



*Independent Statistics & Analysis*  
U.S. Energy Information  
Administration

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# Electric Power Monthly

## with Data for December 2016

February 2017

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## Contacts

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The Electric Power Monthly is prepared by the U.S. Energy Information Administration.

Questions and comments concerning the contents of the Electric Power Monthly may be directed to:

Ronald Hankey, Project Leader  
U.S. Energy Information Administration, EI-23  
U.S. Department of Energy  
1000 Independence Avenue, S.W.  
Washington, DC, 20585-0650

Email address: [infoelectric@eia.gov](mailto:infoelectric@eia.gov)

Subject specialists:

<b>Subject</b>	<b>Specialist</b>
U.S. electric net generation	Ronald Hankey
U.S. electric consumption of fuels	Christopher Cassar
U.S. electric stocks of fuels	Christopher Cassar
U.S. electric fossil-fuel receipts	Joy Liu
U.S. electric fossil-fuel costs	Joy Liu
U.S. sales of electricity to ultimate consumers	Peter Wong
Sampling and estimation methodologies	Orhan Yildiz.

Requests for additional information on other statistics available from the U.S. Energy Information Administration or questions concerning subscriptions and report distribution may be directed to the Office of Communications of the U.S. Energy Information Administration at [infoctr@eia.gov](mailto:infoctr@eia.gov).

## Preface

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The Electric Power Monthly (EPM) presents monthly electricity statistics for a wide audience including Congress, Federal and State agencies, the electric power industry, and the general public. The purpose of this publication is to provide energy decision makers with accurate and timely information that may be used in forming various perspectives on electric issues that lie ahead. In order to provide an integrated view of the electric power industry, data in this report have been separated into two major categories: electric power sector and combined heat and power producers. The U.S. Energy Information Administration (EIA) collected the information in this report to fulfill its data collection and dissemination responsibilities as specified in the Federal Energy Administration Act of 1974 (Public Law 93 275) as amended.

## Background

The Office of Electricity, Renewables & Uranium Statistics, U.S. EIA, U.S. Department of Energy, prepares the EPM. This publication provides monthly statistics at the State (lowest level of aggregation), Census Division, and U.S. levels for net generation, fossil fuel consumption and stocks, cost, quantity, and quality of fossil fuels received, sales of electricity to ultimate consumers, associated revenue, and average price of electricity sold. In addition, the report contains rolling 12-month totals in the national overviews, as appropriate.

## Data sources

The EPM contains information from the following data sources: Form EIA-923, "Power Plant Operations Report;" Form EIA-826, "Monthly Electric Sales and Revenue With State Distributions Report;" Form EIA-860, "Annual Electric Generator Report;" Form EIA-860M, "Monthly Update to the Annual Electric Generator Report;" and Form EIA-861, "Annual Electric Power Industry Report." Forms and their instructions may be obtained from: <http://www.eia.gov/survey/#electricity>. A detailed description of these forms and associated algorithms are found in Appendix C, "Technical Notes."

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Fuel	Facility Type	Total (All Sectors)			Electric Power Sector				Commercial		Industrial		Residential	
		December 2016	December 2015	Percentage Change	Electric Utilities		Independent Power Producers		December 2016	December 2015	December 2016	December 2015	December 2016	December 2015
					December 2016	December 2015	December 2016	December 2015						
Net Generation (Thousand Megawatthours)														
Coal	Utility Scale Facilities	118,790	89,495	32.7%	87,463	68,558	30,591	20,063	45	41	691	832	0	0
Petroleum Liquids	Utility Scale Facilities	1,139	948	20.2%	755	650	309	254	10	7	65	38	0	0
Petroleum Coke	Utility Scale Facilities	871	749	16.3%	667	604	124	67	1	1	79	77	0	0
Natural Gas	Utility Scale Facilities	96,412	109,777	-12.2%	45,796	52,345	42,039	48,676	605	617	7,973	8,137	0	0
Other Gas	Utility Scale Facilities	1,007	1,110	-9.2%	23	1	304	302	0	0	680	806	0	0
Nuclear	Utility Scale Facilities	71,662	69,634	2.9%	37,268	35,997	34,394	33,637	0	0	0	0	0	0
Hydroelectric Conventional	Utility Scale Facilities	22,538	23,166	-2.7%	20,976	21,296	1,434	1,721	NM	4	123	145	0	0
Renewable Sources Excluding Hydroelectric	Utility Scale Facilities	32,427	28,602	13.4%	4,564	3,675	25,176	22,202	233	265	2,453	2,460	0	0
... Wind	Utility Scale Facilities	22,991	20,098	14.4%	3,810	3,104	19,159	16,976	13	12	8	6	0	0
... Solar Thermal and Photovoltaic	Utility Scale Facilities	2,299	1,570	46.4%	221	98	2,052	1,448	24	24	NM	1	0	0
... Wood and Wood-Derived Fuels	Utility Scale Facilities	3,584	3,587	-0.1%	311	259	924	995	7	3	2,343	2,331	0	0
... Other Biomass	Utility Scale Facilities	1,932	1,969	-1.9%	126	117	1,517	1,504	189	226	101	122	0	0
... Geothermal	Utility Scale Facilities	1,620	1,377	17.6%	96	97	1,524	1,280	0	0	0	0	0	0
Hydroelectric Pumped Storage	Utility Scale Facilities	-753	-281	168.2%	-657	-210	-96	-71	0	0	0	0	0	0
Other Energy Sources	Utility Scale Facilities	1,144	1,228	-6.9%	24	49	637	607	83	98	400	475	0	0
All Energy Sources	Utility Scale Facilities	345,238	324,427	6.4%	196,879	182,965	134,914	127,458	981	1,033	12,464	12,970	0	0
Estimated Small Scale Solar Photovoltaic	Small Scale Facilities	1,202	914	31.5%	0	0	0	0	443	349	114	93	644	471
Estimated Total Solar Photovoltaic	All Facilities	3,406	2,358	44.4%	214	96	1,964	1,324	468	373	NM	94	644	471
Estimated Total Solar	All Facilities	3,500	2,484	40.9%	221	98	2,052	1,448	468	373	NM	94	644	471
Consumption of Fossil Fuels for Electricity Generation														
Coal (1000 tons)	Utility Scale Facilities	64,883	50,224	29.2%	47,265	37,878	17,356	12,041	15	14	249	292	0	0
Petroleum Liquids (1000 barrels)	Utility Scale Facilities	1,899	1,581	20.1%	1,350	1,177	470	354	13	8	67	42	0	0
Petroleum Coke (1000 tons)	Utility Scale Facilities	337	276	22.2%	261	232	56	26	0	0	21	18	0	0
Natural Gas (1000 Mcf)	Utility Scale Facilities	706,376	807,219	-12.5%	342,166	393,358	302,636	351,123	5,512	5,748	56,061	56,990	0	0
Consumption of Fossil Fuels for Useful Thermal Output														
Coal (1000 tons)	Utility Scale Facilities	1,201	1,363	-11.9%	99	95	138	151	57	58	907	1,059	0	0
Petroleum Liquids (1000 barrels)	Utility Scale Facilities	225	210	7.4%	2	1	95	90	13	5	115	114	0	0
Petroleum Coke (1000 tons)	Utility Scale Facilities	95	86	10.3%	0	0	10	10	2	1	84	75	0	0
Natural Gas (1000 Mcf)	Utility Scale Facilities	83,877	81,369	3.1%	1,194	743	22,761	23,382	4,307	4,021	55,614	53,223	0	0
Consumption of Fossil Fuels for Electricity Generation and Useful Thermal Output														
Coal (1000 tons)	Utility Scale Facilities	66,084	51,587	28.1%	47,364	37,973	17,494	12,192	71	72	1,155	1,350	0	0
Petroleum Liquids (1000 barrels)	Utility Scale Facilities	2,125	1,791	18.6%	1,352	1,178	565	444	26	13	182	155	0	0
Petroleum Coke (1000 tons)	Utility Scale Facilities	433	362	19.3%	261	232	65	36	2	2	104	93	0	0
Natural Gas (1000 Mcf)	Utility Scale Facilities	790,252	888,588	-11.1%	343,360	394,101	325,397	374,505	9,820	9,769	111,675	110,212	0	0
Fuel Stocks (end-of-month)														
Coal (1000 tons)	Utility Scale Facilities	165,569	197,781	-16.3%	131,811	153,226	32,133	42,322	144	233	1,482	2,000	0	0
Petroleum Liquids (1000 barrels)	Utility Scale Facilities	32,456	34,829	-6.8%	20,399	21,443	10,409	11,441	325	448	1,324	1,497	0	0
Petroleum Coke (1000 tons)	Utility Scale Facilities	1,020	1,727	-40.9%	W	W	W	W	W	W	W	W	0	0

Sales, Revenue, and Average Price of Electricity to Ultimate Customers for 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)		
	December 2016	December 2015	Percentage Change	December 2016	December 2015	Percentage Change	December 2016	December 2015	Percentage Change
Residential	120,840	111,670	8.2%	14,750	13,759	7.2%	12.21	12.32	-0.9%
Commercial	109,548	106,829	2.5%	11,047	10,825	2.1%	10.08	10.13	-0.5%
Industrial	75,124	78,224	-4.0%	4,984	5,043	-1.2%	6.63	6.45	2.8%
Transportation	652	619	5.2%	61	61	0.8%	9.40	9.81	-4.2%
All Sectors	306,163	297,344	3.0%	30,843	29,688	3.9%	10.07	9.98	0.9%

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 ES1.B. Total Electric Power Industry Summary Statistics, Year-to-Date 2016 and 2015

Net Generation and Consumption of Fuels for January through December														
Fuel	Facility Type	Total (All Sectors)			Electric Power Sector				Commercial		Industrial		Residential	
		December 2016 YTD	December 2015 YTD	Percentage Change	Electric Utilities		Independent Power Producers		December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD
					December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD						
Net Generation (Thousand Megawatthours)														
Coal	Utility Scale Facilities	1,240,089	1,352,398	-8.3%	923,280	998,385	307,143	342,608	436	509	9,231	10,896	0	0
Petroleum Liquids	Utility Scale Facilities	12,674	17,372	-27.0%	8,670	10,386	3,373	6,240	106	183	524	563	0	0
Petroleum Coke	Utility Scale Facilities	11,232	10,877	3.3%	8,881	8,278	1,400	1,601	6	8	945	990	0	0
Natural Gas	Utility Scale Facilities	1,380,293	1,333,482	3.5%	654,475	617,817	625,841	619,839	7,750	7,471	92,227	88,355	0	0
Other Gas	Utility Scale Facilities	13,000	13,117	-0.9%	164	199	3,902	3,517	0	0	8,934	9,401	0	0
Nuclear	Utility Scale Facilities	805,327	797,178	1.0%	424,400	416,680	380,928	380,498	0	0	0	0	0	0
Hydroelectric Conventional	Utility Scale Facilities	265,829	249,080	6.7%	246,649	229,640	17,821	17,996	59	35	1,300	1,410	0	0
Renewable Sources Excluding Hydroelectric	Utility Scale Facilities	343,228	295,161	16.3%	42,859	37,485	268,902	225,820	3,161	3,220	28,306	28,635	0	0
... Wind	Utility Scale Facilities	226,485	190,719	18.8%	35,019	30,412	191,246	160,135	142	118	78	53	0	0
... Solar Thermal and Photovoltaic	Utility Scale Facilities	36,754	24,893	47.6%	2,271	1,494	33,886	22,962	565	416	32	21	0	0
... Wood and Wood-Derived Fuels	Utility Scale Facilities	40,504	41,929	-3.4%	3,008	3,018	10,418	11,545	71	48	27,007	27,318	0	0
... Other Biomass	Utility Scale Facilities	22,068	21,703	1.7%	1,467	1,473	17,029	16,350	2,382	2,637	1,190	1,243	0	0
... Geothermal	Utility Scale Facilities	17,417	15,918	9.4%	1,093	1,089	16,324	14,829	0	0	0	0	0	0
Hydroelectric Pumped Storage	Utility Scale Facilities	-6,686	-5,091	31.3%	-5,629	-4,105	-1,057	-987	0	0	0	0	0	0
Other Energy Sources	Utility Scale Facilities	13,683	14,028	-2.5%	312	558	7,126	6,838	1,076	1,170	5,169	5,462	0	0
All Energy Sources	Utility Scale Facilities	4,078,670	4,077,601	0.0%	2,304,060	2,315,323	1,615,380	1,603,971	12,593	12,595	146,637	145,712	0	0
Estimated Small Scale Solar Photovoltaic	Small Scale Facilities	19,467	14,139	37.7%	0	0	0	0	7,180	5,689	1,823	1,451	10,465	6,999
Estimated Total Solar Photovoltaic	All Facilities	52,833	35,805	47.6%	2,192	1,388	30,577	19,841	7,745	6,106	1,855	1,472	10,465	6,999
Estimated Total Solar	All Facilities	56,221	39,032	44.0%	2,271	1,494	33,886	22,962	7,745	6,106	1,855	1,472	10,465	6,999
Consumption of Fossil Fuels for Electricity Generation														
Coal (1000 tons)	Utility Scale Facilities	677,981	739,594	-8.3%	498,146	539,506	176,311	195,927	148	163	3,376	3,999	0	0
Petroleum Liquids (1000 barrels)	Utility Scale Facilities	21,224	28,925	-26.6%	15,667	18,562	4,841	9,473	132	249	584	641	0	0
Petroleum Coke (1000 tons)	Utility Scale Facilities	4,275	4,044	5.7%	3,431	3,120	600	669	1	2	243	253	0	0
Natural Gas (1000 Mcf)	Utility Scale Facilities	10,400,195	10,016,576	3.8%	5,045,520	4,745,255	4,642,081	4,576,683	68,639	70,092	643,955	624,545	0	0
Consumption of Fossil Fuels for Useful Thermal Output														
Coal (1000 tons)	Utility Scale Facilities	14,244	16,632	-14.4%	1,041	1,032	1,733	1,980	544	635	10,925	12,985	0	0
Petroleum Liquids (1000 barrels)	Utility Scale Facilities	2,534	3,142	-19.4%	19	62	1,014	1,155	126	282	1,374	1,643	0	0
Petroleum Coke (1000 tons)	Utility Scale Facilities	1,016	1,144	-11.2%	2	9	105	109	9	16	900	1,010	0	0
Natural Gas (1000 Mcf)	Utility Scale Facilities	956,922	935,098	2.3%	11,226	8,060	284,704	283,372	47,946	46,287	613,046	597,379	0	0
Consumption of Fossil Fuels for Electricity Generation and Useful Thermal Output														
Coal (1000 tons)	Utility Scale Facilities	692,225	756,226	-8.5%	499,188	540,538	178,044	197,906	692	798	14,302	16,984	0	0
Petroleum Liquids (1000 barrels)	Utility Scale Facilities	23,758	32,067	-25.9%	15,687	18,624	5,855	10,629	258	531	1,959	2,283	0	0
Petroleum Coke (1000 tons)	Utility Scale Facilities	5,291	5,188	2.0%	3,433	3,128	705	779	10	18	1,144	1,263	0	0
Natural Gas (1000 Mcf)	Utility Scale Facilities	11,357,117	10,951,674	3.7%	5,056,745	4,753,315	4,926,785	4,860,055	116,586	116,380	1,257,001	1,221,924	0	0

Sales, Revenue, and Average Price of Electricity to Ultimate Customers for January through December									
Sector	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)		
	December 2016 YTD	December 2015 YTD	Percentage Change	December 2016 YTD	December 2015 YTD	Percentage Change	December 2016 YTD	December 2015 YTD	Percentage Change
Residential	1,407,394	1,404,096	0.2%	176,585	177,624	-0.6%	12.55	12.65	-0.8%
Commercial	1,359,617	1,360,752	-0.1%	140,937	144,781	-2.7%	10.37	10.64	-2.5%
Industrial	936,269	986,508	-5.1%	63,201	68,166	-7.3%	6.75	6.91	-2.3%
Transportation	7,499	7,637	-1.8%	711	771	-7.7%	9.48	10.09	-6.0%
All Sectors	3,710,779	3,758,992	-1.3%	381,435	391,341	-2.5%	10.28	10.41	-1.2%

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 ES2.A. Summary Statistics: Receipts and Cost of Fossil Fuels for the Electric Power Industry by Sector, Physical Units, 2016 and 2015**

Total (All Sectors)										
Fuel	Receipts		Cost		Number of Plants		Year-to-Date Receipts		Year-to-Date Cost	
	(Physical Units)		(Dollars / Physical Unit)				(Physical Units)		(Dollars / Physical Unit)	
	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015
Coal (1000 tons)	56,315	58,569	39.85	41.43	270	326	638,688	782,929	40.87	42.86
Petroleum Liquids (1000 barrels)	1,308	1,657	W	53.52	177	186	16,610	24,320	56.72	69.79
Petroleum Coke (1000 tons)	355	393	57.94	44.13	9	13	4,166	4,897	46.23	52.11
Natural Gas (1000 Mcf)	706,054	791,698	4.10	2.68	753	741	10,258,745	9,842,581	2.97	3.34

Electric Utilities										
Fuel	Receipts		Cost		Number of Plants		Year-to-Date Receipts		Year-to-Date Cost	
	(Physical Units)		(Dollars / Physical Unit)				(Physical Units)		(Dollars / Physical Unit)	
	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015
Coal (1000 tons)	40,148	42,781	41.24	42.64	187	215	473,034	571,707	42.09	43.71
Petroleum Liquids (1000 barrels)	924	1,209	64.58	52.14	114	120	11,943	14,747	56.02	69.13
Petroleum Coke (1000 tons)	284	297	56.17	38.62	7	9	3,538	4,069	42.77	50.44
Natural Gas (1000 Mcf)	335,619	373,572	4.30	3.03	407	396	4,892,960	4,565,040	3.26	3.64

Independent Power Producers										
Fuel	Receipts		Cost		Number of Plants		Year-to-Date Receipts		Year-to-Date Cost	
	(Physical Units)		(Dollars / Physical Unit)				(Physical Units)		(Dollars / Physical Unit)	
	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015
Coal (1000 tons)	15,642	14,836	35.67	36.85	66	82	158,742	198,982	36.34	39.39
Petroleum Liquids (1000 barrels)	367	409	W	56.22	53	52	4,369	9,189	58.50	70.36
Petroleum Coke (1000 tons)	55	65	W	W	1	1	492	524	68.91	68.22
Natural Gas (1000 Mcf)	304,102	350,090	3.96	2.29	296	287	4,628,280	4,530,195	2.63	3.04

Commercial Sector										
Fuel	Receipts		Cost		Number of Plants		Year-to-Date Receipts		Year-to-Date Cost	
	(Physical Units)		(Dollars / Physical Unit)				(Physical Units)		(Dollars / Physical Unit)	
	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015
Coal (1000 tons)	9	8	W	W	1	1	57	109	W	W
Petroleum Liquids (1000 barrels)	0	0	--	--	0	0	0	0	--	--
Petroleum Coke (1000 tons)	0	0	--	--	0	0	0	0	--	--
Natural Gas (1000 Mcf)	549	507	W	W	3	3	7,766	6,371	W	W

Industrial Sector										
Fuel	Receipts		Cost		Number of Plants		Year-to-Date Receipts		Year-to-Date Cost	
	(Physical Units)		(Dollars / Physical Unit)				(Physical Units)		(Dollars / Physical Unit)	
	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015
Coal (1000 tons)	516	944	W	W	16	28	6,856	12,132	W	W
Petroleum Liquids (1000 barrels)	17	38	63.57	72.24	10	14	299	385	59.50	82.47
Petroleum Coke (1000 tons)	16	30	W	W	1	3	135	304	W	W
Natural Gas (1000 Mcf)	65,784	67,528	W	W	47	55	729,741	740,975	W	W

NM = Not meaningful due to large relative standard error.

W = Withheld to avoid disclosure of individual company data.

Number of Plants represents the number of plants for which receipts data were collected this month.

.... A plant using more than one fuel may be counted multiple times.

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

Petroleum Liquids include distillate fuel oil, residual fuel oil, jet fuel, kerosene, propane, and waste oil.

Natural Gas includes a small amount of supplemental gaseous fuels that cannot be identified separately.

Table ES2.B. Summary Statistics: Receipts and Cost of Fossil Fuels for the Electric Power Industry by Sector, Btus, 2016 and 2015

Total (All Sectors)											
Fuel	Receipts		Cost		Number of Plants		Receipts		Cost		Year-to-Date
	(Billion Btu)		(Dollars / Million Btu)				(Billion Btu)		(Dollars / Million Btu)		
	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	
Coal	1,079,534	1,124,253	2.08	2.16	270	326	12,335,055	15,086,208	2.12	2.22	
Petroleum Liquids	7,849	10,037	W	8.83	177	186	100,602	147,647	9.36	11.49	
Petroleum Coke	9,944	11,037	2.07	1.57	9	13	116,935	138,668	1.65	1.84	
Natural Gas	730,273	818,600	3.96	2.59	753	741	10,606,036	10,173,502	2.88	3.23	
Fossil Fuels	1,827,600	1,963,928	W	2.36	928	953	23,158,628	25,546,026	2.47	2.65	

Electric Utilities											
Fuel	Receipts		Cost		Number of Plants		Receipts		Cost		Year-to-Date
	(Billion Btu)		(Dollars / Million Btu)				(Billion Btu)		(Dollars / Million Btu)		
	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	
Coal	776,790	825,539	2.13	2.21	187	215	9,203,169	11,088,631	2.16	2.25	
Petroleum Liquids	5,562	7,402	10.73	8.52	114	120	73,050	90,041	9.16	11.32	
Petroleum Coke	8,017	8,492	1.99	1.35	7	9	99,706	115,929	1.52	1.77	
Natural Gas	347,451	386,119	4.15	2.93	407	396	5,060,046	4,717,748	3.15	3.52	
Fossil Fuels	1,137,820	1,227,551	2.79	2.47	526	534	14,435,971	16,012,348	2.54	2.67	

Independent Power Producers											
Fuel	Receipts		Cost		Number of Plants		Receipts		Cost		Year-to-Date
	(Billion Btu)		(Dollars / Million Btu)				(Billion Btu)		(Dollars / Million Btu)		
	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	
Coal	291,318	278,119	1.92	1.96	66	82	2,979,092	3,731,508	1.94	2.10	
Petroleum Liquids	2,183	2,401	W	9.61	53	52	25,734	55,248	9.92	11.69	
Petroleum Coke	1,500	1,742	W	W	1	1	13,566	14,550	2.50	2.45	
Natural Gas	314,419	362,309	3.83	2.21	296	287	4,785,209	4,683,291	2.55	2.94	
Fossil Fuels	609,420	644,570	W	W	351	356	7,803,601	8,484,597	W	W	

Commercial Sector											
Fuel	Receipts		Cost		Number of Plants		Receipts		Cost		Year-to-Date
	(Billion Btu)		(Dollars / Million Btu)				(Billion Btu)		(Dollars / Million Btu)		
	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	
Coal	214	188	W	W	1	1	1,288	2,439	W	W	
Petroleum Liquids	0	0	--	--	0	0	0	0	--	--	
Petroleum Coke	0	0	--	--	0	0	0	0	--	--	
Natural Gas	568	524	W	W	3	3	8,005	6,499	W	W	
Fossil Fuels	781	712	W	W	3	3	9,293	8,938	W	W	

Industrial Sector											
Fuel	Receipts		Cost		Number of Plants		Receipts		Cost		Year-to-Date
	(Billion Btu)		(Dollars / Million Btu)				(Billion Btu)		(Dollars / Million Btu)		
	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	
Coal	11,213	20,408	W	W	16	28	151,507	263,630	W	W	
Petroleum Liquids	103	234	10.53	11.75	10	14	1,817	2,359	9.79	13.45	
Petroleum Coke	427	804	W	W	1	3	3,664	8,189	W	W	
Natural Gas	67,835	69,647	W	W	47	55	752,775	765,964	W	W	
Fossil Fuels	79,579	91,094	W	W	48	60	909,763	1,040,142	W	W	

NM = Not meaningful due to large relative standard error.

W = Withheld to avoid disclosure of individual company data.

Number of Plants represents the number of plants for which receipts data were collected this month.

.... The total number of fossil fuel plants is not the sum of the figures above it because a plant that receives two or more different fuels is only counted once.

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

Petroleum Liquids include distillate fuel oil, residual fuel oil, jet fuel, kerosene, propane, and waste oil.

Natural Gas includes a small amount of supplemental gaseous fuels that cannot be identified separately.













**Table 1.2.E. Net Generation by Energy Source: Residential Sector, 2014-December 2016  
(Thousand Megawatthours)**

Period	Small Scale Generation
	Estimated Small Scale Solar Photovoltaic Generation
<b>Annual Totals</b>	
2014	4,947
2015	6,999
2016	10,465
<b>Year 2014</b>	
January	263
February	277
March	382
April	421
May	468
June	478
July	502
August	503
Sept	472
October	445
November	373
December	363
<b>Year 2015</b>	
January	340
February	375
March	536
April	609
May	676
June	693
July	741
August	746
Sept	679
October	618
November	515
December	471
<b>Year 2016</b>	
January	513
February	614
March	824
April	939
May	1,044
June	1,086
July	1,133
August	1,100
Sept	977
October	874
November	717
December	644
<b>Year to Date</b>	
2014	4,947
2015	6,999
2016	10,465
<b>Rolling 12 Months Ending in December</b>	
2015	6,999
2016	10,465

See Glossary for definitions. Values for 2015 and prior years are final. Values for 2016 are preliminary.

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

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

Sources:

Estimated small scale solar photovoltaic generation and small scale solar photovoltaic capacity are based on data from Form EIA-826, Form EIA-861 and from estimation methods described in the technical notes.

Table 1.3.A. Utility Scale Facility Net Generation  
by State, by Sector, December 2016 and 2015 (Thousand Megawatthours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
	Generation at Utility Scale Facilities			Electric Utilities		Independent Power Producers		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	December 2016	December 2015	Percentage Change	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015
New England	8,869	8,859	0.1%	304	234	8,226	8,286	101	95	238	244
Connecticut	3,186	3,381	-5.8%	NM	6	3,121	3,294	NM	37	NM	44
Maine	904	979	-7.7%	NM	0	699	777	17	17	188	185
Massachusetts	2,501	2,194	14.0%	26	51	2,415	2,098	45	32	NM	13
New Hampshire	1,698	1,659	2.3%	207	84	1,484	1,569	NM	4	NM	2
Rhode Island	432	436	-0.8%	1	0	425	431	NM	NM	0	0
Vermont	149	211	-29.3%	67	93	82	118	NM	0	0	0
Middle Atlantic	36,521	33,979	7.5%	2,621	2,905	33,387	30,503	166	189	347	381
New Jersey	6,331	6,290	0.7%	-5	0	6,243	6,184	50	50	43	55
New York	10,770	10,748	0.2%	2,622	2,898	7,962	7,658	103	105	82	87
Pennsylvania	19,421	16,941	14.6%	NM	6	19,182	16,661	NM	34	221	239
East North Central	51,891	46,455	11.7%	21,281	19,541	29,682	25,903	144	170	784	841
Illinois	17,078	15,735	8.5%	426	342	16,411	15,085	34	46	207	262
Indiana	9,591	7,684	24.8%	8,240	6,019	1,099	1,389	20	20	232	255
Michigan	8,864	9,256	-4.2%	6,085	6,600	2,574	2,462	68	80	137	114
Ohio	11,088	8,165	35.8%	2,545	2,152	8,471	5,933	NM	14	63	66
Wisconsin	5,268	5,615	-6.2%	3,985	4,428	1,126	1,034	12	10	146	144
West North Central	30,538	26,997	13.1%	24,803	22,534	5,324	4,067	57	49	353	347
Iowa	5,535	4,605	20.2%	3,990	3,261	1,342	1,156	22	20	181	168
Kansas	4,510	3,712	21.5%	3,336	2,552	1,173	1,158	0	0	NM	2
Minnesota	5,754	5,113	12.5%	4,415	4,170	1,195	803	19	18	125	123
Missouri	6,745	6,388	5.6%	6,466	6,122	260	252	15	10	NM	4
Nebraska	3,449	3,415	1.0%	2,905	3,081	513	295	NM	1	30	37
North Dakota	3,616	3,024	19.6%	2,999	2,716	605	294	NM	0	NM	14
South Dakota	930	741	25.6%	693	631	238	109	NM	0	0	0
South Atlantic	65,822	61,222	7.5%	56,373	51,642	7,748	7,760	102	109	1,600	1,711
Delaware	410	431	-4.9%	NM	3	311	304	NM	1	95	124
District of Columbia	NM	7	NM	0	0	0	5	NM	2	0	0
Florida	17,875	18,327	-2.5%	16,737	16,969	685	875	NM	7	447	477
Georgia	10,444	9,692	7.8%	9,323	8,187	681	1,049	NM	1	439	455
Maryland	2,768	2,297	20.5%	2	1	2,704	2,243	NM	32	25	22
North Carolina	10,833	9,702	11.7%	9,940	8,868	716	633	19	27	158	174
South Carolina	8,147	7,531	8.2%	7,928	7,161	89	224	NM	1	129	146
Virginia	7,914	7,510	5.4%	6,687	5,941	984	1,301	34	40	210	228
West Virginia	7,427	5,725	29.7%	5,754	4,514	1,577	1,126	0	0	96	85
East South Central	30,386	28,725	5.8%	26,217	24,000	3,408	3,949	NM	14	750	762
Alabama	11,821	12,523	-5.6%	8,511	8,704	2,948	3,447	0	0	362	372
Kentucky	7,204	6,065	18.8%	7,129	6,016	27	1	0	0	47	47
Mississippi	4,330	4,882	-11.3%	3,755	4,248	416	483	NM	1	159	151
Tennessee	7,030	5,255	33.8%	6,821	5,032	16	17	NM	13	182	192
West South Central	56,400	53,827	4.8%	19,040	18,026	30,639	28,886	68	74	6,653	6,841
Arkansas	5,186	3,830	35.4%	3,881	2,926	1,146	757	NM	0	159	145
Louisiana	8,479	8,935	-5.1%	4,916	5,088	866	948	NM	16	2,683	2,884
Oklahoma	6,311	6,433	-1.9%	3,704	3,978	2,548	2,374	NM	0	59	81
Texas	36,424	34,630	5.2%	6,540	6,034	26,078	24,807	54	57	3,752	3,731
Mountain	31,529	32,136	-1.9%	25,106	25,586	6,121	6,230	42	46	259	274
Arizona	8,154	8,896	-8.3%	7,407	7,821	735	1,065	12	10	0	0
Colorado	4,932	5,002	-1.4%	3,842	3,930	1,083	1,064	NM	2	NM	6
Idaho	1,264	1,265	-0.1%	736	696	474	510	NM	4	54	55
Montana	2,805	2,599	7.9%	1,211	965	1,591	1,631	0	0	NM	2
Nevada	2,966	3,379	-12.2%	2,091	2,602	842	745	9	8	24	24
New Mexico	3,170	3,088	2.6%	2,393	2,323	767	753	10	12	NM	0
Utah	3,598	3,695	-2.6%	3,269	3,483	266	147	8	9	55	56
Wyoming	4,640	4,212	10.2%	4,159	3,766	364	316	0	0	118	130
Pacific Contiguous	31,945	30,775	3.8%	20,257	17,503	10,037	11,504	241	242	1,410	1,526
California	15,440	15,464	-0.2%	6,722	5,592	7,266	8,303	232	231	1,220	1,338
Oregon	5,938	5,652	5.1%	4,519	3,978	1,362	1,607	NM	8	52	59
Washington	10,566	9,659	9.4%	9,016	7,933	1,409	1,594	NM	3	138	129
Pacific Noncontiguous	1,338	1,452	-7.8%	876	994	342	370	49	45	71	43
Alaska	509	599	-15.1%	465	551	18	24	14	15	12	9
Hawaii	829	853	-2.8%	411	443	324	346	34	31	59	34
U.S. Total	345,238	324,427	6.4%	196,879	182,965	134,914	127,458	981	1,033	12,464	12,970

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 Notes: See Glossary for definitions. Values for 2016 are preliminary. Values for 2015 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 1.4.A. Utility Scale Facility Net Generation from Coal by State, by Sector, December 2016 and 2015 (Thousand Megawatthours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
	Generation at Utility Scale Facilities			Electric Utilities		Independent Power Producers		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	December 2016	December 2015	Percentage Change	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015
New England	567	183	209.3%	155	17	410	164	0	0	NM	2
Connecticut	89	-3	NM	0	0	89	-3	0	0	0	0
Maine	9	6	42.3%	0	0	8	5	0	0	1	1
Massachusetts	314	163	93.1%	0	0	313	162	0	0	NM	1
New Hampshire	155	17	789.0%	155	17	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	5,752	3,912	47.0%	0	0	5,697	3,832	0	0	56	80
New Jersey	120	101	18.4%	0	0	120	101	0	0	0	0
New York	87	87	-0.6%	0	0	60	63	0	0	26	24
Pennsylvania	5,546	3,724	48.9%	0	0	5,517	3,668	0	0	29	56
East North Central	26,194	20,104	30.3%	15,512	12,969	10,487	6,900	8	5	186	230
Illinois	5,885	4,492	31.0%	343	272	5,406	4,065	5	3	132	153
Indiana	7,061	4,953	42.6%	6,783	4,473	275	478	3	2	NM	0
Michigan	3,517	3,993	-11.9%	3,469	3,950	39	31	0	0	NM	12
Ohio	6,786	3,808	78.2%	2,014	1,463	4,767	2,325	0	0	NM	19
Wisconsin	2,943	2,857	3.0%	2,903	2,810	0	0	0	0	40	47
West North Central	17,036	14,656	16.2%	16,802	14,444	NM	2	20	20	212	191
Iowa	2,401	1,943	23.6%	2,260	1,799	0	0	NM	13	129	130
Kansas	2,267	1,499	51.2%	2,267	1,499	0	0	0	0	0	0
Minnesota	2,411	2,070	16.5%	2,365	2,058	0	0	NM	0	46	12
Missouri	5,218	4,630	12.7%	5,206	4,622	NM	2	9	6	NM	0
Nebraska	2,111	1,985	6.4%	2,083	1,947	0	0	0	0	28	37
North Dakota	2,405	2,339	2.8%	2,398	2,327	0	0	0	0	NM	12
South Dakota	224	192	16.5%	224	192	0	0	0	0	0	0
South Atlantic	21,040	14,145	48.8%	18,511	12,548	2,440	1,466	7	6	83	125
Delaware	10	1	851.8%	0	0	10	1	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	3,447	2,759	24.9%	3,434	2,706	0	36	0	0	NM	17
Georgia	2,921	1,667	75.2%	2,903	1,654	0	0	0	0	18	13
Maryland	1,068	502	112.8%	0	0	1,060	494	0	0	7	8
North Carolina	3,097	1,417	118.6%	3,070	1,388	NM	9	6	5	NM	15
South Carolina	1,879	1,126	66.9%	1,875	1,115	0	0	0	0	4	12
Virginia	1,621	1,279	26.7%	1,537	1,227	52	21	NM	1	30	29
West Virginia	6,997	5,393	29.7%	5,690	4,458	1,307	904	0	0	0	32
East South Central	12,073	9,071	33.1%	11,776	8,840	230	138	0	0	66	94
Alabama	2,803	2,488	12.7%	2,799	2,481	0	0	0	0	NM	7
Kentucky	6,095	5,086	19.8%	6,095	5,086	0	0	0	0	0	0
Mississippi	417	171	144.0%	186	33	230	138	0	0	0	0
Tennessee	2,758	1,326	108.0%	2,696	1,240	0	0	0	0	62	86
West South Central	18,925	10,877	74.0%	9,897	5,694	9,006	5,149	0	0	NM	34
Arkansas	2,897	1,057	174.0%	2,439	798	453	253	0	0	5	6
Louisiana	1,317	932	41.4%	886	720	431	211	0	0	0	0
Oklahoma	2,184	1,315	66.1%	2,007	1,142	160	145	0	0	NM	28
Texas	12,527	7,573	65.4%	4,565	3,033	7,961	4,540	0	0	0	0
Mountain	15,920	15,219	4.6%	14,418	13,619	1,471	1,559	0	0	30	41
Arizona	3,056	2,752	11.1%	3,056	2,752	0	0	0	0	0	0
Colorado	2,942	2,829	4.0%	2,938	2,821	NM	7	0	0	NM	1
Idaho	NM	9	NM	0	0	0	0	0	0	NM	9
Montana	1,307	1,389	-5.9%	NM	26	1,286	1,363	0	0	NM	1
Nevada	73	182	-60.0%	-5	91	78	91	0	0	0	0
New Mexico	1,948	1,790	8.8%	1,948	1,790	0	0	0	0	0	0
Utah	2,637	2,708	-2.7%	2,597	2,670	NM	38	0	0	0	0
Wyoming	3,953	3,560	11.0%	3,865	3,470	NM	60	0	0	24	31
Pacific Contiguous	1,113	1,126	-1.1%	369	375	713	717	0	0	32	34
California	28	31	-8.3%	0	0	0	0	0	0	28	31
Oregon	369	375	-1.8%	369	375	0	0	0	0	0	0
Washington	717	720	-0.5%	0	0	713	717	0	0	4	3
Pacific Noncontiguous	170	201	-15.3%	23	53	136	137	10	10	NM	1
Alaska	45	81	-44.7%	23	53	NM	18	10	10	0	0
Hawaii	125	120	4.7%	0	0	124	118	0	0	NM	1
U.S. Total	118,790	89,495	32.7%	87,463	68,558	30,591	20,063	45	41	691	832

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

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
	Generation at Utility Scale Facilities			Electric Utilities		Independent Power Producers		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	December 2016	December 2015	Percentage Change	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015
New England	79	13	505.7%	6	4	66	5	NM	3	NM	1
Connecticut	15	2	596.9%	1	0	13	2	NM	0	NM	0
Maine	6	4	49.6%	NM	0	4	3	NM	0	2	1
Massachusetts	53	6	785.8%	2	3	49	0	NM	3	NM	0
New Hampshire	3	0	789.0%	2	0	NM	0	NM	0	NM	0
Rhode Island	NM	NM	NM	1	0	NM	0	NM	NM	0	0
Vermont	NM	0	NM	NM	0	0	0	NM	0	0	0
Middle Atlantic	100	37	167.8%	26	6	66	26	3	NM	5	4
New Jersey	18	2	NM	NM	0	18	1	NM	0	NM	0
New York	60	16	270.9%	26	6	27	6	3	NM	4	3
Pennsylvania	22	20	11.2%	NM	0	21	19	NM	0	NM	1
East North Central	56	56	0.6%	24	28	30	24	NM	0	2	3
Illinois	6	6	-6.7%	1	1	5	6	NM	0	0	0
Indiana	11	11	-5.8%	9	9	0	0	NM	0	2	2
Michigan	8	8	2.5%	8	7	0	NM	NM	0	NM	0
Ohio	30	29	3.9%	5	9	24	18	NM	0	NM	1
Wisconsin	2	2	4.6%	2	1	0	0	NM	0	NM	0
West North Central	39	34	17.5%	39	33	NM	0	NM	0	NM	0
Iowa	12	15	-20.3%	12	15	NM	0	NM	0	NM	0
Kansas	4	5	-21.7%	4	5	0	0	0	0	0	0
Minnesota	NM	2	NM	4	2	NM	0	NM	0	NM	0
Missouri	13	8	49.8%	13	8	NM	0	NM	0	0	0
Nebraska	NM	0	NM	NM	0	0	0	0	0	0	0
North Dakota	5	2	121.5%	5	2	0	0	NM	0	NM	0
South Dakota	NM	0	NM	NM	0	NM	0	NM	0	0	0
South Atlantic	126	96	31.9%	103	46	18	44	NM	0	4	5
Delaware	3	7	-56.4%	NM	0	3	7	0	0	0	0
District of Columbia	NM	0	NM	0	0	0	0	NM	0	0	0
Florida	41	20	109.0%	40	17	NM	1	0	0	NM	1
Georgia	6	0	NM	3	-2	NM	0	NM	0	NM	2
Maryland	8	4	101.2%	1	0	6	4	NM	0	NM	0
North Carolina	32	16	98.7%	28	10	3	5	NM	0	NM	1
South Carolina	9	5	65.1%	7	4	NM	0	NM	0	2	1
Virginia	15	34	-57.5%	10	7	5	27	NM	0	NM	0
West Virginia	13	9	51.3%	13	8	0	0	0	0	0	0
East South Central	18	37	-50.1%	17	34	0	NM	0	0	NM	3
Alabama	4	9	-58.2%	3	6	0	NM	0	0	NM	2
Kentucky	7	12	-43.0%	7	12	0	0	0	0	0	0
Mississippi	2	0	359.7%	2	0	0	0	0	0	0	0
Tennessee	6	15	-61.8%	6	15	NM	0	0	0	NM	0
West South Central	16	25	-36.8%	11	17	4	8	NM	0	NM	1
Arkansas	6	7	-11.2%	5	4	1	3	0	0	0	0
Louisiana	1	8	-87.9%	1	8	0	0	0	0	0	0
Oklahoma	1	2	-41.5%	1	1	0	0	NM	0	NM	0
Texas	8	9	-7.4%	4	3	3	5	NM	0	NM	0
Mountain	17	18	-2.8%	15	15	2	2	NM	0	NM	0
Arizona	3	3	-0.3%	3	3	0	0	NM	0	0	0
Colorado	NM	1	NM	NM	1	0	0	0	0	NM	0
Idaho	NM	0	NM	NM	0	0	0	0	0	0	0
Montana	NM	2	NM	NM	0	2	2	0	0	0	0
Nevada	0	1	-75.1%	0	1	0	0	0	0	0	0
New Mexico	6	5	22.6%	6	5	0	0	0	0	NM	0
Utah	3	1	141.0%	3	1	NM	0	0	0	NM	0
Wyoming	2	4	-62.3%	2	4	0	0	0	0	NM	0
Pacific Contiguous	10	10	-6.1%	5	3	4	6	NM	0	NM	1
California	5	6	-7.0%	3	3	2	3	NM	0	NM	0
Oregon	2	0	NM	2	0	0	0	NM	0	0	0
Washington	3	4	-38.1%	NM	0	1	3	NM	0	NM	1
Pacific Noncontiguous	677	622	8.8%	510	464	119	138	NM	1	NM	19
Alaska	110	46	137.0%	105	43	0	0	NM	1	5	3
Hawaii	568	576	-1.5%	406	421	119	138	0	0	NM	17
U.S. Total	1,139	948	20.2%	755	650	309	254	10	7	65	38

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

Table 1.5.B. Utility Scale Facility Net Generation from Petroleum Liquids

by State, by Sector, Year-to-Date through December 2016 and 2015 (Thousand Megawatthours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
	Generation at Utility Scale Facilities			Electric Utilities		Independent Power Producers		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	December 2016 YTD	December 2015 YTD	Percentage Change	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD
New England	721	2,055	-64.9%	57	188	590	1,740	49	84	25	42
Connecticut	100	437	-77.2%	8	8	81	411	NM	10	NM	9
Maine	120	548	-78.0%	NM	0	99	512	NM	3	20	34
Massachusetts	438	777	-43.7%	17	61	396	677	24	39	NM	0
New Hampshire	30	176	-82.9%	20	106	NM	54	8	16	NM	0
Rhode Island	32	114	-72.0%	12	12	12	86	NM	NM	0	0
Vermont	NM	3	NM	NM	2	0	0	NM	1	0	0
Middle Atlantic	1,013	2,767	-63.4%	315	821	612	1,808	33	62	53	77
New Jersey	92	304	-69.9%	NM	4	86	294	NM	1	NM	5
New York	654	1,892	-65.4%	312	817	275	959	30	59	37	58
Pennsylvania	267	571	-53.2%	NM	0	251	554	NM	2	14	14
East North Central	540	570	-5.3%	313	346	204	194	4	3	19	26
Illinois	65	56	16.2%	5	8	59	48	1	0	0	0
Indiana	113	159	-29.0%	100	141	NM	0	NM	0	12	18
Michigan	121	109	11.2%	117	104	0	NM	2	2	2	2
Ohio	215	220	-2.2%	69	72	143	143	NM	0	3	5
Wisconsin	26	27	-2.8%	23	22	3	3	NM	0	NM	1
West North Central	249	289	-13.8%	239	282	NM	5	2	1	2	1
Iowa	73	64	13.5%	72	64	1	0	NM	0	NM	0
Kansas	28	49	-41.5%	28	49	0	0	0	0	0	0
Minnesota	31	28	9.4%	23	22	NM	5	2	1	NM	1
Missouri	77	99	-22.0%	77	99	NM	0	NM	0	0	0
Nebraska	6	6	4.8%	6	6	0	0	0	0	0	0
North Dakota	30	26	15.1%	30	26	0	0	NM	0	NM	1
South Dakota	4	17	-79.6%	3	17	NM	0	NM	0	0	0
South Atlantic	2,180	2,992	-27.1%	1,637	2,137	454	740	8	21	81	93
Delaware	54	154	-65.1%	NM	5	51	149	0	0	0	0
District of Columbia	NM	0	NM	0	0	0	0	NM	0	0	0
Florida	767	582	31.9%	744	560	NM	7	0	0	15	14
Georgia	121	147	-17.7%	60	54	23	48	4	3	34	42
Maryland	176	232	-24.2%	12	11	161	204	NM	16	2	NM
North Carolina	284	435	-34.6%	218	362	59	58	NM	0	NM	14
South Carolina	117	193	-39.2%	99	167	NM	11	NM	0	17	15
Virginia	537	1,108	-51.6%	383	851	147	249	NM	1	NM	7
West Virginia	123	140	-12.5%	118	127	5	14	0	0	0	0
East South Central	292	346	-15.6%	265	312	5	10	NM	0	21	24
Alabama	48	84	-42.6%	26	53	5	10	0	0	NM	21
Kentucky	106	113	-6.2%	106	113	0	0	0	0	0	0
Mississippi	17	14	23.5%	15	12	0	0	0	0	3	2
Tennessee	121	135	-10.7%	119	133	NM	0	NM	0	NM	2
West South Central	156	257	-39.3%	102	155	47	90	NM	1	7	12
Arkansas	42	60	-29.9%	30	39	9	13	0	0	3	8
Louisiana	15	78	-81.4%	13	65	2	13	0	0	0	0
Oklahoma	18	11	68.3%	17	9	0	0	NM	0	2	2
Texas	81	108	-24.9%	42	42	36	63	NM	1	NM	2
Mountain	216	213	1.7%	195	194	21	17	NM	NM	NM	1
Arizona	52	48	7.9%	52	48	0	0	NM	0	0	0
Colorado	10	7	33.1%	10	7	0	0	0	NM	NM	0
Idaho	NM	0	NM	NM	0	0	0	0	0	0	0
Montana	17	14	28.6%	NM	0	17	13	0	0	0	0
Nevada	11	16	-31.3%	8	13	3	3	0	0	0	0
New Mexico	50	63	-21.1%	50	63	0	0	0	0	NM	0
Utah	31	20	57.9%	30	19	NM	1	0	0	NM	0
Wyoming	45	45	1.0%	45	45	0	0	0	0	NM	0
Pacific Contiguous	118	112	5.0%	40	42	17	34	NM	1	60	35
California	93	85	9.5%	33	35	8	25	NM	0	51	25
Oregon	5	6	-19.4%	5	6	0	0	NM	0	0	0
Washington	20	22	-5.9%	NM	2	10	9	NM	0	8	10
Pacific Noncontiguous	7,188	7,770	-7.5%	5,507	5,908	1,415	1,602	9	9	257	250
Alaska	787	747	5.5%	741	695	0	0	6	6	41	46
Hawaii	6,401	7,023	-8.9%	4,766	5,213	1,415	1,602	3	3	216	205
U.S. Total	12,674	17,372	-27.0%	8,670	10,386	3,373	6,240	106	183	524	563

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

Table 1.6.A. Utility Scale Facility Net Generation from Petroleum Coke by State, by Sector, December 2016 and 2015 (Thousand Megawatt-hours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
	Generation at Utility Scale Facilities			Electric Utilities		Independent Power Producers		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	December 2016	December 2015	Percentage Change	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015
New England	0	0	--	0	0	0	0	0	0	0	0
Connecticut	0	0	--	0	0	0	0	0	0	0	0
Maine	0	0	--	0	0	0	0	0	0	0	0
Massachusetts	0	0	--	0	0	0	0	0	0	0	0
New Hampshire	0	0	--	0	0	0	0	0	0	0	0
Rhode Island	0	0	--	0	0	0	0	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	23	18	23.3%	0	0	0	0	0	0	23	18
New Jersey	NM	6	NM	0	0	0	0	0	0	NM	6
New York	0	0	--	0	0	0	0	0	0	0	0
Pennsylvania	NM	13	NM	0	0	0	0	0	0	NM	13
East North Central	137	175	-21.7%	39	130	83	27	0	0	16	18
Illinois	0	0	--	0	0	0	0	0	0	0	0
Indiana	0	119	-100.0%	0	119	0	0	0	0	0	0
Michigan	47	15	220.6%	34	0	0	4	0	0	NM	10
Ohio	84	23	268.4%	0	0	83	23	0	0	NM	0
Wisconsin	7	19	-64.2%	5	11	0	0	0	0	2	7
West North Central	NM	3	NM	0	0	0	0	1	1	NM	3
Iowa	NM	3	NM	0	0	0	0	1	1	NM	3
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	106	111	-3.9%	96	103	0	0	0	0	10	8
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	96	103	-6.9%	96	103	0	0	0	0	0	0
Georgia	10	8	35.8%	0	0	0	0	0	0	10	8
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	79	58	36.3%	79	58	0	0	0	0	0	0
Alabama	0	0	--	0	0	0	0	0	0	0	0
Kentucky	79	58	36.3%	79	58	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	479	344	39.5%	453	313	0	0	0	0	26	31
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	470	336	40.1%	453	313	0	0	0	0	17	23
Oklahoma	0	0	--	0	0	0	0	0	0	0	0
Texas	9	8	12.3%	0	0	0	0	0	0	9	8
Mountain	41	40	2.0%	0	0	41	40	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	41	40	2.0%	0	0	41	40	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	871	749	16.3%	667	604	124	67	1	1	79	77

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 for 2016 are preliminary. Values for 2015 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 1.6.B. Utility Scale Facility Net Generation from Petroleum Coke

by State, by Sector, Year-to-Date through December 2016 and 2015 (Thousand Megawatthours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
	Generation at Utility Scale Facilities			Electric Utilities		Independent Power Producers		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	December 2016 YTD	December 2015 YTD	Percentage Change	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD
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	263	229	14.7%	0	0	0	0	0	0	263	229
New Jersey	74	71	4.3%	0	0	0	0	0	0	74	71
New York	0	0	--	0	0	0	0	0	0	0	0
Pennsylvania	189	158	19.4%	0	0	0	0	0	0	189	158
East North Central	2,297	3,175	-27.7%	1,133	1,790	958	1,118	0	0	207	268
Illinois	0	0	--	0	0	0	0	0	0	0	0
Indiana	497	1,179	-57.9%	497	1,179	0	0	0	0	0	0
Michigan	711	718	-1.0%	553	542	3	29	0	0	155	147
Ohio	969	1,097	-11.7%	0	0	955	1,088	0	0	NM	9
Wisconsin	120	181	-33.6%	83	69	0	0	0	0	37	112
West North Central	62	46	34.7%	0	0	0	0	6	8	56	38
Iowa	62	46	34.7%	0	0	0	0	6	8	56	38
Kansas	0	0	--	0	0	0	0	0	0	0	0
Minnesota	0	0	--	0	0	0	0	0	0	0	0
Missouri	0	0	--	0	0	0	0	0	0	0	0
Nebraska	0	0	--	0	0	0	0	0	0	0	0
North Dakota	0	0	--	0	0	0	0	0	0	0	0
South Dakota	0	0	--	0	0	0	0	0	0	0	0
South Atlantic	2,146	1,681	27.7%	2,048	1,568	0	0	0	0	97	113
Delaware	0	0	--	0	0	0	0	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	2,048	1,568	30.7%	2,048	1,568	0	0	0	0	0	0
Georgia	97	113	-13.9%	0	0	0	0	0	0	97	113
Maryland	0	0	--	0	0	0	0	0	0	0	0
North Carolina	0	0	--	0	0	0	0	0	0	0	0
South Carolina	0	0	--	0	0	0	0	0	0	0	0
Virginia	0	0	--	0	0	0	0	0	0	0	0
West Virginia	0	0	--	0	0	0	0	0	0	0	0
East South Central	1,130	964	17.2%	1,130	964	0	0	0	0	0	0
Alabama	0	0	--	0	0	0	0	0	0	0	0
Kentucky	1,130	964	17.2%	1,130	964	0	0	0	0	0	0
Mississippi	0	0	--	0	0	0	0	0	0	0	0
Tennessee	0	0	--	0	0	0	0	0	0	0	0
West South Central	4,891	4,299	13.8%	4,569	3,957	0	0	0	0	322	342
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	4,771	4,165	14.6%	4,569	3,957	0	0	0	0	202	208
Oklahoma	0	0	--	0	0	0	0	0	0	0	0
Texas	120	134	-10.5%	0	0	0	0	0	0	120	134
Mountain	443	483	-8.3%	0	0	443	483	0	0	0	0
Arizona	0	0	--	0	0	0	0	0	0	0	0
Colorado	0	0	--	0	0	0	0	0	0	0	0
Idaho	0	0	--	0	0	0	0	0	0	0	0
Montana	443	483	-8.3%	0	0	443	483	0	0	0	0
Nevada	0	0	--	0	0	0	0	0	0	0	0
New Mexico	0	0	--	0	0	0	0	0	0	0	0
Utah	0	0	--	0	0	0	0	0	0	0	0
Wyoming	0	0	--	0	0	0	0	0	0	0	0
Pacific Contiguous	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	11,232	10,877	3.3%	8,881	8,278	1,400	1,601	6	8	945	990

Displayed values of zero may represent small values that round to zero. The Excel version of this table provides additional precision which may be accessed by selecting individual cells.  
 NM = Not meaningful due to large relative standard error or excessive percentage change.  
 Notes: See Glossary for definitions. Values for 2016 are preliminary. Values for 2015 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 1.7.A. Utility Scale Facility Net Generation from Natural Gas by State, by Sector, December 2016 and 2015 (Thousand Megawatthours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
	Generation at Utility Scale Facilities			Electric Utilities		Independent Power Producers		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	December 2016	December 2015	Percentage Change	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015
New England	3,723	3,934	-5.3%	6	20	3,563	3,748	74	70	80	96
Connecticut	1,385	1,664	-16.7%	0	3	1,324	1,579	NM	37	NM	44
Maine	146	244	-40.2%	0	0	111	203	NM	2	NM	39
Massachusetts	1,490	1,235	20.7%	4	16	1,433	1,181	39	26	NM	12
New Hampshire	303	377	-19.6%	1	0	298	373	NM	1	NM	2
Rhode Island	400	414	-3.6%	0	0	396	411	NM	NM	0	0
Vermont	NM	0	NM	0	0	0	0	NM	0	0	0
Middle Atlantic	12,546	11,765	6.6%	714	965	11,596	10,546	89	93	148	161
New Jersey	2,983	2,954	1.0%	NM	8	2,938	2,903	NM	16	NM	26
New York	4,087	3,789	7.9%	708	958	3,286	2,735	65	66	29	31
Pennsylvania	5,476	5,022	9.0%	NM	0	5,372	4,908	NM	10	95	104
East North Central	7,745	8,513	-9.0%	3,199	3,907	4,247	4,300	111	130	189	176
Illinois	1,044	1,100	-5.1%	76	61	899	932	29	42	NM	66
Indiana	1,718	1,743	-1.4%	1,387	1,359	268	318	NM	15	49	52
Michigan	1,912	2,001	-4.4%	544	587	1,268	1,334	50	53	49	27
Ohio	2,227	2,338	-4.8%	499	649	1,703	1,669	NM	13	16	7
Wisconsin	845	1,331	-36.5%	693	1,252	108	48	NM	7	35	24
West North Central	1,158	1,627	-28.8%	889	1,384	188	165	19	16	62	62
Iowa	128	258	-50.5%	79	226	NM	0	NM	4	42	28
Kansas	97	45	114.8%	96	44	0	0	0	0	NM	2
Minnesota	391	852	-54.2%	312	777	55	37	NM	11	14	28
Missouri	435	358	21.6%	298	224	133	128	2	1	NM	3
Nebraska	22	11	96.1%	21	11	0	0	NM	0	NM	0
North Dakota	54	19	177.3%	51	19	0	0	0	0	NM	1
South Dakota	32	83	-61.6%	32	83	0	0	0	0	0	0
South Atlantic	22,281	24,703	-9.8%	19,475	20,632	2,413	3,678	NM	36	350	356
Delaware	363	387	-6.0%	NM	2	291	287	0	0	70	97
District of Columbia	NM	2	NM	0	0	0	0	NM	2	0	0
Florida	10,717	12,093	-11.4%	10,288	11,473	314	492	NM	3	114	125
Georgia	3,839	4,092	-6.2%	3,265	3,077	525	965	0	0	49	50
Maryland	101	298	-65.9%	0	0	60	261	NM	30	NM	7
North Carolina	3,124	3,138	-0.4%	2,744	2,818	365	302	2	1	NM	17
South Carolina	980	1,402	-30.1%	923	1,220	48	178	0	0	9	4
Virginia	3,096	3,240	-4.4%	2,247	2,041	803	1,142	NM	1	45	56
West Virginia	56	52	8.1%	5	1	8	51	0	0	43	0
East South Central	9,950	9,630	3.3%	6,618	5,679	3,127	3,768	NM	14	194	168
Alabama	4,442	4,692	-5.3%	1,425	1,173	2,917	3,424	0	0	101	95
Kentucky	671	500	34.1%	626	481	26	0	0	0	NM	19
Mississippi	3,802	3,583	6.1%	3,581	3,205	184	344	NM	1	36	33
Tennessee	1,035	854	21.2%	986	820	0	0	NM	13	39	21
West South Central	22,021	28,629	-23.1%	5,629	8,624	10,526	14,041	62	66	5,805	5,897
Arkansas	952	928	2.7%	242	409	679	489	NM	0	31	29
Louisiana	4,591	6,021	-23.7%	1,971	3,063	364	613	NM	16	2,242	2,328
Oklahoma	2,264	3,202	-29.3%	1,503	2,261	746	920	0	0	NM	22
Texas	14,214	18,478	-23.1%	1,913	2,890	8,738	12,019	47	50	3,516	3,518
Mountain	6,145	8,218	-25.2%	4,666	6,355	1,315	1,700	34	36	130	126
Arizona	1,235	2,345	-47.3%	758	1,517	466	819	11	9	0	0
Colorado	926	1,103	-16.1%	758	957	166	145	0	0	NM	2
Idaho	235	413	-43.1%	99	224	126	179	0	3	10	7
Montana	44	72	-39.5%	39	64	NM	8	0	0	0	0
Nevada	2,233	2,571	-13.1%	2,011	2,348	192	194	NM	5	24	23
New Mexico	778	866	-10.2%	417	507	351	348	10	11	0	0
Utah	629	784	-19.8%	575	730	NM	7	NM	7	39	39
Wyoming	65	63	2.8%	NM	8	NM	0	0	0	56	55
Pacific Contiguous	10,662	12,485	-14.6%	4,428	4,511	5,065	6,729	162	156	1,007	1,089
California	7,894	9,456	-16.5%	2,832	3,053	3,916	5,182	156	149	990	1,071
Oregon	1,794	1,764	1.7%	950	711	833	1,037	NM	5	6	10
Washington	974	1,266	-23.0%	646	747	316	509	NM	2	11	8
Pacific Noncontiguous	179	274	-34.7%	172	268	0	0	NM	0	NM	6
Alaska	179	274	-34.7%	172	268	0	0	NM	0	NM	6
Hawaii	0	0	--	0	0	0	0	0	0	0	0
U.S. Total	96,412	109,777	-12.2%	45,796	52,345	42,039	48,676	605	617	7,973	8,137

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 for 2016 are preliminary. Values for 2015 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.  
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 Source: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report.



Table 1.8.A. Utility Scale Facility Net Generation from Other Gases  
by State, by Sector, December 2016 and 2015 (Thousand Megawatthours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
	Generation at Utility Scale Facilities			Electric Utilities		Independent Power Producers		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	December 2016	December 2015	Percentage Change	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015
New England	0	0	--	0	0	0	0	0	0	0	0
Connecticut	0	0	--	0	0	0	0	0	0	0	0
Maine	0	0	--	0	0	0	0	0	0	0	0
Massachusetts	0	0	--	0	0	0	0	0	0	0	0
New Hampshire	0	0	--	0	0	0	0	0	0	0	0
Rhode Island	0	0	--	0	0	0	0	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	48	48	0.2%	0	0	NM	0	0	0	48	48
New Jersey	NM	17	NM	0	0	0	0	0	0	NM	17
New York	0	0	--	0	0	0	0	0	0	0	0
Pennsylvania	36	32	15.4%	0	0	NM	0	0	0	36	32
East North Central	363	324	12.1%	23	1	154	99	0	0	186	223
Illinois	NM	44	NM	0	0	0	0	0	0	NM	44
Indiana	160	166	-3.4%	NM	2	0	0	0	0	159	164
Michigan	137	37	269.7%	21	0	115	37	0	0	0	0
Ohio	51	77	-34.4%	0	0	39	62	0	0	NM	15
Wisconsin	0	0	--	0	0	0	0	0	0	0	0
West North Central	NM	2	NM	0	0	0	0	0	0	NM	2
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	NM	2	NM	0	0	0	0	0	0	NM	2
South Dakota	0	0	--	0	0	0	0	0	0	0	0
South Atlantic	26	27	-2.7%	0	0	0	0	0	0	26	27
Delaware	24	25	-4.1%	0	0	0	0	0	0	24	25
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	0	0	-15.7%	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	2	2	17.0%	0	0	0	0	0	0	2	2
East South Central	NM	1	NM	0	0	0	0	0	0	NM	1
Alabama	NM	0	NM	0	0	0	0	0	0	NM	0
Kentucky	0	0	--	0	0	0	0	0	0	0	0
Mississippi	0	0	--	0	0	0	0	0	0	0	0
Tennessee	2	1	65.1%	0	0	0	0	0	0	2	1
West South Central	382	484	-21.0%	0	0	112	165	0	0	271	319
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	168	220	-23.7%	0	0	0	0	0	0	168	220
Oklahoma	0	0	--	0	0	0	0	0	0	0	0
Texas	215	264	-18.7%	0	0	112	165	0	0	103	99
Mountain	39	40	-2.5%	0	0	1	2	0	0	38	39
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	1	1	-6.8%	0	0	1	1	0	0	0	0
Nevada	0	0	-100.0%	0	0	0	0	0	0	0	0
New Mexico	0	0	--	0	0	0	0	0	0	0	0
Utah	NM	1	NM	0	0	0	0	0	0	NM	1
Wyoming	37	38	-1.3%	0	0	0	0	0	0	37	38
Pacific Contiguous	139	180	-22.7%	0	0	37	36	0	0	102	144
California	102	144	-29.4%	0	0	0	0	0	0	102	144
Oregon	0	0	--	0	0	0	0	0	0	0	0
Washington	37	36	4.1%	0	0	37	36	0	0	0	0
Pacific Noncontiguous	NM	4	NM	0	0	0	0	0	0	NM	4
Alaska	0	0	--	0	0	0	0	0	0	0	0
Hawaii	NM	4	NM	0	0	0	0	0	0	NM	4
U.S. Total	1,007	1,110	-9.2%	23	1	304	302	0	0	680	806

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 for 2016 are preliminary. Values for 2015 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 1.8.B. Utility Scale Facility Net Generation from Other Gases

by State, by Sector, Year-to-Date through December 2016 and 2015 (Thousand Megawatthours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
	Generation at Utility Scale Facilities			Electric Utilities		Independent Power Producers		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	December 2016 YTD	December 2015 YTD	Percentage Change	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD
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	720	641	12.3%	0	0	NM	0	0	0	719	641
New Jersey	222	221	0.6%	0	0	0	0	0	0	222	221
New York	0	0	--	0	0	0	0	0	0	0	0
Pennsylvania	498	420	18.5%	0	0	NM	0	0	0	497	420
East North Central	4,912	4,706	4.4%	164	199	2,172	1,785	0	0	2,576	2,723
Illinois	282	280	0.6%	0	0	6	2	0	0	276	278
Indiana	2,114	2,269	-6.8%	NM	20	0	0	0	0	2,094	2,248
Michigan	1,615	1,213	33.1%	145	178	1,470	1,034	0	0	0	0
Ohio	902	945	-4.5%	0	0	696	748	0	0	206	197
Wisconsin	0	0	--	0	0	0	0	0	0	0	0
West North Central	46	39	17.5%	0	0	0	0	0	0	46	39
Iowa	0	0	--	0	0	0	0	0	0	0	0
Kansas	0	0	--	0	0	0	0	0	0	0	0
Minnesota	0	0	--	0	0	0	0	0	0	0	0
Missouri	0	0	--	0	0	0	0	0	0	0	0
Nebraska	0	0	--	0	0	0	0	0	0	0	0
North Dakota	46	39	17.5%	0	0	0	0	0	0	46	39
South Dakota	0	0	--	0	0	0	0	0	0	0	0
South Atlantic	307	272	12.8%	0	0	0	0	0	0	307	272
Delaware	277	238	16.5%	0	0	0	0	0	0	277	238
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	5	5	-1.2%	0	0	0	0	0	0	5	5
Georgia	0	0	--	0	0	0	0	0	0	0	0
Maryland	0	0	--	0	0	0	0	0	0	0	0
North Carolina	0	0	--	0	0	0	0	0	0	0	0
South Carolina	0	0	--	0	0	0	0	0	0	0	0
Virginia	0	0	--	0	0	0	0	0	0	0	0
West Virginia	25	29	-15.2%	0	0	0	0	0	0	25	29
East South Central	43	48	-10.0%	0	0	0	0	0	0	43	48
Alabama	28	36	-22.9%	0	0	0	0	0	0	28	36
Kentucky	0	0	--	0	0	0	0	0	0	0	0
Mississippi	0	0	--	0	0	0	0	0	0	0	0
Tennessee	15	12	28.7%	0	0	0	0	0	0	15	12
West South Central	4,715	4,980	-5.3%	0	0	1,318	1,314	0	0	3,397	3,666
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	2,090	2,401	-12.9%	0	0	0	0	0	0	2,090	2,401
Oklahoma	0	0	--	0	0	0	0	0	0	0	0
Texas	2,625	2,579	1.8%	0	0	1,318	1,314	0	0	1,307	1,265
Mountain	375	436	-14.2%	0	0	9	23	0	0	365	414
Arizona	0	0	--	0	0	0	0	0	0	0	0
Colorado	0	0	--	0	0	0	0	0	0	0	0
Idaho	0	0	--	0	0	0	0	0	0	0	0
Montana	9	17	-49.7%	0	0	9	17	0	0	0	0
Nevada	1	6	-86.6%	0	0	1	6	0	0	0	0
New Mexico	0	0	--	0	0	0	0	0	0	0	0
Utah	NM	8	NM	0	0	0	0	0	0	NM	8
Wyoming	358	405	-11.7%	0	0	0	0	0	0	358	405
Pacific Contiguous	1,840	1,944	-5.3%	0	0	402	395	0	0	1,439	1,549
California	1,439	1,549	-7.1%	0	0	0	0	0	0	1,439	1,549
Oregon	0	0	--	0	0	0	0	0	0	0	0
Washington	402	395	1.7%	0	0	402	395	0	0	0	0
Pacific Noncontiguous	42	50	-15.9%	0	0	0	0	0	0	42	50
Alaska	0	0	--	0	0	0	0	0	0	0	0
Hawaii	42	50	-15.9%	0	0	0	0	0	0	42	50
U.S. Total	13,000	13,117	-0.9%	164	199	3,902	3,517	0	0	8,934	9,401

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 Notes: See Glossary for definitions. Values for 2016 are preliminary. Values for 2015 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 1.9.A. Utility Scale Facility Net Generation from Nuclear Energy by State, by Sector, December 2016 and 2015 (Thousand Megawatthours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
	Generation at Utility Scale Facilities			Electric Utilities		Independent Power Producers		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	December 2016	December 2015	Percentage Change	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015
New England	2,859	2,987	-4.3%	0	0	2,859	2,987	0	0	0	0
Connecticut	1,554	1,556	-0.2%	0	0	1,554	1,556	0	0	0	0
Maine	0	0	--	0	0	0	0	0	0	0	0
Massachusetts	375	501	-25.2%	0	0	375	501	0	0	0	0
New Hampshire	930	929	0.1%	0	0	930	929	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	13,993	14,190	-1.4%	0	0	13,993	14,190	0	0	0	0
New Jersey	3,018	3,051	-1.1%	0	0	3,018	3,051	0	0	0	0
New York	3,554	3,874	-8.2%	0	0	3,554	3,874	0	0	0	0
Pennsylvania	7,420	7,266	2.1%	0	0	7,420	7,266	0	0	0	0
East North Central	13,648	13,485	1.2%	1,661	1,668	11,987	11,817	0	0	0	0
Illinois	8,860	8,713	1.7%	0	0	8,860	8,713	0	0	0	0
Indiana	0	0	--	0	0	0	0	0	0	0	0
Michigan	2,267	2,272	-0.2%	1,661	1,668	606	604	0	0	0	0
Ohio	1,624	1,629	-0.3%	0	0	1,624	1,629	0	0	0	0
Wisconsin	897	871	3.0%	0	0	897	871	0	0	0	0
West North Central	4,214	4,217	-0.1%	3,755	3,760	459	456	0	0	0	0
Iowa	459	456	0.7%	0	0	459	456	0	0	0	0
Kansas	913	910	0.3%	913	910	0	0	0	0	0	0
Minnesota	1,317	967	36.2%	1,317	967	0	0	0	0	0	0
Missouri	924	919	0.5%	924	919	0	0	0	0	0	0
Nebraska	601	964	-37.6%	601	964	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	18,761	17,648	6.3%	17,466	16,435	1,295	1,213	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	2,747	2,621	4.8%	2,747	2,621	0	0	0	0	0	0
Georgia	3,079	3,062	0.5%	3,079	3,062	0	0	0	0	0	0
Maryland	1,295	1,213	6.8%	0	0	1,295	1,213	0	0	0	0
North Carolina	3,881	3,876	0.1%	3,881	3,876	0	0	0	0	0	0
South Carolina	5,023	4,396	14.3%	5,023	4,396	0	0	0	0	0	0
Virginia	2,736	2,480	10.3%	2,736	2,480	0	0	0	0	0	0
West Virginia	0	0	--	0	0	0	0	0	0	0	0
East South Central	6,403	6,413	-0.1%	6,403	6,413	0	0	0	0	0	0
Alabama	3,805	3,570	6.6%	3,805	3,570	0	0	0	0	0	0
Kentucky	0	0	--	0	0	0	0	0	0	0	0
Mississippi	-14	1,009	-101.3%	-14	1,009	0	0	0	0	0	0
Tennessee	2,612	1,833	42.5%	2,612	1,833	0	0	0	0	0	0
West South Central	6,455	5,266	22.6%	2,653	2,291	3,802	2,975	0	0	0	0
Arkansas	1,050	1,308	-19.8%	1,050	1,308	0	0	0	0	0	0
Louisiana	1,604	983	63.1%	1,604	983	0	0	0	0	0	0
Oklahoma	0	0	--	0	0	0	0	0	0	0	0
Texas	3,802	2,975	27.8%	0	0	3,802	2,975	0	0	0	0
Mountain	2,983	2,986	-0.1%	2,983	2,986	0	0	0	0	0	0
Arizona	2,983	2,986	-0.1%	2,983	2,986	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	2,346	2,443	-4.0%	2,346	2,443	0	0	0	0	0	0
California	1,693	1,584	6.9%	1,693	1,584	0	0	0	0	0	0
Oregon	0	0	--	0	0	0	0	0	0	0	0
Washington	653	860	-24.1%	653	860	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	71,662	69,634	2.9%	37,268	35,997	34,394	33,637	0	0	0	0

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 Notes: See Glossary for definitions. Values for 2016 are preliminary. Values for 2015 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 1.10.A. Utility Scale Facility Net Generation from Hydroelectric (Conventional) Power by State, by Sector, December 2016 and 2015 (Thousand Megawatthours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
	Generation at Utility Scale Facilities			Electric Utilities		Independent Power Producers		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	December 2016	December 2015	Percentage Change	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015
New England	485	703	-31.0%	64	110	394	554	NM	1	27	39
Connecticut	NM	30	NM	NM	2	NM	28	0	0	0	0
Maine	226	290	-22.3%	0	0	199	253	0	0	27	38
Massachusetts	62	103	-40.2%	NM	25	49	77	NM	1	NM	1
New Hampshire	104	143	-26.8%	24	35	81	108	0	0	0	0
Rhode Island	NM	0	NM	0	0	NM	0	0	0	0	0
Vermont	76	137	-44.5%	NM	48	49	89	0	0	0	0
Middle Atlantic	2,424	2,571	-5.7%	1,939	1,974	480	592	NM	0	NM	6
New Jersey	NM	1	NM	0	0	NM	1	0	0	0	0
New York	2,200	2,324	-5.3%	1,936	1,968	260	350	NM	0	NM	6
Pennsylvania	223	247	-9.5%	NM	6	220	241	0	0	0	0
East North Central	459	572	-19.8%	400	494	40	56	NM	0	NM	21
Illinois	NM	13	NM	NM	4	NM	8	NM	0	0	0
Indiana	29	33	-12.9%	29	33	0	0	0	0	0	0
Michigan	146	237	-38.4%	135	219	NM	13	0	0	NM	5
Ohio	39	53	-25.8%	24	28	NM	25	0	0	0	0
Wisconsin	235	237	-0.5%	208	210	NM	10	0	0	NM	16
West North Central	870	1,011	-13.9%	837	968	NM	27	0	0	NM	16
Iowa	99	76	30.7%	99	75	NM	1	0	0	0	0
Kansas	NM	2	NM	0	0	NM	2	0	0	0	0
Minnesota	88	116	-24.1%	57	75	NM	25	0	0	NM	16
Missouri	38	263	-85.6%	38	263	0	0	0	0	0	0
Nebraska	171	133	28.4%	171	133	0	0	0	0	0	0
North Dakota	147	137	7.0%	147	137	0	0	0	0	0	0
South Dakota	326	283	14.9%	326	283	0	0	0	0	0	0
South Atlantic	902	2,125	-57.5%	659	1,852	189	216	NM	2	54	56
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	NM	35	NM	NM	35	0	0	0	0	0	0
Georgia	204	386	-47.3%	201	382	NM	1	0	0	NM	3
Maryland	137	149	-8.2%	0	0	137	149	0	0	0	0
North Carolina	204	778	-73.7%	201	769	NM	7	NM	2	NM	0
South Carolina	124	461	-73.2%	120	449	NM	12	NM	0	0	0
Virginia	81	183	-55.7%	75	170	NM	12	0	0	NM	2
West Virginia	136	133	2.3%	NM	47	40	35	0	0	51	51
East South Central	1,354	3,011	-55.0%	1,353	3,010	NM	1	0	0	0	0
Alabama	480	1,473	-67.4%	480	1,473	0	0	0	0	0	0
Kentucky	310	365	-15.2%	309	364	NM	1	0	0	0	0
Mississippi	0	0	--	0	0	0	0	0	0	0	0
Tennessee	564	1,173	-51.9%	564	1,173	0	0	0	0	0	0
West South Central	325	1,052	-69.1%	256	927	69	125	0	0	0	0
Arkansas	148	410	-63.8%	145	404	NM	6	0	0	0	0
Louisiana	63	116	-45.8%	0	0	63	116	0	0	0	0
Oklahoma	72	443	-83.7%	72	443	0	0	0	0	0	0
Texas	41	83	-50.3%	39	80	NM	3	0	0	0	0
Mountain	2,774	2,349	18.1%	2,694	2,285	79	63	NM	1	0	0
Arizona	593	532	11.5%	593	532	0	0	0	0	0	0
Colorado	158	184	-14.0%	140	163	NM	21	NM	1	0	0
Idaho	680	498	36.5%	635	471	NM	27	0	0	0	0
Montana	1,139	865	31.6%	1,125	853	NM	13	0	0	0	0
Nevada	84	163	-48.1%	83	161	NM	1	0	0	0	0
New Mexico	NM	8	NM	NM	8	0	0	0	0	0	0
Utah	73	59	22.9%	72	58	NM	1	0	0	0	0
Wyoming	37	40	-6.7%	36	39	NM	0	0	0	0	0
Pacific Contiguous	12,778	9,579	33.4%	12,619	9,496	157	82	NM	0	0	0
California	2,306	860	168.0%	2,201	824	103	36	NM	0	0	0
Oregon	3,148	2,825	11.4%	3,123	2,803	NM	22	0	0	0	0
Washington	7,325	5,894	24.3%	7,295	5,870	NM	24	0	0	0	0
Pacific Noncontiguous	166	192	-13.6%	155	180	5	5	0	0	NM	7
Alaska	153	177	-13.8%	153	177	0	0	0	0	0	0
Hawaii	NM	15	NM	NM	3	5	5	0	0	NM	7
U.S. Total	22,538	23,166	-2.7%	20,976	21,296	1,434	1,721	NM	4	123	145

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 NM = Not meaningful due to large relative standard error or excessive percentage change.  
 Notes: See Glossary for definitions. Values for 2016 are preliminary. Values for 2015 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 1.12.A. Utility Scale Facility Net Generation from Hydroelectric (Pumped Storage) Power by State, by Sector, December 2016 and 2015 (Thousand Megawatthours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
	Generation at Utility Scale Facilities			Electric Utilities		Independent Power Producers		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	December 2016	December 2015	Percentage Change	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015
New England	-42	-37	14.1%	0	0	-42	-37	0	0	0	0
Connecticut	2	0	452.9%	0	0	2	0	0	0	0	0
Maine	0	0	--	0	0	0	0	0	0	0	0
Massachusetts	-45	-37	19.4%	0	0	-45	-37	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	-116	-77	51.0%	-63	-43	-53	-34	0	0	0	0
New Jersey	-15	-9	63.6%	-15	-9	0	0	0	0	0	0
New York	-47	-33	41.7%	-47	-33	0	0	0	0	0	0
Pennsylvania	-53	-34	56.6%	0	0	-53	-34	0	0	0	0
East North Central	-58	-32	82.3%	-58	-32	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	-58	-32	82.3%	-58	-32	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	-16	77	-120.9%	-16	77	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	-16	77	-120.9%	-16	77	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	-274	-129	112.3%	-274	-129	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	-142	11	NM	-142	11	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	-63	-56	12.6%	-63	-56	0	0	0	0	0	0
Virginia	-69	-84	-17.7%	-69	-84	0	0	0	0	0	0
West Virginia	0	0	--	0	0	0	0	0	0	0	0
East South Central	-42	-48	-11.9%	-42	-48	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	-42	-48	-11.9%	-42	-48	0	0	0	0	0	0
West South Central	-8	0	NM	-8	0	0	0	0	0	0	0
Arkansas	0	3	-93.6%	0	3	0	0	0	0	0	0
Louisiana	0	0	--	0	0	0	0	0	0	0	0
Oklahoma	-8	-2	246.9%	-8	-2	0	0	0	0	0	0
Texas	0	0	--	0	0	0	0	0	0	0	0
Mountain	-34	-25	36.7%	-34	-25	0	0	0	0	0	0
Arizona	-10	-2	397.0%	-10	-2	0	0	0	0	0	0
Colorado	-24	-23	6.3%	-24	-23	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	-163	-11	NM	-163	-11	0	0	0	0	0	0
California	-162	-13	NM	-162	-13	0	0	0	0	0	0
Oregon	0	0	--	0	0	0	0	0	0	0	0
Washington	-1	2	-126.9%	-1	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	-753	-281	168.2%	-657	-210	-96	-71	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 for 2016 are preliminary. Values for 2015 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 1.12.B. Utility Scale Facility Net Generation from Hydroelectric (Pumped Storage) Power

by State, by Sector, Year-to-Date through December 2016 and 2015 (Thousand Megawatthours)

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

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 Notes: See Glossary for definitions. Values for 2016 are preliminary. Values for 2015 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 1.13.A. Utility Scale Facility Net Generation from Other Energy Sources by State, by Sector, December 2016 and 2015 (Thousand Megawatthours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
	Generation at Utility Scale Facilities			Electric Utilities		Independent Power Producers		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	December 2016	December 2015	Percentage Change	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015
New England	166	162	2.2%	0	0	149	145	8	7	9	10
Connecticut	47	52	-9.2%	0	0	47	52	0	0	0	0
Maine	33	32	2.3%	0	0	16	15	8	7	9	10
Massachusetts	81	74	9.3%	0	0	81	74	0	0	0	0
New Hampshire	5	4	18.9%	0	0	5	4	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	201	220	-8.8%	0	0	170	173	31	40	0	6
New Jersey	50	57	-12.3%	0	0	36	37	13	13	0	6
New York	79	81	-3.0%	0	0	62	63	17	18	0	0
Pennsylvania	72	82	-12.2%	0	0	72	73	0	9	0	0
East North Central	66	67	-2.1%	1	3	13	12	10	15	41	38
Illinois	19	0	NM	0	0	0	-1	0	0	20	0
Indiana	18	33	-44.3%	0	0	0	0	NM	2	17	31
Michigan	23	30	-25.7%	0	2	13	13	9	13	1	2
Ohio	NM	0	NM	0	0	NM	-1	0	0	1	1
Wisconsin	4	4	-8.5%	1	2	0	0	0	0	NM	3
West North Central	38	44	-13.9%	18	23	13	13	NM	3	NM	6
Iowa	NM	2	NM	0	0	0	0	0	0	NM	2
Kansas	0	0	--	0	0	0	0	0	0	0	0
Minnesota	34	33	2.9%	15	13	13	13	NM	3	NM	4
Missouri	0	6	-95.9%	0	6	0	0	0	0	0	0
Nebraska	0	0	--	0	0	0	0	0	0	0	0
North Dakota	4	4	-8.7%	4	4	0	0	0	0	0	0
South Dakota	0	0	--	0	0	0	0	0	0	0	0
South Atlantic	410	410	0.1%	0	0	229	211	16	18	165	180
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	278	266	4.3%	0	0	145	126	0	0	132	140
Georgia	6	10	-37.6%	0	0	0	0	0	0	6	10
Maryland	25	28	-10.4%	0	0	25	28	0	0	0	0
North Carolina	55	62	-11.5%	0	0	32	35	0	0	23	27
South Carolina	4	4	18.4%	0	0	NM	0	0	0	4	3
Virginia	42	40	6.8%	0	0	27	22	16	18	0	0
West Virginia	-1	0	--	0	0	-1	0	0	0	0	0
East South Central	6	11	-44.4%	4	8	0	0	0	0	2	2
Alabama	0	0	--	0	0	0	0	0	0	0	0
Kentucky	4	8	-51.4%	4	8	0	0	0	0	0	0
Mississippi	NM	1	NM	0	0	0	0	0	0	NM	1
Tennessee	1	2	-20.3%	0	0	0	0	0	0	1	2
West South Central	104	145	-28.5%	0	0	4	9	0	0	100	136
Arkansas	1	1	89.3%	0	0	0	0	0	0	1	1
Louisiana	47	78	-39.5%	0	0	0	0	0	0	47	78
Oklahoma	4	1	229.3%	0	0	3	0	0	0	NM	1
Texas	51	65	-20.7%	0	0	NM	9	0	0	50	56
Mountain	54	54	0.2%	NM	0	29	20	0	0	25	34
Arizona	0	0	--	0	0	0	0	0	0	0	0
Colorado	NM	5	NM	0	0	NM	1	0	0	NM	3
Idaho	6	7	-14.0%	0	0	0	0	0	0	6	7
Montana	28	19	45.6%	0	0	28	19	0	0	0	0
Nevada	0	0	-100.0%	0	0	0	0	0	0	0	0
New Mexico	NM	0	NM	NM	0	0	0	0	0	0	0
Utah	16	17	-3.6%	0	0	NM	0	0	0	16	17
Wyoming	0	6	-100.0%	0	0	0	0	0	0	0	6
Pacific Contiguous	82	86	-5.4%	NM	0	29	24	0	0	53	63
California	72	75	-3.5%	NM	0	19	19	0	0	53	56
Oregon	4	3	19.7%	0	0	4	4	0	0	0	0
Washington	6	8	-33.2%	0	0	6	2	0	0	0	7
Pacific Noncontiguous	18	29	-36.9%	0	14	2	0	17	15	0	0
Alaska	0	0	-100.0%	0	0	0	0	0	0	0	0
Hawaii	18	29	-37.3%	0	14	2	0	17	15	0	0
U.S. Total	1,144	1,228	-6.9%	24	49	637	607	83	98	400	475

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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 1.13.B. Utility Scale Facility Net Generation from Other Energy Sources

by State, by Sector, Year-to-Date through December 2016 and 2015 (Thousand Megawatthours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
	Generation at Utility Scale Facilities			Electric Utilities		Independent Power Producers		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	December 2016 YTD	December 2015 YTD	Percentage Change	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD
New England	1,893	1,814	4.3%	0	0	1,703	1,617	92	89	98	108
Connecticut	591	556	6.3%	0	0	591	553	0	3	0	0
Maine	361	340	6.1%	0	0	171	146	92	86	98	108
Massachusetts	886	868	2.1%	0	0	886	868	0	0	0	0
New Hampshire	54	50	9.5%	0	0	54	50	0	0	0	0
Rhode Island	0	0	--	0	0	0	0	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	2,320	2,400	-3.3%	0	0	1,925	1,888	395	445	0	67
New Jersey	546	582	-6.3%	0	0	403	371	143	145	0	67
New York	911	919	-0.9%	0	0	699	721	212	198	0	0
Pennsylvania	864	899	-3.9%	0	0	823	796	41	102	0	0
East North Central	996	1,132	-12.0%	29	56	155	147	160	212	652	717
Illinois	234	248	-5.8%	0	0	-5	-5	0	0	239	253
Indiana	362	420	-13.9%	0	0	0	0	18	20	344	400
Michigan	320	405	-21.0%	11	32	149	160	142	192	17	21
Ohio	23	-3	-832.8%	0	-3	11	-8	0	0	12	8
Wisconsin	58	63	-7.6%	18	27	0	0	0	0	40	35
West North Central	461	495	-6.8%	230	273	143	132	34	34	54	56
Iowa	6	5	15.7%	0	0	0	0	0	0	6	5
Kansas	0	0	--	0	0	0	0	0	0	0	0
Minnesota	405	390	4.0%	180	173	143	132	34	34	48	51
Missouri	9	58	-84.4%	9	58	0	0	0	0	0	0
Nebraska	0	0	--	0	0	0	0	0	0	0	0
North Dakota	41	42	-3.1%	41	42	0	0	0	0	0	0
South Dakota	0	0	--	0	0	0	0	0	0	0	0
South Atlantic	4,782	4,621	3.5%	0	0	2,505	2,334	198	208	2,080	2,079
Delaware	0	0	--	0	0	0	0	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	3,188	3,021	5.5%	0	0	1,524	1,372	0	0	1,664	1,649
Georgia	98	87	12.0%	0	0	0	0	0	0	98	87
Maryland	325	318	2.1%	0	0	324	318	NM	0	0	0
North Carolina	679	685	-1.0%	0	0	401	386	0	0	278	299
South Carolina	47	49	-4.4%	0	0	6	4	0	0	41	44
Virginia	455	462	-1.5%	0	0	257	253	198	208	0	0
West Virginia	-7	0	--	0	0	-7	0	0	0	0	0
East South Central	72	78	-7.7%	50	52	0	0	0	0	22	27
Alabama	0	0	--	0	0	0	0	0	0	0	0
Kentucky	50	52	-3.4%	50	52	0	0	0	0	0	0
Mississippi	6	6	-7.9%	0	0	0	0	0	0	6	6
Tennessee	17	21	-18.6%	0	0	0	0	0	0	17	21
West South Central	1,409	1,546	-8.9%	0	0	35	91	0	0	1,374	1,455
Arkansas	6	12	-53.5%	0	0	0	0	0	0	6	12
Louisiana	662	788	-16.0%	0	0	0	0	0	0	662	788
Oklahoma	38	11	231.0%	0	0	22	0	0	0	15	11
Texas	703	734	-4.3%	0	0	13	91	0	0	690	644
Mountain	629	621	1.3%	NM	2	344	319	0	0	284	301
Arizona	0	0	--	0	0	0	0	0	0	0	0
Colorado	50	52	-4.6%	0	0	13	12	0	0	36	40
Idaho	76	81	-6.3%	0	0	0	0	0	0	76	81
Montana	327	303	8.0%	0	0	327	303	0	0	0	0
Nevada	NM	1	NM	NM	1	0	0	0	0	0	0
New Mexico	NM	1	NM	NM	1	0	0	0	0	0	0
Utah	175	106	65.9%	0	0	NM	4	0	0	172	102
Wyoming	0	78	-100.0%	0	0	0	0	0	0	0	78
Pacific Contiguous	911	953	-4.5%	NM	-2	304	303	0	0	605	652
California	801	812	-1.3%	NM	-1	195	207	0	0	605	606
Oregon	47	42	12.3%	NM	0	47	42	0	0	0	0
Washington	63	100	-37.3%	0	0	63	54	0	0	0	46
Pacific Noncontiguous	210	367	-42.8%	NM	177	12	8	197	182	0	0
Alaska	NM	-2	NM	NM	-2	0	0	0	0	0	0
Hawaii	209	369	-43.3%	0	180	12	8	197	182	0	0
U.S. Total	13,683	14,028	-2.5%	312	558	7,126	6,838	1,076	1,170	5,169	5,462

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 NM = Not meaningful due to large relative standard error or excessive percentage change.  
 Notes: See Glossary for definitions. Values for 2016 are preliminary. Values for 2015 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 1.14.A. Utility Scale Facility Net Generation from Wind by State, by Sector, December 2016 and 2015 (Thousand Megawatt-hours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
	Generation at Utility Scale Facilities			Electric Utilities		Independent Power Producers		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	December 2016	December 2015	Percentage Change	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015
New England	326	220	48.4%	20	22	302	195	NM	3	NM	0
Connecticut	NM	0	--	0	0	NM	0	0	0	0	0
Maine	209	136	53.5%	0	0	209	136	0	0	0	0
Massachusetts	26	20	33.3%	7	6	16	11	NM	2	NM	0
New Hampshire	50	37	35.0%	0	0	50	37	0	0	0	0
Rhode Island	12	1	NM	0	0	11	0	NM	1	0	0
Vermont	28	26	7.4%	13	16	15	10	0	0	0	0
Middle Atlantic	993	764	29.9%	0	0	993	764	0	0	NM	0
New Jersey	NM	2	NM	0	0	NM	2	0	0	0	0
New York	536	401	33.7%	0	0	536	401	0	0	NM	0
Pennsylvania	455	361	25.9%	0	0	455	361	0	0	0	0
East North Central	2,739	2,714	0.9%	405	312	2,326	2,397	NM	1	NM	5
Illinois	1,186	1,316	-9.9%	NM	2	1,184	1,313	NM	1	0	0
Indiana	541	580	-6.7%	0	0	541	579	NM	0	0	0
Michigan	638	496	28.7%	270	198	368	297	0	0	0	0
Ohio	176	148	18.5%	NM	2	168	143	NM	0	NM	4
Wisconsin	199	175	14.0%	132	110	66	64	0	0	NM	1
West North Central	6,971	5,123	36.1%	2,435	1,803	4,532	3,317	NM	3	0	0
Iowa	2,408	1,838	31.0%	1,537	1,145	870	692	NM	0	0	0
Kansas	1,222	1,245	-1.8%	56	93	1,166	1,151	0	0	0	0
Minnesota	1,342	908	47.8%	314	247	1,024	658	NM	3	0	0
Missouri	118	117	0.5%	0	0	118	117	0	0	0	0
Nebraska	535	313	71.0%	23	18	512	295	0	0	0	0
North Dakota	998	520	91.9%	393	227	605	294	0	0	0	0
South Dakota	348	182	91.2%	111	73	237	109	0	0	0	0
South Atlantic	304	192	58.4%	0	0	304	191	NM	1	0	0
Delaware	NM	1	NM	0	0	0	0	NM	1	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	76	55	37.9%	0	0	76	55	0	0	0	0
North Carolina	6	0	--	0	0	6	0	0	0	0	0
South Carolina	0	0	--	0	0	0	0	0	0	0	0
Virginia	0	0	--	0	0	0	0	0	0	0	0
West Virginia	222	136	62.8%	0	0	222	136	0	0	0	0
East South Central	4	8	-52.6%	0	0	4	8	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	4	8	-52.6%	0	0	4	8	0	0	0	0
West South Central	7,131	6,426	11.0%	148	161	6,979	6,261	NM	3	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	1,768	1,442	22.6%	129	134	1,639	1,308	0	0	0	0
Texas	5,363	4,984	7.6%	19	28	5,340	4,953	NM	3	0	0
Mountain	2,488	2,383	4.4%	304	279	2,183	2,102	NM	1	NM	0
Arizona	49	55	-11.2%	0	0	49	55	0	0	0	0
Colorado	873	871	0.2%	29	11	843	859	NM	0	NM	0
Idaho	271	278	-2.5%	0	0	271	278	0	0	0	0
Montana	241	207	16.5%	27	22	214	185	0	0	0	0
Nevada	35	33	8.2%	0	0	35	33	0	0	0	0
New Mexico	373	375	-0.6%	0	0	373	375	NM	1	0	0
Utah	98	62	58.9%	0	0	98	62	0	0	0	0
Wyoming	546	501	9.1%	247	245	299	256	0	0	0	0
Pacific Contiguous	1,973	2,191	-10.0%	486	517	1,486	1,673	NM	0	NM	0
California	799	917	-12.9%	40	25	758	891	NM	0	NM	0
Oregon	500	567	-11.8%	67	83	433	484	0	0	0	0
Washington	674	707	-4.7%	378	409	295	298	0	0	0	0
Pacific Noncontiguous	62	79	-21.3%	12	11	50	68	0	0	0	0
Alaska	18	16	9.6%	12	11	6	6	0	0	0	0
Hawaii	44	62	-29.3%	0	0	44	62	0	0	0	0
U.S. Total	22,991	20,098	14.4%	3,810	3,104	19,159	16,976	13	12	8	6

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 Notes: See Glossary for definitions. Values for 2016 are preliminary. Values for 2015 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 1.16.A. Utility Scale Facility Net Generation from Geothermal by State, by Sector, December 2016 and 2015 (Thousand Megawatthours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
	Generation at Utility Scale Facilities			Electric Utilities		Independent Power Producers		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	December 2016	December 2015	Percentage Change	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015
New England	0	0	--	0	0	0	0	0	0	0	0
Connecticut	0	0	--	0	0	0	0	0	0	0	0
Maine	0	0	--	0	0	0	0	0	0	0	0
Massachusetts	0	0	--	0	0	0	0	0	0	0	0
New Hampshire	0	0	--	0	0	0	0	0	0	0	0
Rhode Island	0	0	--	0	0	0	0	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	0	0	--	0	0	0	0	0	0	0	0
New Jersey	0	0	--	0	0	0	0	0	0	0	0
New York	0	0	--	0	0	0	0	0	0	0	0
Pennsylvania	0	0	--	0	0	0	0	0	0	0	0
East North Central	0	0	--	0	0	0	0	0	0	0	0
Illinois	0	0	--	0	0	0	0	0	0	0	0
Indiana	0	0	--	0	0	0	0	0	0	0	0
Michigan	0	0	--	0	0	0	0	0	0	0	0
Ohio	0	0	--	0	0	0	0	0	0	0	0
Wisconsin	0	0	--	0	0	0	0	0	0	0	0
West North Central	0	0	--	0	0	0	0	0	0	0	0
Iowa	0	0	--	0	0	0	0	0	0	0	0
Kansas	0	0	--	0	0	0	0	0	0	0	0
Minnesota	0	0	--	0	0	0	0	0	0	0	0
Missouri	0	0	--	0	0	0	0	0	0	0	0
Nebraska	0	0	--	0	0	0	0	0	0	0	0
North Dakota	0	0	--	0	0	0	0	0	0	0	0
South Dakota	0	0	--	0	0	0	0	0	0	0	0
South Atlantic	0	0	--	0	0	0	0	0	0	0	0
Delaware	0	0	--	0	0	0	0	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	0	0	--	0	0	0	0	0	0	0	0
Georgia	0	0	--	0	0	0	0	0	0	0	0
Maryland	0	0	--	0	0	0	0	0	0	0	0
North Carolina	0	0	--	0	0	0	0	0	0	0	0
South Carolina	0	0	--	0	0	0	0	0	0	0	0
Virginia	0	0	--	0	0	0	0	0	0	0	0
West Virginia	0	0	--	0	0	0	0	0	0	0	0
East South Central	0	0	--	0	0	0	0	0	0	0	0
Alabama	0	0	--	0	0	0	0	0	0	0	0
Kentucky	0	0	--	0	0	0	0	0	0	0	0
Mississippi	0	0	--	0	0	0	0	0	0	0	0
Tennessee	0	0	--	0	0	0	0	0	0	0	0
West South Central	0	0	--	0	0	0	0	0	0	0	0
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	0	0	--	0	0	0	0	0	0	0	0
Oklahoma	0	0	--	0	0	0	0	0	0	0	0
Texas	0	0	--	0	0	0	0	0	0	0	0
Mountain	427	374	14.2%	23	23	404	351	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	9	8	17.3%	0	0	9	8	0	0	0	0
Montana	0	0	--	0	0	0	0	0	0	0	0
Nevada	366	326	12.2%	0	0	366	326	0	0	0	0
New Mexico	NM	1	NM	0	0	NM	1	0	0	0	0
Utah	50	39	29.1%	23	23	28	16	0	0	0	0
Wyoming	0	0	--	0	0	0	0	0	0	0	0
Pacific Contiguous	1,165	983	18.5%	73	75	1,091	908	0	0	0	0
California	1,142	963	18.6%	72	74	1,070	889	0	0	0	0
Oregon	23	20	14.7%	NM	1	21	19	0	0	0	0
Washington	0	0	--	0	0	0	0	0	0	0	0
Pacific Noncontiguous	29	20	41.1%	0	0	29	20	0	0	0	0
Alaska	0	0	--	0	0	0	0	0	0	0	0
Hawaii	29	20	41.1%	0	0	29	20	0	0	0	0
U.S. Total	1,620	1,377	17.6%	96	97	1,524	1,280	0	0	0	0

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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 1.16.B. Utility Scale Facility Net Generation from Geothermal

by State, by Sector, Year-to-Date through December 2016 and 2015 (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	
	December 2016 YTD	December 2015 YTD	Percentage Change	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD
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	4,491	3,625	23.9%	257	260	4,234	3,366	0	0	0	0
Arizona	0	0	--	0	0	0	0	0	0	0	0
Colorado	0	0	--	0	0	0	0	0	0	0	0
Idaho	97	76	28.4%	0	0	97	76	0	0	0	0
Montana	0	0	--	0	0	0	0	0	0	0	0
Nevada	3,848	3,111	23.7%	0	0	3,848	3,111	0	0	0	0
New Mexico	16	10	63.8%	0	0	16	10	0	0	0	0
Utah	530	430	23.4%	257	260	273	170	0	0	0	0
Wyoming	0	0	--	0	0	0	0	0	0	0	0
Pacific Contiguous	12,666	12,062	5.0%	836	829	11,829	11,233	0	0	0	0
California	12,469	11,883	4.9%	819	827	11,650	11,056	0	0	0	0
Oregon	197	179	10.1%	NM	2	180	177	0	0	0	0
Washington	0	0	--	0	0	0	0	0	0	0	0
Pacific Noncontiguous	260	230	12.9%	0	0	260	230	0	0	0	0
Alaska	0	0	--	0	0	0	0	0	0	0	0
Hawaii	260	230	12.9%	0	0	260	230	0	0	0	0
U.S. Total	17,417	15,918	9.4%	1,093	1,089	16,324	14,829	0	0	0	0

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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 1.18.A. Utility Scale Facility Net Generation from Solar Thermal  
by State, by Sector, December 2016 and 2015 (Thousand Megawatt-hours)**

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	
	December 2016	December 2015	Percentage Change	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015
New England	0	0	--	0	0	0	0	0	0	0	0
Connecticut	0	0	--	0	0	0	0	0	0	0	0
Maine	0	0	--	0	0	0	0	0	0	0	0
Massachusetts	0	0	--	0	0	0	0	0	0	0	0
New Hampshire	0	0	--	0	0	0	0	0	0	0	0
Rhode Island	0	0	--	0	0	0	0	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	0	0	--	0	0	0	0	0	0	0	0
New Jersey	0	0	--	0	0	0	0	0	0	0	0
New York	0	0	--	0	0	0	0	0	0	0	0
Pennsylvania	0	0	--	0	0	0	0	0	0	0	0
East North Central	0	0	--	0	0	0	0	0	0	0	0
Illinois	0	0	--	0	0	0	0	0	0	0	0
Indiana	0	0	--	0	0	0	0	0	0	0	0
Michigan	0	0	--	0	0	0	0	0	0	0	0
Ohio	0	0	--	0	0	0	0	0	0	0	0
Wisconsin	0	0	--	0	0	0	0	0	0	0	0
West North Central	0	0	--	0	0	0	0	0	0	0	0
Iowa	0	0	--	0	0	0	0	0	0	0	0
Kansas	0	0	--	0	0	0	0	0	0	0	0
Minnesota	0	0	--	0	0	0	0	0	0	0	0
Missouri	0	0	--	0	0	0	0	0	0	0	0
Nebraska	0	0	--	0	0	0	0	0	0	0	0
North Dakota	0	0	--	0	0	0	0	0	0	0	0
South Dakota	0	0	--	0	0	0	0	0	0	0	0
South Atlantic	7	2	240.3%	7	2	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	7	2	240.3%	7	2	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	24	32	-26.3%	0	0	24	32	0	0	0	0
Arizona	22	30	-26.4%	0	0	22	30	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	2	3	-25.2%	0	0	2	3	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	64	91	-29.8%	0	0	64	91	0	0	0	0
California	64	91	-29.8%	0	0	64	91	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	95	126	-24.7%	7	2	88	124	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 for 2016 are preliminary. Values for 2015 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 1.18.B. Utility Scale Facility Net Generation from Solar Thermal

by State, by Sector, Year-to-Date through December 2016 and 2015 (Thousand Megawatthours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
	Generation at Utility Scale Facilities			Electric Utilities		Independent Power Producers		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	December 2016 YTD	December 2015 YTD	Percentage Change	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD
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	79	106	-25.2%	79	106	0	0	0	0	0	0
Delaware	0	0	--	0	0	0	0	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	79	106	-25.2%	79	106	0	0	0	0	0	0
Georgia	0	0	--	0	0	0	0	0	0	0	0
Maryland	0	0	--	0	0	0	0	0	0	0	0
North Carolina	0	0	--	0	0	0	0	0	0	0	0
South Carolina	0	0	--	0	0	0	0	0	0	0	0
Virginia	0	0	--	0	0	0	0	0	0	0	0
West Virginia	0	0	--	0	0	0	0	0	0	0	0
East South Central	0	0	--	0	0	0	0	0	0	0	0
Alabama	0	0	--	0	0	0	0	0	0	0	0
Kentucky	0	0	--	0	0	0	0	0	0	0	0
Mississippi	0	0	--	0	0	0	0	0	0	0	0
Tennessee	0	0	--	0	0	0	0	0	0	0	0
West South Central	0	0	--	0	0	0	0	0	0	0	0
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	0	0	--	0	0	0	0	0	0	0	0
Oklahoma	0	0	--	0	0	0	0	0	0	0	0
Texas	0	0	--	0	0	0	0	0	0	0	0
Mountain	888	828	7.2%	0	0	888	828	0	0	0	0
Arizona	644	719	-10.5%	0	0	644	719	0	0	0	0
Colorado	0	0	--	0	0	0	0	0	0	0	0
Idaho	0	0	--	0	0	0	0	0	0	0	0
Montana	0	0	--	0	0	0	0	0	0	0	0
Nevada	244	109	123.7%	0	0	244	109	0	0	0	0
New Mexico	0	0	--	0	0	0	0	0	0	0	0
Utah	0	0	--	0	0	0	0	0	0	0	0
Wyoming	0	0	--	0	0	0	0	0	0	0	0
Pacific Contiguous	2,421	2,293	5.6%	0	0	2,421	2,293	0	0	0	0
California	2,421	2,293	5.6%	0	0	2,421	2,293	0	0	0	0
Oregon	0	0	--	0	0	0	0	0	0	0	0
Washington	0	0	--	0	0	0	0	0	0	0	0
Pacific Noncontiguous	0	0	--	0	0	0	0	0	0	0	0
Alaska	0	0	--	0	0	0	0	0	0	0	0
Hawaii	0	0	--	0	0	0	0	0	0	0	0
U.S. Total	3,388	3,227	5.0%	79	106	3,308	3,121	0	0	0	0

Displayed values of zero may represent small values that round to zero. The Excel version of this table provides additional precision which may be accessed by selecting individual cells.  
NM = Not meaningful due to large relative standard error or excessive percentage change.  
Notes: See Glossary for definitions. Values for 2016 are preliminary. Values for 2015 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 2.1.A. Coal: Consumption for Electricity Generation, by Sector, 2006-December 2016 (Thousand Tons)**

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
<b>Annual Totals</b>					
2006	1,030,556	753,390	269,412	347	7,408
2007	1,046,795	764,765	276,581	361	5,089
2008	1,042,335	760,326	276,565	369	5,075
2009	934,683	695,615	234,077	317	4,674
2010	979,684	721,431	249,814	314	8,125
2011	934,938	689,316	239,541	347	5,735
2012	825,734	615,467	205,295	307	4,665
2013	860,729	638,327	217,219	513	4,670
2014	853,634	624,235	224,568	202	4,629
2015	739,594	539,506	195,927	163	3,999
2016	677,981	498,146	176,311	148	3,376
<b>Year 2014</b>					
January	83,647	61,084	22,129	27	407
February	76,160	55,073	20,699	27	362
March	72,124	51,559	20,147	22	396
April	58,065	41,151	16,541	16	357
May	64,033	47,114	16,521	12	385
June	74,328	55,542	18,365	15	406
July	81,495	60,238	20,821	16	420
August	81,074	60,222	20,422	14	417
Sept	69,127	50,728	17,998	12	389
October	61,129	44,987	15,772	11	359
November	64,651	46,561	17,720	14	356
December	67,799	49,976	17,434	16	373
<b>Year 2015</b>					
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
Sept	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
<b>Year 2016</b>					
January	62,048	45,567	16,149	14	319
February	50,567	37,652	12,604	15	296
March	39,850	31,037	8,495	14	304
April	38,972	28,646	10,062	11	254
May	45,036	33,834	10,933	9	260
June	63,326	46,363	16,644	10	310
July	74,241	54,196	19,706	11	328
August	73,868	53,927	19,600	12	330
Sept	62,428	44,869	17,280	12	267
October	54,634	39,517	14,858	13	246
November	48,126	35,274	12,624	13	215
December	64,883	47,265	17,356	15	249
<b>Year to Date</b>					
2014	853,634	624,235	224,568	202	4,629
2015	739,594	539,506	195,927	163	3,999
2016	677,981	498,146	176,311	148	3,376
<b>Rolling 12 Months Ending in December</b>					
2015	739,594	539,506	195,927	163	3,999
2016	677,981	498,146	176,311	148	3,376

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 for 2015 and prior years are final. Values for 2016 are preliminary. 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 2.1.B. Coal: Consumption for Useful Thermal Output, by Sector, 2006-December 2016 (Thousand Tons)**

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
<b>Annual Totals</b>					
2006	23,227	0	3,834	1,539	17,854
2007	22,810	0	3,795	1,566	17,449
2008	22,168	0	3,689	1,652	16,827
2009	20,507	0	3,935	1,481	15,091
2010	21,727	0	3,808	1,406	16,513
2011	21,532	0	3,628	1,321	16,584
2012	19,333	0	2,790	1,143	15,400
2013	18,350	0	2,416	843	15,090
2014	18,107	978	1,821	861	14,448
2015	16,632	1,032	1,980	635	12,985
2016	14,244	1,041	1,733	544	10,925
<b>Year 2014</b>					
January	1,773	114	171	105	1,384
February	1,641	97	167	105	1,271
March	1,722	95	199	96	1,332
April	1,425	81	162	66	1,115
May	1,450	81	146	59	1,164
June	1,413	63	153	63	1,134
July	1,466	78	150	70	1,169
August	1,451	70	149	58	1,175
Sept	1,355	70	121	52	1,113
October	1,359	66	122	47	1,123
November	1,480	76	138	68	1,198
December	1,573	86	142	74	1,271
<b>Year 2015</b>					
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
Sept	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
<b>Year 2016</b>					
January	1,500	103	152	62	1,184
February	1,393	90	141	63	1,099
March	1,364	96	142	61	1,065
April	1,041	81	170	39	752
May	1,135	81	135	31	889
June	1,175	81	155	36	902
July	1,176	83	151	35	906
August	1,173	90	141	39	904
Sept	1,040	77	140	37	786
October	1,009	76	149	37	747
November	1,036	84	120	48	784
December	1,201	99	138	57	907
<b>Year to Date</b>					
2014	18,107	978	1,821	861	14,448
2015	16,632	1,032	1,980	635	12,985
2016	14,244	1,041	1,733	544	10,925
<b>Rolling 12 Months Ending in December</b>					
2015	16,632	1,032	1,980	635	12,985
2016	14,244	1,041	1,733	544	10,925

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 for 2015 and prior years are final. Values for 2016 are preliminary. 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 2.1.C. Coal: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2006-December 2016 (Thousand Tons)**

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
<b>Annual Totals</b>					
2006	1,053,783	753,390	273,246	1,886	25,262
2007	1,069,606	764,765	280,377	1,927	22,537
2008	1,064,503	760,326	280,254	2,021	21,902
2009	955,190	695,615	238,012	1,798	19,766
2010	1,001,411	721,431	253,621	1,720	24,638
2011	956,470	689,316	243,168	1,668	22,319
2012	845,066	615,467	208,085	1,450	20,065
2013	879,078	638,327	219,635	1,356	19,761
2014	871,741	625,212	226,389	1,063	19,076
2015	756,226	540,538	197,906	798	16,984
2016	692,225	499,188	178,044	692	14,302
<b>Year 2014</b>					
January	85,420	61,198	22,300	132	1,791
February	77,801	55,170	20,866	131	1,633
March	73,846	51,654	20,346	118	1,729
April	59,489	41,232	16,703	82	1,472
May	65,483	47,195	16,667	72	1,549
June	75,741	55,606	18,518	78	1,540
July	82,961	60,316	20,970	85	1,589
August	82,526	60,292	20,571	72	1,591
Sept	70,482	50,798	18,118	64	1,502
October	62,488	45,053	15,895	58	1,482
November	66,131	46,637	17,858	82	1,554
December	69,372	50,062	17,576	90	1,644
<b>Year 2015</b>					
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
Sept	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
<b>Year 2016</b>					
January	63,549	45,669	16,301	76	1,503
February	51,960	37,742	12,745	78	1,395
March	41,214	31,133	8,636	75	1,370
April	40,014	28,727	10,231	49	1,005
May	46,171	33,915	11,068	40	1,149
June	64,502	46,444	16,799	46	1,212
July	75,416	54,279	19,857	46	1,234
August	75,041	54,017	19,740	50	1,234
Sept	63,469	44,946	17,420	49	1,053
October	55,643	39,594	15,007	50	993
November	49,162	35,358	12,744	61	998
December	66,084	47,364	17,494	71	1,155
<b>Year to Date</b>					
2014	871,741	625,212	226,389	1,063	19,076
2015	756,226	540,538	197,906	798	16,984
2016	692,225	499,188	178,044	692	14,302
<b>Rolling 12 Months Ending in December</b>					
2015	756,226	540,538	197,906	798	16,984
2016	692,225	499,188	178,044	692	14,302

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 for 2015 and prior years are final. Values for 2016 are preliminary. 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 2.2.A. Petroleum Liquids: Consumption for Electricity Generation, by Sector, 2006-December 2016 (Thousand Barrels)**

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
<b>Annual Totals</b>					
2006	73,821	53,529	17,179	327	2,786
2007	82,433	56,910	22,793	250	2,480
2008	53,846	38,995	13,152	160	1,538
2009	43,562	31,847	9,880	184	1,652
2010	40,103	30,806	8,278	164	855
2011	27,326	20,844	5,633	133	716
2012	22,604	17,521	4,110	272	702
2013	23,231	16,827	5,494	328	582
2014	31,531	19,652	10,689	451	739
2015	28,925	18,562	9,473	249	641
2016	21,224	15,667	4,841	132	584
<b>Year 2014</b>					
January	10,190	4,468	5,487	112	122
February	3,117	1,879	1,099	58	81
March	3,476	1,917	1,443	43	72
April	1,556	1,283	200	31	42
May	1,647	1,296	274	22	56
June	1,502	1,179	246	27	50
July	1,696	1,308	311	24	53
August	1,751	1,310	372	23	45
Sept	1,645	1,296	274	24	50
October	1,550	1,218	251	28	53
November	1,681	1,230	362	28	60
December	1,721	1,268	368	30	54
<b>Year 2015</b>					
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
Sept	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
<b>Year 2016</b>					
January	2,330	1,681	589	12	48
February	2,111	1,405	645	14	47
March	1,366	1,044	284	NM	31
April	1,318	1,016	261	10	31
May	1,565	1,173	325	11	56
June	1,577	1,242	281	9	44
July	2,205	1,677	461	11	57
August	2,195	1,630	498	15	52
Sept	1,532	1,112	370	10	41
October	1,566	1,140	352	11	64
November	1,560	1,198	305	11	46
December	1,899	1,350	470	13	67
<b>Year to Date</b>					
2014	31,531	19,652	10,689	451	739
2015	28,925	18,562	9,473	249	641
2016	21,224	15,667	4,841	132	584
<b>Rolling 12 Months Ending in December</b>					
2015	28,925	18,562	9,473	249	641
2016	21,224	15,667	4,841	NM	584

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 for 2015 and prior years are final. Values for 2016 are preliminary. 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 2.2.B. Petroleum Liquids: Consumption for Useful Thermal Output, by Sector, 2006-December 2016 (Thousand Barrels)**

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
<b>Annual Totals</b>					
2006	14,077	0	1,153	559	12,365
2007	13,462	0	1,303	441	11,718
2008	7,533	0	1,311	461	5,762
2009	8,128	0	1,301	293	6,534
2010	4,866	0	1,086	212	3,567
2011	3,826	0	1,004	168	2,654
2012	3,097	0	992	122	1,984
2013	3,456	0	1,050	498	1,908
2014	3,099	64	1,170	216	1,650
2015	3,142	62	1,155	282	1,643
2016	2,534	19	1,014	126	1,374
<b>Year 2014</b>					
January	643	45	189	115	294
February	336	5	88	44	199
March	301	7	101	27	165
April	203	0	86	4	114
May	211	1	89	5	116
June	208	1	90	3	114
July	195	1	93	4	97
August	201	1	108	3	89
Sept	173	1	62	2	109
October	208	0	92	2	114
November	220	0	90	4	125
December	200	1	80	4	114
<b>Year 2015</b>					
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
Sept	199	1	90	2	106
October	225	1	98	3	124
November	203	1	85	7	110
December	210	1	90	5	114
<b>Year 2016</b>					
January	244	4	84	16	140
February	223	7	68	16	132
March	183	0	89	NM	87
April	180	1	79	10	91
May	209	0	86	9	114
June	197	2	78	8	109
July	239	0	87	11	140
August	233	0	94	10	129
Sept	186	1	88	9	89
October	231	0	89	9	133
November	184	0	78	8	97
December	225	2	95	13	115
<b>Year to Date</b>					
2014	3,099	64	1,170	216	1,650
2015	3,142	62	1,155	282	1,643
2016	2,534	19	1,014	126	1,374
<b>Rolling 12 Months Ending in December</b>					
2015	3,142	62	1,155	282	1,643
2016	2,534	19	1,014	NM	1,374

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 for 2015 and prior years are final. Values for 2016 are preliminary. 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 2.2.C. Petroleum Liquids: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2006-December 2016 (Thousand Barrels)**

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
<b>Annual Totals</b>					
2006	87,898	53,529	18,332	886	15,150
2007	95,895	56,910	24,097	691	14,198
2008	61,379	38,995	14,463	621	7,300
2009	51,690	31,847	11,181	477	8,185
2010	44,968	30,806	9,364	376	4,422
2011	31,152	20,844	6,637	301	3,370
2012	25,702	17,521	5,102	394	2,685
2013	26,687	16,827	6,544	826	2,490
2014	34,630	19,716	11,859	667	2,389
2015	32,067	18,624	10,629	531	2,283
2016	23,758	15,687	5,855	258	1,959
<b>Year 2014</b>					
January	10,833	4,513	5,677	227	416
February	3,453	1,885	1,187	101	280
March	3,776	1,924	1,545	70	237
April	1,760	1,283	286	35	156
May	1,858	1,296	363	27	172
June	1,711	1,180	336	30	164
July	1,890	1,309	404	28	150
August	1,952	1,311	481	26	134
Sept	1,818	1,297	336	26	159
October	1,758	1,219	343	30	166
November	1,900	1,230	453	32	186
December	1,921	1,269	449	34	169
<b>Year 2015</b>					
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
Sept	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
<b>Year 2016</b>					
January	2,574	1,685	673	28	188
February	2,334	1,412	713	30	179
March	1,549	1,045	372	NM	118
April	1,498	1,017	340	20	121
May	1,773	1,173	410	20	170
June	1,774	1,245	359	17	153
July	2,444	1,677	548	22	197
August	2,428	1,630	592	25	181
Sept	1,718	1,112	458	18	130
October	1,797	1,140	441	20	196
November	1,744	1,198	384	19	143
December	2,125	1,352	565	26	182
<b>Year to Date</b>					
2014	34,630	19,716	11,859	667	2,389
2015	32,067	18,624	10,629	531	2,283
2016	23,758	15,687	5,855	258	1,959
<b>Rolling 12 Months Ending in December</b>					
2015	32,067	18,624	10,629	531	2,283
2016	23,758	15,687	5,855	NM	1,959

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 for 2015 and prior years are final. Values for 2016 are preliminary. 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 2.3.A. Petroleum Coke: Consumption for Electricity Generation, by Sector, 2006-December 2016 (Thousand Tons)**

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
<b>Annual Totals</b>					
2006	7,363	3,619	3,286	1	456
2007	6,036	2,808	2,715	2	512
2008	5,417	2,296	2,704	1	416
2009	4,821	2,761	1,724	1	335
2010	4,994	3,325	1,354	2	313
2011	5,012	3,449	1,277	1	286
2012	3,675	2,105	756	1	812
2013	4,852	3,409	779	1	662
2014	4,412	3,440	599	2	371
2015	4,044	3,120	669	2	253
2016	4,275	3,431	600	1	243
<b>Year 2014</b>					
January	436	349	55	0	32
February	361	275	56	0	30
March	421	332	57	0	31
April	303	212	55	0	36
May	393	314	49	0	30
June	418	339	46	0	33
July	385	299	54	0	33
August	382	298	51	0	33
Sept	372	281	62	0	29
October	230	178	23	0	29
November	288	228	33	0	27
December	424	335	60	0	29
<b>Year 2015</b>					
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
Sept	376	294	61	0	21
October	300	227	57	0	16
November	260	178	62	0	20
December	276	232	26	0	18
<b>Year 2016</b>					
January	341	302	17	0	22
February	329	272	39	0	17
March	366	283	63	0	20
April	390	326	43	0	21
May	371	296	52	0	23
June	382	308	52	0	22
July	403	325	56	0	22
August	422	337	62	0	23
Sept	383	311	50	0	22
October	246	172	62	0	13
November	304	240	47	0	18
December	337	261	56	0	21
<b>Year to Date</b>					
2014	4,412	3,440	599	2	371
2015	4,044	3,120	669	2	253
2016	4,275	3,431	600	1	243
<b>Rolling 12 Months Ending in December</b>					
2015	4,044	3,120	669	2	253
2016	4,275	3,431	600	1	243

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 for 2015 and prior years are final. Values for 2016 are preliminary. 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 2.3.B. Petroleum Coke: Consumption for Useful Thermal Output, by Sector, 2006-December 2016 (Thousand Tons)**

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
<b>Annual Totals</b>					
2006	1,259	0	195	9	1,055
2007	1,262	0	162	11	1,090
2008	897	0	119	9	769
2009	1,007	0	126	8	873
2010	1,059	0	98	11	950
2011	1,080	0	112	6	962
2012	1,346	0	113	11	1,222
2013	1,486	0	96	11	1,379
2014	1,283	3	90	16	1,174
2015	1,144	9	109	16	1,010
2016	1,016	2	105	9	900
<b>Year 2014</b>					
January	105	0	9	2	95
February	93	1	7	1	84
March	106	0	8	2	96
April	116	0	9	2	105
May	110	0	8	1	102
June	109	0	0	0	109
July	114	0	5	0	109
August	112	0	9	2	101
Sept	113	0	9	2	102
October	86	0	9	1	75
November	104	1	9	2	92
December	114	0	9	2	103
<b>Year 2015</b>					
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
Sept	98	0	8	2	88
October	84	0	8	2	73
November	106	3	10	2	92
December	86	0	10	1	75
<b>Year 2016</b>					
January	79	0	10	2	66
February	87	0	9	2	76
March	108	0	10	2	96
April	71	0	6	0	64
May	74	0	6	0	67
June	79	0	8	0	71
July	85	0	8	1	76
August	84	0	9	0	75
Sept	65	0	9	0	56
October	112	0	10	0	102
November	77	0	9	0	68
December	95	0	10	2	84
<b>Year to Date</b>					
2014	1,283	3	90	16	1,174
2015	1,144	9	109	16	1,010
2016	1,016	2	105	9	900
<b>Rolling 12 Months Ending in December</b>					
2015	1,144	9	109	16	1,010
2016	1,016	2	105	9	900

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 for 2015 and prior years are final. Values for 2016 are preliminary. 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 2.3.C. Petroleum Coke: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2006-December 2016 (Thousand Tons)**

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
<b>Annual Totals</b>					
2006	8,622	3,619	3,482	10	1,511
2007	7,299	2,808	2,877	12	1,602
2008	6,314	2,296	2,823	10	1,184
2009	5,828	2,761	1,850	9	1,209
2010	6,053	3,325	1,452	12	1,264
2011	6,092	3,449	1,388	6	1,248
2012	5,021	2,105	869	13	2,034
2013	6,338	3,409	875	12	2,041
2014	5,695	3,443	689	18	1,545
2015	5,188	3,128	779	18	1,263
2016	5,291	3,433	705	10	1,144
<b>Year 2014</b>					
January	541	349	63	2	127
February	454	276	63	2	113
March	527	332	65	2	128
April	418	212	64	2	141
May	504	314	57	1	132
June	527	339	46	0	141
July	499	299	58	0	142
August	494	298	59	2	134
Sept	485	281	70	2	131
October	316	178	32	2	104
November	393	229	42	2	120
December	538	335	69	2	132
<b>Year 2015</b>					
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
Sept	475	294	69	2	109
October	384	227	65	2	89
November	365	181	72	2	111
December	362	232	36	2	93
<b>Year 2016</b>					
January	420	302	27	3	89
February	416	272	49	2	93
March	474	283	74	2	116
April	461	326	50	0	85
May	445	296	58	0	90
June	461	308	60	0	93
July	488	325	65	1	98
August	506	337	71	0	98
Sept	448	311	59	0	78
October	359	172	72	0	115
November	381	240	56	0	85
December	433	261	65	2	104
<b>Year to Date</b>					
2014	5,695	3,443	689	18	1,545
2015	5,188	3,128	779	18	1,263
2016	5,291	3,433	705	10	1,144
<b>Rolling 12 Months Ending in December</b>					
2015	5,188	3,128	779	18	1,263
2016	5,291	3,433	705	10	1,144

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 for 2015 and prior years are final. Values for 2016 are preliminary. 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 2.4.A. Natural Gas: Consumption for Electricity Generation, by Sector, 2006-December 2016 (Million Cubic Feet)**

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
<b>Annual Totals</b>					
2006	6,461,615	2,478,396	3,412,826	34,623	535,770
2007	7,089,342	2,736,418	3,765,194	34,087	553,643
2008	6,895,843	2,730,134	3,612,197	33,403	520,109
2009	7,121,069	2,911,279	3,655,712	34,279	519,799
2010	7,680,185	3,290,993	3,794,423	39,462	555,307
2011	7,883,865	3,446,087	3,819,107	47,170	571,501
2012	9,484,710	4,101,927	4,686,260	63,116	633,407
2013	8,596,299	3,970,447	3,917,131	66,570	642,152
2014	8,544,387	3,895,008	3,954,032	71,957	623,390
2015	10,016,576	4,745,255	4,576,683	70,092	624,545
2016	10,400,195	5,045,520	4,642,081	68,639	643,955
<b>Year 2014</b>					
January	694,661	324,657	309,522	6,411	54,071
February	579,819	265,645	261,103	5,180	47,892
March	591,101	271,638	263,442	5,292	50,729
April	579,336	270,132	256,256	4,967	47,981
May	680,193	323,448	300,470	5,761	50,513
June	754,126	348,327	349,049	6,119	50,630
July	880,805	393,011	425,395	6,966	55,433
August	935,170	426,346	445,556	7,430	55,839
Sept	805,960	355,962	391,332	6,396	52,270
October	736,039	323,456	356,020	5,939	50,625
November	633,279	288,760	287,096	5,496	51,927
December	673,898	303,627	308,792	5,999	55,480
<b>Year 2015</b>					
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
Sept	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
<b>Year 2016</b>					
January	803,496	390,470	353,701	5,845	53,480
February	716,939	352,730	309,115	5,032	50,062
March	775,092	379,525	337,795	5,413	52,359
April	753,780	364,608	333,632	5,304	50,236
May	839,337	409,691	371,145	5,604	52,897
June	1,006,981	501,185	445,296	6,087	54,412
July	1,179,364	576,840	538,874	6,656	56,994
August	1,191,376	573,095	554,337	6,741	57,203
Sept	951,076	454,440	436,438	5,961	54,237
October	775,622	368,496	350,464	5,153	51,510
November	700,757	332,274	308,648	5,332	54,504
December	706,376	342,166	302,636	5,512	56,061
<b>Year to Date</b>					
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	10,400,195	5,045,520	4,642,081	68,639	643,955
<b>Rolling 12 Months Ending in December</b>					
2015	10,016,576	4,745,255	4,576,683	70,092	624,545
2016	10,400,195	5,045,520	4,642,081	68,639	643,955

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

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
<b>Annual Totals</b>					
2006	942,817	0	330,878	33,112	578,828
2007	872,579	0	339,796	35,987	496,796
2008	793,537	0	326,048	32,813	434,676
2009	816,787	0	305,542	41,275	469,970
2010	821,775	0	301,769	46,324	473,683
2011	839,681	0	308,669	39,856	491,155
2012	886,103	0	322,607	47,883	515,613
2013	882,385	0	303,177	51,057	528,151
2014	865,146	4,926	292,016	46,635	521,569
2015	935,098	8,060	283,372	46,287	597,379
2016	956,922	11,226	284,704	47,946	613,046
<b>Year 2014</b>					
January	87,362	527	28,175	7,205	51,455
February	68,875	539	23,822	3,527	40,988
March	72,690	476	25,252	3,245	43,717
April	67,023	286	22,224	3,085	41,428
May	67,861	224	22,787	3,272	41,578
June	67,490	274	23,101	3,460	40,656
July	72,370	267	24,630	3,749	43,724
August	74,882	441	25,464	4,031	44,946
Sept	69,772	367	23,285	3,731	42,390
October	71,722	431	23,484	3,776	44,032
November	70,483	534	24,002	3,672	42,274
December	74,615	561	25,790	3,883	44,381
<b>Year 2015</b>					
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
Sept	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
<b>Year 2016</b>					
January	85,090	1,163	25,628	4,555	53,744
February	78,278	1,068	23,422	4,216	49,573
March	80,135	958	24,327	4,160	50,691
April	76,780	700	22,327	4,001	49,753
May	77,892	864	24,001	3,652	49,374
June	77,871	909	23,951	3,613	49,398
July	81,911	983	25,464	4,134	51,329
August	83,318	956	26,205	4,159	51,998
Sept	77,778	867	23,163	3,748	50,000
October	76,549	702	21,699	3,603	50,546
November	77,442	860	21,756	3,798	51,027
December	83,877	1,194	22,761	4,307	55,614
<b>Year to Date</b>					
2014	865,146	4,926	292,016	46,635	521,569
2015	935,098	8,060	283,372	46,287	597,379
2016	956,922	11,226	284,704	47,946	613,046
<b>Rolling 12 Months Ending in December</b>					
2015	935,098	8,060	283,372	46,287	597,379
2016	956,922	11,226	284,704	47,946	613,046

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.

The new methodology was retroactively applied to 2004-2007 data. See the Technical Notes (Appendix C) for further information. See Glossary for definitions.

Values for 2015 and prior years are final. Values for 2016 are preliminary. 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 2.9.A. Consumption of Petroleum Liquids for Electricity Generation by State, by Sector, December 2016 and December 2015 (Thousand Barrels)**

Census Division and State	Electric Power Sector										
	All Sectors			Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	December 2016	December 2015	Percentage Change	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015
New England	149	28	433.0%	14	7	129	17	NM	3	2	1
Connecticut	27	4	659.0%	1	0	24	3	NM	0	NM	0
Maine	14	11	20.0%	NM	0	11	10	NM	0	2	1
Massachusetts	99	12	719.0%	4	6	93	4	NM	3	NM	0
New Hampshire	7	1	764.0%	6	1	NM	0	NM	0	NM	0
Rhode Island	NM	NM	NM	2	0	NM	0	NM	NM	0	0
Vermont	NM	0	NM	NM	0	0	0	NM	0	0	0
Middle Atlantic	188	74	153.0%	50	12	126	56	5	NM	7	4
New Jersey	30	4	601.0%	NM	0	30	4	NM	0	NM	0
New York	103	28	264.0%	50	12	46	13	4	NM	4	3
Pennsylvania	54	42	31.0%	NM	0	50	40	1	0	NM	1
East North Central	108	106	1.9%	48	55	56	46	NM	0	3	4
Illinois	11	12	-10.0%	1	1	10	11	NM	0	0	0
Indiana	19	20	-3.1%	17	18	NM	0	NM	0	2	2
Michigan	16	15	2.0%	15	15	0	0	0	0	0	1
Ohio	57	54	7.0%	11	18	46	35	NM	0	0	1
Wisconsin	4	4	-4.8%	4	4	0	0	NM	0	NM	0
West North Central	82	64	27.0%	80	63	NM	1	NM	0	NM	0
Iowa	19	21	-8.9%	19	21	NM	1	NM	0	NM	0
Kansas	13	15	-15.0%	13	15	0	0	0	0	0	0
Minnesota	NM	4	NM	8	3	NM	1	NM	0	NM	0
Missouri	26	17	49.0%	26	17	NM	0	NM	0	0	0
Nebraska	NM	1	NM	NM	1	0	0	0	0	0	0
North Dakota	11	5	105.0%	11	5	0	0	NM	0	NM	0
South Dakota	NM	0	NM	NM	0	NM	0	NM	0	0	0
South Atlantic	223	183	22.0%	185	99	32	79	NM	0	6	5
Delaware	5	10	-49.0%	NM	0	5	10	0	0	0	0
District of Columbia	NM	0	NM	0	0	0	0	NM	0	0	0
Florida	67	32	112.0%	66	25	NM	6	0	0	NM	1
Georgia	9	15	-35.0%	7	12	1	0	NM	0	1	2
Maryland	17	9	89.0%	2	0	14	8	NM	0	NM	0
North Carolina	57	30	92.0%	55	21	NM	8	NM	0	NM	1
South Carolina	17	10	75.0%	14	8	NM	0	NM	0	3	1
Virginia	27	63	-57.0%	18	17	9	46	NM	0	NM	0
West Virginia	23	15	48.0%	23	15	0	1	0	0	0	0
East South Central	37	72	-49.0%	35	68	1	NM	0	0	1	3
Alabama	7	17	-58.0%	5	13	1	NM	0	0	NM	3
Kentucky	13	27	-51.0%	13	27	0	0	0	0	0	0
Mississippi	4	1	325.0%	4	1	0	0	0	0	0	0
Tennessee	13	28	-53.0%	13	27	NM	0	0	0	NM	0
West South Central	29	45	-36.0%	20	28	8	15	NM	0	1	1
Arkansas	10	13	-24.0%	8	8	1	5	0	0	0	0
Louisiana	2	12	-87.0%	2	11	0	0	0	0	0	0
Oklahoma	2	3	-44.0%	1	3	0	0	NM	0	NM	0
Texas	15	17	-7.5%	8	6	7	10	NM	0	NM	0
Mountain	34	35	-3.7%	30	31	4	5	NM	0	NM	0
Arizona	6	6	0.5%	6	6	0	0	NM	0	0	0
Colorado	NM	3	NM	NM	3	0	0	0	0	NM	0
Idaho	NM	0	NM	NM	0	0	0	0	0	0	0
Montana	NM	4	NM	NM	0	3	4	0	0	0	0
Nevada	1	2	-71.0%	0	1	1	1	0	0	0	0
New Mexico	12	10	20.0%	12	10	0	0	0	0	NM	0
Utah	NM	2	NM	5	2	NM	0	0	0	NM	0
Wyoming	3	8	-58.0%	3	8	0	0	0	0	NM	0
Pacific Contiguous	20	21	-4.6%	9	6	9	12	NM	0	2	2
California	12	13	-3.4%	5	5	6	7	NM	0	NM	0
Oregon	3	0	NM	3	0	0	0	NM	0	0	0
Washington	5	8	-38.0%	NM	1	2	5	NM	0	2	2
Pacific Noncontiguous	1,030	953	8.1%	881	808	104	122	NM	2	NM	20
Alaska	198	94	111.0%	188	88	0	0	NM	1	9	5
Hawaii	833	860	-3.2%	693	721	104	122	0	1	NM	16
U.S. Total	1,899	1,581	20.0%	1,350	1,177	470	354	13	8	67	42

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 for 2016 are preliminary. Values for 2015 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 2.9.B. Consumption of Petroleum Liquids for Electricity Generation by State, by Sector, Year-to-Date through December 2016 and December 2015 (Thousand Barrels)**

Census Division and State	Electric Power Sector										
	All Sectors			Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	December 2016 YTD	December 2015 YTD	Percentage Change	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD
New England	1,194	3,440	-65.0%	114	350	1,002	2,940	52	102	26	49
Connecticut	222	737	-70.0%	11	12	190	691	NM	20	8	14
Maine	238	927	-74.0%	NM	0	216	884	NM	8	18	35
Massachusetts	627	1,325	-53.0%	33	100	572	1,175	23	50	NM	0
New Hampshire	58	291	-80.0%	47	208	NM	70	8	14	NM	0
Rhode Island	44	151	-71.0%	20	23	20	120	NM	9	0	0
Vermont	NM	8	NM	NM	7	0	0	NM	2	0	0
Middle Atlantic	1,896	4,680	-59.0%	626	1,419	1,164	3,100	39	72	67	90
New Jersey	158	496	-68.0%	NM	7	149	481	NM	1	4	7
New York	1,172	3,101	-62.0%	620	1,410	488	1,571	29	65	35	54
Pennsylvania	566	1,083	-48.0%	NM	1	528	1,048	9	6	29	29
East North Central	1,064	1,106	-3.8%	630	699	405	369	6	4	25	34
Illinois	129	107	20.0%	11	17	117	90	1	0	0	0
Indiana	207	287	-28.0%	191	264	NM	0	NM	1	16	23
Michigan	244	222	9.6%	236	216	0	0	3	2	5	4
Ohio	419	422	-0.9%	130	142	284	274	NM	1	4	6
Wisconsin	66	67	-1.5%	62	61	4	5	NM	0	1	1
West North Central	535	590	-9.3%	515	569	NM	15	4	4	2	2
Iowa	123	95	29.0%	120	92	2	2	NM	0	NM	0
Kansas	104	110	-5.9%	104	110	0	0	0	0	0	0
Minnesota	64	69	-7.3%	47	51	NM	13	4	4	1	1
Missouri	161	209	-23.0%	161	209	NM	0	NM	0	0	0
Nebraska	16	16	-0.9%	16	16	0	0	0	0	0	0
North Dakota	59	53	11.0%	58	52	0	0	NM	0	1	1
South Dakota	10	38	-74.0%	10	38	NM	0	NM	0	0	0
South Atlantic	4,022	5,463	-26.0%	3,078	4,014	842	1,300	11	48	92	101
Delaware	98	255	-61.0%	NM	8	93	246	0	0	0	0
District of Columbia	NM	0	NM	0	0	0	0	NM	0	0	0
Florida	1,427	1,100	30.0%	1,389	1,062	NM	26	0	0	13	12
Georgia	208	284	-27.0%	135	156	39	86	4	5	30	37
Maryland	369	484	-24.0%	20	23	344	419	NM	40	2	2
North Carolina	500	801	-38.0%	422	723	68	62	NM	1	9	15
South Carolina	221	385	-43.0%	185	342	NM	14	NM	0	33	29
Virginia	982	1,907	-49.0%	713	1,475	262	424	NM	2	4	6
West Virginia	216	247	-13.0%	207	224	9	23	0	0	0	0
East South Central	570	691	-17.0%	530	639	13	22	NM	0	27	30
Alabama	87	153	-43.0%	51	104	13	22	0	0	24	27
Kentucky	212	244	-13.0%	212	244	0	0	0	0	0	0
Mississippi	35	31	14.0%	33	29	0	0	0	0	2	1
Tennessee	236	264	-10.0%	235	262	NM	1	NM	0	1	1
West South Central	295	463	-36.0%	193	272	91	174	NM	1	9	15
Arkansas	76	108	-29.0%	57	75	16	23	0	0	4	9
Louisiana	30	125	-76.0%	27	99	3	25	0	0	0	1
Oklahoma	33	20	68.0%	31	17	0	0	NM	0	2	3
Texas	155	211	-26.0%	79	81	72	126	NM	1	NM	2
Mountain	419	424	-1.4%	373	384	45	39	NM	0	NM	1
Arizona	99	92	7.1%	99	92	0	0	NM	0	0	0
Colorado	23	24	-2.9%	23	23	0	0	0	0	NM	0
Idaho	NM	0	NM	NM	0	0	0	0	0	0	0
Montana	38	32	20.0%	NM	1	38	31	0	0	0	0
Nevada	22	31	-30.0%	16	25	6	NM	0	0	0	0
New Mexico	98	126	-23.0%	98	126	0	0	0	0	NM	0
Utah	54	34	57.0%	52	32	NM	1	0	0	NM	1
Wyoming	85	85	0.3%	85	85	0	0	0	0	NM	0
Pacific Contiguous	194	213	-9.0%	75	81	39	83	NM	1	78	48
California	150	164	-9.1%	63	67	21	65	NM	1	65	32
Oregon	8	11	-20.0%	8	11	0	0	NM	0	0	0
Washington	36	38	-5.4%	NM	4	18	17	NM	1	13	16
Pacific Noncontiguous	11,036	11,856	-6.9%	9,535	10,137	1,226	1,431	18	17	257	272
Alaska	1,438	1,346	6.8%	1,355	1,260	0	0	8	7	75	79
Hawaii	9,598	10,510	-8.7%	8,180	8,877	1,226	1,431	10	9	182	193
U.S. Total	21,224	28,925	-27.0%	15,667	18,562	4,841	9,473	132	249	584	641

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 for 2016 are preliminary. Values for 2015 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 2.10.A. Consumption of Petroleum Coke for Electricity Generation by State, by Sector, December 2016 and December 2015 (Thousand Tons)**

Census Division and State	Electric Power Sector										
	All Sectors			Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	December 2016	December 2015	Percentage Change	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015
New England	0	0	--	0	0	0	0	0	0	0	0
Connecticut	0	0	--	0	0	0	0	0	0	0	0
Maine	0	0	--	0	0	0	0	0	0	0	0
Massachusetts	0	0	--	0	0	0	0	0	0	0	0
New Hampshire	0	0	--	0	0	0	0	0	0	0	0
Rhode Island	0	0	--	0	0	0	0	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	5	4	19.0%	0	0	0	0	0	0	5	4
New Jersey	NM	1	NM	0	0	0	0	0	0	NM	1
New York	0	0	--	0	0	0	0	0	0	0	0
Pennsylvania	NM	4	NM	0	0	0	0	0	0	NM	4
East North Central	65	59	12.0%	21	44	40	11	0	0	4	4
Illinois	0	0	--	0	0	0	0	0	0	0	0
Indiana	0	39	-100.0%	0	39	0	0	0	0	0	0
Michigan	22	4	459.0%	18	0	0	2	0	0	4	2
Ohio	40	9	332.0%	0	0	40	9	0	0	0	0
Wisconsin	3	7	-58.0%	2	5	0	0	0	0	0	2
West North Central	2	1	82.0%	0	0	0	0	0	0	NM	1
Iowa	2	1	82.0%	0	0	0	0	0	0	NM	1
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	38	41	-6.6%	36	39	0	0	0	0	3	2
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	36	39	-8.6%	36	39	0	0	0	0	0	0
Georgia	3	2	30.0%	0	0	0	0	0	0	3	2
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	30	24	29.0%	30	24	0	0	0	0	0	0
Alabama	0	0	--	0	0	0	0	0	0	0	0
Kentucky	30	24	29.0%	30	24	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	180	132	36.0%	174	126	0	0	0	0	6	7
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	177	129	37.0%	174	126	0	0	0	0	3	4
Oklahoma	0	0	--	0	0	0	0	0	0	0	0
Texas	3	3	0.2%	0	0	0	0	0	0	3	3
Mountain	16	15	6.2%	0	0	16	15	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	16	15	6.2%	0	0	16	15	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	337	276	22.0%	261	232	56	26	0	0	21	18

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 for 2016 are preliminary. Values for 2015 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 2.10.B. Consumption of Petroleum Coke for Electricity Generation by State, by Sector, Year-to-Date through December 2016 and December 2015 (Thousand Tons)**

Census Division and State	Electric Power Sector										
	All Sectors			Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	December 2016 YTD	December 2015 YTD	Percentage Change	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD
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	62	55	12.0%	0	0	0	0	0	0	62	55
New Jersey	15	7	124.0%	0	0	0	0	0	0	15	7
New York	0	0	--	0	0	0	0	0	0	0	0
Pennsylvania	47	48	-3.5%	0	0	0	0	0	0	47	48
East North Central	964	1,238	-22.0%	482	700	431	487	0	0	51	52
Illinois	0	0	--	0	0	0	0	0	0	0	0
Indiana	159	387	-59.0%	159	387	0	0	0	0	0	0
Michigan	324	321	0.9%	283	280	1	15	0	0	40	27
Ohio	432	473	-8.6%	0	0	430	472	0	0	2	1
Wisconsin	49	57	-14.0%	41	34	0	0	0	0	8	23
West North Central	26	18	45.0%	0	0	0	0	1	2	25	16
Iowa	26	18	45.0%	0	0	0	0	1	2	25	16
Kansas	0	0	--	0	0	0	0	0	0	0	0
Minnesota	0	0	--	0	0	0	0	0	0	0	0
Missouri	0	0	--	0	0	0	0	0	0	0	0
Nebraska	0	0	--	0	0	0	0	0	0	0	0
North Dakota	0	0	--	0	0	0	0	0	0	0	0
South Dakota	0	0	--	0	0	0	0	0	0	0	0
South Atlantic	765	597	28.0%	739	566	0	0	0	0	26	30
Delaware	0	0	--	0	0	0	0	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	739	566	30.0%	739	566	0	0	0	0	0	0
Georgia	26	30	-14.0%	0	0	0	0	0	0	26	30
Maryland	0	0	--	0	0	0	0	0	0	0	0
North Carolina	0	0	--	0	0	0	0	0	0	0	0
South Carolina	0	0	--	0	0	0	0	0	0	0	0
Virginia	0	0	--	0	0	0	0	0	0	0	0
West Virginia	0	0	--	0	0	0	0	0	0	0	0
East South Central	439	369	19.0%	439	369	0	0	0	0	0	0
Alabama	0	0	--	0	0	0	0	0	0	0	0
Kentucky	439	369	19.0%	439	369	0	0	0	0	0	0
Mississippi	0	0	--	0	0	0	0	0	0	0	0
Tennessee	0	0	--	0	0	0	0	0	0	0	0
West South Central	1,851	1,585	17.0%	1,771	1,485	0	0	0	0	80	100
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	1,807	1,518	19.0%	1,771	1,485	0	0	0	0	36	33
Oklahoma	0	0	--	0	0	0	0	0	0	0	0
Texas	44	68	-35.0%	0	0	0	0	0	0	44	68
Mountain	168	182	-7.6%	0	0	168	182	0	0	0	0
Arizona	0	0	--	0	0	0	0	0	0	0	0
Colorado	0	0	--	0	0	0	0	0	0	0	0
Idaho	0	0	--	0	0	0	0	0	0	0	0
Montana	168	182	-7.6%	0	0	168	182	0	0	0	0
Nevada	0	0	--	0	0	0	0	0	0	0	0
New Mexico	0	0	--	0	0	0	0	0	0	0	0
Utah	0	0	--	0	0	0	0	0	0	0	0
Wyoming	0	0	--	0	0	0	0	0	0	0	0
Pacific Contiguous	0	0	--	0	0	0	0	0	0	0	0
California	0	0	--	0	0	0	0	0	0	0	0
Oregon	0	0	--	0	0	0	0	0	0	0	0
Washington	0	0	--	0	0	0	0	0	0	0	0
Pacific Noncontiguous	0	0	--	0	0	0	0	0	0	0	0
Alaska	0	0	--	0	0	0	0	0	0	0	0
Hawaii	0	0	--	0	0	0	0	0	0	0	0
U.S. Total	4,275	4,044	5.7%	3,431	3,120	600	669	1	2	243	253

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 for 2016 are preliminary. Values for 2015 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 2.12.A. Consumption of Landfill Gas for Electricity Generation by State, by Sector, December 2016 and December 2015 (Million Cubic Feet)**

Census Division and State	Electric Power Sector										
	All Sectors			Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	December 2016	December 2015	Percentage Change	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015
New England	1,083	989	9.5%	0	0	1,013	945	70	44	0	0
Connecticut	NM	45	NM	0	0	NM	45	0	0	0	0
Maine	80	77	4.9%	0	0	80	77	0	0	0	0
Massachusetts	387	324	19.0%	0	0	387	324	0	0	0	0
New Hampshire	178	132	35.0%	0	0	108	87	70	44	0	0
Rhode Island	347	364	-4.6%	0	0	347	364	0	0	0	0
Vermont	NM	48	NM	0	0	NM	48	0	0	0	0
Middle Atlantic	5,467	4,990	9.6%	0	0	5,216	4,758	105	77	145	155
New Jersey	882	800	10.0%	0	0	843	772	NM	28	0	0
New York	1,615	1,433	13.0%	0	0	1,615	1,433	0	0	0	0
Pennsylvania	2,970	2,757	7.7%	0	0	2,758	2,554	66	49	145	155
East North Central	6,879	5,245	31.0%	810	568	5,984	4,593	NM	19	64	65
Illinois	1,453	1,247	16.0%	NM	34	1,410	1,213	0	0	0	0
Indiana	891	624	43.0%	751	517	115	85	0	0	NM	22
Michigan	2,078	1,485	40.0%	0	0	2,078	1,485	0	0	0	0
Ohio	1,193	889	34.0%	0	0	1,193	889	0	0	0	0
Wisconsin	1,265	999	27.0%	NM	17	1,188	921	NM	19	NM	43
West North Central	1,165	840	39.0%	294	285	870	555	0	0	0	0
Iowa	299	144	108.0%	0	0	299	144	0	0	0	0
Kansas	156	122	28.0%	0	0	156	122	0	0	0	0
Minnesota	374	290	29.0%	NM	67	299	223	0	0	0	0
Missouri	193	122	58.0%	NM	56	116	66	0	0	0	0
Nebraska	143	162	-12.0%	143	162	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	4,821	5,370	-10.0%	483	500	3,833	4,370	260	282	245	218
Delaware	163	153	6.6%	0	0	142	137	0	0	NM	15
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	644	812	-21.0%	154	168	489	640	NM	1	0	3
Georgia	469	496	-5.5%	0	0	416	444	0	0	NM	52
Maryland	237	211	12.0%	0	0	161	145	NM	67	0	0
North Carolina	1,191	1,928	-38.0%	0	0	1,040	1,737	151	192	0	0
South Carolina	532	507	4.9%	322	325	NM	33	0	0	172	148
Virginia	1,573	1,247	26.0%	NM	6	1,535	1,218	NM	23	0	0
West Virginia	NM	NM	NM	0	0	NM	NM	0	0	0	0
East South Central	541	353	54.0%	213	145	329	208	0	0	0	0
Alabama	109	71	54.0%	0	0	109	71	0	0	0	0
Kentucky	229	155	47.0%	213	145	NM	10	0	0	0	0
Mississippi	NM	17	NM	0	0	NM	17	0	0	0	0
Tennessee	178	110	62.0%	0	0	178	110	0	0	0	0
West South Central	1,883	1,820	3.5%	0	0	1,805	1,751	NM	69	0	0
Arkansas	181	136	33.0%	0	0	181	136	0	0	0	0
Louisiana	0	0	--	0	0	0	0	0	0	0	0
Oklahoma	NM	27	NM	0	0	NM	27	0	0	0	0
Texas	1,671	1,657	0.8%	0	0	1,593	1,588	NM	69	0	0
Mountain	560	494	13.0%	NM	25	474	423	NM	47	0	0
Arizona	104	90	15.0%	0	0	104	90	0	0	0	0
Colorado	117	114	1.8%	0	0	117	114	0	0	0	0
Idaho	97	89	8.4%	NM	25	NM	49	NM	15	0	0
Montana	0	0	--	0	0	0	0	0	0	0	0
Nevada	NM	49	NM	0	0	NM	49	0	0	0	0
New Mexico	0	0	--	0	0	0	0	0	0	0	0
Utah	184	152	21.0%	0	0	146	120	NM	32	0	0
Wyoming	0	0	--	0	0	0	0	0	0	0	0
Pacific Contiguous	5,773	5,343	8.0%	692	642	3,641	3,201	1,440	1,500	0	0
California	4,682	4,567	2.5%	186	279	3,106	2,825	1,390	1,464	0	0
Oregon	599	447	34.0%	142	120	408	290	NM	36	0	0
Washington	491	329	49.0%	364	243	127	86	0	0	0	0
Pacific Noncontiguous	135	77	74.0%	0	0	0	0	135	77	0	0
Alaska	135	77	74.0%	0	0	0	0	135	77	0	0
Hawaii	0	0	--	0	0	0	0	0	0	0	0
U.S. Total	28,306	25,520	11.0%	2,521	2,165	23,165	20,803	2,166	2,115	455	438

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**Table 2.13.A. Consumption of Biogenic Municipal Solid Waste for Electricity Generation by State, by Sector, December 2016 and December 2015 (Thousand Tons)**

Census Division and State	Electric Power Sector										
	All Sectors			Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	December 2016	December 2015	Percentage Change	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015
New England	311	323	-3.6%	0	0	295	307	17	16	0	0
Connecticut	102	115	-11.0%	0	0	102	115	0	0	0	0
Maine	25	26	-6.7%	0	0	8	11	17	16	0	0
Massachusetts	175	171	2.1%	0	0	175	171	0	0	0	0
New Hampshire	10	10	-5.0%	0	0	10	10	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	450	476	-5.5%	0	0	362	377	87	99	0	0
New Jersey	120	127	-5.1%	0	0	89	97	31	30	0	0
New York	167	176	-4.9%	0	0	129	130	38	45	0	0
Pennsylvania	162	173	-6.4%	0	0	143	150	19	24	0	0
East North Central	18	22	-18.0%	3	3	0	0	15	19	0	0
Illinois	0	0	--	0	0	0	0	0	0	0	0
Indiana	1	1	-14.0%	0	0	0	0	1	1	0	0
Michigan	15	18	-20.0%	0	0	0	0	15	18	0	0
Ohio	0	0	--	0	0	0	0	0	0	0	0
Wisconsin	3	3	-11.0%	3	3	0	0	0	0	0	0
West North Central	53	56	-4.9%	35	33	16	20	2	2	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	53	56	-4.9%	35	33	16	20	2	2	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	474	491	-3.5%	0	0	443	455	31	36	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	327	334	-2.1%	0	0	327	334	0	0	0	0
Georgia	0	0	--	0	0	0	0	0	0	0	0
Maryland	57	70	-19.0%	0	0	57	70	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	90	87	3.3%	0	0	59	51	31	36	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	1	1	-41.0%	0	0	0	0	0	0	1	1
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	0	0	--	0	0	0	0	0	0	0	0
Oklahoma	1	1	-41.0%	0	0	0	0	0	0	1	1
Texas	0	0	--	0	0	0	0	0	0	0	0
Mountain	NM	0	NM	0	0	NM	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	NM	0	NM	0	0	NM	0	0	0	0	0
Wyoming	0	0	--	0	0	0	0	0	0	0	0
Pacific Contiguous	64	72	-11.0%	0	0	64	72	0	0	0	0
California	44	49	-11.0%	0	0	44	49	0	0	0	0
Oregon	8	12	-31.0%	0	0	8	12	0	0	0	0
Washington	12	11	4.7%	0	0	12	11	0	0	0	0
Pacific Noncontiguous	38	30	26.0%	0	0	0	0	38	30	0	0
Alaska	0	0	--	0	0	0	0	0	0	0	0
Hawaii	38	30	26.0%	0	0	0	0	38	30	0	0
U.S. Total	1,409	1,471	-4.3%	38	36	1,180	1,232	190	202	1	1

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**Table 2.13.B. Consumption of Biogenic Municipal Solid Waste for Electricity Generation by State, by Sector, Year-to-Date through December 2016 and December 2015 (Thousand Tons)**

Census Division and State	Electric Power Sector										
	All Sectors			Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	December 2016 YTD	December 2015 YTD	Percentage Change	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD
New England	3,564	3,763	-5.3%	0	0	3,378	3,553	186	211	0	0
Connecticut	1,248	1,295	-3.7%	0	0	1,248	1,280	0	15	0	0
Maine	276	298	-7.4%	0	0	89	102	186	196	0	0
Massachusetts	1,934	2,048	-5.6%	0	0	1,934	2,048	0	0	0	0
New Hampshire	107	122	-12.0%	0	0	107	122	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	5,063	5,336	-5.1%	0	0	4,053	4,212	1,009	1,123	0	0
New Jersey	1,340	1,380	-2.9%	0	0	995	1,034	345	346	0	0
New York	1,863	2,015	-7.6%	0	0	1,440	1,504	422	511	0	0
Pennsylvania	1,860	1,941	-4.1%	0	0	1,619	1,674	242	266	0	0
East North Central	245	259	-5.6%	38	40	0	0	206	220	0	0
Illinois	0	0	--	0	0	0	0	0	0	0	0
Indiana	8	10	-19.0%	0	0	0	0	8	10	0	0
Michigan	198	209	-5.5%	0	0	0	0	198	209	0	0
Ohio	0	0	--	0	0	0	0	0	0	0	0
Wisconsin	38	40	-2.8%	38	40	0	0	0	0	0	0
West North Central	630	649	-3.0%	425	412	185	212	20	25	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	630	649	-3.0%	425	412	185	212	20	25	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	5,458	5,443	0.3%	0	0	5,086	5,027	372	416	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	3,701	3,633	1.9%	0	0	3,701	3,633	0	0	0	0
Georgia	0	0	--	0	0	0	0	0	0	0	0
Maryland	789	809	-2.4%	0	0	789	809	NM	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	968	1,001	-3.3%	0	0	596	585	372	416	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	8	-2.1%	0	0	0	0	0	0	8	8
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	0	0	--	0	0	0	0	0	0	0	0
Oklahoma	8	8	-2.1%	0	0	0	0	0	0	8	8
Texas	0	0	--	0	0	0	0	0	0	0	0
Mountain	2	2	-17.0%	0	0	2	2	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	2	2	-17.0%	0	0	2	2	0	0	0	0
Wyoming	0	0	--	0	0	0	0	0	0	0	0
Pacific Contiguous	651	790	-18.0%	0	0	651	790	0	0	0	0
California	428	521	-18.0%	0	0	428	521	0	0	0	0
Oregon	89	117	-24.0%	0	0	89	117	0	0	0	0
Washington	134	152	-12.0%	0	0	134	152	0	0	0	0
Pacific Noncontiguous	446	380	17.0%	0	0	0	0	446	380	0	0
Alaska	0	0	--	0	0	0	0	0	0	0	0
Hawaii	446	380	17.0%	0	0	0	0	446	380	0	0
U.S. Total	16,067	16,631	-3.4%	464	452	13,356	13,797	2,240	2,375	8	8

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**Table 2.14.A. Consumption of Wood / Wood Waste Biomass for Electricity Generation by State, by Sector, December 2016 and December 2015 (Billion Btus)**

Census Division and State	Electric Power Sector										
	All Sectors			Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	December 2016	December 2015	Percentage Change	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015
New England	5,500	5,889	-6.6%	724	935	4,139	4,427	NM	3	636	524
Connecticut	431	455	-5.3%	0	0	431	455	0	0	0	0
Maine	2,306	2,443	-5.6%	0	0	1,670	1,919	0	1	636	524
Massachusetts	NM	194	NM	0	0	NM	194	0	0	0	0
New Hampshire	2,067	2,155	-4.1%	389	513	1,678	1,642	0	0	0	0
Rhode Island	0	0	--	0	0	0	0	0	0	0	0
Vermont	516	642	-20.0%	334	422	NM	218	NM	2	0	0
Middle Atlantic	1,165	992	17.0%	0	0	723	562	0	0	441	430
New Jersey	0	0	--	0	0	0	0	0	0	0	0
New York	829	688	21.0%	0	0	723	559	0	0	106	129
Pennsylvania	335	304	10.0%	0	0	0	3	0	0	335	301
East North Central	2,794	2,384	17.0%	635	505	1,160	957	0	0	999	921
Illinois	0	0	--	0	0	0	0	0	0	0	0
Indiana	0	0	--	0	0	0	0	0	0	0	0
Michigan	1,737	1,502	16.0%	0	0	1,102	916	0	0	635	586
Ohio	186	161	15.0%	0	0	58	41	0	0	128	120
Wisconsin	871	720	21.0%	635	505	0	0	0	0	236	214
West North Central	1,055	1,000	5.5%	175	184	580	481	41	15	260	321
Iowa	NM	1	NM	0	0	0	0	NM	1	0	0
Kansas	0	0	--	0	0	0	0	0	0	0	0
Minnesota	1,028	986	4.3%	175	184	580	481	14	0	260	321
Missouri	27	14	98.0%	0	0	0	0	27	14	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	10,626	10,233	3.8%	2,328	1,646	2,796	2,951	18	18	5,483	5,618
Delaware	0	0	--	0	0	0	0	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	1,483	1,499	-1.1%	0	0	679	713	0	0	804	786
Georgia	2,736	2,804	-2.4%	0	0	651	699	0	0	2,084	2,105
Maryland	82	65	26.0%	0	0	0	0	18	18	64	47
North Carolina	1,437	1,578	-9.0%	0	0	810	938	0	0	626	641
South Carolina	2,221	2,169	2.4%	405	264	551	554	0	0	1,264	1,352
Virginia	2,668	2,117	26.0%	1,923	1,382	104	48	0	0	641	687
West Virginia	0	0	--	0	0	0	0	0	0	0	0
East South Central	3,193	3,268	-2.3%	0	0	206	205	0	0	2,987	3,063
Alabama	1,962	2,073	-5.4%	0	0	206	205	0	0	1,756	1,868
Kentucky	137	136	1.1%	0	0	0	0	0	0	137	136
Mississippi	686	629	9.1%	0	0	0	0	0	0	686	629
Tennessee	408	431	-5.2%	0	0	0	0	0	0	408	431
West South Central	3,004	3,469	-13.0%	0	0	0	315	0	0	3,004	3,154
Arkansas	705	648	8.9%	0	0	0	0	0	0	705	648
Louisiana	1,601	1,773	-9.7%	0	0	0	0	0	0	1,601	1,773
Oklahoma	104	109	-4.9%	0	0	0	0	0	0	104	109
Texas	594	939	-37.0%	0	0	0	315	0	0	594	624
Mountain	810	823	-1.7%	0	0	368	387	0	0	441	436
Arizona	317	308	2.7%	0	0	317	308	0	0	0	0
Colorado	0	21	-100.0%	0	0	0	21	0	0	0	0
Idaho	444	446	-0.3%	0	0	52	58	0	0	393	388
Montana	NM	49	NM	0	0	0	0	0	0	NM	49
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	5,773	6,842	-16.0%	487	480	3,611	4,653	0	0	1,675	1,709
California	3,656	4,592	-20.0%	0	0	3,372	4,272	0	0	284	320
Oregon	585	810	-28.0%	0	0	NM	381	0	0	346	429
Washington	1,532	1,440	6.4%	487	480	0	0	0	0	1,044	961
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	33,919	34,900	-2.8%	4,349	3,750	13,583	14,939	61	35	15,926	16,176

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 for 2016 are preliminary. Values for 2015 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 2.14.B. Consumption of Wood / Wood Waste Biomass for Electricity Generation by State, by Sector, Year-to-Date through December 2016 and December 2015 (Billion Btus)

Census Division and State	Electric Power Sector										
	All Sectors			Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	December 2016 YTD	December 2015 YTD	Percentage Change	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD
New England	60,209	63,213	-4.8%	9,244	9,200	44,836	46,241	24	51	6,105	7,721
Connecticut	4,492	2,792	61.0%	0	0	4,492	2,790	0	2	0	0
Maine	24,448	29,095	-16.0%	0	0	18,338	21,348	NM	26	6,105	7,721
Massachusetts	1,922	2,030	-5.3%	0	0	1,922	2,030	0	0	0	0
New Hampshire	23,040	22,957	0.4%	4,902	5,009	18,138	17,949	0	0	0	0
Rhode Island	0	0	--	0	0	0	0	0	0	0	0
Vermont	6,307	6,339	-0.5%	4,342	4,192	1,946	2,124	19	23	0	0
Middle Atlantic	12,750	12,013	6.1%	0	0	7,344	6,580	0	0	5,406	5,433
New Jersey	0	0	--	0	0	0	0	0	0	0	0
New York	8,467	7,744	9.3%	0	0	7,340	6,544	0	0	1,127	1,199
Pennsylvania	4,283	4,269	0.3%	0	0	NM	35	0	0	4,279	4,233
East North Central	28,815	31,571	-8.7%	5,392	5,304	12,228	14,269	0	7	11,196	11,991
Illinois	0	0	-100.0%	0	0	0	0	0	0	0	0
Indiana	0	0	--	0	0	0	0	0	0	0	0
Michigan	18,561	18,124	2.4%	NM	0	11,559	11,154	0	7	7,002	6,963
Ohio	2,199	2,912	-25.0%	0	0	669	666	0	0	1,530	2,247
Wisconsin	8,056	10,534	-24.0%	5,392	5,304	0	2,449	0	0	2,664	2,781
West North Central	11,740	11,988	-2.1%	2,083	2,056	6,352	6,655	441	233	2,864	3,043
Iowa	NM	10	NM	0	0	0	0	NM	10	0	0
Kansas	0	0	--	0	0	0	0	0	0	0	0
Minnesota	11,395	11,768	-3.2%	2,083	2,056	6,352	6,655	96	13	2,864	3,043
Missouri	342	209	63.0%	0	0	0	0	342	209	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	116,633	125,026	-6.7%	21,142	20,854	31,785	39,611	207	214	63,498	64,347
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	16,152	21,893	-26.0%	0	0	7,409	12,785	0	0	8,742	9,108
Georgia	30,404	30,840	-1.4%	0	0	7,275	7,234	0	0	23,129	23,606
Maryland	883	807	9.4%	0	0	0	0	207	214	676	594
North Carolina	15,088	17,158	-12.0%	0	0	8,221	9,727	0	0	6,867	7,431
South Carolina	26,452	26,197	1.0%	3,813	3,962	6,052	6,453	0	0	16,586	15,781
Virginia	27,654	28,130	-1.7%	17,329	16,892	2,828	3,412	0	0	7,497	7,826
West Virginia	0	0	--	0	0	0	0	0	0	0	0
East South Central	37,654	37,645	0.0%	0	1	2,397	2,248	0	0	35,256	35,396
Alabama	22,921	22,891	0.1%	0	0	2,397	2,248	0	0	20,523	20,643
Kentucky	1,710	1,671	2.3%	0	0	0	0	0	0	1,710	1,671
Mississippi	8,209	8,242	-0.4%	0	1	0	0	0	0	8,209	8,242
Tennessee	4,815	4,840	-0.5%	0	0	0	0	0	0	4,815	4,840
West South Central	38,008	39,567	-3.9%	337	1,821	1,625	1,447	0	0	36,047	36,300
Arkansas	7,502	8,032	-6.6%	0	0	0	0	0	0	7,502	8,032
Louisiana	20,168	19,859	1.6%	0	0	0	0	0	0	20,168	19,859
Oklahoma	1,205	1,193	1.0%	0	0	0	0	0	0	1,205	1,193
Texas	9,133	10,484	-13.0%	337	1,821	1,625	1,447	0	0	7,171	7,216
Mountain	9,082	9,078	0.0%	0	0	4,236	4,067	0	0	4,846	5,011
Arizona	3,429	3,275	4.7%	0	0	3,429	3,275	0	0	0	0
Colorado	NM	21	NM	0	0	NM	21	0	0	0	0
Idaho	5,058	5,231	-3.3%	0	0	758	770	0	0	4,300	4,461
Montana	546	551	-0.8%	0	0	0	0	0	0	546	551
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	66,727	76,550	-13.0%	4,910	4,683	42,467	50,270	0	0	19,350	21,598
California	43,176	51,190	-16.0%	0	0	39,887	47,419	0	0	3,289	3,771
Oregon	6,419	8,944	-28.0%	0	0	2,580	2,851	0	0	3,839	6,093
Washington	17,132	16,416	4.4%	4,910	4,683	0	0	0	0	12,222	11,733
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	381,618	406,650	-6.2%	43,107	43,919	153,271	171,387	672	504	184,569	190,840

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 for 2016 are preliminary. Values for 2015 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 3.1. Stocks of Coal, Petroleum Liquids, and Petroleum Coke: Electric Power Sector, 2006 - December 2016**

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)
<b>End of Year Stocks</b>									
2006	140,964	48,216	674	110,277	29,799	456	30,688	18,416	217
2007	151,221	44,433	554	120,504	28,032	253	30,717	16,401	301
2008	161,589	40,804	739	127,463	26,108	468	34,126	14,696	270
2009	189,467	39,210	1,394	154,815	25,811	1,194	34,652	13,399	201
2010	174,917	35,706	1,019	143,744	24,798	850	31,173	10,908	168
2011	172,387	34,847	508	142,103	25,648	404	30,284	9,198	104
2012	185,116	32,224	495	150,942	23,875	414	34,174	8,349	81
2013	147,884	31,673	390	120,792	22,494	303	27,092	9,179	86
2014	151,548	33,505	827	116,684	22,487	686	34,864	11,018	142
2015	195,548	32,884	1,340	153,226	21,443	1,163	42,322	11,441	177
2016	163,943	30,807	872	131,811	20,399	630	32,133	10,409	241
<b>Year 2014, End of Month Stocks</b>									
January	133,705	27,553	298	108,249	20,649	216	25,456	6,904	83
February	119,904	29,158	277	97,363	20,964	202	22,541	8,195	74
March	118,260	29,197	350	96,029	21,341	282	22,231	7,855	67
April	128,925	29,568	515	103,431	21,583	451	25,494	7,985	64
May	136,921	29,376	458	108,064	21,446	374	28,856	7,930	84
June	133,479	29,738	397	103,948	21,568	343	29,531	8,170	54
July	125,870	29,120	381	97,829	20,967	300	28,041	8,152	81
August	121,369	29,346	388	93,552	21,205	289	27,817	8,141	99
Sept	124,546	29,789	389	96,266	21,338	297	28,280	8,451	92
October	136,964	30,883	510	105,094	21,741	394	31,870	9,142	117
November	142,595	32,829	633	110,221	22,103	502	32,374	10,726	131
December	151,548	33,505	827	116,684	22,487	686	34,864	11,018	142
<b>Year 2015, End of Month Stocks</b>									
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
Sept	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
<b>Year 2016, End of Month Stocks</b>									
January	187,486	32,397	1,320	146,459	20,980	1,089	41,026	11,416	231
February	187,575	31,637	1,323	146,224	20,670	1,064	41,351	10,967	259
March	192,270	31,485	1,240	149,113	20,603	974	43,156	10,883	266
April	194,063	31,602	1,181	151,402	20,816	901	42,661	10,786	280
May	193,430	31,831	1,071	151,237	21,020	826	42,193	10,810	246
June	183,246	31,594	905	144,986	20,874	689	38,260	10,720	216
July	169,462	31,096	858	135,109	20,559	678	34,353	10,538	180
August	160,449	34,730	780	129,110	20,309	589	31,340	14,421	190
Sept	158,236	34,675	768	128,418	20,285	566	29,818	14,389	201
October	162,737	34,631	812	132,437	20,176	606	30,300	14,455	207
November	172,205	30,910	833	139,079	20,429	606	33,127	10,480	227
December	163,943	30,807	872	131,811	20,399	630	32,133	10,409	241

Notes: See Glossary for definitions. Values for 2015 and prior years are final. Values for 2016 are preliminary.

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 3.2 Stocks of Coal, Petroleum Liquids, and Petroleum Coke:  
Electric Power Sector, by State, December 2016 and 2015**

Census Division and State	Coal (Thousand Tons)			Petroleum Liquids (Thousand Barrels)			Petroleum Coke (Thousand Tons)		
	December 2016	December 2015	Percentage Change	December 2016	December 2015	Percentage Change	December 2016	December 2015	Percentage Change
New England	1,640	1,758	-6.7%	4,459	4,918	-9.3%	0	0	--
Connecticut	W	W	W	1,570	1,669	-6.0%	0	0	--
Maine	0	0	--	W	W	W	0	0	--
Massachusetts	W	W	W	1,870	1,957	-4.4%	0	0	--
New Hampshire	W	W	W	W	W	W	0	0	--
Rhode Island	W	0	W	W	W	W	0	0	--
Vermont	0	0	--	38	NM	NM	0	0	--
Middle Atlantic	4,818	7,914	-39.1%	5,431	6,054	-10.3%	0	0	--
New Jersey	783	932	-15.9%	676	761	-11.2%	0	0	--
New York	W	513	W	3,481	3,861	-9.8%	0	0	--
Pennsylvania	W	6,469	W	1,274	1,432	-11.0%	0	0	--
East North Central	36,994	43,926	-15.8%	1,075	1,158	-7.2%	274	192	42.4%
Illinois	7,489	11,111	-32.6%	71	87	-18.9%	0	0	--
Indiana	9,685	11,491	-15.7%	102	114	-10.3%	W	0	W
Michigan	6,111	7,743	-21.1%	316	339	-6.7%	W	W	W
Ohio	8,886	8,582	3.5%	370	361	2.3%	W	W	W
Wisconsin	4,824	4,999	-3.5%	216	257	-15.7%	W	W	W
West North Central	31,166	31,675	-1.6%	943	1,069	-11.8%	0	0	--
Iowa	8,447	6,892	22.6%	126	148	-15.2%	0	0	--
Kansas	4,595	4,985	-7.8%	120	143	-16.1%	0	0	--
Minnesota	4,048	4,933	-17.9%	129	149	-13.3%	0	0	--
Missouri	9,547	9,764	-2.2%	391	415	-5.7%	0	0	--
Nebraska	W	3,068	W	95	118	-19.5%	0	0	--
North Dakota	1,241	W	W	32	37	-13.8%	0	0	--
South Dakota	W	W	W	49	58	-15.2%	0	0	--
South Atlantic	26,772	35,260	-24.1%	12,011	12,323	-2.5%	W	W	W
Delaware	W	W	W	417	486	-14.2%	0	0	--
District of Columbia	0	0	--	0	0	--	0	0	--
Florida	4,427	6,344	-30.2%	4,939	5,476	-9.8%	W	148	W
Georgia	4,906	6,683	-26.6%	908	841	8.0%	0	0	--
Maryland	1,441	2,051	-29.7%	853	983	-13.3%	0	0	--
North Carolina	5,101	7,621	-33.1%	1,237	1,264	-2.1%	0	0	--
South Carolina	5,080	5,891	-13.8%	715	721	-0.9%	0	0	--
Virginia	W	1,401	W	2,785	2,422	15.0%	0	0	--
West Virginia	4,538	W	W	158	130	21.4%	W	W	W
East South Central	16,040	18,959	-15.4%	1,985	1,835	8.2%	W	W	W
Alabama	3,514	4,324	-18.7%	339	259	30.7%	0	0	--
Kentucky	7,941	8,934	-11.1%	237	251	-5.5%	W	W	W
Mississippi	1,371	1,706	-19.6%	570	577	-1.1%	0	0	--
Tennessee	3,214	3,995	-19.6%	839	748	12.1%	0	0	--
West South Central	24,799	34,018	-27.1%	1,808	1,911	-5.4%	W	W	W
Arkansas	3,877	5,056	-23.3%	W	W	W	0	0	--
Louisiana	2,488	3,831	-35.1%	420	412	2.0%	W	W	W
Oklahoma	4,624	5,923	-21.9%	W	W	W	0	0	--
Texas	13,811	19,208	-28.1%	1,090	1,198	-9.0%	0	0	--
Mountain	20,228	20,737	-2.5%	392	411	-4.6%	W	W	W
Arizona	3,544	4,728	-25.1%	145	138	4.8%	0	0	--
Colorado	4,363	5,605	-22.2%	117	125	-6.6%	0	0	--
Idaho	0	0	--	W	W	W	0	0	--
Montana	W	W	W	17	19	-10.8%	W	W	W
Nevada	W	1,114	W	W	W	W	0	0	--
New Mexico	W	W	W	38	43	-12.0%	0	0	--
Utah	5,279	3,941	33.9%	30	40	-24.8%	0	0	--
Wyoming	4,263	3,329	28.1%	29	31	-5.4%	0	0	--
Pacific Contiguous	W	W	W	456	517	-11.8%	0	0	--
California	0	0	--	W	W	W	0	0	--
Oregon	W	W	W	W	W	W	0	0	--
Washington	W	W	W	214	267	-20.0%	0	0	--
Pacific Noncontiguous	W	W	W	2,247	2,689	-16.4%	0	0	--
Alaska	W	W	W	84	362	-76.8%	0	0	--
Hawaii	W	W	W	2,163	2,327	-7.0%	0	0	--
U.S. Total	163,943	195,548	-16.2%	30,807	32,884	-6.3%	872	1,340	-34.9%

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 for 2016 are preliminary. Values for 2015 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 3.3 Stocks of Coal, Petroleum Liquids, and Petroleum Coke:  
Electric Power Sector, by Census Division, December 2016 and 2015**

Census Division	Electric Power Sector			Electric Utilities		Independent Power Producers	
	December 2016	December 2015	Percentage Change	December 2016	December 2015	December 2016	December 2015
<b>Coal (Thousand Tons)</b>							
New England	1,640	1,758	-6.7%	W	W	W	W
Middle Atlantic	4,818	7,914	-39.1%	0	0	4,818	7,914
East North Central	36,994	43,926	-15.8%	23,214	27,729	13,780	16,198
West North Central	31,166	31,675	-1.6%	31,166	W	0	W
South Atlantic	26,772	35,260	-24.1%	24,521	32,248	2,251	3,012
East South Central	16,040	18,959	-15.4%	16,040	18,959	0	0
West South Central	24,799	34,018	-27.1%	16,279	21,483	8,520	12,535
Mountain	20,228	20,737	-2.5%	W	W	W	W
Pacific Contiguous	W	W	W	W	W	W	W
Pacific Noncontiguous	W	W	W	W	W	W	W
<b>U.S. Total</b>	<b>163,943</b>	<b>195,548</b>	<b>-16.2%</b>	<b>131,811</b>	<b>153,226</b>	<b>32,133</b>	<b>42,322</b>
<b>Petroleum Liquids (Thousand Barrels)</b>							
New England	4,459	4,918	-9.3%	666	689	3,793	4,229
Middle Atlantic	5,431	6,054	-10.3%	2,097	2,381	3,335	3,673
East North Central	1,075	1,158	-7.2%	761	862	314	296
West North Central	943	1,069	-11.8%	W	1,042	W	27
South Atlantic	12,011	12,323	-2.5%	9,728	9,839	2,283	2,484
East South Central	1,985	1,835	8.2%	W	W	W	W
West South Central	1,808	1,911	-5.4%	1,391	1,411	417	500
Mountain	392	411	-4.6%	359	W	33	W
Pacific Contiguous	456	517	-11.8%	W	414	W	103
Pacific Noncontiguous	2,247	2,689	-16.4%	W	W	W	W
<b>U.S. Total</b>	<b>30,807</b>	<b>32,884</b>	<b>-6.3%</b>	<b>20,399</b>	<b>21,443</b>	<b>10,409</b>	<b>11,441</b>
<b>Petroleum Coke (Thousand Tons)</b>							
New England	0	0	--	0	0	0	0
Middle Atlantic	0	0	--	0	0	0	0
East North Central	274	192	42.4%	W	W	W	W
West North Central	0	0	--	0	0	0	0
South Atlantic	W	W	W	W	148	W	W
East South Central	W	W	W	W	W	0	0
West South Central	W	W	W	W	W	0	0
Mountain	W	W	W	0	0	W	W
Pacific Contiguous	0	0	--	0	0	0	0
Pacific Noncontiguous	0	0	--	0	0	0	0
<b>U.S. Total</b>	<b>872</b>	<b>1,340</b>	<b>-34.9%</b>	<b>W</b>	<b>W</b>	<b>W</b>	<b>W</b>

W = Withheld to avoid disclosure of individual company data.

Notes: See Glossary for definitions. Values for 2016 are preliminary. Values for 2015 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 3.4. Stocks of Coal by Coal Rank: Electric Power Sector, 2006 - December 2016**

Period	Electric Power Sector			
	Bituminous Coal	Subbituminous Coal	Lignite Coal	Total
<b>End of Year Stocks</b>				
2006	67,760	68,408	4,797	140,964
2007	63,964	82,692	4,565	151,221
2008	65,818	91,214	4,556	161,589
2009	91,922	92,448	5,097	189,467
2010	81,108	86,915	6,894	174,917
2011	82,056	85,151	5,179	172,387
2012	86,437	93,833	4,846	185,116
2013	73,113	69,720	5,051	147,884
2014	72,771	72,552	6,225	151,548
2015	82,004	108,614	4,931	195,548
2016	68,536	91,036	4,372	163,943
<b>Year 2014, End of Month Stocks</b>				
January	63,618	64,709	5,378	133,705
February	56,041	58,418	5,445	119,904
March	55,150	57,657	5,453	118,260
April	60,602	62,266	6,056	128,925
May	63,782	66,827	6,311	136,921
June	62,679	64,378	6,423	133,479
July	60,134	59,514	6,222	125,870
August	60,128	54,787	6,453	121,369
Sept	63,031	55,432	6,082	124,546
October	69,246	61,368	6,350	136,964
November	70,666	66,105	5,824	142,595
December	72,771	72,552	6,225	151,548
<b>Year 2015, End of Month Stocks</b>				
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
Sept	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
<b>Year 2016, End of Month Stocks</b>				
January	77,097	105,748	4,640	187,486
February	76,703	106,336	4,536	187,575
March	80,107	107,365	4,798	192,270
April	81,926	107,068	5,069	194,063
May	82,821	105,443	5,166	193,430
June	78,957	99,243	5,046	183,246
July	72,160	92,579	4,723	169,462
August	68,467	87,595	4,386	160,449
Sept	67,064	87,008	4,163	158,236
October	68,437	90,326	3,974	162,737
November	71,822	96,100	4,283	172,205
December	68,536	91,036	4,372	163,943

Notes: See Glossary for definitions.

Values for 2015 and prior years are final. Values for 2016 are preliminary. 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 4.7.A. Receipts of Petroleum Liquids Delivered for Electricity Generation by State, December 2016 and 2015  
(Thousand Barrels)**

Census Division and State	Electric Power Sector										
	All Sectors			Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	December 2016	December 2015	Percentage Change	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015
New England	92	10	820.0%	2	0	90	8	0	0	0	2
Connecticut	2	0	NM	0	0	2	0	0	0	0	0
Maine	7	4	72.0%	0	0	6	2	0	0	0	2
Massachusetts	82	6	NM	0	0	82	6	0	0	0	0
New Hampshire	2	0	NM	2	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	49	189	-74.0%	2	95	45	89	0	0	1	5
New Jersey	5	1	277.0%	0	0	5	1	0	0	0	0
New York	19	146	-87.0%	2	95	16	46	0	0	1	5
Pennsylvania	25	42	-41.0%	0	0	25	42	0	0	0	0
East North Central	100	88	14.0%	50	50	47	31	0	0	3	7
Illinois	11	11	1.0%	1	0	10	11	0	0	0	0
Indiana	12	15	-18.0%	12	15	0	0	0	0	0	0
Michigan	14	14	0.8%	13	13	0	0	0	0	1	1
Ohio	61	40	51.0%	22	14	37	20	0	0	2	6
Wisconsin	2	8	-70.0%	2	8	0	0	0	0	0	0
West North Central	69	54	28.0%	69	54	0	0	0	0	0	0
Iowa	22	17	28.0%	22	17	0	0	0	0	0	0
Kansas	4	19	-81.0%	4	19	0	0	0	0	0	0
Minnesota	3	3	-3.8%	3	3	0	0	0	0	0	0
Missouri	30	12	156.0%	30	12	0	0	0	0	0	0
Nebraska	1	1	-4.5%	1	1	0	0	0	0	0	0
North Dakota	10	3	243.0%	10	3	0	0	0	0	0	0
South Dakota	0	0	--	0	0	0	0	0	0	0	0
South Atlantic	247	439	-44.0%	220	327	14	88	0	0	12	24
Delaware	1	17	-94.0%	0	0	1	17	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	80	32	149.0%	80	31	0	0	0	0	0	1
Georgia	13	15	-16.0%	10	10	0	1	0	0	3	4
Maryland	4	5	-22.0%	0	0	4	5	0	0	0	0
North Carolina	49	17	184.0%	49	16	0	0	0	0	0	1
South Carolina	23	31	-27.0%	13	15	0	0	0	0	10	16
Virginia	44	311	-86.0%	42	244	2	65	0	0	0	2
West Virginia	33	10	223.0%	26	10	7	0	0	0	0	0
East South Central	36	46	-23.0%	35	46	1	0	0	0	0	0
Alabama	6	12	-47.0%	6	12	1	0	0	0	0	0
Kentucky	14	21	-35.0%	14	21	0	0	0	0	0	0
Mississippi	2	2	7.7%	2	2	0	0	0	0	0	0
Tennessee	13	11	21.0%	13	11	0	0	0	0	0	0
West South Central	32	15	122.0%	27	7	5	8	0	0	0	0
Arkansas	12	4	194.0%	11	0	2	4	0	0	0	0
Louisiana	1	1	40.0%	1	0	0	1	0	0	0	0
Oklahoma	1	0	--	1	0	0	0	0	0	0	0
Texas	18	10	89.0%	14	7	4	3	0	0	0	0
Mountain	32	30	6.7%	29	28	3	2	0	0	0	0
Arizona	10	10	-6.5%	10	10	0	0	0	0	0	0
Colorado	1	0	87.0%	1	0	0	0	0	0	0	0
Idaho	0	0	--	0	0	0	0	0	0	0	0
Montana	2	2	29.0%	0	0	2	2	0	0	0	0
Nevada	1	3	-79.0%	0	2	1	1	0	0	0	0
New Mexico	12	9	35.0%	12	9	0	0	0	0	0	0
Utah	2	1	113.0%	2	1	0	0	0	0	0	0
Wyoming	5	5	-0.1%	5	5	0	0	0	0	0	0
Pacific Contiguous	2	8	-77.0%	0	3	2	5	0	0	0	0
California	0	0	--	0	0	0	0	0	0	0	0
Oregon	0	3	-100.0%	0	3	0	0	0	0	0	0
Washington	2	5	-62.0%	0	0	2	5	0	0	0	0
Pacific Noncontiguous	649	778	-17.0%	490	600	159	178	0	0	0	0
Alaska	1	1	-51.0%	1	1	0	0	0	0	0	0
Hawaii	648	777	-17.0%	489	599	159	178	0	0	0	0
U.S. Total	1,308	1,657	-21.0%	924	1,209	367	409	0	0	17	38

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 for 2015 are final. Values for 2016 are preliminary. 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 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 4.7.B. Receipts of Petroleum Liquids Delivered for Electricity Generation by State, (Year-to-Date) December 2016 and 2015 (Thousand Barrels)**

Census Division and State	Electric Power Sector										
	All Sectors			Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	December 2016 YTD	December 2015 YTD	Percentage Change	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD
New England	590	2,937	-80.0%	76	63	509	2,868	0	0	5	6
Connecticut	37	761	-95.0%	0	0	37	761	0	0	0	0
Maine	29	873	-97.0%	0	0	24	867	0	0	5	6
Massachusetts	498	1,107	-55.0%	66	6	432	1,101	0	0	0	0
New Hampshire	11	81	-87.0%	11	58	0	23	0	0	0	0
Rhode Island	15	115	-87.0%	0	0	15	115	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	997	4,179	-76.0%	277	1,544	682	2,616	0	0	38	19
New Jersey	18	119	-84.0%	0	0	18	119	0	0	0	0
New York	581	3,054	-81.0%	277	1,544	283	1,494	0	0	22	16
Pennsylvania	397	1,006	-61.0%	0	0	380	1,003	0	0	17	3
East North Central	1,046	1,081	-3.3%	543	690	472	349	0	0	31	42
Illinois	119	101	17.0%	5	12	114	89	0	0	0	0
Indiana	182	268	-32.0%	182	268	0	0	0	0	0	0
Michigan	178	177	0.1%	168	167	0	0	0	0	9	11
Ohio	517	458	13.0%	141	172	354	256	0	0	21	30
Wisconsin	51	77	-34.0%	47	71	4	4	0	0	0	2
West North Central	400	437	-8.5%	395	437	4	0	0	0	0	0
Iowa	106	78	36.0%	106	78	0	0	0	0	0	0
Kansas	41	89	-54.0%	41	89	0	0	0	0	0	0
Minnesota	39	46	-14.0%	35	46	4	0	0	0	0	0
Missouri	144	145	-0.4%	144	145	0	0	0	0	0	0
Nebraska	4	3	39.0%	4	3	0	0	0	0	0	0
North Dakota	61	46	33.0%	61	46	0	0	0	0	0	0
South Dakota	4	30	-88.0%	4	30	0	0	0	0	0	0
South Atlantic	3,668	5,045	-27.0%	2,800	3,535	652	1,197	0	0	216	313
Delaware	79	199	-60.0%	0	0	79	199	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	911	652	40.0%	904	631	7	4	0	0	0	17
Georgia	264	275	-4.3%	169	142	32	76	0	0	63	57
Maryland	266	457	-42.0%	0	0	266	457	0	0	0	0
North Carolina	310	628	-51.0%	249	547	61	41	0	0	0	40
South Carolina	277	458	-39.0%	150	302	0	7	0	0	127	149
Virginia	1,323	2,159	-39.0%	1,104	1,715	193	396	0	0	27	49
West Virginia	238	215	11.0%	223	199	14	16	0	0	0	0
East South Central	459	493	-6.9%	439	482	11	7	0	0	9	4
Alabama	67	86	-23.0%	55	79	11	7	0	0	0	0
Kentucky	188	196	-4.0%	188	196	0	0	0	0	0	0
Mississippi	26	47	-44.0%	26	47	0	0	0	0	0	0
Tennessee	178	165	8.3%	169	161	0	0	0	0	9	4
West South Central	287	342	-16.0%	215	237	72	106	0	0	0	0
Arkansas	74	98	-24.0%	57	71	18	27	0	0	0	0
Louisiana	54	94	-43.0%	52	70	2	25	0	0	0	0
Oklahoma	29	4	672.0%	29	4	0	0	0	0	0	0
Texas	129	146	-12.0%	77	92	52	54	0	0	0	0
Mountain	351	360	-2.4%	321	337	30	23	0	0	0	0
Arizona	108	104	3.4%	108	104	0	0	0	0	0	0
Colorado	14	6	128.0%	14	6	0	0	0	0	0	0
Idaho	0	0	--	0	0	0	0	0	0	0	0
Montana	24	15	65.0%	0	0	24	15	0	0	0	0
Nevada	22	30	-29.0%	16	24	6	6	0	0	0	0
New Mexico	84	103	-18.0%	84	103	0	0	0	0	0	0
Utah	26	30	-12.0%	26	28	0	2	0	0	0	0
Wyoming	73	71	2.8%	73	71	0	0	0	0	0	0
Pacific Contiguous	20	23	-14.0%	4	9	15	14	0	0	0	0
California	0	0	--	0	0	0	0	0	0	0	0
Oregon	3	8	-56.0%	3	8	0	0	0	0	0	0
Washington	16	15	8.2%	1	1	15	14	0	0	0	0
Pacific Noncontiguous	8,793	9,423	-6.7%	6,872	7,413	1,921	2,010	0	0	0	0
Alaska	9	17	-48.0%	9	17	0	0	0	0	0	0
Hawaii	8,784	9,406	-6.6%	6,863	7,396	1,921	2,010	0	0	0	0
U.S. Total	16,610	24,320	-32.0%	11,943	14,747	4,369	9,189	0	0	299	385

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 for 2015 are final. Values for 2016 are preliminary. 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 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 4.8.A. Receipts of Petroleum Coke Delivered for Electricity Generation by State, December 2016 and 2015  
(Thousand Tons)**

Census Division and State	Electric Power Sector										
	All Sectors			Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	December 2016	December 2015	Percentage Change	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015
New England	0	0	--	0	0	0	0	0	0	0	0
Connecticut	0	0	--	0	0	0	0	0	0	0	0
Maine	0	0	--	0	0	0	0	0	0	0	0
Massachusetts	0	0	--	0	0	0	0	0	0	0	0
New Hampshire	0	0	--	0	0	0	0	0	0	0	0
Rhode Island	0	0	--	0	0	0	0	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	0	9	-100.0%	0	0	0	0	0	0	0	9
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	9	-100.0%	0	0	0	0	0	0	0	9
East North Central	74	118	-37.0%	19	45	55	65	0	0	0	7
Illinois	0	0	--	0	0	0	0	0	0	0	0
Indiana	0	39	-100.0%	0	39	0	0	0	0	0	0
Michigan	17	0	NM	17	0	0	0	0	0	0	0
Ohio	55	65	-16.0%	0	0	55	65	0	0	0	0
Wisconsin	2	13	-82.0%	2	6	0	0	0	0	0	7
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	99	82	20.0%	83	67	0	0	0	0	16	15
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	83	67	23.0%	83	67	0	0	0	0	0	0
Georgia	16	15	6.8%	0	0	0	0	0	0	16	15
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	14	64	-78.0%	14	64	0	0	0	0	0	0
Alabama	0	0	--	0	0	0	0	0	0	0	0
Kentucky	14	64	-78.0%	14	64	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	168	121	39.0%	168	121	0	0	0	0	0	0
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	168	121	39.0%	168	121	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	355	393	-9.7%	284	297	55	65	0	0	16	30

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 W = Withheld to avoid disclosure of individual company data.

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 4.8.B. Receipts of Petroleum Coke Delivered for Electricity Generation by State, (Year-to-Date) December 2016 and 2015  
(Thousand Tons)**

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

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

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

Table 4.9.A. Receipts of Natural Gas Delivered for Electricity Generation by State, December 2016 and 2015  
(Million Cubic Feet)

Census Division and State	Electric Power Sector										
	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
	December 2016	December 2015	Percentage Change	Electric Utilities		Independent Power Producers		December 2016	December 2015	December 2016	December 2015
New England	25,355	27,081	-6.4%	73	44	25,281	27,036	0	0	0	0
Connecticut	9,332	10,904	-14.0%	0	0	9,332	10,904	0	0	0	0
Maine	822	1,495	-45.0%	0	0	822	1,495	0	0	0	0
Massachusetts	10,170	8,893	14.0%	48	44	10,122	8,849	0	0	0	0
New Hampshire	2,206	2,709	-19.0%	25	0	2,181	2,709	0	0	0	0
Rhode Island	2,825	3,079	-8.2%	0	0	2,825	3,079	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	87,120	82,025	6.2%	5,919	7,659	80,766	74,181	0	0	435	185
New Jersey	20,467	21,323	-4.0%	0	0	20,467	21,323	0	0	0	0
New York	29,468	27,337	7.8%	5,919	7,659	23,480	19,602	0	0	69	75
Pennsylvania	37,185	33,365	11.0%	0	0	36,818	33,256	0	0	367	109
East North Central	58,131	61,574	-5.6%	24,684	28,693	31,343	31,659	491	460	1,613	761
Illinois	7,449	7,031	6.0%	649	444	6,798	6,582	0	0	3	5
Indiana	12,787	12,604	1.4%	10,593	9,797	2,194	2,807	0	0	0	0
Michigan	15,063	15,436	-2.4%	4,172	4,335	9,795	10,276	491	460	605	365
Ohio	15,928	16,996	-6.3%	3,878	5,279	11,587	11,582	0	0	463	135
Wisconsin	6,903	9,507	-27.0%	5,392	8,838	969	413	0	0	542	257
West North Central	10,316	11,493	-10.0%	8,050	9,698	1,900	1,476	58	47	308	272
Iowa	2,563	1,951	31.0%	2,255	1,949	0	0	0	0	308	2
Kansas	936	422	122.0%	936	422	0	0	0	0	0	0
Minnesota	3,104	5,806	-47.0%	2,194	5,109	910	427	0	0	0	270
Missouri	3,300	2,641	25.0%	2,252	1,544	990	1,049	58	47	0	0
Nebraska	163	114	43.0%	163	114	0	0	0	0	0	0
North Dakota	52	11	382.0%	52	11	0	0	0	0	0	0
South Dakota	198	548	-64.0%	198	548	0	0	0	0	0	0
South Atlantic	156,773	175,825	-11.0%	136,782	145,911	15,996	25,930	0	0	3,994	3,983
Delaware	2,966	3,202	-7.4%	0	0	1,941	1,970	0	0	1,025	1,231
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	74,701	87,255	-14.0%	73,361	84,466	1,340	2,693	0	0	0	95
Georgia	26,652	24,071	11.0%	22,156	16,367	3,700	6,596	0	0	796	1,108
Maryland	584	2,428	-76.0%	0	0	379	2,265	0	0	205	163
North Carolina	21,670	22,915	-5.4%	19,150	20,245	2,520	2,195	0	0	0	475
South Carolina	7,486	11,444	-35.0%	6,836	10,244	178	1,035	0	0	472	164
Virginia	21,890	23,968	-8.7%	15,237	14,547	5,863	8,675	0	0	790	746
West Virginia	824	542	52.0%	42	42	75	500	0	0	706	0
East South Central	74,003	67,437	9.7%	51,147	40,401	21,505	26,057	0	0	1,351	980
Alabama	29,677	30,892	-3.9%	9,705	7,157	19,972	23,735	0	0	0	0
Kentucky	5,480	3,475	58.0%	5,218	3,475	262	0	0	0	0	0
Mississippi	29,564	25,940	14.0%	28,292	23,618	1,272	2,322	0	0	0	0
Tennessee	9,282	7,130	30.0%	7,931	6,151	0	0	0	0	1,351	980
West South Central	184,871	237,212	-22.0%	44,024	67,772	86,296	111,926	0	0	54,551	57,514
Arkansas	7,064	7,048	0.2%	1,686	2,777	5,148	3,885	0	0	230	386
Louisiana	37,073	49,795	-26.0%	15,418	25,461	3,245	5,796	0	0	18,409	18,538
Oklahoma	16,923	22,896	-26.0%	11,722	16,414	5,201	6,369	0	0	0	113
Texas	123,812	157,473	-21.0%	15,198	23,121	72,702	95,875	0	0	35,912	38,477
Mountain	42,272	53,619	-21.0%	34,225	43,271	7,979	10,344	0	0	67	4
Arizona	9,664	17,355	-44.0%	6,234	11,479	3,430	5,876	0	0	0	0
Colorado	6,844	8,042	-15.0%	5,513	6,947	1,331	1,095	0	0	0	0
Idaho	1,656	2,670	-38.0%	802	1,502	854	1,168	0	0	0	0
Montana	0	598	-100.0%	0	595	0	3	0	0	0	0
Nevada	14,394	14,153	1.7%	14,394	14,153	0	0	0	0	0	0
New Mexico	5,691	6,033	-5.7%	3,370	3,831	2,321	2,202	0	0	0	0
Utah	4,019	4,705	-15.0%	3,907	4,701	44	0	0	0	67	4
Wyoming	4	64	-94.0%	4	63	0	0	0	0	0	0
Pacific Contiguous	66,309	74,091	-11.0%	29,810	28,782	33,034	41,480	0	0	3,464	3,829
California	47,582	57,211	-17.0%	18,838	18,980	25,280	34,401	0	0	3,464	3,829
Oregon	12,407	8,916	39.0%	6,462	4,957	5,945	3,959	0	0	0	0
Washington	6,320	7,965	-21.0%	4,510	4,844	1,810	3,121	0	0	0	0
Pacific Noncontiguous	905	1,341	-33.0%	905	1,341	0	0	0	0	0	0
Alaska	905	1,341	-33.0%	905	1,341	0	0	0	0	0	0
Hawaii	0	0	--	0	0	0	0	0	0	0	0
U.S. Total	706,054	791,698	-11.0%	335,619	373,572	304,102	350,090	549	507	65,784	67,528

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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.

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



**Table 4.10.A. Average Cost of Coal Delivered for Electricity Generation by State, December 2016 and 2015  
(Dollars per MMBtu)**

Census Division and State	Electric Power Sector			Electric Utilities		Independent Power Producers	
	December 2016	December 2015	Percentage Change	December 2016	December 2015	December 2016	December 2015
New England	W	W	W	--	--	W	W
Connecticut	--	--	--	--	--	--	--
Maine	W	W	W	--	--	W	W
Massachusetts	--	W	W	--	--	--	W
New Hampshire	--	--	--	--	--	--	--
Rhode Island	--	--	--	--	--	--	--
Vermont	--	--	--	--	--	--	--
Middle Atlantic	2.09	2.16	-3.2%	--	--	2.09	2.16
New Jersey	W	W	W	--	--	W	W
New York	W	W	W	--	--	W	W
Pennsylvania	W	2.07	W	--	--	W	2.07
East North Central	2.04	2.13	-4.2%	2.15	2.21	1.87	2.02
Illinois	W	1.93	W	1.87	2.05	W	1.90
Indiana	W	W	W	2.23	2.28	W	W
Michigan	W	W	W	2.22	2.28	W	W
Ohio	2.00	W	W	1.79	2.04	2.07	W
Wisconsin	2.21	2.16	2.3%	2.21	2.16	--	--
West North Central	1.73	1.67	3.6%	1.73	1.67	--	--
Iowa	1.56	1.49	4.7%	1.56	1.49	--	--
Kansas	1.69	1.69	0.0%	1.69	1.69	--	--
Minnesota	2.01	1.86	8.1%	2.01	1.86	--	--
Missouri	1.90	1.84	3.3%	1.90	1.84	--	--
Nebraska	1.36	1.29	5.4%	1.36	1.29	--	--
North Dakota	1.59	1.63	-2.5%	1.59	1.63	--	--
South Dakota	2.33	2.03	15.0%	2.33	2.03	--	--
South Atlantic	2.68	2.86	-6.3%	2.70	2.93	2.54	2.32
Delaware	W	--	W	--	--	W	--
District of Columbia	--	--	--	--	--	--	--
Florida	2.96	W	W	2.96	3.10	--	W
Georgia	2.69	2.97	-9.4%	2.69	2.97	--	--
Maryland	2.93	2.92	0.3%	--	--	2.93	2.92
North Carolina	3.09	3.38	-8.6%	3.09	3.38	--	3.46
South Carolina	3.24	3.46	-6.4%	3.24	3.46	--	--
Virginia	W	2.93	W	2.68	2.88	W	3.39
West Virginia	W	W	W	2.22	2.37	W	W
East South Central	W	W	W	2.08	2.27	W	W
Alabama	1.87	2.38	-21.0%	1.87	2.38	--	--
Kentucky	2.09	2.18	-4.1%	2.09	2.18	--	--
Mississippi	W	W	W	2.75	2.56	W	W
Tennessee	2.22	2.44	-9.0%	2.22	2.44	--	--
West South Central	1.93	2.05	-5.9%	2.21	2.32	1.68	1.73
Arkansas	W	W	W	2.10	2.29	W	W
Louisiana	W	W	W	3.47	3.78	W	W
Oklahoma	W	W	W	1.95	1.94	W	W
Texas	1.80	1.86	-3.2%	2.13	2.16	1.64	1.67
Mountain	W	W	W	1.87	1.89	W	W
Arizona	2.03	1.99	2.0%	2.03	1.99	--	--
Colorado	1.61	1.83	-12.0%	1.61	1.83	--	--
Idaho	--	--	--	--	--	--	--
Montana	W	W	W	--	1.53	W	W
Nevada	W	W	W	--	2.08	W	W
New Mexico	2.14	2.31	-7.4%	2.14	2.31	--	--
Utah	1.94	1.90	2.1%	1.94	1.90	--	--
Wyoming	1.73	W	W	1.73	1.61	--	W
Pacific Contiguous	W	W	W	2.33	2.31	W	W
California	--	--	--	--	--	--	--
Oregon	2.33	2.31	0.9%	2.33	2.31	--	--
Washington	W	W	W	--	--	W	W
Pacific Noncontiguous	W	3.30	W	3.05	3.30	W	--
Alaska	3.05	3.30	-7.6%	3.05	3.30	--	--
Hawaii	W	--	W	--	--	W	--
U.S. Total	2.07	2.15	-3.7%	2.13	2.21	1.92	1.96

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

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

**Table 4.10.B. Average Cost of Coal Delivered for Electricity Generation by State, (Year-to-Date) December 2016 and 2015  
(Dollars per MMBtu)**

Census Division and State	Electric Power Sector			Electric Utilities		Independent Power Producers	
	December 2016 YTD	December 2015 YTD	Percentage Change	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD
New England	W	3.47	W	4.07	3.87	W	3.25
Connecticut	W	W	W	--	--	W	W
Maine	W	W	W	--	--	W	W
Massachusetts	W	W	W	--	--	W	W
New Hampshire	4.07	3.87	5.2%	4.07	3.87	--	--
Rhode Island	--	--	--	--	--	--	--
Vermont	--	--	--	--	--	--	--
Middle Atlantic	2.02	2.34	-14.0%	--	--	2.02	2.34
New Jersey	W	3.82	W	--	--	W	3.82
New York	W	2.83	W	--	--	W	2.83
Pennsylvania	1.95	2.28	-14.0%	--	--	1.95	2.28
East North Central	2.08	2.18	-4.6%	2.18	2.29	1.94	2.04
Illinois	W	1.92	W	1.97	2.06	W	1.89
Indiana	W	W	W	2.25	2.32	W	W
Michigan	W	W	W	2.24	2.39	W	W
Ohio	2.06	W	W	1.88	2.12	2.12	W
Wisconsin	2.21	2.27	-2.6%	2.21	2.27	--	--
West North Central	1.72	1.72	0.0%	1.72	1.72	--	--
Iowa	1.59	1.62	-1.9%	1.59	1.62	--	--
Kansas	1.70	1.70	0.0%	1.70	1.70	--	--
Minnesota	2.05	1.90	7.9%	2.05	1.90	--	--
Missouri	1.87	1.90	-1.6%	1.87	1.90	--	--
Nebraska	1.35	1.34	0.7%	1.35	1.34	--	--
North Dakota	1.54	1.56	-1.3%	1.54	1.56	--	--
South Dakota	2.25	2.23	0.9%	2.25	2.23	--	--
South Atlantic	2.74	2.93	-6.5%	2.78	2.97	2.53	2.64
Delaware	W	W	W	--	--	W	W
District of Columbia	--	--	--	--	--	--	--
Florida	W	W	W	3.01	3.08	W	W
Georgia	2.79	2.93	-4.8%	2.79	2.93	--	--
Maryland	2.85	2.87	-0.7%	--	--	2.85	2.87
North Carolina	3.10	3.47	-11.0%	3.10	3.47	--	3.55
South Carolina	3.19	3.55	-10.0%	3.19	3.55	--	--
Virginia	W	2.95	W	2.88	2.87	W	3.49
West Virginia	W	2.31	W	2.29	2.37	W	1.96
East South Central	W	W	W	2.19	2.32	W	W
Alabama	2.32	2.44	-4.9%	2.32	2.44	--	--
Kentucky	2.11	2.22	-5.0%	2.11	2.22	--	--
Mississippi	W	W	W	2.69	3.06	W	W
Tennessee	2.23	2.39	-6.7%	2.23	2.39	--	--
West South Central	1.92	2.07	-7.2%	2.15	2.20	1.68	1.90
Arkansas	W	W	W	2.17	2.26	W	W
Louisiana	W	W	W	2.92	3.18	W	W
Oklahoma	W	W	W	1.91	1.97	W	W
Texas	1.80	1.97	-8.6%	2.09	2.13	1.64	1.87
Mountain	W	W	W	1.89	1.92	W	W
Arizona	2.13	2.07	2.9%	2.13	2.07	--	--
Colorado	1.85	1.83	1.1%	1.85	1.83	--	--
Idaho	--	--	--	--	--	--	--
Montana	W	W	W	--	1.72	W	W
Nevada	W	W	W	2.02	2.47	W	W
New Mexico	1.90	2.34	-19.0%	1.90	2.34	--	--
Utah	1.94	1.94	0.0%	1.94	1.94	--	--
Wyoming	1.71	W	W	1.71	1.63	--	W
Pacific Contiguous	W	W	W	2.25	2.38	W	W
California	--	--	--	--	--	--	--
Oregon	2.25	2.38	-5.5%	2.25	2.38	--	--
Washington	W	W	W	--	--	W	W
Pacific Noncontiguous	W	W	W	3.08	3.27	W	W
Alaska	3.08	3.27	-5.8%	3.08	3.27	--	--
Hawaii	W	W	W	--	--	W	W
U.S. Total	2.11	2.21	-4.5%	2.16	2.25	1.94	2.10

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 for 2015 are final. Values for 2016 are preliminary.

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 4.11.A. Average Cost of Petroleum Liquids Delivered for Electricity Generation by State, December 2016 and 2015  
(Dollars per MMBtu)**

Census Division and State	Electric Power Sector			Electric Utilities		Independent Power Producers	
	December 2016	December 2015	Percentage Change	December 2016	December 2015	December 2016	December 2015
New England	W	W	W	14.48	16.59	W	W
Connecticut	W	W	W	--	--	W	W
Maine	W	W	W	--	--	W	W
Massachusetts	W	W	W	21.63	21.58	W	W
New Hampshire	13.93	12.50	11.0%	13.93	12.50	--	--
Rhode Island	--	--	--	--	--	--	--
Vermont	--	--	--	--	--	--	--
Middle Atlantic	12.11	W	W	12.10	5.74	12.11	W
New Jersey	9.53	8.30	15.0%	--	--	9.53	8.30
New York	11.87	W	W	12.10	5.74	11.83	W
Pennsylvania	12.77	9.30	37.0%	--	--	12.77	9.30
East North Central	12.73	9.35	36.0%	12.91	9.19	12.55	9.60
Illinois	12.19	W	W	11.89	9.03	12.23	W
Indiana	12.67	9.74	30.0%	12.67	9.74	--	--
Michigan	11.07	8.87	25.0%	11.07	8.87	--	--
Ohio	13.24	W	W	14.31	9.05	12.63	W
Wisconsin	12.08	8.91	36.0%	12.08	8.91	--	--
West North Central	12.31	9.46	30.0%	12.31	9.46	--	--
Iowa	11.97	9.40	27.0%	11.97	9.40	--	--
Kansas	11.76	9.80	20.0%	11.76	9.80	--	--
Minnesota	12.37	7.74	60.0%	12.37	7.74	--	--
Missouri	13.08	9.34	40.0%	13.08	9.34	--	--
Nebraska	12.84	9.33	38.0%	12.84	9.33	--	--
North Dakota	10.92	9.96	9.6%	10.92	9.96	--	--
South Dakota	--	--	--	--	--	--	--
South Atlantic	10.81	8.18	32.0%	10.70	7.64	12.57	10.81
Delaware	W	W	W	--	--	W	W
District of Columbia	--	--	--	--	--	--	--
Florida	9.37	9.15	2.4%	9.37	9.15	--	--
Georgia	W	8.55	W	11.98	8.55	W	--
Maryland	11.79	W	W	--	--	11.79	W
North Carolina	12.56	W	W	12.56	9.25	--	W
South Carolina	13.08	11.45	14.0%	13.08	11.45	--	--
Virginia	W	W	W	8.56	6.98	W	W
West Virginia	W	11.31	W	13.48	11.31	W	--
East South Central	W	9.19	W	12.47	9.19	W	--
Alabama	W	8.84	W	12.89	8.84	W	--
Kentucky	12.57	9.52	32.0%	12.57	9.52	--	--
Mississippi	11.99	9.18	31.0%	11.99	9.18	--	--
Tennessee	12.26	8.88	38.0%	12.26	8.88	--	--
West South Central	12.14	11.19	8.5%	12.12	10.02	12.26	12.23
Arkansas	W	W	W	12.03	--	W	W
Louisiana	11.96	W	W	11.96	--	--	W
Oklahoma	12.24	--	--	12.24	--	--	--
Texas	W	W	W	12.19	10.02	W	W
Mountain	W	W	W	13.07	12.28	W	W
Arizona	12.65	10.96	15.0%	12.65	10.96	--	--
Colorado	12.59	10.74	17.0%	12.59	10.74	--	--
Idaho	--	--	--	--	--	--	--
Montana	W	W	W	--	--	W	W
Nevada	W	W	W	--	11.66	W	W
New Mexico	13.57	13.33	1.8%	13.57	13.33	--	--
Utah	13.34	W	W	13.34	10.55	--	W
Wyoming	12.71	13.60	-6.5%	12.71	13.60	--	--
Pacific Contiguous	W	W	W	--	10.41	W	W
California	--	--	--	--	--	--	--
Oregon	--	10.41	--	--	10.41	--	--
Washington	W	W	W	--	--	W	W
Pacific Noncontiguous	W	W	W	9.99	9.07	W	W
Alaska	15.94	12.93	23.0%	15.94	12.93	--	--
Hawaii	W	W	W	9.98	9.06	W	W
U.S. Total	W	8.76	W	10.73	8.52	W	9.61

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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 4.11.B. Average Cost of Petroleum Liquids Delivered for Electricity Generation by State, (Year-to-Date) December 2016 and 2015  
(Dollars per MMBtu)**

Census Division and State	Electric Power Sector			Electric Utilities		Independent Power Producers	
	December 2016 YTD	December 2015 YTD	Percentage Change	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD
New England	8.92	W	W	9.76	11.50	8.80	W
Connecticut	10.94	W	W	--	--	10.94	W
Maine	W	W	W	--	--	W	W
Massachusetts	W	11.84	W	9.64	22.00	W	11.79
New Hampshire	10.52	W	W	10.52	10.54	--	W
Rhode Island	W	W	W	--	--	W	W
Vermont	--	--	--	--	--	--	--
Middle Atlantic	10.11	11.27	-10.0%	7.83	8.78	11.09	13.04
New Jersey	9.74	13.93	-30.0%	--	--	9.74	13.93
New York	9.87	10.77	-8.4%	7.83	8.78	11.88	12.94
Pennsylvania	10.51	13.13	-20.0%	--	--	10.51	13.13
East North Central	W	13.52	W	10.85	13.57	W	13.41
Illinois	10.87	W	W	11.05	14.05	10.87	W
Indiana	10.58	13.78	-23.0%	10.58	13.78	--	--
Michigan	10.49	12.86	-18.0%	10.49	12.86	--	--
Ohio	W	13.44	W	11.42	13.54	W	13.37
Wisconsin	W	W	W	11.48	14.44	W	W
West North Central	W	12.40	W	10.81	12.40	W	--
Iowa	11.26	12.24	-8.0%	11.26	12.24	--	--
Kansas	10.43	12.07	-14.0%	10.43	12.07	--	--
Minnesota	W	13.13	W	11.38	13.13	W	--
Missouri	11.09	12.88	-14.0%	11.09	12.88	--	--
Nebraska	11.28	18.25	-38.0%	11.28	18.25	--	--
North Dakota	9.41	12.65	-26.0%	9.41	12.65	--	--
South Dakota	8.54	9.48	-9.9%	8.54	9.48	--	--
South Atlantic	9.95	12.45	-20.0%	9.85	12.16	10.45	13.49
Delaware	W	W	W	--	--	W	W
District of Columbia	--	--	--	--	--	--	--
Florida	W	W	W	11.43	14.24	W	W
Georgia	9.39	15.88	-41.0%	9.68	16.66	7.86	14.11
Maryland	9.65	10.79	-11.0%	--	--	9.65	10.79
North Carolina	W	W	W	10.58	13.22	W	W
South Carolina	11.17	14.83	-25.0%	11.17	14.83	--	--
Virginia	W	11.30	W	7.99	10.19	W	16.49
West Virginia	W	W	W	11.48	13.89	W	W
East South Central	W	W	W	10.44	12.57	W	W
Alabama	W	W	W	10.12	12.66	W	W
Kentucky	10.62	13.21	-20.0%	10.62	13.21	--	--
Mississippi	9.56	10.43	-8.3%	9.56	10.43	--	--
Tennessee	10.47	12.40	-16.0%	10.47	12.40	--	--
West South Central	10.69	13.12	-19.0%	10.55	13.00	11.10	13.39
Arkansas	W	W	W	10.38	13.26	W	W
Louisiana	W	W	W	9.70	12.53	W	W
Oklahoma	12.14	13.81	-12.0%	12.14	13.81	--	--
Texas	W	W	W	10.66	13.12	W	W
Mountain	W	14.68	W	11.37	14.70	W	14.33
Arizona	11.31	13.67	-17.0%	11.31	13.67	--	--
Colorado	10.25	14.74	-30.0%	10.25	14.74	--	--
Idaho	--	--	--	--	--	--	--
Montana	W	W	W	--	--	W	W
Nevada	W	W	W	11.79	16.50	W	W
New Mexico	11.32	15.53	-27.0%	11.32	15.53	--	--
Utah	11.75	W	W	11.75	14.72	--	W
Wyoming	11.49	14.38	-20.0%	11.49	14.38	--	--
Pacific Contiguous	W	W	W	11.43	11.19	W	W
California	--	--	--	--	--	--	--
Oregon	11.19	11.19	0.0%	11.19	11.19	--	--
Washington	W	W	W	12.29	11.29	W	W
Pacific Noncontiguous	W	W	W	8.50	10.94	W	W
Alaska	14.43	17.12	-16.0%	14.43	17.12	--	--
Hawaii	W	W	W	8.50	10.93	W	W
U.S. Total	9.35	11.45	-18.0%	9.16	11.32	9.92	11.69

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

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

**Table 4.12.A. Average Cost of Petroleum Coke Delivered for Electricity Generation by State, December 2016 and 2015  
(Dollars per MMBtu)**

Census Division and State	Electric Power Sector			Electric Utilities		Independent Power Producers	
	December 2016	December 2015	Percentage Change	December 2016	December 2015	December 2016	December 2015
New England	--	--	--	--	--	--	--
Connecticut	--	--	--	--	--	--	--
Maine	--	--	--	--	--	--	--
Massachusetts	--	--	--	--	--	--	--
New Hampshire	--	--	--	--	--	--	--
Rhode Island	--	--	--	--	--	--	--
Vermont	--	--	--	--	--	--	--
Middle Atlantic	--	--	--	--	--	--	--
New Jersey	--	--	--	--	--	--	--
New York	--	--	--	--	--	--	--
Pennsylvania	--	--	--	--	--	--	--
East North Central	W	W	W	1.36	1.05	W	W
Illinois	--	--	--	--	--	--	--
Indiana	--	0.96	--	--	0.96	--	--
Michigan	1.30	1.59	-18.0%	1.30	1.59	--	--
Ohio	W	W	W	--	--	W	W
Wisconsin	1.77	1.73	2.3%	1.77	1.73	--	--
West North Central	--	--	--	--	--	--	--
Iowa	--	--	--	--	--	--	--
Kansas	--	--	--	--	--	--	--
Minnesota	--	--	--	--	--	--	--
Missouri	--	--	--	--	--	--	--
Nebraska	--	--	--	--	--	--	--
North Dakota	--	--	--	--	--	--	--
South Dakota	--	--	--	--	--	--	--
South Atlantic	1.75	1.48	18.0%	1.75	1.48	--	--
Delaware	--	--	--	--	--	--	--
District of Columbia	--	--	--	--	--	--	--
Florida	1.75	1.48	18.0%	1.75	1.48	--	--
Georgia	--	--	--	--	--	--	--
Maryland	--	--	--	--	--	--	--
North Carolina	--	--	--	--	--	--	--
South Carolina	--	--	--	--	--	--	--
Virginia	--	--	--	--	--	--	--
West Virginia	--	--	--	--	--	--	--
East South Central	1.54	1.53	0.7%	1.54	1.53	--	--
Alabama	--	--	--	--	--	--	--
Kentucky	1.54	1.53	0.7%	1.54	1.53	--	--
Mississippi	--	--	--	--	--	--	--
Tennessee	--	--	--	--	--	--	--
West South Central	2.21	1.30	70.0%	2.21	1.30	--	--
Arkansas	--	--	--	--	--	--	--
Louisiana	2.21	1.30	70.0%	2.21	1.30	--	--
Oklahoma	--	--	--	--	--	--	--
Texas	--	--	--	--	--	--	--
Mountain	--	--	--	--	--	--	--
Arizona	--	--	--	--	--	--	--
Colorado	--	--	--	--	--	--	--
Idaho	--	--	--	--	--	--	--
Montana	--	--	--	--	--	--	--
Nevada	--	--	--	--	--	--	--
New Mexico	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--
Wyoming	--	--	--	--	--	--	--
Pacific Contiguous	--	--	--	--	--	--	--
California	--	--	--	--	--	--	--
Oregon	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--
Pacific Noncontiguous	--	--	--	--	--	--	--
Alaska	--	--	--	--	--	--	--
Hawaii	--	--	--	--	--	--	--
U.S. Total	W	W	W	1.99	1.35	W	W

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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 4.12.B. Average Cost of Petroleum Coke Delivered for Electricity Generation by State, (Year-to-Date) December 2016 and 2015 (Dollars per MMBtu)**

Census Division and State	Electric Power Sector			Electric Utilities		Independent Power Producers	
	December 2016 YTD	December 2015 YTD	Percentage Change	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD
New England	--	--	--	--	--	--	--
Connecticut	--	--	--	--	--	--	--
Maine	--	--	--	--	--	--	--
Massachusetts	--	--	--	--	--	--	--
New Hampshire	--	--	--	--	--	--	--
Rhode Island	--	--	--	--	--	--	--
Vermont	--	--	--	--	--	--	--
Middle Atlantic	--	--	--	--	--	--	--
New Jersey	--	--	--	--	--	--	--
New York	--	--	--	--	--	--	--
Pennsylvania	--	--	--	--	--	--	--
East North Central	W	W	W	1.23	1.29	W	W
Illinois	--	--	--	--	--	--	--
Indiana	0.96	0.95	1.1%	0.96	0.95	--	--
Michigan	1.30	W	W	1.30	1.76	--	W
Ohio	W	W	W	--	--	W	W
Wisconsin	1.72	1.68	2.4%	1.72	1.68	--	--
West North Central	--	--	--	--	--	--	--
Iowa	--	--	--	--	--	--	--
Kansas	--	--	--	--	--	--	--
Minnesota	--	--	--	--	--	--	--
Missouri	--	--	--	--	--	--	--
Nebraska	--	--	--	--	--	--	--
North Dakota	--	--	--	--	--	--	--
South Dakota	--	--	--	--	--	--	--
South Atlantic	1.54	2.12	-27.0%	1.54	2.12	--	--
Delaware	--	--	--	--	--	--	--
District of Columbia	--	--	--	--	--	--	--
Florida	1.54	2.12	-27.0%	1.54	2.12	--	--
Georgia	--	--	--	--	--	--	--
Maryland	--	--	--	--	--	--	--
North Carolina	--	--	--	--	--	--	--
South Carolina	--	--	--	--	--	--	--
Virginia	--	--	--	--	--	--	--
West Virginia	--	--	--	--	--	--	--
East South Central	1.55	1.68	-7.7%	1.55	1.68	--	--
Alabama	--	--	--	--	--	--	--
Kentucky	1.55	1.68	-7.7%	1.55	1.68	--	--
Mississippi	--	--	--	--	--	--	--
Tennessee	--	--	--	--	--	--	--
West South Central	1.58	1.80	-12.0%	1.58	1.80	--	--
Arkansas	--	--	--	--	--	--	--
Louisiana	1.58	1.80	-12.0%	1.58	1.80	--	--
Oklahoma	--	--	--	--	--	--	--
Texas	--	--	--	--	--	--	--
Mountain	--	--	--	--	--	--	--
Arizona	--	--	--	--	--	--	--
Colorado	--	--	--	--	--	--	--
Idaho	--	--	--	--	--	--	--
Montana	--	--	--	--	--	--	--
Nevada	--	--	--	--	--	--	--
New Mexico	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--
Wyoming	--	--	--	--	--	--	--
Pacific Contiguous	--	--	--	--	--	--	--
California	--	--	--	--	--	--	--
Oregon	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--
Pacific Noncontiguous	--	--	--	--	--	--	--
Alaska	--	--	--	--	--	--	--
Hawaii	--	--	--	--	--	--	--
U.S. Total	1.64	1.85	-11.0%	1.52	1.77	2.50	2.45

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 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 4.13.A. Average Cost of Natural Gas Delivered for Electricity Generation by State, December 2016 and 2015**  
(Dollars per MMBtu)

Census Division and State	Electric Power Sector			Electric Utilities		Independent Power Producers	
	December 2016	December 2015	Percentage Change	December 2016	December 2015	December 2016	December 2015
New England	6.27	W	W	7.25	3.37	6.27	W
Connecticut	5.34	4.93	8.3%	--	--	5.34	4.93
Maine	W	4.15	W	--	--	W	4.15
Massachusetts	6.80	2.45	178.0%	7.46	3.36	6.80	2.44
New Hampshire	W	W	W	6.84	7.10	W	W
Rhode Island	W	W	W	--	--	W	W
Vermont	--	--	--	--	--	--	--
Middle Atlantic	4.14	2.01	106.0%	6.52	3.59	3.93	1.82
New Jersey	3.87	1.63	137.0%	--	--	3.87	1.63
New York	5.30	2.86	85.0%	6.52	3.59	4.93	2.55
Pennsylvania	3.40	1.48	130.0%	--	--	3.40	1.48
East North Central	3.67	2.13	72.0%	3.78	2.19	3.58	2.08
Illinois	W	W	W	3.80	2.62	W	W
Indiana	W	W	W	3.85	2.27	W	W
Michigan	3.80	2.10	81.0%	4.06	1.81	3.69	2.23
Ohio	3.24	1.79	81.0%	3.37	1.76	3.20	1.81
Wisconsin	W	W	W	3.72	2.54	W	W
West North Central	4.04	W	W	4.04	2.71	4.03	W
Iowa	3.64	2.44	49.0%	3.64	2.44	--	--
Kansas	4.89	4.52	8.2%	4.89	4.52	--	--
Minnesota	W	W	W	4.33	2.74	W	W
Missouri	W	W	W	3.82	2.55	W	W
Nebraska	4.46	3.44	30.0%	4.46	3.44	--	--
North Dakota	3.60	7.24	-50.0%	3.60	7.24	--	--
South Dakota	3.67	2.13	72.0%	3.67	2.13	--	--
South Atlantic	4.39	3.40	29.0%	4.43	3.52	3.88	2.26
Delaware	--	--	--	--	--	--	--
District of Columbia	--	--	--	--	--	--	--
Florida	W	3.92	W	4.53	3.93	W	2.06
Georgia	W	W	W	4.18	2.33	W	W
Maryland	4.68	2.93	60.0%	--	--	4.68	2.93
North Carolina	W	W	W	4.42	3.80	W	W
South Carolina	W	W	W	3.99	2.73	W	W
Virginia	W	W	W	4.51	2.73	W	W
West Virginia	5.43	1.41	285.0%	3.48	1.57	6.52	1.39
East South Central	3.75	2.31	62.0%	3.77	2.37	3.68	2.20
Alabama	W	W	W	4.03	2.34	W	W
Kentucky	W	3.38	W	4.56	3.38	W	--
Mississippi	W	W	W	3.63	2.24	W	W
Tennessee	3.42	2.32	47.0%	3.42	2.32	--	--
West South Central	3.52	2.15	64.0%	3.91	2.26	3.29	2.07
Arkansas	W	W	W	5.52	2.56	W	W
Louisiana	W	W	W	3.89	2.18	W	W
Oklahoma	W	W	W	3.93	2.23	W	W
Texas	3.34	2.15	55.0%	3.73	2.33	3.24	2.10
Mountain	3.91	2.77	41.0%	3.91	2.76	3.96	2.93
Arizona	W	W	W	4.64	2.83	W	W
Colorado	W	W	W	3.96	2.90	W	W
Idaho	4.05	2.41	68.0%	4.05	2.41	--	--
Montana	--	W	W	--	1.91	--	W
Nevada	3.62	2.87	26.0%	3.62	2.87	--	--
New Mexico	4.02	2.33	73.0%	4.02	2.33	--	--
Utah	W	W	W	3.57	2.54	W	W
Wyoming	8.19	W	W	8.19	6.03	--	W
Pacific Contiguous	3.80	2.83	34.0%	3.99	3.11	3.60	2.59
California	3.92	2.87	37.0%	4.46	3.21	3.55	2.63
Oregon	W	W	W	2.83	2.52	W	W
Washington	W	W	W	4.09	3.39	W	W
Pacific Noncontiguous	7.17	5.41	33.0%	7.17	5.41	--	--
Alaska	7.17	5.41	33.0%	7.17	5.41	--	--
Hawaii	--	--	--	--	--	--	--
U.S. Total	4.02	2.62	53.0%	4.15	2.93	3.83	2.21

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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:  
 See Glossary for definitions. Values for 2015 are final. Values for 2016 are preliminary.  
 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 4.13.B. Average Cost of Natural Gas Delivered for Electricity Generation by State, (Year-to-Date) December 2016 and 2015  
(Dollars per MMBtu)**

Census Division and State	Electric Power Sector			Electric Utilities		Independent Power Producers	
	December 2016 YTD	December 2015 YTD	Percentage Change	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD
New England	3.31	4.29	-23.0%	3.64	3.92	3.30	4.30
Connecticut	3.58	4.60	-22.0%	--	--	3.58	4.60
Maine	W	W	W	--	--	W	W
Massachusetts	3.13	4.21	-26.0%	3.51	3.76	3.12	4.22
New Hampshire	W	W	W	4.07	4.92	W	W
Rhode Island	W	3.62	W	--	--	W	3.62
Vermont	--	--	--	--	--	--	--
Middle Atlantic	2.23	2.92	-24.0%	2.74	3.70	2.17	2.82
New Jersey	2.13	2.87	-26.0%	--	--	2.13	2.87
New York	2.68	3.41	-21.0%	2.74	3.70	2.65	3.31
Pennsylvania	1.87	2.42	-23.0%	--	--	1.87	2.42
East North Central	2.64	2.82	-6.4%	2.78	2.94	2.53	2.72
Illinois	2.82	W	W	3.04	3.71	2.79	W
Indiana	W	W	W	2.92	2.93	W	W
Michigan	2.71	3.12	-13.0%	2.88	3.10	2.62	3.13
Ohio	2.23	2.28	-2.2%	2.24	2.38	2.22	2.25
Wisconsin	W	W	W	2.77	3.17	W	W
West North Central	2.93	W	W	2.93	3.44	2.95	W
Iowa	2.66	3.06	-13.0%	2.66	3.06	--	--
Kansas	3.36	3.78	-11.0%	3.36	3.78	--	--
Minnesota	W	W	W	3.05	3.62	W	W
Missouri	W	W	W	2.85	3.27	W	W
Nebraska	3.10	3.71	-16.0%	3.10	3.71	--	--
North Dakota	2.74	8.40	-67.0%	2.74	8.40	--	--
South Dakota	2.46	3.13	-21.0%	2.46	3.13	--	--
South Atlantic	3.45	3.98	-13.0%	3.56	4.11	2.63	2.86
Delaware	--	--	--	--	--	--	--
District of Columbia	--	--	--	--	--	--	--
Florida	3.78	4.31	-12.0%	3.80	4.34	2.87	2.82
Georgia	2.99	3.17	-5.7%	3.05	3.21	2.75	3.03
Maryland	2.85	3.88	-27.0%	--	--	2.85	3.88
North Carolina	W	W	W	3.68	4.64	W	W
South Carolina	W	W	W	3.28	3.37	W	W
Virginia	W	3.36	W	3.07	3.80	W	2.14
West Virginia	W	W	W	2.45	2.78	W	W
East South Central	2.82	2.92	-3.4%	2.83	2.92	2.80	2.94
Alabama	W	W	W	2.95	3.01	W	W
Kentucky	W	W	W	3.19	3.52	W	W
Mississippi	W	W	W	2.79	2.85	W	W
Tennessee	2.59	2.72	-4.8%	2.59	2.72	--	--
West South Central	2.63	2.82	-6.7%	2.74	2.93	2.54	2.74
Arkansas	W	W	W	3.08	3.28	W	W
Louisiana	2.68	W	W	2.72	2.91	2.45	W
Oklahoma	W	W	W	2.75	2.97	W	W
Texas	2.60	2.79	-6.8%	2.70	2.91	2.56	2.75
Mountain	2.97	W	W	2.99	3.23	2.81	W
Arizona	W	3.30	W	3.17	3.41	W	2.96
Colorado	W	3.52	W	3.12	3.39	W	4.32
Idaho	2.92	2.89	1.0%	2.92	2.89	--	--
Montana	--	W	W	--	2.26	--	W
Nevada	2.90	3.20	-9.4%	2.90	3.20	--	--
New Mexico	2.92	3.07	-4.9%	2.92	3.07	--	--
Utah	W	W	W	2.65	2.92	W	W
Wyoming	7.98	W	W	7.98	4.72	--	W
Pacific Contiguous	3.00	3.20	-6.3%	3.28	3.47	2.77	2.96
California	3.12	3.29	-5.2%	3.53	3.64	2.85	3.03
Oregon	W	W	W	2.35	2.75	W	W
Washington	W	W	W	3.41	3.48	W	W
Pacific Noncontiguous	6.61	5.37	23.0%	6.61	5.37	--	--
Alaska	6.61	5.37	23.0%	6.61	5.37	--	--
Hawaii	--	--	--	--	--	--	--
U.S. Total	2.89	3.27	-12.0%	3.15	3.52	2.55	2.94

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

Census Division and State	Bituminous			Subbituminous			Lignite		
	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight
New England	11	1.31	7.1	0	--	--	0	--	--
Connecticut	0	--	--	0	--	--	0	--	--
Maine	11	1.31	7.1	0	--	--	0	--	--
Massachusetts	0	--	--	0	--	--	0	--	--
New Hampshire	0	--	--	0	--	--	0	--	--
Rhode Island	0	--	--	0	--	--	0	--	--
Vermont	0	--	--	0	--	--	0	--	--
Middle Atlantic	1,595	2.83	8.7	0	--	--	0	--	--
New Jersey	68	1.79	6.7	0	--	--	0	--	--
New York	104	2.52	8.4	0	--	--	0	--	--
Pennsylvania	1,424	2.90	8.8	0	--	--	0	--	--
East North Central	5,778	3.05	9.9	6,301	0.25	4.8	0	--	--
Illinois	808	3.62	20.9	2,768	0.22	4.6	0	--	--
Indiana	2,225	2.78	8.4	133	0.28	4.7	0	--	--
Michigan	164	2.31	7.7	1,728	0.27	4.8	0	--	--
Ohio	2,466	3.23	8.8	30	0.21	4.6	0	--	--
Wisconsin	115	2.20	7.5	1,641	0.27	5.3	0	--	--
West North Central	88	3.21	9.2	7,167	0.28	4.9	1,825	0.78	9.4
Iowa	44	3.40	7.4	1,115	0.25	4.9	0	--	--
Kansas	15	3.02	13.1	1,209	0.33	5.0	0	--	--
Minnesota	0	--	--	940	0.37	6.0	0	--	--
Missouri	30	3.04	9.9	2,772	0.22	4.6	0	--	--
Nebraska	0	--	--	967	0.28	5.2	0	--	--
North Dakota	0	--	--	68	0.33	4.5	1,825	0.78	9.4
South Dakota	0	--	--	95	0.32	5.0	0	--	--
South Atlantic	7,121	2.36	10.2	858	0.32	4.9	0	--	--
Delaware	29	2.41	7.4	0	--	--	0	--	--
District of Columbia	0	--	--	0	--	--	0	--	--
Florida	1,059	2.38	8.4	0	--	--	0	--	--
Georgia	681	2.36	7.6	827	0.33	4.9	0	--	--
Maryland	652	2.29	9.0	31	0.20	4.6	0	--	--
North Carolina	1,038	1.79	9.6	0	--	--	0	--	--
South Carolina	613	1.75	8.7	0	--	--	0	--	--
Virginia	588	0.95	17.2	0	--	--	0	--	--
West Virginia	2,462	3.06	11.3	0	--	--	0	--	--
East South Central	3,373	2.67	8.9	2,140	0.26	5.1	246	0.43	14.3
Alabama	343	1.38	10.2	945	0.24	5.2	0	--	--
Kentucky	2,391	3.05	9.0	744	0.30	5.2	0	--	--
Mississippi	86	0.43	5.7	83	0.20	5.5	246	0.43	14.3
Tennessee	553	2.17	8.1	367	0.23	4.6	0	--	--
West South Central	41	1.57	24.6	7,687	0.27	5.3	3,589	1.07	16.3
Arkansas	5	0.62	7.4	1,266	0.26	5.3	0	--	--
Louisiana	0	--	--	523	0.27	5.0	210	0.54	13.9
Oklahoma	36	1.72	27.3	1,012	0.25	5.0	0	--	--
Texas	0	--	--	4,885	0.28	5.3	3,379	1.10	16.5
Mountain	2,278	0.64	13.9	5,261	0.50	9.2	0	--	--
Arizona	627	0.64	10.3	543	0.57	9.0	0	--	--
Colorado	115	0.44	8.6	1,183	0.31	5.5	0	--	--
Idaho	0	--	--	0	--	--	0	--	--
Montana	0	--	--	748	0.69	10.3	0	--	--
Nevada	0	--	--	44	0.24	5.3	0	--	--
New Mexico	525	0.80	22.9	583	0.72	22.3	0	--	--
Utah	1,011	0.60	12.7	84	1.10	9.1	0	--	--
Wyoming	0	--	--	2,076	0.44	7.4	0	--	--
Pacific Contiguous	54	0.45	10.1	498	0.40	9.6	0	--	--
California	54	0.45	10.1	0	--	--	0	--	--
Oregon	0	--	--	43	0.23	4.1	0	--	--
Washington	0	--	--	455	0.41	10.1	0	--	--
Pacific Noncontiguous	0	--	--	63	0.17	4.5	8	0.14	10.1
Alaska	0	--	--	0	--	--	8	0.14	10.1
Hawaii	0	--	--	63	0.17	4.5	0	--	--
U.S. Total	20,339	2.47	10.2	29,973	0.31	5.8	5,667	0.95	13.9

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Notes:  
 Bituminous coal includes anthracite coal and coal-derived synthesis gas.  
 See Glossary for definitions. Values for 2016 are preliminary. Values for 2015 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 4.15. Receipts and Quality of Coal by Rank Delivered for Electricity Generation: Electric Utilities by State, December 2016

Census Division and State	Bituminous			Subbituminous			Lignite		
	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight
New England	0	--	--	0	--	--	0	--	--
Connecticut	0	--	--	0	--	--	0	--	--
Maine	0	--	--	0	--	--	0	--	--
Massachusetts	0	--	--	0	--	--	0	--	--
New Hampshire	0	--	--	0	--	--	0	--	--
Rhode Island	0	--	--	0	--	--	0	--	--
Vermont	0	--	--	0	--	--	0	--	--
Middle Atlantic	0	--	--	0	--	--	0	--	--
New Jersey	0	--	--	0	--	--	0	--	--
New York	0	--	--	0	--	--	0	--	--
Pennsylvania	0	--	--	0	--	--	0	--	--
East North Central	3,238	2.80	8.4	3,900	0.26	4.9	0	--	--
Illinois	144	3.10	10.4	427	0.21	4.5	0	--	--
Indiana	2,150	2.74	8.4	133	0.28	4.7	0	--	--
Michigan	143	2.32	7.7	1,728	0.27	4.8	0	--	--
Ohio	685	3.13	8.5	0	--	--	0	--	--
Wisconsin	115	2.20	7.5	1,612	0.27	5.3	0	--	--
West North Central	35	3.03	10.7	7,103	0.28	5.0	1,825	0.78	9.4
Iowa	0	--	--	1,050	0.26	4.9	0	--	--
Kansas	15	3.02	13.1	1,209	0.33	5.0	0	--	--
Minnesota	0	--	--	940	0.37	6.0	0	--	--
Missouri	20	3.03	8.9	2,772	0.22	4.6	0	--	--
Nebraska	0	--	--	967	0.28	5.2	0	--	--
North Dakota	0	--	--	68	0.33	4.5	1,825	0.78	9.4
South Dakota	0	--	--	95	0.32	5.0	0	--	--
South Atlantic	5,890	2.30	10.2	827	0.33	4.9	0	--	--
Delaware	0	--	--	0	--	--	0	--	--
District of Columbia	0	--	--	0	--	--	0	--	--
Florida	1,059	2.38	8.4	0	--	--	0	--	--
Georgia	668	2.38	7.5	827	0.33	4.9	0	--	--
Maryland	0	--	--	0	--	--	0	--	--
North Carolina	1,038	1.79	9.6	0	--	--	0	--	--
South Carolina	610	1.76	8.7	0	--	--	0	--	--
Virginia	504	0.99	18.9	0	--	--	0	--	--
West Virginia	2,012	2.95	10.8	0	--	--	0	--	--
East South Central	3,297	2.72	8.9	2,140	0.26	5.1	0	--	--
Alabama	343	1.38	10.2	945	0.24	5.2	0	--	--
Kentucky	2,391	3.05	9.0	744	0.30	5.2	0	--	--
Mississippi	86	0.43	5.7	83	0.20	5.5	0	--	--
Tennessee	477	2.42	8.2	367	0.23	4.6	0	--	--
West South Central	0	--	--	4,200	0.26	5.2	891	1.35	18.4
Arkansas	0	--	--	1,068	0.26	5.3	0	--	--
Louisiana	0	--	--	277	0.25	5.1	210	0.54	13.9
Oklahoma	0	--	--	943	0.25	5.0	0	--	--
Texas	0	--	--	1,911	0.27	5.3	681	1.64	20.0
Mountain	2,278	0.64	13.9	4,469	0.47	9.0	0	--	--
Arizona	627	0.64	10.3	543	0.57	9.0	0	--	--
Colorado	115	0.44	8.6	1,183	0.31	5.5	0	--	--
Idaho	0	--	--	0	--	--	0	--	--
Montana	0	--	--	0	--	--	0	--	--
Nevada	0	--	--	0	--	--	0	--	--
New Mexico	525	0.80	22.9	583	0.72	22.3	0	--	--
Utah	1,011	0.60	12.7	84	1.10	9.1	0	--	--
Wyoming	0	--	--	2,076	0.44	7.4	0	--	--
Pacific Contiguous	0	--	--	43	0.23	4.1	0	--	--
California	0	--	--	0	--	--	0	--	--
Oregon	0	--	--	43	0.23	4.1	0	--	--
Washington	0	--	--	0	--	--	0	--	--
Pacific Noncontiguous	0	--	--	0	--	--	8	0.14	10.1
Alaska	0	--	--	0	--	--	8	0.14	10.1
Hawaii	0	--	--	0	--	--	0	--	--
U.S. Total	14,738	2.27	10.0	22,680	0.31	5.8	2,724	0.96	12.2

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Notes:  
 Bituminous coal includes anthracite coal and coal-derived synthesis gas.  
 See Glossary for definitions. Values for 2016 are preliminary. Values for 2015 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 4.16. Receipts and Quality of Coal by Rank Delivered for Electricity Generation: Independent Power Producers by State, December 2016

Census Division and State	Bituminous			Subbituminous			Lignite		
	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight
New England	9	1.42	6.8	0	--	--	0	--	--
Connecticut	0	--	--	0	--	--	0	--	--
Maine	9	1.42	6.8	0	--	--	0	--	--
Massachusetts	0	--	--	0	--	--	0	--	--
New Hampshire	0	--	--	0	--	--	0	--	--
Rhode Island	0	--	--	0	--	--	0	--	--
Vermont	0	--	--	0	--	--	0	--	--
Middle Atlantic	1,579	2.84	8.7	0	--	--	0	--	--
New Jersey	68	1.79	6.7	0	--	--	0	--	--
New York	87	2.72	8.4	0	--	--	0	--	--
Pennsylvania	1,424	2.90	8.8	0	--	--	0	--	--
East North Central	2,441	3.36	12.0	2,308	0.21	4.5	0	--	--
Illinois	568	3.77	26.9	2,277	0.21	4.5	0	--	--
Indiana	74	3.82	9.3	0	--	--	0	--	--
Michigan	18	2.48	7.6	0	--	--	0	--	--
Ohio	1,781	3.26	9.0	30	0.21	4.6	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	1,168	2.71	10.6	31	0.20	4.6	0	--	--
Delaware	29	2.41	7.4	0	--	--	0	--	--
District of Columbia	0	--	--	0	--	--	0	--	--
Florida	0	--	--	0	--	--	0	--	--
Georgia	0	--	--	0	--	--	0	--	--
Maryland	631	2.31	8.7	31	0.20	4.6	0	--	--
North Carolina	0	--	--	0	--	--	0	--	--
South Carolina	0	--	--	0	--	--	0	--	--
Virginia	58	0.79	9.8	0	--	--	0	--	--
West Virginia	450	3.61	13.8	0	--	--	0	--	--
East South Central	0	--	--	0	--	--	246	0.43	14.3
Alabama	0	--	--	0	--	--	0	--	--
Kentucky	0	--	--	0	--	--	0	--	--
Mississippi	0	--	--	0	--	--	246	0.43	14.3
Tennessee	0	--	--	0	--	--	0	--	--
West South Central	36	1.72	27.3	3,487	0.29	5.3	2,698	0.98	15.7
Arkansas	0	--	--	198	0.28	5.6	0	--	--
Louisiana	0	--	--	246	0.30	4.9	0	--	--
Oklahoma	36	1.72	27.3	70	0.25	4.6	0	--	--
Texas	0	--	--	2,974	0.29	5.3	2,698	0.98	15.7
Mountain	0	--	--	792	0.66	10.0	0	--	--
Arizona	0	--	--	0	--	--	0	--	--
Colorado	0	--	--	0	--	--	0	--	--
Idaho	0	--	--	0	--	--	0	--	--
Montana	0	--	--	748	0.69	10.3	0	--	--
Nevada	0	--	--	44	0.24	5.3	0	--	--
New Mexico	0	--	--	0	--	--	0	--	--
Utah	0	--	--	0	--	--	0	--	--
Wyoming	0	--	--	0	--	--	0	--	--
Pacific Contiguous	0	--	--	455	0.41	10.1	0	--	--
California	0	--	--	0	--	--	0	--	--
Oregon	0	--	--	0	--	--	0	--	--
Washington	0	--	--	455	0.41	10.1	0	--	--
Pacific Noncontiguous	0	--	--	63	0.17	4.5	0	--	--
Alaska	0	--	--	0	--	--	0	--	--
Hawaii	0	--	--	63	0.17	4.5	0	--	--
U.S. Total	5,234	3.03	10.7	7,135	0.31	5.8	2,943	0.95	15.6

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 for 2016 are preliminary. Values for 2015 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 4.17. Receipts and Quality of Coal by Rank Delivered for Electricity Generation: Commercial Sector by State, December 2016**

Census Division and State	Bituminous			Subbituminous			Lignite		
	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight
New England	0	--	--	0	--	--	0	--	--
Connecticut	0	--	--	0	--	--	0	--	--
Maine	0	--	--	0	--	--	0	--	--
Massachusetts	0	--	--	0	--	--	0	--	--
New Hampshire	0	--	--	0	--	--	0	--	--
Rhode Island	0	--	--	0	--	--	0	--	--
Vermont	0	--	--	0	--	--	0	--	--
Middle Atlantic	0	--	--	0	--	--	0	--	--
New Jersey	0	--	--	0	--	--	0	--	--
New York	0	--	--	0	--	--	0	--	--
Pennsylvania	0	--	--	0	--	--	0	--	--
East North Central	0	--	--	0	--	--	0	--	--
Illinois	0	--	--	0	--	--	0	--	--
Indiana	0	--	--	0	--	--	0	--	--
Michigan	0	--	--	0	--	--	0	--	--
Ohio	0	--	--	0	--	--	0	--	--
Wisconsin	0	--	--	0	--	--	0	--	--
West North Central	9	3.05	12.0	0	--	--	0	--	--
Iowa	0	--	--	0	--	--	0	--	--
Kansas	0	--	--	0	--	--	0	--	--
Minnesota	0	--	--	0	--	--	0	--	--
Missouri	9	3.05	12.0	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	9	3.05	12.0	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 for 2016 are preliminary. Values for 2015 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 4.18. Receipts and Quality of Coal by Rank Delivered for Electricity Generation: Industrial Sector by State, December 2016**

Census Division and State	Bituminous			Subbituminous			Lignite		
	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight
New England	2	0.79	8.3	0	--	--	0	--	--
Connecticut	0	--	--	0	--	--	0	--	--
Maine	2	0.79	8.3	0	--	--	0	--	--
Massachusetts	0	--	--	0	--	--	0	--	--
New Hampshire	0	--	--	0	--	--	0	--	--
Rhode Island	0	--	--	0	--	--	0	--	--
Vermont	0	--	--	0	--	--	0	--	--
Middle Atlantic	16	1.44	8.7	0	--	--	0	--	--
New Jersey	0	--	--	0	--	--	0	--	--
New York	16	1.44	8.7	0	--	--	0	--	--
Pennsylvania	0	--	--	0	--	--	0	--	--
East North Central	99	3.60	8.4	93	0.63	6.1	0	--	--
Illinois	96	3.70	8.5	64	0.80	6.5	0	--	--
Indiana	0	--	--	0	--	--	0	--	--
Michigan	3	0.52	6.7	0	--	--	0	--	--
Ohio	0	--	--	0	--	--	0	--	--
Wisconsin	0	--	--	29	0.27	5.2	0	--	--
West North Central	44	3.40	7.4	64	0.18	4.4	0	--	--
Iowa	44	3.40	7.4	64	0.18	4.4	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	63	1.07	11.9	0	--	--	0	--	--
Delaware	0	--	--	0	--	--	0	--	--
District of Columbia	0	--	--	0	--	--	0	--	--
Florida	0	--	--	0	--	--	0	--	--
Georgia	13	1.13	10.0	0	--	--	0	--	--
Maryland	21	1.70	21.4	0	--	--	0	--	--
North Carolina	0	--	--	0	--	--	0	--	--
South Carolina	4	0.75	6.5	0	--	--	0	--	--
Virginia	25	0.65	7.1	0	--	--	0	--	--
West Virginia	0	--	--	0	--	--	0	--	--
East South Central	76	0.80	7.4	0	--	--	0	--	--
Alabama	0	--	--	0	--	--	0	--	--
Kentucky	0	--	--	0	--	--	0	--	--
Mississippi	0	--	--	0	--	--	0	--	--
Tennessee	76	0.80	7.4	0	--	--	0	--	--
West South Central	5	0.62	7.4	0	--	--	0	--	--
Arkansas	5	0.62	7.4	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	54	0.45	10.1	0	--	--	0	--	--
California	54	0.45	10.1	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	358	1.83	8.9	157	0.45	5.4	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 for 2016 are preliminary. Values for 2015 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 5.1. Sales of Electricity to Ultimate Customers:  
Total by End-Use Sector, 2006 - December 2016 (Thousand Megawatthours)**

Period	Residential	Commercial	Industrial	Transportation	All Sectors
<b>Annual Totals</b>					
2006	1,351,520	1,299,744	1,011,298	7,358	3,669,919
2007	1,392,241	1,336,315	1,027,832	8,173	3,764,561
2008	1,380,662	1,336,133	1,009,516	7,653	3,733,965
2009	1,364,758	1,306,853	917,416	7,768	3,596,795
2010	1,445,708	1,330,199	971,221	7,712	3,754,841
2011	1,422,801	1,328,057	991,316	7,672	3,749,846
2012	1,374,515	1,327,101	985,714	7,320	3,694,650
2013	1,394,812	1,337,079	985,352	7,625	3,724,868
2014	1,407,208	1,352,158	997,576	7,758	3,764,700
2015	1,404,096	1,360,752	986,508	7,637	3,758,992
2016	1,407,394	1,359,617	936,269	7,499	3,710,779
<b>Year 2014</b>					
January	146,511	113,866	80,149	712	341,238
February	128,475	104,353	75,413	700	308,941
March	114,233	106,968	80,539	648	302,388
April	92,290	102,459	80,505	640	275,894
May	95,727	109,666	85,383	646	291,421
June	118,049	118,423	85,711	609	322,792
July	137,028	125,434	88,417	645	351,524
August	135,830	125,603	89,808	642	351,883
Sept	120,741	120,049	85,489	628	326,907
October	98,038	113,023	84,994	625	296,680
November	99,486	104,245	81,044	637	285,413
December	120,801	108,070	80,123	626	309,620
<b>Year 2015</b>					
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
Sept	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
<b>Year 2016</b>					
January	130,764	109,870	75,892	660	317,186
February	115,820	102,877	73,909	647	293,253
March	100,123	105,180	75,907	610	281,819
April	88,107	101,464	75,801	595	265,967
May	93,981	107,900	78,246	582	280,708
June	124,888	119,673	80,234	632	325,427
July	153,976	129,265	83,369	648	367,258
August	155,851	134,078	85,061	632	375,622
Sept	129,111	122,961	79,719	637	332,428
October	101,137	112,346	77,960	613	292,056
November	92,797	104,454	75,048	592	272,891
December	120,840	109,548	75,124	652	306,163
<b>Year to Date</b>					
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	1,407,394	1,359,617	936,269	7,499	3,710,779
<b>Rolling 12 Months Ending in December</b>					
2015	1,404,096	1,360,752	986,508	7,637	3,758,992
2016	1,407,394	1,359,617	936,269	7,499	3,710,779

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 for 2015 and prior years are final. Values for 2016 are preliminary estimates based on a cutoff model sample. 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-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 5.2. Revenue from Sales of Electricity to Ultimate Customers:  
Total by End-Use Sector, 2006 - December 2016 (Million Dollars)**

Period	Residential	Commercial	Industrial	Transportation	All Sectors
<b>Annual Totals</b>					
2006	140,582	122,914	62,308	702	326,506
2007	148,295	128,903	65,712	792	343,703
2008	155,496	137,036	70,231	820	363,583
2009	157,044	132,747	62,670	828	353,289
2010	166,778	135,554	65,772	814	368,918
2011	166,714	135,927	67,606	803	371,049
2012	163,280	133,898	65,761	747	363,687
2013	169,131	137,188	67,934	805	375,058
2014	176,178	145,253	70,855	810	393,096
2015	177,624	144,781	68,166	771	391,341
2016	176,585	140,937	63,201	711	381,435
<b>Year 2014</b>					
January	17,075	11,790	5,596	78	34,539
February	15,338	11,142	5,370	73	31,922
March	13,996	11,390	5,632	68	31,087
April	11,365	10,715	5,451	65	27,596
May	12,300	11,555	5,833	65	29,753
June	15,337	12,974	6,335	65	34,710
July	17,943	14,014	6,742	69	38,767
August	17,708	13,876	6,748	64	38,396
Sept	15,639	13,399	6,299	69	35,406
October	12,352	12,239	6,007	64	30,663
November	12,417	10,967	5,470	65	28,920
December	14,707	11,192	5,372	66	31,336
<b>Year 2015</b>					
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
Sept	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
<b>Year 2016</b>					
January	15,666	11,005	4,860	62	31,594
February	14,060	10,491	4,720	61	29,332
March	12,585	10,682	4,908	58	28,233
April	10,955	10,275	4,849	56	26,136
May	12,023	11,055	5,134	53	28,266
June	15,882	12,677	5,639	61	34,259
July	19,522	13,732	6,025	62	39,341
August	20,104	14,355	6,152	63	40,674
Sept	16,611	13,157	5,697	63	35,528
October	12,599	11,759	5,236	58	29,653
November	11,828	10,701	4,995	54	27,577
December	14,750	11,047	4,984	61	30,843
<b>Year to Date</b>					
2014	176,178	145,253	70,855	810	393,096
2015	177,624	144,781	68,166	771	391,341
2016	176,585	140,937	63,201	711	381,435
<b>Rolling 12 Months Ending in December</b>					
2015	177,624	144,781	68,166	771	391,341
2016	176,585	140,937	63,201	711	381,435

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 for 2015 and prior years are final. Values for 2016 are preliminary estimates based on a cutoff model sample. 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-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 5.3. Average Price of Electricity to Ultimate Customers:  
Total by End-Use Sector, 2006 - December 2016 (Cents per Kilowatthour)**

Period	Residential	Commercial	Industrial	Transportation	All Sectors
<b>Annual Totals</b>					
2006	10.40	9.46	6.16	9.54	8.90
2007	10.65	9.65	6.39	9.70	9.13
2008	11.26	10.26	6.96	10.71	9.74
2009	11.51	10.16	6.83	10.66	9.82
2010	11.54	10.19	6.77	10.56	9.83
2011	11.72	10.24	6.82	10.46	9.90
2012	11.88	10.09	6.67	10.21	9.84
2013	12.13	10.26	6.89	10.55	10.07
2014	12.52	10.74	7.10	10.45	10.44
2015	12.65	10.64	6.91	10.09	10.41
2016	12.55	10.37	6.75	9.48	10.28
<b>Year 2014</b>					
January	11.65	10.35	6.98	10.93	10.12
February	11.94	10.68	7.12	10.41	10.33
March	12.25	10.65	6.99	10.43	10.28
April	12.31	10.46	6.77	10.23	10.00
May	12.85	10.54	6.83	10.06	10.21
June	12.99	10.96	7.39	10.60	10.75
July	13.09	11.17	7.62	10.68	11.03
August	13.04	11.05	7.51	10.02	10.91
Sept	12.95	11.16	7.37	11.02	10.83
October	12.60	10.83	7.07	10.27	10.34
November	12.48	10.52	6.75	10.20	10.13
December	12.17	10.36	6.70	10.48	10.12
<b>Year 2015</b>					
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
Sept	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
<b>Year 2016</b>					
January	11.98	10.02	6.40	9.41	9.96
February	12.14	10.20	6.39	9.49	10.00
March	12.57	10.16	6.47	9.43	10.02
April	12.43	10.13	6.40	9.41	9.83
May	12.79	10.25	6.56	9.13	10.07
June	12.72	10.59	7.03	9.59	10.53
July	12.68	10.62	7.23	9.63	10.71
August	12.90	10.71	7.23	9.89	10.83
Sept	12.87	10.70	7.15	9.83	10.69
October	12.46	10.47	6.72	9.43	10.15
November	12.75	10.24	6.66	9.04	10.11
December	12.21	10.08	6.63	9.40	10.07
<b>Year to Date</b>					
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	10.37	6.75	9.48	10.28
<b>Rolling 12 Months Ending in December</b>					
2015	12.65	10.64	6.91	10.09	10.41
2016	12.55	10.37	6.75	9.48	10.28

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 for 2015 and prior years are final. Values for 2016 are preliminary estimates based on a cutoff model sample. 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-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 5.4.A. Sales of Electricity to Ultimate Customers by End-Use Sector, by State, December 2016 and 2015 (Thousand Megawatthours)**

Census Division and State	Residential		Commercial		Industrial		Transportation		All Sectors	
	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015
New England	4,061	3,815	4,227	4,261	1,372	1,485	53	47	9,713	9,608
Connecticut	1,097	1,010	1,032	1,014	252	272	16	16	2,398	2,311
Maine	443	431	349	362	229	264	0	0	1,021	1,058
Massachusetts	1,697	1,584	2,029	2,079	547	615	34	29	4,307	4,308
New Hampshire	379	361	355	346	152	153	0	0	887	860
Rhode Island	247	251	293	303	62	65	2	2	605	621
Vermont	197	178	169	156	129	116	0	0	494	451
Middle Atlantic	11,350	10,410	12,792	12,627	5,895	5,752	317	322	30,355	29,111
New Jersey	2,290	2,112	3,091	3,009	564	538	25	25	5,970	5,684
New York	4,117	3,979	6,116	6,131	1,406	1,446	232	229	11,871	11,785
Pennsylvania	4,943	4,319	3,585	3,487	3,925	3,769	61	67	12,514	11,642
East North Central	17,556	15,420	15,374	14,542	14,834	15,535	63	50	47,827	45,546
Illinois	4,138	3,721	4,325	4,042	3,555	3,316	56	44	12,073	11,123
Indiana	3,173	2,663	1,942	1,848	3,203	3,842	2	2	8,320	8,355
Michigan	3,105	2,904	3,193	3,112	2,335	2,497	0	0	8,633	8,513
Ohio	5,014	4,183	3,890	3,651	3,850	3,951	4	4	12,758	11,788
Wisconsin	2,127	1,949	2,024	1,890	1,892	1,928	0	0	6,042	5,767
West North Central	10,079	9,138	8,697	8,222	6,791	7,223	5	4	25,572	24,587
Iowa	1,427	1,347	1,094	1,017	1,802	1,663	0	0	4,323	4,027
Kansas	1,147	1,032	1,245	1,166	875	905	0	0	3,268	3,103
Minnesota	2,135	2,047	1,991	1,918	1,653	1,696	3	2	5,781	5,663
Missouri	3,301	2,798	2,514	2,385	909	1,318	2	2	6,726	6,503
Nebraska	1,001	939	832	763	819	810	0	0	2,652	2,512
North Dakota	576	520	600	573	517	609	0	0	1,694	1,703
South Dakota	491	456	421	399	216	221	0	0	1,128	1,076
South Atlantic	29,480	26,709	24,697	24,125	10,787	11,363	108	92	65,072	62,289
Delaware	392	325	337	255	167	240	0	0	896	820
District of Columbia	193	200	659	611	14	23	23	16	889	850
Florida	8,499	8,763	7,451	7,656	1,322	1,408	8	8	17,280	17,835
Georgia	4,531	3,981	3,588	3,544	2,455	2,520	15	14	10,589	10,059
Maryland	2,535	2,032	2,427	2,296	309	317	46	37	5,317	4,683
North Carolina	5,228	4,641	3,778	3,789	2,131	2,298	0	1	11,137	10,728
South Carolina	2,509	2,244	1,597	1,652	2,061	2,144	0	0	6,168	6,040
Virginia	4,358	3,539	4,213	3,729	1,281	1,392	15	16	9,868	8,675
West Virginia	1,235	983	647	594	1,048	1,021	0	0	2,930	2,598
East South Central	9,810	8,483	6,962	6,934	7,926	7,900	0	0	24,698	23,318
Alabama	2,589	2,275	1,738	1,754	2,691	2,618	0	0	7,017	6,647
Kentucky	2,422	1,978	1,553	1,503	2,251	2,238	0	0	6,227	5,719
Mississippi	1,378	1,249	1,027	1,042	1,351	1,298	0	0	3,756	3,589
Tennessee	3,421	2,981	2,645	2,635	1,633	1,747	0	0	7,698	7,363
West South Central	16,064	15,166	14,920	14,326	13,899	14,786	16	15	44,898	44,293
Arkansas	1,415	1,307	906	878	1,264	1,247	0	0	3,585	3,432
Louisiana	2,160	2,048	1,874	1,844	2,522	3,009	1	1	6,557	6,902
Oklahoma	1,993	1,747	1,647	1,519	1,411	1,479	0	0	5,051	4,745
Texas	10,497	10,065	10,492	10,085	8,703	9,050	14	14	29,706	29,214
Mountain	8,192	8,300	7,717	7,586	6,552	6,702	12	12	22,474	22,599
Arizona	2,260	2,533	2,143	2,175	1,121	1,246	0	0	5,524	5,954
Colorado	1,709	1,685	1,732	1,685	1,282	1,234	6	6	4,729	4,611
Idaho	1,016	937	585	563	499	476	0	0	2,100	1,976
Montana	531	536	436	423	354	364	0	0	1,321	1,324
Nevada	932	886	820	750	1,018	1,095	1	1	2,771	2,731
New Mexico	586	592	711	694	615	631	0	0	1,911	1,917
Utah	838	835	953	957	798	796	5	5	2,593	2,593
Wyoming	320	296	337	338	866	860	0	0	1,524	1,495
Pacific Contiguous	13,791	13,781	13,658	13,699	6,644	7,053	79	78	34,172	34,612
California	7,322	7,801	9,469	9,726	3,703	3,946	76	75	20,570	21,549
Oregon	2,297	2,084	1,488	1,336	952	985	2	2	4,739	4,407
Washington	4,172	3,896	2,701	2,637	1,989	2,121	1	1	8,863	8,655
Pacific Noncontiguous	457	448	504	506	423	426	0	0	1,383	1,381
Alaska	225	221	252	249	120	118	0	0	596	588
Hawaii	233	228	251	257	303	308	0	0	787	793
U.S. Total	120,840	111,670	109,548	106,829	75,124	78,224	652	619	306,163	297,344

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 for 2015 are final. Values for 2016 are preliminary estimates based on a cutoff model sample.

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-826, Monthly Electric Sales and Revenue Report with State Distributions Report.

**Table 5.4.B. Sales of Electricity to Ultimate Customers by End-Use Sector, by State, Year-to-Date through December 2016 and 2015 (Thousand Megawatthours)**

Census Division and State	Residential		Commercial		Industrial		Transportation		All Sectors	
	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD
New England	46,463	47,482	52,346	53,383	17,066	18,733	556	572	116,431	120,170
Connecticut	12,680	12,893	12,725	12,959	3,233	3,432	183	193	28,821	29,476
Maine	4,582	4,662	3,988	4,018	2,838	3,208	0	0	11,408	11,888
Massachusetts	19,636	20,175	25,504	26,200	6,828	7,892	347	353	52,315	54,621
New Hampshire	4,432	4,527	4,462	4,491	1,987	1,981	0	0	10,881	10,999
Rhode Island	3,082	3,136	3,651	3,705	765	799	27	26	7,525	7,665
Vermont	2,050	2,089	2,015	2,011	1,416	1,422	0	0	5,482	5,521
Middle Atlantic	133,406	134,574	157,974	159,474	70,804	72,804	3,845	3,896	366,029	370,747
New Jersey	29,123	29,142	38,410	38,723	6,934	7,320	302	304	74,769	75,490
New York	50,758	51,013	76,108	77,006	17,057	18,079	2,756	2,816	146,679	148,914
Pennsylvania	53,525	54,419	43,455	43,745	46,814	47,404	787	776	144,582	146,344
East North Central	187,355	183,153	185,951	183,420	184,688	196,364	585	589	558,579	563,527
Illinois	46,018	44,646	50,948	50,320	42,134	43,131	519	524	139,619	138,620
Indiana	32,659	32,442	24,264	24,022	41,441	48,030	21	21	98,386	104,515
Michigan	34,402	33,358	39,134	38,441	29,931	30,677	4	4	103,472	102,480
Ohio	52,532	51,493	47,752	47,124	47,312	50,557	41	40	147,637	149,213
Wisconsin	21,744	21,215	23,852	23,514	23,869	23,970	0	0	69,466	68,699
West North Central	102,255	101,620	102,641	101,711	84,565	91,430	46	45	289,507	294,806
Iowa	13,844	13,786	12,261	12,072	21,631	21,289	0	0	47,736	47,147
Kansas	13,505	13,242	15,713	15,380	10,662	11,227	0	0	39,880	39,849
Minnesota	21,430	21,714	23,219	23,388	19,963	21,453	24	24	64,636	66,579
Missouri	34,462	33,912	30,931	30,535	11,933	17,036	21	21	77,348	81,504
Nebraska	9,770	9,532	9,590	9,308	10,479	10,655	0	0	29,839	29,495
North Dakota	4,661	4,863	6,107	6,279	7,208	6,988	0	0	17,977	18,129
South Dakota	4,583	4,571	4,819	4,749	2,688	2,782	0	0	12,090	12,102
South Atlantic	358,597	359,258	312,534	311,709	137,383	143,229	1,326	1,341	809,839	815,537
Delaware	4,741	4,849	4,237	4,219	2,078	2,430	0	0	11,056	11,498
District of Columbia	2,502	2,498	8,369	8,222	192	238	331	334	11,394	11,291
Florida	121,268	122,759	94,833	95,847	16,372	16,897	95	95	232,568	235,599
Georgia	57,660	56,422	47,440	47,151	31,515	32,134	171	171	136,786	135,878
Maryland	27,341	27,403	29,675	29,959	3,775	3,883	540	536	61,331	61,782
North Carolina	58,086	57,902	48,583	48,236	26,825	27,701	6	9	133,501	133,848
South Carolina	30,641	30,059	21,980	21,927	26,603	29,342	0	0	79,224	81,328
Virginia	44,987	45,928	49,593	48,347	17,148	17,537	183	196	111,910	112,009
West Virginia	11,372	11,437	7,824	7,801	12,874	13,065	0	0	32,070	32,303
East South Central	119,192	118,305	91,795	92,400	97,119	102,502	0	0	308,106	313,208
Alabama	32,189	31,909	23,145	23,438	32,558	33,499	0	0	87,893	88,846
Kentucky	26,426	26,168	19,461	19,589	27,268	30,281	0	0	73,154	76,039
Mississippi	18,623	18,561	13,977	14,392	16,476	15,739	0	0	49,076	48,692
Tennessee	41,954	41,667	35,212	34,982	20,817	22,983	0	0	97,983	99,632
West South Central	217,018	218,086	194,590	194,164	170,787	179,373	194	192	582,589	591,815
Arkansas	17,807	18,273	12,147	12,153	15,937	16,038	0	0	45,892	46,465
Louisiana	30,713	31,545	24,949	24,996	33,146	35,123	12	12	88,821	91,676
Oklahoma	23,109	22,616	20,361	20,691	16,992	18,029	0	0	60,462	61,336
Texas	145,388	145,652	137,134	136,324	104,711	110,182	182	180	387,414	392,337
Mountain	97,033	95,206	95,045	94,880	83,031	84,740	135	134	275,244	274,962
Arizona	33,755	33,167	29,572	29,284	14,720	14,892	6	6	78,052	77,349
Colorado	18,898	18,385	20,426	20,408	15,412	15,259	65	64	54,801	54,116
Idaho	8,146	8,055	6,234	6,264	8,554	8,740	0	0	22,934	23,059
Montana	4,813	4,825	4,906	4,894	4,239	4,488	0	0	13,958	14,207
Nevada	12,676	12,339	9,882	9,614	13,462	14,059	8	8	36,029	36,020
New Mexico	6,719	6,642	8,884	8,877	7,458	7,575	0	0	23,060	23,094
Utah	9,282	9,117	11,403	11,615	9,118	9,405	57	56	29,860	30,192
Wyoming	2,744	2,677	3,738	3,925	10,067	10,323	0	0	16,550	16,925
Pacific Contiguous	141,451	141,727	160,868	163,672	85,745	92,284	811	867	388,875	398,550
California	88,400	89,386	115,361	118,384	49,894	52,562	781	838	254,436	261,170
Oregon	18,689	18,269	16,130	16,021	11,568	12,950	24	24	46,410	47,264
Washington	34,362	34,072	29,378	29,267	24,283	26,772	6	5	88,029	90,116
Pacific Noncontiguous	4,624	4,686	5,873	5,938	5,081	5,047	0	0	15,579	15,671
Alaska	2,013	2,044	2,762	2,763	1,367	1,352	0	0	6,142	6,159
Hawaii	2,612	2,641	3,111	3,174	3,714	3,696	0	0	9,437	9,511
U.S. Total	1,407,394	1,404,096	1,359,617	1,360,752	936,269	986,508	7,499	7,637	3,710,779	3,758,992

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

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

Notes: - See Glossary for definitions. - Values for 2015 are final. Values for 2016 are preliminary estimates based on a cutoff model sample.

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-826, Monthly Electric Sales and Revenue Report with State Distributions Report.

**Table 5.5.A. Revenue from Sales of Electricity to Ultimate Customers by End-Use Sector, by State, December 2016 and 2015 (Million Dollars)**

Census Division and State	Residential		Commercial		Industrial		Transportation		All Sectors	
	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015
New England	749	717	619	634	167	178	4	4	1,540	1,534
Connecticut	209	197	158	155	33	34	2	2	401	386
Maine	70	64	43	43	21	23	0	0	134	130
Massachusetts	320	311	303	317	72	81	2	2	698	711
New Hampshire	71	65	52	51	19	19	0	0	142	135
Rhode Island	45	50	40	46	9	9	0	0	94	105
Vermont	34	31	24	23	13	12	0	0	71	66
Middle Atlantic	1,738	1,626	1,527	1,544	404	394	34	36	3,703	3,599
New Jersey	351	328	362	360	55	53	2	2	771	743
New York	707	696	841	853	82	83	28	29	1,658	1,661
Pennsylvania	680	601	323	331	267	258	5	5	1,275	1,195
East North Central	2,219	1,963	1,519	1,405	1,025	1,053	4	4	4,767	4,424
Illinois	484	440	372	345	216	213	4	3	1,075	1,000
Indiana	362	305	196	177	242	256	0	0	800	739
Michigan	474	421	350	322	166	170	0	0	991	913
Ohio	607	533	385	363	261	277	0	0	1,253	1,173
Wisconsin	292	264	215	198	140	136	0	0	647	599
West North Central	1,068	982	769	719	440	459	0	0	2,278	2,160
Iowa	152	140	90	80	92	83	0	0	333	303
Kansas	139	127	121	117	63	66	0	0	323	310
Minnesota	256	237	184	170	115	113	0	0	554	520
Missouri	318	296	213	206	60	78	0	0	592	580
Nebraska	97	89	71	63	56	55	0	0	224	208
North Dakota	53	45	52	49	38	47	0	0	144	142
South Dakota	53	48	39	35	16	16	0	0	107	99
South Atlantic	3,274	3,032	2,248	2,231	682	718	8	7	6,213	5,989
Delaware	51	44	33	27	13	18	0	0	96	89
District of Columbia	24	27	78	76	1	2	2	2	105	107
Florida	949	994	675	710	104	110	1	1	1,728	1,815
Georgia	450	409	328	327	133	127	1	1	912	864
Maryland	355	296	273	247	24	25	4	3	656	571
North Carolina	538	502	314	327	128	152	0	0	980	981
South Carolina	302	270	164	164	126	129	0	0	591	563
Virginia	467	388	324	300	84	92	1	1	876	781
West Virginia	139	103	60	52	70	62	0	0	268	217
East South Central	1,072	913	727	697	486	443	0	0	2,285	2,053
Alabama	311	254	201	183	173	142	0	0	685	578
Kentucky	251	208	146	141	128	121	0	0	525	470
Mississippi	147	139	104	108	85	79	0	0	336	326
Tennessee	364	312	276	265	100	101	0	0	740	678
West South Central	1,656	1,590	1,158	1,130	751	770	1	1	3,566	3,491
Arkansas	134	124	73	72	75	72	0	0	282	269
Louisiana	197	180	167	156	140	149	0	0	504	485
Oklahoma	185	159	120	106	72	71	0	0	377	336
Texas	1,140	1,127	798	796	465	478	1	1	2,404	2,401
Mountain	909	908	698	682	392	390	1	1	2,000	1,981
Arizona	255	271	206	206	65	67	0	0	527	545
Colorado	201	195	163	159	93	89	1	1	459	443
Idaho	96	90	44	42	28	27	0	0	169	158
Montana	57	55	44	41	17	18	0	0	117	114
Nevada	105	110	62	66	47	56	0	0	214	231
New Mexico	71	67	70	66	37	33	0	0	178	166
Utah	89	88	77	74	45	45	0	0	212	207
Wyoming	34	31	31	29	59	56	0	0	124	116
Pacific Contiguous	1,954	1,924	1,673	1,677	552	559	7	7	4,186	4,167
California	1,329	1,349	1,316	1,336	409	415	7	7	3,062	3,106
Oregon	243	217	132	116	55	56	0	0	431	388
Washington	382	359	224	225	87	88	0	0	694	672
Pacific Noncontiguous	110	103	110	106	85	80	0	0	306	289
Alaska	46	42	46	42	19	15	0	0	111	99
Hawaii	64	61	65	64	66	65	0	0	195	190
U.S. Total	14,750	13,759	11,047	10,825	4,984	5,043	61	61	30,843	29,688

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 for 2015 are final. Values for 2016 are preliminary estimates based on a cutoff model sample.

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-826, Monthly Electric Sales and Revenue Report with State Distributions Report.

**Table 5.5.B. Revenue from Sales of Electricity to Ultimate Customers by End-Use Sector, by State, Year-to-Date through December 2016 and 2015 (Million Dollars)**

Census Division and State	Residential		Commercial		Industrial		Transportation		All Sectors	
	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD
New England	8,759	9,227	7,910	8,255	2,063	2,312	46	58	18,778	19,852
Connecticut	2,536	2,699	2,001	2,070	421	445	19	25	4,978	5,239
Maine	724	728	485	501	256	290	0	0	1,465	1,519
Massachusetts	3,753	4,000	3,948	4,136	895	1,069	21	27	8,617	9,232
New Hampshire	817	838	644	672	245	252	0	0	1,706	1,762
Rhode Island	574	605	539	584	104	110	5	5	1,222	1,304
Vermont	355	357	292	292	142	146	0	0	790	795
Middle Atlantic	21,028	21,487	19,802	20,937	4,974	5,331	419	457	46,223	48,212
New Jersey	4,587	4,607	4,769	4,952	703	779	26	31	10,086	10,370
New York	8,929	9,456	11,013	11,786	1,031	1,141	332	365	21,305	22,747
Pennsylvania	7,511	7,423	4,020	4,199	3,240	3,412	60	61	14,832	15,095
East North Central	24,189	23,730	18,326	18,252	12,753	13,690	41	41	55,309	55,713
Illinois	5,627	5,581	4,458	4,540	2,684	2,875	35	36	12,804	13,033
Indiana	3,721	3,753	2,365	2,349	2,908	3,295	2	2	8,996	9,399
Michigan	5,264	4,811	4,179	4,057	2,106	2,155	0	0	11,549	11,023
Ohio	6,450	6,591	4,713	4,743	3,208	3,549	3	3	14,374	14,886
Wisconsin	3,127	2,994	2,611	2,562	1,846	1,816	0	0	7,585	7,372
West North Central	11,991	11,654	9,720	9,431	5,978	6,289	4	4	27,693	27,379
Iowa	1,696	1,604	1,147	1,077	1,329	1,255	0	0	4,172	3,936
Kansas	1,749	1,635	1,609	1,553	789	854	0	0	4,146	4,042
Minnesota	2,729	2,631	2,293	2,207	1,452	1,506	2	2	6,477	6,346
Missouri	3,754	3,800	2,804	2,798	813	1,096	2	2	7,373	7,696
Nebraska	1,062	1,011	852	807	800	809	0	0	2,714	2,627
North Dakota	477	468	558	555	592	564	0	0	1,628	1,586
South Dakota	524	507	456	435	203	205	0	0	1,183	1,146
South Atlantic	41,756	42,175	28,993	29,576	8,792	9,421	105	109	79,645	81,280
Delaware	638	651	429	433	166	201	0	0	1,233	1,285
District of Columbia	322	324	982	987	17	21	31	30	1,352	1,362
Florida	13,628	14,217	8,641	9,106	1,279	1,388	8	9	23,555	24,719
Georgia	6,579	6,511	4,568	4,663	1,778	1,887	9	9	12,934	13,070
Maryland	3,890	3,787	3,260	3,296	296	331	42	45	7,488	7,458
North Carolina	6,472	6,532	4,201	4,210	1,670	1,804	1	1	12,344	12,547
South Carolina	3,812	3,778	2,228	2,240	1,596	1,774	0	0	7,637	7,792
Virginia	5,139	5,221	3,953	3,970	1,143	1,219	14	16	10,249	10,425
West Virginia	1,276	1,153	731	672	846	796	0	0	2,852	2,621
East South Central	12,891	12,796	9,272	9,458	5,664	6,133	0	0	27,827	28,387
Alabama	3,875	3,732	2,574	2,539	1,981	2,021	0	0	8,429	8,292
Kentucky	2,719	2,680	1,824	1,848	1,497	1,661	0	0	6,041	6,189
Mississippi	1,964	2,092	1,343	1,518	974	1,033	0	0	4,281	4,643
Tennessee	4,333	4,292	3,531	3,553	1,212	1,418	0	0	9,076	9,263
West South Central	22,913	23,870	15,196	15,880	8,905	10,025	11	11	47,025	49,786
Arkansas	1,762	1,794	988	1,011	946	999	0	0	3,696	3,804
Louisiana	2,797	2,944	2,117	2,166	1,666	1,901	1	1	6,581	7,011
Oklahoma	2,326	2,294	1,520	1,588	824	964	0	0	4,670	4,846
Texas	16,028	16,838	10,571	11,115	5,470	6,161	10	10	32,078	34,124
Mountain	11,334	11,264	9,087	9,212	5,253	5,583	13	13	25,687	26,073
Arizona	4,123	4,023	3,101	3,043	893	933	1	1	8,118	7,999
Colorado	2,271	2,228	1,974	2,017	1,099	1,129	6	6	5,350	5,380
Idaho	815	800	486	489	563	576	0	0	1,864	1,865
Montana	531	525	499	501	211	239	0	0	1,241	1,264
Nevada	1,447	1,574	790	889	789	949	1	1	3,027	3,413
New Mexico	811	828	875	915	427	480	0	0	2,114	2,223
Utah	1,028	992	1,008	1,002	575	580	6	6	2,617	2,579
Wyoming	307	294	353	358	696	698	0	0	1,356	1,349
Pacific Contiguous	20,591	20,234	21,365	22,443	7,837	8,332	73	78	49,866	51,088
California	15,383	15,188	17,477	18,627	6,024	6,394	70	75	38,955	40,285
Oregon	1,986	1,948	1,430	1,410	712	773	2	2	4,131	4,134
Washington	3,221	3,098	2,458	2,406	1,100	1,165	1	0	6,781	6,669
Pacific Noncontiguous	1,132	1,187	1,269	1,337	981	1,048	0	0	3,383	3,572
Alaska	415	405	502	482	213	196	0	0	1,130	1,083
Hawaii	717	782	767	855	769	852	0	0	2,253	2,489
<b>U.S. Total</b>	<b>176,585</b>	<b>177,624</b>	<b>140,937</b>	<b>144,781</b>	<b>63,201</b>	<b>68,166</b>	<b>711</b>	<b>771</b>	<b>381,435</b>	<b>391,341</b>

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

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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-826, Monthly Electric Sales and Revenue Report with State Distributions Report.

Table 5.6.A. Average Price of Electricity to Ultimate Customers by End-Use Sector, by State, December 2016 and 2015 (Cents per Kilowatthour)

Census Division and State	Residential		Commercial		Industrial		Transportation		All Sectors	
	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015	December 2016	December 2015
New England	18.44	18.80	14.65	14.89	12.19	11.97	8.20	9.17	15.85	15.96
Connecticut	19.02	19.47	15.32	15.24	12.92	12.39	9.85	10.57	16.73	16.73
Maine	15.68	14.91	12.20	11.84	9.39	8.76	--	--	13.08	12.32
Massachusetts	18.87	19.63	14.91	15.26	13.24	13.09	6.68	7.70	16.19	16.51
New Hampshire	18.68	18.01	14.57	14.64	12.65	12.77	--	--	16.00	15.72
Rhode Island	18.39	19.88	13.67	15.27	13.67	13.30	18.62	18.41	15.62	16.93
Vermont	17.22	17.19	14.32	14.56	10.01	10.56	--	--	14.35	14.57
Middle Atlantic	15.32	15.62	11.93	12.23	6.85	6.84	10.84	11.19	12.20	12.36
New Jersey	15.32	15.55	11.73	11.96	9.80	9.77	8.58	8.95	12.91	13.07
New York	17.18	17.50	13.75	13.91	5.82	5.72	11.95	12.58	13.97	14.09
Pennsylvania	13.76	13.92	9.01	9.49	6.80	6.85	7.52	7.28	10.19	10.27
East North Central	12.64	12.73	9.88	9.66	6.91	6.78	7.09	7.16	9.97	9.71
Illinois	11.69	11.82	8.60	8.53	6.08	6.41	6.89	7.00	8.91	8.99
Indiana	11.40	11.46	10.12	9.58	7.55	6.67	10.68	9.40	9.62	8.84
Michigan	15.28	14.51	10.97	10.34	7.10	6.82	12.10	11.64	11.47	10.73
Ohio	12.11	12.74	9.89	9.95	6.79	7.01	7.68	7.52	9.82	9.95
Wisconsin	13.74	13.54	10.63	10.50	7.38	7.08	15.50	16.67	10.71	10.38
West North Central	10.60	10.75	8.85	8.74	6.48	6.35	8.40	8.06	8.91	8.79
Iowa	10.66	10.38	8.19	7.84	5.08	4.99	--	--	7.71	7.51
Kansas	12.13	12.33	9.72	10.00	7.17	7.35	--	--	9.89	10.00
Minnesota	11.97	11.57	9.22	8.85	6.96	6.66	9.69	8.94	9.59	9.18
Missouri	9.63	10.59	8.48	8.62	6.65	5.90	6.78	7.07	8.80	8.91
Nebraska	9.73	9.53	8.49	8.27	6.85	6.82	--	--	8.45	8.27
North Dakota	9.21	8.73	8.74	8.53	7.37	7.77	--	--	8.48	8.32
South Dakota	10.71	10.42	9.24	8.83	7.36	7.17	--	--	9.52	9.16
South Atlantic	11.11	11.35	9.10	9.25	6.32	6.32	7.78	7.97	9.55	9.62
Delaware	12.94	13.40	9.67	10.63	7.55	7.67	--	--	10.71	10.86
District of Columbia	12.46	13.36	11.82	12.49	8.73	9.10	9.87	11.12	11.86	12.58
Florida	11.17	11.34	9.05	9.28	7.83	7.83	8.18	8.91	10.00	10.18
Georgia	9.92	10.28	9.15	9.24	5.43	5.04	4.59	4.13	8.61	8.59
Maryland	14.01	14.59	11.25	10.74	7.74	7.93	7.66	7.95	12.33	12.20
North Carolina	10.29	10.81	8.32	8.64	6.00	6.61	8.88	8.17	8.80	9.14
South Carolina	12.02	12.05	10.25	9.92	6.09	6.00	--	--	9.58	9.32
Virginia	10.72	10.96	7.69	8.05	6.56	6.64	7.83	7.84	8.88	9.01
West Virginia	11.22	10.43	9.27	8.78	6.66	6.12	--	--	9.16	8.36
East South Central	10.93	10.76	10.44	10.05	6.13	5.61	--	--	9.25	8.80
Alabama	12.00	11.16	11.58	10.42	6.42	5.41	--	--	9.76	8.70
Kentucky	10.36	10.51	9.39	9.40	5.69	5.39	--	--	8.43	8.22
Mississippi	10.68	11.14	10.08	10.37	6.29	6.09	--	--	8.93	9.09
Tennessee	10.63	10.45	10.44	10.07	6.14	5.81	--	--	9.61	9.21
West South Central	10.31	10.48	7.76	7.89	5.40	5.21	5.84	5.58	7.94	7.88
Arkansas	9.45	9.49	8.01	8.22	5.96	5.81	11.95	9.58	7.86	7.82
Louisiana	9.12	8.81	8.92	8.44	5.54	4.95	9.22	7.84	7.69	7.03
Oklahoma	9.30	9.10	7.29	7.00	5.07	4.77	--	--	7.46	7.08
Texas	10.86	11.19	7.60	7.89	5.34	5.29	5.59	5.42	8.09	8.22
Mountain	11.10	10.94	9.04	8.99	5.98	5.82	9.04	9.69	8.90	8.76
Arizona	11.30	10.70	9.62	9.49	5.83	5.39	8.30	8.70	9.54	9.15
Colorado	11.78	11.60	9.43	9.41	7.29	7.17	10.17	9.68	9.70	9.61
Idaho	9.49	9.60	7.50	7.39	5.69	5.66	--	--	8.03	8.02
Montana	10.64	10.35	10.03	9.76	4.75	4.86	--	--	8.86	8.65
Nevada	11.26	12.40	7.59	8.77	4.61	5.08	7.39	8.29	7.73	8.47
New Mexico	12.08	11.31	9.86	9.46	6.01	5.23	--	--	9.30	8.64
Utah	10.68	10.50	8.11	7.74	5.63	5.64	7.97	10.01	8.18	7.99
Wyoming	10.71	10.54	9.13	8.51	6.85	6.50	--	--	8.17	7.76
Pacific Contiguous	14.17	13.96	12.25	12.24	8.31	7.92	9.29	9.33	12.25	12.04
California	18.15	17.29	13.90	13.73	11.05	10.51	9.29	9.34	14.88	14.41
Oregon	10.59	10.39	8.89	8.66	5.81	5.69	9.21	9.09	9.10	8.82
Washington	9.16	9.22	8.30	8.53	4.39	4.13	8.81	8.76	7.83	7.76
Pacific Noncontiguous	24.13	23.04	21.92	20.95	20.16	18.79	--	--	22.11	20.96
Alaska	20.44	19.11	18.09	16.81	16.31	12.79	--	--	18.62	16.86
Hawaii	27.68	26.85	25.77	24.96	21.68	21.08	--	--	24.76	24.00
U.S. Total	12.21	12.32	10.08	10.13	6.63	6.45	9.40	9.81	10.07	9.98

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

Source: U.S. Energy Information Administration, Form EIA-826, Monthly Electric Sales and Revenue Report with State Distributions Report.

**Table 5.6.B. Average Price of Electricity to Ultimate Customers by End-Use Sector, by State, Year-to-Date through December 2016 and 2015 (Cents per Kilowatthour)**

Census Division and State	Residential		Commercial		Industrial		Transportation		All Sectors	
	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD	December 2016 YTD	December 2015 YTD
New England	18.85	19.43	15.11	15.46	12.09	12.34	8.25	10.07	16.13	16.52
Connecticut	20.00	20.94	15.72	15.97	13.02	12.95	10.62	13.18	17.27	17.77
Maine	15.80	15.61	12.16	12.47	9.03	9.05	--	--	12.84	12.78
Massachusetts	19.11	19.83	15.48	15.79	13.11	13.54	6.18	7.76	16.47	16.90
New Hampshire	18.43	18.50	14.44	14.96	12.35	12.74	--	--	15.68	16.02
Rhode Island	18.63	19.29	14.77	15.78	13.54	13.76	18.76	18.54	16.24	17.01
Vermont	17.33	17.09	14.49	14.54	10.06	10.27	--	--	14.41	14.41
Middle Atlantic	15.76	15.97	12.54	13.13	7.02	7.32	10.89	11.72	12.63	13.00
New Jersey	15.75	15.81	12.42	12.79	10.14	10.64	8.74	10.25	13.49	13.74
New York	17.59	18.54	14.47	15.31	6.04	6.31	12.05	12.95	14.53	15.28
Pennsylvania	14.03	13.64	9.25	9.60	6.92	7.20	7.64	7.82	10.26	10.31
East North Central	12.91	12.96	9.86	9.95	6.91	6.97	6.93	7.01	9.90	9.89
Illinois	12.23	12.50	8.75	9.02	6.37	6.67	6.71	6.81	9.17	9.40
Indiana	11.39	11.57	9.75	9.78	7.02	6.86	9.82	9.92	9.14	8.99
Michigan	15.30	14.42	10.68	10.55	7.04	7.02	11.63	11.44	11.16	10.76
Ohio	12.28	12.80	9.87	10.07	6.78	7.02	7.76	7.69	9.74	9.98
Wisconsin	14.38	14.11	10.95	10.89	7.74	7.58	14.68	14.66	10.92	10.73
West North Central	11.73	11.47	9.47	9.27	7.07	6.88	9.26	8.98	9.57	9.29
Iowa	12.25	11.63	9.35	8.92	6.14	5.90	--	--	8.74	8.35
Kansas	12.95	12.34	10.24	10.10	7.40	7.61	--	--	10.40	10.14
Minnesota	12.73	12.12	9.88	9.44	7.27	7.02	10.09	9.50	10.02	9.53
Missouri	10.89	11.21	9.07	9.16	6.81	6.44	8.31	8.36	9.53	9.44
Nebraska	10.87	10.60	8.88	8.67	7.64	7.59	--	--	9.09	8.91
North Dakota	10.24	9.62	9.14	8.83	8.22	8.07	--	--	9.05	8.75
South Dakota	11.43	11.08	9.47	9.16	7.55	7.37	--	--	9.79	9.47
South Atlantic	11.64	11.74	9.28	9.49	6.40	6.58	7.89	8.12	9.83	9.97
Delaware	13.47	13.42	10.12	10.25	7.98	8.28	--	--	11.15	11.17
District of Columbia	12.87	12.99	11.73	12.01	8.96	8.78	9.40	9.00	11.87	12.07
Florida	11.24	11.58	9.11	9.50	7.81	8.22	8.32	8.21	10.13	10.49
Georgia	11.41	11.54	9.63	9.89	5.64	5.87	5.05	5.27	9.46	9.62
Maryland	14.23	13.82	10.98	11.00	7.84	8.53	7.83	8.34	12.21	12.07
North Carolina	11.14	11.28	8.65	8.73	6.23	6.51	7.88	7.90	9.25	9.37
South Carolina	12.44	12.57	10.14	10.21	6.00	6.05	--	--	9.64	9.58
Virginia	11.42	11.37	7.97	8.21	6.67	6.95	7.76	8.11	9.16	9.31
West Virginia	11.22	10.08	9.34	8.61	6.57	6.09	--	--	8.89	8.11
East South Central	10.82	10.82	10.10	10.24	5.83	5.98	--	--	9.03	9.06
Alabama	12.04	11.70	11.12	10.83	6.08	6.03	--	--	9.59	9.33
Kentucky	10.29	10.24	9.37	9.44	5.49	5.48	--	--	8.26	8.14
Mississippi	10.54	11.27	9.61	10.55	5.91	6.56	--	--	8.72	9.53
Tennessee	10.33	10.30	10.03	10.16	5.82	6.17	--	--	9.26	9.30
West South Central	10.56	10.95	7.81	8.18	5.21	5.59	5.67	5.53	8.07	8.41
Arkansas	9.90	9.82	8.13	8.32	5.93	6.23	10.39	11.21	8.05	8.19
Louisiana	9.11	9.33	8.49	8.66	5.03	5.41	9.03	8.28	7.41	7.65
Oklahoma	10.07	10.14	7.47	7.68	4.85	5.35	--	--	7.72	7.90
Texas	11.02	11.56	7.71	8.15	5.22	5.59	5.43	5.34	8.28	8.70
Mountain	11.68	11.83	9.56	9.71	6.33	6.59	9.65	9.97	9.33	9.48
Arizona	12.21	12.13	10.49	10.39	6.07	6.26	9.38	9.40	10.40	10.34
Colorado	12.02	12.12	9.66	9.88	7.13	7.40	9.80	10.08	9.76	9.94
Idaho	10.00	9.93	7.80	7.80	6.58	6.60	--	--	8.13	8.09
Montana	11.04	10.88	10.18	10.23	4.97	5.32	--	--	8.89	8.90
Nevada	11.42	12.76	8.00	9.25	5.86	6.75	7.83	9.11	8.40	9.48
New Mexico	12.08	12.47	9.85	10.30	5.73	6.33	--	--	9.17	9.62
Utah	11.08	10.88	8.84	8.62	6.31	6.17	9.76	10.05	8.77	8.54
Wyoming	11.18	10.97	9.44	9.12	6.92	6.76	--	--	8.19	7.97
Pacific Contiguous	14.56	14.28	13.28	13.71	9.14	9.03	8.97	8.99	12.82	12.82
California	17.40	16.99	15.15	15.73	12.07	12.17	8.96	8.99	15.31	15.42
Oregon	10.63	10.66	8.87	8.80	6.16	5.97	9.26	9.14	8.90	8.75
Washington	9.38	9.09	8.37	8.22	4.53	4.35	8.96	8.18	7.70	7.40
Pacific Noncontiguous	24.48	25.34	21.61	22.51	19.31	20.77	--	--	21.71	22.80
Alaska	20.61	19.83	18.19	17.44	15.56	14.53	--	--	18.40	17.59
Hawaii	27.46	29.60	24.64	26.93	20.70	23.06	--	--	23.87	26.17
U.S. Total	12.55	12.65	10.37	10.64	6.75	6.91	9.48	10.09	10.28	10.41

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

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

Notes: - See Glossary for definitions. - Values for 2015 are final. Values for 2016 are preliminary estimates based on a cutoff model sample.

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-826, Monthly Electric Sales and Revenue Report with State Distributions Report.

**Table 5.7. Number of Ultimate Customers Served by Sector:  
2008 - December 2016**

Period	Residential	Commercial	Industrial	Transportation	All Sectors
<b>Annual Totals</b>					
2008	125,037,870	17,582,277	774,817	726	143,395,691
2009	125,208,777	17,562,150	757,497	703	143,529,126
2010	125,717,767	17,674,167	747,691	238	144,139,862
2011	126,143,072	17,637,928	727,889	92	144,508,982
2012	126,832,252	17,728,903	732,344	83	145,293,583
2013	127,776,941	17,679,466	831,734	74	146,288,214
2014	128,680,294	17,853,836	839,154	79	147,373,362
2015	129,811,667	17,985,582	835,527	78	148,632,855
<b>Year 2014</b>					
January	128,080,045	17,756,185	824,418	82	146,660,730
February	127,760,935	17,694,926	810,164	79	146,266,104
March	128,398,293	17,795,435	817,663	79	147,011,470
April	128,347,095	17,795,240	829,796	80	146,972,211
May	128,428,131	17,834,341	840,580	84	147,103,136
June	128,562,601	17,810,020	838,886	77	147,211,584
July	129,055,781	17,937,858	865,715	78	147,859,432
August	128,924,140	17,889,944	856,377	77	147,670,538
Sept	128,788,358	17,922,008	856,589	78	147,567,033
October	129,521,707	17,993,992	860,902	76	148,376,677
November	128,640,689	17,827,317	824,992	76	147,293,074
December	129,655,750	17,988,765	843,760	76	148,488,351
<b>Year 2015</b>					
January	129,177,100	17,924,312	814,536	77	147,916,025
February	128,836,192	17,854,428	808,801	77	147,499,498
March	129,858,190	17,975,571	823,107	78	148,656,946
April	129,607,349	17,955,904	823,833	78	148,387,164
May	129,550,528	17,675,632	828,518	79	148,054,757
June	129,833,960	18,042,403	851,608	79	148,728,050
July	130,322,224	18,099,332	860,552	79	149,282,187
August	129,696,710	18,013,711	849,033	78	148,559,532
Sept	130,004,031	18,059,742	851,435	78	148,915,286
October	130,277,004	18,087,524	851,293	78	149,215,899
November	129,722,466	17,995,604	825,647	78	148,543,795
December	130,854,255	18,142,822	837,966	78	149,835,121
<b>Year 2016</b>					
January	130,338,099	17,991,439	804,007	77	149,133,622
February	130,108,685	18,008,942	799,795	80	148,917,502
March	131,347,329	18,177,656	810,362	86	150,335,433
April	130,487,840	18,048,726	797,985	83	149,334,634
May	131,044,577	18,110,084	813,813	86	149,968,560
June	131,330,842	18,162,550	827,304	86	150,320,782
July	131,138,573	18,138,230	821,488	82	150,098,373
August	131,372,255	18,209,116	832,566	82	150,414,019
Sept	131,392,256	18,200,641	820,906	82	150,413,885
October	131,335,623	18,202,781	813,555	83	150,352,042
November	131,340,409	18,176,864	799,953	83	150,317,309
December	131,874,453	18,252,051	800,163	83	150,926,750
<b>Rolling 12 Months Ending in December</b>					
2015	129,811,667	17,985,582	835,527	78	148,632,855
2016	131,092,578	18,139,923	811,825	83	150,044,409

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 for 2015 and prior years are final. Values for 2016 are preliminary estimates based on a cutoff model sample. 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-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 6.1.A. Estimated Net Summer Solar Photovoltaic Capacity From Utility and Small Scale Facilities (Megawatts)  
2008 - December 2016**

Period	Utility Solar Photovoltaic	Estimated Small Scale Solar Photovoltaic	Estimated Total Solar Photovoltaic
<b>Annual Totals</b>			
2008	70.8	N/A	N/A
2009	145.5	N/A	N/A
2010	393.4	N/A	N/A
2011	1,052.0	N/A	N/A
2012	2,694.1	N/A	N/A
2013	5,336.1	N/A	N/A
2014	8,656.6	7,326.6	15,983.2
2015	11,905.4	9,778.5	21,683.9
<b>Year 2014</b>			
January	5,688.0	5,612.6	11,300.6
February	5,839.2	5,728.2	11,567.4
March	5,967.9	5,853.0	11,820.9
April	6,188.0	5,978.9	12,166.9
May	6,368.8	6,111.6	12,480.4
June	6,564.1	6,227.2	12,791.3
July	6,706.3	6,369.2	13,075.5
August	7,105.0	6,603.0	13,708.0
Sept	7,215.1	6,749.8	13,964.9
October	7,575.3	6,922.0	14,497.3
November	8,005.3	7,078.0	15,083.3
December	8,656.6	7,326.6	15,983.2
<b>Year 2015</b>			
January	8,873.2	7,369.4	16,242.6
February	9,027.0	7,529.1	16,556.1
March	9,088.1	7,696.7	16,784.8
April	9,154.4	7,860.3	17,014.7
May	9,368.0	8,050.6	17,418.6
June	9,638.9	8,235.9	17,874.8
July	9,714.8	8,479.1	18,193.9
August	9,945.4	8,700.9	18,646.3
Sept	10,050.2	8,951.5	19,001.7
October	10,156.7	9,188.4	19,345.1
November	10,478.7	9,416.7	19,895.4
December	11,905.4	9,778.5	21,683.9
<b>Year 2016</b>			
January	12,272.1	10,226.8	22,498.9
February	12,401.5	10,486.5	22,888.0
March	12,583.1	10,809.5	23,392.6
April	13,123.6	11,069.8	24,193.4
May	13,231.7	11,311.7	24,543.4
June	13,420.2	11,568.8	24,989.0
July	14,145.5	11,781.0	25,926.5
August	15,077.2	12,063.5	27,140.7
Sept	15,844.7	12,305.5	28,150.2
October	16,408.2	12,567.0	28,975.2
November	16,950.8	12,855.4	29,806.2
December	19,770.3	13,183.2	32,953.5

Values for 2015 are final. Values for 2016 are preliminary.

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

Estimated small scale solar photovoltaic capacity is based on data from Form EIA-826, Form EIA-861 and from estimation methods described in the technical notes.

**Table 6.1.B. Estimated Net Summer Solar Photovoltaic Capacity From Small Scale Facilities by Sector (Megawatts): 2014 - December 2016**

Period	Residential	Commercial	Industrial	Total
<b>Annual Totals</b>				
2014	3,346.3	3,279.7	700.6	7,326.6
2015	5,191.5	3,706.7	880.3	9,778.5
<b>Year 2014</b>				
January	2,285.2	2,766.5	561.0	5,612.6
February	2,354.4	2,804.9	568.9	5,728.2
March	2,428.2	2,848.7	576.2	5,853.0
April	2,506.9	2,883.8	588.2	5,978.9
May	2,588.3	2,930.2	593.0	6,111.6
June	2,677.6	2,946.1	603.5	6,227.2
July	2,765.0	2,989.0	615.1	6,369.2
August	2,873.0	3,096.4	633.6	6,603.0
Sept	2,980.3	3,128.7	640.9	6,749.8
October	3,092.8	3,162.3	667.0	6,922.0
November	3,191.8	3,203.2	683.0	7,078.0
December	3,346.3	3,279.7	700.6	7,326.6
<b>Year 2015</b>				
January	3,424.8	3,227.0	717.6	7,369.4
February	3,550.2	3,245.1	733.7	7,529.1
March	3,689.3	3,268.3	739.1	7,696.7
April	3,816.3	3,294.6	749.4	7,860.3
May	3,949.5	3,336.6	764.5	8,050.6
June	4,110.7	3,356.2	768.9	8,235.9
July	4,275.5	3,414.5	789.1	8,479.1
August	4,440.5	3,455.9	804.5	8,700.9
Sept	4,635.1	3,498.9	817.4	8,951.5
October	4,815.7	3,540.5	832.2	9,188.4
November	4,972.5	3,593.4	850.8	9,416.7
December	5,191.5	3,706.7	880.3	9,778.5
<b>Year 2016</b>				
January	5,352.9	3,991.9	882.0	10,226.8
February	5,550.7	4,033.4	902.4	10,486.5
March	5,775.1	4,104.2	930.3	10,809.5
April	5,972.7	4,149.0	948.1	11,069.8
May	6,159.1	4,188.8	963.7	11,311.7
June	6,352.0	4,239.0	977.7	11,568.8
July	6,512.3	4,271.8	996.9	11,781.0
August	6,704.7	4,343.1	1,015.8	12,063.5
Sept	6,873.9	4,404.9	1,026.7	12,305.5
October	7,060.2	4,469.8	1,037.0	12,567.0
November	7,241.6	4,565.7	1,048.1	12,855.4
December	7,421.2	4,680.8	1,081.2	13,183.2

Values for 2015 are final. Values for 2016 are preliminary.

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

Estimated small scale solar photovoltaic capacity is based on data from Form EIA-826, Form EIA-861 and from estimation methods described in the technical notes.



















Table 6.3. New Utility Scale Generating Units by Operating Company, Plant, Month, and Year

Year	Month	Entity ID	Entity Name	Plant Producer Type	Plant Name	Plant State	Plant ID	Generator ID	Net Summer Capacity (MW)	Technology	Energy Source Code	Prime Mover Code
2016	12	60520	SoCore Energy LLC	IPP	VEC Alburgh Array	VT	60860	PV1	1.0	Solar Photovoltaic	SUN	PV
2016	12	60257	Solar Glynn LLC	IPP	Solar Glynn	GA	60469	INV1	18.0	Solar Photovoltaic	SUN	PV
2016	12	60177	Solar Star Arizona XIII, LLC	IPP	Sulphur Springs	AZ	60381	SSSP	20.0	Solar Photovoltaic	SUN	PV
2016	12	60353	Solar Star California, XLI, LLC	IPP	Solar Star California, XLI, LLC	CA	60591	RS1	54.0	Solar Photovoltaic	SUN	PV
2016	12	60525	Solar Star California, XLIV, LLC	IPP	Solar Star California, XLIV, LLC	CA	60869	PB1	9.5	Solar Photovoltaic	SUN	PV
2016	12	57313	SolarCity Corporation	IPP	AVS Lancaster 1	CA	60085	PV1	3.7	Solar Photovoltaic	SUN	PV
2016	12	57313	SolarCity Corporation	IPP	CMEEC - Norwich Stott St Solar	CT	60609	BA1	0.8	Batteries	MWH	BA
2016	12	57313	SolarCity Corporation	IPP	CMEEC - Norwich Stott St Solar	CT	60609	PV1	2.0	Solar Photovoltaic	SUN	PV
2016	12	57313	SolarCity Corporation	IPP	Connecticut Municipal Electric Energy Cooperative - Bozrah	CT	60225	PV1	2.5	Solar Photovoltaic	SUN	PV
2016	12	57313	SolarCity Corporation	IPP	Connecticut Municipal Electric Energy Cooperative - Norwich (Rogers Rd)	CT	60228	PV1	1.0	Solar Photovoltaic	SUN	PV
2016	12	57313	SolarCity Corporation	IPP	US-TOPCO (Soccer Center)	CA	60086	PV1	3.0	Solar Photovoltaic	SUN	PV
2016	12	60458	South Fork Wind LLC	IPP	South Fork Wind Farm	MN	58691	STFK1	13.0	Onshore Wind Turbine	WND	WT
2016	12	17583	South Texas Electric Coop, Inc	Electric Utility	Red Gate Power Plant	TX	59391	ENG01	18.3	Natural Gas Internal Combustion Engine	NG	IC
2016	12	17583	South Texas Electric Coop, Inc	Electric Utility	Red Gate Power Plant	TX	59391	ENG02	18.3	Natural Gas Internal Combustion Engine	NG	IC
2016	12	17583	South Texas Electric Coop, Inc	Electric Utility	Red Gate Power Plant	TX	59391	ENG03	18.3	Natural Gas Internal Combustion Engine	NG	IC
2016	12	17583	South Texas Electric Coop, Inc	Electric Utility	Red Gate Power Plant	TX	59391	ENG04	18.3	Natural Gas Internal Combustion Engine	NG	IC
2016	12	17583	South Texas Electric Coop, Inc	Electric Utility	Red Gate Power Plant	TX	59391	ENG05	18.3	Natural Gas Internal Combustion Engine	NG	IC
2016	12	17583	South Texas Electric Coop, Inc	Electric Utility	Red Gate Power Plant	TX	59391	ENG06	18.3	Natural Gas Internal Combustion Engine	NG	IC
2016	12	17583	South Texas Electric Coop, Inc	Electric Utility	Red Gate Power Plant	TX	59391	ENG07	18.3	Natural Gas Internal Combustion Engine	NG	IC
2016	12	17583	South Texas Electric Coop, Inc	Electric Utility	Red Gate Power Plant	TX	59391	ENG08	18.3	Natural Gas Internal Combustion Engine	NG	IC
2016	12	17583	South Texas Electric Coop, Inc	Electric Utility	Red Gate Power Plant	TX	59391	ENG09	18.3	Natural Gas Internal Combustion Engine	NG	IC
2016	12	17583	South Texas Electric Coop, Inc	Electric Utility	Red Gate Power Plant	TX	59391	ENG10	18.3	Natural Gas Internal Combustion Engine	NG	IC
2016	12	17583	South Texas Electric Coop, Inc	Electric Utility	Red Gate Power Plant	TX	59391	ENG11	18.3	Natural Gas Internal Combustion Engine	NG	IC
2016	12	17583	South Texas Electric Coop, Inc	Electric Utility	Red Gate Power Plant	TX	59391	ENG12	18.3	Natural Gas Internal Combustion Engine	NG	IC
2016	12	17609	Southern California Edison Co	Electric Utility	Center Peaker	CA	56475	BA1	10.0	Batteries	MWH	BA
2016	12	17609	Southern California Edison Co	Electric Utility	Grapeland Peaker	CA	56472	BA1	10.0	Batteries	MWH	BA
2016	12	17609	Southern California Edison Co	Electric Utility	Mira Loma Energy Storage Facility	CA	60661	013A	10.0	Batteries	MWH	BA
2016	12	17609	Southern California Edison Co	Electric Utility	Mira Loma Energy Storage Facility	CA	60661	013B	10.0	Batteries	MWH	BA
2016	12	17650	Southern Power Co	IPP	Boulder Solar Power, LLC	NV	60352	BSP	100.0	Solar Photovoltaic	SUN	PV
2016	12	17650	Southern Power Co	IPP	Butler Solar Project 103	GA	59896	1	103.0	Solar Photovoltaic	SUN	PV
2016	12	17650	Southern Power Co	IPP	Grant Plains Wind, LLC	OK	60545	WT	147.2	Onshore Wind Turbine	WND	WT
2016	12	17650	Southern Power Co	IPP	Rutherford Farm	NC	59589	PV1	61.0	Solar Photovoltaic	SUN	PV
2016	12	17650	Southern Power Co	IPP	Salt Fork Wind Project, LLC	TX	60657	GEN1	174.0	Onshore Wind Turbine	WND	WT
2016	12	60359	Summit Farms LLC	IPP	Summit Farms Solar	NC	60611	PV1	60.0	Solar Photovoltaic	SUN	PV
2016	12	59138	SunPower Corporation, Systems	IPP	Rio Bravo Solar 1 LLC	CA	59249	PV1	19.5	Solar Photovoltaic	SUN	PV
2016	12	59138	SunPower Corporation, Systems	IPP	Rio Bravo Solar II LLC	CA	59250	PV1	19.5	Solar Photovoltaic	SUN	PV
2016	12	59839	Sunflower Wind Project	IPP	Sunflower Wind Project	ND	60088	SNFLR	104.0	Onshore Wind Turbine	WND	WT
2016	12	60436	Sunrise Community Solar	IPP	Sunrise Community Solar	MN	60713	SCS1	0.9	Solar Photovoltaic	SUN	PV
2016	12	60436	Sunrise Community Solar	IPP	Sunrise Community Solar	MN	60713	SCS2	0.9	Solar Photovoltaic	SUN	PV
2016	12	60436	Sunrise Community Solar	IPP	Sunrise Community Solar	MN	60713	SCS3	0.9	Solar Photovoltaic	SUN	PV
2016	12	60436	Sunrise Community Solar	IPP	Sunrise Community Solar	MN	60713	SCS4	0.9	Solar Photovoltaic	SUN	PV
2016	12	60436	Sunrise Community Solar	IPP	Sunrise Community Solar	MN	60713	SCS5	0.9	Solar Photovoltaic	SUN	PV
2016	12	58661	Sustainable Power Group, LLC	IPP	Antelope DSR 1	CA	60186	DSR1	50.0	Solar Photovoltaic	SUN	PV
2016	12	58661	Sustainable Power Group, LLC	IPP	Antelope DSR 2	CA	60187	DSR2	5.0	Solar Photovoltaic	SUN	PV
2016	12	58661	Sustainable Power Group, LLC	IPP	Elevation Solar C	CA	59964	ELVSC	40.0	Solar Photovoltaic	SUN	PV
2016	12	58661	Sustainable Power Group, LLC	IPP	Hecate Energy Beacon Solar 3	CA	59316	BEAC3	56.0	Solar Photovoltaic	SUN	PV
2016	12	58661	Sustainable Power Group, LLC	IPP	Hecate Energy Beacon Solar 4	CA	59317	BEAC4	50.0	Solar Photovoltaic	SUN	PV
2016	12	58661	Sustainable Power Group, LLC	IPP	North Lancaster Ranch	CA	59962	NLR	20.0	Solar Photovoltaic	SUN	PV
2016	12	58661	Sustainable Power Group, LLC	IPP	Solverde 1	CA	60185	SOLV1	85.0	Solar Photovoltaic	SUN	PV
2016	12	58661	Sustainable Power Group, LLC	IPP	Western Antelope Blue Sky B	CA	59961	WABSB	20.0	Solar Photovoltaic	SUN	PV
2016	12	58661	Sustainable Power Group, LLC	IPP	Western Antelope Dry Ranch	CA	58627	WADR	10.0	Solar Photovoltaic	SUN	PV
2016	12	59826	Syncarpha Bondsville, LLC	IPP	Palmer Landfill	MA	60076	SYNPL	4.0	Solar Photovoltaic	SUN	PV
2016	12	18454	Tampa Electric Co	Electric Utility	Legoland Solar	FL	60371	1	1.5	Solar Photovoltaic	SUN	PV
2016	12	60245	Three Peaks Power LLC	IPP	Three Peaks Power	UT	60432	TPP	80.0	Solar Photovoltaic	SUN	PV
2016	12	59011	Tiburon Holdings	IPP	Tiburon Holdings	NC	59217	PV1	5.0	Solar Photovoltaic	SUN	PV
2016	12	60273	Tyler Bluff Wind Project, LLC	IPP	Tyler Bluff Wind Project, LLC	TX	60502	GEN1	125.6	Onshore Wind Turbine	WND	WT
2016	12	19497	United Illuminating Co	Electric Utility	UI RCP Woodbridge FC	CT	60593	WBFC	2.2	Other Natural Gas	NG	FC
2016	12	60452	Victory Solar LLC	IPP	Victory Solar LLC	CO	60764	PV1	12.8	Solar Photovoltaic	SUN	PV
2016	12	19876	Virginia Electric & Power Co	Electric Utility	Scott Solar Farm	VA	60316	1	6.8	Solar Photovoltaic	SUN	PV
2016	12	19876	Virginia Electric & Power Co	Electric Utility	Whitehouse Solar Farm	VA	60319	1	8.0	Solar Photovoltaic	SUN	PV
2016	12	19876	Virginia Electric & Power Co	Electric Utility	Woodland Solar Farm	VA	60318	1	7.6	Solar Photovoltaic	SUN	PV
2016	12	57081	WGL Energy Systems, Inc	IPP	Eichtens Solar	MN	60795	SO228	3.9	Solar Photovoltaic	SUN	PV
2016	12	57081	WGL Energy Systems, Inc	IPP	Red Wing Solar	MN	60796	SO234	4.9	Solar Photovoltaic	SUN	PV

NOTES:

Capacity from facilities with a total generator nameplate capacity less than 1 MW are excluded from this table.  
 Entity ID and Plant ID are official, unique identification numbers assigned by EIA; Generator IDs are assigned by plant owners and/or operators.  
 Descriptions for the Energy Source Codes and the Prime Mover Codes listed in the table can be found in the Technical Notes.



Table 6.4. Retired Utility Scale Generating Units by Operating Company, Plant, Month, and Year

Year	Month	Entity ID	Entity Name	Plant Producer Type	Plant Name	Plant State	Plant ID	Generator ID	Net Summer Capacity (MW)	Technology	Energy Source Code	Prime Mover Code
2016	9	55733	Waste Management Energy Solutions Inc	IPP	EI Sobrante Gas Recovery	CA	56534	GEN3	1.3	Landfill Gas	LFG	IC
2016	9	55733	Waste Management Energy Solutions Inc	IPP	Waste Management Simi Valley LFGTE	CA	56535	GEN1	1.3	Landfill Gas	LFG	IC
2016	9	55733	Waste Management Energy Solutions Inc	IPP	Waste Management Simi Valley LFGTE	CA	56535	GEN2	1.3	Landfill Gas	LFG	IC
2016	10	11241	Entergy Louisiana LLC	Electric Utility	Willow Glen	LA	1394	1	152.0	Natural Gas Steam Turbine	NG	ST
2016	10	11241	Entergy Louisiana LLC	Electric Utility	Willow Glen	LA	1394	3	450.0	Natural Gas Steam Turbine	NG	ST
2016	10	11241	Entergy Louisiana LLC	Electric Utility	Willow Glen	LA	1394	5	485.0	Natural Gas Steam Turbine	NG	ST
2016	10	55937	Entergy Texas Inc.	Electric Utility	Sabine	TX	3459	2	213.2	Natural Gas Steam Turbine	NG	ST
2016	10	6035	Exelon Power	IPP	Exelon L Street	MA	1587	GT1	16.0	Petroleum Liquids	DFO	GT
2016	10	58595	INEOS New Planet BioEnergy	Industrial	Indian River BioEnergy Center	FL	58648	ST803	6.4	Natural Gas Steam Turbine	NG	ST
2016	10	14127	Omaha Public Power District	Electric Utility	Fort Calhoun	NE	2289	1	478.1	Nuclear	NUC	ST
2016	10	20838	Win-Sam Inc	Commercial	University of Texas at San Antonio	TX	54606	GEN1	3.3	Natural Gas Internal Combustion Engine	NG	IC
2016	11	50026	Energy Operations Group	Electric CHP	Rupert Cogen Project	ID	54579	1002	10.4	Natural Gas Fired Combined Cycle	NG	CS
2016	11	11241	Entergy Louisiana LLC	Electric Utility	Nine Mile Point	LA	1403	3	100.4	Natural Gas Steam Turbine	NG	ST
2016	11	58100	Middle Tennessee State University	Commercial	MTSU Power Co-Gen Plant	TN	58179	SG-01	2.0	Petroleum Liquids	DFO	IC
2016	11	58100	Middle Tennessee State University	Commercial	MTSU Power Co-Gen Plant	TN	58179	SG-02	2.0	Petroleum Liquids	DFO	IC
2016	11	58100	Middle Tennessee State University	Commercial	MTSU Power Co-Gen Plant	TN	58179	SG-03	2.0	Petroleum Liquids	DFO	IC
2016	11	58100	Middle Tennessee State University	Commercial	MTSU Power Co-Gen Plant	TN	58179	SG-04	2.0	Petroleum Liquids	DFO	IC
2016	11	58100	Middle Tennessee State University	Commercial	MTSU Power Co-Gen Plant	TN	58179	SG-05	2.0	Petroleum Liquids	DFO	IC
2016	12	56730	Cedar Bay Operating Services LLC	Electric CHP	Cedar Bay Generating Company LP	FL	10672	GEN1	250.0	Conventional Steam Coal	BIT	ST
2016	12	3989	City of Colorado Springs - (CO)	Electric Utility	Martin Drake	CO	492	5	46.0	Conventional Steam Coal	SUB	ST
2016	12	14534	City of Pasadena - (CA)	Electric Utility	Broadway (CA)	CA	420	B3	71.0	Natural Gas Steam Turbine	NG	ST
2016	12	6455	Duke Energy Florida, Inc	Electric Utility	Suwannee River	FL	638	1	28.0	Natural Gas Steam Turbine	NG	ST
2016	12	6455	Duke Energy Florida, Inc	Electric Utility	Suwannee River	FL	638	2	29.0	Natural Gas Steam Turbine	NG	ST
2016	12	6455	Duke Energy Florida, Inc	Electric Utility	Suwannee River	FL	638	3	71.0	Natural Gas Steam Turbine	NG	ST
2016	12	15470	Duke Energy Indiana, LLC	Electric Utility	Wabash River	IN	1010	6	318.0	Conventional Steam Coal	BIT	ST
2016	12	15470	Duke Energy Indiana, LLC	Electric Utility	Wabash River	IN	1010	71	3.0	Petroleum Liquids	DFO	IC
2016	12	15470	Duke Energy Indiana, LLC	Electric Utility	Wabash River	IN	1010	72	3.0	Petroleum Liquids	DFO	IC
2016	12	15470	Duke Energy Indiana, LLC	Electric Utility	Wabash River	IN	1010	73	2.0	Petroleum Liquids	DFO	IC
2016	12	54802	Dynegy -Moss Landing LLC	IPP	Dynegy Moss Landing Power Plant	CA	260	6	754.0	Natural Gas Steam Turbine	NG	ST
2016	12	54802	Dynegy -Moss Landing LLC	IPP	Dynegy Moss Landing Power Plant	CA	260	7	755.0	Natural Gas Steam Turbine	NG	ST
2016	12	7160	Geysers Power Co LLC	IPP	West Ford Flat Power Plant	CA	10199	WFF1	15.0	Geothermal	GEO	ST
2016	12	7160	Geysers Power Co LLC	IPP	West Ford Flat Power Plant	CA	10199	WFF2	15.0	Geothermal	GEO	ST
2016	12	8286	Hawaiian Commercial and Sugar Company	Industrial	Hawaiian Comm & Sugar Puunene Mill	HI	10604	PUU3	10.0	Other Waste Biomass	AB	ST
2016	12	8286	Hawaiian Commercial and Sugar Company	Industrial	Hawaiian Comm & Sugar Puunene Mill	HI	10604	PUU4	20.0	Other Waste Biomass	AB	ST
2016	12	8286	Hawaiian Commercial and Sugar Company	Industrial	Hawaiian Comm & Sugar Puunene Mill	HI	10604	PUU5	16.1	Other Waste Biomass	AB	ST
2016	12	13960	NRG Cabrillo Power Ops Inc	IPP	EI Cajon	CA	301	ENCI	16.0	Natural Gas Fired Combustion Turbine	NG	GT
2016	12	13960	NRG Cabrillo Power Ops Inc	IPP	Miramar	CA	305	MRGT	36.0	Natural Gas Fired Combustion Turbine	NG	GT
2016	12	17578	South Orange Co Wastewtr Auth	Commercial	Aliso Water Management Agency	CA	10820	GEN1	0.4	Other Waste Biomass	OBG	IC
2016	12	17578	South Orange Co Wastewtr Auth	Commercial	Aliso Water Management Agency	CA	10820	GEN2	0.4	Other Waste Biomass	OBG	IC

NOTES:

Capacity from facilities with a total generator nameplate capacity less than 1 MW are excluded from this table.  
 Entity ID and Plant ID are official, unique identification numbers assigned by EIA; Generator IDs are assigned by plant owners and/or operators.  
 Descriptions for the Energy Source Codes and the Prime Mover Codes listed in the table can be found in the Technical Notes.

























Table 6.6. Planned U.S. Electric Generating Unit Retirements

Year	Month	Entity ID	Entity Name	Plant Producer Type	Plant Name	Plant State	Plant ID	Generator ID	Net Summer Capacity (MW)	Technology	Energy Source Code	Prime Mover Code
2023	1	11135	City of Logan - (UT)	Electric Utility	Hydro III	UT	3675	HY1	0.7	Conventional Hydroelectric	WAT	HY
2023	1	11135	City of Logan - (UT)	Electric Utility	Hydro III	UT	3675	HY2	0.7	Conventional Hydroelectric	WAT	HY
2023	3	57173	AC Landfill Energy LLC	IPP	AC Landfill Energy LLC	NJ	57845	UNIT1	1.5	Landfill Gas	LFG	IC
2023	3	57173	AC Landfill Energy LLC	IPP	AC Landfill Energy LLC	NJ	57845	UNIT2	1.8	Landfill Gas	LFG	IC
2023	3	57173	AC Landfill Energy LLC	IPP	AC Landfill Energy LLC	NJ	57845	UNIT3	1.8	Landfill Gas	LFG	IC
2023	3	13399	Nevada Cogeneration Assoc # 1	Electric CHP	Nevada Cogen Assoc#1 GarnetVly	NV	54350	GTA	21.7	Natural Gas Fired Combined Cycle	NG	CT
2023	3	13399	Nevada Cogeneration Assoc # 1	Electric CHP	Nevada Cogen Assoc#1 GarnetVly	NV	54350	GTB	21.7	Natural Gas Fired Combined Cycle	NG	CT
2023	3	13399	Nevada Cogeneration Assoc # 1	Electric CHP	Nevada Cogen Assoc#1 GarnetVly	NV	54350	GTC	21.7	Natural Gas Fired Combined Cycle	NG	CT
2023	3	13399	Nevada Cogeneration Assoc # 1	Electric CHP	Nevada Cogen Assoc#1 GarnetVly	NV	54350	STM	24.0	Natural Gas Fired Combined Cycle	NG	CA
2023	3	13365	Nevada Cogeneration Assoc # 2	Electric CHP	Nevada Cogen Associates 2 Black Mountain	NV	54349	GTA	21.7	Natural Gas Fired Combined Cycle	NG	CT
2023	3	13365	Nevada Cogeneration Assoc # 2	Electric CHP	Nevada Cogen Associates 2 Black Mountain	NV	54349	GTB	21.7	Natural Gas Fired Combined Cycle	NG	CT
2023	3	13365	Nevada Cogeneration Assoc # 2	Electric CHP	Nevada Cogen Associates 2 Black Mountain	NV	54349	GTC	21.7	Natural Gas Fired Combined Cycle	NG	CT
2023	3	13365	Nevada Cogeneration Assoc # 2	Electric CHP	Nevada Cogen Associates 2 Black Mountain	NV	54349	STM	28.0	Natural Gas Fired Combined Cycle	NG	CA
2023	12	13781	Northern States Power Co - Minnesota	Electric Utility	Blue Lake	MN	8027	1	39.0	Petroleum Liquids	DFO	GT
2023	12	13781	Northern States Power Co - Minnesota	Electric Utility	Blue Lake	MN	8027	2	39.0	Petroleum Liquids	DFO	GT
2023	12	13781	Northern States Power Co - Minnesota	Electric Utility	Blue Lake	MN	8027	3	36.0	Petroleum Liquids	DFO	GT
2023	12	13781	Northern States Power Co - Minnesota	Electric Utility	Blue Lake	MN	8027	4	39.0	Petroleum Liquids	DFO	GT
2023	12	13781	Northern States Power Co - Minnesota	Electric Utility	French Island	WI	4005	1	9.0	Wood/Wood Waste Biomass	WDS	ST
2023	12	13781	Northern States Power Co - Minnesota	Electric Utility	French Island	WI	4005	2	7.0	Wood/Wood Waste Biomass	WDS	ST
2023	12	13781	Northern States Power Co - Minnesota	Electric Utility	Laverne Battery	MN	58579	1	1.0	Batteries	MWH	BA
2023	12	14063	Oklahoma Gas & Electric Co	Electric Utility	Horseshoe Lake	OK	2951	6	167.8	Natural Gas Steam Turbine	NG	ST
2023	12	17718	Southwestern Public Service Co	Electric Utility	Nichols	TX	3484	2	106.0	Natural Gas Steam Turbine	NG	ST
2024	7	1951	White Pine Electric Power LLC	IPP	White Pine Electric Power	MI	10148	GEN1	18.0	Natural Gas Steam Turbine	NG	ST
2024	7	1951	White Pine Electric Power LLC	IPP	White Pine Electric Power	MI	10148	GEN3	18.0	Natural Gas Steam Turbine	NG	ST
2024	12	13781	Northern States Power Co - Minnesota	Electric Utility	Apple River	WI	6231	1	0.4	Conventional Hydroelectric	WAT	HY
2024	12	13781	Northern States Power Co - Minnesota	Electric Utility	Apple River	WI	6231	3	0.5	Conventional Hydroelectric	WAT	HY
2024	12	13781	Northern States Power Co - Minnesota	Electric Utility	Apple River	WI	6231	4	0.5	Conventional Hydroelectric	WAT	HY
2024	12	13781	Northern States Power Co - Minnesota	Electric Utility	Granite City	MN	1910	1	13.0	Natural Gas Fired Combustion Turbine	NG	GT
2024	12	13781	Northern States Power Co - Minnesota	Electric Utility	Granite City	MN	1910	2	13.0	Natural Gas Fired Combustion Turbine	NG	GT
2024	12	13781	Northern States Power Co - Minnesota	Electric Utility	Granite City	MN	1910	3	13.0	Natural Gas Fired Combustion Turbine	NG	GT
2024	12	13781	Northern States Power Co - Minnesota	Electric Utility	Granite City	MN	1910	4	13.0	Natural Gas Fired Combustion Turbine	NG	GT
2024	12	17718	Southwestern Public Service Co	Electric Utility	Plant X	TX	3485	3	93.0	Natural Gas Steam Turbine	NG	ST
2025	8	13781	Northern States Power Co - Minnesota	Electric Utility	White River (WI)	WI	3989	1	0.2	Conventional Hydroelectric	WAT	HY
2025	8	13781	Northern States Power Co - Minnesota	Electric Utility	White River (WI)	WI	3989	2	0.2	Conventional Hydroelectric	WAT	HY
2025	11	13781	Northern States Power Co - Minnesota	Electric Utility	Trego	WI	4012	1	0.4	Conventional Hydroelectric	WAT	HY
2025	11	13781	Northern States Power Co - Minnesota	Electric Utility	Trego	WI	4012	2	0.3	Conventional Hydroelectric	WAT	HY
2025	12	13781	Northern States Power Co - Minnesota	Electric Utility	Angus Anson	SD	7237	1	90.0	Natural Gas Fired Combustion Turbine	NG	GT
2025	12	13781	Northern States Power Co - Minnesota	Electric Utility	Angus Anson	SD	7237	2	90.0	Natural Gas Fired Combustion Turbine	NG	GT
2025	12	13781	Northern States Power Co - Minnesota	Electric Utility	Saxon Falls	WI	1756	1	0.5	Conventional Hydroelectric	WAT	HY
2025	12	13781	Northern States Power Co - Minnesota	Electric Utility	Saxon Falls	WI	1756	2	0.5	Conventional Hydroelectric	WAT	HY
2025	12	13781	Northern States Power Co - Minnesota	Electric Utility	Sherburne County	MN	6090	1	680.0	Conventional Steam Coal	SUB	ST
2025	12	13781	Northern States Power Co - Minnesota	Electric Utility	Superior Falls	MI	1757	1	0.5	Conventional Hydroelectric	WAT	HY
2025	12	13781	Northern States Power Co - Minnesota	Electric Utility	Superior Falls	MI	1757	2	0.5	Conventional Hydroelectric	WAT	HY
2025	12	13781	Northern States Power Co - Minnesota	Electric Utility	Wheaton	WI	4014	1	44.0	Natural Gas Fired Combustion Turbine	NG	GT
2025	12	13781	Northern States Power Co - Minnesota	Electric Utility	Wheaton	WI	4014	2	55.0	Natural Gas Fired Combustion Turbine	NG	GT
2025	12	13781	Northern States Power Co - Minnesota	Electric Utility	Wheaton	WI	4014	3	44.0	Natural Gas Fired Combustion Turbine	NG	GT
2025	12	13781	Northern States Power Co - Minnesota	Electric Utility	Wheaton	WI	4014	4	47.0	Natural Gas Fired Combustion Turbine	NG	GT
2025	12	13781	Northern States Power Co - Minnesota	Electric Utility	Wheaton	WI	4014	5	52.0	Petroleum Liquids	DFO	GT
2025	12	13781	Northern States Power Co - Minnesota	Electric Utility	Wheaton	WI	4014	6	48.0	Petroleum Liquids	DFO	GT
2025	12	17718	Southwestern Public Service Co	Electric Utility	Carlsbad	NM	2453	5	10.0	Natural Gas Fired Combustion Turbine	NG	GT
2025	12	17718	Southwestern Public Service Co	Electric Utility	Cunningham	NM	2454	2	183.0	Natural Gas Steam Turbine	NG	ST
2025	12	17718	Southwestern Public Service Co	Electric Utility	Maddox	NM	2446	2	61.0	Natural Gas Fired Combustion Turbine	NG	GT
2025	12	17718	Southwestern Public Service Co	Electric Utility	Maddox	NM	2446	3	10.0	Natural Gas Fired Combustion Turbine	NG	GT
2025	12	19099	TransAlta Centralia Gen LLC	IPP	TransAlta Centralia Generation	WA	3845	2	670.0	Conventional Steam Coal	SUB	ST
2026	12	5701	El Paso Electric Co	Electric Utility	Newman	TX	3456	4	83.0	Natural Gas Fired Combined Cycle	NG	CA
2026	12	5701	El Paso Electric Co	Electric Utility	Newman	TX	3456	CT1	72.0	Natural Gas Fired Combined Cycle	NG	CT
2026	12	5701	El Paso Electric Co	Electric Utility	Newman	TX	3456	CT2	72.0	Natural Gas Fired Combined Cycle	NG	CT
2028	12	17539	South Carolina Electric&Gas Company	Electric Utility	McMeekin	SC	3287	1	125.0	Conventional Steam Coal	BIT	ST
2028	12	17539	South Carolina Electric&Gas Company	Electric Utility	McMeekin	SC	3287	2	125.0	Conventional Steam Coal	BIT	ST
2034	6	58944	Enerparc CA 1, LLC	IPP	Enerparc CA1 LLC	CA	59122	ECA11	1.5	Solar Photovoltaic	SUN	PV
2045		195	Alabama Power Co	Electric Utility	Holt Dam	AL	12	1	45.0	Conventional Hydroelectric	WAT	HY
2046	12	58421	Panda Patriot O&M LLC	IPP	Panda Patriot Generation Plant	PA	58426	GEN1	382.5	Natural Gas Fired Combined Cycle	NG	CS
2046	12	58421	Panda Patriot O&M LLC	IPP	Panda Patriot Generation Plant	PA	58426	GEN2	382.5	Natural Gas Fired Combined Cycle	NG	CS

NOTES:

Capacity from facilities with a total generator nameplate capacity less than 1 MW are excluded from this table.

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Descriptions for the Energy Source Codes and the Prime Mover Codes listed in the table can be found in the Technical Notes.

**Table 6.7.A. Capacity Factors for Utility Scale Generators Primarily Using Fossil Fuels, January 2013-December 2016**

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	59.7%	48.2%	4.9%	10.6%	6.1%	12.1%	0.8%	2.2%	
2014	61.0%	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	52.7%	56.0%	8.3%	12.2%	NA	10.8%	1.3%	NA	
Year 2014									
January	71.2%	47.2%	6.6%	10.0%	7.8%	19.5%	3.8%	2.3%	
February	71.9%	42.5%	4.7%	9.2%	8.7%	12.0%	0.9%	1.5%	
March	61.7%	39.7%	4.7%	7.2%	7.1%	13.7%	1.1%	1.4%	
April	51.1%	40.3%	3.8%	7.2%	7.9%	9.4%	0.5%	1.0%	
May	54.1%	45.0%	5.0%	9.8%	7.8%	10.2%	0.6%	1.6%	
June	64.8%	51.1%	5.4%	11.8%	7.6%	14.8%	0.9%	1.3%	
July	67.9%	57.7%	6.2%	15.2%	9.7%	15.0%	1.0%	1.5%	
August	67.5%	61.0%	6.6%	16.9%	11.0%	14.4%	1.3%	1.5%	
Sept	59.2%	55.4%	5.7%	12.7%	9.5%	13.5%	0.7%	1.4%	
October	50.7%	49.0%	5.2%	10.6%	8.8%	8.6%	0.7%	1.3%	
November	56.0%	43.7%	4.5%	7.6%	8.3%	7.7%	0.8%	1.2%	
December	56.6%	46.2%	4.1%	5.9%	7.2%	10.7%	0.6%	1.1%	
Year 2015									
January	61.3%	52.6%	4.4%	7.6%	5.2%	12.4%	0.6%	2.5%	
February	64.9%	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	49.8%	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%	
Sept	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	43.9%	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	55.6%	56.8%	4.5%	6.3%	NA	9.4%	0.5%	NA	
February	48.4%	54.1%	4.5%	6.4%	NA	9.9%	0.5%	NA	
March	35.6%	50.8%	7.2%	9.9%	NA	8.3%	1.3%	NA	
April	37.3%	48.1%	8.6%	12.1%	NA	9.1%	1.0%	NA	
May	41.1%	53.2%	7.6%	12.5%	NA	10.6%	1.3%	NA	
June	60.8%	64.7%	10.0%	17.5%	NA	12.5%	1.5%	NA	
July	69.1%	68.8%	14.3%	22.9%	NA	16.1%	2.5%	NA	
August	68.6%	71.3%	14.3%	21.2%	NA	14.3%	3.1%	NA	
Sept	59.7%	61.4%	9.4%	14.5%	NA	12.2%	1.4%	NA	
October	50.2%	48.1%	7.6%	11.4%	NA	8.2%	1.1%	NA	
November	45.5%	47.0%	6.6%	6.0%	NA	9.3%	0.7%	NA	
December	60.2%	47.8%	4.7%	5.4%	NA	9.4%	0.6%	NA	

Values for 2015 and prior years are final. Values for 2016 are preliminary. NA = Not Available

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

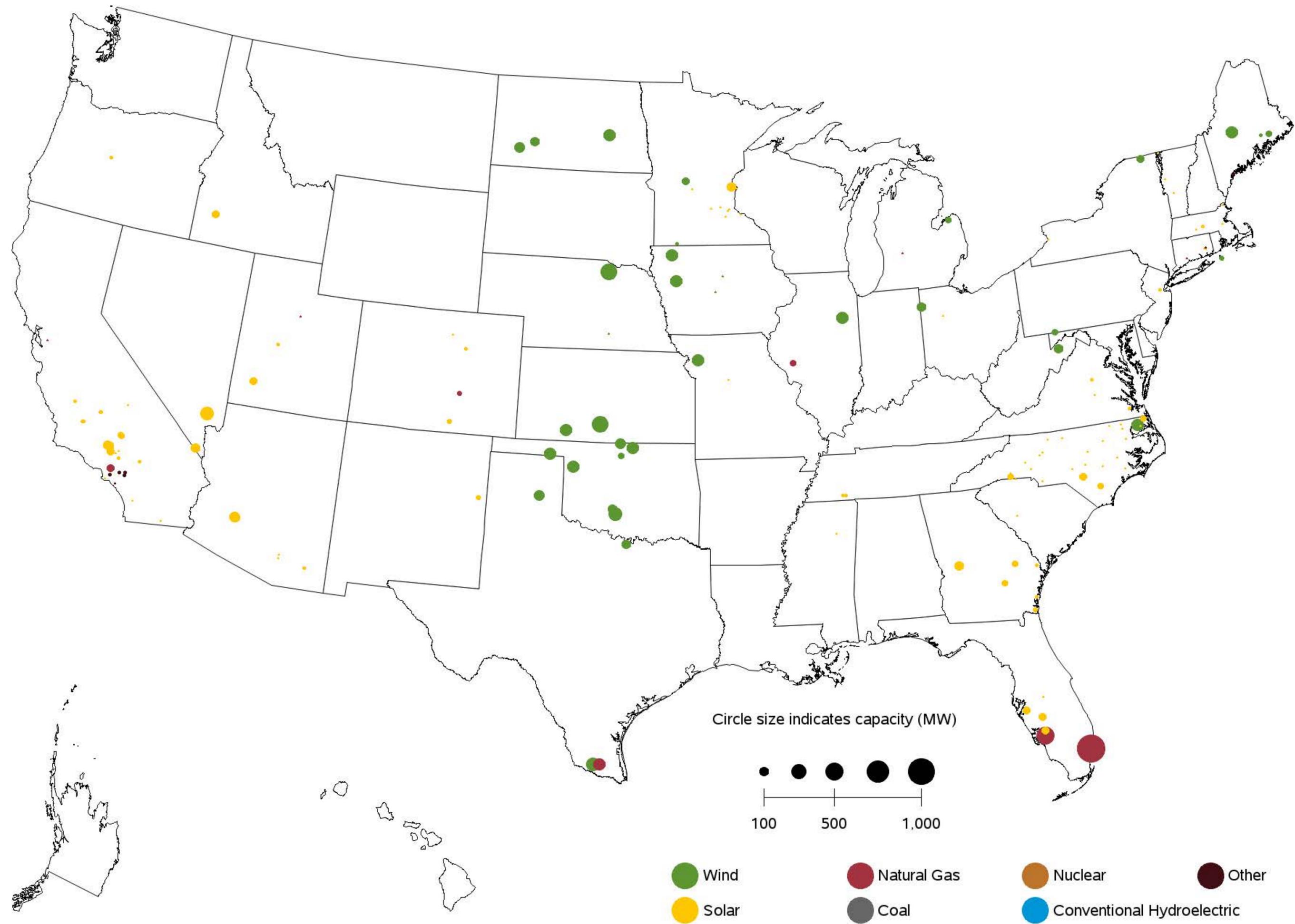
Period	Nuclear	Conventional Hydropower	Wind	Solar Photovoltaic	Solar Thermal	Landfill Gas and Municipal Solid Waste	Other Biomass Including Wood	Geothermal
Annual Factors								
2013	89.9%	38.9%	32.4%	NA	NA	68.9%	56.7%	73.6%
2014	91.7%	37.3%	34.0%	25.9%	19.8%	68.9%	58.9%	74.0%
2015	92.3%	35.8%	32.2%	25.8%	22.1%	68.7%	55.3%	74.3%
2016	92.5%	38.0%	34.7%	27.2%	22.2%	70.7%	46.7%	74.2%
Year 2014								
January	99.1%	36.7%	40.3%	NA	NA	68.1%	60.0%	74.0%
February	94.0%	32.6%	34.8%	NA	NA	68.3%	59.5%	73.3%
March	84.5%	40.7%	39.8%	NA	NA	69.6%	59.7%	73.5%
April	78.8%	44.5%	43.2%	NA	NA	69.9%	49.5%	74.6%
May	85.2%	44.6%	34.9%	NA	NA	70.6%	48.2%	73.2%
June	95.4%	44.8%	36.5%	NA	NA	70.8%	63.0%	73.4%
July	97.5%	41.3%	27.0%	NA	NA	73.1%	63.4%	72.5%
August	96.4%	33.7%	22.5%	30.9%	25.4%	71.1%	62.8%	73.0%
Sept	94.6%	28.2%	26.1%	30.7%	26.3%	68.9%	61.2%	74.2%
October	84.5%	29.2%	31.6%	26.5%	21.1%	64.4%	56.5%	73.9%
November	91.3%	32.6%	42.3%	22.3%	13.8%	66.1%	62.1%	77.3%
December	99.6%	37.8%	30.4%	15.1%	5.6%	65.4%	60.8%	75.5%
Year 2015								
January	101.3%	40.7%	31.2%	16.8%	5.0%	65.1%	57.2%	75.9%
February	95.8%	41.4%	34.1%	22.1%	14.5%	64.3%	60.0%	76.4%
March	88.0%	40.8%	31.4%	26.7%	22.6%	63.0%	53.4%	76.8%
April	84.3%	39.4%	37.5%	30.9%	30.5%	66.8%	47.3%	72.4%
May	89.8%	33.9%	34.8%	31.2%	27.0%	68.5%	48.4%	76.6%
June	96.4%	35.8%	27.9%	31.7%	32.2%	69.2%	56.7%	74.1%
July	97.3%	35.8%	27.4%	31.4%	31.1%	73.1%	59.9%	74.7%
August	98.6%	32.5%	25.8%	31.3%	32.3%	71.5%	61.6%	73.9%
Sept	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	98.8%	42.6%	34.2%	17.9%	6.8%	70.3%	51.2%	73.6%
February	95.6%	43.2%	39.9%	26.7%	19.5%	66.0%	54.0%	73.5%
March	90.1%	45.2%	40.4%	28.0%	19.6%	63.5%	47.8%	72.8%
April	87.8%	44.2%	39.0%	30.8%	20.9%	68.5%	36.4%	68.9%
May	90.7%	42.6%	34.3%	35.0%	28.9%	75.2%	39.0%	74.1%
June	94.5%	40.2%	30.6%	33.6%	33.5%	73.8%	47.2%	71.6%
July	94.8%	35.9%	32.0%	34.8%	36.9%	72.8%	52.4%	72.7%
August	96.3%	32.7%	24.5%	33.4%	29.2%	73.7%	54.9%	73.5%
Sept	91.1%	28.4%	30.6%	30.1%	30.2%	70.7%	47.4%	76.1%
October	81.9%	29.2%	36.7%	25.3%	19.1%	66.4%	38.0%	75.1%
November	91.1%	33.3%	35.4%	21.3%	14.4%	71.5%	41.6%	78.2%
December	97.0%	38.2%	38.8%	15.5%	7.0%	76.3%	50.2%	80.7%

Values for 2015 and prior years are final. Values for 2016 are preliminary. NA = Not Available

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

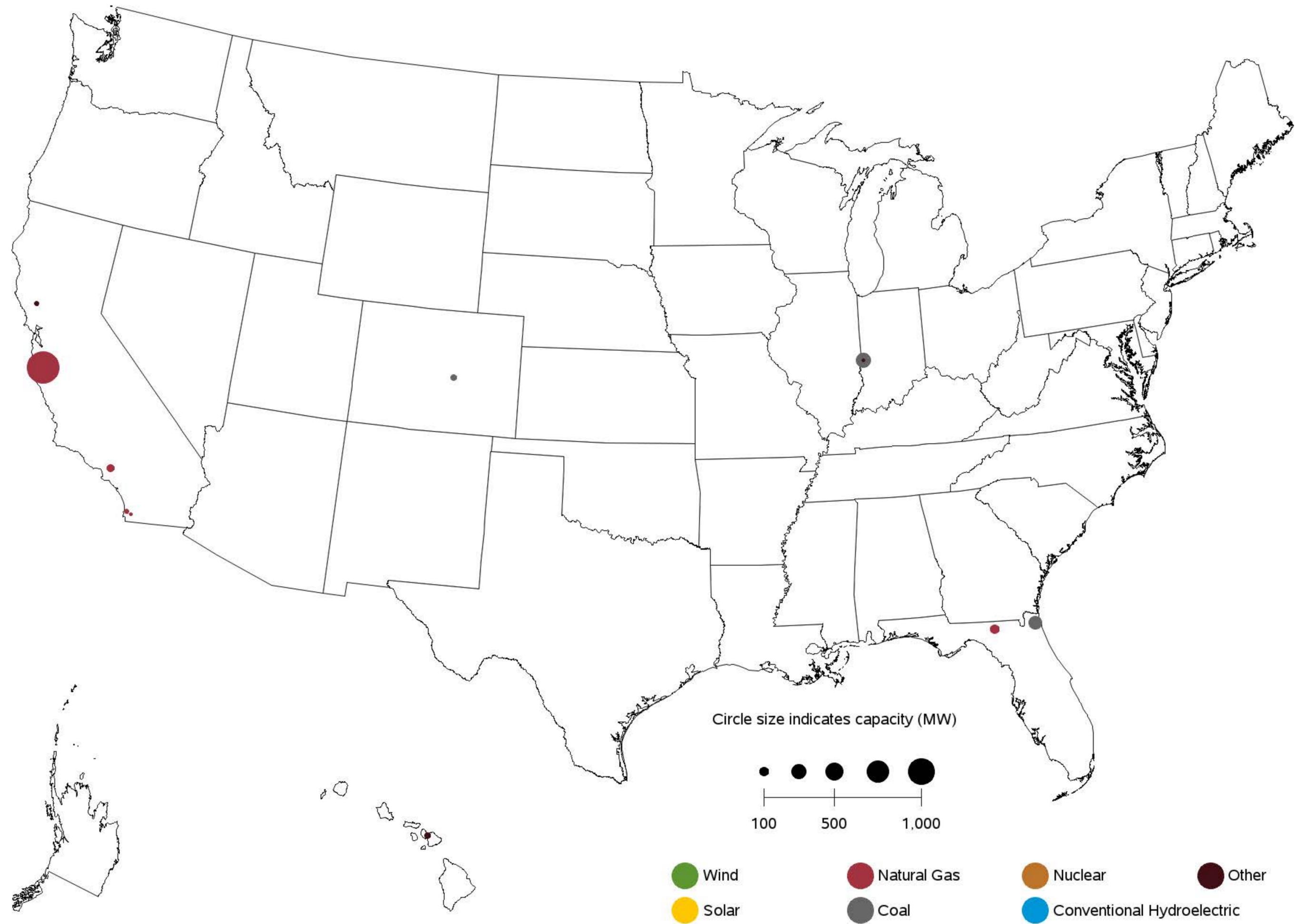
Sources: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report; U.S. Energy Information Administration, Form EIA-860, 'Annual Electric Generator Report' and Form EIA-860M, 'Monthly Update to the Annual Electric Generator Report.'

Figure 6.1.A. Utility-Scale Generating Units Added in December 2016



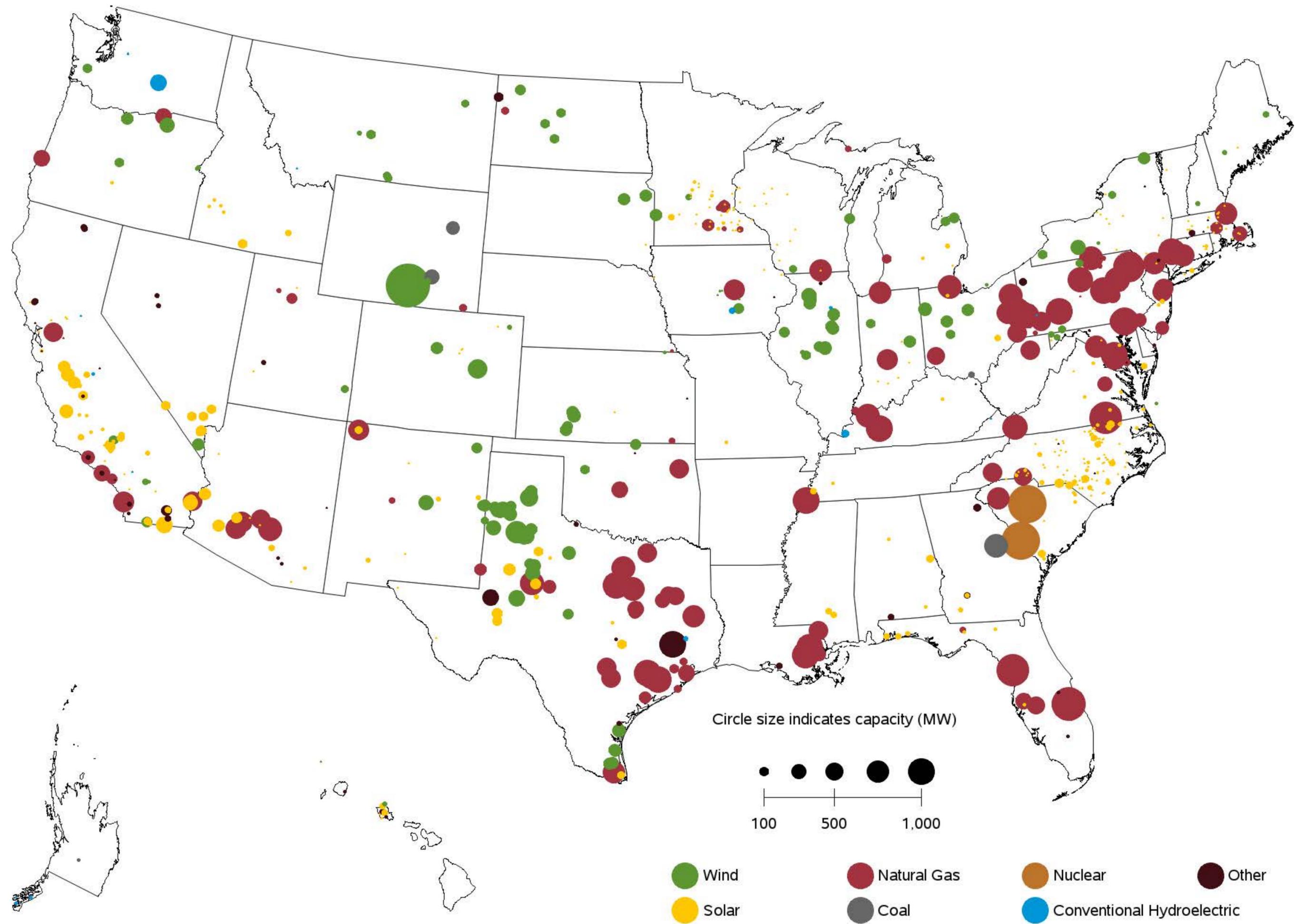
Sources: U.S. Energy Information Administration, Form EIA-860, 'Annual Electric Generator Report' and Form EIA-860M, 'Monthly Update to the Annual Electric Generator Report.'

Figure 6.1.B. Utility-Scale Generating Units Retired in December 2016



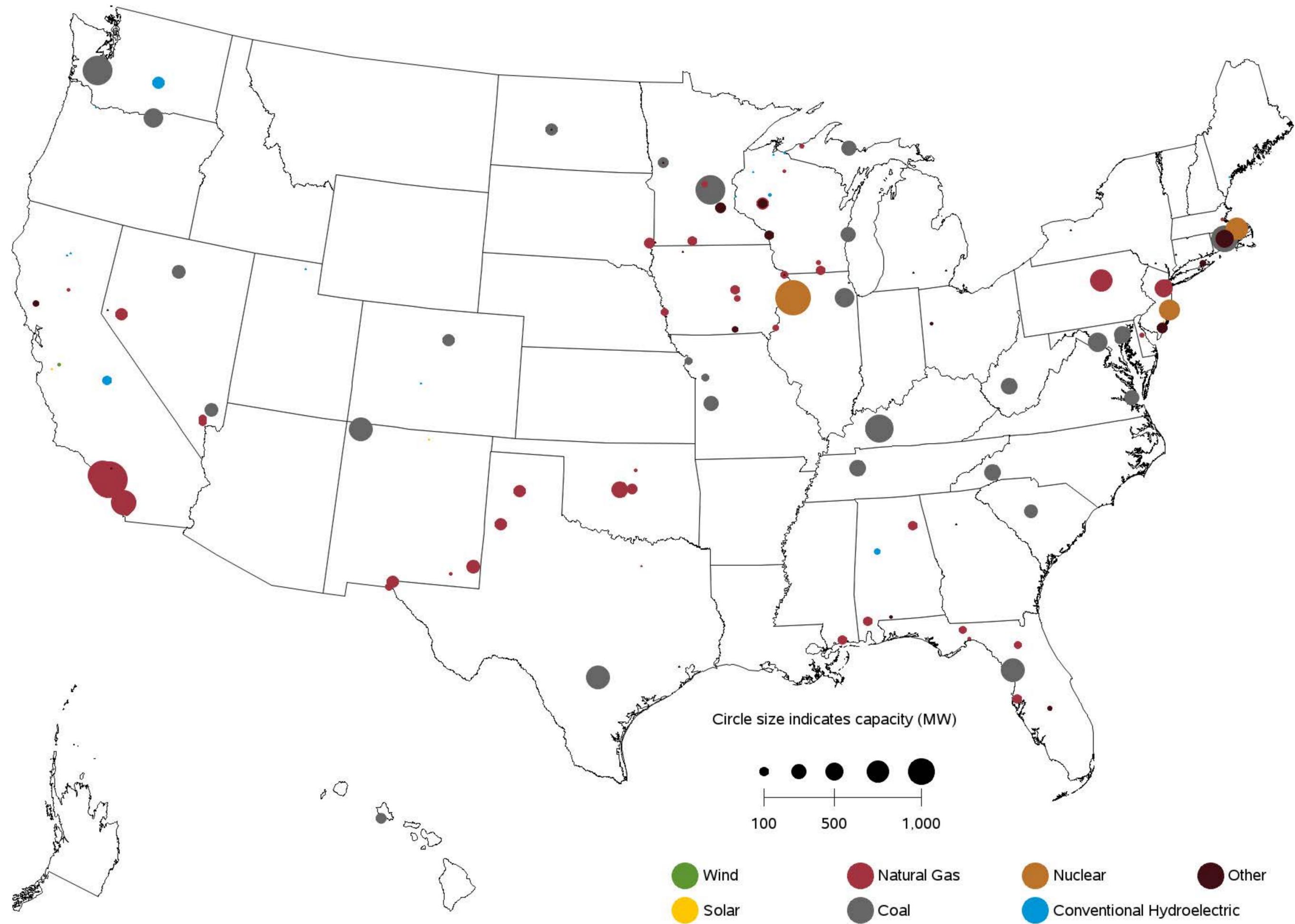
Sources: U.S. Energy Information Administration, Form EIA-860, 'Annual Electric Generator Report' and Form EIA-860M, 'Monthly Update to the Annual Electric Generator Report.'

Figure 6.1.C. Utility-Scale Generating Units Planned to Come Online from January 2017 to December 2017



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.'

Figure 6.1.D. Utility-Scale Generating Units Planned to Retire from January 2017 to December 2017



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 A.1.A. Relative Standard Error (Percent) for Net Generation by Fuel Type:

Total (All Sectors) by Census Division and State, December 2016

Census Region and State	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gases	Nuclear	Hydroelectric Conventional
<b>New England</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>10</b>
Connecticut	0	8	0	3	0	0	70
Maine	0	17	0	15	0	0	15
Massachusetts	1	4	0	3	0	0	28
New Hampshire	0	40	0	2	0	0	15
Rhode Island	0	67	0	2	0	0	719
Vermont	0	234	0	269	0	0	34
<b>Middle Atlantic</b>	<b>2</b>	<b>6</b>	<b>43</b>	<b>1</b>	<b>27</b>	<b>0</b>	<b>2</b>
New Jersey	0	6	80	2	85	0	701
New York	0	5	0	2	0	0	2
Pennsylvania	2	18	51	1	20	0	9
<b>East North Central</b>	<b>0</b>	<b>4</b>	<b>5</b>	<b>1</b>	<b>10</b>	<b>0</b>	<b>15</b>
Illinois	0	4	0	3	80	0	81
Indiana	0	5	0	2	14	0	22
Michigan	2	29	15	2	0	0	28
Ohio	1	2	3	1	45	0	30
Wisconsin	0	36	0	2	0	0	22
<b>West North Central</b>	<b>1</b>	<b>9</b>	<b>80</b>	<b>3</b>	<b>180</b>	<b>0</b>	<b>8</b>
Iowa	2	15	80	9	0	0	33
Kansas	0	8	0	3	0	0	268
Minnesota	2	64	0	3	0	0	35
Missouri	1	1	0	7	0	0	17
Nebraska	2	69	0	17	0	0	26
North Dakota	2	12	0	38	180	0	0
South Dakota	0	150	0	23	0	0	1
<b>South Atlantic</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>
Delaware	0	23	0	8	0	0	0
District of Columbia	0	1,000	0	161	0	0	0
Florida	0	3	0	1	0	0	72
Georgia	0	19	0	1	0	0	13
Maryland	0	19	0	26	0	0	2
North Carolina	1	4	0	0	0	0	14
South Carolina	0	10	0	1	0	0	23
Virginia	1	7	0	0	0	0	24
West Virginia	0	0	0	4	0	0	19
<b>East South Central</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>1</b>	<b>63</b>	<b>0</b>	<b>4</b>
Alabama	1	22	0	1	114	0	7
Kentucky	0	5	0	2	0	0	5
Mississippi	0	12	0	1	0	0	0
Tennessee	0	6	0	1	0	0	8
<b>West South Central</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>10</b>
Arkansas	0	2	0	1	0	0	13
Louisiana	0	3	2	1	5	0	0
Oklahoma	1	18	0	1	0	0	27
Texas	0	4	38	1	5	0	41
<b>Mountain</b>	<b>1</b>	<b>24</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>0</b>	<b>4</b>
Arizona	0	29	0	0	0	0	2
Colorado	0	215	0	1	0	0	24
Idaho	79	482	0	3	0	0	10
Montana	5	54	0	44	0	0	4
Nevada	0	0	0	1	0	0	5
New Mexico	0	45	0	3	0	0	142
Utah	1	35	0	5	263	0	42
Wyoming	2	10	0	16	4	0	28
<b>Pacific Contiguous</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>1</b>	<b>6</b>	<b>0</b>	<b>1</b>
California	0	23	0	2	8	0	6
Oregon	0	8	0	0	0	0	2
Washington	0	47	0	2	0	0	1
<b>Pacific Noncontiguous</b>	<b>5</b>	<b>5</b>	<b>0</b>	<b>11</b>	<b>123</b>	<b>0</b>	<b>19</b>
Alaska	14	8	0	11	0	0	20
Hawaii	4	5	0	0	123	0	72
<b>U.S. Total</b>	<b>0</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>1</b>

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.

Table A.1.A. Relative Standard Error (Percent) for Net Generation by Fuel Type:

Total (All Sectors) by Census Division and State, December 2016 (Continued)

Census Region and State	Wind	Geothermal	Biomass	Solar Thermal and Photovoltaic	Other Renewables	Hydroelectric Pumped Storage	Other Energy Sources	All Energy Sources
<b>New England</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>21</b>	<b>3</b>	<b>0</b>	<b>4</b>	<b>1</b>
Connecticut	0	0	0	96	5	0	6	1
Maine	0	0	0	0	1	0	14	4
Massachusetts	0	0	0	23	8	0	5	2
New Hampshire	0	0	0	0	11	0	31	2
Rhode Island	0	0	0	132	13	0	0	2
Vermont	0	0	0	57	14	0	0	18
<b>Middle Atlantic</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>18</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>1</b>
New Jersey	0	0	0	20	8	0	5	1
New York	0	0	0	39	1	0	7	1
Pennsylvania	0	0	0	67	1	0	6	1
<b>East North Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>28</b>	<b>1</b>	<b>0</b>	<b>9</b>	<b>0</b>
Illinois	0	0	0	73	0	0	28	0
Indiana	0	0	0	35	1	0	5	1
Michigan	0	0	0	128	2	0	13	1
Ohio	0	0	0	65	3	0	61	1
Wisconsin	0	0	0	262	2	0	42	1
<b>West North Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>39</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>0</b>
Iowa	0	0	0	337	0	0	179	1
Kansas	0	0	0	452	0	0	0	0
Minnesota	0	0	0	46	1	0	11	1
Missouri	0	0	0	85	2	0	0	1
Nebraska	0	0	0	226	1	0	0	2
North Dakota	0	0	0	0	0	0	37	1
South Dakota	0	0	0	452	1	0	0	1
<b>South Atlantic</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>
Delaware	0	0	0	73	29	0	0	7
District of Columbia	0	0	0	0	0	0	0	161
Florida	0	0	0	3	3	0	3	0
Georgia	0	0	0	6	2	0	0	0
Maryland	0	0	0	35	4	0	0	1
North Carolina	0	0	0	9	5	0	16	0
South Carolina	0	0	0	147	6	0	19	0
Virginia	0	0	0	58	2	0	6	0
West Virginia	0	0	0	0	0	0	0	0
<b>East South Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>23</b>	<b>2</b>	<b>0</b>	<b>14</b>	<b>0</b>
Alabama	0	0	0	0	3	0	0	1
Kentucky	0	0	0	0	6	0	0	0
Mississippi	0	0	0	257	3	0	180	0
Tennessee	0	0	0	52	7	0	0	1
<b>West South Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>0</b>
Arkansas	0	0	0	125	3	0	0	0
Louisiana	0	0	0	0	4	0	17	1
Oklahoma	0	0	0	0	0	0	29	0
Texas	0	0	0	5	0	0	15	0
<b>Mountain</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>1</b>
Arizona	0	0	0	3	3	0	0	0
Colorado	0	0	0	10	1	0	54	1
Idaho	0	28	0	0	4	0	49	6
Montana	0	0	0	0	2	0	0	3
Nevada	0	3	0	3	2	0	0	1
New Mexico	0	71	0	11	2	0	469	1
Utah	0	5	0	4	2	0	4	1
Wyoming	0	0	0	0	1	0	0	2
<b>Pacific Contiguous</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>9</b>	<b>1</b>
California	0	2	0	2	1	0	10	1
Oregon	0	11	0	47	2	0	34	1
Washington	0	0	0	0	1	0	30	1
<b>Pacific Noncontiguous</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>63</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>4</b>
Alaska	0	0	0	0	25	0	0	8
Hawaii	0	0	0	63	5	0	0	4
<b>U.S. Total</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>

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.

Table A.1.B. Relative Standard Error (Percent) for Net Generation by Fuel Type:

Total (All Sectors) by Census Division and State, Year-to-Date through December 2016

Census Region and State	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gases	Nuclear	Hydroelectric Conventional
<b>New England</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>10</b>
Connecticut	0	8	0	3	0	0	70
Maine	0	17	0	15	0	0	15
Massachusetts	1	4	0	3	0	0	28
New Hampshire	0	40	0	2	0	0	15
Rhode Island	0	67	0	2	0	0	719
Vermont	0	234	0	269	0	0	34
<b>Middle Atlantic</b>	<b>2</b>	<b>6</b>	<b>43</b>	<b>1</b>	<b>27</b>	<b>0</b>	<b>2</b>
New Jersey	0	6	80	2	85	0	701
New York	0	5	0	2	0	0	2
Pennsylvania	2	18	51	1	20	0	9
<b>East North Central</b>	<b>0</b>	<b>4</b>	<b>5</b>	<b>1</b>	<b>10</b>	<b>0</b>	<b>15</b>
Illinois	0	4	0	3	80	0	81
Indiana	0	5	0	2	14	0	22
Michigan	2	29	15	2	0	0	28
Ohio	1	2	3	1	45	0	30
Wisconsin	0	36	0	2	0	0	22
<b>West North Central</b>	<b>1</b>	<b>9</b>	<b>80</b>	<b>3</b>	<b>180</b>	<b>0</b>	<b>8</b>
Iowa	2	15	80	9	0	0	33
Kansas	0	8	0	3	0	0	268
Minnesota	2	64	0	3	0	0	35
Missouri	1	1	0	7	0	0	17
Nebraska	2	69	0	17	0	0	26
North Dakota	2	12	0	38	180	0	0
South Dakota	0	150	0	23	0	0	1
<b>South Atlantic</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>
Delaware	0	23	0	8	0	0	0
District of Columbia	0	1,000	0	161	0	0	0
Florida	0	3	0	1	0	0	72
Georgia	0	19	0	1	0	0	13
Maryland	0	19	0	26	0	0	2
North Carolina	1	4	0	0	0	0	14
South Carolina	0	10	0	1	0	0	23
Virginia	1	7	0	0	0	0	24
West Virginia	0	0	0	4	0	0	19
<b>East South Central</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>1</b>	<b>63</b>	<b>0</b>	<b>4</b>
Alabama	1	22	0	1	114	0	7
Kentucky	0	5	0	2	0	0	5
Mississippi	0	12	0	1	0	0	0
Tennessee	0	6	0	1	0	0	8
<b>West South Central</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>10</b>
Arkansas	0	2	0	1	0	0	13
Louisiana	0	3	2	1	5	0	0
Oklahoma	1	18	0	1	0	0	27
Texas	0	4	38	1	5	0	41
<b>Mountain</b>	<b>1</b>	<b>24</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>0</b>	<b>4</b>
Arizona	0	29	0	0	0	0	2
Colorado	0	215	0	1	0	0	24
Idaho	79	482	0	3	0	0	10
Montana	5	54	0	44	0	0	4
Nevada	0	0	0	1	0	0	5
New Mexico	0	45	0	3	0	0	142
Utah	1	35	0	5	263	0	42
Wyoming	2	10	0	16	4	0	28
<b>Pacific Contiguous</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>1</b>	<b>6</b>	<b>0</b>	<b>1</b>
California	0	23	0	2	8	0	6
Oregon	0	8	0	0	0	0	2
Washington	0	47	0	2	0	0	1
<b>Pacific Noncontiguous</b>	<b>5</b>	<b>5</b>	<b>0</b>	<b>11</b>	<b>123</b>	<b>0</b>	<b>19</b>
Alaska	14	8	0	11	0	0	20
Hawaii	4	5	0	0	123	0	72
<b>U.S. Total</b>	<b>0</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>1</b>

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.

Table A.1.B. Relative Standard Error (Percent) for Net Generation by Fuel Type:

Total (All Sectors) by Census Division and State, Year-to-Date through December 2016 (Continued)

Census Region and State	Wind	Geothermal	Biomass	Solar Thermal and Photovoltaic	Other Renewables	Hydroelectric Pumped Storage	Other Energy Sources	All Energy Sources
<b>New England</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>21</b>	<b>3</b>	<b>0</b>	<b>4</b>	<b>1</b>
Connecticut	0	0	0	96	5	0	6	1
Maine	0	0	0	0	1	0	14	4
Massachusetts	0	0	0	23	8	0	5	2
New Hampshire	0	0	0	0	11	0	31	2
Rhode Island	0	0	0	132	13	0	0	2
Vermont	0	0	0	57	14	0	0	18
<b>Middle Atlantic</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>18</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>1</b>
New Jersey	0	0	0	20	8	0	5	1
New York	0	0	0	39	1	0	7	1
Pennsylvania	0	0	0	67	1	0	6	1
<b>East North Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>28</b>	<b>1</b>	<b>0</b>	<b>9</b>	<b>0</b>
Illinois	0	0	0	73	0	0	28	0
Indiana	0	0	0	35	1	0	5	1
Michigan	0	0	0	128	2	0	13	1
Ohio	0	0	0	65	3	0	61	1
Wisconsin	0	0	0	262	2	0	42	1
<b>West North Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>39</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>0</b>
Iowa	0	0	0	337	0	0	179	1
Kansas	0	0	0	452	0	0	0	0
Minnesota	0	0	0	46	1	0	11	1
Missouri	0	0	0	85	2	0	0	1
Nebraska	0	0	0	226	1	0	0	2
North Dakota	0	0	0	0	0	0	37	1
South Dakota	0	0	0	452	1	0	0	1
<b>South Atlantic</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>
Delaware	0	0	0	73	29	0	0	7
District of Columbia	0	0	0	0	0	0	0	161
Florida	0	0	0	3	3	0	3	0
Georgia	0	0	0	6	2	0	0	0
Maryland	0	0	0	35	4	0	0	1
North Carolina	0	0	0	9	5	0	16	0
South Carolina	0	0	0	147	6	0	19	0
Virginia	0	0	0	58	2	0	6	0
West Virginia	0	0	0	0	0	0	0	0
<b>East South Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>23</b>	<b>2</b>	<b>0</b>	<b>14</b>	<b>0</b>
Alabama	0	0	0	0	3	0	0	1
Kentucky	0	0	0	0	6	0	0	0
Mississippi	0	0	0	257	3	0	180	0
Tennessee	0	0	0	52	7	0	0	1
<b>West South Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>0</b>
Arkansas	0	0	0	125	3	0	0	0
Louisiana	0	0	0	0	4	0	17	1
Oklahoma	0	0	0	0	0	0	29	0
Texas	0	0	0	5	0	0	15	0
<b>Mountain</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>1</b>
Arizona	0	0	0	3	3	0	0	0
Colorado	0	0	0	10	1	0	54	1
Idaho	0	28	0	0	4	0	49	6
Montana	0	0	0	0	2	0	0	3
Nevada	0	3	0	3	2	0	0	1
New Mexico	0	71	0	11	2	0	469	1
Utah	0	5	0	4	2	0	4	1
Wyoming	0	0	0	0	1	0	0	2
<b>Pacific Contiguous</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>9</b>	<b>1</b>
California	0	2	0	2	1	0	10	1
Oregon	0	11	0	47	2	0	34	1
Washington	0	0	0	0	1	0	30	1
<b>Pacific Noncontiguous</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>63</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>4</b>
Alaska	0	0	0	0	25	0	0	8
Hawaii	0	0	0	63	5	0	0	4
<b>U.S. Total</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>

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.

**Table A.2.A. Relative Standard Error (Percent) for Net Generation by Fuel Type:  
Electric Utilities by Census Division and State, December 2016**

Census Region and State	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gases	Nuclear	Hydroelectric Conventional
<b>New England</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>30</b>
Connecticut	0	42	0	0	0	0	245
Maine	0	411	0	0	0	0	0
Massachusetts	0	13	0	0	0	0	87
New Hampshire	0	6	0	0	0	0	23
Rhode Island	0	33	0	0	0	0	0
Vermont	0	141	0	0	0	0	53
<b>Middle Atlantic</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>1</b>
New Jersey	0	242	0	245	0	0	0
New York	0	5	0	9	0	0	1
Pennsylvania	0	178	0	653	0	0	150
<b>East North Central</b>	<b>1</b>	<b>10</b>	<b>0</b>	<b>1</b>	<b>20</b>	<b>0</b>	<b>16</b>
Illinois	0	46	0	5	0	0	189
Indiana	0	4	0	1	340	0	22
Michigan	2	31	0	4	0	0	30
Ohio	2	4	0	1	0	0	10
Wisconsin	0	30	0	2	0	0	24
<b>West North Central</b>	<b>1</b>	<b>7</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>8</b>
Iowa	2	15	0	9	0	0	33
Kansas	0	8	0	1	0	0	0
Minnesota	2	38	0	3	0	0	44
Missouri	1	1	0	9	0	0	17
Nebraska	2	69	0	14	0	0	26
North Dakota	2	11	0	39	0	0	0
South Dakota	0	152	0	23	0	0	1
<b>South Atlantic</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9</b>
Delaware	0	221	0	331	0	0	0
Florida	0	3	0	0	0	0	72
Georgia	0	16	0	0	0	0	13
Maryland	0	36	0	0	0	0	0
North Carolina	0	3	0	0	0	0	14
South Carolina	0	12	0	0	0	0	23
Virginia	0	5	0	0	0	0	24
West Virginia	0	0	0	0	0	0	55
<b>East South Central</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>4</b>
Alabama	0	0	0	4	0	0	7
Kentucky	0	5	0	0	0	0	5
Mississippi	0	12	0	0	0	0	0
Tennessee	0	1	0	0	0	0	8
<b>West South Central</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>13</b>
Arkansas	0	0	0	5	0	0	13
Louisiana	0	3	0	0	0	0	0
Oklahoma	0	8	0	1	0	0	27
Texas	0	1	0	2	0	0	42
<b>Mountain</b>	<b>1</b>	<b>27</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>4</b>
Arizona	0	29	0	0	0	0	2
Colorado	0	216	0	0	0	0	25
Idaho	0	482	0	6	0	0	10
Montana	139	1,419	0	47	0	0	4
Nevada	0	0	0	0	0	0	0
New Mexico	0	45	0	6	0	0	142
Utah	0	3	0	5	0	0	42
Wyoming	2	4	0	98	0	0	27
<b>Pacific Contiguous</b>	<b>0</b>	<b>27</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>1</b>
California	0	25	0	3	0	0	5
Oregon	0	0	0	0	0	0	2
Washington	0	373	0	3	0	0	1
<b>Pacific Noncontiguous</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>20</b>
Alaska	0	9	0	11	0	0	20
Hawaii	0	2	0	0	0	0	226
<b>U.S. Total</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>0</b>	<b>1</b>

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.

Table A.2.A. Relative Standard Error (Percent) for Net Generation by Fuel Type:

Electric Utilities by Census Division and State, December 2016 (Continued)

Census Region and State	Wind	Geothermal	Biomass	Solar Thermal and Photovoltaic	Other Renewables	Hydroelectric Pumped Storage	Other Energy Sources	All Energy Sources
<b>New England</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>78</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>6</b>
Connecticut	0	0	0	305	305	0	0	118
Maine	0	0	0	0	0	0	0	411
Massachusetts	0	0	0	144	43	0	0	43
New Hampshire	0	0	0	0	0	0	0	2
Rhode Island	0	0	0	0	0	0	0	33
Vermont	0	0	0	93	6	0	0	21
<b>Middle Atlantic</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>64</b>	<b>64</b>	<b>0</b>	<b>0</b>	<b>2</b>
New Jersey	0	0	0	64	64	0	0	28
New York	0	0	0	0	0	0	0	2
Pennsylvania	0	0	0	0	0	0	0	144
<b>East North Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>61</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
Illinois	0	0	0	376	52	0	0	2
Indiana	0	0	0	76	15	0	0	0
Michigan	0	0	0	128	1	0	0	1
Ohio	0	0	0	178	79	0	0	2
Wisconsin	0	0	0	0	0	0	0	1
<b>West North Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>153</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>
Iowa	0	0	0	337	0	0	0	1
Kansas	0	0	0	0	0	0	0	0
Minnesota	0	0	0	298	2	0	0	1
Missouri	0	0	0	0	37	0	0	1
Nebraska	0	0	0	0	8	0	0	2
North Dakota	0	0	0	0	1	0	37	2
South Dakota	0	0	0	0	1	0	0	1
<b>South Atlantic</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>
Delaware	0	0	0	197	197	0	0	284
Florida	0	0	0	2	2	0	0	0
Georgia	0	0	0	9	9	0	0	0
Maryland	0	0	0	176	176	0	0	49
North Carolina	0	0	0	25	25	0	0	0
South Carolina	0	0	0	0	5	0	0	0
Virginia	0	0	0	59	2	0	0	0
West Virginia	0	0	0	0	0	0	0	0
<b>East South Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>23</b>	<b>0</b>	<b>0</b>	<b>0</b>
Alabama	0	0	0	0	0	0	0	1
Kentucky	0	0	0	0	23	0	0	0
Mississippi	0	0	0	0	0	0	0	0
Tennessee	0	0	0	0	0	0	0	1
<b>West South Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>141</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Arkansas	0	0	0	452	452	0	0	1
Louisiana	0	0	0	0	0	0	0	0
Oklahoma	0	0	0	0	0	0	0	1
Texas	0	0	0	0	0	0	0	1
<b>Mountain</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>2</b>	<b>0</b>	<b>471</b>	<b>1</b>
Arizona	0	0	0	16	16	0	0	0
Colorado	0	0	0	0	4	0	0	1
Idaho	0	0	0	0	67	0	0	9
Montana	0	0	0	0	0	0	0	5
Nevada	0	0	0	117	117	0	0	0
New Mexico	0	0	0	39	39	0	469	1
Utah	0	0	0	0	0	0	0	1
Wyoming	0	0	0	0	1	0	0	2
<b>Pacific Contiguous</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>24</b>	<b>1</b>	<b>0</b>	<b>396</b>	<b>1</b>
California	0	0	0	24	3	0	391	2
Oregon	0	205	0	194	5	0	0	2
Washington	0	0	0	0	1	0	0	1
<b>Pacific Noncontiguous</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>93</b>	<b>29</b>	<b>0</b>	<b>0</b>	<b>4</b>
Alaska	0	0	0	0	34	0	0	8
Hawaii	0	0	0	93	52	0	0	3
<b>U.S. Total</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>

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Table A.2.B. Relative Standard Error (Percent) for Net Generation by Fuel Type:

Electric Utilities by Census Division and State, Year-to-Date through December 2016

Census Region and State	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gases	Nuclear	Hydroelectric Conventional
<b>New England</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>30</b>
Connecticut	0	42	0	0	0	0	245
Maine	0	411	0	0	0	0	0
Massachusetts	0	13	0	0	0	0	87
New Hampshire	0	6	0	0	0	0	23
Rhode Island	0	33	0	0	0	0	0
Vermont	0	141	0	0	0	0	53
<b>Middle Atlantic</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>1</b>
New Jersey	0	242	0	245	0	0	0
New York	0	5	0	9	0	0	1
Pennsylvania	0	178	0	653	0	0	150
<b>East North Central</b>	<b>1</b>	<b>10</b>	<b>0</b>	<b>1</b>	<b>20</b>	<b>0</b>	<b>16</b>
Illinois	0	46	0	5	0	0	189
Indiana	0	4	0	1	340	0	22
Michigan	2	31	0	4	0	0	30
Ohio	2	4	0	1	0	0	10
Wisconsin	0	30	0	2	0	0	24
<b>West North Central</b>	<b>1</b>	<b>7</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>8</b>
Iowa	2	15	0	9	0	0	33
Kansas	0	8	0	1	0	0	0
Minnesota	2	38	0	3	0	0	44
Missouri	1	1	0	9	0	0	17
Nebraska	2	69	0	14	0	0	26
North Dakota	2	11	0	39	0	0	0
South Dakota	0	152	0	23	0	0	1
<b>South Atlantic</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9</b>
Delaware	0	221	0	331	0	0	0
Florida	0	3	0	0	0	0	72
Georgia	0	16	0	0	0	0	13
Maryland	0	36	0	0	0	0	0
North Carolina	0	3	0	0	0	0	14
South Carolina	0	12	0	0	0	0	23
Virginia	0	5	0	0	0	0	24
West Virginia	0	0	0	0	0	0	55
<b>East South Central</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>4</b>
Alabama	0	0	0	4	0	0	7
Kentucky	0	5	0	0	0	0	5
Mississippi	0	12	0	0	0	0	0
Tennessee	0	1	0	0	0	0	8
<b>West South Central</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>13</b>
Arkansas	0	0	0	5	0	0	13
Louisiana	0	3	0	0	0	0	0
Oklahoma	0	8	0	1	0	0	27
Texas	0	1	0	2	0	0	42
<b>Mountain</b>	<b>1</b>	<b>27</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>4</b>
Arizona	0	29	0	0	0	0	2
Colorado	0	216	0	0	0	0	25
Idaho	0	482	0	6	0	0	10
Montana	139	1,419	0	47	0	0	4
Nevada	0	0	0	0	0	0	0
New Mexico	0	45	0	6	0	0	142
Utah	0	3	0	5	0	0	42
Wyoming	2	4	0	98	0	0	27
<b>Pacific Contiguous</b>	<b>0</b>	<b>27</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>1</b>
California	0	25	0	3	0	0	5
Oregon	0	0	0	0	0	0	2
Washington	0	373	0	3	0	0	1
<b>Pacific Noncontiguous</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>20</b>
Alaska	0	9	0	11	0	0	20
Hawaii	0	2	0	0	0	0	226
<b>U.S. Total</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>0</b>	<b>1</b>

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.

Table A.2.B. Relative Standard Error (Percent) for Net Generation by Fuel Type:

Electric Utilities by Census Division and State, Year-to-Date through December 2016 (Continued)

Census Region and State	Wind	Geothermal	Biomass	Solar Thermal and Photovoltaic	Other Renewables	Hydroelectric Pumped Storage	Other Energy Sources	All Energy Sources
<b>New England</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>78</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>6</b>
Connecticut	0	0	0	305	305	0	0	118
Maine	0	0	0	0	0	0	0	411
Massachusetts	0	0	0	144	43	0	0	43
New Hampshire	0	0	0	0	0	0	0	2
Rhode Island	0	0	0	0	0	0	0	33
Vermont	0	0	0	93	6	0	0	21
<b>Middle Atlantic</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>64</b>	<b>64</b>	<b>0</b>	<b>0</b>	<b>2</b>
New Jersey	0	0	0	64	64	0	0	28
New York	0	0	0	0	0	0	0	2
Pennsylvania	0	0	0	0	0	0	0	144
<b>East North Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>61</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
Illinois	0	0	0	376	52	0	0	2
Indiana	0	0	0	76	15	0	0	0
Michigan	0	0	0	128	1	0	0	1
Ohio	0	0	0	178	79	0	0	2
Wisconsin	0	0	0	0	0	0	0	1
<b>West North Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>153</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>
Iowa	0	0	0	337	0	0	0	1
Kansas	0	0	0	0	0	0	0	0
Minnesota	0	0	0	298	2	0	0	1
Missouri	0	0	0	0	37	0	0	1
Nebraska	0	0	0	0	8	0	0	2
North Dakota	0	0	0	0	1	0	37	2
South Dakota	0	0	0	0	1	0	0	1
<b>South Atlantic</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>
Delaware	0	0	0	197	197	0	0	284
Florida	0	0	0	2	2	0	0	0
Georgia	0	0	0	9	9	0	0	0
Maryland	0	0	0	176	176	0	0	49
North Carolina	0	0	0	25	25	0	0	0
South Carolina	0	0	0	0	5	0	0	0
Virginia	0	0	0	59	2	0	0	0
West Virginia	0	0	0	0	0	0	0	0
<b>East South Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>23</b>	<b>0</b>	<b>0</b>	<b>0</b>
Alabama	0	0	0	0	0	0	0	1
Kentucky	0	0	0	0	23	0	0	0
Mississippi	0	0	0	0	0	0	0	0
Tennessee	0	0	0	0	0	0	0	1
<b>West South Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>141</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Arkansas	0	0	0	452	452	0	0	1
Louisiana	0	0	0	0	0	0	0	0
Oklahoma	0	0	0	0	0	0	0	1
Texas	0	0	0	0	0	0	0	1
<b>Mountain</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>2</b>	<b>0</b>	<b>471</b>	<b>1</b>
Arizona	0	0	0	16	16	0	0	0
Colorado	0	0	0	0	4	0	0	1
Idaho	0	0	0	0	67	0	0	9
Montana	0	0	0	0	0	0	0	5
Nevada	0	0	0	117	117	0	0	0
New Mexico	0	0	0	39	39	0	469	1
Utah	0	0	0	0	0	0	0	1
Wyoming	0	0	0	0	1	0	0	2
<b>Pacific Contiguous</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>24</b>	<b>1</b>	<b>0</b>	<b>396</b>	<b>1</b>
California	0	0	0	24	3	0	391	2
Oregon	0	205	0	194	5	0	0	2
Washington	0	0	0	0	1	0	0	1
<b>Pacific Noncontiguous</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>93</b>	<b>29</b>	<b>0</b>	<b>0</b>	<b>4</b>
Alaska	0	0	0	0	34	0	0	8
Hawaii	0	0	0	93	52	0	0	3
<b>U.S. Total</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>

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.

Table A.3.A. Relative Standard Error (Percent) for Net Generation by Fuel Type:

Independent Power Producers by Census Division and State, December 2016

Census Region and State	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gases	Nuclear	Hydroelectric Conventional
<b>New England</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>12</b>
Connecticut	0	5	0	2	0	0	72
Maine	0	6	0	2	0	0	16
Massachusetts	0	2	0	3	0	0	28
New Hampshire	0	1,110	0	0	0	0	18
Rhode Island	0	409	0	1	0	0	719
Vermont	0	0	0	0	0	0	43
<b>Middle Atlantic</b>	<b>2</b>	<b>8</b>	<b>0</b>	<b>1</b>	<b>4,242</b>	<b>0</b>	<b>10</b>
New Jersey	0	5	0	2	0	0	701
New York	0	10	0	2	0	0	17
Pennsylvania	2	18	0	1	4,242	0	9
<b>East North Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>13</b>	<b>0</b>	<b>47</b>
Illinois	0	0	0	3	0	0	61
Indiana	0	0	0	6	0	0	0
Michigan	0	0	0	2	0	0	109
Ohio	0	1	0	1	49	0	77
Wisconsin	0	0	0	0	0	0	103
<b>West North Central</b>	<b>142</b>	<b>517</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>72</b>
Iowa	0	122	0	6,703	0	0	415
Kansas	0	0	0	0	0	0	268
Minnesota	0	646	0	7	0	0	75
Missouri	142	2,182	0	6	0	0	0
South Dakota	0	603	0	0	0	0	0
<b>South Atlantic</b>	<b>1</b>	<b>11</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>6</b>
Delaware	0	21	0	10	0	0	0
District of Columbia	0	0	0	0	0	0	0
Florida	0	247	0	9	0	0	0
Georgia	0	59	0	3	0	0	384
Maryland	0	20	0	20	0	0	2
North Carolina	263	27	0	0	0	0	184
South Carolina	0	689	0	26	0	0	150
Virginia	0	20	0	1	0	0	133
West Virginia	1	0	0	27	0	0	10
<b>East South Central</b>	<b>0</b>	<b>34</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>390</b>
Alabama	0	34	0	0	0	0	0
Kentucky	0	0	0	0	0	0	390
Mississippi	0	0	0	0	0	0	0
Tennessee	0	785	0	0	0	0	0
<b>West South Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11</b>
Arkansas	0	0	0	0	0	0	172
Louisiana	0	0	0	0	0	0	0
Oklahoma	0	0	0	0	0	0	0
Texas	0	0	0	1	0	0	185
<b>Mountain</b>	<b>5</b>	<b>13</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>39</b>
Arizona	0	0	0	0	0	0	0
Colorado	194	0	0	3	0	0	84
Idaho	0	0	0	0	0	0	51
Montana	4	9	0	135	0	0	91
Nevada	0	0	0	9	0	0	374
New Mexico	0	0	0	2	0	0	0
Utah	64	446	0	128	0	0	368
Wyoming	79	0	0	1,054	0	0	352
<b>Pacific Contiguous</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>27</b>
California	0	10	0	2	0	0	35
Oregon	0	0	0	1	0	0	67
Washington	0	13	0	0	0	0	54
<b>Pacific Noncontiguous</b>	<b>4</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Alaska	51	0	0	0	0	0	0
Hawaii	0	3	0	0	0	0	0
<b>U.S. Total</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>6</b>

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.

Table A.3.A. Relative Standard Error (Percent) for Net Generation by Fuel Type:

Independent Power Producers by Census Division and State, December 2016 (Continued)

Census Region and State	Wind	Geothermal	Biomass	Solar Thermal and Photovoltaic	Other Renewables	Hydroelectric Pumped Storage	Other Energy Sources	All Energy Sources
<b>New England</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>4</b>	<b>0</b>	<b>4</b>	<b>1</b>
Connecticut	0	0	0	100	5	0	6	1
Maine	0	0	0	0	1	0	8	5
Massachusetts	0	0	0	23	8	0	5	2
New Hampshire	0	0	0	0	13	0	31	2
Rhode Island	0	0	0	132	13	0	0	1
Vermont	0	0	0	70	31	0	0	28
<b>Middle Atlantic</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>
New Jersey	0	0	0	22	9	0	7	1
New York	0	0	0	40	1	0	4	1
Pennsylvania	0	0	0	73	1	0	6	1
<b>East North Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>32</b>	<b>1</b>	<b>0</b>	<b>18</b>	<b>0</b>
Illinois	0	0	0	74	0	0	0	0
Indiana	0	0	0	39	1	0	0	2
Michigan	0	0	0	0	3	0	16	1
Ohio	0	0	0	73	3	0	158	0
Wisconsin	0	0	0	262	6	0	0	1
<b>West North Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>41</b>	<b>1</b>	<b>0</b>	<b>20</b>	<b>1</b>
Iowa	0	0	0	0	1	0	0	1
Kansas	0	0	0	452	0	0	0	0
Minnesota	0	0	0	46	2	0	20	2
Missouri	0	0	0	95	2	0	0	4
Nebraska	0	0	0	226	1	0	0	1
North Dakota	0	0	0	0	0	0	0	0
South Dakota	0	0	0	452	1	0	0	1
<b>South Atlantic</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>1</b>
Delaware	0	0	0	79	31	0	0	9
District of Columbia	0	0	0	0	0	0	0	0
Florida	0	0	0	74	4	0	3	4
Georgia	0	0	0	7	6	0	0	3
Maryland	0	0	0	37	4	0	0	1
North Carolina	0	0	0	10	7	0	19	5
South Carolina	0	0	0	147	38	0	176	22
Virginia	0	0	0	0	6	0	0	1
West Virginia	0	0	0	0	0	0	0	1
<b>East South Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>
Alabama	0	0	0	0	5	0	0	0
Kentucky	0	0	0	0	89	0	0	8
Mississippi	0	0	0	257	76	0	0	0
Tennessee	0	0	0	53	22	0	0	22
<b>West South Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>27</b>	<b>0</b>
Arkansas	0	0	0	130	30	0	0	1
Louisiana	0	0	0	0	24	0	0	0
Oklahoma	0	0	0	0	0	0	0	0
Texas	0	0	0	5	0	0	99	0
<b>Mountain</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>2</b>
Arizona	0	0	0	3	2	0	0	1
Colorado	0	0	0	10	1	0	67	2
Idaho	0	28	0	0	4	0	0	5
Montana	0	0	0	0	2	0	0	3
Nevada	0	3	0	2	2	0	0	2
New Mexico	0	71	0	9	1	0	0	1
Utah	0	10	0	4	3	0	233	11
Wyoming	0	0	0	0	2	0	0	15
<b>Pacific Contiguous</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>11</b>	<b>1</b>
California	0	2	0	2	1	0	12	1
Oregon	0	0	0	48	3	0	34	2
Washington	0	0	0	0	1	0	30	1
<b>Pacific Noncontiguous</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>85</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>3</b>
Alaska	0	0	0	0	48	0	0	37
Hawaii	0	0	0	85	6	0	0	2
<b>U.S. Total</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>

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.

Table A.3.B. Relative Standard Error (Percent) for Net Generation by Fuel Type:

Independent Power Producers by Census Division and State, Year-to-Date through December 2016

Census Region and State	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gases	Nuclear	Hydroelectric Conventional
<b>New England</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>12</b>
Connecticut	0	5	0	2	0	0	72
Maine	0	6	0	2	0	0	16
Massachusetts	0	2	0	3	0	0	28
New Hampshire	0	1,110	0	0	0	0	18
Rhode Island	0	409	0	1	0	0	719
Vermont	0	0	0	0	0	0	43
<b>Middle Atlantic</b>	<b>2</b>	<b>8</b>	<b>0</b>	<b>1</b>	<b>4,242</b>	<b>0</b>	<b>10</b>
New Jersey	0	5	0	2	0	0	701
New York	0	10	0	2	0	0	17
Pennsylvania	2	18	0	1	4,242	0	9
<b>East North Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>13</b>	<b>0</b>	<b>47</b>
Illinois	0	0	0	3	0	0	61
Indiana	0	0	0	6	0	0	0
Michigan	0	0	0	2	0	0	109
Ohio	0	1	0	1	49	0	77
Wisconsin	0	0	0	0	0	0	103
<b>West North Central</b>	<b>142</b>	<b>517</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>72</b>
Iowa	0	122	0	6,703	0	0	415
Kansas	0	0	0	0	0	0	268
Minnesota	0	646	0	7	0	0	75
Missouri	142	2,182	0	6	0	0	0
South Dakota	0	603	0	0	0	0	0
<b>South Atlantic</b>	<b>1</b>	<b>11</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>6</b>
Delaware	0	21	0	10	0	0	0
District of Columbia	0	0	0	0	0	0	0
Florida	0	247	0	9	0	0	0
Georgia	0	59	0	3	0	0	384
Maryland	0	20	0	20	0	0	2
North Carolina	263	27	0	0	0	0	184
South Carolina	0	689	0	26	0	0	150
Virginia	0	20	0	1	0	0	133
West Virginia	1	0	0	27	0	0	10
<b>East South Central</b>	<b>0</b>	<b>34</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>390</b>
Alabama	0	34	0	0	0	0	0
Kentucky	0	0	0	0	0	0	390
Mississippi	0	0	0	0	0	0	0
Tennessee	0	785	0	0	0	0	0
<b>West South Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11</b>
Arkansas	0	0	0	0	0	0	172
Louisiana	0	0	0	0	0	0	0
Oklahoma	0	0	0	0	0	0	0
Texas	0	0	0	1	0	0	185
<b>Mountain</b>	<b>5</b>	<b>13</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>39</b>
Arizona	0	0	0	0	0	0	0
Colorado	194	0	0	3	0	0	84
Idaho	0	0	0	0	0	0	51
Montana	4	9	0	135	0	0	91
Nevada	0	0	0	9	0	0	374
New Mexico	0	0	0	2	0	0	0
Utah	64	446	0	128	0	0	368
Wyoming	79	0	0	1,054	0	0	352
<b>Pacific Contiguous</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>27</b>
California	0	10	0	2	0	0	35
Oregon	0	0	0	1	0	0	67
Washington	0	13	0	0	0	0	54
<b>Pacific Noncontiguous</b>	<b>4</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Alaska	51	0	0	0	0	0	0
Hawaii	0	3	0	0	0	0	0
<b>U.S. Total</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>6</b>

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.

Table A.3.B. Relative Standard Error (Percent) for Net Generation by Fuel Type:

Independent Power Producers by Census Division and State, Year-to-Date through December 2016 (Continued)

Census Region and State	Wind	Geothermal	Biomass	Solar Thermal and Photovoltaic	Other Renewables	Hydroelectric Pumped Storage	Other Energy Sources	All Energy Sources
<b>New England</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>4</b>	<b>0</b>	<b>4</b>	<b>1</b>
Connecticut	0	0	0	100	5	0	6	1
Maine	0	0	0	0	1	0	8	5
Massachusetts	0	0	0	23	8	0	5	2
New Hampshire	0	0	0	0	13	0	31	2
Rhode Island	0	0	0	132	13	0	0	1
Vermont	0	0	0	70	31	0	0	28
<b>Middle Atlantic</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>
New Jersey	0	0	0	22	9	0	7	1
New York	0	0	0	40	1	0	4	1
Pennsylvania	0	0	0	73	1	0	6	1
<b>East North Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>32</b>	<b>1</b>	<b>0</b>	<b>18</b>	<b>0</b>
Illinois	0	0	0	74	0	0	0	0
Indiana	0	0	0	39	1	0	0	2
Michigan	0	0	0	0	3	0	16	1
Ohio	0	0	0	73	3	0	158	0
Wisconsin	0	0	0	262	6	0	0	1
<b>West North Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>41</b>	<b>1</b>	<b>0</b>	<b>20</b>	<b>1</b>
Iowa	0	0	0	0	1	0	0	1
Kansas	0	0	0	452	0	0	0	0
Minnesota	0	0	0	46	2	0	20	2
Missouri	0	0	0	95	2	0	0	4
Nebraska	0	0	0	226	1	0	0	1
North Dakota	0	0	0	0	0	0	0	0
South Dakota	0	0	0	452	1	0	0	1
<b>South Atlantic</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>1</b>
Delaware	0	0	0	79	31	0	0	9
District of Columbia	0	0	0	0	0	0	0	0
Florida	0	0	0	74	4	0	3	4
Georgia	0	0	0	7	6	0	0	3
Maryland	0	0	0	37	4	0	0	1
North Carolina	0	0	0	10	7	0	19	5
South Carolina	0	0	0	147	38	0	176	22
Virginia	0	0	0	0	6	0	0	1
West Virginia	0	0	0	0	0	0	0	1
<b>East South Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>
Alabama	0	0	0	0	5	0	0	0
Kentucky	0	0	0	0	89	0	0	8
Mississippi	0	0	0	257	76	0	0	0
Tennessee	0	0	0	53	22	0	0	22
<b>West South Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>27</b>	<b>0</b>
Arkansas	0	0	0	130	30	0	0	1
Louisiana	0	0	0	0	24	0	0	0
Oklahoma	0	0	0	0	0	0	0	0
Texas	0	0	0	5	0	0	99	0
<b>Mountain</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>2</b>
Arizona	0	0	0	3	2	0	0	1
Colorado	0	0	0	10	1	0	67	2
Idaho	0	28	0	0	4	0	0	5
Montana	0	0	0	0	2	0	0	3
Nevada	0	3	0	2	2	0	0	2
New Mexico	0	71	0	9	1	0	0	1
Utah	0	10	0	4	3	0	233	11
Wyoming	0	0	0	0	2	0	0	15
<b>Pacific Contiguous</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>11</b>	<b>1</b>
California	0	2	0	2	1	0	12	1
Oregon	0	0	0	48	3	0	34	2
Washington	0	0	0	0	1	0	30	1
<b>Pacific Noncontiguous</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>85</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>3</b>
Alaska	0	0	0	0	48	0	0	37
Hawaii	0	0	0	85	6	0	0	2
<b>U.S. Total</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>

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.

**Table A.4.A. Relative Standard Error for Net Generation by Fuel Type:  
Commercial Sector by Census Division and State, December 2016**

Census Region and State	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gases	Nuclear	Hydroelectric Conventional
<b>New England</b>	<b>0</b>	<b>66</b>	<b>0</b>	<b>31</b>	<b>0</b>	<b>0</b>	<b>501</b>
Connecticut	0	152	0	62	0	0	0
Maine	0	388	0	222	0	0	0
Massachusetts	0	92	0	29	0	0	501
New Hampshire	0	170	0	241	0	0	0
Rhode Island	0	167	0	192	0	0	0
Vermont	0	863	0	3,193	0	0	0
<b>Middle Atlantic</b>	<b>0</b>	<b>43</b>	<b>0</b>	<b>30</b>	<b>0</b>	<b>0</b>	<b>575</b>
New Jersey	0	249	0	86	0	0	0
New York	0	44	0	30	0	0	575
Pennsylvania	0	223	0	133	0	0	0
<b>East North Central</b>	<b>29</b>	<b>158</b>	<b>0</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>1,179</b>
Illinois	37	439	0	32	0	0	1,179
Indiana	48	768	0	56	0	0	0
Michigan	0	52	0	18	0	0	0
Ohio	0	406	0	140	0	0	0
Wisconsin	0	8,540	0	57	0	0	0
<b>West North Central</b>	<b>30</b>	<b>122</b>	<b>0</b>	<b>36</b>	<b>0</b>	<b>0</b>	<b>0</b>
Iowa	53	615	0	66	0	0	0
Minnesota	287	129	0	54	0	0	0
Missouri	0	517	0	0	0	0	0
Nebraska	0	0	0	518	0	0	0
North Dakota	0	913	0	0	0	0	0
South Dakota	0	768	0	0	0	0	0
<b>South Atlantic</b>	<b>31</b>	<b>74</b>	<b>0</b>	<b>55</b>	<b>0</b>	<b>0</b>	<b>200</b>
District of Columbia	0	1,000	0	161	0	0	0
Florida	0	0	0	178	0	0	0
Georgia	0	54	0	0	0	0	0
Maryland	0	362	0	66	0	0	0
North Carolina	0	185	0	0	0	0	191
South Carolina	0	326	0	0	0	0	801
Virginia	387	129	0	395	0	0	0
<b>East South Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>102</b>	<b>0</b>	<b>0</b>	<b>0</b>
Mississippi	0	0	0	438	0	0	0
Tennessee	0	0	0	105	0	0	0
<b>West South Central</b>	<b>0</b>	<b>289</b>	<b>0</b>	<b>25</b>	<b>0</b>	<b>0</b>	<b>0</b>
Arkansas	0	0	0	633	0	0	0
Louisiana	0	0	0	64	0	0	0
Oklahoma	0	1,528	0	0	0	0	0
Texas	0	292	0	26	0	0	0
<b>Mountain</b>	<b>0</b>	<b>817</b>	<b>0</b>	<b>25</b>	<b>0</b>	<b>0</b>	<b>458</b>
Arizona	0	817	0	43	0	0	0
Colorado	0	0	0	0	0	0	458
Idaho	0	0	0	0	0	0	0
Nevada	0	0	0	59	0	0	0
New Mexico	0	0	0	45	0	0	0
Utah	0	0	0	55	0	0	0
<b>Pacific Contiguous</b>	<b>0</b>	<b>261</b>	<b>0</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>276</b>
California	0	345	0	13	0	0	276
Oregon	0	3,574	0	79	0	0	0
Washington	0	214	0	132	0	0	0
<b>Pacific Noncontiguous</b>	<b>30</b>	<b>96</b>	<b>0</b>	<b>437</b>	<b>0</b>	<b>0</b>	<b>0</b>
Alaska	30	116	0	437	0	0	0
Hawaii	0	0	0	0	0	0	0
<b>U.S. Total</b>	<b>17</b>	<b>36</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>169</b>

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.

Table A.4.A. Relative Standard Error for Net Generation by Fuel Type:

Commercial Sector by Census Division and State, December 2016 (Continued)

Census Region and State	Wind	Geothermal	Biomass	Solar Thermal and Photovoltaic	Other Renewables	Hydroelectric Pumped Storage	Other Energy Sources	All Energy Sources
<b>New England</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>236</b>	<b>28</b>	<b>0</b>	<b>44</b>	<b>23</b>
Connecticut	0	0	0	0	0	0	0	61
Maine	0	0	0	0	38	0	44	35
Massachusetts	0	0	0	236	63	0	0	26
New Hampshire	0	0	0	0	65	0	0	89
Rhode Island	0	0	0	0	126	0	0	136
Vermont	0	0	0	0	219	0	0	331
<b>Middle Atlantic</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>45</b>	<b>13</b>	<b>0</b>	<b>16</b>	<b>16</b>
New Jersey	0	0	0	46	13	0	0	25
New York	0	0	0	235	25	0	30	20
Pennsylvania	0	0	0	332	50	0	0	92
<b>East North Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>299</b>	<b>19</b>	<b>0</b>	<b>22</b>	<b>14</b>
Illinois	0	0	0	0	156	0	0	27
Indiana	0	0	0	0	81	0	100	40
Michigan	0	0	0	0	17	0	21	13
Ohio	0	0	0	299	123	0	0	124
Wisconsin	0	0	0	0	60	0	0	46
<b>West North Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>452</b>	<b>22</b>	<b>0</b>	<b>75</b>	<b>17</b>
Iowa	0	0	0	0	58	0	0	34
Minnesota	0	0	0	0	41	0	75	33
Missouri	0	0	0	452	11	0	0	3
Nebraska	0	0	0	0	91	0	0	96
North Dakota	0	0	0	0	0	0	0	913
South Dakota	0	0	0	0	0	0	0	768
<b>South Atlantic</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>50</b>	<b>15</b>	<b>0</b>	<b>17</b>	<b>23</b>
Delaware	0	0	0	573	150	0	0	150
District of Columbia	0	0	0	0	0	0	0	161
Florida	0	0	0	388	53	0	0	75
Georgia	0	0	0	294	135	0	0	73
Maryland	0	0	0	180	57	0	0	61
North Carolina	0	0	0	53	34	0	0	19
South Carolina	0	0	0	0	0	0	0	726
Virginia	0	0	0	0	14	0	17	13
<b>East South Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>321</b>	<b>321</b>	<b>0</b>	<b>0</b>	<b>101</b>
Mississippi	0	0	0	0	0	0	0	438
Tennessee	0	0	0	321	321	0	0	103
<b>West South Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>363</b>	<b>46</b>	<b>0</b>	<b>0</b>	<b>23</b>
Arkansas	0	0	0	0	181	0	0	255
Louisiana	0	0	0	0	0	0	0	64
Oklahoma	0	0	0	0	0	0	0	1,528
Texas	0	0	0	363	47	0	0	24
<b>Mountain</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>56</b>	<b>45</b>	<b>0</b>	<b>0</b>	<b>24</b>
Arizona	0	0	0	100	100	0	0	41
Colorado	0	0	0	148	130	0	0	239
Idaho	0	0	0	0	128	0	0	128
Nevada	0	0	0	71	71	0	0	46
New Mexico	0	0	0	0	269	0	0	45
Utah	0	0	0	0	98	0	0	50
<b>Pacific Contiguous</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>50</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>10</b>
California	0	0	0	50	11	0	0	10
Oregon	0	0	0	0	84	0	0	64
Washington	0	0	0	0	87	0	0	83
<b>Pacific Noncontiguous</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>7</b>
Alaska	0	0	0	0	52	0	0	26
Hawaii	0	0	0	0	0	0	0	0
<b>U.S. Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>7</b>	<b>0</b>	<b>9</b>	<b>6</b>

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.

Table A.4.B. Relative Standard Error for Net Generation by Fuel Type:

Commercial Sector by Census Division and State, Year-to-Date through December 2016

Census Region and State	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gases	Nuclear	Hydroelectric Conventional
<b>New England</b>	<b>0</b>	<b>66</b>	<b>0</b>	<b>31</b>	<b>0</b>	<b>0</b>	<b>501</b>
Connecticut	0	152	0	62	0	0	0
Maine	0	388	0	222	0	0	0
Massachusetts	0	92	0	29	0	0	501
New Hampshire	0	170	0	241	0	0	0
Rhode Island	0	167	0	192	0	0	0
Vermont	0	863	0	3,193	0	0	0
<b>Middle Atlantic</b>	<b>0</b>	<b>43</b>	<b>0</b>	<b>30</b>	<b>0</b>	<b>0</b>	<b>575</b>
New Jersey	0	249	0	86	0	0	0
New York	0	44	0	30	0	0	575
Pennsylvania	0	223	0	133	0	0	0
<b>East North Central</b>	<b>29</b>	<b>158</b>	<b>0</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>1,179</b>
Illinois	37	439	0	32	0	0	1,179
Indiana	48	768	0	56	0	0	0
Michigan	0	52	0	18	0	0	0
Ohio	0	406	0	140	0	0	0
Wisconsin	0	8,540	0	57	0	0	0
<b>West North Central</b>	<b>30</b>	<b>122</b>	<b>0</b>	<b>36</b>	<b>0</b>	<b>0</b>	<b>0</b>
Iowa	53	615	0	66	0	0	0
Minnesota	287	129	0	54	0	0	0
Missouri	0	517	0	0	0	0	0
Nebraska	0	0	0	518	0	0	0
North Dakota	0	913	0	0	0	0	0
South Dakota	0	768	0	0	0	0	0
<b>South Atlantic</b>	<b>31</b>	<b>74</b>	<b>0</b>	<b>55</b>	<b>0</b>	<b>0</b>	<b>200</b>
District of Columbia	0	1,000	0	161	0	0	0
Florida	0	0	0	178	0	0	0
Georgia	0	54	0	0	0	0	0
Maryland	0	362	0	66	0	0	0
North Carolina	0	185	0	0	0	0	191
South Carolina	0	326	0	0	0	0	801
Virginia	387	129	0	395	0	0	0
<b>East South Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>102</b>	<b>0</b>	<b>0</b>	<b>0</b>
Mississippi	0	0	0	438	0	0	0
Tennessee	0	0	0	105	0	0	0
<b>West South Central</b>	<b>0</b>	<b>289</b>	<b>0</b>	<b>25</b>	<b>0</b>	<b>0</b>	<b>0</b>
Arkansas	0	0	0	633	0	0	0
Louisiana	0	0	0	64	0	0	0
Oklahoma	0	1,528	0	0	0	0	0
Texas	0	292	0	26	0	0	0
<b>Mountain</b>	<b>0</b>	<b>817</b>	<b>0</b>	<b>25</b>	<b>0</b>	<b>0</b>	<b>458</b>
Arizona	0	817	0	43	0	0	0
Colorado	0	0	0	0	0	0	458
Idaho	0	0	0	0	0	0	0
Nevada	0	0	0	59	0	0	0
New Mexico	0	0	0	45	0	0	0
Utah	0	0	0	55	0	0	0
<b>Pacific Contiguous</b>	<b>0</b>	<b>261</b>	<b>0</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>276</b>
California	0	345	0	13	0	0	276
Oregon	0	3,574	0	79	0	0	0
Washington	0	214	0	132	0	0	0
<b>Pacific Noncontiguous</b>	<b>30</b>	<b>96</b>	<b>0</b>	<b>437</b>	<b>0</b>	<b>0</b>	<b>0</b>
Alaska	30	116	0	437	0	0	0
Hawaii	0	0	0	0	0	0	0
<b>U.S. Total</b>	<b>17</b>	<b>36</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>169</b>

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.

Table A.4.B. Relative Standard Error for Net Generation by Fuel Type:

Commercial Sector by Census Division and State, Year-to-Date through December 2016 (Continued)

Census Region and State	Wind	Geothermal	Biomass	Solar Thermal and Photovoltaic	Other Renewables	Hydroelectric Pumped Storage	Other Energy Sources	All Energy Sources
<b>New England</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>236</b>	<b>28</b>	<b>0</b>	<b>44</b>	<b>23</b>
Connecticut	0	0	0	0	0	0	0	61
Maine	0	0	0	0	38	0	44	35
Massachusetts	0	0	0	236	63	0	0	26
New Hampshire	0	0	0	0	65	0	0	89
Rhode Island	0	0	0	0	126	0	0	136
Vermont	0	0	0	0	219	0	0	331
<b>Middle Atlantic</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>45</b>	<b>13</b>	<b>0</b>	<b>16</b>	<b>16</b>
New Jersey	0	0	0	46	13	0	0	25
New York	0	0	0	235	25	0	30	20
Pennsylvania	0	0	0	332	50	0	0	92
<b>East North Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>299</b>	<b>19</b>	<b>0</b>	<b>22</b>	<b>14</b>
Illinois	0	0	0	0	156	0	0	27
Indiana	0	0	0	0	81	0	100	40
Michigan	0	0	0	0	17	0	21	13
Ohio	0	0	0	299	123	0	0	124
Wisconsin	0	0	0	0	60	0	0	46
<b>West North Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>452</b>	<b>22</b>	<b>0</b>	<b>75</b>	<b>17</b>
Iowa	0	0	0	0	58	0	0	34
Minnesota	0	0	0	0	41	0	75	33
Missouri	0	0	0	452	11	0	0	3
Nebraska	0	0	0	0	91	0	0	96
North Dakota	0	0	0	0	0	0	0	913
South Dakota	0	0	0	0	0	0	0	768
<b>South Atlantic</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>50</b>	<b>15</b>	<b>0</b>	<b>17</b>	<b>23</b>
Delaware	0	0	0	573	150	0	0	150
District of Columbia	0	0	0	0	0	0	0	161
Florida	0	0	0	388	53	0	0	75
Georgia	0	0	0	294	135	0	0	73
Maryland	0	0	0	180	57	0	0	61
North Carolina	0	0	0	53	34	0	0	19
South Carolina	0	0	0	0	0	0	0	726
Virginia	0	0	0	0	14	0	17	13
<b>East South Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>321</b>	<b>321</b>	<b>0</b>	<b>0</b>	<b>101</b>
Mississippi	0	0	0	0	0	0	0	438
Tennessee	0	0	0	321	321	0	0	103
<b>West South Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>363</b>	<b>46</b>	<b>0</b>	<b>0</b>	<b>23</b>
Arkansas	0	0	0	0	181	0	0	255
Louisiana	0	0	0	0	0	0	0	64
Oklahoma	0	0	0	0	0	0	0	1,528
Texas	0	0	0	363	47	0	0	24
<b>Mountain</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>56</b>	<b>45</b>	<b>0</b>	<b>0</b>	<b>24</b>
Arizona	0	0	0	100	100	0	0	41
Colorado	0	0	0	148	130	0	0	239
Idaho	0	0	0	0	128	0	0	128
Nevada	0	0	0	71	71	0	0	46
New Mexico	0	0	0	0	269	0	0	45
Utah	0	0	0	0	98	0	0	50
<b>Pacific Contiguous</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>50</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>10</b>
California	0	0	0	50	11	0	0	10
Oregon	0	0	0	0	84	0	0	64
Washington	0	0	0	0	87	0	0	83
<b>Pacific Noncontiguous</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>7</b>
Alaska	0	0	0	0	52	0	0	26
Hawaii	0	0	0	0	0	0	0	0
<b>U.S. Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>7</b>	<b>0</b>	<b>9</b>	<b>6</b>

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.

**Table A.5.A. Relative Standard Error for Net Generation by Fuel Type:  
Industrial Sector by Census Division and State, December 2016**

Census Region and State	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gases	Nuclear	Hydroelectric Conventional
<b>New England</b>	<b>64</b>	<b>53</b>	<b>0</b>	<b>42</b>	<b>0</b>	<b>0</b>	<b>31</b>
Connecticut	0	214	0	57	0	0	0
Maine	0	41	0	65	0	0	31
Massachusetts	145	3,763	0	106	0	0	577
New Hampshire	0	423	0	213	0	0	0
<b>Middle Atlantic</b>	<b>17</b>	<b>22</b>	<b>43</b>	<b>25</b>	<b>26</b>	<b>0</b>	<b>143</b>
New Jersey	0	322	80	67	85	0	0
New York	0	9	0	40	0	0	143
Pennsylvania	34	70	51	31	20	0	0
<b>East North Central</b>	<b>7</b>	<b>21</b>	<b>48</b>	<b>16</b>	<b>16</b>	<b>0</b>	<b>75</b>
Illinois	7	0	0	54	80	0	0
Indiana	382	6	0	30	14	0	0
Michigan	60	79	56	20	0	0	189
Ohio	87	122	212	44	97	0	0
Wisconsin	13	409	0	20	0	0	82
<b>West North Central</b>	<b>11</b>	<b>212</b>	<b>106</b>	<b>19</b>	<b>180</b>	<b>0</b>	<b>84</b>
Iowa	11	435	106	17	0	0	0
Kansas	0	0	0	433	0	0	0
Minnesota	28	294	0	43	0	0	84
Missouri	120	0	0	344	0	0	0
Nebraska	33	0	0	158	0	0	0
North Dakota	69	317	0	111	180	0	0
<b>South Atlantic</b>	<b>28</b>	<b>32</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>13</b>
Delaware	0	0	0	0	0	0	0
Florida	111	157	0	16	0	0	0
Georgia	49	62	0	27	0	0	230
Maryland	0	279	0	93	0	0	0
North Carolina	108	146	0	71	0	0	866
South Carolina	0	8	0	17	0	0	0
Virginia	31	192	0	25	0	0	316
West Virginia	0	0	0	0	0	0	8
<b>East South Central</b>	<b>8</b>	<b>90</b>	<b>0</b>	<b>12</b>	<b>63</b>	<b>0</b>	<b>0</b>
Alabama	107	106	0	16	114	0	0
Kentucky	0	0	0	63	0	0	0
Mississippi	0	0	0	30	0	0	0
Tennessee	0	325	0	19	0	0	0
<b>West South Central</b>	<b>56</b>	<b>58</b>	<b>35</b>	<b>1</b>	<b>5</b>	<b>0</b>	<b>0</b>
Arkansas	0	45	0	17	0	0	0
Louisiana	0	0	49	2	5	0	0
Oklahoma	74	90	0	71	0	0	0
Texas	0	292	38	2	11	0	0
<b>Mountain</b>	<b>33</b>	<b>831</b>	<b>0</b>	<b>10</b>	<b>6</b>	<b>0</b>	<b>0</b>
Colorado	882	687	0	118	0	0	0
Idaho	79	0	0	25	0	0	0
Montana	211	0	0	0	0	0	0
Nevada	0	0	0	30	0	0	0
New Mexico	0	3,056	0	0	0	0	0
Utah	0	1,227	0	22	263	0	0
Wyoming	35	410	0	11	4	0	0
<b>Pacific Contiguous</b>	<b>0</b>	<b>94</b>	<b>0</b>	<b>4</b>	<b>8</b>	<b>0</b>	<b>0</b>
California	0	567	0	4	8	0	0
Oregon	0	0	0	45	0	0	0
Washington	0	65	0	0	0	0	0
<b>Pacific Noncontiguous</b>	<b>398</b>	<b>52</b>	<b>0</b>	<b>69</b>	<b>123</b>	<b>0</b>	<b>139</b>
Alaska	0	22	0	69	0	0	0
Hawaii	398	57	0	0	123	0	139
<b>U.S. Total</b>	<b>7</b>	<b>39</b>	<b>20</b>	<b>2</b>	<b>6</b>	<b>0</b>	<b>19</b>

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.

Table A.5.A. Relative Standard Error for Net Generation by Fuel Type:

Industrial Sector by Census Division and State, December 2016 (Continued)

Census Region and State	Wind	Geothermal	Biomass	Solar Thermal and Photovoltaic	Other Renewables	Hydroelectric Pumped Storage	Other Energy Sources	All Energy Sources
<b>New England</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>34</b>	<b>14</b>
Connecticut	0	0	0	0	0	0	0	57
Maine	0	0	0	0	1	0	34	12
Massachusetts	0	0	0	0	196	0	0	93
New Hampshire	0	0	0	0	0	0	0	212
<b>Middle Atlantic</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>164</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>12</b>
New Jersey	0	0	0	338	338	0	0	46
New York	0	0	0	0	2	0	0	15
Pennsylvania	0	0	0	182	9	0	0	15
<b>East North Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>305</b>	<b>5</b>	<b>0</b>	<b>12</b>	<b>6</b>
Illinois	0	0	0	0	0	0	28	12
Indiana	0	0	0	0	43	0	0	11
Michigan	0	0	0	0	7	0	0	11
Ohio	0	0	0	305	14	0	0	25
Wisconsin	0	0	0	0	8	0	70	11
<b>West North Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>59</b>	<b>8</b>
Iowa	0	0	0	0	44	0	179	9
Kansas	0	0	0	0	0	0	0	337
Minnesota	0	0	0	0	6	0	62	14
Missouri	0	0	0	0	205	0	0	143
Nebraska	0	0	0	0	0	0	0	33
North Dakota	0	0	0	0	123	0	0	58
<b>South Atlantic</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>6</b>	<b>3</b>
Delaware	0	0	0	0	96	0	0	1
Florida	0	0	0	0	4	0	6	6
Georgia	0	0	0	0	2	0	0	4
Maryland	0	0	0	0	0	0	0	24
North Carolina	0	0	0	0	5	0	26	11
South Carolina	0	0	0	0	1	0	0	2
Virginia	0	0	0	0	3	0	0	7
West Virginia	0	0	0	0	0	0	0	4
<b>East South Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>46</b>	<b>4</b>
Alabama	0	0	0	0	4	0	0	5
Kentucky	0	0	0	0	3	0	0	25
Mississippi	0	0	0	0	3	0	180	7
Tennessee	0	0	0	0	7	0	0	5
<b>West South Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>13</b>	<b>1</b>
Arkansas	0	0	0	0	2	0	0	4
Louisiana	0	0	0	0	4	0	17	2
Oklahoma	0	0	0	0	16	0	117	29
Texas	0	0	0	0	8	0	15	2
<b>Mountain</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>290</b>	<b>4</b>	<b>0</b>	<b>15</b>	<b>7</b>
Colorado	0	0	0	0	281	0	71	64
Idaho	0	0	0	0	3	0	49	11
Montana	0	0	0	0	56	0	0	76
Nevada	0	0	0	290	290	0	0	30
New Mexico	0	0	0	0	0	0	0	3,056
Utah	0	0	0	0	0	0	0	16
Wyoming	0	0	0	0	0	0	0	9
<b>Pacific Contiguous</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>197</b>	<b>4</b>	<b>0</b>	<b>13</b>	<b>3</b>
California	0	0	0	197	12	0	13	4
Oregon	0	0	0	0	8	0	0	9
Washington	0	0	0	0	5	0	0	4
<b>Pacific Noncontiguous</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>41</b>	<b>0</b>	<b>0</b>	<b>39</b>
Alaska	0	0	0	0	152	0	0	40
Hawaii	0	0	0	0	40	0	0	45
<b>U.S. Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>111</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>1</b>

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.

Table A.5.B. Relative Standard Error for Net Generation by Fuel Type:

Industrial Sector by Census Division and State, Year-to-Date through December 2016

Census Region and State	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gases	Nuclear	Hydroelectric Conventional
<b>New England</b>	<b>64</b>	<b>53</b>	<b>0</b>	<b>42</b>	<b>0</b>	<b>0</b>	<b>31</b>
Connecticut	0	214	0	57	0	0	0
Maine	0	41	0	65	0	0	31
Massachusetts	145	3,763	0	106	0	0	577
New Hampshire	0	423	0	213	0	0	0
<b>Middle Atlantic</b>	<b>17</b>	<b>22</b>	<b>43</b>	<b>25</b>	<b>26</b>	<b>0</b>	<b>143</b>
New Jersey	0	322	80	67	85	0	0
New York	0	9	0	40	0	0	143
Pennsylvania	34	70	51	31	20	0	0
<b>East North Central</b>	<b>7</b>	<b>21</b>	<b>48</b>	<b>16</b>	<b>16</b>	<b>0</b>	<b>75</b>
Illinois	7	0	0	54	80	0	0
Indiana	382	6	0	30	14	0	0
Michigan	60	79	56	20	0	0	189
Ohio	87	122	212	44	97	0	0
Wisconsin	13	409	0	20	0	0	82
<b>West North Central</b>	<b>11</b>	<b>212</b>	<b>106</b>	<b>19</b>	<b>180</b>	<b>0</b>	<b>84</b>
Iowa	11	435	106	17	0	0	0
Kansas	0	0	0	433	0	0	0
Minnesota	28	294	0	43	0	0	84
Missouri	120	0	0	344	0	0	0
Nebraska	33	0	0	158	0	0	0
North Dakota	69	317	0	111	180	0	0
<b>South Atlantic</b>	<b>28</b>	<b>32</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>13</b>
Delaware	0	0	0	0	0	0	0
Florida	111	157	0	16	0	0	0
Georgia	49	62	0	27	0	0	230
Maryland	0	279	0	93	0	0	0
North Carolina	108	146	0	71	0	0	866
South Carolina	0	8	0	17	0	0	0
Virginia	31	192	0	25	0	0	316
West Virginia	0	0	0	0	0	0	8
<b>East South Central</b>	<b>8</b>	<b>90</b>	<b>0</b>	<b>12</b>	<b>63</b>	<b>0</b>	<b>0</b>
Alabama	107	106	0	16	114	0	0
Kentucky	0	0	0	63	0	0	0
Mississippi	0	0	0	30	0	0	0
Tennessee	0	325	0	19	0	0	0
<b>West South Central</b>	<b>56</b>	<b>58</b>	<b>35</b>	<b>1</b>	<b>5</b>	<b>0</b>	<b>0</b>
Arkansas	0	45	0	17	0	0	0
Louisiana	0	0	49	2	5	0	0
Oklahoma	74	90	0	71	0	0	0
Texas	0	292	38	2	11	0	0
<b>Mountain</b>	<b>33</b>	<b>831</b>	<b>0</b>	<b>10</b>	<b>6</b>	<b>0</b>	<b>0</b>
Colorado	882	687	0	118	0	0	0
Idaho	79	0	0	25	0	0	0
Montana	211	0	0	0	0	0	0
Nevada	0	0	0	30	0	0	0
New Mexico	0	3,056	0	0	0	0	0
Utah	0	1,227	0	22	263	0	0
Wyoming	35	410	0	11	4	0	0
<b>Pacific Contiguous</b>	<b>0</b>	<b>94</b>	<b>0</b>	<b>4</b>	<b>8</b>	<b>0</b>	<b>0</b>
California	0	567	0	4	8	0	0
Oregon	0	0	0	45	0	0	0
Washington	0	65	0	0	0	0	0
<b>Pacific Noncontiguous</b>	<b>398</b>	<b>52</b>	<b>0</b>	<b>69</b>	<b>123</b>	<b>0</b>	<b>139</b>
Alaska	0	22	0	69	0	0	0
Hawaii	398	57	0	0	123	0	139
<b>U.S. Total</b>	<b>7</b>	<b>39</b>	<b>20</b>	<b>2</b>	<b>6</b>	<b>0</b>	<b>19</b>

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.

Table A.5.B. Relative Standard Error for Net Generation by Fuel Type:

Industrial Sector by Census Division and State, Year-to-Date through December 2016 (Continued)

Census Region and State	Wind	Geothermal	Biomass	Solar Thermal and Photovoltaic	Other Renewables	Hydroelectric Pumped Storage	Other Energy Sources	All Energy Sources
<b>New England</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>34</b>	<b>14</b>
Connecticut	0	0	0	0	0	0	0	57
Maine	0	0	0	0	1	0	34	12
Massachusetts	0	0	0	0	196	0	0	93
New Hampshire	0	0	0	0	0	0	0	212
<b>Middle Atlantic</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>164</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>12</b>
New Jersey	0	0	0	338	338	0	0	46
New York	0	0	0	0	2	0	0	15
Pennsylvania	0	0	0	182	9	0	0	15
<b>East North Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>305</b>	<b>5</b>	<b>0</b>	<b>12</b>	<b>6</b>
Illinois	0	0	0	0	0	0	28	12
Indiana	0	0	0	0	43	0	0	11
Michigan	0	0	0	0	7	0	0	11
Ohio	0	0	0	305	14	0	0	25
Wisconsin	0	0	0	0	8	0	70	11
<b>West North Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>59</b>	<b>8</b>
Iowa	0	0	0	0	44	0	179	9
Kansas	0	0	0	0	0	0	0	337
Minnesota	0	0	0	0	6	0	62	14
Missouri	0	0	0	0	205	0	0	143
Nebraska	0	0	0	0	0	0	0	33
North Dakota	0	0	0	0	123	0	0	58
<b>South Atlantic</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>6</b>	<b>3</b>
Delaware	0	0	0	0	96	0	0	1
Florida	0	0	0	0	4	0	6	6
Georgia	0	0	0	0	2	0	0	4
Maryland	0	0	0	0	0	0	0	24
North Carolina	0	0	0	0	5	0	26	11
South Carolina	0	0	0	0	1	0	0	2
Virginia	0	0	0	0	3	0	0	7
West Virginia	0	0	0	0	0	0	0	4
<b>East South Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>46</b>	<b>4</b>
Alabama	0	0	0	0	4	0	0	5
Kentucky	0	0	0	0	3	0	0	25
Mississippi	0	0	0	0	3	0	180	7
Tennessee	0	0	0	0	7	0	0	5
<b>West South Central</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>13</b>	<b>1</b>
Arkansas	0	0	0	0	2	0	0	4
Louisiana	0	0	0	0	4	0	17	2
Oklahoma	0	0	0	0	16	0	117	29
Texas	0	0	0	0	8	0	15	2
<b>Mountain</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>290</b>	<b>4</b>	<b>0</b>	<b>15</b>	<b>7</b>
Colorado	0	0	0	0	281	0	71	64
Idaho	0	0	0	0	3	0	49	11
Montana	0	0	0	0	56	0	0	76
Nevada	0	0	0	290	290	0	0	30
New Mexico	0	0	0	0	0	0	0	3,056
Utah	0	0	0	0	0	0	0	16
Wyoming	0	0	0	0	0	0	0	9
<b>Pacific Contiguous</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>197</b>	<b>4</b>	<b>0</b>	<b>13</b>	<b>3</b>
California	0	0	0	197	12	0	13	4
Oregon	0	0	0	0	8	0	0	9
Washington	0	0	0	0	5	0	0	4
<b>Pacific Noncontiguous</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>41</b>	<b>0</b>	<b>0</b>	<b>39</b>
Alaska	0	0	0	0	152	0	0	40
Hawaii	0	0	0	0	40	0	0	45
<b>U.S. Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>111</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>1</b>

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.

**Table A.6.A. Relative Standard Error for Sales of Electricity to Ultimate Customers  
by End-Use Sector, Census Division, and State, December 2016**

Census Region and State	Residential	Commercial	Industrial	Transportation	Total
<b>New England</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>1</b>
Connecticut	0	1	5	0	1
Maine	1	1	2	0	1
Massachusetts	1	1	8	0	1
New Hampshire	1	1	5	0	1
Rhode Island	0	0	0	0	0
Vermont	3	3	6	0	2
<b>Middle Atlantic</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>
New Jersey	0	0	3	0	0
New York	0	0	2	0	0
Pennsylvania	0	0	1	0	0
<b>East North Central</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>
Illinois	1	1	1	0	1
Indiana	1	1	2	0	1
Michigan	1	2	2	0	1
Ohio	1	1	2	0	1
Wisconsin	1	3	4	0	2
<b>West North Central</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>1</b>
Iowa	2	7	4	0	3
Kansas	2	1	6	0	2
Minnesota	2	4	5	0	2
Missouri	1	1	7	0	1
Nebraska	2	7	6	0	3
North Dakota	2	5	10	0	3
South Dakota	3	9	9	0	4
<b>South Atlantic</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>
Delaware	1	2	8	0	2
District of Columbia	0	0	0	0	0
Florida	1	0	4	0	1
Georgia	2	1	3	0	1
Maryland	0	0	4	0	0
North Carolina	1	1	3	0	1
South Carolina	2	1	3	0	1
Virginia	1	0	3	0	1
West Virginia	0	0	0	0	0
<b>East South Central</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>1</b>
Alabama	2	1	2	0	1
Kentucky	1	2	4	0	2
Mississippi	3	2	4	0	2
Tennessee	1	2	4	0	1
<b>West South Central</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>
Arkansas	2	1	4	0	2
Louisiana	2	1	1	0	1
Oklahoma	2	1	4	0	1
Texas	1	0	1	0	1
<b>Mountain</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>1</b>
Arizona	1	3	3	0	1
Colorado	2	5	5	0	2
Idaho	1	4	4	0	2
Montana	2	8	6	0	3
Nevada	1	3	1	0	1
New Mexico	3	8	7	0	4
Utah	2	5	2	0	2
Wyoming	2	7	3	0	2
<b>Pacific Contiguous</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>1</b>
California	0	1	2	0	1
Oregon	1	4	7	0	2
Washington	1	4	5	0	2
<b>Pacific Noncontiguous</b>	<b>1</b>	<b>5</b>	<b>3</b>	<b>0</b>	<b>2</b>
Alaska	3	9	10	0	5
Hawaii	0	0	0	0	0
<b>U.S. Total</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>

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.

Table A.6.B. Relative Standard Error for Sales of Electricity to Ultimate Customers

by End-Use Sector, Census Division, and State, Year-to-Date through December 2016

Census Region and State	Residential	Commercial	Industrial	Transportation	Total
<b>New England</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>
Connecticut	0	1	4	0	1
Maine	0	1	1	0	0
Massachusetts	0	1	6	0	1
New Hampshire	0	1	3	0	1
Rhode Island	0	0	0	0	0
Vermont	1	2	6	0	2
<b>Middle Atlantic</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>
New Jersey	0	0	2	0	0
New York	0	0	2	0	0
Pennsylvania	0	0	0	0	0
<b>East North Central</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>
Illinois	0	1	1	0	0
Indiana	0	1	2	0	1
Michigan	0	1	2	0	1
Ohio	0	1	1	0	0
Wisconsin	0	2	3	0	1
<b>West North Central</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>1</b>
Iowa	1	5	3	0	2
Kansas	1	1	4	0	1
Minnesota	1	3	4	0	2
Missouri	0	1	5	0	1
Nebraska	1	5	5	0	2
North Dakota	1	3	6	0	3
South Dakota	1	7	7	0	3
<b>South Atlantic</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>
Delaware	0	1	6	0	1
District of Columbia	0	0	0	0	0
Florida	0	0	3	0	0
Georgia	1	1	2	0	1
Maryland	0	0	3	0	0
North Carolina	0	0	2	0	0
South Carolina	1	1	2	0	1
Virginia	0	0	2	0	0
West Virginia	0	0	0	0	0
<b>East South Central</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>
Alabama	1	1	1	0	1
Kentucky	0	1	3	0	1
Mississippi	1	1	3	0	1
Tennessee	0	1	3	0	1
<b>West South Central</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>
Arkansas	1	1	2	0	1
Louisiana	1	1	1	0	0
Oklahoma	1	1	3	0	1
Texas	0	0	1	0	0
<b>Mountain</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>1</b>
Arizona	0	2	2	0	1
Colorado	1	4	4	0	2
Idaho	0	3	2	0	1
Montana	1	5	5	0	2
Nevada	0	2	1	0	1
New Mexico	1	6	5	0	3
Utah	1	4	2	0	2
Wyoming	1	5	2	0	2
<b>Pacific Contiguous</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>1</b>
California	0	1	1	0	0
Oregon	0	3	5	0	2
Washington	0	3	4	0	2
<b>Pacific Noncontiguous</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>1</b>
Alaska	1	7	8	0	4
Hawaii	0	0	0	0	0
<b>U.S. Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

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.

**Table A.7.A. Relative Standard Error for Revenue from Sales of Electricity to Ultimate Customers by End-Use Sector, Census Division, and State, December 2016**

Census Region and State	Residential	Commercial	Industrial	Transportation	Total
<b>New England</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>0</b>
Connecticut	1	1	3	0	1
Maine	1	1	2	0	1
Massachusetts	1	1	5	0	1
New Hampshire	1	1	4	0	1
Rhode Island	0	0	0	0	0
Vermont	3	4	6	0	2
<b>Middle Atlantic</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>
New Jersey	0	0	2	0	0
New York	0	0	2	0	0
Pennsylvania	0	0	1	0	0
<b>East North Central</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>
Illinois	1	1	2	0	1
Indiana	2	2	2	0	1
Michigan	1	2	3	0	1
Ohio	1	1	3	0	1
Wisconsin	1	3	5	0	1
<b>West North Central</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>1</b>
Iowa	2	7	6	0	3
Kansas	3	2	6	0	2
Minnesota	2	4	6	0	2
Missouri	2	2	6	0	1
Nebraska	2	7	9	0	3
North Dakota	2	4	10	0	3
South Dakota	3	7	10	0	3
<b>South Atlantic</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>
Delaware	2	3	12	0	2
District of Columbia	0	0	0	0	0
Florida	1	1	4	0	1
Georgia	2	1	4	0	1
Maryland	1	1	4	0	0
North Carolina	2	1	3	0	1
South Carolina	2	1	3	0	1
Virginia	1	1	4	0	1
West Virginia	0	1	0	0	0
<b>East South Central</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>1</b>
Alabama	2	1	2	0	1
Kentucky	2	3	4	0	2
Mississippi	4	3	5	0	2
Tennessee	2	2	5	0	1
<b>West South Central</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>1</b>
Arkansas	3	3	4	0	2
Louisiana	2	1	1	0	1
Oklahoma	3	2	5	0	2
Texas	1	1	2	0	1
<b>Mountain</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>1</b>
Arizona	1	3	5	0	1
Colorado	2	5	7	0	3
Idaho	1	4	5	0	1
Montana	2	6	12	0	3
Nevada	1	4	2	0	1
New Mexico	4	8	11	0	4
Utah	2	6	4	0	2
Wyoming	2	6	3	0	2
<b>Pacific Contiguous</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>0</b>
California	0	1	2	0	1
Oregon	1	3	8	0	1
Washington	1	3	7	0	1
<b>Pacific Noncontiguous</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>1</b>
Alaska	3	7	9	0	3
Hawaii	0	0	0	0	0
<b>U.S. Total</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>

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.

Table A.7.B. Relative Standard Error for Revenue from Sales of Electricity to Ultimate Customers

by End-Use Sector, Census Division, and State, Year-to-Date through December 2016

Census Region and State	Residential	Commercial	Industrial	Transportation	Total
<b>New England</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>
Connecticut	0	1	2	0	0
Maine	0	1	2	0	0
Massachusetts	0	1	3	0	1
New Hampshire	0	1	3	0	0
Rhode Island	0	1	0	0	0
Vermont	1	3	5	0	1
<b>Middle Atlantic</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>
New Jersey	0	1	2	0	0
New York	0	0	1	0	0
Pennsylvania	0	1	1	0	0
<b>East North Central</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>
Illinois	0	1	2	0	0
Indiana	1	1	1	0	1
Michigan	0	1	2	0	1
Ohio	0	1	2	0	0
Wisconsin	0	2	4	0	1
<b>West North Central</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>1</b>
Iowa	1	4	4	0	2
Kansas	1	1	4	0	1
Minnesota	1	3	5	0	1
Missouri	1	1	4	0	1
Nebraska	1	5	6	0	2
North Dakota	1	3	6	0	2
South Dakota	1	5	8	0	2
<b>South Atlantic</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>
Delaware	1	2	8	0	1
District of Columbia	0	1	0	0	1
Florida	0	1	3	0	0
Georgia	1	1	2	0	1
Maryland	0	1	2	0	0
North Carolina	1	1	2	0	1
South Carolina	1	1	2	0	1
Virginia	0	1	2	0	0
West Virginia	0	1	0	0	0
<b>East South Central</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>
Alabama	1	1	2	0	1
Kentucky	1	2	3	0	1
Mississippi	1	2	4	0	1
Tennessee	1	2	4	0	1
<b>West South Central</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>
Arkansas	1	2	3	0	1
Louisiana	1	1	1	0	1
Oklahoma	1	1	4	0	1
Texas	0	1	1	0	0
<b>Mountain</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>1</b>
Arizona	0	2	3	0	1
Colorado	1	4	5	0	2
Idaho	1	3	2	0	1
Montana	1	4	9	0	2
Nevada	0	3	1	0	1
New Mexico	1	6	9	0	3
Utah	1	4	2	0	2
Wyoming	1	5	3	0	2
<b>Pacific Contiguous</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>
California	0	1	1	0	0
Oregon	1	2	6	0	1
Washington	0	2	5	0	1
<b>Pacific Noncontiguous</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>1</b>
Alaska	2	5	8	0	3
Hawaii	0	0	0	0	0
<b>U.S. Total</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>

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.

**Table A.8.A. Relative Standard Error for Average Price of Electricity to Ultimate Customers by End-Use Sector, Census Division, and State, December 2016**

Census Region and State	Residential	Commercial	Industrial	Transportation	Total
<b>New England</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>
Connecticut	0	0	3	0	0
Maine	0	0	1	0	0
Massachusetts	1	0	4	0	1
New Hampshire	0	0	2	0	0
Rhode Island	0	0	0	0	0
Vermont	2	2	2	0	1
<b>Middle Atlantic</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
New Jersey	0	0	1	0	0
New York	0	0	1	0	0
Pennsylvania	0	0	1	0	0
<b>East North Central</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>
Illinois	1	0	1	0	0
Indiana	1	1	1	0	1
Michigan	0	1	1	0	0
Ohio	1	0	1	0	0
Wisconsin	1	1	1	0	1
<b>West North Central</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>
Iowa	1	2	3	0	1
Kansas	2	2	3	0	1
Minnesota	1	1	2	0	1
Missouri	1	1	2	0	1
Nebraska	1	2	3	0	1
North Dakota	1	1	3	0	1
South Dakota	2	3	3	0	1
<b>South Atlantic</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>
Delaware	1	2	5	0	1
District of Columbia	0	0	0	0	0
Florida	1	1	2	0	0
Georgia	1	1	2	0	1
Maryland	0	0	1	0	0
North Carolina	1	1	1	0	1
South Carolina	1	1	1	0	1
Virginia	1	1	2	0	0
West Virginia	0	0	0	0	0
<b>East South Central</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>
Alabama	1	1	1	0	1
Kentucky	1	1	1	0	1
Mississippi	2	2	2	0	1
Tennessee	1	1	2	0	1
<b>West South Central</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>
Arkansas	2	2	2	0	1
Louisiana	1	1	1	0	1
Oklahoma	2	2	2	0	1
Texas	1	1	1	0	1
<b>Mountain</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>
Arizona	1	1	3	0	1
Colorado	1	1	4	0	1
Idaho	1	1	1	0	1
Montana	1	2	6	0	1
Nevada	0	2	1	0	1
New Mexico	2	2	7	0	2
Utah	1	2	2	0	1
Wyoming	1	2	1	0	1
<b>Pacific Contiguous</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>
California	0	0	1	0	0
Oregon	1	1	2	0	1
Washington	1	1	2	0	1
<b>Pacific Noncontiguous</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>1</b>
Alaska	2	4	3	0	2
Hawaii	0	0	0	0	0
<b>U.S. Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

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Table A.8.B. Relative Standard Error for Average Price of Electricity to Ultimate Customers

by End-Use Sector, Census Division, and State, Year-to-Date through December 2016

Census Region and State	Residential	Commercial	Industrial	Transportation	Total
<b>New England</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>0</b>
Connecticut	0	1	4	0	1
Maine	0	1	2	0	1
Massachusetts	0	1	7	0	1
New Hampshire	0	1	4	0	1
Rhode Island	0	1	0	0	0
Vermont	1	3	7	0	2
<b>Middle Atlantic</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>
New Jersey	0	1	3	0	0
New York	0	0	2	0	0
Pennsylvania	0	1	1	0	0
<b>East North Central</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>
Illinois	0	1	2	0	1
Indiana	1	2	2	0	1
Michigan	0	2	3	0	1
Ohio	0	1	2	0	1
Wisconsin	0	3	4	0	2
<b>West North Central</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>1</b>
Iowa	1	6	5	0	2
Kansas	1	1	5	0	1
Minnesota	0	4	6	0	2
Missouri	1	1	6	0	1
Nebraska	1	6	7	0	3
North Dakota	1	4	7	0	3
South Dakota	1	8	10	0	4
<b>South Atlantic</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>
Delaware	1	3	9	0	2
District of Columbia	0	1	0	0	1
Florida	0	1	4	0	0
Georgia	1	1	3	0	1
Maryland	0	1	4	0	0
North Carolina	1	1	2	0	1
South Carolina	1	1	2	0	1
Virginia	0	1	3	0	0
West Virginia	0	1	0	0	0
<b>East South Central</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>1</b>
Alabama	1	1	2	0	1
Kentucky	1	2	4	0	1
Mississippi	1	2	4	0	1
Tennessee	1	2	5	0	1
<b>West South Central</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>
Arkansas	1	2	3	0	1
Louisiana	1	1	1	0	1
Oklahoma	1	1	4	0	1
Texas	0	1	2	0	0
<b>Mountain</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>1</b>
Arizona	0	2	4	0	1
Colorado	1	5	6	0	2
Idaho	0	4	3	0	1
Montana	1	6	10	0	3
Nevada	0	3	1	0	1
New Mexico	1	8	9	0	4
Utah	1	5	3	0	2
Wyoming	1	6	3	0	2
<b>Pacific Contiguous</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>1</b>
California	0	1	2	0	1
Oregon	0	4	8	0	2
Washington	0	3	6	0	2
<b>Pacific Noncontiguous</b>	<b>1</b>	<b>4</b>	<b>3</b>	<b>0</b>	<b>2</b>
Alaska	2	8	10	0	4
Hawaii	0	0	0	0	0
<b>U.S. Total</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>

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Table B.1 Major Disturbances and Unusual Occurrences, Year-to-Date 2016

Year	Month	Event Date and Time	Restoration Date and Time	Duration	Utility/Power Pool	NERC Region	Area Affected	Type of Disturbance	Loss (megawatts)	Number of Customers Affected
2016	1	01/10/2016 8:46 PM	01/11/2016 5:25 AM	8 Hours, 39 Minutes	ISO New England	NPCC	Maine: Connecticut: Massachusetts: Vermont: New Hampshire: Rhode Island:	Loss of electric service to more than 50,000 customers for 1 hour or more-Weather	Unknown	59859
2016	1	01/22/2016 3:52 PM	01/24/2016 12:30 PM	44 Hours, 38 Minutes	Duke Energy Progress	SERC	North Carolina: South Carolina:	Loss of electric service to more than 50,000 customers for 1 hour or more-Weather	Unknown	150000
2016	1	01/23/2016 7:49 AM	01/23/2016 9:05 AM	1 Hours, 16 Minutes	FirstEnergy Corp. Jersey Central Power & Light	RFC	New Jersey:	Loss of electric service to more than 50,000 customers for 1 hour or more-Weather	Unknown	50900
2016	2	02/05/2016 11:21 AM	02/06/2016 3:48 PM	28 Hours, 27 Minutes	ISO New England	NPCC	Connecticut: Massachusetts: Rhode Island:	Loss of electric service to more than 50,000 customers for 1 hour or more-Weather	Unknown	115057
2016	2	02/13/2016 12:44 PM	02/13/2016 4:27 PM	3 Hours, 43 Minutes	Pacific Gas & Electric Co	SERC	California	Electrical System Separation (Islanding) where part or parts of a power grid remain(s) operational in an otherwise blacked out area or within the partial failure of an integrated electrical system-Islanding	7	4300
2016	2	02/16/2016 8:35 AM	02/16/2016 5:28 PM	8 Hours, 53 Minutes	American Electric Power - (RFC Reliability Region) (8400 Smiths Mill Road, New Albany Ohio 43054)	RFC	Virginia: Roanoke County, Montgomery County; West Virginia: Kanawha County, Cabell County; Tennessee: Sullivan County;	Loss of electric service to more than 50,000 customers for 1 hour or more-Weather	Unknown	52640
2016	2	02/19/2016 10:00 PM	02/20/2016 11:13 PM	25 Hours, 13 Minutes	Detroit Edison Co	RFC	Michigan	Loss of electric service to more than 50,000 customers for 1 hour or more-Weather	Unknown	145314
2016	2	02/24/2016 2:45 PM	02/25/2016 5:00 AM	14 Hours, 15 Minutes	Duke Energy Carolinas	SERC	North Carolina: South Carolina	Loss of electric service to more than 50,000 customers for 1 hour or more-Weather	400	284610
2016	2	02/25/2016 1:44 AM	02/25/2016 2:45 PM	13 Hours, 1 Minutes	ISO New England	NPCC	Connecticut: Maine: Massachusetts: Rhode Island: Vermont:	Loss of electric service to more than 50,000 customers for 1 hour or more-Weather	Unknown	114190
2016	2	02/26/2016 12:01 AM	ongoing	ongoing	California Department of Water Resources	WECC	California: San Bernardino County	Fuel supply emergencies that could impact electric power system adequacy or reliability- Fuel Supply Deficiency	0	0
2016	3	03/01/2016 3:00 PM	ongoing	ongoing	Puget Sound Energy	WECC	Washington: King County, Whatcom County, Kitsap County, Skagit County;	Loss of electric service to more than 50,000 customers for 1 hour or more-Weather	Unknown	56000
2016	3	03/03/2016 11:00 AM	04/16/2016 7:47 PM	1,064 Hours, 47 Minutes	California Department of Water Resources	WECC	California: San Bernardino County;	Fuel supply emergencies that could impact electric power system adequacy or reliability- Fuel Supply Deficiency	0	0
2016	3	03/23/2016 5:00 AM	03/25/2016 11:59 PM	66 Hours, 59 Minutes	Xcel Energy/Public Service Company of Colorado	WECC	Colorado: Denver, City and County of[12];	Loss of electric service to more than 50,000 customers for 1 hour or more-Weather	0	0
2016	4	04/02/2016 11:08 AM	04/02/2016 11:33 AM	0 Hours, 25 Minutes	California Department of Water Resources	WECC	California	Uncontrolled loss or 300 Megawatts or more of firm system loads for more than 15 minutes from a single incident- System Operations	360	0
2016	4	04/18/2016 5:05 AM	04/20/2016 7:55 AM	50 Hours, 50 Minutes	CenterPoint Energy	TRE	Texas: Harris County	Loss of electric service to more than 50,000 customers for 1 hour or more-Weather	Unknown	415103
2016	4	04/27/2016 5:50 AM	04/28/2016 1:35 AM	19 Hours, 45 Minutes	CenterPoint Energy	TRE	Texas: Harris County	Loss of electric service to more than 50,000 customers for 1 hour or more-Weather	Unknown	214864
2016	5	05/08/2016 9:12 AM	ongoing	ongoing	Peak Reliability	WECC	Washington: Clark County;	Electrical System Separation (Islanding) where part or parts of a power grid remain(s) operational in an otherwise blacked out area or within the partial failure of an integrated electrical system-Islanding	Unknown	Unknown
2016	5	05/10/2016 8:45 PM	05/13/2016 3:00 AM	54 Hours, 15 Minutes	Oncor Electric Delivery Company LLC	TRE	Texas: Dallas County, Tarrant County, Parker County;	Loss of electric service to more than 50,000 customers for 1 hour or more-Distribution Interruption	Unknown	85000
2016	5	05/19/2016 9:36 PM	05/20/2016 1:00 AM	3 Hours, 24 Minutes	Pacificorp	WECC	Utah:	Uncontrolled loss or 300 Megawatts or more of firm system loads for more than 15 minutes from a single incident- System Operations	461	85179
2016	5	05/20/2016 12:00 AM	05/22/2016 5:00 AM	53 Hours, 0 Minutes	Entergy Services, Inc.	SERC	Louisiana:	Loss of electric service to more than 50,000 customers for 1 hour or more-Distribution Interruption	Unknown	85000
2016	5	05/20/2016 1:15 AM	.	. Hours, . Minutes	Entergy Transmission - SOC	SERC	Louisiana:	Loss of electric service to more than 50,000 customers for 1 hour or more-Weather	Unknown	57184
2016	5	05/31/2016 7:30 AM	06/13/2016 7:27 AM	311 Hours, 57 Minutes	Upstate New York Power Producers	NPCC	New York: Tompkins County;	Fuel supply emergencies that could impact electric power system adequacy or reliability- Fuel Supply Deficiency	150	Unknown
2016	6	06/17/2016 3:40 PM	06/18/2016 8:34 AM	16 Hours, 54 Minutes	Southern Company	SERC	Georgia, Alabama, Mississippi, Florida	Loss of electric service to more than 50,000 customers for 1 hour or more-Weather	304	91260
2016	7	07/05/2016 2:45 AM	07/06/2016 3:00 AM	24 Hours, 15 Minutes	Oncor Electric Delivery Company LLC	TRE	Texas: Dallas County, Tarrant County	Loss of electric service to more than 50,000 customers for 1 hour or more-Severe Weather	Unknown	52000
2016	7	07/05/2016 5:30 PM	07/06/2016 4:00 PM	22 Hours, 30 Minutes	Northern States Power Co	MRO	Minnesota, Wisconsin	Loss of electric service to more than 50,000 customers for 1 hour or more-Severe Weather	Unknown	250000
2016	7	07/07/2016 4:20 AM	07/07/2016 8:00 AM	3 Hours, 40 Minutes	Kansas City Power & Light Co	SERC	Kansas: Johnson County; Missouri: Jackson County, Platte County, Cass County, Buchanan County, Atchison County, Andrew County, Clay County, Nodaway County	Loss of electric service to more than 50,000 customers for 1 hour or more-Severe Weather	Unknown	58500
2016	7	07/08/2016 6:00 PM	ongoing	ongoing	American Electric Power - (RFC Reliability Region) (8400 Smiths Mill Road, New Albany Ohio 43054)	RFC	West Virginia: Virginia	Loss of electric service to more than 50,000 customers for 1 hour or more-Severe Weather	Unknown	62961
2016	7	07/08/2016 7:00 PM	07/09/2016 12:00 AM	5 Hours, 0 Minutes	Detroit Edison Co	RFC	Michigan: Wayne County, Oakland County, Macomb County, St. Clair County, Lapeer County, Tuscola County, Sanilac County, Huron County	Loss of electric service to more than 50,000 customers for 1 hour or more-Severe Weather	Unknown	160895
2016	7	07/08/2016 8:50 PM	07/09/2016 7:25 PM	22 Hours, 35 Minutes	Duke Energy Carolinas	SERC	North Carolina	Loss of electric service to more than 50,000 customers for 1 hour or more-Severe Weather	600	203345
2016	7	07/09/2016 5:45 PM	07/11/2016 2:00 PM	44 Hours, 15 Minutes	Oncor Electric Delivery Company LLC	TRE	Texas: Dallas County	Loss of electric service to more than 50,000 customers for 1 hour or more-Severe Weather	Unknown	62000

Table B.1 Major Disturbances and Unusual Occurrences, Year-to-Date 2016

Year	Month	Event Date and Time	Restoration Date and Time	Duration	Utility/Power Pool	NERC Region	Area Affected	Type of Disturbance	Loss (megawatts)	Number of Customers Affected
2016	7	07/12/2016 2:10 PM	07/12/2016 8:33 PM	6 Hours, 23 Minutes	Puerto Rico Electric Power Authority	PR	Puerto Rico	Voltage Reduction-System Operations	450	218000
2016	7	07/13/2016 3:00 PM	ongoing	ongoing	Memphis Light Gas and Water Division	SERC	Tennessee: Shelby County	Public Appeal-System Operations	Unknown	Unknown
2016	7	07/14/2016 2:44 PM	07/15/2016 4:00 AM	13 Hours, 16 Minutes	American Electric Power - (SPP Reliability Region)	SPP	Oklahoma	Loss of electric service to more than 50,000 customers for 1 hour or more-Severe Weather	Unknown	96966
2016	7	07/14/2016 4:30 PM	07/16/2016 12:00 AM	31 Hours, 30 Minutes	Entergy Services, Inc.	SPP, SERC	Arkansas: Louisiana: Mississippi: Texas	Loss of electric service to more than 50,000 customers for 1 hour or more-Severe Weather	Unknown	170244
2016	7	07/14/2016 5:30 PM	07/16/2016 8:00 PM	50 Hours, 30 Minutes	Oklahoma Gas & Electric Co	SPP	Oklahoma: Arkansas	Loss of electric service to more than 50,000 customers for 1 hour or more-Severe Weather	Unknown	7300
2016	7	07/19/2016 3:45 PM	07/19/2016 7:25 PM	3 Hours, 40 Minutes	Pacificorp	WECC	Idaho	Islanding, Uncontrolled Loss 300+ MW-System Operations	485	Unknown
2016	7	07/19/2016 3:45 PM	07/19/2016 7:29 PM	3 Hours, 44 Minutes	Bonneville Power Administration	WECC	Idaho	Islanding, Uncontrolled Loss 300+ MW-System Operations	290	Unknown
2016	7	07/21/2016 7:21 PM	07/22/2016 12:09 AM	4 Hours, 48 Minutes	Puerto Rico Electric Power Authority	PR	Puerto Rico	Load Shed 100+ MW, Voltage Reduction-System Operations	200	266000
2016	7	07/22/2016 11:50 PM	07/23/2016 9:10 AM	9 Hours, 20 Minutes	ISO New England	NPCC	Massachusetts: Connecticut: Rhode Island: New Hampshire: Vermont: Maine	Loss of electric service to more than 50,000 customers for 1 hour or more-Severe Weather	Unknown	57058
2016	7	07/23/2016 3:15 PM	07/23/2016 7:53 PM	4 Hours, 38 Minutes	CAmbria Cogen Company	RFC	Pennsylvania: Cambria County	Voltage Reduction-System Operations	87	Unknown
2016	7	07/23/2016 7:30 PM	07/24/2016 7:30 AM	12 Hours, 0 Minutes	ISO New England	NPCC	Connecticut: Massachusetts: New Hampshire: Vermont: Rhode Island	Loss of electric service to more than 50,000 customers for 1 hour or more-Severe Weather	Unknown	101073
2016	7	07/25/2016 6:51 PM	07/26/2016 2:19 AM	7 Hours, 28 Minutes	Puerto Rico Electric Power Authority	PR	Puerto Rico	Voltage Reduction-System Operations	0	0
2016	7	07/26/2016 6:51 PM	07/27/2016 1:45 AM	6 Hours, 54 Minutes	Puerto Rico Electric Power Authority	PR	Puerto Rico	Voltage Reduction-System Operations	25	37100
2016	7	07/27/2016 6:50 PM	07/28/2016 1:38 AM	6 Hours, 48 Minutes	Puerto Rico Electric Power Authority	PR	Puerto Rico	Voltage Reduction-System Operations	80	106300
2016	7	07/28/2016 6:51 PM	07/29/2016 2:02 AM	7 Hours, 11 Minutes	Puerto Rico Electric Power Authority	PR	Puerto Rico	Voltage Reduction-System Operations	22	21600
2016	7	07/29/2016 7:09 PM	07/29/2016 7:57 PM	0 Hours, 48 Minutes	Puerto Rico Electric Power Authority	PR	Puerto Rico	Voltage Reduction-System Operations	0	0
2016	8	08/07/2016 6:39 PM	08/07/2016 8:27 PM	1 Hours, 48 Minutes	Peak Reliability	WECC	New Mexico: Bernalillo County:	Uncontrolled loss of 300 Megawatts or more of firm system loads for more than 15 minutes from a single incident-System Operations	Unknown	Unknown
2016	8	08/10/2016 6:00 AM	ongoing	ongoing	California Department of Water Resources	WECC	California: Butte County:	Fuel supply emergencies that could impact electric power system adequacy or reliability- Fuel Supply Deficiency	0	0
2016	8	08/11/2016 4:30 PM	08/11/2016 7:15 PM	2 Hours, 45 Minutes	FirstEnergy Corp	RFC	Ohio:	Loss of electric service to more than 50,000 customers for 1 hour or more-Severe Weather	Unknown	62140
2016	8	08/13/2016 11:42 AM	08/13/2016 2:07 PM	2 Hours, 25 Minutes	Broad River Energy, LLC	SERC	South Carolina:	Uncontrolled loss of 300 Megawatts or more of firm system loads for more than 15 minutes from a single incident-System Operations	506	0
2016	8	08/23/2016 5:00 PM	08/24/2016 12:05 AM	7 Hours, 5 Minutes	CenterPoint Energy	TRE	Texas: Harris County:	Loss of electric service to more than 50,000 customers for 1 hour or more-Severe Weather	Unknown	72200
2016	8	08/24/2016 6:13 PM	08/24/2016 7:14 PM	1 Hours, 1 Minutes	Puerto Rico Electric Power Authority	PR	Puerto Rico:	Uncontrolled loss of 300 Megawatts or more of firm system loads for more than 15 minutes from a single incident-System Operations	600	400000
2016	8	08/24/2016 7:18 PM	08/24/2016 7:47 PM	0 Hours, 29 Minutes	Peak Reliability	WECC	Washington: King County:	Electrical System Separation (Islanding) where part or parts of a power grid remain(s) operational in an otherwise blacked out area or within the partial failure of an integrated electrical system-Islanding	9232	Unknown
2016	8	08/31/2016 9:45 AM	08/31/2016 9:55 AM	0 Hours, 10 Minutes	Peak Reliability	WECC	Colorado:	Electrical System Separation (Islanding) where part or parts of a power grid remain(s) operational in an otherwise blacked out area or within the partial failure of an integrated electrical system-Transmission Interruption	0	0
2016	8	08/31/2016 2:52 PM	ongoing	ongoing	Peak Reliability	WECC	Washington: Clark County:	Electrical System Separation (Islanding) where part or parts of a power grid remain(s) operational in an otherwise blacked out area or within the partial failure of an integrated electrical system-Islanding	0	0
2016	9	09/01/2016 10:00 PM	ongoing	ongoing	Seminole Electric Cooperative Inc	FRCC	Florida:	Loss of electric service to more than 50,000 customers for 1 hour or more-Severe Weather	100	Unknown
2016	9	09/02/2016 12:40 AM	09/04/2016 8:00 PM	67 Hours, 20 Minutes	City of Tallahassee - (FL)	FRCC	Florida: Leon County, Wakulla County:	Loss of electric service to more than 50,000 customers for 1 hour or more-Severe Weather	450	75000
2016	9	09/02/2016 4:00 AM	09/02/2016 4:00 PM	12 Hours, 0 Minutes	Duke Energy Florida	FRCC	Florida: Alachua County, Bay County, Citrus County, Columbia County, Dixie County, Franklin County, Gilchrist County, Gulf County, Hamilton County, Hardee County, Hernando County, Highlands County, Jefferson County, Lafayette County, Lake County, Levy County, Madison County, Marion County, Orange County, Osceola County, Pasco County, Pinellas County, Polk County, Seminole County, Sumter County, Su	Loss of electric service to more than 50,000 customers for 1 hour or more-Severe Weather	225	90000
2016	9	09/02/2016 5:45 AM	09/03/2016 12:30 AM	18 Hours, 45 Minutes	Southern Company	SERC	Georgia:	Loss of electric service to more than 50,000 customers for 1 hour or more-Severe Weather	Unknown	57000

Table B.1 Major Disturbances and Unusual Occurrences, Year-to-Date 2016

Year	Month	Event Date and Time	Restoration Date and Time	Duration	Utility/Power Pool	NERC Region	Area Affected	Type of Disturbance	Loss (megawatts)	Number of Customers Affected
2016	9	09/06/2016 6:12 PM	09/06/2016 9:24 PM	3 Hours, 12 Minutes	Peak Reliability	WECC	Washington: Clark County;	Electrical System Separation (Islanding) where part or parts of a power grid remain(s) operational in an otherwise blacked out area or within the partial failure of an integrated electrical system-Islanding	300	Unknown
2016	9	09/08/2016 8:30 AM	09/25/2016 12:00 AM	399 Hours, 30 Minutes	Upstate New York Power Producers	NPCC	New York: Tompkins County;	Fuel supply emergencies that could impact electric power system adequacy or reliability- Fuel Supply Deficiency	210	Unknown
2016	9	09/08/2016 2:49 PM	09/08/2016 3:03 PM	0 Hours, 14 Minutes	Peak Reliability	WECC	Washington:	Electrical System Separation (Islanding) where part or parts of a power grid remain(s) operational in an otherwise blacked out area or within the partial failure of an integrated electrical system-Islanding	0	0
2016	9	09/10/2016 9:42 AM	09/10/2016 9:57 AM	0 Hours, 15 Minutes	Peak Reliability	WECC	Washington: Clark County;	Load shedding or 100 Megawatts or more implemented under emergency operational policy-Generation Inadequacy	135	Unknown
2016	9	09/11/2016 12:05 PM	09/11/2016 3:10 PM	3 Hours, 5 Minutes	ISO New England	NPCC	Connecticut: Massachusetts: New Hampshire: Rhode Island: Vermont: Maine:	Loss of electric service to more than 50,000 customers for 1 hour or more-Severe Weather	Unknown	57960
2016	9	09/12/2016 12:30 PM	09/12/2016 5:56 PM	5 Hours, 26 Minutes	Public Service Company of New Mexico	WECC	New Mexico: Bernalillo County, Sandoval County, Santa Fe County, Valencia County;	Load shedding or 100 Megawatts or more implemented under emergency operational policy-Generation Inadequacy	110	53753
2016	9	09/21/2016 2:30 PM	09/24/2016 2:30 AM	60 Hours, 0 Minutes	Puerto Rico Electric Power Authority		Puerto Rico:	Complete operational failure or shut-down of the transmission and/or distribution electrical system-System Operations	2750	1475000
2016	9	09/22/2016 10:56 AM	09/22/2016 11:41 AM	0 Hours, 45 Minutes	Cedar Falls Utilities	MRO	Iowa: Black Hawk County;	Complete operational failure or shut-down of the transmission and/or distribution electrical system-System Operations	69	19124
2016	10	10/02/2016 11:30 PM	10/05/2016 8:00 AM	56 Hours, 30 Minutes	Pacificorp	WECC	Utah:	Public appeal to reduce the use of electricity for purposes of maintaining the continuity of the electric power system-Transmission Interruption	50	4000
2016	10	10/03/2016 3:09 PM	10/04/2016 7:00 PM	27 Hours, 51 Minutes	ERCOT	TRE	Texas:	Public appeal to reduce the use of electricity for purposes of maintaining the continuity of the electric power system-Public Appeal	Unknown	Unknown
2016	10	10/05/2016 11:32 AM	10/05/2016 7:00 PM	7 Hours, 28 Minutes	ERCOT	TRE	Texas:	Public appeal to reduce the use of electricity for purposes of maintaining the continuity of the electric power system-Public Appeal	Unknown	Unknown
2016	10	10/06/2016 9:50 AM	10/06/2016 7:00 PM	9 Hours, 10 Minutes	ERCOT	TRE	Texas:	Public appeal to reduce the use of electricity for purposes of maintaining the continuity of the electric power system-Public Appeal	Unknown	Unknown
2016	10	10/06/2016 7:30 PM	10/08/2016 6:00 PM	46 Hours, 30 Minutes	Florida Power & Light	FRCC	Florida:	Loss of electric service to more than 50,000 customers for 1 hour or more-Severe Weather	5600	1200000
2016	10	10/07/2016 8:00 AM	10/09/2016 1:00 PM	53 Hours, 0 Minutes	Duke Energy Florida	FRCC	Florida: Alachua County, Bay County, Citrus County, Columbia County, Dixie County, Franklin County, Gilchrist County, Gulf County, Hamilton County, Hardee County, Hernando County, Highlands County, Jefferson County, Lafayette County, Lake County, Levy County, Madison County, Marion County, Orange County, Osceola County, Pasco County, Pinellas County, Polk County, Seminole County, Sumter County, Su	Loss of electric service to more than 50,000 customers for 1 hour or more-Severe Weather	413	165000
2016	10	10/07/2016 11:08 AM	10/07/2016 7:00 PM	7 Hours, 52 Minutes	ERCOT	TRE	Texas:	Public appeal to reduce the use of electricity for purposes of maintaining the continuity of the electric power system-Generation Inadequacy	Unknown	Unknown
2016	10	10/07/2016 4:22 PM	10/12/2016 11:00 AM	114 Hours, 38 Minutes	Southern Company	SERC	Georgia:	Loss of electric service to more than 50,000 customers for 1 hour or more-Severe Weather	122	36384
2016	10	10/07/2016 10:45 PM	ongoing	ongoing	Seminole Electric Cooperative Inc	FRCC	Florida:	Loss of electric service to more than 50,000 customers for 1 hour or more-Severe Weather	Unknown	Unknown
2016	10	10/08/2016 1:10 AM	ongoing	ongoing	South Carolina Electric and Gas	SERC	South Carolina:	Loss of electric service to more than 50,000 customers for 1 hour or more-Severe Weather	1050	290824
2016	10	10/08/2016 8:21 AM	10/13/2016 5:30 PM	129 Hours, 9 Minutes	Duke Energy Progress	SERC	North Carolina: South Carolina:	Loss of electric service to more than 50,000 customers for 1 hour or more-Severe Weather	Unknown	Unknown
2016	10	10/10/2016 1:15 PM	10/10/2016 7:00 PM	5 Hours, 45 Minutes	ERCOT	TRE	Texas:	Public appeal to reduce the use of electricity for purposes of maintaining the continuity of the electric power system-Generation Inadequacy	Unknown	Unknown
2016	10	10/28/2016 1:29 PM	10/28/2016 1:38 PM	0 Hours, 9 Minutes	Pacific Gas & Electric Co	WECC	California: Plumas County;	Electrical System Separation (Islanding) where part or parts of a power grid remain(s) operational in an otherwise blacked out area or within the partial failure of an integrated electrical system-Islanding	4	482
2016	11	11/09/2016 11:59 AM	11/09/2016 6:15 PM	6 Hours, 16 Minutes	Modesto Irrigation District	WECC	California: Stanislaus County, San Joaquin County, Alameda County, Tuolumne County;	Cyber event that could potentially impact electric power system adequacy or reliability- Cyber Attack	0	0

**Table B.1 Major Disturbances and Unusual Occurrences, Year-to-Date 2016**

Year	Month	Event Date and Time	Restoration Date and Time	Duration	Utility/Power Pool	NERC Region	Area Affected	Type of Disturbance	Loss (megawatts)	Number of Customers Affected
2016	12	12/15/2016 6:30 AM	ongoing	ongoing	California Department of Water Resources	WECC	California: Merced County	Fuel supply emergencies that could impact electric power system adequacy or reliability- Fuel Supply Deficiency	Unknown	Unknown
2016	12	12/28/2016 4:03 AM	12/31/2016 6:00 AM	73 Hours, 57 Minutes	California Department of Water Resources	WECC	California:	Fuel supply emergencies that could impact electric power system adequacy or reliability- Fuel Supply Deficiency	0	0
2016	12	12/30/2016 2:30 AM	12/30/2016 7:00 PM	16 Hours, 30 Minutes	ISO New England	NPCC	Maine:	Loss of electric service to more than 50,000 customers for 1 hour or more-Weather or Natural Disaster	Unknown	85263

Note: Customers affected are estimates and are preliminary. Source: Form OE-417, 'Electric Emergency Incident and Disturbance Report.'

Table B.2 Major Disturbances and Unusual Occurrences, 2015

Year	Month	Event Date and Time	Restoration Date and Time	Duration	Utility/Power Pool	NERC Region	Area Affected	Type of Disturbance	Loss (megawatts)	Number of Customers Affected
2015	1	01/07/2015 5:00 PM	01/08/2015 8:35 AM	15 Hours, 35 Minutes	Memphis Light Gas and Water Division	SERC	Tennessee	Public appeal to reduce the use of electricity - Severe Weather - Winter	Unknown	Unknown
2015	1	01/07/2015 5:00 PM	01/08/2015 8:35 AM	15 Hours, 35 Minutes	Tennessee Valley Authority	SERC	Tennessee, Kentucky, Virginia, North Carolina, Georgia, Alabama, Missouri	Public appeal to reduce the use of electricity - Severe Weather - Winter	Unknown	Unknown
2015	2	02/06/2015 8:58 PM		. Hours, . Minutes	Pacific Gas & Electric Co	WECC	Northern California	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather - Wind	Unknown	65000
2015	2	02/16/2015 9:00 PM	02/18/2015 2:00 PM	41 Hours, 0 Minutes	Tennessee Valley Authority	SERC	Tennessee, Kentucky, Virginia, North Carolina, Georgia, Alabama, Missouri	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather - Winter	Unknown	67189
2015	2	02/16/2015 9:41 PM	02/18/2015 7:00 AM	33 Hours, 19 Minutes	Southern Company	SERC	Northern/North Eastern, Georgia	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather - Winter	620	186035
2015	2	02/17/2015 2:12 AM	02/18/2015 4:00 PM	37 Hours, 48 Minutes	Duke Energy Carolinas	SERC	North Carolina, South Carolina	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather - Winter	Unknown	68000
2015	2	02/17/2015 9:00 AM	02/18/2015 11:00 PM	38 Hours, 0 Minutes	Duke Energy Progress	SERC	North Carolina, South Carolina	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather - Winter	Unknown	52000
2015	2	02/18/2015 3:00 PM	02/20/2015 9:00 AM	42 Hours, 0 Minutes	Tennessee Valley Authority	SERC	Tennessee, Kentucky, Virginia, North Carolina, Georgia, Alabama, Missouri	Public appeal to reduce the use of electricity - Severe Weather - Winter	Unknown	Unknown
2015	2	02/20/2015 6:00 AM	02/20/2015 10:00 AM	4 Hours, 0 Minutes	Duke Energy Progress	SERC	North Carolina, South Carolina	System-wide voltage reductions of 3 percent or more - Severe Weather - Winter	Unknown	Unknown
2015	2	02/21/2015 8:34 AM	02/21/2015 12:45 PM	4 Hours, 11 Minutes	Tennessee Valley Authority	SERC	Fentress County, Tennessee	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather - Winter	Unknown	50000
2015	2	02/26/2015 3:12 AM	02/26/2015 8:00 PM	16 Hours, 48 Minutes	Duke Energy Progress	SERC	North Carolina, South Carolina	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather - Winter	Unknown	124000
2015	2	02/26/2015 3:30 AM	02/27/2015 12:00 PM	32 Hours, 30 Minutes	Duke Energy Carolinas	SERC	North Carolina	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather - Winter	400	103776
2015	3	03/15/2015 3:30 PM	03/15/2015 7:00 PM	3 Hours, 30 Minutes	Portland General Electric Co	WECC	Greater Portland & Salem, Oregon	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather - Wind	210	71000
2015	3	03/26/2015 3:21 PM	03/26/2015 4:59 PM	1 Hours, 38 Minutes	Pacific Gas & Electric Co	WECC	Contra Costa County, California	Electrical System Separation (Islanding) where part or parts of a power grid remain(s) operational - System Operations	15	Unknown
2015	4	04/03/2015 2:00 AM	04/03/2015 7:48 AM	5 Hours, 48 Minutes	Westar Energy Inc	SPP	Harvey, Reno, and Sedgwick Counties, Kansas	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather - Thunderstorms	Unknown	70000
2015	4	04/06/2015 8:12 AM	04/06/2015 12:08 PM	3 Hours, 56 Minutes	Pacific Gas & Electric Co	WECC	Butte County, California	Loss of electric service to more than 50,000 customers for 1 hour or more - System Operations	Unknown	80000
2015	4	04/07/2015 12:30 PM	04/07/2015 5:34 PM	5 Hours, 4 Minutes	Potomac Electric Power Co	RFC	Unknown	Uncontrolled loss of 300 Megawatts or more of firm system loads for more than 15 minutes from a single incident - System Operations	Unknown	Unknown
2015	4	04/07/2015 3:34 PM	04/07/2015 3:46 PM	0 Hours, 12 Minutes	WAPA Sierra Nevada Region	WECC	California	Electrical System Separation (Islanding) where part or parts of a power grid remain(s) operational - System Operations	0	0
2015	4	04/17/2015 9:16 AM	04/17/2015 11:00 AM	1 Hours, 44 Minutes	Peak Reliability	WECC	Canada	Electrical System Separation (Islanding) where part or parts of a power grid remain(s) operational - System Operations	9300	Unknown
2015	4	04/17/2015 9:30 PM	04/19/2015 11:50 PM	50 Hours, 20 Minutes	CenterPoint Energy	TRE	Houston, Texas	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	Unknown	280982
2015	4	04/18/2015 9:00 PM	04/21/2015 4:00 AM	55 Hours, 0 Minutes	Oncor Electric Delivery Company LLC	TRE	Dallas, Fort Worth, Texas	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	Unknown	89000
2015	4	04/24/2015 7:10 PM	04/26/2015 4:00 PM	44 Hours, 50 Minutes	Oncor Electric Delivery Company LLC	TRE	Dallas, Fort Worth, Texas	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	Unknown	57000
2015	4	04/27/2015 10:30 AM	04/28/2015 6:45 PM	32 Hours, 15 Minutes	Entergy Services, Inc.	SERC	Louisiana and Texas	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	Unknown	199000
2015	5	05/18/2015 3:28 PM	05/18/2015 3:47 PM	0 Hours, 19 Minutes	Peak Reliability for BCHA	WECC	Washington	Electrical System Separation (Islanding) where part or parts of a power grid remain(s) operational - Severe Weather	275	0
2015	5	05/25/2015 6:00 PM	05/29/2015 7:15 AM	85 Hours, 15 Minutes	Oncor Electric Delivery Company LLC	TRE	North Texas	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	Unknown	454000
2015	5	05/25/2015 8:30 PM		. Hours, . Minutes	Southwest Power Pool, Inc.	SPP	Texas, Louisiana, Arkansas	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	Unknown	57351
2015	5	05/25/2015 8:30 PM	05/26/2015 6:30 PM	22 Hours, 0 Minutes	American Electric Power - (SPP Reliability Region)	SPP	Texas	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	Unknown	57531
2015	5	05/25/2015 10:45 PM	05/28/2015 1:25 AM	50 Hours, 40 Minutes	CenterPoint Energy	TRE	Fort Bend County, & Harris County, Texas	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	Unknown	61000
2015	5	05/26/2015 5:30 AM	05/27/2015 7:00 PM	37 Hours, 30 Minutes	Entergy Services, Inc.	SERC	Texas, Louisiana, Arkansas, Mississippi	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	Unknown	78515
2015	6	06/01/2015 7:19 PM	06/02/2015 8:36 AM	13 Hours, 17 Minutes	Pacific Gas & Electric Co	WECC	California	Electrical System Separation (Islanding) where part or parts of a power grid remain(s) operational - System Operations	5	484
2015	6	06/02/2015 6:58 PM	06/02/2015 7:24 PM	0 Hours, 26 Minutes	Pacific Gas & Electric Co	WECC	California	Electrical System Separation (Islanding) where part or parts of a power grid remain(s) operational - System Operations	5	727

Table B.2 Major Disturbances and Unusual Occurrences, 2015

Year	Month	Event Date and Time	Restoration Date and Time	Duration	Utility/Power Pool	NERC Region	Area Affected	Type of Disturbance	Loss (megawatts)	Number of Customers Affected
2015	6	06/03/2015 3:00 PM	06/05/2015 5:00 PM	50 Hours, 0 Minutes	ERCOT	TRE	Texas	Public appeal to reduce the use of electricity - System Operations	Unknown	Unknown
2015	6	06/07/2015 1:52 PM	06/07/2015 2:13 PM	0 Hours, 21 Minutes	Tennessee Valley Authority	SERC	Tennessee	Uncontrolled loss of 300 Megawatts or more of firm system loads for more than 15 minutes from a single incident - System Operations	Unknown	Unknown
2015	6	06/07/2015 1:54 PM	06/07/2015 2:13 PM	0 Hours, 19 Minutes	Memphis Light Gas and Water Division	SERC	Shelby County, Tennessee	Uncontrolled loss of 300 Megawatts or more of firm system loads for more than 15 minutes from a single incident and System-wide voltage reductions of 3 percent or more - System Operations	926	Unknown
2015	6	06/08/2015 12:00 AM		. Hours, . Minutes	California Department of Water Resources	WECC	Merced County, California	Fuel supply emergencies that could impact electric power system adequacy or reliability - System Operations	176	Unknown
2015	6	06/23/2015 5:06 PM	06/26/2015 4:00 PM	70 Hours, 54 Minutes	Delmarva Power & Light Company	RFC	New Castle County, Delaware	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	Unknown	65000
2015	6	06/23/2015 5:30 PM	06/23/2015 7:00 PM	1 Hours, 30 Minutes	Exelon Corporation / PECO	RFC	Delaware County, PA; Chester County, PA	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	Unknown	200000
2015	6	06/23/2015 6:00 PM	06/30/2015 6:00 PM	168 Hours, 0 Minutes	Atlantic City Electric Co	RFC	Gloucester County, Burlington County, Atlantic County, Cape May County, New Jersey	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	Unknown	263000
2015	6	06/23/2015 6:18 PM	06/23/2015 8:30 PM	2 Hours, 12 Minutes	PJM Interconnection	RFC	New Jersey	Load shedding of 100 Megawatts or more implemented under emergency operational policy and Loss of electric service to more than 50,000 customers for 1 hour or more - System Operations	198	156338
2015	6	06/23/2015 6:26 PM		. Hours, . Minutes	Public Service Electric & Gas	NPCC	New Jersey	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	90	73000
2015	6	06/23/2015 6:30 PM	06/24/2015 5:00 AM	10 Hours, 30 Minutes	ISO New England	NPCC	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	Unknown	62442
2015	6	06/26/2015 2:00 AM		. Hours, . Minutes	Kansas City Power & Light Co	SPP	Kansas	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	Unknown	110000
2015	6	06/27/2015 5:00 PM	06/30/2015 5:18 PM	72 Hours, 18 Minutes	Detroit Edison Co	RFC	Wayne County, Michigan	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	Unknown	68000
2015	6	06/29/2015 7:21 PM	06/29/2015 7:42 PM	0 Hours, 21 Minutes	Peak Reliability	WECC	Washington	Electrical System Separation (Islanding) where part or parts of a power grid remain(s) operational - Severe Weather	0	0
2015	6	06/30/2015 10:50 AM	07/01/2015 9:00 PM	34 Hours, 10 Minutes	Pacific Gas & Electric Co	WECC	California	Public appeal to reduce the use of electricity - Severe Weather	Unknown	Unknown
2015	6	06/30/2015 2:00 PM	06/30/2015 9:00 PM	7 Hours, 0 Minutes	California ISO	WECC	California	Public appeal to reduce the use of electricity - Severe Weather	Unknown	Unknown
2015	7	07/03/2015 5:17 PM	07/03/2015 11:30 PM	6 Hours, 13 Minutes	ERCOT	TRE	Texas	Uncontrolled loss of 300 Megawatts or more of firm system loads for more than 15 minutes from a single incident - System Operations	350	30000
2015	7	07/13/2015 2:14 PM	07/16/2015 6:00 AM	63 Hours, 46 Minutes	Duke Energy Ohio Inc	RFC	Ohio, Kentucky	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	480	68339
2015	7	07/13/2015 7:40 PM	07/15/2015 12:15 PM	40 Hours, 35 Minutes	American Electric Power - (RFC Reliability Region)	RFC	Virginia	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	Unknown	52739
2015	7	07/14/2015 3:29 PM	07/15/2015 11:55 AM	20 Hours, 26 Minutes	Entergy Services, Inc.	SPP	Arkansas	Uncontrolled loss of 300 Megawatts or more of firm system loads for more than 15 minutes from a single incident - Severe Weather	Unknown	Unknown
2015	7	07/14/2015 8:00 PM	07/15/2015 9:23 AM	13 Hours, 23 Minutes	Southern Company	SERC	Alabama	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	366	111644
2015	7	07/15/2015 2:00 AM	07/15/2015 2:55 AM	0 Hours, 55 Minutes	California Department of Water Resources	WECC	California	Uncontrolled loss of 300 Megawatts or more of firm system loads for more than 15 minutes from a single incident - System Operations	360	0
2015	7	07/16/2015 4:45 PM	07/16/2015 5:48 PM	1 Hours, 3 Minutes	American Electric Power - (SPP Reliability Region)	SPP	Texas	Load shedding of 100 Megawatts or more implemented under emergency operational policy - System Operations	117	17311
2015	7	07/18/2015 2:00 AM	07/19/2015 7:00 AM	29 Hours, 0 Minutes	Northern States Power Co	MRO	Hennepin and Ramsey County, Minnesota	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	250	250000
2015	7	07/18/2015 6:26 PM	07/18/2015 9:03 PM	2 Hours, 37 Minutes	Pacific Gas & Electric Co	WECC	California	Electrical System Separation (Islanding) where part or parts of a power grid remain(s) operational - System Operations	30	70
2015	7	07/18/2015 7:59 PM	07/18/2015 10:45 PM	2 Hours, 46 Minutes	Pacific Gas & Electric Co	WECC	California	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	160	78164
2015	7	07/21/2015 12:47 PM	07/21/2015 1:12 PM	0 Hours, 25 Minutes	Peak Reliability	WECC	Washington	Load shedding of 100 Megawatts or more implemented under emergency operational policy - System Operations	200	Unknown
2015	7	07/27/2015 3:52 AM	07/27/2015 4:36 AM	0 Hours, 44 Minutes	Pacific Gas & Electric Co	WECC	California	Electrical System Separation (Islanding) where part or parts of a power grid remain(s) operational - System Operations	Unknown	484
2015	7	07/28/2015 12:05 PM	07/28/2015 12:26 PM	0 Hours, 21 Minutes	Puerto Rico Electric Power Authority	N/A	Puerto Rico	System-wide voltage reductions of 3 percent or more - System Operations	150	Unknown

Table B.2 Major Disturbances and Unusual Occurrences, 2015

Year	Month	Event Date and Time	Restoration Date and Time	Duration	Utility/Power Pool	NERC Region	Area Affected	Type of Disturbance	Loss (megawatts)	Number of Customers Affected
2015	7	07/29/2015 4:45 PM	07/29/2015 9:00 PM	4 Hours, 15 Minutes	Long Island Power Authority	NPCC	New York	Fuel supply emergencies that could impact electric power system adequacy or reliability - System Operations	500	0
2015	7	07/30/2015 9:50 AM	07/30/2015 7:00 PM	9 Hours, 10 Minutes	ERCOT	TRE	Texas	Public appeal to reduce the use of electricity - System Operations	Unknown	Unknown
2015	7	07/31/2015 10:55 AM		. Hours, . Minutes	Peak Reliability	WECC	Washington	Electrical system Separation (Islanding) where part or parts of a power grid remain(s) operational - System Operations	9	0
2015	8	08/02/2015 5:45 PM	08/04/2015 3:00 AM	33 Hours, 15 Minutes	Consumers Energy Co	RFC	Emmet County, Grand Traverse County, Leelanau County, Kalkaska County, Benzie County, Manistee County, Wexford County, Missaukee County, Mecosta County, Michigan	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	Unknown	162000
2015	8	08/03/2015 12:30 AM	08/03/2015 2:00 AM	1 Hours, 30 Minutes	Exelon Corporation / ComEd	RFC	Illinois	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	Unknown	115000
2015	8	08/03/2015 1:00 AM	08/05/2015 12:00 AM	47 Hours, 0 Minutes	Detroit Edison Co	RFC	Michigan	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	Unknown	72520
2015	8	08/04/2015 7:17 AM	08/05/2015 12:52 PM	29 Hours, 35 Minutes	ISO New England	NPCC	Massachusetts and Rhode Island	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	Unknown	132000
2015	8	08/11/2015 7:30 PM	08/13/2015 4:05 AM	32 Hours, 35 Minutes	CenterPoint Energy	TRE	Houston, Texas	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	Unknown	100000
2015	8	08/13/2015 3:15 PM	08/13/2015 7:00 PM	3 Hours, 45 Minutes	ERCOT	TRE	Williamson County, Texas	Public appeal to reduce the use of electricity for purposes of maintaining the continuity of the electric power system - Other	Unknown	Unknown
2015	8	08/27/2015 9:51 PM	08/28/2015 6:00 PM	20 Hours, 9 Minutes	Puerto Rico Electric Power Authority	WECC	Puerto Rico	Loss of electric service to more than 50,000 customers for 1 hour or more - System Operations	360	Unknown
2015	8	08/29/2015 10:00 AM		. Hours, . Minutes	Peak Reliability	WECC	Washington	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	Unknown	500000
2015	8	08/29/2015 11:00 AM	09/04/2015 3:00 PM	148 Hours, 0 Minutes	Puget Sound Energy	WECC	King County, Skagit County, Whatcom County, Kitsap County, Pierce County, Thurston County, Island County, Washington	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	250	250000
2015	8	08/29/2015 1:00 PM	08/31/2015 7:00 AM	42 Hours, 0 Minutes	Seattle City Light	WECC	King County, Washington	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	1200	64000
2015	9	09/03/2015 2:33 AM	09/03/2015 6:25 AM	3 Hours, 52 Minutes	Lansing Board of Water & Light	RFC	Michigan	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	Unknown	50114
2015	9	09/20/2015 1:12 PM	09/20/2015 1:44 PM	0 Hours, 32 Minutes	California ISO	WECC	California	Load shedding or 100 Megawatts or more implemented under emergency operational policy - System Operations	150	Unknown
2015	10	10/13/2015 10:25 AM	10/13/2015 6:00 PM	7 Hours, 35 Minutes	ERCOT	TRE	Texas	Public appeal to reduce the use of electricity - Other	Unknown	Unknown
2015	10	10/13/2015 4:32 PM	10/13/2015 8:39 PM	4 Hours, 7 Minutes	California ISO	WECC	California	Public appeal to reduce the use of electricity - Other	41788	Unknown
2015	10	10/18/2015 7:00 AM	10/18/2015 11:29 PM	16 Hours, 29 Minutes	Pacific Gas & Electric Co	WECC	Central Coast area, California	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	88	55677
2015	10	10/23/2015 9:42 AM	10/23/2015 1:26 PM	3 Hours, 44 Minutes	Puerto Rico Electric Power Authority	N/A	Puerto Rico	Electrical System Separation (Islanding) where part or parts of power grid remain(s) operational / Load shedding of 100 Megawatts or more implemented under emergency operational policy / System-wide voltage reductions of 3 percent or more / Loss of electric service to more than 50,000 customers for 1 hour or more - System Operations	500	300000
2015	10	10/31/2015 12:45 AM	11/01/2015 4:05 PM	39 Hours, 20 Minutes	CenterPoint Energy	TRE	Harris County, Texas	Loss of electric service to more than 50,000 customers for 1 hour or more - Severe Weather	Unknown	130252

Note: Customers affected are estimates and are preliminary. Source: Form OE-417, 'Electric Emergency Incident and Disturbance Report.'

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## Appendix C

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### Technical notes

This appendix describes how the U. S. Energy Information Administration (EIA) collects, estimates, and reports electric power data in the EPM.

### Data quality

The EPM is prepared by the Office of Electricity, Renewables & Uranium Statistics (ERUS), Energy Information Administration (EIA), U. S. Department of Energy. Quality statistics begin with the collection of the correct data. To assure this, ERUS performs routine reviews of the data collected and the forms on which it is collected. Additionally, to assure that the data are collected from the correct parties, ERUS routinely reviews the frames for each data collection.

Automatic, computerized verification of keyed input, review by subject matter specialists, and follow-up with nonrespondents assure quality statistics. To ensure the quality standards established by the EIA, formulas that use the past history of data values in the database have been designed and implemented to check data input for errors automatically. Data values that fall outside the ranges prescribed in the formulas are verified by telephoning respondents to resolve any discrepancies. All survey nonrespondents are identified and contacted.

### Reliability of data

There are two types of errors possible in an estimate based on a sample survey: sampling and non-sampling. Sampling errors occur because observations are made only on a sample, not on the entire population. Non-sampling errors can be attributed to many sources in the collection and processing of data. The accuracy of survey results is determined by the joint effects of sampling and non-sampling errors. Monthly sample survey data have both sampling and non-sampling error. Annual survey data are collected by a census and are not subject to sampling error.

Non-sampling errors can be attributed to many sources: (1) inability to obtain complete information about all cases in the sample (i.e., nonresponse); (2) response errors; (3) definitional difficulties; (4) differences in the interpretation of questions; (5) mistakes in recording or coding the data obtained; and (6) other errors of collection, response, coverage, and estimation for missing data. Note that for the cutoff sampling and model-based regression (ratio) estimation that we use, data 'missing' due to nonresponse, and data 'missing' due to being out-of-sample are treated in the same manner. Therefore missing data may be considered to result in sampling error, and variance estimates reflect all 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, in an effort to minimize their influence. See the Data Processing and Data System Editing section for each EIA form for an in-depth discussion of how the sampling and non-sampling errors are handled in each case.

**Relative Standard Error:** The relative standard error (RSE) statistic, usually given as a percentage, 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 the 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 or mean. Note that reported RSEs are always estimates themselves, and are usually, as here, reported as percentages. As an example, suppose that a net generation from coal value is estimated to be 1,507 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 may represent 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. Experiments were done to see if nonresponse should be treated differently, but it was decided to treat those cases the same as out-of-sample cases.

**Relative Standard Error With Respect to a Superpopulation:** The RSESP statistic is similar to the RSE (described above). Like the RSE, it is a statistic designed to estimate the variability of data and is usually given as a percentage. However, where the RSE is only designed to estimate the magnitude of sampling error, the RSESP more fully reflects the impact of variability from sampling and non-sampling errors. This is a more complete measure than RSE in that it can measure statistical variability in a complete census in addition to a sample<sup>21,24</sup>. In addition to being a measure of data variability, the RSESP can also be useful in comparing different models that are applied to the same set of data<sup>22</sup>. This capability is used to test different regression models for imputation and prediction. This testing may include considerations such as comparing different regressors, the comparative reliability of different monthly samples, or the use of different geographical strata or groupings for a given model. For testing purposes, ERUS typically uses recent historical data that have been finalized. Typically, time-series graphics showing two or more models or samples are generated showing the RSESP values over time. In selecting models, consideration is given to total survey error as well as any apparent differences in robustness.

Imputation: For monthly data, if the reported values appeared to be in error and the data issue could not be resolved with the respondent, or if the facility was a nonrespondent, a regression methodology is used to impute for the facility. The same procedure is used to estimate ("predict") data for facilities not in the monthly sample. The regression methodology relies on other data to make estimates for erroneous or missing responses.

Estimation for missing monthly data is accomplished by relating the observed data each month to one or more other data elements (regressors) for which we generally have an annual census. Each year, when new annual regressor data are available, recent monthly relationships are updated, causing slight revisions to estimated monthly results. These revisions are made as soon as the annual data are released.

The basic technique employed is described in the paper "Model-Based Sampling and Inference<sup>16</sup>," on the EIA website. Additional references can be found on the InterStat website (<http://interstat.statjournals.net/>). The basis for the current methodology involves a 'borrowing of strength' technique for small domains.

### Data revision procedure

ERUS has adopted the following policy with respect to the revision and correction of recurrent data in energy publications:

- Annual survey data are disseminated either as preliminary or final when first appearing in a data product. Data initially released as preliminary will be so noted in the data product. These data are typically released as final by the next dissemination of the same product; however, if final data are available at an earlier interval they may be released in another product.
- All monthly survey data are first disseminated as preliminary. These data are revised after the prior year's data are finalized and are disseminated as revised preliminary. No revisions are made to the published data before this or subsequent to these data being finalized unless significant errors are discovered.
- After data are disseminated as final, further revisions will be considered if they 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.
- The magnitudes of changes due to revisions experienced in the past will be included periodically in the data products, so that the reader can assess the accuracy of the data.

### Data sources for Electric Power Monthly

Data published in the EPM are compiled from the following sources:

- Form EIA-923, "Power Plant Operations Report,"
- Form EIA 826, "Monthly Electric Utility Sales and Revenues with State Distributions Report,"
- Form EIA 860, "Annual Electric Generator Report,"
- Form EIA-860M, "Monthly Update to the Annual Electric Generator Report," and

- Form EIA 861, “Annual Electric Power Industry Report.”

For access to these forms and their instructions, please see:

<http://www.eia.gov/cneaf/electricity/page/forms.html>.

In addition to the above-named forms, the historical data published in the EPM for periods prior to 2008 are compiled from the following sources:

- FERC Form 423, “Monthly Report of 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-860A, “Annual Electric Generator Report–Utility,”
- Form EIA-860B, “Annual Electric Generator Report–Nonutility,”
- Form EIA-900, “Monthly Nonutility Power Report,”
- Form EIA-906, “Power Plant Report,” and
- Form EIA-920, “Combined Heat and Power Plant Report.”

See Appendix A of the historical Electric Power Annual reports to find descriptions of forms that are no longer in use. The publications can be found from the top of the current EPA under previous issues: <http://www.eia.gov/electricity/annual>.

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

**Percent difference:** The following formula is used to calculate percent differences:

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

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

**Meanings of symbols appearing in tables:** The following symbols have the meaning described below:

P Indicates a preliminary value.

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).

## Form EIA-826

The Form EIA 826, “Monthly Electric Utility Sales and Revenues with State Distributions Report,” is a monthly collection of data from a sample of approximately 500 of the largest electric utilities (primarily investor owned and publicly owned) as well as a census of energy service providers with sales to ultimate consumers in deregulated States. Form EIA-861, 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.

**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 price of electricity to ultimate consumers 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 energy providers to ultimate consumers 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 EPM April 2001, p.1.)

With the October 2004 issue of the 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 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.

Beginning with 2008 data and some annual 2007 data, the Form EIA-923 replaced Forms EIA-906, EIA-920, EIA-423, and FERC 423. In addition, several sections of the discontinued Form EIA-767 have been included in either the Form EIA-860 or Form EIA-923. See the following link for a detailed explanation. <http://www.eia.gov/cneaf/electricity/2008forms/consolidate.html>

The legislative authority to collect these data is defined in the Federal Energy Administration Act of 1974 (Public Law 93-275, Sec. 13(b), 5(a), 5(b), 52).

**Data processing and data system editing:** Monthly Form EIA-826 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 826 data are collected by end-use sector (residential, commercial, industrial, and transportation) and State. Form EIA 861 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-826 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 the price of electricity to ultimate consumers at the State level. The estimates are accumulated separately to produce the Census division and U.S. level estimates<sup>1</sup>.

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

The electric revenue used to calculate the average price of electricity to ultimate consumers 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 price of electricity to ultimate consumers 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-826 are not considered business sensitive. However, 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, "Annual Electric Generator Report," 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 generator level. Certain power plant environmental-related data are collected at the boiler level. These data include environmental equipment design parameters, boiler air emission standards, and boiler emission controls. The Form EIA-860 is made available in January to collect data related to the previous year.

**Instrument and design history:** The Form EIA-860 was originally implemented in January 1985 to collect data 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 EIA-411. In January 1999, the Form EIA-860 was renamed the Form EIA-860A, "Annual Electric Generator Report – Utility" and was implemented to collect data from electric utilities 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.

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.

The Federal Energy Administration Act of 1974 (Public Law 93-275) defines the legislative authority to collect these data.

**Estimation of form eia-860 data:** EIA received forms from all 18,151 existing generators in the 2010 Form EIA-860 frame, so no imputation was required.

**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-860M

The Form EIA 860M, “Monthly Update to the Annual Electric Generator Report,” is a mandatory monthly survey that collects data on the status of proposed new generators or changes to existing generators for plants that report on Form EIA-860.

The Form EIA-860M has a rolling frame based upon planned changes to capacity as reported on the previous Form EIA-860. Respondents are added to the frame 12 months prior to the expected effective date for all new units or expected retirement date for existing units. For all other types of capacity changes (including retirements, uprates, derates, repowering, or other modifications), respondents are added 1 month prior to the anticipated modification change date. Respondents are removed from the frame at the completion of the changes or if the change date is moved back so that the plant no longer qualifies to be in the frame. Typically, 150 to 200 utilities per month are required to report for 175 to 250 plants (including 250 to 400 generating units) on this form. The unit characteristics of interest are changes to the previously reported planned operating month and year, prime mover type, capacity, and energy sources.

**Instrument and design history:** The data collected on Form EIA-860M was originally collected via phone calls at the end of each month. During 2005, the Form EIA-860M was introduced as a mandatory form using the Internet Data Collection (IDC) system.

The legislative authority to collect these data is defined in the Federal Energy Administration Act of 1974 (Public Law 93-275, Sec. 13(b), 5(a), 5(b), 52).

**Data processing and data system editing:** Approximately 150 to 200 utilities are requested to provide data each month on the Form EIA 860M. These data are collected via the IDC system and automatically checked for certain errors. Most of the quality assurance issues are addressed by the respondents as part of the automatic edit check process. In some cases, respondents are subsequently contacted about their explanatory overrides to the edit checks.

**Sensitive data:** Data collected on the Form EIA-860M are not considered to be sensitive.

### Form EIA-861

The Form EIA 861, “Annual Electric Power Industry Report,” is a mandatory census of electric power industry participants in the United States. The survey is used to collect information on power sales and revenue data from approximately 3,300 respondents. About 3,200 are electric utilities and the remainder are nontraditional utilities such as energy service providers or the unregulated subsidiaries of electric utilities and power marketers.

**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.

**Data processing and data system editing:** The Form EIA 861 is made available to the respondents in January of each year to collect data as of the end of the preceding calendar year. The data are edited when entered into the interactive on line system. Internal edit checks are performed to verify that current data total across and between schedules, and are comparable to data reported the previous year. Edit checks are also performed to compare data reported on the Form EIA 861 and similar data reported on the Form EIA 826. Respondents are telephoned to obtain clarification of reported data and to obtain missing data.

Data for the Form EIA 861 are collected at the owner level from all electric utilities including energy service providers in the United States, its territories, and Puerto Rico. Form EIA 861 data in this report are for the United States only.

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

The electric revenue used to calculate the average price of electricity to ultimate consumers 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 State and Federal income taxes and other taxes paid by the utility.

The average price of electricity to ultimate consumers reported in this publication by sector represents 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 to the electric power industry participant for providing electrical service.

**Sensitive data:** Data collected on the Form EIA-861 are not considered to be sensitive.

## Form EIA-923

Form EIA-923, "Power Plant Operations Report," is a monthly collection of data on receipts and cost of fossil fuels, fuel stocks, generation, consumption of fuel for generation, and environmental data (e.g. emission controls and cooling systems). Data are collected from a monthly sample of approximately 1,900 plants, which includes a census of nuclear and pumped-storage hydroelectric plants. In addition approximately 4,050 plants, representing all other generators 1 MW or greater, are collected annually. In addition to electric power generating plants, respondents include fuel storage terminals without

generating capacity that receive shipments of fossil fuels 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. 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 all other plants, consumption is reported at the prime-mover level. For these plants, generation is reported either at the prime-mover level or, for noncombustible sources (e.g. wind, nuclear), at the prime-mover and energy source level. The source and disposition of electricity is reported annually for nonutilities at the plant level as is revenue from sales for resale. Environmental data are collected annually from facilities that have a steam turbine capacity of at least 10 megawatts.

### **Instrument and design history:**

#### *Receipts and cost and quality of fossil fuels*

On July 7, 1972, the Federal Power Commission (FPC) issued Order Number 453 enacting the New Code of Federal Regulations, Section 141.61, legally 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. The FERC Form 423 replaced the FPC Form 423 in January 1983. The FERC Form 423 eliminated peaking units, for which data were previously collected on the FPC Form 423. 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. Starting with the January 1993 data, the FERC began to collect the data directly from the respondents.

The Form EIA-423 was originally implemented in January 2002 to collect monthly cost and quality data for fossil fuel receipts from owners or operators of nonutility electricity generating plants. 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 above) 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 non-regulated power producers. Its design closely followed that of the FERC Form 423.

Both the Form EIA-423 and FERC Form 423 were superseded by Schedule 2 of the Form EIA-923 in January of 2008. At the time, the Form EIA-923 maintained the 50-megawatt threshold for these data. In January 2013, the threshold was changed to 200 megawatts for plants primarily fueled by natural gas, petroleum coke, distillate fuel oil, and residual fuel oil. 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.

Not all data are collected monthly on the Form EIA-923. Beginning with 2008 data, a sample of the respondents report monthly, with the remainder reporting annually. Until January 2013, monthly fuel receipts values for the annual surveys were imputed via regression. Prior to 2008, Schedule 2 annual data were not collected or imputed.

### *Generation, consumption, and stocks*

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 Federal Power Commission (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<sup>14</sup>. In 1998, the form 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<sup>15</sup>. In 2000, the form was modified to include the production of useful thermal output data.

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 combined heat and power plants; all other plants that generate electricity continue 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.

Forms EIA-906 and EIA-920 were superseded by survey Form EIA-923 beginning in January 2008 with the collection of annual 2007 data and monthly 2008 data.

**Data processing and data system editing:** Respondents are encouraged to enter data directly into a computerized database via the Internet Data Collection (IDC) system. A variety of automated quality control mechanisms are run during this process, such as range checks and comparisons with historical data. These edit checks are performed as the data are provided, and many problems that are encountered are resolved during the reporting process. Those plants that are unable to use the electronic reporting medium provide the data in hard copy, typically via fax. These data are manually entered into the computerized database. The data are subjected to the same edits as those that are electronically submitted.

If the reported data appear to be in error and the data issue cannot be resolved by follow up contact with the respondent, or if a facility is a nonrespondent, a regression methodology is used to impute for the facility. Beginning in January 2013, imputation is not performed for fuel receipts data reported on Schedule 2.

**Imputation:** For select survey data elements collected monthly, regression prediction, or imputation, is done for 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). Only approximately 0.02 percent of the national total generation for 2010 is imputed, although this will vary by State and energy source.

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

Net Generation = (Factor) x Gross Generation
<u>Prime Movers:</u>
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
<u>Environmental Equipment:</u>
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 are 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. These plants include independent power producers, electric utilities, and commercial and industrial combined heat and power producers. All plants with a total fossil-fueled nameplate capacity of 50 megawatts or more (excluding storage terminals, which do not produce electricity) were required to report receipts of fossil fuels. In January 2013, the threshold was changed to 200 megawatts for plants primarily fueled by natural gas, petroleum coke, distillate fuel oil, and residual fuel oil. 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 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.

For coal, units for receipts are in tons and units for average heat contents (A) are in million Btu per ton. For petroleum, units for receipts are in barrels and units for average heat contents (A) are in million Btu per barrel.

For gas, units for receipts are in thousand cubic feet (Mcf) and units for average heat contents (A) are in million Btu per thousand cubic foot.

**Power production, fuel stocks, and fuel consumption data:** 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 Federal Power Commission (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 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 the production of useful thermal output data.

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 combined heat and power plants; all other plants that generate electricity continue 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 2004, Form EIA-920 superseded Form EIA-906 for those plants defined as combined heat and power plants; all other plants that generate electricity continue to report on Form EIA-906.

In January 2008, Form EIA-923 superseded both the Forms EIA-906 and EIA-920 for the collection of these data.

**Methodology to estimate biogenic and non-biogenic municipal solid waste<sup>2</sup>:** 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 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.

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 Tables 1 and 2, below).<sup>3</sup>

These values are used to allocate net generation published in the Electric Power Monthly generation 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
Biogenic	57	56	55	55	56	57	55	54	51	50
Non-biogenic	43	44	45	45	44	43	46	46	49	50

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

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Biogenic	77	77	76	76	75	67	65	65	64	64
Non-biogenic	23	23	24	24	25	34	35	35	36	36

**Useful thermal output:** With the implementation of the Form EIA-923, “Power Plant Operations Report,” in 2008, combined heat and power (CHP) plants are required to report total fuel consumed and electric power generation. Beginning with the January 2008 data, EIA will estimate the allocation of the total fuel consumed at CHP plants between electric power generation and useful thermal output.

First, an efficiency factor is determined for each plant and prime mover type. Based on data for electric power generation and useful thermal output 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 useful thermal output (UTO), divided by the total input in Btu. Electric power is converted to Btu at 3,412 Btu per kilowatt-hour.

Second, to calculate the amount of fuel for electric power, the gross generation in Btu is multiplied 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.

**Conversion of petroleum coke to liquid petroleum:** The quantity conversion is 5 barrels (of 42 U.S. gallons each) per short ton (2,000 pounds).

**Conversion of propane gas to liquid petroleum:** The quantity conversion is 1.53 Mcf (thousand cubic feet) per barrel (or 42 U.S. gallons each).

**Conversion of synthesis gas from coal to coal:** The quantity conversion is 98 Mcf (thousand cubic feet) per short ton (2,000 pounds).

**Conversion of synthesis gas from petroleum coke to petroleum coke:** The quantity conversion is 107.42 Mcf (thousand cubic feet) per short ton (2,000 pounds).

#### **Issues within historical data series:**

##### *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 due 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. In January 2013, this estimation procedure was dropped.

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 the FERC 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. Furthermore, there may be a notable increase in fuel receipts beginning with January 2008 data.

Starting with the revised data for 2008, tables for total receipts begin to reflect estimation for all plants with capacity over 1 megawatt, to be consistent with other electric power data. Previous receipts data published have been 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 EPM (i.e., 1 megawatt and above), with associated relative standard errors, provides a more complete assessment of the market.

##### *Generation and consumption*

Beginning in 2008, a new method of allocating fuel consumption between electric power generation and useful thermal output (UTO) was implemented. This new methodology evenly distributes a combined heat and power (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 decreased while the fuel for UTO is increased 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:** Most of the data collected on the Form EIA-923 are not considered business sensitive. However, the cost of fuel delivered to nonutilities, commodity cost of fossil fuels, and reported fuel stocks at the end of the reporting period 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)).

## 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:

$$CapacityFactor = \left( \frac{\sum_{x,m} Generation_{x,m}}{\sum_{x,m} Capacity_{x,m} * AvailableTime_{x,m}} \right)$$

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.

## NERC classification

The Florida Reliability Coordinating Council (FRCC) separated itself from the Southeastern Electric Reliability Council (SERC) in the mid-1990s. In 1998, several utilities realigned from Southwest Power Pool (SPP) to SERC. Name changes altered both the Mid-Continent Area Power Pool (MAPP) to the Midwest Reliability Organization (MRO) and the Western Systems Coordinating Council (WSCC) to the Western Energy 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. Both the States of Alaska and Hawaii are not contiguous with the other continental States and have no electrical interconnections. At the close of calendar year 2005, the following reliability regional councils were dissolved: East Central Area Reliability Coordinating 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 from a delegation of authority from NERC to handle the regional responsibilities of the Electric Reliability Council of Texas (ERCOT). The revised delegation agreements covering all the regions were approved by the Federal Energy Regulatory Commission on March 21, 2008. Reliability Councils that are unchanged include: Florida Reliability Coordinating Council (FRCC), Northeast Power Coordinating Council (NPCC), and the Western Energy Coordinating Council (WECC)

The new NERC Regional Council 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).

## Business classification

Nonutility power producers consist of corporations, persons, agencies, authorities, or other legal entities that own or operate facilities for electric generation but are not electric utilities. This includes qualifying cogenerators, small power producer, and independent power producers. Furthermore, 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 manufacturing, agricultural, forestry, transportation, finance, service and administrative industries, based on the Office of Management and Budget's Standard Industrial Classification (SIC) Manual. In 1997, the SIC Manual name was changed to North American Industry Classification System (NAICS). The following is a list of the main classifications and the category of primary business activity within each classification.

### Agriculture, Forestry, and Fishing

- 111 Agriculture production-crops
- 112 Agriculture production, livestock and animal specialties
- 113 Forestry
- 114 Fishing, hunting, and trapping
- 115 Agricultural services

### Mining

- 211 Oil and gas extraction
- 2121 Coal mining
- 2122 Metal mining

2123 Mining and quarrying of nonmetallic minerals except fuels

### **Construction**

23

### **Manufacturing**

311 Food and kindred products  
3122 Tobacco products  
314 Textile and mill products  
315 Apparel and other finished products made from fabrics and similar materials  
316 Leather and leather products  
321 Lumber and wood products, except furniture  
322 Paper and allied products (other than 322122 or 32213)  
322122 Paper mills, except building paper  
32213 Paperboard mills  
323 Printing and publishing  
324 Petroleum refining and related industries (other than 32411)  
32411 Petroleum refining  
325 Chemicals and allied products (other than 325188, 325211, 32512, or 325311)  
32512 Industrial organic chemicals  
325188 Industrial Inorganic Chemicals  
325211 Plastics materials and resins  
325311 Nitrogenous fertilizers  
326 Rubber and miscellaneous plastic products  
327 Stone, clay, glass, and concrete products (other than 32731)  
32731 Cement, hydraulic  
331 Primary metal industries (other than 331111 or 331312)  
331111 Blast furnaces and steel mills  
331312 Primary aluminum  
332 Fabricated metal products, except machinery and transportation equipment  
333 Industrial and commercial equipment and components except computer equipment  
3345 Measuring, analyzing, and controlling instruments, photographic, medical, and optical goods, watches and clocks  
335 Electronic and other electrical equipment and components except computer equipment  
336 Transportation equipment  
337 Furniture and fixtures  
339 Miscellaneous manufacturing industries

## **Transportation and Public Utilities**

- 22 Electric, gas, and sanitary services
- 2212 Natural gas transmission
- 2213 Water supply
- 22131 Irrigation systems
- 22132 Sewerage systems
- 481 Transportation by air
- 482 Railroad transportation
- 483 Water transportation
- 484 Motor freight transportation and warehousing
- 485 Local and suburban transit and interurban highway passenger transport
- 486 Pipelines, except natural gas
- 487 Transportation services
- 491 United States Postal Service
- 513 Communications
- 562212 Refuse systems

## **Wholesale Trade**

421 to 422

## **Retail Trade**

441 to 454

## **Finance, Insurance, and Real Estate**

521 to 533

## **Services**

- 512 Motion pictures
- 514 Business services
  - 514199 Miscellaneous services
- 541 Legal services
- 561 Engineering, accounting, research, management, and related services
- 611 Education services
- 622 Health services
- 624 Social services
- 712 Museums, art galleries, and botanical and zoological gardens
- 713 Amusement and recreation services
- 721 Hotels
- 811 Miscellaneous repair services
- 8111 Automotive repair, services, and parking
- 812 Personal services
- 813 Membership organizations
- 814 Private households

## Public Administration

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### 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.<sup>1</sup> Data for these customer classes were further classified by U.S. Census Regions, to ensure adequate number of customer observations in for each estimation group.

**Estimation Model:** The total PV capacity reported by utilities in the annual EIA-861 survey is the single primary input (regressor) to the monthly estimation of PV capacity by state. The model tested for each Census Region was of the form:

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

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

$y_{i_{2015,m}}$  is the  $i^{\text{th}}$  utility's month  $m$ , 2015 (or the current year) reported solar PV capacity

$w_i$  is the weight factor, which is the inverse of  $x_{i_{2013}}$

$\beta_1$  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

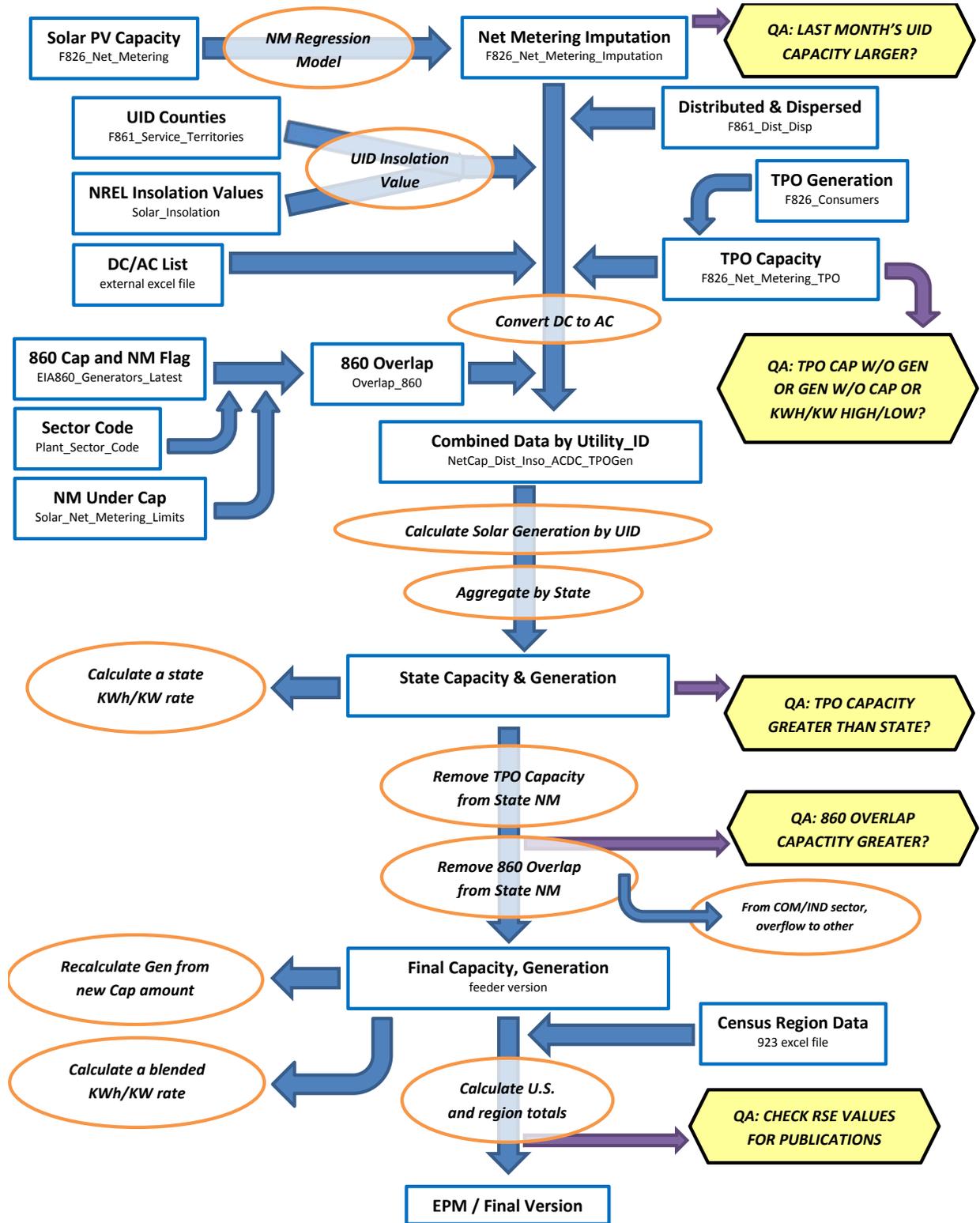
Site	Weather Location	MSA
1	USA NY New York Central Park Obs.	New York-Newark-Jersey City, NY-NJ-PA MSA
2	USA CA Los Angeles Intl Airport	Los Angeles-Long Beach-Anaheim, CA MSA
3	USA IL Chicago Midway Airport	Chicago-Naperville-Elgin, IL-IN-WI MSA
4	USA TX Dallas-fort Worth Intl Airport	Dallas-Fort Worth-Arlington, 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

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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



<sup>1</sup> 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/>.

<sup>2</sup> 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. Published at <http://www.usu.edu/recycle/faq.htm>. Accessed December 2006.

<sup>3</sup> 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.

**Table C.1 Average Heat Content of Fossil-Fuel Receipts, December 2016**

Census Division and State	Coal (Million Btu per Ton)	Petroleum Liquids (Million Btu per Barrel)	Petroleum Coke (Million Btu per Ton)	Natural Gas (Million Btu per Thousand Cubic Feet)
New England	25.70	6.26	--	1.03
Connecticut	--	5.80	--	1.03
Maine	25.70	6.17	--	1.02
Massachusetts	--	6.29	--	1.03
New Hampshire	--	5.80	--	1.03
Rhode Island	--	--	--	1.03
Vermont	--	--	--	--
Middle Atlantic	23.50	5.92	--	1.04
New Jersey	26.34	5.77	--	1.04
New York	25.89	6.14	--	1.03
Pennsylvania	23.25	5.78	--	1.04
East North Central	20.22	5.79	27.11	1.04
Illinois	17.67	5.80	--	1.01
Indiana	22.37	5.75	--	1.04
Michigan	18.79	5.84	26.83	1.03
Ohio	24.60	5.78	27.23	1.05
Wisconsin	17.86	5.84	26.49	1.04
West North Central	16.60	5.79	--	1.04
Iowa	17.59	5.76	--	1.05
Kansas	17.16	5.75	--	1.03
Minnesota	17.71	5.74	--	1.05
Missouri	17.59	5.77	--	1.03
Nebraska	16.88	5.75	--	1.06
North Dakota	13.47	5.93	--	0.99
South Dakota	16.53	--	--	1.07
South Atlantic	23.55	5.87	27.90	1.03
Delaware	26.06	5.67	--	1.05
District of Columbia	--	--	--	--
Florida	23.64	5.80	28.07	1.02
Georgia	20.32	5.88	27.05	1.03
Maryland	25.01	5.82	--	1.04
North Carolina	24.89	5.81	--	1.03
South Carolina	25.10	5.88	--	1.03
Virginia	21.94	6.16	--	1.06
West Virginia	24.47	5.77	--	1.09
East South Central	20.79	5.77	28.05	1.03
Alabama	19.03	5.68	--	1.03
Kentucky	22.13	5.81	28.05	1.02
Mississippi	14.47	5.81	--	1.03
Tennessee	21.51	5.76	--	1.01
West South Central	15.85	5.86	28.51	1.03
Arkansas	17.32	5.88	--	1.03
Louisiana	16.22	5.90	28.51	1.04
Oklahoma	17.35	5.80	--	1.06
Texas	15.40	5.85	--	1.03
Mountain	18.70	5.71	--	1.05
Arizona	19.95	5.65	--	1.04
Colorado	18.52	5.67	--	1.07
Idaho	--	--	--	1.02
Montana	16.80	5.92	--	--
Nevada	17.77	5.88	--	1.04
New Mexico	18.27	5.66	--	1.04
Utah	21.58	5.88	--	1.04
Wyoming	17.51	5.78	--	1.06
Pacific Contiguous	17.61	6.00	--	1.04
California	23.03	--	--	1.03
Oregon	17.17	--	--	1.05
Washington	17.01	6.00	--	1.08
Pacific Noncontiguous	18.35	6.11	--	1.00
Alaska	14.00	5.60	--	1.00
Hawaii	19.30	6.11	--	--
U.S. Total	19.17	6.00	28.03	1.03

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

'Petroleum Liquids' include 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.

Notes: See Glossary for definitions. Values are preliminary. Data represents weighted values.

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

**Table C.2. Comparison of Preliminary Monthly Data Versus Final Monthly Data at the U.S. Level, 2013 through 2015**

Item	Mean Absolute Value of Percent Change Total (All Sectors)		
	2013	2014	2015
<b>Net Generation</b>			
Coal	0.31%	0.25%	0.33%
Petroleum Liquids	4.04%	2.32%	1.00%
Petroleum Coke	0.95%	2.96%	1.60%
Natural Gas	0.98%	0.42%	0.18%
Other Gases	5.81%	4.12%	3.90%
Hydroelectric	0.65%	0.49%	1.08%
Nuclear	0.00%	0.01%	0.01%
Other	0.56%	0.43%	0.80%
<b>Total</b>	<b>0.19%</b>	<b>0.08%</b>	<b>0.23%</b>
<b>Consumption of Fossil Fuels for Electricity Generation</b>			
Coal	0.07%	0.13%	0.24%
Petroleum Liquids	3.49%	2.17%	2.28%
Petroleum Coke	1.03%	3.19%	1.50%
Natural Gas	0.99%	0.48%	0.32%
<b>Fuel Stocks for Electric Power Sector</b>			
Coal	0.25%	0.38%	0.40%
Petroleum Liquids	2.54%	4.25%	2.92%
Petroleum Coke	0.08%	0.61%	0.04%
<b>Retail Sales</b>			
Residential	0.26%	0.30%	0.30%
Commercial	0.22%	0.38%	0.18%
Industrial	3.20%	4.39%	2.92%
Transportation	1.45%	0.44%	0.37%
<b>Total</b>	<b>0.90%</b>	<b>1.10%</b>	<b>0.93%</b>
<b>Revenue</b>			
Residential	0.34%	0.43%	0.15%
Commercial	0.47%	0.47%	0.62%
Industrial	4.28%	5.66%	3.15%
Transportation	3.84%	1.92%	1.09%
<b>Total</b>	<b>0.76%</b>	<b>1.01%</b>	<b>0.83%</b>
<b>Average Retail Price</b>			
Residential	0.12%	0.12%	0.15%
Commercial	0.30%	0.20%	0.44%
Industrial	1.05%	1.20%	0.31%
Transportation	2.49%	2.18%	0.83%
<b>Total</b>	<b>0.17%</b>	<b>0.16%</b>	<b>0.11%</b>
<b>Receipt of Fossil Fuels</b>			
Coal	2.50%	2.20%	1.70%
Petroleum Liquids	0.79%	0.49%	1.86%
Petroleum Coke	2.30%	2.03%	2.47%
Natural Gas	0.47%	0.26%	0.25%
<b>Cost of Fossil Fuels</b>			
Coal	0.18%	0.18%	0.04%
Petroleum Liquids	0.14%	0.04%	0.25%
Petroleum Coke	1.22%	1.03%	1.42%
Natural Gas	0.02%	0.06%	0.14%

Coal includes anthracite, bituminous, subbituminous, lignite, waste coal, and synthetic coal. Coal stocks exclude waste coal.

Petroleum Liquids include distillate fuel oil, residual fuel oil, jet fuel, kerosene, and waste oil.

Natural gas includes a small amount of supplemental gaseous fuels that cannot be identified separately. Excludes blast furnace gas and other gases.

Hydroelectric includes conventional hydroelectric and hydroelectric pumped storage facilities.

Other generation includes geothermal, wood, waste, wind, and solar, batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies.

Fuel Stocks are end-of-month values.

See technical notes (<http://www.eia.gov/cneaf/electricity/epm/appenc.pdf>) for additional information on the Commercial, Industrial and Transportation sectors.

Cost of Fossil Fuels represent weighted values.

Notes: Mean absolute value of percent change is the unweighted average of the absolute percent changes.

Sources: U.S. Energy Information Administration, Form EIA-923 'Power Plant Operations Report'; Form EIA-423, 'Monthly Cost and Quality of Fuels for Electric Plants Report';

Form EIA-826, 'Monthly Electric Sales and Revenue With State Distributions Report'; Form EIA-906, 'Power Plant Report'; Form EIA-920 'Combined Heat and Power Plant Report'; and Federal Energy Regulatory Commission, FERC Form 423, 'Monthly Report of Cost and Quality of Fuels for Electric Plants.'

**Table C.3. Comparison of Preliminary Annual Data Versus Final Annual Data at the U.S. Level, 2013 through 2015**

Item	2013			2014			2015		
	Preliminary Annual Data	Final Annual Data	Percent Change	Preliminary Annual Data	Final Annual Data	Percent Change	Preliminary Annual Data	Final Annual Data	Percent Change
<b>Net Generation (Thousand MWh)</b>									
Coal	1,585,998	1,581,115	-0.31%	1,585,697	1,581,710	-0.25%	1,356,057	1,352,398	-0.27%
Petroleum Liquids	13,410	13,820	3.06%	18,708	18,276	-2.31%	17,456	17,372	-0.48%
Petroleum Coke	13,453	13,344	-0.81%	11,781	11,955	1.48%	10,987	10,877	-1.00%
Natural Gas	1,113,665	1,124,836	1.00%	1,121,928	1,126,609	0.42%	1,335,068	1,333,482	-0.12%
Other Gases	12,271	12,853	4.75%	11,578	12,022	3.83%	12,963	13,117	1.18%
Hydroelectric	264,713	263,884	-0.31%	252,540	253,193	0.26%	246,075	243,989	-0.85%
Nuclear	789,017	789,016	0.00%	797,067	797,166	0.01%	797,178	797,178	0.00%
Other	265,683	267,096	0.53%	293,636	292,674	-0.33%	311,597	309,189	-0.77%
<b>Total</b>	<b>4,058,209</b>	<b>4,065,964</b>	<b>0.19%</b>	<b>4,092,935</b>	<b>4,093,606</b>	<b>0.02%</b>	<b>4,087,381</b>	<b>4,077,601</b>	<b>-0.24%</b>
<b>Consumption of Fossil Fuels for Electricity Generation</b>									
Coal (1,000 tons)	860,790	860,729	-0.01%	854,416	853,634	-0.09%	740,855	739,594	-0.17%
Petroleum Liquids (1,000 barrels)	22,751	23,231	2.11%	32,084	31,531	-1.72%	29,545	28,925	-2.10%
Petroleum Coke (1,000 tons)	4,893	4,852	-0.83%	4,325	4,412	2.02%	4,088	4,044	-1.07%
Natural Gas (1,000 Mcf)	8,512,483	8,596,299	0.98%	8,502,964	8,544,387	0.49%	10,048,346	10,016,576	-0.32%
<b>Fuel Stocks for Electric Power Sector</b>									
Coal (1,000 tons)	147,973	147,884	-0.06%	151,362	151,548	0.12%	197,128	195,548	-0.80%
Petroleum Liquids (1,000 barrels)	31,045	31,673	2.03%	32,139	33,505	4.25%	32,223	32,884	2.05%
Petroleum Coke (1,000 tons)	390	390	-0.01%	847	827	-2.29%	1,342	1,340	-0.15%
<b>Retail Sales (Million kWh)</b>									
Residential	1,391,102	1,394,812	0.27%	1,402,911	1,407,208	0.31%	1,399,884	1,404,096	0.30%
Commercial	1,338,464	1,337,079	-0.10%	1,357,505	1,352,158	-0.39%	1,358,419	1,360,752	0.17%
Industrial	954,731	985,352	3.21%	955,488	997,576	4.40%	958,563	986,508	2.92%
Transportation	7,525	7,625	1.32%	7,776	7,758	-0.24%	7,659	7,637	-0.29%
<b>Total</b>	<b>3,691,822</b>	<b>3,724,868</b>	<b>0.90%</b>	<b>3,723,681</b>	<b>3,764,700</b>	<b>1.10%</b>	<b>3,724,525</b>	<b>3,758,992</b>	<b>0.93%</b>
<b>Revenue (Million Dollars)</b>									
Residential	168,547	169,131	0.35%	175,404	176,178	0.44%	177,367	177,624	0.14%
Commercial	137,779	137,188	-0.43%	145,889	145,253	-0.44%	143,893	144,781	0.62%
Industrial	65,111	67,934	4.33%	67,019	70,855	5.72%	66,088	68,166	3.14%
Transportation	775	805	3.84%	798	810	1.51%	779	771	-1.12%
<b>Total</b>	<b>372,213</b>	<b>375,058</b>	<b>0.76%</b>	<b>389,111</b>	<b>393,096</b>	<b>1.02%</b>	<b>388,127</b>	<b>391,341</b>	<b>0.83%</b>
<b>Average Retail Price (Cents/kWh)</b>									
Residential	12.12	12.13	0.08%	12.50	12.52	0.13%	12.67	12.65	-0.16%
Commercial	10.29	10.26	-0.33%	10.75	10.74	-0.04%	10.59	10.64	0.44%
Industrial	6.82	6.89	1.09%	7.01	7.10	1.26%	6.89	6.91	0.22%
Transportation	10.30	10.55	2.49%	10.27	10.45	1.75%	10.17	10.09	-0.83%
<b>Total</b>	<b>10.08</b>	<b>10.07</b>	<b>-0.13%</b>	<b>10.45</b>	<b>10.44</b>	<b>-0.08%</b>	<b>10.42</b>	<b>10.41</b>	<b>-0.10%</b>
<b>Receipt of Fossil Fuels</b>									
Coal (1,000 tons)	803,206	823,222	2.49%	836,196	854,560	2.20%	769,866	782,929	1.70%
Petroleum Liquids (1,000 barrels)	20,348	20,413	0.32%	28,355	28,514	0.56%	24,512	24,320	-0.78%
Petroleum Coke (1,000 tons)	4,555	4,660	2.31%	5,091	5,195	2.03%	4,779	4,897	2.46%
Natural Gas (1,000 Mcf)	8,463,303	8,503,424	0.47%	8,423,883	8,431,423	0.09%	9,843,170	9,842,581	-0.01%
<b>Cost of Fossil Fuels (Dollars per Million Btu)</b>									
Coal (1,000 tons)	2.35	2.34	-0.12%	2.37	2.37	0.02%	2.22	2.22	-0.03%
Petroleum Liquids (1,000 barrels)	20.59	20.56	-0.12%	19.89	19.89	-0.03%	11.48	11.49	0.10%
Petroleum Coke (1,000 tons)	2.16	2.17	0.70%	1.96	1.98	0.97%	1.87	1.84	-1.37%
Natural Gas (1,000 Mcf)	4.33	4.33	0.03%	4.99	4.99	0.01%	3.22	3.23	0.18%

Coal includes anthracite, bituminous, subbituminous, lignite, waste coal, and synthetic coal. Coal stocks exclude waste coal.

Petroleum Liquids include distillate fuel oil, residual fuel oil, jet fuel, kerosene, and waste oil.

Natural gas includes a small amount of supplemental gaseous fuels that cannot be identified separately. Excludes blast furnace gas and other gases.

Hydroelectric includes conventional hydroelectric and hydroelectric pumped storage facilities.

Other generation includes geothermal, wood, waste, wind, and solar, batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies.

Fuel Stocks are end-of-year values.

See technical notes (<http://www.eia.gov/cneaf/electricity/epm/appenc.pdf>) for additional information on the Commercial, Industrial and Transportation sectors.

Cost of Fossil Fuels represent weighted values.

Notes: The average revenue per kilowatt-hour is calculated by dividing revenue by sales. Totals may not equal sum of components because of independent rounding.

Percent changes refer to the difference between the preliminary data published in the Electric Power Monthly (EPM) and the final data published in the EPM. Values for 2015 are Final.

Sources: U.S. Energy Information Administration, Form EIA-923 'Power Plant Operations Report'; Form EIA-423, 'Monthly Cost and Quality of Fuels for Electric Plants Report';

Form EIA-826, 'Monthly Electric Sales and Revenue With State Distributions Report'; Form EIA-906, 'Power Plant Report'; Form EIA-920 'Combined Heat and Power Plant Report';

and Federal Energy Regulatory Commission, FERC Form 423, 'Monthly Report of Cost and Quality of Fuels for Electric Plants.'

**Table C.4. Unit of Measure Equivalents for Electricity**

<b>Unit</b>	<b>Equivalent</b>
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

Source: U.S. Energy Information Administration

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## Glossary

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**Anthracite:** The highest rank of coal; used primarily for residential and commercial space heating. It is a hard, brittle, and black lustrous coal, often referred to as hard coal, containing a high percentage of fixed carbon and a low percentage of volatile matter. The moisture content of fresh-mined anthracite generally is less than 15 percent. The heat content of anthracite ranges from 22 to 28 million Btu per ton on a moist, mineral-matter-free basis. The heat content of anthracite coal consumed in the United States averages 25 million Btu per ton, on the as-received basis (i.e., containing both inherent moisture and mineral matter). Note: Since the 1980's, anthracite refuse or mine waste has been used for steam electric power generation. This fuel typically has a heat content of 15 million Btu per ton or less.

**Ash:** Impurities consisting of silica, iron, aluminum, and other noncombustible matter that are contained in coal. Ash increases the weight of coal, adds to the cost of handling, and can affect its burning characteristics. Ash content is measured as a percent by weight of coal on a "received" or a "dry" (moisture-free, usually part of a laboratory analysis) basis.

**Ash content:** The amount of ash contained in the fuel (except gas) in terms of percent by weight.

**Average Price of Electricity to Ultimate Consumers** (formerly known as Average Revenue per Kilowatthour): The average revenue per kilowatthour of electricity sold by sector (residential, commercial, industrial, or other) and geographic area (State, Census division, and national), is calculated by dividing the total monthly revenue by the corresponding total monthly sales for each sector and geographic area.

**Barrel:** A unit of volume equal to 42 U.S. gallons.

**Biomass:** Organic non-fossil material of biological origin constituting a renewable energy resource.

**Bituminous coal:** A dense coal, usually black, sometimes dark brown, often with well-defined bands of bright and dull material, used primarily as fuel in steam-electric power generation, with substantial quantities also used for heat and power applications in manufacturing and to make coke. Bituminous coal is the most abundant coal in active U.S. mining regions. Its moisture content usually is less than 20 percent. The heat content of bituminous coal ranges from 21 to 30 million Btu per ton on a moist, mineral-matter-free basis. The heat content of bituminous coal consumed in the United States averages 24 million Btu per ton, on the as-received basis (i.e., containing both inherent moisture and mineral matter).

**British thermal unit:** The quantity of heat required to raise the temperature of 1 pound of liquid water by 1 degree Fahrenheit at the temperature at which water has its greatest density (approximately 39 degrees Fahrenheit).

**Btu:** The abbreviation for British thermal unit(s).

**Capacity:** See Generator Capacity and Generator Name Plate Capacity (Installed).

**Census Divisions:** Any of nine geographic areas of the United States as defined by the U.S. Department of Commerce, Bureau of the Census. The divisions, each consisting of several States, are defined as follows:

- 1) *New England:* Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont;
- 2) *Middle Atlantic:* New Jersey, New York, and Pennsylvania;
- 3) *East North Central:* Illinois, Indiana, Michigan, Ohio, and Wisconsin;
- 4) *West North Central:* Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota;
- 5) *South Atlantic:* Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, and West Virginia;
- 6) *East South Central:* Alabama, Kentucky, Mississippi, and Tennessee;
- 7) *West South Central:* Arkansas, Louisiana, Oklahoma, and Texas;
- 8) *Mountain:* Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming;
- 9) *Pacific:* Alaska, California, Hawaii, Oregon, and Washington.

*Note:* Each division is a sub-area within a broader Census Region. In some cases, the Pacific division is subdivided into the Pacific Contiguous area (California, Oregon, and Washington) and the Pacific Noncontiguous area (Alaska and Hawaii).

**Coal:** A readily combustible black or brownish-black rock whose composition, including inherent moisture, consists of more than 50 percent by weight and more than 70 percent by volume of carbonaceous material. It is formed from plant remains that have been compacted, hardened, chemically altered, and metamorphosed by heat and pressure over geologic time.

**Coal synfuel:** Coal-based solid fuel that has been processed by a coal synfuel plant; and coal-based fuels such as briquettes, pellets, or extrusions, which are formed from fresh or recycled coal and binding materials.

**Coke (petroleum):** A residue high in carbon content and low in hydrogen that is the final product of thermal decomposition in the condensation process in cracking. This product is reported as marketable coke or catalyst coke. The conversion is 5 barrels (of 42 U.S. gallons each) per short ton. Coke from petroleum has a heating value of 6.024 million Btu per barrel.

**Combined cycle:** An electric generating technology in which electricity is produced from otherwise lost waste heat exiting from one or more gas (combustion) turbine-generators. The exiting heat from the combustion turbine(s) is routed to a conventional boiler or to a heat recovery steam generator for utilization by a steam turbine in the production of additional electricity.

**Combined heat and power (CHP):** Includes plants designed to produce both heat and electricity from a single heat source. *Note:* This term is being used in place of the term "cogenerator" that was used by EIA in the past. CHP better describes the facilities because some of the plants included do not produce heat and power in a sequential fashion and, as a result, do not meet the legal definition of cogeneration specified in the Public Utility Regulatory Policies Act (PURPA).

**Commercial sector:** An energy-consuming sector that consists of service-providing facilities and equipment of: businesses; Federal, State, and local governments; and other private and public organizations, such as religious, social, or fraternal groups. The commercial sector includes institutional living quarters. It also includes sewage treatment facilities. Common uses of energy associated with this sector include space heating, water heating, air conditioning, lighting, refrigeration, cooking, and running a wide variety of other equipment. *Note:* This sector includes generators that produce electricity and/or useful thermal output primarily to support the activities of the above-mentioned commercial establishments.

**Consumption (fuel):** The use of energy as a source of heat or power or as a raw material input to a manufacturing process.

**Cost:** The amount paid to acquire resources, such as plant and equipment, fuel, or labor services.

**Demand (electric):** The rate at which electric energy is delivered to or by a system, part of a system, or piece of equipment, at a given instant or averaged over any designated period of time.

**Diesel:** A distillate fuel oil that is used in diesel engines such as those used for transportation and for electric power generation.

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

1) *No. 1 Distillate:* A light petroleum distillate that can be used as either a diesel fuel (see No. 1 Diesel Fuel) or a fuel oil. See No. 1 Fuel Oil.

- *No. 1 Diesel fuel:* A light distillate fuel oil that has distillation temperatures of 550 degrees Fahrenheit at the 90-percent point and meets the specifications defined in ASTM Specification D 975. It is used in high-speed diesel engines, such as those in city buses and similar vehicles. See No. 1 Distillate above.
- *No. 1 Fuel oil:* A light distillate fuel oil that has distillation temperatures of 400 degrees Fahrenheit at the 10-percent recovery point and 550 degrees Fahrenheit at the 90-percent point and meets the specifications defined in ASTM Specification D 396. It is used primarily as fuel for portable outdoor stoves and portable outdoor heaters. See No. 1 Distillate above.

2) *No. 2 Distillate:* A petroleum distillate that can be used as either a diesel fuel (see No. 2 Diesel Fuel definition below) or a fuel oil. See No. 2 Fuel oil below.

- *No. 2 Diesel fuel:* A fuel that has distillation temperatures of 500 degrees Fahrenheit at the 10-percent recovery point and 640 degrees Fahrenheit at the 90-percent recovery point and meets the specifications defined in ASTM Specification D 396. It is used in atomizing type burners for domestic heating or for moderate capacity commercial/industrial burner units. See No. 2 Distillate above.

3) *No. 4 Fuel*: A distillate fuel oil made by blending distillate fuel oil and residual fuel oil stocks. It conforms with ASTM Specification D 396 or Federal Specification VV-F-815C and is used extensively in industrial plants and in commercial burner installations that are not equipped with preheating facilities. It also includes No. 4 diesel fuel used for low- and medium-speed diesel engines and conforms to ASTM Specification D 975.

- *No. 4 Diesel fuel and No. 4 Fuel oil*: See No. 4 Fuel above.

**Electric industry restructuring**: The process of replacing a monopolistic system of electric utility suppliers with competing sellers, allowing individual ultimate customers to choose their supplier but still receive delivery over the power lines of the local utility. It includes the reconfiguration of vertically integrated electric utilities.

**Electric plant (physical)**: A facility containing prime movers, electric generators, and auxiliary equipment for converting mechanical, chemical, and/or fission energy into electric energy.

**Electric power sector**: An energy-consuming sector that consists of electricity-only and combined-heat-and-power (CHP) plants whose primary business is to sell electricity, or electricity and heat, to the public-- i. e., North American Industry Classification System 22 plants.

**Electric utility**: A corporation, person, agency, authority, or other legal entity or instrumentality aligned with distribution facilities for delivery of electric energy for use primarily by the public. Included are investor-owned electric utilities, municipal and State utilities, Federal electric utilities, and rural electric cooperatives. A few entities that are tariff based and corporately aligned with companies that own distribution facilities are also included. Note: Due to the issuance of FERC Order 888 that required traditional electric utilities to functionally unbundle their generation, transmission, and distribution operations, "electric utility" currently has inconsistent interpretations from State to State.

**Electricity**: A form of energy characterized by the presence and motion of elementary charged particles generated by friction, induction, or chemical change.

**Electricity generation**: The process of producing electric energy or the amount of electric energy produced by transforming other forms of energy, commonly expressed in kilowatthours (kWh) or megawatthours (MWh).

**Electricity generators**: The facilities that produce only electricity, commonly expressed in kilowatthours (kWh) or megawatthours (MWh).

**Energy**: The capacity for doing work as measured by the capability of doing work (potential energy) or the conversion of this capability to motion (kinetic energy). Energy has several forms, some of which are easily convertible and can be changed to another form useful for work. Most of the world's convertible energy comes from fossil fuels that are burned to produce heat that is then used as a transfer medium to mechanical or other means in order to accomplish tasks. Electrical energy is usually measured in kilowatthours, while heat energy is usually measured in British thermal units.

**Energy conservation features:** This includes building shell conservation features, HVAC conservation features, lighting conservation features, any conservation features, and other conservation features incorporated by the building. However, this category does not include any demand-side management (DSM) program participation by the building. Any DSM program participation is included in the DSM Programs.

**Energy efficiency:** Refers to programs that are aimed at reducing the energy used by specific end-use devices and systems, typically without affecting the services provided. These programs reduce overall electricity consumption (reported in megawatthours), often without explicit consideration for the timing of program-induced savings. Such savings are generally achieved by substituting technically more advanced equipment to produce the same level of end-use services (e.g. lighting, heating, motor drive) with less electricity. Examples include high-efficiency appliances, efficient lighting programs, high-efficiency heating, ventilating and air conditioning (HVAC) systems or control modifications, efficient building design, advanced electric motor drives, and heat recovery systems.

**Energy service provider:** An energy entity that provides service to an ultimate consumer.

**Energy source:** Any substance or natural phenomenon that can be consumed or transformed to supply heat or power. Examples include petroleum, coal, natural gas, nuclear, biomass, electricity, wind, sunlight, geothermal, water movement, and hydrogen in fuel cells.

**Energy-only service:** Sales services for ultimate consumers for which the company provided only the energy consumed, where another entity provides delivery services.

**Fossil fuel:** An energy source formed in the earth's crust from decayed organic material. The common fossil fuels are petroleum, coal, and natural gas.

**Franchised service area:** A specified geographical area in which a utility has been granted the exclusive right to serve customers. A franchise allows an entity to use city streets, alleys and other public lands in order to provide, distribute, and sell services to the community.

**Fuel:** Any material substance that can be consumed to supply heat or power. Included are petroleum, coal, and natural gas (the fossil fuels), and other consumable materials, such as uranium, biomass, and hydrogen.

**Gas:** A fuel burned under boilers and by internal combustion engines for electric generation. These include natural, manufactured and waste gas.

**Gas turbine plant:** An electric generating facility in which the prime mover is a gas (combustion) turbine. A gas turbine typically consists of an air compressor and one or more combustion chambers where either liquid or gaseous fuel is burned. The resulting hot gases are passed through the turbine where they expand to drive both an electric generator and the compressor.

**Generating unit:** Any combination of physically connected generators, reactors, boilers, combustion turbines, or other prime movers operated together to produce electric power.

**Generator:** A machine that converts mechanical energy into electrical energy.

**Generator capacity:** The maximum output, commonly expressed in megawatts (MW), that generating equipment can supply to system load, adjusted for ambient conditions.

**Generator nameplate capacity (installed):** The maximum rated output of a generator, prime mover, or other electric power production equipment under specific conditions designated by the manufacturer. Installed generator nameplate capacity is commonly expressed in megawatts (MW) and is usually indicated on a nameplate physically attached to the generator.

**Geothermal:** Pertaining to heat within the Earth.

**Geothermal energy:** Hot water or steam extracted from geothermal reservoirs in the earth's crust. Water or steam extracted from geothermal reservoirs can be used for geothermal heat pumps, water heating, or electricity generation.

**Gigawatt (GW):** One billion watts.

**Gigawatthour (GWh):** One billion watthours.

**Gross generation:** The total amount of electric energy produced by generating units and measured at the generating terminal in kilowatthours (kWh) or megawatthours (MWh).

**Heat content:** The amount or number of British thermal units (Btu) produced by the combustion of fuel, measured in Btu/unit of measure.

**Hydroelectric power:** The production of electricity from the kinetic energy of falling water.

**Hydroelectric power generation:** Electricity generated by an electric power plant whose turbines are driven by falling water. It includes electric utility and industrial generation of hydroelectricity, unless otherwise specified. Generation is reported on a net basis, i.e., on the amount of electric energy generated after the electric energy consumed by station auxiliaries and the losses in the transformers that are considered integral parts of the station are deducted.

**Hydroelectric pumped storage:** Hydroelectricity that is generated during peak loads by using water previously pumped into an elevated storage reservoir during off-peak periods when excess generating capacity is available to do so. When additional generating capacity is needed, the water can be released from the reservoir through a conduit to turbine generators located in a power plant at a lower level.

**Hydrogen:** A colorless, odorless, highly flammable gaseous element. It is the lightest of all gases and the most abundant element in the universe, occurring chiefly in combination with oxygen in water and also in acids, bases, alcohols, petroleum, and other hydrocarbons.

**Independent power producer:** A corporation, person, agency, authority, or other legal entity or instrumentality that owns or operates facilities for the generation of electricity for use primarily by the public, and that is not an electric utility.

**Industrial sector:** An energy-consuming sector that consists of all facilities and equipment used for producing, processing, or assembling goods. The industrial sector encompasses the following types of activity: manufacturing (NAICS codes 31-33); agriculture, forestry, and hunting (NAICS code 11); mining, including oil and gas extraction (NAICS code 21); natural gas distribution (NAICS code 2212); and construction (NAICS code 23). Overall energy use in this sector is largely for process heat and cooling and powering machinery, with lesser amounts used for facility heating, air conditioning, and lighting. Fossil fuels are also used as raw material inputs to manufactured products. Note: This sector includes generators that produce electricity and/or useful thermal output primarily to support the above-mentioned industrial activities.

**Interdepartmental service (electric):** Interdepartmental service includes amounts charged by the electric department at tariff or other specified rates for electricity supplied by it to other utility departments.

**Internal combustion plant:** A plant in which the prime mover is an internal combustion engine. An internal combustion engine has one or more cylinders in which the process of combustion takes place, converting energy released from the rapid burning of a fuel-air mixture into mechanical energy. Diesel or gas-fired engines are the principal types used in electric plants. The plant is usually operated during periods of high demand for electricity.

**Investor-owned utility (IOU):** A privately-owned electric utility whose stock is publicly traded. It is rate regulated and authorized to achieve an allowed rate of return.

**Jet fuel:** A refined petroleum product used in jet aircraft engines. It includes kerosene-type jet fuel and naphtha-type jet fuel.

**Kerosene:** A light petroleum distillate that is used in space heaters, cook stoves, and water heaters and is suitable for use as a light source when burned in wick-fed lamps. Kerosene has a maximum distillation temperature of 400 degrees Fahrenheit at the 10-percent recovery point, a final boiling point of 572 degrees Fahrenheit, and a minimum flash point of 100 degrees Fahrenheit. Included are No. 1-K and No. 2-K, the two grades recognized by ASTM Specification D 3699 as well as all other grades of kerosene called range or stove oil, which have properties similar to those of No. 1 fuel oil.

**Kilowatt (kW):** One thousand watts.

**Kilowatthour (kWh):** One thousand watthours.

**Light oil:** Lighter fuel oils distilled off during the refining process. Virtually all petroleum used in internal combustion and gas-turbine engines is light oil.

**Lignite:** The lowest rank of coal, often referred to as brown coal, used almost exclusively as fuel for steam-electric power generation. It is brownish-black and has a high inherent moisture content, sometimes as high as 45 percent. The heat content of lignite ranges from 9 to 17 million Btu per ton on a moist, mineral-matter-free basis. The heat content of lignite consumed in the United States averages 13 million Btu per ton, on the as-received basis (i.e., containing both inherent moisture and mineral matter).

**Manufactured gas:** A gas obtained by destructive distillation of coal, or by thermal decomposition of oil, or by the reaction of steam passing through a bed of heated coal or coke. Examples are coal gases, coke oven gases, producer gas, blast furnace gas, blue (water) gas, and carbureted water gas

**Mcf:** One thousand cubic feet.

**Megawatt (MW):** One million watts of electricity.

**Megawatthour (MWh):** One million watthours.

**Municipal utility:** A nonprofit utility, owned by a local municipality and operated as a department thereof, governed by a city council or an independently elected or appointed board; primarily involved in the distribution and/or sale of electric power to ultimate consumers.

**Natural gas:** A gaseous mixture of hydrocarbon compounds, the primary one being methane. Note: The Energy Information Administration measures wet natural gas and its two sources of production, associated/dissolved natural gas and nonassociated natural gas, and dry natural gas, which is produced from wet natural gas.

- 1) *Wet natural gas:* A mixture of hydrocarbon compounds and small quantities of various nonhydrocarbons existing in the gaseous phase or in solution with crude oil in porous rock formations at reservoir conditions. The principal hydrocarbons normally contained in the mixture are methane, ethane, propane, butane, and pentane. Typical nonhydrocarbon gases that may be present in reservoir natural gas are water vapor, carbon dioxide, hydrogen sulfide, nitrogen and trace amounts of helium. Under reservoir conditions, natural gas and its associated liquefiable portions occur either in a single gaseous phase in the reservoir or in solution with crude oil and are not distinguishable at the time as separate substances. Note: The Securities and Exchange Commission and the Financial Accounting Standards Board refer to this product as natural gas.
  - Associated-dissolved natural gas: Natural gas that occurs in crude oil reservoirs either as free gas (associated) or as gas in solution with crude oil (dissolved gas).
  - Nonassociated natural gas: Natural gas that is not in contact with significant quantities of crude oil in the reservoir.
- 2) *Dry natural gas:* Natural gas which remains after: 1) the liquefiable hydrocarbon portion has been removed from the gas stream (i.e., gas after lease, field, and/or plant separation); and 2) any volumes of nonhydrocarbon gases have been removed where they occur in sufficient quantity to render the gas unmarketable. Note: Dry natural gas is also known as consumer-grade natural gas. The parameters for measurement are cubic feet at 60 degrees Fahrenheit and 14.73 pounds per square inch absolute.

**Net generation:** The amount of gross generation less the electrical energy consumed at the generating station(s) for station service or auxiliaries. Note: Electricity required for pumping at pumped-storage plants is regarded as electricity for station service and is deducted from gross generation.

**Net summer capacity:** The maximum output, commonly expressed in megawatts (MW), that generating equipment can supply to system load, as demonstrated by a multi-hour test, at the time of summer peak demand (period of May 1 through October 31). This output reflects a reduction in capacity due to electricity use for station service or auxiliaries.

**Net winter capacity:** The maximum output, commonly expressed in megawatts (MW), that generating equipment can supply to system load, as demonstrated by a multi-hour test, at the time of peak winter demand (period of November 1 through April 30). This output reflects a reduction in capacity due to electricity use for station service or auxiliaries.

**North American Electric Reliability Council (NERC):** A council formed in 1968 by the electric utility industry to promote the reliability and adequacy of bulk power supply in the electric utility systems of North America. The NERC Regions are:

- 1) Texas Regional Entity (TRE),
- 2) Florida Reliability Coordinating Council (FRCC),
- 3) Midwest Reliability Organization (MRO),
- 4) Northeast Power Coordinating Council (NPCC),
- 5) ReliabilityFirst Corporation (RFC),
- 6) Southeastern Electric Reliability Council (SERC),
- 7) Southwest Power Pool (SPP), and the
- 8) Western Energy Coordinating Council (WECC).

**North American Industry Classification System (NAICS):** A set of codes that describes the possible purposes of a facility.

**Nuclear electric power:** Electricity generated by an electric power plant whose turbines are driven by steam produced by the heat from the fission of nuclear fuel in a reactor.

**Other customers:** Includes public street and highway lighting, other sales to public authorities, sales to railroads and railways, sales for irrigation, and interdepartmental sales.

**Other generation:** Electricity originating from these sources: manufactured, supplemental gaseous fuel, propane, and waste gasses, excluding natural gas; biomass; geothermal; wind; solar thermal; photovoltaic; synthetic fuel; purchased steam; and waste oil energy sources.

**Percent change:** The relative change in a quantity over a specified time period. It is calculated as follows: the current value has the previous value subtracted from it; this new number is divided by the absolute value of the previous value; then this new number is multiplied by 100.

**Petroleum:** A broadly defined class of liquid hydrocarbon mixtures. Included are crude oil, lease condensate, unfinished oils, refined products obtained from the processing of crude oil, and natural gas plant liquids. Note: Volumes of finished petroleum products include nonhydrocarbon compounds, such as additives and detergents, after they have been blended into the products.

**Petroleum coke:** See Coke (petroleum).

**Photovoltaic energy:** Direct-current electricity generated from sunlight through solid-state semiconductor devices that have no moving parts.

**Plant:** A term commonly used either as a synonym for an industrial establishment or a generation facility or to refer to a particular process within an establishment.

**Power:** The rate at which energy is transferred. Electrical energy is usually measured in watts. Also used for a measurement of capacity.

**Power production plant:** All the land and land rights, structures and improvements, boiler or reactor vessel equipment, engines and engine-driven generator, turbo generator units, accessory electric equipment, and miscellaneous power plant equipment are grouped together for each individual facility.

**Production (electric):** Act or process of producing electric energy from other forms of energy; also, the amount of electric energy expressed in watthours (Wh).

**Propane:** A normally gaseous straight-chain hydrocarbon, (C<sub>3</sub>H<sub>8</sub>). It is a colorless paraffinic gas that boils at a temperature of -43.67 degrees Fahrenheit. It is extracted from natural gas or refinery gas streams. It includes all products covered by Gas Processors Association Specifications for commercial propane and HD-5 propane and ASTM Specification D 1835.

**Public street and highway lighting service:** Includes electricity supplied and services rendered for the purpose of lighting streets, highways, parks and other public places; or for traffic or other signal system service, for municipalities, or other divisions or agencies of State or Federal governments.

**Railroad and railway electric service:** Electricity supplied to railroads and interurban and street railways, for general railroad use, including the propulsion of cars or locomotives, where such electricity is supplied under separate and distinct rate schedules.

**Receipts:** Purchases of fuel.

**Relative standard error:** The standard deviation of a distribution divided by the arithmetic mean, sometimes multiplied by 100. It is used for the purpose of comparing the variabilities of frequency distributions but is sensitive to errors in the means.

**Residential:** An energy-consuming sector that consists of living quarters for private households. Common uses of energy associated with this sector include space heating, water heating, air conditioning, lighting, refrigeration, cooking, and running a variety of other appliances. The residential sector excludes institutional living quarters.

**Residual fuel oil:** A general classification for the heavier oils, known as No. 5 and No. 6 fuel oils, that remain after the distillate fuel oils and lighter hydrocarbons are distilled away in refinery operations. It conforms to ASTM Specifications D 396 and D 975 and Federal Specification VV-F-815C. No. 5, a residual fuel oil of medium viscosity, is also known as Navy Special and is defined in Military Specification MIL-F-859E, including Amendment 2 (NATO Symbol F-770). It is used in steam-powered vessels in government

service and inshore power plants. No. 6 fuel oil includes Bunker C fuel oil and is used for the production of electric power, space heating, vessel bunkering, and various industrial purposes.

**Retail:** Sales covering electrical energy supplied for residential, commercial, and industrial end-use purposes. Other small classes, such as agriculture and street lighting, also are included in this category.

**Revenues:** The total amount of money received by a firm from sales of its products and/or services, gains from the sales or exchange of assets, interest and dividends earned on investments, and other increases in the owner's equity except those arising from capital adjustments.

**Sales:** The transfer of title to an energy commodity from a seller to a buyer for a price or the quantity transferred during a specified period.

**Service classifications (sectors):** Consumers grouped by similar characteristics in order to be identified for the purpose of setting a common rate for electric service. Usually classified into groups identified as residential, commercial, industrial and other.

**Service to public authorities:** Public authority service includes electricity supplied and services rendered to municipalities or divisions or agencies of State and Federal governments, under special contracts or agreements or service classifications applicable only to public authorities.

**Solar energy:** The radiant energy of the sun that can be converted into other forms of energy, such as heat or electricity. Electricity produced from solar energy heats a medium that powers an electricity-generating device.

**State power authority:** A nonprofit utility owned and operated by a state government agency, primarily involved in the generation, marketing, and/or transmission of wholesale electric power.

**Steam-electric power plant (conventional):** A plant in which the prime mover is a steam turbine. The steam used to drive the turbine is produced in a boiler where fossil fuels are burned.

**Stocks of fuel:** A supply of fuel accumulated for future use. This includes coal and fuel oil stocks at the plant site, in coal cars, tanks, or barges at the plant site, or in separate storage sites.

**Subbituminous coal:** A coal whose properties range from those of lignite to those of bituminous coal and used primarily as fuel for steam-electric power generation. It may be dull, dark brown to black, soft and crumbly, at the lower end of the range, to bright, jet black, hard, and relatively strong, at the upper end. Subbituminous coal contains 20 to 30 percent inherent moisture by weight. The heat content of subbituminous coal ranges from 17 to 24 million Btu per ton on a moist, mineral-matter-free basis. The heat content of subbituminous coal consumed in the United States averages 17 to 18 million Btu per ton, on the as-received basis (i.e., containing both inherent moisture and mineral matter).

**Sulfur:** A yellowish nonmetallic element, sometimes known as "brimstone." It is present at various levels of concentration in many fossil fuels whose combustion releases sulfur compounds that are considered harmful to the environment. Some of the most commonly used fossil fuels are categorized according to their sulfur content, with lower sulfur fuels usually selling at a higher price. Note: No. 2 Distillate fuel is

currently reported as having either a 0.05 percent or lower sulfur level for on-highway vehicle use or a greater than 0.05 percent sulfur level for off-highway use, home heating oil, and commercial and industrial uses. Residual fuel, regardless of use, is classified as having either no more than 1 percent sulfur or greater than 1 percent sulfur. Coal is also classified as being low-sulfur at concentrations of 1 percent or less or high-sulfur at concentrations greater than 1 percent.

**Sulfur content:** The amount of sulfur contained in the fuel (except gas) in terms of percent by weight.

**Supplemental gaseous fuel supplies:** Synthetic natural gas, propane-air, coke oven gas, refinery gas, biomass gas, air injected for Btu stabilization, and manufactured gas commingled and distributed with natural gas.

**Synthetic fuel:** A gaseous, liquid, or solid fuel that does not occur naturally. Synfuels can be made from coal (coal gasification or coal liquefaction), petroleum products, oil shale, tar sands, or plant products. Among the synfuels are various fuel gases, including but not restricted to substitute natural gas, liquid fuels for engines (e.g., gasoline, diesel fuel, and alcohol fuels) and burner fuels (e.g., fuel heating oils).

**Terrawatt:** One trillion watts.

**Terrawatthour:** One trillion kilowatthours.

**Ton:** A unit of weight equal to 2,000 pounds.

**Turbine:** A machine for generating rotary mechanical power from the energy of a stream of fluid (such as water, steam, or hot gas). Turbines convert the kinetic energy of fluids to mechanical energy through the principles of impulse and reaction, or a mixture of the two.

**Ultimate consumer:** A consumer that purchases electricity for its own use and not for resale.

**Useful thermal output:** The thermal energy made available in a combined heat or power system for use in any industrial or commercial process, heating or cooling application, or delivered to other end users, i.e., total thermal energy made available for processes and applications other than electrical generation.

**Waste coal:** As a fuel for electric power generation, waste coal includes anthracite refuse or mine waste, waste from anthracite preparation plants, and coal recovered from previously mined sites.

**Waste gases:** As a fuel for electric power generation, waste gasses are those gasses that are produced from gasses recovered from a solid-waste or wastewater treatment facility, or the gaseous by-products of oil-refining processes.

**Waste oil:** As a fuel for electric power generation, waste oil includes recycled motor oil, and waste oil from transformers.

**Watt (W):** The unit of electrical power equal to one ampere under a pressure of one volt. A Watt is equal to 1/746 horsepower.

**Watt-hour (Wh):** The electrical energy unit of measure equal to one watt of power supplied to, or taken from, an electric circuit steadily for one hour.

**Wind energy:** The kinetic energy of wind converted into mechanical energy by wind turbines (i.e., blades rotating from the hub) that drive generators to produce electricity.

**Year-to-date:** The cumulative sum of each month's value starting with January and ending with the current month of the data.