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Due to data corrections in reported net generation from other energy sources, EIA has revised tables 1.1; 1.2; 1.3; 3.1.A; 3.2.A; 3.3.A; 3.7; 3.17; and 6.3.

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Chapter 1

National Summary Data

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Net Generation and Consumption of Fuels for January through December														
Total (All Sectors)					Electric Power Sector				Commercial		Industrial		Residential	
Fuel	Facility Type	Year 2017	Year 2016	Percentage Change	Electric Utilities		Independent Power Producers		Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
					Year 2017	Year 2016	Year 2017	Year 2016						
Net Generation (Thousand Megawatthours)														
Coal	Utility Scale Facilities	1,205,835	1,239,149	-2.7%	893,639	922,399	304,198	307,263	329	383	7,669	9,103	0	0
Petroleum Liquids	Utility Scale Facilities	12,414	13,008	-4.6%	8,567	9,069	3,281	3,360	103	77	463	503	0	0
Petroleum Coke	Utility Scale Facilities	8,976	11,197	-19.8%	6,711	8,881	1,480	1,401	8	6	776	909	0	0
Natural Gas	Utility Scale Facilities	1,296,415	1,378,307	-5.9%	623,835	654,780	572,919	624,600	8,042	7,730	91,619	91,197	0	0
Other Gas	Utility Scale Facilities	12,469	12,807	-2.6%	149	154	3,978	3,758	0	0	8,343	8,895	0	0
Nuclear	Utility Scale Facilities	804,950	805,694	-0.1%	424,485	424,400	380,465	381,294	0	0	0	0	0	0
Hydroelectric Conventional	Utility Scale Facilities	300,333	267,812	12.1%	275,677	247,787	23,034	18,539	240	217	1,383	1,269	0	0
Renewable Sources Excluding Hydroelectric	Utility Scale Facilities	386,277	341,633	13.1%	46,111	42,661	308,338	267,056	3,251	3,226	28,578	28,690	0	0
... Wind	Utility Scale Facilities	254,303	226,993	12.0%	37,068	35,070	217,006	191,720	144	131	84	71	0	0
... Solar Thermal and Photovoltaic	Utility Scale Facilities	53,286	36,054	47.8%	3,348	1,995	49,375	33,502	521	529	42	27	0	0
... Wood and Wood-Derived Fuels	Utility Scale Facilities	41,152	40,947	0.5%	3,226	3,038	10,416	10,382	70	69	27,440	27,458	0	0
... Other Biomass	Utility Scale Facilities	21,610	21,813	-0.9%	1,448	1,478	16,636	16,706	2,515	2,496	1,012	1,134	0	0
... Geothermal	Utility Scale Facilities	15,927	15,826	0.6%	1,022	1,080	14,905	14,746	0	0	0	0	0	0
Hydroelectric Pumped Storage	Utility Scale Facilities	-6,495	-6,686	-2.9%	-5,448	-5,629	-1,047	-1,057	0	0	0	0	0	0
Other Energy Sources	Utility Scale Facilities	13,096	13,754	-4.8%	553	421	6,527	6,941	1,088	1,068	4,928	5,324	0	0
All Energy Sources	Utility Scale Facilities	4,034,271	4,076,675	-1.0%	2,274,279	2,304,923	1,603,173	1,613,156	13,060	12,706	143,758	145,890	0	0
Estimated Small Scale Solar Photovoltaic	Small Scale Facilities	23,990	18,812	27.5%	0	0	0	0	7,685	6,158	2,364	2,060	13,942	10,595
Estimated Total Solar Photovoltaic	All Facilities	74,007	51,483	43.8%	3,326	1,920	46,127	30,194	8,206	6,687	2,406	2,087	13,942	10,595
Estimated Total Solar	All Facilities	77,276	54,866	40.8%	3,348	1,995	49,375	33,502	8,206	6,687	2,406	2,087	13,942	10,595
Consumption of Fossil Fuels for Electricity Generation														
Coal (1000 tons)	Utility Scale Facilities	663,911	677,371	-2.0%	484,389	496,192	176,643	178,047	95	111	2,783	3,021	0	0
Petroleum Liquids (1000 barrels)	Utility Scale Facilities	21,696	22,405	-3.2%	15,567	16,137	5,461	5,624	191	108	476	536	0	0
Petroleum Coke (1000 tons)	Utility Scale Facilities	3,490	4,253	-18.0%	2,731	3,427	542	591	3	2	214	233	0	0
Natural Gas (1000 Mcf)	Utility Scale Facilities	9,507,760	10,170,110	-6.5%	4,754,883	5,018,894	4,161,987	4,571,375	50,060	46,304	540,830	533,537	0	0
Consumption of Fossil Fuels for Useful Thermal Output														
Coal (1000 tons)	Utility Scale Facilities	14,667	16,586	-11.6%	2,802	2,979	1,158	1,336	515	572	10,192	11,700	0	0
Petroleum Liquids (1000 barrels)	Utility Scale Facilities	2,012	2,277	-11.6%	72	68	220	245	238	245	1,482	1,719	0	0
Petroleum Coke (1000 tons)	Utility Scale Facilities	977	1,099	-11.0%	11	6	115	113	15	9	836	971	0	0
Natural Gas (1000 Mcf)	Utility Scale Facilities	1,168,850	1,151,866	1.5%	38,740	38,096	309,945	356,905	104,324	80,943	715,842	675,922	0	0
Consumption of Fossil Fuels for Electricity Generation and Useful Thermal Output														
Coal (1000 tons)	Utility Scale Facilities	678,578	693,958	-2.2%	487,192	499,172	177,801	179,383	610	683	12,975	14,720	0	0
Petroleum Liquids (1000 barrels)	Utility Scale Facilities	23,708	24,682	-3.9%	15,640	16,205	5,681	5,869	429	352	1,958	2,255	0	0
Petroleum Coke (1000 tons)	Utility Scale Facilities	4,467	5,352	-16.5%	2,742	3,433	657	705	17	10	1,050	1,204	0	0
Natural Gas (1000 Mcf)	Utility Scale Facilities	10,676,610	11,321,975	-5.7%	4,793,623	5,056,990	4,471,932	4,928,280	154,383	127,246	1,256,672	1,209,459	0	0

Sales, Revenue, and Average Price of Electricity to Ultimate Customers for January through December									
Sector	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)		
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Percentage Change
Residential	1,378,648	1,411,058	-2.3%	177,661	177,077	0.3%	12.89	12.55	2.7%
Commercial	1,352,888	1,367,191	-1.0%	144,242	142,643	1.1%	10.66	10.43	2.2%
Industrial	984,298	976,715	0.8%	67,691	66,068	2.5%	6.88	6.76	1.8%
Transportation	7,523	7,497	0.3%	728	722	0.9%	9.68	9.63	0.5%
All Sectors	3,723,356	3,762,462	-1.0%	390,322	386,509	1.0%	10.48	10.27	2.0%

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, 2007 - 2017

(From Table 2.1.) Number of Ultimate Customers

Year	Residential	Commer-cial	Industrial	Transpor-tation	Other	Total
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
2017	132,579,747	18,359,427	840,329	86	N/A	151,779,589

(From Table 2.2.) Sales to Ultimate Customers

(Thousand Megawatthours)

Year	Residential	Commer-cial	Industrial	Transpor-tation	Other	Total
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
2017	1,378,648	1,352,888	984,298	7,523	N/A	3,723,356

(From Table 2.3.) Revenue From Ultimate Customers

(Million Dollars)

Year	Residential	Commer-cial	Industrial	Transpor-tation	Other	Total
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
2017	177,661	144,242	67,691	728	N/A	390,322

Table 1.2. Summary Statistics for the United States, 2007 - 2017

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

Year	Residential	Commer-cial	Industrial	Transpor-tation	Other	Total
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
2017	12.89	10.66	6.88	9.68	N/A	10.48

**(From Tables 2.12. - 2.14.) Trade
(Thousand Megawatthours)**

Year	Purchases	Sales for Resale	Imports	Exports
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
2017	4,861,257	4,889,947	65,685	9,371

(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 Conventional	Hydro Pumped Storage	Geothermal	Wind
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
2017	1,205,835	21,390	1,296,415	12,469	804,950	300,333	-6,495	15,927	254,303

Generation at Utility Scale Facilities	Small Scale Generation	Utility and Small Scale Generation
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Table 1.2. Summary Statistics for the United States, 2007 - 2017

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
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
2017	50,017	3,269	41,152	21,610	13,096	4,034,271	23,990	74,007	77,276

(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 Conventional	Hydro Pumped Storage	Geothermal	Wind
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
2017	256,547.3	33,306.7	456,011.6	2,375.8	99,628.9	79,794.5	22,810.4	2,483.3	87,597.5

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
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
2017	25,209.0	1,757.9	8,830.9	5,129.5	2,886.3	1,084,369.6	16,147.8	41,356.8	43,114.7

Table 1.2. Summary Statistics for the United States, 2007 - 2017

(From Chapter 5.) Consumption of Fossil Fuels

Year	For Electricity Generation				For Useful Thermal Output			
	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)
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
2017	663,911	39,144	9,507,760	70,721	14,667	6,899	1,168,850	227,981

Year	Total			
	Coal (Thousand Tons)	Petroleum (Thousand Barrels)	Natural Gas (Millions of Cubic Feet)	Other Gas (Millions of BTU)
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
2017	678,578	46,043	10,676,610	298,702

(From Tables 6.1. and 7.1)

Year End Stocks, Annual Receipts and Average Costs

Year	Electric Power Sector Year End Stocks		Annual Receipts at All Electricity Generators			Average Cost of Fuel at All Electricity Generators		
	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)
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
2014	151,548	37,643	854,560	54,488	8,431,423	2.37	11.60	5.00

Table 1.2. Summary Statistics for the United States, 2007 - 2017

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
2017	137,687	33,612	642,364	32,672	9,628,733	2.06	7.10	3.37

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

Year	Carbon Dioxide (CO ₂)	Sulfur Dioxide (SO ₂)	Nitrogen Oxides (NO _x)
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
2017	1,849,750	1,657	1,506

(From Tables 10.6. and 10.7.) Energy Efficiency

Year	Savings		Incremental Costs		Life Cycle Savings		Life Cycle Costs	
	Energy (MWh)	Peak Demand (MW)	Incentives (thousand dollars)	Other (thousand dollars)	Energy (MWh)	Peak Demand (MW)	Incentives (thousand dollars)	Other (thousand dollars)
2013	24,653,124	11,078	2,871,654	1,944,597	249,940,645	10,956	6,028,810	3,994,889
2014	26,466,020	6,453	3,410,854	2,209,098	301,956,123	8,040	4,007,452	3,120,898
2015	26,129,489	5,952	3,448,286	2,283,300	296,346,403	7,096	4,255,368	3,710,453
2016	27,500,224	5,658	3,570,950	2,522,854	354,347,692	7,050	4,126,758	3,432,717
2017	29,899,028	6,071	3,664,407	2,297,957	374,826,892	5,951	4,849,803	3,162,995

(From Tables 10.8. and 10.9.) Demand Response

Year	Yearly Energy and Demand Savings				Program Costs	
	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
2017	9,440,938	1,310,862	31,508	12,248	1,003,124	370,700

Table 1.2. Summary Statistics for the United States, 2007 - 2017

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 municipal 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, commercial 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, 2007 through 2017

(From Chapter 3.) Supply (Thousand Megawatthours)

Year	Generation					Total Imports	Total Supply
	Electric Utilities	IPP (Non-CHP)	IPP (CHP)	Commercial Sector	Industrial Sector		
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	72,716	4,149,391
2017	2,274,279	1,464,590	138,583	13,060	143,758	65,685	4,099,955

(From Chapter 2.) Disposition (Thousand Megawatthours)

Year	Retail Sales			Direct Use	Total Exports	Losses and Unaccounted For	Total Disposition
	Full-Service Providers	Energy-Only Providers	Facility Direct				
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	6,214	240,871	4,149,391
2017	3,149,973	559,727	13,656	141,114	9,371	226,114	4,099,955

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, 2007 through 2017

Year	Residential	Commercial	Industrial	Transportation	Total
Total Electric Industry					
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
2017	132,579,747	18,359,427	840,329	86	151,779,589
Full-Service Providers					
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
2017	121,964,414	16,329,808	789,732	52	139,084,006
Energy-Only Providers					
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
2017	10,615,333	2,029,619	50,597	34	12,695,583

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, 2007 through 2017 (Megawatthours)

Year	Residential	Commercial	Industrial	Transportation	Total	Direct Use	Total End Use
Total Electric Industry							
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
2017	1,378,647,742	1,352,887,694	984,297,945	7,522,593	3,723,355,974	141,114,442	3,864,470,416
Full-Service Providers							
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
2017	1,285,787,376	1,078,679,288	797,505,332	1,656,960	3,163,628,956	N/A	3,163,628,956
Energy-Only Providers							
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
2017	92,860,366	274,208,406	186,792,613	5,865,633	559,727,018	N/A	559,727,018

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, 2007 through 2017 (Million Dollars)

Year	Residential	Commercial	Industrial	Transportation	Total
Total Electric Industry					
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
2017	177,661	144,242	67,691	728	390,322
Full-Service Providers					
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
2017	162,762	112,576	54,412	171	329,921
Competitive Service Providers					
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
2017	14,899	31,666	13,279	557	60,402
Energy-Only Providers					
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
2017	7,666	18,368	9,829	363	36,227
Delivery-Only Providers					
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
2017	7,232	13,298	3,450	194	24,174

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 2007 through 2017 (Cents per kilowatthour)

Year	Residential	Commercial	Industrial	Transportation	Total
Total Electric Industry					
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
2017	12.89	10.66	6.88	9.68	10.48
Full-Service Providers					
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
2017	12.66	10.44	6.82	10.32	10.43
Competitive Service Providers					
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
2017	16.04	11.55	7.11	9.50	10.79
Energy-Only Providers					
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
2017	8.26	6.70	5.26	6.19	6.47
Delivery-Only Providers					
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
2017	7.79	4.85	1.85	3.31	4.32

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, 2007 - December 2017 (Thousand Megawatthours)**

Period	Residential	Commercial	Industrial	Transportation	All Sectors
Annual Totals					
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
2017	1,378,648	1,352,888	984,298	7,523	3,723,356
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
Year 2017					
January	129,212	109,488	78,809	667	318,177
February	100,968	99,640	74,534	635	275,777
March	103,096	107,173	80,530	645	291,444
April	90,725	102,589	78,899	589	272,801
May	98,281	109,872	83,134	583	291,871
June	122,543	120,013	85,399	628	328,583
July	149,900	129,277	87,806	630	367,613
August	142,007	128,481	89,134	640	360,263
September	118,779	118,789	83,540	618	321,726
October	102,811	113,287	82,815	626	299,539
November	98,321	104,973	79,456	598	283,347
December	122,005	109,306	80,242	664	312,216

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, 2007 - December 2017 (Million Dollars)**

Period	Residential	Commercial	Industrial	Transportation	All Sectors
Annual Totals					
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
2017	177,661	144,242	67,691	728	390,322
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
Year 2017					
January	15,781	11,183	5,190	63	32,216
February	12,911	10,442	4,941	60	28,354
March	13,289	11,208	5,407	61	29,965
April	11,536	10,669	5,209	56	27,470
May	12,843	11,638	5,639	56	30,176
June	16,171	13,209	6,141	64	35,585
July	19,606	14,184	6,416	64	40,269
August	18,679	14,141	6,435	64	39,320
September	15,772	13,104	5,992	62	34,930
October	13,164	12,208	5,725	60	31,157
November	12,721	11,016	5,345	57	29,139
December	15,189	11,239	5,249	62	31,739

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, 2007 - December 2017 (Cents per Kilowatthour)**

Period	Residential	Commercial	Industrial	Transportation	All Sectors
Annual Totals					
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
2017	12.89	10.66	6.88	9.68	10.48
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
Year 2017					
January	12.21	10.21	6.59	9.39	10.13
February	12.79	10.48	6.63	9.50	10.28
March	12.89	10.46	6.71	9.49	10.28
April	12.72	10.40	6.60	9.46	10.07
May	13.07	10.59	6.78	9.61	10.34
June	13.20	11.01	7.19	10.18	10.83
July	13.08	10.97	7.31	10.12	10.95
August	13.15	11.01	7.22	10.06	10.91
September	13.28	11.03	7.17	9.99	10.86
October	12.80	10.78	6.91	9.57	10.40
November	12.94	10.49	6.73	9.50	10.28
December	12.45	10.28	6.54	9.35	10.17

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 2.8. Sales of Electricity to Ultimate Customers by End-Use Sector, by State, 2017 and 2016 (Thousand Megawatthours)

Census Division and State	Residential		Commercial		Industrial		Transportation		All Sectors	
	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
New England	45,849	46,532	52,190	52,753	16,867	17,965	553	552	115,458	117,802
Connecticut	12,380	12,677	12,335	12,701	3,244	3,370	177	183	28,136	28,931
Maine	4,639	4,586	3,917	3,986	2,658	2,877	0	0	11,214	11,449
Massachusetts	19,338	19,693	25,968	25,934	6,859	7,507	348	342	52,513	53,476
New Hampshire	4,441	4,438	4,390	4,466	1,956	2,000	0	0	10,787	10,905
Rhode Island	3,028	3,082	3,603	3,651	726	764	28	27	7,385	7,524
Vermont	2,023	2,056	1,977	2,014	1,424	1,446	0	0	5,424	5,516
Middle Atlantic	128,567	133,799	155,927	158,715	73,044	72,130	3,828	3,846	361,366	368,490
New Jersey	27,762	29,091	37,971	38,672	7,343	7,293	307	303	73,383	75,359
New York	49,081	50,831	75,333	76,507	17,811	17,709	2,767	2,756	144,992	147,803
Pennsylvania	51,724	53,877	42,623	43,535	47,889	47,128	755	787	142,991	145,328
East North Central	179,275	187,898	181,770	185,751	192,154	195,324	586	585	553,784	569,557
Illinois	43,717	45,990	49,988	50,910	42,971	43,632	520	519	137,196	141,050
Indiana	31,552	33,026	23,657	24,229	43,737	46,429	20	21	98,966	103,705
Michigan	32,977	34,543	38,325	38,986	30,591	30,934	6	4	101,899	104,468
Ohio	49,796	52,524	46,158	47,742	50,651	50,291	39	41	146,644	150,598
Wisconsin	21,233	21,814	23,641	23,884	24,205	24,038	0	0	69,079	69,736
West North Central	100,529	102,860	101,871	102,760	93,190	89,589	47	46	295,637	295,255
Iowa	13,722	14,094	12,135	12,291	23,065	22,046	0	0	48,922	48,431
Kansas	13,013	13,509	15,739	15,887	11,535	11,414	0	0	40,288	40,810
Minnesota	21,574	21,804	23,274	23,502	22,281	21,217	24	24	67,153	66,546
Missouri	33,051	34,355	30,177	30,728	13,211	13,513	23	21	76,461	78,618
Nebraska	9,668	9,738	9,293	9,307	11,398	11,154	0	0	30,359	30,199
North Dakota	4,848	4,741	6,530	6,346	8,762	7,433	0	0	20,140	18,520
South Dakota	4,653	4,619	4,723	4,698	2,938	2,813	0	0	12,314	12,130
South Atlantic	349,290	361,426	309,752	313,557	140,374	139,870	1,301	1,326	800,717	816,179
Delaware	4,663	4,763	4,185	4,235	2,281	2,260	0	0	11,129	11,258
District of Columbia	2,395	2,502	8,006	8,368	180	192	335	331	10,916	11,394
Florida	121,463	123,321	95,004	95,547	16,602	16,759	86	95	233,155	235,722
Georgia	54,771	57,889	46,265	47,762	32,251	32,290	169	171	133,457	138,112
Maryland	26,084	27,317	28,893	29,676	3,798	3,821	529	540	59,304	61,354
North Carolina	56,134	58,457	47,890	48,604	27,393	27,337	4	6	131,421	134,404
South Carolina	29,225	30,616	21,758	22,275	27,114	26,687	0	0	78,097	79,578
Virginia	43,982	45,186	50,201	49,264	17,169	17,648	178	183	111,530	112,281
West Virginia	10,573	11,376	7,549	7,826	13,586	12,875	0	0	31,709	32,076
East South Central	111,800	118,627	90,020	93,577	102,125	100,383	0	0	303,945	312,587
Alabama	30,181	32,056	22,744	23,634	33,317	32,535	0	0	86,242	88,225
Kentucky	24,883	26,338	19,293	19,981	28,459	28,234	0	0	72,634	74,554
Mississippi	17,444	18,459	14,256	14,523	16,129	16,069	0	0	47,829	49,050
Tennessee	39,293	41,774	33,727	35,439	24,220	23,546	0	0	97,240	100,758
West South Central	212,638	217,197	194,398	196,873	192,433	183,555	196	194	599,664	597,819
Arkansas	17,027	17,784	11,913	12,178	17,146	16,226	0	0	46,086	46,188
Louisiana	29,532	30,650	24,500	24,896	37,161	35,895	13	12	91,206	91,453
Oklahoma	21,838	22,790	20,499	20,696	18,156	18,031	0	0	60,492	61,517
Texas	144,242	145,973	137,486	139,104	119,970	113,403	182	182	401,880	398,662
Mountain	98,536	97,005	97,122	95,538	82,211	83,442	145	137	278,014	276,122
Arizona	34,251	33,691	29,681	29,564	13,706	14,976	8	7	77,646	78,238
Colorado	18,615	18,834	20,641	20,800	15,501	15,103	73	65	54,830	54,802
Idaho	8,728	8,172	6,421	6,279	8,645	8,612	0	0	23,794	23,063
Montana	5,225	4,853	4,970	4,832	4,515	4,416	0	0	14,710	14,101
Nevada	12,937	12,692	11,123	9,929	12,590	13,515	9	8	36,658	36,145
New Mexico	6,497	6,643	8,784	8,806	7,728	7,591	0	0	23,010	23,040
Utah	9,511	9,371	11,739	11,565	9,283	9,187	56	57	30,589	30,180
Wyoming	2,772	2,751	3,762	3,762	10,244	10,041	0	0	16,778	16,555
Pacific Contiguous	147,472	141,096	164,053	161,824	86,868	89,349	867	812	399,260	393,081
California	90,124	88,311	117,682	116,775	48,627	50,979	835	782	257,268	256,847
Oregon	20,066	18,573	16,571	16,060	13,382	12,692	25	24	50,044	47,349
Washington	37,283	34,212	29,800	28,989	24,859	25,678	7	6	91,948	88,885
Pacific Noncontiguous	4,690	4,618	5,787	5,843	5,033	5,108	0	0	15,510	15,569
Alaska	2,060	NM	2,705	2,731	1,421	1,385	0	0	6,186	6,123
Hawaii	2,630	2,612	3,082	3,111	3,613	3,722	0	0	9,324	9,445
U.S. Total	1,378,648	1,411,058	1,352,888	1,367,191	984,298	976,715	7,523	7,497	3,723,356	3,762,462

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, 2017 and 2016 (Million Dollars)

Census Division and State	Residential		Commercial		Industrial		Transportation		All Sectors	
	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
New England	8,897	8,751	8,080	8,009	2,114	2,191	46	45	19,138	18,996
Connecticut	2,512	2,537	1,981	2,000	425	432	19	20	4,938	4,989
Maine	741	726	475	482	245	258	0	0	1,460	1,465
Massachusetts	3,879	3,742	4,138	4,046	952	1,004	22	20	8,991	8,812
New Hampshire	853	816	650	645	241	247	0	0	1,744	1,707
Rhode Island	555	574	548	543	106	103	5	5	1,213	1,225
Vermont	358	357	289	293	145	148	0	0	792	798
Middle Atlantic	20,552	20,977	19,601	19,808	5,040	5,071	431	419	45,624	46,276
New Jersey	4,344	4,574	4,663	4,740	743	741	27	26	9,777	10,082
New York	8,849	8,934	11,111	11,054	1,055	1,068	350	332	21,366	21,388
Pennsylvania	7,359	7,470	3,826	4,014	3,242	3,262	54	60	14,481	14,806
East North Central	23,951	24,536	18,465	18,498	13,598	13,525	39	40	56,053	56,600
Illinois	5,662	5,765	4,543	4,592	2,782	2,840	33	35	13,020	13,231
Indiana	3,878	3,892	2,495	2,425	3,298	3,238	2	2	9,673	9,557
Michigan	5,078	5,258	4,217	4,147	2,201	2,138	1	0	11,496	11,543
Ohio	6,287	6,551	4,640	4,762	3,503	3,509	3	3	14,433	14,825
Wisconsin	3,046	3,069	2,571	2,572	1,814	1,802	0	0	7,430	7,443
West North Central	12,190	12,127	9,995	9,802	6,685	6,378	4	4	28,874	28,312
Iowa	1,693	1,682	1,148	1,127	1,432	1,333	0	0	4,273	4,143
Kansas	1,732	1,764	1,667	1,664	870	855	0	0	4,270	4,283
Minnesota	2,814	2,763	2,439	2,316	1,643	1,564	2	2	6,898	6,646
Missouri	3,844	3,851	2,858	2,846	968	962	2	2	7,672	7,661
Nebraska	1,060	1,056	822	819	873	858	0	0	2,756	2,732
North Dakota	499	482	600	580	669	593	0	0	1,768	1,655
South Dakota	548	530	460	450	230	213	0	0	1,238	1,193
South Atlantic	41,439	41,790	29,092	28,983	9,128	9,028	102	105	79,761	79,906
Delaware	622	639	414	426	177	183	0	0	1,214	1,249
District of Columbia	310	308	933	981	15	17	30	32	1,288	1,337
Florida	14,098	13,545	8,882	8,507	1,299	1,288	7	8	24,286	23,348
Georgia	6,517	6,659	4,667	4,688	1,922	1,884	9	9	13,115	13,240
Maryland	3,641	3,886	3,107	3,262	318	301	41	42	7,106	7,492
North Carolina	6,138	6,446	4,043	4,189	1,699	1,725	0	1	11,881	12,362
South Carolina	3,804	3,874	2,301	2,289	1,677	1,625	0	0	7,783	7,788
Virginia	5,079	5,131	4,023	3,909	1,118	1,157	14	14	10,234	10,211
West Virginia	1,230	1,302	723	732	903	846	0	0	2,855	2,879
East South Central	12,633	12,888	9,546	9,542	6,058	5,835	0	0	28,236	28,264
Alabama	3,787	3,843	2,638	2,627	2,052	1,966	0	0	8,476	8,436
Kentucky	2,700	2,763	1,900	1,912	1,627	1,600	0	0	6,227	6,276
Mississippi	1,933	1,932	1,449	1,390	966	931	0	0	4,348	4,253
Tennessee	4,214	4,350	3,559	3,612	1,413	1,337	0	0	9,185	9,299
West South Central	22,828	22,999	16,221	16,211	10,485	9,755	16	16	49,550	48,980
Arkansas	1,750	1,765	1,014	1,002	1,041	986	0	0	3,805	3,753
Louisiana	2,875	2,862	2,193	2,139	2,036	1,822	1	1	7,105	6,825
Oklahoma	2,317	2,324	1,662	1,586	984	905	0	0	4,963	4,814
Texas	15,886	16,048	11,352	11,484	6,424	6,042	15	14	33,678	33,588
Mountain	11,717	11,298	9,333	9,066	5,388	5,320	14	13	26,452	25,698
Arizona	4,259	4,094	3,115	3,078	884	909	1	1	8,259	8,082
Colorado	2,265	2,274	2,041	1,996	1,163	1,110	7	6	5,476	5,386
Idaho	876	813	513	487	576	564	0	0	1,965	1,865
Montana	572	531	503	492	237	223	0	0	1,312	1,246
Nevada	1,550	1,448	886	788	775	795	1	1	3,212	3,031
New Mexico	837	799	895	858	476	443	0	0	2,208	2,101
Utah	1,042	1,032	1,015	1,012	569	581	6	6	2,632	2,632
Wyoming	315	306	365	354	709	695	0	0	1,389	1,355
Pacific Contiguous	22,240	20,585	22,573	21,477	8,135	7,984	75	79	53,023	50,125
California	16,501	15,360	18,552	17,603	6,190	6,077	72	77	41,315	39,116
Oregon	2,139	1,981	1,468	1,431	801	768	2	2	4,409	4,182
Washington	3,601	3,245	2,553	2,443	1,144	1,139	1	1	7,299	6,827
Pacific Noncontiguous	1,214	1,125	1,336	1,246	1,060	981	0	0	3,610	3,352
Alaska	438	NM	511	480	232	211	0	0	1,181	1,098
Hawaii	776	717	825	767	828	770	0	0	2,429	2,254
U.S. Total	177,661	177,077	144,242	142,643	67,691	66,068	728	722	390,322	386,509

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 2.10. Average Price of Electricity to Ultimate Customers by End-Use Sector, by State, 2017 and 2016 (Cents per Kilowatthour)

Census Division and State	Residential		Commercial		Industrial		Transportation		All Sectors	
	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
New England	19.41	18.81	15.48	15.18	12.54	12.20	8.28	8.19	16.58	16.13
Connecticut	20.29	20.01	16.06	15.75	13.10	12.81	10.95	10.84	17.55	17.24
Maine	15.97	15.83	12.12	12.08	9.20	8.96	--	--	13.02	12.80
Massachusetts	20.06	19.00	15.93	15.60	13.88	13.38	6.22	5.94	17.12	16.48
New Hampshire	19.20	18.38	14.81	14.43	12.34	12.34	--	--	16.17	15.66
Rhode Island	18.32	18.62	15.20	14.88	14.57	13.48	17.08	18.71	16.42	16.28
Vermont	17.68	17.37	14.61	14.54	10.21	10.23	--	--	14.60	14.46
Middle Atlantic	15.99	15.68	12.57	12.48	6.90	7.03	11.27	10.88	12.63	12.56
New Jersey	15.65	15.72	12.28	12.26	10.12	10.16	8.81	8.68	13.32	13.38
New York	18.03	17.58	14.75	14.45	5.92	6.03	12.67	12.05	14.74	14.47
Pennsylvania	14.23	13.86	8.98	9.22	6.77	6.92	7.16	7.64	10.13	10.19
East North Central	13.36	13.06	10.16	9.96	7.08	6.92	6.65	6.91	10.12	9.94
Illinois	12.95	12.54	9.09	9.02	6.47	6.51	6.35	6.67	9.49	9.38
Indiana	12.29	11.79	10.54	10.01	7.54	6.97	11.23	9.82	9.77	9.22
Michigan	15.40	15.22	11.00	10.64	7.19	6.91	11.99	11.63	11.28	11.05
Ohio	12.63	12.47	10.05	9.97	6.92	6.98	7.50	7.93	9.84	9.84
Wisconsin	14.35	14.07	10.87	10.77	7.49	7.49	14.31	14.68	10.76	10.67
West North Central	12.13	11.79	9.81	9.54	7.17	7.12	9.01	9.24	9.77	9.59
Iowa	12.34	11.94	9.46	9.17	6.21	6.05	--	--	8.73	8.55
Kansas	13.31	13.06	10.59	10.47	7.54	7.49	--	--	10.60	10.49
Minnesota	13.04	12.67	10.48	9.86	7.37	7.37	9.56	10.06	10.27	9.99
Missouri	11.63	11.21	9.47	9.26	7.33	7.12	8.42	8.31	10.03	9.74
Nebraska	10.97	10.84	8.85	8.80	7.66	7.69	--	--	9.08	9.05
North Dakota	10.29	10.16	9.19	9.15	7.63	7.98	--	--	8.78	8.94
South Dakota	11.77	11.47	9.74	9.58	7.84	7.57	--	--	10.05	9.83
South Atlantic	11.86	11.56	9.39	9.24	6.50	6.45	7.84	7.93	9.96	9.79
Delaware	13.35	13.42	9.89	10.07	7.78	8.11	--	--	10.90	11.09
District of Columbia	12.94	12.29	11.66	11.72	8.23	8.80	8.90	9.53	11.80	11.73
Florida	11.61	10.98	9.35	8.90	7.83	7.69	8.62	8.32	10.42	9.91
Georgia	11.90	11.50	10.09	9.81	5.96	5.84	5.35	5.08	9.83	9.59
Maryland	13.96	14.23	10.75	10.99	8.37	7.89	7.74	7.85	11.98	12.21
North Carolina	10.94	11.03	8.44	8.62	6.20	6.31	8.55	7.88	9.04	9.20
South Carolina	13.02	12.65	10.57	10.28	6.19	6.09	--	--	9.97	9.79
Virginia	11.55	11.36	8.01	7.93	6.51	6.56	8.11	7.76	9.18	9.09
West Virginia	11.63	11.44	9.58	9.35	6.64	6.57	--	--	9.00	8.98
East South Central	11.30	10.86	10.60	10.20	5.93	5.81	--	--	9.29	9.04
Alabama	12.55	11.99	11.60	11.11	6.16	6.04	--	--	9.83	9.56
Kentucky	10.85	10.49	9.85	9.57	5.72	5.67	--	--	8.57	8.42
Mississippi	11.08	10.47	10.17	9.57	5.99	5.79	--	--	9.09	8.67
Tennessee	10.72	10.41	10.55	10.19	5.83	5.68	--	--	9.45	9.23
West South Central	10.74	10.59	8.34	8.23	5.45	5.31	8.28	7.99	8.26	8.19
Arkansas	10.28	9.92	8.51	8.23	6.07	6.08	12.26	10.40	8.26	8.13
Louisiana	9.74	9.34	8.95	8.59	5.48	5.08	9.93	9.03	7.79	7.46
Oklahoma	10.61	10.20	8.11	7.66	5.42	5.02	--	--	8.20	7.83
Texas	11.01	10.99	8.26	8.26	5.35	5.33	8.16	7.92	8.38	8.43
Mountain	11.89	11.65	9.61	9.49	6.55	6.38	9.88	9.67	9.51	9.31
Arizona	12.44	12.15	10.50	10.41	6.45	6.07	9.65	9.93	10.64	10.33
Colorado	12.17	12.07	9.89	9.60	7.50	7.35	9.77	9.80	9.99	9.83
Idaho	10.04	9.95	7.98	7.76	6.66	6.55	--	--	8.26	8.08
Montana	10.95	10.94	10.12	10.19	5.25	5.06	--	--	8.92	8.84
Nevada	11.99	11.41	7.96	7.93	6.15	5.88	8.61	7.83	8.76	8.38
New Mexico	12.88	12.03	10.19	9.75	6.15	5.84	--	--	9.59	9.12
Utah	10.95	11.02	8.64	8.75	6.13	6.33	10.26	9.76	8.60	8.72
Wyoming	11.37	11.13	9.70	9.40	6.92	6.92	--	--	8.28	8.19
Pacific Contiguous	15.08	14.59	13.76	13.27	9.36	8.94	8.71	9.78	13.28	12.75
California	18.31	17.39	15.76	15.07	12.73	11.92	8.68	9.80	16.06	15.23
Oregon	10.66	10.66	8.86	8.91	5.98	6.05	9.35	9.26	8.81	8.83
Washington	9.66	9.48	8.57	8.43	4.60	4.43	9.18	8.89	7.94	7.68
Pacific Noncontiguous	25.89	24.36	23.09	21.33	21.06	19.21	--	--	23.28	21.53
Alaska	21.27	NM	18.89	17.56	16.34	15.22	--	--	19.10	17.93
Hawaii	29.50	27.47	26.77	24.64	22.92	20.69	--	--	26.05	23.87
U.S. Total	12.89	12.55	10.66	10.43	6.88	6.76	9.68	9.63	10.48	10.27

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. Number of Ultimate Customers by Sector by State, 2016 and 2017

Census Division and State	Residential		Commercial		Industrial		Transportation		All Sectors	
	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
New England	6,338,673	6,290,389	885,220	874,475	23,034	26,412	7	7	7,246,934	7,191,283
Connecticut	1,495,577	1,486,741	152,903	152,182	4,385	4,408	4	4	1,652,869	1,643,335
Maine	707,792	699,321	99,331	97,949	3,100	3,028	--	--	810,223	800,298
Massachusetts	2,766,154	2,740,865	409,715	402,936	10,358	13,675	2	2	3,186,229	3,157,478
New Hampshire	618,356	612,716	107,436	106,900	3,220	3,250	--	--	729,012	722,866
Rhode Island	437,124	438,507	59,447	58,907	1,784	1,821	1	1	498,356	499,236
Vermont	313,670	312,239	56,388	55,601	187	230	--	--	370,245	368,070
Middle Atlantic	16,037,193	15,964,597	2,305,746	2,283,555	41,496	42,947	20	21	18,384,455	18,291,120
New Jersey	3,536,087	3,510,141	517,404	514,579	11,773	11,929	6	7	4,065,270	4,036,656
New York	7,144,413	7,118,901	1,089,889	1,072,896	6,997	7,646	8	8	8,241,307	8,199,451
Pennsylvania	5,356,693	5,335,555	698,453	696,080	22,726	23,372	6	6	6,077,878	6,055,013
East North Central	20,060,556	19,937,976	2,485,519	2,469,330	54,136	54,962	9	8	22,600,220	22,462,276
Illinois	5,264,333	5,231,541	611,670	606,954	5,693	6,054	3	3	5,881,699	5,844,552
Indiana	2,834,090	2,821,546	352,015	350,645	17,917	18,085	1	1	3,204,023	3,190,277
Michigan	4,344,321	4,311,008	542,959	538,677	6,196	6,191	2	1	4,893,478	4,855,877
Ohio	4,936,471	4,911,597	627,168	623,730	18,664	19,095	2	2	5,582,305	5,554,424
Wisconsin	2,681,341	2,662,284	351,707	349,324	5,666	5,537	1	1	3,038,715	3,017,146
West North Central	9,427,746	9,345,853	1,441,788	1,431,149	123,910	124,720	3	3	10,993,447	10,901,725
Iowa	1,375,599	1,358,902	237,942	235,813	7,747	7,724	--	--	1,621,288	1,602,439
Kansas	1,259,226	1,252,846	232,078	232,926	24,322	23,729	--	--	1,515,626	1,509,501
Minnesota	2,403,168	2,378,681	292,859	291,569	8,984	9,000	1	1	2,705,012	2,679,251
Missouri	2,771,123	2,751,460	381,634	376,711	8,191	10,169	2	2	3,160,950	3,138,342
Nebraska	841,965	834,038	151,485	149,812	62,066	61,613	--	--	1,055,516	1,045,463
North Dakota	380,101	377,739	74,527	73,573	8,708	8,634	--	--	463,336	459,946
South Dakota	396,564	392,187	71,263	70,745	3,892	3,851	--	--	471,719	466,783
South Atlantic	27,592,479	27,213,237	3,743,229	3,713,164	83,651	82,158	13	13	31,419,372	31,008,572
Delaware	426,071	419,234	54,105	53,366	854	873	--	--	481,030	473,473
District of Columbia	267,448	259,392	26,111	25,924	1	1	3	3	293,563	285,320
Florida	9,291,707	9,149,214	1,216,939	1,199,897	21,289	21,162	2	2	10,529,937	10,370,275
Georgia	4,296,977	4,240,421	572,861	567,431	23,108	21,774	1	1	4,892,947	4,829,627
Maryland	2,313,189	2,288,301	252,966	250,939	8,754	8,822	5	5	2,574,914	2,548,067
North Carolina	4,488,039	4,423,532	680,967	672,610	10,045	10,052	1	1	5,179,052	5,106,195
South Carolina	2,251,558	2,209,783	373,073	369,409	4,379	4,062	--	--	2,629,010	2,583,254
Virginia	3,398,529	3,362,985	422,256	430,877	3,692	3,708	1	1	3,824,478	3,797,571
West Virginia	858,961	860,375	143,951	142,711	11,529	11,704	--	--	1,014,441	1,014,790
East South Central	8,316,868	8,248,665	1,394,010	1,381,966	27,380	26,981	--	--	9,738,258	9,657,612
Alabama	2,213,592	2,200,574	369,984	367,009	8,047	7,266	--	--	2,591,623	2,574,849
Kentucky	1,971,002	1,957,188	304,457	302,040	7,010	7,308	--	--	2,282,469	2,266,536
Mississippi	1,284,578	1,278,616	235,245	232,885	11,156	11,214	--	--	1,530,979	1,522,715
Tennessee	2,847,696	2,812,287	484,324	480,032	1,167	1,193	--	--	3,333,187	3,293,512
West South Central	16,014,300	15,687,117	2,279,262	2,205,235	188,845	180,307	6	6	18,482,413	18,072,665
Arkansas	1,380,157	1,368,867	191,879	190,181	35,595	36,428	2	2	1,607,633	1,595,478
Louisiana	2,073,615	2,059,699	291,404	289,780	19,611	19,231	1	1	2,384,631	2,368,711
Oklahoma	1,751,034	1,736,819	281,267	278,027	18,782	19,096	--	--	2,051,083	2,033,942
Texas	10,809,494	10,521,732	1,514,712	1,447,247	114,857	105,552	3	3	12,439,066	12,074,534
Mountain	9,761,430	9,529,171	1,399,023	1,383,974	95,759	95,239	5	5	11,256,217	11,008,389
Arizona	2,764,355	2,725,510	320,562	318,197	8,133	8,130	2	2	3,093,052	3,051,839
Colorado	2,288,358	2,260,068	370,691	367,001	16,228	16,245	1	1	2,675,278	2,643,315
Idaho	727,568	714,365	108,965	107,551	28,138	27,847	--	--	864,671	849,763
Montana	503,313	497,170	107,147	105,934	9,893	9,814	--	--	620,353	612,918
Nevada	1,263,101	1,143,667	163,356	161,594	3,447	3,654	1	1	1,429,905	1,308,916
New Mexico	880,867	876,921	143,326	141,723	9,395	9,325	--	--	1,033,588	1,027,969
Utah	1,063,292	1,041,823	127,113	124,540	9,594	9,570	1	1	1,200,000	1,175,934
Wyoming	270,576	269,647	57,863	57,434	10,931	10,654	--	--	339,370	337,735
Pacific Contiguous	18,311,853	18,137,554	2,310,922	2,291,865	199,962	202,189	23	23	20,822,760	20,631,631
California	13,548,295	13,445,133	1,696,071	1,692,326	147,754	148,549	15	15	15,392,135	15,286,023
Oregon	1,725,884	1,706,622	233,823	231,692	24,383	24,628	2	2	1,984,092	1,962,944
Washington	3,037,674	2,985,799	381,028	367,847	27,825	29,012	6	6	3,446,533	3,382,664
Pacific Noncontiguous	718,649	714,201	114,708	113,640	2,156	2,144	--	--	835,513	829,985
Alaska	285,697	283,260	53,472	52,804	1,374	1,343	--	--	340,543	337,407
Hawaii	432,952	430,941	61,236	60,836	782	801	--	--	494,970	492,578
U.S. Total	132,579,747	131,068,760	18,359,427	18,148,353	840,329	838,059	86	86	151,779,589	150,055,258

Table 2.12. Electric Power Industry - Electricity Purchases, 2007 through 2017 (Thousand Megawatthours)

Year	Electric Utilities	Energy-Only Providers	Independent Power Producers	Combined Heat and Power	U.S. Total
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
2017	2,102,971	2,552,146	9,372	196,768	4,861,257

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 - Electricity Sales for Resale, 2007 through 2017 (Thousand Megawatthours)

Year	Electric Utilities	Energy-Only Providers	Independent Power Producers	Combined Heat and Power	U.S. Total
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
2017	1,396,838	2,066,455	1,389,083	37,571	4,889,947

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 2.14. Electric Power Industry - U.S. Electricity Imports from and Electricity Exports to Canada and Mexico, 2007-2017 (Megawatthours)

Year	Canada		Mexico		U.S. Total	
	Imports from	Exports to	Imports from	Exports to	Imports	Exports
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
2017	59,909,320	3,312,798	5,775,597	6,058,005	65,684,917	9,370,803

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.

Chapter 3

Net Generation

Table 3.1.A. Net Generation by Energy Source: Total (All Sectors), 2007 - 2017
(Thousand Megawatthours)

Period	Generation at Utility Scale Facilities											Small Scale Generation	Net Generation From Utility and Small Scale Facilities			
	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																
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	
2017	1,205,835	12,414	8,976	1,296,415	12,469	804,950	300,333	53,286	332,991	-6,495	13,096	4,034,271	23,990	74,007	77,276	
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	71,528	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	
Year 2017																
January	115,333	1,121	944	95,473	1,046	73,121	26,788	2,030	26,676	-435	1,094	343,190	1,246	3,186	3,276	
February	86,822	874	723	82,694	977	63,560	23,643	2,555	27,317	-508	995	289,653	1,384	3,804	3,939	
March	89,365	950	699	95,022	1,060	65,093	29,272	4,245	31,688	-521	1,062	317,935	1,972	5,921	6,218	
April	81,335	846	431	88,418	1,001	56,743	29,390	4,696	30,854	-439	1,050	294,325	2,195	6,580	6,891	
May	92,777	971	847	98,067	1,055	61,313	32,384	5,663	28,782	-423	1,083	322,518	2,423	7,684	8,086	
June	107,508	1,001	901	117,317	992	67,011	30,222	6,175	26,258	-568	1,099	357,916	2,487	8,197	8,662	
July	127,697	916	889	146,994	1,048	71,314	26,491	5,753	22,832	-759	1,211	404,387	2,555	7,996	8,308	
August	119,488	970	765	141,209	1,134	72,384	21,851	5,434	20,527	-638	1,220	384,342	2,480	7,573	7,914	
September	98,203	925	712	118,112	1,060	68,098	19,067	5,115	24,142	-606	1,034	335,861	2,225	6,991	7,340	
October	89,775	956	572	106,852	999	65,995	18,284	4,821	31,558	-463	1,027	320,376	1,990	6,497	6,811	
November	90,986	903	755	94,883	1,001	66,618	20,565	3,409	30,596	-478	1,077	310,315	1,561	4,839	4,970	
December	106,546	1,982	737	111,373	1,096	73,700	22,377	3,389	31,762	-656	1,146	353,452	1,472	4,739	4,861	

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, Form EIA-861M, Form EIA-861, 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), 2007 - 2017
(Thousand Megawatthours)**

Period	Generation at Utility Scale Facilities										Small Scale Generation	Generation From Utility and Small Scale Facilities	
	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													
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
2017	254,303	50,017	3,269	41,152	11,543	6,951	3,115	15,927	300,333	686,610	23,990	74,007	77,276
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
Year 2017													
January	19,840	1,940	90	3,505	1,050	617	280	1,383	26,788	55,494	1,246	3,186	3,276
February	21,198	2,419	136	3,186	910	528	256	1,239	23,643	53,515	1,384	3,804	3,939
March	24,993	3,949	297	3,457	1,007	557	290	1,385	29,272	65,205	1,972	5,921	6,218
April	24,613	4,385	310	3,149	956	544	254	1,337	29,390	64,939	2,195	6,580	6,891
May	22,450	5,261	402	3,189	989	604	267	1,283	32,384	66,829	2,423	7,684	8,086
June	19,809	5,710	465	3,439	956	588	251	1,214	30,222	62,655	2,487	8,197	8,662
July	15,960	5,442	311	3,703	948	604	261	1,355	26,491	55,077	2,555	7,996	8,308
August	13,621	5,093	341	3,753	945	617	246	1,345	21,851	47,812	2,480	7,573	7,914
September	17,855	4,766	349	3,294	914	558	224	1,297	19,067	48,325	2,225	6,991	7,340
October	25,306	4,507	314	3,306	921	558	238	1,229	18,284	54,663	1,990	6,497	6,811
November	24,082	3,278	131	3,430	951	571	272	1,289	20,565	54,569	1,561	4,839	4,970
December	24,575	3,267	123	3,738	995	606	276	1,571	22,377	57,528	1,472	4,739	4,861

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 3.2.A. Net Generation by Energy Source: Electric Utilities, 2007 - 2017
(Thousand Megawatthours)

Period	Generation at Utility Scale Facilities											Total
	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gas	Nuclear	Hydroelectric Conventional	Solar	Renewable Sources Excluding Hydroelectric and Solar	Hydroelectric Pumped Storage	Other	
Annual Totals												
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
2017	893,639	8,567	6,711	623,835	149	424,485	275,677	3,348	42,763	-5,448	553	2,274,279
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
Year 2017												
January	85,985	810	743	45,702	13	38,425	24,717	136	3,161	-346	45	199,391
February	64,844	632	540	39,534	17	33,911	21,619	178	3,541	-418	39	164,438
March	65,992	755	535	46,397	16	34,693	26,768	260	4,241	-455	43	179,245
April	58,913	631	260	43,444	18	30,217	26,683	288	4,020	-368	46	164,153
May	69,099	710	654	48,524	5	31,728	29,577	328	3,467	-350	38	183,781
June	81,297	714	698	56,453	10	35,022	27,897	338	3,298	-474	45	205,300
July	96,782	648	673	71,107	19	37,874	24,333	324	2,639	-646	53	233,807
August	90,517	698	540	67,671	2	38,667	20,124	318	2,304	-531	55	220,364
September	71,859	661	523	56,393	0	35,496	17,749	304	2,946	-522	49	185,458
October	66,498	721	405	50,140	9	35,038	16,950	291	4,543	-388	44	174,251
November	64,983	633	583	45,117	15	34,541	18,529	279	4,235	-394	46	168,569
December	76,870	953	556	53,353	24	38,871	20,729	304	4,369	-557	50	195,521

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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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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**Table 3.2.B. Net Generation from Renewable Sources: Electric Utilities, 2007 - 2017
(Thousand Megawatthours)**

Period	Generation at Utility Scale Facilities										Small Scale Generation	Generation From Utility and Small Scale Facilities	
	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													
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
2017	37,068	3,326	22	3,226	1,103	184	161	1,022	275,677	321,788	0	3,326	3,348
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
Year 2017													
January	2,618	135	0	329	95	14	13	92	24,717	28,014	0	135	136
February	3,079	178	0	265	94	9	15	80	21,619	25,339	0	178	178
March	3,718	260	0	311	100	15	19	78	26,768	31,269	0	260	260
April	3,564	288	0	246	94	16	11	90	26,683	30,991	0	288	288
May	3,043	328	1	213	97	15	13	86	29,577	33,372	0	328	328
June	2,858	337	1	245	84	17	14	81	27,897	31,533	0	337	338
July	2,148	323	1	282	91	17	13	88	24,333	27,296	0	323	324
August	1,810	314	4	280	91	19	15	88	20,124	22,745	0	314	318
September	2,583	298	7	166	81	18	13	85	17,749	20,999	0	298	304
October	4,099	290	1	252	89	14	11	78	16,950	21,784	0	290	291
November	3,743	278	2	288	92	15	10	87	18,529	23,043	0	278	279
December	3,805	298	6	350	95	14	15	89	20,729	25,401	0	298	304

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.

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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 3.3.A. Net Generation by Energy Source: Independent Power Producers, 2007 - 2017
(Thousand Megawatthours)

Period	Generation at Utility Scale Facilities											Total
	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gas	Nuclear	Hydroelectric Conventional	Solar	Renewable Sources Excluding Hydroelectric and Solar	Hydroelectric Pumped Storage	Other	
Annual Totals												
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
2017	304,198	3,281	1,480	572,919	3,978	380,465	23,034	49,375	258,962	-1,047	6,527	1,603,173
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
Year 2017												
January	28,587	254	139	41,183	336	34,695	1,918	1,876	20,878	-90	583	130,360
February	21,314	197	123	35,510	291	29,650	1,894	2,348	21,360	-90	514	113,110
March	22,696	147	81	40,458	342	30,400	2,358	3,941	24,871	-66	522	125,751
April	21,829	174	113	37,135	282	26,526	2,538	4,358	24,347	-71	507	117,739
May	23,043	220	136	41,497	345	29,585	2,628	5,277	22,777	-73	548	125,981
June	25,528	249	132	52,380	313	31,988	2,185	5,772	20,315	-93	549	139,318
July	30,237	227	138	66,734	350	33,440	2,030	5,366	17,417	-114	572	156,397
August	28,293	231	140	64,705	358	33,717	1,617	5,056	15,432	-107	580	150,023
September	25,701	223	136	53,827	346	32,602	1,228	4,755	18,701	-84	508	137,942
October	22,616	191	110	48,686	318	30,957	1,221	4,480	24,488	-75	518	133,509
November	25,364	215	111	41,702	337	32,077	1,891	3,093	23,772	-84	539	129,016
December	28,990	951	122	49,104	359	34,828	1,526	3,054	24,605	-99	586	144,026

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.

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**Table 3.3.B. Net Generation from Renewable Sources: Independent Power Producers, 2007 - 2017
(Thousand Megawatthours)**

Period	Generation at Utility Scale Facilities										Small Scale Generation	Generation From Utility and Small Scale Facilities	
	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													
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
2017	217,006	46,127	3,248	10,416	9,505	5,652	1,479	14,905	23,034	331,372	0	46,127	49,375
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
Year 2017													
January	17,203	1,786	90	860	871	518	135	1,291	1,918	24,672	0	1,786	1,876
February	18,100	2,212	136	796	742	440	123	1,158	1,894	25,602	0	2,212	2,348
March	21,250	3,644	297	905	823	454	133	1,307	2,358	31,170	0	3,644	3,941
April	21,027	4,048	310	729	787	440	117	1,247	2,538	31,243	0	4,048	4,358
May	19,386	4,875	402	765	814	484	132	1,197	2,628	30,682	0	4,875	5,277
June	16,934	5,308	464	848	793	479	128	1,133	2,185	28,272	0	5,308	5,772
July	13,801	5,055	311	958	781	484	126	1,267	2,030	24,812	0	5,055	5,366
August	11,801	4,720	337	991	777	494	111	1,257	1,617	22,105	0	4,720	5,056
September	15,257	4,412	343	922	757	447	106	1,212	1,228	24,684	0	4,412	4,755
October	21,183	4,167	313	831	762	447	114	1,151	1,221	30,189	0	4,167	4,480
November	20,316	2,964	130	875	780	466	132	1,202	1,891	28,756	0	2,964	3,093
December	20,747	2,937	117	936	818	499	123	1,482	1,526	29,185	0	2,937	3,054

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 3.4.A. Net Generation by Energy Source: Commercial Sector, 2007 - 2017
(Thousand Megawatthours)

Period	Generation at Utility Scale Facilities												Small Scale Generation	Net Generation From Utility and Small Scale Facilities	
	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															
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
2017	329	103	8	8,042	0	0	240	521	2,729	0	1,088	13,060	7,685	8,206	8,206
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
Year 2017															
January	41	13	1	681	0	0	27	17	232	0	84	1,098	420	438	438
February	32	8	1	597	0	0	15	27	206	0	78	963	458	485	485
March	33	9	1	652	0	0	15	42	233	0	86	1,071	629	671	671
April	20	5	0	574	0	0	23	46	222	0	87	976	699	745	745
May	19	7	0	619	0	0	24	53	245	0	101	1,069	770	823	823
June	21	5	0	718	0	0	15	61	225	0	89	1,135	777	838	838
July	25	7	0	786	0	0	14	58	237	0	99	1,227	808	866	866
August	23	8	1	766	0	0	17	55	231	0	100	1,202	788	843	843
September	27	6	1	701	0	0	14	52	216	0	90	1,107	709	761	761
October	24	6	1	661	0	0	29	47	217	0	94	1,079	632	679	679
November	29	7	1	611	0	0	23	34	228	0	88	1,020	502	536	536
December	35	23	1	674	0	0	23	29	238	0	91	1,114	492	521	521

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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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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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, 2007 - 2017
(Thousand Megawatthours)**

Period	Generation at Utility Scale Facilities										Small Scale Generation	Generation From Utility and Small Scale Facilities	
	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													
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
2017	144	521	0	70	753	1,114	648	0	240	3,490	7,685	8,206	8,206
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
Year 2017													
January	11	17	0	8	68	86	59	0	27	277	420	438	438
February	11	27	0	7	58	79	51	0	15	248	458	485	485
March	16	42	0	3	67	88	58	0	15	290	629	671	671
April	15	46	0	5	59	89	54	0	23	290	699	745	745
May	13	53	0	7	65	103	57	0	24	323	770	823	823
June	11	61	0	6	62	91	54	0	15	300	777	838	838
July	8	58	0	7	63	102	57	0	14	309	808	866	866
August	6	55	0	7	62	102	54	0	17	303	788	843	843
September	11	52	0	2	62	92	48	0	14	282	709	761	761
October	15	47	0	5	56	97	44	0	29	293	632	679	679
November	14	34	0	6	63	90	54	0	23	285	502	536	536
December	14	29	0	6	66	93	59	0	23	290	492	521	521

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.

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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, 2007 - 2017
(Thousand Megawatthours)

Period	Generation at Utility Scale Facilities											Small Scale Generation	Net Generation From Utility and Small Scale Facilities		
	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															
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
2017	7,669	463	776	91,619	8,343	0	1,383	42	28,536	0	4,928	143,758	2,364	2,406	2,406
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
Year 2017															
January	720	43	61	7,907	696	0	126	1	2,405	0	382	12,341	123	124	124
February	632	38	60	7,052	668	0	115	2	2,209	0	364	11,142	137	139	139
March	644	38	82	7,515	702	0	131	3	2,342	0	411	11,868	197	200	200
April	573	35	58	7,266	701	0	146	4	2,265	0	410	11,457	213	217	217
May	616	34	57	7,428	704	0	155	4	2,293	0	396	11,686	239	242	242
June	662	33	71	7,765	668	0	124	5	2,420	0	416	12,164	241	246	246
July	653	34	78	8,367	679	0	115	5	2,540	0	486	12,956	252	257	257
August	655	33	83	8,067	774	0	93	5	2,560	0	484	12,754	246	251	251
September	615	34	52	7,191	715	0	75	4	2,281	0	386	11,354	223	227	227
October	637	38	56	7,366	673	0	84	4	2,310	0	370	11,537	201	204	204
November	610	47	61	7,453	649	0	121	3	2,361	0	405	11,710	156	158	158
December	651	55	58	8,242	713	0	99	3	2,550	0	419	12,790	138	141	141

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 3.5.B. Net Generation from Renewable Sources: Industrial Sector, 2007 - 2017
(Thousand Megawatthours)**

Period	Generation at Utility Scale Facilities										Small Scale Generation	Generation From Utility and Small Scale Facilities	
	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													
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
2017	84	42	0	27,440	183	1	827	0	1,383	29,961	2,364	2,406	2,406
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
Year 2017													
January	8	1	0	2,308	17	-1	73	0	126	2,532	123	124	124
February	8	2	0	2,118	16	-1	68	0	115	2,326	137	139	139
March	9	3	0	2,239	17	-1	80	0	131	2,476	197	200	200
April	8	4	0	2,169	15	-1	73	0	146	2,415	213	217	217
May	8	4	0	2,205	14	1	65	0	155	2,451	239	242	242
June	7	5	0	2,340	16	0	56	0	124	2,549	241	246	246
July	4	5	0	2,457	13	1	65	0	115	2,659	252	257	257
August	4	5	0	2,475	15	1	66	0	93	2,658	246	251	251
September	4	4	0	2,204	14	1	58	0	75	2,360	223	227	227
October	8	4	0	2,217	15	1	69	0	84	2,397	201	204	204
November	8	3	0	2,261	16	0	75	0	121	2,485	156	158	158
December	9	3	0	2,446	16	0	79	0	99	2,652	138	141	141

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 3.6. Net Generation by Energy Source: Residential Sector, 2014 - 2017
(Thousand Megawatthours)**

Period	Small Scale Generation	
		Estimated Small Scale Solar Photovoltaic Generation
Annual Totals		
2014		4,947
2015		6,999
2016		10,595
2017		13,942
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
Year 2017		
January		703
February		789
March		1,147
April		1,283
May		1,415
June		1,469
July		1,495
August		1,446
September		1,293
October		1,157
November		904
December		841

See Glossary for definitions. Values are final.

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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, 2017 and 2016 (Thousand Megawatthours)

Census Division and State	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	
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
New England	105,234	107,725	-2.3%	2,550	2,482	98,469	101,348	1,316	1,282	2,899	2,612
Connecticut	34,563	36,497	-5.3%	98	74	33,426	35,511	423	409	616	502
Maine	11,264	11,514	-2.2%	0	0	9,207	9,458	215	205	1,843	1,851
Massachusetts	32,204	31,955	0.8%	546	468	30,843	30,729	548	532	268	226
New Hampshire	17,447	19,282	-9.5%	975	1,062	16,373	18,113	70	74	30	33
Rhode Island	7,615	6,565	16.0%	3	13	7,410	6,494	58	58	143	0
Vermont	2,141	1,911	12.0%	929	865	1,210	1,043	3	3	0	0
Middle Atlantic	417,349	427,095	-2.3%	34,874	35,325	375,657	385,130	2,376	2,127	4,442	4,513
New Jersey	75,645	77,611	-2.5%	130	151	74,102	76,129	674	642	740	689
New York	128,065	134,417	-4.7%	34,642	35,094	91,247	97,139	1,310	1,222	867	962
Pennsylvania	213,639	215,067	-0.7%	103	80	210,309	211,863	392	263	2,836	2,861
East North Central	579,496	585,059	-1.0%	237,156	246,855	330,431	326,837	1,916	1,899	9,993	9,468
Illinois	183,591	187,289	-2.0%	5,066	5,191	175,353	179,069	433	354	2,739	2,675
Indiana	98,930	101,759	-2.8%	77,340	86,423	17,669	11,873	265	280	3,656	3,183
Michigan	112,314	112,122	0.2%	79,939	78,006	30,223	31,947	831	881	1,320	1,287
Ohio	119,554	118,922	0.5%	23,431	26,624	95,224	91,357	263	227	636	715
Wisconsin	65,107	64,967	0.2%	51,380	50,612	11,961	12,590	124	157	1,642	1,608
West North Central	340,047	325,988	4.3%	277,405	272,454	57,930	48,911	602	654	4,110	3,969
Iowa	57,910	54,393	6.5%	43,189	40,080	12,507	12,136	210	232	2,003	1,944
Kansas	50,933	47,600	7.0%	33,850	34,176	17,025	13,372	15	0	43	52
Minnesota	58,749	59,479	-1.2%	45,690	47,985	11,378	9,886	184	204	1,497	1,403
Missouri	84,607	78,612	7.6%	81,061	75,449	3,325	2,916	175	199	46	47
Nebraska	35,407	36,525	-3.1%	30,095	32,548	4,933	3,610	19	19	360	347
North Dakota	41,505	37,856	9.6%	34,637	33,415	6,708	4,267	0	0	160	175
South Dakota	10,936	11,524	-5.1%	8,883	8,800	2,052	2,724	0	0	0	0
South Atlantic	792,859	813,880	-2.6%	659,053	678,187	113,479	115,751	1,491	1,293	18,837	18,648
Delaware	7,496	8,731	-14.1%	24	80	6,304	7,356	6	7	1,161	1,289
District of Columbia	67	76	-12.6%	0	0	0	53	67	24	0	0
Florida	238,413	238,262	0.1%	222,272	216,244	10,881	16,576	72	84	5,188	5,358
Georgia	127,455	133,380	-4.4%	107,179	115,955	15,208	12,664	6	8	5,063	4,754
Maryland	34,104	37,167	-8.2%	256	7	33,022	36,442	543	449	283	268
North Carolina	128,468	130,779	-1.8%	114,362	118,657	11,863	9,977	357	270	1,886	1,875
South Carolina	93,081	96,986	-4.0%	88,079	91,591	3,228	3,622	2	2	1,772	1,770
Virginia	90,417	92,555	-2.3%	70,951	76,224	16,620	13,425	439	449	2,407	2,456
West Virginia	73,357	75,943	-3.4%	55,929	59,429	16,351	15,637	0	0	1,077	877
East South Central	351,917	364,881	-3.6%	301,873	308,701	40,792	47,070	201	187	9,052	8,923
Alabama	139,964	142,385	-1.7%	101,709	97,991	33,817	40,139	0	0	4,437	4,255
Kentucky	73,179	80,274	-8.8%	72,106	79,113	454	547	0	0	619	613
Mississippi	59,728	62,881	-5.0%	51,510	54,760	6,291	6,185	5	0	1,921	1,937
Tennessee	79,046	79,341	-0.4%	76,547	76,837	229	200	195	187	2,075	2,118
West South Central	685,021	700,416	-2.2%	228,403	241,141	380,432	380,273	907	990	75,279	78,012
Arkansas	60,775	60,445	0.5%	54,209	43,352	4,863	15,455	43	43	1,660	1,595
Louisiana	97,719	107,269	-8.9%	56,686	64,486	10,084	10,282	137	170	30,812	32,332
Oklahoma	73,732	78,655	-6.3%	36,426	45,255	36,484	32,509	0	0	823	891
Texas	452,794	454,048	-0.3%	81,082	88,048	329,001	322,028	727	777	41,985	43,195
Mountain	361,265	364,116	-0.8%	282,251	283,709	75,245	76,336	576	582	3,193	3,488
Arizona	105,852	108,763	-2.7%	91,623	89,822	14,062	18,776	166	165	0	0
Colorado	53,844	54,418	-1.1%	41,471	42,191	12,268	12,123	31	31	74	73
Idaho	17,396	15,661	11.1%	11,447	9,995	5,367	5,017	52	51	530	599
Montana	28,221	27,784	1.6%	11,545	10,811	16,645	16,943	0	0	31	30
Nevada	38,201	39,787	-4.0%	26,836	29,476	10,945	9,904	127	126	294	280
New Mexico	33,597	32,912	2.1%	24,595	25,014	8,884	7,777	117	119	1	1
Utah	37,412	38,134	-1.9%	32,614	34,206	3,872	2,766	84	90	843	1,072
Wyoming	46,742	46,657	0.2%	42,120	42,194	3,202	3,029	0	0	1,420	1,434
Pacific Contiguous	384,772	371,232	3.6%	239,669	225,200	126,583	127,274	2,966	2,965	15,554	15,792
California	206,146	196,963	4.7%	90,422	81,156	99,342	99,247	2,867	2,859	13,515	13,702
Oregon	62,714	60,182	4.2%	48,765	45,096	13,266	14,437	72	70	611	579
Washington	115,912	114,087	1.6%	100,482	98,948	13,975	13,591	27	36	1,428	1,511
Pacific Noncontiguous	16,310	16,284	0.2%	11,045	10,868	4,156	4,223	708	727	400	466
Alaska	6,497	6,335	2.6%	5,823	5,649	231	252	335	322	108	111
Hawaii	9,812	9,949	-1.4%	5,223	5,218	3,924	3,971	373	405	292	355
U.S. Total	4,034,271	4,076,675	-1.0%	2,274,279	2,304,923	1,603,173	1,613,156	13,060	12,706	143,758	145,890

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 3.8. Utility Scale Facility Net Generation from Coal by State, by Sector, 2017 and 2016 (Thousand Megawatthours)

Census Division and State	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	
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
New England	1,689	2,544	-33.6%	287	422	1,392	2,113	0	0	10	10
Connecticut	198	177	11.4%	0	0	198	177	0	0	0	0
Maine	68	70	-2.7%	0	0	58	60	0	0	10	10
Massachusetts	1,136	1,875	-39.4%	0	0	1,136	1,875	0	0	0	0
New Hampshire	287	422	-31.9%	287	422	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	49,621	57,757	-14.1%	0	0	49,235	57,046	0	0	385	711
New Jersey	1,216	1,315	-7.5%	0	0	1,216	1,315	0	0	0	0
New York	770	1,770	-56.5%	0	0	562	1,437	0	0	209	333
Pennsylvania	47,634	54,672	-12.9%	0	0	47,458	54,294	0	0	177	378
East North Central	276,582	274,536	0.7%	167,556	165,111	106,945	107,209	63	82	2,017	2,135
Illinois	57,980	59,338	-2.3%	4,002	3,419	52,403	54,397	29	20	1,546	1,501
Indiana	72,385	72,533	-0.2%	69,731	69,060	2,620	3,421	34	46	0	7
Michigan	42,021	40,527	3.7%	41,531	39,988	444	445	0	15	46	78
Ohio	68,344	68,775	-0.6%	16,856	19,716	51,478	48,946	0	0	9	113
Wisconsin	35,852	33,363	7.5%	35,437	32,927	0	0	0	0	416	436
West North Central	185,041	182,383	1.5%	182,466	179,756	1	0	106	142	2,469	2,485
Iowa	25,358	25,198	0.6%	23,787	23,480	0	0	83	88	1,489	1,631
Kansas	19,390	23,096	-16.0%	19,390	23,096	0	0	0	0	0	0
Minnesota	22,782	23,206	-1.8%	22,270	22,806	0	0	1	2	511	398
Missouri	67,519	60,322	11.9%	67,496	60,269	1	0	22	53	0	0
Nebraska	21,174	21,898	-3.3%	20,813	21,551	0	0	0	0	360	347
North Dakota	26,756	26,580	0.7%	26,648	26,472	0	0	0	0	108	109
South Dakota	2,062	2,083	-1.0%	2,062	2,083	0	0	0	0	0	0
South Atlantic	210,560	238,077	-11.6%	186,731	208,099	23,001	28,762	56	52	772	1,163
Delaware	359	479	-25.1%	0	0	359	479	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	37,513	39,429	-4.9%	37,265	38,522	109	733	0	0	139	175
Georgia	32,487	37,890	-14.3%	32,311	37,674	0	0	0	0	176	216
Maryland	8,514	13,826	-38.4%	0	0	8,440	13,751	0	0	74	75
North Carolina	34,460	37,436	-7.9%	34,136	37,020	113	166	45	45	167	206
South Carolina	18,152	21,003	-13.6%	18,127	20,900	0	0	0	0	25	103
Virginia	10,726	16,499	-35.0%	9,999	15,605	524	609	11	8	192	277
West Virginia	68,349	71,513	-4.4%	54,893	58,377	13,456	13,024	0	0	0	112
East South Central	121,020	137,590	-12.0%	118,076	133,748	2,231	2,895	0	0	713	947
Alabama	31,440	34,258	-8.2%	31,411	34,186	0	0	0	0	29	72
Kentucky	57,237	66,822	-14.3%	57,237	66,822	0	0	0	0	0	0
Mississippi	4,628	5,342	-13.4%	2,397	2,447	2,231	2,895	0	0	0	0
Tennessee	27,715	31,168	-11.1%	27,031	30,293	0	0	0	0	684	875
West South Central	190,618	176,203	8.2%	91,640	88,820	98,644	86,965	0	0	334	417
Arkansas	26,285	23,800	10.4%	22,743	19,154	3,497	4,596	0	0	45	50
Louisiana	12,316	12,014	2.5%	7,240	8,062	5,075	3,952	0	0	0	0
Oklahoma	17,368	19,158	-9.3%	15,329	16,903	1,750	1,888	0	0	289	367
Texas	134,648	121,231	11.1%	46,328	44,702	88,321	76,529	0	0	0	0
Mountain	161,264	161,149	0.1%	144,883	144,251	15,731	16,021	0	0	650	877
Arizona	31,396	30,403	3.3%	31,396	30,403	0	0	0	0	0	0
Colorado	29,242	29,949	-2.4%	29,233	29,920	0	21	0	0	9	8
Idaho	24	29	-18.3%	0	0	0	0	0	0	24	29
Montana	13,864	14,269	-2.8%	225	260	13,633	14,003	0	0	6	6
Nevada	1,866	2,167	-13.9%	902	1,279	964	888	0	0	0	0
New Mexico	18,414	18,365	0.3%	18,414	18,365	0	0	0	0	0	0
Utah	26,390	25,939	1.7%	25,759	25,103	413	399	0	0	217	437
Wyoming	40,069	40,027	0.1%	38,954	38,920	721	709	0	0	394	397
Pacific Contiguous	7,509	6,819	10.1%	1,728	1,898	5,463	4,569	0	0	318	352
California	291	319	-8.7%	0	0	0	0	0	0	291	319
Oregon	1,728	1,898	-9.0%	1,728	1,898	0	0	0	0	0	0
Washington	5,490	4,602	19.3%	0	0	5,463	4,569	0	0	27	33
Pacific Noncontiguous	1,931	2,092	-7.7%	271	295	1,557	1,684	104	107	0	6
Alaska	556	594	-6.5%	271	295	181	192	104	107	0	0
Hawaii	1,376	1,497	-8.1%	0	0	1,376	1,492	0	0	0	6
U.S. Total	1,205,835	1,239,149	-2.7%	893,639	922,399	304,198	307,263	329	383	7,669	9,103

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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 3.9. Utility Scale Facility Net Generation from Petroleum Liquids by State, by Sector, 2017 and 2016 (Thousand Megawatthours)

Census Division and State	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	
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
New England	747	693	7.8%	84	58	609	581	39	43	15	11
Connecticut	178	92	94.5%	5	6	169	81	4	3	1	2
Maine	132	110	20.4%	0	0	117	99	2	2	13	9
Massachusetts	266	422	-37.1%	44	15	204	388	16	19	1	1
New Hampshire	105	39	170.4%	25	20	66	2	14	16	0	0
Rhode Island	58	26	122.2%	3	13	53	12	3	2	0	0
Vermont	7	4	77.6%	7	4	0	0	0	0	0	0
Middle Atlantic	934	997	-6.3%	239	328	638	611	16	13	41	45
New Jersey	80	81	-0.4%	0	1	80	79	0	1	0	0
New York	598	643	-7.0%	239	326	309	269	12	11	38	38
Pennsylvania	256	273	-6.4%	0	1	249	263	4	2	3	7
East North Central	525	547	-4.0%	319	319	180	204	4	5	22	19
Illinois	51	70	-26.4%	8	9	43	59	0	1	0	0
Indiana	125	113	10.4%	107	101	1	0	0	1	17	12
Michigan	110	120	-8.8%	105	116	0	0	3	2	2	2
Ohio	206	217	-5.0%	67	70	136	142	0	1	2	3
Wisconsin	33	27	22.7%	32	23	0	3	0	0	1	1
West North Central	299	392	-23.8%	289	382	7	6	1	2	1	2
Iowa	104	239	-56.5%	103	238	0	1	0	0	0	0
Kansas	55	28	92.5%	55	28	0	0	0	0	0	0
Minnesota	35	32	9.8%	26	24	7	6	1	1	1	2
Missouri	61	78	-22.2%	61	78	0	0	0	0	0	0
Nebraska	6	-18	-131.4%	6	-18	0	0	0	0	0	0
North Dakota	36	30	18.7%	36	30	0	0	0	0	0	0
South Dakota	3	3	8.5%	3	3	0	0	0	0	0	0
South Atlantic	1,707	2,134	-20.0%	1,309	1,612	261	430	34	6	103	86
Delaware	25	63	-59.4%	2	9	23	54	0	0	0	0
District of Columbia	0	1	-100.0%	0	0	0	0	0	1	0	0
Florida	512	772	-33.7%	489	739	6	7	0	0	17	26
Georgia	142	114	24.4%	74	60	4	24	2	2	62	30
Maryland	102	161	-36.4%	2	-2	97	159	1	1	2	2
North Carolina	251	251	0.1%	227	210	12	33	1	0	11	8
South Carolina	98	114	-14.2%	88	95	1	2	0	0	8	17
Virginia	456	535	-14.8%	309	382	115	147	28	2	3	5
West Virginia	120	123	-2.4%	119	118	1	5	0	0	0	0
East South Central	241	273	-11.7%	227	248	4	6	0	0	11	20
Alabama	36	46	-22.1%	25	26	3	5	0	0	7	15
Kentucky	71	88	-19.9%	71	88	0	0	0	0	0	0
Mississippi	11	18	-35.6%	9	15	0	0	0	0	2	3
Tennessee	124	122	1.7%	122	119	0	0	0	0	2	2
West South Central	158	156	1.3%	97	101	56	47	1	1	5	6
Arkansas	49	42	15.6%	23	30	24	9	0	0	2	3
Louisiana	19	14	30.3%	19	13	0	2	0	0	0	0
Oklahoma	16	17	-7.0%	15	17	0	0	0	0	1	1
Texas	74	82	-9.5%	39	42	33	36	1	1	2	2
Mountain	209	226	-7.4%	191	193	18	22	0	0	0	11
Arizona	57	52	10.0%	57	52	0	0	0	0	0	0
Colorado	7	7	3.9%	7	7	0	0	0	0	0	0
Idaho	0	0	-7.5%	0	0	0	0	0	0	0	0
Montana	13	17	-23.1%	0	0	13	17	0	0	0	0
Nevada	9	11	-20.4%	5	8	4	3	0	0	0	0
New Mexico	41	52	-21.0%	41	52	0	0	0	0	0	0
Utah	38	32	21.7%	37	30	1	2	0	0	0	0
Wyoming	44	56	-21.2%	44	45	0	0	0	0	0	11
Pacific Contiguous	79	119	-33.2%	47	40	14	18	1	1	17	60
California	46	92	-50.1%	35	33	3	7	1	0	8	51
Oregon	10	5	114.3%	10	5	0	0	0	0	0	0
Washington	23	22	5.0%	3	2	11	11	0	0	9	9
Pacific Noncontiguous	7,514	7,472	0.6%	5,766	5,787	1,493	1,435	7	6	248	243
Alaska	881	831	5.9%	832	780	0	0	5	3	44	48
Hawaii	6,634	6,640	-0.1%	4,934	5,007	1,493	1,435	2	3	204	195
U.S. Total	12,414	13,008	-4.6%	8,567	9,069	3,281	3,360	103	77	463	503

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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, 2017 and 2016 (Thousand Megawatthours)

Census Division and State	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	
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
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	175	155	13.0%	0	0	0	1	0	0	175	155
New Jersey	76	65	16.2%	0	0	0	0	0	0	76	65
New York	0	0	--	0	0	0	0	0	0	0	0
Pennsylvania	99	90	10.7%	0	0	0	1	0	0	99	89
East North Central	2,153	2,281	-5.6%	967	1,133	1,035	958	0	0	151	190
Illinois	0	0	--	0	0	0	0	0	0	0	0
Indiana	0	497	-100.0%	0	497	0	0	0	0	0	0
Michigan	1,007	699	44.1%	856	553	0	3	0	0	151	143
Ohio	1,035	965	7.3%	0	0	1,035	955	0	0	0	10
Wisconsin	111	120	-7.4%	111	83	0	0	0	0	0	37
West North Central	43	39	10.0%	0	0	0	0	8	6	34	33
Iowa	43	39	10.0%	0	0	0	0	8	6	34	33
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	1,091	2,146	-49.1%	951	2,048	0	0	0	0	140	97
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	951	2,048	-53.6%	951	2,048	0	0	0	0	0	0
Georgia	140	97	44.1%	0	0	0	0	0	0	140	97
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	427	1,130	-62.2%	427	1,130	0	0	0	0	0	0
Alabama	0	0	--	0	0	0	0	0	0	0	0
Kentucky	427	1,130	-62.2%	427	1,130	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	4,640	4,919	-5.7%	4,366	4,569	0	0	0	0	274	350
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	4,551	4,805	-5.3%	4,366	4,569	0	0	0	0	185	235
Oklahoma	0	0	--	0	0	0	0	0	0	0	0
Texas	90	114	-21.8%	0	0	0	0	0	0	90	114
Mountain	445	443	0.6%	0	0	445	443	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	445	443	0.6%	0	0	445	443	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	84	-100.0%	0	0	0	0	0	0	0	84
California	0	84	-100.0%	0	0	0	0	0	0	0	84
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	8,976	11,197	-19.8%	6,711	8,881	1,480	1,401	8	6	776	909

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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 3.11. Utility Scale Facility Net Generation from Natural Gas by State, by Sector, 2017 and 2016 (Thousand Megawatthours)

Census Division and State	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	
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
New England	51,121	53,631	-4.7%	270	324	48,533	51,273	980	963	1,338	1,070
Connecticut	15,961	17,952	-11.1%	64	48	14,863	16,996	419	407	615	500
Maine	2,237	3,498	-36.1%	0	0	1,915	3,157	30	28	292	314
Massachusetts	22,153	21,144	4.8%	173	238	21,250	20,226	472	456	258	223
New Hampshire	3,580	4,744	-24.5%	32	37	3,508	4,652	10	22	30	33
Rhode Island	7,188	6,291	14.3%	0	0	6,996	6,241	49	49	143	0
Vermont	2	2	-8.0%	1	1	0	0	1	1	0	0
Middle Atlantic	157,483	168,649	-6.6%	10,133	12,430	143,901	153,135	1,211	1,088	2,239	1,997
New Jersey	37,708	43,807	-13.9%	211	272	36,903	43,005	225	187	369	344
New York	47,272	56,793	-16.8%	9,915	12,146	36,150	43,531	847	782	360	335
Pennsylvania	72,503	68,049	6.5%	7	12	70,848	66,599	139	119	1,510	1,319
East North Central	101,577	111,191	-8.6%	34,297	48,048	62,734	59,805	1,466	1,432	3,080	1,906
Illinois	15,016	17,485	-14.1%	970	1,674	12,915	14,798	397	326	735	686
Indiana	17,976	19,996	-10.1%	6,789	16,010	9,716	3,310	190	193	1,281	483
Michigan	26,131	29,295	-10.8%	8,251	10,050	16,889	18,352	564	578	428	315
Ohio	28,799	28,942	-0.5%	6,209	6,548	22,185	22,079	247	213	158	103
Wisconsin	13,655	15,473	-11.7%	12,079	13,766	1,031	1,266	67	122	478	319
West North Central	20,587	22,475	-8.4%	17,340	18,506	2,314	3,154	279	298	654	518
Iowa	4,567	2,961	54.3%	4,041	2,661	4	0	86	87	437	213
Kansas	2,147	2,027	5.9%	2,105	1,975	0	0	0	0	41	52
Minnesota	6,708	8,928	-24.9%	5,370	7,191	1,116	1,437	97	112	126	189
Missouri	5,206	6,032	-13.7%	3,874	4,173	1,194	1,717	94	97	43	44
Nebraska	629	538	17.0%	628	536	0	0	1	1	0	1
North Dakota	676	1,071	-36.9%	668	1,051	0	0	0	0	8	20
South Dakota	654	919	-28.8%	654	919	0	0	0	0	0	0
South Atlantic	329,079	322,338	2.1%	269,973	262,912	54,016	54,914	673	502	4,417	4,010
Delaware	6,723	7,787	-13.7%	15	64	5,830	6,728	0	0	878	995
District of Columbia	20	23	-13.2%	0	0	0	0	20	23	0	0
Florida	161,104	158,495	1.6%	153,028	145,192	6,606	11,820	24	33	1,446	1,450
Georgia	52,723	52,862	-0.3%	39,696	41,277	12,436	11,143	0	0	591	443
Maryland	6,729	5,423	24.1%	246	0	5,866	4,919	526	425	90	79
North Carolina	38,590	39,251	-1.7%	33,442	34,070	4,956	5,064	92	12	100	105
South Carolina	17,156	16,367	4.8%	14,347	13,154	2,686	3,150	0	1	124	62
Virginia	44,507	40,905	8.8%	29,022	29,013	14,795	11,253	10	9	680	631
West Virginia	1,527	1,225	24.7%	178	142	841	838	0	0	509	245
East South Central	119,790	127,445	-6.0%	79,380	81,521	37,833	43,643	196	183	2,381	2,098
Alabama	52,984	57,804	-8.3%	18,360	16,893	33,425	39,838	0	0	1,199	1,073
Kentucky	10,380	8,228	26.1%	9,709	7,452	432	523	0	0	239	253
Mississippi	46,158	50,095	-7.9%	41,739	46,400	3,962	3,280	5	0	452	415
Tennessee	10,269	11,319	-9.3%	9,572	10,777	14	2	191	183	492	356
West South Central	311,250	347,156	-10.3%	96,723	108,005	148,519	171,057	822	899	65,187	67,194
Arkansas	17,314	18,171	-4.7%	15,832	7,181	1,169	10,672	37	39	277	279
Louisiana	58,973	66,479	-11.3%	29,649	34,690	4,015	5,145	137	170	25,172	26,475
Oklahoma	30,451	36,529	-16.6%	17,762	24,414	12,437	11,945	0	0	252	169
Texas	204,512	225,976	-9.5%	33,480	41,720	130,899	143,294	648	691	39,485	40,271
Mountain	88,026	99,018	-11.1%	68,132	72,922	17,904	24,205	434	438	1,556	1,453
Arizona	29,591	34,183	-13.4%	20,418	19,266	9,030	14,776	143	141	0	0
Colorado	12,532	12,679	-1.2%	10,630	10,732	1,879	1,926	3	2	20	20
Idaho	3,079	3,321	-7.3%	1,575	1,762	1,333	1,380	40	40	132	140
Montana	417	476	-12.5%	303	378	109	94	0	0	4	4
Nevada	26,626	28,922	-7.9%	24,118	26,369	2,156	2,209	60	65	291	278
New Mexico	9,132	9,958	-8.3%	5,696	6,199	3,320	3,641	114	116	1	1
Utah	5,871	8,691	-32.5%	5,233	8,031	77	179	73	74	488	408
Wyoming	779	788	-1.2%	158	185	1	1	0	0	620	602
Pacific Contiguous	114,266	123,363	-7.4%	44,415	47,135	57,166	63,414	1,979	1,924	10,705	10,889
California	88,350	97,074	-9.0%	30,106	32,955	45,800	51,521	1,921	1,866	10,523	10,731
Oregon	15,066	15,307	-1.6%	7,927	7,587	7,015	7,612	41	38	83	69
Washington	10,849	10,982	-1.2%	6,383	6,593	4,350	4,280	17	20	99	89
Pacific Noncontiguous	3,235	3,040	6.4%	3,170	2,977	0	0	2	1	62	63
Alaska	3,235	3,040	6.4%	3,170	2,977	0	0	2	1	62	63
Hawaii	0	0	--	0	0	0	0	0	0	0	0
U.S. Total	1,296,415	1,378,307	-5.9%	623,835	654,780	572,919	624,600	8,042	7,730	91,619	91,197

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, 2017 and 2016 (Thousand Megawatthours)

Census Division and State	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	
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
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	666	695	-4.2%	0	0	0	1	0	0	666	694
New Jersey	219	207	5.9%	0	0	0	0	0	0	219	207
New York	0	0	--	0	0	0	0	0	0	0	0
Pennsylvania	446	488	-8.5%	0	0	0	1	0	0	446	487
East North Central	4,609	4,812	-4.2%	149	154	2,126	2,028	0	0	2,334	2,630
Illinois	180	204	-11.8%	0	0	0	6	0	0	180	198
Indiana	1,991	2,272	-12.4%	0	9	0	0	0	0	1,991	2,263
Michigan	1,652	1,615	2.3%	149	145	1,504	1,470	0	0	0	0
Ohio	786	721	9.0%	0	0	623	553	0	0	163	168
Wisconsin	0	0	--	0	0	0	0	0	0	0	0
West North Central	42	40	4.9%	0	0	0	0	0	0	42	40
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	42	40	4.9%	0	0	0	0	0	0	42	40
South Dakota	0	0	--	0	0	0	0	0	0	0	0
South Atlantic	310	307	1.0%	0	0	0	0	0	0	310	307
Delaware	271	277	-2.5%	0	0	0	0	0	0	271	277
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	5	5	4.0%	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	34	25	39.9%	0	0	0	0	0	0	34	25
East South Central	20	39	-48.1%	0	0	0	0	0	0	20	39
Alabama	9	24	-63.3%	0	0	0	0	0	0	9	24
Kentucky	0	0	--	0	0	0	0	0	0	0	0
Mississippi	0	0	--	0	0	0	0	0	0	0	0
Tennessee	12	15	-24.3%	0	0	0	0	0	0	12	15
West South Central	4,615	4,613	0.0%	0	0	1,482	1,318	0	0	3,133	3,295
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	2,143	2,099	2.1%	0	0	0	0	0	0	2,143	2,099
Oklahoma	0	0	--	0	0	0	0	0	0	0	0
Texas	2,472	2,514	-1.7%	0	0	1,482	1,318	0	0	990	1,196
Mountain	390	422	-7.4%	0	0	14	9	0	0	377	412
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	14	9	60.0%	0	0	14	9	0	0	0	0
Nevada	0	1	-100.0%	0	0	0	1	0	0	0	0
New Mexico	0	0	--	0	0	0	0	0	0	0	0
Utah	16	54	-69.7%	0	0	0	0	0	0	16	54
Wyoming	360	358	0.6%	0	0	0	0	0	0	360	358
Pacific Contiguous	1,764	1,828	-3.5%	0	0	356	402	0	0	1,408	1,427
California	1,408	1,427	-1.3%	0	0	0	0	0	0	1,408	1,427
Oregon	0	0	--	0	0	0	0	0	0	0	0
Washington	356	402	-11.4%	0	0	356	402	0	0	0	0
Pacific Noncontiguous	52	51	2.0%	0	0	0	0	0	0	52	51
Alaska	0	0	--	0	0	0	0	0	0	0	0
Hawaii	52	51	2.0%	0	0	0	0	0	0	52	51
U.S. Total	12,469	12,807	-2.6%	149	154	3,978	3,758	0	0	8,343	8,895

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 3.13. Utility Scale Facility Net Generation from Nuclear Energy by State, by Sector, 2017 and 2016 (Thousand Megawatthours)

Census Division and State	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	
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
New England	31,537	32,751	-3.7%	0	0	31,537	32,751	0	0	0	0
Connecticut	16,500	16,575	-0.5%	0	0	16,500	16,575	0	0	0	0
Maine	0	0	--	0	0	0	0	0	0	0	0
Massachusetts	5,047	5,414	-6.8%	0	0	5,047	5,414	0	0	0	0
New Hampshire	9,991	10,761	-7.2%	0	0	9,991	10,761	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	159,400	154,380	3.3%	0	0	159,400	154,380	0	0	0	0
New Jersey	34,033	29,885	13.9%	0	0	34,033	29,885	0	0	0	0
New York	42,167	41,571	1.4%	0	0	42,167	41,571	0	0	0	0
Pennsylvania	83,200	82,924	0.3%	0	0	83,200	82,924	0	0	0	0
East North Central	156,909	157,128	-0.1%	26,284	24,507	130,625	132,621	0	0	0	0
Illinois	97,191	98,607	-1.4%	0	0	97,191	98,607	0	0	0	0
Indiana	0	0	--	0	0	0	0	0	0	0	0
Michigan	32,381	31,552	2.6%	26,284	24,507	6,097	7,045	0	0	0	0
Ohio	17,688	16,817	5.2%	0	0	17,688	16,817	0	0	0	0
Wisconsin	9,649	10,151	-4.9%	0	0	9,649	10,151	0	0	0	0
West North Central	44,983	45,590	-1.3%	39,769	40,888	5,214	4,703	0	0	0	0
Iowa	5,214	4,703	10.9%	0	0	5,214	4,703	0	0	0	0
Kansas	10,648	8,246	29.1%	10,648	8,246	0	0	0	0	0	0
Minnesota	13,904	13,861	0.3%	13,904	13,861	0	0	0	0	0	0
Missouri	8,304	9,430	-11.9%	8,304	9,430	0	0	0	0	0	0
Nebraska	6,913	9,351	-26.1%	6,913	9,351	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	205,235	206,905	-0.8%	190,128	192,145	15,107	14,760	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	29,146	29,320	-0.6%	29,146	29,320	0	0	0	0	0	0
Georgia	33,709	34,481	-2.2%	33,709	34,481	0	0	0	0	0	0
Maryland	15,107	14,760	2.3%	0	0	15,107	14,760	0	0	0	0
North Carolina	42,374	42,786	-1.0%	42,374	42,786	0	0	0	0	0	0
South Carolina	54,345	55,826	-2.7%	54,345	55,826	0	0	0	0	0	0
Virginia	30,554	29,732	2.8%	30,554	29,732	0	0	0	0	0	0
West Virginia	0	0	--	0	0	0	0	0	0	0	0
East South Central	81,834	75,377	8.6%	81,834	75,377	0	0	0	0	0	0
Alabama	42,652	39,902	6.9%	42,652	39,902	0	0	0	0	0	0
Kentucky	0	0	--	0	0	0	0	0	0	0	0
Mississippi	7,365	5,897	24.9%	7,365	5,897	0	0	0	0	0	0
Tennessee	31,818	29,578	7.6%	31,818	29,578	0	0	0	0	0	0
West South Central	66,682	72,652	-8.2%	28,101	30,573	38,581	42,079	0	0	0	0
Arkansas	12,691	13,421	-5.4%	12,691	13,421	0	0	0	0	0	0
Louisiana	15,410	17,152	-10.2%	15,410	17,152	0	0	0	0	0	0
Oklahoma	0	0	--	0	0	0	0	0	0	0	0
Texas	38,581	42,079	-8.3%	0	0	38,581	42,079	0	0	0	0
Mountain	32,340	32,377	-0.1%	32,340	32,377	0	0	0	0	0	0
Arizona	32,340	32,377	-0.1%	32,340	32,377	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	26,029	28,533	-8.8%	26,029	28,533	0	0	0	0	0	0
California	17,901	18,908	-5.3%	17,901	18,908	0	0	0	0	0	0
Oregon	0	0	--	0	0	0	0	0	0	0	0
Washington	8,128	9,626	-15.6%	8,128	9,626	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	804,950	805,694	-0.1%	424,485	424,400	380,465	381,294	0	0	0	0

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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 3.14. Utility Scale Facility Net Generation from Hydroelectric (Conventional) Power by State, by Sector, 2017 and 2016 (Thousand Megawatthours)

Census Division and State	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	
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
New England	7,455	6,161	21.0%	1,051	806	6,030	5,029	4	3	370	323
Connecticut	332	224	48.2%	25	17	307	207	0	0	0	0
Maine	3,389	3,000	13.0%	0	0	3,025	2,678	0	0	364	322
Massachusetts	1,037	713	45.6%	252	141	775	567	4	3	6	1
New Hampshire	1,413	1,145	23.4%	340	275	1,073	871	0	0	0	0
Rhode Island	2	2	11.5%	0	0	2	2	0	0	0	0
Vermont	1,280	1,078	18.8%	434	373	847	704	0	0	0	0
Middle Atlantic	33,282	29,272	13.7%	24,999	23,161	8,207	6,050	6	4	70	57
New Jersey	14	9	43.8%	0	0	14	9	0	0	0	0
New York	30,145	26,888	12.1%	24,904	23,094	5,165	3,733	6	4	70	57
Pennsylvania	3,123	2,375	31.5%	95	67	3,028	2,307	0	0	0	0
East North Central	5,045	5,419	-6.9%	4,534	4,727	313	489	2	1	197	201
Illinois	125	133	-5.8%	49	51	75	80	2	1	0	0
Indiana	306	426	-28.2%	306	426	0	0	0	0	0	0
Michigan	1,679	1,564	7.3%	1,540	1,433	110	106	0	0	29	26
Ohio	277	500	-44.6%	277	320	0	180	0	0	0	0
Wisconsin	2,657	2,795	-4.9%	2,362	2,497	128	123	0	0	168	176
West North Central	12,829	10,998	16.6%	12,438	10,613	236	255	0	0	156	130
Iowa	1,034	917	12.8%	1,027	909	7	8	0	0	0	0
Kansas	29	31	-4.3%	0	0	29	31	0	0	0	0
Minnesota	1,258	1,209	4.1%	903	861	200	217	0	0	156	130
Missouri	1,182	1,268	-6.9%	1,182	1,268	0	0	0	0	0	0
Nebraska	1,489	856	73.9%	1,489	856	0	0	0	0	0	0
North Dakota	2,582	1,912	35.0%	2,582	1,912	0	0	0	0	0	0
South Dakota	5,256	4,806	9.4%	5,256	4,806	0	0	0	0	0	0
South Atlantic	13,021	14,692	-11.4%	9,960	12,239	2,497	1,918	12	16	553	520
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	218	175	25.1%	218	175	0	0	0	0	0	0
Georgia	2,410	3,373	-28.6%	2,384	3,350	6	7	0	0	19	16
Maryland	1,965	1,392	41.2%	0	0	1,965	1,392	0	0	0	0
North Carolina	3,818	4,417	-13.6%	3,773	4,359	35	44	10	14	0	0
South Carolina	1,835	2,226	-17.6%	1,788	2,172	46	52	1	2	0	0
Virginia	1,116	1,471	-24.1%	1,056	1,391	60	72	0	0	0	9
West Virginia	1,658	1,638	1.2%	740	792	385	351	0	0	534	496
East South Central	22,434	17,237	30.2%	22,424	17,227	11	10	0	0	0	0
Alabama	9,237	6,985	32.2%	9,237	6,985	0	0	0	0	0	0
Kentucky	4,506	3,478	29.6%	4,495	3,468	11	10	0	0	0	0
Mississippi	0	0	--	0	0	0	0	0	0	0	0
Tennessee	8,691	6,774	28.3%	8,691	6,774	0	0	0	0	0	0
West South Central	6,948	8,588	-19.1%	5,962	7,409	984	1,179	2	0	0	0
Arkansas	2,943	3,570	-17.6%	2,898	3,526	45	44	0	0	0	0
Louisiana	906	1,103	-17.8%	0	0	906	1,103	0	0	0	0
Oklahoma	2,036	2,573	-20.9%	2,036	2,573	0	0	0	0	0	0
Texas	1,062	1,342	-20.9%	1,028	1,310	33	32	2	0	0	0
Mountain	34,769	31,856	9.1%	33,273	30,627	1,482	1,217	14	12	0	0
Arizona	6,832	7,168	-4.7%	6,832	7,168	0	0	0	0	0	0
Colorado	1,897	1,903	-0.3%	1,630	1,688	253	203	14	12	0	0
Idaho	10,670	9,033	18.1%	9,689	8,221	981	812	0	0	0	0
Montana	10,946	10,083	8.6%	10,791	9,941	155	142	0	0	0	0
Nevada	1,813	1,789	1.3%	1,739	1,748	74	41	0	0	0	0
New Mexico	193	148	30.6%	193	148	0	0	0	0	0	0
Utah	1,294	760	70.3%	1,283	749	11	10	0	0	0	0
Wyoming	1,124	973	15.4%	1,116	964	8	10	0	0	0	0
Pacific Contiguous	162,840	141,837	14.8%	159,565	139,471	3,256	2,354	19	12	0	0
California	42,363	28,942	46.4%	39,798	27,303	2,546	1,627	19	12	0	0
Oregon	38,294	34,549	10.8%	37,980	34,273	314	277	0	0	0	0
Washington	82,183	78,346	4.9%	81,787	77,895	396	450	0	0	0	0
Pacific Noncontiguous	1,710	1,750	-2.3%	1,471	1,508	19	36	182	168	37	38
Alaska	1,644	1,659	-0.9%	1,462	1,491	0	0	182	168	0	0
Hawaii	66	91	-27.3%	10	17	19	36	0	0	37	38
U.S. Total	300,333	267,812	12.1%	275,677	247,787	23,034	18,539	240	217	1,383	1,269

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 3.15. Utility Scale Facility Net Generation from Renewable Sources Excluding Hydroelectric by State, by Sector, 2017 and 2016 (Thousand Megawatthours)

Census Division and State	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	
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
New England	11,308	10,574	6.9%	858	872	9,214	8,437	205	187	1,032	1,077
Connecticut	845	893	-5.4%	3	3	841	891	1	0	0	0
Maine	5,042	4,455	13.2%	0	0	3,919	3,290	94	90	1,029	1,075
Massachusetts	2,182	2,030	7.5%	76	74	2,047	1,901	55	53	3	1
New Hampshire	2,022	2,122	-4.7%	291	308	1,686	1,778	45	36	0	0
Rhode Island	366	246	48.8%	0	0	359	239	7	7	0	0
Vermont	852	828	2.9%	487	487	363	338	2	2	0	0
Middle Atlantic	14,580	14,104	3.4%	80	82	13,009	12,602	693	633	798	787
New Jersey	1,877	1,838	2.1%	80	82	1,485	1,439	305	312	8	6
New York	6,605	6,323	4.5%	0	0	6,182	5,903	233	220	189	200
Pennsylvania	6,098	5,942	2.6%	0	0	5,343	5,260	155	101	601	581
East North Central	31,926	28,958	10.2%	3,710	3,634	26,393	23,413	232	220	1,591	1,691
Illinois	12,794	11,179	14.4%	38	37	12,751	11,138	5	5	0	0
Indiana	5,840	5,558	5.1%	407	319	5,332	5,143	21	21	80	75
Michigan	7,749	7,200	7.6%	1,899	1,956	5,066	4,395	135	146	649	703
Ohio	2,421	2,033	19.1%	23	23	2,089	1,691	15	13	293	306
Wisconsin	3,122	2,988	4.5%	1,342	1,298	1,154	1,047	57	35	569	606
West North Central	75,665	63,417	19.3%	24,783	21,897	50,011	40,652	174	173	698	695
Iowa	21,587	20,324	6.2%	14,231	12,793	7,283	7,424	33	51	41	55
Kansas	18,661	14,172	31.7%	1,653	830	16,996	13,342	15	0	-3	0
Minnesota	13,666	11,836	15.5%	3,053	3,063	9,908	8,086	51	56	655	631
Missouri	2,233	1,293	72.6%	41	42	2,130	1,199	58	49	3	3
Nebraska	5,197	3,900	33.2%	246	272	4,933	3,610	17	18	0	0
North Dakota	11,361	8,178	38.9%	4,651	3,905	6,708	4,267	0	0	2	6
South Dakota	2,960	3,715	-20.3%	908	991	2,052	2,724	0	0	0	0
South Atlantic	31,101	25,689	21.1%	3,551	2,266	16,505	12,559	532	512	10,513	10,353
Delaware	118	124	-5.1%	6	7	92	94	6	7	13	16
District of Columbia	47	53	-10.6%	0	0	0	53	47	0	0	0
Florida	5,886	4,867	20.9%	1,175	247	2,694	2,544	47	51	1,969	2,025
Georgia	7,005	5,454	28.4%	252	107	2,762	1,489	3	6	3,987	3,852
Maryland	1,365	1,281	6.5%	9	9	1,225	1,137	15	23	116	112
North Carolina	8,397	5,983	40.3%	410	211	6,464	4,307	208	199	1,315	1,265
South Carolina	2,479	2,381	4.1%	410	420	489	414	0	0	1,580	1,547
Virginia	4,122	4,113	0.2%	1,289	1,264	1,097	1,088	205	226	1,531	1,535
West Virginia	1,682	1,432	17.5%	0	0	1,682	1,432	0	0	0	0
East South Central	6,767	6,417	5.5%	146	103	714	517	4	3	5,903	5,794
Alabama	3,606	3,367	7.1%	24	0	389	296	0	0	3,193	3,071
Kentucky	515	477	8.0%	122	103	12	14	0	0	380	360
Mississippi	1,563	1,524	2.5%	0	0	98	10	0	0	1,465	1,514
Tennessee	1,083	1,050	3.2%	0	0	214	198	4	3	865	849
West South Central	98,994	84,653	16.9%	1,612	1,712	92,060	77,507	83	90	5,240	5,345
Arkansas	1,468	1,396	5.1%	2	2	128	133	6	5	1,332	1,257
Louisiana	2,769	2,876	-3.7%	2	0	88	80	0	0	2,679	2,796
Oklahoma	23,930	20,437	17.1%	1,401	1,436	22,249	18,653	0	0	280	348
Texas	70,827	59,944	18.2%	207	274	69,595	58,641	77	85	949	944
Mountain	43,485	38,116	14.1%	3,720	3,517	39,304	34,077	128	132	333	391
Arizona	5,683	4,522	25.7%	626	497	5,034	4,000	23	24	0	0
Colorado	10,435	10,122	3.1%	297	139	10,121	9,962	14	17	3	3
Idaho	3,554	3,212	10.7%	183	11	3,053	2,825	12	11	306	365
Montana	2,190	2,160	1.4%	225	231	1,944	1,909	0	0	21	20
Nevada	7,857	6,877	14.3%	40	51	7,748	6,762	66	61	3	3
New Mexico	5,818	4,389	32.5%	252	250	5,563	4,136	3	3	0	0
Utah	3,628	2,445	48.4%	249	257	3,369	2,172	10	16	0	0
Wyoming	4,321	4,389	-1.6%	1,848	2,080	2,473	2,309	0	0	0	0
Pacific Contiguous	70,944	68,145	4.1%	7,463	8,389	60,043	56,234	968	1,029	2,470	2,493
California	54,544	49,712	9.7%	2,163	2,221	50,804	45,909	927	981	650	602
Oregon	7,576	8,382	-9.6%	1,120	1,334	5,897	6,507	31	32	528	510
Washington	8,824	10,050	-12.2%	4,180	4,835	3,343	3,819	10	16	1,292	1,381
Pacific Noncontiguous	1,507	1,560	-3.4%	190	190	1,085	1,056	231	247	1	66
Alaska	185	212	-12.7%	91	109	50	60	42	43	1	1
Hawaii	1,322	1,347	-1.9%	98	81	1,034	995	189	205	0	66
U.S. Total	386,277	341,633	13.1%	46,111	42,661	308,338	267,056	3,251	3,226	28,578	28,690

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, 2017 and 2016 (Thousand Megawatthours)

Census Division and State	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	
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
New England	-441	-495	-10.8%	0	0	-441	-495	0	0	0	0
Connecticut	2	6	-67.8%	0	0	2	6	0	0	0	0
Maine	0	0	--	0	0	0	0	0	0	0	0
Massachusetts	-443	-500	-11.5%	0	0	-443	-500	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	-1,183	-1,237	-4.4%	-577	-675	-605	-562	0	0	0	0
New Jersey	-162	-204	-20.7%	-162	-204	0	0	0	0	0	0
New York	-416	-471	-11.7%	-416	-471	0	0	0	0	0	0
Pennsylvania	-605	-562	7.7%	0	0	-605	-562	0	0	0	0
East North Central	-675	-752	-10.2%	-675	-752	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	-675	-752	-10.2%	-675	-752	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	100	179	-44.4%	100	179	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	100	179	-44.4%	100	179	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	-3,550	-3,132	13.3%	-3,550	-3,132	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	-1,248	-993	25.6%	-1,248	-993	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	-1,025	-977	4.9%	-1,025	-977	0	0	0	0	0	0
Virginia	-1,278	-1,163	9.9%	-1,278	-1,163	0	0	0	0	0	0
West Virginia	0	0	--	0	0	0	0	0	0	0	0
East South Central	-686	-704	-2.5%	-686	-704	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	-686	-704	-2.5%	-686	-704	0	0	0	0	0	0
West South Central	-97	-49	99.8%	-97	-49	0	0	0	0	0	0
Arkansas	20	39	-47.2%	20	39	0	0	0	0	0	0
Louisiana	0	0	--	0	0	0	0	0	0	0	0
Oklahoma	-118	-87	34.5%	-118	-87	0	0	0	0	0	0
Texas	0	0	--	0	0	0	0	0	0	0	0
Mountain	-372	-236	58.1%	-372	-236	0	0	0	0	0	0
Arizona	-46	59	-178.2%	-46	59	0	0	0	0	0	0
Colorado	-327	-294	11.0%	-327	-294	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	410	-262	-256.9%	410	-262	0	0	0	0	0	0
California	407	-259	-257.1%	407	-259	0	0	0	0	0	0
Oregon	0	0	--	0	0	0	0	0	0	0	0
Washington	3	-2	-229.2%	3	-2	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	-6,495	-6,686	-2.9%	-5,448	-5,629	-1,047	-1,057	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 3.17. Utility Scale Facility Net Generation from Other Energy Sources by State, by Sector, 2017 and 2016 (Thousand Megawatthours)

Census Division and State	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	
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
New England	1,818	1,866	-2.5%	0	0	1,595	1,658	89	86	135	122
Connecticut	547	577	-5.3%	0	0	547	577	0	0	0	0
Maine	396	381	3.9%	0	0	173	174	89	86	135	122
Massachusetts	827	858	-3.7%	0	0	827	858	0	0	0	0
New Hampshire	49	49	-0.6%	0	0	49	49	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	2,391	2,322	3.0%	1	0	1,873	1,866	450	388	67	68
New Jersey	583	607	-4.0%	1	0	372	397	144	143	67	68
New York	924	899	2.7%	0	0	712	694	211	205	0	0
Pennsylvania	884	816	8.3%	0	0	789	775	95	41	0	0
East North Central	844	940	-10.1%	16	-25	80	109	149	159	600	696
Illinois	254	274	-7.4%	0	0	-25	-16	0	0	278	290
Indiana	306	363	-15.7%	0	0	0	0	19	19	287	344
Michigan	260	302	-14.0%	0	11	114	131	129	140	16	19
Ohio	-2	-48	-96.8%	-1	-54	-10	-6	0	0	9	12
Wisconsin	27	50	-46.0%	17	18	0	0	0	0	9	32
West North Central	458	474	-3.3%	220	234	148	141	34	33	56	65
Iowa	2	12	-80.3%	0	0	0	0	0	0	2	12
Kansas	5	0	NM	0	0	0	0	0	0	5	0
Minnesota	396	407	-2.9%	165	180	148	141	34	33	48	53
Missouri	4	9	-59.4%	4	9	0	0	0	0	0	0
Nebraska	0	0	--	0	0	0	0	0	0	0	0
North Dakota	51	45	13.7%	51	45	0	0	0	0	0	0
South Dakota	0	0	--	0	0	0	0	0	0	0	0
South Atlantic	4,305	4,724	-8.9%	0	0	2,091	2,408	186	205	2,028	2,111
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	3,078	3,151	-2.3%	0	0	1,466	1,473	0	0	1,613	1,678
Georgia	87	101	-13.5%	0	0	0	0	0	0	87	101
Maryland	322	323	-0.4%	0	0	322	323	0	0	0	0
North Carolina	577	655	-11.8%	0	0	284	363	0	0	294	292
South Carolina	41	45	-9.3%	0	0	6	5	0	0	35	41
Virginia	213	462	-53.8%	0	0	28	257	186	205	0	0
West Virginia	-14	-12	11.9%	0	0	-14	-12	0	0	0	0
East South Central	68	75	-9.1%	45	50	0	0	0	0	23	25
Alabama	0	0	--	0	0	0	0	0	0	0	0
Kentucky	45	50	-10.5%	45	50	0	0	0	0	0	0
Mississippi	2	5	-64.8%	0	0	0	0	0	0	2	5
Tennessee	21	20	9.5%	0	0	0	0	0	0	21	20
West South Central	1,213	1,524	-20.4%	0	0	106	119	0	0	1,107	1,405
Arkansas	4	6	-27.6%	0	0	0	0	0	0	4	6
Louisiana	632	727	-13.0%	0	0	0	0	0	0	632	727
Oklahoma	48	28	74.9%	0	0	47	22	0	0	1	5
Texas	528	764	-31.0%	0	0	59	97	0	0	469	667
Mountain	708	744	-5.0%	84	57	346	343	0	0	278	344
Arizona	-1	0	--	0	0	-1	0	0	0	0	0
Colorado	57	53	6.2%	0	0	15	11	0	0	42	42
Idaho	68	65	5.1%	0	0	0	0	0	0	68	65
Montana	332	327	1.5%	0	0	332	327	0	0	0	0
Nevada	32	21	50.1%	32	21	0	0	0	0	0	0
New Mexico	-1	0	-310.4%	-1	0	0	0	0	0	0	0
Utah	175	213	-17.8%	53	36	0	5	0	0	122	172
Wyoming	46	65	-29.4%	0	0	0	0	0	0	46	65
Pacific Contiguous	931	766	21.5%	11	-5	285	284	0	0	635	487
California	836	666	25.5%	12	-4	188	183	0	0	635	487
Oregon	39	41	-3.4%	-1	0	40	41	0	0	0	0
Washington	56	60	-6.4%	-1	0	57	60	0	0	0	0
Pacific Noncontiguous	360	320	12.7%	177	110	1	12	182	197	0	0
Alaska	-3	-2	13.3%	-3	-2	0	0	0	0	0	0
Hawaii	363	322	12.7%	180	113	1	12	182	197	0	0
U.S. Total	13,096	13,754	-4.8%	553	421	6,527	6,941	1,088	1,068	4,928	5,324

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 3.18. Utility Scale Facility Net Generation from Wind by State, by Sector, 2017 and 2016 (Thousand Megawatthours)

Census Division and State	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	
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
New England	3,444	2,646	30.2%	241	238	3,174	2,380	28	27	2	1
Connecticut	13	13	-0.3%	0	0	13	13	0	0	0	0
Maine	2,333	1,667	39.9%	0	0	2,333	1,667	0	0	0	0
Massachusetts	233	216	7.6%	62	59	148	135	21	20	2	1
New Hampshire	412	432	-4.8%	0	0	412	432	0	0	0	0
Rhode Island	149	27	461.2%	0	0	142	20	7	7	0	0
Vermont	305	291	4.9%	178	179	127	112	0	0	0	0
Middle Atlantic	7,749	7,437	4.2%	0	0	7,744	7,436	4	0	1	2
New Jersey	22	21	7.7%	0	0	22	21	0	0	0	0
New York	4,136	3,940	5.0%	0	0	4,131	3,939	4	0	1	2
Pennsylvania	3,591	3,476	3.3%	0	0	3,591	3,476	0	0	0	0
East North Central	25,778	23,019	12.0%	2,846	2,942	22,859	20,010	10	8	63	59
Illinois	12,268	10,663	15.0%	13	13	12,249	10,646	5	5	0	0
Indiana	5,089	4,899	3.9%	0	0	5,089	4,899	1	1	0	0
Michigan	5,191	4,696	10.6%	1,836	1,947	3,355	2,749	0	0	0	0
Ohio	1,589	1,245	27.6%	12	11	1,518	1,180	4	3	55	52
Wisconsin	1,641	1,515	8.3%	984	972	649	536	0	0	7	7
West North Central	72,542	60,923	19.1%	24,237	21,334	48,259	39,556	46	33	0	0
Iowa	21,373	20,072	6.5%	14,206	12,770	7,163	7,298	4	4	0	0
Kansas	18,598	14,111	31.8%	1,651	830	16,932	13,281	15	0	0	0
Minnesota	11,137	9,933	12.1%	2,656	2,646	8,455	7,259	26	29	0	0
Missouri	2,032	1,122	81.2%	0	0	2,032	1,122	0	0	0	0
Nebraska	5,084	3,798	33.8%	166	192	4,918	3,606	0	0	0	0
North Dakota	11,359	8,172	39.0%	4,651	3,905	6,708	4,267	0	0	0	0
South Dakota	2,958	3,714	-20.4%	908	991	2,050	2,723	0	0	0	0
South Atlantic	2,719	1,971	38.0%	0	0	2,714	1,966	5	5	0	0
Delaware	5	5	-6.7%	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	561	527	6.5%	0	0	561	527	0	0	0	0
North Carolina	471	6	NM	0	0	471	6	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	1,682	1,432	17.5%	0	0	1,682	1,432	0	0	0	0
East South Central	43	38	14.8%	0	0	43	38	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	43	38	14.8%	0	0	43	38	0	0	0	0
West South Central	90,660	77,600	16.8%	1,570	1,686	89,037	75,866	42	48	11	0
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	0	0	--	0	0	0	0	0	0	0	0
Oklahoma	23,599	20,069	17.6%	1,368	1,430	22,231	18,639	0	0	0	0
Texas	67,061	57,531	16.6%	202	256	66,806	57,227	42	48	11	0
Mountain	24,719	23,842	3.7%	2,539	2,450	22,173	21,385	4	4	3	3
Arizona	570	542	5.2%	0	0	570	542	0	0	0	0
Colorado	9,315	9,421	-1.1%	295	139	9,015	9,278	1	1	3	3
Idaho	2,545	2,578	-1.3%	171	0	2,374	2,578	0	0	0	0
Montana	2,155	2,140	0.7%	225	231	1,930	1,909	0	0	0	0
Nevada	361	344	5.1%	0	0	361	344	0	0	0	0
New Mexico	4,595	3,605	27.4%	0	0	4,592	3,603	3	3	0	0
Utah	858	822	4.4%	0	0	858	822	0	0	0	0
Wyoming	4,321	4,389	-1.6%	1,848	2,080	2,473	2,309	0	0	0	0
Pacific Contiguous	25,975	28,708	-9.5%	5,544	6,311	20,420	22,385	6	6	5	5
California	12,823	13,509	-5.1%	789	704	12,023	12,794	6	6	5	5
Oregon	6,227	7,157	-13.0%	1,051	1,261	5,176	5,896	0	0	0	0
Washington	6,925	8,042	-13.9%	3,704	4,346	3,221	3,695	0	0	0	0
Pacific Noncontiguous	674	808	-16.7%	91	109	582	700	0	0	0	0
Alaska	142	169	-16.3%	91	109	50	60	0	0	0	0
Hawaii	532	639	-16.8%	0	0	532	639	0	0	0	0
U.S. Total	254,303	226,993	12.0%	37,068	35,070	217,006	191,720	144	131	84	71

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 3.19. Utility Scale Facility Net Generation from Biomass by State, by Sector, 2017 and 2016 (Thousand Megawatthours)

Census Division and State	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	
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
New England	6,917	7,220	-4.2%	559	613	5,160	5,377	170	155	1,029	1,075
Connecticut	792	856	-7.4%	0	0	792	856	0	0	0	0
Maine	2,704	2,788	-3.0%	0	0	1,580	1,623	94	90	1,029	1,075
Massachusetts	1,160	1,204	-3.6%	0	0	1,132	1,177	29	27	0	0
New Hampshire	1,610	1,689	-4.7%	291	308	1,274	1,346	45	36	0	0
Rhode Island	203	205	-0.9%	0	0	203	205	0	0	0	0
Vermont	448	477	-6.2%	268	305	178	170	2	2	0	0
Middle Atlantic	5,653	5,618	0.6%	0	0	4,332	4,367	540	480	781	771
New Jersey	929	983	-5.5%	0	0	763	815	166	167	0	0
New York	2,286	2,244	1.9%	0	0	1,873	1,828	225	217	188	199
Pennsylvania	2,438	2,391	2.0%	0	0	1,696	1,723	149	96	593	572
East North Central	5,628	5,587	0.7%	706	639	3,176	3,109	220	210	1,526	1,629
Illinois	474	467	1.5%	22	22	452	445	0	0	0	0
Indiana	473	433	9.4%	324	287	49	51	20	20	80	75
Michigan	2,494	2,495	0.0%	0	0	1,711	1,646	135	146	649	703
Ohio	727	722	0.7%	3	4	480	459	8	8	236	252
Wisconsin	1,460	1,470	-0.7%	358	327	484	508	57	35	561	599
West North Central	2,443	2,445	-0.1%	534	558	1,086	1,052	126	139	698	695
Iowa	210	252	-16.7%	21	23	120	127	28	47	41	55
Kansas	57	59	-2.8%	0	0	60	59	0	0	-3	0
Minnesota	1,933	1,892	2.2%	395	417	859	818	24	27	655	631
Missouri	144	139	4.0%	38	39	46	49	56	47	3	3
Nebraska	97	98	-0.5%	80	80	0	0	17	18	0	0
North Dakota	2	6	-64.4%	0	0	0	0	0	0	2	6
South Dakota	0	0	--	0	0	0	0	0	0	0	0
South Atlantic	19,695	18,907	4.2%	2,029	1,766	6,760	6,421	395	367	10,511	10,353
Delaware	63	68	-7.6%	0	0	50	52	0	0	13	16
District of Columbia	47	53	-10.6%	0	0	0	53	47	0	0	0
Florida	5,009	4,643	7.9%	438	88	2,559	2,482	44	48	1,968	2,025
Georgia	5,018	4,573	9.7%	0	0	1,031	719	0	3	3,987	3,852
Maryland	536	546	-1.7%	0	0	412	417	8	16	116	112
North Carolina	2,812	2,556	10.0%	0	0	1,406	1,217	91	74	1,315	1,265
South Carolina	2,400	2,376	1.0%	410	420	409	409	0	0	1,580	1,547
Virginia	3,809	4,092	-6.9%	1,180	1,259	893	1,072	205	226	1,531	1,535
West Virginia	0	0	--	0	0	0	0	0	0	0	0
East South Central	6,345	6,258	1.4%	103	91	339	373	0	0	5,903	5,794
Alabama	3,426	3,335	2.7%	0	0	232	265	0	0	3,193	3,071
Kentucky	495	465	6.4%	103	91	12	14	0	0	380	360
Mississippi	1,477	1,524	-3.1%	0	0	12	10	0	0	1,465	1,514
Tennessee	948	933	1.5%	0	0	83	84	0	0	865	849
West South Central	6,079	6,291	-3.4%	0	19	811	888	39	40	5,229	5,345
Arkansas	1,437	1,370	4.9%	0	0	99	108	6	5	1,332	1,257
Louisiana	2,767	2,876	-3.8%	0	0	88	80	0	0	2,679	2,796
Oklahoma	299	362	-17.6%	0	0	19	15	0	0	280	348
Texas	1,577	1,683	-6.3%	0	19	606	685	33	35	938	944
Mountain	977	1,086	-10.0%	12	11	616	662	22	27	327	385
Arizona	171	214	-20.1%	0	0	171	214	0	0	0	0
Colorado	166	162	2.2%	0	0	166	162	0	0	0	0
Idaho	465	532	-12.4%	12	11	136	145	12	11	306	365
Montana	21	20	5.1%	0	0	0	0	0	0	21	20
Nevada	58	55	4.4%	0	0	58	55	0	0	0	0
New Mexico	18	18	-1.3%	0	0	18	18	0	0	0	0
Utah	78	84	-7.6%	0	0	68	68	10	16	0	0
Wyoming	0	0	--	0	0	0	0	0	0	0	0
Pacific Contiguous	8,688	8,947	-2.9%	676	780	4,723	4,787	841	901	2,447	2,479
California	5,808	5,939	-2.2%	139	230	4,242	4,268	801	853	627	589
Oregon	981	1,001	-2.0%	62	63	360	396	31	32	528	510
Washington	1,899	2,008	-5.4%	475	488	122	124	10	16	1,292	1,381
Pacific Noncontiguous	336	402	-16.4%	55	37	49	51	231	247	1	66
Alaska	44	43	1.3%	0	0	0	0	42	43	1	1
Hawaii	293	359	-18.6%	55	37	49	51	189	205	0	66
U.S. Total	62,762	62,760	0.0%	4,674	4,516	27,051	27,087	2,585	2,565	28,452	28,592

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 3.20. Utility Scale Facility Net Generation from Geothermal by State, by Sector, 2017 and 2016 (Thousand Megawatthours)

Census Division and State	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	
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
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	3,870	3,925	-1.4%	249	257	3,621	3,668	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	84	72	17.3%	0	0	84	72	0	0	0	0
Montana	0	0	--	0	0	0	0	0	0	0	0
Nevada	3,292	3,353	-1.8%	0	0	3,292	3,353	0	0	0	0
New Mexico	13	14	-8.8%	0	0	13	14	0	0	0	0
Utah	481	485	-0.9%	249	257	232	228	0	0	0	0
Wyoming	0	0	--	0	0	0	0	0	0	0	0
Pacific Contiguous	11,734	11,641	0.8%	773	823	10,961	10,818	0	0	0	0
California	11,560	11,457	0.9%	771	819	10,789	10,638	0	0	0	0
Oregon	174	184	-5.1%	2	4	173	180	0	0	0	0
Washington	0	0	--	0	0	0	0	0	0	0	0
Pacific Noncontiguous	323	260	24.0%	0	0	323	260	0	0	0	0
Alaska	0	0	--	0	0	0	0	0	0	0	0
Hawaii	323	260	24.0%	0	0	323	260	0	0	0	0
U.S. Total	15,927	15,826	0.6%	1,022	1,080	14,905	14,746	0	0	0	0

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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 3.21. Net Generation from Solar Photovoltaic by State, by Sector, 2017 and 2016 (Thousand Megawatthours)

Census Division and State	All Sectors								Electric Power Sector				Commercial Sector				Industrial Sector				Residential Sector					
	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				
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016			
New England	3,164	2,467	28.2%	947	707	2,217	1,760	58	21	880	681	1,169	976	7	6	1,162	970	99	82	1	0	97	82	958	708	
Connecticut	447	344	29.8%	40	25	407	320	3	3	36	22	157	130	1	0	156	130	21	16	0	0	21	16	230	174	
Maine	46	29	58.0%	5	0	41	29	0	0	5	0	14	10	0	0	14	10	0	0	0	0	0	0	27	19	
Massachusetts	2,304	1,863	23.7%	788	609	1,516	1,254	14	15	767	589	905	782	6	6	899	776	70	64	1	0	69	64	547	414	
New Hampshire	87	52	69.1%	0	0	87	52	0	0	0	0	26	14	0	0	26	14	5	2	0	0	5	2	56	36	
Rhode Island	69	44	56.2%	14	15	55	30	0	0	14	15	27	16	0	0	27	16	0	0	0	0	0	0	28	14	
Vermont	210	135	56.0%	99	59	111	76	41	4	58	55	40	24	0	0	40	24	2	0	0	0	2	0	70	51	
Middle Atlantic	4,378	3,594	21.8%	1,178	1,049	3,199	2,545	80	82	934	800	1,594	1,394	149	153	1,445	1,241	191	172	16	14	174	158	1,580	1,147	
New Jersey	2,586	2,220	16.5%	926	835	1,660	1,385	80	82	699	603	1,011	954	139	144	872	809	112	91	8	6	104	85	684	491	
New York	1,364	1,013	34.7%	183	140	1,182	873	0	0	178	137	439	317	5	3	435	314	14	13	0	0	14	13	733	547	
Pennsylvania	427	361	18.2%	70	75	357	287	0	0	56	61	144	123	6	6	138	118	64	68	8	8	56	60	163	109	
East North Central	863	604	43.0%	520	352	343	251	157	53	358	294	208	161	3	2	205	159	22	14	2	3	20	11	118	82	
Illinois	111	86	28.9%	52	49	58	37	2	2	50	47	38	24	0	0	38	24	0	0	0	0	0	0	21	13	
Indiana	313	243	28.7%	278	226	35	17	84	33	194	193	17	7	0	0	17	7	1	1	0	0	1	1	16	9	
Michigan	129	64	100.6%	63	9	65	55	63	0	0	34	30	0	0	34	30	3	1	1	0	1	1	31	24		
Ohio	234	173	35.0%	105	66	129	108	8	9	92	52	99	86	3	2	96	83	8	7	2	3	6	5	27	20	
Wisconsin	77	37	106.5%	21	3	56	35	0	0	21	3	20	14	0	0	20	14	11	5	0	0	11	5	24	16	
West North Central	1,055	325	224.8%	680	49	376	276	12	4	666	44	195	150	2	2	193	148	10	6	0	0	10	6	173	121	
Iowa	94	60	58.1%	5	0	89	59	5	0	0	0	56	36	0	0	56	36	3	3	0	0	3	3	31	20	
Kansas	22	11	108.4%	5	2	17	8	2	0	4	2	5	2	0	0	5	2	0	0	0	0	0	0	11	6	
Minnesota	655	47	NM	596	10	59	37	2	1	594	9	24	17	0	0	24	17	5	3	0	0	5	3	30	18	
Missouri	261	200	30.4%	56	33	204	167	3	3	52	28	108	93	2	2	106	91	1	1	0	0	1	1	97	75	
Nebraska	21	7	210.9%	15	4	5	3	0	0	15	4	2	1	0	0	2	1	0	0	0	0	0	0	3	2	
North Dakota	0	0	10.0%	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	3	1	166.7%	2	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Atlantic	10,461	6,005	74.2%	8,666	4,736	1,795	1,268	1,501	424	7,031	4,173	687	604	132	140	555	465	251	204	2	0	249	204	990	600	
Delaware	143	119	20.4%	50	51	92	67	6	7	42	43	30	25	1	1	28	24	5	4	0	0	5	4	59	40	
District of Columbia	52	32	63.7%	0	0	52	32	0	0	0	0	29	15	0	0	29	15	0	0	0	0	0	0	23	16	
Florida	1,148	354	224.6%	855	149	293	205	715	84	135	61	96	87	3	3	93	83	11	6	2	0	9	6	190	116	
Georgia	2,212	1,076	105.7%	1,996	881	226	195	252	107	1,731	771	33	31	3	3	30	28	180	154	0	0	180	154	16	13	
Maryland	1,002	728	37.7%	267	209	735	519	9	9	252	193	211	181	7	7	204	174	33	35	0	0	33	35	498	310	
North Carolina	5,300	3,589	47.7%	5,114	3,421	186	167	410	211	4,587	3,085	229	238	118	125	112	112	7	4	0	0	7	4	67	51	
South Carolina	217	41	431.0%	80	5	138	36	0	0	80	5	33	10	0	0	33	10	13	2	0	0	13	2	92	24	
Virginia	379	62	510.8%	313	21	66	41	109	5	204	16	24	16	0	0	24	16	1	0	0	0	1	0	41	25	
West Virginia	8	6	39.5%	0	0	8	6	0	0	0	0	2	1	0	0	2	1	0	0	0	0	0	0	6	4	
East South Central	509	242	110.5%	379	122	130	120	43	12	331	107	94	88	4	3	90	85	2	1	0	0	1	1	39	34	
Alabama	189	39	385.2%	181	31	8	8	24	0	157	31	5	5	0	0	5	5	0	0	0	0	0	0	2	2	
Kentucky	45	32	38.7%	20	12	25	20	19	12	1	0	15	13	0	0	15	13	0	0	0	0	0	0	10	7	
Mississippi	96	6	NM	86	0	11	6	0	0	86	0	6	4	0	0	6	4	1	0	0	0	1	0	3	2	
Tennessee	179	164	9.0%	92	79	87	86	0	0	88	75	68	66	4	3	63	63	1	1	0	0	1	1	23	22	
West South Central	2,947	1,355	117.4%	2,255	762	692	593	42	7	2,212	753	146	152	2	2	144	150	0	0	0	0	0	0	548	443	
Arkansas	41	33	22.9%	31	26	10	7	2	2	29	25	4	3	0	0	4	3	0	0	0	0	0	0	6	4	
Louisiana	202	191	6.2%	2	0	200	191	2	0	0	0	8	7	0	0	8	7	0	0	0	0	0	0	192	184	
Oklahoma	38	9	307.9%	33	5	6	4	33	5	0	0	1	1	0	0	1	1	0	0	0	0	0	0	4	3	
Texas	2,665	1,122	137.5%	2,189	731	476	391	5	0	2,182	729	133	141	2	2	131	139	0	0	0	0	0	0	345	252	
Mountain	16,400	11,143	47.2%	13,035	8,375	3,365	2,767	920	799	12,010	7,474	1,199	974	102	101	1,097	874	55	206	3	3	52	203	2,216	1,690	
Arizona	6,111	4,726	29.3%	4,218	3,122	1,893	1,603	626	497	3,569	2,601	659	493	23	24	635	469	17	170	0	0	17	170	1,241	964	
Colorado	1,485	999	48.6%	954	538	531	461	2	0	940	522	225	209	12	16	212	193	2	2	0	0	2	2	317	265	
Idaho	476	40	NM	459	30	16	10	0	0	459	30	4	3	0	0	4	3	0	0	0	0	0	0	12	7	
Montana	29	11	163.4%	14	0	15	11	0	0	14	0	4	3	0	0	4	3	0	0	0	0	0	0	11	8	
Nevada	4,398	3,252	35.2%	3,986	2,880	412	372	40	51	3,877	2,765	167	158	66	61	100	97	27	25	3	3	25	23	287	253	
New Mexico	1,397	909	53.7%	1,193	752	204	157	252	250	941	502	76	64	0	0	76	64	1	1	0	0	1	1	128	92	
Utah	2,500	1,203	107.8%	2,211	1,054	289	150	0	0	2,211	1,054	63	43	0	0	63	43	8	6	0	0	8	6	218	101	
Wyoming	5	3	37.7%	0	0	5	3	0	0	0	0	2	1	0	0	2	1	0	0	0	0	0	0	3	2	
Pacific Contiguous	33,084	24,899	32.9%	22,184	16,428	10,900	8,471	471	475	21,574	15,824	2,553	1,909	120	121	2,433	1,787	1,775	1,401	18	8	1,757	1,393	6,710	5,291	
California	32,594	24,616	32.4%	21,989	16,386	10,605	8,230	464	468	21,386	15,789	2,455	1,825	120	121	2,335	1,703	1,760	1,388	18	8	1,742	1,379	6,529	5,147	
Oregon	373	192	93.9%	194	41	179	151	6	6	188	35	79	71	0	0	79	71	15	13	0	0	15	13	85	67	
Washington	116	90	29.3%	0	1	116	89	0	1	0	0	19	13	0	0	19	13	0	0	0	0	0	0	97	76	
Pacific Noncontiguous	1,147	850	35.0%	174	89	973	761	43	44	131	45	360	280	0	0	360	280	3	2	0	0	3	2	610	479	
Alaska	2	1	51.8%	0	0	2	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	1	
Hawaii	1,145	848	35.0%	174	89	971	760	43	44	131	45	360	279	0	0	360	279	3	2	0	0	3	2	609	479	
U.S. Total	74,007	51,483	43.8%	50,017	32,670	23,990	18,812	3,326	1,920	46,127	30,194															

Table 3.22. Utility Scale Facility Net Generation from Solar Thermal by State, by Sector, 2017 and 2016 (Thousand Megawatthours)

Census Division and State	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	
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
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	22	75	-71.4%	22	75	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	22	75	-71.4%	22	75	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	884	888	-0.4%	0	0	884	888	0	0	0	0
Arizona	724	644	12.5%	0	0	724	644	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	160	244	-34.5%	0	0	160	244	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	2,364	2,421	-2.3%	0	0	2,364	2,421	0	0	0	0
California	2,364	2,421	-2.3%	0	0	2,364	2,421	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	3,269	3,384	-3.4%	22	75	3,248	3,308	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), 2007 - 2017
(Billion Btus)**

Period	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gas	Renewable Sources	Other	Total
Annual Totals								
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
2017	193,164	7,922	17,322	789,591	151,579	703,355	23,685	1,886,618
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
Year 2017								
January	19,058	726	1,524	68,486	13,571	61,847	2,181	167,391
February	15,582	499	1,247	60,824	11,780	55,422	1,879	147,233
March	16,984	611	1,616	65,559	12,591	60,154	2,041	159,557
April	15,085	565	1,340	60,386	12,046	56,270	1,937	147,629
May	14,971	539	1,390	62,385	13,353	56,316	1,865	150,820
June	15,505	461	1,576	64,318	12,254	57,912	2,027	154,053
July	15,663	457	1,520	70,408	12,726	59,551	2,032	162,358
August	15,840	448	1,581	68,817	12,510	60,817	2,147	162,160
September	14,602	552	1,282	65,823	12,228	54,633	1,854	150,974
October	16,388	549	1,488	66,083	13,004	58,098	1,814	157,424
November	16,298	1,040	1,397	64,436	12,448	59,608	1,884	157,112
December	17,187	1,476	1,362	72,066	13,068	62,726	2,023	169,907

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 separating 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, 2007 - 2017
(Billion Btus)

Period	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gas	Renewable Sources	Other	Total
Annual Totals								
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
2017	11,269	627	1,267	192,295	17,798	24,279	7,422	254,958
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
Year 2017								
January	1,178	102	106	16,869	1,472	2,419	645	22,791
February	1,004	49	104	14,561	1,325	2,102	570	19,715
March	1,047	22	113	16,679	1,465	2,451	641	22,418
April	799	25	109	14,796	1,393	1,788	629	19,539
May	766	32	112	15,041	1,448	1,727	643	19,768
June	797	33	104	16,016	1,446	1,787	645	20,827
July	925	34	104	17,329	1,520	1,893	684	22,490
August	937	28	102	17,119	1,400	1,860	678	22,123
September	872	58	101	15,586	1,536	1,781	577	20,511
October	932	45	105	15,755	1,614	1,989	488	20,928
November	909	64	98	15,338	1,572	2,155	561	20,696
December	1,104	135	109	17,206	1,605	2,329	663	23,151

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 separating 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.

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Table 3.25. Useful Thermal Output by Energy Source: Commercial Sector Combined Heat and Power, 2007 - 2017
(Billion Btus)

Period	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gas	Renewable Sources	Other	Total
Annual Totals								
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
2017	7,360	806	234	71,149	0	10,762	5,140	95,450
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
Year 2017								
January	848	133	31	6,841	0	1,142	544	9,538
February	689	88	18	5,733	0	946	447	7,920
March	813	93	27	5,545	0	875	444	7,796
April	529	43	9	4,715	0	843	414	6,552
May	493	43	12	4,926	0	831	408	6,712
June	475	29	8	5,757	0	901	448	7,619
July	572	38	6	6,722	0	889	442	8,669
August	506	38	32	6,724	0	919	446	8,666
September	532	34	30	6,079	0	704	357	7,736
October	476	42	20	5,888	0	833	378	7,638
November	632	61	12	5,736	0	930	405	7,776
December	795	162	29	6,483	0	950	407	8,827

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 separating 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 3.26. Useful Thermal Output by Energy Source: Industrial Sector Combined Heat and Power, 2007 - 2017
(Billion Btus)

Period	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gas	Renewable Sources	Other	Total
Annual Totals								
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
2017	151,780	6,289	15,721	503,723	133,781	660,876	11,112	1,483,283
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
Year 2017								
January	14,600	453	1,385	42,679	12,099	57,510	991	129,717
February	12,231	340	1,121	38,665	10,455	51,718	862	115,392
March	13,188	482	1,471	41,312	11,126	56,089	955	124,623
April	11,880	489	1,221	39,132	10,653	52,963	894	117,232
May	12,013	456	1,259	40,564	11,905	53,293	815	120,305
June	12,509	386	1,455	41,038	10,808	54,583	933	121,713
July	12,084	375	1,399	44,352	11,206	56,327	906	126,650
August	12,380	373	1,428	43,098	11,111	57,416	1,022	126,827
September	11,551	451	1,140	42,435	10,692	51,558	919	118,744
October	13,158	452	1,354	42,679	11,390	54,704	947	124,684
November	12,694	904	1,276	41,563	10,876	55,946	918	124,177
December	13,493	1,127	1,212	46,206	11,463	58,767	951	133,220

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 separating 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.

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Chapter 4

Generation Capacity

Table 4.1. Count of Electric Power Industry Power Plants, by Sector, by Predominant Energy Sources within Plant, 2007 through 2017

Year	Coal	Petroleum	Natural Gas	Other Gases	Nuclear	Hydroelectric Conventional	Other Renewables	Hydroelectric Pumped Storage	Other Energy Sources
Total (All Sectors)									
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
2017	359	1,080	1,820	44	61	1,458	4,174	40	148
Electric Utilities									
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
2017	219	765	820	1	31	894	417	35	53
Independent Power Producers, Non-Combined Heat and Power Plants									
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
2017	71	145	415	--	30	505	3,320	5	43
Independent Power Producers, Combined Heat and Power Plants									
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
2017	22	7	138	3	--	--	56	--	3
Commercial Sector									
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
2017	9	112	189	--	--	15	203	--	4
Industrial Sector									
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
2017	38	51	258	40	--	44	178	--	45

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, 2007 through 2017 (Megawatts)

Year	Utility Scale Capacity										Small Scale Capacity Estimated Photovoltaic
	Coal	Petroleum	Natural Gas	Other Gases	Nuclear	Hydroelectric Conventional	Other Renewable Sources	Hydroelectric Pumped Storage	Other Energy Sources	Utility Total	
Total (All Sectors)											
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
2017	256,547.3	33,306.7	456,011.6	2,375.8	99,628.9	79,794.5	131,008.1	22,810.4	2,886.3	1,084,369.6	16,147.8
Electric Utilities											
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	--
2017	186,623.1	19,999.9	236,557.8	12.0	53,343.6	73,739.5	15,281.3	19,430.0	519.3	605,506.5	--
Independent Power Producers, Non-Combined Heat and Power Plants											
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	--
2017	64,419.3	11,777.0	176,029.0	--	46,285.3	5,697.9	107,618.0	3,380.4	989.3	416,196.2	--
Independent Power Producers, Combined Heat and Power Plants											
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	--
2017	3,338.0	301.2	26,922.1	350.0	--	--	969.8	--	21.0	31,902.1	--
Commercial Sector											
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
2017	202.4	596.5	2,018.7	--	--	74.9	1,162.0	--	11.6	4,066.1	5,155.8
Industrial Sector											
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
2017	1,964.5	632.1	14,484.0	2,013.8	--	282.2	5,977.0	--	1,345.1	26,698.7	1,365.1
Residential Sector											
2014	--	--	--	--	--	--	--	--	--	--	3,346.3
2015	--	--	--	--	--	--	--	--	--	--	5,191.5
2016	--	--	--	--	--	--	--	--	--	--	7,527.0
2017	--	--	--	--	--	--	--	--	--	--	9,626.8

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, 2007 through 2017 (Megawatts) (Page 1)

Year	Utility Scale Capacity							Utility and Small Scale Capacity		
	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)										
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
2017	87,597.5	25,209.0	1,757.9	8,830.9	2,483.3	5,129.5	131,008.1	16,147.8	41,356.8	43,114.7
Electric Utilities										
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
2017	12,150.8	1,724.5	--	811.3	161.9	432.8	15,281.3	--	1,724.5	1,724.5
Independent Power Producers, Non-Combined Heat and Power Plants										
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
2017	75,346.6	23,127.0	1,757.9	1,649.1	2,321.4	3,416.0	107,618.0	--	23,127.0	24,884.9

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, 2007 through 2017 (Megawatts) (Page 2)

Year	Utility Scale Capacity							Utility and Small Scale Capacity		
	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										
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
2017	--	2.5	--	582.0	--	385.3	969.8	--	2.5	2.5
Commercial Sector										
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
2017	60.8	311.6	--	63.1	--	726.5	1,162.0	5,155.8	5,467.4	5,467.4
Industrial Sector										
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
2017	39.3	43.4	--	5,725.4	--	168.9	5,977.0	1,365.1	1,408.5	1,408.5
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
2017	--	--	--	--	--	--	--	9,626.8	9,626.8	9,626.8

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, 2017 (Megawatts)

Energy Source	Facility Type	Number of Generators	Generator Nameplate Capacity	Net Summer Capacity	Net Winter Capacity
Coal	Utility Scale	789	279,221.3	256,547.3	258,296.2
Petroleum	Utility Scale	3,575	38,257.4	33,306.7	36,408.3
Natural Gas	Utility Scale	5,878	522,378.0	456,011.6	490,986.5
Other Gases	Utility Scale	95	2,673.1	2,375.8	2,407.1
Nuclear	Utility Scale	99	104,792.4	99,628.9	101,868.1
Hydroelectric Conventional	Utility Scale	4,062	79,594.5	79,794.5	79,256.2
Wind	Utility Scale	1,245	88,315.7	87,597.5	87,704.8
Solar Photovoltaic	Utility Scale	2,820	25,475.1	25,209.0	24,835.5
Solar Thermal	Utility Scale	19	1,774.6	1,757.9	1,631.8
Wood and Wood-Derived Fuels	Utility Scale	353	10,059.2	8,830.9	8,948.3
Geothermal	Utility Scale	187	3,732.4	2,483.3	2,741.8
Other Biomass	Utility Scale	1,976	5,868.5	5,129.5	5,197.2
Hydroelectric Pumped Storage	Utility Scale	153	21,643.3	22,810.4	22,665.2
Other Energy Sources	Utility Scale	186	3,158.4	2,886.3	2,883.3
Total	Utility Scale	21,437	1,186,943.9	1,084,369.6	1,125,830.3
Small Scale Photovoltaic	Small Scale	--	--	16,147.8	--
Estimated Total Photovoltaic	Utility and Small Scale	--	--	41,356.8	--
Estimated Total Solar	Utility and Small Scale	--	--	43,114.7	--

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, 2017 (Megawatts)

Producer Type	Facility Type	Number of Generators	Generator Nameplate Capacity	Net Summer Capacity	Net Winter Capacity
Electric Power Sector					
Electric Utilities	Utility Scale	9,584	663,796.8	605,506.5	627,720.9
Independent Power Producers, Non-Combined Heat and Power Plants	Utility Scale	8,515	451,757.4	416,196.2	431,092.8
Independent Power Producers, Combined Heat and Power Plants	Utility Scale	521	36,065.0	31,902.1	34,418.2
Total	Utility Scale	18,620	1,151,619.2	1,053,604.8	1,093,231.9
Commercial and Industrial Sectors					
Commercial Sector	Utility Scale	1,227	4,469.4	4,066.1	4,151.9
Industrial Sector	Utility Scale	1,590	30,855.3	26,698.7	28,446.5
Total	Utility Scale	2,817	35,324.7	30,764.8	32,598.4
All Sectors					
Total	Utility Scale	21,437	1,186,943.9	1,084,369.6	1,125,830.3
Small Scale					
Estimated Solar Photovoltaic	Small Scale	--	--	16,147.8	--

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, 2018-2022 (Page 1)

Energy Source	Generator Additions		Generator Retirements		Net Capacity Additions	
	Number of Generators	Net Summer Capacity	Number of Generators	Net Summer Capacity	Number of Generators	Net Summer Capacity
Year 2018						
U.S. Total	672	34,327.7	163	18,664.9	509	15,662.8
Coal	1	17.0	36	13,687.2	-35	-13,670.2
Petroleum	14	25.9	31	245.2	-17	-219.3
Natural Gas	128	20,153.1	51	3,902.9	77	16,250.2
Other Gases	--	--	--	--	--	--
Nuclear	--	--	1	607.7	-1	-607.7
Hydroelectric Conventional	6	145.1	20	45.1	-14	100.0
Wind	65	7,895.2	2	20.0	63	7,875.2
Solar Thermal and Photovoltaic	409	5,666.8	1	0.5	408	5,666.3
Wood and Wood-Derived Fuels	2	14.5	3	47.3	-1	-32.8
Geothermal	3	56.0	--	--	3	56.0
Other Biomass	12	88.0	17	107.5	-5	-19.5
Hydroelectric Pumped Storage	--	--	--	--	--	--
Other Energy Sources	32	266.1	1	1.5	31	264.6
Year 2019						
U.S. Total	334	24,779.6	66	8,029.0	268	16,750.6
Coal	--	--	17	4,144.6	-17	-4,144.6
Petroleum	2	14.3	7	27.8	-5	-13.5
Natural Gas	117	9,541.5	29	2,233.9	88	7,307.6
Other Gases	--	--	--	--	--	--
Nuclear	--	--	2	1,480.0	-2	-1,480.0
Hydroelectric Conventional	18	132.0	1	103.8	17	28.2
Wind	73	11,324.0	--	--	73	11,324.0
Solar Thermal and Photovoltaic	105	3,485.3	4	1.9	101	3,483.4
Wood and Wood-Derived Fuels	2	158.5	2	24.8	--	133.7
Geothermal	1	35.0	--	--	1	35.0
Other Biomass	7	19.6	4	12.2	3	7.4
Hydroelectric Pumped Storage	--	--	--	--	--	--
Other Energy Sources	9	69.4	--	--	9	69.4
Year 2020						
U.S. Total	158	23,556.9	67	7,024.6	91	16,532.3
Coal	1	275.0	9	1,697.9	-8	-1,422.9
Petroleum	--	--	5	25.9	-5	-25.9
Natural Gas	66	14,779.9	32	2,797.7	34	11,982.2
Other Gases	--	--	--	--	--	--
Nuclear	--	--	3	2,495.8	-3	-2,495.8
Hydroelectric Conventional	5	133.5	7	6.2	-2	127.3
Wind	30	4,837.1	--	--	30	4,837.1
Solar Thermal and Photovoltaic	46	3,292.5	--	--	46	3,292.5
Wood and Wood-Derived Fuels	1	42.0	--	--	1	42.0
Geothermal	3	114.9	--	--	3	114.9
Other Biomass	3	2.0	11	1.1	-8	0.9
Hydroelectric Pumped Storage	--	--	--	--	--	--
Other Energy Sources	3	80.0	--	--	3	80.0

Notes: These data reflect plans as of December 31, 2017

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, 2018-2022 (Page 2)

Energy Source	Generator Additions		Generator Retirements		Net Capacity Additions	
	Number of Generators	Net Summer Capacity	Number of Generators	Net Summer Capacity	Number of Generators	Net Summer Capacity
Year 2021						
U.S. Total	68	17,718.7	15	6,846.5	53	10,872.2
Coal	--	--	4	1,106.4	-4	-1,106.4
Petroleum	--	--	--	--	--	--
Natural Gas	39	11,623.8	5	1,649.0	34	9,974.8
Other Gases	1	110.0	--	--	1	110.0
Nuclear	2	2,200.0	4	4,089.3	-2	-1,889.3
Hydroelectric Conventional	2	1.8	1	0.8	1	1.0
Wind	9	1,925.0	--	--	9	1,925.0
Solar Thermal and Photovoltaic	9	1,684.1	--	--	9	1,684.1
Wood and Wood-Derived Fuels	--	--	--	--	--	--
Geothermal	--	--	--	--	--	--
Other Biomass	3	31.0	1	1.0	2	30.0
Hydroelectric Pumped Storage	--	--	--	--	--	--
Other Energy Sources	3	143.0	--	--	3	143.0
Year 2022						
U.S. Total	23	5,604.4	28	3,714.2	-5	1,890.2
Coal	1	850.0	11	2,181.0	-10	-1,331.0
Petroleum	--	--	5	287.0	-5	-287.0
Natural Gas	14	4,639.7	6	423.0	8	4,216.7
Other Gases	--	--	--	--	--	--
Nuclear	--	--	1	801.8	-1	-801.8
Hydroelectric Conventional	3	1.5	4	19.9	-1	-18.4
Wind	--	--	--	--	--	--
Solar Thermal and Photovoltaic	1	75.0	--	--	1	75.0
Wood and Wood-Derived Fuels	--	--	--	--	--	--
Geothermal	--	--	--	--	--	--
Other Biomass	2	3.2	--	--	2	3.2
Hydroelectric Pumped Storage	--	--	--	--	--	--
Other Energy Sources	2	35.0	1	1.5	1	33.5
Years 2018-2022						
U.S. Total	1,255	105,987.3	339	44,279.2	916	61,708.1
Coal	3	1,142.0	77	22,817.1	-74	-21,675.1
Petroleum	16	40.2	48	585.9	-32	-545.7
Natural Gas	364	60,738.0	123	11,006.5	241	49,731.5
Other Gases	1	110.0	--	--	1	110.0
Nuclear	2	2,200.0	11	9,474.6	-9	-7,274.6
Hydroelectric Conventional	34	413.9	33	175.8	1	238.1
Wind	177	25,981.3	2	20.0	175	25,961.3
Solar Thermal and Photovoltaic	570	14,203.7	5	2.4	565	14,201.3
Wood and Wood-Derived Fuels	5	215.0	5	72.1	--	142.9
Geothermal	7	205.9	--	--	7	205.9
Other Biomass	27	143.8	33	121.8	-6	22.0
Hydroelectric Pumped Storage	--	--	--	--	--	--
Other Energy Sources	49	593.5	2	3.0	47	590.5

Notes: These data reflect plans as of December 31, 2017

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, 2017 (Count, Megawatts)

Energy Source	Generator Additions				Generator Retirements			
	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	--	--	--	--	30	6,947.8	6,309.7	6,421.0
Petroleum	35	61.7	61.3	61.3	68	836.0	716.1	764.7
Natural Gas	98	10,546.1	9,306.6	9,943.4	60	4,646.0	3,736.8	3,802.7
Other Gases	--	--	--	--	--	--	--	--
Nuclear	--	--	--	--	--	--	--	--
Hydroelectric Conventional	6	207.2	207.6	205.2	6	109.6	109.5	109.5
Wind	67	6,304.9	6,317.9	6,317.9	7	59.9	58.1	58.3
Solar Thermal and Photovoltaic	552	5,055.0	4,959.2	4,856.5	--	--	--	--
Wood and Wood-Derived Fuels	2	129.5	101.0	99.0	8	81.1	70.6	70.7
Geothermal	1	37.0	37.0	37.0	26	138.8	77.6	82.4
Other Biomass	26	80.4	66.7	66.9	26	51.7	37.3	37.6
Hydroelectric Pumped Storage	--	--	--	--	--	--	--	--
Other Energy Sources	22	122.4	122.1	122.1	1	20.0	20.0	20.0
Total	809	22,544.2	21,179.4	21,709.3	232	12,890.9	11,135.7	11,366.9

Energy Source	Other Changes to Existing Capacity		
	Generator Nameplate Capacity	Net Summer Capacity	Net Winter Capacity
Coal	-4,767.2	-4,217.3	-4,280.6
Petroleum	-4,378.3	-3,852.7	-3,858.2
Natural Gas	2,548.5	2,295.0	3,717.1
Other Gases	-85.9	-81.1	-89.0
Nuclear	1.3	64.1	54.0
Hydroelectric Conventional	22.5	-314.6	-284.1
Wind	-102.5	-47.9	-44.7
Solar Thermal and Photovoltaic	-72.7	-85.5	-155.9
Wood and Wood-Derived Fuels	-152.9	-135.6	-124.0
Geothermal	29.6	7.3	12.6
Other Biomass	7.8	8.9	11.2
Hydroelectric Pumped Storage	--	31.7	20.3
Other Energy Sources	789.2	738.6	725.7
Total	-6,160.6	-5,589.1	-4,295.6

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, 2017 and 2016 (Megawatts)

Census Division and State	Renewable Sources		Fossil Fuels		Hydroelectric Pumped Storage		Other Energy Storage		Nuclear		All Other Sources		All Sources	
	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
New England	5,668.3	5,528.0	21,234.7	22,691.3	1,797.4	1,797.4	24.7	19.0	4,014.1	4,015.9	320.9	48.0	33,060.1	34,099.6
Connecticut	361.2	352.0	6,125.4	6,313.6	29.4	29.4	1.6	0.8	2,087.8	2,087.8	298.9	26.0	8,904.3	8,809.6
Maine	2,345.6	2,435.1	2,536.5	2,442.5	0.0	0.0	16.2	16.2	0.0	0.0	22.0	22.0	4,920.3	4,915.8
Massachusetts	1,289.4	1,120.7	8,380.9	9,765.7	1,768.0	1,768.0	4.9	0.0	677.2	677.2	0.0	0.0	12,120.4	13,331.6
New Hampshire	928.9	928.9	2,262.9	2,266.0	0.0	0.0	0.0	0.0	1,249.1	1,250.9	0.0	0.0	4,440.9	4,445.8
Rhode Island	113.3	100.1	1,831.1	1,805.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,944.4	1,905.7
Vermont	629.9	591.2	97.9	97.9	0.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	729.8	691.1
Middle Atlantic	10,856.0	10,927.9	68,017.0	69,366.2	3,409.8	3,409.1	72.4	70.4	19,295.6	19,304.3	420.9	11.2	102,071.7	103,089.1
New Jersey	911.9	853.8	12,370.9	13,515.1	420.0	420.0	1.0	0.0	4,107.9	4,107.9	11.2	11.2	17,822.9	18,908.0
New York	7,067.5	7,173.8	26,026.8	26,124.8	1,406.8	1,406.1	21.0	20.0	5,390.7	5,399.4	221.7	0.0	40,134.5	40,124.1
Pennsylvania	2,876.6	2,900.3	29,619.3	29,726.3	1,583.0	1,583.0	50.4	50.4	9,797.0	9,797.0	188.0	0.0	44,114.3	44,057.0
East North Central	11,631.1	10,571.5	114,316.8	112,924.8	2,134.0	2,103.0	167.4	187.4	19,024.4	19,019.3	188.1	110.1	147,461.8	144,916.1
Illinois	4,447.9	4,172.4	28,931.1	28,970.6	0.0	0.0	112.4	112.4	11,577.4	11,587.3	78.0	0.0	45,146.8	44,842.7
Indiana	2,442.8	2,187.0	23,159.4	23,027.4	0.0	0.0	22.0	22.0	0.0	0.0	89.0	89.0	25,713.2	25,325.4
Michigan	2,590.8	2,270.8	20,790.1	20,603.9	2,134.0	2,103.0	0.0	0.0	4,119.8	4,105.4	0.0	0.0	29,634.7	29,083.1
Ohio	923.1	827.2	26,910.3	25,810.5	0.0	0.0	33.0	53.0	2,134.0	2,134.0	0.0	0.0	30,000.4	28,824.7
Wisconsin	1,226.5	1,114.1	14,525.9	14,512.4	0.0	0.0	0.0	0.0	1,193.2	1,192.6	21.1	21.1	16,966.7	16,840.2
West North Central	26,508.1	24,514.5	60,565.5	60,350.5	657.0	657.0	3.2	2.0	5,443.4	5,394.9	24.5	24.5	93,201.7	90,943.4
Iowa	7,147.7	6,940.6	9,921.7	9,503.5	0.0	0.0	0.0	0.0	601.4	601.4	0.0	0.0	17,670.8	17,045.5
Kansas	5,136.2	4,472.2	9,775.8	9,709.0	0.0	0.0	0.0	0.0	1,225.0	1,175.0	0.8	0.8	16,137.8	15,357.0
Minnesota	4,902.1	4,299.7	10,000.7	10,035.8	0.0	0.0	1.0	1.0	1,657.0	1,657.0	18.4	18.4	16,579.2	16,011.9
Missouri	1,567.9	1,242.2	18,391.5	18,578.4	657.0	657.0	2.2	1.0	1,190.0	1,190.0	0.0	0.0	21,808.6	21,668.6
Nebraska	1,724.6	1,527.5	6,148.4	6,215.5	0.0	0.0	0.0	0.0	770.0	771.5	0.0	0.0	8,643.0	8,514.5
North Dakota	3,592.8	3,343.5	4,635.6	4,621.2	0.0	0.0	0.0	0.0	0.0	0.0	5.3	5.3	8,233.7	7,970.0
South Dakota	2,436.8	2,688.8	1,691.8	1,687.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4,128.6	4,375.9
South Atlantic	18,369.8	16,936.2	159,357.6	158,165.5	7,905.2	7,905.2	80.5	77.5	24,602.6	24,598.6	446.7	446.7	210,762.4	208,129.7
Delaware	46.1	44.9	3,331.4	3,364.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3,377.5	3,408.9
District of Columbia	23.0	12.0	9.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	32.0	21.0
Florida	1,865.2	1,662.8	53,176.0	52,848.5	0.0	0.0	0.0	0.0	3,572.0	3,572.0	348.7	348.7	58,961.9	58,432.0
Georgia	3,927.5	4,136.1	26,973.7	26,973.2	1,862.2	1,862.2	1.0	1.0	4,061.0	4,061.0	44.0	44.0	36,869.4	37,077.5
Maryland	1,090.1	1,059.8	10,278.7	9,559.7	0.0	0.0	13.0	11.0	1,707.8	1,707.8	0.0	0.0	13,089.6	12,338.3
North Carolina	6,133.3	5,211.1	21,644.3	21,824.9	86.0	86.0	1.0	0.0	5,117.6	5,113.6	54.0	54.0	33,036.2	32,289.6
South Carolina	2,152.4	1,911.7	11,435.2	11,472.3	2,716.0	2,716.0	0.0	0.0	6,576.2	6,576.2	0.0	0.0	22,879.8	22,672.2
Virginia	2,105.1	1,862.0	18,746.0	17,950.6	3,241.0	3,241.0	0.0	0.0	3,568.0	3,568.0	0.0	0.0	27,660.1	26,621.6
West Virginia	1,027.1	1,035.8	13,763.3	14,163.3	0.0	0.0	65.5	65.5	0.0	0.0	0.0	0.0	14,855.9	15,264.6
East South Central	8,769.9	8,131.8	65,250.8	65,811.4	1,616.3	1,616.3	1.0	0.0	10,984.1	10,984.1	1.4	1.4	86,623.5	86,545.0
Alabama	4,156.0	3,789.2	20,507.4	20,227.7	0.0	0.0	1.0	0.0	5,060.4	5,060.4	0.0	0.0	29,724.8	29,077.3
Kentucky	1,245.4	1,150.6	18,874.3	19,004.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20,119.7	20,154.9
Mississippi	435.3	277.8	13,989.9	14,278.0	0.0	0.0	0.0	0.0	1,401.0	1,401.0	1.4	1.4	15,827.6	15,958.2
Tennessee	2,933.2	2,914.2	11,879.2	12,301.4	1,616.3	1,616.3	0.0	0.0	4,522.7	4,522.7	0.0	0.0	20,951.4	21,354.6
West South Central	35,070.8	31,679.8	143,692.2	142,221.5	286.0	286.0	78.5	41.0	8,910.7	8,910.7	512.7	512.9	188,550.9	183,651.9
Arkansas	1,613.3	1,620.1	11,183.0	11,245.2	28.0	28.0	0.0	0.0	1,817.8	1,817.8	0.0	0.0	14,642.1	14,711.1
Louisiana	683.2	615.7	20,600.7	21,165.6	0.0	0.0	0.5	0.0	2,132.9	2,132.9	288.7	288.9	23,706.0	24,203.1
Oklahoma	7,856.0	7,582.4	18,577.0	18,175.5	258.0	258.0	0.0	0.0	0.0	0.0	0.0	0.0	26,691.0	26,015.9
Texas	24,918.3	21,861.6	93,331.5	91,635.2	0.0	0.0	78.0	41.0	4,960.0	4,960.0	224.0	224.0	123,511.8	118,721.8
Mountain	26,098.8	25,000.4	62,321.3	63,857.9	778.8	778.8	23.6	2.6	3,937.0	3,937.0	126.3	126.3	93,285.8	93,703.0
Arizona	5,014.4	4,915.3	19,407.3	19,407.3	216.3	216.3	20.0	0.0	3,937.0	3,937.0	0.0	0.0	28,595.0	28,475.9
Colorado	4,283.1	4,157.2	11,161.2	11,349.0	562.5	562.5	1.0	0.0	0.0	0.0	9.3	9.3	16,017.1	16,078.0
Idaho	4,011.9	3,893.3	1,127.6	1,148.1	0.0	0.0	0.0	0.0	0.0	0.0	14.8	14.8	5,154.3	5,056.2
Montana	3,446.3	3,429.3	2,740.4	2,740.4	0.0	0.0	0.0	0.0	0.0	0.0	44.0	44.0	6,230.7	6,213.7
Nevada	3,572.5	3,549.4	7,791.6	8,248.6	0.0	0.0	0.0	0.0	0.0	0.0	6.5	6.5	11,370.6	11,804.5
New Mexico	2,375.7	1,673.7	5,966.8	6,828.3	0.0	0.0	2.6	2.6	0.0	0.0	0.0	0.0	8,345.1	8,504.6
Utah	1,600.5	1,587.8	7,348.2	7,348.2	0.0	0.0	0.0	0.0	0.0	0.0	40.2	40.2	8,988.9	8,976.2
Wyoming	1,794.4	1,794.4	6,778.2	6,788.0	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	8,584.1	8,593.9
Pacific Contiguous	66,701.5	65,331.2	49,262.9	50,676.7	4,225.9	4,225.9	171.9	127.7	3,417.0	3,400.0	106.3	106.3	123,885.5	123,867.8
California	29,810.9	28,546.3	40,185.0	41,614.9	3,911.9	3,911.9	159.5	117.5	2,240.0	2,240.0	106.3	106.3	76,413.6	76,536.9
Oregon	12,191.8	12,011.2	4,318.1	4,318.1	0.0	0.0	5.0	5.0	0.0	0.0	0.0	0.0	16,514.9	16,334.3
Washington	24,698.8	24,773.7	4,759.8	4,743.7	314.0	314.0	7.4	5.2	1,177.0	1,160.0	0.0	0.0	30,957.0	30,996.6
Pacific Noncontiguous	1,128.3	1,070.5	4,222.6	4,216.6	0.0	0.0	88.7	73.5	0.0	0.0	26.6	26.6	5,466.2	5,387.2
Alaska	538.2	538.0	2,164.3	2,159.4	0.0	0.0	46.2	45.0	0.0	0.0	0.0	0.0	2,748.7	2,742.4
Hawaii	590.1	532.5	2,058.3	2,057.2	0.0	0.0	42.5	28.5	0.0	0.0	26.6	26.6	2,717.5	2,644.8
U.S. Total	210,802.6	199,691.8	748,241.4	750,282.4	22,810.4	22,778.7	711.9	601.1	99,628.9	99,564.8	2,174.4	1,414.0	1,084,369.6	1,074,332.8

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, 2017 and 2016 (Megawatts)

Census Division and State	Summer Capacity at Utility Scale Facilities														Small Scale Capacity		Capacity From Utility and Small Scale Facilities			
	Wind		Solar Photovoltaic		Solar Thermal		Conventional Hydroelectric		Biomass Sources		Geothermal		Total Renewable Sources		Estimated Solar Photovoltaic		Estimated Total Solar Photovoltaic		Estimated Total Solar	
	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
New England	1,400.6	1,348.0	776.8	578.1	0.0	0.0	1,960.7	1,957.4	1,530.2	1,644.5	0.0	0.0	5,668.3	5,528.0	1,792.0	1,410.1	2,568.8	1,988.2	2,568.8	1,988.2
Connecticut	1.0	1.1	34.5	25.2	0.0	0.0	122.2	122.2	203.5	203.5	0.0	0.0	361.2	352.0	332.6	264.6	367.1	289.8	367.1	289.8
Maine	921.6	898.8	5.6	0.0	0.0	0.0	732.4	732.4	686.0	803.9	0.0	0.0	2,345.6	2,435.1	32.0	23.4	37.6	23.4	37.6	23.4
Massachusetts	92.9	94.5	643.8	477.0	0.0	0.0	267.4	265.9	285.3	283.3	0.0	0.0	1,289.4	1,120.7	1,215.4	988.4	1,859.2	1,465.4	1,859.2	1,465.4
New Hampshire	183.1	183.1	0.0	0.0	0.0	0.0	504.8	504.8	241.0	241.0	0.0	0.0	928.9	928.9	70.3	51.6	70.3	51.6	70.3	51.6
Rhode Island	51.8	50.3	18.7	10.2	0.0	0.0	2.7	2.7	40.1	36.9	0.0	0.0	113.3	100.1	51.4	22.3	70.1	32.5	70.1	32.5
Vermont	150.2	120.2	74.2	65.7	0.0	0.0	331.2	329.4	74.3	75.9	0.0	0.0	629.9	591.2	90.3	59.8	164.5	125.5	164.5	125.5
Middle Atlantic	3,205.6	3,204.1	879.4	767.6	0.0	0.0	5,466.2	5,630.7	1,304.8	1,325.5	0.0	0.0	10,856.0	10,927.9	2,529.8	1,999.7	3,409.2	2,767.3	3,409.2	2,767.3
New Jersey	7.6	7.6	664.7	606.6	0.0	0.0	12.3	12.3	227.3	227.3	0.0	0.0	911.9	853.8	1,271.0	1,058.2	1,935.7	1,664.8	1,935.7	1,664.8
New York	1,826.2	1,824.7	162.9	110.2	0.0	0.0	4,554.3	4,718.8	524.1	520.1	0.0	0.0	7,067.5	7,173.8	983.5	727.8	1,146.4	838.0	1,146.4	838.0
Pennsylvania	1,371.8	1,371.8	51.8	50.8	0.0	0.0	899.6	899.6	553.4	578.1	0.0	0.0	2,876.6	2,900.3	275.3	213.7	327.1	264.5	327.1	264.5
East North Central	9,096.7	8,173.7	392.3	256.4	0.0	0.0	857.3	853.1	1,284.8	1,288.3	0.0	0.0	11,631.1	10,571.5	293.7	188.1	686.0	444.5	686.0	444.5
Illinois	4,261.8	3,983.8	34.8	32.8	0.0	0.0	34.1	34.1	117.2	121.7	0.0	0.0	4,447.9	4,172.4	49.9	26.9	84.7	59.7	84.7	59.7
Indiana	2,109.4	1,889.7	196.7	160.5	0.0	0.0	60.4	60.4	76.3	76.4	0.0	0.0	2,442.8	2,187.0	45.6	12.6	242.3	173.1	242.3	173.1
Michigan	1,691.8	1,434.8	73.0	12.5	0.0	0.0	266.9	263.0	559.1	560.5	0.0	0.0	2,590.8	2,270.8	52.8	NM	125.8	NM	125.8	NM
Ohio	604.4	533.9	69.4	47.5	0.0	0.0	101.9	101.9	147.4	143.9	0.0	0.0	923.1	827.2	100.6	78.8	170.0	126.3	170.0	126.3
Wisconsin	429.3	331.5	18.4	3.1	0.0	0.0	394.0	393.7	384.8	385.8	0.0	0.0	1,226.5	1,114.1	44.8	29.3	63.2	32.4	63.2	32.4
West North Central	22,078.6	20,381.3	580.4	290.7	0.0	0.0	3,291.7	3,289.4	557.4	553.1	0.0	0.0	26,508.1	24,514.5	262.2	189.7	842.6	480.4	842.6	480.4
Iowa	6,972.2	6,771.7	7.7	2.6	0.0	0.0	146.4	144.9	21.4	21.4	0.0	0.0	7,147.7	6,940.6	70.0	44.5	77.7	47.1	77.7	47.1
Kansas	5,116.0	4,455.0	4.2	1.2	0.0	0.0	7.0	7.0	9.0	9.0	0.0	0.0	5,136.2	4,472.2	11.2	5.8	15.4	7.0	15.4	7.0
Minnesota	3,707.9	3,359.2	503.3	253.9	0.0	0.0	205.9	205.9	485.0	480.7	0.0	0.0	4,902.1	4,299.7	45.7	29.3	549.0	283.2	549.0	283.2
Missouri	954.3	654.3	48.6	25.7	0.0	0.0	548.5	545.7	16.5	16.5	0.0	0.0	1,567.9	1,242.2	130.4	107.5	179.0	133.2	179.0	133.2
Nebraska	1,417.4	1,329.6	15.6	6.3	0.0	0.0	275.9	175.9	15.7	15.7	0.0	0.0	1,724.6	1,527.5	4.2	1.8	19.8	8.1	19.8	8.1
North Dakota	3,073.0	2,823.7	0.0	0.0	0.0	0.0	510.0	510.0	9.8	9.8	0.0	0.0	3,592.8	3,343.5	0.2	0.2	0.2	0.2	0.2	0.2
South Dakota	837.8	987.8	1.0	1.0	0.0	0.0	1,598.0	1,700.0	0.0	0.0	0.0	0.0	2,436.8	2,688.8	0.5	0.5	1.5	1.5	1.5	1.5
South Atlantic	1,086.3	1,086.3	5,644.2	4,023.0	0.0	0.0	7,268.2	7,498.7	4,371.1	4,328.2	0.0	0.0	18,369.8	16,936.2	1,355.1	1,000.1	6,999.3	5,023.1	6,999.3	5,023.1
Delaware	2.0	2.0	31.9	30.7	0.0	0.0	0.0	0.0	12.2	12.2	0.0	0.0	46.1	44.9	69.5	51.7	101.4	82.4	101.4	82.4
District of Columbia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.0	12.0	0.0	0.0	23.0	12.0	37.7	27.8	37.7	27.8	37.7	27.8
Florida	0.0	0.0	513.9	326.5	0.0	0.0	54.5	54.5	1,296.8	1,281.8	0.0	0.0	1,865.2	1,662.8	192.3	132.7	706.2	459.2	706.2	459.2
Georgia	0.0	0.0	974.9	968.1	0.0	0.0	2,047.2	2,275.1	905.4	892.9	0.0	0.0	3,927.5	4,136.1	NM	NM	NM	NM	NM	NM
Maryland	190.0	190.0	168.1	137.8	0.0	0.0	590.0	590.0	142.0	142.0	0.0	0.0	1,090.1	1,059.8	617.0	482.6	785.1	620.4	785.1	620.4
North Carolina	208.0	208.0	3,355.0	2,437.0	0.0	0.0	2,002.0	2,002.0	568.3	564.1	0.0	0.0	6,133.3	5,211.1	114.9	109.7	3,469.9	2,546.7	3,469.9	2,546.7
South Carolina	0.0	0.0	253.7	19.3	0.0	0.0	1,367.7	1,361.6	531.0	530.8	0.0	0.0	2,152.4	1,911.7	123.7	47.1	377.4	66.4	377.4	66.4
Virginia	0.0	0.0	346.7	103.6	0.0	0.0	866.0	892.4	892.4	892.4	0.0	0.0	2,105.1	1,862.0	46.5	29.5	393.2	133.1	393.2	133.1
West Virginia	686.3	686.3	0.0	0.0	0.0	0.0	340.8	349.5	0.0	0.0	0.0	0.0	1,027.1	1,035.8	5.8	4.0	5.8	4.0	5.8	4.0
East South Central	29.1	29.1	455.5	158.4	0.0	0.0	7,056.3	6,729.3	1,229.0	1,215.0	0.0	0.0	8,769.9	8,131.8	87.1	75.3	542.6	233.7	542.6	233.7
Alabama	0.0	0.0	179.3	75.0	0.0	0.0	3,290.8	3,042.3	685.9	671.9	0.0	0.0	4,156.0	3,789.2	NM	4.7	NM	79.7	NM	79.7
Kentucky	0.0	0.0	26.3	10.0	0.0	0.0	1,146.9	1,068.4	72.2	72.2	0.0	0.0	1,245.4	1,150.6	17.0	13.5	43.3	23.5	43.3	23.5
Mississippi	0.0	0.0	160.6	3.1	0.0	0.0	0.0	0.0	274.7	274.7	0.0	0.0	435.3	277.8	10.3	4.1	170.9	7.2	170.9	7.2
Tennessee	29.1	29.1	89.3	70.3	0.0	0.0	2,618.6	2,618.6	196.2	196.2	0.0	0.0	2,933.2	2,914.2	54.6	53.1	143.9	123.4	143.9	123.4
West South Central	29,480.9	26,825.8	1,280.8	596.9	0.0	0.0	2,987.5	2,988.3	1,321.6	1,268.8	0.0	0.0	35,070.8	31,679.8	441.5	404.2	1,722.3	1,001.1	1,722.3	1,001.1
Arkansas	0.0	0.0	19.0	13.0	0.0	0.0	1,263.9	1,266.7	330.4	340.4	0.0	0.0	1,613.3	1,620.1	7.3	4.6	26.3	17.6	26.3	17.6
Louisiana	0.0	0.0	1.1	0.0	0.0	0.0	192.0	192.0	490.1	423.7	0.0	0.0	683.2	615.7	121.2	119.9	122.3	119.9	122.3	119.9
Oklahoma	6,897.7	6,644.1	20.5	2.5	0.0	0.0	861.6	859.6	76.2	76.2	0.0	0.0	7,856.0	7,582.4	3.9	2.6	24.4	5.1	24.4	5.1
Texas	22,583.2	20,181.7	1,240.2	581.4	0.0	0.0	670.0	670.0	424.9	428.5	0.0	0.0	24,918.3	21,861.6	309.1	277.1	1,549.3	858.5	1,549.3	858.5
Mountain	8,812.5	8,080.2	5,480.9	5,165.5	473.9	473.9	10,574.4	10,560.4	174.3	176.1	582.8	544.3	26,098.8	25,000.4	1,957.8	1,584.4	7,438.7	6,749.9	7,912.6	7,223.8
Arizona	267.3	267.3	1,700.1	1,601.0	295.4	295.4	2,720.9	2,720.9	30.7	30.7	0.0	0.0	5,014.4	4,915.3	1,068.6	871.8	2,768.7	2,472.8	3,064.1	2,768.2
Colorado	3,106.2	3,026.1	460.8	417.4	0.0	0.0	687.4	685.0	28.7	28.7	0.0	0.0	4,283.1	4,157.2	327.3	281.1	788.1	698.5	788.1	698.5
Idaho	970.5	970.5	240.0	120.0	0.0	0.0	2,707.5	2,708.9	83.9	83.9	10.0	10.0	4,011.9	3,893.3	13.4	7.3	253.4	127.3	253.4	127.3
Montana	678.5	678.5	17.0	0.0	0.0	0.0	2,747.8	2,747.8	3.0	3.0	0.0	0.0	3,446.3	3,429.3	11.2	8.0	28.2	8.0	28.2	8.0
Nevada	150.0	150.0	1,684.6	1,700.0	178.5	178.5	1,051.4	1,051.4	9.8	9.8	498.2	459.7	3,572.5	3,549.4	227.3	209.5	1,911.9	1,909.5	2,090.4	2,088.0
New Mexico	1,764.5	1,112.3	521.3	471.3	0.0	0.0	82.9	82.9	5.4	5.6	1.6	1.6	2,375.7	1,673.7	116.1	88.1	637.4	559.4	637.4	559.4
Utah	388.2	388.2	857.1	855.8	0.0	0.0	269.4	256.4	12.8	14.4	73.0	73.0	1,600.5	1,587.8	190.6	116.4	1,047.7	972.2	1,047.7	972.2
Wyoming	1,487.3	1,487.3	0.0	0.0	0.0	0.0	307.1	307.1	0.0	0.0	0.0	0.0	1,794.4	1,794.4	NM	2.2	NM	2.2	NM	2.2
Pacific Contiguous	12,141.0	11,891.9	9,620.4	8,305.6	1,284.0	1,284.0	39,835.7	39,909.3	1,962.9	2,011.1	1,857.5	1,929.3	66,701.5	65,331.2	6,852.4	5,452.6	16,472.8	13,758.2	17,756.8	15,042.2
California	5,857.7	5,658.6	9,395.7	8,205.2	1,284.0	1,284.0	10,198.0	10,190.4	1,237.5	1,298.3	1,838.0	1,909.8	29,810.9	28,546.3	6,617.8	5,257.9	16,013.5	13,463.1	17,297.5	14,747.1
Oregon	3,210.2	3,160.2	224.2	99.9	0.0	0.0	8,423.2	8,423.2	314.7	308.4	19.5	19.5	12,191.8	12,011.2	135.5	116.6	359.7	216.5	359.7	216

Table 4.7.C. Net Summer Capacity of Utility Scale Units Using Primarily Fossil Fuels and by State, 2017 and 2016 (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 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
	New England	11,884.4	12,006.8	1,118.8	1,086.2	1,605.7	1,049.7	917.3	1,955.3	0.0	0.0	5,708.5	6,593.3	0.0	0.0	21,234.7
Connecticut	2,356.9	2,555.3	477.6	467.3	872.4	424.6	383.4	383.4	0.0	0.0	2,035.1	2,483.0	0.0	0.0	6,125.4	6,313.6
Maine	1,250.0	1,250.0	297.1	297.1	108.5	14.5	0.0	0.0	0.0	0.0	880.9	880.9	0.0	0.0	2,536.5	2,442.5
Massachusetts	5,259.3	5,193.3	333.5	318.0	199.7	198.0	0.0	1,038.0	0.0	0.0	2,588.4	3,018.4	0.0	0.0	8,380.9	9,765.7
New Hampshire	1,231.0	1,231.0	3.8	3.8	400.2	400.2	533.9	533.9	0.0	0.0	94.0	97.1	0.0	0.0	2,262.9	2,266.0
Rhode Island	1,787.2	1,777.2	6.8	0.0	24.9	12.4	0.0	0.0	0.0	0.0	12.2	16.0	0.0	0.0	1,831.1	1,805.6
Vermont	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	97.9	97.9	0.0	0.0	97.9	97.9
Middle Atlantic	26,068.9	26,300.6	7,682.3	7,716.4	15,129.1	14,067.5	13,530.2	15,721.7	78.6	78.6	5,398.7	5,356.2	129.2	125.2	68,017.0	69,366.2
New Jersey	8,158.0	8,103.2	2,845.0	2,857.3	497.7	1,052.4	609.0	1,245.0	11.6	11.6	226.2	222.2	23.4	23.4	12,370.9	13,515.1
New York	7,977.3	8,128.7	3,157.0	3,179.6	9,688.5	9,546.0	1,640.2	1,747.4	0.0	0.0	3,563.8	3,523.1	0.0	0.0	26,026.8	26,124.8
Pennsylvania	9,933.6	10,068.7	1,680.3	1,679.5	4,942.9	3,469.1	11,281.0	12,729.3	67.0	67.0	1,608.7	1,610.9	105.8	101.8	29,619.3	29,726.3
East North Central	18,862.0	17,080.1	26,579.8	26,346.3	4,212.9	3,902.3	60,678.3	61,504.4	247.6	247.6	2,643.3	2,678.2	1,092.9	1,165.9	114,316.8	112,924.8
Illinois	3,580.2	3,562.9	10,385.3	10,302.2	288.9	290.9	13,966.0	14,015.1	0.0	0.0	674.2	685.0	36.5	114.5	28,931.1	28,970.6
Indiana	2,406.0	2,406.0	3,405.8	3,266.6	729.1	725.9	15,761.4	15,776.8	0.0	0.0	237.8	237.8	619.3	614.3	23,159.4	23,027.4
Michigan	4,421.0	4,294.5	3,970.8	3,964.9	2,394.0	2,134.7	9,216.7	9,414.2	47.2	47.2	490.4	498.4	250.0	250.0	20,790.1	20,603.9
Ohio	5,704.0	4,074.8	5,446.1	5,431.7	189.2	153.3	14,605.4	15,181.6	142.0	142.0	636.5	640.0	187.1	187.1	26,910.3	25,810.5
Wisconsin	2,750.8	2,741.9	3,371.8	3,380.9	611.7	597.5	7,128.8	7,116.7	58.4	58.4	604.4	617.0	0.0	0.0	14,525.9	14,512.4
West North Central	6,633.1	5,988.3	11,523.4	11,341.1	4,378.2	4,152.0	34,116.0	34,780.4	32.0	32.0	3,874.4	4,048.3	8.4	8.4	60,565.5	60,350.5
Iowa	1,772.6	1,121.1	1,265.7	1,140.3	532.8	670.4	5,497.9	5,548.8	32.0	32.0	820.7	990.9	0.0	0.0	9,921.7	9,503.5
Kansas	266.0	266.0	2,148.3	2,169.0	2,096.7	2,057.5	4,714.2	4,683.2	0.0	0.0	550.6	533.3	0.0	0.0	9,775.8	9,709.0
Minnesota	2,172.0	2,172.0	2,456.4	2,437.9	275.8	322.3	4,309.4	4,308.5	0.0	0.0	787.1	795.1	0.0	0.0	10,000.7	10,035.8
Missouri	1,789.9	1,796.6	3,399.6	3,420.5	836.1	501.0	11,260.8	11,726.1	0.0	0.0	1,105.1	1,134.2	0.0	0.0	18,391.5	18,578.4
Nebraska	342.6	342.6	1,150.8	1,150.8	516.5	592.1	3,817.3	3,817.3	0.0	0.0	321.2	312.7	0.0	0.0	6,148.4	6,215.5
North Dakota	0.0	0.0	408.0	328.0	111.6	0.0	4,042.4	4,222.5	0.0	0.0	65.2	62.3	8.4	8.4	4,635.6	4,621.2
South Dakota	290.0	290.0	694.6	694.6	8.7	8.7	474.0	474.0	0.0	0.0	224.5	219.8	0.0	0.0	1,691.8	1,687.1
South Atlantic	53,188.3	50,670.3	31,786.6	32,396.9	7,308.6	7,272.4	56,389.3	57,079.7	142.8	83.8	10,407.0	10,527.4	135.0	135.0	159,357.6	158,165.5
Delaware	1,512.0	1,512.0	317.2	315.2	843.1	877.7	410.0	410.0	0.0	0.0	114.1	114.1	135.0	135.0	3,331.4	3,364.0
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	27,953.7	26,966.7	7,890.1	8,557.5	2,481.2	2,469.3	9,822.0	9,881.0	59.0	0.0	4,970.0	4,974.0	0.0	0.0	53,176.0	52,848.5
Georgia	7,963.9	7,957.7	7,787.2	7,823.8	832.9	796.4	9,360.5	9,360.5	83.8	83.8	945.4	951.0	0.0	0.0	26,973.7	26,973.2
Maryland	976.0	250.0	1,957.6	1,966.2	1,414.2	1,414.2	4,712.0	4,712.0	0.0	0.0	1,218.9	1,217.3	0.0	0.0	10,278.7	9,559.7
North Carolina	4,724.8	4,724.8	6,045.1	5,957.7	0.0	0.0	10,536.8	10,745.8	0.0	0.0	337.6	396.6	0.0	0.0	21,644.3	21,824.9
South Carolina	2,399.0	2,399.0	2,814.8	2,801.9	546.0	546.0	5,212.0	5,212.0	0.0	0.0	463.4	513.4	0.0	0.0	11,435.2	11,472.3
Virginia	7,658.9	6,860.1	3,894.3	3,894.3	1,068.2	1,045.8	3,778.0	3,800.4	0.0	0.0	2,346.6	2,350.0	0.0	0.0	18,746.0	17,950.6
West Virginia	0.0	0.0	1,071.3	1,071.3	123.0	123.0	12,558.0	12,958.0	0.0	0.0	11.0	11.0	0.0	0.0	13,763.3	14,163.3
East South Central	20,632.1	19,097.9	12,646.9	13,002.4	6,053.8	5,338.8	25,756.2	28,210.5	0.0	0.0	142.0	142.0	19.8	19.8	65,250.8	65,811.4
Alabama	9,618.4	9,441.4	2,532.2	2,532.2	2,791.3	1,908.3	5,503.1	6,283.4	0.0	0.0	42.6	42.6	19.8	19.8	20,507.4	20,227.7
Kentucky	1,763.0	663.0	4,976.6	4,976.6	260.0	260.0	11,862.8	13,092.8	0.0	0.0	11.9	11.9	0.0	0.0	18,874.3	19,004.3
Mississippi	7,847.7	7,590.5	1,357.6	1,718.9	2,936.3	3,104.3	1,804.0	1,820.0	0.0	0.0	44.3	44.3	0.0	0.0	13,989.9	14,278.0
Tennessee	1,403.0	1,403.0	3,780.5	3,774.7	66.2	66.2	6,586.3	7,014.3	0.0	0.0	43.2	43.2	0.0	0.0	11,879.2	12,301.4
West South Central	60,410.1	58,389.5	13,977.4	13,425.8	31,660.5	32,190.2	35,856.2	36,423.7	957.9	955.7	174.8	181.3	655.3	655.3	143,692.2	142,221.5
Arkansas	4,566.0	4,620.5	702.8	702.8	802.0	793.7	5,100.0	5,116.0	0.0	0.0	12.2	12.2	0.0	0.0	11,183.0	11,245.2
Louisiana	7,537.0	7,552.8	2,357.9	2,372.8	6,528.4	7,042.3	2,832.6	2,852.9	894.1	891.9	43.3	45.5	407.4	407.4	20,600.7	21,165.6
Oklahoma	7,247.6	6,783.7	1,684.9	1,295.2	5,235.5	5,156.4	4,334.6	4,865.8	0.0	0.0	74.4	74.4	0.0	0.0	18,577.0	18,175.5
Texas	41,059.5	39,432.5	9,231.8	9,055.0	19,094.6	19,197.8	23,589.0	23,589.0	63.8	63.8	44.9	49.2	247.9	247.9	93,331.5	91,635.2
Mountain	22,483.8	22,494.2	8,638.9	8,859.0	3,693.9	3,341.9	26,989.0	28,628.4	52.0	52.0	356.3	370.8	107.4	111.6	62,321.3	63,857.9
Arizona	9,891.6	9,891.6	2,367.6	2,367.6	1,303.6	1,303.6	5,754.0	5,754.0	0.0	0.0	90.5	90.5	0.0	0.0	19,407.3	19,407.3
Colorado	3,240.5	3,240.5	2,572.3	2,572.3	681.0	329.0	4,499.0	5,038.8	0.0	0.0	168.4	168.4	0.0	0.0	11,161.2	11,349.0
Idaho	547.7	558.1	552.0	562.1	14.0	14.0	8.5	8.5	0.0	0.0	5.4	5.4	0.0	0.0	1,127.6	1,148.1
Montana	0.0	0.0	321.6	321.6	72.2	72.2	2,293.1	2,293.1	52.0	52.0	0.0	0.0	1.5	1.5	2,740.4	2,740.4
Nevada	5,415.0	5,415.0	1,185.6	1,385.6	444.6	444.6	740.4	997.4	0.0	0.0	6.0	6.0	0.0	0.0	7,791.6	8,248.6
New Mexico	1,465.0	1,465.0	966.0	976.0	849.4	849.4	2,634.0	3,471.0	0.0	0.0	52.4	66.9	0.0	0.0	5,966.8	6,828.3
Utah	1,830.0	1,830.0	520.2	316.2	316.2	4,654.0	4,654.0	0.0	0.0	27.8	27.8	0.0	0.0	7,348.2	7,348.2	
Wyoming	94.0	94.0	153.6	153.6	12.9	12.9	6,406.0	6,411.6	0.0	0.0	5.8	5.8	105.9	110.1	6,778.2	6,788.0
Pacific Contiguous	26,030.1	25,975.2	11,680.4	11,757.3	8,861.1	10,293.6	1,982.0	1,982.0	17.0	17.0	470.9	422.3	221.4	229.3	49,262.9	50,676.7
California	20,001.6	19,962.8	10,827.2	10,904.1	8,605.1	10,037.6	57.0	57.0	17.0	17.0	455.7	407.1	221.4	229.3	40,185.0	41,614.9
Oregon	3,374.9	3,374.9	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	4,318.1
Washington	2,653.6	2,637.5	719.4	719.4	31.6	31.6	1,340.0	1,340.0	0.0	0.0	15.2	15.2	0.0	0.0	4,759.8	4,743.7
Pacific Noncontiguous	479.2	479.2	626.3	626.3	175.0	175.0	332.8	333.8	0.0	0.0	2,602.9	2,595.9	6.4	6.4	4,222.6	4,216.6
Alaska	479.2	479.2	626.3	626.3	175.0	175.0	152.8	153.8	0.0	0.0	731.0	725.1	0.0			

Table 4.8.A. Capacity Factors for Utility Scale Generators Primarily Using Fossil Fuels, January 2013-December 2017

Period	Coal	Natural Gas				Petroleum			
		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%	
2017	53.7%	51.3%	6.7%	10.5%	9.9%	13.5%	0.9%	2.3%	
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%	
Year 2017									
January	59.9%	46.7%	5.3%	4.3%	9.2%	11.6%	0.7%	3.0%	
February	49.7%	44.4%	5.4%	3.8%	7.9%	10.3%	0.8%	2.4%	
March	46.3%	44.8%	6.5%	7.2%	7.8%	13.0%	0.8%	2.7%	
April	43.6%	42.5%	5.6%	8.7%	8.0%	10.1%	0.6%	1.9%	
May	48.4%	45.8%	6.0%	9.1%	8.2%	15.9%	0.8%	2.0%	
June	58.5%	56.0%	7.3%	14.1%	10.3%	15.8%	0.8%	2.0%	
July	67.1%	67.0%	9.1%	20.8%	13.0%	18.5%	0.9%	2.1%	
August	62.9%	65.5%	8.0%	16.1%	12.3%	14.9%	0.9%	2.3%	
September	53.8%	55.7%	7.8%	13.3%	10.9%	14.2%	1.1%	2.3%	
October	47.5%	48.2%	6.6%	12.4%	10.2%	11.7%	0.9%	2.1%	
November	49.3%	45.6%	5.8%	7.0%	10.1%	12.3%	0.7%	2.1%	
December	56.2%	52.3%	6.4%	8.5%	10.3%	14.3%	1.4%	2.4%	

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 2017

Period	Nuclear	Conventional Hydropower	Wind	Solar Photovoltaic	Solar Thermal	Landfill Gas and Municipal 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%
2017	92.2%	43.1%	34.6%	25.7%	21.8%	68.0%	57.8%	74.0%
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%
Year 2017								
January	98.7%	45.4%	32.6%	12.7%	7.3%	73.0%	59.7%	75.9%
February	95.0%	44.1%	38.6%	17.2%	11.7%	69.2%	59.9%	75.3%
March	87.8%	49.1%	40.6%	25.1%	22.9%	66.7%	60.7%	74.1%
April	79.1%	51.1%	41.1%	28.4%	24.9%	66.4%	52.3%	75.9%
May	82.7%	54.7%	36.2%	32.5%	31.0%	68.7%	49.9%	70.5%
June	93.4%	52.7%	32.9%	35.9%	37.9%	69.7%	56.7%	68.9%
July	96.2%	45.1%	25.6%	32.7%	25.4%	67.4%	60.4%	74.4%
August	97.7%	37.3%	21.8%	30.4%	27.6%	68.2%	60.8%	73.9%
September	94.9%	33.4%	29.5%	29.1%	29.2%	65.7%	55.2%	73.6%
October	89.0%	31.0%	40.2%	26.4%	24.1%	63.8%	54.1%	67.5%
November	92.9%	36.0%	39.1%	19.4%	10.3%	67.8%	59.9%	73.2%
December	99.4%	37.7%	38.0%	17.7%	9.0%	69.6%	63.3%	85.1%

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.A. Total Capacity of Distributed and Dispersed Generators by Technology Type, 2007 through 2015 (Table Discontinued)

Year	Capacity (MW)										Number of Generators
	Internal Combustion	Combustion Turbine	Steam Turbine	Hydro	Wind	Photovoltaic	Storage	Other	Wind and Other	Total	
Distributed Generators											
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											
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											
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.B Total Capacity of Non Net Metered Distributed Generators by Technology Type and Sector, 2010 through 2017

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
2017	86.766	851.363	306.305	--	78.180	1,322.614
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
2017	11.750	56.187	25.069	--	5.893	98.899
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
2017	1.250	1.920	1.254	--	0.431	4.855
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
2017	5.915	30.763	8.033	--	103.607	148.318
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
2017	2.632	16.453	1.044	--	8.988	29.117
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
2017	186.910	513.251	177.192	--	120.946	998.299
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
2017	3.916	42.884	12.271	--	1.444	60.515
Fuel Cell						
2010	--	--	--	--	--	--
2011	--	--	--	--	--	--
2012	--	--	--	--	--	--
2013	--	--	--	--	--	--
2014	--	--	--	--	--	--
2015	--	--	--	--	--	--
2016	0.161	6.229	3.700	--	0.225	10.315
2017	0.167	7.953	6.336	--	0.625	15.081
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
2017	1.139	33.093	12.729	--	4.950	51.911
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
2017	300.445	1,553.867	550.233	--	325.064	2,729.609
Total Number of Generators						
2010	--	--	--	--	--	15,630
2011	--	--	--	--	--	20,941
2012	--	--	--	--	--	28,252
2013	--	--	--	--	--	196,141
2014	--	--	--	--	--	203,099
2015	--	--	--	--	--	215,825
2016	--	--	--	--	--	195,703
2017	--	--	--	--	--	215,889

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, 2007 through 2017

Year	Capacity (MW)					Customers				
	Residential	Commercial	Industrial	Transportation	Total	Residential	Commercial	Industrial	Transportation	Total
Historical Data										
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
2017	9,486.987	5,119.870	1,197.785	--	15,804.641	1,626,283	69,538	5,267	--	1,701,088
Storage										
2016	4.489	7.575	11.698	--	23.762	793	79	31	--	903
2017	13.276	15.356	12.328	--	40.960	2,316	137	34	--	2,487
Virtual PV (1 MW and over)										
2016	15.171	194.318	--	--	209.489	5,193	322	--	--	5,515
2017	11.115	287.440	2.000	--	300.555	3,611	535	2	--	4,148
Virtual PV (under 1 MW)										
2016	27.482	73.116	3.168	--	103.766	8,705	1,506	11	--	10,222
2017	42.005	129.547	5.136	--	176.689	11,337	2,372	17	--	13,726
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
2017	35.005	119.651	49.507	--	204.163	5,258	1,429	111	--	6,798
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
2017	9.064	208.639	199.398	--	417.101	915	693	330	--	1,938
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
2017	9,584.177	5,865.147	1,453.826	--	16,903.148	1,647,404	74,567	5,727	--	1,727,698

N/A = Not Available.

Total customer count for the years 2007, 2009, and 2010 were revised based on requests from respondents.

Capacity and customer count was not collected by technology type before 2010.

Starting in 2013, there is no maximum capacity on installed units.

Starting in 2016, utilities have the option to report photovoltaic in DC or AC. Values have been converted to AC.

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, 2017
(Megawatts, Percent)**

Producer Type	Total Net Summer Capacity of All Generators Reporting Natural Gas as the Primary Fuel	Fuel-Switchable Part of Total			
		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	236,557.8	83,339.7	35.2%	81,219.6	18,797.7
Independent Power Producers, Non-Combined Heat and Power Plants	176,029.0	41,394.4	23.5%	38,116.3	7,190.3
Independent Power Producers, Combined Heat and Power Plants	26,922.1	4,777.4	17.7%	4,536.9	357.6
Electric Power Sector Subtotal	439,508.9	129,511.5	29.5%	123,872.8	26,345.6
Commercial Sector	2,018.7	881.8	43.7%	837.9	113.0
Industrial Sector	14,484.0	917.8	6.3%	901.3	99.5
All Sectors	456,011.6	131,311.1	28.8%	125,612.0	26,558.1

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, 2017 (Megawatts, Percent)

Producer Type	Total Net Summer Capacity of All Generators Reporting Petroleum Liquids as the Primary Fuel	Fuel-Switchable Part of Total		
		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	19,048.4	3,957.6	20.8%	3,946.1
Independent Power Producers, Non-Combined Heat and Power Plants	11,641.0	2,781.4	23.9%	1,964.2
Independent Power Producers, Combined Heat and Power Plants	249.2	--	0.0%	--
Electric Power Sector Subtotal	30,938.6	6,739.0	21.8%	5,910.3
Commercial Sector	596.5	13.2	2.2%	13.7
Industrial Sector	243.7	35.4	14.5%	31.4
All Sectors	31,778.8	6,787.6	21.4%	5,955.4

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, 2017 (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	178	28,135.3	8,775.9
Combined Cycle	392	45,423.5	5,813.2
Internal Combustion	329	1,263.3	414.8
Gas Turbine	881	56,489.0	11,554.2
All Fuel Switchable Prime Movers	1,780	131,311.1	26,558.1

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, 2017 (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	294	12,279.9	4,648.5
1970-1974	270	14,846.4	4,573.1
1975-1979	100	11,325.2	3,212.2
1980-1984	42	862.1	205.7
1985-1989	91	2,812.7	329.2
1990-1994	201	11,556.4	1,448.4
1995-1999	132	9,527.7	1,940.8
2000-2004	398	38,056.4	6,531.0
2005-2009	119	15,480.1	1,867.5
2010-2014	98	10,883.4	99.2
2015-2017	35	3,680.8	1,702.5
Total	1,780	131,311.1	26,558.1

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, 2007 - 2017 (Thousand Tons)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	663,911	484,389	176,643	95	2,783
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
Year 2017					
January	63,460	46,708	16,471	11	270
February	47,985	35,491	12,240	9	245
March	48,840	35,655	12,926	9	250
April	44,279	31,403	12,656	6	214
May	50,898	37,373	13,294	6	224
June	58,852	43,744	14,881	6	221
July	69,769	51,971	17,560	7	230
August	65,761	48,954	16,574	7	227
September	54,713	39,390	15,098	8	218
October	50,015	36,190	13,591	7	227
November	50,882	35,778	14,873	8	222
December	58,457	41,733	16,479	9	236

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, 2007 - 2017 (Thousand Tons)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	14,667	2,802	1,158	515	10,192
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
Year 2017					
January	1,470	300	117	59	995
February	1,198	213	104	48	832
March	1,292	238	106	57	892
April	1,129	221	78	36	794
May	1,137	209	75	34	819
June	1,153	211	84	34	823
July	1,202	254	96	40	812
August	1,214	256	100	36	823
September	1,103	207	86	38	773
October	1,223	223	94	35	871
November	1,260	263	98	44	855
December	1,285	208	119	56	903

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, 2007 - 2017 (Thousand Tons)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	678,578	487,192	177,801	610	12,975
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
Year 2017					
January	64,930	47,008	16,588	71	1,264
February	49,183	35,705	12,344	58	1,077
March	50,132	35,893	13,032	66	1,141
April	45,408	31,624	12,735	42	1,008
May	52,034	37,582	13,370	39	1,043
June	60,005	43,955	14,965	40	1,045
July	70,971	52,225	17,656	47	1,042
August	66,975	49,209	16,673	43	1,050
September	55,817	39,596	15,184	45	991
October	51,238	36,413	13,686	42	1,098
November	52,142	36,042	14,971	52	1,077
December	59,743	41,940	16,598	66	1,139

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.D. Coal: Consumption for Electricity Generation, by Sector, 2007 - 2017 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	12,606,527	9,328,961	3,219,833	1,914	55,820
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
Year 2017					
January	1,200,950	894,562	300,722	238	5,428
February	907,773	677,464	225,239	194	4,875
March	934,819	690,256	239,313	187	5,063
April	849,822	613,913	231,356	117	4,436
May	970,719	724,208	241,926	112	4,473
June	1,125,323	850,061	270,677	127	4,458
July	1,336,225	1,009,439	322,063	148	4,575
August	1,249,576	943,848	301,025	137	4,566
September	1,029,572	752,508	272,541	157	4,367
October	941,497	695,389	241,428	139	4,541
November	950,245	676,718	268,997	162	4,368
December	1,110,005	800,595	304,546	195	4,669

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.E. Coal: Consumption for Useful Thermal Output, by Sector, 2007 - 2017 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	297,520	48,745	24,682	10,284	213,810
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
Year 2017					
January	29,768	5,162	2,524	1,194	20,889
February	24,170	3,662	2,172	966	17,370
March	26,109	4,069	2,292	1,125	18,622
April	23,172	3,834	1,753	720	16,865
May	23,096	3,697	1,703	677	17,019
June	23,527	3,737	1,779	678	17,333
July	24,275	4,509	2,038	813	16,915
August	24,576	4,500	2,062	710	17,304
September	22,605	3,663	1,898	748	16,296
October	24,851	3,851	2,040	659	18,301
November	25,250	4,533	1,992	869	17,855
December	26,121	3,527	2,428	1,125	19,041

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, 2007 - 2017 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	12,904,048	9,377,705	3,244,514	12,198	269,630
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
Year 2017					
January	1,230,718	899,723	303,245	1,432	26,318
February	931,943	681,127	227,411	1,160	22,245
March	960,928	694,325	241,606	1,312	23,685
April	872,994	617,747	233,109	837	21,301
May	993,816	727,905	243,630	790	21,491
June	1,148,850	853,799	272,456	804	21,791
July	1,360,500	1,013,948	324,101	961	21,490
August	1,274,152	948,348	303,087	847	21,870
September	1,052,177	756,171	274,439	905	20,662
October	966,348	699,240	243,468	798	22,842
November	975,495	681,251	270,989	1,031	22,224
December	1,136,127	804,122	306,975	1,320	23,709

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.A. Petroleum Liquids: Consumption for Electricity Generation, by Sector, 2007 - 2017 (Thousand Barrels)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	21,696	15,567	5,461	191	476
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
Year 2017					
January	1,937	1,436	433	20	48
February	1,542	1,143	345	13	41
March	1,658	1,342	262	15	40
April	1,479	1,153	281	9	36
May	1,713	1,290	373	15	35
June	1,763	1,313	403	13	34
July	1,592	1,173	369	16	34
August	1,710	1,267	390	19	34
September	1,623	1,199	372	14	38
October	1,674	1,303	319	13	39
November	1,591	1,170	362	15	45
December	3,414	1,779	1,551	31	52

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.B. Petroleum Liquids: Consumption for Useful Thermal Output, by Sector, 2007 - 2017 (Thousand Barrels)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	2,012	72	220	238	1,482
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
Year 2017					
January	199	13	37	36	113
February	137	9	17	24	87
March	152	5	8	26	113
April	140	3	10	12	117
May	137	3	12	15	107
June	120	4	13	10	92
July	117	3	12	12	89
August	119	3	11	15	91
September	134	3	18	11	102
October	142	3	16	13	110
November	242	4	19	19	200
December	373	19	47	46	262

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.C. Petroleum Liquids: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2007 - 2017 (Thousand Barrels)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	23,708	15,640	5,681	429	1,958
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
Year 2017					
January	2,136	1,450	470	56	161
February	1,679	1,152	362	37	128
March	1,810	1,346	271	40	152
April	1,620	1,155	291	21	153
May	1,850	1,293	385	30	142
June	1,883	1,317	416	23	126
July	1,709	1,177	381	28	123
August	1,829	1,270	400	33	125
September	1,756	1,202	390	24	140
October	1,816	1,306	335	26	149
November	1,833	1,174	381	34	245
December	3,787	1,797	1,598	77	314

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.D. Petroleum Liquids: Consumption for Electricity Generation, by Sector, 2007 - 2017 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	128,649	92,975	31,895	1,125	2,654
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
Year 2017					
January	11,395	8,535	2,476	117	267
February	9,119	6,782	2,041	74	222
March	9,779	7,952	1,519	86	222
April	8,755	6,866	1,631	54	204
May	10,167	7,718	2,168	88	193
June	10,471	7,884	2,327	76	184
July	9,466	7,027	2,159	93	187
August	10,181	7,603	2,279	109	190
September	9,616	7,183	2,142	79	212
October	9,970	7,836	1,841	77	216
November	9,409	6,972	2,093	87	257
December	20,321	10,617	9,218	185	300

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, 2007 - 2017 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	11,825	405	1,253	1,432	8,736
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
Year 2017					
January	1,144	77	194	217	656
February	782	40	102	147	492
March	895	27	49	155	665
April	823	14	56	71	682
May	798	16	72	89	621
June	693	24	73	62	533
July	680	19	73	74	515
August	694	17	62	87	528
September	790	17	104	65	604
October	831	19	94	77	642
November	1,471	23	116	113	1,219
December	2,224	112	259	275	1,578

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.F. Petroleum Liquids: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2007 - 2017 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	140,474	93,379	33,148	2,557	11,389
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
Year 2017					
January	12,539	8,613	2,670	334	923
February	9,901	6,823	2,143	222	713
March	10,674	7,979	1,568	241	887
April	9,578	6,880	1,687	125	886
May	10,965	7,734	2,240	177	815
June	11,164	7,908	2,400	139	717
July	10,147	7,046	2,232	166	703
August	10,875	7,619	2,342	196	718
September	10,406	7,200	2,246	144	816
October	10,802	7,855	1,935	153	858
November	10,880	6,994	2,209	201	1,476
December	22,544	10,729	9,477	461	1,878

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 5.3.A. Petroleum Coke: Consumption for Electricity Generation, by Sector, 2007 - 2017 (Thousand Tons)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	3,490	2,731	542	3	214
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
Year 2017					
January	368	301	51	0	15
February	277	217	44	0	15
March	265	214	31	0	20
April	168	110	41	0	16
May	329	264	49	0	16
June	350	282	48	0	20
July	344	271	51	0	22
August	300	226	52	0	22
September	276	209	50	0	16
October	228	171	40	0	18
November	293	234	40	0	18
December	292	231	44	0	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.

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 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, 2007 - 2017 (Thousand Tons)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	977	11	115	15	836
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
Year 2017					
January	81	0	10	2	70
February	69	0	10	1	58
March	90	1	10	2	77
April	74	0	10	1	64
May	78	1	10	1	66
June	91	1	9	1	80
July	86	1	10	0	75
August	90	2	9	2	77
September	76	1	9	2	64
October	86	1	9	1	74
November	80	1	9	1	69
December	76	1	10	2	63

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, 2007 - 2017 (Thousand Tons)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	4,467	2,742	657	17	1,050
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
Year 2017					
January	449	301	61	2	85
February	347	218	54	1	74
March	355	215	41	2	97
April	242	110	51	1	80
May	406	265	59	1	82
June	441	283	57	1	100
July	430	272	60	0	98
August	390	228	61	2	99
September	352	211	60	2	80
October	314	172	49	2	92
November	373	235	49	1	87
December	368	233	54	2	80

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.D. Petroleum Coke: Consumption for Electricity Generation, by Sector, 2007 - 2017 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	94,136	72,919	15,100	72	6,045
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
Year 2017					
January	9,816	7,962	1,411	9	434
February	7,611	5,942	1,225	6	439
March	7,257	5,813	864	8	573
April	4,481	2,859	1,154	3	466
May	8,922	7,123	1,351	4	444
June	9,520	7,640	1,338	3	539
July	9,185	7,140	1,420	2	623
August	8,115	6,024	1,461	9	620
September	7,540	5,658	1,418	9	455
October	6,092	4,478	1,114	6	494
November	7,861	6,242	1,111	4	504
December	7,735	6,038	1,234	9	454

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.

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.E. Petroleum Coke: Consumption for Useful Thermal Output, by Sector, 2007 - 2017 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	28,680	297	3,335	403	24,645
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
Year 2017					
January	2,366	5	279	53	2,029
February	2,058	11	273	31	1,742
March	2,626	17	298	46	2,267
April	2,211	3	288	15	1,904
May	2,292	20	295	20	1,956
June	2,637	24	274	14	2,324
July	2,527	32	275	10	2,211
August	2,675	56	270	55	2,294
September	2,245	31	265	52	1,896
October	2,539	26	276	35	2,203
November	2,317	35	257	21	2,004
December	2,187	36	286	50	1,815

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 5.3.F. Petroleum Coke: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2007 - 2017 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	122,816	73,216	18,435	475	30,690
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
Year 2017					
January	12,182	7,967	1,690	63	2,463
February	9,669	5,953	1,498	37	2,181
March	9,884	5,829	1,161	54	2,839
April	6,692	2,862	1,442	18	2,370
May	11,214	7,144	1,646	24	2,400
June	12,156	7,664	1,612	17	2,863
July	11,712	7,172	1,695	11	2,833
August	10,791	6,080	1,731	65	2,915
September	9,785	5,690	1,683	61	2,351
October	8,631	4,503	1,390	41	2,697
November	10,178	6,276	1,368	26	2,509
December	9,922	6,074	1,521	58	2,269

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 5.4.A. Natural Gas: Consumption for Electricity Generation, by Sector, 2007 - 2017 (Million Cubic Feet)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	9,507,760	4,754,883	4,161,987	50,060	540,830
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
Year 2017					
January	679,456	337,365	291,293	4,212	46,587
February	587,375	291,892	250,059	3,763	41,661
March	690,237	350,941	290,725	4,044	44,527
April	646,952	331,856	268,401	3,537	43,158
May	720,458	374,380	298,341	3,820	43,917
June	872,928	436,021	386,492	4,400	46,015
July	1,104,716	552,301	498,292	4,942	49,181
August	1,043,414	516,896	474,421	4,803	47,295
September	877,808	433,254	397,947	4,400	42,206
October	791,673	385,327	358,763	4,105	43,478
November	686,346	340,195	298,079	3,776	44,297
December	806,395	404,455	349,174	4,259	48,508

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 5.4.B. Natural Gas: Consumption for Useful Thermal Output, by Sector, 2007 - 2017 (Million Cubic Feet)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	1,168,850	38,740	309,945	104,324	715,842
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
Year 2017					
January	101,360	3,704	27,262	9,905	60,489
February	90,127	3,216	23,614	8,341	54,956
March	97,233	3,489	27,021	8,120	58,603
April	89,236	2,985	23,807	6,830	55,614
May	92,148	3,093	24,244	7,223	57,587
June	95,359	2,722	25,799	8,475	58,363
July	103,932	3,441	27,792	9,956	62,744
August	101,846	3,216	27,487	9,983	61,161
September	97,464	2,980	25,078	8,964	60,443
October	97,666	3,046	25,407	8,647	60,566
November	95,578	3,119	24,763	8,391	59,305
December	106,899	3,729	27,671	9,488	66,010

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 5.4.C. Natural Gas: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2007 - 2017 (Million Cubic Feet)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	10,676,610	4,793,623	4,471,932	154,383	1,256,672
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
Year 2017					
January	780,816	341,068	318,555	14,116	107,077
February	677,502	295,109	273,673	12,104	96,617
March	787,471	354,430	317,746	12,165	103,130
April	736,188	334,841	292,208	10,367	98,772
May	812,607	377,474	322,585	11,043	101,504
June	968,287	438,743	412,291	12,875	104,377
July	1,208,649	555,742	526,084	14,898	111,925
August	1,145,261	520,111	501,908	14,786	108,456
September	975,272	436,234	423,025	13,364	102,649
October	889,339	388,373	384,170	12,752	104,044
November	781,924	343,314	322,841	12,167	103,602
December	913,294	408,184	376,845	13,747	114,519

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.

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.D. Natural Gas: Consumption for Electricity Generation, by Sector, 2007 - 2017 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	9,827,462	4,911,620	4,308,244	51,592	556,006
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
Year 2017					
January	702,977	349,274	301,725	4,338	47,640
February	607,111	301,492	258,897	3,878	42,844
March	713,069	362,350	300,801	4,169	45,749
April	668,315	342,730	277,564	3,645	44,377
May	743,913	386,360	308,469	3,919	45,165
June	902,146	450,385	399,885	4,530	47,346
July	1,142,962	571,277	515,972	5,091	50,622
August	1,079,107	534,285	491,186	4,950	48,686
September	908,471	447,955	412,521	4,539	43,457
October	817,566	397,372	371,287	4,233	44,674
November	708,507	350,697	308,349	3,899	45,562
December	833,318	417,443	361,588	4,401	49,885

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.

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.

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.E. Natural Gas: Consumption for Useful Thermal Output, by Sector, 2007 - 2017 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	1,204,917	39,828	318,607	107,987	738,495
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
Year 2017					
January	104,566	3,810	28,027	10,257	62,471
February	92,873	3,306	24,245	8,635	56,687
March	100,170	3,583	27,752	8,398	60,438
April	91,908	3,067	24,450	7,056	57,335
May	94,921	3,177	24,898	7,455	59,391
June	98,312	2,799	26,524	8,772	60,218
July	107,185	3,541	28,572	10,313	64,759
August	105,007	3,312	28,256	10,337	63,102
September	100,615	3,065	25,843	9,284	62,423
October	100,665	3,126	26,138	8,955	62,445
November	98,498	3,201	25,454	8,695	61,149
December	110,198	3,841	28,448	9,832	68,078

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, 2007 - 2017 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	11,032,379	4,951,447	4,626,851	159,580	1,294,501
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
Year 2017					
January	807,542	353,085	329,752	14,595	110,111
February	699,984	304,797	283,142	12,514	99,531
March	813,240	365,932	328,554	12,567	106,187
April	760,223	345,797	302,014	10,700	101,712
May	838,834	389,538	333,367	11,374	104,555
June	1,000,458	453,184	426,408	13,302	107,564
July	1,250,147	574,819	544,544	15,404	115,380
August	1,184,113	537,596	519,442	15,288	111,788
September	1,009,086	451,020	438,363	13,822	105,881
October	918,231	400,498	397,425	13,188	107,119
November	807,005	353,898	333,803	12,593	106,711
December	943,516	421,284	390,037	14,233	117,963

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 5.5.D. Wood / Wood Waste Biomass: Consumption for Electricity Generation, by Sector, 2007 - 2017 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	363,971	42,806	151,877	460	168,828
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
Year 2017					
January	31,111	4,492	12,653	56	13,910
February	28,404	3,584	11,989	50	12,781
March	31,284	4,210	13,448	26	13,601
April	27,497	3,136	11,066	34	13,261
May	28,273	2,799	11,614	43	13,817
June	30,264	3,180	12,592	38	14,454
July	32,600	3,942	13,505	41	15,112
August	33,336	3,803	14,249	41	15,244
September	28,574	2,090	13,001	15	13,469
October	28,951	3,387	11,782	33	13,748
November	30,458	3,608	12,600	41	14,210
December	33,219	4,575	13,378	43	15,222

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 5.5.E. Wood / Wood Waste Biomass: Consumption for Useful Thermal Output, by Sector, 2007 - 2017 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	1,036,427	11,656	22,986	4,522	997,263
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
Year 2017					
January	90,099	1,206	2,090	525	86,278
February	79,451	1,037	1,879	430	76,104
March	87,759	1,170	2,113	299	84,176
April	82,426	1,044	1,548	295	79,539
May	84,129	716	1,623	301	81,490
June	85,459	1,007	1,641	322	82,490
July	89,160	683	1,963	355	86,159
August	90,434	989	2,010	365	87,071
September	81,960	931	2,032	233	78,763
October	86,217	893	1,972	402	82,950
November	87,430	902	1,929	473	84,126
December	91,903	1,079	2,186	524	88,115

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.

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.F. Wood / Wood Waste Biomass: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2007 - 2017 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	1,400,397	54,462	174,862	4,982	1,166,091
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
Year 2017					
January	121,210	5,698	14,743	581	100,188
February	107,854	4,621	13,868	480	88,885
March	119,043	5,380	15,562	325	97,777
April	109,922	4,180	12,613	328	92,800
May	112,402	3,515	13,237	344	95,306
June	115,723	4,187	14,232	360	96,944
July	121,760	4,625	15,469	395	101,271
August	123,771	4,792	16,258	406	102,315
September	110,535	3,021	15,033	249	92,232
October	115,168	4,281	13,754	435	96,698
November	117,888	4,509	14,529	514	98,336
December	125,122	5,654	15,564	566	103,338

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.

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.A. Landfill Gas: Consumption for Electricity Generation, by Sector, 2007 - 2017 (Million Cubic Feet)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	278,112	25,074	229,050	20,121	3,866
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
Year 2017					
January	25,272	2,182	20,948	1,784	358
February	21,912	2,167	17,878	1,529	337
March	24,177	2,303	19,774	1,742	359
April	22,941	2,145	18,844	1,620	332
May	23,879	2,202	19,651	1,731	294
June	23,091	1,921	19,163	1,670	336
July	22,896	1,983	18,932	1,702	279
August	22,923	2,030	18,919	1,668	305
September	22,102	1,851	18,287	1,672	292
October	22,063	2,037	18,243	1,465	318
November	22,870	2,105	18,715	1,728	322
December	23,986	2,148	19,695	1,810	333

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.

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.B. Landfill Gas: Consumption for Useful Thermal Output, by Sector, 2007 - 2017 (Million Cubic Feet)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	3,940	2	1,948	1,099	891
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
Year 2017					
January	352	0	171	94	87
February	329	0	156	92	81
March	353	0	177	92	84
April	346	0	153	107	87
May	299	0	134	85	80
June	329	0	165	89	75
July	312	0	176	85	51
August	348	0	172	98	78
September	330	0	169	98	62
October	319	0	170	93	56
November	298	0	140	85	73
December	324	0	165	81	77

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.

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, 2007 - 2017 (Million Cubic Feet)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	282,051	25,076	230,998	21,220	4,757
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
Year 2017					
January	25,625	2,182	21,119	1,878	446
February	22,241	2,167	18,034	1,621	419
March	24,530	2,303	19,951	1,834	442
April	23,287	2,146	18,996	1,727	418
May	24,178	2,202	19,785	1,816	374
June	23,419	1,921	19,329	1,759	411
July	23,208	1,983	19,108	1,786	330
August	23,271	2,030	19,092	1,766	383
September	22,431	1,851	18,456	1,771	354
October	22,382	2,037	18,413	1,558	374
November	23,168	2,105	18,855	1,813	395
December	24,310	2,149	19,860	1,891	410

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.D. Landfill Gas: Consumption for Electricity Generation, by Sector, 2007 - 2017 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	137,635	13,071	114,131	8,508	1,926
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
Year 2017					
January	12,505	1,137	10,446	744	179
February	10,847	1,126	8,912	644	165
March	11,950	1,190	9,844	737	178
April	11,357	1,112	9,402	680	163
May	11,833	1,132	9,814	741	147
June	11,459	1,028	9,545	717	169
July	11,356	1,065	9,422	728	141
August	11,340	1,068	9,408	709	154
September	10,926	963	9,115	701	147
October	10,955	1,058	9,112	629	156
November	11,297	1,086	9,327	724	160
December	11,810	1,105	9,783	755	166

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 5.6.E. Landfill Gas: Consumption for Useful Thermal Output, by Sector, 2007 - 2017 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	2,196	1	1,066	698	431
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
Year 2017					
January	192	0	94	56	42
February	179	0	85	55	39
March	195	0	97	57	40
April	198	0	84	72	42
May	165	0	74	52	38
June	184	0	90	58	36
July	177	0	96	56	26
August	194	0	94	63	37
September	184	0	92	62	30
October	182	0	94	61	27
November	168	0	77	56	35
December	179	0	89	51	38

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, 2007 - 2017 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	139,831	13,072	115,197	9,206	2,357
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
Year 2017					
January	12,697	1,137	10,539	800	221
February	11,026	1,126	8,997	699	204
March	12,145	1,190	9,942	794	219
April	11,555	1,112	9,487	752	205
May	11,998	1,132	9,888	793	185
June	11,643	1,028	9,635	774	206
July	11,533	1,065	9,517	783	167
August	11,533	1,068	9,502	772	192
September	11,111	963	9,208	763	177
October	11,137	1,058	9,206	690	183
November	11,465	1,086	9,404	779	195
December	11,989	1,105	9,873	806	205

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.

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.A. Biogenic Municipal Solid Waste: Consumption for Electricity Generation, by Sector, 2007 - 2017 (Thousand Tons)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	16,348	422	13,381	2,537	8
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
Year 2017					
January	1,434	35	1,194	205	0
February	1,244	19	1,034	191	0
March	1,330	36	1,091	204	0
April	1,288	35	1,044	209	0
May	1,410	36	1,147	226	1
June	1,421	38	1,175	207	1
July	1,440	41	1,172	226	1
August	1,453	47	1,182	223	1
September	1,321	41	1,072	207	1
October	1,317	33	1,065	218	1
November	1,311	30	1,074	207	1
December	1,378	32	1,132	214	1

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.

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.B. Biogenic Municipal Solid Waste: Consumption for Useful Thermal Output, by Sector, 2007 - 2017 (Thousand Tons)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	2,124	0	814	1,102	208
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
Year 2017					
January	203	0	72	111	20
February	171	0	64	94	12
March	187	0	75	93	19
April	173	0	69	86	18
May	182	0	69	96	18
June	185	0	68	101	16
July	185	0	72	97	17
August	196	0	77	97	22
September	154	0	63	74	17
October	155	0	59	78	18
November	166	0	64	88	15
December	168	0	63	88	17

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.

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.C. Biogenic Municipal Solid Waste: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2007 - 2017 (Thousand Tons)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	18,473	422	14,195	3,639	216
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
Year 2017					
January	1,637	35	1,266	316	20
February	1,415	19	1,098	286	12
March	1,517	36	1,165	297	19
April	1,461	35	1,113	294	18
May	1,592	36	1,215	322	19
June	1,606	38	1,243	309	17
July	1,625	41	1,244	323	18
August	1,649	47	1,259	320	23
September	1,475	41	1,135	281	18
October	1,472	33	1,124	295	19
November	1,477	30	1,138	295	15
December	1,546	32	1,195	301	18

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.

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, 2007 - 2017 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	130,942	4,172	106,382	20,320	67
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
Year 2017					
January	11,516	349	9,521	1,646	0
February	9,929	180	8,212	1,536	0
March	10,732	357	8,748	1,626	0
April	10,335	349	8,304	1,680	2
May	11,189	352	9,027	1,799	11
June	11,277	375	9,257	1,639	7
July	11,487	399	9,271	1,807	10
August	11,545	461	9,281	1,793	10
September	10,558	411	8,484	1,656	7
October	10,584	327	8,506	1,742	9
November	10,541	294	8,581	1,659	7
December	11,250	318	9,189	1,737	5

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.E. Biogenic Municipal Solid Waste: Consumption for Useful Thermal Output, by Sector, 2007 - 2017 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	17,720	0	6,475	9,474	1,772
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
Year 2017					
January	1,780	0	585	1,008	187
February	1,457	0	514	837	106
March	1,573	0	601	811	161
April	1,451	0	535	759	157
May	1,438	0	540	749	148
June	1,491	0	523	841	126
July	1,522	0	571	811	140
August	1,629	0	612	825	191
September	1,291	0	499	649	143
October	1,305	0	470	686	150
November	1,375	0	511	743	121
December	1,409	0	512	754	143

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.

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.F. Biogenic Municipal Solid Waste: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2007 - 2017 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	148,662	4,172	112,857	29,794	1,839
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
Year 2017					
January	13,295	349	10,106	2,654	187
February	11,385	180	8,727	2,373	106
March	12,305	357	9,349	2,437	161
April	11,786	349	8,840	2,439	159
May	12,627	352	9,567	2,549	159
June	12,767	375	9,780	2,480	133
July	13,010	399	9,843	2,618	150
August	13,174	461	9,894	2,619	201
September	11,849	411	8,982	2,305	150
October	11,889	327	8,976	2,428	159
November	11,916	294	9,092	2,402	127
December	12,658	318	9,702	2,491	148

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 5.8.D. Other Waste Biomass: Consumption for Electricity Generation, by Sector, 2007 - 2017 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	35,755	1,845	22,517	5,288	6,105
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
Year 2017					
January	3,141	137	1,959	487	558
February	3,021	170	1,914	427	510
March	3,400	242	2,105	478	574
April	2,815	125	1,712	445	533
May	2,991	147	1,901	465	478
June	2,886	154	1,894	425	413
July	3,109	137	2,046	458	469
August	2,920	173	1,841	432	475
September	2,631	162	1,661	392	415
October	2,809	117	1,833	347	513
November	3,062	110	1,935	447	570
December	2,971	172	1,716	485	598

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.

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 5.8.E. Other Waste Biomass: Consumption for Useful Thermal Output, by Sector, 2007 - 2017 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	50,518	15	10,543	3,218	36,742
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
Year 2017					
January	5,664	2	1,280	347	4,036
February	4,923	0	997	271	3,655
March	5,350	0	1,189	292	3,869
April	4,626	7	780	255	3,584
May	3,632	2	691	266	2,673
June	2,863	0	774	274	1,815
July	2,960	0	617	235	2,108
August	3,053	1	552	268	2,232
September	2,608	2	469	224	1,914
October	4,305	0	850	220	3,235
November	5,191	1	1,125	292	3,773
December	5,344	0	1,219	275	3,850

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.

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 5.8.F. Other Waste Biomass: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2007 - 2017 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
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
2017	86,274	1,860	33,060	8,506	42,848
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
Year 2017					
January	8,804	138	3,238	834	4,594
February	7,944	171	2,911	698	4,165
March	8,749	242	3,295	770	4,443
April	7,441	131	2,492	701	4,117
May	6,623	149	2,592	731	3,151
June	5,749	155	2,667	699	2,228
July	6,069	137	2,663	693	2,576
August	5,974	174	2,393	700	2,706
September	5,239	164	2,130	617	2,329
October	7,114	117	2,683	566	3,748
November	8,253	111	3,061	739	4,343
December	8,314	172	2,935	760	4,448

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.

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 5.9. Consumption of Coal for Electricity Generation by State by Sector, 2017 and 2016 (Thousand Tons)

Census Division and State	Electric Power Sector										
	All Sectors			Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
New England	846	1,246	-32.0%	134	194	709	1,048	0	0	3	3
Connecticut	137	128	7.1%	0	0	137	128	0	0	0	0
Maine	15	16	-5.4%	0	0	12	13	0	0	3	3
Massachusetts	559	907	-38.0%	0	0	559	907	0	0	0	0
New Hampshire	134	194	-31.0%	134	194	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	25,114	28,812	-13.0%	0	0	24,988	28,598	0	0	126	214
New Jersey	513	563	-8.9%	0	0	513	563	0	0	0	0
New York	311	760	-59.0%	0	0	242	654	0	0	69	106
Pennsylvania	24,290	27,489	-12.0%	0	0	24,233	27,381	0	0	57	108
East North Central	143,842	143,250	0.4%	88,355	86,747	54,764	55,796	16	24	707	684
Illinois	34,770	35,899	-3.1%	2,166	1,895	32,059	33,536	8	9	538	460
Indiana	35,450	36,014	-1.6%	34,143	34,303	1,300	1,698	8	11	0	3
Michigan	24,028	23,123	3.9%	23,796	22,871	217	221	0	4	15	27
Ohio	28,524	29,080	-1.9%	7,335	8,716	21,188	20,341	0	0	1	23
Wisconsin	21,070	19,134	10.0%	20,916	18,963	0	0	0	0	154	171
West North Central	115,350	113,565	1.6%	114,154	112,397	0	0	28	37	1,168	1,131
Iowa	14,259	14,019	1.7%	13,765	13,477	0	0	22	23	473	519
Kansas	12,542	14,587	-14.0%	12,542	14,587	0	0	0	0	0	0
Minnesota	13,231	13,446	-1.6%	12,957	13,255	0	0	1	2	273	189
Missouri	39,417	35,473	11.0%	39,411	35,460	0	0	5	13	0	0
Nebraska	12,959	13,443	-3.6%	12,570	13,056	0	0	0	0	388	388
North Dakota	21,654	21,297	1.7%	21,620	21,263	0	0	0	0	34	34
South Dakota	1,289	1,299	-0.8%	1,289	1,299	0	0	0	0	0	0
South Atlantic	91,459	103,425	-12.0%	81,178	90,681	10,022	12,420	14	14	245	310
Delaware	186	227	-18.0%	0	0	186	227	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	16,874	17,700	-4.7%	16,800	17,341	48	326	0	0	26	32
Georgia	16,808	19,318	-13.0%	16,770	19,272	0	0	0	0	38	46
Maryland	3,675	5,882	-38.0%	0	0	3,656	5,864	0	0	18	19
North Carolina	13,435	14,772	-9.0%	13,339	14,645	52	76	12	12	32	40
South Carolina	7,506	8,569	-12.0%	7,502	8,545	0	0	0	0	5	24
Virginia	5,118	7,520	-32.0%	4,760	7,135	230	255	2	2	125	129
West Virginia	27,856	29,436	-5.4%	22,007	23,744	5,848	5,672	0	0	0	20
East South Central	61,865	69,467	-11.0%	59,294	66,214	2,419	3,056	0	0	152	198
Alabama	16,242	17,466	-7.0%	16,231	17,448	0	0	0	0	10	18
Kentucky	27,484	31,859	-14.0%	27,484	31,859	0	0	0	0	0	0
Mississippi	3,865	4,522	-15.0%	1,446	1,466	2,419	3,056	0	0	0	0
Tennessee	14,274	15,621	-8.6%	14,132	15,441	0	0	0	0	142	180
West South Central	128,187	121,146	5.8%	59,045	58,328	68,972	62,604	0	0	170	214
Arkansas	15,202	14,075	8.0%	13,238	11,525	1,956	2,541	0	0	8	9
Louisiana	8,397	8,566	-2.0%	5,035	5,852	3,362	2,714	0	0	0	0
Oklahoma	11,101	12,375	-10.0%	9,852	10,977	1,088	1,193	0	0	162	205
Texas	93,488	86,130	8.5%	30,921	29,975	62,567	56,155	0	0	0	0
Mountain	91,354	90,967	0.4%	80,973	80,258	10,236	10,517	0	0	145	192
Arizona	16,929	16,639	1.7%	16,929	16,639	0	0	0	0	0	0
Colorado	16,630	16,636	0.0%	16,628	16,628	0	6	0	0	2	2
Idaho	5	6	-19.0%	0	0	0	0	0	0	5	6
Montana	8,946	9,331	-4.1%	217	256	8,726	9,073	0	0	2	3
Nevada	1,097	1,192	-8.0%	535	674	562	519	0	0	0	0
New Mexico	10,494	10,547	-0.5%	10,494	10,547	0	0	0	0	0	0
Utah	12,482	12,092	3.2%	12,026	11,604	412	397	0	0	44	91
Wyoming	24,770	24,524	1.0%	24,144	23,911	535	523	0	0	91	90
Pacific Contiguous	4,720	4,271	11.0%	1,031	1,125	3,623	3,075	0	0	66	72
California	59	63	-6.5%	0	0	0	0	0	0	59	63
Oregon	1,031	1,125	-8.3%	1,031	1,125	0	0	0	0	0	0
Washington	3,630	3,083	18.0%	0	0	3,623	3,075	0	0	7	9
Pacific Noncontiguous	1,173	1,222	-4.0%	226	248	911	933	36	37	0	4
Alaska	414	443	-6.6%	226	248	152	158	36	37	0	0
Hawaii	759	779	-2.6%	0	0	759	775	0	0	0	4
U.S. Total	663,911	677,371	-2.0%	484,389	496,192	176,643	178,047	95	111	2,783	3,021

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 5.10. Consumption of Petroleum Liquids for Electricity Generation by State, by Sector, 2017 and 2016 (Thousand Barrels)

Census Division and State	Electric Power Sector										
	All Sectors			Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
New England	1,362	1,157	18.0%	177	125	1,135	978	38	44	13	10
Connecticut	345	209	65.0%	11	12	330	193	4	3	1	2
Maine	272	227	20.0%	0	0	254	213	6	6	11	7
Massachusetts	479	598	-20.0%	77	30	388	549	13	19	1	1
New Hampshire	163	67	143.0%	61	49	89	3	13	15	0	0
Rhode Island	81	44	82.0%	5	23	74	19	2	2	0	0
Vermont	22	12	91.0%	22	11	0	0	0	0	0	0
Middle Atlantic	1,693	1,888	-10.0%	458	634	1,151	1,173	26	25	58	56
New Jersey	126	130	-2.9%	0	2	125	126	0	1	0	0
New York	1,018	1,142	-11.0%	457	630	508	459	16	15	38	38
Pennsylvania	549	616	-11.0%	0	2	518	588	11	9	20	18
East North Central	996	1,083	-8.0%	648	654	323	407	6	6	20	17
Illinois	104	135	-23.0%	19	17	85	117	0	1	0	0
Indiana	216	204	5.9%	197	191	2	0	0	1	16	12
Michigan	227	248	-8.7%	221	244	0	0	5	3	1	1
Ohio	377	426	-11.0%	139	136	235	286	1	1	2	3
Wisconsin	73	71	3.9%	72	65	1	4	0	0	1	1
West North Central	552	546	1.2%	525	526	25	15	2	2	1	3
Iowa	118	161	-27.0%	116	159	2	2	0	0	0	0
Kansas	121	66	83.0%	121	66	0	0	0	0	0	0
Minnesota	76	67	14.0%	51	51	23	13	1	2	1	1
Missouri	136	165	-18.0%	136	165	0	0	0	0	0	0
Nebraska	16	16	3.4%	16	16	0	0	0	0	0	0
North Dakota	70	60	17.0%	70	59	0	0	0	0	0	1
South Dakota	15	11	32.0%	15	11	0	0	0	0	0	0
South Atlantic	3,270	4,010	-18.0%	2,530	3,060	546	846	103	14	91	89
Delaware	50	114	-56.0%	5	17	45	97	0	0	0	0
District of Columbia	0	5	-100.0%	0	0	0	0	0	5	0	0
Florida	926	1,428	-35.0%	893	1,387	17	16	0	0	17	25
Georgia	239	209	15.0%	174	133	15	45	4	3	45	27
Maryland	243	353	-31.0%	7	3	231	347	3	2	2	2
North Carolina	486	485	0.2%	448	411	23	65	3	1	11	8
South Carolina	202	214	-5.4%	190	189	3	4	0	0	9	20
Virginia	916	987	-7.2%	607	713	209	263	93	4	7	7
West Virginia	208	216	-3.6%	206	207	2	9	0	0	0	0
East South Central	521	560	-7.1%	503	528	7	12	0	0	10	20
Alabama	64	79	-19.0%	50	51	7	12	0	0	7	16
Kentucky	189	211	-10.0%	189	211	0	0	0	0	0	0
Mississippi	25	34	-26.0%	24	32	0	0	0	0	2	2
Tennessee	243	237	2.5%	241	235	1	0	0	0	1	2
West South Central	298	293	1.7%	187	193	104	91	1	2	5	7
Arkansas	85	76	12.0%	42	57	41	16	0	0	2	3
Louisiana	44	30	49.0%	44	26	0	3	0	0	0	0
Oklahoma	29	32	-9.8%	27	31	0	0	0	0	1	1
Texas	140	155	-10.0%	73	79	63	72	1	2	2	2
Mountain	409	428	-4.5%	369	372	40	46	0	0	0	10
Arizona	107	98	9.3%	107	98	0	0	0	0	0	0
Colorado	23	21	9.1%	23	21	0	0	0	0	0	0
Idaho	0	0	-5.0%	0	0	0	0	0	0	0	0
Montana	31	38	-19.0%	1	1	30	37	0	0	0	0
Nevada	19	22	-13.0%	12	16	7	6	0	0	0	0
New Mexico	81	101	-20.0%	81	101	0	0	0	0	0	0
Utah	66	55	21.0%	63	51	2	3	0	0	0	0
Wyoming	83	94	-12.0%	83	85	0	0	0	0	0	9
Pacific Contiguous	150	190	-21.0%	95	76	29	39	1	1	24	74
California	94	149	-37.0%	69	63	9	20	1	0	15	66
Oregon	18	8	116.0%	18	8	0	0	0	0	0	0
Washington	38	32	17.0%	8	5	20	19	0	0	9	8
Pacific Noncontiguous	12,444	12,250	1.6%	10,076	9,969	2,102	2,015	13	14	254	252
Alaska	1,585	1,454	9.0%	1,517	1,382	0	0	5	3	62	68
Hawaii	10,859	10,797	0.6%	8,559	8,587	2,102	2,015	7	10	191	184
U.S. Total	21,696	22,405	-3.2%	15,567	16,137	5,461	5,624	191	108	476	536

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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.

Table 5.11. Consumption of Petroleum Coke for Electricity Generation by State, by Sector, 2017 and 2016 (Thousand Tons)

Census Division and State	Electric Power Sector										
	All Sectors			Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
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	27	23	15.0%	0	0	0	0	0	0	27	23
New Jersey	7	6	17.0%	0	0	0	0	0	0	7	6
New York	0	0	--	0	0	0	0	0	0	0	0
Pennsylvania	19	17	14.0%	0	0	0	0	0	0	19	17
East North Central	956	983	-2.7%	504	478	380	431	0	0	72	73
Illinois	0	0	--	0	0	0	0	0	0	0	0
Indiana	0	159	-100.0%	0	159	0	0	0	0	0	0
Michigan	527	348	51.0%	456	283	0	1	0	0	72	65
Ohio	380	431	-12.0%	0	0	380	430	0	0	0	1
Wisconsin	48	44	8.8%	48	37	0	0	0	0	0	7
West North Central	8	7	15.0%	0	0	0	0	3	2	5	5
Iowa	8	7	15.0%	0	0	0	0	3	2	5	5
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	381	764	-50.0%	347	739	0	0	0	0	34	25
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	347	739	-53.0%	347	739	0	0	0	0	0	0
Georgia	34	25	33.0%	0	0	0	0	0	0	34	25
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	166	439	-62.0%	166	439	0	0	0	0	0	0
Alabama	0	0	--	0	0	0	0	0	0	0	0
Kentucky	166	439	-62.0%	166	439	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	1,791	1,862	-3.8%	1,714	1,771	0	0	0	0	77	91
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	1,747	1,812	-3.6%	1,714	1,771	0	0	0	0	32	41
Oklahoma	0	0	--	0	0	0	0	0	0	0	0
Texas	45	50	-10.0%	0	0	0	0	0	0	45	50
Mountain	162	160	1.0%	0	0	162	160	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	162	160	1.0%	0	0	162	160	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	16	-100.0%	0	0	0	0	0	0	0	16
California	0	16	-100.0%	0	0	0	0	0	0	0	16
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	3,490	4,253	-18.0%	2,731	3,427	542	591	3	2	214	233

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 5.12. Consumption of Natural Gas for Electricity Generation by State, by Sector, 2017 and 2016 (Million Cubic Feet)

Census Division and State	Electric Power Sector										
	All Sectors			Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
New England	368,504	388,458	-5.1%	3,061	3,330	352,211	374,582	5,358	5,180	7,873	5,366
Connecticut	113,830	127,130	-10.0%	883	421	107,093	121,879	2,263	2,213	3,591	2,618
Maine	15,247	23,895	-36.0%	0	0	13,717	22,281	152	130	1,377	1,483
Massachusetts	160,737	156,132	2.9%	1,765	2,419	155,006	150,150	2,659	2,504	1,307	1,059
New Hampshire	26,204	34,140	-23.0%	400	476	25,575	33,365	43	92	186	206
Rhode Island	52,470	47,144	11.0%	0	0	50,820	46,907	237	236	1,412	0
Vermont	16	19	-11.0%	12	14	0	0	4	4	0	0
Middle Atlantic	1,160,599	1,269,480	-8.6%	89,698	110,702	1,050,267	1,141,115	7,960	6,552	12,674	11,111
New Jersey	262,660	314,705	-17.0%	2,092	2,583	257,521	309,356	1,144	945	1,903	1,821
New York	370,211	452,696	-18.0%	87,541	108,016	274,165	337,708	6,108	4,993	2,396	1,979
Pennsylvania	527,729	502,080	5.1%	64	103	518,581	494,051	708	615	8,376	7,312
East North Central	790,287	852,535	-7.3%	282,945	382,447	475,972	446,919	7,996	7,522	23,374	15,647
Illinois	146,271	149,481	-2.1%	8,355	13,725	130,450	128,973	2,487	1,813	4,980	4,970
Indiana	136,308	152,405	-11.0%	57,187	123,508	66,883	24,991	988	1,016	11,251	2,890
Michigan	195,965	225,323	-13.0%	70,122	87,203	119,546	129,419	2,957	3,052	3,340	5,650
Ohio	206,855	210,518	-1.7%	54,016	55,135	150,795	153,812	1,227	1,051	818	520
Wisconsin	104,887	114,807	-8.6%	93,264	102,876	8,299	9,724	339	590	2,985	1,617
West North Central	161,737	179,323	-9.8%	139,274	151,096	18,079	23,870	1,463	1,609	2,921	2,747
Iowa	31,573	22,012	43.0%	29,265	20,699	37	0	469	459	1,801	854
Kansas	20,816	20,680	0.7%	20,589	20,399	0	0	0	0	227	281
Minnesota	48,862	65,624	-26.0%	39,170	52,636	8,574	11,137	491	636	628	1,215
Missouri	42,038	47,411	-11.0%	31,921	34,015	9,468	12,732	490	501	159	163
Nebraska	6,181	5,813	6.3%	6,168	5,791	0	0	13	13	0	9
North Dakota	6,554	10,373	-37.0%	6,448	10,146	0	0	0	0	106	227
South Dakota	5,713	7,410	-23.0%	5,713	7,410	0	0	0	0	0	0
South Atlantic	2,414,067	2,415,762	-0.1%	1,970,870	1,947,864	410,089	440,121	7,872	5,960	25,237	21,816
Delaware	49,376	58,855	-16.0%	186	711	44,696	53,122	0	0	4,494	5,022
District of Columbia	601	601	0.1%	0	0	0	0	601	600	0	0
Florida	1,192,463	1,186,725	0.5%	1,128,447	1,081,094	56,299	97,758	131	172	7,586	7,701
Georgia	373,297	381,331	-2.1%	280,701	295,258	88,929	83,189	0	0	3,666	2,884
Maryland	55,973	53,486	4.6%	3,224	0	46,190	48,046	6,111	5,048	448	391
North Carolina	279,751	293,942	-4.8%	240,963	254,527	37,277	38,745	970	80	541	590
South Carolina	133,271	131,598	1.3%	114,333	106,252	18,141	24,999	3	9	794	338
Virginia	316,918	298,102	6.3%	201,084	208,486	110,070	85,637	55	51	5,709	3,928
West Virginia	12,417	11,122	12.0%	1,932	1,536	8,487	8,625	0	0	1,999	961
East South Central	871,880	929,994	-6.2%	595,214	613,191	263,514	304,829	939	901	12,214	11,073
Alabama	370,297	403,770	-8.3%	132,145	120,458	231,699	277,130	0	0	6,454	6,182
Kentucky	82,170	67,386	22.0%	76,539	60,847	4,669	5,512	0	0	961	1,027
Mississippi	340,928	368,640	-7.5%	311,651	344,423	26,996	22,175	35	0	2,246	2,041
Tennessee	78,486	90,198	-13.0%	74,880	87,463	150	12	903	901	2,553	1,823
West South Central	2,220,631	2,480,580	-10.0%	799,638	886,812	1,041,646	1,204,698	4,395	4,706	374,952	384,364
Arkansas	123,423	131,629	-6.2%	115,119	54,814	6,467	74,981	418	433	1,419	1,401
Louisiana	423,118	481,008	-12.0%	244,478	280,472	29,680	44,592	598	739	148,362	155,205
Oklahoma	230,634	278,283	-17.0%	141,470	194,042	87,099	82,920	0	0	2,065	1,320
Texas	1,443,455	1,589,660	-9.2%	298,571	357,484	918,399	1,002,205	3,379	3,534	223,106	226,437
Mountain	668,947	739,943	-9.6%	522,713	550,066	130,777	175,191	2,243	2,274	13,215	12,413
Arizona	224,548	256,096	-12.0%	159,473	149,716	64,454	105,757	621	624	0	0
Colorado	94,180	93,347	0.9%	77,468	77,193	16,355	15,818	17	12	340	323
Idaho	21,694	24,098	-10.0%	11,935	13,694	8,989	9,590	172	170	599	644
Montana	4,706	5,382	-13.0%	3,700	4,499	987	864	0	0	19	19
Nevada	195,341	208,394	-6.3%	177,493	190,283	15,110	15,428	250	270	2,489	2,412
New Mexico	75,991	81,834	-7.1%	51,075	55,180	24,320	26,044	581	594	15	16
Utah	46,919	65,310	-28.0%	40,275	58,000	549	1,678	602	603	5,493	5,029
Wyoming	5,569	5,483	1.6%	1,294	1,502	13	12	0	0	4,261	3,969
Pacific Contiguous	821,891	885,536	-7.2%	322,537	345,161	419,433	460,049	11,812	11,593	68,109	68,733
California	641,500	701,605	-8.6%	222,701	245,491	340,121	377,035	11,568	11,301	67,109	67,778
Oregon	103,763	106,536	-2.6%	53,213	51,498	49,867	54,339	173	209	509	490
Washington	76,628	77,394	-1.0%	46,622	48,172	29,445	28,674	71	83	491	465
Pacific Noncontiguous	29,216	28,498	2.5%	28,933	28,224	0	0	22	7	261	267
Alaska	29,216	28,498	2.5%	28,933	28,224	0	0	22	7	261	267
Hawaii	0	0	--	0	0	0	0	0	0	0	0
U.S. Total	9,507,760	10,170,110	-6.5%	4,754,883	5,018,894	4,161,987	4,571,375	50,060	46,304	540,830	533,537

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, 2017 and 2016 (Million Cubic Feet)

Census Division and State	Electric Power Sector										
	All Sectors			Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
New England	10,719	11,326	-5.4%	0	0	10,477	11,128	242	198	0	0
Connecticut	443	476	-6.9%	0	0	443	476	0	0	0	0
Maine	720	732	-1.7%	0	0	720	732	0	0	0	0
Massachusetts	3,665	4,133	-11.0%	0	0	3,665	4,133	0	0	0	0
New Hampshire	1,570	1,433	9.6%	0	0	1,328	1,235	242	198	0	0
Rhode Island	4,061	4,124	-1.5%	0	0	4,061	4,124	0	0	0	0
Vermont	260	428	-39.0%	0	0	260	428	0	0	0	0
Middle Atlantic	53,390	53,761	-0.7%	0	0	51,096	51,556	799	840	1,495	1,365
New Jersey	7,690	8,088	-4.9%	0	0	7,362	7,783	328	305	0	0
New York	16,711	16,102	3.8%	0	0	16,711	16,102	0	0	0	0
Pennsylvania	28,988	29,571	-2.0%	0	0	27,023	27,671	471	535	1,495	1,365
East North Central	63,452	61,641	2.9%	7,439	6,864	55,419	54,392	370	146	224	239
Illinois	12,581	12,537	0.3%	437	422	12,143	12,115	0	0	0	0
Indiana	8,109	7,383	9.8%	6,963	6,301	1,145	1,071	0	0	0	12
Michigan	20,649	19,931	3.6%	0	0	20,649	19,931	0	0	0	0
Ohio	10,972	10,348	6.0%	0	0	10,972	10,348	0	0	0	0
Wisconsin	11,141	11,442	-2.6%	38	141	10,508	10,927	370	146	224	227
West North Central	10,845	11,113	-2.4%	3,497	3,311	7,349	7,801	0	0	0	0
Iowa	2,577	2,627	-1.9%	0	0	2,577	2,627	0	0	0	0
Kansas	1,273	1,270	0.3%	0	0	1,273	1,270	0	0	0	0
Minnesota	3,157	3,609	-13.0%	708	765	2,449	2,844	0	0	0	0
Missouri	2,072	1,903	8.9%	1,023	842	1,049	1,061	0	0	0	0
Nebraska	1,766	1,704	3.7%	1,766	1,704	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	53,675	47,055	14.0%	4,496	4,530	44,827	38,239	2,387	2,051	1,965	2,235
Delaware	1,261	1,379	-8.6%	0	0	1,142	1,232	0	0	119	148
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	10,526	7,840	34.0%	1,615	1,699	8,912	6,123	0	8	0	10
Georgia	6,853	4,696	46.0%	0	0	6,536	4,240	0	0	317	456
Maryland	2,936	2,667	10.0%	0	0	1,906	1,887	1,030	780	0	0
North Carolina	11,503	11,273	2.0%	0	0	10,383	10,268	1,121	1,005	0	0
South Carolina	4,712	4,769	-1.2%	2,803	2,774	379	373	0	0	1,529	1,621
Virginia	15,884	14,431	10.0%	78	57	15,569	14,117	237	258	0	0
West Virginia	0	0	--	0	0	0	0	0	0	0	0
East South Central	5,716	5,496	4.0%	2,451	2,177	3,265	3,319	0	0	0	0
Alabama	1,061	1,093	-3.0%	0	0	1,061	1,093	0	0	0	0
Kentucky	2,710	2,479	9.3%	2,451	2,177	259	302	0	0	0	0
Mississippi	221	188	18.0%	0	0	221	188	0	0	0	0
Tennessee	1,724	1,737	-0.7%	0	0	1,724	1,737	0	0	0	0
West South Central	14,830	15,922	-6.9%	0	0	14,304	15,353	526	569	0	0
Arkansas	1,513	1,491	1.5%	0	0	1,513	1,491	0	0	0	0
Louisiana	0	0	--	0	0	0	0	0	0	0	0
Oklahoma	455	360	26.0%	0	0	455	360	0	0	0	0
Texas	12,863	14,072	-8.6%	0	0	12,336	13,503	526	569	0	0
Mountain	6,592	6,474	1.8%	253	245	5,881	5,650	458	579	0	0
Arizona	987	854	16.0%	0	0	987	854	0	0	0	0
Colorado	1,371	1,311	4.6%	0	0	1,371	1,311	0	0	0	0
Idaho	1,001	993	0.8%	253	245	543	564	205	183	0	0
Montana	0	0	--	0	0	0	0	0	0	0	0
Nevada	1,589	1,479	7.4%	0	0	1,589	1,479	0	0	0	0
New Mexico	21	29	-27.0%	0	0	21	29	0	0	0	0
Utah	1,623	1,808	-10.0%	0	0	1,370	1,413	253	395	0	0
Wyoming	0	0	--	0	0	0	0	0	0	0	0
Pacific Contiguous	58,104	60,012	-3.2%	6,938	7,153	36,432	37,554	14,551	15,305	182	0
California	47,912	50,177	-4.5%	2,168	2,813	31,481	32,565	14,081	14,799	182	0
Oregon	5,546	5,889	-5.8%	1,382	1,627	3,694	3,755	470	506	0	0
Washington	4,646	3,946	18.0%	3,389	2,712	1,257	1,234	0	0	0	0
Pacific Noncontiguous	788	758	4.0%	0	0	0	0	788	758	0	0
Alaska	788	758	4.0%	0	0	0	0	788	758	0	0
Hawaii	0	0	--	0	0	0	0	0	0	0	0
U.S. Total	278,112	273,557	1.7%	25,074	24,280	229,050	224,993	20,121	20,445	3,866	3,839

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 5.14. Consumption of Biogenic Municipal Solid Waste for Electricity Generation by State, by Sector, 2017 and 2016 (Thousand Tons)

Census Division and State	Electric Power Sector										
	All Sectors			Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
New England	3,694,618	3,752,472	-1.5%	0	0	3,489,969	3,563,135	204,649	189,337	0	0
Connecticut	1,245,610	1,327,571	-6.2%	0	0	1,245,610	1,327,571	0	0	0	0
Maine	315,079	302,663	4.1%	0	0	110,430	113,326	204,649	189,337	0	0
Massachusetts	2,008,372	2,000,266	0.4%	0	0	2,008,372	2,000,266	0	0	0	0
New Hampshire	125,557	121,972	2.9%	0	0	125,557	121,972	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	5,508,412	5,430,250	1.4%	0	0	4,332,164	4,279,138	1,176,248	1,151,112	0	0
New Jersey	1,430,402	1,439,426	-0.6%	0	0	1,082,402	1,094,098	348,000	345,328	0	0
New York	2,084,883	2,046,762	1.9%	0	0	1,510,947	1,482,562	573,936	564,200	0	0
Pennsylvania	1,993,127	1,944,062	2.5%	0	0	1,738,815	1,702,478	254,312	241,584	0	0
East North Central	234,874	250,391	-6.2%	34,810	38,435	0	0	200,064	211,956	0	0
Illinois	0	0	--	0	0	0	0	0	0	0	0
Indiana	17,911	17,638	1.5%	0	0	0	0	17,911	17,638	0	0
Michigan	182,153	194,318	-6.3%	0	0	0	0	182,153	194,318	0	0
Ohio	0	0	--	0	0	0	0	0	0	0	0
Wisconsin	34,810	38,435	-9.4%	34,810	38,435	0	0	0	0	0	0
West North Central	632,546	656,309	-3.6%	387,302	425,217	233,614	219,783	11,630	11,309	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	632,546	656,309	-3.6%	387,302	425,217	233,614	219,783	11,630	11,309	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	5,107,615	5,710,075	-11.0%	0	0	4,586,948	5,153,439	520,667	556,636	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	3,877,326	3,933,291	-1.4%	0	0	3,877,326	3,933,291	0	0	0	0
Georgia	0	0	--	0	0	0	0	0	0	0	0
Maryland	639,456	624,522	2.4%	0	0	639,456	624,405	0	117	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	590,833	1,152,262	-49.0%	0	0	70,166	595,743	520,667	556,519	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	8,049	11,046	-27.0%	0	0	0	0	0	0	8,049	11,046
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	0	0	--	0	0	0	0	0	0	0	0
Oklahoma	8,049	11,046	-27.0%	0	0	0	0	0	0	8,049	11,046
Texas	0	0	--	0	0	0	0	0	0	0	0
Mountain	450	3,077	-85.0%	0	0	450	3,077	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	450	3,077	-85.0%	0	0	450	3,077	0	0	0	0
Wyoming	0	0	--	0	0	0	0	0	0	0	0
Pacific Contiguous	737,883	734,231	0.5%	0	0	737,883	734,231	0	0	0	0
California	467,506	457,278	2.2%	0	0	467,506	457,278	0	0	0	0
Oregon	110,535	114,085	-3.1%	0	0	110,535	114,085	0	0	0	0
Washington	159,842	162,868	-1.9%	0	0	159,842	162,868	0	0	0	0
Pacific Noncontiguous	423,913	446,086	-5.0%	0	0	0	0	423,913	446,086	0	0
Alaska	0	0	--	0	0	0	0	0	0	0	0
Hawaii	423,913	446,086	-5.0%	0	0	0	0	423,913	446,086	0	0
U.S. Total	16,348,360	16,993,937	-3.8%	422,112	463,652	13,381,028	13,952,803	2,537,171	2,566,436	8,049	11,046

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.

Chapter 6

Fossil Fuel Stocks for Electricity Generation

Table 6.1. Stocks of Coal, Petroleum Liquids, and Petroleum Coke: Electric Power Sector, 2007 - 2017

Period	Electric Power Sector			Electric Utilities			Independent Power Producers		
	Coal (Thousand Tons)	Petroleum Liquids (Thousand Barrels)	Petroleum Coke (Thousand Tons)	Coal (Thousand Tons)	Petroleum Liquids (Thousand Barrels)	Petroleum Coke (Thousand Tons)	Coal (Thousand Tons)	Petroleum Liquids (Thousand Barrels)	Petroleum Coke (Thousand Tons)
End of Year Stocks									
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
2017	137,687	29,294	864	114,782	20,253	692	22,905	9,041	171
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
Year 2017, End of Month Stocks									
January	156,214	31,761	768	125,221	20,912	540	30,994	10,849	228
February	160,502	31,500	756	128,051	20,731	544	32,451	10,769	212
March	161,815	32,174	785	128,645	21,565	558	33,170	10,609	227
April	163,937	31,969	844	130,461	21,531	622	33,475	10,438	221
May	162,542	31,578	772	129,300	21,123	562	33,242	10,455	210
June	158,014	31,208	742	126,564	21,038	535	31,450	10,171	207
July	145,811	31,033	724	117,584	20,901	544	28,228	10,132	180
August	141,204	30,750	749	114,228	20,687	569	26,976	10,064	181
September	139,571	30,346	798	113,247	20,516	624	26,324	9,830	173
October	141,463	30,227	862	114,939	20,336	683	26,524	9,891	179
November	143,424	30,501	859	117,758	20,626	677	25,666	9,875	182
December	137,687	29,294	864	114,782	20,253	692	22,905	9,041	171

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, 2017 and 2016**

Census Division and State	Coal (Thousand Tons)			Petroleum Liquids (Thousand Barrels)			Petroleum Coke (Thousand Tons)		
	December 2017	December 2016	Percentage Change	December 2017	December 2016	Percentage Change	December 2017	December 2016	Percentage Change
New England	933	1,638	-43.1%	3,452	4,534	-23.9%	0	0	--
Connecticut	W	W	W	1,247	1,596	-21.9%	0	0	--
Maine	0	0	--	317	468	-32.3%	0	0	--
Massachusetts	W	W	W	1,444	1,903	-24.1%	0	0	--
New Hampshire	W	W	W	297	365	-18.6%	0	0	--
Rhode Island	W	W	W	104	150	-30.6%	0	0	--
Vermont	0	0	--	43	52	-16.4%	0	0	--
Middle Atlantic	3,876	4,526	-14.4%	5,176	5,792	-10.6%	0	0	--
New Jersey	311	783	-60.2%	675	682	-1.0%	0	0	--
New York	W	W	W	3,311	3,759	-11.9%	0	0	--
Pennsylvania	W	W	W	1,190	1,352	-12.0%	0	0	--
East North Central	28,906	35,636	-18.9%	1,144	1,167	-2.0%	W	247	W
Illinois	5,716	7,056	-19.0%	79	83	-5.6%	0	0	--
Indiana	8,427	9,703	-13.2%	107	109	-1.8%	W	W	W
Michigan	6,080	6,024	0.9%	343	361	-5.0%	W	W	W
Ohio	5,177	8,028	-35.5%	420	389	7.9%	W	W	W
Wisconsin	3,506	4,824	-27.3%	196	225	-13.1%	W	W	W
West North Central	28,193	31,091	-9.3%	984	1,040	-5.4%	0	0	--
Iowa	6,840	8,430	-18.9%	147	169	-13.3%	0	0	--
Kansas	4,116	4,588	-10.3%	122	123	-1.3%	0	0	--
Minnesota	3,479	4,003	-13.1%	141	141	0.1%	0	0	--
Missouri	8,507	9,547	-10.9%	372	389	-4.3%	0	0	--
Nebraska	3,352	2,985	12.3%	122	130	-6.0%	0	0	--
North Dakota	W	W	W	29	33	-10.3%	0	0	--
South Dakota	W	W	W	51	55	-8.5%	0	0	--
South Atlantic	24,030	26,769	-10.2%	11,917	12,144	-1.9%	W	W	W
Delaware	W	W	W	411	571	-28.1%	0	0	--
District of Columbia	0	0	--	0	0	--	0	0	--
Florida	4,239	4,427	-4.3%	5,473	4,913	11.4%	107	W	W
Georgia	5,116	4,907	4.3%	774	806	-4.0%	0	0	--
Maryland	1,512	1,535	-1.5%	701	941	-25.5%	0	0	--
North Carolina	4,104	4,986	-17.7%	1,205	1,248	-3.5%	0	0	--
South Carolina	4,023	5,080	-20.8%	677	718	-5.7%	0	0	--
Virginia	W	1,093	W	2,546	2,789	-8.7%	0	0	--
West Virginia	3,828	W	W	131	158	-16.8%	W	W	W
East South Central	12,266	15,918	-22.9%	1,729	2,004	-13.7%	W	W	W
Alabama	3,049	3,514	-13.2%	198	339	-41.6%	0	0	--
Kentucky	6,063	7,945	-23.7%	262	238	9.9%	W	W	W
Mississippi	911	1,246	-26.9%	489	570	-14.2%	0	0	--
Tennessee	2,244	3,214	-30.2%	780	856	-9.0%	0	0	--
West South Central	19,583	24,799	-21.0%	1,675	1,800	-6.9%	W	W	W
Arkansas	2,972	3,877	-23.3%	181	188	-4.0%	0	0	--
Louisiana	2,297	2,488	-7.7%	384	419	-8.3%	W	W	W
Oklahoma	4,332	4,624	-6.3%	106	110	-3.6%	0	0	--
Texas	9,981	13,811	-27.7%	1,005	1,083	-7.2%	0	0	--
Mountain	18,782	20,144	-6.8%	410	410	0.0%	W	W	W
Arizona	3,015	3,544	-14.9%	138	147	-6.4%	0	0	--
Colorado	4,388	4,363	0.6%	140	126	11.5%	0	0	--
Idaho	0	0	--	0	0	-12.1%	0	0	--
Montana	W	W	W	20	20	-2.8%	W	W	W
Nevada	W	W	W	3	15	-80.7%	0	0	--
New Mexico	W	W	W	37	39	-5.2%	0	0	--
Utah	4,589	5,279	-13.1%	33	32	3.0%	0	0	--
Wyoming	4,316	4,177	3.3%	39	30	30.6%	0	0	--
Pacific Contiguous	W	W	W	338	358	-5.5%	0	0	--
California	0	0	--	159	177	-10.0%	0	0	--
Oregon	W	W	W	77	75	2.2%	0	0	--
Washington	W	W	W	103	106	-3.3%	0	0	--
Pacific Noncontiguous	W	W	W	2,468	2,591	-4.7%	0	0	--
Alaska	W	W	W	281	322	-12.7%	0	0	--
Hawaii	W	W	W	2,187	2,269	-3.6%	0	0	--
U.S. Total	137,687	162,009	-15.0%	29,294	31,839	-8.0%	864	845	2.2%

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 Division, 2017 and 2016**

Census Division	Electric Power Sector			Electric Utilities		Independent Power Producers	
	December 2017	December 2016	Percentage Change	December 2017	December 2016	December 2017	December 2016
Coal (Thousand Tons)							
New England	933	1,638	-43.1%	W	W	W	W
Middle Atlantic	3,876	4,526	-14.4%	W	0	W	4,526
East North Central	28,906	35,636	-18.9%	19,532	22,656	9,374	12,980
West North Central	28,193	31,091	-9.3%	28,193	W	0	W
South Atlantic	24,030	26,769	-10.2%	21,746	24,404	2,284	2,364
East South Central	12,266	15,918	-22.9%	12,266	15,918	0	0
West South Central	19,583	24,799	-21.0%	14,040	16,279	5,543	8,520
Mountain	18,782	20,144	-6.8%	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	137,687	162,009	-15.0%	114,782	130,885	22,905	31,124
Petroleum Liquids (Thousand Barrels)							
New England	3,452	4,534	-23.9%	589	683	2,864	3,852
Middle Atlantic	5,176	5,792	-10.6%	2,008	2,331	3,168	3,461
East North Central	1,144	1,167	-2.0%	788	855	356	312
West North Central	984	1,040	-5.4%	957	1,014	26	26
South Atlantic	11,917	12,144	-1.9%	9,891	9,637	2,026	2,507
East South Central	1,729	2,004	-13.7%	1,656	1,931	73	73
West South Central	1,675	1,800	-6.9%	1,314	1,384	361	416
Mountain	410	410	0.0%	378	376	32	34
Pacific Contiguous	338	358	-5.5%	235	249	104	109
Pacific Noncontiguous	2,468	2,591	-4.7%	2,436	2,554	32	37
U.S. Total	29,294	31,839	-8.0%	20,253	21,013	9,041	10,827
Petroleum Coke (Thousand Tons)							
New England	0	0	--	0	0	0	0
Middle Atlantic	0	0	--	0	0	0	0
East North Central	W	247	W	W	W	W	W
West North Central	0	0	--	0	0	0	0
South Atlantic	W	W	W	107	W	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	864	845	2.2%	692	603	171	241

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, 2007 - 2017

Period	Electric Power Sector			
	Bituminous Coal	Subbituminous Coal	Lignite Coal	Total
End of Year Stocks				
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
2017	56,140	77,875	3,672	137,687
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
Year 2017, End of Month Stocks				
January	65,797	86,082	4,335	156,214
February	67,752	88,326	4,424	160,502
March	67,783	89,381	4,651	161,815
April	68,195	90,736	5,005	163,937
May	68,333	89,005	5,204	162,542
June	66,591	86,722	4,701	158,014
July	60,766	80,765	4,281	145,811
August	59,208	77,758	4,238	141,204
September	58,453	77,173	3,945	139,571
October	59,122	78,821	3,519	141,463
November	59,427	79,916	4,081	143,424
December	56,140	77,875	3,672	137,687

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, 2007 through 2017

Period	Coal				Petroleum				Natural Gas		All Fossil Fuels
	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Cost		Receipts (Thousand Barrels)	Average Sulfur Percent by Weight	Average Cost		Receipts (Thousand Mcf)	Average Cost (Dollars per MMBtu)	Average Cost (Dollars per MMBtu)
			(Dollars per MMBtu)	(Dollars per Ton)			(Dollars per MMBtu)	(Dollars per Barrel)			
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
2017	642,364	1.28	2.06	39.27	32,672	3.59	7.10	41.23	9,628,733	3.37	2.65

* = 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.

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- See Glossary for definitions.

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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 7.2. Receipts and Quality of Coal Delivered for the Electric Power Industry, 2007 through 2017

Period	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
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
2017	224,500	2.45	10.3	350,580	0.31	5.6	59,665	0.96	14.0

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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 the Technical Notes for fuel conversion factors.
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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 7.3. Average Quality of Fossil Fuel Receipts for the Electric Power Industry, 2007 through 2017

Period	Coal			Petroleum			Natural Gas
	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
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
2017	9,544	1.28	8.4	138,324	3.59	0.4	1,034

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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.

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- See the Technical Notes for fuel conversion factors.
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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 7.4. Weighted Average Cost of Fossil Fuels for the Electric Power Industry, 2007 through 2017

Period	Coal								Petroleum		Natural Gas		Total Fossil	
	Bituminous		Subbituminous		Lignite		All Coal Ranks		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)						
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
2017	5,279	2.31	6,123	1.90	773	1.66	12,261	2.06	190	7.10	9,952	3.37	22,403	2.65

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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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Table 7.5. Receipts, Average Cost, and Quality of Fossil Fuels: Electric Utilities, 2007 - 2017

Period	Coal						Petroleum Liquids					
	Receipts		Average Cost		Average Sulfur Percent by Weight	Percentage of Consumption	Receipts		Average Cost		Average Sulfur Percent by Weight	Percentage of Consumption
	(Billion Btu)	(Thousand Tons)	(Dollars per MMBtu)	(Dollars per Ton)			(Billion Btu)	(Thousand Barrels)	(Dollars per MMBtu)	(Dollars per Barrel)		
Annual Totals												
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
2017	9,011,629	467,595	2.12	40.81	1.16	96.0	70,422	11,640	11.60	70.19	0.47	74.4
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
Year 2017												
January	797,433	41,477	2.14	41.15	1.14	88.2	6,680	1,100	11.15	67.71	0.44	75.9
February	737,614	38,372	2.11	40.53	1.20	107.5	4,658	770	11.60	70.11	0.46	66.9
March	706,986	36,570	2.12	41.05	1.20	101.9	10,582	1,778	11.59	68.99	0.53	132.1
April	650,562	33,339	2.14	41.82	1.22	105.4	4,760	788	11.41	68.97	0.46	68.2
May	702,581	36,058	2.16	42.07	1.21	95.9	4,694	778	11.40	68.79	0.45	60.1
June	786,845	40,393	2.13	41.51	1.20	91.9	5,771	951	10.93	66.29	0.47	72.2
July	821,488	42,591	2.11	40.78	1.11	81.6	4,826	803	10.96	65.87	0.45	68.3
August	890,849	46,092	2.11	40.79	1.18	93.7	5,210	855	11.12	67.72	0.46	67.4
September	741,814	38,857	2.08	39.69	1.10	98.1	4,823	792	11.80	71.87	0.48	65.9
October	733,109	38,175	2.09	40.12	1.15	104.8	5,030	825	12.05	73.47	0.49	63.2
November	726,042	38,128	2.11	40.23	1.13	105.8	7,044	1,156	12.00	73.12	0.41	98.5
December	716,306	37,543	2.11	40.20	1.11	89.5	6,345	1,043	12.93	78.67	0.42	58.0

Displayed values of zero may represent small values that round to zero.

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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 Glossary for definitions.

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- See the Technical Notes for fuel conversion factors.

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Table 7.6. Receipts, Average Cost, and Quality of Fossil Fuels: Electric Utilities, 2007 - 2017 (continued)

Period	Petroleum Coke						Natural Gas					All Fossil Fuels
	Receipts		Average Cost		Average Sulfur Percent by Weight	Percentage of Consumption	Receipts		Average Cost		Percentage of Consumption	Average Cost
	(Billion Btu)	(Thousand Tons)	(Dollars per MMBtu)	(Dollars per Ton)			(Billion Btu)	(Thousand Mcf)	(Dollars per MMBtu)	(Dollars per Mcf)		(Dollars per MMBtu)
Annual Totals												
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
2017	90,481	3,224	2.15	60.31	5.55	117.6	4,794,383	4,640,827	3.62	3.74	96.8	2.68
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
Year 2017												
January	7,058	251	2.14	60.16	5.67	83.3	337,596	326,324	4.31	4.46	95.7	2.82
February	7,593	271	2.00	56.03	5.85	124.3	294,616	285,401	3.80	3.92	96.7	2.62
March	8,628	309	2.06	57.51	5.29	143.9	355,096	343,820	3.53	3.64	97.0	2.67
April	5,835	208	2.00	55.96	5.34	188.7	338,000	327,213	3.52	3.63	97.7	2.65
May	6,776	242	2.05	57.46	5.57	91.5	383,433	371,812	3.68	3.80	98.5	2.73
June	8,386	298	2.14	60.07	5.55	105.5	442,214	428,256	3.55	3.66	97.6	2.67
July	8,245	292	2.11	59.61	5.49	107.5	554,383	536,001	3.45	3.57	96.5	2.68
August	7,676	273	2.11	59.17	5.45	119.8	519,749	502,748	3.42	3.53	96.7	2.62
September	7,658	274	2.12	59.07	5.42	130.2	435,093	420,539	3.54	3.66	96.4	2.65
October	7,454	265	2.37	66.84	5.58	154.2	389,312	377,140	3.54	3.66	97.1	2.63
November	7,084	252	2.52	70.93	5.66	107.1	342,138	331,585	3.64	3.76	96.6	2.66
December	8,088	287	2.17	60.99	5.74	123.5	402,754	389,987	3.71	3.83	95.5	2.74

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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:

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.

- 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 7.7 Receipts, Average Cost, and Quality of Fossil Fuels: Independent Power Producers, 2007 - 2017

Period	Coal						Petroleum Liquids					
	Receipts		Average Cost		Average Sulfur Percent by Weight	Percentage of Consumption	Receipts		Average Cost		Average Sulfur Percent by Weight	Percentage of Consumption
	(Billion Btu)	(Thousand Tons)	(Dollars per MMBtu)	(Dollars per Ton)			(Billion Btu)	(Thousand Barrels)	(Dollars per MMBtu)	(Dollars per Barrel)		
Annual Totals												
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
2017	3,056,215	165,567	1.85	34.19	1.64	93.1	24,704	4,190	12.67	74.73	0.46	73.8
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
Year 2017												
January	297,849	16,042	1.92	35.75	1.59	96.7	2,862	488	13.96	82.04	0.47	103.9
February	254,381	13,690	1.88	34.92	1.59	110.9	1,514	254	11.89	70.84	0.50	70.2
March	251,712	13,439	1.88	35.27	1.75	103.1	1,436	247	11.97	69.71	0.44	91.2
April	235,324	12,633	1.85	34.48	1.66	99.2	1,436	242	W	W	0.44	83.2
May	238,355	12,976	1.86	34.11	1.67	97.1	1,790	306	W	W	0.45	79.3
June	239,687	13,070	1.86	34.15	1.67	87.3	1,559	267	W	W	0.42	64.2
July	257,789	14,218	1.85	33.64	1.55	80.5	1,775	303	W	W	0.48	79.4
August	279,845	15,249	1.83	33.52	1.64	91.5	1,702	289	W	W	0.43	72.3
September	258,366	13,963	1.82	33.65	1.63	92.0	1,543	267	W	W	0.42	68.5
October	250,339	13,545	1.83	33.87	1.60	99.0	2,399	406	11.71	69.17	0.50	121.1
November	243,578	13,224	1.79	33.00	1.64	88.3	2,544	434	13.15	77.15	0.56	113.8
December	248,991	13,519	1.83	33.70	1.68	81.5	4,145	688	15.82	95.35	0.43	43.1

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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, 2007 - 2017 (continued)

Period	Petroleum Coke							Natural Gas					All Fossil Fuels
	Receipts		Average Cost			Average Sulfur Percent by Weight	Percentage of Consumption	Receipts		Average Cost		Percentage of Consumption	Average Cost
	(Billion Btu)	(Thousand Tons)	(Dollars per MMBtu)	(Dollars per Ton)	(Billion Btu)			(Thousand Mcf)	(Dollars per MMBtu)	(Dollars per Mcf)	(Dollars per MMBtu)		
Annual Totals													
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	
2017	0	0	--	--	--	0.0	4,346,156	4,201,573	3.08	3.19	94.0	2.54	
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	
Year 2017													
January	0	0	--	--	--	0.0	308,232	297,759	3.99	4.13	93.5	2.92	
February	0	0	--	--	--	0.0	266,747	257,955	3.34	3.45	94.3	2.58	
March	0	0	--	--	--	0.0	308,990	298,914	3.22	3.33	94.1	2.58	
April	0	0	--	--	--	0.0	284,267	275,005	3.20	3.31	94.1	W	
May	0	0	--	--	--	0.0	315,859	305,704	3.21	3.31	94.8	W	
June	0	0	--	--	--	0.0	401,526	388,362	2.93	3.02	94.2	W	
July	0	0	--	--	--	0.0	510,414	493,178	2.88	2.98	93.8	W	
August	0	0	--	--	--	0.0	490,671	474,207	2.74	2.84	94.5	W	
September	0	0	--	--	--	0.0	411,228	396,942	2.66	2.75	93.8	W	
October	0	0	--	--	--	0.0	370,640	358,457	2.60	2.69	93.3	2.29	
November	0	0	--	--	--	0.0	310,865	300,737	3.03	3.13	93.2	2.47	
December	0	0	--	--	--	0.0	366,717	354,352	3.64	3.77	94.0	2.91	

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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.

- Values are final.

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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 7.9. Receipts, Average Cost, and Quality of Fossil Fuels: Commercial Sector, 2007 - 2017

Period	Coal						Petroleum Liquids					
	Receipts		Average Cost		Average Sulfur Percent by Weight	Percentage of Consumption	Receipts		Average Cost		Average Sulfur Percent by Weight	Percentage of Consumption
	(Billion Btu)	(Thousand Tons)	(Dollars per MMBtu)	(Dollars per Ton)			(Billion Btu)	(Thousand Barrels)	(Dollars per MMBtu)	(Dollars per Barrel)		
Annual Totals												
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
2017	548	24	W	W	2.99	3.9	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
Year 2017												
January	111	5	W	W	2.99	6.9	0	0	--	--	--	0.0
February	91	4	W	W	2.95	6.9	0	0	--	--	--	0.0
March	104	5	W	W	3.02	7.0	0	0	--	--	--	0.0
April	1	0	W	W	2.96	0.1	0	0	--	--	--	0.0
May	11	0	W	W	3.23	1.2	0	0	--	--	--	0.0
June	17	1	W	W	3.02	1.8	0	0	--	--	--	0.0
July	0	0	--	--	--	0.0	0	0	--	--	--	0.0
August	4	0	W	W	2.77	0.4	0	0	--	--	--	0.0
September	72	3	W	W	2.96	6.9	0	0	--	--	--	0.0
October	35	2	W	W	2.96	3.6	0	0	--	--	--	0.0
November	13	1	W	W	3.04	1.1	0	0	--	--	--	0.0
December	89	4	W	W	3.01	6.0	0	0	--	--	--	0.0

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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 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 7.10. Receipts, Average Cost, and Quality of Fossil Fuels: Commercial Sector, 2007 - 2017 (continued)

Period	Petroleum Coke						Natural Gas					All Fossil Fuels
	Receipts		Average Cost				Receipts		Average Cost			Average Cost
	(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												
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
2017	0	0	--	--	--	0.0	7,841	7,593	W	W	4.9	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
Year 2017												
January	0	0	--	--	--	0.0	662	639	W	W	4.5	W
February	0	0	--	--	--	0.0	646	624	W	W	5.2	W
March	0	0	--	--	--	0.0	680	662	W	W	5.4	W
April	0	0	--	--	--	0.0	502	490	W	W	4.7	W
May	0	0	--	--	--	0.0	497	483	W	W	4.4	W
June	0	0	--	--	--	0.0	615	595	W	W	4.6	W
July	0	0	--	--	--	0.0	636	613	W	W	4.1	W
August	0	0	--	--	--	0.0	809	778	W	W	5.3	W
September	0	0	--	--	--	0.0	707	685	W	W	5.1	W
October	0	0	--	--	--	0.0	605	588	W	W	4.6	W
November	0	0	--	--	--	0.0	749	725	W	W	6.0	W
December	0	0	--	--	--	0.0	734	711	W	W	5.2	W

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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 7.11. Receipts, Average Cost, and Quality of Fossil Fuels: Industrial Sector, 2007 - 2017

Period	Coal						Petroleum Liquids					
	Receipts		Average Cost		Average Sulfur Percent by Weight	Percentage of Consumption	Receipts		Average Cost		Average Sulfur Percent by Weight	Percentage of Consumption
	(Billion Btu)	(Thousand Tons)	(Dollars per MMBtu)	(Dollars per Ton)			(Billion Btu)	(Thousand Barrels)	(Dollars per MMBtu)	(Dollars per Barrel)		
Annual Totals												
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
2017	192,637	9,178	W	W	1.35	70.7	1,850	297	11.18	69.57	1.42	15.2
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
Year 2017												
January	15,758	742	W	W	1.38	58.7	128	21	11.64	72.27	1.06	12.8
February	15,865	744	W	W	1.18	69.1	121	19	11.56	72.24	1.36	15.1
March	17,861	858	W	W	1.34	75.2	178	29	10.66	66.36	1.22	18.7
April	16,089	759	W	W	1.23	75.3	160	26	W	W	1.27	16.7
May	16,329	796	W	W	1.16	76.3	155	25	W	W	1.21	17.7
June	15,911	757	W	W	1.37	72.5	142	23	W	W	1.11	17.9
July	15,852	763	2.46	51.07	1.30	73.3	95	15	W	W	1.30	12.4
August	16,644	784	W	W	1.36	74.7	110	18	W	W	1.55	14.1
September	14,897	715	W	W	1.17	72.2	151	24	W	W	1.51	17.3
October	15,687	741	W	W	1.36	67.5	149	24	11.43	71.09	1.58	16.1
November	15,335	734	W	W	1.43	68.2	199	32	11.67	72.03	1.71	13.2
December	16,408	785	W	W	1.89	68.9	263	42	11.14	69.14	1.79	13.5

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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 7.12. Receipts, Average Cost, and Quality of Fossil Fuels: Industrial Sector, 2007 - 2017 (continued)

Period	Petroleum Coke						Natural Gas					All Fossil Fuels
	Receipts		Average Cost				Receipts		Average Cost			Average Cost
	(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												
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
2017	2,356	85	W	W	5.84	8.1	803,435	778,741	W	W	62.0	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
Year 2017												
January	0	0	--	--	--	0.0	69,093	66,857	W	W	62.4	W
February	0	0	--	--	--	0.0	66,939	64,865	W	W	67.1	W
March	0	0	--	--	--	0.0	69,909	67,773	W	W	65.7	W
April	0	0	--	--	--	0.0	66,465	64,429	W	W	65.2	W
May	0	0	--	--	--	0.0	66,784	64,714	W	W	63.8	W
June	271	9	W	W	5.75	9.5	66,331	64,299	W	W	61.6	W
July	253	9	W	W	5.85	9.4	67,662	65,619	W	W	58.6	W
August	296	11	W	W	5.85	10.9	65,688	63,679	W	W	58.7	W
September	257	9	W	W	5.85	11.7	62,978	61,019	W	W	59.4	W
October	893	32	W	W	5.85	35.3	63,058	61,209	W	W	58.8	W
November	386	14	W	W	5.85	16.1	66,895	64,843	W	W	62.6	W
December	0	0	--	--	--	0.0	71,633	69,435	W	W	60.6	W

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:

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.

- 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 7.13. Receipts of Coal Delivered for Electricity Generation by State, 2017 and 2016
(Thousand Tons)**

Census Division and State	Electric Power Sector										
	All Sectors			Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
New England	198	1,173	-83.0%	45	177	153	979	0	0	0	17
Connecticut	0	85	-100.0%	0	0	0	85	0	0	0	0
Maine	66	87	-24.0%	0	0	66	70	0	0	0	17
Massachusetts	87	824	-89.0%	0	0	87	824	0	0	0	0
New Hampshire	45	177	-75.0%	45	177	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	23,135	24,329	-4.9%	119	0	22,734	23,738	0	0	282	591
New Jersey	656	649	1.1%	0	0	656	649	0	0	0	0
New York	281	637	-56.0%	0	0	109	361	0	0	172	277
Pennsylvania	22,198	23,042	-3.7%	119	0	21,968	22,728	0	0	110	314
East North Central	138,487	137,391	0.8%	84,753	82,037	51,281	52,728	0	0	2,452	2,625
Illinois	40,231	39,036	3.1%	7,794	6,947	30,210	30,046	0	0	2,227	2,043
Indiana	28,961	28,736	0.8%	27,465	27,038	1,496	1,699	0	0	0	0
Michigan	23,611	21,809	8.3%	23,331	21,548	272	247	0	0	8	13
Ohio	25,965	28,881	-10.0%	6,662	7,993	19,303	20,736	0	0	0	152
Wisconsin	19,719	18,929	4.2%	19,502	18,511	0	0	0	0	217	418
West North Central	116,890	117,202	-0.3%	113,553	114,210	0	0	24	57	3,313	2,935
Iowa	15,347	18,041	-15.0%	13,186	15,932	0	0	0	0	2,162	2,110
Kansas	12,272	14,425	-15.0%	12,272	14,425	0	0	0	0	0	0
Minnesota	12,946	12,471	3.8%	12,569	12,404	0	0	0	0	377	67
Missouri	37,752	34,893	8.2%	37,728	34,836	0	0	24	57	0	0
Nebraska	13,654	13,652	0.0%	12,880	12,894	0	0	0	0	774	758
North Dakota	23,540	22,386	5.2%	23,540	22,386	0	0	0	0	0	0
South Dakota	1,379	1,333	3.5%	1,379	1,333	0	0	0	0	0	0
South Atlantic	88,271	95,606	-7.7%	76,688	82,063	10,561	12,343	0	0	1,022	1,200
Delaware	200	243	-18.0%	0	0	200	243	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	15,139	15,033	0.7%	14,947	14,744	26	290	0	0	167	0
Georgia	16,943	17,397	-2.6%	16,832	17,246	0	0	0	0	111	151
Maryland	3,851	5,583	-31.0%	0	0	3,652	5,354	0	0	198	228
North Carolina	13,214	12,236	8.0%	12,832	11,802	90	74	0	0	292	359
South Carolina	6,499	7,971	-18.0%	6,473	7,883	0	0	0	0	26	88
Virginia	5,520	7,861	-30.0%	4,662	6,894	631	663	0	0	228	304
West Virginia	26,906	29,281	-8.1%	20,943	23,494	5,963	5,719	0	0	0	69
East South Central	59,231	67,605	-12.0%	55,871	63,383	2,417	3,053	0	0	943	1,170
Alabama	15,754	16,261	-3.1%	15,754	16,261	0	0	0	0	0	0
Kentucky	31,490	37,275	-16.0%	31,490	37,275	0	0	0	0	0	0
Mississippi	3,845	4,442	-13.0%	1,428	1,389	2,417	3,053	0	0	0	0
Tennessee	8,142	9,627	-15.0%	7,199	8,458	0	0	0	0	943	1,170
West South Central	120,958	110,732	9.2%	56,200	52,760	64,327	57,516	0	0	431	457
Arkansas	14,285	12,797	12.0%	12,442	10,593	1,776	2,142	0	0	67	62
Louisiana	8,029	6,912	16.0%	5,025	5,113	3,003	1,799	0	0	0	0
Oklahoma	10,586	11,073	-4.4%	9,180	9,583	1,043	1,095	0	0	364	395
Texas	88,058	79,950	10.0%	29,553	27,471	58,506	52,479	0	0	0	0
Mountain	89,478	90,812	-1.5%	79,315	80,388	10,052	10,193	0	0	111	231
Arizona	16,406	15,236	7.7%	16,406	15,236	0	0	0	0	0	0
Colorado	16,284	15,889	2.5%	16,284	15,889	0	0	0	0	0	0
Idaho	0	0	--	0	0	0	0	0	0	0	0
Montana	8,759	9,032	-3.0%	215	256	8,544	8,776	0	0	0	0
Nevada	743	956	-22.0%	182	459	561	497	0	0	0	0
New Mexico	10,608	10,909	-2.8%	10,608	10,909	0	0	0	0	0	0
Utah	11,981	13,632	-12.0%	11,458	13,004	412	397	0	0	111	231
Wyoming	24,697	25,158	-1.8%	24,161	24,635	535	523	0	0	0	0
Pacific Contiguous	4,815	4,880	-1.3%	877	994	3,313	3,252	0	0	625	634
California	625	634	-1.4%	0	0	0	0	0	0	625	634
Oregon	877	994	-12.0%	877	994	0	0	0	0	0	0
Washington	3,313	3,252	1.9%	0	0	3,313	3,252	0	0	0	0
Pacific Noncontiguous	902	1,041	-13.0%	173	195	728	846	0	0	0	0
Alaska	173	195	-11.0%	173	195	0	0	0	0	0	0
Hawaii	728	846	-14.0%	0	0	728	846	0	0	0	0
U.S. Total	642,364	650,770	-1.3%	467,595	476,207	165,567	164,648	24	57	9,178	9,859

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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.
 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, 2017 and 2016
(Thousand Barrels)**

Census Division and State	Electric Power Sector										
	All Sectors			Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
New England	502	590	-15.0%	24	76	478	509	0	0	0	5
Connecticut	30	37	-20.0%	0	0	30	37	0	0	0	0
Maine	178	29	504.0%	0	0	178	24	0	0	0	5
Massachusetts	189	498	-62.0%	10	66	179	432	0	0	0	0
New Hampshire	80	11	646.0%	14	11	66	0	0	0	0	0
Rhode Island	27	15	79.0%	0	0	27	15	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	1,159	1,133	2.3%	210	307	860	712	0	0	88	114
New Jersey	18	18	-0.6%	0	0	18	18	0	0	0	0
New York	714	612	17.0%	210	307	483	284	0	0	21	22
Pennsylvania	426	502	-15.0%	0	0	359	410	0	0	67	92
East North Central	888	1,050	-15.0%	512	547	352	472	0	0	24	31
Illinois	116	119	-2.5%	5	5	111	114	0	0	0	0
Indiana	203	184	11.0%	201	184	2	0	0	0	0	0
Michigan	154	180	-15.0%	144	171	0	0	0	0	9	9
Ohio	363	517	-30.0%	110	142	238	354	0	0	15	21
Wisconsin	53	51	5.1%	52	47	1	4	0	0	0	0
West North Central	453	402	13.0%	453	398	0	4	0	0	0	0
Iowa	101	106	-4.5%	101	106	0	0	0	0	0	0
Kansas	115	41	181.0%	115	41	0	0	0	0	0	0
Minnesota	49	42	17.0%	49	38	0	4	0	0	0	0
Missouri	108	144	-25.0%	108	144	0	0	0	0	0	0
Nebraska	5	4	31.0%	5	4	0	0	0	0	0	0
North Dakota	69	61	13.0%	69	61	0	0	0	0	0	0
South Dakota	5	4	38.0%	5	4	0	0	0	0	0	0
South Atlantic	3,222	3,717	-13.0%	2,622	2,804	423	659	0	0	178	254
Delaware	19	79	-76.0%	0	0	19	79	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	1,447	916	58.0%	1,407	909	0	7	0	0	40	0
Georgia	253	264	-3.9%	162	169	19	32	0	0	73	63
Maryland	233	266	-13.0%	0	0	233	266	0	0	0	0
North Carolina	340	354	-4.0%	290	249	18	68	0	0	32	38
South Carolina	148	277	-47.0%	130	150	0	0	0	0	18	127
Virginia	601	1,323	-55.0%	451	1,104	135	193	0	0	15	27
West Virginia	182	238	-24.0%	182	223	0	14	0	0	0	0
East South Central	368	459	-20.0%	355	439	6	11	0	0	6	9
Alabama	51	67	-24.0%	44	55	6	11	0	0	0	0
Kentucky	169	188	-9.9%	169	188	0	0	0	0	0	0
Mississippi	15	26	-42.0%	15	26	0	0	0	0	0	0
Tennessee	133	178	-26.0%	126	169	0	0	0	0	6	9
West South Central	231	287	-19.0%	132	215	99	72	0	0	0	0
Arkansas	81	74	9.5%	36	57	45	18	0	0	0	0
Louisiana	6	54	-89.0%	6	52	0	2	0	0	0	0
Oklahoma	18	29	-37.0%	18	29	0	0	0	0	0	0
Texas	126	129	-2.8%	71	77	54	52	0	0	0	0
Mountain	351	355	-1.2%	322	321	29	34	0	0	0	0
Arizona	89	108	-18.0%	89	108	0	0	0	0	0	0
Colorado	5	14	-63.0%	5	14	0	0	0	0	0	0
Idaho	0	0	--	0	0	0	0	0	0	0	0
Montana	19	24	-20.0%	0	0	19	24	0	0	0	0
Nevada	18	22	-18.0%	11	16	7	6	0	0	0	0
New Mexico	72	84	-15.0%	72	84	0	0	0	0	0	0
Utah	66	30	117.0%	63	26	3	4	0	0	0	0
Wyoming	82	73	13.0%	82	73	0	0	0	0	0	0
Pacific Contiguous	35	20	77.0%	18	4	17	15	0	0	0	0
California	0	0	--	0	0	0	0	0	0	0	0
Oregon	14	3	287.0%	14	3	0	0	0	0	0	0
Washington	22	16	32.0%	4	1	17	15	0	0	0	0
Pacific Noncontiguous	8,917	8,793	1.4%	6,993	6,872	1,924	1,921	0	0	0	0
Alaska	1	9	-84.0%	1	9	0	0	0	0	0	0
Hawaii	8,916	8,784	1.5%	6,992	6,863	1,924	1,921	0	0	0	0
U.S. Total	16,127	16,807	-4.0%	11,640	11,985	4,190	4,410	0	0	297	412

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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.
 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, 2017 and 2016
(Thousand Tons)**

Census Division and State	Electric Power Sector										
	All Sectors			Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
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	-100.0%	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	-100.0%	0	0	0	0	0	0	0	0
East North Central	559	1,014	-45.0%	559	504	0	492	0	0	0	18
Illinois	0	0	--	0	0	0	0	0	0	0	0
Indiana	0	162	-100.0%	0	162	0	0	0	0	0	0
Michigan	504	295	71.0%	504	295	0	0	0	0	0	0
Ohio	0	492	-100.0%	0	0	0	492	0	0	0	0
Wisconsin	54	66	-17.0%	54	47	0	0	0	0	0	18
West North Central	85	0	--	0	0	0	0	0	0	85	0
Iowa	85	0	--	0	0	0	0	0	0	85	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	663	1,441	-54.0%	663	1,324	0	0	0	0	0	117
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	663	1,324	-50.0%	663	1,324	0	0	0	0	0	0
Georgia	0	117	-100.0%	0	0	0	0	0	0	0	117
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	117	92	28.0%	117	92	0	0	0	0	0	0
Alabama	0	0	--	0	0	0	0	0	0	0	0
Kentucky	117	92	28.0%	117	92	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	1,885	1,619	16.0%	1,885	1,619	0	0	0	0	0	0
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	1,885	1,619	16.0%	1,885	1,619	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	3,309	4,166	-21.0%	3,224	3,538	0	492	0	0	85	135

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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.
 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, 2017 and 2016
(Million Cubic Feet)**

Census Division and State	Electric Power Sector										
	All Sectors			Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
New England	352,098	372,811	-5.6%	1,455	1,973	350,643	370,838	0	0	0	0
Connecticut	103,957	118,539	-12.0%	0	0	103,957	118,539	0	0	0	0
Maine	13,735	22,591	-39.0%	0	0	13,735	22,591	0	0	0	0
Massachusetts	157,628	150,999	4.4%	1,055	1,497	156,573	149,502	0	0	0	0
New Hampshire	26,062	33,883	-23.0%	400	476	25,662	33,407	0	0	0	0
Rhode Island	50,716	46,798	8.4%	0	0	50,716	46,798	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	1,122,972	1,212,167	-7.4%	84,110	101,020	1,034,150	1,108,355	0	0	4,711	2,792
New Jersey	268,581	309,871	-13.0%	0	0	268,581	309,871	0	0	0	0
New York	350,206	422,842	-17.0%	84,110	101,020	263,642	320,922	0	0	2,454	900
Pennsylvania	504,185	479,454	5.2%	0	0	501,928	477,561	0	0	2,257	1,892
East North Central	736,347	845,653	-13.0%	260,580	373,096	455,532	454,803	5,952	6,357	14,283	11,398
Illinois	107,309	135,248	-21.0%	7,779	12,793	99,475	122,418	0	0	54	36
Indiana	122,867	148,401	-17.0%	54,979	121,845	67,888	26,556	0	0	0	0
Michigan	198,703	237,431	-16.0%	55,318	83,424	131,445	141,907	5,952	6,357	5,988	5,744
Ohio	206,172	209,824	-1.7%	53,674	55,369	147,666	152,722	0	0	4,831	1,733
Wisconsin	101,296	114,750	-12.0%	88,829	99,664	9,057	11,201	0	0	3,410	3,885
West North Central	171,237	179,892	-4.8%	148,131	151,235	17,324	25,263	1,641	1,409	4,141	1,985
Iowa	49,009	31,395	56.0%	45,009	30,523	0	0	0	0	4,000	872
Kansas	17,988	17,007	5.8%	17,988	17,007	0	0	0	0	0	0
Minnesota	45,644	64,230	-29.0%	36,715	49,834	8,782	13,294	7	10	140	1,092
Missouri	40,569	45,802	-11.0%	30,393	32,434	8,542	11,970	1,634	1,399	0	0
Nebraska	6,035	4,333	39.0%	6,035	4,312	0	0	0	0	0	21
North Dakota	7,226	11,320	-36.0%	7,226	11,320	0	0	0	0	0	0
South Dakota	4,765	5,804	-18.0%	4,765	5,804	0	0	0	0	0	0
South Atlantic	2,370,929	2,396,562	-1.1%	1,950,240	1,942,448	385,848	413,536	0	0	34,841	40,577
Delaware	42,418	63,408	-33.0%	0	0	42,418	49,502	0	0	0	13,906
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	1,153,819	1,153,072	0.1%	1,111,591	1,072,377	40,092	80,695	0	0	2,135	0
Georgia	378,227	390,148	-3.1%	280,741	297,542	88,413	82,871	0	0	9,074	9,735
Maryland	46,548	47,562	-2.1%	0	0	44,107	45,379	0	0	2,441	2,182
North Carolina	279,167	292,769	-4.6%	239,655	253,834	37,436	38,745	0	0	2,075	189
South Carolina	131,328	130,416	0.7%	113,766	105,944	16,308	22,310	0	0	1,254	2,162
Virginia	320,733	304,679	5.3%	202,464	211,213	108,595	85,355	0	0	9,674	8,111
West Virginia	18,689	14,508	29.0%	2,023	1,537	8,479	8,678	0	0	8,187	4,293
East South Central	886,080	939,721	-5.7%	602,975	621,230	264,995	306,493	0	0	18,110	11,998
Alabama	364,506	394,076	-7.5%	131,177	115,349	233,329	278,728	0	0	0	0
Kentucky	81,265	67,374	21.0%	76,497	61,863	4,769	5,511	0	0	0	0
Mississippi	346,830	378,393	-8.3%	319,933	356,139	26,897	22,254	0	0	0	0
Tennessee	93,479	99,878	-6.4%	75,369	87,879	0	0	0	0	18,110	11,998
West South Central	2,633,752	2,855,252	-7.8%	779,185	863,058	1,183,929	1,369,805	0	0	670,638	622,389
Arkansas	126,300	133,676	-5.5%	112,269	50,915	11,930	80,503	0	0	2,101	2,258
Louisiana	535,301	536,078	-0.1%	237,120	271,761	34,771	50,056	0	0	263,411	214,261
Oklahoma	230,111	276,545	-17.0%	140,961	193,111	86,876	82,633	0	0	2,274	801
Texas	1,742,040	1,908,954	-8.7%	288,836	347,272	1,050,352	1,156,613	0	0	402,852	405,068
Mountain	622,145	688,171	-9.6%	510,586	532,547	110,246	154,856	0	0	1,312	768
Arizona	224,021	254,500	-12.0%	159,622	148,841	64,399	105,659	0	0	0	0
Colorado	90,410	90,645	-0.3%	76,803	76,165	13,606	14,481	0	0	0	0
Idaho	19,169	20,974	-8.6%	10,181	12,110	8,989	8,865	0	0	0	0
Montana	3,157	3,386	-6.7%	3,140	3,367	17	18	0	0	0	0
Nevada	178,129	191,152	-6.8%	178,129	191,152	0	0	0	0	0	0
New Mexico	68,683	73,286	-6.3%	45,461	48,589	23,222	24,697	0	0	0	0
Utah	37,307	54,033	-31.0%	35,995	52,142	0	1,123	0	0	1,312	768
Wyoming	1,268	194	555.0%	1,255	182	13	12	0	0	0	0
Pacific Contiguous	717,877	767,973	-6.5%	288,268	307,952	398,905	430,569	0	0	30,705	29,451
California	556,012	593,164	-6.3%	202,241	212,636	323,067	351,077	0	0	30,705	29,451
Oregon	94,868	106,814	-11.0%	45,243	52,607	49,625	54,207	0	0	0	0
Washington	66,997	67,994	-1.5%	40,784	42,708	26,213	25,285	0	0	0	0
Pacific Noncontiguous	15,297	12,979	18.0%	15,297	12,979	0	0	0	0	0	0
Alaska	15,297	12,979	18.0%	15,297	12,979	0	0	0	0	0	0
Hawaii	0	0	--	0	0	0	0	0	0	0	0
U.S. Total	9,628,733	10,271,180	-6.3%	4,640,827	4,907,538	4,201,573	4,634,518	7,593	7,766	778,741	721,358

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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, 2017 and 2016
(Dollars per MMBtu)**

Census Division and State	Electric Power Sector			Electric Utilities		Independent Power Producers	
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Year 2017	Year 2016
New England	W	W	W	4.34	4.07	W	W
Connecticut	--	W	W	--	--	--	W
Maine	W	W	W	--	--	W	W
Massachusetts	W	W	W	--	--	W	W
New Hampshire	4.34	4.07	6.6%	4.34	4.07	--	--
Rhode Island	--	--	--	--	--	--	--
Vermont	--	--	--	--	--	--	--
Middle Atlantic	1.94	1.96	-1.0%	1.66	--	1.94	1.96
New Jersey	W	W	W	--	--	W	W
New York	W	W	W	--	--	W	W
Pennsylvania	1.88	1.90	-1.1%	1.66	--	1.88	1.90
East North Central	2.02	2.09	-3.3%	2.10	2.18	1.88	1.94
Illinois	W	W	W	1.85	1.97	W	W
Indiana	W	W	W	2.15	2.25	W	W
Michigan	W	W	W	2.17	2.25	W	W
Ohio	1.92	2.06	-6.8%	1.74	1.89	1.98	2.12
Wisconsin	2.22	2.21	0.5%	2.22	2.21	--	--
West North Central	1.75	1.72	1.7%	1.75	1.72	--	--
Iowa	1.66	1.59	4.4%	1.66	1.59	--	--
Kansas	1.72	1.70	1.2%	1.72	1.70	--	--
Minnesota	2.09	2.06	1.5%	2.09	2.06	--	--
Missouri	1.87	1.87	0.0%	1.87	1.87	--	--
Nebraska	1.37	1.35	1.5%	1.37	1.35	--	--
North Dakota	1.59	1.55	2.6%	1.59	1.55	--	--
South Dakota	2.19	2.25	-2.7%	2.19	2.25	--	--
South Atlantic	2.69	2.74	-1.8%	2.72	2.78	2.45	2.53
Delaware	W	W	W	--	--	W	W
District of Columbia	--	--	--	--	--	--	--
Florida	W	W	W	2.95	3.01	W	W
Georgia	2.77	2.79	-0.7%	2.77	2.79	--	--
Maryland	2.67	2.85	-6.3%	--	--	2.67	2.85
North Carolina	2.97	W	W	2.97	3.10	3.75	W
South Carolina	3.30	3.19	3.4%	3.30	3.19	--	--
Virginia	W	W	W	2.73	2.88	W	W
West Virginia	2.20	2.25	-2.2%	2.21	2.29	2.14	2.03
East South Central	W	W	W	2.09	2.19	W	W
Alabama	2.16	2.32	-6.9%	2.16	2.32	--	--
Kentucky	1.99	2.11	-5.7%	1.99	2.11	--	--
Mississippi	W	W	W	2.66	2.69	W	W
Tennessee	2.28	2.23	2.2%	2.28	2.23	--	--
West South Central	1.85	1.92	-3.6%	2.10	2.15	1.61	1.68
Arkansas	W	W	W	2.03	2.17	W	W
Louisiana	W	W	W	2.95	2.92	W	W
Oklahoma	W	W	W	1.83	1.91	W	W
Texas	1.74	1.80	-3.3%	2.08	2.09	1.57	1.64
Mountain	W	W	W	1.90	1.88	W	W
Arizona	2.23	2.13	4.7%	2.23	2.13	--	--
Colorado	1.77	1.85	-4.3%	1.77	1.85	--	--
Idaho	--	--	--	--	--	--	--
Montana	W	W	W	1.76	1.66	W	W
Nevada	W	W	W	3.08	2.02	W	W
New Mexico	1.96	1.90	3.2%	1.96	1.90	--	--
Utah	1.96	1.94	1.0%	1.96	1.94	--	--
Wyoming	W	W	W	1.66	1.68	W	W
Pacific Contiguous	W	W	W	2.32	2.25	W	W
California	--	--	--	--	--	--	--
Oregon	2.32	2.25	3.1%	2.32	2.25	--	--
Washington	W	W	W	--	--	W	W
Pacific Noncontiguous	W	W	W	3.08	3.08	W	W
Alaska	3.08	3.08	0.0%	3.08	3.08	--	--
Hawaii	W	W	W	--	--	W	W
U.S. Total	2.05	2.10	-2.4%	2.12	2.16	1.85	1.93

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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, 2017 and 2016
(Dollars per MMBtu)**

Census Division and State	Electric Power Sector			Electric Utilities		Independent Power Producers	
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Year 2017	Year 2016
New England	12.25	8.95	37.0%	14.05	9.76	12.16	8.83
Connecticut	14.18	10.94	30.0%	--	--	14.18	10.94
Maine	W	W	W	--	--	W	W
Massachusetts	W	W	W	14.55	9.64	W	W
New Hampshire	W	10.52	W	13.71	10.52	W	--
Rhode Island	W	W	W	--	--	W	W
Vermont	--	--	--	--	--	--	--
Middle Atlantic	14.97	10.11	48.0%	10.16	8.04	16.19	11.04
New Jersey	W	9.74	W	--	--	W	9.74
New York	15.89	9.88	61.0%	10.16	8.04	18.38	11.88
Pennsylvania	W	10.47	W	--	--	W	10.47
East North Central	W	W	W	13.21	10.86	W	W
Illinois	14.33	10.87	32.0%	13.39	11.05	14.38	10.87
Indiana	W	10.60	W	12.98	10.60	W	--
Michigan	13.01	10.50	24.0%	13.01	10.50	--	--
Ohio	W	W	W	14.15	11.42	W	W
Wisconsin	W	W	W	12.68	11.48	W	W
West North Central	13.10	W	W	13.10	10.66	--	W
Iowa	13.09	10.95	20.0%	13.09	10.95	--	--
Kansas	13.19	10.43	26.0%	13.19	10.43	--	--
Minnesota	13.18	W	W	13.18	11.34	--	W
Missouri	13.37	10.92	22.0%	13.37	10.92	--	--
Nebraska	12.94	11.28	15.0%	12.94	11.28	--	--
North Dakota	12.61	9.41	34.0%	12.61	9.41	--	--
South Dakota	11.98	8.54	40.0%	11.98	8.54	--	--
South Atlantic	12.23	9.97	23.0%	12.27	9.87	11.95	10.46
Delaware	W	W	W	--	--	W	W
District of Columbia	--	--	--	--	--	--	--
Florida	12.50	W	W	12.50	11.47	--	W
Georgia	12.12	9.39	29.0%	12.36	9.68	9.49	7.86
Maryland	11.67	9.65	21.0%	--	--	11.67	9.65
North Carolina	W	10.03	W	12.88	10.58	W	8.03
South Carolina	12.99	11.17	16.0%	12.99	11.17	--	--
Virginia	W	W	W	10.60	7.99	W	W
West Virginia	13.25	W	W	13.25	11.48	--	W
East South Central	W	W	W	12.67	10.44	W	W
Alabama	W	W	W	13.52	10.12	W	W
Kentucky	12.78	10.62	20.0%	12.78	10.62	--	--
Mississippi	12.17	9.56	27.0%	12.17	9.56	--	--
Tennessee	12.28	10.47	17.0%	12.28	10.47	--	--
West South Central	12.80	10.69	20.0%	12.89	10.55	12.67	11.10
Arkansas	W	W	W	12.79	10.38	W	W
Louisiana	13.78	W	W	13.78	9.70	--	W
Oklahoma	14.71	12.16	21.0%	14.71	12.16	--	--
Texas	W	W	W	12.39	10.66	W	W
Mountain	14.27	11.45	25.0%	14.32	11.37	13.81	12.16
Arizona	13.89	11.31	23.0%	13.89	11.31	--	--
Colorado	14.69	10.25	43.0%	14.69	10.25	--	--
Idaho	--	--	--	--	--	--	--
Montana	W	W	W	--	--	W	W
Nevada	W	W	W	12.34	11.79	W	W
New Mexico	14.40	11.32	27.0%	14.40	11.32	--	--
Utah	W	W	W	14.90	11.75	W	W
Wyoming	14.48	11.49	26.0%	14.48	11.49	--	--
Pacific Contiguous	W	W	W	13.87	11.43	W	W
California	--	--	--	--	--	--	--
Oregon	12.71	11.19	14.0%	12.71	11.19	--	--
Washington	W	W	W	17.51	12.29	W	W
Pacific Noncontiguous	W	W	W	11.00	8.50	W	W
Alaska	16.06	14.43	11.0%	16.06	14.43	--	--
Hawaii	W	W	W	11.00	8.50	W	W
U.S. Total	11.88	9.36	27.0%	11.60	9.16	12.67	9.93

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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, 2017 and 2016
(Dollars per MMBtu)**

Census Division and State	Electric Power Sector			Electric Utilities		Independent Power Producers	
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Year 2017	Year 2016
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	1.48	W	W	1.48	1.23	--	W
Illinois	--	--	--	--	--	--	--
Indiana	--	0.96	--	--	0.96	--	--
Michigan	1.44	1.30	11.0%	1.44	1.30	--	--
Ohio	--	W	W	--	--	--	W
Wisconsin	1.79	1.72	4.1%	1.79	1.72	--	--
West North Central	--	--	--	--	--	--	--
Iowa	--	--	--	--	--	--	--
Kansas	--	--	--	--	--	--	--
Minnesota	--	--	--	--	--	--	--
Missouri	--	--	--	--	--	--	--
Nebraska	--	--	--	--	--	--	--
North Dakota	--	--	--	--	--	--	--
South Dakota	--	--	--	--	--	--	--
South Atlantic	2.66	1.55	72.0%	2.66	1.55	--	--
Delaware	--	--	--	--	--	--	--
District of Columbia	--	--	--	--	--	--	--
Florida	2.66	1.55	72.0%	2.66	1.55	--	--
Georgia	--	--	--	--	--	--	--
Maryland	--	--	--	--	--	--	--
North Carolina	--	--	--	--	--	--	--
South Carolina	--	--	--	--	--	--	--
Virginia	--	--	--	--	--	--	--
West Virginia	--	--	--	--	--	--	--
East South Central	1.50	1.55	-3.2%	1.50	1.55	--	--
Alabama	--	--	--	--	--	--	--
Kentucky	1.50	1.55	-3.2%	1.50	1.55	--	--
Mississippi	--	--	--	--	--	--	--
Tennessee	--	--	--	--	--	--	--
West South Central	2.20	1.58	39.0%	2.20	1.58	--	--
Arkansas	--	--	--	--	--	--	--
Louisiana	2.20	1.58	39.0%	2.20	1.58	--	--
Oklahoma	--	--	--	--	--	--	--
Texas	--	--	--	--	--	--	--
Mountain	--	--	--	--	--	--	--
Arizona	--	--	--	--	--	--	--
Colorado	--	--	--	--	--	--	--
Idaho	--	--	--	--	--	--	--
Montana	--	--	--	--	--	--	--
Nevada	--	--	--	--	--	--	--
New Mexico	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--
Wyoming	--	--	--	--	--	--	--
Pacific Contiguous	--	--	--	--	--	--	--
California	--	--	--	--	--	--	--
Oregon	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--
Pacific Noncontiguous	--	--	--	--	--	--	--
Alaska	--	--	--	--	--	--	--
Hawaii	--	--	--	--	--	--	--
U.S. Total	2.15	1.64	31.0%	2.15	1.52	--	2.50

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:
 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.
 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, 2017 and 2016
(Dollars per MMBtu)**

Census Division and State	Electric Power Sector			Electric Utilities		Independent Power Producers	
	Year 2017	Year 2016	Percentage Change	Year 2017	Year 2016	Year 2017	Year 2016
New England	3.85	3.32	16.0%	3.68	3.64	3.85	3.32
Connecticut	4.25	3.58	19.0%	--	--	4.25	3.58
Maine	W	W	W	--	--	W	W
Massachusetts	3.62	3.20	13.0%	3.45	3.51	3.62	3.19
New Hampshire	W	W	W	4.26	4.07	W	W
Rhode Island	3.53	W	W	--	--	3.53	W
Vermont	--	--	--	--	--	--	--
Middle Atlantic	2.85	2.22	28.0%	3.50	2.74	2.79	2.17
New Jersey	2.75	2.13	29.0%	--	--	2.75	2.13
New York	3.35	2.68	25.0%	3.50	2.74	3.30	2.66
Pennsylvania	2.56	1.87	37.0%	--	--	2.56	1.87
East North Central	3.10	2.64	17.0%	3.19	2.78	3.05	2.53
Illinois	3.26	2.82	16.0%	3.68	3.04	3.22	2.79
Indiana	W	W	W	3.22	2.92	W	W
Michigan	3.18	2.71	17.0%	3.38	2.88	3.10	2.62
Ohio	2.90	2.23	30.0%	2.87	2.25	2.91	2.22
Wisconsin	W	W	W	3.20	2.77	W	W
West North Central	W	2.91	W	3.43	2.90	W	2.95
Iowa	3.03	2.66	14.0%	3.03	2.66	--	--
Kansas	3.73	3.36	11.0%	3.73	3.36	--	--
Minnesota	W	W	W	3.81	3.05	W	W
Missouri	W	W	W	3.26	2.85	W	W
Nebraska	3.96	3.10	28.0%	3.96	3.10	--	--
North Dakota	3.83	2.58	48.0%	3.83	2.58	--	--
South Dakota	3.07	2.46	25.0%	3.07	2.46	--	--
South Atlantic	3.88	3.45	12.0%	3.98	3.56	3.14	2.63
Delaware	--	--	--	--	--	--	--
District of Columbia	--	--	--	--	--	--	--
Florida	4.20	3.78	11.0%	4.21	3.80	3.76	2.87
Georgia	3.47	2.99	16.0%	3.55	3.05	3.18	2.75
Maryland	3.49	2.85	22.0%	--	--	3.49	2.85
North Carolina	W	W	W	4.03	3.68	W	W
South Carolina	W	W	W	3.51	3.28	W	W
Virginia	3.32	W	W	3.59	3.07	2.51	W
West Virginia	W	W	W	3.00	2.45	W	W
East South Central	3.24	2.82	15.0%	3.24	2.83	3.25	2.80
Alabama	W	W	W	3.34	2.95	W	W
Kentucky	W	W	W	3.64	3.19	W	W
Mississippi	W	W	W	3.14	2.79	W	W
Tennessee	3.04	2.59	17.0%	3.04	2.59	--	--
West South Central	3.13	2.63	19.0%	3.23	2.74	3.04	2.54
Arkansas	W	W	W	3.30	3.08	W	W
Louisiana	W	2.68	W	3.27	2.72	W	2.45
Oklahoma	W	W	W	3.18	2.75	W	W
Texas	3.08	2.60	18.0%	3.19	2.70	3.05	2.56
Mountain	W	2.97	W	3.45	2.98	W	2.82
Arizona	W	W	W	3.61	3.17	W	W
Colorado	W	W	W	3.44	3.12	W	W
Idaho	3.33	2.92	14.0%	3.33	2.92	--	--
Montana	W	W	W	1.78	1.77	W	W
Nevada	3.37	2.90	16.0%	3.37	2.90	--	--
New Mexico	3.41	2.92	17.0%	3.41	2.92	--	--
Utah	3.32	W	W	3.32	2.65	--	W
Wyoming	W	W	W	3.89	9.06	W	W
Pacific Contiguous	3.44	2.96	16.0%	3.63	3.28	3.24	2.63
California	3.65	3.07	19.0%	4.02	3.53	3.33	2.68
Oregon	W	W	W	2.45	2.35	W	W
Washington	W	W	W	3.37	3.41	W	W
Pacific Noncontiguous	7.05	6.61	6.7%	7.05	6.61	--	--
Alaska	7.05	6.61	6.7%	7.05	6.61	--	--
Hawaii	--	--	--	--	--	--	--
U.S. Total	3.39	2.89	17.0%	3.62	3.15	3.08	2.54

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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."

**Table 7.21. Receipts and Quality of Coal by Rank Delivered for Electricity Generation:
Total (All Sectors) by State, 2017**

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	198	0.80	8.5	0	--	--	0	--	--
Connecticut	0	--	--	0	--	--	0	--	--
Maine	66	1.11	6.9	0	--	--	0	--	--
Massachusetts	87	0.69	10.0	0	--	--	0	--	--
New Hampshire	45	0.48	8.4	0	--	--	0	--	--
Rhode Island	0	--	--	0	--	--	0	--	--
Vermont	0	--	--	0	--	--	0	--	--
Middle Atlantic	17,027	2.99	8.9	0	--	--	0	--	--
New Jersey	656	1.74	7.4	0	--	--	0	--	--
New York	281	2.27	8.0	0	--	--	0	--	--
Pennsylvania	16,090	3.06	9.0	0	--	--	0	--	--
East North Central	66,089	3.10	10.1	72,398	0.24	4.7	0	--	--
Illinois	10,322	3.65	19.5	29,909	0.22	4.6	0	--	--
Indiana	27,535	2.78	8.7	1,426	0.23	4.5	0	--	--
Michigan	1,752	2.28	7.6	21,858	0.27	4.7	0	--	--
Ohio	25,752	3.32	8.8	212	0.30	5.0	0	--	--
Wisconsin	727	2.67	8.2	18,992	0.25	5.0	0	--	--
West North Central	1,153	3.13	9.3	92,369	0.27	4.9	23,368	0.84	9.6
Iowa	411	3.38	8.1	14,936	0.24	4.7	0	--	--
Kansas	180	3.19	13.5	12,091	0.32	4.9	0	--	--
Minnesota	0	--	--	12,946	0.35	5.9	0	--	--
Missouri	562	2.94	8.9	37,190	0.23	4.7	0	--	--
Nebraska	0	--	--	13,654	0.27	5.1	0	--	--
North Dakota	0	--	--	172	0.36	4.9	23,368	0.84	9.6
South Dakota	0	--	--	1,379	0.36	5.2	0	--	--
South Atlantic	77,744	2.27	10.1	9,557	0.34	4.9	0	--	--
Delaware	200	2.41	7.7	0	--	--	0	--	--
District of Columbia	0	--	--	0	--	--	0	--	--
Florida	15,139	2.23	8.4	0	--	--	0	--	--
Georgia	7,483	2.49	8.0	9,460	0.34	4.9	0	--	--
Maryland	3,753	2.31	10.5	98	0.25	5.3	0	--	--
North Carolina	13,214	1.72	9.5	0	--	--	0	--	--
South Carolina	6,499	1.63	9.0	0	--	--	0	--	--
Virginia	5,520	1.12	16.6	0	--	--	0	--	--
West Virginia	25,936	2.90	11.0	0	--	--	0	--	--
East South Central	35,170	2.62	9.1	21,645	0.26	4.9	2,417	0.44	13.3
Alabama	5,564	1.59	10.4	10,189	0.28	5.1	0	--	--
Kentucky	23,628	3.02	9.1	7,862	0.25	4.9	0	--	--
Mississippi	710	1.52	7.3	718	0.28	4.9	2,417	0.44	13.3
Tennessee	5,267	2.07	8.1	2,875	0.23	4.7	0	--	--
West South Central	834	1.95	17.1	86,557	0.27	5.0	33,567	1.07	17.3
Arkansas	67	0.61	8.8	14,218	0.23	4.8	0	--	--
Louisiana	285	2.97	8.8	5,844	0.26	4.9	1,899	0.58	16.5
Oklahoma	482	1.49	24.0	10,105	0.23	4.8	0	--	--
Texas	0	--	--	56,391	0.29	5.1	31,668	1.10	17.3
Mountain	25,601	0.60	13.8	63,250	0.50	8.6	215	0.53	8.8
Arizona	6,518	0.56	10.3	9,888	0.56	9.9	0	--	--
Colorado	1,971	0.46	11.1	14,312	0.32	5.5	0	--	--
Idaho	0	--	--	0	--	--	0	--	--
Montana	0	--	--	8,544	0.68	9.8	215	0.53	8.8
Nevada	0	--	--	743	0.33	6.0	0	--	--
New Mexico	6,267	0.78	22.1	4,341	0.78	21.2	0	--	--
Utah	10,845	0.55	12.1	724	1.03	8.5	0	--	--
Wyoming	0	--	--	24,697	0.46	7.2	0	--	--
Pacific Contiguous	625	0.50	10.6	4,136	0.42	7.9	0	--	--
California	625	0.50	10.6	0	--	--	0	--	--
Oregon	0	--	--	877	0.24	4.8	0	--	--
Washington	0	--	--	3,259	0.46	8.8	0	--	--
Pacific Noncontiguous	60	0.25	10.6	668	0.19	4.5	98	0.12	7.0
Alaska	0	--	--	0	--	--	98	0.12	7.0
Hawaii	60	0.25	10.6	668	0.19	4.5	0	--	--
U.S. Total	224,500	2.45	10.3	350,580	0.31	5.6	59,665	0.96	14.0

Displayed values of zero may represent small values that round to zero.
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 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 Utilities by State, 2017

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	45	0.48	8.4	0	--	--	0	--	--
Connecticut	0	--	--	0	--	--	0	--	--
Maine	0	--	--	0	--	--	0	--	--
Massachusetts	0	--	--	0	--	--	0	--	--
New Hampshire	45	0.48	8.4	0	--	--	0	--	--
Rhode Island	0	--	--	0	--	--	0	--	--
Vermont	0	--	--	0	--	--	0	--	--
Middle Atlantic	119	4.11	9.5	0	--	--	0	--	--
New Jersey	0	--	--	0	--	--	0	--	--
New York	0	--	--	0	--	--	0	--	--
Pennsylvania	119	4.11	9.5	0	--	--	0	--	--
East North Central	37,256	2.85	8.7	47,497	0.25	4.8	0	--	--
Illinois	2,437	3.12	11.0	5,358	0.21	4.6	0	--	--
Indiana	26,039	2.73	8.6	1,426	0.23	4.5	0	--	--
Michigan	1,472	2.46	7.8	21,858	0.27	4.7	0	--	--
Ohio	6,662	3.25	8.5	0	--	--	0	--	--
Wisconsin	647	2.91	7.9	18,855	0.25	5.0	0	--	--
West North Central	718	3.00	10.0	89,467	0.27	5.0	23,368	0.84	9.6
Iowa	0	--	--	13,186	0.25	4.7	0	--	--
Kansas	180	3.19	13.5	12,091	0.32	4.9	0	--	--
Minnesota	0	--	--	12,569	0.35	5.9	0	--	--
Missouri	538	2.93	8.9	37,190	0.23	4.7	0	--	--
Nebraska	0	--	--	12,880	0.27	5.1	0	--	--
North Dakota	0	--	--	172	0.36	4.9	23,368	0.84	9.6
South Dakota	0	--	--	1,379	0.36	5.2	0	--	--
South Atlantic	67,228	2.21	10.0	9,460	0.34	4.9	0	--	--
Delaware	0	--	--	0	--	--	0	--	--
District of Columbia	0	--	--	0	--	--	0	--	--
Florida	14,947	2.25	8.4	0	--	--	0	--	--
Georgia	7,372	2.51	7.9	9,460	0.34	4.9	0	--	--
Maryland	0	--	--	0	--	--	0	--	--
North Carolina	12,832	1.74	9.6	0	--	--	0	--	--
South Carolina	6,473	1.63	9.0	0	--	--	0	--	--
Virginia	4,662	1.19	18.4	0	--	--	0	--	--
West Virginia	20,943	2.75	10.6	0	--	--	0	--	--
East South Central	34,227	2.68	9.2	21,645	0.26	4.9	0	--	--
Alabama	5,564	1.59	10.4	10,189	0.28	5.1	0	--	--
Kentucky	23,628	3.02	9.1	7,862	0.25	4.9	0	--	--
Mississippi	710	1.52	7.3	718	0.28	4.9	0	--	--
Tennessee	4,324	2.36	8.3	2,875	0.23	4.7	0	--	--
West South Central	285	2.97	8.8	47,340	0.25	4.9	8,574	1.42	19.8
Arkansas	0	--	--	12,442	0.23	4.8	0	--	--
Louisiana	285	2.97	8.8	2,841	0.25	4.9	1,899	0.58	16.5
Oklahoma	0	--	--	9,180	0.23	4.8	0	--	--
Texas	0	--	--	22,878	0.27	5.1	6,675	1.69	20.9
Mountain	25,490	0.60	13.8	53,609	0.48	8.4	215	0.53	8.8
Arizona	6,518	0.56	10.3	9,888	0.56	9.9	0	--	--
Colorado	1,971	0.46	11.1	14,312	0.32	5.5	0	--	--
Idaho	0	--	--	0	--	--	0	--	--
Montana	0	--	--	0	--	--	215	0.53	8.8
Nevada	0	--	--	182	0.42	9.1	0	--	--
New Mexico	6,267	0.78	22.1	4,341	0.78	21.2	0	--	--
Utah	10,734	0.55	12.1	724	1.03	8.5	0	--	--
Wyoming	0	--	--	24,161	0.46	7.3	0	--	--
Pacific Contiguous	0	--	--	877	0.24	4.8	0	--	--
California	0	--	--	0	--	--	0	--	--
Oregon	0	--	--	877	0.24	4.8	0	--	--
Washington	0	--	--	0	--	--	0	--	--
Pacific Noncontiguous	0	--	--	0	--	--	98	0.12	7.0
Alaska	0	--	--	0	--	--	98	0.12	7.0
Hawaii	0	--	--	0	--	--	0	--	--
U.S. Total	165,368	2.23	10.1	269,895	0.31	5.6	32,255	0.98	12.1

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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, 2017

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	153	0.89	8.5	0	--	--	0	--	--
Connecticut	0	--	--	0	--	--	0	--	--
Maine	66	1.11	6.9	0	--	--	0	--	--
Massachusetts	87	0.69	10.0	0	--	--	0	--	--
New Hampshire	0	--	--	0	--	--	0	--	--
Rhode Island	0	--	--	0	--	--	0	--	--
Vermont	0	--	--	0	--	--	0	--	--
Middle Atlantic	16,626	3.00	8.9	0	--	--	0	--	--
New Jersey	656	1.74	7.4	0	--	--	0	--	--
New York	109	2.58	8.7	0	--	--	0	--	--
Pennsylvania	15,860	3.06	9.0	0	--	--	0	--	--
East North Central	27,093	3.43	12.1	24,188	0.21	4.6	0	--	--
Illinois	6,234	3.86	27.2	23,976	0.21	4.6	0	--	--
Indiana	1,496	3.63	9.3	0	--	--	0	--	--
Michigan	272	1.19	6.4	0	--	--	0	--	--
Ohio	19,091	3.35	9.0	212	0.30	5.0	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	9,494	2.85	11.3	98	0.25	5.3	0	--	--
Delaware	200	2.41	7.7	0	--	--	0	--	--
District of Columbia	0	--	--	0	--	--	0	--	--
Florida	26	0.66	8.0	0	--	--	0	--	--
Georgia	0	--	--	0	--	--	0	--	--
Maryland	3,555	2.33	10.0	98	0.25	5.3	0	--	--
North Carolina	90	0.67	6.8	0	--	--	0	--	--
South Carolina	0	--	--	0	--	--	0	--	--
Virginia	631	0.85	8.9	0	--	--	0	--	--
West Virginia	4,993	3.58	12.8	0	--	--	0	--	--
East South Central	0	--	--	0	--	--	2,417	0.44	13.3
Alabama	0	--	--	0	--	--	0	--	--
Kentucky	0	--	--	0	--	--	0	--	--
Mississippi	0	--	--	0	--	--	2,417	0.44	13.3
Tennessee	0	--	--	0	--	--	0	--	--
West South Central	482	1.49	24.0	38,853	0.30	5.1	24,993	0.97	16.5
Arkansas	0	--	--	1,776	0.25	4.7	0	--	--
Louisiana	0	--	--	3,003	0.28	4.9	0	--	--
Oklahoma	482	1.49	24.0	561	0.28	4.9	0	--	--
Texas	0	--	--	33,513	0.31	5.2	24,993	0.97	16.5
Mountain	0	--	--	9,641	0.64	9.3	0	--	--
Arizona	0	--	--	0	--	--	0	--	--
Colorado	0	--	--	0	--	--	0	--	--
Idaho	0	--	--	0	--	--	0	--	--
Montana	0	--	--	8,544	0.68	9.8	0	--	--
Nevada	0	--	--	561	0.30	4.9	0	--	--
New Mexico	0	--	--	0	--	--	0	--	--
Utah	0	--	--	0	--	--	0	--	--
Wyoming	0	--	--	535	0.46	6.6	0	--	--
Pacific Contiguous	0	--	--	3,259	0.46	8.8	0	--	--
California	0	--	--	0	--	--	0	--	--
Oregon	0	--	--	0	--	--	0	--	--
Washington	0	--	--	3,259	0.46	8.8	0	--	--
Pacific Noncontiguous	60	0.25	10.6	668	0.19	4.5	0	--	--
Alaska	0	--	--	0	--	--	0	--	--
Hawaii	60	0.25	10.6	668	0.19	4.5	0	--	--
U.S. Total	53,907	3.16	11.0	76,706	0.32	5.6	27,410	0.93	16.3

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 7.24. Receipts and Quality of Coal by Rank Delivered for Electricity Generation: Commercial Sector by State, 2017

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	24	2.99	8.5	0	--	--	0	--	--
Iowa	0	--	--	0	--	--	0	--	--
Kansas	0	--	--	0	--	--	0	--	--
Minnesota	0	--	--	0	--	--	0	--	--
Missouri	24	2.99	8.5	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	24	2.99	8.5	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, 2017

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	282	2.10	7.6	0	--	--	0	--	--
New Jersey	0	--	--	0	--	--	0	--	--
New York	172	2.07	7.4	0	--	--	0	--	--
Pennsylvania	110	2.15	7.8	0	--	--	0	--	--
East North Central	1,740	3.63	8.8	713	0.69	6.3	0	--	--
Illinois	1,652	3.80	8.7	576	0.80	6.5	0	--	--
Indiana	0	--	--	0	--	--	0	--	--
Michigan	8	0.65	8.0	0	--	--	0	--	--
Ohio	0	--	--	0	--	--	0	--	--
Wisconsin	80	0.47	10.7	137	0.25	5.2	0	--	--
West North Central	411	3.38	8.1	2,901	0.22	4.6	0	--	--
Iowa	411	3.38	8.1	1,751	0.22	4.5	0	--	--
Kansas	0	--	--	0	--	--	0	--	--
Minnesota	0	--	--	377	0.24	5.5	0	--	--
Missouri	0	--	--	0	--	--	0	--	--
Nebraska	0	--	--	774	0.21	4.4	0	--	--
North Dakota	0	--	--	0	--	--	0	--	--
South Dakota	0	--	--	0	--	--	0	--	--
South Atlantic	1,022	0.99	9.9	0	--	--	0	--	--
Delaware	0	--	--	0	--	--	0	--	--
District of Columbia	0	--	--	0	--	--	0	--	--
Florida	167	0.70	7.5	0	--	--	0	--	--
Georgia	111	1.19	10.3	0	--	--	0	--	--
Maryland	198	1.80	22.1	0	--	--	0	--	--
North Carolina	292	0.88	6.9	0	--	--	0	--	--
South Carolina	26	0.76	6.7	0	--	--	0	--	--
Virginia	228	0.73	7.1	0	--	--	0	--	--
West Virginia	0	--	--	0	--	--	0	--	--
East South Central	943	0.87	7.4	0	--	--	0	--	--
Alabama	0	--	--	0	--	--	0	--	--
Kentucky	0	--	--	0	--	--	0	--	--
Mississippi	0	--	--	0	--	--	0	--	--
Tennessee	943	0.87	7.4	0	--	--	0	--	--
West South Central	67	0.61	8.8	364	0.19	4.6	0	--	--
Arkansas	67	0.61	8.8	0	--	--	0	--	--
Louisiana	0	--	--	0	--	--	0	--	--
Oklahoma	0	--	--	364	0.19	4.6	0	--	--
Texas	0	--	--	0	--	--	0	--	--
Mountain	111	0.50	10.6	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	111	0.50	10.6	0	--	--	0	--	--
Wyoming	0	--	--	0	--	--	0	--	--
Pacific Contiguous	625	0.50	10.6	0	--	--	0	--	--
California	625	0.50	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	5,200	1.94	8.9	3,978	0.30	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,
2007 through 2017 (Btu per Kilowatthour)**

Year	Coal	Petroleum	Natural Gas	Nuclear
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
2017	10,465	10,834	7,812	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 - 2017
(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	--
2017				
Steam Generator	10,043	10,199	10,353	10,459
Gas Turbine	--	13,491	11,176	--
Internal Combustion	--	10,301	9,120	--
Combined Cycle	W	9,811	7,649	--

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, 2007 through 2017 (Million Dollars)

Description	2007	2008	2009	2010	2011	2012
Utility Operating Revenues	270,964	298,962	276,124	285,512	280,520	270,912
.....Electric Utility	240,864	266,124	249,303	260,119	255,573	249,166
.....Other Utility	30,100	32,838	26,822	25,393	24,946	21,745
Utility Operating Expenses	241,198	267,263	244,243	253,022	247,118	235,694
.....Electric Utility	213,076	236,572	219,544	234,173	228,873	220,722
.....Operation	153,885	175,887	154,925	166,922	161,460	152,379
.....Production	121,700	140,974	118,816	128,831	122,520	111,714
.....Cost of Fuel	39,548	47,337	40,242	44,138	42,779	38,998
.....Purchased Power	74,112	84,724	67,630	67,284	61,447	54,570
.....Other	8,058	8,937	10,970	17,409	18,294	18,146
.....Transmission	6,051	6,950	6,742	6,948	6,876	7,183
.....Distribution	3,765	3,997	3,947	4,007	4,044	4,181
.....Customer Accounts	4,652	5,286	5,203	5,091	5,180	5,086
.....Customer Service	2,939	3,567	3,857	4,741	5,311	5,640
.....Sales	239	225	178	185	185	221
.....Administrative and General	14,346	14,718	15,991	17,120	17,343	18,353
.....Maintenance	13,181	14,192	14,092	14,957	15,772	15,489
.....Depreciation	17,936	19,049	20,095	20,951	22,555	23,677
.....Taxes and Other	27,000	26,202	29,081	31,343	29,086	29,177
.....Other Utility	28,122	30,692	24,698	18,849	18,245	14,972
Net Utility Operating Income	29,766	31,699	31,881	32,490	33,402	35,218

Description	2013	2014	2015	2016	2017
Utility Operating Revenues	281,901	298,430	282,695	282,499	286,501
.....Electric Utility	257,718	271,832	260,121	261,047	263,265
.....Other Utility	24,183	26,598	22,574	21,451	23,235
Utility Operating Expenses	244,316	258,936	242,728	239,037	240,041
.....Electric Utility	227,483	240,643	228,366	226,457	226,110
.....Operation	156,077	165,989	149,939	145,077	142,000
.....Production	115,046	123,366	107,201	100,852	98,859
.....Cost of Fuel	41,127	42,545	34,711	32,621	32,165
.....Purchased Power	55,529	62,066	52,970	49,962	49,030
.....Other	18,390	18,755	19,521	18,269	17,664
.....Transmission	7,881	8,902	9,624	10,447	10,804
.....Distribution	4,197	4,331	4,406	4,734	4,358
.....Customer Accounts	5,107	5,255	5,184	5,077	4,789
.....Customer Service	5,906	6,396	6,445	6,187	5,961
.....Sales	203	208	201	205	213
.....Administrative and General	17,738	17,532	16,878	17,575	17,016
.....Maintenance	15,505	16,801	16,392	16,982	17,996
.....Depreciation	24,723	25,919	26,847	30,097	30,323
.....Taxes and Other	31,179	31,934	35,188	34,301	35,791
.....Other Utility	16,833	18,293	14,362	12,579	13,931
Net Utility Operating Income	37,585	39,494	39,968	43,462	46,460

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, 2007 through 2017 (Mills per Kilowatthour)

Year	Operation				Maintenance			
	Nuclear	Fossil Steam	Hydro-electric	Gas Turbine and Small Scale	Nuclear	Fossil Steam	Hydro-electric	Gas Turbine and Small Scale
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
2017	10.27	5.01	6.33	2.45	6.63	5.13	3.96	2.83

Year	Fuel				Total			
	Nuclear	Fossil Steam	Hydro-electric	Gas Turbine and Small Scale	Nuclear	Fossil Steam	Hydro-electric	Gas Turbine and Small Scale
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
2017	7.47	25.27	--	26.48	24.38	35.41	10.29	31.76

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 2007 through 2017 (Thousand Metric Tons)

Year	Carbon Dioxide (CO ₂)	Sulfur Dioxide (SO ₂)	Nitrogen Oxides (NO _x)
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
2017	1,849,750	1,657	1,506

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, 2007 - 2017

Year	Flue Gas Desulfurization Systems		Electrostatic Precipitators		Baghouses		Select Catalytic and Non-Catalytic Reduction Systems		Activated Carbon Injection Systems		Direct Sorbent Injection Systems	
	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)
2007	590	131,499	1,496	317,751	556	65,672	1,197	266,397	141	7,735	59	7,602
2008	637	151,520	1,471	316,810	576	68,442	1,250	277,576	169	17,391	62	7,701
2009	677	174,774	1,456	314,356	597	73,863	1,323	300,007	227	39,546	65	8,242
2010	716	201,052	1,410	310,486	610	83,407	1,360	315,222	262	54,183	66	8,721
2011	730	211,754	1,368	307,043	633	98,507	1,408	331,242	274	59,057	75	8,977
2012	726	219,317	1,291	298,425	629	101,593	1,451	344,811	287	63,709	83	10,618
2013	704	219,317	1,218	289,182	637	104,331	1,457	351,217	260	61,160	97	12,985
2014	701	223,793	1,172	283,940	621	105,990	1,471	358,410	278	69,232	104	16,777
2015	692	224,101	1,037	264,905	623	110,820	1,479	359,869	362	106,395	122	23,307
2016	693	228,300	943	252,904	613	112,581	1,479	360,907	479	153,130	125	26,679
2017	676	221,441	886	244,087	601	109,495	1,480	362,591	475	151,153	126	25,762

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, 2007 - 2017

Energy Source	Once-Through Cooling Systems		Recirculating Cooling Systems		Cooling Ponds		Dry Cooling Systems		Hybrid Wet and Dry Cooling Systems		Other Cooling System Types	
	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)
2007												
Coal	458	131,692	357	156,284	101	49,609	--	--	--	--	15	6,283
Natural Gas	202	51,836	424	81,379	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	362	158,369	100	48,787	--	--	--	--	10	4,366
Natural Gas	197	51,110	425	82,251	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	370	161,312	100	47,960	1	335	--	--	8	3,036
Natural Gas	192	48,737	429	83,850	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	371	162,953	101	48,929	2	435	1	766	9	3,086
Natural Gas	180	48,398	425	83,038	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	369	165,958	104	50,476	3	840	1	766	9	3,090
Natural Gas	176	48,361	440	87,086	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	366	166,915	88	39,933	4	1,412	1	766	15	6,918
Natural Gas	172	52,020	445	92,213	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	357	164,826	77	39,482	4	1,422	1	750	11	4,797
Natural Gas	159	51,291	426	88,626	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	340	160,534	74	38,906	4	1,422	1	750	22	8,322
Natural Gas	161	50,985	418	84,902	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	313	153,917	77	45,026	4	1,422	1	750	25	9,883
Natural Gas	160	49,219	435	88,900	58	22,311	59	12,038	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	1	110	--	--
Other	18	1,676	26	2,104	1	66	1	72	--	--	1	128
2016												
Coal	210	82,047	294	149,187	79	44,702	4	1,422	1	750	22	10,148
Natural Gas	168	49,664	438	88,428	57	21,930	64	14,128	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	1	110	--	--
Other	18	1,689	24	2,035	1	66	1	72	--	--	1	128
2017												
Coal	197	76,492	281	142,578	75	44,341	4	1,422	1	750	19	9,581
Natural Gas	172	50,053	437	91,135	58	21,637	66	15,271	4	801	6	3,772
Nuclear	42	47,013	35	38,784	14	17,700	--	--	--	--	9	13,298
Petroleum	26	8,174	8	1,844	4	3,965	--	--	--	--	--	--
Solar Thermal	--	--	4	866	--	--	5	900	1	110	--	--
Other	17	1,582	26	2,464	2	97	2	245	--	--	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, 2007 - 2017

Year	Average Operation and Maintenance Costs (Dollars per Megawatthour)	Average Installed Capital Costs (Dollars per Kilowatt)
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	278.58
2013	1.74	256.95
2014	1.84	186.45
2015	2.03	158.14
2016	1.96	307.17
2017	2.15	104.88

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, 2016 and 2017 (Thousand Metric Tons)

Census Division and State	Carbon Dioxide (CO2)		Sulfur Dioxide (SO2)		Nitrogen Oxides (NOx)	
	Year 2017	Year 2016	Year 2017	Year 2016	Year 2017	Year 2016
New England	27,328	29,066	10	12	25	26
Connecticut	7,874	8,579	1	1	6	6
Maine	2,098	2,557	6	7	6	6
Massachusetts	12,384	12,722	3	3	9	10
New Hampshire	1,976	2,526	1	1	2	2
Rhode Island	2,981	2,670	0	0	2	1
Vermont	15	12	0	0	1	1
Middle Atlantic	122,971	137,445	86	121	88	131
New Jersey	18,136	21,108	3	3	10	12
New York	25,584	31,295	15	18	28	32
Pennsylvania	79,252	85,041	68	100	49	87
East North Central	333,824	338,794	346	432	250	271
Illinois	70,670	72,226	78	98	36	36
Indiana	81,929	85,393	59	83	70	89
Michigan	58,414	58,644	76	92	50	52
Ohio	79,917	81,618	109	131	65	65
Wisconsin	42,893	40,914	25	28	28	28
West North Central	204,724	203,950	240	246	168	179
Iowa	30,661	30,216	31	31	27	26
Kansas	22,238	25,762	5	6	16	17
Minnesota	28,344	29,644	22	24	25	25
Missouri	68,645	62,731	98	93	47	54
Nebraska	22,290	23,014	47	47	20	20
North Dakota	30,043	29,908	37	43	32	36
South Dakota	2,502	2,676	1	1	1	1
South Atlantic	349,546	379,065	230	275	253	271
Delaware	3,630	4,363	0	0	2	2
District of Columbia	37	48	0	0	0	0
Florida	107,438	110,388	54	59	70	70
Georgia	54,811	60,156	48	53	42	43
Maryland	13,379	18,578	16	25	11	13
North Carolina	48,705	52,492	39	47	49	48
South Carolina	25,362	28,001	17	23	14	15
Virginia	31,195	36,566	19	27	26	32
West Virginia	64,988	68,473	36	42	40	48
East South Central	176,387	196,408	142	182	106	126
Alabama	53,192	57,776	36	49	29	35
Kentucky	63,252	72,433	55	72	44	55
Mississippi	24,151	26,272	11	12	14	15
Tennessee	35,792	39,927	40	48	18	22
West South Central	355,603	358,451	468	395	291	290
Arkansas	33,322	31,726	56	54	31	31
Louisiana	49,961	53,162	111	58	71	66
Oklahoma	32,329	37,106	40	50	24	27
Texas	239,991	236,457	261	233	166	166
Mountain	205,278	209,056	96	101	193	204
Arizona	43,739	44,531	12	12	35	36
Colorado	35,720	36,075	14	18	25	29
Idaho	1,771	1,829	4	4	5	5
Montana	15,911	16,470	12	11	15	16
Nevada	13,167	14,542	2	2	9	10
New Mexico	23,000	23,193	8	7	35	35
Utah	27,698	28,245	10	11	32	33
Wyoming	44,273	44,172	35	35	37	39
Pacific Contiguous	63,432	65,443	19	21	95	95
California	44,433	47,008	1	2	69	69
Oregon	7,991	8,207	7	8	12	12
Washington	11,008	10,229	11	11	14	13
Pacific Noncontiguous	10,656	10,723	20	21	37	37
Alaska	3,532	3,466	3	3	21	21
Hawaii	7,124	7,257	17	18	16	16
U.S. Total	1,849,750	1,928,401	1,657	1,807	1,506	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. 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

Chapter 10

Demand-Side Management and Advanced Metering

Table 10.1. Demand-Side Management Program Annual Effects by Program Category, 2007 through 2012

Year	Energy Efficiency		Load Management			Total	
	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)
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, 2007 through 2012 (Table Discontinued)

Year	Residential	Commercial	Industrial	Transportation	Total
Energy Efficiency - Energy Savings (Thousand MWh)					
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)					
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)					
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)					
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)					
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, 2007 through 2012 (Table Discontinued)

Year	Energy Efficiency		Load Management			Total	
	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)
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, 2007 through 2012 (Table Discontinued)

Year	Residential	Commercial	Industrial	Transportation	Total
Energy Efficiency - Energy Savings (Thousand MWh)					
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)					
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)					
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)					
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)					
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,

2007 through 2012 (Thousand Dollars) (Table Discontinued)

Year	Energy Efficiency	Load Management	Direct Cost	Indirect Cost	Total Cost
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 2017**

Year	Residential	Commercial	Industrial	Transportation	Total
Incremental Annual Savings - Energy Savings (MWh)					
2013	11,020,468	10,461,718	3,141,044	29,894	24,653,124
2014	11,443,087	11,928,798	3,074,819	19,316	26,466,020
2015	11,012,627	12,285,000	2,818,448	13,414	26,129,489
2016	11,712,873	13,348,029	2,425,175	14,147	27,500,224
2017	13,199,995	14,095,101	2,592,155	11,776	29,899,028
Incremental Annual Savings - Peak Demand Savings (MW)					
2013	3,642	5,974	1,458	5	11,078
2014	3,000	2,889	563	2	6,453
2015	2,654	2,891	407	--	5,952
2016	2,698	2,556	401	3	5,658
2017	2,790	2,739	540	1	6,071
Incremental Costs - Customer Incentive (thousand dollars)					
2013	1,251,703	1,274,284	345,662	5	2,871,654
2014	1,522,205	1,561,358	327,227	64	3,410,854
2015	1,488,651	1,616,843	342,773	20	3,448,286
2016	1,541,458	1,733,170	296,321	--	3,570,950
2017	1,657,086	1,713,295	294,026	--	3,664,407
Incremental Costs - All Other Costs (thousand dollars)					
2013	1,015,135	749,710	179,719	33	1,944,597
2014	1,088,914	911,967	208,095	122	2,209,098
2015	1,152,224	938,021	193,015	40	2,283,300
2016	1,387,122	959,160	176,560	12	2,522,854
2017	1,221,072	900,291	176,585	10	2,297,957

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 2017

Year	Residential	Commercial	Industrial	Transportation	Total
Life Cycle Savings - Energy Savings (MWh)					
2013	83,729,903	127,269,038	38,493,282	448,421	249,940,645
2014	105,870,642	156,171,166	39,626,390	287,925	301,956,123
2015	99,512,487	160,045,443	36,589,144	199,328	296,346,403
2016	134,003,597	186,654,713	33,477,182	212,200	354,347,692
2017	137,297,599	204,102,657	33,249,999	176,636	374,826,892
Life Cycle Savings - Peak Demand Savings (MW)					
2013	3,782	5,876	1,293	6	10,956
2014	4,058	3,308	672	2	8,040
2015	3,492	3,104	500		7,096
2016	3,408	3,132	507	3	7,050
2017	2,668	2,698	584	1	5,951
Life Cycle Costs - Customer Incentive (thousand dollars)					
2013	2,698,135	2,875,483	455,343	5	6,028,810
2014	1,748,893	1,912,277	346,218	64	4,007,452
2015	1,844,246	1,997,677	413,416	30	4,255,368
2016	1,704,458	2,079,373	342,927		4,126,758
2017	2,194,049	2,359,255	296,498		4,849,803
Life Cycle Costs - All Other Costs (thousand dollars)					
2013	2,134,225	1,626,069	234,577	33	3,994,889
2014	1,555,433	1,348,672	216,673	122	3,120,898
2015	2,086,543	1,407,658	216,226	40	3,710,453
2016	1,964,832	1,265,765	202,112	12	3,432,717
2017	1,649,863	1,335,176	177,945	10	3,162,995

* = 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 2017**

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
2017	8,287,913	1,084,392	68,630	3	9,440,938
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
2017	948,037	244,603	118,230	--	1,310,862
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
2017	8,996	6,995	15,512	5	31,508
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
2017	3,960	2,743	5,546	--	12,248

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 2017**

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
2017	292,443	345,226	365,451	--	1,003,124
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
2017	245,231	68,251	57,221	--	370,700

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

Table 10.10. Advanced Metering Count by Technology Type, 2008 through 2017

Year	Residential	Commercial	Industrial	Transportation	Total
Automated Meter Reading (AMR)					
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
2017	39,325,014	4,813,029	230,099	707	44,368,849
Advanced Metering Infrastructure (AMI)					
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
2017	69,474,626	9,060,128	365,447	1,389	78,901,590
Standard (non-AMR/AMI) Meters					
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
2017	24,351,523	4,261,918	225,949	445	28,839,835
Total Number of Meters					
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
2017	133,151,163	18,135,075	821,495	2,541	152,110,274

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)."

Chapter 11

U.S. Territories

**Table 11.1 Puerto Rico- Number of Ultimate Customers Served:
by Sector, 2007 through 2017**

Period	Residential	Commercial	Industrial	Transportation	All Sectors
Annual Totals					
2008	1,318,498	133,223	1,225	--	1,452,946
2009	1,330,507	132,620	828	--	1,463,955
2010	1,339,703	133,029	790	--	1,473,522
2011	1,341,708	132,738	750	--	1,475,196
2012	1,349,750	131,264	721	--	1,481,735
2013	1,340,989	131,034	694	--	1,472,717
2014	1,328,546	129,122	662	--	1,458,330
2015	1,326,631	127,365	647	--	1,454,643
2016	1,332,152	127,179	633	--	1,459,964
2017	1,337,756	127,065	618	--	1,465,439
Year 2015					
January	1,328,896	127,830	658	--	1,457,384
February	1,327,563	127,678	653	--	1,455,894
March	1,327,022	127,571	651	--	1,455,244
April	1,326,520	127,392	649	--	1,454,561
May	1,326,554	127,364	648	--	1,454,566
June	1,326,204	127,257	646	--	1,454,107
July	1,326,832	127,213	651	--	1,454,696
August	1,326,488	127,157	649	--	1,454,294
September	1,324,602	127,718	643	--	1,452,963
October	1,325,203	127,003	643	--	1,452,849
November	1,326,443	127,106	639	--	1,454,188
December	1,327,247	127,086	638	--	1,454,971
Year 2016					
January	1,327,936	127,058	640	--	1,455,634
February	1,328,227	127,040	637	--	1,455,904
March	1,329,387	127,155	636	--	1,457,178
April	1,331,140	127,236	635	--	1,459,011
May	1,332,103	127,264	636	--	1,460,003
June	1,332,712	127,158	635	--	1,460,505
July	1,333,672	127,327	633	--	1,461,632
August	1,333,858	127,218	631	--	1,461,707
September	1,331,317	126,967	627	--	1,458,911
October	1,334,555	127,221	626	--	1,462,402
November	1,335,163	127,237	629	--	1,463,029
December	1,335,753	127,265	627	--	1,463,645
Year 2017					
January	1,336,481	127,251	627	--	1,464,359
February	1,337,101	127,229	626	--	1,464,956
March	1,335,413	127,147	620	--	1,463,180
April	1,337,164	127,086	620	--	1,464,870
May	1,337,956	127,048	618	--	1,465,622
June	1,339,373	127,119	616	--	1,467,108
July	1,338,891	127,049	614	--	1,466,554
August	1,337,758	127,026	615	--	1,465,399
September	1,338,973	127,056	615	--	1,466,644
October	1,337,261	126,948	615	--	1,464,824
November	1,338,117	126,941	613	--	1,465,671
December	1,338,583	126,877	612	--	1,466,072

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

**Table 11.2 Puerto Rico- Sales of Electricity to Ultimate Customers:
by Sector, 2007 through 2017 (Megawatthours)**

Period	Residential	Commercial	Industrial	Transportation	All Sectors
Annual Totals					
2008	6,473,008	9,022,906	3,543,703	--	19,039,617
2009	6,673,185	8,936,576	3,094,188	--	18,703,949
2010	6,975,149	9,041,424	2,967,817	--	18,984,390
2011	6,586,877	8,832,355	2,832,127	--	18,251,359
2012	6,770,865	8,879,105	2,500,360	--	18,150,330
2013	6,319,746	8,968,572	2,504,182	--	17,792,500
2014	6,218,352	8,761,182	2,376,022	--	17,355,556
2015	6,313,615	8,586,457	2,355,385	--	17,255,457
2016	6,524,304	8,568,874	2,251,095	--	17,344,273
2017	5,045,346	6,819,591	1,746,554	--	13,611,491
Year 2015					
January	483,336	673,909	161,452	--	1,318,697
February	426,267	631,224	167,983	--	1,225,473
March	478,400	724,810	203,903	--	1,407,113
April	473,664	685,781	177,364	--	1,336,808
May	568,379	754,924	209,355	--	1,532,657
June	542,684	725,543	207,754	--	1,475,981
July	583,814	760,038	205,785	--	1,549,637
August	589,972	753,379	203,048	--	1,546,399
September	547,708	672,177	203,519	--	1,423,404
October	603,322	791,102	201,591	--	1,596,015
November	506,276	708,185	199,685	--	1,414,146
December	509,795	705,387	213,947	--	1,429,128
Year 2016					
January	514,603	647,983	158,461	--	1,321,047
February	446,691	646,627	176,197	--	1,269,516
March	498,818	737,957	207,852	--	1,444,626
April	505,807	664,910	175,755	--	1,346,472
May	555,936	746,192	201,814	--	1,503,941
June	594,352	742,387	200,571	--	1,537,310
July	620,798	773,186	192,844	--	1,586,828
August	603,620	721,615	204,645	--	1,529,880
September	594,027	751,122	187,197	--	1,532,346
October	539,819	704,304	179,924	--	1,424,047
November	541,191	723,348	189,954	--	1,454,494
December	508,643	709,243	175,881	--	1,393,767
Year 2017					
January	507,862	649,624	159,232	--	1,316,718
February	395,440	575,493	153,949	--	1,124,883
March	490,439	697,879	191,188	--	1,379,507
April	494,072	628,330	184,098	--	1,306,500
May	525,030	675,349	181,797	--	1,382,176
June	595,232	692,079	184,358	--	1,471,669
July	590,447	709,863	200,197	--	1,500,507
August	631,851	718,603	186,937	--	1,537,392
September	519,910	372,458	127,184	--	1,019,551
October	16,339	224,180	11,110	--	251,630
November	41,829	569,484	28,062	--	639,375
December	236,894	306,249	138,441	--	681,584

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

**Table 11.3 Puerto Rico- Revenue from Sales of Electricity to Ultimate Customers:
by Sector, 2007 through 2017 (Thousand Dollars)**

Period	Residential	Commercial	Industrial	Transportation	All Sectors
Annual Totals					
2008	1,573,993	2,284,639	734,155	--	4,592,787
2009	1,313,102	1,868,381	517,578	--	3,699,061
2010	1,520,584	2,102,942	564,218	--	4,187,744
2011	1,748,433	2,483,175	662,537	--	4,894,145
2012	1,689,700	2,604,712	647,414	--	4,941,826
2013	1,633,328	2,474,088	570,210	--	4,677,626
2014	1,636,166	2,394,155	550,673	--	4,580,994
2015	1,282,008	1,850,101	417,158	--	3,549,267
2016	1,169,715	1,677,209	356,310	--	3,203,233
2017	1,123,005	1,549,337	344,034	--	3,016,376
Year 2015					
January	104,532	152,206	30,585	--	287,323
February	97,025	148,520	32,527	--	278,072
March	102,528	169,630	38,597	--	310,756
April	104,507	155,342	34,320	--	294,168
May	114,514	156,751	37,193	--	308,457
June	110,315	159,538	37,227	--	307,080
July	116,207	160,291	35,918	--	312,417
August	115,540	149,784	33,835	--	299,158
September	114,320	149,597	37,328	--	301,245
October	116,543	163,097	34,279	--	313,919
November	94,992	141,736	31,473	--	268,201
December	90,986	143,610	33,875	--	268,471
Year 2016					
January	86,331	120,134	22,802	--	229,267
February	74,756	118,381	25,070	--	218,207
March	79,335	130,653	29,147	--	239,135
April	85,526	123,522	25,520	--	234,567
May	90,773	139,011	29,482	--	259,266
June	102,950	141,139	30,318	--	274,407
July	110,365	149,894	30,362	--	290,621
August	117,700	154,261	35,642	--	307,604
September	110,837	145,869	31,093	--	287,799
October	108,321	155,106	33,013	--	296,440
November	102,173	147,119	32,370	--	281,662
December	100,648	152,119	31,491	--	284,258
Year 2017					
January	112,261	142,225	29,890	--	284,375
February	99,221	142,975	31,523	--	273,719
March	105,243	151,375	33,960	--	290,577
April	109,465	143,850	33,925	--	287,239
May	118,971	157,160	34,597	--	310,728
June	129,095	151,630	33,508	--	314,233
July	129,968	160,590	36,898	--	327,456
August	142,908	166,467	35,351	--	344,726
September	100,645	74,126	20,797	--	195,568
October	6,083	45,705	4,476	--	56,264
November	19,236	115,412	14,884	--	149,531
December	49,911	97,824	34,226	--	181,961

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

**Table 11.4 Puerto Rico- Average Price of Electricity to Ultimate Customers:
by Sector, 2007 through 2017 (Cents per Kilowatthour)**

Period	Residential	Commercial	Industrial	Transportation	All Sectors
Annual Totals					
2008	24.32	25.32	20.72	--	24.12
2009	19.68	20.91	16.73	--	19.78
2010	21.80	23.26	19.01	--	22.06
2011	26.54	28.11	23.39	--	26.82
2012	24.96	29.34	25.89	--	27.23
2013	25.84	27.59	22.77	--	26.29
2014	26.31	27.33	23.18	--	26.39
2015	20.31	21.55	17.71	--	20.57
2016	17.93	19.57	15.83	--	18.47
2017	22.26	22.72	19.70	--	22.16
Year 2015					
January	21.63	22.59	18.94	--	21.79
February	22.76	23.53	19.36	--	22.69
March	21.43	23.40	18.93	--	22.08
April	22.06	22.65	19.35	--	22.01
May	20.15	20.76	17.77	--	20.13
June	20.33	21.99	17.92	--	20.81
July	19.90	21.09	17.45	--	20.16
August	19.58	19.88	16.66	--	19.35
September	20.87	22.26	18.34	--	21.16
October	19.32	20.62	17.00	--	19.67
November	18.76	20.01	15.76	--	18.97
December	17.85	20.36	15.83	--	18.79
Year 2016					
January	16.78	18.54	14.39	--	17.36
February	16.74	18.31	14.23	--	17.19
March	15.90	17.70	14.02	--	16.55
April	16.91	18.58	14.52	--	17.42
May	16.33	18.63	14.61	--	17.24
June	17.32	19.01	15.12	--	17.85
July	17.78	19.39	15.74	--	18.31
August	19.50	21.38	17.42	--	20.11
September	18.66	19.42	16.61	--	18.78
October	20.07	22.02	18.35	--	20.82
November	18.88	20.34	17.04	--	19.37
December	19.79	21.45	17.90	--	20.40
Year 2017					
January	22.10	21.89	18.77	--	21.60
February	25.09	24.84	20.48	--	24.33
March	21.46	21.69	17.76	--	21.06
April	22.16	22.89	18.43	--	21.99
May	22.66	23.27	19.03	--	22.48
June	21.69	21.91	18.18	--	21.35
July	22.01	22.62	18.43	--	21.82
August	22.62	23.17	18.91	--	22.42
September	19.36	19.90	16.35	--	19.18
October	37.23	20.39	40.29	--	22.36
November	45.99	20.27	53.04	--	23.39
December	21.07	31.94	24.72	--	26.70

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

**Table 11.5. American Samoa
By Sector, 2007 through 2017**

Year	Residential	Commercial	Industrial	Transportation	Total
Number of Ultimate Customers					
2007	10,292	1,417	6	--	11,715
2008	10,466	1,395	9	--	11,870
2009	10,453	1,418	9	--	11,880
2010	10,475	1,404	5	--	11,884
2011	10,616	1,447	4	--	12,067
2012	10,736	1,437	4	--	12,177
2013	10,945	1,411	4	--	12,360
2014	11,561	1,386	4	--	12,951
2015	11,023	1,356	4	--	12,383
2016	10,916	1,363	6	--	12,285
2017	10,930	1,386	4	--	12,320
Sales of Electricity to Ultimate Customers (megawatthours)					
2007	47,133	83,337	31,253	--	161,723
2008	44,865	80,717	40,585	--	166,167
2009	43,398	77,754	36,613	--	157,765
2010	45,269	76,014	20,587	--	141,870
2011	41,144	72,785	22,352	--	136,281
2012	39,935	71,952	22,539	--	134,426
2013	40,719	71,069	23,724	--	135,512
2014	41,029	70,598	23,142	--	134,769
2015	43,306	72,007	25,974	--	141,287
2016	46,493	69,617	32,232	--	148,342
2017	49,538	71,173	26,699	--	147,410
Revenue from Sales of Electricity to Ultimate Customers (thousand dollars)					
2007	13,020	23,440	8,103	--	44,563
2008	15,344	30,524	14,024	--	59,892
2009	13,185	23,273	9,786	--	46,244
2010	14,336	23,651	5,751	--	43,737
2011	16,459	26,981	7,457	--	50,898
2012	17,343	29,092	8,233	--	54,668
2013	15,809	27,905	8,339	--	52,053
2014	17,286	27,553	8,076	--	52,915
2015	15,035	22,981	7,695	--	45,710
2016	13,184	18,402	7,962	--	39,548
2017	15,020	20,626	7,294	--	42,940
Average Price of Electricity to Ultimate Customers (cents per kilowatthour)					
2007	27.62	28.13	25.93	--	27.56
2008	34.20	37.82	34.55	--	36.04
2009	30.38	29.93	26.73	--	29.31
2010	31.67	31.11	27.93	--	30.83
2011	40.00	37.07	33.36	--	37.35
2012	43.43	40.43	36.53	--	40.67
2013	38.82	39.26	35.15	--	38.41
2014	42.13	39.03	34.90	--	39.26
2015	34.72	31.91	29.63	--	32.35
2016	28.36	26.43	24.70	--	26.66
2017	30.32	28.98	27.32	--	29.13

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

**Table 11.6. Guam
By Sector, 2007 through 2017**

Year	Residential	Commercial	Industrial	Transportation	Total
Number of Ultimate Customers					
2007	38,464	6,597	--	--	45,061
2008	39,097	6,567	--	--	45,664
2009	39,863	6,625	--	--	46,488
2010	40,633	6,700	--	--	47,333
2011	41,255	6,717	--	--	47,972
2012	41,612	6,908	--	--	48,520
2013	41,708	6,890	--	--	48,598
2014	41,999	6,925	--	--	48,924
2015	42,752	6,940	--	--	49,692
2016	43,943	6,956	--	--	50,899
2017	43,756	7,087	--	--	50,843
Sales of Electricity to Ultimate Customers (megawatthours)					
2007	485,931	1,148,691	--	--	1,634,622
2008	472,873	1,163,918	--	--	1,636,791
2009	471,385	1,152,841	--	--	1,624,226
2010	486,962	1,150,700	--	--	1,637,662
2011	487,230	1,130,580	--	--	1,617,810
2012	459,499	1,103,976	--	--	1,563,475
2013	462,163	1,104,247	--	--	1,566,410
2014	457,835	1,075,511	--	--	1,533,346
2015	463,990	1,078,018	--	--	1,542,008
2016	494,842	1,087,317	--	--	1,582,159
2017	516,682	1,103,757	--	--	1,620,439
Revenue from Sales of Electricity to Ultimate Customers (thousand dollars)					
2007	85,135	220,734	--	--	305,869
2008	101,550	267,946	--	--	369,496
2009	103,972	284,032	--	--	388,004
2010	101,892	262,998	--	--	364,890
2011	112,320	279,555	--	--	391,875
2012	122,259	315,853	--	--	438,112
2013	122,463	315,369	--	--	437,832
2014	125,028	309,439	--	--	434,467
2015	106,057	260,652	--	--	366,709
2016	93,568	214,840	--	--	308,408
2017	103,327	230,472	--	--	333,799
Average Price of Electricity to Ultimate Customers (cents per kilowatthour)					
2007	17.52	19.22	--	--	18.71
2008	21.48	23.02	--	--	22.57
2009	22.06	24.64	--	--	23.89
2010	20.92	22.86	--	--	22.28
2011	23.05	24.73	--	--	24.22
2012	26.61	28.61	--	--	28.02
2013	26.50	28.56	--	--	27.95
2014	27.31	28.77	--	--	28.33
2015	22.86	24.18	--	--	23.78
2016	18.91	19.76	--	--	19.49
2017	20.00	20.88	--	--	20.60

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

**Table 11.7. Northern Mariana Islands
By Sector, 2011 through 2017**

Year	Residential	Commercial	Industrial	Transportation	Total
Number of Ultimate Customers					
2011	11,010	3,673	--	--	14,683
2012	10,657	3,615	--	--	14,272
2013	11,138	3,524	--	--	14,662
2014	11,045	3,651	--	--	14,696
2015	11,318	3,612	--	--	14,930
2016	11,869	3,952	--	--	15,821
2017	12,106	3,952	--	--	16,058
Sales of Electricity to Ultimate Customers (megawatthours)					
2011	65,962	160,389	--	--	226,351
2012	57,490	157,247	--	--	214,737
2013	54,056	154,505	--	--	208,561
2014	57,532	153,959	--	--	211,491
2015	52,928	145,170	--	--	198,098
2016	70,404	177,766	--	--	248,170
2017	80,502	193,399	--	--	273,901
Revenue from Sales of Electricity to Ultimate Customers (thousand dollars)					
2011	23,615	66,316	--	--	89,931
2012	20,209	66,437	--	--	86,646
2013	20,128	67,020	--	--	87,148
2014	20,714	66,034	--	--	86,749
2015	12,197	43,521	--	--	55,718
2016	12,657	42,870	--	--	55,527
2017	18,653	52,614	--	--	71,268
Average Price of Electricity to Ultimate Customers (cents per kilowatthour)					
2011	35.80	41.35	--	--	39.73
2012	35.15	42.25	--	--	40.35
2013	37.24	43.38	--	--	41.79
2014	36.01	42.89	--	--	41.02
2015	23.04	29.98	--	--	28.13
2016	17.98	24.12	--	--	22.37
2017	23.17	27.21	--	--	26.02

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

**Table 11.8. Virgin Islands
By Sector, 2007 through 2017**

Year	Residential	Commercial	Industrial	Transportation	Total
Number of Ultimate Customers					
2007	43,579	8,417	1,632	--	53,628
2008	43,972	8,402	1,631	--	54,005
2009	44,237	8,907	1,032	--	54,176
2010	44,711	8,320	1,038	--	54,069
2011	44,993	8,881	1,031	--	54,905
2012	44,780	8,826	1,023	--	54,629
2013	44,736	8,785	1,050	--	54,571
2014	45,066	8,808	1,043	--	54,917
2015	45,090	8,747	1,044	--	54,881
2016	49,559	9,951	1,089	--	60,599
2017	49,559	9,951	1,089	--	60,599
Sales of Electricity to Ultimate Customers (megawatthours)					
2007	274,367	130,421	371,570	--	776,358
2008	266,734	124,774	375,250	--	766,758
2009	248,227	127,325	348,725	--	724,277
2010	264,932	120,988	368,867	--	754,787
2011	266,721	151,424	337,652	--	755,797
2012	249,011	156,328	318,578	--	723,917
2013	231,148	123,234	326,158	--	680,540
2014	219,402	113,517	308,119	--	641,038
2015	211,753	109,530	299,598	--	620,881
2016	224,268	115,464	298,959	--	638,691
2017	174,208	85,273	201,822	--	461,303
Revenue from Sales of Electricity to Ultimate Customers (thousand dollars)					
2007	80,398	36,985	102,743	--	220,126
2008	83,309	37,311	143,089	--	263,709
2009	90,735	49,695	124,189	--	264,619
2010	112,891	42,486	132,097	--	287,474
2011	94,859	61,096	124,404	--	280,359
2012	109,441	57,856	150,636	--	317,932
2013	112,133	62,760	158,869	--	333,762
2014	108,204	58,361	153,232	--	319,797
2015	90,567	43,840	134,197	--	268,603
2016	76,907	45,969	101,434	--	224,310
2017	72,035	38,703	93,206	--	203,944
Average Price of Electricity to Ultimate Customers (cents per kilowatthour)					
2007	29.30	28.36	27.65	--	28.35
2008	31.23	29.90	38.13	--	34.39
2009	36.55	39.03	35.61	--	36.54
2010	42.61	35.12	35.81	--	38.09
2011	35.56	40.35	36.84	--	37.09
2012	43.95	37.01	47.28	--	43.92
2013	48.51	50.93	48.71	--	49.04
2014	49.32	51.41	49.73	--	49.89
2015	42.77	40.03	44.79	--	43.26
2016	34.29	39.81	33.93	--	35.12
2017	41.35	45.39	46.18	--	44.21

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

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 combustion 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 combustion 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:

- Eastern Research Group, Inc. and E.H. Pechar & 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
- 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/chieff/ap42/>

Table A.2. Nitrogen Oxides 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				Tangential Boiler		All Other Boiler Types		Combustion Turbine	Internal Combustion Engine	
				Cyclone Firing Boiler	Fluidized Bed Firing Boiler	Stoker Boiler	Dry-Bottom Boilers	Wet-Bottom Boilers	Dry-Bottom Boilers	Wet-Bottom Boilers			
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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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:

- 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
- 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/>
- 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

Nitrogen Oxides Control Technology	EIA Code	Reduction Factor							
		Coal	Residual Fuel Oil and Distillate 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%

Nitrogen Oxides Control Technology	EIA Code	Source of Selected Reduction Factor							
		Coal	Residual Fuel Oil and Distillate 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 Reduction 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 Distillate 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, Municipal Solid Waste, Tire-Derived Fuels, Sludge Waste, Agricultural Byproducts, 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 include 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-423² 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 estimates³.

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
	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, NYSEDA 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, 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	44	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 (CO₂) from electric generating plants for 1989 through the present, as well as the estimated emissions of sulfur dioxide (SO₂) 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 SO₂ and NO_x 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:

$$Emissions = Quantity\ of\ Fuel\ Consumed \times Emission\ Factor$$

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 SO₂ emissions. As discussed below, physical quantities are converted to millions of Btus for calculating CO₂ emissions.

For some fuels, the calculation of SO₂ 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:

$$\text{Emissions} = \text{Quantity of Fuel Consumed} \times \text{Emission Factor} \times \text{Sulfur Content}$$

The fuels that require the percent sulfur as part of the emissions calculation are indicated in Table A.1., which lists the SO₂ emission factors used for this report.

In the case of SO₂ 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 SO₂ 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 SO₂ is the fluidized bed boiler, in which the sulfur removal process is integral with the operation of the boiler. The SO₂ emission factors shown in Table A.1. for fluidized bed boilers already account for 90 percent removal of SO₂ since, in effect, the plant has no uncontrolled emissions of this pollutant.

Although SO₂ 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 CO₂ are incomplete and are not used in this report.) The CEMS data account for the bulk of SO₂ and NO_x emissions from the electric power industry. For those plants for which CEMS data are available, the EIA estimates of SO₂ 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 CO₂ 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.

CO₂ Emissions: CO₂ 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 CO₂ emissions, the fuel-specific emission factor from Table A.3. is multiplied by the fuel consumption in MMBtu.

The estimation procedure calculates uncontrolled CO₂ emissions. CO₂ control technologies are currently in the early stages of research and there are no commercial systems installed. Therefore, no estimates of controlled CO₂ emissions are made.

SO₂ and NO_x Emissions: To comply with environmental regulations controlling SO₂ 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 fuels⁷ 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 SO₂ 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 SO₂, 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 SO₂ 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:

$$y_{i_{2015m}} = \beta_1 x_{i_{2013}} + w_i^{-1/2} e_i, \text{ where}$$

$x_{i_{2013}}$ is the i^{th} utility's 2013 (or the last published year) solar PV capacity

$y_{i_{2015m}}$ is the i^{th} 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

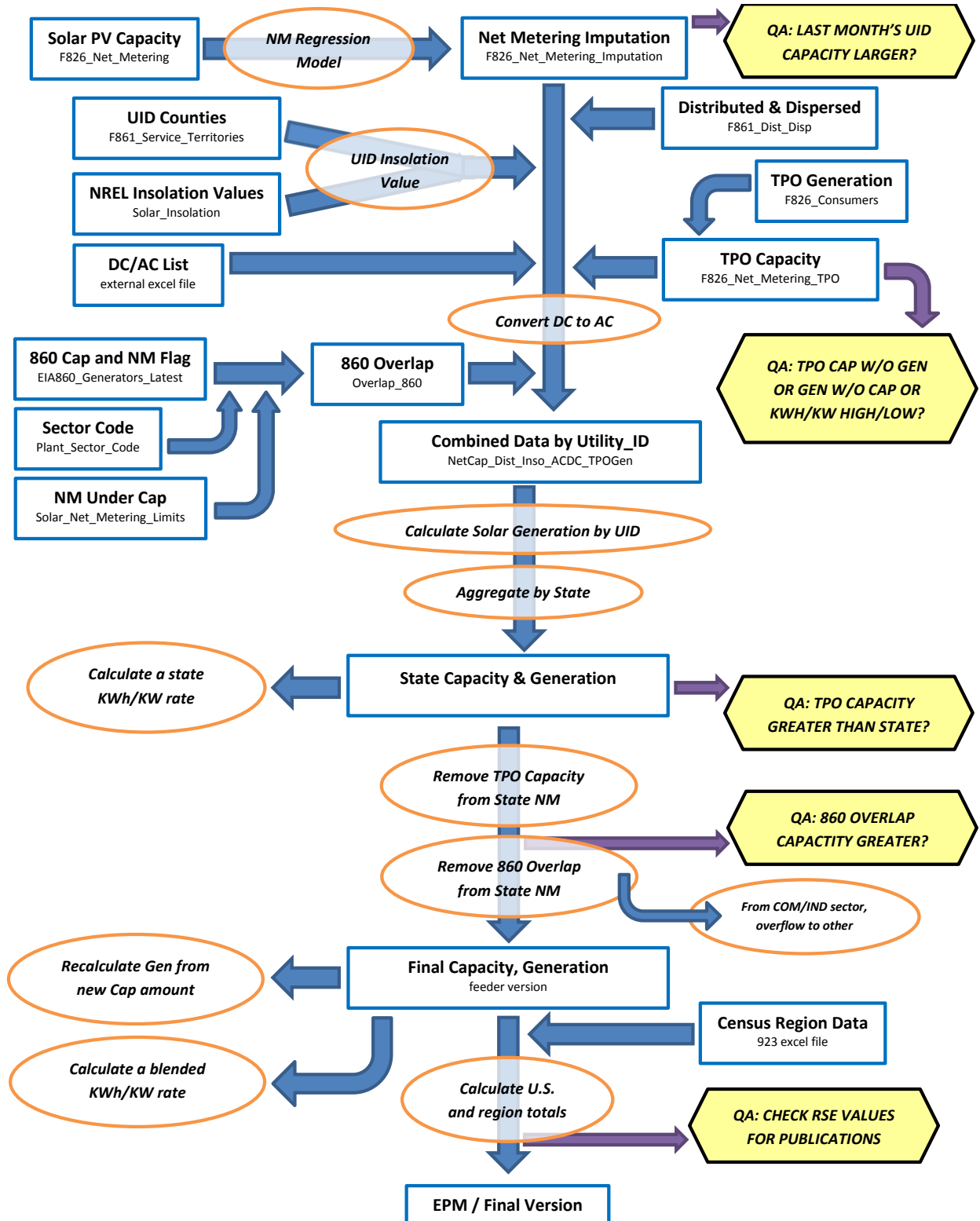
TMY3 (1991-2005) Weather Stations by MSA

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 Worcester 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 Worcester 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.

