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Chapter 1

National Summary Data

Table 1.1. Total Electric Power Industry Summary Statistics, 2023 and 2022

Net Generation and Consumption of Fuels for January through December														
		Total (All Sectors)			Electric Power Sector				Commercial		Industrial		Residential	
					Electric Utilities		Independent Power Producers							
Fuel	Facility Type	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
Net Generation (Thousand Megawatthours)														
Coal	Utility Scale Facilities	675,115	831,512	-18.8%	518,330	621,853	152,238	204,243	220	287	4,327	5,128	0	0
Petroleum Liquids	Utility Scale Facilities	11,397	15,805	-27.9%	8,254	9,356	2,573	5,734	76	101	494	614	0	0
Petroleum Coke	Utility Scale Facilities	4,836	7,126	-32.1%	3,146	5,383	1,415	1,354	2	10	273	379	0	0
Natural Gas	Utility Scale Facilities	1,806,063	1,687,065	7.1%	895,910	832,421	803,945	750,266	7,744	7,830	98,463	96,548	0	0
Other Fossil Gas	Utility Scale Facilities	11,778	11,722	0.5%	0	0	3,340	3,451	0	0	8,438	8,271	0	0
Nuclear	Utility Scale Facilities	774,873	771,537	0.4%	441,391	427,933	333,482	343,604	0	0	0	0	0	0
Hydroelectric Conventional	Utility Scale Facilities	245,002	254,789	-3.8%	220,003	232,953	23,862	20,673	293	263	844	899	0	0
Renewable Sources Excluding Hydroelectric	Utility Scale Facilities	650,239	646,025	0.7%	106,543	103,925	516,695	512,744	4,545	4,854	22,456	24,502	0	0
... Wind	Utility Scale Facilities	421,141	434,297	-3.0%	80,120	80,962	340,780	353,032	130	173	112	130	0	0
... Solar Thermal and Photovoltaic	Utility Scale Facilities	165,530	143,792	15.1%	22,230	17,692	142,360	125,155	615	669	326	276	0	0
... Wood and Wood-Derived Fuels	Utility Scale Facilities	31,615	35,466	-10.9%	2,549	3,263	7,637	8,739	107	175	21,320	23,289	0	0
... Other Biomass	Utility Scale Facilities	15,585	16,383	-4.9%	862	982	10,332	10,757	3,693	3,838	698	806	0	0
... Geothermal	Utility Scale Facilities	16,367	16,087	1.7%	782	1,026	15,586	15,061	0	0	0	0	0	0
Hydroelectric Pumped Storage	Utility Scale Facilities	-5,990	-6,028	-0.6%	-4,545	-4,752	-1,445	-1,276	0	0	0	0	0	0
Other Energy Sources	Utility Scale Facilities	9,957	11,114	-10.4%	580	534	2,823	3,487	3,185	3,391	3,369	3,702	0	0
All Energy Sources	Utility Scale Facilities	4,183,271	4,230,668	-1.1%	2,189,615	2,229,605	1,838,927	1,844,282	16,066	16,737	138,664	140,043	0	0
Estimated Small Scale Solar Photovoltaic	Small Scale Facilities	73,406	61,282	19.8%	0	0	0	0	19,751	17,724	4,382	4,048	49,273	39,510
Estimated Total Solar Photovoltaic	All Facilities	236,090	202,075	16.8%	22,230	17,664	139,513	122,184	20,366	18,393	4,708	4,324	49,273	39,510
Estimated Total Solar	All Facilities	238,937	205,074	16.5%	22,230	17,692	142,360	125,155	20,366	18,393	4,708	4,324	49,273	39,510
Consumption of Fossil Fuels for Electricity Generation														
Coal (1000 tons)	Utility Scale Facilities	386,626	471,576	-18.0%	291,034	349,320	94,063	120,514	69	87	1,460	1,655	0	0
Petroleum Liquids (1000 barrels)	Utility Scale Facilities	21,336	28,760	-25.8%	16,366	18,375	4,253	9,474	200	254	517	657	0	0
Petroleum Coke (1000 tons)	Utility Scale Facilities	2,028	2,985	-32.1%	1,328	2,271	594	578	1	3	105	132	0	0
Natural Gas (1000 Mcf)	Utility Scale Facilities	13,244,813	12,384,086	7.0%	6,820,807	6,376,041	5,766,811	5,364,050	49,069	48,658	608,127	595,337	0	0
Consumption of Fossil Fuels for Useful Thermal Output														
Coal (1000 tons)	Utility Scale Facilities	9,363	11,356	-17.5%	1,580	2,269	527	731	331	448	6,925	7,908	0	0
Petroleum Liquids (1000 barrels)	Utility Scale Facilities	3,133	4,181	-25.1%	65	106	330	403	363	495	2,374	3,177	0	0
Petroleum Coke (1000 tons)	Utility Scale Facilities	622	718	-13.4%	8	23	115	92	3	13	495	589	0	0
Natural Gas (1000 Mcf)	Utility Scale Facilities	1,210,187	1,206,250	0.3%	46,531	46,329	306,058	305,125	69,832	74,683	787,766	780,113	0	0
Consumption of Fossil Fuels for Electricity Generation and Useful Thermal Output														
Coal (1000 tons)	Utility Scale Facilities	395,989	482,931	-18.0%	292,615	351,589	94,591	121,245	400	535	8,384	9,563	0	0
Petroleum Liquids (1000 barrels)	Utility Scale Facilities	24,468	32,940	-25.7%	16,431	18,480	4,583	9,877	563	749	2,891	3,835	0	0
Petroleum Coke (1000 tons)	Utility Scale Facilities	2,649	3,702	-28.4%	1,336	2,294	709	671	4	16	600	721	0	0
Natural Gas (1000 Mcf)	Utility Scale Facilities	14,455,000	13,590,336	6.4%	6,867,338	6,422,369	6,072,869	5,669,175	118,901	123,342	1,395,893	1,375,449	0	0

Sales, Revenue, and Average Price of Electricity to Ultimate Customers for January through December									
	Total U.S. Electric Power Industry								
	Sales of Electricity to Ultimate Customers (million kWh)			Revenue from Sales of Electricity to Ultimate Customers (million dollars)			Average Price of Electricity to Ultimate Customers (cents/kWh)		
Sector	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Percentage Change
Residential	1,450,025	1,509,233	-3.9%	231,993	226,990	2.2%	16.00	15.04	6.4%
Commercial	1,408,109	1,390,873	1.2%	177,342	172,600	2.7%	12.59	12.41	1.5%
Industrial	1,009,256	1,020,464	-1.1%	81,159	84,895	-4.4%	8.04	8.32	-3.4%
Transportation	6,864	6,599	4.0%	877	765	14.6%	12.77	11.59	10.2%
All Sectors	3,874,253	3,927,169	-1.3%	491,370	485,249	1.3%	12.68	12.36	2.6%

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 Fossil Gas includes gaseous propane, blast furnace gas, other manufactured and waste gases derived from fossil fuels other than hydrogen.
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.
Other Energy Sources includes hydrogen, non-biogenic municipal solid waste, batteries, purchased steam, sulfur, tire-derived fuel, and other miscellaneous energy sources.
Coal stocks include anthracite, bituminous, subbituminous, lignite, refined coal, and synthetic coal; waste coal is excluded.
Sales of electricity to ultimate customers and net generation may not correspond exactly for a particular month for a variety of reasons (e.g., sales data may include imported electricity).
Net generation is presented for the calendar month while sales of electricity to ultimate customers and associated revenue accumulate from bills collected for periods of time that vary depending

Table 1.2. Summary Statistics for the United States, 2013 - 2023

(From Table 2.1.) Number of Ultimate Customers

Year	Residential	Commer-cial	Industrial	Transpor-tation	Other	Total
2013	127,777,153	17,679,562	831,790	75	N/A	146,288,580
2014	128,680,416	17,853,995	839,212	79	N/A	147,373,702
2015	129,811,718	17,985,690	835,536	78	N/A	148,633,022
2016	131,068,760	18,148,353	838,059	86	N/A	150,055,258
2017	132,579,747	18,359,427	840,329	86	N/A	151,779,589
2018	133,893,321	18,605,393	840,321	83	N/A	153,339,118
2019	135,249,616	18,694,240	954,222	83	N/A	154,898,161
2020	136,682,001	18,848,813	992,311	83	N/A	156,523,208
2021	138,308,772	19,102,304	1,022,212	82	N/A	158,433,370
2022	139,854,178	19,257,529	1,049,983	86	N/A	160,161,776
2023	141,282,713	19,381,328	1,078,249	85	N/A	161,742,375

(From Table 2.2.) Sales to Ultimate Customers

(Thousand Megawatthours)

Year	Residential	Commer-cial	Industrial	Transpor-tation	Other	Total
2013	1,394,812	1,337,079	985,352	7,625	N/A	3,724,868
2014	1,407,208	1,352,158	997,576	7,758	N/A	3,764,700
2015	1,404,096	1,360,752	986,508	7,637	N/A	3,758,992
2016	1,411,058	1,367,191	976,715	7,497	N/A	3,762,462
2017	1,378,648	1,352,888	984,298	7,523	N/A	3,723,356
2018	1,469,093	1,381,755	1,000,673	7,665	N/A	3,859,185
2019	1,440,289	1,360,877	1,002,353	7,632	N/A	3,811,150
2020	1,464,605	1,287,440	959,082	6,548	N/A	3,717,674
2021	1,470,487	1,328,439	1,000,613	6,334	N/A	3,805,874
2022	1,509,233	1,390,873	1,020,464	6,599	N/A	3,927,169
2023	1,450,025	1,408,109	1,009,256	6,864	N/A	3,874,253

(From Table 2.3.) Revenue From Ultimate Customers

(Million Dollars)

Year	Residential	Commer-cial	Industrial	Transpor-tation	Other	Total
2013	169,131	137,188	67,934	805	N/A	375,058
2014	176,178	145,253	70,855	810	N/A	393,096
2015	177,624	144,781	68,166	771	N/A	391,341
2016	177,077	142,643	66,068	722	N/A	386,509
2017	177,661	144,242	67,691	728	N/A	390,322
2018	189,033	147,425	69,218	744	N/A	406,420
2019	187,436	145,280	68,285	737	N/A	401,738
2020	192,663	136,372	63,956	648	N/A	393,639
2021	200,834	149,008	71,835	646	N/A	422,323
2022	226,990	172,600	84,895	765	N/A	485,249
2023	231,993	177,342	81,159	877	N/A	491,370

Table 1.2. Summary Statistics for the United States, 2013 - 2023

(From Table 2.4.) Average Price

(Cents per Kilowatthour)

Year	Residential	Commer-cial	Industrial	Transpor-tation	Other	Total
2013	12.13	10.26	6.89	10.55	N/A	10.07
2014	12.52	10.74	7.10	10.45	N/A	10.44
2015	12.65	10.64	6.91	10.09	N/A	10.41
2016	12.55	10.43	6.76	9.63	N/A	10.27
2017	12.89	10.66	6.88	9.68	N/A	10.48
2018	12.87	10.67	6.92	9.70	N/A	10.53
2019	13.01	10.68	6.81	9.66	N/A	10.54
2020	13.15	10.59	6.67	9.90	N/A	10.59
2021	13.66	11.22	7.18	10.20	N/A	11.10
2022	15.04	12.41	8.32	11.59	N/A	12.36
2023	16.00	12.59	8.04	12.77	N/A	12.68

(From Tables 2.12. - 2.14.) Trade

(Thousand Megawatthours)

Year	Purchases	Sales for Resale	Imports	Exports
2013	4,684,977	4,842,508	68,947	11,373
2014	4,802,227	4,908,839	66,510	13,298
2015	4,761,523	4,797,395	75,770	9,100
2016	4,723,571	4,746,967	72,716	6,214
2017	4,861,257	4,889,947	65,685	9,371
2018	5,168,874	5,127,276	58,261	13,804
2019	5,371,635	5,172,430	59,052	20,008
2020	5,224,580	5,145,459	61,449	14,135
2021	5,067,170	4,938,756	53,167	13,855
2022	5,130,963	5,105,520	56,970	15,758
2023	4,795,772	4,866,463	38,917	20,013

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

Generation at Utility Scale Facilities									
Year	Coal	Petroleum	Natural Gas	Other Fossil Gas	Nuclear	Hydro Conven-tional	Hydro Pumped Storage	Geothermal	Wind
2013	1,581,115	27,164	1,124,836	12,853	789,016	268,565	-4,681	15,775	167,840
2014	1,581,710	30,232	1,126,635	12,022	797,166	259,367	-6,174	15,877	181,655
2015	1,352,398	28,249	1,334,668	13,117	797,178	249,080	-5,091	15,918	190,719
2016	1,239,149	24,205	1,379,271	12,807	805,694	267,812	-6,686	15,826	226,993
2017	1,205,835	21,390	1,297,703	12,469	804,950	300,333	-6,495	15,927	254,303
2018	1,149,487	25,226	1,471,843	13,463	807,084	292,524	-5,905	15,967	272,667
2019	964,957	18,341	1,588,533	12,591	809,409	287,874	-5,261	15,473	295,882
2020	773,393	17,341	1,626,790	11,818	789,879	285,274	-5,321	15,890	337,938
2021	897,999	19,173	1,579,190	11,397	779,645	251,585	-5,112	15,975	378,197
2022	831,512	22,931	1,687,065	11,722	771,537	254,789	-6,028	16,087	434,297
2023	675,115	16,233	1,806,063	11,778	774,873	245,002	-5,990	16,367	421,141

Table 1.2. Summary Statistics for the United States, 2013 - 2023

Generation at Utility Scale Facilities							Small Scale Generation	Utility and Small Scale Generation	
Year	Solar Photo-voltaic	Solar Thermal	Wood and Wood-Derived Fuels	Other Biomass	Other Energy Sources	Total Utility Scale Generation	Estimated Photo-voltaic	Total Photo-voltaic	Total Solar
2013	8,121	915	40,028	20,830	13,588	4,065,964	--	8,121	9,036
2014	15,250	2,441	42,340	21,650	13,393	4,093,564	11,233	26,482	28,924
2015	21,666	3,227	41,929	21,703	13,955	4,078,714	14,139	35,805	39,032
2016	32,670	3,384	40,947	21,813	13,689	4,077,574	18,812	51,483	54,866
2017	50,018	3,269	41,124	21,610	13,008	4,035,443	23,990	74,008	77,277
2018	60,234	3,592	40,936	20,896	12,973	4,180,988	29,539	89,773	93,365
2019	68,719	3,218	38,543	18,964	13,331	4,130,574	34,957	103,676	106,894
2020	86,066	3,133	36,219	18,493	12,855	4,009,767	41,522	127,588	130,721
2021	112,335	2,924	36,463	17,790	12,140	4,109,699	49,164	161,499	164,422
2022	140,793	2,999	35,466	16,383	11,114	4,230,668	61,282	202,075	205,074
2023	162,683	2,847	31,615	15,585	9,957	4,183,271	73,406	236,090	238,937

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

Utility Scale Capacity									
Year	Coal	Petroleum	Natural Gas	Other Fossil Gas	Nuclear	Hydro Conven-tional	Hydro Pumped Storage	Geothermal	Wind
2013	303,306.3	43,523.0	425,389.7	2,107.8	99,240.3	79,200.0	22,389.3	2,607.0	59,973.4
2014	299,094.2	41,135.4	432,150.3	1,914.3	98,569.3	79,677.3	22,485.1	2,514.3	64,231.5
2015	279,719.9	36,830.3	439,425.4	2,500.4	98,672.0	79,664.2	22,575.1	2,541.5	72,573.4
2016	266,619.9	34,382.4	446,823.2	2,456.9	99,564.8	79,912.9	22,778.7	2,516.6	81,286.6
2017	256,547.3	33,306.7	456,011.6	2,375.8	99,628.9	79,794.5	22,810.4	2,483.3	87,597.5
2018	242,785.6	32,218.2	470,236.9	2,543.9	99,432.9	79,871.8	22,830.2	2,444.3	94,417.7
2019	228,657.4	31,400.3	476,567.4	2,499.2	98,119.0	79,773.1	22,778.3	2,555.4	103,571.2
2020	215,554.2	27,569.3	485,807.2	2,275.2	96,500.6	79,924.3	23,016.2	2,571.9	118,378.7
2021	209,825.7	28,204.5	491,870.2	1,888.0	95,546.4	79,909.7	23,007.7	2,596.7	132,753.4
2022	189,316.3	30,775.3	502,396.9	1,728.2	94,658.9	80,067.6	23,043.9	2,648.6	141,402.2
2023	178,441.7	29,440.7	507,535.8	1,866.8	95,712.2	79,985.3	23,147.4	2,695.8	147,444.7

Utility Scale Capacity							Small Scale Capacity	Utility and Small Scale Capacity	
Year	Solar Photo-voltaic	Solar Thermal	Wood and Wood-Derived Fuels	Other Biomass	Other Energy Sources	Total Utility Scale Capacity	Estimated Photo-voltaic	Total Photo-voltaic	Total Solar
2013	5,336.1	1,286.4	8,354.2	5,043.0	2,307.0	1,060,063.5	--	5,336.1	6,622.5
2014	8,656.6	1,666.7	8,368.1	5,166.5	2,792.6	1,068,422.2	7,326.6	15,983.2	17,649.9
2015	11,905.4	1,757.9	8,968.9	5,124.5	1,795.6	1,064,054.5	9,778.5	21,683.9	23,441.8
2016	20,192.9	1,757.9	8,936.1	5,088.8	2,015.1	1,074,332.8	12,765.1	32,958.0	34,715.9
2017	25,209.0	1,757.9	8,830.9	5,129.5	2,886.3	1,084,369.6	16,147.8	41,356.8	43,114.7
2018	30,120.5	1,757.9	8,694.6	5,038.6	2,346.7	1,094,739.8	19,547.1	49,667.6	51,425.5
2019	35,710.2	1,758.1	8,374.5	4,738.8	2,606.4	1,099,109.3	23,213.6	58,923.8	60,681.9
2020	46,306.2	1,747.9	8,326.5	4,623.3	3,079.3	1,115,680.8	27,584.8	73,891.0	75,638.9
2021	60,070.1	1,480.0	7,923.2	4,469.2	6,311.3	1,145,856.1	33,081.0	93,151.1	94,631.1
2022	71,381.5	1,480.0	7,804.5	4,322.3	10,405.6	1,161,431.8	39,828.0	111,209.5	112,689.5
2023	90,517.8	1,480.0	7,693.1	4,133.2	17,450.9	1,187,545.4	47,774.7	138,292.5	139,772.5

Table 1.2. Summary Statistics for the United States, 2013 - 2023

(From Chapter 5.) Consumption of Fossil Fuels

	For Electricity Generation				For Useful Thermal Output			
Year	Coal (Thousand Tons)	Petroleum (Thousand Barrels)	Natural Gas (Millions of Cubic Feet)	Other Fossil Gas (Millions of BTU)	Coal (Thousand Tons)	Petroleum (Thousand Barrels)	Natural Gas (Millions of Cubic Feet)	Other Fossil Gas (Millions of BTU)
2013	860,729	47,492	8,596,299	115,303	18,350	10,886	882,385	189,902
2014	853,634	53,593	8,544,387	110,010	18,107	9,513	865,146	194,088
2015	739,594	49,145	10,016,576	105,997	16,632	8,864	935,098	183,596
2016	677,371	43,671	10,170,110	73,785	16,586	7,770	1,151,866	221,835
2017	663,911	39,144	9,508,062	70,721	14,667	6,899	1,168,544	227,981
2018	636,213	46,727	10,842,129	78,757	13,813	7,261	1,205,962	274,612
2019	537,620	34,454	11,612,858	71,854	12,397	6,357	1,196,025	209,000
2020	435,351	33,391	11,928,104	69,609	10,402	5,629	1,292,624	199,076
2021	500,367	36,982	11,502,569	65,137	11,301	5,873	1,221,841	198,379
2022	471,576	43,684	12,384,086	64,285	11,356	7,769	1,206,250	194,981
2023	386,626	31,474	13,244,813	65,145	9,363	6,241	1,210,187	211,645

	Total			
Year	Coal (Thousand Tons)	Petroleum (Thousand Barrels)	Natural Gas (Millions of Cubic Feet)	Other Fossil Gas (Millions of BTU)
2013	879,078	58,378	9,478,685	305,205
2014	871,741	63,106	9,409,532	304,098
2015	756,226	58,009	10,951,674	289,593
2016	693,958	51,441	11,321,975	295,619
2017	678,578	46,043	10,676,606	298,702
2018	650,027	53,988	12,048,091	353,369
2019	550,017	40,811	12,808,883	280,854
2020	445,753	39,020	13,220,728	268,685
2021	511,669	42,855	12,724,410	263,515
2022	482,931	51,452	13,590,336	259,266
2023	395,989	37,715	14,455,000	276,790

(From Tables 6.1. and 7.1)

Year End Stocks, Annual Receipts and Average Costs

	Electric Power Sector Year End Stocks		Annual Receipts at All Electricty Generators			Average Cost of Fuel at All Electricty Generators		
Year	Coal (Thousand Tons)	Petroleum (Thousand Barrels)	Coal (Thousand Tons)	Petroleum (Thousand Barrels)	Natural Gas (Millions of Cubic Feet)	Coal (Dollars per MMBtu)	Petroleum (Dollars per MMBtu)	Natural Gas (Dollars per MMBtu)
2013	147,884	32,336	823,222	43,714	8,503,424	2.34	11.57	4.33
2014	151,548	36,459	854,560	54,488	8,431,423	2.37	11.60	5.00
2015	195,548	38,396	782,929	48,804	9,842,581	2.22	6.74	3.23
2016	162,009	34,818	650,770	37,637	10,271,180	2.11	5.24	2.87
2017	137,687	32,407	642,364	32,672	9,628,733	2.06	7.10	3.37
2018	102,793	28,674	596,215	37,341	10,894,849	2.06	9.68	3.55
2019	128,102	28,317	560,153	24,556	11,704,743	2.02	9.07	2.88
2020	131,431	27,552	439,636	24,846	11,981,552	1.92	5.98	2.40
2021	91,884	27,513	461,477	27,783	11,578,254	1.98	10.08	5.20
2022	88,861	24,404	469,718	30,792	12,436,074	2.36	16.53	7.21
2023	133,253	26,539	431,375	25,590	13,237,380	2.51	15.98	3.36

Table 1.2. Summary Statistics for the United States, 2013 - 2023

(From Table 9.1.) Emissions

(Thousand Metric Tons)

Year	Carbon Dioxide (CO2)	Sulfur Dioxide (SO2)	Nitrogen Oxides (NOx)
2013	2,173,806	3,609	2,163
2014	2,168,284	3,454	2,100
2015	2,031,452	2,548	1,824
2016	1,928,401	1,807	1,630
2017	1,849,750	1,599	1,493
2018	1,872,330	1,517	1,474
2019	1,724,873	1,267	1,342
2020	1,553,586	1,023	1,211
2021	1,651,911	1,168	1,253
2022	1,650,367	1,079	1,230
2023	1,531,554	848	1,117

(From Tables 10.1 and 10.2.) Energy Efficiency

	Savings		Incremental Costs		Life Cycle Savings		Life Cycle Costs	
Year	Energy (MWh)	Peak Demand (MW)	Incentives (thousand dollars)	Other (thousand dollars)	Energy (MWh)	Peak Demand (MW)	Incentives (thousand dollars)	Other (thousand dollars)
2013	24,653,124	11,078	2,871,654	1,944,597	249,940,645	10,956	6,028,810	3,994,889
2014	26,466,020	6,453	3,410,854	2,209,098	301,956,123	8,040	4,007,452	3,120,898
2015	26,129,489	5,952	3,448,286	2,283,300	296,346,403	7,096	4,255,368	3,710,453
2016	27,500,224	5,658	3,570,950	2,522,854	354,347,692	7,050	4,126,758	3,432,717
2017	29,899,028	6,071	3,664,407	2,297,957	374,826,892	5,951	4,849,803	3,162,995
2018	28,415,037	6,309	3,484,767	2,165,981	359,446,175	6,075	4,177,905	4,179,320
2019	28,562,529	7,135	3,657,477	2,288,028	355,216,512	6,931	4,351,926	3,655,607
2020	28,167,459	6,287	3,152,372	2,112,261	367,829,206	6,003	3,561,148	3,349,318
2021	25,760,657	5,801	3,375,805	2,240,600	300,327,216	5,631	3,678,879	2,466,541
2022	24,384,518	5,445	3,374,379	2,216,696	273,589,534	5,216	4,019,332	2,666,853
2023	24,221,289	5,761	3,850,362	2,538,191	270,451,419	5,655	4,413,487	2,919,623

(From Tables 10.3. and 10.4.) Demand Response

	Yearly Energy and Demand Savings				Program Costs	
Year	Customers	Energy (MWh)	Potential Peak Demand (MW)	Actual Peak Demand (MW)	Incentives (thousand dollars)	Other (thousand dollars)
2013	9,187,350	1,401,987	27,095	11,883	1,112,782	485,133
2014	9,265,629	1,436,449	31,191	12,683	1,217,796	447,659
2015	9,094,138	1,251,006	32,875	13,036	1,120,446	381,918
2016	9,839,355	1,336,136	35,924	11,841	1,039,890	379,707
2017	9,440,938	1,310,862	31,508	12,248	1,003,124	370,700
2018	9,752,238	1,426,211	30,895	12,522	1,189,284	360,718
2019	10,932,845	1,462,735	31,020	11,334	1,118,882	343,214
2020	11,665,663	1,509,124	29,470	10,387	987,653	326,872
2021	10,492,584	1,153,791	29,222	12,211	1,188,390	312,091
2022	10,319,774	1,292,980	30,448	13,827	1,149,280	329,053
2023	10,567,254	407,255	30,542	10,752	1,118,770	311,943

Table 1.2. Summary Statistics for the United States, 2013 - 2023

N/A = Not available.

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

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

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

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

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

Table 1.3. Supply and Disposition of Electricity, 2013 through 2023

(From Chapter 3.) Supply (Thousand Megawatthours)

	Generation						
Year	Electric Utilities	IPP (Non-CHP)	IPP (CHP)	Commercial Sector	Industrial Sector	Total Imports	Total Supply
2013	2,388,058	1,368,038	147,619	12,234	150,015	68,947	4,134,911
2014	2,382,500	1,404,256	150,205	12,520	144,083	66,510	4,160,074
2015	2,316,508	1,448,726	155,173	12,595	145,712	75,770	4,154,484
2016	2,305,887	1,459,558	153,532	12,706	145,890	72,716	4,150,290
2017	2,275,539	1,464,503	138,584	13,060	143,758	65,685	4,101,128
2018	2,339,960	1,538,235	142,682	13,312	146,798	58,261	4,239,248
2019	2,268,723	1,559,801	139,824	13,689	148,537	59,052	4,189,626
2020	2,170,316	1,546,400	136,940	13,046	143,064	61,449	4,071,216
2021	2,211,643	1,612,655	132,883	12,768	139,750	53,167	4,162,866
2022	2,229,605	1,714,779	129,503	16,737	140,043	56,970	4,287,638
2023	2,189,615	1,703,467	135,460	16,066	138,664	38,917	4,222,188

(From Chapter 2.) Disposition (Thousand Megawatthours)

	Sales to Ultimate Customers						
Year	Full-Service Providers	Energy-Only Providers	Facility Direct	Direct Use	Total Exports	Losses and Unaccounted For	Total Disposition
2013	3,147,192	559,211	18,465	143,462	11,373	255,208	4,134,911
2014	3,184,841	563,441	16,418	138,574	13,298	243,502	4,160,074
2015	3,191,425	554,944	12,624	141,168	9,100	245,224	4,154,484
2016	3,189,541	560,015	12,905	139,837	6,214	241,778	4,150,290
2017	3,149,973	559,727	13,656	140,959	9,371	227,442	4,101,128
2018	3,260,944	584,077	14,164	143,904	13,804	222,355	4,239,248
2019	3,213,129	583,431	14,591	143,270	20,008	215,198	4,189,626
2020	3,144,898	558,832	13,944	138,703	14,135	200,704	4,071,216
2021	3,215,297	575,567	15,011	138,915	13,855	204,222	4,162,866
2022	3,346,987	565,117	15,064	139,726	15,758	204,985	4,287,638
2023	3,294,907	562,573	16,773	136,918	20,013	191,003	4,222,188

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

Chapter 2

Electricity Sales

Table 2.1. Number of Ultimate Customers Served by Sector, by Provider, 2013 through 2023

Year	Residential	Commercial	Industrial	Transportation	Total
Total Electric Industry					
2013	127,777,153	17,679,562	831,790	75	146,288,580
2014	128,680,416	17,853,995	839,212	79	147,373,702
2015	129,811,718	17,985,690	835,536	78	148,633,022
2016	131,068,760	18,148,353	838,059	86	150,055,258
2017	132,579,747	18,359,427	840,329	86	151,779,589
2018	133,893,321	18,605,393	840,321	83	153,339,118
2019	135,249,616	18,694,240	954,222	83	154,898,161
2020	136,682,001	18,848,813	992,311	83	156,523,208
2021	138,308,772	19,102,304	1,022,212	82	158,433,370
2022	139,854,178	19,257,529	1,049,983	86	160,161,776
2023	141,282,713	19,381,328	1,078,249	85	161,742,375
Full-Service Providers					
2013	116,624,884	15,817,442	780,759	48	133,223,133
2014	117,230,661	15,942,158	789,803	50	133,962,672
2015	119,477,949	16,108,931	787,466	48	136,374,394
2016	120,875,548	16,197,174	788,641	53	137,861,416
2017	121,964,414	16,329,808	789,732	52	139,084,006
2018	122,767,933	16,415,207	794,548	49	139,977,737
2019	122,422,722	16,367,082	904,443	50	139,694,297
2020	123,575,349	16,466,429	940,350	52	140,982,180
2021	125,145,266	16,631,306	971,419	51	142,748,042
2022	126,936,159	16,800,418	1,001,592	53	144,738,222
2023	127,697,761	16,885,126	1,027,326	53	145,610,266
Energy-Only Providers					
2013	11,152,269	1,862,120	51,031	27	13,065,447
2014	11,449,755	1,911,837	49,409	29	13,411,030
2015	10,333,769	1,876,759	48,070	30	12,258,628
2016	10,193,212	1,951,179	49,418	33	12,193,842
2017	10,615,333	2,029,619	50,597	34	12,695,583
2018	11,125,388	2,190,186	45,773	34	13,361,381
2019	12,826,894	2,327,158	49,779	33	15,203,864
2020	13,106,652	2,382,384	51,961	31	15,541,028
2021	13,163,506	2,470,998	50,793	31	15,685,328
2022	12,918,019	2,457,111	48,391	33	15,423,554
2023	13,584,952	2,496,202	50,923	32	16,132,109

N/A = Not Available.

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

Full-Service Providers sell bundled electricity services (e.g., both energy and delivery) to end users. Full-Service Providers may purchase electricity from others (such as Independent Power Producers or other Full-Service Providers) prior to delivery. Direct sales from independent facility generators to end use consumers are reported under Full-Service Providers.

Energy-Only Providers sell energy to end use customers; incumbent utility distribution firms provide Delivery-Only Services for these customers.

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

Table 2.2. Sales and Direct Use of Electricity to Ultimate Customers by Sector, by Provider, 2013 through 2023 (Megawatthours)

Year	Residential	Commercial	Industrial	Transportation	Total	Direct Use	Total End Use
Total Electric Industry							
2013	1,394,812,129	1,337,078,777	985,351,874	7,625,041	3,724,867,821	143,461,937	3,868,329,758
2014	1,407,208,311	1,352,158,263	997,576,138	7,757,555	3,764,700,267	138,573,884	3,903,274,151
2015	1,404,096,499	1,360,751,527	986,507,732	7,636,632	3,758,992,390	141,167,519	3,900,159,909
2016	1,411,058,153	1,367,191,386	976,715,181	7,496,910	3,762,461,630	139,836,699	3,902,298,329
2017	1,378,647,742	1,352,887,694	984,297,945	7,522,593	3,723,355,974	140,959,389	3,864,315,363
2018	1,469,093,059	1,381,754,845	1,000,672,553	7,664,804	3,859,185,261	143,903,731	4,003,088,992
2019	1,440,288,909	1,360,876,555	1,002,352,849	7,632,150	3,811,150,463	143,270,338	3,954,420,801
2020	1,464,605,046	1,287,439,583	959,082,028	6,547,824	3,717,674,481	138,702,540	3,856,377,021
2021	1,470,486,882	1,328,439,498	1,000,613,490	6,334,383	3,805,874,253	138,915,068	3,944,789,321
2022	1,509,233,162	1,390,872,813	1,020,463,986	6,599,108	3,927,169,069	139,725,701	4,066,894,770
2023	1,450,025,184	1,408,108,755	1,009,255,634	6,863,789	3,874,253,362	136,918,155	4,011,171,517
Full-Service Providers							
2013	1,291,368,071	1,074,915,884	797,769,849	1,603,318	3,165,657,122	N/A	3,165,657,122
2014	1,301,458,851	1,083,806,639	814,206,541	1,787,408	3,201,259,439	N/A	3,201,259,439
2015	1,307,918,081	1,089,268,864	805,111,979	1,749,450	3,204,048,374	N/A	3,204,048,374
2016	1,316,113,416	1,091,957,177	792,712,354	1,663,475	3,202,446,422	N/A	3,202,446,422
2017	1,285,787,376	1,078,679,288	797,505,332	1,656,960	3,163,628,956	N/A	3,163,628,956
2018	1,368,032,531	1,096,773,561	808,613,290	1,688,442	3,275,107,824	N/A	3,275,107,824
2019	1,335,937,347	1,078,046,650	811,871,096	1,864,134	3,227,719,227	N/A	3,227,719,227
2020	1,355,779,174	1,023,022,155	778,352,070	1,688,885	3,158,842,284	N/A	3,158,842,284
2021	1,364,227,749	1,051,202,406	813,202,989	1,674,150	3,230,307,294	N/A	3,230,307,294
2022	1,410,779,678	1,110,251,412	839,329,783	1,690,901	3,362,051,774	N/A	3,362,051,774
2023	1,354,990,246	1,128,111,069	826,674,586	1,904,230	3,311,680,131	N/A	3,311,680,131
Energy-Only Providers							
2013	103,444,058	262,162,893	187,582,025	6,021,723	559,210,699	N/A	559,210,699
2014	105,749,460	268,351,624	183,369,597	5,970,147	563,440,828	N/A	563,440,828
2015	96,178,418	271,482,663	181,395,753	5,887,182	554,944,016	N/A	554,944,016
2016	94,944,737	275,234,209	184,002,827	5,833,435	560,015,208	N/A	560,015,208
2017	92,860,366	274,208,406	186,792,613	5,865,633	559,727,018	N/A	559,727,018
2018	101,060,528	284,981,284	192,059,263	5,976,362	584,077,437	N/A	584,077,437
2019	104,351,562	282,829,905	190,481,753	5,768,016	583,431,236	N/A	583,431,236
2020	108,825,872	264,417,428	180,729,958	4,858,939	558,832,197	N/A	558,832,197
2021	106,259,133	277,237,092	187,410,501	4,660,233	575,566,959	N/A	575,566,959
2022	98,453,484	280,621,401	181,134,203	4,908,207	565,117,295	N/A	565,117,295
2023	95,034,938	279,997,686	182,581,048	4,959,559	562,573,231	N/A	562,573,231

N/A = Not Available.
Starting in 2023- Many of the changes in the industrial and commercial sector retail sales are the result of improved reporting practices for data center and cryptocurrency mining operations.
Direct Use represents commercial and industrial facility use of onsite net electricity generation; and electricity sales or transfers to adjacent or co-located facilities for which revenue information is not available.
Pursuant to applicable Texas statutes establishing competitive electricity markets within the Electric Reliability Council of Texas (ERCOT), all customers served by Retail Energy Providers must be provided bundled energy and delivery services, so they are included under "Full-Service Providers".
Full-Service Providers sell bundled electricity services (e.g., both energy and delivery) to end users. Full-Service Providers may purchase electricity from others (such as Independent Power Producers or other Full-Service Providers) prior to delivery. Direct sales from independent facility generators to end use consumers are reported under Full-Service Providers. Energy-Only Providers sell energy to end use customers; incumbent utility distribution firms provide Delivery-Only Services for these customers.
Source: U.S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report.", Form EIA-861S, "Annual Electric Power Industry Report (Short Form)" and Form EIA-923, "Power Plant Operations Report"

Table 2.3. Revenue from Sales of Electricity to Ultimate Customers by Sector, by Provider, 2013 through 2023 (Million Dollars)

Year	Residential	Commercial	Industrial	Transportation	Total
Total Electric Industry					
2013	169,131	137,188	67,934	805	375,058
2014	176,178	145,253	70,855	810	393,096
2015	177,624	144,781	68,166	771	391,341
2016	177,077	142,643	66,068	722	386,509
2017	177,661	144,242	67,691	728	390,322
2018	189,033	147,425	69,218	744	406,420
2019	187,436	145,280	68,285	737	401,738
2020	192,663	136,372	63,956	648	393,639
2021	200,834	149,008	71,835	646	422,323
2022	226,990	172,600	84,895	765	485,249
2023	231,993	177,342	81,159	877	491,370
Full-Service Providers					
2013	155,203	108,460	54,309	167	318,138
2014	160,637	113,880	57,140	187	331,845
2015	162,857	113,225	54,787	170	331,038
2016	162,395	111,218	52,958	164	326,735
2017	162,762	112,576	54,412	171	329,921
2018	172,556	114,007	55,058	176	341,797
2019	169,867	112,036	54,782	190	336,876
2020	173,742	105,065	51,346	178	330,331
2021	181,387	113,630	57,714	183	352,913
2022	206,032	131,400	68,249	220	405,902
2023	208,850	134,213	64,748	262	408,072
Competitive Service Providers					
2013	13,928	28,729	13,625	638	56,919
2014	15,541	31,373	13,715	623	61,251
2015	14,767	31,557	13,379	601	60,303
2016	14,682	31,425	13,110	557	59,774
2017	14,899	31,666	13,279	557	60,402
2018	16,477	33,418	14,161	567	64,623
2019	17,569	33,244	13,502	547	64,863
2020	18,921	31,307	12,610	470	63,309
2021	19,447	35,379	14,121	463	69,410
2022	20,957	41,199	16,645	545	79,347
2023	23,143	43,130	16,411	615	83,298
Energy-Only Providers					
2013	7,755	17,876	10,330	451	36,412
2014	9,079	19,948	10,813	436	40,277
2015	8,428	19,657	10,298	407	38,791
2016	7,947	18,850	9,896	360	37,053
2017	7,666	18,368	9,829	363	36,227
2018	8,438	19,279	10,424	378	38,518
2019	8,718	18,436	9,738	360	37,253
2020	9,017	16,485	8,829	305	34,636
2021	8,750	18,223	10,024	295	37,292
2022	10,100	22,791	12,458	360	45,709
2023	11,640	24,381	11,966	413	48,401
Delivery-Only Providers					
2013	6,172	10,853	3,295	187	20,507
2014	6,462	11,425	2,901	187	20,975
2015	6,339	11,900	3,081	193	21,512
2016	6,735	12,575	3,213	197	22,720
2017	7,232	13,298	3,450	194	24,174
2018	8,039	14,139	3,737	190	26,105
2019	8,850	14,809	3,764	187	27,610
2020	9,904	14,823	3,781	165	28,672
2021	10,697	17,155	4,097	168	32,118
2022	10,857	18,408	4,187	185	33,638
2023	11,503	18,749	4,445	201	34,898

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

Table 2.4. Average Price of Electricity to Ultimate Customers

by End-Use Sectors 2013 through 2023 (Cents per kilowatthour)

Year	Residential	Commercial	Industrial	Transportation	Total
Total Electric Industry					
2013	12.13	10.26	6.89	10.55	10.07
2014	12.52	10.74	7.10	10.45	10.44
2015	12.65	10.64	6.91	10.09	10.41
2016	12.55	10.43	6.76	9.63	10.27
2017	12.89	10.66	6.88	9.68	10.48
2018	12.87	10.67	6.92	9.70	10.53
2019	13.01	10.68	6.81	9.66	10.54
2020	13.15	10.59	6.67	9.90	10.59
2021	13.66	11.22	7.18	10.20	11.10
2022	15.04	12.41	8.32	11.59	12.36
2023	16.00	12.59	8.04	12.77	12.68
Full-Service Providers					
2013	12.02	10.09	6.81	10.40	10.05
2014	12.34	10.51	7.02	10.49	10.37
2015	12.45	10.39	6.80	9.71	10.33
2016	12.34	10.19	6.68	9.87	10.20
2017	12.66	10.44	6.82	10.32	10.43
2018	12.61	10.39	6.81	10.44	10.44
2019	12.72	10.39	6.75	10.20	10.44
2020	12.81	10.27	6.60	10.53	10.46
2021	13.30	10.81	7.10	10.92	10.93
2022	14.60	11.84	8.13	13.02	12.07
2023	15.41	11.90	7.83	13.75	12.32
Competitive Service Providers					
2013	13.46	10.96	7.26	10.60	10.18
2014	14.70	11.69	7.48	10.44	10.87
2015	15.35	11.62	7.38	10.20	10.87
2016	15.46	11.42	7.12	9.56	10.67
2017	16.04	11.55	7.11	9.50	10.79
2018	16.30	11.73	7.37	9.49	11.06
2019	16.84	11.75	7.09	9.49	11.12
2020	17.39	11.84	6.98	9.68	11.33
2021	18.30	12.76	7.53	9.94	12.06
2022	21.29	14.68	9.19	11.10	14.04
2023	24.35	15.40	8.99	12.39	14.81
Energy-Only Providers					
2013	7.50	6.82	5.51	7.49	6.51
2014	8.59	7.43	5.90	7.31	7.15
2015	8.76	7.24	5.68	6.92	6.99
2016	8.37	6.85	5.38	6.17	6.62
2017	8.26	6.70	5.26	6.19	6.47
2018	8.35	6.77	5.43	6.32	6.59
2019	8.35	6.52	5.11	6.25	6.39
2020	8.29	6.23	4.89	6.29	6.20
2021	8.23	6.57	5.35	6.33	6.48
2022	10.26	8.12	6.88	7.33	8.09
2023	12.25	8.71	6.55	8.33	8.60
Delivery-Only Providers					
2013	5.97	4.14	1.76	3.11	3.67
2014	6.11	4.26	1.58	3.12	3.72
2015	6.59	4.38	1.70	3.28	3.88
2016	7.09	4.57	1.75	3.38	4.06
2017	7.79	4.85	1.85	3.31	4.32
2018	7.95	4.96	1.95	3.17	4.47
2019	8.48	5.24	1.98	3.24	4.73
2020	9.10	5.61	2.09	3.40	5.13
2021	10.07	6.19	2.19	3.61	5.58
2022	11.03	6.56	2.31	3.77	5.95
2023	12.10	6.70	2.43	4.06	6.20

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

Table 2.5. Sales of Electricity to Ultimate Customers: Total by End-Use Sector, 2013 - December 2023 (Thousand Megawatthours)

Period	Residential	Commercial	Industrial	Transportation	All Sectors
Annual Totals					
2013	1,394,812	1,337,079	985,352	7,625	3,724,868
2014	1,407,208	1,352,158	997,576	7,758	3,764,700
2015	1,404,096	1,360,752	986,508	7,637	3,758,992
2016	1,411,058	1,367,191	976,715	7,497	3,762,462
2017	1,378,648	1,352,888	984,298	7,523	3,723,356
2018	1,469,093	1,381,755	1,000,673	7,665	3,859,185
2019	1,440,289	1,360,877	1,002,353	7,632	3,811,150
2020	1,464,605	1,287,440	959,082	6,548	3,717,674
2021	1,470,487	1,328,439	1,000,613	6,334	3,805,874
2022	1,509,233	1,390,873	1,020,464	6,599	3,927,169
2023	1,450,025	1,408,109	1,009,256	6,864	3,874,253
Year 2021					
January	136,682	104,498	79,750	567	321,496
February	126,550	98,356	74,245	548	299,698
March	114,374	102,877	77,552	542	295,345
April	93,891	98,721	79,661	506	272,779
May	101,160	104,711	83,703	487	290,061
June	132,153	119,053	86,702	508	338,415
July	154,495	127,856	91,052	546	373,948
August	157,792	131,111	91,576	560	381,039
September	131,111	118,989	85,817	527	336,444
October	103,992	112,246	85,356	533	302,127
November	100,591	103,506	82,545	492	287,134
December	117,696	106,516	82,655	521	307,387
Year 2022					
January	140,504	113,605	83,982	565	338,656
February	125,342	103,063	76,893	566	305,863
March	111,439	108,603	83,679	579	304,300
April	97,432	104,566	82,422	513	284,933
May	110,071	113,007	86,090	529	309,697
June	136,310	121,567	88,716	513	347,106
July	164,277	133,952	90,420	566	389,214
August	160,271	135,676	93,143	536	389,626
September	129,241	124,195	86,550	558	340,544
October	99,792	111,851	85,017	535	297,196
November	103,152	106,858	81,701	546	292,258
December	131,402	113,929	81,852	593	327,776
Year 2023					
January	131,638	112,790	80,408	579	325,415
February	112,105	103,830	76,449	561	292,946
March	110,417	112,643	82,817	577	306,454
April	96,196	104,091	80,011	513	280,811
May	100,231	113,243	84,704	529	298,706
June	121,320	120,707	86,193	579	328,798
July	159,715	136,394	90,526	621	387,256
August	161,460	138,390	92,009	578	392,436
September	132,807	126,546	86,472	652	346,476
October	103,314	118,208	85,978	565	308,065
November	101,907	109,756	82,036	549	294,248
December	118,917	111,512	81,652	561	312,642

Starting in 2023- Many of the changes in the industrial and commercial sector retail sales are the result of improved reporting practices for data center and cryptocurrency mining operations.
See Technical notes for additional information on the Commercial, Industrial, and Transportation sectors. NA = Not available. See Glossary for definitions.
Geographic coverage is the 50 States and the District of Columbia. Values include energy service provider (power marketer) data.
Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-826. Utilities and energy service providers may classify commercial and industrial customers based on either NAICS codes or demands or usage falling within specified limits by rate schedule. Changes from year to year in consumer counts, sales and revenues, particularly involving the commercial and industrial consumer sectors, may result from respondent implementation of changes in the definitions of consumers, and reclassifications. Sales and net generation may not correspond exactly for a particular month for a variety of reasons (i.e., sales data may include purchases of electricity from nonutilities or imported electricity). Net generation is for the calendar month while sales and associated revenue accumulate from bills collected for periods of time (28 to 35 days) that vary dependent upon customer class and consumption occurring in and outside the calendar month.
Sources: U.S. Energy Information Administration, Form EIA-861M (formerly EIA-826), Monthly Electric Industry Power Report.
Form EIA-826, Monthly Electric Sales and Revenue Report with State Distributions Report;
Form EIA-861, Annual Electric Power Industry Report; and Form EIA-861S, Annual Electric Power Industry Report (Short Form).

Table 2.6. Revenue from Sales of Electricity to Ultimate Customers: Total by End-Use Sector, 2013 - December 2023 (Million Dollars)

Period	Residential	Commercial	Industrial	Transportation	All Sectors
Annual Totals					
2013	169,131	137,188	67,934	805	375,058
2014	176,178	145,253	70,855	810	393,096
2015	177,624	144,781	68,166	771	391,341
2016	177,077	142,643	66,068	722	386,509
2017	177,661	144,242	67,691	728	390,322
2018	189,033	147,425	69,218	744	406,420
2019	187,436	145,280	68,285	737	401,738
2020	192,663	136,372	63,956	648	393,639
2021	200,834	149,008	71,835	646	422,323
2022	226,990	172,600	84,895	765	485,249
2023	231,993	177,342	81,159	877	491,370
Year 2021					
January	17,254	10,731	5,037	54	33,076
February	16,469	11,175	5,755	54	33,454
March	15,146	11,397	5,415	53	32,011
April	12,887	10,729	5,340	51	29,007
May	14,017	11,369	5,564	49	30,998
June	18,273	13,491	6,263	53	38,080
July	21,364	14,653	6,758	56	42,832
August	21,960	15,104	6,907	58	44,028
September	18,544	13,868	6,530	59	39,001
October	14,619	12,927	6,349	55	33,950
November	14,150	11,688	6,084	51	31,973
December	16,150	11,876	5,832	55	33,914
Year 2022					
January	19,163	12,794	6,037	60	38,053
February	17,247	12,019	5,601	62	34,929
March	16,062	12,647	6,164	63	34,936
April	14,194	12,355	6,343	58	32,950
May	16,394	13,561	7,099	57	37,112
June	20,850	15,506	7,854	62	44,272
July	25,155	17,435	8,422	70	51,082
August	25,354	18,199	8,739	69	52,361
September	20,930	16,492	7,841	70	45,333
October	15,961	14,418	7,184	63	37,627
November	16,041	13,179	6,654	63	35,937
December	19,637	13,996	6,955	68	40,656
Year 2023					
January	20,371	14,228	6,578	73	41,249
February	17,910	13,013	6,125	74	37,123
March	17,716	13,923	6,460	71	38,171
April	15,492	12,572	6,009	62	34,136
May	16,176	13,769	6,472	66	36,483
June	19,515	15,248	6,987	72	41,821
July	25,336	17,603	7,563	79	50,582
August	25,693	18,102	8,185	77	52,057
September	21,602	16,538	7,291	94	45,525
October	17,022	15,047	6,883	71	39,024
November	16,501	13,646	6,394	69	36,610
December	18,659	13,653	6,210	69	38,591

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

Table 2.7. Average Price of Electricity to Ultimate Customers: Total by End-Use Sector, 2013 - December 2023 (Cents per Kilowatthour)

Period	Residential	Commercial	Industrial	Transportation	All Sectors
Annual Totals					
2013	12.13	10.26	6.89	10.55	10.07
2014	12.52	10.74	7.10	10.45	10.44
2015	12.65	10.64	6.91	10.09	10.41
2016	12.55	10.43	6.76	9.63	10.27
2017	12.89	10.66	6.88	9.68	10.48
2018	12.87	10.67	6.92	9.70	10.53
2019	13.01	10.68	6.81	9.66	10.54
2020	13.15	10.59	6.67	9.90	10.59
2021	13.66	11.22	7.18	10.20	11.10
2022	15.04	12.41	8.32	11.59	12.36
2023	16.00	12.59	8.04	12.77	12.68
Year 2021					
January	12.62	10.27	6.32	9.48	10.29
February	13.01	11.36	7.75	9.92	11.16
March	13.24	11.08	6.98	9.70	10.84
April	13.73	10.87	6.70	10.03	10.63
May	13.86	10.86	6.65	10.03	10.69
June	13.83	11.33	7.22	10.42	11.25
July	13.83	11.46	7.42	10.29	11.45
August	13.92	11.52	7.54	10.27	11.55
September	14.14	11.65	7.61	11.15	11.59
October	14.06	11.52	7.44	10.25	11.24
November	14.07	11.29	7.37	10.47	11.14
December	13.72	11.15	7.06	10.49	11.03
Year 2022					
January	13.64	11.26	7.19	10.54	11.24
February	13.76	11.66	7.28	10.95	11.42
March	14.41	11.65	7.37	10.87	11.48
April	14.57	11.82	7.70	11.26	11.56
May	14.89	12.00	8.25	10.79	11.98
June	15.30	12.75	8.85	12.10	12.75
July	15.31	13.02	9.31	12.39	13.12
August	15.82	13.41	9.38	12.90	13.44
September	16.19	13.28	9.06	12.57	13.31
October	15.99	12.89	8.45	11.81	12.66
November	15.55	12.33	8.14	11.56	12.30
December	14.94	12.28	8.50	11.48	12.40
Year 2023					
January	15.47	12.61	8.18	12.54	12.68
February	15.98	12.53	8.01	13.14	12.67
March	16.04	12.36	7.80	12.28	12.46
April	16.10	12.08	7.51	12.05	12.16
May	16.14	12.16	7.64	12.43	12.21
June	16.09	12.63	8.11	12.41	12.72
July	15.86	12.91	8.36	12.77	13.06
August	15.91	13.08	8.90	13.26	13.27
September	16.27	13.07	8.43	14.45	13.14
October	16.48	12.73	8.01	12.65	12.67
November	16.19	12.43	7.79	12.60	12.44
December	15.69	12.24	7.61	12.34	12.34

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

Table 2.8. Sales of Electricity to Ultimate Customers by End-Use Sector, by State, 2023 and 2022 (Thousand Megawatthours)

	Residential		Commercial		Industrial		Transportation		All Sectors	
Census Division and State	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
New England	46,664	48,452	49,271	49,946	14,909	15,601	484	493	111,329	114,491
Connecticut	12,553	13,191	11,374	11,626	2,579	2,780	179	171	26,685	27,767
Maine	4,919	5,091	4,017	4,129	2,400	2,655	0	0	11,336	11,876
Massachusetts	19,366	20,007	24,276	24,444	6,091	6,234	279	299	50,012	50,983
New Hampshire	4,655	4,808	4,051	4,085	1,926	1,925	0	0	10,631	10,818
Rhode Island	2,995	3,168	3,651	3,746	629	639	26	23	7,301	7,576
Vermont	2,176	2,187	1,904	1,916	1,284	1,367	0	0	5,364	5,470
Middle Atlantic	130,856	138,703	143,307	146,799	71,544	73,814	3,523	3,382	349,230	362,698
New Jersey	28,415	30,062	36,083	37,374	6,224	6,754	375	253	71,097	74,443
New York	50,113	52,227	71,422	72,206	15,174	16,178	2,713	2,600	139,422	143,211
Pennsylvania	52,328	56,413	35,802	37,219	50,147	50,883	434	530	138,711	145,045
East North Central	179,525	191,773	174,691	177,245	184,688	186,406	463	507	539,367	555,931
Illinois	43,320	46,479	45,576	47,120	41,267	41,818	415	455	130,578	135,872
Indiana	31,739	34,058	23,016	23,494	41,229	42,480	11	13	95,995	100,044
Michigan	32,534	35,035	36,534	37,114	28,515	28,486	5	4	97,589	100,639
Ohio	49,714	53,312	46,351	46,091	50,546	50,063	30	34	146,641	149,500
Wisconsin	22,219	22,888	23,213	23,427	23,131	23,560	1	1	68,564	69,876
West North Central	107,369	111,878	107,264	103,538	99,248	100,350	42	45	313,923	315,811
Iowa	14,582	15,193	12,601	12,470	27,217	26,541	0	0	54,400	54,204
Kansas	13,815	14,444	15,727	15,781	11,509	11,736	0	0	41,052	41,961
Minnesota	23,023	23,418	22,614	22,549	20,561	20,649	18	20	66,216	66,635
Missouri	34,965	37,245	29,174	29,791	12,813	13,246	24	25	76,976	80,306
Nebraska	10,671	10,984	11,261	9,619	11,640	13,242	0	0	33,571	33,844
North Dakota	5,067	5,272	10,855	8,392	12,280	11,729	0	0	28,202	25,393
South Dakota	5,246	5,323	5,033	4,936	3,227	3,208	0	0	13,506	13,467
South Atlantic	370,594	383,766	341,272	334,808	136,603	142,955	1,177	1,006	849,646	862,536
Delaware	4,932	5,210	4,149	4,299	2,001	2,030	0	0	11,082	11,539
District of Columbia	2,372	2,519	7,030	7,290	176	182	301	251	9,880	10,242
Florida	135,805	134,246	97,255	96,864	17,809	17,636	71	75	250,940	248,821
Georgia	58,412	61,140	51,405	49,541	32,068	34,210	144	144	142,029	145,035
Maryland	26,108	28,065	27,062	27,623	3,456	3,602	408	392	57,033	59,683
North Carolina	58,738	62,444	48,197	49,229	26,144	27,519	13	15	133,091	139,207
South Carolina	30,898	32,287	25,194	24,131	25,110	26,341	0	0	81,202	82,758
Virginia	43,096	46,718	73,807	68,556	15,176	16,861	240	130	132,319	132,265
West Virginia	10,234	11,137	7,174	7,275	14,663	14,574	0	0	32,071	32,986
East South Central	115,857	122,286	90,842	91,874	96,872	99,298	0	0	303,571	313,458
Alabama	31,410	32,924	22,213	22,391	31,257	31,713	0	0	84,880	87,028
Kentucky	24,553	26,840	19,303	19,674	27,367	28,825	0	0	71,223	75,339
Mississippi	18,544	18,918	14,231	14,090	15,647	15,972	0	0	48,422	48,980
Tennessee	41,351	43,604	35,094	35,719	22,601	22,789	0	0	99,046	102,112
West South Central	242,549	246,771	224,347	218,257	238,748	223,806	179	190	705,823	689,025
Arkansas	18,374	19,251	11,694	11,787	18,581	17,960	0	0	48,649	48,998
Louisiana	31,747	31,445	23,743	23,540	39,874	40,144	10	10	95,374	95,139
Oklahoma	23,818	25,479	23,117	22,212	22,044	21,796	0	0	68,979	69,487
Texas	168,611	170,596	165,792	160,719	158,249	143,906	169	180	492,820	475,401
Mountain	109,662	110,762	105,323	102,416	84,248	85,753	162	155	299,394	299,086
Arizona	38,992	38,368	32,620	31,507	14,297	14,312	10	10	85,919	84,197
Colorado	19,999	20,594	20,698	21,059	14,779	15,018	90	91	55,566	56,763
Idaho	9,793	9,964	6,842	6,837	9,039	9,401	0	0	25,674	26,201
Montana	5,756	5,894	5,063	5,020	4,686	4,670	0	0	15,505	15,584
Nevada	13,509	14,307	12,367	12,428	12,367	12,579	7	7	38,249	39,320
New Mexico	7,336	7,283	9,349	9,084	11,662	10,790	0	0	28,347	27,156
Utah	11,328	11,344	13,338	12,871	8,623	9,105	54	46	33,344	33,366
Wyoming	2,948	3,009	5,046	3,611	8,796	9,880	0	0	16,790	16,499
Pacific Contiguous	142,206	150,044	166,389	160,576	77,589	87,651	834	822	387,018	399,093
California	82,821	89,542	112,936	114,141	42,999	47,500	725	685	239,480	251,869
Oregon	20,445	20,726	23,084	16,655	14,434	18,924	23	23	57,985	56,327
Washington	38,940	39,776	30,370	29,780	20,156	21,227	86	114	89,553	90,897
Pacific Noncontiguous	4,744	4,799	5,402	5,414	4,806	4,828	0	0	14,952	15,041
Alaska	2,051	2,050	2,603	2,576	1,371	1,376	0	0	6,025	6,002
Hawaii	2,693	2,748	2,799	2,838	3,435	3,453	0	0	8,927	9,039
U.S. Total	1,450,025	1,509,233	1,408,109	1,390,873	1,009,256	1,020,464	6,864	6,599	3,874,253	3,927,169

Starting in 2023- Many of the changes in the industrial and commercial sector retail sales are the result of improved reporting practices for data center and cryptocurrency mining operations.
See Technical notes for additional information on the Commercial, Industrial, and Transportation sectors.
Displayed values of zero may represent small values that round to zero. The Excel version of this table provides additional precision which may be accessed by selecting individual cells.
Notes: - See Glossary for definitions. - Values are final.
See Technical Notes for a discussion of the sample design for the Form EIA-826.
Utilities and energy service providers may classify commercial and industrial customers based on either NAICS codes or demands or usage falling within specified limits by rate schedule.
Changes from year to year in consumer counts, sales and revenues, particularly involving the commercial and industrial consumer sectors, may result from respondent implementation of changes in the definitions of consumers, and reclassifications.
Totals may not equal sum of components because of independent rounding.
Source: U.S. Energy Information Administration, Form EIA-861, Annual Electric Power Industry Report.

Table 2.9. Revenue from Sales of Electricity to Ultimate Customers by End-Use Sector, by State, 2023 and 2022 (Million Dollars)

Census Division and State	Residential		Commercial		Industrial		Transportation		All Sectors	
	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
New England	13,407	11,981	9,570	9,057	2,357	2,344	63	56	25,396	23,438
Connecticut	3,751	3,246	2,273	2,156	405	419	39	31	6,468	5,852
Maine	1,349	1,143	718	636	295	293	0	0	2,362	2,072
Massachusetts	5,734	5,196	4,763	4,562	1,089	1,063	20	21	11,607	10,843
New Hampshire	1,310	1,224	827	763	304	292	0	0	2,441	2,279
Rhode Island	809	735	645	608	119	115	5	4	1,579	1,462
Vermont	453	436	343	331	145	162	0	0	940	930
Middle Atlantic	25,650	25,558	21,951	22,266	5,656	6,218	516	434	53,774	54,476
New Jersey	5,031	5,032	5,052	5,138	727	818	46	33	10,856	11,021
New York	11,148	11,532	12,866	13,133	1,042	1,221	426	360	25,482	26,246
Pennsylvania	9,472	8,995	4,033	3,995	3,886	4,178	44	41	17,436	17,209
East North Central	29,072	29,460	20,855	20,575	14,670	15,360	33	38	64,630	65,433
Illinois	6,804	7,274	5,124	5,332	3,385	3,585	29	33	15,342	16,223
Indiana	4,741	4,970	2,889	3,020	3,399	3,674	1	2	11,031	11,666
Michigan	6,130	6,256	4,895	4,658	2,326	2,372	1	1	13,351	13,286
Ohio	7,647	7,384	4,984	4,790	3,554	3,730	2	3	16,187	15,906
Wisconsin	3,750	3,576	2,963	2,775	2,007	2,000	0	0	8,719	8,351
West North Central	13,979	14,133	11,065	10,813	7,715	7,843	5	5	32,764	32,793
Iowa	1,940	1,997	1,302	1,316	1,880	1,875	0	0	5,122	5,187
Kansas	1,849	2,021	1,707	1,817	879	974	0	0	4,435	4,812
Minnesota	3,392	3,336	2,801	2,773	1,893	1,911	2	2	8,088	8,023
Missouri	4,398	4,374	2,958	2,846	1,012	1,015	2	2	8,370	8,237
Nebraska	1,195	1,186	986	848	888	955	0	0	3,070	2,989
North Dakota	558	576	801	709	905	854	0	0	2,263	2,139
South Dakota	647	644	511	504	259	258	0	0	1,416	1,405
South Atlantic	53,552	51,579	36,933	36,248	10,358	11,136	120	95	100,963	99,057
Delaware	776	714	491	472	157	179	0	0	1,424	1,365
District of Columbia	390	357	1,191	1,137	19	14	30	21	1,630	1,530
Florida	20,652	18,664	11,621	10,842	1,673	1,615	8	8	33,953	31,129
Georgia	7,997	8,438	5,498	5,995	2,206	2,960	11	13	15,711	17,406
Maryland	4,333	4,058	3,456	3,495	344	360	46	37	8,179	7,950
North Carolina	7,593	7,253	4,662	4,308	1,868	1,801	1	1	14,125	13,363
South Carolina	4,228	4,387	2,618	2,620	1,677	1,878	0	0	8,523	8,885
Virginia	6,146	6,233	6,604	6,621	1,353	1,347	25	14	14,128	14,215
West Virginia	1,438	1,473	791	758	1,061	982	0	0	3,291	3,214
East South Central	15,194	15,845	11,020	11,214	6,511	7,146	0	0	32,725	34,205
Alabama	4,594	4,691	2,924	2,946	2,221	2,447	0	0	9,739	10,085
Kentucky	3,106	3,466	2,196	2,318	1,793	2,136	0	0	7,096	7,920
Mississippi	2,453	2,349	1,760	1,656	1,089	1,071	0	0	5,302	5,076
Tennessee	5,041	5,339	4,140	4,293	1,408	1,492	0	0	10,589	11,124
West South Central	33,184	33,032	20,478	20,853	15,441	16,129	14	14	69,116	70,028
Arkansas	2,251	2,321	1,209	1,209	1,276	1,325	0	0	4,736	4,855
Louisiana	3,666	4,067	2,481	2,809	2,345	3,027	1	1	8,494	9,905
Oklahoma	2,877	3,170	2,158	2,296	1,380	1,517	0	0	6,415	6,984
Texas	24,389	23,475	14,629	14,539	10,441	10,259	12	12	49,471	48,285
Mountain	15,003	14,162	11,525	10,635	6,604	6,482	20	16	33,152	31,296
Arizona	5,466	4,995	3,845	3,404	1,159	1,126	1	1	10,471	9,525
Colorado	2,859	2,922	2,409	2,440	1,256	1,296	12	9	6,537	6,667
Idaho	1,083	1,034	601	565	648	631	0	0	2,331	2,230
Montana	722	668	613	536	366	350	0	0	1,700	1,553
Nevada	2,252	1,972	1,473	1,261	1,281	1,069	1	1	5,006	4,302
New Mexico	1,016	1,008	999	1,006	671	707	0	0	2,685	2,722
Utah	1,269	1,230	1,135	1,079	603	623	7	6	3,012	2,938
Wyoming	338	334	451	345	621	681	0	0	1,409	1,359
Pacific Contiguous	31,320	29,583	32,310	29,282	10,379	10,715	106	108	74,114	69,688
California	24,440	23,137	27,007	24,896	8,014	8,117	94	94	59,555	56,244
Oregon	2,603	2,368	2,291	1,558	1,085	1,289	3	2	5,982	5,217
Washington	4,277	4,079	3,012	2,827	1,279	1,309	9	11	8,577	8,227
Pacific Noncontiguous	1,632	1,656	1,635	1,657	1,468	1,521	0	0	4,735	4,834
Alaska	490	474	543	517	256	254	0	0	1,290	1,244
Hawaii	1,142	1,183	1,092	1,140	1,212	1,268	0	0	3,446	3,590
U.S. Total	231,993	226,990	177,342	172,600	81,159	84,895	877	765	491,370	485,249

See Technical notes for additional information on the Commercial, Industrial, and Transportation sectors.
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Totals may not equal sum of components because of independent rounding.
Source: U.S. Energy Information Administration, Form EIA-861, Annual Electric Power Industry Report.

Table 2.10. Average Price of Electricity to Ultimate Customers by End-Use Sector, by State, 2023 and 2022 (Cents per Kilowatthour)

	Residential		Commercial		Industrial		Transportation		All Sectors	
Census Division and State	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
New England	28.73	24.73	19.42	18.13	15.81	15.02	13.01	11.37	22.81	20.47
Connecticut	29.88	24.61	19.99	18.54	15.69	15.07	21.55	18.07	24.24	21.08
Maine	27.42	22.44	17.88	15.40	12.30	11.03	--	--	20.84	17.44
Massachusetts	29.61	25.97	19.62	18.67	17.88	17.06	7.15	7.08	23.21	21.27
New Hampshire	28.15	25.46	20.40	18.69	15.76	15.15	--	--	22.96	21.07
Rhode Island	27.02	23.21	17.68	16.23	18.98	17.96	17.29	17.52	21.62	19.30
Vermont	20.82	19.93	18.00	17.29	11.27	11.88	--	--	17.53	16.99
Middle Atlantic	19.60	18.43	15.32	15.17	7.91	8.42	14.65	12.82	15.40	15.02
New Jersey	17.70	16.74	14.00	13.75	11.68	12.12	12.22	12.90	15.27	14.80
New York	22.24	22.08	18.01	18.19	6.87	7.55	15.70	13.84	18.28	18.33
Pennsylvania	18.10	15.94	11.26	10.73	7.75	8.21	10.21	7.81	12.57	11.86
East North Central	16.19	15.36	11.94	11.61	7.94	8.24	7.08	7.51	11.98	11.77
Illinois	15.71	15.65	11.24	11.32	8.20	8.57	6.90	7.21	11.75	11.94
Indiana	14.94	14.59	12.55	12.86	8.24	8.65	12.73	13.03	11.49	11.66
Michigan	18.84	17.86	13.40	12.55	8.16	8.33	13.67	12.35	13.68	13.20
Ohio	15.38	13.85	10.75	10.39	7.03	7.45	5.91	8.54	11.04	10.64
Wisconsin	16.88	15.62	12.76	11.85	8.68	8.49	17.21	16.55	12.72	11.95
West North Central	13.02	12.63	10.32	10.44	7.77	7.82	10.89	10.44	10.44	10.38
Iowa	13.31	13.15	10.33	10.55	6.91	7.06	--	--	9.42	9.57
Kansas	13.38	13.99	10.85	11.51	7.64	8.30	--	--	10.80	11.47
Minnesota	14.73	14.25	12.39	12.30	9.20	9.25	12.35	12.29	12.21	12.04
Missouri	12.58	11.74	10.14	9.55	7.90	7.67	9.77	8.97	10.87	10.26
Nebraska	11.20	10.79	8.76	8.82	7.63	7.21	--	--	9.14	8.83
North Dakota	11.01	10.92	7.38	8.45	7.37	7.28	--	--	8.03	8.42
South Dakota	12.32	12.09	10.16	10.21	8.01	8.04	--	--	10.49	10.44
South Atlantic	14.45	13.44	10.82	10.83	7.58	7.79	10.23	9.41	11.88	11.48
Delaware	15.73	13.71	11.83	10.98	7.85	8.79	--	--	12.85	11.83
District of Columbia	16.45	14.18	16.94	15.60	10.85	7.74	9.94	8.50	16.50	14.94
Florida	15.21	13.90	11.95	11.19	9.39	9.16	11.33	10.19	13.53	12.51
Georgia	13.69	13.80	10.70	12.10	6.88	8.65	7.29	9.33	11.06	12.00
Maryland	16.60	14.46	12.77	12.65	9.94	10.01	11.23	9.45	14.34	13.32
North Carolina	12.93	11.62	9.67	8.75	7.15	6.54	8.86	7.61	10.61	9.60
South Carolina	13.68	13.59	10.39	10.86	6.68	7.13	--	--	10.50	10.74
Virginia	14.26	13.34	8.95	9.66	8.92	7.99	10.42	10.85	10.68	10.75
West Virginia	14.05	13.23	11.03	10.42	7.24	6.74	--	--	10.26	9.74
East South Central	13.11	12.96	12.13	12.21	6.72	7.20	--	--	10.78	10.91
Alabama	14.63	14.25	13.16	13.16	7.10	7.72	--	--	11.47	11.59
Kentucky	12.65	12.91	11.38	11.78	6.55	7.41	--	--	9.96	10.51
Mississippi	13.23	12.41	12.37	11.76	6.96	6.71	--	--	10.95	10.36
Tennessee	12.19	12.25	11.80	12.02	6.23	6.55	--	--	10.69	10.89
West South Central	13.68	13.39	9.13	9.55	6.47	7.21	7.53	7.13	9.79	10.16
Arkansas	12.25	12.05	10.34	10.26	6.87	7.38	14.93	15.48	9.73	9.91
Louisiana	11.55	12.93	10.45	11.93	5.88	7.54	11.00	12.45	8.91	10.41
Oklahoma	12.08	12.44	9.34	10.34	6.26	6.96	--	--	9.30	10.05
Texas	14.46	13.76	8.82	9.05	6.60	7.13	7.30	6.82	10.04	10.16
Mountain	13.68	12.79	10.94	10.38	7.84	7.56	12.69	10.62	11.07	10.46
Arizona	14.02	13.02	11.79	10.80	8.11	7.86	10.01	9.62	12.19	11.31
Colorado	14.30	14.19	11.64	11.58	8.50	8.63	13.23	9.91	11.76	11.75
Idaho	11.05	10.37	8.78	8.27	7.17	6.71	--	--	9.08	8.51
Montana	12.54	11.33	12.11	10.68	7.80	7.49	--	--	10.97	9.97
Nevada	16.67	13.78	11.91	10.14	10.36	8.50	12.75	9.74	13.09	10.94
New Mexico	13.85	13.84	10.68	11.07	5.75	6.56	--	--	9.47	10.02
Utah	11.20	10.84	8.51	8.39	6.99	6.84	12.28	12.38	9.03	8.80
Wyoming	11.46	11.09	8.94	9.55	7.06	6.89	--	--	8.39	8.24
Pacific Contiguous	22.02	19.72	19.42	18.24	13.38	12.22	12.67	13.15	19.15	17.46
California	29.51	25.84	23.91	21.81	18.64	17.09	13.01	13.76	24.87	22.33
Oregon	12.73	11.42	9.92	9.35	7.52	6.81	11.41	10.45	10.32	9.26
Washington	10.98	10.26	9.92	9.49	6.35	6.17	10.17	10.05	9.58	9.05
Pacific Noncontiguous	34.40	34.51	30.28	30.61	30.55	31.50	--	--	31.67	32.14
Alaska	23.90	23.10	20.87	20.06	18.70	18.43	--	--	21.41	20.73
Hawaii	42.39	43.03	39.03	40.18	35.28	36.71	--	--	38.60	39.72
U.S. Total	16.00	15.04	12.59	12.41	8.04	8.32	12.77	11.59	12.68	12.36

See Technical notes for additional information on the Commercial, Industrial, and Transportation sectors.
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Totals may not equal sum of components because of independent rounding.
Source: U.S. Energy Information Administration, Form EIA-861, Annual Electric Power Industry Report.

Table 2.11. Number of Ultimate Customers by Sector by State, 2022 and 2023

Census Division and State	Residential		Commercial		Industrial		Transportation		All Sectors	
	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
New England	**6,579,669**	**6,564,756**	**943,130**	**930,147**	**21,474**	**21,703**	**6**	**6**	**7,544,279**	**7,516,612**
Connecticut	1,541,895	1,536,217	156,310	155,784	3,936	3,976	3	3	1,702,144	1,695,980
Maine	731,969	728,053	108,745	106,211	2,040	2,155	--	--	842,754	836,419
Massachusetts	2,886,203	2,888,583	443,991	435,521	10,510	10,524	2	2	3,340,706	3,334,630
New Hampshire	647,007	642,870	111,302	110,915	3,125	3,167	--	--	761,434	756,952
Rhode Island	450,190	448,184	60,297	60,133	1,606	1,628	1	1	512,094	509,946
Vermont	322,405	320,849	62,485	61,583	257	253	--	--	385,147	382,685
Middle Atlantic	**16,603,564**	**16,526,130**	**2,455,311**	**2,430,244**	**33,989**	**34,111**	**21**	**22**	**19,092,885**	**18,990,507**
New Jersey	3,702,963	3,675,569	539,427	532,838	11,246	11,427	8	7	4,253,644	4,219,841
New York	7,384,444	7,346,236	1,180,841	1,166,974	7,178	7,333	8	8	8,572,471	8,520,551
Pennsylvania	5,516,157	5,504,325	735,043	730,432	15,565	15,351	5	7	6,266,770	6,250,115
East North Central	**20,833,849**	**20,709,073**	**2,547,590**	**2,556,100**	**55,099**	**55,261**	**11**	**12**	**23,436,549**	**23,320,446**
Illinois	5,394,659	5,376,734	626,171	636,011	5,541	5,486	4	4	6,026,375	6,018,235
Indiana	3,018,496	2,988,151	371,773	370,420	19,291	19,116	1	1	3,409,561	3,377,688
Michigan	4,496,300	4,475,317	559,552	554,487	5,589	5,689	2	2	5,061,443	5,035,495
Ohio	5,110,814	5,082,414	624,926	631,665	19,087	19,383	2	3	5,754,829	5,733,465
Wisconsin	2,813,580	2,786,457	365,168	363,517	5,591	5,587	2	2	3,184,341	3,155,563
West North Central	**9,915,499**	**9,818,380**	**1,517,734**	**1,509,487**	**131,428**	**129,706**	**3**	**3**	**11,564,664**	**11,457,576**
Iowa	1,436,037	1,426,164	250,532	245,328	9,451	9,458	--	--	1,696,020	1,680,950
Kansas	1,306,777	1,297,400	245,544	245,577	24,106	24,109	--	--	1,576,427	1,567,086
Minnesota	2,551,574	2,523,110	308,285	308,250	9,351	9,234	1	1	2,869,211	2,840,595
Missouri	2,906,438	2,882,259	399,085	398,806	9,831	9,883	2	2	3,315,356	3,290,950
Nebraska	893,123	877,619	160,540	158,569	63,824	63,679	--	--	1,117,487	1,099,867
North Dakota	395,002	392,470	76,700	76,800	10,628	9,142	--	--	482,330	478,412
South Dakota	426,548	419,358	77,048	76,157	4,237	4,201	--	--	507,833	499,716
South Atlantic	**30,090,394**	**29,674,453**	**4,000,173**	**3,967,438**	**88,038**	**85,507**	**13**	**13**	**34,178,618**	**33,727,411**
Delaware	468,358	461,484	59,839	59,162	876	868	--	--	529,073	521,514
District of Columbia	312,982	306,464	27,387	27,136	1	1	3	3	340,373	333,604
Florida	10,222,476	10,066,753	1,292,988	1,282,170	26,085	23,673	2	2	11,541,551	11,372,598
Georgia	4,703,796	4,648,898	609,978	607,578	24,366	24,135	1	1	5,338,141	5,280,612
Maryland	2,432,423	2,415,655	260,822	260,799	9,226	9,156	5	5	2,702,476	2,685,615
North Carolina	4,951,380	4,855,658	746,025	739,530	9,082	9,152	1	1	5,706,488	5,604,341
South Carolina	2,518,272	2,472,265	410,802	403,966	3,634	3,635	--	--	2,932,708	2,879,866
Virginia	3,615,939	3,583,371	441,468	437,391	3,673	3,663	1	1	4,061,081	4,024,426
West Virginia	864,768	863,905	150,864	149,706	11,095	11,224	--	--	1,026,727	1,024,835
East South Central	**8,853,035**	**8,762,386**	**1,484,981**	**1,472,328**	**24,411**	**24,576**	**--**	**--**	**10,362,427**	**10,259,290**
Alabama	2,353,274	2,329,559	384,122	380,269	7,239	7,223	--	--	2,744,635	2,717,051
Kentucky	2,057,705	2,045,252	323,183	318,516	5,136	5,419	--	--	2,386,024	2,369,187
Mississippi	1,335,278	1,329,184	246,032	245,252	11,023	10,911	--	--	1,592,333	1,585,347
Tennessee	3,106,778	3,058,391	531,644	528,291	1,013	1,023	--	--	3,639,435	3,587,705
West South Central	**17,711,160**	**17,476,183**	**2,400,621**	**2,378,193**	**419,810**	**397,549**	**6**	**6**	**20,531,597**	**20,251,931**
Arkansas	1,459,802	1,445,528	205,526	203,432	36,612	35,670	2	2	1,701,942	1,684,632
Louisiana	2,137,199	2,128,425	300,640	299,424	18,790	19,695	1	1	2,456,630	2,447,545
Oklahoma	1,857,151	1,839,083	304,896	300,361	19,874	20,064	--	--	2,181,921	2,159,508
Texas	12,257,008	12,063,147	1,589,559	1,574,976	344,534	322,120	3	3	14,191,104	13,960,246
Mountain	**10,725,657**	**10,541,628**	**1,502,127**	**1,486,495**	**100,935**	**98,732**	**6**	**5**	**12,328,725**	**12,126,860**
Arizona	3,068,552	3,013,393	344,059	340,035	7,614	7,808	2	2	3,420,227	3,361,238
Colorado	2,517,452	2,480,555	397,348	390,861	15,358	15,078	2	1	2,930,160	2,886,495
Idaho	845,896	826,329	121,675	119,688	29,322	29,155	--	--	996,893	975,172
Montana	549,248	540,745	116,235	114,645	12,019	11,917	--	--	677,502	667,307
Nevada	1,288,498	1,270,155	174,042	173,757	4,784	3,386	1	1	1,467,325	1,447,299
New Mexico	928,216	921,109	147,632	147,142	9,339	9,278	--	--	1,085,187	1,077,529
Utah	1,244,066	1,207,878	142,545	141,960	10,719	10,380	1	1	1,397,331	1,360,219
Wyoming	283,729	281,464	58,591	58,407	11,780	11,730	--	--	354,100	351,601
Pacific Contiguous	**19,227,491**	**19,041,965**	**2,412,748**	**2,410,589**	**201,091**	**200,867**	**19**	**19**	**21,841,349**	**21,653,440**
California	14,063,972	13,942,174	1,766,915	1,767,719	148,000	147,928	12	12	15,978,899	15,857,833
Oregon	1,843,683	1,826,286	244,410	244,617	26,545	26,560	2	2	2,114,640	2,097,465
Washington	3,319,836	3,273,505	401,423	398,253	26,546	26,379	5	5	3,747,810	3,698,142
Pacific Noncontiguous	**742,395**	**739,224**	**116,913**	**116,508**	**1,974**	**1,971**	**--**	**--**	**861,282**	**857,703**
Alaska	296,192	294,370	56,796	56,372	1,161	1,149	--	--	354,149	351,891
Hawaii	446,203	444,854	60,117	60,136	813	822	--	--	507,133	505,812
U.S. Total	**141,282,713**	**139,854,178**	**19,381,328**	**19,257,529**	**1,078,249**	**1,049,983**	**85**	**86**	**161,742,375**	**160,161,776**

Table 2.12. Electric Power Industry - Electricity Purchases, 2013 through 2023 (Thousand Megawatthours)

Year	Electric Utilities	Energy-Only Providers	Independent Power Producers	Combined Heat and Power	U.S. Total
2013	2,099,528	2,482,928	16,101	86,420	4,684,977
2014	2,145,378	2,559,875	17,000	79,975	4,802,227
2015	2,101,788	2,506,185	54,046	99,505	4,761,523
2016	2,089,540	2,438,204	8,520	187,307	4,723,571
2017	2,102,971	2,552,146	9,372	196,768	4,861,257
2018	2,187,615	2,713,174	8,730	259,354	5,168,874
2019	2,231,042	2,778,349	9,391	352,854	5,371,635
2020	2,146,608	2,792,233	9,458	276,281	5,224,580
2021	2,258,989	2,541,686	5,950	260,545	5,067,170
2022	2,407,972	2,436,300	11,634	275,057	5,130,963
2023	2,247,163	2,329,456	19,670	199,483	4,795,772

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

Table 2.13. Electric Power Industry - Electricity Sales for Resale, 2013 through 2023 (Thousand Megawatthours)

Year	Electric Utilities	Energy-Only Providers	Independent Power Producers	Combined Heat and Power	U.S. Total
2013	1,472,124	2,036,460	1,298,528	35,396	4,842,508
2014	1,485,964	2,081,235	1,301,724	39,916	4,908,839
2015	1,393,396	2,033,705	1,331,181	39,113	4,797,395
2016	1,391,873	1,947,036	1,372,928	35,131	4,746,967
2017	1,396,838	2,066,455	1,389,083	37,571	4,889,947
2018	1,431,952	2,193,414	1,463,236	38,674	5,127,276
2019	1,402,200	2,259,028	1,466,561	44,641	5,172,430
2020	1,364,031	2,284,266	1,457,591	39,572	5,145,459
2021	1,481,890	2,020,031	1,402,064	34,772	4,938,756
2022	1,526,810	1,909,697	1,626,033	42,980	5,105,520
2023	1,394,671	1,785,875	1,638,113	47,804	4,866,463

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

Table 2.14. Electric Power Industry - U.S. Electricity Imports from and Electricity Exports to Canada and Mexico, 2013-2023 (Megawatthours)

	Canada		Mexico		U.S. Total	
Year	Imports from	Exports to	Imports from	Exports to	Imports	Exports
2013	62,739,038	10,694,907	6,207,597	678,300	68,946,635	11,373,207
2014	59,369,660	12,860,889	7,140,624	437,364	66,510,284	13,298,253
2015	68,462,277	8,707,873	7,308,192	392,016	75,770,469	9,099,889
2016	65,173,818	2,682,381	7,542,445	3,531,636	72,716,263	6,214,017
2017	59,909,320	3,312,798	5,775,597	6,058,005	65,684,917	9,370,803
2018	51,494,627	7,290,070	6,765,975	6,514,422	58,260,602	13,804,492
2019	52,309,254	13,532,067	6,743,207	6,475,965	59,052,461	20,008,032
2020	57,001,240	9,855,106	4,447,623	4,279,573	61,448,863	14,134,679
2021	48,140,438	10,067,396	5,026,570	3,788,022	53,167,008	13,855,418
2022	52,187,403	10,651,209	4,782,900	5,107,113	56,970,303	15,758,322
2023	33,225,087	18,384,320	5,692,121	1,628,726	38,917,208	20,013,046

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

Sources: 2016-2023, U.S. Energy Information Administration, Form EIA-111, "Quarterly Electricity Imports and Exports Report"; 2006-2015 data, National Energy Board of Canada; FERC 714, Annual Electric Balancing Authority Area and Planning Report; California Energy Commission; and EIA estimates.

Chapter 3

Net Generation

Table 3.1.A. Net Generation by Energy Source: Total (All Sectors), 2013 - 2023
(Thousand Megawatthours)

	Generation at Utility Scale Facilities												Small Scale Generation	Net Generation From Utility and Small Scale Facilities	
Period	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Fossil Gas	Nuclear	Hydroelectric Conventional	Solar	Renewable Sources Excluding Hydroelectric and Solar	Hydroelectric Pumped Storage	Other	Total Generation at Utility Scale Facilities	Estimated Solar Photovoltaic	Estimated Total Solar Photovoltaic	Estimated Total Solar
Annual Totals															
2013	1,581,115	13,820	13,344	1,124,836	12,853	789,016	268,565	9,036	244,472	-4,681	13,588	4,065,964	N/A	N/A	N/A
2014	1,581,710	18,276	11,955	1,126,635	12,022	797,166	259,367	17,691	261,522	-6,174	13,393	4,093,564	11,233	26,482	28,924
2015	1,352,398	17,372	10,877	1,334,668	13,117	797,178	249,080	24,893	270,268	-5,091	13,955	4,078,714	14,139	35,805	39,032
2016	1,239,149	13,008	11,197	1,379,271	12,807	805,694	267,812	36,054	305,579	-6,686	13,689	4,077,574	18,812	51,483	54,866
2017	1,205,835	12,414	8,976	1,297,703	12,469	804,950	300,333	53,287	332,963	-6,495	13,008	4,035,443	23,990	74,008	77,277
2018	1,149,487	16,245	8,981	1,471,843	13,463	807,084	292,524	63,825	350,467	-5,905	12,973	4,180,988	29,539	89,773	93,365
2019	964,957	11,522	6,819	1,588,533	12,591	809,409	287,874	71,937	368,862	-5,261	13,331	4,130,574	34,957	103,676	106,894
2020	773,393	9,662	7,679	1,626,790	11,818	789,879	285,274	89,199	408,539	-5,321	12,855	4,009,767	41,522	127,588	130,721
2021	897,999	11,663	7,511	1,579,190	11,397	779,645	251,585	115,258	448,424	-5,112	12,140	4,109,699	49,164	161,499	164,422
2022	831,512	15,805	7,126	1,687,065	11,722	771,537	254,789	143,792	502,234	-6,028	11,114	4,230,668	61,282	202,075	205,074
2023	675,115	11,397	4,836	1,806,063	11,778	774,873	245,002	165,530	484,708	-5,990	9,957	4,183,271	73,406	236,090	238,937
Year 2021															
January	81,240	936	702	126,530	1,035	71,732	24,560	5,559	36,231	-424	1,109	349,210	2,750	8,229	8,309
February	87,470	1,589	660	111,183	820	62,954	20,137	6,330	32,261	-425	921	323,900	2,939	9,135	9,270
March	61,904	791	645	107,019	860	63,708	21,220	9,296	45,129	-236	1,060	311,397	4,158	13,196	13,454
April	53,956	802	422	107,416	871	57,092	19,389	10,892	41,696	-197	969	293,308	4,610	15,168	15,502
May	63,873	835	534	114,676	914	63,394	23,309	12,457	39,602	-416	1,003	320,181	5,063	17,127	17,520
June	87,265	932	453	149,376	974	66,070	23,454	12,197	32,506	-376	1,006	373,856	5,107	16,983	17,304
July	101,537	883	681	170,189	1,046	68,832	22,098	12,192	27,811	-685	1,041	405,624	5,192	17,127	17,384
August	101,855	1,197	747	172,716	1,031	69,471	20,328	11,967	33,192	-670	1,031	412,865	4,924	16,551	16,891
September	78,877	950	638	138,214	984	64,520	17,022	11,214	34,783	-434	975	347,744	4,370	15,282	15,584
October	62,572	894	655	131,852	1,062	58,401	17,133	9,268	37,809	-427	982	320,202	3,821	12,866	13,089
November	57,426	887	783	122,433	871	62,749	19,373	7,795	41,400	-377	970	314,310	3,259	10,866	11,054
December	60,025	968	591	127,586	930	70,720	23,562	6,091	46,004	-445	1,073	337,104	2,970	8,969	9,061
Year 2022															
January	87,588	3,105	564	134,948	1,005	70,577	24,198	7,822	43,424	-493	1,029	373,766	3,376	11,065	11,198
February	70,966	1,114	621	114,945	886	61,852	21,321	9,027	43,090	-412	900	324,311	3,717	12,585	12,744
March	61,019	959	500	112,477	953	63,154	24,436	11,694	48,677	-318	979	324,530	5,121	16,560	16,815
April	55,329	749	528	105,506	921	55,290	20,066	13,402	51,528	-265	941	303,994	5,671	18,751	19,073
May	62,532	834	596	127,091	1,036	63,382	23,359	15,120	47,729	-467	971	342,184	6,236	20,985	21,356
June	73,463	897	683	155,517	987	65,715	25,988	16,052	39,461	-589	959	379,134	6,229	21,910	22,281
July	86,415	1,045	488	189,042	1,083	68,857	24,567	15,765	35,499	-768	982	422,975	6,438	21,915	22,203
August	85,215	1,001	576	188,860	1,008	68,897	21,133	14,502	30,657	-640	924	412,133	6,194	20,418	20,697
September	64,998	942	648	156,948	987	63,733	17,026	13,286	32,840	-598	845	351,655	5,544	18,545	18,830
October	54,228	952	610	133,492	968	58,945	14,367	11,942	38,036	-434	844	313,949	5,022	16,674	16,964
November	56,377	911	568	127,523	911	62,041	17,898	8,403	46,779	-495	864	321,780	4,035	12,289	12,438
December	73,381	3,296	744	140,716	978	69,094	20,430	6,777	44,514	-548	876	360,257	3,698	10,377	10,475
Year 2023															
January	61,357	983	421	138,339	945	70,870	22,754	7,806	44,039	-620	890	347,784	3,989	11,711	11,795
February	46,374	1,233	395	124,892	891	60,807	19,961	9,435	46,464	-456	779	310,776	4,387	13,713	13,822
March	50,096	924	314	133,558	1,028	62,820	21,331	12,213	49,008	-519	791	331,565	6,005	18,064	18,218
April	40,233	868	301	119,878	866	56,662	19,820	15,062	47,623	-290	745	301,768	6,742	21,509	21,803
May	43,804	880	330	137,296	1,011	61,155	27,651	17,281	37,566	-459	858	327,374	7,543	24,525	24,824
June	57,772	878	389	161,851	974	64,819	21,572	17,834	32,725	-551	839	359,101	7,405	24,874	25,239
July	78,903	964	651	199,289	1,046	69,888	21,978	18,894	33,391	-656	873	425,220	7,720	26,234	26,614
August	78,112	958	651	199,000	1,088	69,744	21,293	17,744	33,879	-653	866	422,682	7,504	24,938	25,248
September	59,959	894	592	166,151	983	65,560	16,916	15,583	33,467	-553	776	360,328	6,604	21,894	22,187
October	50,933	990	293	140,655	924	61,436	15,673	14,121	41,061	-372	838	326,549	6,076	19,910	20,196
November	51,209	906	179	135,358	959	62,258	17,026	10,446	41,772	-347	845	320,610	4,938	15,218	15,384
December	56,365	920	318	149,798	1,062	68,854	19,028	9,113	43,713	-514	857	349,513	4,494	13,500	13,606

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

Table 3.1.B. Net Generation from Renewable Sources: Total (All Sectors), 2013 - 2023
(Thousand Megawatthours)

	Generation at Utility Scale Facilities										Small Scale Generation	Generation From Utility and Small Scale Facilities	
Period	Wind	Solar Photovoltaic	Solar Thermal	Wood and Wood-Derived Fuels	Landfill Gas	Biogenic Municipal Solid Waste	Other Waste Biomass	Geothermal	Conventional Hydroelectric	Total Renewable Generation at Utility Scale Facilities	Estimated Solar Photovoltaic	Estimated Total Solar Photovoltaic	Estimated Total Solar
Annual Totals													
2013	167,840	8,121	915	40,028	10,658	7,186	2,986	15,775	268,565	522,073	N/A	N/A	N/A
2014	181,655	15,250	2,441	42,340	11,220	7,228	3,202	15,877	259,367	538,579	11,233	26,482	28,924
2015	190,719	21,666	3,227	41,929	11,291	7,211	3,201	15,918	249,080	544,241	14,139	35,805	39,032
2016	226,993	32,670	3,384	40,947	11,218	7,265	3,331	15,826	267,812	609,445	18,812	51,483	54,866
2017	254,303	50,018	3,269	41,124	11,543	6,951	3,115	15,927	300,333	686,583	23,990	74,008	77,277
2018	272,667	60,234	3,592	40,936	11,036	7,136	2,724	15,967	292,524	706,816	29,539	89,773	93,365
2019	295,882	68,719	3,218	38,543	10,468	6,093	2,402	15,473	287,874	728,673	34,957	103,676	106,894
2020	337,938	86,066	3,133	36,219	10,212	6,080	2,201	15,890	285,274	783,012	41,522	127,588	130,721
2021	378,197	112,335	2,924	36,463	9,421	6,101	2,267	15,975	251,585	815,267	49,164	161,499	164,422
2022	434,297	140,793	2,999	35,466	8,535	5,776	2,073	16,087	254,789	900,814	61,282	202,075	205,074
2023	421,141	162,683	2,847	31,615	7,935	5,568	2,082	16,367	245,002	895,241	73,406	236,090	238,937
Year 2021													
January	30,060	5,479	80	3,229	860	530	205	1,347	24,560	66,350	2,750	8,229	8,309
February	26,716	6,196	134	2,859	759	457	183	1,287	20,137	58,728	2,939	9,135	9,270
March	39,205	9,038	259	3,108	845	520	209	1,242	21,220	75,646	4,158	13,196	13,454
April	36,158	10,558	334	2,785	779	506	180	1,288	19,389	71,977	4,610	15,168	15,502
May	33,787	12,064	393	2,966	806	517	191	1,335	23,309	75,368	5,063	17,127	17,520
June	26,672	11,876	321	3,088	773	518	179	1,277	23,454	68,157	5,107	16,983	17,304
July	21,716	11,934	257	3,248	792	525	179	1,351	22,098	62,100	5,192	17,127	17,384
August	27,071	11,626	341	3,315	776	519	175	1,337	20,328	65,487	4,924	16,551	16,891
September	28,998	10,912	302	3,005	754	497	185	1,343	17,022	63,020	4,370	15,282	15,584
October	32,215	9,045	223	2,835	751	500	188	1,319	17,133	64,210	3,821	12,866	13,089
November	35,751	7,607	188	2,890	723	480	190	1,366	19,373	68,568	3,259	10,866	11,054
December	39,849	5,999	92	3,134	803	533	201	1,484	23,562	75,656	2,970	8,969	9,061
Year 2022													
January	37,416	7,689	133	3,106	748	492	192	1,470	24,198	75,443	3,376	11,065	11,198
February	37,645	8,868	159	2,897	701	432	173	1,243	21,321	73,438	3,717	12,585	12,744
March	43,031	11,439	255	2,934	773	465	188	1,286	24,436	84,808	5,121	16,560	16,815
April	46,167	13,080	321	2,736	699	482	161	1,282	20,066	84,995	5,671	18,751	19,073
May	42,124	14,749	371	2,907	722	492	157	1,327	23,359	86,208	6,236	20,985	21,356
June	33,768	15,681	372	3,045	710	498	166	1,276	25,988	81,501	6,229	21,910	22,281
July	29,475	15,477	288	3,276	723	510	173	1,341	24,567	75,831	6,438	21,915	22,203
August	24,718	14,223	279	3,206	707	498	174	1,354	21,133	66,293	6,194	20,418	20,697
September	27,331	13,001	285	2,864	686	470	159	1,329	17,026	63,152	5,544	18,545	18,830
October	32,745	11,652	289	2,624	714	473	182	1,298	14,367	64,345	5,022	16,674	16,964
November	41,199	8,254	149	2,865	678	473	167	1,397	17,898	73,079	4,035	12,289	12,438
December	38,680	6,679	99	3,005	674	493	181	1,482	20,430	71,721	3,698	10,377	10,475
Year 2023													
January	38,358	7,722	84	2,920	691	483	167	1,420	22,754	74,599	3,989	11,711	11,795
February	41,424	9,326	109	2,533	612	420	174	1,302	19,961	75,860	4,387	13,713	13,822
March	43,584	12,059	154	2,704	669	446	163	1,442	21,331	82,553	6,005	18,064	18,218
April	42,746	14,767	295	2,336	621	409	157	1,356	19,820	82,504	6,742	21,509	21,803
May	32,227	16,981	300	2,654	689	475	176	1,345	27,651	82,499	7,543	24,525	24,824
June	27,547	17,469	365	2,579	664	483	159	1,293	21,572	72,131	7,405	24,874	25,239
July	28,005	18,514	380	2,758	671	497	165	1,296	21,978	74,263	7,720	26,234	26,614
August	28,394	17,435	309	2,884	678	482	174	1,267	21,293	72,916	7,504	24,938	25,248
September	28,353	15,290	293	2,573	626	441	159	1,315	16,916	65,966	6,604	21,894	22,187
October	36,020	13,834	287	2,317	649	463	192	1,420	15,673	70,854	6,076	19,910	20,196
November	36,445	10,280	166	2,584	649	471	183	1,440	17,026	69,243	4,938	15,218	15,384
December	38,038	9,006	106	2,774	716	498	213	1,473	19,028	71,853	4,494	13,500	13,606

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

Table 3.2.A. Net Generation by Energy Source: Electric Utilities, 2013 - 2023
(Thousand Megawatthours)

	Generation at Utility Scale Facilities											
Period	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Fossil Gas	Nuclear	Hydroelectric Conventional	Solar	Renewable Sources Excluding Hydroelectric and Solar	Hydroelectric Pumped Storage	Other	Total
Annual Totals												
2013	1,188,452	9,446	9,522	501,427	798	406,114	243,040	943	31,474	-3,773	615	2,388,058
2014	1,173,073	10,696	9,147	501,440	112	419,871	238,185	1,218	33,278	-5,144	622	2,382,500
2015	998,385	10,386	8,278	619,003	199	416,680	229,640	1,494	35,992	-4,105	558	2,316,508
2016	922,399	9,069	8,881	655,744	154	424,400	247,787	1,995	40,666	-5,629	421	2,305,887
2017	893,639	8,567	6,711	625,094	149	424,485	275,677	3,348	42,763	-5,448	553	2,275,539
2018	863,505	10,108	6,817	722,916	151	424,251	267,336	4,916	44,184	-4,785	561	2,339,960
2019	722,885	8,313	5,112	787,745	154	430,672	262,364	6,785	48,403	-4,261	551	2,268,723
2020	582,374	7,182	5,663	815,414	45	428,953	264,650	9,945	59,797	-4,326	618	2,170,316
2021	674,804	8,791	5,728	777,057	12	430,683	228,689	13,911	75,338	-3,876	508	2,211,643
2022	621,853	9,356	5,383	832,421	0	427,933	232,953	17,692	86,233	-4,752	534	2,229,605
2023	518,330	8,254	3,146	895,910	0	441,391	220,003	22,230	84,313	-4,545	580	2,189,615
Year 2021												
January	60,119	732	538	62,011	-1	39,472	22,459	757	5,644	-333	45	191,445
February	66,231	1,188	537	53,913	5	34,339	18,612	791	5,417	-339	34	180,728
March	46,241	599	505	53,746	9	35,325	18,971	1,152	7,195	-142	43	163,643
April	40,784	611	261	54,243	0	30,126	17,256	1,354	6,927	-102	46	151,505
May	49,417	635	360	57,584	0	33,491	21,178	1,550	6,488	-323	40	170,419
June	66,424	672	340	74,852	0	36,854	21,827	1,293	5,141	-270	43	207,176
July	76,452	652	539	84,947	0	38,371	20,109	1,394	4,414	-551	35	226,361
August	77,465	935	600	85,233	0	38,752	18,598	1,325	5,402	-531	47	227,827
September	60,311	740	482	66,832	0	35,306	15,289	1,265	6,036	-313	45	185,991
October	45,722	690	514	62,206	0	34,522	15,383	1,155	6,505	-333	43	166,407
November	41,646	647	620	58,942	0	34,882	17,373	992	7,861	-302	41	162,702
December	43,993	688	432	62,548	0	39,244	21,635	883	8,309	-338	46	177,439
Year 2022												
January	63,823	1,254	388	66,875	0	39,295	22,395	1,066	8,258	-420	58	202,990
February	50,911	629	453	55,560	0	34,300	19,408	1,188	7,998	-301	51	170,198
March	43,015	691	324	54,831	0	34,385	21,943	1,533	8,561	-214	55	165,124
April	40,123	548	361	51,428	0	30,252	17,583	1,714	8,652	-164	43	150,540
May	47,965	639	503	62,462	0	35,037	21,195	1,850	7,488	-375	53	176,816
June	56,910	652	545	79,183	0	36,908	24,296	1,836	6,114	-460	40	206,024
July	66,631	678	388	95,306	0	38,888	23,132	1,811	5,104	-623	40	231,355
August	64,386	661	421	93,582	0	38,921	19,778	1,717	4,893	-495	36	223,900
September	49,704	680	480	75,975	0	35,914	15,593	1,489	5,846	-493	33	185,222
October	41,060	676	440	64,375	0	32,085	12,963	1,460	6,736	-370	46	159,472
November	41,209	673	446	63,004	0	33,612	16,315	1,046	8,593	-398	40	164,537
December	56,116	1,575	636	69,839	0	38,335	18,352	982	7,992	-437	39	193,428
Year 2023												
January	47,822	749	265	69,057	0	40,507	19,961	1,198	7,368	-498	50	186,479
February	34,662	721	257	61,261	0	34,281	17,914	1,480	8,665	-359	44	158,927
March	37,670	678	166	66,439	0	36,091	18,841	1,928	8,423	-389	47	169,894
April	29,082	634	176	59,847	0	33,574	17,367	1,992	9,198	-191	41	151,719
May	32,611	657	166	70,284	0	34,559	25,345	2,322	6,601	-336	44	172,252
June	46,228	687	257	81,589	0	37,005	19,980	2,288	4,812	-420	52	192,478
July	62,726	678	484	99,499	0	39,977	19,811	2,325	4,726	-519	51	229,759
August	61,744	733	491	100,832	0	40,065	19,175	2,301	5,570	-499	59	230,470
September	46,714	653	441	81,425	0	37,575	15,262	1,965	5,788	-415	47	189,456
October	38,830	695	176	68,789	0	34,541	14,167	1,873	7,410	-294	47	166,233
November	37,358	669	100	63,733	0	34,719	15,453	1,403	8,015	-245	47	161,252
December	42,884	699	167	73,156	0	38,497	16,728	1,154	7,737	-379	53	180,696

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

Table 3.2.B. Net Generation from Renewable Sources: Electric Utilities, 2013 - 2023
(Thousand Megawatthours)

	Generation at Utility Scale Facilities										Small Scale Generation	Generation From Utility and Small Scale Facilities	
Period	Wind	Solar Photovoltaic	Solar Thermal	Wood and Wood-Derived Fuels	Landfill Gas	Biogenic Municipal Solid Waste	Other Waste Biomass	Geothermal	Conventional Hydroelectric	Total Renewable Generation at Utility Scale Facilities	Estimated Solar Photovoltaic	Estimated Total Solar Photovoltaic	Estimated Total Solar
Annual Totals													
2013	26,436	841	102	2,534	1,114	197	188	1,005	243,040	275,457	N/A	N/A	N/A
2014	27,671	1,094	124	3,050	1,068	191	182	1,116	238,185	272,681	0	1,094	1,218
2015	30,412	1,388	106	3,018	1,061	195	218	1,089	229,640	267,125	0	1,388	1,494
2016	35,070	1,920	75	3,038	1,040	201	237	1,080	247,787	290,448	0	1,920	1,995
2017	37,068	3,326	22	3,226	1,103	184	161	1,022	275,677	321,788	0	3,326	3,348
2018	38,466	4,865	51	3,364	1,004	203	138	1,009	267,336	316,436	0	4,865	4,916
2019	43,636	6,757	28	2,784	964	122	126	771	262,364	317,552	0	6,757	6,785
2020	55,554	9,915	30	2,077	1,006	126	120	915	264,650	334,392	0	9,915	9,945
2021	70,338	13,883	29	2,796	973	108	116	1,007	228,689	317,938	0	13,883	13,911
2022	80,962	17,664	28	3,263	813	111	58	1,026	232,953	336,878	0	17,664	17,692
2023	80,120	22,230	0	2,549	653	115	94	782	220,003	326,546	0	22,230	22,230
Year 2021													
January	5,235	756	1	213	91	9	12	84	22,459	28,861	0	756	757
February	5,001	789	2	245	77	4	10	79	18,612	24,819	0	789	791
March	6,812	1,149	3	200	84	7	12	80	18,971	27,318	0	1,149	1,152
April	6,570	1,351	4	172	80	11	8	86	17,256	25,537	0	1,351	1,354
May	6,110	1,545	5	204	84	11	6	73	21,178	29,216	0	1,545	1,550
June	4,718	1,291	2	248	81	10	12	73	21,827	28,261	0	1,291	1,293
July	3,896	1,391	3	334	83	4	9	87	20,109	25,918	0	1,391	1,394
August	4,895	1,323	2	320	82	10	10	85	18,598	25,326	0	1,323	1,325
September	5,638	1,262	3	215	79	10	10	85	15,289	22,590	0	1,262	1,265
October	6,142	1,154	2	182	73	10	9	88	15,383	23,043	0	1,154	1,155
November	7,479	990	1	186	74	11	9	100	17,373	26,225	0	990	992
December	7,842	882	1	276	84	10	9	88	21,635	30,826	0	882	883
Year 2022													
January	7,790	1,057	9	281	76	9	6	96	22,395	31,718	0	1,057	1,066
February	7,537	1,187	1	292	71	9	3	86	19,408	28,594	0	1,187	1,188
March	8,171	1,531	2	224	77	6	4	79	21,943	32,037	0	1,531	1,533
April	8,302	1,711	3	182	69	9	3	87	17,583	27,948	0	1,711	1,714
May	7,057	1,845	4	254	70	12	6	89	21,195	30,532	0	1,845	1,850
June	5,665	1,834	2	281	67	10	5	84	24,296	32,247	0	1,834	1,836
July	4,587	1,809	2	347	68	11	6	87	23,132	30,046	0	1,809	1,811
August	4,364	1,715	2	360	65	11	4	88	19,778	26,388	0	1,715	1,717
September	5,420	1,488	2	263	64	8	6	86	15,593	22,929	0	1,488	1,489
October	6,352	1,459	1	222	65	10	5	82	12,963	21,159	0	1,459	1,460
November	8,206	1,046	0	231	62	9	6	79	16,315	25,953	0	1,046	1,046
December	7,511	982	0	326	59	8	5	83	18,352	27,326	0	982	982
Year 2023													
January	6,934	1,198	0	279	58	9	9	79	19,961	28,527	0	1,198	1,198
February	8,273	1,480	0	245	50	6	8	82	17,914	28,060	0	1,480	1,480
March	8,122	1,928	0	169	58	8	6	60	18,841	29,193	0	1,928	1,928
April	8,930	1,992	0	121	53	8	9	76	17,367	28,557	0	1,992	1,992
May	6,291	2,322	0	180	58	9	7	56	25,345	34,267	0	2,322	2,322
June	4,459	2,288	0	245	56	11	5	36	19,980	27,079	0	2,288	2,288
July	4,279	2,325	0	293	55	10	7	82	19,811	26,862	0	2,325	2,325
August	5,121	2,301	0	293	54	11	6	83	19,175	27,046	0	2,301	2,301
September	5,447	1,965	0	215	49	10	8	59	15,262	23,016	0	1,965	1,965
October	7,143	1,873	0	133	53	11	12	59	14,167	23,450	0	1,873	1,873
November	7,721	1,403	0	166	53	10	7	58	15,453	24,871	0	1,403	1,403
December	7,399	1,154	0	211	56	11	10	50	16,728	25,619	0	1,154	1,154

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

Table 3.3.A. Net Generation by Energy Source: Independent Power Producers, 2013 - 2023
(Thousand Megawatthours)

	Generation at Utility Scale Facilities											
Period	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Fossil Gas	Nuclear	Hydroelectric Conventional	Solar	Renewable Sources Excluding Hydroelectric and Solar	Hydroelectric Pumped Storage	Other	Total
Annual Totals												
2013	379,270	3,761	1,780	527,522	3,524	382,902	22,018	7,782	181,263	-908	6,742	1,515,657
2014	395,701	6,789	1,410	531,758	3,246	377,295	19,861	16,086	196,723	-1,030	6,622	1,554,462
2015	342,608	6,240	1,601	619,839	3,517	380,498	17,996	22,962	202,858	-987	6,765	1,603,898
2016	307,263	3,360	1,401	624,600	3,758	381,294	18,539	33,502	233,553	-1,057	6,876	1,613,090
2017	304,198	3,281	1,480	572,919	3,978	380,465	23,034	49,376	258,962	-1,047	6,439	1,603,086
2018	278,668	5,487	1,516	645,616	3,935	382,833	23,812	58,337	275,154	-1,119	6,677	1,680,917
2019	235,847	2,669	1,125	692,113	3,883	378,738	24,288	64,480	290,343	-1,000	7,138	1,699,625
2020	185,328	1,984	1,504	706,885	3,129	360,925	19,409	78,567	319,633	-995	6,971	1,683,340
2021	217,636	2,378	1,413	699,547	3,292	348,961	21,702	100,612	344,784	-1,235	6,449	1,745,538
2022	204,243	5,734	1,354	750,266	3,451	343,604	20,673	125,155	387,590	-1,276	3,487	1,844,282
2023	152,238	2,573	1,415	803,945	3,340	333,482	23,862	142,360	374,335	-1,445	2,823	1,838,927
Year 2021												
January	20,645	159	124	55,180	337	32,261	1,989	4,766	28,106	-92	586	144,063
February	20,795	331	90	49,941	190	28,615	1,441	5,502	24,726	-86	516	132,062
March	15,206	149	104	45,540	188	28,384	2,124	8,081	35,500	-94	576	135,757
April	12,755	153	131	45,583	270	26,966	2,023	9,464	32,452	-95	519	130,220
May	14,000	161	136	49,085	289	29,903	2,024	10,827	30,751	-93	535	137,617
June	20,363	225	87	65,700	322	29,216	1,544	10,826	25,029	-106	537	153,743
July	24,606	194	114	75,646	312	30,461	1,889	10,720	20,990	-134	546	165,344
August	23,918	221	122	77,980	331	30,719	1,639	10,565	25,329	-139	532	171,216
September	18,077	178	130	63,041	299	29,214	1,640	9,880	26,399	-120	512	149,249
October	16,402	166	112	61,110	343	23,879	1,657	8,055	29,020	-93	535	141,184
November	15,296	202	131	54,770	180	27,867	1,899	6,755	31,239	-76	493	138,756
December	15,573	240	132	55,971	232	31,476	1,834	5,172	35,242	-107	563	146,327
Year 2022												
January	23,291	1,778	144	58,734	292	31,282	1,702	6,707	32,672	-73	337	156,865
February	19,627	438	131	51,382	251	27,552	1,808	7,781	32,824	-111	276	141,960
March	17,526	222	145	49,110	270	28,768	2,358	10,085	37,718	-103	307	146,406
April	14,792	154	137	46,169	291	25,037	2,360	11,598	40,541	-101	296	141,274
May	14,096	149	58	56,228	365	28,345	2,054	13,172	37,838	-92	289	152,501
June	16,076	192	108	67,698	281	28,807	1,601	14,109	30,941	-129	309	159,993
July	19,305	311	71	84,262	342	29,969	1,357	13,851	27,884	-146	312	177,519
August	20,347	295	124	85,697	277	29,976	1,272	12,685	23,314	-145	298	174,141
September	14,860	210	140	72,435	306	27,819	1,354	11,709	24,739	-105	275	153,744
October	12,745	228	136	60,642	276	26,860	1,338	10,406	29,126	-64	255	141,947
November	14,768	190	84	55,774	236	28,430	1,504	7,299	35,838	-97	252	144,278
December	16,810	1,566	76	62,134	264	30,759	1,966	5,753	34,153	-111	284	153,654
Year 2023												
January	13,093	166	123	60,616	285	30,363	2,679	6,565	34,357	-122	281	148,405
February	11,333	444	112	55,471	238	26,526	1,935	7,898	35,758	-97	224	139,842
March	12,063	191	117	58,390	280	26,730	2,356	10,209	38,366	-130	228	148,801
April	10,796	191	107	52,454	202	23,088	2,336	12,968	36,407	-99	218	138,668
May	10,816	186	143	58,633	308	26,596	2,196	14,853	28,753	-123	271	142,634
June	11,172	149	114	71,177	273	27,814	1,505	15,445	25,822	-132	253	153,592
July	15,778	243	140	90,165	305	29,910	2,075	16,463	26,509	-137	241	181,692
August	15,990	183	138	88,505	333	29,679	2,037	15,347	26,048	-154	240	178,346
September	12,872	200	132	75,519	289	27,985	1,589	13,534	25,576	-137	196	157,755
October	11,746	255	98	63,078	249	26,895	1,443	12,176	31,572	-78	215	147,648
November	13,493	193	59	62,734	262	27,538	1,507	8,985	31,544	-102	229	146,440
December	13,087	173	130	67,204	316	30,357	2,205	7,916	33,624	-135	227	155,104

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

Table 3.3.B. Net Generation from Renewable Sources: Independent Power Producers, 2013 - 2023
(Thousand Megawatthours)

	Generation at Utility Scale Facilities										Small Scale Generation	Generation From Utility and Small Scale Facilities	
Period	Wind	Solar Photovoltaic	Solar Thermal	Wood and Wood-Derived Fuels	Landfill Gas	Biogenic Municipal Solid Waste	Other Waste Biomass	Geothermal	Conventional Hydroelectric	Total Renewable Generation at Utility Scale Facilities	Estimated Solar Photovoltaic	Estimated Total Solar Photovoltaic	Estimated Total Solar
Annual Totals													
2013	141,306	6,969	813	9,768	8,442	5,838	1,139	14,770	22,018	211,063	N/A	N/A	N/A
2014	153,825	13,769	2,317	11,977	9,062	5,838	1,261	14,761	19,861	232,670	0	13,769	16,086
2015	160,135	19,841	3,121	11,545	9,202	5,806	1,342	14,829	17,996	243,816	0	19,841	22,962
2016	191,720	30,194	3,308	10,382	9,255	5,965	1,486	14,746	18,539	285,594	0	30,194	33,502
2017	217,006	46,128	3,248	10,416	9,505	5,652	1,479	14,905	23,034	331,372	0	46,128	49,376
2018	233,931	54,796	3,540	10,021	9,162	5,891	1,226	14,924	23,812	357,303	0	54,796	58,337
2019	251,968	61,290	3,190	9,237	8,739	5,096	1,043	14,260	24,288	379,111	0	61,290	64,480
2020	281,599	75,464	3,103	9,135	8,417	5,117	839	14,526	19,409	417,609	0	75,464	78,567
2021	307,579	97,717	2,895	9,101	7,717	5,019	900	14,466	21,702	467,098	0	97,717	100,612
2022	353,032	122,184	2,971	8,739	7,077	2,904	776	15,061	20,673	533,418	0	122,184	125,155
2023	340,780	139,513	2,847	7,637	6,646	2,858	828	15,586	23,862	540,557	0	139,513	142,360
Year 2021													
January	24,803	4,687	79	865	701	433	86	1,218	1,989	34,862	0	4,687	4,766
February	21,692	5,370	132	783	619	386	77	1,169	1,441	31,669	0	5,370	5,502
March	32,361	7,826	255	782	693	436	83	1,145	2,124	45,705	0	7,826	8,081
April	29,561	9,133	330	608	638	413	67	1,165	2,023	43,938	0	9,133	9,464
May	27,654	10,439	388	717	662	426	82	1,210	2,024	43,602	0	10,439	10,827
June	21,934	10,506	320	794	632	429	77	1,164	1,544	37,399	0	10,506	10,826
July	17,806	10,466	254	808	648	434	70	1,225	1,889	33,599	0	10,466	10,720
August	22,159	10,227	338	838	636	420	66	1,211	1,639	37,533	0	10,227	10,565
September	23,338	9,581	299	750	618	402	77	1,215	1,640	37,919	0	9,581	9,880
October	26,049	7,834	221	680	620	417	70	1,183	1,657	38,732	0	7,834	8,055
November	28,244	6,567	187	728	590	386	69	1,222	1,899	39,893	0	6,567	6,755
December	31,979	5,080	91	748	662	438	76	1,340	1,834	42,248	0	5,080	5,172
Year 2022													
January	29,596	6,583	124	760	613	259	70	1,374	1,702	41,080	0	6,583	6,707
February	30,076	7,624	157	727	578	217	69	1,157	1,808	42,413	0	7,624	7,781
March	34,827	9,832	253	740	639	237	67	1,208	2,358	50,161	0	9,832	10,085
April	37,831	11,279	319	643	586	232	53	1,195	2,360	54,499	0	11,279	11,598
May	35,040	12,805	367	675	601	237	47	1,238	2,054	53,064	0	12,805	13,172
June	28,081	13,740	369	755	590	251	71	1,192	1,601	46,650	0	13,740	14,109
July	24,872	13,565	286	823	600	260	74	1,255	1,357	43,092	0	13,565	13,851
August	20,341	12,409	277	797	585	254	71	1,266	1,272	37,271	0	12,409	12,685
September	21,896	11,426	283	730	567	241	63	1,243	1,354	37,803	0	11,426	11,709
October	26,369	10,117	289	648	593	232	69	1,216	1,338	40,870	0	10,117	10,406
November	32,961	7,150	149	709	565	231	54	1,318	1,504	44,641	0	7,150	7,299
December	31,142	5,654	99	732	560	254	66	1,399	1,966	41,872	0	5,654	5,753
Year 2023													
January	31,400	6,481	84	715	581	254	65	1,341	2,679	43,600	0	6,481	6,565
February	33,123	7,790	109	600	513	227	76	1,219	1,935	45,591	0	7,790	7,898
March	35,432	10,056	154	691	559	242	61	1,382	2,356	50,932	0	10,056	10,209
April	33,788	12,673	295	554	517	210	59	1,279	2,336	51,711	0	12,673	12,968
May	25,915	14,554	300	660	582	246	61	1,289	2,196	45,802	0	14,554	14,853
June	23,074	15,080	365	630	557	243	61	1,257	1,505	42,771	0	15,080	15,445
July	23,717	16,083	380	696	565	252	66	1,214	2,075	45,046	0	16,083	16,463
August	23,260	15,038	309	715	570	246	73	1,184	2,037	43,433	0	15,038	15,347
September	22,895	13,241	293	604	528	221	72	1,255	1,589	40,699	0	13,241	13,534
October	28,858	11,889	287	501	550	231	72	1,361	1,443	45,191	0	11,889	12,176
November	28,701	8,818	166	613	546	235	67	1,382	1,507	42,035	0	8,818	8,985
December	30,617	7,810	106	657	581	251	96	1,422	2,205	43,745	0	7,810	7,916

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

Table 3.4.A. Net Generation by Energy Source: Commercial Sector, 2013 - 2023
(Thousand Megawatthours)

	Generation at Utility Scale Facilities												Small Scale Generation	Net Generation From Utility and Small Scale Facilities	
Period	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Fossil Gas	Nuclear	Hydroelectric Conventional	Solar	Renewable Sources Excluding Hydroelectric and Solar	Hydroelectric Pumped Storage	Other	Total Generation at Utility Scale Facilities	Estimated Solar Photovoltaic	Estimated Total Solar Photovoltaic	Estimated Total Solar
Annual Totals															
2013	839	118	5	7,154	0	0	44	294	2,662	0	1,118	12,234	N/A	N/A	N/A
2014	595	247	9	7,227	0	0	38	371	2,862	0	1,171	12,520	5,146	5,516	5,516
2015	509	183	8	7,471	0	0	35	416	2,803	0	1,170	12,595	5,689	6,106	6,106
2016	383	77	6	7,730	0	0	217	529	2,697	0	1,068	12,706	6,158	6,687	6,687
2017	329	103	8	8,042	0	0	240	521	2,729	0	1,088	13,060	7,685	8,206	8,206
2018	303	132	7	8,419	0	0	227	525	2,688	0	1,010	13,312	9,798	10,324	10,324
2019	268	116	5	8,610	0	0	188	587	2,840	0	1,076	13,689	11,002	11,588	11,588
2020	240	97	2	8,110	0	0	214	586	2,761	0	1,035	13,046	12,859	13,445	13,445
2021	280	94	4	7,346	0	0	258	598	2,978	0	1,209	12,768	15,124	15,722	15,722
2022	287	101	10	7,830	0	0	263	669	4,185	0	3,391	16,737	17,724	18,393	18,393
2023	220	76	2	7,744	0	0	293	615	3,930	0	3,185	16,066	19,751	20,366	20,366
Year 2021															
January	26	10	0	638	0	0	25	30	258	0	109	1,096	865	895	895
February	34	9	1	561	0	0	22	31	230	0	85	973	935	965	965
March	25	8	0	557	0	0	23	53	227	0	96	988	1,280	1,332	1,332
April	19	9	0	484	0	0	21	61	240	0	104	938	1,416	1,477	1,477
May	13	9	0	506	0	0	23	66	249	0	100	966	1,534	1,600	1,600
June	19	7	0	647	0	0	24	64	242	0	97	1,101	1,551	1,615	1,615
July	20	8	0	729	0	0	23	65	253	0	107	1,204	1,599	1,664	1,664
August	23	7	0	764	0	0	21	61	257	0	109	1,242	1,538	1,599	1,599
September	25	6	0	651	0	0	19	55	254	0	105	1,115	1,373	1,428	1,428
October	29	7	1	603	0	0	17	45	247	0	90	1,040	1,194	1,239	1,239
November	26	7	1	587	0	0	18	38	253	0	102	1,031	945	983	983
December	21	9	1	619	0	0	22	29	268	0	105	1,074	895	924	924
Year 2022															
January	29	23	1	655	0	0	24	36	358	0	276	1,403	1,012	1,048	1,048
February	19	6	1	563	0	0	21	42	324	0	254	1,232	1,116	1,158	1,158
March	18	5	1	606	0	0	24	56	346	0	271	1,328	1,521	1,576	1,576
April	13	6	1	559	0	0	21	66	349	0	295	1,308	1,662	1,728	1,728
May	10	6	1	611	0	0	26	71	358	0	298	1,381	1,816	1,887	1,887
June	27	8	1	672	0	0	27	74	354	0	291	1,455	1,819	1,893	1,893
July	26	7	1	807	0	0	26	72	359	0	294	1,592	1,894	1,966	1,966
August	29	8	0	822	0	0	22	69	360	0	286	1,595	1,801	1,871	1,871
September	30	5	0	696	0	0	18	61	335	0	272	1,417	1,608	1,668	1,668
October	28	5	0	571	0	0	15	52	345	0	284	1,300	1,383	1,435	1,435
November	28	6	1	601	0	0	18	40	350	0	286	1,330	1,086	1,126	1,126
December	30	18	1	668	0	0	20	29	347	0	284	1,397	1,007	1,037	1,037
Year 2023															
January	28	9	1	619	0	0	29	28	327	0	270	1,311	1,119	1,147	1,147
February	26	19	0	583	0	0	26	38	290	0	230	1,210	1,234	1,272	1,272
March	20	7	0	606	0	0	30	51	305	0	240	1,260	1,680	1,731	1,731
April	21	4	0	560	0	0	30	67	295	0	234	1,210	1,855	1,923	1,923
May	17	5	0	591	0	0	26	71	333	0	271	1,314	2,023	2,095	2,095
June	9	4	0	656	0	0	19	66	343	0	281	1,378	2,011	2,077	2,077
July	12	5	0	777	0	0	24	70	346	0	289	1,522	2,087	2,156	2,156
August	12	4	0	740	0	0	24	62	346	0	277	1,465	2,010	2,072	2,072
September	15	4	0	701	0	0	18	53	317	0	257	1,365	1,796	1,849	1,849
October	18	5	0	621	0	0	23	46	333	0	271	1,318	1,558	1,604	1,604
November	18	5	0	604	0	0	22	37	340	0	277	1,303	1,225	1,262	1,262
December	23	6	1	686	0	0	23	25	358	0	288	1,411	1,153	1,178	1,178

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

Table 3.4.B. Net Generation from Renewable Sources: Commercial Sector, 2013 - 2023
(Thousand Megawatthours)

	Generation at Utility Scale Facilities										Small Scale Generation	Generation From Utility and Small Scale Facilities	
Period	Wind	Solar Photovoltaic	Solar Thermal	Wood and Wood-Derived Fuels	Landfill Gas	Biogenic Municipal Solid Waste	Other Waste Biomass	Geothermal	Conventional Hydroelectric	Total Renewable Generation at Utility Scale Facilities	Estimated Solar Photovoltaic	Estimated Total Solar Photovoltaic	Estimated Total Solar
Annual Totals													
2013	61	294	0	34	925	1,149	493	0	44	3,000	N/A	N/A	N/A
2014	107	371	0	74	905	1,202	575	0	38	3,271	5,146	5,516	5,516
2015	118	416	0	48	847	1,199	592	0	35	3,255	5,689	6,106	6,106
2016	131	529	0	69	753	1,093	649	0	217	3,443	6,158	6,687	6,687
2017	144	521	0	70	753	1,114	648	0	240	3,490	7,685	8,206	8,206
2018	174	525	0	77	703	1,038	664	33	227	3,441	9,798	10,324	10,324
2019	179	587	0	90	626	869	634	442	188	3,615	11,002	11,588	11,588
2020	168	586	0	91	657	832	565	449	214	3,561	12,859	13,445	13,445
2021	168	598	0	153	612	973	571	502	258	3,834	15,124	15,722	15,722
2022	173	669	0	175	517	2,761	560	0	263	5,118	17,724	18,393	18,393
2023	130	615	0	107	509	2,595	589	0	293	4,838	19,751	20,366	20,366
Year 2021													
January	14	30	0	10	56	88	47	44	25	313	865	895	895
February	13	31	0	15	50	68	45	39	22	282	935	965	965
March	19	53	0	8	54	78	49	17	23	302	1,280	1,332	1,332
April	16	61	0	8	49	84	46	37	21	323	1,416	1,477	1,477
May	14	66	0	6	50	80	48	51	23	338	1,534	1,600	1,600
June	11	64	0	15	51	78	47	40	24	330	1,551	1,615	1,615
July	8	65	0	18	52	86	49	39	23	340	1,599	1,664	1,664
August	12	61	0	17	51	87	49	41	21	340	1,538	1,599	1,599
September	13	55	0	15	51	84	48	43	19	328	1,373	1,428	1,428
October	15	45	0	12	51	73	48	48	17	309	1,194	1,239	1,239
November	17	38	0	11	50	82	48	44	18	309	945	983	983
December	16	29	0	17	47	85	46	57	22	319	895	924	924
Year 2022													
January	18	36	0	15	48	225	52	0	24	418	1,012	1,048	1,048
February	17	42	0	14	42	206	43	0	21	388	1,116	1,158	1,158
March	19	56	0	10	46	221	50	0	24	426	1,521	1,576	1,576
April	19	66	0	11	35	240	44	0	21	435	1,662	1,728	1,728
May	16	71	0	17	40	243	43	0	26	455	1,816	1,887	1,887
June	13	74	0	20	42	237	43	0	27	456	1,819	1,893	1,893
July	9	72	0	18	45	240	47	0	26	457	1,894	1,966	1,966
August	7	69	0	27	46	233	47	0	22	451	1,801	1,871	1,871
September	10	61	0	12	45	221	47	0	18	414	1,608	1,668	1,668
October	13	52	0	6	45	231	50	0	15	412	1,383	1,435	1,435
November	18	40	0	11	41	233	47	0	18	408	1,086	1,126	1,126
December	15	29	0	12	43	231	46	0	20	396	1,007	1,037	1,037
Year 2023													
January	13	28	0	11	44	220	39	0	29	383	1,119	1,147	1,147
February	15	38	0	7	40	187	41	0	26	353	1,234	1,272	1,272
March	16	51	0	7	42	196	44	0	30	386	1,680	1,731	1,731
April	16	67	0	5	42	191	41	0	30	392	1,855	1,923	1,923
May	13	71	0	3	41	221	55	0	26	430	2,023	2,095	2,095
June	7	66	0	11	42	229	54	0	19	428	2,011	2,077	2,077
July	4	70	0	10	44	236	52	0	24	439	2,087	2,156	2,156
August	6	62	0	14	46	225	54	0	24	432	2,010	2,072	2,072
September	7	53	0	12	43	209	45	0	18	388	1,796	1,849	1,849
October	9	46	0	8	39	221	55	0	23	402	1,558	1,604	1,604
November	11	37	0	9	42	226	52	0	22	398	1,225	1,262	1,262
December	12	25	0	11	44	235	55	0	23	406	1,153	1,178	1,178

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

Table 3.5.A. Net Generation by Energy Source: Industrial Sector, 2013 - 2023
(Thousand Megawatthours)

	Generation at Utility Scale Facilities												Small Scale Generation	Net Generation From Utility and Small Scale Facilities	
Period	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Fossil Gas	Nuclear	Hydroelectric Conventional	Solar	Renewable Sources Excluding Hydroelectric and Solar	Hydroelectric Pumped Storage	Other	Total Generation at Utility Scale Facilities	Estimated Solar Photovoltaic	Estimated Total Solar Photovoltaic	Estimated Total Solar
Annual Totals															
2013	12,554	495	2,036	88,733	8,531	0	3,463	17	29,074	0	5,113	150,015	N/A	N/A	N/A
2014	12,341	544	1,389	86,209	8,664	0	1,282	16	28,659	0	4,978	144,083	1,139	1,156	1,156
2015	10,896	563	990	88,355	9,401	0	1,410	21	28,614	0	5,462	145,712	1,451	1,472	1,472
2016	9,103	503	909	91,197	8,895	0	1,269	27	28,663	0	5,324	145,890	2,060	2,087	2,087
2017	7,669	463	776	91,647	8,343	0	1,382	42	28,508	0	4,928	143,758	2,364	2,406	2,406
2018	7,011	517	640	94,892	9,377	0	1,149	47	28,440	0	4,725	146,798	2,636	2,683	2,683
2019	5,957	424	576	100,065	8,554	0	1,033	85	27,276	0	4,567	148,537	3,041	3,127	3,127
2020	5,451	398	510	96,381	8,644	0	1,001	101	26,348	0	4,231	143,064	3,484	3,586	3,586
2021	5,278	400	367	95,240	8,093	0	936	137	25,324	0	3,975	139,750	3,858	3,994	3,994
2022	5,128	614	379	96,548	8,271	0	899	276	24,226	0	3,702	140,043	4,048	4,324	4,324
2023	4,327	494	273	98,463	8,438	0	844	326	22,130	0	3,369	138,664	4,382	4,708	4,708
Year 2021															
January	449	36	39	8,701	698	0	86	6	2,222	0	369	12,606	216	222	222
February	410	60	33	6,767	624	0	62	7	1,888	0	286	10,136	230	237	237
March	432	35	36	7,177	663	0	103	11	2,208	0	344	11,010	330	340	340
April	399	30	30	7,107	601	0	89	12	2,077	0	300	10,645	357	370	370
May	443	30	38	7,501	626	0	84	14	2,114	0	329	11,179	394	408	408
June	459	28	26	8,176	652	0	60	13	2,093	0	329	11,837	396	409	409
July	458	29	28	8,868	735	0	76	13	2,154	0	354	12,715	405	419	419
August	449	33	25	8,739	700	0	70	15	2,204	0	344	12,579	392	407	407
September	464	26	26	7,691	686	0	75	15	2,094	0	313	11,389	354	369	369
October	419	32	29	7,933	719	0	76	12	2,038	0	313	11,571	319	331	331
November	459	30	31	8,134	691	0	83	11	2,047	0	334	11,820	246	257	257
December	438	31	26	8,448	697	0	70	8	2,185	0	359	12,264	219	226	226
Year 2022															
January	445	51	31	8,683	713	0	77	13	2,137	0	359	12,508	230	243	243
February	409	NM	36	7,440	635	0	83	15	1,944	0	319	10,921	244	259	259
March	459	41	30	7,931	683	0	111	21	2,051	0	347	11,673	348	369	369
April	402	42	28	7,350	630	0	102	24	1,986	0	308	10,871	377	401	401
May	461	40	35	7,790	671	0	84	28	2,045	0	332	11,485	413	441	441
June	450	45	29	7,964	706	0	63	32	2,053	0	319	11,661	413	446	446
July	453	48	28	8,667	741	0	53	31	2,152	0	336	12,510	426	458	458
August	453	38	31	8,759	731	0	61	30	2,091	0	303	12,498	411	441	441
September	404	47	29	7,842	680	0	60	26	1,919	0	265	11,272	368	395	395
October	396	43	33	7,903	692	0	51	24	1,828	0	260	11,230	333	357	357
November	372	43	38	8,144	675	0	62	18	1,998	0	287	11,635	256	273	273
December	425	137	31	8,075	714	0	92	13	2,023	0	270	11,779	229	242	242
Year 2023															
January	414	59	32	8,047	660	0	85	16	1,987	0	290	11,590	244	260	260
February	354	50	25	7,577	654	0	86	18	1,751	0	281	10,797	259	277	277
March	343	48	31	8,122	748	0	104	24	1,914	0	276	11,609	370	395	395
April	334	39	17	7,017	665	0	87	34	1,723	0	252	10,170	408	442	442
May	359	32	20	7,789	703	0	84	35	1,880	0	273	11,175	447	481	481
June	362	38	18	8,429	701	0	69	35	1,749	0	253	11,654	446	481	481
July	387	38	27	8,847	741	0	69	37	1,811	0	292	12,247	461	497	497
August	366	38	23	8,923	755	0	57	34	1,916	0	290	12,401	444	478	478
September	358	36	19	8,506	694	0	46	30	1,787	0	276	11,753	400	429	429
October	340	36	20	8,166	675	0	40	26	1,745	0	304	11,351	363	389	389
November	340	38	21	8,287	697	0	45	21	1,873	0	293	11,615	286	307	307
December	370	41	20	8,751	746	0	72	17	1,994	0	290	12,302	254	271	271

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 Fossil Gas.
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 Fossil Gas.
Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Fossil Gas.
Other Fossil Gas includes gaseous propane, blast furnace gas, other manufactured and waste gases derived from fossil fuels other than hydrogen.
See the Technical Notes for fuel conversion factors.
Renewable Sources include wood, black liquor, other wood waste, biogenic municipal solid waste, landfill gas, sludge waste, agriculture byproducts, other biomass, geothermal, solar thermal, photovoltaic energy, and wind.
Other includes hydrogen, non-biogenic municipal solid waste, batteries, purchased steam, sulfur, tire-derived fuel, and other miscellaneous energy sources.
Notes: Beginning with 2001 data, non-biogenic municipal solid waste and tire-derived fuels are reclassified as non-renewable energy sources and included in Other. Biogenic municipal solid waste is included in Other Renewable Sources.
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Estimated small scale solar photovoltaic generation and small scale solar photovoltaic capacity are based on data from Form EIA-861M, Form EIA-861 and from estimation methods described in the technical notes.

Table 3.5.B. Net Generation from Renewable Sources: Industrial Sector, 2013 - 2023
(Thousand Megawatthours)

	Generation at Utility Scale Facilities										Small Scale Generation	Generation From Utility and Small Scale Facilities	
Period	Wind	Solar Photovoltaic	Solar Thermal	Wood and Wood-Derived Fuels	Landfill Gas	Biogenic Municipal Solid Waste	Other Waste Biomass	Geothermal	Conventional Hydroelectric	Total Renewable Generation at Utility Scale Facilities	Estimated Solar Photovoltaic	Estimated Total Solar Photovoltaic	Estimated Total Solar
Annual Totals													
2013	37	17	0	27,691	178	2	1,166	0	3,463	32,554	N/A	N/A	N/A
2014	53	16	0	27,239	185	-2	1,185	0	1,282	29,957	1,139	1,156	1,156
2015	53	21	0	27,318	182	12	1,049	0	1,410	30,045	1,451	1,472	1,472
2016	71	27	0	27,458	170	6	959	0	1,269	29,960	2,060	2,087	2,087
2017	84	42	0	27,412	183	1	827	0	1,382	29,932	2,364	2,406	2,406
2018	97	47	0	27,475	168	4	697	0	1,149	29,636	2,636	2,683	2,683
2019	100	85	0	26,433	139	5	598	0	1,033	28,395	3,041	3,127	3,127
2020	617	101	0	24,916	133	5	676	0	1,001	27,450	3,484	3,586	3,586
2021	112	137	0	24,413	119	1	680	0	936	26,397	3,858	3,994	3,994
2022	130	276	0	23,289	128	0	678	0	899	25,401	4,048	4,324	4,324
2023	112	326	0	21,320	127	0	571	0	844	23,300	4,382	4,708	4,708
Year 2021													
January	9	6	0	2,141	12	0	61	0	86	2,315	216	222	222
February	10	7	0	1,816	12	-1	51	0	62	1,957	230	237	237
March	13	11	0	2,118	14	-1	65	0	103	2,322	330	340	340
April	10	12	0	1,996	12	-1	59	0	89	2,178	357	370	370
May	8	14	0	2,039	11	0	55	0	84	2,212	394	408	408
June	9	13	0	2,031	10	1	43	0	60	2,167	396	409	409
July	6	13	0	2,088	9	1	50	0	76	2,244	405	419	419
August	5	15	0	2,140	8	1	50	0	70	2,289	392	407	407
September	9	15	0	2,026	7	1	51	0	75	2,184	354	369	369
October	9	12	0	1,960	7	0	61	0	76	2,126	319	331	331
November	11	11	0	1,964	8	0	63	0	83	2,141	246	257	257
December	13	8	0	2,092	10	0	70	0	70	2,263	219	226	226
Year 2022													
January	12	13	0	2,049	10	0	65	0	77	2,226	230	243	243
February	14	15	0	1,864	10	0	57	0	83	2,042	244	259	259
March	15	21	0	1,960	11	0	66	0	111	2,183	348	369	369
April	14	24	0	1,901	10	0	62	0	102	2,112	377	401	401
May	12	28	0	1,961	10	0	62	0	84	2,157	413	441	441
June	8	32	0	1,988	11	0	46	0	63	2,148	413	446	446
July	7	31	0	2,088	11	0	46	0	53	2,236	426	458	458
August	5	30	0	2,022	11	0	52	0	61	2,182	411	441	441
September	6	26	0	1,860	11	0	42	0	60	2,006	368	395	395
October	11	24	0	1,748	11	0	58	0	51	1,904	333	357	357
November	14	18	0	1,914	10	0	59	0	62	2,077	256	273	273
December	12	13	0	1,936	12	0	64	0	92	2,127	229	242	242
Year 2023													
January	11	16	0	1,914	9	0	54	0	85	2,089	244	260	260
February	13	18	0	1,680	9	0	48	0	86	1,856	259	277	277
March	13	24	0	1,838	11	0	52	0	104	2,042	370	395	395
April	11	34	0	1,655	9	0	48	0	87	1,845	408	442	442
May	9	35	0	1,811	8	0	52	0	84	1,999	447	481	481
June	7	35	0	1,693	9	0	40	0	69	1,852	446	481	481
July	5	37	0	1,758	8	0	40	0	69	1,916	461	497	497
August	6	34	0	1,862	7	0	40	0	57	2,006	444	478	478
September	5	30	0	1,741	7	0	34	0	46	1,863	400	429	429
October	10	26	0	1,675	7	0	53	0	40	1,811	363	389	389
November	12	21	0	1,796	8	0	57	0	45	1,939	286	307	307
December	10	17	0	1,896	36	0	52	0	72	2,083	254	271	271

Wood and Wood-derived fuels include wood/wood waste solids (including paper pellets, railroad ties, utility poles, wood chips, bark, and wood waste solids), wood waste liquids (red liquor, sludge wood, spent sulfite liquor, and other wood-based liquids), and black liquor.
Other Waste Biomass includes sludge waste, agricultural byproducts, other biomass solids, other biomass liquids, and other biomass gases (including digester gases, methane, and other biomass gases).
Notes: Beginning with 2001 data, non-biogenic municipal solid waste and tire-derived fuels are reclassified as non-renewable energy sources and included in Other. Biogenic municipal solid waste is included in Other Renewable Sources.
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Displayed values of zero may represent small values that round to zero. The Excel version of this table provides additional precision which may be accessed by selecting individual cells.
Sources: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report; U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report; and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report; Form EIA-423, Monthly Cost and Quality of Fuels for Electric Plants Report; and Federal Energy Regulatory Commission, FERC Form 423, Monthly Report of Cost and Quality of Fuels for Electric Plants.
Estimated small scale solar photovoltaic generation and small scale solar photovoltaic capacity are based on data from Form EIA-861M, Form EIA-861 and from estimation methods described in the technical notes.

Table 3.6. Net Generation by Energy Source: Residential Sector, 2014 - 2023
(Thousand Megawatthours)

	Small Scale Generation
Period	**Estimated Small Scale Solar Photovoltaic Generation**
Annual Totals	
2014	4,947
2015	6,999
2016	10,595
2017	13,942
2018	17,105
2019	20,914
2020	25,179
2021	30,182
2022	39,510
2023	49,273
Year 2021	
January	1,669
February	1,774
March	2,549
April	2,837
May	3,135
June	3,161
July	3,188
August	2,994
September	2,642
October	2,308
November	2,068
December	1,857
Year 2022	
January	2,135
February	2,357
March	3,252
April	3,632
May	4,007
June	3,997
July	4,118
August	3,982
September	3,569
October	3,306
November	2,693
December	2,462
Year 2023	
January	2,625
February	2,894
March	3,954
April	4,478
May	5,073
June	4,948
July	5,173
August	5,049
September	4,409
October	4,155
November	3,428
December	3,087

See Glossary for definitions. Values are final.
Totals may not equal sum of components because of independent rounding. NM=Not meaningful due to large standard error. W=Withheld to avoid disclosure of individual company data.
Displayed values of zero may represent small values that round to zero. The Excel version of this table provides additional precision which may be accessed by selecting individual cells.
Sources:
Estimated small scale solar photovoltaic generation and small scale solar photovoltaic capacity are based on data from Form EIA-861M, Form EIA-861 and from estimation methods described in the technical notes.

Table 3.7. Utility Scale Facility Net Generation by State, by Sector, 2023 and 2022 (Thousand Megawatthours)

	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
Census Division and State	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
New England	102,611	105,612	-2.8%	1,658	1,563	96,713	99,270	2,129	2,217	2,110	2,563
Connecticut	40,666	43,054	-5.5%	135	103	39,582	42,036	294	295	655	620
Maine	12,512	12,764	-2.0%	5	1	11,361	11,090	47	104	1,099	1,568
Massachusetts	19,696	21,026	-6.3%	529	529	17,323	18,612	1,673	1,690	172	195
New Hampshire	16,825	18,764	-10.3%	17	11	16,719	18,659	62	66	27	28
Rhode Island	10,431	7,819	33.4%	0	0	10,223	7,609	50	58	157	151
Vermont	2,480	2,184	13.6%	973	918	1,504	1,263	2	3	0	0
Middle Atlantic	424,194	429,507	-1.2%	35,522	35,249	379,475	384,965	3,834	3,994	5,362	5,300
New Jersey	64,229	65,061	-1.3%	282	246	62,260	63,174	1,107	1,129	580	511
New York	124,040	125,185	-0.9%	35,157	34,872	85,934	87,212	2,145	2,267	804	834
Pennsylvania	235,925	239,261	-1.4%	84	130	231,282	234,578	581	598	3,978	3,955
East North Central	584,213	597,825	-2.3%	210,067	210,124	361,790	375,154	1,794	1,825	10,562	10,722
Illinois	177,738	185,223	-4.0%	4,104	4,345	170,954	177,941	435	447	2,244	2,490
Indiana	90,047	98,055	-8.2%	54,096	61,240	30,705	31,791	238	240	5,007	4,784
Michigan	120,657	117,497	2.7%	88,209	81,578	30,476	33,807	717	750	1,255	1,362
Ohio	133,223	135,810	-1.9%	13,608	15,623	118,678	119,252	273	248	664	687
Wisconsin	62,549	61,239	2.1%	50,050	47,338	10,976	12,361	130	139	1,392	1,400
West North Central	351,225	376,502	-6.7%	258,247	278,252	88,242	93,293	590	762	4,145	4,196
Iowa	69,837	72,982	-4.3%	55,970	58,913	11,744	11,790	128	191	1,994	2,088
Kansas	58,457	62,198	-6.0%	33,224	34,212	24,863	27,700	13	16	357	269
Minnesota	57,277	58,967	-2.9%	40,376	42,148	15,431	15,277	247	335	1,222	1,207
Missouri	66,703	79,361	-15.9%	59,453	72,498	7,025	6,615	182	200	43	47
Nebraska	39,446	40,693	-3.1%	27,292	27,762	11,830	12,587	19	19	304	325
North Dakota	42,069	44,401	-5.3%	32,582	33,585	9,321	10,626	0	0	166	190
South Dakota	17,436	17,900	-2.6%	9,350	9,134	8,028	8,697	NM	0	58	69
South Atlantic	800,717	807,112	-0.8%	659,687	656,810	122,815	130,655	2,774	2,829	15,441	16,819
Delaware	4,772	5,308	-10.1%	25	69	3,479	4,145	7	7	1,262	1,087
District of Columbia	172	160	7.3%	3	0	21	22	147	138	0	0
Florida	259,798	258,910	0.3%	243,421	240,393	11,636	13,270	1,097	1,105	3,644	4,143
Georgia	129,222	126,485	2.2%	105,782	100,542	19,110	20,738	2	6	4,327	5,198
Maryland	36,001	37,139	-3.1%	4,431	3,941	31,164	32,881	346	267	59	51
North Carolina	126,553	134,257	-5.7%	104,306	111,135	20,481	21,152	263	288	1,504	1,681
South Carolina	100,853	98,710	2.2%	95,650	92,255	3,717	4,965	2	1	1,485	1,489
Virginia	91,059	89,477	1.8%	68,967	69,673	19,136	16,657	910	1,017	2,047	2,130
West Virginia	52,287	56,665	-7.7%	37,103	38,802	14,070	16,824	0	0	1,114	1,040
East South Central	353,377	359,754	-1.8%	301,637	308,431	42,486	42,388	201	200	9,053	8,735
Alabama	139,435	144,789	-3.7%	97,501	103,495	37,210	36,783	0	0	4,725	4,511
Kentucky	63,217	69,147	-8.6%	62,094	67,901	587	682	1	3	535	562
Mississippi	72,933	67,781	7.6%	68,027	62,601	3,004	3,389	0	0	1,902	1,791
Tennessee	77,791	78,036	-0.3%	74,015	74,434	1,685	1,534	200	197	1,892	1,871
West South Central	797,511	781,608	2.0%	246,870	249,924	475,533	457,375	833	928	74,274	73,381
Arkansas	63,196	65,905	-4.1%	57,015	58,598	5,219	6,193	55	58	906	1,056
Louisiana	97,785	105,505	-7.3%	60,863	67,520	7,028	7,730	92	146	29,802	30,109
Oklahoma	89,236	84,635	5.4%	43,593	36,521	44,864	47,260	-18	-21	796	874
Texas	547,295	525,563	4.1%	85,398	87,284	418,422	396,193	704	744	42,771	41,342
Mountain	372,230	375,324	-0.8%	258,965	267,880	109,550	103,874	614	592	3,101	2,978
Arizona	111,839	104,699	6.8%	86,637	82,574	25,017	21,952	151	154	34	19
Colorado	57,542	58,044	-0.9%	39,336	40,494	17,962	17,299	24	27	220	225
Idaho	17,842	16,278	9.6%	11,701	10,388	5,527	5,300	70	69	544	521
Montana	26,896	27,089	-0.7%	10,516	11,423	16,354	15,636	0	0	26	30
Nevada	42,164	42,592	-1.0%	25,302	25,718	16,249	16,402	111	109	502	363
New Mexico	39,269	40,889	-4.0%	20,503	23,940	18,592	16,817	107	113	67	19
Utah	33,497	39,386	-15.0%	27,811	33,562	5,332	5,359	150	120	203	344
Wyoming	43,181	46,347	-6.8%	37,159	39,781	4,517	5,109	0	0	1,505	1,458
Pacific Contiguous	381,281	381,392	0.0%	205,332	210,093	159,101	153,604	2,579	2,677	14,269	15,018
California	216,629	203,384	6.5%	77,633	65,373	124,804	122,993	2,504	2,585	11,688	12,433
Oregon	61,692	61,318	0.6%	40,869	42,568	20,119	18,093	67	72	637	584
Washington	102,961	116,691	-11.8%	86,831	102,152	14,177	12,517	9	20	1,944	2,001
Pacific Noncontiguous	15,912	16,032	-0.7%	11,628	11,282	3,220	3,705	718	713	346	331
Alaska	6,718	6,694	0.4%	6,023	6,032	194	208	384	339	117	115
Hawaii	9,194	9,337	-1.5%	5,606	5,249	3,027	3,498	334	374	228	217
U.S. Total	4,183,271	4,230,668	-1.1%	2,189,615	2,229,605	1,838,927	1,844,282	16,066	16,737	138,664	140,043

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

Table 3.8. Utility Scale Facility Net Generation from Coal by State, by Sector, 2023 and 2022 (Thousand Megawatthours)

	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
Census Division and State	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
New England	203	348	-41.6%	0	0	203	348	0	0	0	0
Connecticut	0	0	--	0	0	0	0	0	0	0	0
Maine	43	42	1.8%	0	0	43	42	0	0	0	0
Massachusetts	0	0	--	0	0	0	0	0	0	0	0
New Hampshire	160	305	-47.6%	0	0	160	305	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	12,835	24,428	-47.5%	0	0	12,745	24,338	0	0	90	89
New Jersey	0	498	-100.0%	0	0	0	498	0	0	0	0
New York	0	0	--	0	0	0	0	0	0	0	0
Pennsylvania	12,835	23,930	-46.4%	0	0	12,745	23,840	0	0	90	89
East North Central	144,159	191,341	-24.7%	87,049	109,949	56,070	80,019	41	64	999	1,310
Illinois	27,150	40,559	-33.1%	1,273	1,920	24,977	37,503	16	17	884	1,119
Indiana	40,932	51,384	-20.3%	36,822	46,854	4,085	4,484	25	46	0	0
Michigan	23,555	34,482	-31.7%	23,349	34,118	205	359	0	0	0	5
Ohio	31,436	42,993	-26.9%	4,632	5,319	26,804	37,673	0	0	0	0
Wisconsin	21,087	21,923	-3.8%	20,972	21,738	0	0	0	0	114	185
West North Central	127,850	154,044	-17.0%	125,969	151,873	0	0	14	89	1,866	2,082
Iowa	16,414	18,172	-9.7%	15,121	16,634	0	0	7	62	1,286	1,477
Kansas	16,291	20,229	-19.5%	16,291	20,229	0	0	0	0	0	0
Minnesota	12,794	16,159	-20.8%	12,641	16,008	0	0	5	16	148	134
Missouri	40,347	52,832	-23.6%	40,345	52,822	0	0	2	11	0	0
Nebraska	17,916	19,945	-10.2%	17,618	19,621	0	0	0	0	298	325
North Dakota	22,525	24,831	-9.3%	22,390	24,685	0	0	0	0	135	146
South Dakota	1,563	1,875	-16.6%	1,563	1,875	0	0	0	0	0	0
South Atlantic	105,731	120,035	-11.9%	94,578	101,394	10,830	18,140	11	19	312	482
Delaware	-6	105	-106.2%	0	0	-6	105	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	11,691	15,532	-24.7%	11,665	15,496	0	0	0	0	27	36
Georgia	16,769	16,778	-0.1%	16,664	16,623	0	0	0	0	105	155
Maryland	1,709	4,639	-63.2%	0	0	1,709	4,639	0	0	0	0
North Carolina	14,205	14,674	-3.2%	14,126	14,506	0	0	11	19	68	149
South Carolina	15,150	14,243	6.4%	15,066	14,022	62	202	0	0	22	19
Virginia	1,415	3,346	-57.7%	1,325	3,224	0	0	0	0	90	122
West Virginia	44,798	50,718	-11.7%	35,732	37,524	9,065	13,194	0	0	0	0
East South Central	82,459	94,534	-12.8%	79,522	91,261	2,538	2,909	0	0	399	364
Alabama	19,182	25,944	-26.1%	19,182	25,944	0	0	0	0	0	0
Kentucky	43,447	47,053	-7.7%	43,447	47,053	0	0	0	0	0	0
Mississippi	4,037	5,651	-28.6%	1,499	2,742	2,538	2,909	0	0	0	0
Tennessee	15,793	15,886	-0.6%	15,394	15,522	0	0	0	0	399	364
West South Central	98,491	122,825	-19.8%	46,458	62,655	51,981	60,071	0	0	52	99
Arkansas	16,844	20,361	-17.3%	13,440	15,987	3,371	4,335	0	0	33	38
Louisiana	4,834	8,173	-40.9%	3,483	5,049	1,350	3,124	0	0	0	0
Oklahoma	5,199	8,954	-41.9%	5,180	8,894	0	0	0	0	19	60
Texas	71,615	85,337	-16.1%	24,355	32,725	47,260	52,612	0	0	0	0
Mountain	98,285	118,765	-17.2%	84,321	104,260	13,588	14,075	0	0	376	430
Arizona	12,069	13,449	-10.3%	12,069	13,449	0	0	0	0	0	0
Colorado	18,788	21,723	-13.5%	18,788	21,723	0	0	0	0	0	0
Idaho	0	6	-100.0%	0	0	0	0	0	0	0	6
Montana	11,553	11,651	-0.8%	0	0	11,548	11,643	0	0	5	8
Nevada	2,060	2,735	-24.7%	975	1,395	1,084	1,340	0	0	0	0
New Mexico	7,372	13,292	-44.5%	7,372	13,292	0	0	0	0	0	0
Utah	15,600	22,390	-30.3%	15,286	21,987	314	404	0	0	0	0
Wyoming	30,844	33,518	-8.0%	29,831	32,414	642	688	0	0	371	416
Pacific Contiguous	4,371	3,818	14.5%	0	0	4,138	3,546	0	0	233	272
California	209	252	-17.0%	0	0	0	0	0	0	209	252
Oregon	0	0	--	0	0	0	0	0	0	0	0
Washington	4,163	3,566	16.7%	0	0	4,138	3,546	0	0	24	20
Pacific Noncontiguous	731	1,375	-46.8%	434	461	143	797	154	116	0	0
Alaska	731	727	0.5%	434	461	143	149	154	116	0	0
Hawaii	0	648	-100.0%	0	0	0	648	0	0	0	0
U.S. Total	675,115	831,512	-18.8%	518,330	621,853	152,238	204,243	220	287	4,327	5,128

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

Table 3.9. Utility Scale Facility Net Generation from Petroleum Liquids by State, by Sector, 2023 and 2022 (Thousand Megawatthours)

	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
Census Division and State	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
New England	390	1,855	-79.0%	34	75	316	1,726	22	28	18	26
Connecticut	124	314	-60.5%	5	4	115	303	1	4	3	2
Maine	67	274	-75.5%	0	0	53	252	0	1	14	22
Massachusetts	97	756	-87.1%	27	65	63	681	7	8	1	2
New Hampshire	68	445	-84.7%	0	0	56	434	12	12	0	0
Rhode Island	31	60	-49.0%	0	0	29	56	NM	NM	0	0
Vermont	3	5	-50.4%	3	5	0	0	0	0	0	0
Middle Atlantic	504	2,307	-78.2%	126	819	339	1,456	22	17	18	16
New Jersey	42	138	-69.4%	0	0	40	135	1	2	0	1
New York	413	1,857	-77.8%	125	817	259	1,018	15	11	13	10
Pennsylvania	49	313	-84.4%	1	2	39	303	5	4	4	4
East North Central	383	660	-42.0%	248	280	122	370	1	2	11	8
Illinois	26	38	-30.0%	6	7	20	30	0	0	0	0
Indiana	97	114	-15.0%	90	104	6	9	0	0	1	1
Michigan	97	106	-8.4%	92	102	0	0	0	0	5	3
Ohio	114	372	-69.3%	14	38	96	330	1	1	4	3
Wisconsin	48	31	57.5%	47	29	0	0	0	0	2	1
West North Central	418	41	916.9%	411	27	2	9	2	2	3	2
Iowa	62	82	-24.8%	60	80	2	1	NM	0	0	0
Kansas	59	-224	-126.4%	59	-224	0	0	0	0	0	0
Minnesota	54	-61	-188.3%	50	-73	1	8	1	2	3	2
Missouri	132	163	-19.2%	132	163	0	0	0	0	0	0
Nebraska	35	35	0.0%	35	35	0	0	0	0	0	0
North Dakota	53	29	81.4%	53	29	0	0	0	0	0	0
South Dakota	23	17	36.8%	23	17	0	0	NM	0	0	0
South Atlantic	942	2,391	-60.6%	607	1,597	137	507	17	44	181	243
Delaware	-2	108	-101.7%	1	11	-3	97	0	0	0	0
District of Columbia	0	0	199.8%	0	0	0	0	0	0	0	0
Florida	220	487	-54.8%	204	445	10	26	0	0	6	NM
Georgia	182	386	-52.9%	29	149	5	42	1	4	147	191
Maryland	64	143	-55.0%	-2	10	66	133	0	0	NM	NM
North Carolina	84	278	-69.7%	62	246	6	14	1	4	15	14
South Carolina	96	187	-48.5%	86	170	3	6	0	0	7	11
Virginia	135	652	-79.4%	66	432	49	175	14	35	6	10
West Virginia	163	150	8.3%	161	136	2	15	0	0	0	0
East South Central	195	277	-29.6%	181	262	0	0	0	0	14	14
Alabama	25	41	-40.0%	13	32	0	0	0	0	11	9
Kentucky	61	80	-23.6%	61	80	0	0	0	0	0	0
Mississippi	7	9	-22.8%	5	6	0	0	0	0	2	3
Tennessee	102	147	-30.4%	102	144	0	0	0	0	1	2
West South Central	250	388	-35.5%	105	184	141	199	0	1	4	4
Arkansas	45	64	-30.8%	34	46	10	18	0	0	0	0
Louisiana	9	17	-43.5%	9	17	0	0	0	0	0	0
Oklahoma	20	29	-31.0%	18	27	0	0	0	0	2	1
Texas	176	278	-36.6%	43	94	131	181	0	1	3	3
Mountain	172	183	-6.0%	157	170	14	13	0	0	0	0
Arizona	32	32	-2.0%	32	32	0	0	0	0	0	0
Colorado	48	27	76.2%	47	24	0	3	0	0	0	0
Idaho	0	0	136.7%	0	0	0	0	0	0	0	0
Montana	10	11	-11.9%	0	5	10	6	0	0	0	0
Nevada	8	9	-13.3%	6	7	2	2	0	0	0	0
New Mexico	1	19	-92.5%	1	19	0	0	0	0	0	0
Utah	29	31	-5.7%	27	30	2	1	0	0	0	0
Wyoming	44	53	-17.6%	44	53	0	0	0	0	0	0
Pacific Contiguous	99	200	-50.6%	47	51	11	42	5	4	35	103
California	75	155	-51.6%	32	34	6	33	5	4	32	84
Oregon	0	2	-88.3%	0	1	0	0	0	0	0	0
Washington	24	44	-45.6%	15	16	5	9	0	NM	3	18
Pacific Noncontiguous	8,045	7,503	7.2%	6,338	5,890	1,491	1,411	6	3	209	198
Alaska	885	848	4.5%	835	806	0	0	2	-1	48	42
Hawaii	7,159	6,655	7.6%	5,503	5,084	1,491	1,411	5	4	161	156
U.S. Total	11,397	15,805	-27.9%	8,254	9,356	2,573	5,734	76	101	494	614

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

Table 3.10. Utility Scale Facility Net Generation from Petroleum Coke by State, by Sector, 2023 and 2022 (Thousand Megawatthours)

	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
Census Division and State	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
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	2,235	2,494	-10.4%	1,141	1,443	934	900	0	0	160	150
Illinois	0	0	--	0	0	0	0	0	0	0	0
Indiana	0	0	--	0	0	0	0	0	0	0	0
Michigan	1,257	1,449	-13.3%	1,098	1,298	0	0	0	0	159	150
Ohio	935	900	3.9%	0	0	934	900	0	0	1	0
Wisconsin	43	145	-70.3%	43	145	0	0	0	0	0	0
West North Central	2	12	-83.4%	0	0	0	0	2	10	0	NM
Iowa	2	12	-83.4%	0	0	0	0	2	10	0	NM
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	1,036	963	7.6%	982	832	0	0	0	0	54	131
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	982	832	18.1%	982	832	0	0	0	0	0	0
Georgia	54	131	-58.8%	0	0	0	0	0	0	54	131
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	18	-100.4%	0	18	0	0	0	0	0	0
Alabama	0	0	--	0	0	0	0	0	0	0	0
Kentucky	0	18	-100.4%	0	18	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	1,082	3,185	-66.0%	1,023	3,090	0	0	0	0	59	95
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	1,023	3,090	-66.9%	1,023	3,090	0	0	0	0	0	0
Oklahoma	0	0	--	0	0	0	0	0	0	0	0
Texas	59	95	-38.4%	0	0	0	0	0	0	59	95
Mountain	481	454	6.0%	0	0	481	454	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	481	454	6.0%	0	0	481	454	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	4,836	7,126	-32.1%	3,146	5,383	1,415	1,354	2	10	273	379

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

Table 3.11. Utility Scale Facility Net Generation from Natural Gas by State, by Sector, 2023 and 2022 (Thousand Megawatthours)

	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
Census Division and State	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
New England	57,482	55,914	2.8%	176	184	55,017	53,150	1,056	1,053	1,233	1,528
Connecticut	24,952	24,531	1.7%	91	69	23,925	23,559	289	285	648	618
Maine	3,975	4,140	-4.0%	0	0	3,710	3,567	31	32	234	542
Massachusetts	14,774	15,776	-6.4%	84	115	13,843	14,794	680	678	167	189
New Hampshire	4,226	4,502	-6.1%	0	0	4,186	4,465	13	9	27	28
Rhode Island	9,554	6,964	37.2%	0	0	9,354	6,765	43	48	157	151
Vermont	1	1	-15.7%	0	1	0	0	1	1	0	0
Middle Atlantic	230,740	223,870	3.1%	11,855	11,357	213,752	207,389	1,159	1,197	3,973	3,928
New Jersey	33,056	33,394	-1.0%	156	128	32,244	32,645	236	240	420	381
New York	58,428	60,312	-3.1%	11,682	11,193	45,417	47,729	757	786	573	603
Pennsylvania	139,256	130,164	7.0%	18	35	136,092	127,014	167	170	2,980	2,944
East North Central	221,688	185,235	19.7%	81,915	63,962	133,424	115,116	1,563	1,534	4,785	4,624
Illinois	28,445	19,789	43.7%	2,667	2,245	24,515	16,284	417	424	846	836
Indiana	34,849	32,121	8.5%	15,593	13,178	16,841	16,641	205	166	2,210	2,136
Michigan	54,068	41,184	31.3%	30,333	17,154	22,550	22,815	623	653	562	561
Ohio	78,705	68,865	14.3%	8,659	9,931	69,518	58,423	258	231	269	280
Wisconsin	25,621	23,276	10.1%	24,664	21,454	0	953	60	59	898	811
West North Central	44,054	31,727	38.9%	34,798	25,482	7,448	4,616	356	356	1,451	1,273
Iowa	10,241	7,339	39.5%	9,494	6,704	0	0	111	96	637	539
Kansas	4,369	3,363	29.9%	4,027	3,107	0	0	0	0	342	255
Minnesota	13,824	8,736	58.2%	8,770	5,523	4,574	2,718	103	113	376	381
Missouri	9,260	8,152	13.6%	6,205	6,063	2,874	1,898	140	146	40	45
Nebraska	1,411	1,260	12.0%	1,403	1,260	0	0	2	1	6	0
North Dakota	2,833	1,453	95.0%	2,826	1,441	0	0	0	0	8	13
South Dakota	2,116	1,424	48.5%	2,074	1,384	0	0	0	0	42	41
South Atlantic	406,807	405,126	0.4%	341,918	339,011	59,136	60,821	666	586	5,086	4,708
Delaware	4,383	4,750	-7.7%	17	51	3,289	3,831	0	0	1,077	868
District of Columbia	89	80	11.1%	0	0	0	0	89	80	0	0
Florida	197,191	193,310	2.0%	186,966	181,529	8,709	10,165	105	108	1,411	1,508
Georgia	60,044	59,849	0.3%	48,880	46,494	10,397	12,594	0	0	768	760
Maryland	15,336	13,950	9.9%	4,425	3,923	10,530	9,736	322	241	59	51
North Carolina	51,788	58,131	-10.9%	43,156	49,018	8,336	8,815	135	136	160	163
South Carolina	23,691	24,144	-1.9%	23,115	22,381	429	1,649	0	0	148	114
Virginia	50,605	48,802	3.7%	34,878	35,195	14,884	12,819	15	22	827	765
West Virginia	3,680	2,110	74.4%	483	420	2,562	1,211	0	0	635	479
East South Central	147,135	147,375	-0.2%	107,051	107,451	36,456	36,535	196	193	3,432	3,195
Alabama	61,848	62,217	-0.6%	24,273	24,992	35,992	35,871	0	0	1,584	1,355
Kentucky	15,090	16,918	-10.8%	14,426	16,047	457	651	0	0	206	220
Mississippi	55,168	51,719	6.7%	54,592	51,211	7	8	0	0	568	500
Tennessee	15,030	16,521	-9.0%	13,760	15,201	0	6	196	193	1,074	1,121
West South Central	428,274	390,476	9.7%	158,955	144,133	201,551	179,922	797	876	66,970	65,543
Arkansas	26,487	26,037	1.7%	25,055	24,509	1,220	1,276	37	39	175	213
Louisiana	74,414	72,275	3.0%	43,877	42,918	4,635	3,455	92	146	25,811	25,756
Oklahoma	45,213	36,023	25.5%	30,195	23,455	14,500	12,062	-1	-1	520	508
Texas	282,159	256,140	10.2%	59,829	53,252	181,197	163,129	669	693	40,464	39,067
Mountain	129,519	114,153	13.5%	101,455	88,782	25,928	23,399	430	424	1,707	1,548
Arizona	52,818	45,053	17.2%	36,354	31,062	16,332	13,861	131	130	0	0
Colorado	17,220	15,446	11.5%	14,844	13,111	2,207	2,157	2	3	167	174
Idaho	5,686	4,335	31.2%	3,700	2,521	1,810	1,656	39	39	137	119
Montana	1,002	729	37.5%	885	582	116	144	0	0	1	3
Nevada	24,599	24,844	-1.0%	22,869	22,464	1,176	1,967	65	62	489	352
New Mexico	14,231	10,978	29.6%	9,881	7,348	4,177	3,500	105	111	67	19
Utah	11,834	11,107	6.5%	11,490	10,671	111	113	86	79	148	244
Wyoming	2,129	1,661	28.2%	1,431	1,023	1	0	0	0	698	638
Pacific Contiguous	137,183	129,959	5.6%	54,673	48,902	71,232	69,318	1,521	1,611	9,757	10,128
California	94,390	96,372	-2.1%	28,299	29,465	55,779	56,078	1,484	1,561	8,829	9,268
Oregon	23,385	19,055	22.7%	13,228	10,125	10,011	8,818	36	40	111	71
Washington	19,408	14,532	33.5%	13,147	9,311	5,442	4,422	1	10	817	789
Pacific Noncontiguous	3,182	3,229	-1.5%	3,113	3,157	0	0	0	0	69	72
Alaska	3,182	3,229	-1.5%	3,113	3,157	0	0	0	0	69	72
Hawaii	0	0	--	0	0	0	0	0	0	0	0
U.S. Total	1,806,063	1,687,065	7.1%	895,910	832,421	803,945	750,266	7,744	7,830	98,463	96,548

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

Table 3.12. Utility Scale Facility Net Generation from Other Fossil Gas by State, by Sector, 2023 and 2022 (Thousand Megawatthours)

	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
Census Division and State	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
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	739	652	13.2%	0	0	30	0	0	0	709	652
New Jersey	161	120	34.6%	0	0	29	0	0	0	132	120
New York	0	0	--	0	0	0	0	0	0	0	0
Pennsylvania	578	533	8.4%	0	0	0	0	0	0	577	533
East North Central	4,684	4,477	4.6%	0	0	2,032	1,984	0	0	2,652	2,493
Illinois	248	265	-6.2%	0	0	0	0	0	0	248	265
Indiana	2,272	2,145	5.9%	0	0	0	0	0	0	2,272	2,145
Michigan	1,377	1,330	3.6%	0	0	1,377	1,330	0	0	0	0
Ohio	787	738	6.7%	0	0	655	654	0	0	132	84
Wisconsin	0	0	--	0	0	0	0	0	0	0	0
West North Central	23	31	-23.8%	0	0	0	0	0	0	23	31
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	23	31	-23.8%	0	0	0	0	0	0	23	31
South Dakota	0	0	--	0	0	0	0	0	0	0	0
South Atlantic	204	234	-12.6%	0	0	0	0	0	0	204	234
Delaware	172	198	-13.3%	0	0	0	0	0	0	172	198
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	0	0	-53.8%	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	32	35	-8.7%	0	0	0	0	0	0	32	35
East South Central	11	11	-5.3%	0	0	0	0	0	0	11	11
Alabama	0	0	628.2%	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	11	11	-5.5%	0	0	0	0	0	0	11	11
West South Central	4,132	4,312	-4.2%	0	0	1,269	1,463	0	0	2,863	2,848
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	1,804	1,882	-4.1%	0	0	0	0	0	0	1,804	1,882
Oklahoma	0	0	--	0	0	0	0	0	0	0	0
Texas	2,327	2,430	-4.2%	0	0	1,269	1,463	0	0	1,059	967
Mountain	365	339	7.7%	0	0	10	4	0	0	355	334
Arizona	0	0	--	0	0	0	0	0	0	0	0
Colorado	0	3	-100.0%	0	0	0	0	0	0	0	3
Idaho	0	0	--	0	0	0	0	0	0	0	0
Montana	10	4	126.0%	0	0	10	4	0	0	0	0
Nevada	0	0	--	0	0	0	0	0	0	0	0
New Mexico	0	0	--	0	0	0	0	0	0	0	0
Utah	3	3	-9.2%	0	0	0	0	0	0	3	3
Wyoming	352	329	7.2%	0	0	0	0	0	0	352	329
Pacific Contiguous	1,620	1,667	-2.8%	0	0	0	0	0	0	1,620	1,667
California	1,382	1,412	-2.1%	0	0	0	0	0	0	1,382	1,412
Oregon	0	0	--	0	0	0	0	0	0	0	0
Washington	238	255	-6.6%	0	0	0	0	0	0	238	255
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	11,778	11,722	0.5%	0	0	3,340	3,451	0	0	8,438	8,271

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

Table 3.13. Utility Scale Facility Net Generation from Nuclear Energy by State, by Sector, 2023 and 2022 (Thousand Megawatthours)

	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
Census Division and State	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
New England	23,204	27,386	-15.3%	0	0	23,204	27,386	0	0	0	0
Connecticut	13,669	16,464	-17.0%	0	0	13,669	16,464	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	9,535	10,922	-12.7%	0	0	9,535	10,922	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	131,165	131,297	-0.1%	0	0	131,165	131,297	0	0	0	0
New Jersey	28,335	28,319	0.1%	0	0	28,335	28,319	0	0	0	0
New York	27,525	26,812	2.7%	0	0	27,525	26,812	0	0	0	0
Pennsylvania	75,305	76,166	-1.1%	0	0	75,305	76,166	0	0	0	0
East North Central	151,445	151,787	-0.2%	27,996	23,283	123,449	128,504	0	0	0	0
Illinois	97,559	98,870	-1.3%	0	0	97,559	98,870	0	0	0	0
Indiana	0	0	--	0	0	0	0	0	0	0	0
Michigan	27,996	26,013	7.6%	27,996	23,283	0	2,730	0	0	0	0
Ohio	16,207	16,827	-3.7%	0	0	16,207	16,827	0	0	0	0
Wisconsin	9,683	10,077	-3.9%	0	0	9,683	10,077	0	0	0	0
West North Central	38,331	38,171	0.4%	38,331	38,171	0	0	0	0	0	0
Iowa	0	0	--	0	0	0	0	0	0	0	0
Kansas	10,302	8,982	14.7%	10,302	8,982	0	0	0	0	0	0
Minnesota	11,924	14,696	-18.9%	11,924	14,696	0	0	0	0	0	0
Missouri	9,180	8,875	3.4%	9,180	8,875	0	0	0	0	0	0
Nebraska	6,926	5,619	23.3%	6,926	5,619	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	209,922	204,864	2.5%	194,938	190,053	14,984	14,811	0	0	0	0
Delaware	0	0	--	0	0	0	0	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	29,940	30,768	-2.7%	29,940	30,768	0	0	0	0	0	0
Georgia	37,377	34,074	9.7%	37,377	34,074	0	0	0	0	0	0
Maryland	14,984	14,811	1.2%	0	0	14,984	14,811	0	0	0	0
North Carolina	42,336	42,644	-0.7%	42,336	42,644	0	0	0	0	0	0
South Carolina	55,622	54,370	2.3%	55,622	54,370	0	0	0	0	0	0
Virginia	29,663	28,197	5.2%	29,663	28,197	0	0	0	0	0	0
West Virginia	0	0	--	0	0	0	0	0	0	0	0
East South Central	95,266	86,549	10.1%	95,266	86,549	0	0	0	0	0	0
Alabama	45,579	42,314	7.7%	45,579	42,314	0	0	0	0	0	0
Kentucky	0	0	--	0	0	0	0	0	0	0	0
Mississippi	11,750	8,600	36.6%	11,750	8,600	0	0	0	0	0	0
Tennessee	37,937	35,635	6.5%	37,937	35,635	0	0	0	0	0	0
West South Central	67,864	72,095	-5.9%	27,184	30,488	40,680	41,607	0	0	0	0
Arkansas	14,972	14,324	4.5%	14,972	14,324	0	0	0	0	0	0
Louisiana	12,211	16,165	-24.5%	12,211	16,165	0	0	0	0	0	0
Oklahoma	0	0	--	0	0	0	0	0	0	0	0
Texas	40,680	41,607	-2.2%	0	0	40,680	41,607	0	0	0	0
Mountain	31,523	31,943	-1.3%	31,523	31,943	0	0	0	0	0	0
Arizona	31,523	31,943	-1.3%	31,523	31,943	0	0	0	0	0	0
Colorado	0	0	--	0	0	0	0	0	0	0	0
Idaho	0	0	--	0	0	0	0	0	0	0	0
Montana	0	0	--	0	0	0	0	0	0	0	0
Nevada	0	0	--	0	0	0	0	0	0	0	0
New Mexico	0	0	--	0	0	0	0	0	0	0	0
Utah	0	0	--	0	0	0	0	0	0	0	0
Wyoming	0	0	--	0	0	0	0	0	0	0	0
Pacific Contiguous	26,153	27,445	-4.7%	26,153	27,445	0	0	0	0	0	0
California	17,718	17,593	0.7%	17,718	17,593	0	0	0	0	0	0
Oregon	0	0	--	0	0	0	0	0	0	0	0
Washington	8,435	9,852	-14.4%	8,435	9,852	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	774,873	771,537	0.4%	441,391	427,933	333,482	343,604	0	0	0	0

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

Table 3.14. Utility Scale Facility Net Generation from Hydroelectric (Conventional) Power by State, by Sector, 2023 and 2022 (Thousand Megawatthours)

	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
Census Division and State	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
New England	8,601	6,602	30.3%	874	622	7,625	5,895	5	5	97	79
Connecticut	465	312	49.0%	39	29	426	283	0	0	0	0
Maine	3,832	3,063	25.1%	5	1	3,730	2,983	0	0	97	79
Massachusetts	1,165	877	32.8%	304	209	857	663	5	5	0	0
New Hampshire	1,592	1,201	32.5%	17	11	1,575	1,190	0	0	0	0
Rhode Island	8	7	2.1%	0	0	8	7	0	0	0	0
Vermont	1,539	1,141	34.9%	510	373	1,029	768	0	0	0	0
Middle Atlantic	31,229	30,089	3.8%	23,556	23,405	7,607	6,639	5	5	61	40
New Jersey	12	5	122.3%	0	0	12	5	0	0	0	0
New York	28,434	27,432	3.7%	23,490	23,312	4,878	4,074	5	5	61	40
Pennsylvania	2,783	2,653	4.9%	66	93	2,718	2,560	0	0	0	0
East North Central	4,384	4,370	0.3%	3,868	3,854	405	406	6	4	105	107
Illinois	92	115	-20.1%	64	61	29	54	0	0	0	0
Indiana	464	371	25.0%	458	367	0	0	6	4	0	0
Michigan	1,395	1,386	0.7%	1,328	1,318	57	58	0	0	10	10
Ohio	507	507	0.0%	292	322	215	185	0	0	0	0
Wisconsin	1,926	1,991	-3.3%	1,726	1,785	104	109	0	0	96	97
West North Central	10,055	10,475	-4.0%	9,799	10,148	198	254	0	0	58	73
Iowa	948	1,010	-6.1%	944	1,004	4	5	0	0	0	0
Kansas	13	24	-43.2%	0	0	13	24	0	0	0	0
Minnesota	750	950	-21.1%	513	652	180	225	0	0	58	73
Missouri	785	1,384	-43.3%	785	1,384	0	0	0	0	0	0
Nebraska	1,143	1,057	8.1%	1,143	1,057	0	0	0	0	0	0
North Dakota	2,119	1,791	18.3%	2,119	1,791	0	0	0	0	0	0
South Dakota	4,296	4,259	0.9%	4,296	4,259	0	0	0	0	0	0
South Atlantic	14,291	14,839	-3.7%	10,784	11,184	3,040	3,104	11	12	456	539
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	224	231	-2.9%	224	231	0	0	0	0	0	0
Georgia	2,872	3,177	-9.6%	2,857	3,158	6	6	0	0	9	13
Maryland	1,849	1,780	3.9%	0	0	1,849	1,780	0	0	0	0
North Carolina	4,225	4,686	-9.8%	3,552	3,927	664	748	9	11	0	0
South Carolina	2,199	2,181	0.9%	2,140	2,119	57	61	2	1	0	0
Virginia	1,391	1,137	22.3%	1,284	1,027	107	110	0	0	0	0
West Virginia	1,530	1,647	-7.1%	727	722	357	400	0	0	446	526
East South Central	20,426	23,916	-14.6%	19,746	23,123	680	793	0	0	0	0
Alabama	8,430	10,188	-17.3%	8,430	10,188	0	0	0	0	0	0
Kentucky	3,955	4,530	-12.7%	3,943	4,516	11	14	0	0	0	0
Mississippi	0	0	--	0	0	0	0	0	0	0	0
Tennessee	8,042	9,198	-12.6%	7,373	8,419	669	779	0	0	0	0
West South Central	6,178	6,774	-8.8%	5,371	5,757	807	1,018	0	0	0	0
Arkansas	3,229	3,469	-6.9%	3,172	3,411	56	57	0	0	0	0
Louisiana	708	916	-22.8%	0	0	708	916	0	0	0	0
Oklahoma	1,483	1,770	-16.2%	1,483	1,770	0	0	0	0	0	0
Texas	758	620	22.2%	715	576	43	44	0	0	0	0
Mountain	27,817	28,035	-0.8%	26,520	26,929	1,234	1,059	64	47	0	0
Arizona	5,937	5,298	12.1%	5,937	5,298	0	0	0	0	0	0
Colorado	1,597	1,345	18.7%	1,376	1,142	207	187	14	15	0	0
Idaho	8,378	8,360	0.2%	7,566	7,686	812	674	0	0	0	0
Montana	8,792	9,886	-11.1%	8,672	9,762	120	124	0	0	0	0
Nevada	1,319	1,686	-21.8%	1,246	1,629	73	57	0	0	0	0
New Mexico	108	121	-10.8%	108	121	0	0	0	0	0	0
Utah	769	595	29.2%	707	556	12	8	50	31	0	0
Wyoming	917	745	23.2%	908	735	9	10	0	0	0	0
Pacific Contiguous	120,156	127,865	-6.0%	117,897	126,396	2,246	1,461	13	8	0	0
California	32,381	17,644	83.5%	30,525	16,606	1,843	1,030	13	8	0	0
Oregon	26,329	31,304	-15.9%	26,110	31,096	219	208	0	0	0	0
Washington	61,446	78,916	-22.1%	61,262	78,693	184	223	0	0	0	0
Pacific Noncontiguous	1,867	1,824	2.4%	1,589	1,536	20	43	190	183	67	61
Alaska	1,773	1,713	3.5%	1,584	1,530	0	0	190	183	0	0
Hawaii	93	110	-15.2%	5	6	20	43	0	0	67	61
U.S. Total	245,002	254,789	-3.8%	220,003	232,953	23,862	20,673	293	263	844	899

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

Table 3.15. Utility Scale Facility Net Generation from Renewable Sources Excluding Hydroelectric by State, by Sector, 2023 and 2022 (Thousand Megawatthours)

	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
Census Division and State	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
New England	11,419	12,151	-6.0%	572	678	9,692	10,113	528	575	627	785
Connecticut	1,022	940	8.7%	0	1	1,012	933	5	6	5	0
Maine	4,320	4,963	-13.0%	0	0	3,694	4,150	7	32	618	780
Massachusetts	3,111	3,087	0.8%	115	142	2,520	2,458	472	482	4	5
New Hampshire	1,194	1,339	-10.8%	0	0	1,157	1,294	37	45	0	0
Rhode Island	839	789	6.3%	0	0	834	782	6	7	0	0
Vermont	934	1,034	-9.6%	457	536	476	496	1	2	0	0
Middle Atlantic	16,047	15,839	1.3%	358	119	13,903	13,786	1,298	1,364	489	571
New Jersey	2,233	2,204	1.4%	126	119	1,637	1,594	465	485	6	6
New York	8,663	8,233	5.2%	232	0	7,649	7,386	625	666	157	180
Pennsylvania	5,151	5,403	-4.7%	0	0	4,616	4,805	208	212	326	385
East North Central	55,069	57,427	-4.1%	8,565	8,200	45,278	47,786	131	157	1,095	1,283
Illinois	23,961	25,325	-5.4%	95	112	23,863	25,208	3	5	NM	0
Indiana	10,953	11,453	-4.4%	1,134	737	9,774	10,658	2	11	43	47
Michigan	11,584	12,268	-5.6%	4,822	5,172	6,201	6,435	42	43	519	618
Ohio	4,526	4,605	-1.7%	12	12	4,250	4,264	14	17	249	312
Wisconsin	4,046	3,775	7.2%	2,503	2,166	1,190	1,222	70	80	283	306
West North Central	130,196	141,512	-8.0%	48,823	52,251	80,452	88,264	180	265	741	732
Iowa	42,170	46,367	-9.1%	30,352	34,490	11,738	11,783	8	23	71	71
Kansas	27,420	29,823	-8.1%	2,546	2,117	24,850	27,676	13	16	11	13
Minnesota	17,628	18,179	-3.0%	6,354	5,222	10,534	12,177	102	164	638	616
Missouri	7,049	7,790	-9.5%	2,855	3,027	4,150	4,717	40	43	3	3
Nebraska	12,015	12,776	-6.0%	167	171	11,830	12,588	18	18	0	0
North Dakota	14,477	16,250	-10.9%	5,155	5,624	9,321	10,626	0	0	0	0
South Dakota	9,439	10,326	-8.6%	1,395	1,600	8,028	8,697	0	0	17	29
South Atlantic	60,851	58,161	4.6%	18,491	15,792	33,468	31,985	1,056	1,107	7,835	9,278
Delaware	226	147	53.3%	7	7	199	113	7	7	13	21
District of Columbia	83	80	3.3%	3	0	21	22	58	58	0	0
Florida	17,183	15,348	12.0%	13,478	11,129	1,994	2,076	457	459	1,254	1,684
Georgia	12,501	12,674	-1.4%	640	688	8,707	8,100	2	2	3,153	3,885
Maryland	1,746	1,524	14.6%	8	8	1,715	1,489	24	26	0	0
North Carolina	13,680	13,636	0.3%	1,075	796	11,475	11,575	106	118	1,024	1,147
South Carolina	4,504	4,414	2.0%	74	64	3,161	3,040	0	0	1,268	1,310
Virginia	8,830	8,322	6.1%	3,206	3,100	4,098	3,553	402	437	1,123	1,232
West Virginia	2,099	2,017	4.0%	0	0	2,099	2,017	0	0	0	0
East South Central	8,347	7,506	11.2%	334	203	2,811	2,150	5	7	5,197	5,147
Alabama	4,371	4,085	7.0%	25	25	1,217	912	0	0	3,129	3,147
Kentucky	573	494	15.9%	124	133	119	17	1	3	329	343
Mississippi	1,972	1,801	9.5%	182	42	459	471	0	0	1,332	1,288
Tennessee	1,430	1,126	27.0%	3	3	1,016	750	3	4	407	369
West South Central	190,432	180,499	5.5%	7,481	3,386	179,194	173,120	46	62	3,711	3,931
Arkansas	1,511	1,578	-4.2%	241	254	561	505	19	20	690	799
Louisiana	2,280	2,273	0.3%	40	41	335	235	0	0	1,904	1,997
Oklahoma	37,356	37,946	-1.6%	6,743	2,452	30,365	35,198	-7	-9	256	304
Texas	149,285	138,702	7.6%	457	639	147,932	137,182	35	51	861	831
Mountain	83,476	80,791	3.3%	14,764	15,647	68,184	64,627	121	121	408	395
Arizona	9,365	8,838	6.0%	593	697	8,718	8,099	20	23	34	19
Colorado	19,840	19,474	1.9%	4,256	4,514	15,568	14,950	8	8	8	2
Idaho	3,706	3,527	5.1%	435	181	2,906	2,970	31	30	335	345
Montana	4,825	4,081	18.2%	959	1,074	3,846	2,988	0	0	20	19
Nevada	14,192	13,311	6.6%	177	193	13,955	13,060	47	47	12	11
New Mexico	17,576	16,480	6.7%	3,142	3,161	14,433	13,317	1	2	0	0
Utah	5,163	5,114	1.0%	255	270	4,894	4,833	14	11	0	0
Wyoming	8,810	9,966	-11.6%	4,945	5,556	3,865	4,410	0	0	0	0
Pacific Contiguous	92,484	90,294	2.4%	6,996	7,471	82,145	79,457	991	987	2,352	2,380
California	71,348	69,916	2.0%	1,490	1,855	67,939	66,167	953	945	966	949
Oregon	11,955	10,921	9.5%	1,532	1,346	9,866	9,031	31	32	526	513
Washington	9,181	9,457	-2.9%	3,974	4,270	4,340	4,258	7	10	860	918
Pacific Noncontiguous	1,918	1,846	3.9%	158	180	1,569	1,456	190	210	0	0
Alaska	150	180	-16.5%	61	81	50	58	39	41	0	0
Hawaii	1,767	1,666	6.1%	97	99	1,519	1,398	151	169	0	0
U.S. Total	650,239	646,025	0.7%	106,543	103,925	516,695	512,744	4,545	4,854	22,456	24,502

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

Table 3.16. Utility Scale Facility Net Generation from Hydroelectric (Pumped Storage) Power by State, by Sector, 2023 and 2022 (Thousand Megawatthours)

	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
Census Division and State	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
New England	-375	-398	-5.9%	0	0	-375	-398	0	0	0	0
Connecticut	5	1	245.4%	0	0	5	1	0	0	0	0
Maine	0	0	--	0	0	0	0	0	0	0	0
Massachusetts	-379	-400	-5.0%	0	0	-379	-400	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	-1,442	-1,328	8.6%	-372	-451	-1,070	-878	0	0	0	0
New Jersey	-165	-136	21.6%	0	0	-165	-136	0	0	0	0
New York	-372	-451	-17.4%	-372	-451	0	0	0	0	0	0
Pennsylvania	-905	-742	22.0%	0	0	-905	-742	0	0	0	0
East North Central	-810	-868	-6.7%	-810	-868	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	-810	-868	-6.7%	-810	-868	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	-49	165	-129.6%	-49	165	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	-49	165	-129.6%	-49	165	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	-2,573	-3,015	-14.7%	-2,573	-3,015	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	-664	-643	3.2%	-664	-643	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	-454	-870	-47.8%	-454	-870	0	0	0	0	0	0
Virginia	-1,455	-1,502	-3.1%	-1,455	-1,502	0	0	0	0	0	0
West Virginia	0	0	--	0	0	0	0	0	0	0	0
East South Central	-554	-491	12.7%	-554	-491	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	-554	-491	12.7%	-554	-491	0	0	0	0	0	0
West South Central	47	-23	-306.6%	47	-23	0	0	0	0	0	0
Arkansas	101	67	49.1%	101	67	0	0	0	0	0	0
Louisiana	0	0	--	0	0	0	0	0	0	0	0
Oklahoma	-53	-90	-41.3%	-53	-90	0	0	0	0	0	0
Texas	0	0	--	0	0	0	0	0	0	0	0
Mountain	161	76	112.8%	161	76	0	0	0	0	0	0
Arizona	136	97	40.5%	136	97	0	0	0	0	0	0
Colorado	25	-21	-217.9%	25	-21	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	-396	-145	173.1%	-396	-145	0	0	0	0	0	0
California	-393	-155	153.3%	-393	-155	0	0	0	0	0	0
Oregon	0	0	--	0	0	0	0	0	0	0	0
Washington	-3	10	-129.6%	-3	10	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	-5,990	-6,028	-0.6%	-4,545	-4,752	-1,445	-1,276	0	0	0	0

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

Table 3.17. Utility Scale Facility Net Generation from Other Energy Sources by State, by Sector, 2023 and 2022 (Thousand Megawatthours)

	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
Census Division and State	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
New England	1,686	1,754	-3.8%	2	2	1,031	1,051	518	556	136	145
Connecticut	429	492	-12.7%	0	0	429	492	0	0	0	0
Maine	276	280	-1.7%	0	0	131	96	9	40	136	145
Massachusetts	928	930	-0.2%	-1	-1	420	415	509	516	0	0
New Hampshire	51	50	2.5%	0	0	51	50	0	0	0	0
Rhode Island	0	-1	-69.7%	0	0	0	-1	0	0	0	0
Vermont	3	3	-5.5%	3	3	0	0	0	0	0	0
Middle Atlantic	2,377	2,353	1.0%	0	0	1,005	937	1,350	1,412	22	4
New Jersey	554	519	6.8%	0	0	127	114	405	401	22	4
New York	949	991	-4.2%	0	0	206	192	743	798	0	0
Pennsylvania	874	843	3.7%	0	0	672	631	202	212	0	0
East North Central	977	902	8.3%	95	21	76	70	51	65	755	747
Illinois	256	263	-2.6%	0	0	-9	-7	0	0	265	270
Indiana	482	467	3.1%	0	0	0	0	0	12	482	455
Michigan	138	147	-6.0%	0	0	87	81	51	53	0	13
Ohio	6	3	102.1%	0	0	-2	-5	0	0	8	8
Wisconsin	95	22	329.5%	95	22	0	0	0	0	0	NM
West North Central	344	324	6.4%	163	134	143	149	36	40	3	1
Iowa	0	0	-22.6%	0	0	0	0	0	0	0	0
Kansas	3	1	276.1%	0	0	0	0	0	0	3	1
Minnesota	303	308	-1.5%	125	119	143	149	36	40	0	0
Missouri	0	0	--	0	0	0	0	0	0	0	0
Nebraska	0	0	-74.3%	0	0	0	0	0	0	0	0
North Dakota	38	15	151.7%	38	15	0	0	0	0	0	0
South Dakota	0	0	--	0	0	0	0	0	0	0	0
South Atlantic	3,508	3,514	-0.2%	-39	-37	1,221	1,287	1,014	1,061	1,313	1,204
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	2,366	2,402	-1.5%	-38	-37	923	1,003	535	538	946	898
Georgia	86	58	48.3%	0	0	-5	-4	0	0	91	62
Maryland	312	294	6.4%	0	0	312	294	0	0	0	0
North Carolina	235	208	13.2%	-1	-1	0	0	0	0	237	209
South Carolina	44	42	6.1%	0	0	5	7	0	0	40	35
Virginia	477	523	-8.8%	0	0	-2	0	478	523	0	0
West Virginia	-14	-12	13.0%	0	0	-14	-12	0	0	0	0
East South Central	92	58	58.5%	91	54	0	0	0	0	0	4
Alabama	0	0	86.0%	0	0	0	0	0	0	0	0
Kentucky	91	54	68.2%	91	54	0	0	0	0	0	0
Mississippi	0	0	--	0	0	0	0	0	0	0	0
Tennessee	0	4	-86.9%	0	0	0	0	0	0	0	4
West South Central	762	1,078	-29.3%	245	255	-89	-26	-10	-11	615	860
Arkansas	6	5	31.1%	0	0	0	0	-1	0	7	5
Louisiana	501	715	-29.9%	219	241	0	0	0	0	282	474
Oklahoma	18	4	326.8%	28	15	0	0	-9	-11	0	0
Texas	236	353	-33.3%	-1	-1	-89	-26	0	0	326	380
Mountain	432	587	-26.5%	66	74	112	243	0	0	254	270
Arizona	-40	-11	253.0%	-6	-4	-33	-8	0	0	0	0
Colorado	25	48	-48.8%	0	0	-20	2	0	0	45	47
Idaho	72	51	43.4%	0	0	0	0	0	0	72	51
Montana	224	272	-17.9%	0	0	224	272	0	0	0	0
Nevada	-13	6	-314.3%	28	30	-41	-24	0	0	0	0
New Mexico	-19	0	NM	-1	0	-18	0	0	0	0	0
Utah	98	146	-32.4%	46	48	0	0	0	0	53	97
Wyoming	84	76	11.0%	0	0	0	0	0	0	84	76
Pacific Contiguous	-390	290	-234.5%	-38	-26	-671	-220	49	68	271	469
California	-482	196	-345.9%	-39	-26	-763	-314	49	68	271	469
Oregon	23	35	-34.4%	0	0	24	36	0	0	0	0
Washington	69	58	19.6%	1	0	69	58	0	0	0	0
Pacific Noncontiguous	170	255	-33.5%	-4	57	-4	-3	178	201	0	0
Alaska	-4	-3	31.4%	-4	-3	0	0	0	0	0	0
Hawaii	174	259	-32.7%	0	60	-4	-3	178	201	0	0
U.S. Total	9,957	11,114	-10.4%	580	534	2,823	3,487	3,185	3,391	3,369	3,702

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

Table 3.18. Utility Scale Facility Net Generation from Wind by State, by Sector, 2023 and 2022 (Thousand Megawatthours)

	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
Census Division and State	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
New England	3,450	4,046	-14.7%	202	248	3,223	3,766	25	32	0	0
Connecticut	10	13	-22.9%	0	0	10	13	0	0	0	0
Maine	2,339	2,716	-13.9%	0	0	2,339	2,716	0	0	0	0
Massachusetts	182	216	-15.8%	37	51	125	140	19	25	0	0
New Hampshire	411	482	-14.7%	0	0	411	482	0	0	0	0
Rhode Island	169	209	-19.3%	0	0	163	202	6	7	0	0
Vermont	340	409	-17.0%	165	197	175	212	0	0	0	0
Middle Atlantic	8,076	8,161	-1.0%	232	0	7,840	8,157	3	3	1	2
New Jersey	18	22	-14.8%	0	0	18	22	0	0	0	0
New York	4,800	4,568	5.1%	232	0	4,563	4,563	3	3	1	2
Pennsylvania	3,258	3,572	-8.8%	0	0	3,258	3,572	0	0	0	0
East North Central	43,502	47,600	-8.6%	5,903	6,264	37,483	41,195	24	32	92	109
Illinois	21,808	23,494	-7.2%	10	14	21,797	23,475	1	5	0	0
Indiana	8,844	9,985	-11.4%	0	0	8,844	9,985	0	0	0	0
Michigan	8,292	9,151	-9.4%	4,742	5,094	3,551	4,057	0	0	0	0
Ohio	2,819	3,154	-10.6%	5	5	2,726	3,044	3	4	86	101
Wisconsin	1,738	1,816	-4.3%	1,147	1,151	564	633	20	24	7	8
West North Central	125,583	137,224	-8.5%	48,134	51,766	77,404	85,397	34	47	11	13
Iowa	41,439	45,761	-9.4%	30,030	34,299	11,407	11,457	2	5	0	0
Kansas	27,273	29,687	-8.1%	2,530	2,108	24,718	27,551	13	16	11	13
Minnesota	14,398	15,091	-4.6%	6,160	5,072	8,220	9,992	19	26	0	0
Missouri	6,775	7,525	-10.0%	2,777	2,971	3,998	4,553	0	0	0	0
Nebraska	11,845	12,614	-6.1%	87	92	11,758	12,522	0	0	0	0
North Dakota	14,477	16,250	-10.9%	5,155	5,624	9,321	10,626	0	0	0	0
South Dakota	9,376	10,295	-8.9%	1,395	1,600	7,981	8,695	0	0	0	0
South Atlantic	3,151	3,106	1.4%	47	51	3,100	3,051	4	4	0	0
Delaware	4	4	-4.8%	0	0	0	0	4	4	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	482	498	-3.2%	0	0	482	498	0	0	0	0
North Carolina	529	547	-3.3%	0	0	529	547	0	0	0	0
South Carolina	0	0	--	0	0	0	0	0	0	0	0
Virginia	47	51	-7.6%	47	51	0	0	0	0	0	0
West Virginia	2,089	2,007	4.1%	0	0	2,089	2,007	0	0	0	0
East South Central	16	15	9.1%	0	0	16	15	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	16	15	9.1%	0	0	16	15	0	0	0	0
West South Central	156,867	152,340	3.0%	6,861	2,570	149,975	149,723	32	47	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	37,012	37,553	-1.4%	6,669	2,374	30,344	35,179	0	0	0	0
Texas	119,855	114,787	4.4%	193	196	119,631	114,544	32	47	0	0
Mountain	49,227	50,193	-1.9%	12,980	14,047	36,243	36,142	1	2	2	2
Arizona	1,733	1,564	10.8%	0	0	1,733	1,564	0	0	0	0
Colorado	16,091	16,911	-4.8%	4,243	4,501	11,846	12,409	0	0	2	2
Idaho	2,320	2,442	-5.0%	149	163	2,170	2,279	0	0	0	0
Montana	4,557	4,022	13.3%	951	1,065	3,606	2,957	0	0	0	0
Nevada	291	316	-7.7%	0	0	291	316	0	0	0	0
New Mexico	14,914	14,435	3.3%	2,691	2,762	12,222	11,670	1	2	0	0
Utah	683	723	-5.5%	0	0	683	723	0	0	0	0
Wyoming	8,637	9,780	-11.7%	4,945	5,556	3,691	4,224	0	0	0	0
Pacific Contiguous	30,522	30,848	-1.1%	5,699	5,935	24,812	24,902	7	6	5	4
California	14,019	14,638	-4.2%	579	693	13,428	13,935	7	6	5	4
Oregon	8,954	8,149	9.9%	1,462	1,284	7,491	6,865	0	0	0	0
Washington	7,550	8,061	-6.3%	3,657	3,959	3,892	4,102	0	0	0	0
Pacific Noncontiguous	746	765	-2.5%	61	81	684	684	0	0	0	0
Alaska	111	139	-20.0%	61	81	50	58	0	0	0	0
Hawaii	634	625	1.4%	0	0	634	625	0	0	0	0
U.S. Total	421,141	434,297	-3.0%	80,120	80,962	340,780	353,032	130	173	112	130

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

Table 3.19. Utility Scale Facility Net Generation from Biomass by State, by Sector, 2023 and 2022 (Thousand Megawatthours)

	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
Census Division and State	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
New England	4,392	4,759	-7.7%	236	277	3,049	3,175	489	527	618	780
Connecticut	591	514	14.9%	0	0	591	514	0	0	0	0
Maine	1,458	1,815	-19.7%	0	0	833	1,002	7	32	618	780
Massachusetts	914	937	-2.5%	0	0	471	489	443	448	0	0
New Hampshire	779	853	-8.6%	0	0	742	807	37	45	0	0
Rhode Island	247	218	13.1%	0	0	247	218	0	0	0	0
Vermont	403	422	-4.5%	236	277	166	143	1	2	0	0
Middle Atlantic	3,830	4,137	-7.4%	0	0	2,215	2,399	1,149	1,194	465	544
New Jersey	671	663	1.1%	0	0	335	329	335	335	0	0
New York	1,627	1,880	-13.5%	0	0	869	1,058	612	653	146	168
Pennsylvania	1,532	1,593	-3.8%	0	0	1,011	1,011	201	206	319	376
East North Central	3,873	4,610	-16.0%	640	877	2,137	2,447	96	114	1,000	1,173
Illinois	242	283	-14.3%	83	96	159	186	0	0	0	0
Indiana	254	386	-34.2%	154	274	57	54	0	10	43	47
Michigan	2,023	2,258	-10.4%	0	0	1,462	1,596	42	43	519	618
Ohio	324	530	-38.9%	0	0	154	313	8	7	162	210
Wisconsin	1,030	1,154	-10.7%	403	506	305	296	46	53	276	298
West North Central	1,616	1,698	-4.8%	249	261	490	501	147	218	729	719
Iowa	209	220	-4.9%	31	32	101	98	6	19	71	71
Kansas	66	61	7.8%	0	0	66	61	0	0	0	0
Minnesota	1,135	1,187	-4.3%	129	131	285	302	83	138	638	616
Missouri	99	113	-12.5%	17	27	39	40	40	43	3	3
Nebraska	90	89	1.6%	72	70	0	0	18	18	0	0
North Dakota	0	0	--	0	0	0	0	0	0	0	0
South Dakota	17	29	-42.1%	0	0	0	0	0	0	17	29
South Atlantic	15,325	17,655	-13.2%	1,491	1,898	5,095	5,536	912	952	7,827	9,269
Delaware	66	79	-16.0%	0	0	53	58	0	0	13	21
District of Columbia	58	58	0.5%	0	0	0	0	58	58	0	0
Florida	3,124	4,006	-22.0%	366	706	1,056	1,166	450	452	1,251	1,681
Georgia	4,951	5,727	-13.5%	0	0	1,798	1,843	0	0	3,153	3,885
Maryland	322	312	3.0%	0	0	319	306	3	7	0	0
North Carolina	1,692	1,825	-7.3%	0	0	668	678	0	0	1,024	1,147
South Carolina	1,741	1,992	-12.6%	67	56	412	632	0	0	1,263	1,304
Virginia	3,361	3,645	-7.8%	1,058	1,136	779	842	401	436	1,123	1,232
West Virginia	9	10	-10.9%	0	0	9	10	0	0	0	0
East South Central	5,380	5,369	0.2%	81	92	107	137	0	0	5,192	5,141
Alabama	3,171	3,190	-0.6%	0	0	41	43	0	0	3,129	3,147
Kentucky	418	448	-6.7%	81	92	8	13	0	0	329	343
Mississippi	1,339	1,297	3.2%	0	0	8	9	0	0	1,332	1,288
Tennessee	452	434	4.2%	0	0	50	71	0	0	402	363
West South Central	4,247	4,703	-9.7%	250	429	305	364	-7	-8	3,700	3,918
Arkansas	713	841	-15.2%	0	0	27	46	0	1	687	795
Louisiana	1,988	2,077	-4.3%	0	0	84	80	0	0	1,904	1,997
Oklahoma	265	312	-15.0%	0	0	17	16	-7	-9	256	304
Texas	1,280	1,473	-13.1%	250	429	177	222	0	0	853	822
Mountain	957	995	-3.9%	25	23	536	570	44	41	352	361
Arizona	193	204	-5.5%	0	0	193	204	0	0	0	0
Colorado	134	163	-18.1%	0	0	134	163	0	0	0	0
Idaho	444	460	-3.6%	17	14	64	74	31	30	332	342
Montana	27	28	-1.8%	8	9	0	0	0	0	20	19
Nevada	54	49	9.8%	0	0	54	49	0	0	0	0
New Mexico	13	17	-23.4%	0	0	13	17	0	0	0	0
Utah	92	74	25.0%	0	0	79	63	14	11	0	0
Wyoming	0	0	--	0	0	0	0	0	0	0	0
Pacific Contiguous	7,253	7,605	-4.6%	420	373	3,911	4,272	787	769	2,135	2,190
California	5,062	5,307	-4.6%	47	12	3,518	3,809	749	727	749	759
Oregon	924	985	-6.2%	65	56	303	384	31	32	526	513
Washington	1,267	1,313	-3.5%	309	305	90	80	7	10	860	918
Pacific Noncontiguous	327	318	2.8%	19	16	124	96	184	205	0	0
Alaska	39	41	-4.7%	0	0	0	0	39	41	0	0
Hawaii	288	277	3.8%	19	16	124	96	145	165	0	0
U.S. Total	47,200	51,849	-9.0%	3,411	4,245	17,970	19,496	3,800	4,012	22,018	24,096

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

Table 3.20. Utility Scale Facility Net Generation from Geothermal by State, by Sector, 2023 and 2022 (Thousand Megawatthours)

	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
Census Division and State	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
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	4,733	4,519	4.7%	248	262	4,485	4,257	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	89	91	-3.1%	0	0	89	91	0	0	0	0
Montana	0	0	--	0	0	0	0	0	0	0	0
Nevada	4,150	3,917	6.0%	0	0	4,150	3,917	0	0	0	0
New Mexico	36	47	-23.8%	0	0	36	47	0	0	0	0
Utah	458	463	-1.1%	248	262	210	201	0	0	0	0
Wyoming	0	0	--	0	0	0	0	0	0	0	0
Pacific Contiguous	11,442	11,360	0.7%	534	764	10,908	10,596	0	0	0	0
California	11,266	11,181	0.8%	534	764	10,732	10,417	0	0	0	0
Oregon	176	179	-1.6%	0	0	176	179	0	0	0	0
Washington	0	0	--	0	0	0	0	0	0	0	0
Pacific Noncontiguous	193	208	-7.6%	0	0	193	208	0	0	0	0
Alaska	0	0	--	0	0	0	0	0	0	0	0
Hawaii	193	208	-7.6%	0	0	193	208	0	0	0	0
U.S. Total	16,367	16,087	1.7%	782	1,026	15,586	15,061	0	0	0	0

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

Table 3.21. Net Generation from Solar Photovoltaic by State, by Sector, 2023 and 2022 (Thousand Megawatthours)

	All Sectors							Electric Power Sector				Commercial Sector						Industrial Sector						Residential Sector	
								Electric Utilities		Independent Power Producers															
	Estimated Generation From Utility and Small Scale Facilities			Generation at Utility Scale Facilities		Estimated Small Scale Generation		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Estimated Generation From Utility and Small Scale Facilities		Generation at Utility Scale Facilities		Estimated Small Scale Generation		Estimated Generation From Utility and Small Scale Facilities		Generation at Utility Scale Facilities		Estimated Small Scale Generation		Estimated Small Scale Generation	
Census Division and State	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
New England	10,294	9,138	12.7%	3,577	3,346	6,717	5,791	134	153	3,421	3,173	3,607	3,157	14	16	3,593	3,141	221	207	9	5	213	203	2,911	2,447
Connecticut	1,659	1,470	12.8%	421	413	1,238	1,057	0	1	412	406	396	382	5	6	391	376	58	49	5	0	54	49	793	633
Maine	1,152	768	50.0%	523	432	629	336	0	0	523	432	520	253	0	0	520	253	0	0	0	0	0	0	109	83
Massachusetts	5,724	5,353	6.9%	2,015	1,934	3,709	3,419	77	91	1,924	1,829	2,078	1,955	9	10	2,069	1,945	143	142	4	5	138	137	1,501	1,337
New Hampshire	302	244	23.9%	3	4	299	240	0	0	3	4	105	95	0	0	105	95	12	11	0	0	12	11	182	134
Rhode Island	1,027	888	15.5%	423	362	603	527	0	0	423	362	413	393	0	0	413	393	7	3	0	0	7	3	183	130
Vermont	430	414	4.1%	192	202	239	211	56	61	135	141	95	79	0	0	95	79	2	2	0	0	2	2	142	130
Middle Atlantic	12,304	10,994	11.9%	4,141	3,541	8,163	7,453	126	119	3,848	3,231	3,913	3,733	146	167	3,768	3,565	324	326	22	24	302	302	4,094	3,585
New Jersey	4,710	4,691	0.4%	1,544	1,518	3,166	3,172	126	119	1,283	1,243	1,466	1,564	130	151	1,336	1,413	201	214	6	6	195	208	1,635	1,551
New York	6,205	5,256	18.0%	2,236	1,785	3,968	3,471	0	0	2,218	1,765	2,178	1,930	9	10	2,169	1,920	27	28	9	10	18	18	1,781	1,534
Pennsylvania	1,389	1,047	32.7%	361	237	1,029	809	0	0	347	222	269	239	7	7	262	232	96	85	7	9	89	76	678	501
East North Central	10,580	7,538	40.4%	7,694	5,216	2,887	2,321	2,023	1,060	5,658	4,145	1,431	1,253	11	11	1,420	1,242	97	81	2	1	95	80	1,372	999
Illinois	3,447	2,795	23.3%	1,911	1,548	1,536	1,247	2	2	1,907	1,546	824	749	2	0	822	749	5	4	NM	0	5	4	708	494
Indiana	2,203	1,363	61.6%	1,854	1,082	349	281	980	463	872	618	193	165	2	1	191	164	14	7	0	0	14	7	144	110
Michigan	1,566	1,105	41.7%	1,269	859	298	246	80	78	1,189	781	105	93	0	0	105	93	5	5	0	0	5	5	187	148
Ohio	1,800	1,247	44.4%	1,382	921	418	326	7	7	1,370	907	191	146	4	6	187	141	44	39	2	1	43	37	187	148
Wisconsin	1,564	1,027	52.2%	1,277	805	287	222	954	510	320	292	118	99	4	3	115	95	27	27	0	0	27	27	145	100
West North Central	4,586	3,796	20.8%	2,997	2,590	1,589	1,206	440	224	2,557	2,366	558	464	0	0	558	464	58	52	0	0	58	52	972	690
Iowa	911	693	31.4%	521	386	390	308	291	158	230	228	200	173	0	0	200	173	15	12	0	0	15	12	175	123
Kansas	210	161	30.3%	81	74	129	87	16	10	66	65	40	27	0	0	40	27	1	1	0	0	1	1	88	59
Minnesota	2,417	2,144	12.7%	2,094	1,901	323	243	65	19	2,029	1,882	88	71	0	0	88	71	23	23	0	0	23	23	211	149
Missouri	867	681	27.3%	174	152	692	528	61	28	113	124	218	184	0	0	218	183	15	12	0	0	15	12	459	333
Nebraska	129	110	16.9%	79	74	49	36	8	8	72	65	11	9	0	0	11	9	4	3	0	0	4	3	35	24
North Dakota	2	2	38.5%	0	0	2	2	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	1	1
South Dakota	50	4	NM	47	2	4	2	0	0	47	2	1	1	0	0	1	1	0	0	0	0	0	0	3	2
South Atlantic	50,516	43,453	16.3%	42,375	37,372	8,141	6,081	16,953	13,815	25,273	23,398	1,369	1,220	140	150	1,228	1,070	443	342	8	10	434	332	6,479	4,679
Delaware	344	222	55.0%	155	64	189	158	7	7	146	54	38	34	3	3	35	32	13	12	0	0	13	12	141	114
District of Columbia	231	198	16.6%	25	22	206	176	3	0	21	22	75	68	0	0	75	68	0	0	0	0	0	0	132	108
Florida	17,804	13,857	28.5%	14,059	11,314	3,745	2,542	13,112	10,394	938	909	286	241	7	7	279	235	67	20	3	4	64	16	3,401	2,291
Georgia	8,069	7,332	10.0%	7,550	6,947	519	385	640	688	6,908	6,258	78	65	2	2	77	63	260	212	0	0	260	212	183	109
Maryland	2,325	1,996	16.5%	943	714	1,382	1,283	8	8	914	686	317	335	21	19	296	316	31	29	0	0	31	29	1,055	938
North Carolina	12,216	11,858	3.0%	11,459	11,264	757	594	1,075	796	10,278	10,350	287	282	106	118	181	164	17	16	0	0	17	16	559	414
South Carolina	3,351	2,942	13.9%	2,762	2,422	589	520	8	8	2,749	2,407	113	99	0	0	113	99	46	46	5	6	41	41	435	381
Virginia	6,129	5,015	22.2%	5,421	4,626	708	389	2,101	1,913	3,319	2,711	164	86	1	2	162	85	6	5	0	0	6	5	539	300
West Virginia	47	33	42.4%	0	0	47	33	0	0	0	0	11	9	0	0	11	9	2	1	0	0	2	1	35	24
East South Central	3,199	2,342	36.6%	2,950	2,122	248	219	253	111	2,688	1,998	109	117	5	7	104	110	11	10	6	6	5	3	139	106
Alabama	1,223	916	33.4%	1,201	895	22	22	25	25	1,176	869	14	16	0	0	14	16	3	1	0	0	3	1	5	5
Kentucky	286	148	93.3%	155	47	131	101	43	41	111	3	34	37	1	3	32	34	2	2	0	0	2	2	96	66
Mississippi	656	526	24.8%	633	504	23	22	182	42	451	462	9	11	0	0	9	11	1	1	0	0	1	1	13	11
Tennessee	1,034	752	37.6%	961	677	72	75	3	3	950	664	52	54	3	4	49	50	6	6	6	6	0	0	24	25
West South Central	34,353	27,039	27.0%	29,317	23,456	5,035	3,583	370	387	28,914	23,034	689	548	22	23	667	525	55	47	11	12	43	34	4,325	3,023
Arkansas	1,194	967	23.5%	798	736	397	230	241	254	535	460	167	93	19	19	148	74	43	37	3	4	40	33	208	123
Louisiana	592	468	26.3%	292	196	300	272	40	41	251	155	24	19	0	0	24	19	0	0	0	0	0	0	275	253
Oklahoma	242	167	45.3%	79	81	164	85	74	78	4	4	28	12	0	0	28	12	3	1	0	0	3	1	132	72
Texas	32,325	25,437	27.1%	28,150	22,442	4,175	2,995	14	15	28,124	22,415	470	424	4	4	466	420	8	9	8	9	0	0	3,709	2,575
Mountain	37,823	32,562	16.2%	27,614	24,196	10,209	8,367	1,510	1,315	25,974	22,770	1,993	1,686	75	79	1,918	1,607	215	160	55	32	161	128	8,131	6,632
Arizona	11,535	10,367	11.3%	6,663	6,373	4,871	3,994	593	697	6,017	5,634	1,121	871	20	23	1,102	848	47	32	34	19	14	14	3,756	3,132
Colorado	5,319	3,772	41.0%	3,616	2,400	1,704	1,372	13	14	3,588	2,378	381	351	8	8	373	343	40	23	6	0	34	23	1,296	1,006
Idaho	1,092	712	53.4%	854	533	238	179	268	5	583	526	14	12	0	0	14	12	31	31	3	3	29	28	195	139
Montana	316	85	272.7%	240	32	76	53	0	0	240	32	16	14	0	0	16	14	0	0	0	0	0	0	60	39
Nevada	11,209	10,222	9.7%	9,525	8,837	1,685	1,385	177	193	9,288	8,586	173	175	47	47	127	127	82	60	12	11	69	50	1,489	1,208
New Mexico	3,314	2,566	29.1%	2,613	1,981	701	586	451	398	2,162	1,583	143	136	0	0	143	136	1	1	0	0	1	1	557	448
Utah	4,835	4,629	4.4%	3,929	3,853	906	776	7	8	3,922	3,845	140	124	0	0	140	124	13	12	0	0	13	12	753	640
Wyoming	202	209	-3.1%	174	186	29	23	0	0	174	186	3	3	0	0	3	3	1	1	0	0	1	1	25	19
Pacific Contiguous	70,376	63,316	11.2%	41,365	38,398	29,011	24,918	342	399	40,613	37,603	6,191	5,716	197	211	5,993	5,505	3,279	3,095	212	185	3,067	2,909	19,951	16,503
California	67,077	60,827	10.3%	39,100	36,706	27,977	24,121	330	386	38,360	35,924	5,988	5,531	197	211	5,791	5,320	3,257	3,074	212	185	3,044	2,889	19,142	15,912
Oregon	2,416	2,013	20.0%	1,901	1,608	515	404	5	6	1,896	1,603	133	124	0	0	133	124	21	19	0	0	21	19	361	261
Washington	883	477	85.2%	364	83	518	393	7	7	357	76	69	61	0	0	69	61	1	1	0	0	1	1	448	331
Pacific Noncontiguous	2,059	1,897	8.5%	653	555	1,406	1,342	79	83	568	468	507	498	6	4	501	494	4	4	0	0	4	4	901	844
Alaska	18	16	17.7%	0	0	18	16	0	0	0	0	6	5	0	0	6	5	0	0	0	0	0	0	12	10
Hawaii	2,040	1,882	8.4%	653	555	1,387	1,327	79	83	568	468	501	493	6	4	495	488	4	4	0	0	4	4	888	834
U.S. Total	236,090	202,075	16.8%	162,683	140,793	73,406	61,282	22,230	17,664	139,513	122,184	20,366	18,393	615	669	19,751	17,724	4,708	4,324	326	276	4,382	4,048	49,273	39,510

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

Table 3.22. Utility Scale Facility Net Generation from Solar Thermal by State, by Sector, 2023 and 2022 (Thousand Megawatthours)

	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
Census Division and State	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
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	28	-100.0%	0	28	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	28	-100.0%	0	28	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	946	888	6.6%	0	0	946	888	0	0	0	0
Arizona	775	696	11.4%	0	0	775	696	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	172	192	-10.9%	0	0	172	192	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	1,901	2,083	-8.8%	0	0	1,901	2,083	0	0	0	0
California	1,901	2,083	-8.8%	0	0	1,901	2,083	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	2,847	2,999	-5.1%	0	28	2,847	2,971	0	0	0	0

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

Table 3.23. Useful Thermal Output by Energy Source: Total Combined Heat and Power (All Sectors), 2013 - 2023
(Billion Btus)

Period	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Fossil Gas	Renewable Sources	Other	Total
Annual Totals								
2013	243,043	12,828	25,224	553,696	103,719	611,443	22,171	1,572,124
2014	232,509	11,990	23,457	545,624	104,868	624,086	21,390	1,563,923
2015	211,030	11,796	21,748	591,749	98,910	626,887	19,729	1,581,849
2016	220,162	8,607	20,122	785,413	148,881	698,858	25,342	1,907,384
2017	193,164	7,922	17,322	789,485	151,579	674,248	23,685	1,857,405
2018	182,373	9,878	16,581	813,127	172,677	663,644	23,169	1,881,448
2019	162,108	7,992	14,278	802,153	142,229	643,548	22,429	1,794,736
2020	139,423	6,463	12,359	835,666	135,048	602,034	20,901	1,751,893
2021	149,948	7,603	12,390	818,647	135,509	609,495	19,596	1,753,188
2022	146,782	16,516	11,793	805,556	133,148	587,576	18,475	1,719,846
2023	121,382	12,155	9,979	810,007	143,075	541,688	19,090	1,657,377
Year 2021								
January	13,508	901	1,195	74,998	12,146	52,978	1,876	157,603
February	13,008	1,211	1,127	63,835	9,824	46,856	1,639	137,500
March	12,848	661	1,160	66,607	11,328	51,663	1,807	146,075
April	11,665	536	1,054	64,926	10,872	50,772	1,478	141,304
May	11,625	474	1,172	64,848	11,001	51,349	1,433	141,901
June	11,957	431	940	68,177	11,219	48,992	1,597	143,312
July	12,845	474	1,001	71,687	11,510	51,742	1,659	150,917
August	12,307	531	920	71,398	11,790	51,703	1,591	150,240
September	12,528	513	990	65,381	11,246	49,478	1,565	141,701
October	11,819	633	931	66,444	11,244	48,954	1,575	141,599
November	12,965	606	935	68,707	11,670	50,301	1,586	146,771
December	12,874	633	965	71,640	11,658	54,707	1,788	154,265
Year 2022								
January	13,842	1,523	941	74,850	11,832	52,132	1,668	156,788
February	12,010	951	988	65,806	10,693	47,280	1,470	139,200
March	12,937	1,371	1,029	68,372	11,541	49,787	1,401	146,438
April	11,623	1,387	928	62,340	10,702	49,043	1,450	137,473
May	11,936	1,243	1,100	63,862	11,755	50,125	1,389	141,411
June	11,579	1,442	921	65,044	10,959	48,845	1,617	140,406
July	12,492	1,439	864	70,619	11,501	50,440	1,734	149,089
August	12,458	934	1,056	70,833	11,502	49,912	1,586	148,279
September	11,532	1,270	883	64,472	10,485	45,872	1,562	136,075
October	11,966	1,319	1,026	63,798	10,902	46,754	1,504	137,270
November	11,637	1,323	1,085	65,580	10,519	48,226	1,605	139,975
December	12,768	2,314	974	69,981	10,757	49,159	1,489	147,443
Year 2023								
January	12,058	1,558	685	70,910	11,903	50,312	1,575	149,000
February	10,343	1,551	465	64,340	10,823	44,130	1,477	133,128
March	10,805	1,196	1,037	69,023	12,139	48,555	1,525	144,280
April	9,472	1,383	913	62,542	11,606	42,243	1,403	129,561
May	9,975	625	975	63,672	11,946	45,258	1,448	133,898
June	9,422	611	839	66,217	11,959	41,359	1,535	131,943
July	10,386	659	817	70,449	12,273	43,700	1,556	139,840
August	9,582	802	884	69,525	12,304	44,605	1,572	139,274
September	9,534	779	871	66,870	12,504	43,397	1,381	135,337
October	9,351	739	848	65,077	12,537	43,638	1,383	133,573
November	9,933	981	809	68,709	11,043	46,833	2,065	140,372
December	10,522	1,271	837	72,673	12,038	47,659	2,169	147,169

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

Table 3.24. Useful Thermal Output by Energy Source: Electric Power Sector Combined Heat and Power, 2013 - 2023
(Billion Btus)

Period	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Fossil Gas	Renewable Sources	Other	Total
Annual Totals								
2013	21,306	4,614	993	188,094	10,303	16,225	4,966	246,501
2014	15,513	4,931	936	182,148	7,732	17,736	5,666	234,662
2015	16,036	4,894	1,143	178,167	7,161	16,999	5,180	229,580
2016	13,922	695	1,237	227,427	17,400	24,993	8,046	293,719
2017	11,269	627	1,267	192,299	17,798	24,279	7,422	254,961
2018	13,573	1,023	1,023	207,459	18,692	23,375	7,119	272,265
2019	12,759	655	1,019	197,106	19,684	26,057	7,544	264,823
2020	7,412	530	1,300	203,104	17,318	24,815	7,322	261,801
2021	6,793	891	1,180	191,119	16,931	22,963	5,547	245,424
2022	6,936	1,201	996	187,898	17,384	20,406	2,882	237,704
2023	4,653	982	1,208	188,431	17,627	19,046	3,244	235,191
Year 2021								
January	641	79	128	17,244	1,613	2,373	624	22,701
February	730	230	104	15,240	857	2,094	530	19,785
March	665	72	117	15,596	906	2,242	572	20,169
April	489	66	104	15,638	1,377	1,980	364	20,019
May	489	45	96	15,189	1,282	1,699	421	19,221
June	515	34	99	15,684	1,554	1,768	443	20,097
July	584	53	108	16,266	1,570	1,703	435	20,719
August	550	54	103	16,944	1,605	1,777	425	21,457
September	657	42	94	15,341	1,446	1,655	384	19,618
October	330	59	53	15,633	1,790	1,443	386	19,694
November	495	91	85	16,112	1,569	2,112	455	20,919
December	649	67	89	16,233	1,363	2,117	509	21,026
Year 2022								
January	674	213	89	17,433	1,426	2,155	278	22,268
February	637	55	109	15,602	1,380	1,874	224	19,881
March	742	104	99	16,051	1,420	1,863	210	20,489
April	611	77	87	13,952	1,648	1,563	235	18,171
May	533	78	85	14,840	1,825	1,323	229	18,913
June	475	83	68	15,765	1,497	1,492	248	19,628
July	488	69	14	17,425	1,467	1,601	285	21,350
August	568	71	85	16,961	1,407	1,603	264	20,959
September	541	81	85	15,310	1,403	1,546	215	19,182
October	539	92	88	14,489	1,350	1,529	229	18,317
November	582	99	89	14,166	1,161	1,865	200	18,162
December	546	179	98	15,903	1,399	1,993	265	20,384
Year 2023								
January	442	109	98	15,783	1,327	1,854	263	19,876
February	480	95	104	15,205	1,157	1,872	241	19,153
March	652	78	110	15,908	1,411	2,500	242	20,901
April	435	84	89	14,339	1,415	1,790	292	18,445
May	374	75	107	14,012	1,588	1,639	290	18,085
June	476	77	98	15,307	1,534	1,428	284	19,204
July	304	70	101	17,143	1,495	1,229	285	20,627
August	266	63	106	17,205	1,715	1,042	278	20,674
September	244	73	109	15,559	1,502	786	214	18,486
October	379	100	90	15,440	1,395	1,671	187	19,261
November	290	71	87	16,148	1,409	1,595	328	19,927
December	313	88	108	16,381	1,679	1,642	340	20,551

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

Table 3.25. Useful Thermal Output by Energy Source: Commercial Sector Combined Heat and Power, 2013 - 2023
(Billion Btus)

Period	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Fossil Gas	Renewable Sources	Other	Total
Annual Totals								
2013	10,942	1,017	222	27,562	0	7,054	5,693	52,489
2014	11,081	820	327	26,876	0	7,610	5,123	51,837
2015	7,966	823	325	26,498	0	8,228	5,641	49,482
2016	8,313	924	140	57,356	0	11,017	5,381	83,131
2017	7,360	806	234	71,149	0	10,762	5,140	95,450
2018	6,943	1,020	165	58,312	0	10,902	4,918	82,260
2019	6,211	1,346	95	56,356	0	8,307	3,335	75,650
2020	5,446	692	50	55,508	0	6,929	2,863	71,489
2021	5,975	820	88	50,047	0	6,377	2,825	66,132
2022	5,996	1,165	212	52,264	0	9,263	6,333	75,235
2023	4,334	908	50	49,140	0	8,717	6,303	69,453
Year 2021								
January	615	89	0	4,916	0	566	255	6,441
February	723	177	14	4,406	0	538	180	6,037
March	576	71	1	4,208	0	542	224	5,622
April	435	53	0	3,528	0	445	225	4,686
May	370	68	0	3,431	0	408	241	4,518
June	371	41	0	3,989	0	531	225	5,156
July	393	51	0	4,422	0	601	286	5,754
August	436	44	0	4,699	0	611	268	6,057
September	487	42	0	3,933	0	594	252	5,308
October	491	47	18	4,002	0	475	219	5,252
November	538	58	28	4,097	0	476	198	5,394
December	539	81	27	4,417	0	589	251	5,905
Year 2022								
January	682	303	27	5,178	0	834	561	7,584
February	652	81	25	4,604	0	761	485	6,606
March	438	97	27	4,509	0	745	487	6,303
April	298	75	23	4,035	0	663	483	5,576
May	304	75	29	3,921	0	779	542	5,651
June	428	38	26	4,061	0	865	557	5,975
July	487	68	19	4,727	0	848	591	6,738
August	496	60	0	4,787	0	878	591	6,812
September	503	29	5	4,021	0	743	537	5,838
October	499	37	0	3,770	0	665	475	5,447
November	571	48	11	3,980	0	781	560	5,951
December	639	255	21	4,671	0	702	465	6,752
Year 2023								
January	557	133	22	4,466	0	755	493	6,426
February	483	99	5	4,077	0	661	492	5,816
March	439	65	3	4,168	0	748	526	5,949
April	382	26	0	3,614	0	672	502	5,195
May	287	29	0	3,654	0	668	570	5,207
June	263	43	0	3,845	0	739	498	5,387
July	280	40	0	4,416	0	691	543	5,970
August	295	36	0	4,200	0	787	579	5,898
September	296	42	0	4,060	0	770	520	5,689
October	268	40	0	3,939	0	660	430	5,336
November	359	74	0	4,273	0	731	547	5,984
December	425	282	20	4,428	0	836	604	6,595

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 Fossil Gas.
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 Fossil Gas.
Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Fossil Gas.
Other Fossil Gas includes gaseous propane, blast furnace gas, other manufactured and waste gases derived from fossil fuels other than hydrogen. Prior to 2011, Other Fossil Gas included propane and synthesis gases.
See the Technical Notes for fuel conversion factors.
Renewable Sources include wood, black liquor, other wood waste, biogenic municipal solid waste, landfill gas, sludge waste, agriculture byproducts, other biomass, geothermal, and solar thermal.
Other includes hydrogen, non-biogenic municipal solid waste, batteries, purchased steam, sulfur, tire-derived fuel, and other miscellaneous energy sources.
Notes: Beginning with 2001 data, non-biogenic municipal solid waste and tire-derived fuels are reclassified as non-renewable energy sources and included in Other. Biogenic municipal solid waste is included in Other Renewable Sources.
Beginning with the collection of Form EIA-923 in January 2008, the methodology for separating the fuel used for electricity generation and useful thermal output from combined heat and power plants changed. The new methodology was retroactively applied to 2004-2007, as well as 2008-2015. Beginning with the 2016 Form EIA-923 data, the methodology for seperating the fuel used for electricity generation and useful thermal output from CHP plants was updated. This update will apply to the 2016 data and future data years. See the Technical Notes (Appendix C) for further information.
See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
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Sources: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report; U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report; and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report;
Form EIA-423, Monthly Cost and Quality of Fuels for Electric Plants Report; and Federal Energy Regulatory Commission, FERC Form 423, Monthly Report of Cost and Quality of Fuels for Electric Plants.

Table 3.26. Useful Thermal Output by Energy Source: Industrial Sector Combined Heat and Power, 2013 - 2023
(Billion Btus)

Period	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Fossil Gas	Renewable Sources	Other	Total
Annual Totals								
2013	210,795	7,196	24,009	338,041	93,416	588,165	11,512	1,273,134
2014	199,512	6,120	22,167	334,901	97,137	596,087	10,600	1,266,524
2015	180,501	5,965	20,203	384,369	91,749	598,890	8,899	1,290,576
2016	173,589	6,792	18,692	478,068	131,481	655,831	11,904	1,476,358
2017	151,780	6,289	15,721	503,614	133,781	631,768	11,112	1,454,066
2018	142,671	7,535	15,281	521,936	153,985	622,699	11,118	1,475,224
2019	127,411	5,787	13,012	523,919	122,544	607,138	11,535	1,411,347
2020	114,031	5,078	10,863	548,938	117,730	568,537	10,702	1,375,879
2021	120,335	5,658	10,933	547,717	118,578	578,150	11,208	1,392,579
2022	116,212	13,837	10,375	537,793	115,764	555,335	9,245	1,358,561
2023	100,884	10,076	8,645	545,036	125,448	511,656	9,521	1,311,266
Year 2021								
January	10,838	722	1,058	50,096	10,534	49,825	996	124,069
February	10,131	722	996	41,711	8,967	44,032	927	107,485
March	10,322	506	1,038	44,342	10,422	48,684	1,009	116,324
April	9,656	403	950	43,491	9,496	48,164	887	113,046
May	9,753	352	1,075	44,129	9,719	49,122	771	114,922
June	9,594	344	831	45,796	9,665	46,541	929	113,701
July	10,240	360	880	48,293	9,939	49,214	936	119,864
August	9,572	421	753	46,961	10,185	49,142	896	117,930
September	9,878	412	888	43,708	9,801	47,222	928	112,837
October	9,706	508	849	44,942	9,454	46,934	969	113,361
November	10,558	442	804	45,894	10,101	47,494	932	116,225
December	10,086	467	810	48,355	10,295	51,775	1,027	122,816
Year 2022								
January	10,800	927	810	49,490	10,406	48,935	827	122,194
February	9,296	774	779	43,261	9,313	44,432	760	108,616
March	10,346	1,153	891	45,486	10,121	46,936	702	115,636
April	9,433	1,223	816	42,760	9,054	46,595	732	110,614
May	9,975	1,076	975	43,143	9,930	47,876	618	113,592
June	9,260	1,307	817	42,871	9,462	46,320	811	110,848
July	9,778	1,285	822	45,738	10,033	47,805	857	116,319
August	9,761	792	963	46,573	10,095	47,228	730	116,142
September	8,923	1,146	786	42,961	9,082	43,356	807	107,061
October	9,632	1,176	931	43,722	9,552	44,432	798	110,243
November	9,130	1,162	932	45,012	9,359	45,296	844	111,734
December	9,877	1,815	853	46,774	9,358	46,125	758	115,561
Year 2023								
January	9,826	1,296	559	48,133	10,576	47,447	816	118,653
February	8,491	1,334	345	42,769	9,666	41,382	742	104,729
March	8,685	1,041	905	46,602	10,728	45,062	756	113,779
April	7,998	1,260	802	42,607	10,191	39,561	609	103,027
May	8,452	500	868	44,058	10,358	42,904	585	107,724
June	7,826	478	740	44,831	10,425	39,045	752	104,097
July	8,597	534	709	46,216	10,778	41,615	726	109,176
August	7,843	691	771	45,812	10,589	42,588	712	109,006
September	7,959	655	760	45,000	11,002	41,743	646	107,765
October	7,928	581	757	43,785	11,142	41,115	765	106,073
November	8,436	821	721	45,913	9,634	44,267	1,189	110,981
December	8,845	886	708	49,311	10,359	44,926	1,223	116,258

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

Table 3.27 Gross/Net Generation by Energy Storage Technology: Total (All Sectors), 2013 - 2023
(Thousand Megawatthours)

	Generation at Utility Scale Facilities									
	Gross Generation					Net Generation				
Period	Battery	Compressed Air	Flywheels	Hydroelectric Pumped Storage	Total	Battery	Compressed Air	Flywheels	Hydroelectric Pumped Storage	Total
Annual Totals										
2013	9	0	25	19,257	19,290	-3	0	-8	-4,681	-4,692
2014	24	9	47	20,054	20,133	-14	-2	-21	-6,174	-6,210
2015	76	8	49	20,111	20,244	-20	-7	-24	-5,091	-5,142
2016	142	17	43	22,443	22,645	-170	-8	-22	-6,686	-6,886
2017	383	12	62	22,752	23,209	-69	-8	-26	-6,495	-6,597
2018	358	6	67	21,503	21,934	-88	-6	-28	-5,905	-6,026
2019	456	6	59	20,772	21,293	-97	-7	-26	-5,261	-5,391
2020	557	6	53	21,073	21,689	-131	-5	-24	-5,321	-5,482
2021	1,507	23	46	20,618	22,194	-264	-6	-23	-5,112	-5,404
2022	3,808	26	49	22,466	26,349	-689	-6	-23	-6,028	-6,746
2023	6,696	2	42	22,132	28,872	-1,281	-4	-20	-5,990	-7,294
Year 2021										
January	59	1	4	1,381	1,445	-14	0	-2	-424	-440
February	62	1	3	1,396	1,462	-13	0	-2	-425	-440
March	67	0	4	1,269	1,340	-13	0	-2	-236	-250
April	70	1	4	1,186	1,261	-16	0	-2	-197	-215
May	90	1	4	1,482	1,577	-18	0	-2	-416	-436
June	130	3	4	2,052	2,189	-23	-1	-2	-376	-401
July	157	3	4	2,596	2,760	-29	-1	-2	-685	-717
August	172	4	4	2,726	2,906	-31	-1	-2	-670	-704
September	161	2	4	2,113	2,280	-26	-1	-2	-434	-462
October	160	4	4	1,667	1,835	-23	-1	-2	-427	-453
November	182	1	4	1,281	1,467	-31	0	-2	-377	-411
December	196	2	4	1,469	1,671	-28	0	-2	-445	-476
Year 2022										
January	201	1	4	1,626	1,832	-33	0	-2	-493	-528
February	224	0	3	1,375	1,602	-40	0	-2	-412	-453
March	225	0	4	1,566	1,795	-39	0	-2	-318	-359
April	248	1	4	1,216	1,468	-40	0	-2	-265	-307
May	287	2	4	1,874	2,167	-53	-1	-2	-467	-522
June	322	4	4	2,461	2,791	-57	-1	-2	-589	-649
July	345	4	4	2,726	3,081	-66	-1	-2	-768	-838
August	348	5	4	2,812	3,169	-67	-1	-2	-640	-710
September	349	3	4	2,191	2,546	-68	-1	-2	-598	-668
October	423	3	4	1,442	1,872	-78	-1	-2	-434	-515
November	416	1	4	1,524	1,946	-75	0	-2	-495	-572
December	421	2	4	1,653	2,081	-72	-1	-2	-548	-623
Year 2023										
January	474	0	1	1,574	2,049	-76	0	-1	-620	-697
February	403	0	1	1,482	1,886	-98	0	-1	-456	-555
March	484	0	1	1,579	2,064	-118	0	-1	-519	-638
April	497	0	1	1,465	1,963	-85	0	-1	-290	-376
May	477	0	1	1,880	2,358	-82	0	-1	-459	-542
June	510	0	1	2,299	2,810	-94	0	-1	-551	-646
July	576	0	1	2,707	3,284	-121	0	-1	-656	-778
August	606	0	1	2,678	3,284	-116	0	-1	-653	-769
September	599	0	1	2,213	2,813	-123	0	-1	-553	-676
October	703	0	1	1,496	2,200	-123	0	-1	-372	-496
November	687	0	1	1,378	2,066	-118	0	0	-347	-465
December	680	2	31	1,383	2,095	-128	-4	-13	-514	-658

See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
Totals may not equal sum of components because of independent rounding. NM=Not meaningful due to large standard error. W=Withheld to avoid disclosure of individual company data.
Displayed values of zero may represent small values that round to zero. The Excel version of this table provides additional precision which may be accessed by selecting individual cells.
Sources: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report; U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report; and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report; Form EIA-423, Monthly Cost and Quality of Fuels for Electric Plants Report; and Federal Energy Regulatory Commission, FERC Form 423, Monthly Report of Cost and Quality of Fuels for Electric Plants.

Chapter 4

Generation Capacity

Table 4.1. Count of Electric Power Industry Power Plants, by Sector, by Predominant Energy Sources within Plant, 2013 through 2023

Year	Coal	Petroleum	Natural Gas	Other Fossil Gas	Nuclear	Hydroelectric Conventional	Other Renewables	Hydroelectric Pumped Storage	Other Energy Sources
Total (All Sectors)									
2013	518	1,101	1,725	44	63	1,435	2,299	41	78
2014	491	1,082	1,749	43	62	1,441	2,674	41	94
2015	427	1,082	1,779	45	62	1,440	3,043	41	83
2016	381	1,076	1,801	45	61	1,451	3,624	40	117
2017	359	1,080	1,820	44	61	1,458	4,174	40	148
2018	336	1,087	1,854	46	60	1,458	4,667	40	171
2019	308	1,090	1,899	43	58	1,452	5,244	40	212
2020	284	1,091	1,926	42	56	1,446	5,918	40	267
2021	269	1,104	2,020	37	55	1,449	6,579	40	372
2022	242	1,084	2,073	33	54	1,445	7,084	40	483
2023	227	1,075	2,084	35	54	1,441	7,684	40	617
Electric Utilities									
2013	300	795	787	1	32	873	253	36	15
2014	286	780	803	1	32	889	272	35	20
2015	256	782	816	1	32	890	318	35	15
2016	230	771	819	1	31	893	375	35	36
2017	219	765	820	1	31	894	417	35	53
2018	206	751	819	1	31	896	462	35	60
2019	194	743	818	1	31	898	512	35	71
2020	181	743	820	1	31	892	586	35	78
2021	169	739	813	1	31	879	649	34	86
2022	157	726	835	1	31	875	709	34	104
2023	148	721	837	1	31	873	782	34	132
Independent Power Producers, Non-Combined Heat and Power Plants									
2013	86	147	384	1	31	505	1,670	5	15
2014	87	148	395	1	30	499	2,006	5	18
2015	80	143	397	--	30	497	2,309	5	21
2016	75	142	406	--	30	500	2,826	5	34
2017	71	145	415	--	30	505	3,320	5	43
2018	65	140	450	--	29	514	3,749	5	59
2019	59	141	476	--	27	506	4,251	5	74
2020	56	135	491	--	25	506	4,847	5	119
2021	56	150	521	--	24	521	5,429	6	214
2022	46	139	548	--	23	521	5,833	6	306
2023	43	135	562	--	23	520	6,359	6	409
Independent Power Producers, Combined Heat and Power Plants									
2013	35	11	152	2	--	1	51	--	5
2014	30	9	145	2	--	--	54	--	7
2015	27	8	143	3	--	--	58	--	3
2016	24	7	143	3	--	--	57	--	2
2017	22	7	138	3	--	--	56	--	3
2018	19	8	133	3	--	--	56	--	3
2019	14	6	128	3	--	--	56	--	3
2020	12	7	121	3	--	--	56	--	4
2021	11	8	122	3	--	--	52	--	4
2022	8	7	119	3	--	--	54	--	3
2023	8	7	118	3	--	--	52	--	3
Commercial Sector									
2013	19	92	164	--	--	9	160	--	3
2014	17	93	169	--	--	10	178	1	6
2015	12	94	176	--	--	10	186	1	3
2016	9	101	181	--	--	14	195	--	3
2017	9	112	189	--	--	15	203	--	4
2018	7	139	192	--	--	15	220	--	5
2019	6	152	203	--	--	15	242	--	20
2020	4	156	220	--	--	15	240	--	21
2021	4	160	281	--	--	16	255	--	24
2022	3	161	287	--	--	17	277	--	26
2023	3	163	285	--	--	17	278	--	28
Industrial Sector									
2013	78	56	238	40	--	47	165	--	40
2014	71	52	237	39	--	43	164	--	43
2015	52	55	247	41	--	43	172	--	41
2016	43	55	252	41	--	44	171	--	42
2017	38	51	258	40	--	44	178	--	45
2018	39	49	260	42	--	33	180	--	44
2019	35	48	274	39	--	33	183	--	44
2020	31	50	274	38	--	33	189	--	45
2021	29	47	283	33	--	33	194	--	44
2022	28	51	284	29	--	32	211	--	44
2023	25	49	282	31	--	31	213	--	45

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

Table 4.2.A. Existing Net Summer Capacity by Energy Source and Producer Type, 2013 through 2023 (Megawatts)

	Utility Scale Capacity										Small Scale Capacity
Year	Coal	Petroleum	Natural Gas	Other Fossil Gas	Nuclear	Hydroelectric Conventional	Other Renewable Sources	Hydroelectric Pumped Storage	Other Energy Sources	Utility Total	Estimated Photovoltaic
Total (All Sectors)											
2013	303,306.3	43,523.0	425,389.7	2,107.8	99,240.3	79,200.0	82,600.1	22,389.3	2,307.0	1,060,063.5	--
2014	299,094.2	41,135.4	432,150.3	1,914.3	98,569.3	79,677.3	90,603.7	22,485.1	2,792.6	1,068,422.2	7,326.6
2015	279,719.9	36,830.3	439,425.4	2,500.4	98,672.0	79,664.2	102,871.6	22,575.1	1,795.6	1,064,054.5	9,778.5
2016	266,619.9	34,382.4	446,823.2	2,456.9	99,564.8	79,912.9	119,778.9	22,778.7	2,015.1	1,074,332.8	12,765.1
2017	256,547.3	33,306.7	456,011.6	2,375.8	99,628.9	79,794.5	131,008.1	22,810.4	2,886.3	1,084,369.6	16,147.8
2018	242,785.6	32,218.2	470,236.9	2,543.9	99,432.9	79,871.8	142,473.6	22,830.2	2,346.7	1,094,739.8	19,547.1
2019	228,657.4	31,400.3	476,567.4	2,499.2	98,119.0	79,773.1	156,708.2	22,778.3	2,606.4	1,099,109.3	23,213.6
2020	215,554.2	27,569.3	485,807.2	2,275.2	96,500.6	79,924.3	181,954.5	23,016.2	3,079.3	1,115,680.8	27,584.8
2021	209,825.7	28,204.5	491,870.2	1,888.0	95,546.4	79,909.7	209,292.6	23,007.7	6,311.3	1,145,856.1	33,081.0
2022	189,316.3	30,775.3	502,396.9	1,728.2	94,658.9	80,067.6	229,039.1	23,043.9	10,405.6	1,161,431.8	39,828.0
2023	178,441.7	29,440.7	507,535.8	1,866.8	95,712.2	79,985.3	253,964.6	23,147.4	17,450.9	1,187,545.4	47,774.7
Electric Utilities											
2013	228,478.0	24,648.8	208,485.7	12.0	52,399.1	72,755.2	10,118.4	19,114.9	787.3	616,799.4	--
2014	219,837.9	24,045.0	215,690.8	12.0	52,390.9	73,725.4	10,893.7	19,121.3	914.5	616,631.5	--
2015	202,922.4	22,269.7	223,215.6	12.0	52,457.2	73,713.0	12,654.3	19,211.3	87.5	606,543.0	--
2016	193,122.6	20,285.5	229,677.1	12.0	53,274.1	73,879.3	14,236.4	19,398.3	236.1	604,121.4	--
2017	186,623.1	19,999.9	236,557.8	12.0	53,343.6	73,739.5	15,281.3	19,430.0	519.3	605,506.5	--
2018	179,047.8	18,642.6	241,477.0	12.0	53,725.6	73,818.2	18,155.9	19,449.8	341.8	604,670.7	--
2019	171,088.7	18,219.8	247,018.9	12.0	53,880.6	73,719.7	20,745.8	19,428.9	418.3	604,532.7	--
2020	163,886.7	14,723.5	252,902.3	12.0	54,002.7	73,855.3	27,910.6	19,666.8	438.3	607,398.2	--
2021	157,681.0	15,660.6	257,969.4	12.0	53,917.1	73,316.9	33,028.9	19,235.3	958.5	611,779.7	--
2022	146,127.6	16,411.3	266,709.4	12.0	53,862.9	73,482.6	35,629.0	19,279.1	1,298.5	612,812.4	--
2023	139,158.0	15,291.5	270,951.7	12.0	54,917.4	73,467.1	41,569.6	19,377.1	1,917.6	616,662.0	--
Independent Power Producers, Non-Combined Heat and Power Plants											
2013	67,153.5	17,444.7	171,653.6	47.0	46,841.2	5,762.2	64,890.5	3,274.4	231.2	377,298.3	--
2014	71,994.6	15,724.4	172,224.5	47.0	46,178.4	5,651.2	72,144.4	3,358.4	238.7	387,561.6	--
2015	70,217.8	13,102.9	172,519.2	--	46,214.8	5,650.5	82,014.6	3,358.4	354.3	393,432.5	--
2016	67,667.7	12,587.4	173,455.8	--	46,290.7	5,676.9	97,408.4	3,380.4	487.5	406,954.8	--
2017	64,419.3	11,777.0	176,029.0	--	46,285.3	5,697.9	107,618.0	3,380.4	989.3	416,196.2	--
2018	58,716.2	11,733.2	186,542.1	--	45,707.3	5,770.0	116,197.3	3,380.4	670.1	428,716.6	--
2019	53,646.5	11,514.8	187,715.6	--	44,238.4	5,764.3	127,964.3	3,349.4	760.7	434,954.0	--
2020	48,069.4	11,007.6	190,621.4	--	42,497.9	5,780.6	145,809.5	3,349.4	1,204.4	448,340.2	--
2021	48,742.4	10,672.5	190,877.6	--	41,629.3	6,293.8	168,330.4	3,772.4	3,891.7	474,210.1	--
2022	40,460.6	12,386.6	192,400.0	--	40,796.0	6,288.7	185,017.6	3,764.8	7,811.0	488,925.3	--
2023	36,615.5	12,249.2	193,777.0	--	40,794.8	6,224.0	204,050.1	3,770.3	14,192.5	511,673.4	--
Independent Power Producers, Combined Heat and Power Plants											
2013	4,313.7	322.2	29,081.2	83.0	--	4.3	945.1	--	121.8	34,871.3	--
2014	4,073.0	308.2	27,676.7	83.0	--	--	885.9	--	335.8	33,362.6	--
2015	3,843.6	307.2	27,284.1	350.0	--	--	970.5	--	126.0	32,881.4	--
2016	3,552.4	301.2	27,222.4	350.0	--	--	1,068.3	--	19.0	32,513.3	--
2017	3,338.0	301.2	26,922.1	350.0	--	--	969.8	--	21.0	31,902.1	--
2018	2,922.0	458.0	25,658.1	350.0	--	--	884.2	--	21.0	30,293.3	--
2019	2,074.1	298.8	24,782.0	350.0	--	--	944.9	--	112.0	28,561.8	--
2020	1,994.2	450.8	24,635.8	350.0	--	--	952.0	--	113.0	28,495.8	--
2021	1,902.6	452.2	24,611.8	350.0	--	--	888.1	--	113.0	28,317.7	--
2022	1,283.9	449.9	24,505.3	350.0	--	--	856.8	--	17.0	27,462.9	--
2023	1,245.0	451.1	24,172.2	350.0	--	--	770.0	--	31.0	27,019.3	--
Commercial Sector											
2013	341.9	455.7	1,778.9	--	--	17.8	947.6	--	9.1	3,551.0	--
2014	290.1	463.5	1,832.6	--	--	21.4	1,066.8	5.4	15.6	3,695.4	3,279.7
2015	226.6	466.1	1,932.5	--	--	21.4	1,126.5	5.4	6.7	3,785.2	3,706.7
2016	202.4	511.0	1,982.6	--	--	74.5	1,132.0	--	6.7	3,909.2	4,022.8
2017	202.4	596.5	2,018.7	--	--	74.9	1,162.0	--	11.6	4,066.1	5,155.8
2018	144.2	823.6	2,157.6	--	--	74.7	1,241.5	--	13.0	4,454.6	6,271.4
2019	123.2	856.7	2,247.5	--	--	74.9	1,218.6	--	49.1	4,570.0	7,167.9
2020	77.6	875.1	2,345.0	--	--	74.2	1,217.9	--	51.8	4,641.6	8,376.1
2021	77.6	912.5	2,272.7	--	--	84.8	1,373.0	--	51.1	4,771.7	9,752.0
2022	47.9	958.1	2,378.2	--	--	87.5	1,925.2	--	53.1	5,450.0	11,212.3
2023	47.9	960.5	2,347.4	--	--	87.5	1,927.1	--	55.1	5,425.5	12,605.1
Industrial Sector											
2013	3,019.2	651.6	14,390.3	1,965.8	--	660.5	5,698.5	--	1,157.6	27,543.5	--
2014	2,898.6	594.3	14,725.7	1,772.3	--	279.3	5,612.9	--	1,288.0	27,171.1	700.6
2015	2,509.5	684.4	14,474.0	2,138.4	--	279.3	6,105.7	--	1,221.1	27,412.4	880.3
2016	2,074.8	697.3	14,485.3	2,094.9	--	282.2	5,933.8	--	1,265.8	26,834.1	1,215.3
2017	1,964.5	632.1	14,484.0	2,013.8	--	282.2	5,977.0	--	1,345.1	26,698.7	1,365.1
2018	1,955.4	560.8	14,402.1	2,181.9	--	208.9	5,994.7	--	1,300.8	26,604.6	1,555.4
2019	1,724.9	510.2	14,803.4	2,137.2	--	214.2	5,834.6	--	1,266.3	26,490.8	1,796.6
2020	1,526.3	512.3	15,302.7	1,913.2	--	214.2	6,064.5	--	1,271.8	26,805.0	2,045.3
2021	1,422.1	506.7	16,138.7	1,526.0	--	214.2	5,672.2	--	1,297.0	26,776.9	2,212.7
2022	1,396.3	569.4	16,404.0	1,366.2	--	208.8	5,610.5	--	1,226.0	26,781.2	2,321.7
2023	1,375.3	488.4	16,287.5	1,504.8	--	206.7	5,647.8	--	1,254.7	26,765.2	2,558.3
Residential Sector											
2014	--	--	--	--	--	--	--	--	--	--	3,346.3
2015	--	--	--	--	--	--	--	--	--	--	5,191.5
2016	--	--	--	--	--	--	--	--	--	--	7,527.0
2017	--	--	--	--	--	--	--	--	--	--	9,626.8
2018	--	--	--	--	--	--	--	--	--	--	11,720.4
2019	--	--	--	--	--	--	--	--	--	--	14,249.0
2020	--	--	--	--	--	--	--	--	--	--	17,163.3
2021	--	--	--	--	--	--	--	--	--	--	21,116.2
2022	--	--	--	--	--	--	--	--	--	--	26,294.0
2023	--	--	--	--	--	--	--	--	--	--	32,611.3

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

Table 4.2.B. Existing Net Summer Capacity of Other Renewable Sources by Producer Type, 2013 through 2023 (Megawatts) (Page 1)

	Utility Scale Capacity							Utility and Small Scale Capacity		
Year	Wind	Solar Photovoltaic	Solar Thermal	Wood and Wood-Derived Fuels	Geothermal	Other Biomass	Total Utility (Other Renewable Sources)	Estimated Small Scale Photovoltaic	Total Solar Photovoltaic	Total Solar
Total (All Sectors)										
2013	59,973.4	5,336.1	1,286.4	8,354.2	2,607.0	5,043.0	82,600.1	--	5,336.1	6,622.5
2014	64,231.5	8,656.6	1,666.7	8,368.1	2,514.3	5,166.5	90,603.7	7,326.6	15,983.2	17,649.9
2015	72,573.4	11,905.4	1,757.9	8,968.9	2,541.5	5,124.5	102,871.6	9,778.5	21,683.9	23,441.8
2016	81,286.6	20,192.9	1,757.9	8,936.1	2,516.6	5,088.8	119,778.9	12,765.1	32,958.0	34,715.9
2017	87,597.5	25,209.0	1,757.9	8,830.9	2,483.3	5,129.5	131,008.1	16,147.8	41,356.8	43,114.7
2018	94,417.7	30,120.5	1,757.9	8,694.6	2,444.3	5,038.6	142,473.6	19,547.1	49,667.6	51,425.5
2019	103,571.2	35,710.2	1,758.1	8,374.5	2,555.4	4,738.8	156,708.2	23,213.6	58,923.8	60,681.9
2020	118,378.7	46,306.2	1,747.9	8,326.5	2,571.9	4,623.3	181,954.5	27,584.8	73,891.0	75,638.9
2021	132,753.4	60,070.1	1,480.0	7,923.2	2,596.7	4,469.2	209,292.6	33,081.0	93,151.1	94,631.1
2022	141,402.2	71,381.5	1,480.0	7,804.5	2,648.6	4,322.3	229,039.1	39,828.0	111,209.5	112,689.5
2023	147,444.7	90,517.8	1,480.0	7,693.1	2,695.8	4,133.2	253,964.6	47,774.7	138,292.5	139,772.5
Electric Utilities										
2013	8,424.7	487.9	--	564.3	164.1	477.4	10,118.4	--	487.9	487.9
2014	9,022.6	568.5	--	654.8	164.1	483.7	10,893.7	--	568.5	568.5
2015	10,580.9	842.9	--	623.8	165.9	440.8	12,654.3	--	842.9	842.9
2016	11,552.6	1,388.4	--	708.8	167.9	418.7	14,236.4	--	1,388.4	1,388.4
2017	12,150.8	1,724.5	--	811.3	161.9	432.8	15,281.3	--	1,724.5	1,724.5
2018	14,031.7	2,683.5	--	807.0	148.8	484.9	18,155.9	--	2,683.5	2,683.5
2019	15,715.0	3,851.4	--	696.2	146.5	336.7	20,745.8	--	3,851.4	3,851.4
2020	20,788.5	5,965.4	--	670.8	149.5	336.4	27,910.6	--	5,965.4	5,965.4
2021	23,991.7	7,979.1	--	627.7	149.5	280.9	33,028.9	--	7,979.1	7,979.1
2022	24,445.7	10,141.2	--	628.6	149.5	264.0	35,629.0	--	10,141.2	10,141.2
2023	26,855.3	13,691.6	--	628.6	158.5	235.6	41,569.6	--	13,691.6	13,691.6
Independent Power Producers, Non-Combined Heat and Power Plants										
2013	51,497.8	4,647.6	1,286.4	1,845.4	2,401.1	3,212.2	64,890.5	--	4,647.6	5,934.0
2014	55,133.0	7,857.0	1,666.7	1,816.6	2,308.8	3,362.3	72,144.4	--	7,857.0	9,523.7
2015	61,905.4	10,768.2	1,757.9	1,873.3	2,375.6	3,334.2	82,014.6	--	10,768.2	12,526.1
2016	69,645.4	18,483.3	1,757.9	1,789.6	2,348.7	3,383.5	97,408.4	--	18,483.3	20,241.2
2017	75,346.6	23,127.0	1,757.9	1,649.1	2,321.4	3,416.0	107,618.0	--	23,127.0	24,884.9
2018	80,267.6	27,055.8	1,757.9	1,576.2	2,246.1	3,293.7	116,197.3	--	27,055.8	28,813.7
2019	87,737.8	31,416.4	1,758.1	1,475.7	2,359.5	3,216.8	127,964.3	--	31,416.4	33,174.5
2020	97,242.6	39,868.8	1,747.9	1,463.3	2,373.0	3,113.9	145,809.5	--	39,868.8	41,616.7
2021	108,637.2	51,546.2	1,480.0	1,339.8	2,373.0	2,954.2	168,330.4	--	51,546.2	53,026.2
2022	116,829.6	60,617.7	1,480.0	1,318.3	2,499.1	2,272.9	185,017.6	--	60,617.7	62,097.7
2023	120,466.5	76,128.3	1,480.0	1,320.0	2,537.3	2,118.0	204,050.1	--	76,128.3	77,608.3

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

Table 4.2.B. Existing Net Summer Capacity of Other Renewable Sources by Producer Type, 2013 through 2023 (Megawatts) (Page 2)

	Utility Scale Capacity							Utility and Small Scale Capacity		
Year	Wind	Solar Photovoltaic	Solar Thermal	Wood and Wood-Derived Fuels	Geothermal	Other Biomass	Total Utility (Other Renewable Sources)	Estimated Small Scale Photovoltaic	Total Solar Photovoltaic	Total Solar
Independent Power Producers, Combined Heat and Power Plants										
2013	--	--	--	469.2	41.8	434.1	945.1	--	--	--
2014	--	--	--	465.5	41.4	379.0	885.9	--	--	--
2015	--	--	--	568.2	--	402.3	970.5	--	--	--
2016	--	1.0	--	667.2	--	400.1	1,068.3	--	1.0	1.0
2017	--	2.5	--	582.0	--	385.3	969.8	--	2.5	2.5
2018	--	3.3	--	492.7	--	388.2	884.2	--	3.3	3.3
2019	--	3.3	--	554.7	--	386.9	944.9	--	3.3	3.3
2020	--	3.9	--	563.2	--	384.9	952.0	--	3.9	3.9
2021	--	3.9	--	467.2	--	417.0	888.1	--	3.9	3.9
2022	--	4.1	--	467.2	--	385.5	856.8	--	4.1	4.1
2023	--	3.9	--	382.2	--	383.9	770.0	--	3.9	3.9
Commercial Sector										
2013	33.2	192.9	--	8.4	--	713.1	947.6	--	192.9	192.9
2014	51.6	223.4	--	65.4	--	726.4	1,066.8	3,279.7	3,503.1	3,503.1
2015	55.3	282.1	--	65.3	--	723.8	1,126.5	3,706.7	3,988.8	3,988.8
2016	56.8	300.8	--	67.1	--	707.3	1,132.0	4,022.8	4,323.6	4,323.6
2017	60.8	311.6	--	63.1	--	726.5	1,162.0	5,155.8	5,467.4	5,467.4
2018	73.4	330.6	--	63.1	49.4	725.0	1,241.5	6,271.4	6,602.0	6,602.0
2019	73.4	381.1	--	63.1	49.4	651.6	1,218.6	7,167.9	7,549.0	7,549.0
2020	67.6	385.1	--	63.3	49.4	652.5	1,217.9	8,376.1	8,761.2	8,761.2
2021	67.8	412.9	--	137.3	74.2	680.8	1,373.0	9,752.0	10,164.9	10,164.9
2022	70.2	444.3	--	137.3	--	1,273.4	1,925.2	11,212.3	11,656.6	11,656.6
2023	69.2	448.6	--	137.3	--	1,272.0	1,927.1	12,605.1	13,053.7	13,053.7
Industrial Sector										
2013	17.7	7.7	--	5,466.9	--	206.2	5,698.5	--	7.7	7.7
2014	24.3	7.7	--	5,365.8	--	215.1	5,612.9	700.6	708.3	708.3
2015	31.8	12.2	--	5,838.3	--	223.4	6,105.7	880.3	892.5	892.5
2016	31.8	19.4	--	5,703.4	--	179.2	5,933.8	1,215.3	1,234.7	1,234.7
2017	39.3	43.4	--	5,725.4	--	168.9	5,977.0	1,365.1	1,408.5	1,408.5
2018	45.0	47.3	--	5,755.6	--	146.8	5,994.7	1,555.4	1,602.7	1,602.7
2019	45.0	58.0	--	5,584.8	--	146.8	5,834.6	1,796.6	1,854.6	1,854.6
2020	280.0	83.0	--	5,565.9	--	135.6	6,064.5	2,045.3	2,128.3	2,128.3
2021	56.7	128.0	--	5,351.2	--	136.3	5,672.2	2,212.7	2,340.7	2,340.7
2022	56.7	174.2	--	5,253.1	--	126.5	5,610.5	2,321.7	2,495.9	2,495.9
2023	53.7	245.4	--	5,225.0	--	123.7	5,647.8	2,558.3	2,803.7	2,803.7
Residential Sector										
2014	--	--	--	--	--	--	--	3,346.3	3,346.3	3,346.3
2015	--	--	--	--	--	--	--	5,191.5	5,191.5	5,191.5
2016	--	--	--	--	--	--	--	7,527.0	7,527.0	7,527.0
2017	--	--	--	--	--	--	--	9,626.8	9,626.8	9,626.8
2018	--	--	--	--	--	--	--	11,720.4	11,720.4	11,720.4
2019	--	--	--	--	--	--	--	14,249.0	14,249.0	14,249.0
2020	--	--	--	--	--	--	--	17,163.3	17,163.3	17,163.3
2021	--	--	--	--	--	--	--	21,116.2	21,116.2	21,116.2
2022	--	--	--	--	--	--	--	26,294.0	26,294.0	26,294.0
2023	--	--	--	--	--	--	--	32,611.3	32,611.3	32,611.3

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

Table 4.3. Existing Capacity by Energy Source, 2023 (Megawatts)

Energy Source	Facility Type	Number of Generators	Generator Nameplate Capacity	Net Summer Capacity	Net Winter Capacity
Coal	Utility Scale	479	193,414.6	178,441.7	179,630.1
Petroleum	Utility Scale	3,912	34,082.5	29,440.7	32,562.1
Natural Gas	Utility Scale	6,664	572,319.3	507,535.8	543,072.2
Other Fossil Gas	Utility Scale	73	2,031.3	1,866.8	1,871.5
Nuclear	Utility Scale	93	100,674.6	95,712.2	98,063.2
Hydroelectric Conventional	Utility Scale	3,999	79,969.5	79,985.3	79,385.7
Wind	Utility Scale	1,540	148,039.8	147,444.7	147,467.4
Solar Photovoltaic	Utility Scale	6,308	91,219.2	90,517.8	89,357.4
Solar Thermal	Utility Scale	13	1,497.0	1,480.0	1,352.5
Wood and Wood-Derived Fuels	Utility Scale	299	8,678.0	7,693.1	7,811.7
Geothermal	Utility Scale	167	4,009.5	2,695.8	3,155.0
Other Biomass	Utility Scale	1,635	4,698.0	4,133.2	4,184.2
Hydroelectric Pumped Storage	Utility Scale	152	22,170.1	23,147.4	23,186.7
Other Energy Sources	Utility Scale	676	17,739.9	17,450.9	17,490.8
Total	Utility Scale	26,010	1,280,543.3	1,187,545.4	1,228,590.5
Small Scale Photovoltaic	Small Scale	--	--	47,774.7	--
Estimated Total Photovoltaic	Utility and Small Scale	--	--	138,292.5	--
Estimated Total Solar	Utility and Small Scale	--	--	139,772.5	--

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

Table 4.4. Existing Capacity by Producer Type, 2023 (Megawatts)

Producer Type	Facility Type	Number of Generators	Generator Nameplate Capacity	Net Summer Capacity	Net Winter Capacity
Electric Power Sector					
Electric Utilities	Utility Scale	9,661	668,964.9	616,662.0	638,886.5
Independent Power Producers, Non-Combined Heat and Power Plants	Utility Scale	12,508	544,436.6	511,673.4	526,609.5
Independent Power Producers, Combined Heat and Power Plants	Utility Scale	435	30,302.4	27,019.3	28,951.9
Total	Utility Scale	22,604	1,243,703.9	1,155,354.7	1,194,447.9
Commercial and Industrial Sectors					
Commercial Sector	Utility Scale	1,900	5,939.7	5,425.5	5,524.1
Industrial Sector	Utility Scale	1,506	30,899.7	26,765.2	28,618.5
Total	Utility Scale	3,406	36,839.4	32,190.7	34,142.6
All Sectors					
Total	**Utility Scale**	**26,010**	**1,280,543.3**	**1,187,545.4**	**1,228,590.5**
Small Scale					
Estimated Solar Photovoltaic	Small Scale	--	--	47,774.7	--

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

Table 4.5. Planned Utility-Scale Generating Capacity Changes, by Energy Source, 2024-2028 (Page 1)

Energy Source	Generator Additions		Generator Retirements		Net Capacity Additions	
	Number of Generators	Net Summer Capacity	Number of Generators	Net Summer Capacity	Number of Generators	Net Summer Capacity
Year 2024						
U.S. Total	1,077	64,212.9	191	6,847.0	886	57,365.9
Coal	--	--	9	2,154.6	-9	-2,154.6
Petroleum	13	32.7	44	582.6	-31	-549.9
Natural Gas	80	2,860.7	50	3,762.4	30	-901.7
Other Fossil Gas	--	--	--	--	--	--
Nuclear	1	1,114.0	--	--	1	1,114.0
Hydroelectric Conventional	8	7.9	13	153.8	-5	-145.9
Wind	36	6,451.8	1	0.7	35	6,451.1
Solar Thermal and Photovoltaic	691	38,442.1	1	88.0	690	38,354.1
Wood and Wood-Derived Fuels	--	--	--	--	--	--
Geothermal	--	--	--	--	--	--
Other Biomass	8	14.4	70	94.3	-62	-79.9
Hydroelectric Pumped Storage	--	--	--	--	--	--
Other Energy Sources	240	15,289.3	3	10.6	237	15,278.7
Year 2025						
U.S. Total	500	49,786.2	87	16,026.1	413	33,760.1
Coal	--	--	23	11,158.5	-23	-11,158.5
Petroleum	1	1.0	10	1,190.3	-9	-1,189.3
Natural Gas	53	4,740.7	29	2,539.5	24	2,201.2
Other Fossil Gas	--	--	--	--	--	--
Nuclear	--	--	1	1,118.0	-1	-1,118.0
Hydroelectric Conventional	7	17.9	9	8.3	-2	9.6
Wind	44	8,449.8	--	--	44	8,449.8
Solar Thermal and Photovoltaic	266	23,705.0	--	--	266	23,705.0
Wood and Wood-Derived Fuels	2	22.9	--	--	2	22.9
Geothermal	--	--	--	--	--	--
Other Biomass	3	34.6	13	9.5	-10	25.1
Hydroelectric Pumped Storage	--	--	--	--	--	--
Other Energy Sources	124	12,814.3	2	2.0	122	12,812.3
Year 2026						
U.S. Total	280	42,192.1	62	7,521.2	218	34,670.9
Coal	--	--	8	3,773.5	-8	-3,773.5
Petroleum	--	--	8	38.6	-8	-38.6
Natural Gas	15	4,332.7	31	3,698.2	-16	634.5
Other Fossil Gas	--	--	--	--	--	--
Nuclear	--	--	--	--	--	--
Hydroelectric Conventional	5	24.7	1	2.8	4	21.9
Wind	23	8,434.9	9	1.5	14	8,433.4
Solar Thermal and Photovoltaic	155	20,489.0	4	1.6	151	20,487.4
Wood and Wood-Derived Fuels	--	--	--	--	--	--
Geothermal	5	19.5	--	--	5	19.5
Other Biomass	5	24.4	--	--	5	24.4
Hydroelectric Pumped Storage	--	--	--	--	--	--
Other Energy Sources	72	8,866.9	1	5.0	71	8,861.9

Notes: These data reflect plans as of December 31, 2023
Coal includes anthracite, bituminous, subbituminous, lignite, waste coal, coal synfuel, refined coal, and coal-derived synthesis gas.
Petroleum includes distillate fuel oil (all diesel and No. 1, No. 2, and No. 4 fuel oils), residual fuel oil (No. 5 and No. 6 fuel oils and bunker C fuel oil), jet fuel, kerosene, petroleum coke (converted to liquid petroleum, see Technical Notes for conversion methodology), waste oil, synthetic gas, and propane.
Other Fossil Gas includes gaseous propane, blast furnace gas, other manufactured and waste gases derived from fossil fuels other than hydrogen.
Hydroelectric Conventional capacity includes conventional hydroelectric power excluding pumped storage facilities.
Wood and wood-derived fuels include wood/wood waste solids (including paper pellets, railroad ties, utility poles, wood chips, bark, and wood waste solids), wood waste liquids (red liquor, sludge wood, spent sulfite liquor, and other wood-based liquids), and black liquor.
Other Biomass include municipal solid waste, landfill gas, sludge waste, agricultural byproducts, other biomass solids, other biomass liquids, and other biomass gases (including digester gases, methane, and other biomass gases).
Hydroelectric Conventional capacity includes conventional hydroelectric power excluding pumped storage facilities.
Other Energy Sources include hydrogen, non-biogenic municipal solid waste, batteries, purchased steam, sulfur, tire-derived fuel, and other miscellaneous energy sources.
Capacity by energy source is based on the capacity associated with the energy source reported as the most predominant (primary) one, where more than one energy source is associated with a generator.
In the case of wind, solar and wave energy sites, the capacity for multiple generators is reported in a single generator record and is presented as a single generator in the generator count.
Source: U.S. Energy Information Administration, Form EIA-860, 'Annual Electric Generator Report.'

Table 4.5. Planned Utility-Scale Generating Capacity Changes, by Energy Source, 2024-2028 (Page 2)

Energy Source	Generator Additions		Generator Retirements		Net Capacity Additions	
	Number of Generators	Net Summer Capacity	Number of Generators	Net Summer Capacity	Number of Generators	Net Summer Capacity
Year 2027						
U.S. Total	191	30,283.6	61	10,976.2	130	19,307.4
Coal	--	--	21	6,947.0	-21	-6,947.0
Petroleum	5	17.0	2	4.0	3	13.0
Natural Gas	31	5,274.8	17	3,886.0	14	1,388.8
Other Fossil Gas	--	--	--	--	--	--
Nuclear	--	--	--	--	--	--
Hydroelectric Conventional	20	59.2	10	16.3	10	42.9
Wind	8	1,853.0	1	80.0	7	1,773.0
Solar Thermal and Photovoltaic	79	16,034.5	4	3.8	75	16,030.7
Wood and Wood-Derived Fuels	--	--	--	--	--	--
Geothermal	--	--	--	--	--	--
Other Biomass	--	--	5	38.1	-5	-38.1
Hydroelectric Pumped Storage	3	600.0	--	--	3	600.0
Other Energy Sources	45	6,445.1	1	1.0	44	6,444.1
Year 2028						
U.S. Total	107	10,343.5	42	13,781.0	65	-3,437.5
Coal	--	--	20	12,826.1	-20	-12,826.1
Petroleum	3	10.9	7	38.4	-4	-27.5
Natural Gas	18	2,229.6	5	755.6	13	1,474.0
Other Fossil Gas	--	--	--	--	--	--
Nuclear	--	--	--	--	--	--
Hydroelectric Conventional	47	132.3	--	--	47	132.3
Wind	5	997.5	--	--	5	997.5
Solar Thermal and Photovoltaic	16	3,300.7	7	7.9	9	3,292.8
Wood and Wood-Derived Fuels	--	--	3	153.0	-3	-153.0
Geothermal	--	--	--	--	--	--
Other Biomass	--	--	--	--	--	--
Hydroelectric Pumped Storage	8	2,000.0	--	--	8	2,000.0
Other Energy Sources	10	1,672.5	--	--	10	1,672.5
Years 2024-2028						
U.S. Total	2,155	196,818.3	443	55,151.5	1,712	141,666.8
Coal	--	--	81	36,859.7	-81	-36,859.7
Petroleum	22	61.6	71	1,853.9	-49	-1,792.3
Natural Gas	197	19,438.5	132	14,641.7	65	4,796.8
Other Fossil Gas	--	--	--	--	--	--
Nuclear	1	1,114.0	1	1,118.0	--	-4.0
Hydroelectric Conventional	87	242.0	33	181.2	54	60.8
Wind	116	26,187.0	11	82.2	105	26,104.8
Solar Thermal and Photovoltaic	1,207	101,971.3	16	101.3	1,191	101,870.0
Wood and Wood-Derived Fuels	2	22.9	3	153.0	-1	-130.1
Geothermal	5	19.5	--	--	5	19.5
Other Biomass	16	73.4	88	141.9	-72	-68.5
Hydroelectric Pumped Storage	11	2,600.0	--	--	11	2,600.0
Other Energy Sources	491	45,088.1	7	18.6	484	45,069.5

Notes: These data reflect plans as of December 31, 2023
Coal includes anthracite, bituminous, subbituminous, lignite, waste coal, coal synfuel, refined coal, and coal-derived synthesis gas.
Petroleum includes distillate fuel oil (all diesel and No. 1, No. 2, and No. 4 fuel oils), residual fuel oil (No. 5 and No. 6 fuel oils and bunker C fuel oil), jet fuel, kerosene, petroleum coke (converted to liquid petroleum, see Technical Notes for conversion methodology), waste oil, synthetic gas, and propane.
Other Fossil Gas includes gaseous propane, blast furnace gas, other manufactured and waste gases derived from fossil fuels other than hydrogen.
Hydroelectric Conventional capacity includes conventional hydroelectric power excluding pumped storage facilities.
Wood and wood-derived fuels include wood/wood waste solids (including paper pellets, railroad ties, utility poles, wood chips, bark, and wood waste solids), wood waste liquids (red liquor, sludge wood, spent sulfite liquor, and other wood-based liquids), and black liquor.
Other Biomass include municipal solid waste, landfill gas, sludge waste, agricultural byproducts, other biomass solids, other biomass liquids, and other biomass gases (including digester gases, methane, and other biomass gases).
Hydroelectric Conventional capacity includes conventional hydroelectric power excluding pumped storage facilities.
Other Energy Sources include hydrogen, non-biogenic municipal solid waste, batteries, purchased steam, sulfur, tire-derived fuel, and other miscellaneous energy sources.
Capacity by energy source is based on the capacity associated with the energy source reported as the most predominant (primary) one, where more than one energy source is associated with a generator.
In the case of wind, solar and wave energy sites, the capacity for multiple generators is reported in a single generator record and is presented as a single generator in the generator count.
Source: U.S. Energy Information Administration, Form EIA-860, 'Annual Electric Generator Report.'

Table 4.6. Utility-Scale Capacity Additions, Retirements and Changes by Energy Source, 2023 (Count, Megawatts)

	Generator Additions				Generator Retirements			
Energy Source	Number of Generators	Generator Nameplate Capacity	Net Summer Capacity	Net Winter Capacity	Number of Generators	Generator Nameplate Capacity	Net Summer Capacity	Net Winter Capacity
Coal	--	--	--	--	26	10,237.5	9,224.9	9,304.4
Petroleum	25	51.5	51.4	51.4	82	310.4	271.2	319.3
Natural Gas	104	9,728.4	8,701.3	9,176.4	71	5,891.8	5,128.0	5,367.2
Other Fossil Gas	--	--	--	--	3	35.0	30.0	33.0
Nuclear	1	1,114.0	1,114.0	1,114.0	--	--	--	--
Hydroelectric Conventional	4	24.4	24.4	24.4	10	50.6	49.7	57.2
Wind	39	6,635.2	6,586.4	6,586.4	11	48.0	40.9	42.4
Solar Thermal and Photovoltaic	527	19,274.0	18,887.6	18,298.8	112	59.1	59.1	58.6
Wood and Wood-Derived Fuels	--	--	--	--	15	308.8	240.0	241.9
Geothermal	5	122.0	85.0	122.0	3	71.0	46.8	71.0
Other Biomass	3	5.7	5.1	5.1	44	144.1	135.6	138.0
Hydroelectric Pumped Storage	--	--	--	--	--	--	--	--
Other Energy Sources	130	6,926.5	6,862.8	6,862.8	5	11.7	11.7	11.7
Total	838	43,881.7	42,318.0	42,241.3	382	17,168.0	15,237.9	15,644.7

	Other Changes to Existing Capacity			
Energy Source		Generator Nameplate Capacity	Net Summer Capacity	Net Winter Capacity
Coal		-2,303.7	-2,104.1	-2,022.1
Petroleum		-5,233.3	-4,757.4	-4,697.0
Natural Gas		977.0	67.8	1,067.2
Other Fossil Gas		174.7	168.6	166.9
Nuclear		125.6	-60.7	-76.8
Hydroelectric Conventional		-60.8	-147.9	-169.2
Wind		-624.5	-602.0	-602.0
Solar Thermal and Photovoltaic		147.5	155.4	195.3
Wood and Wood-Derived Fuels		112.4	128.6	129.8
Geothermal		-6.7	9.0	11.0
Other Biomass		-67.8	-63.4	-63.7
Hydroelectric Pumped Storage		162.0	103.5	238.1
Other Energy Sources		154.0	161.7	144.0
Total		-6,443.6	-6,940.9	-5,678.5

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

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

Table 4.7.A. Net Summer Capacity of Utility Scale Units by Technology and by State, 2023 and 2022 (Megawatts)

Census Division and State	Renewable Sources		Fossil Fuels		Hydroelectric Pumped Storage		Other Energy Storage		Nuclear		All Other Sources		All Sources	
	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
New England	7,418.1	7,021.5	22,647.6	22,933.0	1,863.4	1,830.4	369.9	303.1	3,326.9	3,356.1	22.0	22.0	35,647.9	35,466.1
Connecticut	551.2	536.7	7,272.5	7,432.7	29.4	29.4	1.6	1.6	2,081.2	2,108.0	0.0	0.0	9,935.9	10,108.4
Maine	2,724.9	2,541.7	2,442.4	2,516.4	0.0	0.0	62.3	46.3	0.0	0.0	22.0	22.0	5,251.6	5,126.4
Massachusetts	1,981.2	1,917.5	8,766.2	8,807.4	1,834.0	1,801.0	268.1	241.3	0.0	0.0	0.0	0.0	12,849.5	12,767.2
New Hampshire	946.6	944.1	2,260.4	2,270.4	0.0	0.0	14.0	0.0	1,245.7	1,248.1	0.0	0.0	4,466.7	4,462.6
Rhode Island	505.4	379.0	1,780.1	1,780.1	0.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	2,288.5	2,162.1
Vermont	708.8	702.5	126.0	126.0	0.0	0.0	20.9	10.9	0.0	0.0	0.0	0.0	855.7	839.4
Middle Atlantic	14,452.9	12,880.2	71,613.0	73,120.8	3,312.0	3,343.2	350.5	257.4	15,854.5	15,854.5	11.2	11.2	105,594.1	105,467.3
New Jersey	1,376.1	1,280.0	11,509.1	11,501.4	415.4	420.0	69.7	42.7	3,456.7	3,456.7	11.2	11.2	16,838.2	16,712.0
New York	9,482.0	8,585.0	25,811.9	26,230.5	1,405.1	1,408.8	226.2	160.1	3,304.6	3,304.6	0.0	0.0	40,229.8	39,689.0
Pennsylvania	3,594.8	3,015.2	34,292.0	35,388.9	1,491.5	1,514.4	54.6	54.6	9,093.2	9,093.2	0.0	0.0	48,526.1	49,066.3
East North Central	25,670.1	20,994.3	103,395.4	104,044.2	2,185.6	2,185.6	173.9	165.5	18,206.2	18,215.6	169.8	169.8	149,801.0	145,775.0
Illinois	9,210.5	8,022.3	24,467.0	24,399.0	0.0	0.0	96.1	96.1	11,567.6	11,567.6	78.0	78.0	45,419.2	44,163.0
Indiana	4,849.3	4,226.0	21,605.0	22,553.2	0.0	0.0	36.0	36.0	0.0	0.0	88.0	88.0	26,578.3	26,903.2
Michigan	5,304.5	4,700.1	20,306.7	20,329.2	2,185.6	2,185.6	1.3	1.3	3,318.0	3,318.0	3.8	3.8	31,119.9	30,538.0
Ohio	3,089.8	1,785.0	23,845.1	23,501.3	0.0	0.0	34.8	26.8	2,134.0	2,134.0	0.0	0.0	29,103.7	27,447.1
Wisconsin	3,216.0	2,260.9	13,171.6	13,261.5	0.0	0.0	5.7	5.3	1,186.6	1,196.0	0.0	0.0	17,579.9	16,723.7
West North Central	45,724.5	43,759.9	56,682.2	57,796.0	657.0	657.0	31.6	26.8	4,792.2	4,842.0	12.2	12.2	107,899.7	107,093.9
Iowa	13,295.8	12,869.0	9,401.7	9,673.5	0.0	0.0	8.9	3.9	0.0	0.0	0.0	0.0	22,706.4	22,546.4
Kansas	9,098.8	8,290.6	8,921.1	8,910.2	0.0	0.0	0.0	0.0	1,176.7	1,225.0	0.8	0.8	19,197.4	18,426.6
Minnesota	6,748.7	6,500.5	9,413.8	10,280.3	0.0	0.0	16.0	16.0	1,657.0	1,657.0	6.1	6.1	17,841.6	18,459.9
Missouri	3,038.2	3,028.2	16,286.1	16,250.7	657.0	657.0	1.0	2.2	1,190.0	1,190.0	0.0	0.0	21,172.3	21,128.1
Nebraska	3,854.1	3,854.1	6,153.4	6,172.0	0.0	0.0	4.9	3.9	768.5	770.0	0.0	0.0	10,780.9	10,800.0
North Dakota	4,839.9	4,845.9	4,556.9	4,557.8	0.0	0.0	0.0	0.0	0.0	0.0	5.3	5.3	9,402.1	9,409.0
South Dakota	4,849.0	4,371.6	1,949.2	1,951.5	0.0	0.0	0.8	0.8	0.0	0.0	0.0	0.0	6,799.0	6,323.9
South Atlantic	36,635.5	32,864.1	153,342.1	155,415.9	8,192.5	8,100.4	847.9	727.8	25,904.1	24,752.8	366.9	366.9	225,289.0	222,227.9
Delaware	105.6	105.7	3,189.9	3,215.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3,295.5	3,321.6
District of Columbia	31.6	30.5	20.6	20.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52.2	51.1
Florida	8,847.4	7,179.1	55,335.9	55,184.1	0.0	0.0	560.7	540.9	3,666.0	3,666.0	312.9	312.9	68,722.9	66,883.0
Georgia	7,175.1	6,626.1	23,457.0	23,532.2	1,897.4	1,897.4	81.2	81.2	5,175.0	4,061.0	0.0	0.0	37,785.7	36,197.9
Maryland	1,429.2	1,432.3	8,742.0	8,759.7	0.0	0.0	7.7	7.7	1,745.2	1,707.8	0.0	0.0	11,924.1	11,907.5
North Carolina	9,197.4	8,722.8	21,318.2	21,342.6	86.0	86.0	58.3	36.0	5,149.6	5,149.6	54.0	54.0	35,863.5	35,391.0
South Carolina	3,317.2	3,094.7	11,526.3	11,710.8	2,956.0	2,876.0	22.0	4.0	6,600.3	6,600.4	0.0	0.0	24,421.8	24,285.9
Virginia	5,332.8	4,473.7	15,993.8	17,876.0	3,253.1	3,241.0	70.5	10.5	3,568.0	3,568.0	0.0	0.0	28,218.2	29,169.2
West Virginia	1,199.2	1,199.2	13,758.4	13,774.0	0.0	0.0	47.5	47.5	0.0	0.0	0.0	0.0	15,005.1	15,020.7
East South Central	9,893.9	9,386.5	62,317.4	60,452.4	1,616.3	1,616.3	2.5	1.0	11,358.4	11,375.9	1.4	1.4	85,189.9	82,833.5
Alabama	4,509.6	4,330.7	21,134.0	19,125.2	0.0	0.0	1.0	1.0	5,452.7	5,452.7	0.0	0.0	31,097.3	28,909.6
Kentucky	1,290.2	1,289.7	17,045.5	16,343.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18,335.7	17,633.2
Mississippi	728.0	621.7	12,719.1	12,699.9	0.0	0.0	1.5	0.0	1,383.0	1,400.5	1.4	1.4	14,833.0	14,723.5
Tennessee	3,366.1	3,144.4	11,418.8	12,283.8	1,616.3	1,616.3	0.0	0.0	4,522.7	4,522.7	0.0	0.0	20,923.9	21,567.2
West South Central	72,879.6	66,909.2	140,206.5	142,398.7	288.0	288.0	3,830.6	2,114.8	8,941.9	8,934.0	578.1	548.2	226,724.7	221,192.9
Arkansas	2,309.9	1,821.9	10,875.0	11,257.8	30.0	30.0	22.0	22.0	1,825.0	1,822.0	0.0	0.0	15,061.9	14,953.7
Louisiana	958.6	738.6	21,508.7	21,519.7	0.0	0.0	0.0	0.5	2,136.9	2,132.0	359.1	329.2	24,963.3	24,720.0
Oklahoma	13,209.5	12,561.4	18,212.3	19,789.9	258.0	258.0	10.0	10.0	0.0	0.0	0.0	0.0	31,689.8	32,619.3
Texas	56,401.6	51,787.3	89,610.5	89,831.3	0.0	0.0	3,798.6	2,082.3	4,980.0	4,980.0	219.0	219.0	155,009.7	148,899.9
Mountain	41,576.5	38,243.9	58,237.6	58,152.8	806.7	797.1	1,955.8	323.0	3,937.0	3,937.0	124.6	123.7	106,638.2	101,577.5
Arizona	7,251.8	6,364.1	17,548.5	17,587.5	216.3	216.3	931.0	97.0	3,937.0	3,937.0	0.0	0.0	29,884.6	28,201.9
Colorado	8,228.5	7,156.7	10,472.4	10,335.0	590.4	580.8	241.0	10.2	0.0	0.0	9.1	9.1	19,541.4	18,091.8
Idaho	4,095.5	4,095.7	1,242.3	1,244.8	0.0	0.0	0.0	0.0	0.0	0.0	14.8	14.8	5,352.6	5,355.3
Montana	4,589.9	4,326.8	2,068.0	2,072.0	0.0	0.0	0.0	0.0	0.0	0.0	40.0	40.0	6,697.9	6,438.8
Nevada	5,903.3	5,255.0	8,082.3	8,079.6	0.0	0.0	543.8	200.0	0.0	0.0	6.5	6.5	14,535.9	13,541.1
New Mexico	5,635.4	5,365.4	4,849.1	4,849.0	0.0	0.0	239.0	14.8	0.0	0.0	0.7	0.7	10,724.2	10,229.9
Utah	2,367.0	2,274.2	7,301.6	7,311.5	0.0	0.0	1.0	1.0	0.0	0.0	40.2	40.2	9,709.8	9,626.9
Wyoming	3,505.1	3,406.0	6,673.4	6,673.4	0.0	0.0	0.0	0.0	0.0	0.0	13.3	12.4	10,191.8	10,091.8
Pacific Contiguous	78,304.1	75,719.5	44,686.6	45,740.3	4,225.9	4,225.9	8,025.6	4,905.4	3,391.0	3,391.0	94.4	94.4	138,727.6	134,076.5
California	39,289.0	36,944.9	36,855.0	37,925.7	3,911.9	3,911.9	7,984.6	4,864.4	2,240.0	2,240.0	94.4	94.4	90,374.9	85,981.3
Oregon	13,664.8	13,452.5	3,769.0	3,755.0	0.0	0.0	35.0	35.0	0.0	0.0	0.0	0.0	17,468.8	17,242.5
Washington	25,350.3	25,322.1	4,062.6	4,059.6	314.0	314.0	6.0	6.0	1,151.0	1,151.0	0.0	0.0	30,883.9	30,852.7
Pacific Noncontiguous	1,404.6	1,332.4	4,156.4	4,162.4	0.0	0.0	453.6	202.6	0.0	0.0	28.4	28.4	6,043.0	5,725.8
Alaska	549.9	542.8	2,176.5	2,182.5	0.0	0.0	93.7	93.7	0.0	0.0	0.9	0.9	2,821.0	2,819.9
Hawaii	854.7	789.6	1,979.9	1,979.9	0.0	0.0	359.9	108.9	0.0	0.0	27.5	27.5	3,222.0	2,905.9
U.S. Total	333,959.8	309,111.5	717,284.8	724,216.5	23,147.4	23,043.9	16,041.9	9,027.4	95,712.2	94,658.9	1,409.0	1,378.2	1,187,555.1	1,161,436.4

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

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

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

Table 4.7.B. Net Summer Capacity Using Primarily Renewable Energy Sources and by State, 2023 and 2022 (Megawatts)

Census Division and State	Summer Capacity at Utility Scale Facilities														Small Scale Capacity		Capacity From Utility and Small Scale Facilities			
	Wind		Solar Photovoltaic		Solar Thermal		Conventional Hydroelectric		Biomass Sources		Geothermal		Total Renewable Sources		Estimated Solar Photovoltaic		Estimated Total Solar Photovoltaic		Estimated Total Solar	
	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
New England	1,575.7	1,575.7	2,641.4	2,242.2	0.0	0.0	1,953.6	1,950.2	1,247.4	1,253.4	0.0	0.0	7,418.1	7,021.5	5,033.3	4,318.4	7,674.7	6,560.6	7,674.7	6,560.6
Connecticut	5.0	5.0	287.4	272.9	0.0	0.0	119.2	119.2	139.6	139.6	0.0	0.0	551.2	536.7	978.6	795.5	1,266.0	1,068.4	1,266.0	1,068.4
Maine	1,029.5	1,029.5	481.0	297.8	0.0	0.0	725.8	725.8	488.6	488.6	0.0	0.0	2,724.9	2,541.7	532.9	298.5	1,013.9	596.3	1,013.9	596.3
Massachusetts	101.8	101.8	1,339.1	1,271.0	0.0	0.0	267.2	267.2	273.1	277.5	0.0	0.0	1,981.2	1,917.5	2,661.3	2,516.9	4,000.4	3,787.9	4,000.4	3,787.9
New Hampshire	211.9	211.9	2.4	2.4	0.0	0.0	506.5	504.0	225.8	225.8	0.0	0.0	946.6	944.1	232.8	182.4	235.2	184.8	235.2	184.8
Rhode Island	77.3	77.3	385.3	258.9	0.0	0.0	2.7	2.7	40.1	40.1	0.0	0.0	505.4	379.0	453.2	362.8	838.5	621.7	838.5	621.7
Vermont	150.2	150.2	146.2	139.2	0.0	0.0	332.2	331.3	80.2	81.8	0.0	0.0	708.8	702.5	174.4	162.3	320.6	301.5	320.6	301.5
Middle Atlantic	4,306.5	3,657.4	3,576.6	2,621.8	0.0	0.0	5,502.6	5,505.2	1,067.2	1,095.8	0.0	0.0	14,452.9	12,880.2	6,104.4	5,612.6	9,681.0	8,234.4	9,681.0	8,234.4
New Jersey	7.6	7.6	1,167.5	1,069.4	0.0	0.0	12.3	12.3	188.7	190.7	0.0	0.0	1,376.1	1,280.0	2,297.4	2,346.1	3,464.9	3,415.5	3,464.9	3,415.5
New York	2,746.3	2,189.8	1,719.6	1,376.6	0.0	0.0	4,560.8	4,563.3	455.3	455.3	0.0	0.0	9,482.0	8,585.0	2,995.2	2,637.9	4,714.8	4,014.5	4,714.8	4,014.5
Pennsylvania	1,552.6	1,460.0	689.5	175.8	0.0	0.0	929.5	929.6	423.2	449.8	0.0	0.0	3,594.8	3,015.2	811.8	628.6	1,501.3	804.4	1,501.3	804.4
East North Central	16,816.1	15,558.6	6,969.1	3,491.0	0.0	0.0	880.2	876.7	1,004.7	1,068.0	0.0	0.0	25,670.1	20,994.3	2,185.1	1,792.1	9,154.2	5,283.1	9,154.2	5,283.1
Illinois	7,873.7	7,034.6	1,248.7	899.0	0.0	0.0	32.9	32.9	55.2	55.8	0.0	0.0	9,210.5	8,022.3	1,164.1	953.6	2,412.8	1,852.6	2,412.8	1,852.6
Indiana	3,439.1	3,453.1	1,288.9	629.2	0.0	0.0	71.6	71.6	49.7	72.1	0.0	0.0	4,849.3	4,226.0	238.1	212.8	1,527.0	842.0	1,527.0	842.0
Michigan	3,575.3	3,239.0	975.0	707.7	0.0	0.0	263.8	264.1	490.4	489.3	0.0	0.0	5,304.5	4,700.1	226.4	190.9	1,201.4	898.6	1,201.4	898.6
Ohio	1,101.8	1,097.3	1,808.3	481.2	0.0	0.0	101.9	101.9	77.8	104.6	0.0	0.0	3,089.8	1,785.0	341.2	264.0	2,149.5	745.2	2,149.5	745.2
Wisconsin	826.2	734.6	1,648.2	773.9	0.0	0.0	410.0	406.2	331.6	346.2	0.0	0.0	3,216.0	2,260.9	215.2	170.9	1,863.4	944.8	1,863.4	944.8
West North Central	40,153.1	38,429.0	1,815.9	1,572.6	0.0	0.0	3,364.6	3,364.6	390.9	393.7	0.0	0.0	45,724.5	43,759.9	1,059.7	846.7	2,875.6	2,419.3	2,875.6	2,419.3
Iowa	12,803.8	12,378.5	262.0	260.5	0.0	0.0	209.4	209.4	20.6	20.6	0.0	0.0	13,295.8	12,869.0	286.4	221.5	548.4	482.0	548.4	482.0
Kansas	9,042.7	8,238.1	40.1	36.5	0.0	0.0	7.0	7.0	9.0	9.0	0.0	0.0	9,098.8	8,290.6	87.8	62.4	127.9	98.9	127.9	98.9
Minnesota	4,928.7	4,828.7	1,291.4	1,143.2	0.0	0.0	212.0	212.0	316.6	316.6	0.0	0.0	6,748.7	6,500.5	243.2	188.6	1,534.6	1,331.8	1,534.6	1,331.8
Missouri	2,374.9	2,374.9	100.8	90.8	0.0	0.0	548.5	548.5	14.0	14.0	0.0	0.0	3,038.2	3,028.2	403.2	345.6	504.0	436.4	504.0	436.4
Nebraska	3,518.3	3,518.3	40.6	40.6	0.0	0.0	279.7	279.7	15.5	15.5	0.0	0.0	3,854.1	3,854.1	33.0	25.7	73.6	66.3	73.6	66.3
North Dakota	4,320.1	4,323.3	0.0	0.0	0.0	0.0	510.0	510.0	9.8	12.6	0.0	0.0	4,839.9	4,845.9	2.2	1.4	2.2	1.4	2.2	1.4
South Dakota	3,164.6	2,767.2	81.0	1.0	0.0	0.0	1,598.0	1,598.0	5.4	5.4	0.0	0.0	4,849.0	4,371.6	3.8	1.6	84.8	2.6	84.8	2.6
South Atlantic	1,267.2	1,267.2	24,432.6	20,447.6	0.0	0.0	7,055.3	7,139.6	3,880.4	4,009.7	0.0	0.0	36,635.5	32,864.1	5,717.6	4,244.8	30,150.2	24,692.4	30,150.2	24,692.4
Delaware	2.0	2.0	89.4	89.5	0.0	0.0	0.0	0.0	14.2	14.2	0.0	0.0	105.6	105.7	130.1	112.9	219.5	202.4	219.5	202.4
District of Columbia	0.0	0.0	19.6	18.5	0.0	0.0	0.0	0.0	12.0	12.0	0.0	0.0	31.6	30.5	142.2	117.3	161.8	135.8	161.8	135.8
Florida	0.0	0.0	7,802.3	5,994.4	0.0	0.0	43.5	43.5	1,001.6	1,141.2	0.0	0.0	8,847.4	7,179.1	2,582.3	1,763.2	10,384.6	7,757.6	10,384.6	7,757.6
Georgia	0.0	0.0	4,123.0	3,631.3	0.0	0.0	1,985.0	1,985.0	1,067.1	1,009.8	0.0	0.0	7,175.1	6,626.1	320.2	242.4	4,443.2	3,873.7	4,443.2	3,873.7
Maryland	190.0	190.0	584.4	512.4	0.0	0.0	514.9	590.0	139.9	139.9	0.0	0.0	1,429.2	1,432.3	1,038.0	980.4	1,622.4	1,492.8	1,622.4	1,492.8
North Carolina	208.0	208.0	6,597.8	6,069.6	0.0	0.0	2,010.5	2,008.7	381.1	436.5	0.0	0.0	9,197.4	8,722.8	498.1	400.7	7,095.9	6,470.3	7,095.9	6,470.3
South Carolina	0.0	0.0	1,557.5	1,339.0	0.0	0.0	1,294.0	1,305.0	465.7	450.7	0.0	0.0	3,317.2	3,094.7	378.1	343.0	1,935.6	1,682.0	1,935.6	1,682.0
Virginia	12.0	12.0	3,658.6	2,792.9	0.0	0.0	866.6	866.6	795.6	802.2	0.0	0.0	5,332.8	4,473.7	592.8	258.4	4,251.4	3,051.3	4,251.4	3,051.3
West Virginia	855.2	855.2	0.0	0.0	0.0	0.0	340.8	340.8	3.2	3.2	0.0	0.0	1,199.2	1,199.2	35.7	26.4	35.7	26.4	35.7	26.4
East South Central	29.1	29.1	1,692.5	1,180.0	0.0	0.0	7,037.8	7,037.8	1,134.5	1,139.6	0.0	0.0	9,893.9	9,386.5	177.2	139.0	1,869.7	1,319.0	1,869.7	1,319.0
Alabama	0.0	0.0	601.1	421.1	0.0	0.0	3,291.8	3,291.8	616.7	617.8	0.0	0.0	4,509.6	4,330.7	15.8	10.9	616.9	432.0	616.9	432.0
Kentucky	0.0	0.0	82.3	77.8	0.0	0.0	1,137.4	1,137.4	70.5	74.5	0.0	0.0	1,290.2	1,289.7	93.5	71.3	175.8	149.1	175.8	149.1
Mississippi	0.0	0.0	425.6	319.3	0.0	0.0	0.0	0.0	302.4	302.4	0.0	0.0	728.0	621.7	14.4	12.3	440.0	331.6	440.0	331.6
Tennessee	29.1	29.1	583.5	361.8	0.0	0.0	2,608.6	2,608.6	144.9	144.9	0.0	0.0	3,366.1	3,144.4	53.5	44.5	637.0	406.3	637.0	406.3
West South Central	52,572.3	50,937.9	16,219.1	11,867.2	0.0	0.0	3,013.0	3,016.1	1,075.2	1,088.0	0.0	0.0	72,879.6	66,909.2	3,349.5	2,516.2	19,568.6	14,383.4	19,568.6	14,383.4
Arkansas	0.0	0.0	820.9	329.7	0.0	0.0	1,265.2	1,265.2	223.8	227.0	0.0	0.0	2,309.9	1,821.9	250.5	176.3	1,071.4	506.0	1,071.4	506.0
Louisiana	0.0	0.0	344.5	124.5	0.0	0.0	192.0	192.0	422.1	422.1	0.0	0.0	958.6	738.6	185.1	160.8	529.6	285.3	529.6	285.3
Oklahoma	12,245.2	11,594.0	47.5	47.5	0.0	0.0	840.6	843.7	76.2	76.2	0.0	0.0	13,209.5	12,561.4	110.9	64.7	158.4	112.2	158.4	112.2
Texas	40,327.1	39,343.9	15,006.2	11,365.5	0.0	0.0	715.2	715.2	353.1	362.7	0.0	0.0	56,401.6	51,787.3	2,803.0	2,114.3	17,809.2	13,479.8	17,809.2	13,479.8
Mountain	16,796.9	16,158.2	12,812.3	10,108.6	474.2	474.2	10,568.6	10,609.2	176.2	174.4	748.3	719.3	41,576.5	38,243.9	5,850.9	4,709.4	18,663.2	14,818.0	19,137.4	15,292.2
Arizona	855.5	617.3	3,350.9	2,703.6	295.6	295.6	2,721.9	2,719.7	27.9	27.9	0.0	0.0	7,251.8	6,364.1	2,679.6	2,111.4	6,030.5	4,815.0	6,326.1	5,110.6
Colorado	5,336.7	5,136.2	2,173.4	1,302.1	0.0	0.0	689.7	689.7	28.7	28.7	0.0	0.0	8,228.5	7,156.7	1,089.0	862.8	3,262.4	2,164.9	3,262.4	2,164.9
Idaho	968.3	968.3	402.0	362.0	0.0	0.0	2,630.8	2,672.3	84.4	83.1	10.0	10.0	4,095.5	4,095.7	156.0	124.7	558.0	486.7	558.0	486.7
Montana	1,581.7	1,478.9	177.0	17.0	0.0	0.0	2,825.0	2,826.3	6.2	4.6	0.0	0.0	4,589.9	4,326.8	59.0	40.4	236.0	57.4	236.0	57.4
Nevada	150.0	150.0	3,854.3	3,235.0	178.5	178.5	1,051.7	1,051.7	9.8	9.8	659.0	630.0	5,903.3	5,255.0	952.5	775.6	4,806.8	4,010.6	4,985.3	4,189.1
New Mexico	4,409.0	4,410.9	1,131.9	855.7	0.0	0.0	82.7	82.7	3.2	7.5	8.6	8.6	5,635.4	5,365.4	375.3	313.4	1,507.2	1,169.1	1,507.2	1,169.1
Utah	389.7	389.7	1,630.8	1,541.2	0.1	0.1	259.7	259.7	16.0	12.8	70.7	70.7	2,367.0	2,274.2	522.1	465.5	2,152.9	2,006.7	2,153.0	2,006.8
Wyoming	3,106.0	3,006.9	92.0	92.0	0.0	0.0	307.1	307.1	0.0	0.0	0.0	0.0	3,505.1	3,406.0	17.4	15.6	109.4	107.6	109.4	107.6
Pacific Contiguous	13,635.6	13,496.9	19,968.3	17,527.4	1,005.8	1,005.8	40,101.0	40,059.8	1,688.9	1,743.3	1,904.5	1,886.3	78,304.1	75,719.5	17,444.1	14,853.2	37,412.4	32,380.6	38,418.2	33,386.4
California	6,284.2	6,145.5	18,769.3	16,545.3	1,005.8	1,005.8	10,225.9	10,263.3	1,118.8	1,118.2	1,885.0	1,866.8	39,289.0	36,944.9	16,615.2	14,196.0	35,384.5	30,741.3	36,390.3	31,747.1
Oregon	3,976.5	3,976.5	1,010.7	793.7	0.0	0.0	8,363.2	8,367.9	294.9	294.9	19.5	19.5	13,664.8	13,452.5	398.1	316.1	1,408.8	1,109.8	1,408.8	1,109.8
Washington	3,374.9	3,374.9	188.3	188.4	0.0	0.0	21,511.9	21,428.6	275.2	330.2	0.0	0.0	25,350.3	25,322.1	430.7	341.1	619.0	529.5	619.0	529.5
Pacific Noncontiguous	292.2	292.2	399.9	327.9	0.0	0.0	508.6	508.4	160.9	160.9	43.0	43.0	1,404.6	1,332.4	852.9	795.6	1,252.8	1,123.5	1,252.8	1,123.5
Alaska	59.0	59.0	7.7	0.8	0.0	0.0	476.2	476.0	7.0	7.0	0.0	0.0	549.9	542.8	19.2	16.1	26.9	16.9	26.9	16.9
Hawaii	233.2	233.2	392.2	327.1	0.0	0.0	32.4	32.4	153.9	153.9	43.0	43.0	854.7	789.6	833.8	779.5	1,226.0	1,106.6	1,226.0	1,106.6
U.S. Total	147,444.7	141,402.2	90,527.7	71,386.3	1,480.0	1,480.0	79,985.3	80,067.6	11,826.3	12,126.8	2,695.8	2,648.6	333,959.8	309,111.5	47,774.7	39,828.0	138,302.4	111,214.3	139,782.4	112,694.3

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

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

Table 4.7.C. Net Summer Capacity of Utility Scale Units Using Primarily Fossil Fuels and by State, 2023 and 2022 (Megawatts)

Census Division and State	Natural Gas Fired Combined Cycle		Natural Gas Fired Combustion Turbine		Other Natural Gas		Coal		Petroleum Coke		Petroleum Liquids		Other Fossil Gas		Total Fossil Fuels	
	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
New England	14,115.3	14,343.8	1,368.4	1,710.1	672.5	762.8	533.9	533.9	0.0	0.0	5,957.5	5,582.4	0.0	0.0	22,647.6	22,933.0
Connecticut	3,923.0	3,919.4	584.0	585.7	556.8	555.2	0.0	0.0	0.0	0.0	2,208.7	2,372.4	0.0	0.0	7,272.5	7,432.7
Maine	1,285.7	1,279.7	312.0	312.0	0.0	80.0	0.0	0.0	0.0	0.0	844.7	844.7	0.0	0.0	2,442.4	2,516.4
Massachusetts	5,942.9	6,171.0	456.2	796.2	90.3	102.2	0.0	0.0	0.0	0.0	2,276.8	1,738.0	0.0	0.0	8,766.2	8,807.4
New Hampshire	1,228.5	1,238.5	3.8	3.8	0.0	0.0	533.9	533.9	0.0	0.0	494.2	494.2	0.0	0.0	2,260.4	2,270.4
Rhode Island	1,735.2	1,735.2	12.4	12.4	25.4	25.4	0.0	0.0	0.0	0.0	7.1	7.1	0.0	0.0	1,780.1	1,780.1
Vermont	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	126.0	126.0	0.0	0.0	126.0	126.0
Middle Atlantic	37,337.0	37,143.4	7,092.0	7,607.0	15,936.8	14,537.6	6,008.7	8,023.2	11.6	11.6	5,112.0	5,683.1	114.9	114.9	71,613.0	73,120.8
New Jersey	8,374.0	8,356.5	2,734.5	2,740.5	69.9	73.7	0.0	0.0	11.6	11.6	290.1	290.1	29.0	29.0	11,509.1	11,501.4
New York	9,908.2	9,910.2	2,459.2	2,915.7	9,962.7	9,330.1	0.0	0.0	0.0	0.0	3,481.8	4,074.5	0.0	0.0	25,811.9	26,230.5
Pennsylvania	19,054.8	18,876.7	1,898.3	1,950.8	5,904.2	5,133.8	6,008.7	8,023.2	0.0	0.0	1,340.1	1,318.5	85.9	85.9	34,292.0	35,388.9
East North Central	31,442.5	27,799.9	26,550.4	26,500.5	4,503.0	5,776.2	37,336.3	40,352.3	251.1	249.9	2,269.1	2,285.4	1,043.0	1,080.0	103,395.4	104,044.2
Illinois	5,823.1	4,772.4	10,721.0	10,351.4	373.0	1,723.0	6,853.5	6,853.5	0.0	0.0	659.9	662.2	36.5	36.5	24,467.0	24,399.0
Indiana	3,899.6	3,875.0	3,365.9	3,365.8	851.4	829.0	12,847.2	13,842.5	0.0	0.0	95.8	95.8	545.1	545.1	21,605.0	22,553.2
Michigan	7,691.6	6,864.8	3,570.0	3,896.0	2,513.5	2,540.3	5,801.9	6,291.1	47.2	47.2	432.5	439.8	250.0	250.0	20,306.7	20,329.2
Ohio	10,554.2	8,764.8	5,721.3	5,636.8	102.2	102.2	6,607.5	8,097.5	145.5	144.3	503.0	507.3	211.4	248.4	23,845.1	23,501.3
Wisconsin	3,474.0	3,522.9	3,172.2	3,250.5	662.9	581.7	5,226.2	5,267.7	58.4	58.4	577.9	580.3	0.0	0.0	13,171.6	13,261.5
West North Central	7,047.3	7,089.6	11,620.1	11,603.9	3,755.9	3,685.9	30,374.7	31,476.7	32.0	39.5	3,843.8	3,894.8	8.4	5.6	56,682.2	57,796.0
Iowa	1,741.9	1,752.5	1,210.6	1,123.4	751.2	757.2	4,860.8	5,068.5	32.0	39.5	805.2	932.4	0.0	0.0	9,401.7	9,673.5
Kansas	247.0	266.0	2,208.4	2,192.6	1,396.3	1,392.7	4,524.7	4,521.4	0.0	0.0	544.7	537.5	0.0	0.0	8,921.1	8,910.2
Minnesota	2,532.9	2,532.9	2,545.0	2,545.8	421.9	449.5	3,141.7	3,978.6	0.0	0.0	772.3	773.5	0.0	0.0	9,413.8	10,280.3
Missouri	1,892.5	1,905.2	3,200.8	3,286.0	392.8	390.9	9,714.2	9,656.2	0.0	0.0	1,085.8	1,012.4	0.0	0.0	16,286.1	16,250.7
Nebraska	338.0	338.0	1,107.6	1,106.9	518.4	517.4	3,825.8	3,845.6	0.0	0.0	363.6	364.1	0.0	0.0	6,153.4	6,172.0
North Dakota	0.0	0.0	454.0	454.0	203.9	106.8	3,832.5	3,931.4	0.0	0.0	58.1	60.0	8.4	5.6	4,556.9	4,557.8
South Dakota	295.0	295.0	893.7	895.2	71.4	71.4	475.0	475.0	0.0	0.0	214.1	214.9	0.0	0.0	1,949.2	1,951.5
South Atlantic	65,781.6	64,694.6	32,264.9	31,826.1	14,129.5	14,607.6	35,006.2	36,987.0	83.8	83.8	5,941.1	7,081.8	135.0	135.0	153,342.1	155,415.9
Delaware	1,496.0	1,504.0	314.0	314.0	723.8	738.8	410.0	410.0	0.0	0.0	111.1	114.1	135.0	135.0	3,189.9	3,215.9
District of Columbia	0.0	0.0	20.6	20.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.6	20.6
Florida	35,743.0	34,563.0	8,791.0	8,834.0	5,201.3	5,562.9	3,989.7	4,562.0	0.0	0.0	1,610.9	1,662.2	0.0	0.0	55,335.9	55,184.1
Georgia	8,067.0	8,073.2	7,569.1	7,143.5	850.1	850.1	5,780.0	5,780.0	83.8	83.8	1,107.0	1,601.6	0.0	0.0	23,457.0	23,532.2
Maryland	2,745.8	2,766.0	1,675.6	1,675.7	1,211.3	1,209.5	1,453.0	1,758.0	0.0	0.0	1,656.3	1,350.5	0.0	0.0	8,742.0	8,759.7
North Carolina	5,579.0	5,579.0	6,030.5	6,002.5	4,665.7	4,665.7	4,552.0	4,594.0	0.0	0.0	491.0	501.4	0.0	0.0	21,318.2	21,342.6
South Carolina	3,252.0	3,237.2	2,528.7	2,497.0	780.0	883.0	4,749.0	4,789.0	0.0	0.0	216.6	304.6	0.0	0.0	11,526.3	11,710.8
Virginia	8,898.8	8,972.2	4,245.9	4,249.3	581.8	582.1	1,530.1	2,536.0	0.0	0.0	737.2	1,536.4	0.0	0.0	15,993.8	17,876.0
West Virginia	0.0	0.0	1,089.5	1,089.5	115.5	115.5	12,542.4	12,558.0	0.0	0.0	11.0	11.0	0.0	0.0	13,758.4	13,774.0
East South Central	23,800.8	21,884.4	13,682.0	12,253.0	4,012.2	4,605.8	20,288.5	21,171.5	0.0	0.0	533.9	533.9	0.0	3.8	62,317.4	60,452.4
Alabama	11,172.2	9,795.3	3,307.8	2,572.8	1,883.4	1,982.7	4,728.0	4,728.0	0.0	0.0	42.6	42.6	0.0	3.8	21,134.0	19,125.2
Kentucky	1,789.0	1,763.0	5,599.6	4,905.6	483.0	483.0	9,162.0	9,180.0	0.0	0.0	11.9	11.9	0.0	0.0	17,045.5	16,343.5
Mississippi	8,384.5	7,871.0	1,369.3	1,369.3	1,512.3	2,006.6	1,444.0	1,444.0	0.0	0.0	9.0	9.0	0.0	0.0	12,719.1	12,699.9
Tennessee	2,455.1	2,455.1	3,405.3	3,405.3	133.5	133.5	4,954.5	5,819.5	0.0	0.0	470.4	470.4	0.0	0.0	11,418.8	12,283.8
West South Central	64,856.8	65,720.9	16,899.8	16,628.8	29,761.0	29,710.1	26,698.6	28,568.9	891.4	882.1	754.2	701.4	344.7	186.5	140,206.5	142,398.7
Arkansas	4,605.2	4,613.3	702.8	702.8	824.0	824.0	4,734.0	5,108.7	0.0	0.0	9.0	9.0	0.0	0.0	10,875.0	11,257.8
Louisiana	9,688.0	9,695.8	2,834.2	2,972.9	5,872.1	5,746.2	2,069.5	2,074.1	827.6	818.3	49.7	49.7	167.6	162.7	21,508.7	21,519.7
Oklahoma	7,327.6	8,954.9	1,649.2	1,643.0	5,909.1	5,881.1	3,272.5	3,244.5	0.0	0.0	53.9	66.4	0.0	0.0	18,212.3	19,789.9
Texas	43,236.0	42,456.9	11,713.6	11,310.1	17,155.8	17,258.8	16,622.6	18,141.6	63.8	63.8	641.6	576.3	177.1	23.8	89,610.5	89,831.3
Mountain	23,087.2	23,093.2	9,570.6	9,479.1	3,683.1	3,702.8	21,299.9	21,307.9	52.0	52.0	537.0	510.0	7.8	7.8	58,237.6	58,152.8
Arizona	10,181.6	10,193.6	3,061.8	3,084.8	1,097.6	1,097.6	2,939.0	2,943.0	0.0	0.0	268.5	268.5	0.0	0.0	17,548.5	17,587.5
Colorado	3,193.5	3,193.5	2,661.0	2,538.0	633.4	646.0	3,804.0	3,804.0	0.0	0.0	177.5	150.5	3.0	3.0	10,472.4	10,335.0
Idaho	601.0	595.0	619.2	627.7	16.7	16.7	0.0	0.0	0.0	0.0	5.4	5.4	0.0	0.0	1,242.3	1,244.8
Montana	0.0	0.0	315.8	315.8	72.2	72.2	1,626.5	1,630.5	52.0	52.0	0.0	0.0	1.5	1.5	2,068.0	2,072.0
Nevada	5,703.0	5,703.0	1,185.6	1,185.6	447.3	444.6	740.4	740.4	0.0	0.0	6.0	6.0	0.0	0.0	8,082.3	8,079.6
New Mexico	1,484.1	1,484.1	945.3	945.3	833.7	833.6	1,540.0	1,540.0	0.0	0.0	46.0	46.0	0.0	0.0	4,849.1	4,849.0
Utah	1,830.0	1,830.0	534.6	534.6	328.2	338.1	4,581.0	4,581.0	0.0	0.0	27.8	27.8	0.0	0.0	7,301.6	7,311.5
Wyoming	94.0	94.0	247.3	247.3	254.0	254.0	6,069.0	6,069.0	0.0	0.0	5.8	5.8	3.3	3.3	6,673.4	6,673.4
Pacific Contiguous	26,426.9	26,589.1	12,312.6	12,276.9	4,568.1	5,493.7	727.0	727.0	0.0	20.0	439.0	439.0	213.0	194.6	44,686.6	45,740.3
California	20,391.1	20,567.3	11,469.4	11,433.7	4,309.3	5,237.9	57.0	57.0	0.0	20.0	415.2	415.2	213.0	194.6	36,855.0	37,925.7
Oregon	3,409.2	3,395.2	124.0	124.0	229.2	229.2	0.0	0.0	0.0	0.0	6.6	6.6	0.0	0.0	3,769.0	3,755.0
Washington	2,626.6	2,626.6	719.2	719.2	29.6	26.6	670.0	670.0	0.0	0.0	17.2	17.2	0.0	0.0	4,062.6	4,059.6
Pacific Noncontiguous	374.6	374.6	708.5	721.1	174.4	174.4	167.9	167.9	0.0	0.0	2,731.0	2,724.4	0.0	0.0	4,156.4	4,162.4
Alaska	374.6	374.6	708.5	721.1	174.4	174.4	167.9	167.9	0.0	0.0	751.1	744.5	0.0	0.0	2,176.5	2,182.5
Hawaii	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,979.9	1,979.9	0.0	0.0	1,979.9	1,979.9
U.S. Total	294,270.0	288,733.5	132,069.3	130,606.5	81,196.5	83,056.9	178,441.7	189,316.3	1,321.9	1,338.9	28,118.6	29,436.2	1,866.8	1,728.2	717,284.8	724,216.5

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

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

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

Table 4.08.A. Capacity Factors for Utility Scale Generators Primarily Using Fossil Fuels

Year/Month	Coal		Natural Gas								Petroleum					
			Combined Cycle		Gas Turbine		Steam Turbine		Internal Combustion		Steam Turbine		Gas Turbine		Internal Combustion	
	Time Adjusted Capacity (MW)	Capacity Factor	Time Adjusted Capacity (MW)	Capacity Factor	Time Adjusted Capacity (MW)	Capacity Factor	Time Adjusted Capacity (MW)	Capacity Factor	Time Adjusted Capacity (MW)	Capacity Factor	Time Adjusted Capacity (MW)	Capacity Factor	Time Adjusted Capacity (MW)	Capacity Factor	Time Adjusted Capacity (MW)	Capacity Factor
Annual Data																
2013	302,604.4	59.4%	219,902.9	48.8%	123,025.6	8.3%	75,810.5	11.2%	2,996.2	8.8%	20,022.9	12.6%	17,224.1	0.9%	4,999.4	2.1%
2014	299,064.7	60.5%	224,183.2	48.6%	124,736.9	8.3%	75,049.1	10.3%	3,026.7	10.8%	18,057.0	13.0%	16,791.5	1.2%	5,011.3	2.1%
2015	286,082.7	54.3%	231,467.5	55.8%	123,444.3	9.8%	80,348.0	11.3%	3,507.8	11.9%	14,965.4	14.0%	16,122.8	1.3%	5,075.2	2.1%
2016	269,477.1	52.8%	236,442.8	55.4%	125,148.4	11.0%	81,225.1	12.3%	3,684.3	11.5%	13,993.7	12.2%	15,114.0	1.3%	5,082.8	2.3%
2017	259,930.2	53.1%	242,839.1	51.2%	125,806.6	9.6%	79,149.4	10.7%	4,225.5	11.6%	13,290.9	13.7%	14,275.3	1.0%	5,153.3	2.1%
2018	246,866.8	53.6%	254,403.3	55.1%	126,763.4	11.9%	76,177.8	12.6%	4,446.6	13.0%	13,300.1	14.2%	14,234.9	1.3%	5,289.7	1.9%
2019	235,089.3	47.5%	266,846.5	57.4%	128,832.5	11.4%	72,797.3	14.1%	4,848.3	15.3%	11,214.7	12.8%	14,009.7	1.0%	5,287.8	2.0%
2020	220,623.2	40.5%	274,300.4	57.1%	129,085.6	11.6%	75,462.3	14.2%	5,123.0	15.1%	8,443.3	13.9%	13,875.8	1.2%	5,300.7	1.8%
2021	212,587.0	49.1%	277,618.5	55.0%	130,103.4	11.7%	74,003.4	12.5%	5,171.8	18.2%	8,385.5	14.2%	13,729.8	1.6%	5,522.7	1.8%
2022	196,396.3	48.4%	286,467.1	56.6%	130,170.6	12.9%	77,518.8	15.6%	5,526.9	18.1%	9,839.0	13.2%	15,005.7	1.6%	5,407.0	1.8%
2023	182,767.5	42.4%	291,134.7	59.7%	130,736.5	12.9%	76,908.1	17.4%	5,802.9	20.1%	8,743.2	10.1%	14,386.8	1.3%	5,418.9	1.8%
Year 2021																
January	214,601.5	51.5%	275,710.6	54.7%	129,543.1	8.2%	74,184.1	7.7%	5,121.3	15.1%	8,685.9	15.9%	13,743.2	1.0%	5,537.5	1.4%
February	214,601.5	61.1%	276,710.6	51.3%	129,522.1	10.3%	74,184.7	11.9%	5,119.0	17.1%	8,685.9	15.0%	13,743.2	2.2%	5,533.6	2.0%
March	214,052.7	39.5%	276,584.0	45.3%	129,522.1	8.0%	74,184.7	7.6%	5,120.3	15.9%	8,685.9	13.7%	13,743.2	1.3%	5,539.0	1.8%
April	213,710.7	35.7%	276,614.0	45.5%	129,755.4	10.4%	74,184.7	10.0%	5,120.3	16.8%	8,685.9	9.0%	13,743.2	1.4%	5,536.4	1.7%
May	213,152.2	40.9%	276,682.0	47.6%	130,036.3	9.7%	74,081.6	10.2%	5,180.3	14.4%	8,685.9	11.9%	13,743.2	1.3%	5,535.9	1.2%
June	212,180.1	58.1%	277,202.0	61.8%	130,036.3	15.0%	74,081.1	18.0%	5,171.9	20.1%	8,173.5	10.5%	13,734.1	2.0%	5,530.7	1.6%
July	212,180.1	65.4%	277,202.0	67.9%	130,070.3	16.4%	73,989.3	20.0%	5,169.6	22.6%	8,173.5	16.2%	13,734.1	1.8%	5,512.6	1.4%
August	212,180.1	65.6%	277,971.5	68.4%	130,410.4	17.0%	73,989.3	21.3%	5,194.0	23.0%	8,173.5	17.5%	13,734.1	2.3%	5,517.4	1.8%
September	212,180.1	52.8%	278,530.7	58.5%	130,499.4	11.1%	73,840.3	14.5%	5,199.4	20.3%	8,173.5	15.8%	13,734.1	1.5%	5,512.0	2.2%
October	211,277.1	40.7%	278,545.7	53.2%	130,499.4	12.4%	73,775.5	12.7%	5,212.2	18.3%	8,173.5	16.0%	13,717.5	1.6%	5,511.2	2.2%
November	211,264.5	39.2%	279,817.8	51.6%	130,663.1	11.6%	73,779.4	8.9%	5,221.7	17.3%	8,173.5	15.9%	13,700.1	1.5%	5,508.5	2.0%
December	209,825.7	39.6%	279,817.8	53.6%	130,644.1	9.6%	73,779.4	7.4%	5,227.7	17.1%	8,173.5	13.8%	13,689.1	1.2%	5,498.2	2.0%
Year 2022																
January	202,043.3	57.4%	284,236.2	55.6%	129,881.8	11.3%	78,088.0	14.8%	5,454.3	16.0%	9,839.0	19.6%	15,279.8	1.4%	5,401.4	2.2%
February	202,013.8	52.2%	284,236.2	52.4%	129,967.8	9.6%	78,088.0	11.7%	5,454.3	14.8%	9,839.0	15.3%	15,279.8	0.9%	5,402.0	1.8%
March	200,821.8	41.0%	284,247.2	46.6%	130,009.3	8.2%	77,514.0	8.5%	5,484.9	13.6%	9,839.0	9.8%	15,245.8	1.0%	5,392.6	1.7%
April	200,376.8	38.5%	284,450.3	44.2%	130,070.8	9.6%	77,514.0	9.6%	5,486.4	13.5%	9,839.0	10.1%	15,119.1	0.9%	5,395.3	1.7%
May	198,851.8	42.1%	283,899.1	49.6%	130,070.8	12.5%	77,514.0	14.6%	5,544.4	14.7%	9,839.0	12.0%	15,119.1	1.4%	5,399.7	1.8%
June	195,863.8	52.5%	286,389.0	61.2%	130,127.6	16.9%	77,510.0	20.2%	5,546.0	18.8%	9,839.0	12.2%	14,947.1	1.8%	5,407.0	1.9%
July	195,881.8	59.6%	287,485.0	70.5%	130,274.1	20.1%	77,510.0	28.1%	5,549.7	23.0%	9,839.0	10.3%	14,947.1	2.5%	5,410.4	1.7%
August	194,856.8	59.2%	288,566.5	72.4%	130,035.1	18.5%	77,379.0	22.4%	5,563.9	25.1%	9,839.0	11.8%	14,947.1	2.2%	5,410.7	1.7%
September	192,425.8	47.3%	288,493.5	63.9%	130,259.8	13.8%	77,374.0	16.3%	5,559.0	21.7%	9,839.0	13.1%	14,858.1	1.7%	5,409.2	1.8%
October	192,425.8	38.7%	288,458.5	53.0%	130,348.7	10.2%	77,374.0	13.3%	5,558.0	17.9%	9,839.0	12.3%	14,817.2	1.4%	5,413.1	1.8%
November	192,271.3	40.9%	288,485.6	52.0%	130,380.6	11.2%	77,379.8	13.7%	5,555.9	17.9%	9,839.0	13.6%	14,789.6	1.0%	5,420.9	1.6%
December	189,316.3	51.4%	288,504.6	56.8%	130,606.5	12.5%	77,026.8	14.1%	5,560.7	19.3%	9,839.0	18.2%	14,735.6	2.8%	5,421.2	2.2%
Year 2023																
January	186,822.6	44.6%	287,456.6	57.4%	130,416.1	9.3%	78,868.8	9.6%	5,738.6	18.7%	8,743.2	9.1%	14,494.8	1.0%	5,428.8	1.9%
February	186,812.0	37.3%	287,688.6	57.1%	130,416.1	9.2%	78,868.8	10.3%	5,742.7	18.0%	8,743.2	11.7%	14,494.8	1.4%	5,426.8	1.8%
March	186,007.1	36.2%	288,941.6	53.6%	130,356.1	10.5%	78,303.3	11.5%	5,744.2	19.5%	8,743.2	8.9%	14,494.8	1.1%	5,422.2	1.8%
April	186,007.1	30.6%	289,463.1	47.9%	130,356.1	11.2%	77,868.3	13.4%	5,746.9	16.2%	8,743.2	8.4%	14,494.8	1.2%	5,422.2	2.0%
May	184,515.1	32.6%	291,190.1	53.0%	130,248.2	12.4%	77,038.3	15.4%	5,745.0	16.0%	8,743.2	7.9%	14,463.5	1.2%	5,413.4	1.8%
June	182,361.9	44.5%	291,270.1	63.7%	130,403.5	15.0%	76,724.3	22.1%	5,752.6	21.4%	8,743.2	10.2%	14,315.1	1.3%	5,399.1	1.8%
July	181,713.0	58.3%	292,441.8	74.0%	130,558.5	19.4%	76,724.3	31.7%	5,752.6	26.0%	8,743.2	14.3%	14,315.1	1.6%	5,414.9	1.6%
August	181,099.7	58.0%	292,441.8	74.1%	131,221.5	19.0%	76,724.3	31.0%	5,884.2	26.7%	8,743.2	13.3%	14,315.1	1.9%	5,416.6	1.6%
September	180,234.7	46.4%	292,441.8	66.2%	131,221.5	13.6%	75,688.3	22.4%	5,878.3	22.0%	8,743.2	14.5%	14,315.1	1.3%	5,425.7	1.5%
October	179,749.7	38.6%	293,100.7	53.7%	131,221.5	12.6%	75,687.9	16.3%	5,879.5	18.9%	8,743.2	8.7%	14,315.1	1.3%	5,429.6	1.7%
November	179,749.7	39.7%	293,100.7	54.8%	131,217.5	11.5%	75,681.6	14.1%	5,880.7	18.8%	8,743.2	6.8%	14,315.1	1.0%	5,414.6	2.1%
December	178,441.7	42.3%	293,802.5	60.0%	131,178.5	10.1%	74,854.6	10.8%	5,885.5	18.6%	8,743.2	7.7%	14,315.1	1.2%	5,413.5	1.8%

Values are final.
Time adjusted capacity for month rows is the summer capacity of generators in operation for the entire month; units that began operation during the month or that retired during the month are excluded. Time adjusted capacity for year rows is a time weighted average of the month rows.
Capacity factors are a comparison of net generation with available capacity. See the technical note for an explanation of how capacity factors are calculated.
Sources: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report; U.S. Energy Information Administration, Form EIA-860, 'Annual Electric Generator Report' and Form EIA-860M, 'Monthly Update to the Annual Electric Generator Report.'

Table 4.08.B. Capacity Factors for Utility Scale Generators Primarily Using Non-Fossil Fuels

	Geothermal		Hydroelectric		Nuclear		Other Biomass		Other Fossil Gas		Solar				Wind		Wood	
Year/Month											Photovoltaic		Thermal					
	Time Adjusted Capacity (MW)	Capacity Factor	Time Adjusted Capacity (MW)	Capacity Factor	Time Adjusted Capacity (MW)	Capacity Factor	Time Adjusted Capacity (MW)	Capacity Factor	Time Adjusted Capacity (MW)	Capacity Factor	Time Adjusted Capacity (MW)	Capacity Factor	Time Adjusted Capacity (MW)	Capacity Factor	Time Adjusted Capacity (MW)	Capacity Factor	Time Adjusted Capacity (MW)	Capacity Factor
Annual Data																		
2013	2,509.5	71.8%	78,873.5	38.8%	99,006.8	90.8%	4,949.7	62.3%	2,171.6	55.9%	3,525.2	24.5%	552.1	17.4%	59,175.6	32.4%	7,887.9	59.0%
2014	2,513.3	72.0%	79,582.8	37.2%	98,569.3	91.7%	5,114.6	62.7%	1,994.0	54.0%	6,555.6	25.6%	1,445.3	18.3%	60,587.8	34.0%	8,319.7	60.0%
2015	2,523.0	71.9%	79,650.8	35.7%	98,614.6	92.3%	5,104.5	62.6%	2,527.7	60.8%	9,521.6	25.5%	1,697.3	21.7%	67,106.2	32.2%	9,024.5	59.3%
2016	2,516.6	71.6%	79,806.0	38.2%	99,364.8	92.3%	5,099.5	62.7%	2,458.8	64.8%	14,161.4	25.0%	1,757.9	22.1%	74,162.7	34.5%	8,979.8	58.3%
2017	2,460.4	73.2%	79,698.8	43.0%	99,619.5	92.3%	5,125.6	61.8%	2,375.8	62.8%	21,940.9	25.6%	1,757.9	21.8%	83,355.6	34.6%	8,807.5	60.2%
2018	2,391.5	76.0%	79,771.9	41.9%	99,605.2	92.5%	5,059.0	61.8%	2,543.9	65.4%	27,143.3	25.1%	1,757.9	23.6%	89,228.5	34.6%	8,760.2	60.6%
2019	2,535.2	69.6%	79,838.0	41.2%	98,836.7	93.4%	4,786.5	62.5%	2,504.1	67.4%	31,840.8	24.3%	1,758.1	21.2%	97,564.8	34.4%	8,485.0	59.0%
2020	2,561.5	69.1%	79,810.4	40.7%	97,238.3	92.4%	4,653.8	62.5%	2,275.2	64.6%	39,458.1	24.2%	1,747.9	20.6%	107,387.7	35.3%	8,327.2	57.8%
2021	2,588.5	69.8%	79,878.4	36.0%	95,802.7	92.8%	4,490.4	63.2%	1,902.5	60.9%	51,219.7	24.4%	1,629.0	20.5%	123,757.1	34.4%	7,959.0	59.9%
2022	2,616.0	69.0%	80,054.5	36.3%	94,969.9	92.7%	4,402.5	60.2%	1,716.0	61.6%	64,501.0	24.4%	1,480.0	23.1%	136,669.4	35.9%	7,817.6	57.9%
2023	2,670.6	69.4%	79,982.5	35.0%	95,065.2	93.0%	4,162.6	60.4%	1,871.6	53.8%	77,130.8	23.2%	1,480.0	22.1%	143,443.5	33.2%	7,830.2	53.5%
Year 2021																		
January	2,571.9	69.8%	79,835.5	41.3%	96,585.8	99.9%	4,515.4	65.5%	1,913.0	65.8%	46,650.9	15.5%	1,739.9	6.3%	117,890.3	33.6%	8,086.1	63.0%
February	2,571.9	73.9%	79,840.5	37.5%	96,585.8	97.0%	4,516.0	63.4%	1,913.0	62.0%	46,958.5	19.2%	1,739.9	11.5%	118,996.4	32.8%	8,086.1	61.4%
March	2,571.9	64.2%	79,839.3	35.7%	96,585.8	88.7%	4,506.4	64.6%	1,913.0	62.7%	47,653.4	25.0%	1,739.9	19.9%	119,963.2	43.0%	7,943.1	60.6%
April	2,571.9	68.3%	79,840.2	33.7%	95,546.4	82.1%	4,506.4	63.5%	1,913.0	55.7%	49,269.7	29.4%	1,739.9	26.7%	121,112.1	40.7%	7,943.1	56.7%
May	2,596.7	68.5%	79,845.4	39.2%	95,546.4	89.2%	4,495.2	63.3%	1,913.0	57.9%	49,785.1	31.8%	1,739.9	30.2%	121,846.4	36.5%	7,943.1	57.4%
June	2,596.7	67.9%	79,882.3	40.8%	95,546.4	96.0%	4,484.2	64.1%	1,913.0	64.4%	50,448.9	31.9%	1,739.9	25.8%	123,202.6	29.5%	7,943.1	61.2%
July	2,596.7	69.5%	79,909.8	37.2%	95,546.4	96.8%	4,485.3	63.5%	1,913.0	65.2%	51,174.9	30.5%	1,559.9	22.3%	124,851.0	23.1%	7,927.9	61.5%
August	2,596.7	68.8%	79,907.4	34.3%	95,546.4	97.7%	4,484.7	62.2%	1,888.0	63.1%	52,136.1	29.0%	1,559.9	29.6%	126,118.8	28.8%	7,927.9	62.7%
September	2,596.7	71.4%	79,907.4	29.6%	95,546.4	93.8%	4,473.4	62.1%	1,888.0	60.7%	53,619.6	27.5%	1,559.9	26.8%	126,457.2	31.7%	7,927.9	60.2%
October	2,596.7	67.7%	79,909.9	28.8%	95,546.4	82.2%	4,481.4	60.8%	1,888.0	62.5%	54,659.6	21.6%	1,479.9	19.9%	126,805.4	33.8%	7,932.9	54.8%
November	2,596.7	72.4%	79,909.9	33.7%	95,546.4	91.2%	4,470.5	60.2%	1,888.0	53.6%	55,488.0	18.5%	1,479.9	17.9%	128,224.4	38.2%	7,932.9	58.4%
December	2,596.7	76.2%	79,909.8	39.6%	95,546.4	99.5%	4,467.3	64.8%	1,888.0	56.8%	56,506.2	13.4%	1,479.9	8.5%	129,285.2	40.8%	7,923.2	61.2%
Year 2022																		
January	2,592.8	75.1%	80,036.5	40.6%	95,406.4	99.4%	4,460.5	60.7%	1,664.2	64.2%	60,335.2	16.8%	1,480.0	11.3%	132,415.6	37.5%	7,829.0	60.8%
February	2,592.8	70.3%	80,040.6	39.6%	95,406.4	96.5%	4,459.1	60.6%	1,664.2	62.8%	61,350.2	21.2%	1,480.0	15.9%	133,711.4	41.6%	7,829.0	62.6%
March	2,592.8	65.7%	80,050.6	41.0%	95,406.4	89.0%	4,444.5	59.8%	1,664.2	63.4%	61,673.4	24.4%	1,480.0	23.1%	133,969.5	42.7%	7,829.0	57.4%
April	2,592.8	67.1%	80,054.7	34.8%	95,406.4	80.5%	4,437.0	60.0%	1,733.5	56.2%	62,666.8	28.5%	1,480.0	30.1%	135,080.4	46.6%	7,829.0	54.9%
May	2,609.8	67.4%	80,054.7	39.2%	95,427.4	89.3%	4,434.2	59.2%	1,733.5	59.9%	63,122.2	30.9%	1,480.0	33.5%	137,384.2	41.1%	7,811.3	55.4%
June	2,609.8	67.0%	80,057.2	45.1%	94,658.9	96.4%	4,434.2	61.7%	1,733.5	63.6%	63,890.6	33.2%	1,480.0	34.9%	137,594.2	33.9%	7,805.5	59.5%
July	2,609.8	67.1%	80,057.2	41.2%	94,658.9	97.8%	4,374.4	61.7%	1,733.5	63.7%	65,118.6	31.2%	1,480.0	26.2%	137,993.8	28.6%	7,805.5	61.5%
August	2,639.4	67.9%	80,057.2	35.5%	94,658.9	97.8%	4,378.3	60.7%	1,733.5	59.5%	65,707.2	28.4%	1,480.0	25.3%	137,999.4	24.0%	7,817.5	60.3%
September	2,661.3	68.6%	80,058.7	29.5%	94,658.9	93.5%	4,369.7	59.5%	1,733.5	61.6%	66,419.3	26.5%	1,480.0	26.7%	138,005.0	27.3%	7,817.5	56.4%
October	2,620.5	65.3%	80,059.2	24.1%	94,658.9	83.7%	4,366.5	59.2%	1,733.5	59.5%	67,201.8	22.9%	1,480.0	26.4%	138,005.0	31.6%	7,817.5	50.9%
November	2,620.5	72.6%	80,059.2	31.0%	94,658.9	91.0%	4,354.3	59.6%	1,733.5	63.2%	67,739.4	16.5%	1,480.0	14.1%	138,025.0	40.8%	7,817.5	56.7%
December	2,648.6	74.1%	80,067.7	34.3%	94,658.9	98.1%	4,322.3	60.1%	1,728.2	62.3%	68,569.5	12.5%	1,480.0	9.0%	139,628.0	36.8%	7,804.5	58.8%
Year 2023																		
January	2,657.6	71.2%	79,971.6	38.2%	94,598.2	100.7%	4,259.7	60.5%	1,896.8	48.4%	71,639.2	14.2%	1,480.0	7.7%	140,883.2	36.3%	7,933.1	57.5%
February	2,657.6	72.4%	79,989.6	37.1%	94,598.2	95.7%	4,158.1	59.6%	1,896.8	54.3%	72,849.9	18.6%	1,480.0	10.9%	141,532.3	43.1%	7,933.1	56.2%
March	2,623.3	73.2%	79,989.6	35.9%	94,598.2	89.3%	4,158.1	58.3%	1,866.8	54.7%	73,402.2	21.5%	1,480.0	14.0%	142,245.7	40.6%	7,933.1	53.5%
April	2,623.3	70.6%	80,007.4	34.4%	94,598.2	83.2%	4,158.1	55.5%	1,866.8	54.7%	73,948.2	26.8%	1,480.0	27.8%	142,659.5	41.2%	7,933.1	48.6%
May	2,684.3	66.9%	79,978.4	46.5%	94,598.2	86.9%	4,158.1	61.0%	1,866.8	51.1%	74,880.6	29.5%	1,480.0	27.4%	142,976.1	30.0%	7,888.1	51.9%
June	2,684.3	66.5%	79,979.8	37.5%	94,598.2	95.2%	4,158.1	62.3%	1,866.8	54.1%	75,981.9	30.9%	1,480.0	34.6%	143,730.8	26.4%	7,873.5	52.2%
July	2,684.3	64.6%	79,979.8	36.9%	94,598.2	99.1%	4,159.4	61.9%	1,866.8	57.0%	77,601.9	30.9%	1,480.0	35.0%	143,730.8	25.9%	7,788.5	54.0%
August	2,671.8	63.1%	79,979.8	35.8%	95,712.2	97.9%	4,155.4	61.3%	1,866.8	56.4%	78,928.8	28.7%	1,480.0	28.3%	144,230.3	26.2%	7,788.5	56.3%
September	2,671.8	67.4%	79,977.0	29.4%	95,712.2	95.1%	4,155.4	58.0%	1,866.8	52.9%	79,648.0	25.6%	1,480.0	27.7%	144,334.3	27.1%	7,756.3	52.6%
October	2,695.8	70.4%	79,974.9	26.3%	95,712.2	86.3%	4,147.2	59.4%	1,866.8	51.2%	80,606.0	22.0%	1,480.0	26.1%	144,417.5	33.1%	7,756.3	47.4%
November	2,695.8	73.7%	79,979.5	29.6%	95,712.2	90.3%	4,148.8	61.7%	1,866.8	54.0%	82,386.8	16.7%	1,480.0	15.7%	145,235.0	34.6%	7,693.1	54.5%
December	2,695.8	72.9%	79,983.6	32.1%	95,712.2	96.7%	4,133.2	64.5%	1,866.8	56.4%	83,392.8	13.5%	1,480.0	9.9%	145,232.0	34.6%	7,693.1	56.7%

Values are final.
Time adjusted capacity for month rows is the summer capacity of generators in operation for the entire month; units that began operation during the month or that retired during the month are excluded. Time adjusted capacity for year rows is a time weighted average of the month rows.
Capacity factors are a comparison of net generation with available capacity. See the technical note for an explanation of how capacity factors are calculated.
Sources: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report; U.S. Energy Information Administration, Form EIA-860, 'Annual Electric Generator Report' and Form EIA-860M, 'Monthly Update to the Annual Electric Generator Report.'

Table 4.08.C. Usage Factors for Utility Scale Storage Generators

	Battery		Pumped Storage	
Year/Month	Time Adjusted Capacity (MW)	Usage Factor	Time Adjusted Capacity (MW)	Usage Factor
Annual Data				
2013	126.7	0.7%	22,389.3	9.8%
2014	155.1	1.7%	22,477.9	10.2%
2015	206.8	3.6%	22,568.9	10.2%
2016	423.0	3.8%	22,752.7	11.2%
2017	632.8	6.8%	22,791.7	11.4%
2018	713.6	5.2%	22,815.4	10.8%
2019	949.8	5.4%	22,754.7	10.4%
2020	1,210.3	5.2%	22,939.6	10.5%
2021	2,627.6	6.1%	23,007.7	10.2%
2022	6,566.1	6.4%	23,033.9	11.1%
2023	11,225.7	6.6%	23,132.1	10.9%
Year 2021				
January	1,505.6	4.2%	23,007.7	8.1%
February	1,640.0	5.6%	23,007.7	9.0%
March	1,653.0	5.5%	23,007.7	7.4%
April	1,780.4	5.1%	23,007.7	7.2%
May	1,958.8	6.1%	23,007.7	8.7%
June	2,499.4	6.4%	23,007.7	12.4%
July	2,777.0	6.5%	23,007.7	15.2%
August	3,043.5	7.4%	23,007.7	15.9%
September	3,110.9	7.1%	23,007.7	12.8%
October	3,304.5	6.0%	23,007.7	9.7%
November	3,765.6	6.2%	23,007.7	7.7%
December	4,418.2	5.8%	23,007.7	8.6%
Year 2022				
January	4,926.4	5.5%	23,013.4	9.5%
February	4,996.7	6.6%	23,013.4	8.9%
March	5,069.2	5.7%	23,013.4	9.1%
April	5,316.2	6.0%	23,013.4	7.3%
May	6,055.5	6.4%	23,043.9	10.9%
June	6,064.5	7.1%	23,043.9	14.8%
July	6,555.2	6.9%	23,043.9	15.9%
August	6,941.6	6.6%	23,043.9	16.4%
September	7,469.9	6.1%	23,043.9	13.2%
October	7,958.4	6.7%	23,043.9	8.4%
November	8,630.7	6.7%	23,043.9	9.2%
December	8,696.4	6.5%	23,043.9	9.6%
Year 2023				
January	9,168.7	6.9%	23,057.8	9.2%
February	9,236.4	6.5%	23,057.8	9.6%
March	9,318.4	7.0%	23,137.8	9.2%
April	9,621.5	7.2%	23,147.4	8.8%
May	9,791.5	6.5%	23,147.4	10.9%
June	9,943.1	6.4%	23,147.4	13.8%
July	10,846.6	6.5%	23,147.4	15.7%
August	12,332.2	6.4%	23,147.4	15.5%
September	12,815.4	6.3%	23,147.4	13.3%
October	13,515.9	7.0%	23,147.4	8.7%
November	13,768.3	6.7%	23,147.4	8.3%
December	14,197.9	6.3%	23,147.4	8.0%

Values are final.
Time adjusted capacity for month rows is the summer capacity of generators in operation for the entire month; units that began operation during the month or that retired during the month are excluded. Time adjusted capacity for year rows is a time weighted average of the month rows.
Usage factors are a comparison of gross generation with available capacity. See the technical note for an explanation of how usage factors are calculated.
Sources: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report; U.S. Energy Information Administration, Form EIA-860, 'Annual Electric Generator Report' and Form EIA-860M, 'Monthly Update to the Annual Electric Generator Report.'

Table 4.9 Total Capacity of Non Net Metered Distributed Generators by Technology Type and Sector, 2013 through 2023

Generators by Technology and Sector						
Year	Residential	Commercial	Industrial	Transportation	Direct Connected	Total
Photovoltaic						
2013	--	--	--	--	--	555.965
2014	--	--	--	--	--	692.034
2015	--	--	--	--	--	876.351
2016	80.577	388.911	132.970	--	112.922	715.380
2017	186.910	513.251	177.192	--	120.946	998.299
2018	289.151	594.877	188.874	--	126.793	1,199.698
2019	437.911	688.600	202.899	--	131.391	1,460.800
2020	655.125	872.946	211.173	--	138.251	1,877.496
2021	981.281	1,035.068	214.531	--	148.136	2,379.018
2022	1,334.849	1,106.717	188.956	--	150.016	2,780.530
2023	1,613.746	1,114.113	221.723	--	156.700	3,106.283
Battery						
2013	--	--	--	--	--	1.950
2014	--	--	--	--	--	7.227
2015	--	--	--	--	--	24.443
2016	0.070	32.678	8.714	--	1.246	42.708
2017	3.916	42.884	12.271	--	1.444	60.515
2018	6.935	79.042	10.674	--	7.276	103.927
2019	14.308	113.788	15.519	--	15.929	159.544
2020	26.048	136.448	16.876	--	17.245	196.617
2021	108.876	166.042	16.733	--	20.719	312.370
2022	171.343	221.150	16.594	--	20.535	429.622
2023	239.419	242.722	16.699	--	3.110	501.950
Battery Energy (MWh)						
2013	--	--	--	--	--	--
2014	--	--	--	--	--	--
2015	--	--	--	--	--	--
2016	--	--	--	--	--	--
2017	--	--	--	--	--	--
2018	--	--	--	--	--	--
2019	--	--	--	--	--	--
2020	--	--	--	--	--	--
2021	--	--	--	--	--	--
2022	--	--	--	--	--	--
2023	607.049	563.367	0.086	--	22.134	1,192.636
Wind						
2013	--	--	--	--	--	78.299
2014	--	--	--	--	--	33.727
2015	--	--	--	--	--	26.658
2016	2.616	15.742	1.366	--	8.828	28.552
2017	2.632	16.453	1.044	--	8.988	29.117
2018	2.579	15.527	1.441	--	9.071	28.618
2019	2.437	15.707	1.452	--	9.918	29.514
2020	2.104	13.947	1.249	--	9.523	26.823
2021	2.000	15.108	1.153	--	9.571	27.832
2022	1.884	13.303	1.171	--	9.572	25.930
2023	1.861	15.547	0.771	--	9.572	27.751
Hydroelectric						
2013	--	--	--	--	--	103.935
2014	--	--	--	--	--	108.235
2015	--	--	--	--	--	121.234
2016	6.140	39.930	8.533	--	101.146	155.749
2017	5.915	30.763	8.033	--	103.607	148.318
2018	5.422	36.048	5.503	--	113.592	160.565
2019	7.482	37.818	5.503	--	113.910	164.713
2020	2.822	39.539	2.793	--	104.293	149.447
2021	2.529	43.226	6.053	--	102.912	154.720
2022	2.529	45.892	4.893	--	99.542	152.856
2023	2.529	44.890	4.493	--	108.164	160.076
Fuel Cell						
2013	--	--	--	--	--	--
2014	--	--	--	--	--	--
2015	--	--	--	--	--	--
2016	0.161	6.229	3.700	--	0.225	10.315
2017	0.167	7.953	6.336	--	0.625	15.081
2018	0.150	12.793	3.959	--	0.625	17.527
2019	0.150	19.943	3.601	--	0.625	24.319
2020	1.133	18.599	4.599	--	0.625	24.956
2021	0.133	20.608	5.564	--	0.625	26.930
2022	0.134	23.207	5.310	--	0.625	29.276
2023	0.134	23.353	5.310	--	0.625	29.422
Internal Combustion						
2013	--	--	--	--	--	981.311
2014	--	--	--	--	--	813.847
2015	--	--	--	--	--	797.595
2016	46.974	679.239	223.037	--	69.217	1,018.467
2017	86.766	851.363	306.305	--	78.180	1,322.614
2018	69.428	909.278	336.970	--	91.159	1,406.835
2019	76.934	955.455	263.507	0.275	111.981	1,408.152
2020	56.878	862.233	299.805	--	81.835	1,300.751
2021	70.081	906.179	345.146	--	78.941	1,400.347
2022	85.208	944.560	326.954	--	77.522	1,434.244
2023	78.968	1,040.781	321.369	--	79.488	1,520.606
Gas Turbine						
2013	--	--	--	--	--	106.385
2014	--	--	--	--	--	81.325
2015	--	--	--	--	--	49.329
2016	0.233	62.127	24.415	--	2.728	89.503
2017	11.750	56.187	25.069	--	5.893	98.899
2018	0.070	75.151	24.568	--	3.488	103.277
2019	0.077	76.695	22.128	--	4.488	103.388
2020	0.077	94.906	21.828	--	3.488	120.299
2021	0.197	102.084	22.333	--	1.253	125.867
2022	0.213	109.087	21.598	--	1.253	132.151
2023	0.213	96.431	37.178	--	1.253	135.075
Steam Turbine						
2013	--	--	--	--	--	31.050
2014	--	--	--	--	--	12.925
2015	--	--	--	--	--	10.531
2016	--	2.995	0.524	--	0.431	3.950
2017	1.250	1.920	1.254	--	0.431	4.855
2018	--	4.626	0.539	--	2.581	7.746
2019	--	8.439	0.539	--	2.581	11.559
2020	--	7.464	0.539	--	2.581	10.584
2021	--	7.589	0.539	--	2.581	10.709
2022	--	9.256	0.019	--	2.581	11.856
2023	--	7.779	0.019	--	2.581	10.379
Other						
2013	--	--	--	--	--	89.000
2014	--	--	--	--	--	100.995
2015	--	--	--	--	--	88.423
2016	0.753	34.050	10.389	--	6.050	51.242
2017	1.139	33.093	12.729	--	4.950	51.911
2018	0.629	36.452	16.209	--	3.310	56.600
2019	0.464	37.306	14.954	--	3.579	56.303
2020	0.117	38.842	16.249	--	2.979	58.187
2021	0.841	46.050	15.564	--	2.019	64.474
2022	0.901	48.004	15.084	--	2.019	66.008
2023	1.233	47.196	7.134	--	1.169	56.732
Total						
2013	--	--	--	--	--	1,947.394
2014	--	--	--	--	--	1,855.455
2015	--	--	--	--	--	1,994.564
2016	137.524	1,261.901	413.648	--	302.793	2,115.866
2017	300.445	1,553.867	550.233	--	325.064	2,729.609
2018	374.368	1,763.792	588.737	--	357.895	3,084.792
2019	539.763	1,953.751	530.102	0.275	394.402	3,418.292
2020	744.304	2,084.924	575.111	--	360.820	3,765.160
2021	1,165.938	2,341.954	627.616	--	366.757	4,502.267
2022	1,597.061	2,521.175	580.579	--	363.665	5,062.472
2023	1,938.103	2,632.812	614.696	--	362.662	5,548.274
Total Number of Generators						
2013	--	--	--	--	--	196,141
2014	--	--	--	--	--	203,099
2015	--	--	--	--	--	215,825
2016	--	--	--	--	--	195,703
2017	--	--	--	--	--	215,889
2018	--	--	--	--	--	231,220
2019	--	--	--	--	--	251,357
2020	--	--	--	--	--	279,730
2021	--	--	--	--	--	323,085
2022	--	--	--	--	--	389,197
2023	--	--	--	--	--	433,096

Starting in 2023, capacity and energy capacity is now collected for batteries. Prior to 2023, the battery historical data was listed as storage.
Starting in 2018, PV Capacities have been converted to AC.
Starting in 2016, Capacity is now collected by technology and sector.
Starting in 2013, the residential sector is now included and all net metering units are excluded.
Distributed generators are generators which are connected to the grid. They may be installed at or near a customer`s site or at other locations. They may be owned by either the customers of the distribution utility or by the utility. Other includes generators for which technology is not specified.
Totals may not equal sum of components because of independent rounding.
Source: U.S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report."

Table 4.10. Net Metering Customers and Capacity by Technology Type, by End Use Sector, 2013 through 2023

	Capacity (MW)					Customers				
Year	Residential	Commercial	Industrial	Transportation	Total	Residential	Commercial	Industrial	Transportation	Total
Photovoltaic										
2013	2,286.567	2,294.831	565.982	--	5,147.380	442,195	35,379	2,480	--	480,054
2014	3,452.987	2,933.122	710.719	--	7,096.828	642,276	43,335	3,131	--	688,742
2015	5,357.358	3,455.124	884.664	--	9,697.146	958,850	51,501	3,624	--	1,013,975
2016	7,487.643	3,975.813	1,078.607	--	12,542.064	1,321,277	60,456	4,391	--	1,386,124
2017	9,486.987	5,119.870	1,197.785	--	15,804.641	1,626,283	69,538	5,267	--	1,701,088
2018	11,356.711	6,173.324	1,378.863	--	18,908.896	1,911,892	78,912	5,844	--	1,996,648
2019	13,863.288	7,181.594	1,613.248	--	22,658.129	2,283,702	86,552	6,499	--	2,376,753
2020	16,432.611	8,223.285	1,853.604	--	26,509.501	2,661,029	95,037	7,330	--	2,763,396
2021	19,929.222	9,462.694	2,036.963	--	31,428.877	3,157,429	104,645	8,108	--	3,270,182
2022	24,668.240	11,091.920	2,194.394	--	37,954.553	3,788,427	112,054	8,670	--	3,909,151
2023	28,246.529	11,807.244	2,375.359	--	42,429.127	4,550,541	123,686	9,977	--	4,684,204
Battery										
2016	4.489	7.575	11.698	--	23.762	793	79	31	--	903
2017	13.276	15.356	12.328	--	40.960	2,316	137	34	--	2,487
2018	65.199	40.141	24.526	--	129.866	10,633	303	61	--	10,997
2019	153.282	48.397	40.441	--	242.120	24,007	427	93	--	24,527
2020	309.866	67.428	56.081	--	433.375	45,042	552	126	--	45,720
2021	631.087	88.178	61.909	--	781.174	86,124	807	150	--	87,081
2022	922.394	129.782	65.323	--	1,117.499	128,360	1,011	168	--	129,539
2023	1,294.718	362.489	88.261	--	1,745.459	191,493	1,580	205	--	193,278
Virtual PV										
2016	42.653	267.434	3.168	--	313.255	13,898	1,828	11	--	15,737
2017	53.120	416.987	7.136	--	477.244	14,948	2,907	19	--	17,874
2018	68.951	523.977	8.069	--	600.997	19,116	4,996	33	--	24,145
2019	77.492	624.588	10.684	--	712.763	20,753	5,908	40	--	26,701
2020	108.466	818.499	11.845	--	938.810	23,411	6,517	46	--	29,974
2021	156.792	1,081.457	12.242	--	1,250.492	28,880	11,215	49	--	40,144
2022	160.309	1,493.413	15.880	--	1,669.604	29,401	24,761	54	--	54,216
2023	241.151	2,343.589	19.164	--	2,603.907	59,901	55,194	63	--	115,158
Wind										
2013	38.987	92.818	14.659	--	146.464	5,265	1,308	92	--	6,665
2014	37.918	101.622	25.426	--	164.966	5,379	1,351	94	--	6,824
2015	34.893	103.086	29.137	--	167.116	5,387	1,434	109	--	6,930
2016	37.030	108.726	41.454	--	187.210	5,759	1,470	113	--	7,342
2017	35.005	119.651	49.507	--	204.163	5,258	1,429	111	--	6,798
2018	33.625	133.856	52.386	--	219.867	5,368	1,452	110	--	6,930
2019	33.668	148.594	52.580	--	234.842	5,218	1,438	107	--	6,763
2020	29.858	151.950	76.209	--	258.017	4,825	1,378	105	--	6,308
2021	28.103	152.021	76.253	--	256.377	4,711	1,350	106	--	6,167
2022	27.616	146.647	82.158	--	256.421	4,648	1,303	97	--	6,048
2023	27.566	146.114	72.127	--	245.807	4,696	1,296	102	--	6,094
Other										
2013	6.785	80.405	80.568	--	167.758	598	331	169	--	1,098
2014	7.633	102.797	98.277	--	208.707	857	397	201	--	1,455
2015	7.873	116.382	116.780	--	241.035	821	445	249	--	1,515
2016	7.952	155.889	149.608	--	313.449	862	592	325	--	1,779
2017	9.064	208.639	199.398	--	417.101	915	693	330	--	1,938
2018	6.351	258.601	241.416	--	506.368	692	826	347	--	1,865
2019	23.364	254.281	263.966	--	541.611	2,226	842	381	--	3,449
2020	12.983	281.848	282.195	--	577.026	850	814	385	--	2,049
2021	9.338	337.186	298.198	--	644.722	962	937	403	--	2,302
2022	12.129	364.602	317.492	--	694.223	1,256	972	402	--	2,630
2023	22.263	418.597	383.953	--	824.813	2,961	969	610	--	4,540
All Technologies										
2013	2,332.339	2,468.054	661.209	--	5,461.602	448,058	37,018	2,741	--	487,817
2014	3,498.538	3,137.541	834.422	--	7,470.501	648,512	45,083	3,426	--	697,021
2015	5,400.124	3,674.592	1,030.581	--	10,105.297	965,058	53,380	3,982	--	1,022,420
2016	7,715.715	4,576.384	1,289.946	--	13,582.045	1,341,796	64,346	4,840	--	1,410,982
2017	9,584.177	5,865.147	1,453.826	--	16,903.148	1,647,404	74,567	5,727	--	1,727,698
2018	11,465.638	7,089.758	1,680.734	--	20,236.128	1,937,068	86,186	6,334	--	2,029,588
2019	13,997.811	8,209.056	1,940.478	--	24,147.345	2,311,899	94,740	7,027	--	2,413,666
2020	16,583.921	9,475.582	2,223.853	--	28,283.355	2,690,115	103,746	7,866	--	2,801,727
2021	20,123.453	11,033.357	2,423.656	--	33,580.468	3,191,982	118,147	8,666	--	3,318,795
2022	24,868.296	13,096.584	2,609.924	--	40,574.800	3,823,732	139,090	9,223	--	3,972,045
2023	28,537.506	14,715.533	2,850.603	--	46,103.650	4,618,099	181,145	10,752	--	4,809,996

Starting in 2023, capacity and customers are now collected for batteries. Prior to 2023, the battery historical data was listed as storage.
N/A = Not Available.
Total customer count for the years 2007, 2009, and 2010 were revised based on requests from respondents.
Capacity and customer count was not collected by technology type before 2010.
Starting in 2013, there is no maximum capacity on installed units.
Starting in 2016, utilities have the option to report photovoltaic in DC or AC. Values have been converted to AC.
Source: U.S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report."

Table 4.11. Fuel-Switching Capacity of Operable Generators Reporting Natural Gas as the Primary Fuel, by Producer Type, 2023

(Megawatts, Percent)

		Fuel-Switchable Part of Total			
Producer Type	Total Net Summer Capacity of All Generators Reporting Natural Gas as the Primary Fuel	Net Summer Capacity of Natural Gas-Fired Generators Reporting the Ability to Switch to Petroleum Liquids	Fuel Switchable Capacity as Percent of Total	Maximum Achievable Net Summer Capacity Using Petroleum Liquids	Fuel Switchable Net Summer Capacity Reported to Have No Factors that Limit the Ability to Switch to Petroleum Liquids
Electric Utilities	270,951.7	83,116.7	30.7%	78,564.4	19,320.3
Independent Power Producers, Non-Combined Heat and Power Plants	193,777.0	42,294.5	21.8%	38,921.2	6,487.3
Independent Power Producers, Combined Heat and Power Plants	24,172.2	3,570.6	14.8%	3,529.8	298.2
Electric Power Sector Subtotal	488,900.9	128,981.8	26.4%	121,015.4	26,105.8
Commercial Sector	2,347.4	993.1	42.3%	951.1	140.7
Industrial Sector	16,287.5	904.9	5.6%	881.4	78.8
All Sectors	507,535.8	130,879.8	25.8%	122,847.9	26,325.3

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

Table 4.12. Fuel-Switching Capacity of Operable Generators Reporting Petroleum Liquids as the Primary Fuel, by Producer Type, 2023 (Megawatts, Percent)

		Fuel-Switchable Part of Total		
Producer Type	Total Net Summer Capacity of All Generators Reporting Petroleum Liquids as the Primary Fuel	Net Summer Capacity of Petroleum Liquids-Fired Generators Reporting the Ability to Switch to Natural Gas	Fuel Switchable Capacity as Percent of Total	Maximum Achievable Net Summer Capacity Using Natural Gas
Electric Utilities	14,405.5	1,620.5	11.2%	1,606.1
Independent Power Producers, Non-Combined Heat and Power Plants	12,249.2	3,892.1	31.8%	2,664.0
Independent Power Producers, Combined Heat and Power Plants	259.6	--	0.0%	--
Electric Power Sector Subtotal	26,914.3	5,512.6	20.5%	4,270.1
Commercial Sector	960.5	--	0.0%	--
Industrial Sector	244.0	29.0	11.9%	25.0
All Sectors	28,118.8	5,541.6	19.7%	4,295.1

Notes: Petroleum liquids include distillate fuel oil (all diesel and No. 1, No. 2, and No. 4 fuel oils), residual fuel oil (No. 5 and No. 6 fuel oils and bunker C fuel oil), jet fuel, kerosene, waste oil, and propane.

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

Table 4.13. Fuel-Switching Capacity of Operable Generators Reporting Natural Gas as the Primary Fuel, by Type of Prime Mover, 2023 (Megawatts, Percent)

Prime Mover Type	Number of Natural Gas-Fired Generators Reporting the Ability to Switch to Petroleum Liquids	Net Summer Capacity of Natural Gas-Fired Generators Reporting the Ability to Switch to Petroleum Liquids	Fuel Switchable Net Summer Capacity Reported to Have No Factors that Limit the Ability to Switch to Petroleum Liquids
Steam Generator	161	24,010.0	8,987.2
Combined Cycle	371	49,526.3	5,385.5
Internal Combustion	305	1,221.9	374.2
Gas Turbine	808	56,121.6	11,578.4
All Fuel Switchable Prime Movers	1,645	130,879.8	26,325.3

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

Table 4.14. Fuel-Switching Capacity of Operable Generators Reporting Natural Gas as the Primary Fuel, by Year of Initial Commercial Operation, 2023 (Megawatts, Percent)

Year of Initial Commercial Operation	Number of Natural Gas-Fired Generators Reporting the Ability to Switch to Petroleum Liquids	Net Summer Capacity of Natural Gas-Fired Generators Reporting the Ability to Switch to Petroleum Liquids	Fuel Switchable Net Summer Capacity Reported to Have No Factors that Limit the Ability to Switch to Petroleum Liquids
Pre-1970	230	9,902.3	3,571.9
1970-1974	204	10,675.6	3,711.5
1975-1979	89	10,508.6	3,971.1
1980-1984	38	834.6	205.6
1985-1989	73	2,149.3	184.8
1990-1994	181	10,962.5	1,307.1
1995-1999	121	8,787.8	950.0
2000-2004	400	38,013.3	5,586.1
2005-2009	115	15,382.6	1,739.0
2010-2014	100	11,465.6	246.4
2015-2019	68	9,433.3	2,671.0
2020-2023	26	2,764.3	2,180.8
Total	1,645	130,879.8	26,325.3

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

Chapter 5

Consumption of Fossil Fuels

Table 5.1.A. Coal: Consumption for Electricity Generation, by Sector, 2013 - 2023 (Thousand Tons)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	860,729	638,327	217,219	513	4,670
2014	853,634	624,235	224,568	202	4,629
2015	739,594	539,506	195,927	163	3,999
2016	677,371	496,192	178,047	111	3,021
2017	663,911	484,389	176,643	95	2,783
2018	636,213	473,617	159,976	87	2,534
2019	537,620	399,545	135,838	76	2,161
2020	435,351	325,352	108,125	72	1,802
2021	500,367	372,694	125,920	87	1,666
2022	471,576	349,320	120,514	87	1,655
2023	386,626	291,034	94,063	69	1,460
Year 2021					
January	45,095	33,198	11,750	8	139
February	47,821	36,196	11,485	11	128
March	34,416	25,651	8,631	7	127
April	29,995	22,448	7,420	6	121
May	35,613	26,977	8,492	4	140
June	47,913	36,142	11,622	6	144
July	56,262	42,104	14,007	7	145
August	56,131	42,391	13,587	7	145
September	44,291	33,553	10,578	8	153
October	35,574	25,681	9,746	9	138
November	32,788	23,460	9,171	8	149
December	34,469	24,894	9,431	7	138
Year 2022					
January	48,671	35,515	13,004	8	145
February	39,951	28,588	11,219	7	137
March	34,396	24,194	10,045	5	151
April	30,904	22,073	8,704	4	124
May	35,210	26,438	8,621	3	148
June	41,748	31,926	9,666	9	147
July	49,433	37,902	11,380	8	143
August	48,356	36,307	11,897	9	142
September	37,302	28,179	8,983	9	130
October	31,458	23,343	7,980	8	126
November	32,398	23,313	8,953	8	122
December	41,750	31,540	10,062	9	139
Year 2023					
January	35,506	27,360	7,998	9	138
February	26,854	19,980	6,749	8	118
March	28,671	21,207	7,345	6	114
April	22,889	16,155	6,616	7	111
May	25,484	18,557	6,799	6	122
June	33,541	26,111	7,308	3	120
July	44,412	34,525	9,752	4	131
August	43,887	34,029	9,730	4	123
September	34,223	26,184	7,913	5	121
October	29,580	21,997	7,460	6	117
November	29,549	21,115	8,310	6	117
December	32,031	23,814	8,083	7	127

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

Table 5.1.B. Coal: Consumption for Useful Thermal Output, by Sector, 2013 - 2023 (Thousand Tons)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	18,350	0	2,416	843	15,090
2014	18,107	978	1,821	861	14,448
2015	16,632	1,032	1,980	635	12,985
2016	16,586	2,979	1,336	572	11,700
2017	14,667	2,802	1,158	515	10,192
2018	13,813	2,268	1,356	490	9,700
2019	12,397	2,062	1,161	443	8,731
2020	10,402	1,635	715	401	7,651
2021	11,301	2,153	667	447	8,034
2022	11,356	2,269	731	448	7,908
2023	9,363	1,580	527	331	6,925
Year 2021					
January	1,027	183	64	45	735
February	994	185	72	55	683
March	949	166	67	43	674
April	858	143	45	33	637
May	835	130	51	27	627
June	896	187	52	28	630
July	993	211	54	29	700
August	955	220	57	32	646
September	962	200	59	36	667
October	889	152	37	37	663
November	976	168	50	42	716
December	967	209	60	42	656
Year 2022					
January	1,071	221	66	48	736
February	930	189	67	49	625
March	985	181	78	32	694
April	898	163	72	22	641
May	904	149	56	24	676
June	892	173	52	33	634
July	954	219	55	36	643
August	963	203	62	37	661
September	905	190	57	38	621
October	933	174	56	38	664
November	904	181	56	43	624
December	1,018	227	55	48	688
Year 2023					
January	922	157	53	43	669
February	787	127	47	37	576
March	839	142	65	33	600
April	710	88	40	29	553
May	744	119	33	22	569
June	731	117	43	20	552
July	811	167	36	21	586
August	771	157	38	22	553
September	753	146	34	22	551
October	734	114	47	22	551
November	760	115	43	28	574
December	802	131	48	33	591

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

Table 5.1.C. Coal: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2013 - 2023 (Thousand Tons)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	879,078	638,327	219,635	1,356	19,761
2014	871,741	625,212	226,389	1,063	19,076
2015	756,226	540,538	197,906	798	16,984
2016	693,958	499,172	179,383	683	14,720
2017	678,578	487,192	177,801	610	12,975
2018	650,027	475,885	161,332	577	12,233
2019	550,017	401,607	136,998	519	10,892
2020	445,753	326,987	108,840	473	9,453
2021	511,669	374,848	126,587	534	9,700
2022	482,931	351,589	121,245	535	9,563
2023	395,989	292,615	94,591	400	8,384
Year 2021					
January	46,122	33,381	11,814	52	874
February	48,815	36,381	11,557	65	811
March	35,365	25,817	8,698	50	801
April	30,852	22,591	7,465	39	758
May	36,448	27,108	8,543	31	767
June	48,810	36,328	11,674	34	774
July	57,256	42,314	14,060	35	845
August	57,086	42,612	13,644	40	791
September	45,253	33,753	10,637	43	820
October	36,462	25,833	9,783	46	800
November	33,764	23,627	9,221	50	865
December	35,436	25,103	9,490	49	795
Year 2022					
January	49,742	35,736	13,069	56	881
February	40,880	28,777	11,286	55	762
March	35,381	24,375	10,123	37	845
April	31,802	22,236	8,776	25	765
May	36,114	26,587	8,677	27	824
June	42,640	32,099	9,718	42	781
July	50,387	38,121	11,435	44	787
August	49,318	36,510	11,959	46	803
September	38,207	28,369	9,040	47	751
October	32,391	23,518	8,036	46	791
November	33,301	23,494	9,009	52	746
December	42,768	31,766	10,117	57	828
Year 2023					
January	36,428	27,518	8,051	51	808
February	27,641	20,107	6,796	44	694
March	29,511	21,349	7,409	39	714
April	23,599	16,243	6,656	36	664
May	26,227	18,677	6,832	28	691
June	34,273	26,228	7,351	22	672
July	45,223	34,692	9,788	26	718
August	44,658	34,186	9,768	26	677
September	34,975	26,329	7,948	27	671
October	30,313	22,111	7,507	27	668
November	30,308	21,231	8,353	34	691
December	32,833	23,945	8,131	39	718

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

Table 5.1.D. Coal: Consumption for Electricity Generation, by Sector, 2013 - 2023 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	16,509,468	12,421,537	3,981,216	9,444	97,270
2014	16,472,004	12,217,628	4,154,134	4,344	95,898
2015	14,167,878	10,456,910	3,624,869	3,443	82,656
2016	12,979,911	9,641,625	3,274,103	2,293	61,889
2017	12,606,527	9,328,961	3,219,833	1,914	55,820
2018	12,037,444	9,041,357	2,944,321	1,736	50,029
2019	10,166,309	7,623,281	2,498,944	1,509	42,575
2020	8,224,162	6,206,153	1,980,662	1,330	36,018
2021	9,482,946	7,124,244	2,323,722	1,577	33,403
2022	8,868,315	6,636,816	2,197,088	1,629	32,781
2023	7,240,596	5,556,006	1,655,101	1,182	28,307
Year 2021					
January	856,498	635,221	218,299	145	2,833
February	921,283	698,252	220,193	200	2,639
March	654,880	489,859	162,265	137	2,618
April	572,136	432,925	136,645	104	2,461
May	678,641	524,567	151,194	73	2,808
June	916,891	696,483	217,435	109	2,864
July	1,068,689	803,634	262,079	116	2,860
August	1,071,933	814,490	254,468	130	2,845
September	832,295	635,534	193,593	141	3,026
October	661,627	483,344	175,406	164	2,713
November	607,807	440,656	164,040	140	2,971
December	640,266	469,279	168,105	118	2,765
Year 2022					
January	932,465	681,662	247,758	162	2,884
February	755,759	541,928	210,989	131	2,711
March	648,077	457,992	186,983	100	3,002
April	586,192	425,501	158,133	68	2,491
May	664,220	508,370	152,870	58	2,922
June	782,819	606,620	173,150	154	2,895
July	929,477	719,031	207,472	145	2,828
August	907,079	685,213	218,881	166	2,820
September	695,932	531,013	162,189	170	2,561
October	575,870	435,090	138,144	153	2,484
November	601,968	442,289	157,075	154	2,450
December	788,457	602,109	183,445	169	2,733
Year 2023					
January	659,607	513,389	143,312	160	2,746
February	500,285	376,970	120,835	140	2,339
March	540,007	405,614	132,031	113	2,249
April	432,462	314,052	116,149	112	2,150
May	474,300	353,561	118,277	92	2,369
June	623,856	499,160	122,404	44	2,248
July	840,127	664,788	172,782	64	2,493
August	829,792	653,077	174,273	66	2,376
September	642,442	498,804	141,204	78	2,357
October	547,246	416,202	128,691	96	2,257
November	549,358	402,536	144,457	95	2,270
December	601,115	457,856	140,685	121	2,454

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

Table 5.1.E. Coal: Consumption for Useful Thermal Output, by Sector, 2013 - 2023 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	401,108	0	47,677	18,535	334,897
2014	391,550	18,332	37,139	18,805	317,274
2015	356,895	18,640	37,815	13,483	286,956
2016	342,370	51,590	29,330	11,736	249,714
2017	297,521	48,745	24,682	10,284	213,810
2018	278,277	38,513	28,829	9,719	201,217
2019	247,251	33,559	25,686	8,571	179,436
2020	208,052	26,952	15,375	7,424	158,300
2021	224,841	35,397	14,246	8,211	166,986
2022	222,498	37,337	14,441	8,270	162,450
2023	181,221	25,906	10,216	5,839	139,259
Year 2021					
January	20,602	3,015	1,380	838	15,369
February	19,865	2,977	1,524	1,028	14,336
March	19,120	2,723	1,419	788	14,191
April	17,265	2,354	1,002	582	13,327
May	16,859	2,168	1,050	496	13,145
June	17,798	3,141	1,076	507	13,075
July	19,609	3,558	1,206	544	14,301
August	18,694	3,710	1,152	603	13,228
September	19,075	3,281	1,300	672	13,821
October	17,514	2,459	758	680	13,617
November	19,339	2,694	1,046	736	14,862
December	19,100	3,317	1,332	738	13,714
Year 2022					
January	21,216	3,619	1,375	942	15,279
February	18,306	3,109	1,362	895	12,939
March	19,606	2,963	1,560	592	14,491
April	17,720	2,720	1,303	384	13,314
May	17,823	2,433	1,097	407	13,886
June	17,248	2,787	967	605	12,889
July	18,598	3,623	1,062	684	13,229
August	18,804	3,331	1,213	699	13,561
September	17,542	3,149	1,155	701	12,537
October	18,133	2,905	1,112	687	13,429
November	17,783	2,985	1,157	780	12,861
December	19,719	3,713	1,078	893	14,035
Year 2023					
January	18,141	2,595	951	794	13,800
February	15,528	2,083	937	672	11,836
March	16,361	2,339	1,339	589	12,095
April	13,897	1,475	865	508	11,049
May	14,545	1,969	704	380	11,493
June	13,843	1,860	958	340	10,685
July	15,546	2,795	738	365	11,648
August	14,582	2,623	702	387	10,871
September	14,472	2,360	651	391	11,069
October	14,100	1,848	829	366	11,058
November	14,698	1,853	732	475	11,638
December	15,507	2,106	809	573	12,018

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; synthetic coal and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Fossil Gas.
See the Technical Notes for fuel conversion factors.
Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
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Table 5.1.F. Coal: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2013 - 2023 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	16,910,576	12,421,537	4,028,894	27,979	432,167
2014	16,863,554	12,235,960	4,191,273	23,149	413,173
2015	14,524,773	10,475,551	3,662,685	16,926	369,612
2016	13,322,281	9,693,215	3,303,433	14,029	311,604
2017	12,904,048	9,377,705	3,244,514	12,198	269,630
2018	12,315,720	9,079,870	2,973,150	11,455	251,245
2019	10,413,560	7,656,840	2,524,630	10,080	222,011
2020	8,432,214	6,233,105	1,996,036	8,754	194,318
2021	9,707,787	7,159,642	2,337,968	9,788	200,389
2022	9,090,813	6,674,153	2,211,529	9,900	195,231
2023	7,421,817	5,581,912	1,665,316	7,022	167,567
Year 2021					
January	877,101	638,237	219,679	983	18,202
February	941,148	701,229	221,717	1,228	16,975
March	674,000	492,582	163,684	925	16,809
April	589,401	435,279	137,648	686	15,789
May	695,500	526,735	152,244	569	15,953
June	934,689	699,624	218,511	616	15,939
July	1,088,298	807,192	263,285	661	17,161
August	1,090,627	818,200	255,620	733	16,073
September	851,369	638,816	194,894	813	16,847
October	679,141	485,804	176,164	844	16,330
November	627,146	443,350	165,086	876	17,833
December	659,367	472,596	169,437	856	16,479
Year 2022					
January	953,681	685,281	249,133	1,104	18,163
February	774,064	545,038	212,351	1,026	15,650
March	667,683	460,955	188,543	692	17,494
April	603,912	428,220	159,436	452	15,804
May	682,042	510,802	153,967	465	16,808
June	800,067	609,407	174,117	759	15,784
July	948,074	722,654	208,534	830	16,057
August	925,883	688,544	220,093	864	16,381
September	713,474	534,161	163,344	871	15,097
October	594,004	437,995	139,256	839	15,913
November	619,751	445,273	158,232	934	15,311
December	808,176	605,822	184,523	1,063	16,768
Year 2023					
January	677,748	515,984	144,264	954	16,546
February	515,813	379,053	121,772	812	14,176
March	556,368	407,953	133,370	702	14,343
April	446,359	315,527	117,014	620	13,198
May	488,845	355,530	118,981	472	13,862
June	637,699	501,020	123,362	385	12,932
July	855,673	667,583	173,520	429	14,141
August	844,374	655,700	174,975	452	13,247
September	656,915	501,164	141,855	470	13,426
October	561,346	418,049	129,520	462	13,315
November	564,056	404,389	145,189	570	13,908
December	616,622	459,962	141,494	694	14,472

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

Table 5.2.A. Petroleum Liquids: Consumption for Electricity Generation, by Sector, 2013 - 2023 (Thousand Barrels)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	23,231	16,827	5,494	328	582
2014	31,531	19,652	10,689	451	739
2015	28,925	18,562	9,473	249	641
2016	22,405	16,137	5,624	108	536
2017	21,696	15,567	5,461	191	476
2018	28,614	18,345	9,467	269	534
2019	20,836	15,677	4,464	251	444
2020	18,008	13,913	3,447	238	410
2021	21,633	16,850	4,102	250	432
2022	28,760	18,375	9,474	254	657
2023	21,336	16,366	4,253	200	517
Year 2021					
January	1,728	1,376	295	22	35
February	2,988	2,295	606	20	67
March	1,489	1,179	250	23	38
April	1,500	1,190	255	24	32
May	1,525	1,204	267	20	34
June	1,725	1,290	385	20	30
July	1,632	1,243	336	23	30
August	2,193	1,752	385	20	36
September	1,740	1,396	298	16	29
October	1,654	1,317	280	23	34
November	1,647	1,260	338	17	32
December	1,810	1,349	406	21	34
Year 2022					
January	5,217	2,325	2,794	44	54
February	2,067	1,239	768	16	43
March	1,732	1,304	365	14	48
April	1,408	1,098	250	17	43
May	1,588	1,275	252	20	42
June	1,704	1,286	351	20	46
July	2,020	1,375	576	21	48
August	1,896	1,301	537	19	39
September	1,738	1,341	335	12	49
October	1,814	1,370	387	14	43
November	1,700	1,339	304	15	42
December	5,876	3,121	2,553	42	160
Year 2023					
January	1,821	1,453	283	24	61
February	2,432	1,558	791	36	47
March	1,677	1,305	303	16	53
April	1,605	1,262	292	11	40
May	1,689	1,348	290	15	36
June	1,680	1,370	256	11	43
July	1,778	1,318	405	13	41
August	1,789	1,445	289	13	41
September	1,666	1,277	339	12	38
October	1,825	1,351	423	13	37
November	1,671	1,313	304	15	38
December	1,704	1,366	277	21	41

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

Table 5.2.B. Petroleum Liquids: Consumption for Useful Thermal Output, by Sector, 2013 - 2023 (Thousand Barrels)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	3,456	0	1,050	498	1,908
2014	3,099	64	1,170	216	1,650
2015	3,142	62	1,155	282	1,643
2016	2,277	68	245	245	1,719
2017	2,012	72	220	238	1,482
2018	2,614	103	354	350	1,807
2019	2,162	71	226	419	1,446
2020	1,730	59	179	269	1,223
2021	2,072	80	278	330	1,384
2022	4,181	106	403	495	3,177
2023	3,133	65	330	363	2,374
Year 2021					
January	231	4	25	34	168
February	317	26	59	51	182
March	189	5	22	33	129
April	151	5	20	28	97
May	137	3	16	28	90
June	120	4	13	19	83
July	135	3	18	25	89
August	150	5	19	21	105
September	135	6	15	17	96
October	174	7	19	25	124
November	161	5	27	20	108
December	173	6	24	30	112
Year 2022					
January	425	28	68	114	214
February	239	14	18	30	177
March	336	6	35	33	263
April	335	4	27	26	277
May	310	5	27	34	244
June	345	5	28	18	294
July	360	5	25	38	292
August	243	3	27	30	183
September	302	4	28	10	259
October	317	5	32	14	266
November	310	4	33	16	257
December	659	21	55	131	451
Year 2023					
January	406	6	35	62	303
February	373	9	29	30	305
March	326	4	26	25	271
April	329	5	29	8	288
May	163	7	26	10	120
June	166	5	26	16	120
July	174	5	25	16	129
August	204	5	23	16	161
September	207	3	25	20	158
October	193	6	32	17	137
November	247	5	25	37	181
December	344	5	29	107	203

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

Table 5.2.C. Petroleum Liquids: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2013 - 2023 (Thousand Barrels)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	26,687	16,827	6,544	826	2,490
2014	34,630	19,716	11,859	667	2,389
2015	32,067	18,624	10,629	531	2,283
2016	24,682	16,205	5,869	352	2,255
2017	23,708	15,640	5,681	429	1,958
2018	31,228	18,448	9,820	619	2,341
2019	22,998	15,748	4,690	670	1,890
2020	19,738	13,972	3,626	507	1,633
2021	23,705	16,929	4,379	580	1,816
2022	32,940	18,480	9,877	749	3,835
2023	24,468	16,431	4,583	563	2,891
Year 2021					
January	1,960	1,380	320	56	203
February	3,305	2,320	665	71	249
March	1,679	1,183	272	56	167
April	1,651	1,195	275	52	129
May	1,662	1,207	283	48	124
June	1,845	1,295	398	39	114
July	1,767	1,246	355	47	119
August	2,343	1,757	404	41	142
September	1,875	1,402	314	34	125
October	1,828	1,323	299	48	158
November	1,808	1,266	365	37	140
December	1,983	1,355	430	51	147
Year 2022					
January	5,642	2,353	2,863	158	268
February	2,306	1,253	786	47	220
March	2,068	1,310	400	47	311
April	1,742	1,102	277	43	320
May	1,898	1,280	279	54	285
June	2,049	1,291	379	38	341
July	2,380	1,380	601	59	340
August	2,139	1,305	564	48	222
September	2,040	1,345	364	23	308
October	2,131	1,375	419	28	310
November	2,011	1,344	337	31	299
December	6,534	3,142	2,608	173	611
Year 2023					
January	2,227	1,460	318	86	363
February	2,805	1,566	820	66	352
March	2,003	1,309	329	41	324
April	1,934	1,267	321	18	328
May	1,852	1,355	317	25	155
June	1,846	1,374	281	27	163
July	1,952	1,323	430	29	170
August	1,993	1,450	312	29	202
September	1,872	1,280	364	32	197
October	2,018	1,357	456	30	174
November	1,918	1,319	329	52	219
December	2,049	1,371	306	127	245

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

Table 5.2.D. Petroleum Liquids: Consumption for Electricity Generation, by Sector, 2013 - 2023 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	139,139	101,217	32,504	2,038	3,380
2014	188,814	118,226	63,488	2,765	4,335
2015	172,884	111,808	55,979	1,482	3,616
2016	133,457	96,967	32,922	639	2,928
2017	128,649	92,975	31,895	1,125	2,654
2018	169,663	109,734	55,433	1,579	2,916
2019	122,591	93,088	25,678	1,466	2,359
2020	105,735	82,276	19,821	1,396	2,241
2021	126,799	99,374	23,648	1,466	2,312
2022	169,716	108,473	56,212	1,482	3,548
2023	126,106	96,840	25,293	1,162	2,810
Year 2021					
January	10,218	8,173	1,716	131	198
February	17,440	13,478	3,506	118	337
March	8,712	6,929	1,449	133	201
April	8,756	6,977	1,468	142	168
May	8,975	7,141	1,542	120	173
June	10,109	7,596	2,238	117	158
July	9,598	7,374	1,932	133	159
August	12,988	10,440	2,235	119	194
September	10,221	8,275	1,687	96	162
October	9,670	7,739	1,603	137	192
November	9,591	7,378	1,936	99	179
December	10,521	7,874	2,334	122	191
Year 2022					
January	31,071	13,759	16,747	260	306
February	12,135	7,285	4,511	96	243
March	10,220	7,691	2,173	84	272
April	8,301	6,485	1,483	97	235
May	9,410	7,568	1,498	115	228
June	9,991	7,555	2,064	116	255
July	11,966	8,119	3,456	123	267
August	11,188	7,674	3,192	108	214
September	10,277	7,960	1,981	71	265
October	10,721	8,139	2,258	79	245
November	10,022	7,902	1,795	86	239
December	34,416	18,335	15,055	247	779
Year 2023					
January	10,680	8,575	1,639	143	322
February	14,494	9,267	4,754	208	266
March	9,884	7,698	1,797	90	298
April	9,464	7,453	1,727	61	223
May	9,973	7,977	1,717	89	191
June	9,913	8,120	1,501	64	228
July	10,546	7,801	2,454	76	215
August	10,580	8,554	1,731	75	220
September	9,901	7,598	2,023	71	209
October	10,793	8,015	2,501	77	201
November	9,851	7,754	1,800	88	209
December	10,027	8,029	1,648	121	229

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
Petroleum 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 Fossil Gas.
See the Technical Notes for fuel conversion factors.
Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
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Table 5.2.E. Petroleum Liquids: Consumption for Useful Thermal Output, by Sector, 2013 - 2023 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	20,717	0	6,176	3,292	11,248
2014	18,181	395	6,802	1,311	9,672
2015	18,449	379	6,748	1,755	9,568
2016	13,164	395	1,391	1,496	9,882
2017	11,825	405	1,253	1,432	8,736
2018	15,163	598	1,951	2,082	10,533
2019	12,383	403	1,319	2,472	8,189
2020	9,962	317	1,056	1,595	6,994
2021	11,989	453	1,624	1,964	7,948
2022	24,130	613	2,452	2,920	18,145
2023	18,007	370	2,027	2,160	13,450
Year 2021					
January	1,348	22	146	206	973
February	1,810	148	330	303	1,029
March	1,093	26	132	198	736
April	867	30	121	165	552
May	773	18	95	161	499
June	684	25	76	110	473
July	775	19	108	144	503
August	864	26	113	123	601
September	795	35	90	103	567
October	1,026	37	112	147	730
November	942	31	162	124	625
December	1,011	36	139	179	658
Year 2022					
January	2,487	166	397	665	1,260
February	1,414	79	108	181	1,045
March	1,958	34	215	192	1,517
April	1,916	23	167	155	1,570
May	1,781	29	169	199	1,384
June	1,977	27	174	108	1,667
July	2,072	31	157	225	1,660
August	1,397	20	168	174	1,035
September	1,749	25	176	63	1,485
October	1,843	29	195	84	1,535
November	1,835	26	198	99	1,512
December	3,702	125	327	775	2,474
Year 2023					
January	2,322	37	211	369	1,705
February	2,154	50	176	185	1,743
March	1,883	25	162	149	1,547
April	1,895	26	180	48	1,641
May	940	40	164	62	675
June	942	26	159	95	662
July	987	28	155	93	711
August	1,159	26	141	94	898
September	1,181	18	155	118	890
October	1,109	35	198	102	774
November	1,452	29	150	218	1,055
December	1,984	30	177	627	1,150

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
Petroleum 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 Fossil Gas.
See the Technical Notes for fuel conversion factors.
Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
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Table 5.2.F. Petroleum Liquids: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2013 - 2023 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	159,855	101,217	38,681	5,330	14,628
2014	206,995	118,621	70,291	4,076	14,008
2015	191,333	112,186	62,727	3,236	13,184
2016	146,621	97,363	34,313	2,135	12,810
2017	140,474	93,380	33,148	2,557	11,389
2018	184,826	110,332	57,383	3,661	13,449
2019	134,974	93,491	26,998	3,937	10,548
2020	115,697	82,594	20,877	2,991	9,235
2021	138,788	99,827	25,271	3,430	10,259
2022	193,845	109,086	58,664	4,402	21,693
2023	144,113	97,210	27,320	3,323	16,260
Year 2021					
January	11,566	8,195	1,862	337	1,172
February	19,250	13,626	3,837	421	1,366
March	9,805	6,956	1,581	331	937
April	9,623	7,007	1,589	306	720
May	9,748	7,159	1,637	280	672
June	10,793	7,621	2,314	227	631
July	10,373	7,393	2,040	277	663
August	13,852	10,466	2,348	242	795
September	11,016	8,310	1,778	199	729
October	10,697	7,776	1,715	284	922
November	10,533	7,409	2,098	223	804
December	11,532	7,909	2,473	301	849
Year 2022					
January	33,558	13,924	17,144	924	1,566
February	13,549	7,365	4,619	277	1,288
March	12,178	7,725	2,388	276	1,789
April	10,216	6,509	1,651	252	1,805
May	11,190	7,597	1,666	314	1,613
June	11,968	7,582	2,239	225	1,923
July	14,037	8,150	3,613	348	1,927
August	12,585	7,694	3,359	282	1,249
September	12,026	7,985	2,157	134	1,750
October	12,564	8,169	2,453	163	1,780
November	11,857	7,928	1,993	184	1,751
December	38,117	18,460	15,382	1,022	3,253
Year 2023					
January	13,002	8,612	1,850	513	2,028
February	16,648	9,317	4,929	393	2,009
March	11,767	7,723	1,959	239	1,845
April	11,359	7,479	1,907	109	1,864
May	10,913	8,017	1,881	151	865
June	10,855	8,146	1,661	159	889
July	11,533	7,829	2,609	170	926
August	11,739	8,580	1,873	169	1,118
September	11,082	7,617	2,178	189	1,098
October	11,902	8,050	2,699	179	974
November	11,302	7,783	1,950	306	1,264
December	12,011	8,058	1,825	747	1,380

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

Table 5.3.A. Petroleum Coke: Consumption for Electricity Generation, by Sector, 2013 - 2023 (Thousand Tons)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	4,852	3,409	779	1	662
2014	4,412	3,440	599	2	371
2015	4,044	3,120	669	2	253
2016	4,253	3,427	591	2	233
2017	3,490	2,731	542	3	214
2018	3,623	2,740	704	2	177
2019	2,724	2,067	478	1	177
2020	3,077	2,260	658	1	158
2021	3,070	2,323	618	1	127
2022	2,985	2,271	578	3	132
2023	2,028	1,328	594	1	105
Year 2021					
January	282	211	59	0	12
February	274	223	41	0	9
March	260	203	44	0	12
April	173	107	56	0	10
May	220	148	59	0	12
June	195	148	37	0	11
July	278	219	48	0	10
August	299	238	52	0	9
September	255	190	56	0	9
October	262	202	49	0	10
November	325	256	57	0	11
December	247	178	58	0	10
Year 2022					
January	240	166	63	0	11
February	248	180	55	0	13
March	216	143	62	0	10
April	225	156	59	0	10
May	248	212	22	0	12
June	281	224	46	0	10
July	219	177	31	0	11
August	241	178	52	0	11
September	280	210	60	0	10
October	263	192	60	0	11
November	227	178	36	0	13
December	296	254	31	0	10
Year 2023					
January	179	116	52	0	11
February	163	107	47	0	9
March	135	73	49	0	12
April	124	74	43	0	7
May	144	76	60	0	8
June	162	107	48	0	7
July	266	196	59	0	10
August	265	197	59	0	9
September	238	175	55	0	8
October	125	76	41	0	8
November	80	49	24	0	8
December	147	81	57	0	8

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

Table 5.3.B. Petroleum Coke: Consumption for Useful Thermal Output, by Sector, 2013 - 2023 (Thousand Tons)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	1,486	0	96	11	1,379
2014	1,283	3	90	16	1,174
2015	1,144	9	109	16	1,010
2016	1,099	6	113	9	971
2017	977	11	115	15	836
2018	929	12	93	10	814
2019	839	17	93	6	724
2020	780	16	124	3	637
2021	760	21	113	6	621
2022	718	23	92	13	589
2023	622	8	115	3	495
Year 2021					
January	74	1	15	0	58
February	65	1	10	1	52
March	67	0	11	0	55
April	62	0	10	0	52
May	68	0	9	0	59
June	59	1	9	0	49
July	63	1	10	0	52
August	61	7	9	0	45
September	62	1	9	0	52
October	58	1	5	1	51
November	57	2	8	2	46
December	65	4	9	2	50
Year 2022					
January	55	2	8	2	44
February	67	8	11	2	46
March	60	1	9	2	48
April	56	0	8	1	47
May	68	1	8	2	57
June	52	1	6	2	44
July	51	1	1	1	47
August	69	1	8	0	60
September	49	1	8	0	40
October	62	1	8	0	53
November	71	6	8	1	56
December	58	0	9	1	48
Year 2023					
January	49	1	9	1	37
February	38	1	10	0	26
March	60	2	10	0	47
April	52	2	8	0	41
May	56	0	10	0	46
June	51	0	10	0	41
July	52	1	10	0	41
August	56	1	10	0	45
September	53	0	11	0	41
October	53	0	8	0	45
November	49	0	8	0	41
December	53	0	10	1	41

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

Table 5.3.C. Petroleum Coke: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2013 - 2023 (Thousand Tons)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	6,338	3,409	875	12	2,041
2014	5,695	3,443	689	18	1,545
2015	5,188	3,128	779	18	1,263
2016	5,352	3,433	705	10	1,204
2017	4,467	2,742	657	17	1,050
2018	4,552	2,752	797	12	991
2019	3,563	2,083	571	7	900
2020	3,856	2,276	782	4	795
2021	3,830	2,344	731	7	748
2022	3,702	2,294	671	16	721
2023	2,649	1,336	709	4	600
Year 2021					
January	356	212	74	0	69
February	339	224	51	1	62
March	326	204	55	0	67
April	235	107	66	0	63
May	288	148	68	0	71
June	254	149	46	0	59
July	341	220	58	0	62
August	360	245	61	0	54
September	317	190	65	0	62
October	321	204	54	1	62
November	382	258	65	2	57
December	311	183	67	2	60
Year 2022					
January	295	168	71	2	54
February	315	188	66	2	59
March	275	144	71	2	58
April	282	156	67	2	57
May	315	214	30	2	69
June	333	225	53	2	53
July	270	178	33	1	58
August	310	179	59	0	72
September	330	211	68	0	51
October	325	193	68	0	64
November	298	184	44	1	69
December	355	255	40	2	58
Year 2023					
January	228	116	62	2	48
February	201	108	57	0	35
March	195	75	60	0	59
April	175	77	51	0	48
May	200	76	70	0	54
June	213	107	57	0	49
July	318	197	69	0	52
August	321	197	69	0	54
September	290	175	66	0	49
October	178	76	49	0	53
November	129	49	32	0	49
December	200	81	67	1	50

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

Table 5.3.D. Petroleum Coke: Consumption for Electricity Generation, by Sector, 2013 - 2023 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	138,774	97,626	22,052	38	19,058
2014	123,736	95,642	17,032	59	11,003
2015	113,568	87,210	18,889	58	7,411
2016	118,303	94,892	16,591	47	6,774
2017	94,136	72,919	15,100	72	6,045
2018	100,362	73,895	21,327	57	5,083
2019	74,970	56,411	13,472	37	5,050
2020	84,427	61,343	18,446	18	4,619
2021	83,779	62,714	17,234	32	3,799
2022	79,689	59,461	16,174	81	3,973
2023	53,489	33,329	16,961	16	3,183
Year 2021					
January	7,859	5,987	1,528	0	344
February	7,364	5,937	1,145	5	278
March	7,136	5,509	1,270	0	357
April	4,805	2,913	1,588	0	303
May	6,157	4,131	1,655	0	371
June	5,239	3,871	1,049	0	318
July	7,680	5,986	1,383	0	311
August	8,288	6,546	1,462	0	280
September	6,995	5,110	1,602	0	284
October	7,104	5,406	1,380	7	311
November	8,433	6,512	1,564	10	348
December	6,719	4,806	1,607	10	296
Year 2022					
January	6,687	4,613	1,750	10	314
February	6,925	5,013	1,523	10	380
March	5,799	3,783	1,702	10	304
April	5,978	4,010	1,660	9	299
May	6,475	5,449	643	11	372
June	7,360	5,737	1,321	10	293
July	5,639	4,423	886	6	324
August	6,432	4,643	1,452	0	337
September	7,444	5,440	1,689	2	313
October	6,735	4,743	1,647	0	345
November	6,147	4,750	1,005	4	388
December	8,067	6,858	897	8	304
Year 2023					
January	4,615	2,789	1,484	8	334
February	4,475	2,860	1,349	2	264
March	3,677	1,909	1,402	1	365
April	3,282	1,854	1,222	0	206
May	3,714	1,754	1,713	0	247
June	4,382	2,763	1,399	0	220
July	7,156	5,123	1,715	0	318
August	7,008	5,049	1,682	0	277
September	6,291	4,496	1,563	0	232
October	3,107	1,710	1,154	0	242
November	2,046	1,130	688	0	228
December	3,736	1,892	1,588	5	251

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

Table 5.3.E. Petroleum Coke: Consumption for Useful Thermal Output, by Sector, 2013 - 2023 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	40,846	0	2,769	305	37,772
2014	36,602	90	2,597	449	33,467
2015	33,138	255	3,167	446	29,269
2016	32,473	159	3,255	241	28,817
2017	28,680	297	3,335	403	24,645
2018	27,398	332	2,693	284	24,088
2019	24,348	470	2,681	164	21,032
2020	22,623	453	3,563	87	18,521
2021	22,772	594	3,182	152	18,844
2022	21,600	665	2,646	366	17,924
2023	18,788	241	3,297	87	15,163
Year 2021					
January	2,098	27	356	0	1,715
February	1,902	38	282	24	1,557
March	2,003	12	320	2	1,670
April	1,885	0	283	0	1,602
May	2,054	2	261	0	1,791
June	1,786	28	266	0	1,492
July	1,908	37	293	0	1,578
August	1,850	210	270	0	1,370
September	1,870	24	248	0	1,598
October	1,754	33	139	31	1,551
November	1,727	60	223	48	1,396
December	1,935	124	239	47	1,524
Year 2022					
January	1,642	46	233	47	1,317
February	1,998	246	305	43	1,404
March	1,809	34	261	46	1,468
April	1,679	5	229	39	1,406
May	2,045	35	224	50	1,736
June	1,593	29	179	45	1,340
July	1,546	27	36	32	1,450
August	2,088	23	224	0	1,841
September	1,502	18	225	9	1,250
October	1,856	20	232	0	1,604
November	2,117	175	238	19	1,686
December	1,726	7	261	36	1,422
Year 2023					
January	1,392	14	265	39	1,075
February	1,112	35	292	8	777
March	1,808	63	299	6	1,440
April	1,574	72	235	0	1,267
May	1,710	0	293	0	1,418
June	1,571	2	276	0	1,293
July	1,577	22	277	0	1,279
August	1,708	20	286	0	1,402
September	1,604	8	310	0	1,286
October	1,623	3	238	0	1,382
November	1,496	0	230	0	1,266
December	1,612	3	295	35	1,279

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

Table 5.3.F. Petroleum Coke: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2013 - 2023 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	179,621	97,626	24,821	343	56,831
2014	160,338	95,731	19,629	508	44,470
2015	146,706	87,465	22,056	505	36,680
2016	150,776	95,051	19,846	288	35,591
2017	122,816	73,216	18,435	475	30,690
2018	127,760	74,227	24,020	341	29,171
2019	99,318	56,881	16,153	201	26,083
2020	107,050	61,796	22,009	105	23,140
2021	106,551	63,308	20,416	184	22,644
2022	101,289	60,125	18,820	446	21,897
2023	72,276	33,570	20,257	103	18,347
Year 2021					
January	9,957	6,014	1,884	0	2,059
February	9,266	5,974	1,428	29	1,835
March	9,139	5,520	1,590	2	2,027
April	6,690	2,913	1,871	0	1,905
May	8,211	4,133	1,916	0	2,162
June	7,025	3,899	1,315	0	1,810
July	9,588	6,023	1,676	0	1,888
August	10,138	6,756	1,733	0	1,650
September	8,865	5,134	1,850	0	1,882
October	8,858	5,439	1,520	38	1,861
November	10,160	6,571	1,787	58	1,744
December	8,654	4,930	1,846	57	1,820
Year 2022					
January	8,330	4,659	1,983	57	1,631
February	8,923	5,259	1,828	52	1,784
March	7,608	3,817	1,963	57	1,772
April	7,657	4,015	1,889	48	1,705
May	8,520	5,484	867	61	2,108
June	8,953	5,766	1,499	54	1,633
July	7,185	4,450	922	38	1,774
August	8,520	4,666	1,676	0	2,178
September	8,946	5,459	1,914	11	1,563
October	8,591	4,763	1,879	0	1,949
November	8,263	4,924	1,242	23	2,074
December	9,793	6,865	1,158	44	1,726
Year 2023					
January	6,007	2,803	1,749	46	1,408
February	5,588	2,895	1,641	10	1,041
March	5,485	1,973	1,700	7	1,805
April	4,856	1,926	1,457	0	1,472
May	5,425	1,754	2,006	0	1,665
June	5,953	2,765	1,675	0	1,513
July	8,733	5,145	1,992	0	1,596
August	8,715	5,068	1,969	0	1,679
September	7,895	4,504	1,874	0	1,518
October	4,730	1,713	1,393	0	1,624
November	3,542	1,130	918	0	1,494
December	5,347	1,895	1,883	39	1,530

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

Table 5.4.A. Natural Gas: Consumption for Electricity Generation, by Sector, 2013 - 2023 (Million Cubic Feet)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	8,596,299	3,970,447	3,917,131	66,570	642,152
2014	8,544,387	3,895,008	3,954,032	71,957	623,390
2015	10,016,576	4,745,255	4,576,683	70,092	624,545
2016	10,170,110	5,018,894	4,571,375	46,304	533,537
2017	9,508,062	4,754,893	4,161,984	50,060	541,126
2018	10,842,129	5,560,267	4,663,935	52,650	565,276
2019	11,612,858	5,980,679	4,958,798	55,575	617,805
2020	11,928,104	6,196,152	5,061,569	51,827	618,556
2021	11,502,569	5,876,442	4,995,247	45,537	585,343
2022	12,384,086	6,376,041	5,364,050	48,658	595,337
2023	13,244,813	6,820,807	5,766,811	49,069	608,127
Year 2021					
January	888,929	451,377	380,506	3,962	53,084
February	801,381	404,132	351,999	3,474	41,775
March	761,278	396,874	316,236	3,483	44,685
April	779,081	408,210	324,097	2,984	43,790
May	834,675	433,323	352,461	3,102	45,790
June	1,111,149	575,818	481,482	3,988	49,861
July	1,266,884	654,378	553,358	4,491	54,657
August	1,288,895	657,227	573,063	4,714	53,891
September	1,011,461	508,790	451,326	4,074	47,271
October	962,719	474,461	436,070	3,768	48,420
November	891,827	451,592	386,597	3,669	49,969
December	904,290	460,260	388,053	3,827	52,149
Year 2022					
January	972,571	499,668	416,488	3,980	52,436
February	823,713	414,497	360,403	3,525	45,288
March	800,152	407,227	339,907	3,791	49,227
April	767,572	391,895	325,930	3,536	46,211
May	947,250	488,790	406,341	3,767	48,352
June	1,168,712	623,023	491,993	4,050	49,645
July	1,430,805	752,312	619,375	4,873	54,246
August	1,407,824	722,888	625,436	5,064	54,436
September	1,149,683	579,459	517,292	4,325	48,606
October	971,750	491,554	428,251	3,632	48,313
November	928,162	480,119	394,845	3,849	49,349
December	1,015,891	524,610	437,787	4,265	49,229
Year 2023					
January	986,729	509,637	423,074	3,981	50,037
February	886,200	452,487	384,540	3,676	45,496
March	959,777	498,668	407,459	3,899	49,751
April	882,659	460,800	374,473	3,575	43,811
May	1,015,436	541,880	420,862	3,768	48,927
June	1,204,125	629,324	518,898	4,137	51,767
July	1,500,478	772,944	667,653	4,925	54,956
August	1,498,044	785,548	652,373	4,711	55,411
September	1,225,232	620,161	548,257	4,408	52,405
October	1,040,696	527,858	458,366	3,905	50,567
November	986,104	487,240	444,261	3,741	50,862
December	1,059,333	534,260	466,594	4,344	54,135

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

Table 5.4.B. Natural Gas: Consumption for Useful Thermal Output, by Sector, 2013 - 2023 (Million Cubic Feet)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	882,385	0	303,177	51,057	528,151
2014	865,146	4,926	292,016	46,635	521,569
2015	935,098	8,060	283,372	46,287	597,379
2016	1,151,866	38,096	356,905	80,943	675,922
2017	1,168,544	38,740	309,949	104,324	715,532
2018	1,205,962	43,156	331,952	81,856	748,997
2019	1,196,025	42,645	317,231	79,734	756,415
2020	1,292,624	47,025	326,976	78,844	839,778
2021	1,221,841	49,103	307,795	71,094	793,849
2022	1,206,250	46,329	305,125	74,683	780,113
2023	1,210,187	46,531	306,058	69,832	787,766
Year 2021					
January	111,408	4,510	27,632	6,921	72,344
February	94,857	4,137	24,277	6,194	60,248
March	99,179	3,987	24,883	5,969	64,340
April	97,168	3,686	25,287	4,966	63,229
May	96,969	3,481	24,554	4,874	64,060
June	101,877	4,490	25,297	5,711	66,378
July	106,968	4,447	26,261	6,334	69,926
August	106,913	4,617	27,423	6,751	68,122
September	97,651	3,921	24,694	5,632	63,403
October	99,331	3,156	25,372	5,701	65,101
November	102,477	4,273	25,879	5,799	66,526
December	107,044	4,397	26,235	6,240	70,171
Year 2022					
January	111,979	4,635	28,424	7,331	71,588
February	98,435	3,929	25,170	6,465	62,872
March	102,253	3,852	25,861	6,384	66,156
April	92,922	2,748	22,502	5,734	61,937
May	95,766	3,356	24,200	5,623	62,587
June	97,703	3,887	25,622	5,855	62,339
July	106,539	4,604	28,679	6,816	66,440
August	106,095	4,242	27,578	6,894	67,381
September	96,584	3,583	24,804	5,816	62,381
October	95,266	3,073	23,556	5,412	63,225
November	98,143	4,017	23,125	5,694	65,307
December	104,564	4,401	25,603	6,659	67,900
Year 2023					
January	105,708	4,357	25,508	6,325	69,519
February	96,292	3,879	24,676	5,805	61,931
March	103,003	3,925	25,733	5,943	67,403
April	93,565	3,302	23,341	5,162	61,760
May	94,798	3,414	22,583	5,193	63,608
June	98,914	3,707	24,782	5,479	64,946
July	105,374	4,560	27,941	6,309	66,565
August	104,078	4,161	27,825	5,991	66,101
September	99,777	3,791	25,380	5,793	64,813
October	97,349	3,239	25,276	5,599	63,236
November	102,859	3,964	26,458	6,005	66,433
December	108,469	4,232	26,556	6,229	71,451

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Table 5.4.C. Natural Gas: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2013 - 2023 (Million Cubic Feet)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	9,478,685	3,970,447	4,220,309	117,626	1,170,303
2014	9,409,532	3,899,934	4,246,048	118,591	1,144,959
2015	10,951,674	4,753,315	4,860,055	116,380	1,221,924
2016	11,321,975	5,056,990	4,928,280	127,246	1,209,459
2017	10,676,606	4,793,632	4,471,933	154,383	1,256,658
2018	12,048,091	5,603,423	4,995,888	134,507	1,314,273
2019	12,808,883	6,023,324	5,276,029	135,310	1,374,220
2020	13,220,728	6,243,178	5,388,546	130,671	1,458,334
2021	12,724,410	5,925,545	5,303,041	116,631	1,379,193
2022	13,590,336	6,422,369	5,669,175	123,342	1,375,449
2023	14,455,000	6,867,338	6,072,869	118,901	1,395,893
Year 2021					
January	1,000,337	455,887	408,138	10,883	125,428
February	896,238	408,270	376,276	9,669	102,023
March	860,458	400,861	341,119	9,452	109,025
April	876,249	411,897	349,384	7,950	107,018
May	931,644	436,804	377,014	7,975	109,851
June	1,213,026	580,307	506,779	9,700	116,240
July	1,373,852	658,825	579,619	10,825	124,583
August	1,395,808	661,843	600,486	11,465	122,013
September	1,109,112	512,711	476,021	9,707	110,674
October	1,062,050	477,617	461,442	9,470	113,522
November	994,304	455,865	412,476	9,468	116,495
December	1,011,334	464,658	414,288	10,068	122,320
Year 2022					
January	1,084,549	504,303	444,912	11,311	124,023
February	922,149	418,426	385,573	9,989	108,160
March	902,405	411,079	365,768	10,175	115,382
April	860,494	394,643	348,432	9,270	108,148
May	1,043,016	492,145	430,541	9,390	110,939
June	1,266,415	626,911	517,616	9,905	111,984
July	1,537,345	756,916	648,054	11,689	120,685
August	1,513,919	727,130	653,015	11,958	121,816
September	1,246,267	583,042	542,096	10,141	110,987
October	1,067,017	494,626	451,807	9,044	111,539
November	1,026,306	484,136	417,970	9,543	114,656
December	1,120,455	529,011	463,390	10,924	117,129
Year 2023					
January	1,092,437	513,994	448,582	10,306	119,555
February	982,491	456,366	409,217	9,481	107,428
March	1,062,781	502,593	433,192	9,842	117,154
April	976,224	464,102	397,814	8,736	105,572
May	1,110,234	545,294	443,445	8,961	112,535
June	1,303,039	633,031	543,680	9,616	116,712
July	1,605,852	777,504	695,593	11,234	121,521
August	1,602,122	789,709	680,198	10,702	121,512
September	1,325,009	623,952	573,638	10,201	117,219
October	1,138,045	531,097	483,641	9,504	113,803
November	1,088,963	491,203	470,719	9,745	117,295
December	1,167,802	538,492	493,151	10,573	125,586

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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.
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Table 5.4.D. Natural Gas: Consumption for Electricity Generation, by Sector, 2013 - 2023 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	8,813,288	4,059,838	4,026,793	67,918	658,740
2014	8,795,303	4,001,826	4,076,787	74,194	642,495
2015	10,360,990	4,905,009	4,739,438	71,929	644,615
2016	10,515,826	5,189,543	4,728,444	47,550	550,288
2017	9,827,794	4,911,629	4,308,241	51,592	556,331
2018	11,200,796	5,739,753	4,825,957	54,390	580,696
2019	12,008,434	6,178,186	5,137,826	57,028	635,394
2020	12,324,847	6,398,560	5,239,106	53,175	634,006
2021	11,892,547	6,071,668	5,172,999	46,896	600,984
2022	12,792,589	6,580,269	5,550,639	50,198	611,483
2023	13,684,166	7,041,001	5,967,921	50,769	624,475
Year 2021					
January	919,810	466,675	394,513	4,081	54,541
February	830,306	418,486	365,280	3,578	42,963
March	787,638	410,080	328,037	3,587	45,934
April	804,738	421,193	335,514	3,073	44,958
May	862,177	447,214	364,761	3,192	47,011
June	1,148,146	594,946	497,941	4,108	51,151
July	1,310,545	677,004	572,832	4,622	56,087
August	1,332,180	679,117	592,919	4,851	55,293
September	1,045,249	525,487	467,085	4,200	48,477
October	994,479	489,500	451,388	3,882	49,709
November	921,969	466,297	400,599	3,782	51,291
December	935,310	475,670	402,130	3,940	53,569
Year 2022					
January	1,005,525	516,084	431,435	4,104	53,901
February	851,167	427,737	373,226	3,640	46,563
March	825,945	419,799	351,669	3,910	50,566
April	791,873	403,696	337,071	3,637	47,469
May	976,896	503,588	419,789	3,875	49,643
June	1,205,401	642,072	508,210	4,180	50,938
July	1,476,117	775,494	640,021	5,013	55,590
August	1,455,041	746,891	647,073	5,212	55,865
September	1,189,365	599,087	535,910	4,476	49,894
October	1,003,933	507,308	443,201	3,758	49,666
November	958,728	495,304	408,724	3,979	50,722
December	1,052,598	543,210	454,311	4,413	50,664
Year 2023					
January	1,022,559	528,140	438,829	4,122	51,469
February	916,639	467,841	398,275	3,811	46,711
March	991,960	515,040	421,801	4,043	51,076
April	910,851	474,610	387,555	3,696	44,990
May	1,047,441	558,273	435,019	3,896	50,252
June	1,243,188	649,252	536,524	4,281	53,131
July	1,549,860	797,738	690,661	5,091	56,370
August	1,546,842	810,325	674,780	4,875	56,862
September	1,264,543	639,659	566,542	4,561	53,782
October	1,074,320	544,280	474,053	4,045	51,942
November	1,018,988	502,624	460,252	3,869	52,243
December	1,096,977	553,220	483,631	4,481	55,645

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Table 5.4.E. Natural Gas: Consumption for Useful Thermal Output, by Sector, 2013 - 2023 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	905,583	0	311,058	51,939	542,587
2014	891,994	5,033	300,870	47,579	538,514
2015	965,573	8,254	292,629	47,573	617,118
2016	1,188,399	39,123	367,919	83,938	697,418
2017	1,204,582	39,828	318,611	107,987	738,156
2018	1,242,771	44,393	341,707	85,108	771,563
2019	1,232,925	43,862	327,203	82,455	779,405
2020	1,330,225	48,377	337,024	81,490	863,334
2021	1,258,705	50,514	316,694	73,588	817,909
2022	1,241,812	47,619	313,753	77,225	803,214
2023	1,245,459	47,866	314,352	72,281	810,961
Year 2021					
January	114,846	4,638	28,461	7,172	74,575
February	97,980	4,262	25,141	6,408	62,169
March	102,314	4,105	25,665	6,167	66,377
April	99,946	3,781	25,985	5,142	65,038
May	99,794	3,572	25,228	5,046	65,948
June	104,900	4,628	26,003	5,910	68,359
July	110,158	4,582	27,024	6,556	71,995
August	110,098	4,760	28,194	6,984	70,161
September	100,529	4,034	25,376	5,832	65,288
October	102,301	3,246	26,062	5,903	67,089
November	105,552	4,390	26,581	6,009	68,572
December	110,287	4,517	26,975	6,458	72,337
Year 2022					
January	115,425	4,763	29,244	7,589	73,829
February	101,428	4,030	25,905	6,706	64,787
March	105,152	3,945	26,566	6,606	68,035
April	95,492	2,808	23,111	5,921	63,651
May	98,439	3,439	24,825	5,804	64,370
June	100,539	3,996	26,351	6,061	64,131
July	109,613	4,736	29,480	7,039	68,358
August	109,239	4,375	28,378	7,127	69,360
September	99,549	3,697	25,602	6,017	64,232
October	98,163	3,163	24,207	5,599	65,194
November	101,006	4,130	23,735	5,878	67,263
December	107,768	4,538	26,349	6,877	70,004
Year 2023					
January	108,868	4,492	26,208	6,546	71,622
February	99,093	3,990	25,368	6,003	63,731
March	105,889	4,034	26,442	6,145	69,268
April	96,231	3,387	23,983	5,320	63,541
May	97,540	3,502	23,200	5,365	65,473
June	101,810	3,807	25,465	5,667	66,871
July	108,398	4,694	28,686	6,525	68,493
August	107,197	4,289	28,645	6,206	68,057
September	102,633	3,905	26,025	6,000	66,703
October	100,190	3,331	25,929	5,796	65,134
November	105,909	4,079	27,145	6,237	68,449
December	111,701	4,357	27,254	6,471	73,619

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Table 5.4.F. Natural Gas: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2013 - 2023 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	9,718,871	4,059,838	4,337,851	119,857	1,201,326
2014	9,687,297	4,006,859	4,377,657	121,773	1,181,009
2015	11,326,564	4,913,263	5,032,066	119,502	1,261,732
2016	11,704,224	5,228,667	5,096,363	131,489	1,247,706
2017	11,032,375	4,951,457	4,626,852	159,580	1,294,487
2018	12,443,568	5,784,146	5,167,665	139,498	1,352,259
2019	13,241,359	6,222,048	5,465,029	139,483	1,414,799
2020	13,655,071	6,446,937	5,576,130	134,665	1,497,340
2021	13,151,252	6,122,182	5,489,692	120,485	1,418,893
2022	14,034,401	6,627,889	5,864,392	127,423	1,414,697
2023	14,929,626	7,088,867	6,282,273	123,050	1,435,435
Year 2021					
January	1,034,657	471,313	422,974	11,253	129,116
February	928,286	422,747	390,421	9,986	105,132
March	889,952	414,185	353,702	9,755	112,310
April	904,684	424,973	361,499	8,215	109,997
May	961,971	450,786	389,988	8,238	112,959
June	1,253,046	599,574	523,944	10,018	119,510
July	1,420,703	681,587	599,856	11,178	128,082
August	1,442,278	683,877	621,113	11,834	125,453
September	1,145,778	529,520	492,460	10,032	113,765
October	1,096,780	492,746	477,450	9,786	116,799
November	1,027,520	470,687	427,180	9,791	119,863
December	1,045,597	480,187	429,105	10,398	125,907
Year 2022					
January	1,120,949	520,847	460,679	11,693	127,730
February	952,594	431,767	399,131	10,346	111,350
March	931,097	423,744	378,235	10,516	118,601
April	887,365	406,504	360,181	9,559	111,120
May	1,075,335	507,028	444,615	9,679	114,014
June	1,305,940	646,069	534,561	10,241	115,069
July	1,585,730	780,229	669,501	12,052	123,948
August	1,564,279	751,266	675,450	12,339	125,225
September	1,288,914	602,784	561,511	10,493	114,126
October	1,102,096	510,470	467,408	9,358	114,860
November	1,059,735	499,433	432,459	9,857	117,985
December	1,160,366	547,747	480,661	11,290	120,668
Year 2023					
January	1,131,427	532,631	465,037	10,668	123,091
February	1,015,731	471,831	423,644	9,814	110,443
March	1,097,849	519,074	448,244	10,188	120,344
April	1,007,082	477,997	411,538	9,016	108,531
May	1,144,981	561,776	458,219	9,261	115,726
June	1,344,997	653,059	561,989	9,947	120,003
July	1,658,258	802,432	719,346	11,616	124,863
August	1,654,039	814,613	703,425	11,081	124,919
September	1,367,175	643,563	592,567	10,561	120,484
October	1,174,510	547,611	499,982	9,841	117,076
November	1,124,897	506,703	487,397	10,106	120,692
December	1,208,677	557,577	510,885	10,951	129,264

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

Table 5.5.D. Wood / Wood Waste Biomass: Consumption for Electricity Generation, by Sector, 2013 - 2023 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	397,929	43,363	143,721	536	210,308
2014	431,285	45,643	174,513	961	210,167
2015	406,650	43,919	171,387	504	190,840
2016	359,983	41,036	149,516	473	168,959
2017	363,646	42,806	151,877	460	168,503
2018	361,703	45,856	143,288	520	172,039
2019	338,317	42,240	128,980	583	166,514
2020	318,381	31,606	125,695	608	160,472
2021	328,253	41,868	129,554	998	155,833
2022	323,820	46,357	125,125	1,140	151,198
2023	289,996	38,914	110,338	732	140,012
Year 2021					
January	29,254	3,269	12,084	64	13,836
February	26,391	3,483	11,297	95	11,516
March	27,443	3,036	11,103	55	13,247
April	24,196	2,702	8,785	56	12,654
May	26,614	3,087	10,162	44	13,321
June	27,589	3,594	10,874	96	13,026
July	30,352	5,009	11,638	118	13,587
August	29,979	4,653	11,800	108	13,418
September	27,359	3,659	10,765	97	12,838
October	25,444	2,696	9,910	79	12,760
November	25,753	2,681	10,495	75	12,501
December	27,880	4,000	10,641	110	13,129
Year 2022					
January	28,590	4,116	11,148	102	13,225
February	27,354	4,072	10,966	94	12,223
March	26,834	3,220	10,911	69	12,633
April	24,378	2,638	9,297	73	12,370
May	26,094	3,542	9,711	110	12,731
June	27,667	4,060	10,713	129	12,766
July	30,189	4,960	11,506	119	13,604
August	29,708	5,264	11,129	171	13,144
September	26,117	3,722	10,273	81	12,041
October	23,854	3,181	9,295	42	11,335
November	25,533	3,117	9,864	72	12,481
December	27,502	4,466	10,313	77	12,647
Year 2023					
January	26,972	3,947	10,564	76	12,384
February	23,316	3,531	8,879	47	10,859
March	24,472	2,504	9,943	55	11,971
April	21,340	1,966	8,038	46	11,290
May	24,408	2,836	9,447	24	12,101
June	24,292	3,798	9,164	68	11,262
July	26,080	4,560	9,783	58	11,678
August	27,025	4,473	10,163	85	12,304
September	23,669	3,310	8,832	82	11,446
October	20,337	2,193	7,284	61	10,800
November	22,798	2,521	8,717	56	11,503
December	25,286	3,276	9,522	74	12,414

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Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
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Table 5.5.E. Wood / Wood Waste Biomass: Consumption for Useful Thermal Output, by Sector, 2013 - 2023 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	919,631	0	20,342	950	898,339
2014	946,344	8,835	22,262	3,766	911,481
2015	943,962	9,351	19,200	3,714	911,697
2016	969,841	10,950	22,905	4,520	931,465
2017	939,633	11,656	22,986	4,522	900,469
2018	929,365	10,297	21,623	4,806	892,639
2019	907,420	3,564	25,740	4,969	873,147
2020	860,062	3,051	25,022	3,595	828,394
2021	870,986	3,520	21,804	2,958	842,704
2022	819,538	4,629	21,579	3,158	790,172
2023	754,615	4,076	20,744	2,343	727,452
Year 2021					
January	75,180	377	2,146	229	72,427
February	66,581	341	1,876	315	64,049
March	72,900	336	1,945	227	70,391
April	72,574	312	1,696	153	70,412
May	73,777	208	1,349	125	72,095
June	71,452	268	1,956	276	68,952
July	75,597	390	1,840	300	73,068
August	74,458	304	1,955	316	71,882
September	71,697	17	1,817	308	69,555
October	71,228	177	1,507	213	69,330
November	69,883	378	1,922	207	67,376
December	75,661	411	1,794	290	73,166
Year 2022					
January	72,157	390	2,158	282	69,327
February	65,478	385	1,740	281	63,071
March	68,069	443	1,613	228	65,785
April	68,138	403	1,617	171	65,947
May	70,011	269	1,639	274	67,828
June	68,973	296	1,688	367	66,623
July	71,267	330	1,709	327	68,901
August	70,484	360	1,819	375	67,931
September	64,897	408	1,977	199	62,313
October	65,076	230	1,763	149	62,935
November	66,976	513	1,895	250	64,318
December	68,011	603	1,960	256	65,192
Year 2023					
January	69,277	456	1,721	249	66,851
February	60,917	377	1,949	163	58,427
March	66,831	438	2,692	223	63,478
April	59,109	391	1,725	162	56,830
May	63,132	91	1,803	81	61,157
June	58,285	266	1,869	254	55,897
July	61,598	295	1,451	129	59,723
August	62,979	339	1,215	221	61,204
September	60,896	182	866	256	59,592
October	61,213	344	2,393	185	58,292
November	64,741	433	1,506	179	62,623
December	65,636	464	1,555	241	63,377

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Table 5.5.F. Wood / Wood Waste Biomass: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2013 - 2023 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	1,317,560	43,363	164,063	1,486	1,108,647
2014	1,377,629	54,478	196,775	4,727	1,121,648
2015	1,350,612	53,269	190,587	4,219	1,102,537
2016	1,329,824	51,986	172,421	4,993	1,100,424
2017	1,303,279	54,462	174,862	4,982	1,068,972
2018	1,291,068	56,153	164,911	5,326	1,064,678
2019	1,245,737	45,804	154,720	5,552	1,039,661
2020	1,178,443	34,657	150,717	4,203	988,866
2021	1,199,240	45,387	151,359	3,957	998,537
2022	1,143,358	50,986	146,704	4,297	941,370
2023	1,044,610	42,990	131,082	3,075	867,464
Year 2021					
January	104,434	3,646	14,231	294	86,264
February	92,972	3,824	13,173	410	75,565
March	100,342	3,373	13,049	282	83,639
April	96,770	3,014	10,481	210	83,066
May	100,391	3,295	11,512	169	85,416
June	99,041	3,862	12,830	372	81,978
July	105,948	5,398	13,478	418	86,655
August	104,437	4,958	13,755	424	85,300
September	99,055	3,676	12,582	404	82,393
October	96,672	2,873	11,417	292	82,090
November	95,636	3,059	12,417	282	79,878
December	103,541	4,411	12,434	400	86,295
Year 2022					
January	100,746	4,505	13,306	384	82,552
February	92,833	4,457	12,706	376	75,294
March	94,902	3,663	12,524	297	78,418
April	92,516	3,041	10,914	244	78,317
May	96,104	3,810	11,350	384	80,559
June	96,641	4,356	12,401	495	79,388
July	101,457	5,290	13,216	446	82,505
August	100,192	5,624	12,948	545	81,075
September	91,014	4,131	12,251	280	74,354
October	88,930	3,412	11,058	191	74,270
November	92,510	3,630	11,759	322	76,800
December	95,513	5,068	12,273	334	77,839
Year 2023					
January	96,249	4,403	12,285	325	79,236
February	84,233	3,908	10,828	210	69,287
March	91,304	2,942	12,635	278	75,449
April	80,449	2,357	9,763	209	68,121
May	87,540	2,927	11,250	105	73,258
June	82,577	4,064	11,032	322	67,159
July	87,677	4,855	11,234	187	71,401
August	90,005	4,812	11,378	306	73,508
September	84,565	3,492	9,698	338	71,037
October	81,550	2,537	9,677	246	69,091
November	87,538	2,954	10,223	235	74,126
December	90,923	3,740	11,078	315	75,791

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Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
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Table 5.6.A. Landfill Gas: Consumption for Electricity Generation, by Sector, 2013 - 2023 (Million Cubic Feet)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	271,967	27,259	211,942	28,143	4,623
2014	285,982	25,819	228,447	27,038	4,678
2015	282,530	25,257	227,381	25,250	4,642
2016	273,557	24,280	224,993	20,445	3,839
2017	278,112	25,074	229,050	20,121	3,866
2018	270,235	23,580	223,513	19,790	3,352
2019	257,494	22,726	214,819	16,874	3,075
2020	252,501	23,571	208,196	18,136	2,597
2021	231,876	22,831	190,031	16,472	2,542
2022	211,866	18,486	176,160	14,898	2,323
2023	194,294	15,815	162,863	13,392	2,224
Year 2021					
January	21,051	2,121	17,209	1,469	252
February	18,681	1,812	15,289	1,324	254
March	20,782	1,976	17,070	1,446	291
April	19,174	1,885	15,713	1,319	258
May	19,935	1,982	16,398	1,327	229
June	19,143	1,893	15,658	1,381	210
July	19,628	1,946	16,084	1,396	203
August	19,148	1,917	15,679	1,374	178
September	18,571	1,841	15,217	1,365	148
October	18,409	1,732	15,133	1,383	161
November	17,677	1,746	14,414	1,352	165
December	19,678	1,981	16,167	1,337	193
Year 2022					
January	18,515	1,725	15,257	1,343	190
February	17,347	1,602	14,349	1,216	180
March	19,127	1,751	15,882	1,301	192
April	17,226	1,547	14,618	900	161
May	17,953	1,594	14,955	1,209	195
June	17,609	1,531	14,651	1,225	202
July	17,975	1,543	14,919	1,314	198
August	17,540	1,487	14,533	1,315	207
September	17,102	1,461	14,174	1,275	192
October	17,877	1,480	14,857	1,337	202
November	16,933	1,419	14,149	1,177	188
December	16,663	1,347	13,815	1,285	216
Year 2023					
January	16,943	1,406	14,204	1,177	156
February	15,058	1,220	12,575	1,092	172
March	16,460	1,395	13,702	1,151	212
April	15,191	1,273	12,676	1,073	169
May	16,976	1,410	14,319	1,103	145
June	16,370	1,356	13,723	1,111	181
July	16,562	1,332	13,922	1,161	148
August	16,623	1,319	13,967	1,206	131
September	15,364	1,188	12,923	1,132	120
October	15,752	1,273	13,412	935	133
November	15,829	1,284	13,298	1,099	147
December	17,164	1,360	14,142	1,152	510

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Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
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Table 5.6.B. Landfill Gas: Consumption for Useful Thermal Output, by Sector, 2013 - 2023 (Million Cubic Feet)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	831	0	261	423	147
2014	1,710	176	525	674	335
2015	1,522	2	644	515	362
2016	4,163	3	2,339	1,034	788
2017	3,940	2	1,948	1,099	891
2018	3,621	0	1,867	911	843
2019	3,570	5	1,933	820	812
2020	4,011	3	2,187	820	1,000
2021	4,030	6	2,155	741	1,129
2022	4,280	15	1,996	817	1,451
2023	3,418	10	1,730	705	973
Year 2021					
January	376	1	192	73	111
February	332	0	168	55	109
March	388	1	196	72	120
April	355	0	186	48	120
May	292	0	121	59	111
June	339	1	192	47	99
July	283	0	139	65	78
August	340	0	209	57	73
September	332	0	197	70	63
October	312	0	190	56	65
November	279	0	137	66	76
December	403	0	227	73	102
Year 2022					
January	401	1	197	81	121
February	374	1	186	69	118
March	436	1	218	78	138
April	330	1	157	70	102
May	293	1	116	51	125
June	344	1	163	65	115
July	362	1	170	66	125
August	362	1	164	74	122
September	355	1	160	76	117
October	355	1	163	69	122
November	315	1	130	64	120
December	354	1	173	55	124
Year 2023					
January	297	1	153	64	80
February	267	1	135	52	79
March	283	1	145	49	88
April	297	1	142	65	89
May	221	1	103	40	78
June	294	1	152	53	88
July	310	1	161	65	83
August	309	1	160	70	78
September	279	1	155	61	63
October	293	1	147	72	73
November	247	1	104	60	83
December	321	1	173	54	93

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Table 5.6.C. Landfill Gas: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2013 - 2023 (Million Cubic Feet)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	272,798	27,259	212,203	28,566	4,770
2014	287,692	25,995	228,971	27,713	5,013
2015	284,052	25,259	228,024	25,765	5,004
2016	277,720	24,283	227,332	21,479	4,626
2017	282,051	25,076	230,998	21,220	4,757
2018	273,856	23,580	225,380	20,701	4,196
2019	261,064	22,731	216,753	17,694	3,887
2020	256,512	23,575	210,383	18,956	3,598
2021	235,906	22,836	192,186	17,212	3,671
2022	216,146	18,501	178,155	15,715	3,774
2023	197,712	15,825	164,593	14,097	3,197
Year 2021					
January	21,427	2,121	17,401	1,541	363
February	19,013	1,813	15,457	1,379	363
March	21,170	1,976	17,266	1,518	411
April	19,529	1,885	15,899	1,367	377
May	20,227	1,982	16,518	1,386	340
June	19,482	1,894	15,851	1,427	310
July	19,911	1,946	16,223	1,461	281
August	19,488	1,917	15,888	1,431	251
September	18,903	1,842	15,414	1,435	212
October	18,720	1,732	15,323	1,439	226
November	17,956	1,746	14,551	1,418	241
December	20,082	1,981	16,395	1,410	296
Year 2022					
January	18,916	1,726	15,454	1,424	311
February	17,721	1,603	14,535	1,285	298
March	19,562	1,753	16,100	1,379	330
April	17,556	1,548	14,775	971	263
May	18,246	1,595	15,070	1,260	321
June	17,953	1,532	14,813	1,290	318
July	18,337	1,545	15,089	1,380	323
August	17,902	1,488	14,696	1,389	329
September	17,456	1,462	14,334	1,350	309
October	18,232	1,482	15,020	1,406	324
November	17,247	1,420	14,279	1,241	308
December	17,017	1,348	13,988	1,340	340
Year 2023					
January	17,241	1,407	14,356	1,241	237
February	15,326	1,220	12,710	1,144	250
March	16,743	1,395	13,847	1,200	300
April	15,488	1,274	12,818	1,138	257
May	17,197	1,411	14,422	1,142	222
June	16,664	1,356	13,875	1,165	268
July	16,873	1,333	14,083	1,227	231
August	16,932	1,320	14,127	1,276	209
September	15,643	1,188	13,078	1,193	183
October	16,045	1,274	13,559	1,006	206
November	16,075	1,285	13,402	1,159	230
December	17,486	1,361	14,316	1,206	603

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Table 5.6.D. Landfill Gas: Consumption for Electricity Generation, by Sector, 2013 - 2023 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	132,766	13,819	105,330	11,290	2,327
2014	140,779	13,132	114,333	10,937	2,377
2015	138,085	12,846	112,911	10,023	2,304
2016	135,365	12,294	112,770	8,374	1,927
2017	137,635	13,071	114,131	8,508	1,926
2018	133,957	12,395	111,769	8,104	1,689
2019	127,540	11,794	107,100	7,086	1,560
2020	124,647	12,337	103,453	7,510	1,348
2021	113,839	11,897	93,819	6,826	1,297
2022	103,630	9,661	86,766	6,007	1,197
2023	95,684	8,251	80,667	5,640	1,126
Year 2021					
January	10,306	1,105	8,466	608	127
February	9,139	944	7,518	549	129
March	10,177	1,029	8,398	603	148
April	9,412	979	7,760	543	130
May	9,780	1,034	8,079	551	116
June	9,395	988	7,728	572	107
July	9,658	1,016	7,958	580	104
August	9,432	1,000	7,767	573	92
September	9,141	960	7,536	568	77
October	9,044	901	7,487	572	84
November	8,700	909	7,138	568	85
December	9,657	1,033	7,985	540	98
Year 2022					
January	9,050	900	7,506	546	98
February	8,482	837	7,060	492	93
March	9,339	916	7,813	511	99
April	8,482	812	7,202	385	83
May	8,781	836	7,372	473	100
June	8,624	800	7,221	498	105
July	8,813	806	7,376	529	102
August	8,603	776	7,187	534	106
September	8,359	763	6,979	518	98
October	8,707	773	7,298	531	104
November	8,282	741	6,968	476	96
December	8,108	700	6,784	513	111
Year 2023					
January	8,333	734	7,043	480	76
February	7,382	636	6,220	442	84
March	8,100	729	6,793	473	104
April	7,479	667	6,272	457	83
May	8,341	738	7,065	468	70
June	8,056	708	6,793	467	88
July	8,171	696	6,908	495	72
August	8,200	687	6,934	514	65
September	7,553	617	6,402	475	59
October	7,804	662	6,662	414	66
November	7,791	668	6,586	465	72
December	8,474	707	6,987	491	288

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

Table 5.6.E. Landfill Gas: Consumption for Useful Thermal Output, by Sector, 2013 - 2023 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	414	0	132	206	76
2014	852	88	266	326	173
2015	756	1	326	250	179
2016	2,236	1	1,266	589	380
2017	2,196	1	1,066	698	431
2018	1,964	0	966	594	403
2019	1,960	2	1,034	531	394
2020	2,225	1	1,168	535	521
2021	2,210	2	1,151	504	553
2022	2,363	5	1,081	547	729
2023	1,876	3	944	464	465
Year 2021					
January	205	0	102	49	54
February	181	0	90	37	53
March	218	0	105	54	59
April	191	0	100	32	58
May	159	0	66	39	54
June	182	0	103	30	48
July	158	0	76	43	39
August	189	0	112	40	37
September	184	0	105	47	32
October	174	0	102	39	33
November	155	0	74	44	37
December	216	0	117	49	50
Year 2022					
January	224	0	107	55	61
February	207	0	101	47	60
March	240	0	117	53	70
April	186	0	86	48	51
May	159	0	64	32	63
June	193	0	89	45	59
July	199	0	93	43	63
August	201	0	89	50	61
September	196	0	87	50	58
October	196	0	88	46	61
November	174	0	71	43	60
December	189	0	89	37	62
Year 2023					
January	163	0	83	42	38
February	145	0	74	34	38
March	156	0	79	34	42
April	163	0	78	43	43
May	121	0	59	25	37
June	160	0	83	34	42
July	171	0	88	43	39
August	172	0	87	47	37
September	155	0	84	40	30
October	164	0	81	47	35
November	134	0	58	37	39
December	174	0	91	37	45

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

Table 5.6.F. Landfill Gas: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2013 - 2023 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	133,180	13,819	105,462	11,497	2,403
2014	141,632	13,220	114,599	11,263	2,550
2015	138,841	12,847	113,238	10,273	2,483
2016	137,600	12,295	114,036	8,963	2,307
2017	139,831	13,072	115,197	9,206	2,357
2018	135,921	12,395	112,736	8,698	2,092
2019	129,500	11,795	108,134	7,617	1,954
2020	126,872	12,338	104,621	8,045	1,868
2021	116,049	11,899	94,971	7,330	1,850
2022	105,993	9,666	87,846	6,554	1,926
2023	97,560	8,254	81,611	6,104	1,591
Year 2021					
January	10,510	1,105	8,568	657	181
February	9,320	944	7,608	586	182
March	10,395	1,029	8,502	657	207
April	9,602	979	7,860	575	189
May	9,940	1,034	8,145	590	170
June	9,576	988	7,831	602	155
July	9,816	1,016	8,033	623	143
August	9,620	1,000	7,880	612	128
September	9,325	960	7,641	615	109
October	9,217	901	7,589	611	116
November	8,855	909	7,212	612	122
December	9,873	1,033	8,102	590	148
Year 2022					
January	9,274	901	7,612	601	160
February	8,689	838	7,160	538	153
March	9,579	917	7,930	564	169
April	8,668	812	7,288	433	135
May	8,939	836	7,436	505	163
June	8,817	800	7,310	543	163
July	9,012	806	7,468	572	166
August	8,804	776	7,277	584	168
September	8,554	764	7,066	568	156
October	8,903	774	7,386	577	166
November	8,456	742	7,039	519	156
December	8,297	700	6,873	550	173
Year 2023					
January	8,495	734	7,126	521	113
February	7,527	636	6,294	475	122
March	8,256	730	6,872	507	147
April	7,642	667	6,350	500	125
May	8,462	738	7,124	493	107
June	8,216	708	6,877	502	129
July	8,342	696	6,996	539	111
August	8,372	688	7,021	561	102
September	7,708	617	6,487	515	90
October	7,968	663	6,743	461	101
November	7,925	668	6,644	502	111
December	8,647	708	7,078	528	333

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
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Table 5.7.A. Biogenic Municipal Solid Waste: Consumption for Electricity Generation, by Sector, 2013 - 2023 (Thousand Tons)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	17,007	456	14,057	2,485	8
2014	16,706	444	13,809	2,447	6
2015	16,631	452	13,797	2,375	8
2016	16,994	464	13,953	2,566	11
2017	16,348	422	13,381	2,537	8
2018	16,783	467	13,859	2,448	9
2019	15,559	297	12,941	2,310	10
2020	15,516	280	12,975	2,251	10
2021	15,223	252	12,442	2,521	7
2022	14,589	274	7,346	6,969	0
2023	13,916	283	6,960	6,674	0
Year 2021					
January	1,270	20	1,035	214	1
February	1,122	10	937	176	0
March	1,274	17	1,055	202	0
April	1,238	23	1,004	211	0
May	1,245	24	1,018	203	1
June	1,300	26	1,063	211	1
July	1,361	9	1,121	230	1
August	1,350	27	1,093	230	1
September	1,303	23	1,060	219	1
October	1,248	23	1,029	196	1
November	1,216	27	977	212	1
December	1,295	24	1,051	219	0
Year 2022					
January	1,214	22	645	547	0
February	1,117	20	567	530	0
March	1,215	17	638	560	0
April	1,207	23	592	591	0
May	1,225	28	607	589	0
June	1,248	25	622	601	0
July	1,272	25	634	612	0
August	1,246	28	623	595	0
September	1,199	18	604	577	0
October	1,211	24	592	595	0
November	1,212	23	593	595	0
December	1,224	21	626	577	0
Year 2023					
January	1,205	24	616	564	0
February	1,048	15	539	494	0
March	1,112	21	575	516	0
April	1,065	21	533	512	0
May	1,170	21	591	558	0
June	1,180	26	582	572	0
July	1,248	24	620	604	0
August	1,235	28	614	592	0
September	1,140	24	572	544	0
October	1,156	27	564	565	0
November	1,131	26	546	559	0
December	1,226	24	607	595	0

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.
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Table 5.7.B. Biogenic Municipal Solid Waste: Consumption for Useful Thermal Output, by Sector, 2013 - 2023 (Thousand Tons)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	1,865	0	517	1,160	187
2014	1,955	0	650	1,104	200
2015	1,986	0	655	1,127	203
2016	2,232	0	885	1,134	213
2017	2,124	0	814	1,102	208
2018	2,050	0	752	1,109	189
2019	1,667	0	743	737	187
2020	1,650	0	757	705	188
2021	1,712	0	873	666	173
2022	1,647	0	401	1,246	0
2023	1,667	0	449	1,218	0
Year 2021					
January	155	0	75	63	17
February	121	0	70	45	6
March	142	0	71	57	14
April	130	0	57	56	18
May	139	0	71	54	13
June	139	0	71	51	16
July	154	0	75	63	16
August	154	0	76	62	17
September	146	0	71	60	15
October	139	0	71	54	15
November	137	0	80	44	13
December	154	0	85	57	13
Year 2022					
January	148	0	38	110	0
February	130	0	31	99	0
March	129	0	30	100	0
April	125	0	29	96	0
May	143	0	34	109	0
June	141	0	32	108	0
July	148	0	37	111	0
August	151	0	34	117	0
September	137	0	32	104	0
October	127	0	32	95	0
November	139	0	34	106	0
December	129	0	38	91	0
Year 2023					
January	135	0	38	97	0
February	129	0	33	96	0
March	137	0	34	103	0
April	129	0	32	97	0
May	141	0	33	108	0
June	128	0	33	95	0
July	148	0	41	107	0
August	153	0	40	113	0
September	140	0	40	101	0
October	122	0	37	85	0
November	145	0	44	102	0
December	159	0	43	115	0

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
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Table 5.7.C. Biogenic Municipal Solid Waste: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2013 - 2023 (Thousand Tons)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	18,871	456	14,574	3,646	195
2014	18,661	444	14,459	3,551	206
2015	18,617	452	14,452	3,502	211
2016	19,226	464	14,838	3,700	224
2017	18,473	422	14,195	3,639	216
2018	18,833	467	14,611	3,557	197
2019	17,225	297	13,684	3,047	197
2020	17,166	280	13,732	2,956	198
2021	16,934	252	13,315	3,187	180
2022	16,236	274	7,747	8,215	0
2023	15,584	283	7,408	7,892	0
Year 2021					
January	1,425	20	1,110	277	17
February	1,243	10	1,007	221	6
March	1,415	17	1,126	259	14
April	1,369	23	1,061	267	18
May	1,384	24	1,089	257	14
June	1,439	26	1,134	262	17
July	1,515	9	1,196	294	16
August	1,504	27	1,168	292	18
September	1,449	23	1,130	279	16
October	1,388	23	1,099	249	16
November	1,353	27	1,056	256	14
December	1,449	24	1,136	276	13
Year 2022					
January	1,362	22	683	657	0
February	1,248	20	598	629	0
March	1,344	17	668	660	0
April	1,332	23	621	687	0
May	1,368	28	642	697	0
June	1,389	25	655	709	0
July	1,420	25	671	723	0
August	1,397	28	657	712	0
September	1,336	18	636	682	0
October	1,338	24	624	690	0
November	1,351	23	627	701	0
December	1,353	21	664	668	0
Year 2023					
January	1,340	24	654	662	0
February	1,177	15	571	591	0
March	1,250	21	609	619	0
April	1,194	21	564	609	0
May	1,311	21	625	665	0
June	1,309	26	615	668	0
July	1,396	24	661	711	0
August	1,388	28	654	705	0
September	1,281	24	612	644	0
October	1,278	27	601	649	0
November	1,276	26	590	660	0
December	1,385	24	650	710	0

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Table 5.7.D. Biogenic Municipal Solid Waste: Consumption for Electricity Generation, by Sector, 2013 - 2023 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	135,764	4,459	111,430	19,811	64
2014	134,408	4,429	110,569	19,366	45
2015	133,117	4,295	109,691	19,068	63
2016	135,957	4,434	111,003	20,431	89
2017	130,942	4,172	106,382	20,320	67
2018	134,465	4,568	110,452	19,374	72
2019	115,114	2,454	95,638	16,946	76
2020	114,814	2,284	95,941	16,511	77
2021	113,173	2,029	92,144	18,944	56
2022	108,508	2,212	54,250	52,046	0
2023	103,306	2,275	51,190	49,841	0
Year 2021					
January	9,501	163	7,717	1,615	5
February	8,369	77	6,968	1,325	0
March	9,501	137	7,832	1,532	0
April	9,222	183	7,443	1,595	1
May	9,339	190	7,612	1,531	5
June	9,632	210	7,846	1,567	9
July	10,024	70	8,231	1,716	7
August	9,935	212	8,004	1,711	8
September	9,605	189	7,782	1,627	7
October	9,286	185	7,642	1,452	7
November	9,046	215	7,223	1,604	4
December	9,713	198	7,844	1,668	3
Year 2022					
January	9,109	172	4,796	4,141	0
February	8,332	161	4,204	3,967	0
March	9,091	134	4,797	4,160	0
April	9,014	186	4,404	4,424	0
May	9,156	227	4,528	4,401	0
June	9,285	203	4,602	4,480	0
July	9,451	205	4,699	4,547	0
August	9,222	227	4,574	4,420	0
September	8,817	143	4,423	4,251	0
October	8,960	192	4,319	4,449	0
November	8,977	188	4,321	4,468	0
December	9,095	174	4,584	4,338	0
Year 2023					
January	8,952	198	4,517	4,237	0
February	7,833	124	3,984	3,725	0
March	8,285	174	4,245	3,866	0
April	7,938	169	3,923	3,846	0
May	8,740	173	4,378	4,188	0
June	8,746	208	4,274	4,264	0
July	9,244	195	4,584	4,465	0
August	9,066	227	4,465	4,373	0
September	8,403	194	4,194	4,015	0
October	8,593	215	4,161	4,217	0
November	8,403	204	4,003	4,196	0
December	9,104	193	4,462	4,449	0

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Table 5.7.E. Biogenic Municipal Solid Waste: Consumption for Useful Thermal Output, by Sector, 2013 - 2023 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	15,168	0	4,145	9,530	1,493
2014	15,783	0	5,140	9,046	1,597
2015	16,623	0	5,195	9,752	1,676
2016	18,259	0	6,877	9,665	1,717
2017	17,720	0	6,475	9,474	1,772
2018	16,724	0	5,887	9,312	1,524
2019	12,308	0	5,362	5,527	1,419
2020	11,939	0	5,420	5,117	1,401
2021	12,721	0	6,371	5,050	1,300
2022	12,244	0	2,966	9,278	0
2023	12,535	0	3,367	9,168	0
Year 2021					
January	1,151	0	560	464	126
February	881	0	501	332	48
March	1,044	0	520	419	106
April	974	0	425	415	134
May	1,028	0	524	406	99
June	1,036	0	527	387	122
July	1,180	0	546	517	117
August	1,144	0	540	478	126
September	1,062	0	501	448	113
October	1,024	0	515	393	116
November	1,041	0	592	350	99
December	1,156	0	620	442	95
Year 2022					
January	1,125	0	281	845	0
February	959	0	231	728	0
March	949	0	220	729	0
April	912	0	211	701	0
May	1,051	0	254	797	0
June	1,042	0	238	803	0
July	1,125	0	274	851	0
August	1,117	0	254	862	0
September	1,020	0	237	783	0
October	929	0	232	696	0
November	1,063	0	253	810	0
December	952	0	279	673	0
Year 2023					
January	995	0	282	713	0
February	955	0	245	710	0
March	1,024	0	254	770	0
April	965	0	237	728	0
May	1,064	0	251	813	0
June	975	0	249	726	0
July	1,102	0	307	795	0
August	1,121	0	292	829	0
September	1,051	0	297	754	0
October	942	0	291	650	0
November	1,129	0	334	795	0
December	1,211	0	327	884	0

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

Table 5.7.F. Biogenic Municipal Solid Waste: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2013 - 2023 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	150,932	4,459	115,574	29,342	1,557
2014	150,191	4,429	115,709	28,411	1,643
2015	149,740	4,295	114,886	28,821	1,739
2016	154,216	4,434	117,880	30,095	1,806
2017	148,662	4,172	112,857	29,794	1,839
2018	151,188	4,568	116,339	28,686	1,596
2019	127,422	2,454	101,000	22,473	1,495
2020	126,752	2,284	101,362	21,629	1,478
2021	125,894	2,029	98,516	23,994	1,355
2022	120,753	2,212	57,217	61,324	0
2023	115,841	2,275	54,557	59,009	0
Year 2021					
January	10,652	163	8,278	2,080	131
February	9,251	77	7,469	1,657	48
March	10,546	137	8,351	1,951	106
April	10,196	183	7,868	2,010	135
May	10,367	190	8,136	1,937	104
June	10,668	210	8,373	1,954	131
July	11,203	70	8,777	2,233	124
August	11,079	212	8,544	2,189	133
September	10,667	189	8,283	2,075	120
October	10,310	185	8,157	1,845	122
November	10,087	215	7,815	1,954	103
December	10,869	198	8,463	2,110	98
Year 2022					
January	10,234	172	5,077	4,986	0
February	9,291	161	4,435	4,696	0
March	10,040	134	5,018	4,889	0
April	9,926	186	4,615	5,125	0
May	10,207	227	4,782	5,198	0
June	10,327	203	4,841	5,283	0
July	10,576	205	4,973	5,398	0
August	10,338	227	4,829	5,283	0
September	9,837	143	4,660	5,033	0
October	9,889	192	4,551	5,146	0
November	10,040	188	4,575	5,277	0
December	10,047	174	4,863	5,010	0
Year 2023					
January	9,947	198	4,799	4,950	0
February	8,788	124	4,229	4,436	0
March	9,310	174	4,499	4,637	0
April	8,903	169	4,160	4,573	0
May	9,804	173	4,630	5,001	0
June	9,721	208	4,523	4,989	0
July	10,346	195	4,891	5,260	0
August	10,187	227	4,757	5,202	0
September	9,455	194	4,491	4,769	0
October	9,534	215	4,452	4,867	0
November	9,532	204	4,337	4,991	0
December	10,316	193	4,789	5,333	0

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

Table 5.8.D. Other Waste Biomass: Consumption for Electricity Generation, by Sector, 2013 - 2023 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	29,385	2,432	13,671	4,979	8,303
2014	38,361	2,360	21,628	5,745	8,627
2015	41,785	2,853	25,058	5,935	7,939
2016	33,786	2,553	18,194	5,504	7,536
2017	35,755	1,845	22,517	5,288	6,105
2018	29,407	1,343	16,874	5,867	5,324
2019	23,947	1,133	12,606	5,668	4,540
2020	22,234	1,024	11,195	5,014	5,001
2021	22,623	1,007	11,536	5,075	5,005
2022	19,910	638	9,809	4,548	4,915
2023	20,807	865	11,018	4,700	4,224
Year 2021					
January	2,072	100	1,089	413	469
February	1,878	83	1,019	393	384
March	2,110	104	1,103	442	461
April	1,808	74	885	413	436
May	1,950	57	1,041	436	415
June	1,770	108	927	420	314
July	1,796	74	911	438	373
August	1,737	89	839	440	369
September	1,845	88	960	427	369
October	1,842	74	886	439	443
November	1,833	78	886	410	460
December	1,984	77	990	405	512
Year 2022					
January	1,896	57	934	436	470
February	1,712	40	904	351	417
March	1,800	45	851	414	490
April	1,502	34	665	356	447
May	1,427	64	566	355	442
June	1,610	55	858	365	331
July	1,648	63	883	373	329
August	1,701	48	903	378	372
September	1,593	70	840	375	307
October	1,709	44	848	398	419
November	1,535	59	675	373	428
December	1,777	59	882	374	462
Year 2023					
January	1,691	78	866	335	412
February	1,922	80	1,129	354	360
March	1,650	60	818	389	383
April	1,531	85	750	337	360
May	1,716	66	833	438	379
June	1,594	47	829	419	298
July	1,652	61	892	401	297
August	1,710	60	960	390	300
September	1,638	73	939	374	252
October	1,813	105	908	420	380
November	1,770	66	886	408	409
December	2,121	84	1,209	436	393

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

Table 5.8.E. Other Waste Biomass: Consumption for Useful Thermal Output, by Sector, 2013 - 2023 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	62,445	0	6,768	1,259	54,418
2014	65,201	15	6,930	1,543	56,712
2015	67,512	1	7,845	2,000	57,666
2016	57,123	18	11,252	3,569	42,284
2017	50,518	15	10,543	3,218	36,742
2018	50,338	14	10,753	3,673	35,898
2019	41,084	39	10,452	3,282	27,312
2020	43,383	18	9,358	3,166	30,841
2021	45,209	9	9,499	2,907	32,793
2022	45,181	13	9,088	2,633	33,446
2023	39,471	15	9,646	2,666	27,144
Year 2021					
January	4,904	1	1,088	277	3,538
February	4,172	1	1,001	259	2,912
March	4,571	2	1,059	269	3,241
April	4,005	4	996	226	2,779
May	3,913	0	929	187	2,797
June	2,320	0	380	244	1,696
July	2,620	0	523	226	1,870
August	2,603	0	467	246	1,890
September	2,739	0	494	246	1,999
October	3,772	0	435	218	3,119
November	4,556	0	983	242	3,330
December	5,035	1	1,144	268	3,622
Year 2022					
January	4,959	0	1,143	247	3,568
February	4,327	0	1,079	237	3,010
March	5,115	0	1,158	244	3,712
April	4,088	0	672	196	3,219
May	3,785	0	364	221	3,199
June	2,664	0	515	222	1,927
July	2,521	0	612	197	1,712
August	2,727	0	558	197	1,972
September	2,339	2	440	228	1,671
October	3,637	3	536	231	2,867
November	4,198	3	953	198	3,044
December	4,821	2	1,058	214	3,546
Year 2023					
January	4,600	4	1,199	257	3,141
February	3,836	4	1,010	215	2,607
March	4,178	0	1,186	235	2,758
April	3,712	4	1,004	210	2,495
May	3,570	0	704	214	2,651
June	2,155	0	348	211	1,596
July	2,108	0	467	201	1,439
August	2,082	0	486	206	1,389
September	1,922	0	410	230	1,281
October	3,458	0	813	244	2,401
November	3,638	0	978	212	2,448
December	4,212	0	1,042	233	2,937

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

Table 5.8.F. Other Waste Biomass: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2013 - 2023 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2013	91,830	2,432	20,439	6,238	62,721
2014	103,561	2,375	28,558	7,289	65,339
2015	109,297	2,854	32,903	7,935	65,605
2016	90,909	2,571	29,446	9,073	49,820
2017	86,274	1,860	33,060	8,506	42,848
2018	79,745	1,357	27,627	9,540	41,221
2019	65,031	1,172	23,057	8,950	31,852
2020	65,617	1,043	20,552	8,180	35,842
2021	67,832	1,017	21,035	7,982	37,798
2022	65,090	652	18,897	7,181	38,361
2023	60,278	879	20,664	7,366	31,368
Year 2021					
January	6,976	101	2,177	690	4,007
February	6,050	84	2,020	651	3,296
March	6,681	106	2,162	711	3,702
April	5,813	78	1,881	639	3,215
May	5,862	57	1,970	622	3,213
June	4,090	108	1,307	664	2,010
July	4,416	74	1,434	664	2,243
August	4,339	89	1,306	686	2,259
September	4,584	88	1,454	673	2,368
October	5,613	74	1,321	656	3,562
November	6,389	78	1,869	652	3,790
December	7,019	78	2,133	674	4,134
Year 2022					
January	6,855	57	2,077	683	4,038
February	6,039	40	1,983	588	3,428
March	6,915	46	2,009	658	4,202
April	5,590	35	1,338	552	3,666
May	5,211	64	930	577	3,641
June	4,273	56	1,373	587	2,258
July	4,169	63	1,495	570	2,041
August	4,428	49	1,461	574	2,344
September	3,932	72	1,280	603	1,978
October	5,346	47	1,385	629	3,285
November	5,733	62	1,628	571	3,472
December	6,598	61	1,940	589	4,008
Year 2023					
January	6,291	82	2,065	591	3,553
February	5,758	84	2,138	569	2,967
March	5,828	60	2,003	624	3,141
April	5,244	89	1,754	546	2,855
May	5,286	66	1,537	652	3,030
June	3,749	47	1,177	630	1,894
July	3,759	61	1,359	603	1,736
August	3,792	60	1,446	596	1,690
September	3,560	73	1,349	604	1,533
October	5,271	106	1,721	663	2,781
November	5,407	67	1,864	619	2,858
December	6,333	85	2,250	668	3,330

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

Table 5.9. Consumption of Coal for Electricity Generation by State by Sector, 2023 and 2022 (Thousand Tons)

Census Division and State	All Sectors			Electric Power Sector							
				Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
New England	82	159	-48.0%	0	0	82	159	0	0	0	0
Connecticut	0	0	--	0	0	0	0	0	0	0	0
Maine	12	12	0.3%	0	0	12	12	0	0	0	0
Massachusetts	0	0	--	0	0	0	0	0	0	0	0
New Hampshire	70	147	-52.0%	0	0	70	147	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	9,769	14,815	-34.0%	0	0	9,749	14,796	0	0	20	19
New Jersey	0	204	-100.0%	0	0	0	204	0	0	0	0
New York	0	0	--	0	0	0	0	0	0	0	0
Pennsylvania	9,769	14,611	-33.0%	0	0	9,749	14,592	0	0	20	19
East North Central	74,465	101,886	-27.0%	46,314	60,118	27,808	41,354	11	17	332	396
Illinois	16,078	24,665	-35.0%	768	1,076	15,033	23,276	5	5	272	308
Indiana	20,998	26,748	-21.0%	19,025	24,599	1,966	2,137	6	12	0	0
Michigan	12,777	19,845	-36.0%	12,684	19,680	92	164	0	0	0	1
Ohio	12,788	18,087	-29.0%	2,071	2,310	10,717	15,777	0	0	0	0
Wisconsin	11,825	12,541	-5.7%	11,765	12,454	0	0	0	0	60	87
West North Central	81,912	97,543	-16.0%	81,126	96,679	0	0	5	25	780	839
Iowa	9,380	10,341	-9.3%	8,935	9,833	0	0	3	16	443	492
Kansas	10,482	13,053	-20.0%	10,482	13,053	0	0	0	0	0	0
Minnesota	7,425	9,366	-21.0%	7,380	9,319	0	0	2	6	43	41
Missouri	24,046	30,999	-22.0%	24,046	30,996	0	0	1	3	0	0
Nebraska	10,954	12,191	-10.0%	10,702	11,929	0	0	0	0	252	261
North Dakota	18,646	20,423	-8.7%	18,604	20,379	0	0	0	0	41	44
South Dakota	978	1,171	-16.0%	978	1,171	0	0	0	0	0	0
South Atlantic	46,873	52,975	-12.0%	42,046	45,215	4,735	7,622	3	5	89	134
Delaware	13	70	-81.0%	0	0	13	70	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	5,456	7,160	-24.0%	5,451	7,153	0	0	0	0	5	7
Georgia	8,641	8,895	-2.8%	8,616	8,858	0	0	0	0	25	36
Maryland	815	1,991	-59.0%	0	0	815	1,991	0	0	0	0
North Carolina	5,913	6,062	-2.5%	5,897	6,029	0	0	3	5	13	29
South Carolina	6,452	5,912	9.1%	6,432	5,862	15	46	0	0	4	4
Virginia	816	1,710	-52.0%	775	1,652	0	0	0	0	41	58
West Virginia	18,766	21,176	-11.0%	14,875	15,660	3,892	5,516	0	0	0	0
East South Central	43,869	50,338	-13.0%	40,859	47,051	2,926	3,209	0	0	85	78
Alabama	10,966	14,635	-25.0%	10,966	14,635	0	0	0	0	0	0
Kentucky	20,594	22,339	-7.8%	20,594	22,339	0	0	0	0	0	0
Mississippi	3,888	4,915	-21.0%	962	1,706	2,926	3,209	0	0	0	0
Tennessee	8,421	8,450	-0.3%	8,336	8,371	0	0	0	0	85	78
West South Central	67,421	82,170	-18.0%	30,377	40,736	37,029	41,400	0	0	15	34
Arkansas	10,095	11,933	-15.0%	8,159	9,508	1,929	2,418	0	0	6	7
Louisiana	3,096	5,288	-41.0%	2,133	3,125	963	2,163	0	0	0	0
Oklahoma	3,525	5,881	-40.0%	3,516	5,854	0	0	0	0	9	27
Texas	50,706	59,068	-14.0%	16,569	22,248	34,137	36,819	0	0	0	0
Mountain	58,839	68,285	-14.0%	49,930	59,112	8,822	9,073	0	0	87	100
Arizona	7,301	8,152	-10.0%	7,301	8,152	0	0	0	0	0	0
Colorado	10,964	12,275	-11.0%	10,964	12,275	0	0	0	0	0	0
Idaho	0	1	-100.0%	0	0	0	0	0	0	0	1
Montana	7,371	7,399	-0.4%	0	0	7,368	7,395	0	0	3	4
Nevada	1,300	1,577	-18.0%	675	835	625	742	0	0	0	0
New Mexico	4,033	7,370	-45.0%	4,033	7,370	0	0	0	0	0	0
Utah	7,867	10,571	-26.0%	7,533	10,155	334	416	0	0	0	0
Wyoming	20,002	20,939	-4.5%	19,423	20,324	495	520	0	0	84	94
Pacific Contiguous	2,848	2,460	16.0%	0	0	2,795	2,405	0	0	53	55
California	47	50	-6.2%	0	0	0	0	0	0	47	50
Oregon	0	0	--	0	0	0	0	0	0	0	0
Washington	2,802	2,410	16.0%	0	0	2,795	2,405	0	0	7	6
Pacific Noncontiguous	549	945	-42.0%	381	408	118	497	50	41	0	0
Alaska	549	575	-4.5%	381	408	118	126	50	41	0	0
Hawaii	0	370	-100.0%	0	0	0	370	0	0	0	0
U.S. Total	386,626	471,576	-18.0%	291,034	349,320	94,063	120,514	69	87	1,460	1,655

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

Table 5.10. Consumption of Petroleum Liquids for Electricity Generation by State, by Sector,. 2023 and 2022 (Thousand Barrels)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
New England	737	3,040	-76.0%	66	135	633	2,853	25	31	14	21
Connecticut	265	636	-58.0%	8	8	253	621	1	4	2	2
Maine	110	456	-76.0%	0	0	99	437	0	3	11	17
Massachusetts	195	1,176	-83.0%	49	109	135	1,056	10	10	0	2
New Hampshire	115	655	-83.0%	0	0	103	644	11	11	0	0
Rhode Island	45	99	-55.0%	0	1	43	96	2	NM	0	0
Vermont	8	18	-54.0%	8	18	0	0	0	0	0	0
Middle Atlantic	1,034	3,815	-73.0%	262	1,382	679	2,363	50	34	43	36
New Jersey	60	228	-74.0%	0	0	58	226	2	2	0	1
New York	795	2,966	-73.0%	260	1,379	490	1,555	33	22	12	10
Pennsylvania	178	621	-71.0%	2	2	132	581	15	11	30	26
East North Central	853	1,423	-40.0%	588	608	253	806	4	3	8	6
Illinois	64	85	-25.0%	14	14	50	70	0	1	0	0
Indiana	205	235	-12.0%	188	208	16	26	0	0	1	1
Michigan	177	204	-13.0%	173	201	0	0	0	1	3	2
Ohio	217	831	-74.0%	27	119	186	709	1	1	3	2
Wisconsin	190	69	175.0%	185	66	1	1	2	1	1	1
West North Central	1,059	1,136	-6.8%	1,050	1,113	4	17	2	3	3	2
Iowa	147	228	-35.0%	143	224	3	3	NM	0	0	0
Kansas	156	226	-31.0%	156	226	0	0	0	0	0	0
Minnesota	160	100	59.0%	155	82	1	14	2	2	2	2
Missouri	340	396	-14.0%	340	395	0	0	0	1	0	0
Nebraska	96	82	17.0%	96	82	0	0	0	0	0	0
North Dakota	107	60	78.0%	107	60	0	0	0	NM	0	0
South Dakota	53	44	21.0%	53	44	0	0	NM	0	0	0
South Atlantic	1,772	4,375	-59.0%	1,188	3,063	355	954	78	155	151	204
Delaware	36	197	-82.0%	2	21	33	177	0	0	0	0
District of Columbia	0	0	194.0%	0	0	0	0	0	0	0	0
Florida	396	883	-55.0%	366	814	24	55	0	0	6	15
Georgia	191	524	-63.0%	67	296	10	78	1	6	112	144
Maryland	183	325	-44.0%	2	22	181	303	1	1	NM	NM
North Carolina	187	535	-65.0%	159	487	11	25	3	9	14	15
South Carolina	172	359	-52.0%	160	337	4	10	0	0	7	12
Virginia	307	1,264	-76.0%	133	826	88	279	73	139	12	19
West Virginia	301	288	4.5%	297	261	4	27	0	0	0	0
East South Central	419	669	-37.0%	397	656	NM	1	0	0	21	12
Alabama	49	81	-39.0%	29	72	NM	1	0	0	19	8
Kentucky	122	210	-42.0%	122	210	0	0	0	0	0	0
Mississippi	11	14	-22.0%	10	12	0	0	0	0	1	2
Tennessee	236	364	-35.0%	236	362	0	0	0	0	0	2
West South Central	623	778	-20.0%	358	360	260	411	0	1	5	5
Arkansas	81	115	-30.0%	62	85	18	30	0	0	0	0
Louisiana	18	33	-46.0%	18	33	0	0	0	0	0	0
Oklahoma	40	56	-27.0%	38	53	0	0	0	0	3	2
Texas	485	574	-16.0%	240	190	242	381	0	1	2	NM
Mountain	905	368	145.0%	878	344	26	24	0	0	1	0
Arizona	62	62	-0.1%	62	62	0	0	0	0	0	0
Colorado	508	67	663.0%	506	61	1	6	0	0	1	0
Idaho	0	0	108.0%	0	0	0	0	0	0	0	0
Montana	18	22	-17.0%	0	10	18	12	0	0	0	0
Nevada	18	19	-6.5%	15	15	3	4	0	0	0	0
New Mexico	151	38	298.0%	151	38	0	0	0	0	0	0
Utah	56	55	0.5%	51	53	5	2	0	0	0	0
Wyoming	91	105	-13.0%	91	105	0	0	0	0	0	0
Pacific Contiguous	190	335	-43.0%	95	92	25	103	23	12	47	128
California	142	269	-47.0%	64	65	14	82	21	12	42	111
Oregon	0	3	-89.0%	0	3	0	0	0	0	0	0
Washington	48	63	-25.0%	30	24	11	21	1	NM	5	18
Pacific Noncontiguous	13,744	12,819	7.2%	11,486	10,621	2,016	1,942	18	13	224	242
Alaska	1,626	1,533	6.1%	1,556	1,440	0	0	2	1	68	92
Hawaii	12,118	11,286	7.4%	9,930	9,182	2,016	1,942	16	12	156	150
U.S. Total	21,336	28,760	-26.0%	16,366	18,375	4,253	9,474	200	254	517	657

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

Table 5.11. Consumption of Petroleum Coke for Electricity Generation by State, by Sector, 2023 and 2022 (Thousand Tons)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
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	1,028	1,220	-16.0%	548	748	416	411	0	0	64	61
Illinois	0	0	--	0	0	0	0	0	0	0	0
Indiana	0	0	--	0	0	0	0	0	0	0	0
Michigan	594	749	-21.0%	530	689	0	0	0	0	64	61
Ohio	416	411	1.3%	0	0	416	411	0	0	0	0
Wisconsin	18	59	-69.0%	18	59	0	0	0	0	0	0
West North Central	1	3	-82.0%	0	0	0	0	1	3	0	0
Iowa	1	3	-82.0%	0	0	0	0	1	3	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	399	355	13.0%	383	324	0	0	0	0	16	31
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	383	324	18.0%	383	324	0	0	0	0	0	0
Georgia	16	31	-49.0%	0	0	0	0	0	0	16	31
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	7	-100.0%	0	7	0	0	0	0	0	0
Alabama	0	0	--	0	0	0	0	0	0	0	0
Kentucky	0	7	-100.0%	0	7	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	421	1,232	-66.0%	396	1,192	0	0	0	0	25	40
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	396	1,192	-67.0%	396	1,192	0	0	0	0	0	0
Oklahoma	0	0	--	0	0	0	0	0	0	0	0
Texas	25	40	-38.0%	0	0	0	0	0	0	25	40
Mountain	178	167	6.5%	0	0	178	167	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	178	167	6.5%	0	0	178	167	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	2,028	2,985	-32.0%	1,328	2,271	594	578	1	3	105	132

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

Table 5.12. Consumption of Nautral Gas for Electricity Generation by State, by Sector, 2023 and 2022 (Million Cubic Feet)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
New England	409,759	395,702	3.6%	1,681	1,737	394,951	379,760	5,743	5,806	7,384	8,400
Connecticut	172,421	169,159	1.9%	794	626	166,191	163,271	1,706	1,622	3,730	3,640
Maine	27,059	27,377	-1.2%	0	0	25,875	25,028	150	155	1,034	2,194
Massachusetts	106,935	114,921	-6.9%	884	1,103	101,528	109,161	3,610	3,746	914	911
New Hampshire	31,076	32,197	-3.5%	0	0	30,849	31,983	55	37	172	177
Rhode Island	72,259	52,036	39.0%	0	0	70,507	50,317	218	242	1,534	1,477
Vermont	8	12	-34.0%	3	8	0	0	5	4	0	0
Middle Atlantic	1,657,420	1,597,094	3.8%	104,837	102,751	1,515,555	1,457,850	8,003	8,447	29,025	28,046
New Jersey	232,173	235,068	-1.2%	1,543	1,275	226,561	229,865	1,816	1,888	2,253	2,040
New York	459,614	462,958	-0.7%	103,135	101,155	347,479	352,298	5,399	5,706	3,601	3,799
Pennsylvania	965,633	899,068	7.4%	159	322	941,515	875,687	788	853	23,170	22,207
East North Central	1,596,860	1,341,250	19.0%	634,104	495,530	919,184	802,039	8,408	8,367	35,164	35,315
Illinois	206,544	148,706	39.0%	20,805	18,284	177,320	122,166	2,465	2,476	5,954	5,780
Indiana	271,610	241,284	13.0%	139,670	107,773	113,133	113,966	1,048	905	17,760	18,640
Michigan	386,488	299,800	29.0%	227,125	134,633	152,889	158,553	3,114	3,322	3,360	3,292
Ohio	546,691	477,154	15.0%	67,796	74,038	475,843	400,050	1,302	1,157	1,751	1,908
Wisconsin	185,526	174,307	6.4%	178,708	160,802	0	7,303	479	507	6,339	5,695
West North Central	353,556	266,033	33.0%	287,953	221,556	54,245	34,084	2,034	1,774	9,325	8,619
Iowa	70,472	57,910	22.0%	66,557	54,626	1	2	829	513	3,085	2,769
Kansas	43,392	32,577	33.0%	40,877	30,569	0	0	0	0	2,514	2,008
Minnesota	100,954	66,079	53.0%	63,733	42,284	33,824	20,225	466	510	2,932	3,060
Missouri	79,501	70,716	12.0%	58,210	55,950	20,420	13,857	722	745	149	164
Nebraska	14,311	12,672	13.0%	14,226	12,666	0	0	17	6	68	0
North Dakota	26,949	13,851	95.0%	26,836	13,678	0	0	0	0	114	174
South Dakota	17,977	12,228	47.0%	17,514	11,784	0	0	0	0	463	444
South Atlantic	2,968,873	2,988,673	-0.7%	2,479,798	2,481,886	453,816	474,688	7,014	5,986	28,245	26,114
Delaware	32,510	36,019	-9.7%	187	553	26,787	30,980	0	0	5,536	4,485
District of Columbia	929	823	13.0%	0	0	0	0	929	823	0	0
Florida	1,411,687	1,396,144	1.1%	1,334,487	1,302,951	69,181	84,478	611	703	7,408	8,012
Georgia	432,544	436,809	-1.0%	351,745	336,359	75,916	95,919	0	0	4,883	4,531
Maryland	113,908	99,960	14.0%	29,849	26,642	79,968	70,288	3,804	2,793	287	236
North Carolina	402,323	465,832	-14.0%	341,537	398,255	58,451	65,194	1,506	1,508	829	875
South Carolina	181,285	186,120	-2.6%	176,155	169,439	4,138	15,909	0	0	993	771
Virginia	359,769	348,317	3.3%	239,745	242,981	114,036	99,853	163	159	5,825	5,323
West Virginia	33,917	18,651	82.0%	6,094	4,705	25,339	12,064	0	0	2,484	1,881
East South Central	1,070,457	1,094,416	-2.2%	796,219	818,108	252,010	255,024	930	920	21,298	20,364
Alabama	440,870	446,421	-1.2%	185,031	190,930	246,231	246,708	0	0	9,608	8,783
Kentucky	111,679	136,522	-18.0%	105,150	127,460	5,692	8,169	0	0	837	893
Mississippi	404,776	379,340	6.7%	401,631	376,536	87	95	0	0	3,058	2,709
Tennessee	113,132	132,133	-14.0%	104,407	123,181	0	51	930	920	7,795	7,980
West South Central	3,174,679	2,863,514	11.0%	1,294,209	1,176,465	1,475,232	1,291,807	4,364	4,755	400,874	390,487
Arkansas	188,232	184,973	1.8%	180,167	176,450	6,709	6,981	426	437	930	1,105
Louisiana	527,985	515,085	2.5%	336,771	334,275	37,130	26,658	408	647	153,677	153,506
Oklahoma	361,639	290,767	24.0%	252,811	199,005	104,869	87,896	1	1	3,957	3,865
Texas	2,096,823	1,872,688	12.0%	524,460	466,734	1,326,524	1,170,273	3,529	3,670	242,309	232,011
Mountain	1,003,148	883,239	14.0%	795,928	696,158	192,413	173,047	2,270	2,223	12,536	11,810
Arizona	401,841	339,055	19.0%	282,480	238,735	118,779	99,747	582	574	0	0
Colorado	134,799	127,968	5.3%	113,708	106,665	19,907	20,080	14	19	1,170	1,204
Idaho	47,138	33,554	40.0%	34,166	21,640	12,190	11,215	170	166	611	534
Montana	10,315	7,746	33.0%	9,265	6,448	1,043	1,282	0	0	7	17
Nevada	180,100	186,318	-3.3%	167,450	169,306	8,331	13,834	267	256	4,053	2,922
New Mexico	120,856	90,587	33.0%	88,523	64,102	31,014	25,709	518	555	800	221
Utah	89,405	83,768	6.7%	86,091	79,177	1,140	1,176	719	653	1,455	2,762
Wyoming	18,694	14,242	31.0%	14,245	10,086	9	5	0	0	4,440	4,151
Pacific Contiguous	982,282	927,070	6.0%	398,570	355,060	509,403	495,752	10,302	10,379	64,007	65,880
California	680,050	694,753	-2.1%	209,418	220,115	402,638	403,833	9,126	9,672	58,868	61,133
Oregon	162,894	131,895	24.0%	92,367	69,741	69,745	61,571	165	187	617	396
Washington	139,338	100,423	39.0%	96,784	65,204	37,019	30,348	1,012	520	4,522	4,350
Pacific Noncontiguous	27,780	27,094	2.5%	27,509	26,791	0	0	1	1	270	302
Alaska	27,780	27,094	2.5%	27,509	26,791	0	0	1	1	270	302
Hawaii	0	0	--	0	0	0	0	0	0	0	0
U.S. Total	13,244,813	12,384,086	7.0%	6,820,807	6,376,041	5,766,811	5,364,050	49,069	48,658	608,127	595,337

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

Table 5.13. Consumption of Landfill Gas for Electricity Generation by State, by Sector, 2023 and 2022 (Million Cubic Feet)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
New England	11,098	10,882	2.0%	1,154	1,051	9,729	9,582	216	249	0	0
Connecticut	144	150	-3.8%	0	0	144	150	0	0	0	0
Maine	412	485	-15.0%	0	0	412	485	0	0	0	0
Massachusetts	2,163	2,546	-15.0%	0	0	2,163	2,546	0	0	0	0
New Hampshire	2,123	2,144	-1.0%	0	0	1,907	1,895	216	249	0	0
Rhode Island	4,907	4,288	14.0%	0	0	4,907	4,288	0	0	0	0
Vermont	1,350	1,269	6.4%	1,154	1,051	196	217	0	0	0	0
Middle Atlantic	31,876	33,397	-4.6%	0	0	30,364	32,235	351	401	1,160	760
New Jersey	3,926	4,139	-5.1%	0	0	3,902	4,080	24	59	0	0
New York	14,421	14,964	-3.6%	0	0	14,421	14,964	0	0	0	0
Pennsylvania	13,528	14,294	-5.4%	0	0	12,041	13,192	327	342	1,160	760
East North Central	42,136	49,981	-16.0%	5,868	8,104	35,814	41,394	243	275	211	208
Illinois	7,218	8,316	-13.0%	2,428	2,879	4,790	5,438	0	0	0	0
Indiana	4,744	6,491	-27.0%	3,440	5,225	1,304	1,266	0	0	0	0
Michigan	18,055	18,883	-4.4%	0	0	18,055	18,883	0	0	0	0
Ohio	3,342	7,937	-58.0%	0	0	3,342	7,937	0	0	0	0
Wisconsin	8,777	8,353	5.1%	0	0	8,324	7,870	243	275	211	208
West North Central	7,223	7,506	-3.8%	2,211	2,841	4,999	4,541	0	0	13	123
Iowa	2,221	2,108	5.3%	0	0	2,221	2,108	0	0	0	0
Kansas	1,453	1,357	7.1%	0	0	1,453	1,357	0	0	0	0
Minnesota	484	985	-51.0%	31	560	453	425	0	0	0	0
Missouri	1,360	1,333	2.0%	488	683	872	650	0	0	0	0
Nebraska	1,692	1,598	5.9%	1,692	1,598	0	0	0	0	0	0
North Dakota	0	0	--	0	0	0	0	0	0	0	0
South Dakota	13	123	-90.0%	0	0	0	0	0	0	13	123
South Atlantic	39,744	40,634	-2.2%	2,421	2,323	36,606	37,230	205	167	512	915
Delaware	1,284	1,461	-12.0%	0	0	1,160	1,312	0	0	124	149
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	8,133	8,694	-6.5%	723	933	7,410	7,760	0	0	0	0
Georgia	6,577	5,394	22.0%	0	0	6,558	5,343	0	0	19	51
Maryland	1,501	1,447	3.8%	0	0	1,499	1,447	2	0	0	0
North Carolina	7,945	8,622	-7.8%	0	0	7,945	8,622	0	0	0	0
South Carolina	2,083	2,301	-9.5%	1,699	1,389	15	196	0	0	369	715
Virginia	12,115	12,602	-3.9%	0	0	11,912	12,435	203	167	0	0
West Virginia	107	114	-6.1%	0	0	107	114	0	0	0	0
East South Central	4,288	5,222	-18.0%	1,955	2,187	2,333	3,035	0	0	0	0
Alabama	875	898	-2.5%	0	0	875	898	0	0	0	0
Kentucky	2,216	2,550	-13.0%	1,955	2,187	261	363	0	0	0	0
Mississippi	150	179	-16.0%	0	0	150	179	0	0	0	0
Tennessee	1,047	1,595	-34.0%	0	0	1,047	1,595	0	0	0	0
West South Central	5,046	7,512	-33.0%	0	0	5,046	7,512	0	0	0	0
Arkansas	614	1,087	-44.0%	0	0	614	1,087	0	0	0	0
Louisiana	0	0	--	0	0	0	0	0	0	0	0
Oklahoma	378	854	-56.0%	0	0	378	854	0	0	0	0
Texas	4,054	5,571	-27.0%	0	0	4,054	5,571	0	0	0	0
Mountain	6,974	6,665	4.6%	547	521	5,581	5,337	846	807	0	0
Arizona	427	412	3.7%	0	0	427	412	0	0	0	0
Colorado	891	1,033	-14.0%	0	0	891	1,033	0	0	0	0
Idaho	1,617	1,418	14.0%	397	329	630	520	590	569	0	0
Montana	150	192	-22.0%	150	192	0	0	0	0	0	0
Nevada	1,718	1,642	4.6%	0	0	1,718	1,642	0	0	0	0
New Mexico	0	347	-100.0%	0	0	0	347	0	0	0	0
Utah	2,171	1,622	34.0%	0	0	1,915	1,384	256	238	0	0
Wyoming	0	0	--	0	0	0	0	0	0	0	0
Pacific Contiguous	45,147	49,281	-8.4%	1,659	1,460	32,391	35,293	10,769	12,212	329	317
California	38,925	43,022	-9.5%	104	85	28,067	30,804	10,426	11,816	329	317
Oregon	5,248	5,353	-2.0%	1,555	1,374	3,350	3,582	343	396	0	0
Washington	974	907	7.5%	0	0	974	907	0	0	0	0
Pacific Noncontiguous	762	787	-3.2%	0	0	0	0	762	787	0	0
Alaska	762	787	-3.2%	0	0	0	0	762	787	0	0
Hawaii	0	0	--	0	0	0	0	0	0	0	0
U.S. Total	194,294	211,866	-8.3%	15,815	18,486	162,863	176,160	13,392	14,898	2,224	2,323

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

Table 5.14. Consumption of Biogenic Municipal Solid Waste for Electricity Generation by State, by Sector, 2023 and 2022 (Thousand Tons)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
New England	2,980,013	3,069,970	-2.9%	0	0	1,908,674	1,934,921	1,071,339	1,135,049	0	0
Connecticut	860,460	971,932	-11.0%	0	0	860,460	971,932	0	0	0	0
Maine	153,208	166,372	-7.9%	0	0	106,137	57,122	47,071	109,250	0	0
Massachusetts	1,856,682	1,827,699	1.6%	0	0	832,414	801,900	1,024,268	1,025,799	0	0
New Hampshire	109,663	103,967	5.5%	0	0	109,663	103,967	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	4,841,993	4,799,291	0.9%	0	0	2,031,713	1,921,316	2,810,280	2,877,975	0	0
New Jersey	1,266,075	1,206,951	4.9%	0	0	346,491	318,991	919,584	887,960	0	0
New York	1,737,122	1,794,844	-3.2%	0	0	303,946	282,065	1,433,176	1,512,779	0	0
Pennsylvania	1,838,796	1,797,496	2.3%	0	0	1,381,276	1,320,260	457,520	477,236	0	0
East North Central	162,756	166,463	-2.2%	35,569	37,584	0	0	127,187	128,879	0	0
Illinois	0	0	--	0	0	0	0	0	0	0	0
Indiana	16,411	17,163	-4.4%	0	0	0	0	16,411	17,163	0	0
Michigan	110,776	111,716	-0.8%	0	0	0	0	110,776	111,716	0	0
Ohio	0	0	--	0	0	0	0	0	0	0	0
Wisconsin	35,569	37,584	-5.4%	35,569	37,584	0	0	0	0	0	0
West North Central	474,670	464,470	2.2%	247,635	236,629	213,909	214,489	13,126	13,352	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	474,670	464,470	2.2%	247,635	236,629	213,909	214,489	13,126	13,352	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	4,615,485	5,054,505	-8.7%	0	0	2,465,758	2,799,708	2,149,727	2,254,797	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	3,113,542	3,459,828	-10.0%	0	0	1,957,695	2,296,823	1,155,847	1,163,005	0	0
Georgia	0	0	--	0	0	0	0	0	0	0	0
Maryland	508,063	502,885	1.0%	0	0	508,063	502,885	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	993,880	1,091,792	-9.0%	0	0	0	0	993,880	1,091,792	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	1,150	744	55.0%	0	0	0	0	1,150	744	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	1,150	744	55.0%	0	0	0	0	1,150	744	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	465,926	619,616	-25.0%	0	0	339,670	475,081	126,256	144,535	0	0
California	248,135	379,246	-35.0%	0	0	121,879	234,711	126,256	144,535	0	0
Oregon	71,939	96,917	-26.0%	0	0	71,939	96,917	0	0	0	0
Washington	145,852	143,453	1.7%	0	0	145,852	143,453	0	0	0	0
Pacific Noncontiguous	374,493	413,795	-9.5%	0	0	0	0	374,493	413,795	0	0
Alaska	0	0	--	0	0	0	0	0	0	0	0
Hawaii	374,493	413,795	-9.5%	0	0	0	0	374,493	413,795	0	0
U.S. Total	13,916,486	14,588,854	-4.6%	283,204	274,213	6,959,724	7,345,515	6,673,558	6,969,126	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.
Notes: See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923.
Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.
Source: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report.

Chapter 6

Fossil Fuel Stocks for Electricity Generation

Table 6.1. Stocks of Coal, Petroleum Liquids, and Petroleum Coke: Electric Power Sector, 2013 - 2023

	Electric Power Sector			Electric Utilities			Independent Power Producers		
Period	Coal (Thousand Tons)	Petroleum Liquids (Thousand Barrels)	Petroleum Coke (Thousand Tons)	Coal (Thousand Tons)	Petroleum Liquids (Thousand Barrels)	Petroleum Coke (Thousand Tons)	Coal (Thousand Tons)	Petroleum Liquids (Thousand Barrels)	Petroleum Coke (Thousand Tons)
End of Year Stocks									
2013	147,884	30,387	390	120,792	21,208	303	27,092	9,179	86
2014	151,548	32,322	827	116,684	21,304	686	34,864	11,018	142
2015	195,548	31,694	1,340	153,226	20,253	1,163	42,322	11,441	177
2016	162,009	30,593	845	130,885	19,767	603	31,124	10,827	241
2017	137,687	28,089	864	114,782	19,047	692	22,905	9,041	171
2018	102,793	25,977	539	84,728	16,553	521	18,065	9,423	19
2019	128,102	25,960	471	104,265	16,435	428	23,837	9,525	43
2020	131,431	26,063	298	107,965	15,941	273	23,466	10,123	25
2021	91,884	26,002	302	75,231	15,634	290	16,653	10,368	12
2022	88,861	22,812	318	74,917	14,204	297	13,943	8,608	21
2023	133,253	24,402	427	111,749	15,353	421	21,504	9,050	7
Year 2021, End of Month Stocks									
January	123,705	25,913	253	101,601	16,111	250	22,104	9,802	3
February	107,698	25,306	207	88,851	15,686	189	18,847	9,620	18
March	109,614	25,249	230	89,317	15,692	211	20,296	9,558	19
April	115,505	24,878	353	94,160	15,268	340	21,345	9,610	14
May	117,932	24,840	397	95,618	15,176	382	22,314	9,665	16
June	108,678	24,583	454	88,047	15,028	429	20,632	9,555	25
July	94,974	24,049	453	78,110	14,808	434	16,864	9,242	19
August	81,762	23,589	360	68,021	14,401	347	13,741	9,188	13
September	77,476	24,100	375	63,541	14,863	359	13,935	9,236	17
October	81,880	24,378	339	68,087	14,890	326	13,792	9,489	13
November	89,192	24,880	340	73,722	14,922	328	15,469	9,958	12
December	91,884	26,002	302	75,231	15,634	290	16,653	10,368	12
Year 2022, End of Month Stocks									
January	84,541	24,166	336	70,468	14,938	324	14,073	9,228	12
February	81,034	24,252	299	68,800	15,159	287	12,234	9,092	12
March	86,143	23,755	350	73,271	15,156	340	12,872	8,599	10
April	90,746	23,758	424	76,913	15,311	416	13,833	8,446	8
May	92,692	24,025	454	78,852	15,053	425	13,840	8,972	29
June	86,869	24,078	423	73,119	15,309	408	13,750	8,769	16
July	79,172	25,707	474	66,434	15,384	459	12,738	10,323	15
August	75,570	22,794	490	64,278	14,882	479	11,292	7,912	11
September	79,354	22,484	405	67,442	14,704	397	11,912	7,780	8
October	87,342	22,771	351	73,276	14,779	344	14,066	7,992	7
November	93,203	23,678	408	78,597	14,925	393	14,605	8,753	15
December	88,861	22,812	318	74,917	14,204	297	13,943	8,608	21
Year 2023, End of Month Stocks									
January	92,714	24,410	385	77,005	15,167	360	15,709	9,243	25
February	99,760	24,622	380	82,205	15,413	355	17,554	9,209	24
March	109,041	24,059	534	89,836	15,370	505	19,205	8,689	29
April	119,671	24,068	644	98,769	15,363	598	20,902	8,704	46
May	128,001	23,882	600	105,833	15,175	591	22,168	8,708	9
June	129,404	24,066	533	106,626	15,299	525	22,778	8,767	8
July	123,131	24,065	440	101,818	15,422	434	21,313	8,643	6
August	118,113	23,416	356	97,973	15,018	348	20,140	8,398	8
September	118,271	23,469	279	98,243	15,117	273	20,027	8,352	6
October	123,265	23,257	284	102,672	14,998	279	20,593	8,258	5
November	131,208	23,335	369	109,778	14,910	356	21,430	8,425	13
December	133,253	24,402	427	111,749	15,353	421	21,504	9,050	7

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

Table 6.2 Stocks of Coal, Petroleum Liquids, and Petroleum Coke: Electric Power Sector, by State, 2023 and 2022

Census Division and State	Coal (Thousand Tons)			Petroleum Liquids (Thousand Barrels)			Petroleum Coke (Thousand Tons)		
	December 2023	December 2022	Percentage Change	December 2023	December 2022	Percentage Change	December 2023	December 2022	Percentage Change
New England	W	W	W	2,315	1,985	16.6%	0	0	--
Connecticut	0	0	--	644	825	-21.9%	0	0	--
Maine	0	0	--	294	182	61.9%	0	0	--
Massachusetts	0	0	--	986	648	52.1%	0	0	--
New Hampshire	W	W	W	235	190	23.3%	0	0	--
Rhode Island	0	0	--	126	114	10.4%	0	0	--
Vermont	0	0	--	29	NM	NM	0	0	--
Middle Atlantic	2,627	2,587	1.6%	5,047	4,336	16.4%	0	0	--
New Jersey	0	0	--	520	477	9.1%	0	0	--
New York	0	0	--	3,165	2,628	20.4%	0	0	--
Pennsylvania	2,627	2,587	1.6%	1,361	1,231	10.5%	0	0	--
East North Central	27,100	17,206	57.5%	1,040	1,555	-33.1%	W	53	W
Illinois	5,591	2,990	87.0%	102	NM	NM	0	0	--
Indiana	9,574	6,728	42.3%	110	187	-41.2%	0	0	--
Michigan	3,730	3,109	20.0%	190	187	1.7%	W	W	W
Ohio	4,122	1,728	138.5%	428	348	23.0%	0	W	W
Wisconsin	4,083	2,652	54.0%	210	763	-72.4%	W	W	W
West North Central	27,153	17,704	53.4%	1,178	1,615	-27.1%	0	0	--
Iowa	5,094	3,584	42.1%	94	NM	NM	0	0	--
Kansas	5,151	3,254	58.3%	206	198	3.7%	0	0	--
Minnesota	2,879	2,283	26.1%	117	765	-84.7%	0	0	--
Missouri	8,458	4,406	92.0%	569	339	68.1%	0	0	--
Nebraska	3,556	2,555	39.2%	91	NM	NM	0	0	--
North Dakota	W	W	W	36	NM	NM	0	0	--
South Dakota	W	W	W	64	NM	NM	0	0	--
South Atlantic	21,391	14,698	45.5%	9,578	8,208	16.7%	W	W	W
Delaware	W	W	W	518	446	16.3%	0	0	--
District of Columbia	0	0	--	0	0	--	0	0	--
Florida	1,996	1,385	44.1%	3,846	3,496	10.0%	W	W	W
Georgia	W	W	W	1,211	951	27.3%	0	0	--
Maryland	799	567	40.8%	641	565	13.5%	0	0	--
North Carolina	3,654	3,591	1.8%	1,144	866	32.1%	0	0	--
South Carolina	2,578	W	W	574	522	10.0%	0	0	--
Virginia	W	W	W	1,491	1,240	20.3%	0	0	--
West Virginia	6,852	4,289	59.8%	153	123	24.5%	W	W	W
East South Central	13,032	9,197	41.7%	1,099	901	22.0%	0	0	--
Alabama	4,180	W	W	258	221	16.5%	0	0	--
Kentucky	6,731	5,070	32.8%	278	204	35.9%	0	0	--
Mississippi	W	W	W	4	NM	NM	0	0	--
Tennessee	W	2,124	W	559	470	19.0%	0	0	--
West South Central	26,728	15,756	69.6%	2,164	2,139	1.1%	W	W	W
Arkansas	4,679	3,564	31.3%	165	163	1.3%	0	0	--
Louisiana	3,563	1,835	94.2%	185	201	-8.2%	W	W	W
Oklahoma	5,042	2,446	106.1%	38	40	-5.0%	0	0	--
Texas	13,444	7,912	69.9%	1,776	1,736	2.3%	0	0	--
Mountain	W	W	W	330	320	3.2%	W	W	W
Arizona	3,585	2,387	50.1%	126	114	10.2%	0	0	--
Colorado	3,566	1,903	87.4%	117	109	7.6%	0	0	--
Idaho	0	0	--	0	0	-42.8%	0	0	--
Montana	W	W	W	12	NM	NM	W	W	W
Nevada	W	W	W	3	3	6.2%	0	0	--
New Mexico	0	0	--	5	NM	NM	0	0	--
Utah	2,438	2,512	-2.9%	28	37	-25.6%	0	0	--
Wyoming	W	2,968	W	39	30	27.2%	0	0	--
Pacific Contiguous	W	W	W	351	338	3.9%	0	0	--
California	0	0	--	173	177	-2.2%	0	0	--
Oregon	0	0	--	72	72	0.0%	0	0	--
Washington	W	W	W	107	NM	NM	0	0	--
Pacific Noncontiguous	W	W	W	1,301	1,414	-8.0%	0	0	--
Alaska	W	W	W	62	NM	NM	0	0	--
Hawaii	0	0	--	1,240	1,262	-1.8%	0	0	--
U.S. Total	133,253	88,861	50.0%	24,402	22,812	7.0%	427	318	34.2%

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

Table 6.3 Stocks of Coal, Petroleum Liquids, and Petroleum Coke: Electric Power Sector, by Census Divison, 2023 and 2022

	Electric Power Sector			Electric Utilities		Independent Power Producers	
Census Division	December 2023	December 2022	Percentage Change	December 2023	December 2022	December 2023	December 2022
Coal (Thousand Tons)							
New England	W	W	W	0	0	W	W
Middle Atlantic	2,627	2,587	1.6%	W	W	W	W
East North Central	27,100	17,206	57.5%	18,108	W	8,992	W
West North Central	27,153	17,704	53.4%	27,153	17,704	0	0
South Atlantic	21,391	14,698	45.5%	20,080	13,452	1,311	1,246
East South Central	13,032	9,197	41.7%	13,032	9,197	0	0
West South Central	26,728	15,756	69.6%	19,496	11,707	7,232	4,050
Mountain	W	W	W	W	W	W	W
Pacific Contiguous	W	W	W	0	0	W	W
Pacific Noncontiguous	W	W	W	W	W	W	W
U.S. Total	**133,253**	**88,861**	**50.0%**	**111,749**	**74,917**	**21,504**	**13,943**
Petroleum Liquids (Thousand Barrels)							
New England	2,315	1,985	16.6%	255	190	2,060	1,795
Middle Atlantic	5,047	4,336	16.4%	2,085	1,689	2,962	2,647
East North Central	1,040	1,555	-33.1%	687	1,172	353	383
West North Central	1,178	1,615	-27.1%	1,150	935	27	680
South Atlantic	9,578	8,208	16.7%	7,348	6,448	2,230	1,759
East South Central	1,099	901	22.0%	1,060	862	39	39
West South Central	2,164	2,139	1.1%	919	972	1,244	1,167
Mountain	330	320	3.2%	305	296	24	23
Pacific Contiguous	351	338	3.9%	270	255	81	83
Pacific Noncontiguous	1,301	1,414	-8.0%	1,273	1,383	29	31
U.S. Total	**24,402**	**22,812**	**7.0%**	**15,353**	**14,204**	**9,050**	**8,608**
Petroleum Coke (Thousand Tons)							
New England	0	0	--	0	0	0	0
Middle Atlantic	0	0	--	0	0	0	0
East North Central	W	53	W	W	W	0	W
West North Central	0	0	--	0	0	0	0
South Atlantic	W	W	W	W	W	W	W
East South Central	0	0	--	0	0	0	0
West South Central	W	W	W	W	W	0	0
Mountain	W	W	W	0	0	W	W
Pacific Contiguous	0	0	--	0	0	0	0
Pacific Noncontiguous	0	0	--	0	0	0	0
U.S. Total	**427**	**318**	**34.2%**	**421**	**297**	**7**	**21**

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

Table 6.4. Stocks of Coal by Coal Rank: Electric Power Sector, 2013 - 2023
(Thousand Tons)

	Electric Power Sector			
Period	Bituminous Coal	Subbituminous Coal	Lignite Coal	Total
End of Year Stocks				
2013	73,113	69,720	5,051	147,884
2014	72,771	72,552	6,225	151,548
2015	82,004	108,614	4,931	195,548
2016	67,241	90,376	4,393	162,009
2017	56,140	77,875	3,672	137,687
2018	41,507	58,247	3,039	102,793
2019	54,769	69,942	3,124	128,102
2020	50,649	77,033	3,556	131,431
2021	34,560	54,726	2,598	91,884
2022	35,194	50,704	2,956	88,861
2023	46,574	83,013	3,439	133,253
Year 2021, End of Month Stocks				
January	47,703	73,083	2,778	123,705
February	41,919	62,968	2,701	107,698
March	41,984	64,597	2,885	109,614
April	44,213	68,094	3,028	115,505
May	44,529	69,949	3,230	117,932
June	40,652	64,802	2,999	108,678
July	35,174	56,830	2,782	94,974
August	30,154	48,768	2,684	81,762
September	28,442	46,257	2,776	77,476
October	31,560	47,364	2,956	81,880
November	34,389	51,524	3,279	89,192
December	34,560	54,726	2,598	91,884
Year 2022, End of Month Stocks				
January	30,697	51,157	2,686	84,541
February	29,288	49,029	2,717	81,034
March	31,687	51,304	3,152	86,143
April	33,868	53,609	3,269	90,746
May	33,202	56,289	3,191	92,692
June	30,392	53,338	3,129	86,869
July	28,769	47,358	3,040	79,172
August	28,730	44,005	2,826	75,570
September	30,766	45,802	2,776	79,354
October	34,061	50,366	2,905	87,342
November	35,998	54,329	2,867	93,203
December	35,194	50,704	2,956	88,861
Year 2023, End of Month Stocks				
January	37,880	51,812	3,014	92,714
February	40,066	56,667	3,022	99,760
March	41,614	64,432	2,991	109,041
April	43,353	72,772	3,330	119,671
May	46,598	77,685	3,500	128,001
June	47,911	77,671	3,601	129,404
July	44,256	75,155	3,499	123,131
August	42,345	72,129	3,424	118,113
September	42,659	72,147	3,247	118,271
October	44,914	74,948	3,184	123,265
November	46,999	80,588	3,393	131,208
December	46,574	83,013	3,439	133,253

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

Chapter 7

Receipts, Cost, and Quality of Fossil Fuels

Table 7.1. Receipts, Average Cost, and Quality of Fossil Fuels for the Electric Power Industry, 2013 through 2023

	Coal				Petroleum				Natural Gas		All Fossil Fuels
			Average Cost				Average Cost			Average Cost	Average Cost
Period	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	(Dollars per MMBtu)	(Dollars per Ton)	Receipts (Thousand Barrels)	Average Sulfur Percent by Weight	(Dollars per MMBtu)	(Dollars per Barrel)	Receipts (Thousand Mcf)	(Dollars per MMBtu)	(Dollars per MMBtu)
2013	823,222	1.29	2.34	45.33	43,714	3.54	11.57	68.09	8,503,424	4.33	3.09
2014	854,560	1.32	2.37	45.96	54,488	3.56	11.60	68.12	8,431,423	5.00	3.31
2015	782,929	1.29	2.22	42.86	48,804	3.38	6.74	39.51	9,842,581	3.23	2.65
2016	650,770	1.34	2.11	40.64	37,637	3.69	5.24	30.46	10,271,180	2.87	2.47
2017	642,364	1.28	2.06	39.27	32,672	3.59	7.10	41.23	9,628,733	3.37	2.65
2018	596,215	1.31	2.06	39.25	37,341	3.31	9.68	56.82	10,894,849	3.55	2.83
2019	560,153	1.31	2.02	38.70	24,556	3.03	9.07	53.55	11,704,743	2.88	2.50
2020	439,636	1.28	1.92	36.36	24,846	3.45	5.98	34.92	11,981,552	2.40	2.22
2021	461,477	1.30	1.98	37.48	27,783	3.11	10.08	58.93	11,578,254	5.20	3.82
2022	469,718	1.28	2.36	44.69	30,792	2.91	16.53	97.42	12,436,074	7.21	5.22
2023	431,375	1.23	2.51	47.23	25,590	2.44	15.98	94.80	13,237,380	3.36	3.12

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

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

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

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

Table 7.2. Receipts and Quality of Coal Delivered for the Electric Power Industry, 2013 through 2023

	Bituminous			Subbituminous			Lignite		
Period	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight
2013	312,821	2.33	10.5	429,283	0.32	5.8	71,191	0.92	14.3
2014	334,082	2.34	10.3	440,013	0.31	5.8	71,534	0.90	14.1
2015	289,093	2.40	10.4	421,127	0.32	5.8	65,826	0.89	14.1
2016	245,141	2.43	10.3	333,241	0.31	5.8	64,426	0.91	14.0
2017	224,500	2.45	10.3	350,580	0.31	5.6	59,665	0.96	14.0
2018	205,783	2.55	10.1	329,974	0.31	5.7	52,438	0.91	13.4
2019	198,016	2.52	10.0	309,029	0.32	5.7	46,781	0.90	13.3
2020	144,966	2.57	10.3	245,158	0.32	5.8	43,862	0.86	13.1
2021	149,031	2.66	10.3	262,770	0.31	5.6	43,018	0.86	13.3
2022	148,785	2.64	10.2	271,258	0.32	5.8	41,887	0.89	13.5
2023	133,921	2.59	10.4	253,550	0.30	5.4	37,150	0.84	12.7

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

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

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

Table 7.3. Average Quality of Fossil Fuel Receipts for the Electric Power Industry, 2013 through 2023

	Coal			Petroleum			Natural Gas
Period	Average Btu per Pound	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Average Btu per Gallon	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Average Btu per Cubic Foot
2013	9,661	1.29	8.7	139,671	3.54	0.5	1,026
2014	9,710	1.32	8.6	139,713	3.56	0.5	1,029
2015	9,634	1.29	8.6	139,681	3.38	0.5	1,034
2016	9,617	1.34	8.7	138,384	3.69	0.5	1,034
2017	9,544	1.28	8.4	138,324	3.59	0.4	1,034
2018	9,536	1.31	8.3	139,762	3.31	0.3	1,033
2019	9,592	1.31	8.3	140,549	3.03	0.3	1,034
2020	9,473	1.28	8.4	138,976	3.45	0.3	1,033
2021	9,485	1.30	8.3	139,137	3.11	0.3	1,034
2022	9,448	1.28	8.4	140,441	2.91	0.4	1,033
2023	9,403	1.23	8.1	141,246	2.44	0.4	1,033

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NM = Not meaningful due to large relative standard error or excessive percentage change.
W = Withheld to avoid disclosure of individual company data.

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

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

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

Table 7.4. Weighted Average Cost of Fossil Fuels for the Electric Power Industry, 2013 through 2023

	Coal								Petroleum		Natural Gas		Total Fossil	
	Bituminous		Subbituminous		Lignite		All Coal Ranks							
Period	Receipts (Trillion Btu)	Average Cost (Dollars per MMBtu)	Receipts (Trillion Btu)	Average Cost (Dollars per MMBtu)	Receipts (Trillion Btu)	Average Cost (Dollars per MMBtu)	Receipts (Trillion Btu)	Average Cost (Dollars per MMBtu)	Receipts (Trillion Btu)	Average Cost (Dollars per MMBtu)	Receipts (Trillion Btu)	Average Cost (Dollars per MMBtu)	Receipts (Trillion Btu)	Average Cost (Dollars per MMBtu)
2013	7,351	2.77	7,511	2.00	927	1.78	15,907	2.34	256	11.57	8,721	4.33	24,884	3.09
2014	7,883	2.74	7,681	2.06	934	1.77	16,595	2.37	320	11.60	8,679	5.00	25,594	3.31
2015	6,797	2.58	7,353	1.94	855	1.92	15,086	2.22	286	6.74	10,174	3.23	25,546	2.65
2016	5,770	2.40	5,818	1.89	840	1.74	12,516	2.11	219	5.24	10,619	2.87	23,354	2.47
2017	5,279	2.31	6,123	1.90	773	1.66	12,261	2.06	190	7.10	9,952	3.37	22,403	2.65
2018	4,838	2.31	5,765	1.90	677	1.71	11,371	2.06	219	9.68	11,254	3.55	22,844	2.83
2019	4,670	2.26	5,401	1.86	601	1.68	10,746	2.02	145	9.07	12,105	2.89	22,996	2.50
2020	3,399	2.11	4,300	1.78	566	1.90	8,329	1.92	145	5.98	12,381	2.40	20,855	2.22
2021	3,513	2.13	4,610	1.85	553	2.09	8,754	1.98	162	10.08	11,967	5.20	20,883	3.82
2022	3,499	2.74	4,748	2.17	538	1.78	8,876	2.36	182	16.53	12,840	7.21	21,898	5.22
2023	3,130	3.15	4,428	2.15	481	1.79	8,112	2.51	152	15.98	13,669	3.36	21,934	3.12

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NM = Not meaningful due to large relative standard error or excessive percentage change.
W = Withheld to avoid disclosure of individual company data.

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

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

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

Table 7.5. Receipts, Average Cost, and Quality of Fossil Fuels: Electric Utilities, 2013 - 2023

	Coal						Petroleum Liquids					
	Receipts		Average Cost				Receipts		Average Cost			
Period	(Billion Btu)	(Thousand Tons)	(Dollars per MMBtu)	(Dollars per Ton)	Average Sulfur Percent by Weight	Percentage of Consumption	(Billion Btu)	(Thousand Barrels)	(Dollars per MMBtu)	(Dollars per Barrel)	Average Sulfur Percent by Weight	Percentage of Consumption
Annual Totals												
2013	11,595,328	592,772	2.38	46.51	1.23	92.9	78,101	12,814	21.09	128.57	0.43	76.2
2014	12,064,810	614,728	2.39	46.95	1.21	98.3	98,357	16,161	19.90	121.14	0.44	82.0
2015	11,088,631	571,707	2.25	43.71	1.17	105.8	90,041	14,747	11.32	69.13	0.46	79.2
2016	9,256,878	476,207	2.16	42.01	1.21	95.4	73,294	11,985	9.16	56.02	0.45	74.0
2017	9,011,629	467,595	2.12	40.81	1.16	96.0	70,422	11,640	11.60	70.19	0.47	74.4
2018	8,351,036	435,964	2.11	40.35	1.18	91.6	84,050	13,896	14.39	87.09	0.37	75.3
2019	7,970,069	413,915	2.08	39.99	1.18	103.1	66,789	11,010	13.40	81.29	0.46	69.9
2020	6,256,811	327,488	1.96	37.49	1.15	100.2	56,530	9,371	9.84	59.37	0.47	67.1
2021	6,448,846	338,205	2.03	38.68	1.14	90.2	69,111	11,468	14.53	87.56	0.47	67.7
2022	6,594,794	346,120	2.41	45.96	1.15	98.4	73,400	12,131	24.43	147.80	0.48	65.6
2023	6,224,613	326,208	2.56	48.88	1.15	111.5	78,893	13,023	20.48	124.06	0.46	79.3
Year 2021												
January	524,855	27,416	1.97	37.77	1.16	82.1	6,079	994	10.94	66.90	0.47	72.1
February	432,895	22,506	1.97	37.91	1.23	61.9	7,142	1,193	12.72	76.15	0.47	51.4
March	502,746	26,282	1.95	37.28	1.17	101.8	5,440	894	13.23	80.48	0.48	75.6
April	506,346	26,292	1.94	37.28	1.20	116.4	4,447	734	13.61	82.52	0.47	61.4
May	539,795	28,011	1.95	37.57	1.17	103.3	4,906	816	13.99	84.17	0.47	67.6
June	571,750	29,803	2.01	38.49	1.18	82.0	5,792	961	14.57	87.79	0.47	74.3
July	597,304	31,627	2.07	39.08	1.08	74.7	5,254	879	15.06	90.05	0.53	70.5
August	603,863	31,668	2.12	40.51	1.16	74.3	5,319	886	15.30	91.91	0.44	50.4
September	556,784	29,410	2.07	39.21	1.08	87.1	8,318	1,359	14.50	88.77	0.46	96.9
October	533,631	28,034	2.08	39.62	1.13	108.5	5,386	893	16.27	98.09	0.44	67.5
November	535,618	28,455	2.06	38.79	1.07	120.4	5,026	845	17.72	105.34	0.48	66.8
December	543,259	28,701	2.11	39.93	1.08	114.3	6,002	1,013	17.21	101.92	0.47	74.8
Year 2022												
January	546,113	29,056	2.24	42.12	1.06	81.3	6,596	1,103	17.23	103.03	0.46	46.9
February	500,644	26,344	2.19	41.69	1.05	91.5	6,361	1,045	18.65	113.52	0.48	83.4
March	537,576	28,123	2.18	41.71	1.14	115.4	5,580	926	22.53	135.80	0.49	70.7
April	486,354	25,278	2.24	43.02	1.17	113.7	5,684	934	26.28	159.85	0.48	84.8
May	552,474	28,904	2.29	43.87	1.16	108.7	4,509	747	28.14	169.81	0.48	58.4
June	537,295	28,300	2.35	44.64	1.14	88.2	7,089	1,166	28.58	173.77	0.48	90.3
July	557,748	29,313	2.47	47.07	1.18	76.9	6,739	1,115	28.96	175.11	0.48	80.8
August	627,619	32,918	2.53	48.27	1.19	90.2	5,736	947	26.06	157.81	0.47	72.6
September	599,306	31,443	2.60	49.50	1.17	110.8	5,857	966	24.83	150.60	0.48	71.8
October	579,715	30,502	2.53	48.08	1.16	129.7	6,272	1,028	23.81	145.25	0.48	74.8
November	542,727	28,448	2.55	48.63	1.14	121.1	5,760	953	26.15	158.05	0.46	70.9
December	527,223	27,491	2.69	51.67	1.22	86.5	7,217	1,202	23.01	138.22	0.48	38.2
Year 2023												
January	559,118	29,346	2.65	50.44	1.13	106.6	11,620	1,944	22.15	132.38	0.47	133.2
February	477,280	25,125	2.67	50.72	1.17	125.0	6,931	1,155	22.13	132.74	0.48	73.8
March	549,894	28,881	2.53	48.18	1.19	135.3	5,960	986	20.64	124.72	0.48	75.3
April	481,181	25,153	2.51	47.98	1.16	154.9	5,523	905	19.34	117.99	0.47	71.5
May	486,120	25,332	2.54	48.84	1.14	135.6	6,074	1,006	18.86	113.90	0.48	74.2
June	504,353	26,328	2.50	47.98	1.16	100.4	6,134	1,010	17.52	106.44	0.47	73.5
July	552,719	29,116	2.53	48.00	1.13	83.9	7,002	1,138	17.18	105.70	0.44	86.0
August	583,320	30,491	2.55	48.69	1.14	89.2	4,863	797	19.97	121.81	0.47	55.0
September	517,934	27,065	2.59	49.49	1.12	102.8	6,073	992	22.75	139.30	0.43	77.5
October	504,437	26,340	2.58	49.51	1.14	119.1	5,203	855	22.31	135.80	0.40	63.0
November	509,063	26,715	2.57	48.89	1.14	125.8	5,628	932	21.72	131.14	0.43	70.7
December	499,194	26,316	2.52	47.89	1.17	109.9	7,883	1,303	20.21	122.26	0.45	95.1

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

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

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

Table 7.6. Receipts, Average Cost, and Quality of Fossil Fuels: Electric Utilities, 2013 - 2023 (continued)

	Petroleum Coke						Natural Gas					All Fossil Fuels
	Receipts		Average Cost				Receipts		Average Cost			Average Cost
Period	(Billion Btu)	(Thousand Tons)	(Dollars per MMbtu)	(Dollars per Ton)	Average Sulfur Percent by Weight	Percentage of Consumption	(Billion Btu)	(Thousand Mcf)	(Dollars per MMBtu)	(Dollars per Mcf)	Percentage of Consumption	(Dollars per MMBtu)
Annual Totals												
2013	99,088	3,463	2.11	60.30	5.34	101.6	3,939,408	3,851,241	4.49	4.59	97.0	2.99
2014	123,793	4,349	1.89	53.77	5.56	126.3	3,876,549	3,772,596	5.17	5.31	96.7	3.16
2015	115,929	4,069	1.77	50.44	5.23	130.1	4,717,748	4,565,040	3.52	3.64	96.0	2.67
2016	99,706	3,538	1.52	42.85	5.38	103.1	5,075,337	4,907,538	3.15	3.26	97.0	2.54
2017	90,481	3,224	2.15	60.31	5.55	117.6	4,794,383	4,640,827	3.62	3.74	96.8	2.68
2018	83,211	2,940	2.56	72.34	5.74	106.8	5,562,903	5,388,544	3.68	3.80	96.2	2.80
2019	54,266	1,896	1.92	54.88	5.50	91.0	6,038,432	5,842,392	3.03	3.13	97.0	2.53
2020	65,684	2,317	1.70	48.07	5.39	101.8	6,207,039	6,011,244	2.63	2.72	96.3	2.32
2021	64,891	2,296	3.16	89.27	5.24	98.0	5,901,472	5,713,855	5.21	5.39	96.4	3.60
2022	64,607	2,283	4.35	122.99	5.52	99.5	6,393,812	6,200,191	7.49	7.73	96.5	5.01
2023	40,716	1,450	4.05	113.73	5.61	108.5	6,803,788	6,596,937	3.81	3.92	96.1	3.32
Year 2021												
January	5,427	190	2.59	73.95	5.38	89.7	457,380	442,433	3.42	3.54	97.1	2.70
February	4,645	164	2.33	66.18	5.37	73.1	404,863	391,435	14.95	15.47	95.9	8.23
March	6,956	247	2.56	72.10	5.28	121.1	400,289	387,315	3.68	3.80	96.6	2.77
April	5,749	206	2.88	80.22	5.16	192.7	412,575	399,946	3.34	3.44	97.1	2.62
May	5,309	185	2.73	78.46	5.43	124.6	442,080	428,517	3.56	3.67	98.1	2.73
June	5,260	184	3.34	95.30	5.13	123.9	575,255	556,914	3.74	3.86	96.0	2.93
July	6,204	219	3.35	94.94	5.15	99.3	655,484	633,900	4.24	4.38	96.2	3.25
August	4,179	147	3.21	91.15	5.43	60.1	656,574	635,636	4.57	4.72	96.0	3.44
September	5,608	203	3.62	100.04	4.77	106.5	508,326	492,286	5.17	5.33	96.0	3.63
October	4,814	170	3.03	85.94	5.27	83.5	478,144	463,507	5.96	6.14	97.1	3.96
November	6,105	218	4.34	121.62	5.04	84.6	451,553	437,703	6.12	6.31	96.0	3.98
December	4,634	163	3.89	110.86	5.60	89.1	458,949	444,263	5.57	5.76	95.6	3.77
Year 2022												
January	5,343	189	4.32	122.16	5.11	112.6	503,615	487,628	7.15	7.39	96.7	4.67
February	4,050	141	4.24	121.53	5.80	75.1	414,806	402,121	6.13	6.32	96.1	4.08
March	5,791	205	4.84	136.40	5.31	142.5	408,255	396,288	5.28	5.43	96.4	3.63
April	6,637	235	4.80	135.31	5.57	150.6	395,234	383,835	6.25	6.44	97.3	4.17
May	5,992	212	4.97	140.62	5.48	99.1	494,026	479,966	7.53	7.75	97.5	4.86
June	4,887	173	4.50	126.93	5.51	76.9	621,160	603,483	8.29	8.53	96.3	5.66
July	5,781	205	4.65	131.34	5.54	115.1	749,263	727,668	7.75	7.98	96.1	5.61
August	6,465	228	5.02	142.06	5.62	127.5	723,303	700,993	9.35	9.65	96.4	6.25
September	3,818	134	2.32	66.08	5.74	63.7	579,405	560,966	8.53	8.81	96.2	5.58
October	4,060	144	3.35	94.31	5.74	74.8	493,094	478,019	6.19	6.38	96.6	4.31
November	6,485	229	3.84	108.96	5.53	124.4	482,176	467,566	6.05	6.24	96.6	4.31
December	5,298	187	4.19	118.73	5.50	73.4	529,475	511,657	9.05	9.36	96.7	5.97
Year 2023												
January	4,871	176	4.54	126.02	5.67	151.3	509,603	492,284	8.55	8.85	95.8	5.62
February	3,886	136	4.80	136.95	5.62	125.8	447,571	433,509	4.89	5.05	95.0	3.88
March	4,905	172	4.66	132.76	5.71	228.6	493,900	478,430	3.76	3.88	95.2	3.22
April	4,768	168	4.70	133.61	5.72	218.3	460,793	447,538	3.05	3.14	96.4	2.88
May	1,985	72	3.14	86.86	5.76	94.2	543,700	528,159	2.86	2.94	96.9	2.81
June	1,853	66	3.48	98.25	5.77	61.3	627,911	609,220	2.92	3.01	96.2	2.81
July	2,787	100	3.62	101.16	5.45	50.5	767,356	743,822	3.26	3.36	95.7	3.03
August	2,311	84	3.39	93.79	5.73	42.4	781,288	757,734	3.30	3.40	96.0	3.04
September	3,289	118	3.76	104.81	5.48	67.3	618,399	600,954	3.28	3.38	96.3	3.07
October	2,404	86	3.84	107.56	5.50	112.5	528,905	513,656	3.32	3.41	96.7	3.06
November	3,097	111	3.60	100.64	5.35	228.6	488,206	473,567	3.79	3.91	96.4	3.27
December	4,559	163	3.39	94.99	5.53	199.5	536,155	518,063	3.73	3.86	96.2	3.27

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

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Table 7.7 Receipts, Average Cost, and Quality of Fossil Fuels: Independent Power Producers, 2013 - 2023

	Coal						Petroleum Liquids					
	Receipts		Average Cost				Receipts		Average Cost			
Period	(Billion Btu)	(Thousand Tons)	(Dollars per MMBtu)	(Dollars per Ton)	Average Sulfur Percent by Weight	Percentage of Consumption	(Billion Btu)	(Thousand Barrels)	(Dollars per MMBtu)	(Dollars per Barrel)	Average Sulfur Percent by Weight	Percentage of Consumption
Annual Totals												
2013	4,032,431	217,572	2.20	40.95	1.48	99.1	43,432	7,205	19.71	118.88	0.45	110.1
2014	4,243,949	226,600	2.25	42.20	1.61	100.1	71,774	11,980	19.90	119.36	0.45	101.0
2015	3,731,508	198,982	2.10	39.39	1.66	100.5	55,248	9,189	11.69	70.36	0.46	86.5
2016	3,047,358	164,648	1.93	35.69	1.73	91.8	25,975	4,410	9.93	58.56	0.48	75.1
2017	3,056,215	165,567	1.85	34.19	1.64	93.1	24,704	4,190	12.67	74.73	0.46	73.8
2018	2,849,062	152,015	1.89	35.41	1.70	94.2	47,699	8,022	14.52	86.39	0.44	81.7
2019	2,629,405	139,141	1.81	34.16	1.74	101.6	20,188	3,425	14.40	84.89	0.50	73.0
2020	1,937,714	105,627	1.74	31.92	1.72	97.1	18,954	3,216	9.44	55.61	0.49	88.7
2021	2,163,331	116,480	1.79	33.35	1.79	92.0	25,972	4,447	15.38	89.84	0.47	101.6
2022	2,142,472	116,864	2.19	40.16	1.69	96.4	41,066	6,827	22.83	137.45	0.39	69.1
2023	1,763,719	98,990	2.28	40.63	1.52	104.7	29,337	4,849	20.59	124.91	0.36	105.8
Year 2021												
January	185,620	9,964	1.67	31.08	1.80	84.3	1,993	340	11.82	69.33	0.60	106.2
February	154,531	8,265	1.77	33.10	1.84	71.5	2,100	361	11.10	64.65	0.63	54.2
March	176,736	9,439	1.70	31.96	1.81	108.5	1,737	297	13.80	80.67	0.55	109.2
April	158,802	8,408	1.73	32.61	1.89	112.6	1,752	300	14.50	84.69	0.55	109.2
May	172,615	9,414	1.69	31.05	1.79	110.2	2,150	369	15.19	88.44	0.51	130.5
June	185,308	9,823	1.77	33.34	1.83	84.2	2,152	367	15.80	92.53	0.49	92.3
July	186,143	10,139	1.79	32.99	1.78	72.1	1,600	275	15.25	88.82	0.48	77.4
August	191,383	10,378	1.83	33.74	1.77	76.1	1,757	300	15.27	89.45	0.50	74.3
September	184,552	9,982	1.80	33.31	1.74	93.8	1,514	262	15.86	91.81	0.43	83.3
October	185,243	10,015	1.85	34.18	1.74	102.4	2,554	440	17.08	99.21	0.33	147.2
November	196,451	10,599	1.96	36.28	1.78	114.9	3,274	560	17.91	104.62	0.42	153.5
December	185,947	10,053	1.94	35.96	1.74	105.9	3,389	576	17.33	101.92	0.41	134.2
Year 2022												
January	190,059	10,391	2.06	37.66	1.62	79.5	8,892	1,482	18.48	111.05	0.39	51.8
February	169,787	9,274	2.07	37.95	1.56	82.2	4,566	762	18.20	109.02	0.36	96.9
March	191,644	10,240	2.04	38.27	1.72	101.2	1,540	252	22.72	138.89	0.45	63.0
April	175,332	9,448	1.99	37.03	1.86	107.7	1,498	247	27.01	163.98	0.48	89.1
May	170,813	9,355	2.01	36.76	1.87	107.8	1,250	205	28.43	173.23	0.48	73.6
June	170,764	9,296	2.20	40.47	1.83	95.7	1,651	275	30.73	185.03	0.41	72.6
July	188,956	10,384	2.45	44.55	1.71	90.8	1,756	293	30.58	183.42	0.47	48.7
August	189,136	10,350	2.41	44.15	1.63	86.5	2,286	381	27.18	162.89	0.47	67.6
September	175,484	9,589	2.16	39.62	1.72	106.1	2,185	358	23.44	143.49	0.41	98.3
October	185,852	10,141	2.18	40.02	1.67	126.2	2,848	471	23.30	140.86	0.35	112.5
November	164,764	9,127	2.20	39.71	1.49	101.3	3,910	654	26.55	158.67	0.37	194.2
December	169,882	9,269	2.47	45.38	1.65	91.6	8,682	1,447	19.92	119.50	0.33	55.5
Year 2023												
January	160,350	8,640	2.36	43.91	1.70	107.3	3,706	618	22.40	134.71	0.41	194.5
February	150,824	8,308	2.25	40.84	1.63	122.3	3,914	637	17.39	107.13	0.37	77.7
March	156,569	8,706	2.31	41.52	1.54	117.5	1,599	261	21.45	131.58	0.47	79.2
April	143,467	8,154	2.27	39.94	1.50	122.5	1,844	305	20.51	124.08	0.37	95.0
May	145,409	8,086	2.32	41.86	1.59	118.4	1,720	282	19.41	118.27	0.43	89.2
June	136,863	7,723	2.28	40.48	1.52	105.1	1,623	269	18.98	114.73	0.46	95.4
July	142,931	8,208	2.24	38.98	1.44	83.9	2,180	361	18.91	114.20	0.35	83.9
August	148,108	8,433	2.23	39.31	1.46	86.3	2,952	490	21.29	129.36	0.26	157.0
September	135,357	7,629	2.24	39.75	1.41	96.0	1,974	327	23.62	143.13	0.30	89.9
October	138,346	7,862	2.28	40.14	1.50	104.7	2,214	362	22.47	137.36	0.33	79.5
November	153,037	8,666	2.27	40.16	1.46	103.8	2,920	484	20.22	121.98	0.38	147.1
December	152,457	8,573	2.27	40.45	1.52	105.4	2,692	453	21.47	128.27	0.29	148.0

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

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Table 7.8. Receipts, Average Cost, and Quality of Fossil Fuels: Independent Power Producers, 2013 - 2023 (continued)

	Petroleum Coke						Natural Gas					All Fossil Fuels
	Receipts		Average Cost				Receipts		Average Cost			Average Cost
Period	(Billion Btu)	(Thousand Tons)	(Dollars per MMbtu)	(Dollars per Ton)	Average Sulfur Percent by Weight	Percentage of Consumption	(Billion Btu)	(Thousand Mcf)	(Dollars per MMBtu)	(Dollars per Mcf)	Percentage of Consumption	(Dollars per MMBtu)
Annual Totals												
2013	16,150	575	W	W	5.39	65.6	4,025,263	3,917,898	4.25	4.36	92.8	W
2014	13,781	488	2.48	70.31	5.33	70.9	4,054,540	3,934,672	4.90	5.05	92.7	3.52
2015	14,550	524	2.45	68.22	5.26	67.3	4,683,291	4,530,195	2.94	3.04	93.2	2.57
2016	13,573	492	2.50	68.88	5.44	69.9	4,791,729	4,634,518	2.54	2.63	94.0	2.29
2017	0	0	--	--	--	0.0	4,346,156	4,201,573	3.08	3.19	94.0	2.54
2018	0	0	--	--	--	0.0	4,889,212	4,727,692	3.40	3.52	94.6	2.84
2019	0	0	--	--	--	0.0	5,242,547	5,062,877	2.70	2.80	96.0	2.40
2020	0	0	--	--	--	0.0	5,359,545	5,178,938	2.10	2.17	96.1	2.01
2021	0	0	--	--	--	0.0	5,255,390	5,077,009	5.29	5.48	95.7	4.16
2022	0	0	--	--	--	--	5,602,375	5,414,698	6.95	7.20	95.5	5.50
2023	0	0	--	--	--	--	6,038,310	5,836,072	2.82	2.92	96.1	2.75
Year 2021												
January	0	0	--	--	--	0.0	404,229	390,207	2.97	3.08	95.6	2.54
February	0	0	--	--	--	0.0	370,876	357,402	20.68	21.46	95.0	14.35
March	0	0	--	--	--	0.0	336,016	324,135	2.83	2.93	95.0	2.44
April	0	0	--	--	--	0.0	342,406	330,947	2.72	2.82	94.7	2.41
May	0	0	--	--	--	0.0	368,697	356,493	2.86	2.96	94.6	2.49
June	0	0	--	--	--	0.0	513,031	496,348	3.26	3.37	97.9	2.83
July	0	0	--	--	--	0.0	569,314	550,203	3.87	4.00	94.9	3.29
August	0	0	--	--	--	0.0	595,029	575,225	4.26	4.41	95.8	3.59
September	0	0	--	--	--	0.0	470,580	454,842	4.91	5.08	95.6	3.92
October	0	0	--	--	--	0.0	456,780	441,354	5.36	5.55	95.7	4.27
November	0	0	--	--	--	0.0	406,881	392,716	5.34	5.54	95.2	4.18
December	0	0	--	--	--	0.0	421,552	407,135	5.90	6.11	98.3	4.61
Year 2022												
January	0	0	--	--	--	--	440,567	425,442	6.15	6.38	95.6	4.92
February	0	0	--	--	--	--	375,891	363,057	5.88	6.09	94.2	4.62
March	0	0	--	--	--	--	359,407	347,490	4.96	5.14	95.0	3.87
April	0	0	--	--	--	--	344,208	332,882	6.22	6.44	95.5	4.66
May	0	0	--	--	--	--	428,890	414,929	7.60	7.86	96.4	5.80
June	0	0	--	--	--	--	513,920	497,609	7.55	7.81	96.1	6.03
July	0	0	--	--	--	--	644,066	623,293	7.29	7.54	96.2	6.04
August	0	0	--	--	--	--	645,276	623,863	8.56	8.86	95.5	6.95
September	0	0	--	--	--	--	538,145	519,483	7.58	7.86	95.8	6.04
October	0	0	--	--	--	--	446,464	431,379	5.29	5.48	95.5	4.32
November	0	0	--	--	--	--	407,043	393,319	5.35	5.54	94.1	4.44
December	0	0	--	--	--	--	458,497	441,951	9.26	9.61	95.4	7.27
Year 2023												
January	0	0	--	--	--	--	446,640	430,815	5.37	5.57	96.0	4.57
February	0	0	--	--	--	--	407,924	394,009	3.92	4.06	96.3	3.50
March	0	0	--	--	--	--	428,537	414,070	2.95	3.06	95.6	2.81
April	0	0	--	--	--	--	393,827	380,548	2.28	2.36	95.7	2.35
May	0	0	--	--	--	--	444,722	430,350	2.12	2.19	97.1	2.23
June	0	0	--	--	--	--	542,599	524,807	2.17	2.24	96.5	2.24
July	0	0	--	--	--	--	691,161	668,245	2.67	2.76	96.1	2.63
August	0	0	--	--	--	--	677,647	655,199	2.46	2.55	96.3	2.48
September	0	0	--	--	--	--	571,702	553,460	2.35	2.43	96.5	2.39
October	0	0	--	--	--	--	483,231	467,338	2.42	2.51	96.6	2.47
November	0	0	--	--	--	--	469,276	453,150	2.94	3.05	96.3	2.85
December	0	0	--	--	--	--	481,043	464,082	2.76	2.86	94.1	2.70

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

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

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

Table 7.9. Receipts, Average Cost, and Quality of Fossil Fuels: Commercial Sector, 2013 - 2023

	Coal						Petroleum Liquids					
	Receipts		Average Cost				Receipts		Average Cost			
Period	(Billion Btu)	(Thousand Tons)	(Dollars per MMBtu)	(Dollars per Ton)	Average Sulfur Percent by Weight	Percentage of Consumption	(Billion Btu)	(Thousand Barrels)	(Dollars per MMBtu)	(Dollars per Barrel)	Average Sulfur Percent by Weight	Percentage of Consumption
Annual Totals												
2013	3,507	151	W	W	3.05	11.2	0	0	--	--	--	0.0
2014	4,096	182	3.12	70.30	2.50	17.1	0	0	--	--	--	0.0
2015	2,439	109	2.85	63.90	2.55	13.6	0	0	--	--	--	0.0
2016	1,288	57	2.69	60.89	3.03	8.3	0	0	--	--	--	0.0
2017	548	24	2.78	63.31	2.99	3.9	0	0	--	--	--	0.0
2018	290	13	2.94	66.52	3.04	2.2	0	0	--	--	--	0.0
2019	193	8	2.92	66.55	3.01	1.6	0	0	--	--	--	0.0
2020	132	6	2.96	67.66	2.93	1.2	0	0	--	--	--	0.0
2021	262	11	3.03	69.50	2.94	2.1	0	0	--	--	--	0.0
2022	268	12	4.17	94.87	3.08	2.2	0	0	--	--	--	--
2023	66	3	4.28	96.92	3.22	0.7	0	0	--	--	--	--
Year 2021												
January	28	1	2.96	68.67	2.86	2.3	0	0	--	--	--	0.0
February	93	4	2.96	67.61	2.82	6.2	0	0	--	--	--	0.0
March	0	0	--	--	--	0.0	0	0	--	--	--	0.0
April	0	0	--	--	--	0.0	0	0	--	--	--	0.0
May	0	0	--	--	--	0.0	0	0	--	--	--	0.0
June	0	0	--	--	--	0.0	0	0	--	--	--	0.0
July	0	0	--	--	--	0.0	0	0	--	--	--	0.0
August	0	0	--	--	--	0.0	0	0	--	--	--	0.0
September	21	1	3.09	71.22	3.05	2.1	0	0	--	--	--	0.0
October	60	3	3.09	71.01	3.01	5.7	0	0	--	--	--	0.0
November	28	1	3.09	71.01	3.01	2.4	0	0	--	--	--	0.0
December	33	1	3.07	70.46	3.08	2.9	0	0	--	--	--	0.0
Year 2022												
January	74	3	3.95	90.18	3.03	5.8	0	0	--	--	--	--
February	19	1	3.95	90.65	3.00	1.5	0	0	--	--	--	--
March	0	0	--	--	--	0.0	0	0	--	--	--	--
April	0	0	--	--	--	0.0	0	0	--	--	--	--
May	0	0	--	--	--	0.0	0	0	--	--	--	--
June	0	0	--	--	--	--	0	0	--	--	--	--
July	0	0	--	--	--	--	0	0	--	--	--	--
August	0	0	--	--	--	--	0	0	--	--	--	--
September	106	5	4.28	97.46	3.05	10.0	0	0	--	--	--	--
October	54	2	4.28	97.11	3.24	5.2	0	0	--	--	--	--
November	0	0	--	--	--	0.0	0	0	--	--	--	--
December	15	1	4.28	96.94	3.02	1.1	0	0	--	--	--	--
Year 2023												
January	21	1	4.28	96.60	3.06	1.8	0	0	--	--	--	--
February	22	1	4.28	97.20	3.12	2.1	0	0	--	--	--	--
March	0	0	--	--	--	--	0	0	--	--	--	--
April	0	0	--	--	--	--	0	0	--	--	--	--
May	0	0	--	--	--	--	0	0	--	--	--	--
June	0	0	--	--	--	--	0	0	--	--	--	--
July	0	0	--	--	--	--	0	0	--	--	--	--
August	0	0	--	--	--	--	0	0	--	--	--	--
September	0	0	--	--	--	--	0	0	--	--	--	--
October	0	0	--	--	--	--	0	0	--	--	--	--
November	0	0	--	--	--	--	0	0	--	--	--	--
December	24	1	4.28	96.94	3.46	2.6	0	0	--	--	--	--

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W = Withheld to avoid disclosure of individual company data.

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

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

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

Table 7.10. Receipts, Average Cost, and Quality of Fossil Fuels: Commerical Sector, 2013 - 2023 (continued)

	Petroleum Coke						Natural Gas					All Fossil Fuels
	Receipts		Average Cost				Receipts		Average Cost			Average Cost
Period	(Billion Btu)	(Thousand Tons)	(Dollars per MMbtu)	(Dollars per Ton)	Average Sulfur Percent by Weight	Percentage of Consumption	(Billion Btu)	(Thousand Mcf)	(Dollars per MMBtu)	(Dollars per Mcf)	Percentage of Consumption	(Dollars per MMBtu)
Annual Totals												
2013	0	0	--	--	--	0.0	5,497	5,450	W	W	4.6	W
2014	0	0	--	--	--	0.0	5,849	5,795	5.42	5.47	4.9	4.47
2015	0	0	--	--	--	0.0	6,499	6,371	4.11	4.19	5.5	3.76
2016	0	0	--	--	--	0.0	8,005	7,766	3.85	3.97	6.1	3.69
2017	0	0	--	--	--	0.0	7,841	7,593	3.82	3.95	4.9	3.75
2018	0	0	--	--	--	0.0	9,090	8,823	3.49	3.59	6.6	3.47
2019	0	0	--	--	--	0.0	9,429	9,087	3.26	3.39	6.7	3.26
2020	0	0	--	--	--	0.0	8,532	8,188	3.07	3.20	6.3	3.07
2021	0	0	--	--	--	0.0	8,869	8,528	3.42	3.56	7.3	3.41
2022	0	0	--	--	--	--	8,636	8,322	3.88	4.02	6.8	3.89
2023	0	0	--	--	--	--	8,130	7,861	3.04	3.15	6.6	3.05
Year 2021												
January	0	0	--	--	--	0.0	759	729	3.12	3.24	6.7	3.11
February	0	0	--	--	--	0.0	676	650	3.13	3.26	6.7	3.11
March	0	0	--	--	--	0.0	702	676	3.12	3.24	7.2	3.12
April	0	0	--	--	--	0.0	740	716	3.12	3.23	9.0	3.12
May	0	0	--	--	--	0.0	673	647	3.13	3.26	8.1	3.13
June	0	0	--	--	--	0.0	671	645	3.17	3.30	6.7	3.17
July	0	0	--	--	--	0.0	680	653	3.39	3.53	6.0	3.39
August	0	0	--	--	--	0.0	794	760	3.53	3.69	6.6	3.53
September	0	0	--	--	--	0.0	775	743	3.86	4.02	7.7	3.84
October	0	0	--	--	--	0.0	753	724	3.74	3.89	7.7	3.69
November	0	0	--	--	--	0.0	782	754	3.92	4.06	8.0	3.89
December	0	0	--	--	--	0.0	864	830	3.65	3.80	8.3	3.63
Year 2022												
January	0	0	--	--	--	--	759	731	3.29	3.42	6.5	3.35
February	0	0	--	--	--	--	711	683	3.32	3.45	6.8	3.33
March	0	0	--	--	--	--	712	687	3.30	3.42	6.8	3.30
April	0	0	--	--	--	--	786	758	4.35	4.51	8.2	4.35
May	0	0	--	--	--	--	686	661	4.13	4.29	7.0	4.13
June	0	0	--	--	--	--	628	603	3.89	4.05	6.1	3.89
July	0	0	--	--	--	--	693	668	3.86	4.00	5.7	3.86
August	0	0	--	--	--	--	732	703	4.86	5.06	5.9	4.86
September	0	0	--	--	--	--	766	738	4.56	4.73	7.3	4.53
October	0	0	--	--	--	--	657	634	3.98	4.12	7.0	4.00
November	0	0	--	--	--	--	656	636	3.18	3.28	6.7	3.18
December	0	0	--	--	--	--	850	821	3.73	3.86	7.5	3.74
Year 2023												
January	0	0	--	--	--	--	707	682	3.11	3.22	6.6	3.14
February	0	0	--	--	--	--	707	683	3.01	3.11	7.2	3.05
March	0	0	--	--	--	--	680	655	3.05	3.17	6.7	3.05
April	0	0	--	--	--	--	720	700	2.89	2.97	8.0	2.89
May	0	0	--	--	--	--	748	726	2.84	2.92	8.1	2.84
June	0	0	--	--	--	--	617	598	2.89	2.99	6.2	2.89
July	0	0	--	--	--	--	629	607	3.07	3.18	5.4	3.07
August	0	0	--	--	--	--	670	646	3.09	3.21	6.0	3.09
September	0	0	--	--	--	--	619	597	3.10	3.21	5.9	3.10
October	0	0	--	--	--	--	685	664	3.03	3.13	7.0	3.03
November	0	0	--	--	--	--	687	664	3.19	3.31	6.8	3.19
December	0	0	--	--	--	--	661	638	3.27	3.38	6.0	3.30

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Table 7.11. Receipts, Average Cost, and Quality of Fossil Fuels: Industrial Sector, 2013 - 2023

	Coal						Petroleum Liquids					
	Receipts		Average Cost				Receipts		Average Cost			
Period	(Billion Btu)	(Thousand Tons)	(Dollars per MMBtu)	(Dollars per Ton)	Average Sulfur Percent by Weight	Percentage of Consumption	(Billion Btu)	(Thousand Barrels)	(Dollars per MMBtu)	(Dollars per Barrel)	Average Sulfur Percent by Weight	Percentage of Consumption
Annual Totals												
2013	275,543	12,727	W	W	1.32	64.4	2,431	394	18.20	112.29	1.43	15.8
2014	281,867	13,050	2.97	64.15	1.33	68.4	2,290	373	17.91	109.99	1.43	15.6
2015	263,630	12,132	2.72	59.17	1.35	71.4	2,359	385	13.45	82.47	1.42	16.9
2016	210,749	9,859	2.67	57.01	1.30	67.0	2,541	412	10.51	64.79	1.27	18.3
2017	192,637	9,178	2.49	52.29	1.35	70.7	1,850	297	11.18	69.57	1.42	15.2
2018	170,730	8,224	2.47	51.38	1.30	67.2	2,319	372	13.46	83.97	1.35	15.9
2019	146,324	7,088	2.55	52.69	1.19	65.1	1,684	275	13.19	80.82	1.47	14.5
2020	134,523	6,515	2.49	51.38	1.27	68.9	1,700	277	10.52	64.54	1.20	17.0
2021	141,492	6,781	2.33	48.60	1.33	69.9	2,380	387	12.90	79.39	1.46	21.3
2022	138,708	6,721	2.78	57.30	1.27	70.3	2,475	404	18.35	112.54	1.26	10.5
2023	123,941	6,174	3.26	65.45	1.02	73.6	2,862	468	17.32	105.80	1.35	16.2
Year 2021												
January	11,319	541	2.37	49.49	1.14	61.9	226	37	11.25	69.01	1.27	18.1
February	10,689	502	2.41	51.26	1.42	61.9	200	32	11.85	73.29	1.39	13.0
March	10,653	500	2.41	51.35	1.32	62.4	201	33	12.48	75.76	1.50	19.8
April	11,847	562	2.45	51.58	1.20	74.2	236	39	12.63	77.32	1.51	29.9
May	12,884	609	2.23	47.12	1.39	79.5	144	24	12.41	76.01	1.39	18.9
June	12,493	601	2.24	46.46	1.32	77.7	132	22	14.13	86.63	0.82	19.0
July	11,007	539	2.26	46.15	1.26	63.7	206	33	13.90	85.70	1.61	28.1
August	11,462	563	2.28	46.46	1.21	71.1	237	38	12.75	78.57	1.50	27.2
September	12,253	593	2.33	48.06	1.35	72.4	210	34	12.67	78.29	1.56	27.2
October	11,454	547	2.48	51.94	1.21	68.3	197	32	12.68	78.52	1.49	20.2
November	13,432	651	2.21	45.64	1.56	75.2	198	32	14.24	87.87	1.46	23.0
December	11,999	575	2.35	49.10	1.55	72.3	192	31	14.41	89.71	1.59	21.0
Year 2022												
January	12,244	593	2.58	53.22	1.35	67.4	301	49	14.12	86.62	1.46	18.3
February	10,697	520	2.65	54.46	1.17	68.2	229	37	15.76	97.63	1.27	16.8
March	12,941	626	2.53	52.28	1.39	74.0	219	36	15.78	97.43	1.06	11.4
April	10,674	504	2.78	58.94	1.37	65.8	112	18	19.33	118.47	1.55	5.7
May	12,282	597	2.49	51.10	1.38	72.5	175	29	19.13	117.32	0.90	10.0
June	11,491	564	2.36	48.06	1.45	72.2	144	23	21.21	129.90	1.07	6.9
July	12,246	595	2.65	54.47	1.30	75.6	156	26	19.35	118.47	1.57	7.5
August	10,874	533	2.67	54.52	1.21	66.4	157	25	20.21	124.53	1.54	11.4
September	11,393	556	3.10	63.58	1.06	74.0	202	33	18.30	112.79	1.13	10.7
October	11,143	541	3.52	72.50	0.91	68.4	223	36	17.89	109.96	1.15	11.7
November	10,179	488	3.21	66.97	1.29	65.4	219	36	23.10	140.27	1.11	12.1
December	12,543	605	2.91	60.37	1.36	73.2	337	56	19.51	118.50	1.38	9.1
Year 2023												
January	11,082	548	2.99	60.56	1.21	67.8	336	55	17.76	108.25	1.35	15.2
February	10,894	523	3.79	78.83	1.06	75.4	332	55	17.22	104.12	1.55	15.6
March	10,570	525	3.64	73.24	0.78	73.6	440	73	16.48	99.40	1.62	22.5
April	11,351	563	3.48	70.15	0.97	84.9	300	50	17.07	103.34	1.55	15.1
May	10,576	520	3.41	69.33	1.16	75.3	309	51	15.64	95.51	1.12	32.7
June	10,155	532	2.82	53.77	0.82	79.2	93	15	16.41	103.52	1.09	9.0
July	9,652	499	2.86	55.29	0.73	69.5	141	23	16.54	102.83	1.00	13.4
August	10,109	515	3.10	60.84	0.91	76.1	136	22	17.84	111.00	1.20	10.9
September	8,716	431	3.73	75.33	1.07	64.2	154	25	16.85	104.23	1.13	12.6
October	10,465	521	3.22	64.67	1.08	77.9	232	38	20.00	122.63	1.47	21.7
November	9,969	489	3.04	62.05	1.15	70.7	198	32	19.26	117.80	1.37	14.8
December	10,403	508	3.04	62.22	1.25	70.8	191	31	17.47	108.06	1.32	12.6

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

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

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

Table 7.12. Receipts, Average Cost, and Quality of Fossil Fuels: Industrial Sector, 2013 - 2023 (continued)

	Petroleum Coke						Natural Gas					All Fossil Fuels
	Receipts		Average Cost				Receipts		Average Cost			Average Cost
Period	(Billion Btu)	(Thousand Tons)	(Dollars per MMbtu)	(Dollars per Ton)	Average Sulfur Percent by Weight	Percentage of Consumption	(Billion Btu)	(Thousand Mcf)	(Dollars per MMBtu)	(Dollars per Mcf)	Percentage of Consumption	(Dollars per MMBtu)
Annual Totals												
2013	17,236	623	W	W	5.82	30.5	750,946	728,835	W	W	62.3	W
2014	9,736	358	2.56	69.67	5.83	23.2	742,347	718,360	4.54	4.69	62.7	4.12
2015	8,189	304	1.73	46.72	5.50	24.1	765,964	740,975	2.83	2.93	60.6	2.82
2016	3,664	135	2.00	54.12	5.84	11.2	744,034	721,358	2.65	2.74	59.6	2.68
2017	2,356	85	1.59	44.08	5.84	8.1	803,435	778,741	3.18	3.28	62.0	3.06
2018	1,911	71	1.75	47.47	5.74	7.1	792,297	769,790	3.39	3.49	58.6	3.25
2019	2,028	73	1.69	46.99	5.81	8.1	814,483	790,388	2.82	2.91	57.5	2.80
2020	2,157	80	1.73	46.84	5.89	10.0	805,785	783,182	2.28	2.34	53.7	2.32
2021	0	0	--	--	--	0.0	801,054	778,861	4.65	4.79	56.5	4.33
2022	82	3	4.46	124.88	5.99	0.4	835,428	812,863	6.51	6.69	59.1	6.01
2023	0	0	--	--	--	--	819,270	796,511	2.96	3.05	57.1	3.04
Year 2021												
January	0	0	--	--	--	0.0	72,875	70,729	2.81	2.89	56.4	2.77
February	0	0	--	--	--	0.0	54,185	52,629	13.21	13.60	51.6	11.43
March	0	0	--	--	--	0.0	61,141	59,409	2.87	2.96	54.5	2.83
April	0	0	--	--	--	0.0	60,706	59,084	2.73	2.81	55.2	2.72
May	0	0	--	--	--	0.0	64,452	62,733	3.12	3.20	57.1	2.99
June	0	0	--	--	--	0.0	66,734	64,935	3.33	3.42	55.9	3.17
July	0	0	--	--	--	0.0	68,822	66,765	3.91	4.03	53.6	3.71
August	0	0	--	--	--	0.0	70,582	68,625	4.15	4.26	56.2	3.91
September	0	0	--	--	--	0.0	64,834	63,108	4.83	4.96	57.0	4.45
October	0	0	--	--	--	0.0	68,441	66,595	5.76	5.92	58.7	5.31
November	0	0	--	--	--	0.0	71,400	69,498	5.60	5.76	59.7	5.09
December	0	0	--	--	--	0.0	76,882	74,751	4.87	5.01	61.1	4.55
Year 2022												
January	0	0	--	--	--	--	76,455	74,275	4.68	4.82	59.9	4.42
February	0	0	--	--	--	--	65,784	63,860	5.74	5.91	59.0	5.34
March	0	0	--	--	--	--	71,461	69,559	4.69	4.82	60.3	4.39
April	0	0	--	--	--	--	67,470	65,714	5.97	6.13	60.8	5.55
May	0	0	--	--	--	--	67,025	65,283	7.68	7.89	58.9	6.90
June	0	0	--	--	--	--	68,964	67,264	8.29	8.50	60.1	7.47
July	0	0	--	--	--	--	72,749	70,916	6.93	7.11	58.8	6.33
August	0	0	--	--	--	--	73,848	72,011	8.69	8.91	59.1	7.94
September	0	0	--	--	--	--	66,052	64,306	8.40	8.63	57.9	7.65
October	82	3	4.46	124.88	5.99	4.6	65,621	63,673	5.82	5.99	57.1	5.52
November	0	0	--	--	--	--	69,498	67,553	5.11	5.26	58.9	4.92
December	0	0	--	--	--	--	70,500	68,450	6.26	6.45	58.4	5.81
Year 2023												
January	0	0	--	--	--	--	71,716	69,675	5.00	5.14	58.3	4.78
February	0	0	--	--	--	--	64,329	62,549	3.21	3.31	58.2	3.36
March	0	0	--	--	--	--	69,643	67,835	2.75	2.82	57.9	2.94
April	0	0	--	--	--	--	63,498	61,740	2.31	2.38	58.5	2.55
May	0	0	--	--	--	--	66,713	64,886	2.36	2.43	57.7	2.56
June	0	0	--	--	--	--	66,989	65,355	2.48	2.54	56.0	2.54
July	0	0	--	--	--	--	67,515	65,565	2.84	2.93	54.0	2.87
August	0	0	--	--	--	--	68,641	66,678	2.82	2.90	54.9	2.88
September	0	0	--	--	--	--	67,506	65,578	2.80	2.88	55.9	2.93
October	0	0	--	--	--	--	67,344	65,433	2.86	2.94	57.5	2.96
November	0	0	--	--	--	--	70,348	68,333	3.08	3.18	58.3	3.12
December	0	0	--	--	--	--	75,027	72,883	2.86	2.95	58.0	2.92

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

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

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

Table 7.13. Receipts of Coal Delivered for Electricity Generation by State, 2023 and 2022
(Thousand Tons)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
New England	120	241	-50.0%	0	0	120	241	0	0	0	0
Connecticut	0	0	--	0	0	0	0	0	0	0	0
Maine	66	65	1.1%	0	0	66	65	0	0	0	0
Massachusetts	0	0	--	0	0	0	0	0	0	0	0
New Hampshire	54	176	-69.0%	0	0	54	176	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	8,551	13,538	-37.0%	0	0	8,443	13,439	0	0	108	99
New Jersey	0	184	-100.0%	0	0	0	184	0	0	0	0
New York	0	0	--	0	0	0	0	0	0	0	0
Pennsylvania	8,551	13,354	-36.0%	0	0	8,443	13,255	0	0	108	99
East North Central	86,520	99,350	-13.0%	52,619	58,164	32,298	39,490	0	0	1,603	1,696
Illinois	23,125	27,628	-16.0%	4,040	3,800	17,482	22,142	0	0	1,603	1,687
Indiana	21,554	24,350	-11.0%	19,257	21,862	2,298	2,488	0	0	0	0
Michigan	13,700	18,380	-25.0%	13,598	18,203	102	168	0	0	0	9
Ohio	14,980	16,609	-9.8%	2,563	1,916	12,417	14,692	0	0	0	0
Wisconsin	13,161	12,384	6.3%	13,161	12,384	0	0	0	0	0	0
West North Central	95,536	99,908	-4.4%	92,829	96,876	0	0	3	12	2,704	3,020
Iowa	13,137	12,694	3.5%	11,043	10,474	0	0	0	0	2,094	2,220
Kansas	12,351	13,126	-5.9%	12,351	13,126	0	0	0	0	0	0
Minnesota	8,693	9,997	-13.0%	8,693	9,997	0	0	0	0	0	0
Missouri	27,819	28,993	-4.1%	27,816	28,982	0	0	3	12	0	0
Nebraska	12,365	12,358	0.1%	11,754	11,557	0	0	0	0	610	800
North Dakota	20,090	21,441	-6.3%	20,090	21,441	0	0	0	0	0	0
South Dakota	1,082	1,299	-17.0%	1,082	1,299	0	0	0	0	0	0
South Atlantic	52,480	54,045	-2.9%	47,058	45,730	5,006	7,666	0	0	416	649
Delaware	95	144	-34.0%	0	0	95	144	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	5,943	6,698	-11.0%	5,913	6,678	0	0	0	0	30	20
Georgia	10,336	8,771	18.0%	10,204	8,609	0	0	0	0	132	162
Maryland	1,135	1,857	-39.0%	0	0	1,135	1,857	0	0	0	0
North Carolina	5,608	5,924	-5.3%	5,531	5,686	0	0	0	0	77	238
South Carolina	7,443	6,658	12.0%	7,319	6,407	88	221	0	0	37	30
Virginia	1,089	1,854	-41.0%	949	1,655	0	0	0	0	140	199
West Virginia	20,830	22,139	-5.9%	17,142	16,696	3,688	5,444	0	0	0	0
East South Central	47,995	52,092	-7.9%	44,448	48,306	2,926	3,209	0	0	622	577
Alabama	13,185	14,380	-8.3%	13,185	14,380	0	0	0	0	0	0
Kentucky	27,297	27,859	-2.0%	27,297	27,859	0	0	0	0	0	0
Mississippi	4,098	4,842	-15.0%	1,172	1,632	2,926	3,209	0	0	0	0
Tennessee	3,415	5,012	-32.0%	2,793	4,434	0	0	0	0	622	577
West South Central	76,160	81,726	-6.8%	36,967	40,212	39,009	41,392	0	0	184	122
Arkansas	11,174	12,617	-11.0%	9,042	10,030	2,076	2,529	0	0	56	59
Louisiana	4,928	5,145	-4.2%	2,906	3,064	2,022	2,081	0	0	0	0
Oklahoma	5,869	6,197	-5.3%	5,741	6,134	0	0	0	0	129	63
Texas	54,190	57,766	-6.2%	19,279	20,984	34,911	36,783	0	0	0	0
Mountain	60,535	65,200	-7.2%	51,947	56,464	8,589	8,737	0	0	0	0
Arizona	8,510	8,402	1.3%	8,510	8,402	0	0	0	0	0	0
Colorado	12,453	11,077	12.0%	12,453	11,077	0	0	0	0	0	0
Idaho	0	0	--	0	0	0	0	0	0	0	0
Montana	7,092	7,082	0.1%	0	0	7,092	7,082	0	0	0	0
Nevada	1,467	1,645	-11.0%	800	927	667	718	0	0	0	0
New Mexico	3,504	7,520	-53.0%	3,504	7,520	0	0	0	0	0	0
Utah	7,177	10,047	-29.0%	6,843	9,631	334	416	0	0	0	0
Wyoming	20,333	19,427	4.7%	19,838	18,907	495	520	0	0	0	0
Pacific Contiguous	3,135	2,992	4.8%	0	0	2,599	2,434	0	0	536	559
California	536	559	-4.0%	0	0	0	0	0	0	536	559
Oregon	0	0	--	0	0	0	0	0	0	0	0
Washington	2,599	2,434	6.8%	0	0	2,599	2,434	0	0	0	0
Pacific Noncontiguous	342	625	-45.0%	342	368	0	256	0	0	0	0
Alaska	342	368	-7.1%	342	368	0	0	0	0	0	0
Hawaii	0	256	-100.0%	0	0	0	256	0	0	0	0
U.S. Total	431,375	469,718	-8.2%	326,208	346,120	98,990	116,864	3	12	6,174	6,721

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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 are final. See Technical Notes for a discussion of the sample design for the Form EIA-923.
Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.
Coal includes anthracite, bituminous, subbituminous, lignite, waste coal, and coal-derived synthesis gas.

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

Table 7.14. Receipts of Petroleum Liquids Delivered for Electricity Generation by State, 2023 and 2022
(Thousand Barrels)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
New England	987	2,296	-57.0%	101	57	885	2,239	0	0	0	0
Connecticut	100	684	-85.0%	0	0	100	684	0	0	0	0
Maine	331	348	-4.9%	0	0	331	348	0	0	0	0
Massachusetts	336	690	-51.0%	101	57	234	633	0	0	0	0
New Hampshire	164	527	-69.0%	0	0	164	527	0	0	0	0
Rhode Island	55	46	19.0%	0	0	55	46	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	1,768	2,251	-21.0%	806	599	897	1,585	0	0	65	66
New Jersey	28	28	-0.5%	0	0	28	28	0	0	0	0
New York	1,355	1,855	-27.0%	806	599	549	1,255	0	0	0	0
Pennsylvania	384	367	4.6%	0	0	320	301	0	0	64	66
East North Central	831	685	21.0%	510	427	269	225	0	0	51	32
Illinois	78	59	32.0%	21	2	56	57	0	0	0	0
Indiana	185	199	-7.0%	185	199	0	0	0	0	0	0
Michigan	251	170	48.0%	223	153	0	0	0	0	28	17
Ohio	297	212	40.0%	61	29	213	168	0	0	23	15
Wisconsin	20	45	-56.0%	20	45	0	0	0	0	0	0
West North Central	950	821	16.0%	950	818	1	4	0	0	0	0
Iowa	115	143	-20.0%	115	143	0	0	0	0	0	0
Kansas	152	208	-27.0%	152	208	0	0	0	0	0	0
Minnesota	154	66	134.0%	154	62	1	4	0	0	0	0
Missouri	390	295	32.0%	390	295	0	0	0	0	0	0
Nebraska	22	32	-31.0%	22	32	0	0	0	0	0	0
North Dakota	105	67	56.0%	105	67	0	0	0	0	0	0
South Dakota	12	10	25.0%	12	10	0	0	0	0	0	0
South Atlantic	2,905	2,589	12.0%	2,063	1,840	495	463	0	0	347	286
Delaware	86	38	129.0%	0	0	86	38	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	745	666	12.0%	661	618	55	25	0	0	29	23
Georgia	438	493	-11.0%	263	300	9	85	0	0	166	108
Maryland	211	128	65.0%	0	0	211	128	0	0	0	0
North Carolina	348	249	40.0%	266	181	0	0	0	0	82	68
South Carolina	228	251	-9.1%	186	185	12	32	0	0	30	34
Virginia	530	514	3.1%	400	311	91	151	0	0	39	52
West Virginia	317	249	27.0%	287	245	30	4	0	0	0	0
East South Central	515	489	5.2%	510	470	0	0	0	0	5	19
Alabama	52	83	-38.0%	52	83	0	0	0	0	0	0
Kentucky	184	140	31.0%	184	140	0	0	0	0	0	0
Mississippi	7	11	-37.0%	7	11	0	0	0	0	0	0
Tennessee	273	255	6.7%	267	236	0	0	0	0	5	19
West South Central	490	631	-22.0%	165	229	325	402	0	0	0	0
Arkansas	83	105	-21.0%	62	71	21	34	0	0	0	0
Louisiana	12	28	-57.0%	12	28	0	0	0	0	0	0
Oklahoma	45	76	-41.0%	45	76	0	0	0	0	0	0
Texas	351	422	-17.0%	46	54	304	368	0	0	0	0
Mountain	221	273	-19.0%	200	255	21	18	0	0	0	0
Arizona	56	56	-0.8%	56	56	0	0	0	0	0	0
Colorado	18	12	48.0%	18	12	0	0	0	0	0	0
Idaho	0	0	--	0	0	0	0	0	0	0	0
Montana	13	23	-43.0%	0	11	13	12	0	0	0	0
Nevada	16	20	-17.0%	13	16	3	4	0	0	0	0
New Mexico	0	20	-100.0%	0	20	0	0	0	0	0	0
Utah	37	55	-33.0%	32	53	5	2	0	0	0	0
Wyoming	81	87	-6.6%	81	87	0	0	0	0	0	0
Pacific Contiguous	43	39	8.5%	32	20	11	20	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	43	39	8.5%	32	20	11	20	0	0	0	0
Pacific Noncontiguous	9,631	9,288	3.7%	7,686	7,416	1,945	1,872	0	0	0	0
Alaska	18	25	-28.0%	18	25	0	0	0	0	0	0
Hawaii	9,614	9,264	3.8%	7,669	7,392	1,945	1,872	0	0	0	0
U.S. Total	18,341	19,362	-5.3%	13,023	12,131	4,849	6,827	0	0	468	404

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Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.
Petroleum Liquids includes distillate and residual fuel oils.
See the Technical Notes for fuel conversion factors.

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

Table 7.15. Receipts of Petroleum Coke Delivered for Electricity Generation by State, 2023 and 2022
(Thousand Tons)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
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	641	715	-10.0%	641	715	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	619	648	-4.5%	619	648	0	0	0	0	0	0
Ohio	0	0	--	0	0	0	0	0	0	0	0
Wisconsin	22	67	-67.0%	22	67	0	0	0	0	0	0
West North Central	0	3	-100.0%	0	0	0	0	0	0	0	3
Iowa	0	3	-100.0%	0	0	0	0	0	0	0	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	431	335	28.0%	431	335	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	431	335	28.0%	431	335	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	7	-100.0%	0	7	0	0	0	0	0	0
Alabama	0	0	--	0	0	0	0	0	0	0	0
Kentucky	0	7	-100.0%	0	7	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	378	1,225	-69.0%	378	1,225	0	0	0	0	0	0
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	378	1,225	-69.0%	378	1,225	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	1,450	2,286	-37.0%	1,450	2,283	0	0	0	0	0	3

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

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

Table 7.16. Receipts of Natural Gas Delivered for Electricity Generation by State, 2023 and 2022
(Million Cubic Feet)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
New England	400,731	380,100	5.4%	318	776	400,413	379,324	0	0	0	0
Connecticut	163,651	157,191	4.1%	0	0	163,651	157,191	0	0	0	0
Maine	26,981	25,923	4.1%	0	0	26,981	25,923	0	0	0	0
Massachusetts	106,804	113,585	-6.0%	318	776	106,486	112,809	0	0	0	0
New Hampshire	30,878	31,968	-3.4%	0	0	30,878	31,968	0	0	0	0
Rhode Island	72,417	51,433	41.0%	0	0	72,417	51,433	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	1,613,381	1,550,392	4.1%	102,567	96,471	1,486,256	1,430,160	0	0	24,558	23,761
New Jersey	240,430	244,378	-1.6%	0	0	240,430	244,378	0	0	0	0
New York	433,635	431,794	0.4%	102,567	96,471	324,377	328,513	0	0	6,692	6,810
Pennsylvania	939,315	874,220	7.4%	0	0	921,449	857,269	0	0	17,866	16,951
East North Central	1,547,784	1,301,760	19.0%	596,441	474,247	925,377	799,254	5,488	6,095	20,478	22,164
Illinois	196,069	138,654	41.0%	19,106	16,012	170,809	115,754	0	0	6,154	6,887
Indiana	245,235	219,964	11.0%	127,925	103,406	117,310	116,558	0	0	0	0
Michigan	382,379	294,690	30.0%	207,219	119,172	164,590	163,442	5,488	6,095	5,082	5,981
Ohio	545,984	475,742	15.0%	67,570	73,391	472,668	396,250	0	0	5,745	6,101
Wisconsin	178,118	172,711	3.1%	174,621	162,266	0	7,250	0	0	3,498	3,195
West North Central	332,994	242,613	37.0%	273,532	204,337	51,408	32,286	2,372	2,227	5,683	3,763
Iowa	75,387	61,373	23.0%	69,705	57,610	0	0	0	0	5,683	3,763
Kansas	34,113	22,331	53.0%	34,113	22,331	0	0	0	0	0	0
Minnesota	89,633	56,099	60.0%	56,907	37,021	32,709	19,064	17	14	0	0
Missouri	77,363	68,294	13.0%	56,310	52,859	18,698	13,222	2,355	2,213	0	0
Nebraska	13,670	12,337	11.0%	13,670	12,337	0	0	0	0	0	0
North Dakota	28,868	13,791	109.0%	28,868	13,791	0	0	0	0	0	0
South Dakota	13,960	8,388	66.0%	13,960	8,388	0	0	0	0	0	0
South Atlantic	2,956,451	2,970,372	-0.5%	2,481,716	2,473,444	438,180	460,824	0	0	36,555	36,105
Delaware	24,782	28,590	-13.0%	0	0	24,782	28,590	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	1,377,415	1,361,682	1.2%	1,319,876	1,288,364	53,407	68,970	0	0	4,131	4,347
Georgia	442,228	443,671	-0.3%	359,343	339,404	72,776	94,349	0	0	10,108	9,918
Maryland	109,516	98,380	11.0%	30,070	26,946	79,446	71,434	0	0	0	0
North Carolina	403,276	472,533	-15.0%	341,075	398,248	61,117	71,058	0	0	1,084	3,227
South Carolina	188,627	186,182	1.3%	183,305	172,295	3,086	12,689	0	0	2,236	1,198
Virginia	372,762	357,535	4.3%	242,564	244,012	117,904	101,463	0	0	12,294	12,061
West Virginia	37,846	21,798	74.0%	5,482	4,174	25,662	12,270	0	0	6,702	5,354
East South Central	1,069,590	1,101,503	-2.9%	786,335	815,994	258,275	257,127	0	0	24,980	28,383
Alabama	428,575	428,005	0.1%	176,158	179,238	252,417	248,767	0	0	0	0
Kentucky	107,514	135,881	-21.0%	101,821	127,712	5,692	8,169	0	0	0	0
Mississippi	404,871	386,054	4.9%	404,704	385,862	167	191	0	0	0	0
Tennessee	128,631	151,564	-15.0%	103,651	123,181	0	0	0	0	24,980	28,383
West South Central	3,538,619	3,265,503	8.4%	1,250,595	1,143,699	1,630,050	1,448,516	0	0	657,974	673,289
Arkansas	188,168	187,013	0.6%	173,665	171,363	11,743	12,444	0	0	2,759	3,206
Louisiana	582,914	578,463	0.8%	328,480	328,529	42,319	30,992	0	0	212,115	218,942
Oklahoma	344,298	285,069	21.0%	237,147	190,516	100,248	87,898	0	0	6,903	6,655
Texas	2,423,240	2,214,958	9.4%	511,303	453,291	1,475,740	1,317,181	0	0	436,196	444,487
Mountain	910,018	819,049	11.0%	740,999	666,919	168,870	152,130	0	0	149	0
Arizona	389,864	335,961	16.0%	279,143	236,451	110,721	99,510	0	0	0	0
Colorado	126,143	120,363	4.8%	108,562	102,785	17,581	17,578	0	0	0	0
Idaho	29,658	26,778	11.0%	17,468	16,563	12,190	10,215	0	0	0	0
Montana	6,226	4,554	37.0%	6,171	4,521	56	33	0	0	0	0
Nevada	168,209	169,097	-0.5%	168,209	169,097	0	0	0	0	0	0
New Mexico	99,119	79,348	25.0%	70,806	54,559	28,313	24,790	0	0	0	0
Utah	76,793	72,944	5.3%	76,644	72,944	0	0	0	0	149	0
Wyoming	14,005	10,004	40.0%	13,996	9,999	9	5	0	0	0	0
Pacific Contiguous	854,903	790,169	8.2%	351,527	309,694	477,243	455,077	0	0	26,133	25,398
California	579,502	569,679	1.7%	181,047	180,431	372,322	363,850	0	0	26,133	25,398
Oregon	161,864	132,193	22.0%	93,963	71,069	67,901	61,125	0	0	0	0
Washington	113,537	88,297	29.0%	76,517	58,195	37,019	30,102	0	0	0	0
Pacific Noncontiguous	12,908	14,611	-12.0%	12,908	14,611	0	0	0	0	0	0
Alaska	12,908	14,611	-12.0%	12,908	14,611	0	0	0	0	0	0
Hawaii	0	0	--	0	0	0	0	0	0	0	0
U.S. Total	13,237,380	12,436,074	6.4%	6,596,937	6,200,191	5,836,072	5,414,698	7,861	8,322	796,511	812,863

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

Table 7.17. Average Cost of Coal Delivered for Electricity Generation by State, 2023 and 2022
(Dollars per MMBtu)

Census Division and State	Electric Power Sector			Electric Utilities		Independent Power Producers	
	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022
New England	W	W	W	--	--	W	W
Connecticut	--	--	--	--	--	--	--
Maine	W	W	W	--	--	W	W
Massachusetts	--	--	--	--	--	--	--
New Hampshire	W	W	W	--	--	W	W
Rhode Island	--	--	--	--	--	--	--
Vermont	--	--	--	--	--	--	--
Middle Atlantic	2.31	3.19	-28.0%	--	--	2.31	3.19
New Jersey	--	W	W	--	--	--	W
New York	--	--	--	--	--	--	--
Pennsylvania	2.31	W	W	--	--	2.31	W
East North Central	2.54	2.25	13.0%	2.69	2.54	2.32	1.83
Illinois	W	1.91	W	2.09	2.02	W	1.89
Indiana	W	W	W	2.99	2.76	W	W
Michigan	W	W	W	2.58	2.37	W	W
Ohio	2.67	W	W	2.56	2.82	2.69	W
Wisconsin	2.48	2.44	1.6%	2.48	2.44	--	--
West North Central	1.83	1.83	0.0%	1.83	1.83	--	--
Iowa	1.76	1.81	-2.8%	1.76	1.81	--	--
Kansas	1.70	1.88	-9.6%	1.70	1.88	--	--
Minnesota	2.40	2.33	3.0%	2.40	2.33	--	--
Missouri	1.92	1.92	0.0%	1.92	1.92	--	--
Nebraska	1.33	1.29	3.1%	1.33	1.29	--	--
North Dakota	1.86	1.67	11.0%	1.86	1.67	--	--
South Dakota	2.25	2.08	8.2%	2.25	2.08	--	--
South Atlantic	3.55	3.12	14.0%	3.64	3.17	2.72	2.81
Delaware	W	W	W	--	--	W	W
District of Columbia	--	--	--	--	--	--	--
Florida	3.37	3.63	-7.2%	3.37	3.63	--	--
Georgia	4.48	3.88	15.0%	4.48	3.88	--	--
Maryland	W	W	W	--	--	W	W
North Carolina	4.68	3.55	32.0%	4.68	3.55	--	--
South Carolina	W	W	W	3.57	3.54	W	W
Virginia	5.20	3.28	59.0%	5.20	3.28	--	--
West Virginia	2.81	2.27	24.0%	2.94	2.44	2.13	1.75
East South Central	W	W	W	2.74	2.64	W	W
Alabama	3.04	2.81	8.2%	3.04	2.81	--	--
Kentucky	2.50	2.38	5.0%	2.50	2.38	--	--
Mississippi	W	W	W	3.96	3.95	W	W
Tennessee	3.54	3.49	1.4%	3.54	3.49	--	--
West South Central	2.17	2.20	-1.4%	2.21	2.38	2.12	2.01
Arkansas	W	W	W	2.19	2.33	W	W
Louisiana	W	W	W	2.97	2.66	W	W
Oklahoma	2.27	2.59	-12.0%	2.27	2.59	--	--
Texas	W	W	W	2.08	2.30	W	W
Mountain	W	2.13	W	2.39	2.17	W	1.81
Arizona	3.04	2.84	7.0%	3.04	2.84	--	--
Colorado	2.11	1.91	10.0%	2.11	1.91	--	--
Idaho	--	--	--	--	--	--	--
Montana	W	W	W	--	--	W	W
Nevada	W	W	W	5.15	3.29	W	W
New Mexico	3.57	2.93	22.0%	3.57	2.93	--	--
Utah	2.51	2.16	16.0%	2.51	2.16	--	--
Wyoming	W	W	W	1.88	1.64	W	W
Pacific Contiguous	W	W	W	--	--	W	W
California	--	--	--	--	--	--	--
Oregon	--	--	--	--	--	--	--
Washington	W	W	W	--	--	W	W
Pacific Noncontiguous	4.57	W	W	4.57	3.85	--	W
Alaska	4.57	3.85	19.0%	4.57	3.85	--	--
Hawaii	--	W	W	--	--	--	W
U.S. Total	2.50	2.36	5.9%	2.56	2.41	2.28	2.19

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

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

Table 7.18. Average Cost of Petroleum Liquids Delivered for Electricity Generation by State, 2023 and 2022
(Dollars per MMBtu)

Census Division and State	Electric Power Sector			Electric Utilities		Independent Power Producers	
	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022
New England	W	W	W	21.04	21.71	W	W
Connecticut	27.98	W	W	--	--	27.98	W
Maine	15.78	W	W	--	--	15.78	W
Massachusetts	W	14.72	W	21.04	21.71	W	13.56
New Hampshire	W	W	W	--	--	W	W
Rhode Island	W	W	W	--	--	W	W
Vermont	--	--	--	--	--	--	--
Middle Atlantic	19.57	20.55	-4.8%	18.25	19.04	21.05	21.39
New Jersey	23.54	26.98	-13.0%	--	--	23.54	26.98
New York	18.78	19.29	-2.6%	18.25	19.04	19.65	19.47
Pennsylvania	24.22	27.97	-13.0%	--	--	24.22	27.97
East North Central	20.20	26.33	-23.0%	19.82	26.19	20.95	26.61
Illinois	23.48	27.79	-16.0%	23.88	21.13	23.28	28.00
Indiana	21.24	27.13	-22.0%	21.24	27.13	--	--
Michigan	17.31	25.73	-33.0%	17.31	25.73	--	--
Ohio	21.15	26.14	-19.0%	23.56	26.09	20.47	26.15
Wisconsin	19.67	23.83	-17.0%	19.67	23.83	--	--
West North Central	W	W	W	21.38	25.38	W	W
Iowa	21.80	26.04	-16.0%	21.80	26.04	--	--
Kansas	20.56	24.71	-17.0%	20.56	24.71	--	--
Minnesota	W	W	W	20.07	25.28	W	W
Missouri	22.06	25.93	-15.0%	22.06	25.93	--	--
Nebraska	21.75	23.33	-6.8%	21.75	23.33	--	--
North Dakota	21.07	25.07	-16.0%	21.07	25.07	--	--
South Dakota	24.42	23.11	5.7%	24.42	23.11	--	--
South Atlantic	W	25.79	W	22.10	25.61	W	26.68
Delaware	W	W	W	--	--	W	W
District of Columbia	--	--	--	--	--	--	--
Florida	W	W	W	21.70	26.40	W	W
Georgia	W	W	W	24.66	28.73	W	W
Maryland	21.36	27.70	-23.0%	--	--	21.36	27.70
North Carolina	24.50	25.14	-2.5%	24.50	25.14	--	--
South Carolina	W	W	W	22.28	27.63	W	W
Virginia	W	W	W	19.71	19.81	W	W
West Virginia	W	W	W	21.71	25.97	W	W
East South Central	21.61	26.60	-19.0%	21.61	26.60	--	--
Alabama	23.02	26.31	-13.0%	23.02	26.31	--	--
Kentucky	22.14	25.93	-15.0%	22.14	25.93	--	--
Mississippi	20.99	23.88	-12.0%	20.99	23.88	--	--
Tennessee	20.98	27.24	-23.0%	20.98	27.24	--	--
West South Central	22.02	25.45	-13.0%	21.55	25.13	22.26	25.64
Arkansas	W	W	W	22.02	25.20	W	W
Louisiana	19.58	25.85	-24.0%	19.58	25.85	--	--
Oklahoma	22.10	24.88	-11.0%	22.10	24.88	--	--
Texas	W	W	W	20.90	25.04	W	W
Mountain	24.78	28.02	-12.0%	24.67	28.03	25.81	27.84
Arizona	23.97	27.87	-14.0%	23.97	27.87	--	--
Colorado	26.51	26.00	2.0%	26.51	26.00	--	--
Idaho	--	--	--	--	--	--	--
Montana	W	W	W	--	23.36	W	W
Nevada	W	W	W	26.76	26.85	W	W
New Mexico	--	30.80	--	--	30.80	--	--
Utah	W	W	W	24.65	28.82	W	W
Wyoming	24.40	28.11	-13.0%	24.40	28.11	--	--
Pacific Contiguous	W	W	W	25.90	23.43	W	W
California	--	--	--	--	--	--	--
Oregon	--	--	--	--	--	--	--
Washington	W	W	W	25.90	23.43	W	W
Pacific Noncontiguous	W	W	W	20.02	24.16	W	W
Alaska	25.12	30.16	-17.0%	25.12	30.16	--	--
Hawaii	W	W	W	20.01	24.14	W	W
U.S. Total	20.51	23.94	-14.0%	20.48	24.43	20.59	22.83

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

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

Table 7.19. Average Cost of Petroleum Coke Delivered for Electricity Generation by State, 2023 and 2022
(Dollars per MMBtu)

Census Division and State	Electric Power Sector			Electric Utilities		Independent Power Producers	
	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022
New England	--	--	--	--	--	--	--
Connecticut	--	--	--	--	--	--	--
Maine	--	--	--	--	--	--	--
Massachusetts	--	--	--	--	--	--	--
New Hampshire	--	--	--	--	--	--	--
Rhode Island	--	--	--	--	--	--	--
Vermont	--	--	--	--	--	--	--
Middle Atlantic	--	--	--	--	--	--	--
New Jersey	--	--	--	--	--	--	--
New York	--	--	--	--	--	--	--
Pennsylvania	--	--	--	--	--	--	--
East North Central	2.97	1.46	103.0%	2.97	1.46	--	--
Illinois	--	--	--	--	--	--	--
Indiana	--	--	--	--	--	--	--
Michigan	2.89	1.16	149.0%	2.89	1.16	--	--
Ohio	--	--	--	--	--	--	--
Wisconsin	5.15	4.38	18.0%	5.15	4.38	--	--
West North Central	--	--	--	--	--	--	--
Iowa	--	--	--	--	--	--	--
Kansas	--	--	--	--	--	--	--
Minnesota	--	--	--	--	--	--	--
Missouri	--	--	--	--	--	--	--
Nebraska	--	--	--	--	--	--	--
North Dakota	--	--	--	--	--	--	--
South Dakota	--	--	--	--	--	--	--
South Atlantic	5.20	7.01	-26.0%	5.20	7.01	--	--
Delaware	--	--	--	--	--	--	--
District of Columbia	--	--	--	--	--	--	--
Florida	5.20	7.01	-26.0%	5.20	7.01	--	--
Georgia	--	--	--	--	--	--	--
Maryland	--	--	--	--	--	--	--
North Carolina	--	--	--	--	--	--	--
South Carolina	--	--	--	--	--	--	--
Virginia	--	--	--	--	--	--	--
West Virginia	--	--	--	--	--	--	--
East South Central	--	3.85	--	--	3.85	--	--
Alabama	--	--	--	--	--	--	--
Kentucky	--	3.85	--	--	3.85	--	--
Mississippi	--	--	--	--	--	--	--
Tennessee	--	--	--	--	--	--	--
West South Central	4.49	5.25	-14.0%	4.49	5.25	--	--
Arkansas	--	--	--	--	--	--	--
Louisiana	4.49	5.25	-14.0%	4.49	5.25	--	--
Oklahoma	--	--	--	--	--	--	--
Texas	--	--	--	--	--	--	--
Mountain	--	--	--	--	--	--	--
Arizona	--	--	--	--	--	--	--
Colorado	--	--	--	--	--	--	--
Idaho	--	--	--	--	--	--	--
Montana	--	--	--	--	--	--	--
Nevada	--	--	--	--	--	--	--
New Mexico	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--
Wyoming	--	--	--	--	--	--	--
Pacific Contiguous	--	--	--	--	--	--	--
California	--	--	--	--	--	--	--
Oregon	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--
Pacific Noncontiguous	--	--	--	--	--	--	--
Alaska	--	--	--	--	--	--	--
Hawaii	--	--	--	--	--	--	--
U.S. Total	4.05	4.35	-6.9%	4.05	4.35	--	--

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

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

Table 7.20. Average Cost of Natural Gas Delivered for Electricity Generation by State, 2023 and 2022
(Dollars per MMBtu)

Census Division and State	Electric Power Sector			Electric Utilities		Independent Power Producers	
	Year 2023	Year 2022	Percentage Change	Year 2023	Year 2022	Year 2023	Year 2022
New England	W	W	W	5.70	8.82	W	W
Connecticut	3.75	8.89	-58.0%	--	--	3.75	8.89
Maine	W	W	W	--	--	W	W
Massachusetts	6.91	11.77	-41.0%	5.70	8.82	6.92	11.79
New Hampshire	W	W	W	--	--	W	W
Rhode Island	2.97	8.39	-65.0%	--	--	2.97	8.39
Vermont	--	--	--	--	--	--	--
Middle Atlantic	2.32	6.56	-65.0%	3.07	7.38	2.26	6.49
New Jersey	2.07	7.00	-70.0%	--	--	2.07	7.00
New York	2.93	7.18	-59.0%	3.07	7.38	2.87	7.11
Pennsylvania	2.09	6.10	-66.0%	--	--	2.09	6.10
East North Central	2.67	6.27	-57.0%	3.14	6.44	2.37	6.18
Illinois	2.55	6.88	-63.0%	2.84	7.46	2.52	6.79
Indiana	2.88	6.27	-54.0%	3.12	6.57	2.63	6.00
Michigan	2.69	6.56	-59.0%	2.80	7.11	2.55	6.16
Ohio	2.24	6.10	-63.0%	2.50	6.27	2.20	6.07
Wisconsin	3.84	5.83	-34.0%	3.84	5.83	--	--
West North Central	W	W	W	3.38	9.58	W	W
Iowa	2.92	6.02	-51.0%	2.92	6.02	--	--
Kansas	3.07	7.13	-57.0%	3.07	7.13	--	--
Minnesota	W	W	W	4.94	7.54	W	W
Missouri	W	W	W	2.85	19.07	W	W
Nebraska	3.45	8.38	-59.0%	3.45	8.38	--	--
North Dakota	2.74	3.11	-12.0%	2.74	3.11	--	--
South Dakota	3.35	4.49	-25.0%	3.35	4.49	--	--
South Atlantic	3.84	7.86	-51.0%	3.99	7.94	2.81	7.27
Delaware	--	W	W	--	--	--	W
District of Columbia	--	--	--	--	--	--	--
Florida	3.99	8.31	-52.0%	4.00	8.33	3.47	7.84
Georgia	W	7.87	W	3.05	7.94	W	7.57
Maryland	2.90	8.29	-65.0%	2.45	7.79	3.07	8.47
North Carolina	4.97	7.31	-32.0%	5.35	7.37	2.79	6.88
South Carolina	3.95	7.11	-44.0%	3.95	7.11	--	--
Virginia	3.30	7.14	-54.0%	3.71	7.46	2.18	6.10
West Virginia	W	W	W	1.93	6.75	W	W
East South Central	2.92	6.75	-57.0%	2.94	6.64	2.84	7.19
Alabama	W	W	W	3.18	7.65	W	W
Kentucky	W	W	W	3.41	6.61	W	W
Mississippi	W	W	W	2.75	6.42	W	W
Tennessee	2.83	5.86	-52.0%	2.83	5.86	--	--
West South Central	2.66	6.70	-60.0%	2.79	6.96	2.55	6.44
Arkansas	W	W	W	2.69	6.94	W	W
Louisiana	W	W	W	2.84	7.04	W	W
Oklahoma	W	W	W	2.97	7.53	W	W
Texas	2.60	6.50	-60.0%	2.70	6.66	2.56	6.44
Mountain	5.12	7.90	-35.0%	5.19	7.76	4.51	9.31
Arizona	W	8.42	W	4.16	8.03	W	10.02
Colorado	W	W	W	3.84	7.00	W	W
Idaho	6.57	10.44	-37.0%	6.57	10.44	--	--
Montana	W	W	W	2.29	4.13	W	W
Nevada	7.23	7.92	-8.7%	7.23	7.92	--	--
New Mexico	2.62	6.50	-60.0%	2.62	6.50	--	--
Utah	7.98	8.17	-2.3%	7.98	8.17	--	--
Wyoming	W	W	W	6.91	8.11	W	W
Pacific Contiguous	6.39	8.57	-25.0%	6.78	7.92	5.87	9.32
California	7.31	9.89	-26.0%	8.33	9.48	6.41	10.23
Oregon	W	W	W	5.07	5.69	W	W
Washington	W	W	W	5.78	6.68	W	W
Pacific Noncontiguous	7.29	6.23	17.0%	7.29	6.23	--	--
Alaska	7.29	6.23	17.0%	7.29	6.23	--	--
Hawaii	--	--	--	--	--	--	--
U.S. Total	3.39	7.27	-53.0%	3.81	7.49	2.82	6.95

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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 7.21. Receipts and Quality of Coal by Rank Delivered for Electricity Generation: Total (All Sectors) by State, 2023

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	120	2.20	7.6	0	--	--	0	--	--
Connecticut	0	--	--	0	--	--	0	--	--
Maine	66	0.97	6.7	0	--	--	0	--	--
Massachusetts	0	--	--	0	--	--	0	--	--
New Hampshire	54	3.31	8.4	0	--	--	0	--	--
Rhode Island	0	--	--	0	--	--	0	--	--
Vermont	0	--	--	0	--	--	0	--	--
Middle Atlantic	2,854	2.58	8.7	0	--	--	0	--	--
New Jersey	0	--	--	0	--	--	0	--	--
New York	0	--	--	0	--	--	0	--	--
Pennsylvania	2,854	2.58	8.7	0	--	--	0	--	--
East North Central	45,303	3.07	10.7	41,218	0.24	4.6	0	--	--
Illinois	8,365	3.30	21.2	14,761	0.23	4.6	0	--	--
Indiana	20,357	2.97	9.0	1,197	0.23	4.7	0	--	--
Michigan	870	2.26	7.8	12,830	0.26	4.6	0	--	--
Ohio	14,980	3.17	9.0	0	--	--	0	--	--
Wisconsin	731	2.31	7.8	12,430	0.23	4.7	0	--	--
West North Central	456	3.09	8.9	74,990	0.26	4.9	20,013	0.73	9.7
Iowa	121	3.44	8.9	13,015	0.24	4.8	0	--	--
Kansas	0	--	--	12,351	0.28	5.2	0	--	--
Minnesota	0	--	--	8,693	0.32	5.6	0	--	--
Missouri	335	2.97	8.9	27,484	0.23	4.6	0	--	--
Nebraska	0	--	--	12,365	0.27	4.8	0	--	--
North Dakota	0	--	--	0	--	--	20,013	0.73	9.7
South Dakota	0	--	--	1,082	0.31	5.1	0	--	--
South Atlantic	46,589	2.53	9.8	5,330	0.36	5.4	0	--	--
Delaware	95	2.29	7.8	0	--	--	0	--	--
District of Columbia	0	--	--	0	--	--	0	--	--
Florida	5,943	2.80	8.8	0	--	--	0	--	--
Georgia	5,006	2.34	9.0	5,330	0.36	5.4	0	--	--
Maryland	1,135	2.45	12.3	0	--	--	0	--	--
North Carolina	5,608	1.72	9.8	0	--	--	0	--	--
South Carolina	7,443	2.00	9.3	0	--	--	0	--	--
Virginia	1,089	1.05	17.5	0	--	--	0	--	--
West Virginia	20,269	2.98	10.1	0	--	--	0	--	--
East South Central	25,690	2.73	9.9	19,379	0.27	5.1	2,926	0.48	14.6
Alabama	2,338	1.07	12.1	10,847	0.30	5.2	0	--	--
Kentucky	20,770	2.95	9.8	6,527	0.23	5.0	0	--	--
Mississippi	57	1.29	11.4	1,116	0.27	5.0	2,926	0.48	14.6
Tennessee	2,525	2.40	8.7	890	0.21	4.8	0	--	--
West South Central	318	2.55	9.3	61,887	0.28	5.1	13,955	1.08	16.9
Arkansas	56	0.77	12.0	11,118	0.22	4.7	0	--	--
Louisiana	262	2.97	8.7	4,665	0.23	4.8	0	--	--
Oklahoma	0	--	--	5,869	0.24	5.0	0	--	--
Texas	0	--	--	40,235	0.31	5.3	13,955	1.08	16.9
Mountain	12,055	0.60	13.6	48,146	0.45	7.2	0	--	--
Arizona	0	--	--	8,510	0.54	9.0	0	--	--
Colorado	1,290	0.46	11.5	11,163	0.32	6.3	0	--	--
Idaho	0	--	--	0	--	--	0	--	--
Montana	0	--	--	7,092	0.70	8.9	0	--	--
Nevada	470	0.39	7.6	997	0.41	5.0	0	--	--
New Mexico	3,504	0.85	19.4	0	--	--	0	--	--
Utah	6,792	0.53	11.8	52	0.98	8.7	0	--	--
Wyoming	0	--	--	20,333	0.40	6.6	0	--	--
Pacific Contiguous	536	0.54	9.6	2,599	0.38	7.7	0	--	--
California	536	0.54	9.6	0	--	--	0	--	--
Oregon	0	--	--	0	--	--	0	--	--
Washington	0	--	--	2,599	0.38	7.7	0	--	--
Pacific Noncontiguous	0	--	--	0	--	--	256	0.12	6.7
Alaska	0	--	--	0	--	--	256	0.12	6.7
Hawaii	0	--	--	0	--	--	0	--	--
U.S. Total	133,921	2.59	10.4	253,550	0.30	5.4	37,150	0.84	12.7

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

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

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

Table 7.22. Receipts and Quality of Coal by Rank Delivered for Electricity Generation: Electric Utilties by State, 2023

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	22,912	2.91	8.9	29,707	0.24	4.7	0	--	--
Illinois	790	2.50	10.3	3,250	0.21	4.6	0	--	--
Indiana	18,059	2.93	9.0	1,197	0.23	4.7	0	--	--
Michigan	768	2.35	7.7	12,830	0.26	4.6	0	--	--
Ohio	2,563	3.26	9.2	0	--	--	0	--	--
Wisconsin	731	2.31	7.8	12,430	0.23	4.7	0	--	--
West North Central	332	2.97	8.9	72,407	0.26	4.9	20,013	0.73	9.7
Iowa	0	--	--	11,043	0.25	4.9	0	--	--
Kansas	0	--	--	12,351	0.28	5.2	0	--	--
Minnesota	0	--	--	8,693	0.32	5.6	0	--	--
Missouri	332	2.97	8.9	27,484	0.23	4.6	0	--	--
Nebraska	0	--	--	11,754	0.27	4.9	0	--	--
North Dakota	0	--	--	0	--	--	20,013	0.73	9.7
South Dakota	0	--	--	1,082	0.31	5.1	0	--	--
South Atlantic	41,727	2.47	9.8	5,330	0.36	5.4	0	--	--
Delaware	0	--	--	0	--	--	0	--	--
District of Columbia	0	--	--	0	--	--	0	--	--
Florida	5,913	2.81	8.8	0	--	--	0	--	--
Georgia	4,874	2.38	9.0	5,330	0.36	5.4	0	--	--
Maryland	0	--	--	0	--	--	0	--	--
North Carolina	5,531	1.73	9.8	0	--	--	0	--	--
South Carolina	7,319	2.02	9.3	0	--	--	0	--	--
Virginia	949	0.99	19.4	0	--	--	0	--	--
West Virginia	17,142	2.86	10.2	0	--	--	0	--	--
East South Central	25,068	2.78	9.9	19,379	0.27	5.1	0	--	--
Alabama	2,338	1.07	12.1	10,847	0.30	5.2	0	--	--
Kentucky	20,770	2.95	9.8	6,527	0.23	5.0	0	--	--
Mississippi	57	1.29	11.4	1,116	0.27	5.0	0	--	--
Tennessee	1,903	2.92	9.0	890	0.21	4.8	0	--	--
West South Central	262	2.97	8.7	34,176	0.25	5.0	2,528	1.79	24.2
Arkansas	0	--	--	9,042	0.22	4.7	0	--	--
Louisiana	262	2.97	8.7	2,643	0.21	4.7	0	--	--
Oklahoma	0	--	--	5,741	0.24	5.0	0	--	--
Texas	0	--	--	16,750	0.28	5.1	2,528	1.79	24.2
Mountain	12,055	0.60	13.6	39,892	0.41	7.0	0	--	--
Arizona	0	--	--	8,510	0.54	9.0	0	--	--
Colorado	1,290	0.46	11.5	11,163	0.32	6.3	0	--	--
Idaho	0	--	--	0	--	--	0	--	--
Montana	0	--	--	0	--	--	0	--	--
Nevada	470	0.39	7.6	330	0.56	4.2	0	--	--
New Mexico	3,504	0.85	19.4	0	--	--	0	--	--
Utah	6,792	0.53	11.8	52	0.98	8.7	0	--	--
Wyoming	0	--	--	19,838	0.40	6.6	0	--	--
Pacific Contiguous	0	--	--	0	--	--	0	--	--
California	0	--	--	0	--	--	0	--	--
Oregon	0	--	--	0	--	--	0	--	--
Washington	0	--	--	0	--	--	0	--	--
Pacific Noncontiguous	0	--	--	0	--	--	256	0.12	6.7
Alaska	0	--	--	0	--	--	256	0.12	6.7
Hawaii	0	--	--	0	--	--	0	--	--
U.S. Total	102,356	2.45	10.0	200,892	0.29	5.3	22,798	0.82	11.0

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

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

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

Table 7.23. Receipts and Quality of Coal by Rank Delivered for Electricity Generation: Independent Power Producers by State, 2023

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	120	2.20	7.6	0	--	--	0	--	--
Connecticut	0	--	--	0	--	--	0	--	--
Maine	66	0.97	6.7	0	--	--	0	--	--
Massachusetts	0	--	--	0	--	--	0	--	--
New Hampshire	54	3.31	8.4	0	--	--	0	--	--
Rhode Island	0	--	--	0	--	--	0	--	--
Vermont	0	--	--	0	--	--	0	--	--
Middle Atlantic	2,746	2.59	8.7	0	--	--	0	--	--
New Jersey	0	--	--	0	--	--	0	--	--
New York	0	--	--	0	--	--	0	--	--
Pennsylvania	2,746	2.59	8.7	0	--	--	0	--	--
East North Central	21,538	3.22	12.8	10,760	0.24	4.6	0	--	--
Illinois	6,722	3.38	24.7	10,760	0.24	4.6	0	--	--
Indiana	2,298	3.32	9.1	0	--	--	0	--	--
Michigan	102	1.49	8.0	0	--	--	0	--	--
Ohio	12,417	3.15	8.9	0	--	--	0	--	--
Wisconsin	0	--	--	0	--	--	0	--	--
West North Central	0	--	--	0	--	--	0	--	--
Iowa	0	--	--	0	--	--	0	--	--
Kansas	0	--	--	0	--	--	0	--	--
Minnesota	0	--	--	0	--	--	0	--	--
Missouri	0	--	--	0	--	--	0	--	--
Nebraska	0	--	--	0	--	--	0	--	--
North Dakota	0	--	--	0	--	--	0	--	--
South Dakota	0	--	--	0	--	--	0	--	--
South Atlantic	4,445	3.24	10.2	0	--	--	0	--	--
Delaware	95	2.29	7.8	0	--	--	0	--	--
District of Columbia	0	--	--	0	--	--	0	--	--
Florida	0	--	--	0	--	--	0	--	--
Georgia	0	--	--	0	--	--	0	--	--
Maryland	1,135	2.45	12.3	0	--	--	0	--	--
North Carolina	0	--	--	0	--	--	0	--	--
South Carolina	88	0.87	9.8	0	--	--	0	--	--
Virginia	0	--	--	0	--	--	0	--	--
West Virginia	3,127	3.61	9.5	0	--	--	0	--	--
East South Central	0	--	--	0	--	--	2,926	0.48	14.6
Alabama	0	--	--	0	--	--	0	--	--
Kentucky	0	--	--	0	--	--	0	--	--
Mississippi	0	--	--	0	--	--	2,926	0.48	14.6
Tennessee	0	--	--	0	--	--	0	--	--
West South Central	0	--	--	27,582	0.32	5.4	11,427	0.95	15.5
Arkansas	0	--	--	2,076	0.22	4.6	0	--	--
Louisiana	0	--	--	2,022	0.26	4.9	0	--	--
Oklahoma	0	--	--	0	--	--	0	--	--
Texas	0	--	--	23,484	0.34	5.5	11,427	0.95	15.5
Mountain	0	--	--	8,255	0.65	8.4	0	--	--
Arizona	0	--	--	0	--	--	0	--	--
Colorado	0	--	--	0	--	--	0	--	--
Idaho	0	--	--	0	--	--	0	--	--
Montana	0	--	--	7,092	0.70	8.9	0	--	--
Nevada	0	--	--	667	0.32	5.4	0	--	--
New Mexico	0	--	--	0	--	--	0	--	--
Utah	0	--	--	0	--	--	0	--	--
Wyoming	0	--	--	495	0.43	6.3	0	--	--
Pacific Contiguous	0	--	--	2,599	0.38	7.7	0	--	--
California	0	--	--	0	--	--	0	--	--
Oregon	0	--	--	0	--	--	0	--	--
Washington	0	--	--	2,599	0.38	7.7	0	--	--
Pacific Noncontiguous	0	--	--	0	--	--	0	--	--
Alaska	0	--	--	0	--	--	0	--	--
Hawaii	0	--	--	0	--	--	0	--	--
U.S. Total	28,850	3.15	11.9	49,196	0.36	5.8	14,353	0.87	15.4

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

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

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

Table 7.24. Receipts and Quality of Coal by Rank Delivered for Electricity Generation: Commercial Sector by State, 2023

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	3	3.22	9.5	0	--	--	0	--	--
Iowa	0	--	--	0	--	--	0	--	--
Kansas	0	--	--	0	--	--	0	--	--
Minnesota	0	--	--	0	--	--	0	--	--
Missouri	3	3.22	9.5	0	--	--	0	--	--
Nebraska	0	--	--	0	--	--	0	--	--
North Dakota	0	--	--	0	--	--	0	--	--
South Dakota	0	--	--	0	--	--	0	--	--
South Atlantic	0	--	--	0	--	--	0	--	--
Delaware	0	--	--	0	--	--	0	--	--
District of Columbia	0	--	--	0	--	--	0	--	--
Florida	0	--	--	0	--	--	0	--	--
Georgia	0	--	--	0	--	--	0	--	--
Maryland	0	--	--	0	--	--	0	--	--
North Carolina	0	--	--	0	--	--	0	--	--
South Carolina	0	--	--	0	--	--	0	--	--
Virginia	0	--	--	0	--	--	0	--	--
West Virginia	0	--	--	0	--	--	0	--	--
East South Central	0	--	--	0	--	--	0	--	--
Alabama	0	--	--	0	--	--	0	--	--
Kentucky	0	--	--	0	--	--	0	--	--
Mississippi	0	--	--	0	--	--	0	--	--
Tennessee	0	--	--	0	--	--	0	--	--
West South Central	0	--	--	0	--	--	0	--	--
Arkansas	0	--	--	0	--	--	0	--	--
Louisiana	0	--	--	0	--	--	0	--	--
Oklahoma	0	--	--	0	--	--	0	--	--
Texas	0	--	--	0	--	--	0	--	--
Mountain	0	--	--	0	--	--	0	--	--
Arizona	0	--	--	0	--	--	0	--	--
Colorado	0	--	--	0	--	--	0	--	--
Idaho	0	--	--	0	--	--	0	--	--
Montana	0	--	--	0	--	--	0	--	--
Nevada	0	--	--	0	--	--	0	--	--
New Mexico	0	--	--	0	--	--	0	--	--
Utah	0	--	--	0	--	--	0	--	--
Wyoming	0	--	--	0	--	--	0	--	--
Pacific Contiguous	0	--	--	0	--	--	0	--	--
California	0	--	--	0	--	--	0	--	--
Oregon	0	--	--	0	--	--	0	--	--
Washington	0	--	--	0	--	--	0	--	--
Pacific Noncontiguous	0	--	--	0	--	--	0	--	--
Alaska	0	--	--	0	--	--	0	--	--
Hawaii	0	--	--	0	--	--	0	--	--
U.S. Total	3	3.22	9.5	0	--	--	0	--	--

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

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

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

Table 7.25. Receipts and Quality of Coal by Rank Delivered for Electricity Generation: Industrial Sector by State, 2023

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	108	2.21	7.8	0	--	--	0	--	--
New Jersey	0	--	--	0	--	--	0	--	--
New York	0	--	--	0	--	--	0	--	--
Pennsylvania	108	2.21	7.8	0	--	--	0	--	--
East North Central	853	3.50	8.5	750	0.22	4.4	0	--	--
Illinois	853	3.50	8.5	750	0.22	4.4	0	--	--
Indiana	0	--	--	0	--	--	0	--	--
Michigan	0	--	--	0	--	--	0	--	--
Ohio	0	--	--	0	--	--	0	--	--
Wisconsin	0	--	--	0	--	--	0	--	--
West North Central	121	3.44	8.9	2,583	0.20	4.5	0	--	--
Iowa	121	3.44	8.9	1,973	0.20	4.6	0	--	--
Kansas	0	--	--	0	--	--	0	--	--
Minnesota	0	--	--	0	--	--	0	--	--
Missouri	0	--	--	0	--	--	0	--	--
Nebraska	0	--	--	610	0.21	4.4	0	--	--
North Dakota	0	--	--	0	--	--	0	--	--
South Dakota	0	--	--	0	--	--	0	--	--
South Atlantic	416	1.10	7.5	0	--	--	0	--	--
Delaware	0	--	--	0	--	--	0	--	--
District of Columbia	0	--	--	0	--	--	0	--	--
Florida	30	0.53	6.8	0	--	--	0	--	--
Georgia	132	1.22	8.4	0	--	--	0	--	--
Maryland	0	--	--	0	--	--	0	--	--
North Carolina	77	0.86	7.2	0	--	--	0	--	--
South Carolina	37	0.54	7.1	0	--	--	0	--	--
Virginia	140	1.41	7.1	0	--	--	0	--	--
West Virginia	0	--	--	0	--	--	0	--	--
East South Central	622	0.94	7.8	0	--	--	0	--	--
Alabama	0	--	--	0	--	--	0	--	--
Kentucky	0	--	--	0	--	--	0	--	--
Mississippi	0	--	--	0	--	--	0	--	--
Tennessee	622	0.94	7.8	0	--	--	0	--	--
West South Central	56	0.77	12.0	129	0.20	4.4	0	--	--
Arkansas	56	0.77	12.0	0	--	--	0	--	--
Louisiana	0	--	--	0	--	--	0	--	--
Oklahoma	0	--	--	129	0.20	4.4	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	536	0.54	9.6	0	--	--	0	--	--
California	536	0.54	9.6	0	--	--	0	--	--
Oregon	0	--	--	0	--	--	0	--	--
Washington	0	--	--	0	--	--	0	--	--
Pacific Noncontiguous	0	--	--	0	--	--	0	--	--
Alaska	0	--	--	0	--	--	0	--	--
Hawaii	0	--	--	0	--	--	0	--	--
U.S. Total	2,712	1.79	8.4	3,462	0.21	4.5	0	--	--

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

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

Chapter 8

Electric Power System Characteristics and Performance

Table 8.1. Average Operating Heat Rate for Selected Energy Sources, 2013 through 2023 (Btu per Kilowatthour)

Year	Coal	Petroleum	Natural Gas	Nuclear
2013	10,459	10,713	7,948	10,449
2014	10,428	10,814	7,907	10,459
2015	10,495	10,687	7,869	10,458
2016	10,493	10,811	7,863	10,459
2017	10,465	10,834	7,803	10,459
2018	10,481	11,095	7,811	10,455
2019	10,551	11,205	7,725	10,442
2020	10,655	11,259	7,725	10,446
2021	10,583	11,224	7,689	10,429
2022	10,689	11,166	7,740	10,448
2023	10,745	11,465	7,721	10,452

Note:
Coal includes anthracite, bituminous, subbituminous, lignite, waste coal, refined coal; and coal-derived synthesis gas.
Petroleum includes distillate fuel oil (all diesel and No. 1 and No. 2 fuel oils), residual fuel oil (No. 5 and No. 6 fuel oils and bunker C fuel oil, jet fuel, kerosene, petroleum coke, and waste oil.

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

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

Table 8.2. Average Tested Heat Rates by Prime Mover and Energy Source, 2013 - 2023

(Btu per Kilowatthour)

Prime Mover	Coal	Petroleum	Natural Gas	Nuclear
2013				
Steam Generator	10,089	10,334	10,354	10,449
Gas Turbine	--	13,555	11,371	--
Internal Combustion	--	10,401	9,573	--
Combined Cycle	W	9,937	7,667	--
2014				
Steam Generator	10,080	10,156	10,408	10,459
Gas Turbine	--	13,457	11,378	--
Internal Combustion	--	10,403	9,375	--
Combined Cycle	W	9,924	7,658	--
2015				
Steam Generator	10,059	10,197	10,372	10,458
Gas Turbine	--	13,550	11,302	--
Internal Combustion	--	10,379	9,322	--
Combined Cycle	W	9,676	7,655	--
2016				
Steam Generator	10,045	10,189	10,382	10,459
Gas Turbine	--	13,535	11,214	--
Internal Combustion	--	10,331	9,179	--
Combined Cycle	W	9,860	7,652	--
2017				
Steam Generator	10,043	10,199	10,353	10,459
Gas Turbine	--	13,491	11,176	--
Internal Combustion	--	10,301	9,120	--
Combined Cycle	W	9,811	7,649	--
2018				
Steam Generator	10,015	10,270	10,334	10,455
Gas Turbine	--	13,352	11,138	--
Internal Combustion	--	10,326	9,009	--
Combined Cycle	W	9,663	7,627	--
2019				
Steam Generator	10,002	10,236	10,347	10,442
Gas Turbine	--	13,315	11,098	--
Internal Combustion	--	10,325	8,899	--
Combined Cycle	W	9,662	7,633	--
2020				
Steam Generator	9,997	10,339	10,368	10,446
Gas Turbine	--	13,223	11,069	--
Internal Combustion	--	10,334	8,832	--
Combined Cycle	W	9,208	7,604	--
2021				
Steam Generator	10,002	10,347	10,365	10,429
Gas Turbine	--	13,227	11,068	--
Internal Combustion	--	10,461	8,821	--
Combined Cycle	W	9,208	7,580	--
2022				
Steam Generator	10,026	10,263	10,295	10,448
Gas Turbine	--	13,217	11,030	--
Internal Combustion	--	10,475	8,894	--
Combined Cycle	W	9,204	7,596	--
2023				
Steam Generator	10,020	10,314	10,285	10,452
Gas Turbine	--	13,088	11,010	--
Internal Combustion	--	10,506	8,900	--
Combined Cycle	W	9,696	7,549	--

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

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

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

Table 8.3. Revenue and Expense Statistics for Major U.S. Investor-Owned Electric Utilities, 2013 through 2023 (Million Dollars)

Description	2013	2014	2015	2016	2017	2018
Utility Operating Revenues	**281,901**	**298,430**	**282,695**	**282,499**	**286,501**	**293,868**
......Electric Utility	257,718	271,832	260,121	261,047	263,265	268,421
......Other Utility	24,183	26,598	22,574	21,451	23,235	25,447
Utility Operating Expenses	**244,316**	**258,936**	**242,728**	**239,037**	**240,041**	**253,944**
......Electric Utility	227,483	240,643	228,366	226,457	226,110	238,526
.....Operation	156,077	165,989	149,939	145,077	142,000	163,479
.....Production	115,046	123,366	107,201	100,852	98,859	104,185
.....Cost of Fuel	41,127	42,545	34,711	32,621	32,165	33,592
.....Purchased Power	55,529	62,066	52,970	49,962	49,030	53,060
.....Other	18,390	18,755	19,521	18,269	17,664	17,533
.....Transmission	7,881	8,902	9,624	10,447	10,804	11,387
.....Distribution	4,197	4,331	4,406	4,734	4,358	4,806
.....Customer Accounts	5,107	5,255	5,184	5,077	4,789	4,969
.....Customer Service	5,906	6,396	6,445	6,187	5,961	6,019
.....Sales	203	208	201	205	213	203
.....Administrative and General	17,738	17,532	16,878	17,575	17,016	31,911
.....Maintenance	15,505	16,801	16,392	16,982	17,996	17,786
.....Depreciation	24,723	25,919	26,847	30,097	30,323	32,125
.....Taxes and Other	31,179	31,934	35,188	34,301	35,791	25,136
......Other Utility	16,833	18,293	14,362	12,579	13,931	15,418
Net Utility Operating Income	**37,585**	**39,494**	**39,968**	**43,462**	**46,460**	**39,924**

Description	2019	2020	2021	2022	2023
Utility Operating Revenues	**293,000**	**294,756**	**329,138**	**381,129**	**378,230**
......Electric Utility	266,876	269,869	299,956	344,355	343,701
......Other Utility	26,124	24,888	29,181	36,774	34,529
Utility Operating Expenses	**250,136**	**240,802**	**271,078**	**315,491**	**307,839**
......Electric Utility	234,892	227,084	253,979	292,247	287,611
.....Operation	157,265	144,335	163,952	196,589	185,924
.....Production	99,518	93,505	110,775	140,287	126,857
.....Cost of Fuel	29,614	25,856	34,771	49,486	36,229
.....Purchased Power	50,378	50,407	61,627	80,032	67,897
.....Other	19,526	17,242	14,377	10,768	22,731
.....Transmission	11,941	12,949	15,310	15,872	15,746
.....Distribution	5,218	5,480	5,659	5,973	6,402
.....Customer Accounts	4,978	5,775	5,249	5,658	6,607
.....Customer Service	6,156	5,868	6,192	6,659	6,953
.....Sales	204	211	215	255	217
.....Administrative and General	29,248	20,546	20,553	21,886	23,142
.....Maintenance	19,898	20,030	20,875	21,834	21,570
.....Depreciation	34,883	38,208	39,666	42,104	44,693
.....Taxes and Other	22,846	24,510	29,485	31,720	35,424
......Other Utility	15,245	13,718	17,100	23,244	20,228
Net Utility Operating Income	**42,864**	**53,954**	**58,060**	**65,638**	**70,391**

Notes: Missing or erroneous respondent data may result in slight imbalances in some of the expense account subtotals.
Total may not equal sum of components due to independent rounding.

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

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

Electric Utilities, 2013 through 2023 (Mills per Kilowatthour)

	Operation				Maintenance			
Year	Nuclear	Fossil Steam	Hydro-electric	Gas Turbine and Small Scale	Nuclear	Fossil Steam	Hydro-electric	Gas Turbine and Small Scale
2013	12.51	4.57	6.56	2.56	6.64	4.41	4.32	2.80
2014	12.41	4.55	7.30	2.63	6.67	5.11	4.59	2.90
2015	11.17	5.16	8.37	2.34	7.06	5.41	5.06	2.68
2016	10.90	5.05	6.65	2.49	7.01	5.53	4.34	2.74
2017	10.27	5.01	6.33	2.45	6.63	5.13	3.96	2.83
2018	10.78	5.19	6.69	2.37	5.93	5.27	3.96	2.71
2019	10.63	5.52	6.86	2.58	6.29	6.85	3.94	2.64
2020	10.05	6.40	7.72	2.38	5.78	5.60	5.00	2.51
2021	10.55	5.70	7.98	2.12	5.88	5.32	4.33	2.28
2022	10.51	6.75	7.68	2.20	6.10	5.09	4.76	2.36
2023	9.52	6.48	9.18	2.16	6.36	5.61	5.53	2.12

	Fuel				Total			
Year	Nuclear	Fossil Steam	Hydro-electric	Gas Turbine and Small Scale	Nuclear	Fossil Steam	Hydro-electric	Gas Turbine and Small Scale
2013	8.14	28.94	--	32.56	27.29	37.92	10.88	37.92
2014	7.71	29.39	--	37.06	26.79	39.04	11.90	42.60
2015	7.48	26.70	--	28.22	25.71	37.26	13.42	33.24
2016	7.45	25.50	--	24.97	25.36	36.08	10.98	30.19
2017	7.47	25.27	--	26.48	24.38	35.41	10.29	31.76
2018	7.15	25.40	--	27.35	23.86	35.86	10.65	32.43
2019	6.81	24.28	--	23.11	23.73	36.66	10.80	28.33
2020	6.10	22.87	--	19.65	21.92	34.86	12.71	24.55
2021	6.31	24.64	--	25.78	22.74	35.66	12.30	30.18
2022	6.12	32.04	--	38.72	22.73	43.88	12.44	43.28
2023	6.12	30.58	--	22.19	22.00	42.67	14.71	26.47

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

Chapter 9

Environmental Data

Table 9.1. Emissions from Energy Consumption at Conventional Power Plants and Combined-Heat-and-Power Plants 2013 through 2023 (Thousand Metric Tons)

Year	Carbon Dioxide (CO2)	Sulfur Dioxide (SO2)	Nitrogen Oxides (NOx)
2013	2,173,806	3,609	2,163
2014	2,168,284	3,454	2,100
2015	2,031,452	2,548	1,824
2016	1,928,401	1,807	1,630
2017	1,849,750	1,599	1,493
2018	1,872,330	1,517	1,474
2019	1,724,873	1,267	1,342
2020	1,553,586	1,023	1,211
2021	1,651,911	1,168	1,253
2022	1,650,367	1,079	1,230
2023	1,531,554	848	1,117

Notes:
The emissions data presented include total emissions from both electricity generation and the production of useful thermal output.
See Appendix A, Technical Notes, for a description of the sources and methodology used to develop the emissions estimates.
Source: Calculations made by the Office of Electricity, Renewables, and Uranium Statistics, U.S. Energy Information Administration.

Table 9.2. Quantity and Net Summer Capacity of Operable Environmental Equipment, 2013 - 2023

	Flue Gas Desulfurization Systems		Electrostatic Precipitators		Baghouses		Select Catalytic and Non-Catalytic Reduction Systems		Activated Carbon Injection Systems		Direct Sorbent Injection Systems	
Year	Quantity	Associated Net Summer Capacity (MW)	Quantity	Associated Net Summer Capacity (MW)	Quantity	Associated Net Summer Capacity (MW)	Quantity	Associated Net Summer Capacity (MW)	Quantity	Associated Net Summer Capacity (MW)	Quantity	Associated Net Summer Capacity (MW)
2013	705	219,359	1,219	289,545	637	104,331	1,468	353,748	262	61,215	98	13,121
2014	702	223,835	1,173	284,303	621	105,990	1,482	360,941	280	69,287	105	16,913
2015	693	224,143	1,038	265,268	623	110,820	1,490	362,401	364	106,450	123	23,443
2016	697	228,583	944	253,267	614	112,824	1,494	365,037	482	153,800	126	26,815
2017	682	222,592	887	244,450	603	109,759	1,503	368,435	477	151,208	128	25,916
2018	663	214,161	842	229,774	584	105,546	1,500	369,019	455	143,471	121	26,415
2019	618	203,115	784	217,711	537	102,103	1,473	366,207	431	136,597	116	25,615
2020	594	193,201	749	207,516	514	98,754	1,452	362,873	410	130,761	112	23,917
2021	569	186,384	708	197,689	483	94,981	1,433	360,294	396	127,791	108	22,975
2022	550	178,106	665	183,139	465	91,537	1,407	353,745	364	117,573	103	22,308
2023	521	167,232	621	171,029	454	89,970	1,383	346,601	344	110,996	98	21,257

Note:
'Associated Net Summer Capacity' is defined as the net summer capacity of the generators that are associated with the operation of this environmental equipment.
In some cases respondents have reported equipment late. Counts and capacity may have changed from prior publications of this table because of late reporting.

Source: Form EIA-860, "Annual Electric Generator Report."

Table 9.3. Quantity and Net Summer Capacity of Operable Cooling Systems, by Energy Source and Cooling System Type, 2013 - 2023

	Once-Through Cooling Systems		Recirculating Cooling Systems		Cooling Ponds		Dry Cooling Systems		Hybrid Wet and Dry Cooling Systems		Other Cooling System Types	
Energy Source	Quantity	Associated Net Summer Capacity (MW)	Quantity	Associated Net Summer Capacity (MW)	Quantity	Associated Net Summer Capacity (MW)	Quantity	Associated Net Summer Capacity (MW)	Quantity	Associated Net Summer Capacity (MW)	Quantity	Associated Net Summer Capacity (MW)
2013												
Coal	345	120,340	357	164,826	77	39,482	4	1,422	1	750	11	4,797
Natural Gas	159	51,291	428	88,707	58	18,883	58	12,828	4	637	4	2,481
Nuclear	45	50,266	38	40,013	13	15,251	--	--	--	--	8	11,181
Petroleum	51	12,760	11	3,481	4	4,692	--	--	--	--	--	--
Solar Thermal	--	--	2	591	--	--	4	516	--	--	--	--
Other	15	1,301	31	2,561	1	66	--	--	--	--	1	128
2014												
Coal	328	115,930	340	160,534	74	38,906	4	1,422	1	750	22	8,322
Natural Gas	161	50,985	420	84,984	56	20,294	58	11,878	4	637	3	2,419
Nuclear	44	49,586	35	37,650	13	15,237	--	--	--	--	9	11,886
Petroleum	42	10,893	11	3,473	4	4,691	--	--	--	--	--	--
Solar Thermal	--	--	4	841	--	--	5	900	--	--	--	--
Other	16	1,332	31	2,756	1	66	1	72	--	--	1	128
2015												
Coal	259	93,180	313	153,917	77	45,026	4	1,422	1	750	25	9,883
Natural Gas	160	49,219	437	88,982	59	22,351	59	12,038	3	475	3	2,410
Nuclear	43	47,268	35	37,610	14	17,663	--	--	--	--	9	12,062
Petroleum	29	9,104	9	2,308	4	4,299	--	--	--	--	--	--
Solar Thermal	--	--	4	866	--	--	5	900	1	110	--	--
Other	18	1,676	26	2,104	1	66	1	72	--	--	1	128
2016												
Coal	210	82,047	294	149,187	79	44,702	4	1,422	1	750	22	10,148
Natural Gas	168	49,664	441	88,690	58	21,970	64	14,128	3	475	3	2,359
Nuclear	42	47,029	35	38,745	14	17,660	--	--	--	--	9	13,298
Petroleum	27	8,620	8	2,222	3	3,904	--	--	--	--	--	--
Solar Thermal	--	--	4	866	--	--	5	900	1	110	--	--
Other	18	1,689	24	2,035	1	66	1	72	--	--	1	128
2017												
Coal	197	76,492	281	142,578	75	44,341	4	1,422	1	750	19	9,581
Natural Gas	172	50,053	440	91,398	59	21,677	66	15,271	4	801	6	3,772
Nuclear	42	47,013	35	38,784	14	17,700	--	--	--	--	9	13,298
Petroleum	26	8,174	8	1,844	4	3,965	--	--	--	--	--	--
Solar Thermal	--	--	4	866	--	--	5	900	1	110	--	--
Other	17	1,582	26	2,464	2	97	2	245	--	--	1	128
2018												
Coal	180	70,659	273	138,632	67	39,593	4	1,422	1	750	16	8,089
Natural Gas	161	47,653	446	93,078	59	21,549	77	18,613	4	801	7	4,478
Nuclear	41	46,723	35	38,805	14	17,759	--	--	--	--	9	13,608
Petroleum	27	8,575	8	1,844	3	2,304	--	--	--	--	--	--
Solar Thermal	--	--	4	866	--	--	5	900	1	110	--	--
Other	17	1,931	25	2,161	1	31	1	72	--	--	1	128
2019												
Coal	163	67,142	246	129,998	63	37,807	4	1,432	1	750	14	7,629
Natural Gas	150	45,079	448	95,673	56	21,279	78	18,769	4	801	7	4,058
Nuclear	40	46,244	34	37,970	14	17,759	--	--	--	--	10	14,927
Petroleum	26	8,147	7	1,684	3	2,302	--	--	--	--	--	--
Solar Thermal	--	--	4	866	--	--	5	900	1	110	--	--
Other	18	1,962	25	2,161	--	--	1	72	--	--	1	128
2020												
Coal	143	61,538	232	123,410	58	35,832	5	1,536	1	750	13	6,703
Natural Gas	152	46,653	453	97,151	56	23,018	83	19,640	4	801	8	4,804
Nuclear	39	43,163	33	37,281	14	17,855	--	--	--	--	9	14,326
Petroleum	24	7,175	6	898	2	682	--	--	--	--	--	--
Solar Thermal	--	--	4	866	--	--	5	893	1	110	--	--
Other	18	1,955	25	2,158	--	--	1	72	--	--	1	128
2021												
Coal	130	59,230	221	119,928	58	35,856	5	1,536	1	750	14	7,992
Natural Gas	144	44,244	460	101,024	52	22,762	82	19,627	4	801	6	3,612
Nuclear	38	42,013	33	37,471	14	17,862	--	--	--	--	9	14,213
Petroleum	24	7,622	6	898	2	684	--	--	--	--	--	--
Solar Thermal	--	--	4	866	--	--	5	893	1	110	--	--
Other	18	1,955	22	2,045	--	--	1	72	--	--	1	128
2022												
Coal	105	46,596	207	112,393	57	35,718	4	1,432	1	750	11	6,581
Natural Gas	146	46,954	458	102,623	52	21,970	85	21,884	4	801	9	4,947
Nuclear	38	42,002	32	36,609	14	17,847	--	--	--	--	9	14,198
Petroleum	27	9,035	6	1,020	1	628	--	--	--	--	--	--
Solar Thermal	--	--	4	866	--	--	5	893	1	110	--	--
Other	15	1,760	19	1,773	--	--	1	72	--	--	1	128
2023												
Coal	94	41,649	198	107,601	54	34,183	4	1,432	1	750	10	5,581
Natural Gas	136	44,252	456	103,264	52	21,758	90	24,794	5	947	7	3,901
Nuclear	38	41,999	33	37,713	14	17,799	--	--	--	--	9	14,198
Petroleum	26	7,954	6	1,020	1	637	--	--	--	--	--	--
Solar Thermal	--	--	4	866	--	--	5	893	1	110	--	--
Other	16	1,806	20	1,826	--	--	1	72	--	--	1	128

Notes:
'Associated Net Summer Capacity' is defined as the net summer capacity of the generators that are associated with the operation of this environmental equipment.
In some cases respondents have reported equipment late. Counts and capacity may have changed from prior publications of this table because of late reporting.
Coal includes anthracite, bituminous, subbituminous, lignite, waste coal, refined coal; and coal-derived synthesis gas.
Petroleum Liquids includes distillate and residual fuel oils, jet fuel, kerosene, waste oil, and beginning in 2011, propane.
Petroleum Coke includes petroleum coke-derived synthesis gas.
Other Energy Sources consists of wood and wood waste products, biomass, blast furnace gas and Other Fossil Gas.

Source: Form EIA-860, "Annual Electric Generator Report."

Table 9.4. Average Costs of Existing Flue Gas Desulfurization Units Operating in Electric Power Sector, 2013 - 2023

Year	Average Operation and Maintenance Costs (Dollars per Megawatthour)	Average Installed Capital Costs (Dollars per Kilowatt)
2013	1.74	255.86
2014	1.84	186.45
2015	2.03	157.83
2016	1.96	303.32
2017	2.15	242.88
2018	2.08	--
2019	2.11	452.20
2020	2.21	--
2021	2.14	--
2022	2.36	108.15
2023	2.54	--

Notes:
Average Installed Capital Costs reflect units which began operating in the specified year.
Years in which no new Flue Gas Desulfurization units were installed a '--' is indicated in the Average Installed Capital Cost column.
Average Operation and Maintenance Costs are based on all units in operation during the specified year regardless of installation year.
Commercial and industrial facilities had significantly different costs than units used in the electric power sector. In order to give a more accurate reflection of the electric power sector, commercial and industrial facilities have been excluded from this publication table.

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

Table 9.5. Emissions from Energy Consumption at Conventional Power Plants and Combined-Heat-and-Power Plants, by State, 2022 and 2023 (Thousand Metric Tons)

Census Division and State	Carbon Dioxide (CO2)		Sulfur Dioxide (SO2)		Nitrogen Oxides (NOx)	
	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
New England	27,434	28,152	7	9	21	22
Connecticut	10,653	10,757	0	1	5	5
Maine	2,434	2,792	4	5	4	5
Massachusetts	8,263	9,098	2	2	8	7
New Hampshire	2,060	2,543	0	1	2	2
Rhode Island	4,014	2,949	0	0	2	2
Vermont	9	13	0	0	1	1
Middle Atlantic	114,738	124,234	33	49	63	74
New Jersey	15,112	15,891	1	1	8	8
New York	29,418	30,788	6	8	25	27
Pennsylvania	70,207	77,555	26	40	31	39
East North Central	249,331	287,484	149	229	155	188
Illinois	42,186	53,796	29	52	18	28
Indiana	61,252	70,490	23	31	43	50
Michigan	50,018	58,510	31	49	43	49
Ohio	63,226	71,710	59	85	31	42
Wisconsin	32,649	32,978	7	12	20	20
West North Central	161,366	183,329	170	201	133	159
Iowa	24,593	26,163	18	23	19	26
Kansas	20,280	23,881	3	4	14	18
Minnesota	20,842	22,327	11	14	18	21
Missouri	45,916	57,147	66	87	34	45
Nebraska	19,770	22,174	38	41	18	20
North Dakota	27,040	28,813	33	32	27	28
South Dakota	2,926	2,825	1	1	3	2
South Atlantic	281,059	297,954	147	179	176	194
Delaware	2,374	2,682	0	0	1	2
District of Columbia	73	64	0	0	0	0
Florida	93,735	97,615	21	34	44	50
Georgia	43,044	43,772	42	42	35	36
Maryland	9,138	11,240	2	3	5	5
North Carolina	36,765	41,255	18	23	36	40
South Carolina	25,599	24,857	19	21	15	16
Virginia	24,587	26,093	10	12	15	17
West Virginia	45,743	50,376	36	42	26	28
East South Central	148,514	161,158	86	100	78	82
Alabama	46,082	52,252	25	27	23	24
Kentucky	50,039	55,012	34	44	29	31
Mississippi	27,096	27,308	11	11	14	16
Tennessee	25,297	26,586	16	17	11	11
West South Central	310,377	319,796	165	209	241	251
Arkansas	28,363	31,303	32	37	17	20
Louisiana	42,944	48,266	24	33	53	52
Oklahoma	26,301	26,607	9	12	21	22
Texas	212,769	213,621	101	126	150	157
Mountain	162,426	175,133	58	66	119	135
Arizona	34,788	32,948	6	7	22	23
Colorado	27,579	29,739	9	9	15	18
Idaho	3,002	2,287	3	3	4	4
Montana	13,774	13,656	8	8	12	12
Nevada	12,540	13,509	3	3	10	10
New Mexico	13,542	18,112	2	2	7	11
Utah	20,620	26,262	4	8	21	29
Wyoming	36,580	38,619	22	25	28	30
Pacific Contiguous	66,670	63,109	14	19	94	91
California	43,360	44,448	1	1	59	63
Oregon	9,636	7,874	4	4	22	16
Washington	13,674	10,787	10	14	13	12
Pacific Noncontiguous	9,639	10,018	19	19	37	34
Alaska	3,605	3,592	2	2	20	18
Hawaii	6,035	6,427	17	17	16	16
U.S. Total	1,531,554	1,650,367	848	1,079	1,117	1,230

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

Source: Calculations made by the Office of Energy Production Conversion and Delivery, U.S. Energy Information Administration.

Chapter 10

Energy Efficiency, Demand Response and Advanced Meters

Table 10.1. Energy Efficiency Category, by Sector, 2013 through 2023

Year	Residential	Commercial	Industrial	Transportation	Total
Incremental Annual Savings - Energy Savings (MWh)					
2014	11,443,087	11,928,798	3,074,819	19,316	26,466,020
2015	11,012,627	12,285,000	2,818,448	13,414	26,129,489
2016	11,712,873	13,348,029	2,425,175	14,147	27,500,224
2017	13,199,995	14,095,101	2,592,155	11,776	29,899,028
2018	12,459,323	13,350,203	2,565,238	40,273	28,415,037
2019	13,283,024	12,706,234	2,538,169	35,103	28,562,529
2020	13,136,061	12,464,063	2,559,475	7,859	28,167,459
2021	12,444,823	11,459,062	1,853,577	3,195	25,760,657
2022	11,709,919	10,835,070	1,839,391	139	24,384,518
2023	11,243,272	11,048,142	1,929,875	--	24,221,289
Incremental Annual Savings - Peak Demand Savings (MW)					
2014	3,000	2,889	563	2	6,453
2015	2,654	2,891	407	--	5,952
2016	2,698	2,556	401	3	5,658
2017	2,790	2,739	540	1	6,071
2018	2,775	3,072	459	4	6,309
2019	3,402	3,116	614	4	7,135
2020	2,985	2,877	424	1	6,287
2021	2,753	2,712	336	1	5,801
2022	2,466	2,499	479	--	5,445
2023	2,204	3,191	366	--	5,761
Incremental Costs - Customer Incentive (thousand dollars)					
2014	1,522,205	1,561,358	327,227	64	3,410,854
2015	1,488,651	1,616,843	342,773	20	3,448,286
2016	1,541,458	1,733,170	296,321	--	3,570,950
2017	1,657,086	1,713,295	294,026	--	3,664,407
2018	1,602,723	1,608,369	273,676	--	3,484,767
2019	1,712,243	1,659,591	285,643	--	3,657,477
2020	1,358,512	1,557,663	236,198	--	3,152,372
2021	1,574,404	1,594,830	206,571	--	3,375,805
2022	1,644,822	1,531,745	197,812	--	3,374,379
2023	1,826,044	1,771,421	252,897	--	3,850,362
Incremental Costs - All Other Costs (thousand dollars)					
2014	1,088,914	911,967	208,095	122	2,209,098
2015	1,152,224	938,021	193,015	40	2,283,300
2016	1,387,122	959,160	176,560	12	2,522,854
2017	1,221,072	900,291	176,585	10	2,297,957
2018	1,127,692	874,427	163,783	78	2,165,981
2019	1,209,389	910,039	168,567	33	2,288,028
2020	1,108,027	844,860	159,365	9	2,112,261
2021	1,178,407	932,133	130,700	3	2,240,600
2022	1,110,656	964,655	141,385	--	2,216,696
2023	1,250,790	1,124,056	163,345	--	2,538,191

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

Table 10.2. Energy Efficiency - Life Cycle Category, by Sector, 2013 through 2023

Year	Residential	Commercial	Industrial	Transportation	Total
Life Cycle Savings - Energy Savings (MWh)					
2014	105,870,642	156,171,166	39,626,390	287,925	301,956,123
2015	99,512,487	160,045,443	36,589,144	199,328	296,346,403
2016	134,003,597	186,654,713	33,477,182	212,200	354,347,692
2017	137,297,599	204,102,657	33,249,999	176,636	374,826,892
2018	129,572,460	195,288,558	33,981,062	604,095	359,446,175
2019	134,474,216	186,931,400	33,284,347	526,549	355,216,512
2020	144,098,659	190,336,319	33,276,349	117,879	367,829,206
2021	122,339,730	153,947,500	23,992,054	47,932	300,327,216
2022	113,782,935	137,420,139	22,384,375	2,085	273,589,534
2023	101,341,591	146,197,493	22,912,335		270,451,419
Life Cycle Savings - Peak Demand Savings (MW)					
2014	4,058	3,308	672	2	8,040
2015	3,492	3,104	500		7,096
2016	3,408	3,132	507	3	7,050
2017	2,668	2,698	584	1	5,951
2018	2,649	2,987	436	4	6,075
2019	3,322	2,993	613	4	6,931
2020	2,769	2,807	425	1	6,003
2021	2,628	2,651	351	1	5,631
2022	2,294	2,449	473		5,216
2023	2,069	3,214	372		5,655
Life Cycle Costs - Customer Incentive (thousand dollars)					
2014	1,748,893	1,912,277	346,218	64	4,007,452
2015	1,844,246	1,997,677	413,416	30	4,255,368
2016	1,704,458	2,079,373	342,927		4,126,758
2017	2,194,049	2,359,255	296,498		4,849,803
2018	1,808,354	2,093,170	276,381		4,177,905
2019	1,911,197	2,000,492	440,237		4,351,926
2020	1,414,886	1,650,928	495,334		3,561,148
2021	1,636,371	1,713,633	328,872	3	3,678,879
2022	1,920,560	1,885,652	213,120		4,019,332
2023	2,035,217	2,125,178	253,091		4,413,487
Life Cycle Costs - All Other Costs (thousand dollars)					
2014	1,555,433	1,348,672	216,673	122	3,120,898
2015	2,086,543	1,407,658	216,226	40	3,710,453
2016	1,964,832	1,265,765	202,112	12	3,432,717
2017	1,649,863	1,335,176	177,945	10	3,162,995
2018	2,605,135	1,409,483	164,623	78	4,179,320
2019	1,884,678	1,527,461	243,435	33	3,655,607
2020	1,773,693	1,346,643	228,973	9	3,349,318
2021	1,258,415	1,015,672	192,451	3	2,466,541
2022	1,314,337	1,205,465	147,051		2,666,853
2023	1,420,950	1,335,146	163,528		2,919,623

* = Value is less than half of the smallest unit of measure.
Source: U.S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report."

Table 10.3. Demand Response - Yearly Energy and Demand Savings Category, by Sector, 2013 through 2023

Year	Residential	Commercial	Industrial	Transportation	Total
Number of Customers Enrolled					
2014	8,603,402	605,094	57,129	4	9,265,629
2015	8,140,688	890,284	63,163	3	9,094,138
2016	8,739,535	1,033,649	66,170	1	9,839,355
2017	8,287,913	1,084,392	68,630	3	9,440,938
2018	8,700,669	986,816	64,753	--	9,752,238
2019	10,447,335	432,669	52,841	--	10,932,845
2020	11,302,017	324,939	38,706	1	11,665,663
2021	10,196,668	255,355	40,560	1	10,492,584
2022	10,044,583	235,825	39,365	1	10,319,774
2023	10,282,113	245,332	39,808	1	10,567,254
Energy Savings (MWh)					
2014	881,563	462,337	92,549	--	1,436,449
2015	855,017	273,089	122,900	--	1,251,006
2016	1,005,144	225,174	105,818	--	1,336,136
2017	948,037	244,603	118,230	--	1,310,862
2018	1,099,179	221,502	105,536	--	1,426,211
2019	1,075,567	306,832	80,336	--	1,462,735
2020	1,186,421	251,719	70,984	--	1,509,124
2021	984,129	88,947	80,715	--	1,153,791
2022	1,004,031	126,867	162,081	--	1,292,980
2023	230,285	107,321	69,649	--	407,255
Potential Peak Demand Savings (MW)					
2014	8,118	6,215	16,505	353	31,191
2015	8,703	6,989	17,169	14	32,875
2016	10,518	11,053	14,339	14	35,924
2017	8,996	6,995	15,512	5	31,508
2018	8,539	7,021	15,335	--	30,895
2019	8,867	6,907	15,246	--	31,020
2020	8,535	5,837	15,098	--	29,470
2021	8,705	6,646	13,871	--	29,222
2022	9,039	6,545	14,864	--	30,448
2023	9,667	7,035	13,840	--	30,542
Actual Peak Demand Savings (MW)					
2014	3,147	2,652	6,883	1	12,683
2015	3,430	3,047	6,546	13	13,036
2016	3,608	3,598	4,632	4	11,841
2017	3,960	2,743	5,546	--	12,248
2018	3,788	2,694	6,040	--	12,522
2019	3,426	2,403	5,505	--	11,334
2020	3,504	2,115	4,768	--	10,387
2021	3,836	2,807	5,569	--	12,211
2022	4,606	2,608	6,613	--	13,827
2023	4,082	2,661	4,009	--	10,752

Energy Savings dropped due to a reclassification in the 2023 annual filings.
Source: U.S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report."

Table 10.4. Demand Response - Program Costs Category, by Sector, 2013 through 2023

Year	Residential	Commercial	Industrial	Transportation	Total
Customer Incentives (thousand dollars)					
2014	345,894	345,435	514,751	11,716	1,217,796
2015	320,683	338,153	461,271	339	1,120,446
2016	306,635	448,332	284,584	339	1,039,890
2017	292,443	345,226	365,451	--	1,003,124
2018	310,892	347,235	531,157	--	1,189,284
2019	306,152	322,611	490,119	--	1,118,882
2020	274,021	281,304	432,328	--	987,653
2021	293,293	314,739	580,358	--	1,188,390
2022	265,186	287,785	596,309	--	1,149,280
2023	262,583	306,095	550,092	--	1,118,770
All Other Costs (thousand dollars)					
2014	301,389	101,127	45,028	115	447,659
2015	256,519	78,758	46,613	28	381,918
2016	253,180	66,084	60,443	--	379,707
2017	245,231	68,251	57,221	--	370,700
2018	235,159	66,024	59,534	--	360,718
2019	223,129	49,407	70,677	--	343,214
2020	213,592	59,905	53,365	10	326,872
2021	218,758	70,615	22,709	10	312,091
2022	244,430	62,832	21,782	10	329,053
2023	222,739	64,259	24,935	10	311,943

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

Table 10.05. Advanced Metering Count by Technology Type, 2014 through 2023

Year	Residential	Commercial	Industrial	Transportation	Total
Automated Meter Reading (AMR)					
2014	41,830,781	4,781,167	216,459	1,252	46,829,659
2015	42,326,302	5,049,978	226,908	1,023	47,604,211
2016	41,508,261	5,074,877	223,584	971	46,807,693
2017	39,325,014	4,813,029	230,099	707	44,368,849
2018	36,365,339	4,591,398	213,108	712	41,170,557
2019	32,750,506	4,160,628	207,286	861	37,119,281
2020	29,345,377	3,769,118	197,641	905	33,313,041
2021	26,098,336	3,550,517	184,358	920	29,834,131
2022	23,296,364	3,185,114	157,857	873	26,640,208
2023	19,591,318	2,982,169	156,330	571	22,730,388
Advanced Metering Infrastructure (AMI)					
2014	51,710,725	6,563,614	270,683	916	58,545,938
2015	57,107,785	7,324,345	310,889	813	64,743,832
2016	62,360,132	8,119,223	342,766	1,345	70,823,466
2017	69,474,626	9,060,128	365,447	1,389	78,901,590
2018	76,498,388	9,932,993	411,287	1,489	86,844,157
2019	83,539,594	10,850,886	446,871	1,504	94,838,855
2020	90,692,768	11,771,565	468,071	1,499	102,933,903
2021	97,708,824	12,930,423	535,725	1,786	111,176,758
2022	104,237,855	13,908,481	574,526	1,879	118,722,741
2023	112,175,762	14,830,952	755,067	2,584	127,764,365
Standard (non-AMR/AMI) Meters					
2014	32,995,176	5,642,247	254,621	1,331	38,893,375
2015	32,430,105	5,744,831	290,354	432	38,465,722
2016	28,491,094	4,929,344	280,406	416	33,701,260
2017	24,351,523	4,261,918	225,949	445	28,839,835
2018	21,982,727	3,884,695	186,001	414	26,053,837
2019	20,778,995	3,734,399	175,344	478	24,689,216
2020	18,941,774	3,572,152	140,087	510	22,654,523
2021	17,551,772	3,225,410	127,901	716	20,905,799
2022	15,675,775	2,953,060	106,426	691	18,735,952
2023	13,233,236	2,404,543	102,080	563	15,740,422
Total Number of Meters					
2014	126,536,682	16,987,028	741,763	3,499	144,268,972
2015	131,864,192	18,119,154	828,151	2,268	150,813,765
2016	132,359,487	18,123,444	846,756	2,732	151,332,419
2017	133,151,163	18,135,075	821,495	2,541	152,110,274
2018	134,846,454	18,409,086	810,396	2,615	154,068,551
2019	137,069,095	18,745,913	829,501	2,843	156,647,352
2020	138,979,919	19,112,835	805,799	2,914	158,901,467
2021	141,358,932	19,706,350	847,984	3,422	161,916,688
2022	143,209,994	20,046,655	838,809	3,443	164,098,901
2023	145,000,316	20,217,664	1,013,477	3,718	166,235,175

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

Chapter 11

Distribution System Reliability

Table 11.1 Reliability Metrics of U.S. Distribution System

	IEEE									Any Method					
	All Events (With Major Event Days)			Without Major Event Days			Loss of Supply Removed			All Events (With Major Events)			Without Major Events		
Year	SAIDI (minutes per year)	SAIFI (times per year)	CAIDI (minutes per interruption)	SAIDI (minutes per year)	SAIFI (times per year)	CAIDI (minutes per interruption)	SAIDI (minutes per year)	SAIFI (times per year)	CAIDI (minutes per interruption)	SAIDI (minutes per year)	SAIFI (times per year)	CAIDI (minutes per interruption)	SAIDI (minutes per year)	SAIFI (times per year)	CAIDI (minutes per interruption)
2013	227.2	1.2	191.5	111.9	1.0	112.6	225.5	1.1	202.6	215.7	1.2	179.8	106.1	1.0	106.9
2014	236.2	1.3	188.0	114.2	1.0	110.0	244.8	1.2	203.7	219.0	1.2	179.6	109.7	1.0	107.7
2015	209.0	1.3	163.9	117.0	1.1	109.1	198.2	1.2	170.4	205.0	1.2	164.5	113.1	1.0	108.1
2016	268.4	1.3	202.2	119.8	1.1	110.7	257.0	1.2	209.0	249.2	1.3	192.9	116.9	1.1	110.0
2017	505.9	1.4	356.2	117.0	1.0	114.3	489.6	1.3	390.6	473.1	1.4	339.3	114.4	1.0	113.6
2018	349.2	1.3	260.5	121.4	1.1	115.5	338.5	1.2	283.8	346.4	1.3	261.5	117.2	1.0	114.0
2019	295.5	1.3	221.8	122.2	1.0	117.5	289.1	1.2	243.0	284.6	1.3	214.8	118.6	1.0	116.6
2020	456.1	1.4	329.3	116.0	1.0	114.5	460.5	1.2	371.9	491.9	1.4	341.7	119.0	1.0	114.7
2021	475.8	1.4	331.2	125.7	1.0	120.9	404.5	1.3	312.6	440.0	1.4	308.8	121.5	1.0	118.5
2022	333.0	1.4	233.5	131.1	1.1	120.2	324.7	1.3	246.9	335.5	1.4	238.8	125.7	1.1	118.1
2023	366.6	1.3	271.8	123.9	1.0	121.3	357.7	1.2	288.0	342.0	1.3	256.6	118.4	1.0	118.5

SAIDI = System Average Interruption Duration Index. It is the minutes of non-momentary electric interruptions, per year, the average customer experienced.
SAIFI = System Average Interruption Frequency Index. It is the number of non-momentary electric interruptions, per year, the average customer experienced.
CAIDI = Customer Average Interruption Duration Index. It is average number of minutes it takes to restore non-momentary electric interruptions.
IEEE refers to the IEEE 1366-2003 or the IEEE 1366-2012 standard. Any method combines data from utilities that use IEEE standard with data from utilities that do not.
For utilities using the IEEE method, a Major Event Day is any day that exceeds a daily SAIDI threshold called Tmed. Tmed is a duration statistic calculated from daily SAIDI values from the past five years. For utilities not using IEEE methods, Major Events are self-determined by the reporting utility.
Loss of Supply Removed excludes outages due to loss of supply from the high-voltage/bulk power system.
For a five minute video explanation of these metrics, go to https://youtu.be/oVH9L0fCMTU.
Source: U.S. Energy Information Administration, Form EIA-861, Annual Electric Power Industry Report.

Table 11.2 Reliability Metrics Using IEEE of U.S. Distribution System by State, 2023 and 2022

			All Events (With Major Event Days)						Without Major Event Days						Loss of Supply Removed					
	Percent of Customers Reported		SAIDI (minutes per year)		SAIFI (times per year)		CAIDI (minutes per interruption)		SAIDI (minutes per year)		SAIFI (times per year)		CAIDI (minutes per interruption)		SAIDI (minutes per year)		SAIFI (times per year)		CAIDI (minutes per interruption)	
Census Division and State	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
New England	83.3%	85.5%	489.3	309.3	1.4	1.3	357.7	230.7	103.4	98.2	0.9	1.0	112.5	101.0	481.2	349.9	1.3	1.3	370.7	262.4
Connecticut	79.0%	78.5%	193.4	187.4	0.9	0.9	212.4	207.0	77.7	73.7	0.7	0.7	114.0	109.4	188.2	187.1	0.9	0.9	214.9	208.5
Maine	100.8%	102.7%	1,863.0	963.6	3.3	3.0	562.2	321.1	247.4	216.7	2.0	2.0	125.0	110.8	1,781.4	930.7	3.0	2.8	590.9	334.1
Massachusetts	86.0%	90.9%	265.3	165.8	1.1	1.1	248.2	151.7	83.5	84.4	0.8	0.9	105.7	94.0	268.5	186.4	1.0	1.0	262.0	186.9
New Hampshire	88.2%	88.2%	590.6	495.5	1.5	1.4	397.7	349.6	89.3	78.2	0.8	0.7	116.6	111.8	587.7	487.4	1.5	1.4	397.2	352.5
Rhode Island	98.3%	98.2%	104.6	81.9	0.8	1.0	133.7	85.4	52.2	63.2	0.7	0.8	78.3	78.2	100.8	81.1	0.7	0.9	136.9	87.0
Vermont	10.4%	10.5%	486.3	914.6	2.3	2.4	216.1	374.8	204.3	178.5	1.4	2.0	148.1	91.5	480.1	877.6	2.0	2.3	235.3	388.3
Middle Atlantic	58.8%	58.7%	196.8	184.7	1.0	1.1	189.0	167.7	112.2	111.7	0.9	1.0	126.1	117.3	185.9	176.3	1.0	1.0	195.5	173.3
New Jersey	99.3%	99.2%	108.2	89.6	0.9	0.9	122.9	102.3	88.0	78.7	0.8	0.8	106.0	94.0	99.2	81.4	0.8	0.8	126.8	104.9
New York	20.0%	20.1%	204.8	347.7	1.1	1.5	181.7	237.2	130.1	150.0	1.0	1.2	135.1	129.1	207.5	354.0	1.1	1.5	182.0	237.7
Pennsylvania	84.3%	84.1%	265.1	207.5	1.1	1.2	232.0	178.3	125.9	125.4	0.9	1.0	137.7	128.6	248.3	195.1	1.0	1.1	242.3	184.2
East North Central	91.0%	90.8%	489.5	319.7	1.2	1.2	412.3	263.8	108.8	121.4	0.8	0.9	134.6	130.4	483.4	288.6	1.1	1.1	434.5	264.8
Illinois	96.3%	95.8%	210.4	90.8	0.8	0.8	252.4	120.2	56.2	59.1	0.6	0.6	93.0	91.9	209.9	89.2	0.8	0.7	256.4	119.8
Indiana	83.4%	83.3%	467.4	276.5	1.4	1.4	330.6	193.7	111.3	139.9	0.9	1.1	118.0	123.2	462.1	217.6	1.3	1.2	357.6	177.0
Michigan	94.2%	94.1%	1,127.7	520.7	1.5	1.3	730.9	388.7	164.8	166.8	0.9	1.0	177.1	164.2	1,131.2	519.9	1.5	1.3	738.0	391.9
Ohio	96.4%	96.2%	366.6	413.6	1.3	1.5	292.7	272.4	127.1	144.1	0.9	1.1	138.4	128.5	336.0	318.9	1.1	1.2	312.6	264.8
Wisconsin	74.5%	74.3%	203.8	307.9	0.9	1.1	223.3	279.6	76.8	104.7	0.6	0.8	121.4	137.3	200.9	305.2	0.9	1.1	228.0	289.8
West North Central	76.2%	75.9%	222.7	202.8	1.1	1.1	203.8	183.2	84.6	90.1	0.8	0.9	104.3	103.9	215.6	191.7	1.0	1.0	221.5	195.7
Iowa	52.8%	52.8%	83.9	95.0	0.9	1.0	97.7	97.2	60.7	78.2	0.6	0.8	94.1	93.5	75.5	80.1	0.7	0.8	101.9	105.4
Kansas	80.1%	79.7%	287.1	178.3	1.3	1.3	216.3	134.9	101.8	108.1	1.0	1.1	101.4	99.5	274.4	157.9	1.2	1.1	234.3	138.2
Minnesota	86.7%	86.6%	127.1	275.2	1.0	1.2	130.6	228.0	72.8	81.0	0.8	0.8	93.6	95.8	123.6	270.3	0.9	1.1	143.9	245.5
Missouri	83.6%	83.1%	379.0	149.5	1.3	1.1	286.1	141.5	104.4	97.0	0.9	0.9	118.9	110.3	391.2	144.2	1.3	1.0	309.8	146.3
Nebraska	67.0%	66.1%	69.4	73.0	0.6	0.6	125.2	123.8	55.6	56.2	0.5	0.5	116.2	105.2	66.4	71.1	0.5	0.6	121.8	124.0
North Dakota	63.2%	63.2%	262.3	677.6	1.2	1.4	227.9	475.5	93.9	102.8	0.9	1.1	99.7	96.6	259.0	789.8	0.8	1.1	307.2	701.2
South Dakota	67.9%	67.8%	78.1	338.3	1.0	1.2	76.8	281.1	63.9	126.3	0.9	0.8	71.4	159.4	62.2	244.7	0.7	0.9	90.1	274.9
South Atlantic	81.7%	80.2%	240.4	615.8	1.3	1.7	179.4	370.5	119.7	127.9	1.1	1.1	111.9	116.6	211.7	635.0	1.2	1.5	180.0	416.1
Delaware	87.4%	87.1%	109.7	79.8	0.8	0.9	130.4	93.5	61.2	66.4	0.7	0.8	87.2	86.5	112.1	80.8	0.9	0.9	130.6	93.4
District of Columbia	98.9%	98.2%	71.9	33.7	0.4	0.3	194.2	111.5	33.3	26.3	0.3	0.3	104.6	95.1	71.9	33.7	0.4	0.3	194.2	111.5
Florida	84.4%	83.7%	172.3	1,011.3	1.0	1.5	175.5	691.2	69.4	69.8	0.8	0.8	89.0	83.8	160.0	1,012.6	0.9	1.4	172.3	719.3
Georgia	87.8%	86.1%	342.7	212.4	1.9	1.7	184.5	127.3	133.4	129.3	1.3	1.3	99.9	100.2	300.3	185.2	1.8	1.5	170.1	119.9
Maryland	98.7%	98.1%	166.2	260.0	0.9	1.2	180.7	224.2	66.9	84.2	0.7	0.8	95.1	100.2	156.1	224.6	0.9	1.1	176.9	213.0
North Carolina	88.5%	86.5%	262.5	486.0	1.5	2.0	172.1	246.7	156.4	150.7	1.3	1.2	121.9	121.6	249.9	423.1	1.4	1.8	178.6	236.6
South Carolina	92.2%	92.0%	169.8	302.4	1.5	1.9	112.3	161.7	126.5	114.8	1.3	1.2	98.1	99.4	140.4	274.4	1.2	1.6	117.3	174.7
Virginia	30.8%	26.5%	292.8	1,108.2	1.7	2.5	176.9	436.1	239.9	342.3	1.5	1.8	157.6	186.2	280.6	1,103.6	1.6	2.4	179.8	451.6
West Virginia	97.8%	98.1%	751.5	1,003.2	2.4	2.7	319.4	366.5	385.7	543.6	1.9	2.2	206.2	244.3	700.4	850.9	2.1	2.3	333.5	378.0
East South Central	61.5%	62.0%	864.3	392.5	2.4	2.5	359.0	156.7	186.5	187.8	1.6	1.7	114.7	111.0	876.2	393.0	2.3	2.3	375.6	168.6
Alabama	14.3%	14.4%	400.2	231.3	2.3	2.3	175.4	101.4	189.5	198.4	1.5	2.0	128.0	100.6	380.2	230.1	2.0	2.2	192.8	106.9
Kentucky	93.2%	93.0%	861.5	345.5	1.9	1.7	463.4	202.4	140.6	151.5	1.1	1.3	124.5	118.6	841.1	328.1	1.7	1.5	507.5	215.2
Mississippi	68.8%	68.7%	877.8	455.9	2.6	2.2	334.1	210.2	266.6	243.3	2.1	1.7	126.2	140.7	991.9	519.9	2.9	2.3	338.3	230.7
Tennessee	73.2%	74.5%	926.9	428.3	2.8	3.3	330.7	128.8	192.7	194.1	1.9	2.0	101.9	97.6	933.4	425.9	2.8	3.1	336.5	138.6
West South Central	64.8%	64.8%	685.6	242.8	1.9	1.8	355.7	136.8	163.3	178.3	1.4	1.5	116.2	119.0	671.2	238.8	1.8	1.7	376.3	142.7
Arkansas	82.0%	82.4%	915.3	437.5	2.1	2.2	431.2	202.5	230.7	279.6	1.6	1.8	146.2	155.1	879.0	427.2	1.9	1.9	460.4	226.5
Louisiana	72.3%	74.1%	663.2	323.8	1.9	2.0	352.5	162.6	199.3	252.2	1.5	1.9	132.8	135.7	633.7	306.6	1.8	1.9	360.3	165.3
Oklahoma	45.9%	45.1%	1,339.4	165.6	2.1	1.5	644.3	114.0	123.8	122.4	1.1	1.3	109.2	96.9	1,012.7	141.7	1.7	1.2	591.2	121.2
Texas	64.3%	64.1%	583.1	204.6	1.9	1.7	308.7	120.1	150.3	153.7	1.4	1.4	108.1	109.8	604.3	202.6	1.8	1.7	340.0	122.3
Mountain	90.2%	90.4%	117.9	153.2	1.0	1.0	122.0	146.7	90.4	95.4	0.8	0.9	106.5	105.5	101.2	123.5	0.9	1.0	114.5	128.3
Arizona	95.8%	95.9%	103.8	136.9	1.0	1.0	109.2	133.7	66.9	69.1	0.8	0.9	84.9	79.4	88.7	103.7	0.9	1.0	96.8	106.0
Colorado	88.8%	89.4%	100.2	143.7	0.9	1.0	108.4	138.1	89.2	96.9	0.9	0.9	102.2	105.0	96.2	138.2	0.9	1.0	113.1	142.4
Idaho	93.1%	92.2%	134.4	167.4	1.1	1.2	125.5	143.4	121.8	144.5	1.0	1.1	123.6	132.5	95.9	112.7	0.8	0.8	126.7	138.3
Montana	68.4%	67.9%	113.9	224.7	1.1	1.4	108.3	160.7	113.9	139.6	1.1	1.2	108.3	115.0	93.9	187.7	0.9	1.1	110.2	177.2
Nevada	102.7%	102.6%	138.7	195.1	0.9	1.0	147.2	198.2	81.2	77.0	0.7	0.7	108.9	106.7	96.9	424.3	1.1	2.0	85.7	217.2
New Mexico	85.1%	85.6%	156.0	175.2	1.1	1.1	141.6	160.9	123.7	125.4	0.9	1.0	136.3	130.3	139.0	134.6	1.0	1.0	143.9	134.5
Utah	85.5%	86.7%	127.7	108.7	0.9	0.9	140.0	126.6	108.5	96.6	0.9	0.8	125.3	117.8	119.9	103.4	0.9	0.9	130.4	120.6
Wyoming	65.9%	62.9%	121.4	159.0	0.9	1.3	129.8	123.6	102.6	116.1	0.8	1.1	124.3	101.3	106.4	157.3	0.9	1.2	116.3	126.5
Pacific Contiguous	92.8%	92.4%	299.1	246.2	1.3	1.3	230.9	188.5	147.8	152.8	1.0	1.1	142.8	140.1	287.3	232.3	1.2	1.2	236.5	189.9
California	94.6%	94.3%	352.5	202.4	1.4	1.3	250.2	160.7	157.1	156.5	1.1	1.1	143.2	136.5	351.5	195.3	1.4	1.2	252.4	160.0
Oregon	87.5%	86.2%	122.9	325.2	0.8	1.3	152.1	248.1	103.5	121.0	0.7	0.8	140.4	150.5	115.9	304.0	0.8	1.2	153.9	250.3
Washington	88.0%	87.8%	153.8	403.6	1.1	1.5	146.5	265.4	129.8	153.5	0.9	1.0	141.9	155.0	113.4	345.6	0.7	1.2	156.4	278.8
Pacific Noncontiguous	23.7%	19.5%	456.2	891.3	3.4	5.0	135.2	179.7	325.7	334.9	2.4	3.4	137.6	98.3	472.5	820.6	2.5	3.4	188.8	239.2
Alaska	47.7%	47.6%	499.4	891.3	3.3	5.0	153.2	179.7	325.7	334.9	2.4	3.4	137.6	98.3	472.5	820.6	2.5	3.4	188.8	239.2
Hawaii	6.9%		248.8		3.9		63.4													
U.S. Total	78.4%	78.1%	366.6	333.0	1.3	1.4	271.8	233.5	123.9	131.1	1.0	1.1	121.3	120.2	357.7	324.7	1.2	1.3	288.0	246.9

SAIFI = System Average Interruption Frequency Index. It is the number of non-momentary electric interruptions, per year, the average customer experienced.
CAIDI = Customer Average Interruption Duration Index. It is average number of minutes it takes to restore non-momentary electric interruptions.
IEEE refers to the IEEE 1366-2003 or the IEEE 1366-2012 standard.
A Major Event Day is any day that exceeds a daily SAIDI threshold called Tmed. Tmed is a duration statistic calculated from daily SAIDI values from the past five years.
Loss of Supply Removed excludes outages due to loss of supply from the high-voltage/bulk power system.
For a five minute video explanation of these metrics, go to https://youtu.be/oVH9L0fCMTU.
Source: U.S. Energy Information Administration, Form EIA-861, Annual Electric Power Industry Report.

Table 11.3 Reliability Metrics Using Any Method of U.S. Distribution System by State, 2023 and 2022

			All Events (With Major Events)						Without Major Events					
	Percent of Customers Reported		SAIDI (minutes per year)		SAIFI (times per year)		CAIDI (minutes per interruption)		SAIDI (minutes per year)		SAIFI (times per year)		CAIDI (minutes per interruption)	
Census Division and State	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022	Year 2023	Year 2022
New England	94.2%	96.4%	480.5	333.0	1.4	1.4	343.7	240.9	107.8	104.2	0.9	1.0	114.2	104.5
Connecticut	100.6%	100.2%	164.6	157.4	0.9	0.8	188.8	191.8	70.3	66.1	0.7	0.6	107.3	106.4
Maine	100.8%	102.7%	1,863.0	963.6	3.3	3.0	562.2	321.1	247.4	216.7	2.0	2.0	125.0	110.8
Massachusetts	88.2%	93.1%	259.4	163.2	1.1	1.1	245.4	151.0	82.2	83.0	0.8	0.9	105.4	93.8
New Hampshire	99.3%	99.3%	645.8	616.7	1.8	1.8	368.5	345.9	124.6	107.5	1.0	0.9	126.1	115.6
Rhode Island	98.3%	98.2%	104.6	81.9	0.8	1.0	133.7	85.4	52.2	63.2	0.7	0.8	78.3	78.2
Vermont	87.0%	87.2%	744.4	963.5	2.4	2.6	316.5	367.8	221.3	267.6	1.6	2.0	140.0	136.0
Middle Atlantic	97.3%	97.0%	159.5	175.9	0.9	1.0	180.7	183.6	89.9	93.4	0.7	0.8	122.2	116.5
New Jersey	101.0%	100.9%	108.3	89.7	0.9	0.9	123.0	102.4	88.5	79.0	0.8	0.8	106.5	94.3
New York	97.7%	97.1%	120.0	203.0	0.7	0.9	165.6	232.7	70.0	77.6	0.6	0.7	119.4	116.5
Pennsylvania	94.4%	94.1%	252.7	200.4	1.1	1.1	228.0	175.9	119.2	126.1	0.9	1.0	135.8	130.4
East North Central	95.7%	95.5%	472.8	313.6	1.2	1.2	401.6	260.3	107.1	120.2	0.8	0.9	133.3	129.8
Illinois	97.8%	97.4%	208.2	90.4	0.8	0.8	249.2	118.9	56.2	59.0	0.6	0.6	92.9	91.4
Indiana	91.1%	91.0%	455.4	279.3	1.4	1.4	314.8	195.3	110.3	137.4	0.9	1.1	116.6	122.4
Michigan	97.4%	97.5%	1,093.6	513.1	1.5	1.3	723.5	383.2	162.7	166.0	0.9	1.0	176.7	163.6
Ohio	96.5%	96.3%	366.2	413.2	1.3	1.5	292.5	272.4	127.0	144.0	0.9	1.1	138.4	128.4
Wisconsin	92.5%	92.1%	183.0	273.5	0.9	1.0	208.6	262.2	72.4	99.6	0.6	0.8	114.7	132.7
West North Central	84.9%	84.7%	213.8	194.8	1.1	1.1	198.1	179.8	85.5	89.6	0.8	0.9	105.5	104.0
Iowa	85.2%	84.9%	104.9	85.8	0.9	0.9	115.7	96.6	70.4	75.5	0.7	0.8	99.3	93.3
Kansas	82.5%	81.3%	283.1	178.8	1.3	1.3	214.9	135.4	101.7	108.1	1.0	1.1	101.9	99.5
Minnesota	88.7%	88.6%	126.4	273.7	1.0	1.2	129.9	226.3	73.4	82.2	0.8	0.9	93.5	96.0
Missouri	87.6%	87.8%	371.8	148.0	1.3	1.1	282.9	141.0	106.7	97.0	0.9	0.9	121.7	110.7
Nebraska	73.6%	72.7%	72.6	82.1	0.6	0.6	130.1	134.9	56.8	62.3	0.5	0.5	118.3	115.1
North Dakota	89.0%	89.1%	208.6	559.6	1.1	1.3	197.7	431.4	89.9	99.6	0.9	1.0	99.1	96.1
South Dakota	74.3%	74.1%	77.0	327.1	1.0	1.2	76.2	264.9	63.2	123.5	0.9	0.8	70.8	155.8
South Atlantic	96.7%	95.9%	227.4	663.7	1.3	1.7	169.3	401.0	117.5	125.6	1.1	1.1	108.6	113.6
Delaware	89.0%	87.1%	108.2	79.8	0.8	0.9	130.3	93.5	60.4	66.4	0.7	0.8	87.3	86.5
District of Columbia	98.9%	98.2%	71.9	33.7	0.4	0.3	194.2	111.5	33.3	26.3	0.3	0.3	104.6	95.1
Florida	100.2%	99.6%	160.1	1,146.3	1.0	1.5	157.7	774.5	69.2	69.7	0.8	0.9	84.1	80.4
Georgia	89.5%	87.8%	349.2	264.3	1.9	1.7	185.2	155.9	136.8	134.6	1.4	1.3	100.8	102.3
Maryland	98.7%	98.5%	166.2	259.1	0.9	1.2	180.7	224.1	66.9	84.2	0.7	0.8	95.1	100.2
North Carolina	96.1%	94.7%	252.0	456.3	1.5	1.9	167.4	236.8	153.5	148.6	1.3	1.2	120.5	120.2
South Carolina	95.6%	95.7%	167.2	301.1	1.5	1.9	110.9	161.0	126.1	114.8	1.3	1.2	97.7	99.3
Virginia	96.8%	96.8%	221.1	593.9	1.5	1.9	151.3	320.4	159.3	187.5	1.3	1.3	124.2	139.6
West Virginia	97.8%	98.1%	751.5	1,003.2	2.4	2.7	319.4	366.5	385.7	543.6	1.9	2.2	206.2	244.3
East South Central	86.8%	87.0%	715.5	349.2	2.3	2.3	317.2	152.4	168.7	175.5	1.5	1.6	111.7	110.5
Alabama	80.0%	79.3%	294.2	210.1	1.6	1.4	186.9	145.1	120.2	138.8	1.0	1.2	122.8	119.8
Kentucky	96.6%	96.6%	868.2	345.8	1.9	1.8	456.3	194.1	143.4	151.7	1.2	1.3	122.9	116.7
Mississippi	83.6%	83.5%	802.1	448.5	2.7	2.4	295.2	184.6	252.8	246.7	2.1	2.0	118.0	125.4
Tennessee	87.0%	88.0%	857.9	404.5	2.8	3.2	305.1	126.6	186.1	188.3	1.9	1.9	98.1	96.6
West South Central	95.1%	95.1%	579.1	237.4	1.8	1.7	314.2	138.0	142.0	154.9	1.3	1.3	113.0	115.2
Arkansas	89.3%	89.6%	911.2	415.5	2.1	2.1	433.4	196.9	221.7	274.7	1.5	1.8	144.0	155.2
Louisiana	93.6%	95.4%	584.2	304.0	2.1	2.1	275.1	146.4	195.0	246.1	1.6	1.9	118.8	127.5
Oklahoma	90.0%	90.3%	896.6	195.6	1.9	1.4	481.6	135.6	139.3	144.2	1.1	1.3	121.8	113.9
Texas	96.9%	96.5%	496.2	212.0	1.8	1.7	281.5	128.1	124.7	127.5	1.2	1.2	106.1	105.9
Mountain	92.8%	93.1%	120.2	155.9	1.0	1.1	121.6	147.0	91.7	98.5	0.9	0.9	106.3	107.5
Arizona	96.7%	96.8%	106.8	139.7	1.0	1.1	108.6	132.7	69.3	72.3	0.8	0.9	84.8	80.6
Colorado	91.8%	92.4%	99.2	141.5	0.9	1.0	108.3	137.2	88.4	96.2	0.9	0.9	102.2	105.0
Idaho	94.9%	94.1%	137.5	180.7	1.1	1.2	128.4	154.8	119.4	158.3	1.0	1.1	121.2	145.1
Montana	75.0%	74.6%	118.7	225.6	1.1	1.4	111.1	163.9	117.1	146.1	1.1	1.2	111.0	121.5
Nevada	102.7%	102.6%	138.7	195.1	0.9	1.0	147.2	198.2	81.2	77.0	0.7	0.7	108.9	106.7
New Mexico	90.1%	90.6%	168.9	182.6	1.2	1.2	136.0	156.5	132.3	129.1	1.0	1.0	132.7	128.4
Utah	88.4%	89.7%	127.1	111.3	0.9	0.9	138.7	125.5	109.8	100.4	0.9	0.9	124.9	117.5
Wyoming	75.9%	76.7%	127.0	170.1	1.0	1.3	127.8	127.7	96.0	113.0	0.8	1.1	124.7	105.3
Pacific Contiguous	98.6%	98.6%	294.2	242.3	1.3	1.3	229.2	187.9	144.6	148.8	1.0	1.1	140.8	138.1
California	100.2%	100.2%	346.6	198.5	1.4	1.2	248.1	159.1	152.0	150.5	1.1	1.1	140.0	133.5
Oregon	92.9%	93.2%	126.9	322.9	0.8	1.3	153.8	250.8	108.0	123.4	0.8	0.8	143.7	151.9
Washington	95.1%	95.0%	151.7	395.3	1.0	1.5	148.0	267.0	130.6	154.9	0.9	1.0	143.8	156.4
Pacific Noncontiguous	93.6%	93.5%	448.4	330.8	2.1	2.3	210.8	141.3	184.6	162.9	1.6	1.7	115.8	93.3
Alaska	84.5%	84.4%	374.8	575.2	2.7	3.5	138.8	163.3	325.7	334.9	2.4	3.4	137.6	98.3
Hawaii	99.9%	99.9%	491.8	187.2	1.8	1.6	275.1	113.7	148.6	105.9	1.4	1.2	106.3	88.6
U.S. Total	94.8%	94.7%	342.0	335.5	1.3	1.4	256.6	238.8	118.4	125.7	1.0	1.1	118.5	118.1

SAIFI = System Average Interruption Frequency Index. It is the number of non-momentary electric interruptions, per year, the average customer experienced.
CAIDI = Customer Average Interruption Duration Index. It is average number of minutes it takes to restore non-momentary electric interruptions.
Any method combines data from utilities that use IEEE standard with data from utilities that do not.
For utilities using the IEEE method, a Major Event Day is any day that exceeds a daily SAIDI threshold called Tmed. Tmed is a duration statistic calculated from daily SAIDI values from the past five years. For utilities not using IEEE methods, Major Events are self-determined by the reporting utility.
Percent of Customers Reported is an estimate of the percentage of total customers covered by these metrics. The numerator is reported number of meters used on the reliability schedule, while the denominator is the number of customers reported on the sales to ultimate customers schedule. It is possible, in some instances, for this metric to exceed 100%.
For a five minute video explanation of these metrics, go to https://youtu.be/oVH9L0fCMTU.
Source: U.S. Energy Information Administration, Form EIA-861, Annual Electric Power Industry Report.

Table 11.4 SAIDI Values (Minutes Per Year) of U.S. Distribution System by State, 2013 - 2023

Census Division and State	IEEE: All Events (With Major Event Days)										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
New England	444.4	306.7	145.7	231.2	776.5	723.6	351.5	1,272.9	382.1	309.3	489.3
Connecticut	179.6	93.7	112.5	201.1	348.9	761.6	246.6	3,033.8	170.9	187.4	193.4
Maine	971.3	1,049.3	213.6	535.4	2,492.6	665.3	908.1	1,725.0	325.2	963.6	1,863.0
Massachusetts	435.5	126.8	86.4	148.6	178.7	865.3	244.3	224.1	527.8	165.8	265.3
New Hampshire	209.3	815.3	117.3	192.5	915.4	450.8	219.6	408.5	176.5	495.5	590.6
Rhode Island	783.2	54.2	341.8	168.9	728.3	594.8	236.5	548.4	448.6	81.9	104.6
Vermont	240.0	240.0	193.4	198.8	1,792.4	929.8	334.0	158.4	215.3	914.6	486.3
Middle Atlantic	176.5	283.1	193.6	150.0	172.6	516.4	262.5	588.9	190.8	184.7	196.8
New Jersey	167.7	111.7	263.6	137.5	85.5	505.5	249.7	943.3	139.2	89.6	108.2
New York	274.1	198.0	146.4	206.1	344.5	396.5	323.7	447.4	218.8	347.7	204.8
Pennsylvania	143.2	438.3	166.2	132.3	184.5	564.0	252.5	355.4	222.6	207.5	265.1
East North Central	338.4	285.4	219.4	189.9	332.1	254.0	315.3	311.1	377.0	319.7	489.5
Illinois	182.1	197.6	170.9	136.1	120.0	143.8	116.3	335.6	127.3	90.8	210.4
Indiana	246.9	236.5	257.4	254.2	223.5	302.4	266.6	294.3	302.7	276.5	467.4
Michigan	791.0	592.5	374.5	268.4	802.2	450.2	570.2	416.7	890.9	520.7	1,127.7
Ohio	214.8	185.5	167.5	169.5	246.8	240.3	303.8	283.6	244.9	413.6	366.6
Wisconsin	162.9	154.1	107.8	147.8	219.2	117.0	383.5	119.9	361.2	307.9	203.8
West North Central	317.3	133.1	179.0	222.1	221.0	140.2	195.2	226.8	236.4	202.8	222.7
Iowa	140.5	151.3	96.0	136.5	128.1	115.4	126.0	1,066.5	137.8	95.0	83.9
Kansas	258.2	153.4	350.5	169.1	368.6	151.3	241.2	106.6	346.0	178.3	287.1
Minnesota	388.1	123.1	160.8	308.9	129.8	128.1	148.9	128.0	121.0	275.2	127.1
Missouri	291.1	134.3	164.9	215.4	307.2	151.2	261.0	154.1	267.9	149.5	379.0
Nebraska	104.3	98.3	67.9	63.1	160.7	185.7	78.9	115.4	556.9	73.0	69.4
North Dakota	98.7	102.5	113.6	152.8	91.2	111.2	132.6	123.3	101.6	677.6	262.3
South Dakota	1,010.9	120.6	135.0	255.8	101.7	93.1	311.4	97.4	101.3	338.3	78.1
South Atlantic	194.7	309.4	195.4	576.5	1,241.6	639.0	206.0	321.4	191.2	615.8	240.4
Delaware	158.5	169.8	191.4	148.7	154.6	136.2	102.0	271.9	64.3	79.8	109.7
District of Columbia	124.0	96.0	112.4	115.0	57.5	109.2	77.0	44.0	52.0	33.7	71.9
Florida	79.3	89.4	86.1	388.2	2,693.2	305.5	88.9	200.4	82.9	1,011.3	172.3
Georgia	124.9	252.3	248.2	424.0	1,030.8	230.7	149.8	521.7	140.5	212.4	342.7
Maryland	119.6	255.9	117.2	120.7	103.1	330.4	143.8	113.8	127.6	260.0	166.2
North Carolina	240.4	519.0	220.8	857.5	282.2	1,877.6	287.5	437.4	215.2	486.0	262.5
South Carolina	117.7	787.0	234.3	1,698.8	386.9	488.6	338.2	332.6	122.9	302.4	169.8
Virginia	878.3	287.1	249.0	317.6	279.2	1,133.7	478.0	337.7	798.2	1,108.2	292.8
West Virginia	542.1	662.8	814.6	743.4	690.8	739.7	755.2	604.2	1,117.2	1,003.2	751.5
East South Central	188.7	263.9	272.4	216.0	427.7	314.9	269.4	825.2	573.8	392.5	864.3
Alabama	272.9	282.9	274.7	174.2	242.4	457.8	183.7	3,320.4	175.7	231.3	400.2
Kentucky	175.6	249.5	245.8	194.3	193.3	407.5	204.2	284.7	698.8	345.5	861.5
Mississippi	198.7	279.4	363.3	276.3	580.2	271.6	466.1	1,611.7	1,189.8	455.9	877.8
Tennessee	183.2	277.7	257.5	212.9	621.5	217.5	252.9	618.4	316.8	428.3	926.9
West South Central	204.0	204.8	318.0	265.6	455.6	203.4	309.0	1,018.2	1,893.7	242.8	685.6
Arkansas	252.8	238.5	326.2	400.5	405.6	330.9	451.2	771.6	308.4	437.5	915.3
Louisiana	560.5	499.1	411.9	442.6	423.5	285.7	521.2	4,331.9	5,868.8	323.8	663.2
Oklahoma	498.5	115.9	597.0	326.3	194.0	154.7	186.2	565.1	165.9	165.6	1,339.4
Texas	149.6	198.6	279.8	216.8	486.8	170.4	254.8	419.4	1,496.4	204.6	583.1
Mountain	130.8	107.3	131.7	131.3	131.7	119.0	131.1	178.8	166.3	153.2	117.9
Arizona	73.9	86.9	89.6	86.9	89.5	111.6	83.3	70.6	101.9	136.9	103.8
Colorado	139.1	86.7	107.9	154.5	132.7	99.9	184.5	136.4	185.4	143.7	100.2
Idaho	245.4	168.4	238.1	183.0	253.9	169.9	155.4	286.5	438.0	167.4	134.4
Montana	172.0	144.9	295.4	155.7	218.9	135.4	165.8	275.3	251.7	224.7	113.9
Nevada	68.2	75.7	107.0	95.7	114.4	126.2	87.0	73.3	102.4	195.1	138.7
New Mexico	134.9	74.5	108.8	130.4	121.2	132.9	158.2	140.1	204.3	175.2	156.0
Utah	209.3	193.9	203.2	193.4	142.1	115.5	144.4	591.8	113.4	108.7	127.7
Wyoming	386.5	201.9	181.3	180.2	201.4	125.4	166.8	293.4	167.9	159.0	121.4
Pacific Contiguous	116.1	160.6	188.1	147.8	258.5	200.9	528.9	282.8	483.8	246.2	299.1
California	100.2	113.0	120.4	119.9	243.2	199.4	610.7	280.7	335.2	202.4	352.5
Oregon	182.7	259.9	225.9	233.5	314.5	111.4	230.4	325.9	1,588.3	325.2	122.9
Washington	174.7	412.6	620.9	258.0	311.3	265.3	310.9	268.6	554.5	403.6	153.8
Pacific Noncontiguous	384.1	312.0	332.4	149.1	215.4	250.2	218.0	174.0	537.3	891.3	456.2
Alaska	384.1	312.0	657.8	196.6	149.2	339.3	279.0	256.9	537.3	891.3	499.4
Hawaii			152.0	109.3	254.3	198.0	182.1	123.8			248.8
U.S. Total	227.2	236.2	209.0	268.4	505.9	349.2	295.5	456.1	475.8	333.0	366.6

Census Division and State	IEEE: Without Major Event Days										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
New England	109.7	109.4	99.2	126.3	107.9	119.1	95.0	101.9	104.1	98.2	103.4
Connecticut	88.8	93.7	78.0	103.2	78.1	80.9	67.5	70.2	76.7	73.7	77.7
Maine	249.5	235.3	198.7	264.4	238.5	273.0	213.7	244.8	223.5	216.7	247.4
Massachusetts	85.7	84.1	71.1	91.6	72.7	81.3	67.5	63.6	88.1	84.4	83.5
New Hampshire	140.1	136.6	104.8	135.3	120.5	122.0	84.9	99.0	98.3	78.2	89.3
Rhode Island	57.3	54.2	64.3	69.1	59.1	65.1	68.2	69.1	68.8	63.2	52.2
Vermont	180.0	180.0	193.4	198.8	186.2	357.7	170.4	158.4	215.3	178.5	204.3
Middle Atlantic	111.0	96.5	97.8	110.1	98.2	113.2	115.1	105.0	110.9	111.7	112.2
New Jersey	125.6	78.3	64.0	85.0	71.0	87.4	86.4	86.5	84.3	78.7	88.0
New York	121.7	116.0	137.6	160.2	132.1	145.2	136.9	142.1	131.5	150.0	130.1
Pennsylvania	102.5	104.1	102.1	105.1	108.4	122.8	130.5	107.5	125.2	125.4	125.9
East North Central	120.5	125.7	125.5	124.4	122.5	128.1	135.4	113.8	120.8	121.4	108.8
Illinois	82.5	91.9	88.4	80.7	72.8	72.5	73.8	57.1	63.6	59.1	56.2
Indiana	112.1	122.2	119.7	129.4	135.4	146.1	147.5	127.6	137.4	139.9	111.3
Michigan	199.1	183.3	183.4	194.2	180.1	186.4	213.9	168.3	178.6	166.8	164.8
Ohio	110.6	131.4	139.4	127.1	141.8	150.1	145.2	129.2	136.0	144.1	127.1
Wisconsin	79.5	78.0	68.8	76.3	69.1	76.4	90.0	89.1	88.0	104.7	76.8
West North Central	95.7	93.2	95.6	95.1	90.3	91.1	95.4	87.6	88.9	90.1	84.6
Iowa	90.1	91.1	88.1	96.0	103.8	92.9	83.7	85.7	80.7	78.2	60.7
Kansas	121.0	114.9	131.5	132.3	130.9	105.6	117.2	91.8	113.9	108.1	101.8
Minnesota	88.0	77.1	79.4	88.6	71.7	87.8	79.9	84.7	81.7	81.0	72.8
Missouri	93.6	101.2	98.3	86.6	90.8	91.8	113.6	96.7	97.8	97.0	104.4
Nebraska	75.9	50.7	50.2	49.2	72.5	76.8	59.2	67.4	59.9	56.2	55.6
North Dakota	93.2	91.6	101.0	110.4	70.4	96.0	77.1	86.8	88.4	102.8	93.9
South Dakota	94.8	107.9	107.6	84.4	80.3	73.0	108.2	71.5	61.9	126.3	63.9
South Atlantic	123.3	119.7	123.2	129.3	122.4	135.3	124.2	122.6	113.0	127.9	119.7
Delaware	129.3	113.9	115.5	102.3	83.3	73.8	74.2	84.9	64.3	66.4	61.2
District of Columbia	124.0	82.0	112.4	115.0	57.5	52.9	55.0	39.0	42.0	26.3	33.3
Florida	75.3	86.6	79.3	82.7	76.7	79.6	74.0	72.5	65.3	69.8	69.4
Georgia	88.4	97.8	108.5	120.6	115.2	118.8	125.8	130.5	123.8	129.3	133.4
Maryland	113.4	93.6	100.2	104.5	81.5	93.6	89.0	76.2	80.2	84.2	66.9
North Carolina	112.3	118.7	131.3	152.1	151.1	168.0	147.0	146.0	125.9	150.7	156.4
South Carolina	101.6	102.0	121.9	122.1	119.4	138.8	106.3	121.3	101.3	114.8	126.5
Virginia	276.9	243.0	208.5	219.7	218.0	307.8	285.4	250.6	262.7	342.3	239.9
West Virginia	417.6	449.8	458.0	439.1	451.8	513.1	471.3	467.9	451.6	543.6	385.7
East South Central	134.8	152.6	154.5	147.9	144.4	156.3	160.3	147.6	152.6	187.8	186.5
Alabama	153.7	154.9	167.9	140.1	130.8	136.8	106.8	144.6	110.9	198.4	189.5
Kentucky	134.0	146.7	140.4	139.0	120.0	146.7	148.9	125.3	130.3	151.5	140.6
Mississippi	132.5	180.0	227.7	179.9	205.5	209.7	214.3	203.9	224.5	243.3	266.6
Tennessee	131.2	143.9	134.6	141.6	141.7	145.6	160.4	144.5	151.7	194.1	192.7
West South Central	128.8	130.9	155.3	145.8	144.8	150.3	162.3	153.5	186.6	178.3	163.3
Arkansas	214.4	216.5	222.6	213.7	176.0	214.1	228.0	210.6	199.4	279.6	230.7
Louisiana	137.2	156.7	199.0	190.1	196.9	214.2	223.5	217.9	265.0	252.2	199.3
Oklahoma	125.6	102.6	123.1	122.3	118.0	113.9	138.4	139.3	126.2	122.4	123.8
Texas	112.7	118.6	143.0	132.7	135.1	130.2	141.4	132.7	174.7	153.7	150.3
Mountain	96.9	88.1	95.2	90.6	95.6	88.6	91.2	87.3	95.5	95.4	90.4
Arizona	61.6	59.8	66.0	67.9	50.8	57.6	64.0	62.0	69.3	69.1	66.9
Colorado	92.9	81.6	83.9	83.5	80.2	86.5	84.3	83.4	104.8	96.9	89.2
Idaho	168.7	139.9	193.2	157.6	223.9	140.8	132.3	158.1	137.5	144.5	121.8
Montana	141.4	123.8	143.5	128.8	160.8	118.3	121.7	136.0	142.6	139.6	113.9
Nevada	53.3	62.6	55.4	73.7	87.7	76.7	77.5	55.3	69.6	77.0	81.2
New Mexico	96.3	76.3	95.6	102.2	114.5	123.9	121.5	113.6	120.0	125.4	123.7
Utah	182.2	151.0	156.4	106.1	116.3	115.5	110.8	100.9	98.0	96.6	108.5
Wyoming	170.9	177.4	163.3	135.6	171.9	107.1	134.0	105.1	115.6	116.1	102.6
Pacific Contiguous	91.5	106.1	97.2	103.5	108.8	101.0	106.1	110.4	145.5	152.8	147.8
California	90.3	103.3	93.2	100.8	104.0	99.5	106.7	107.6	148.0	156.5	157.1
Oregon	86.0	108.1	102.2	101.1	111.6	90.3	101.6	103.4	113.9	121.0	103.5
Washington	104.3	124.2	120.0	121.3	135.8	115.5	105.8	126.9	151.1	153.5	129.8
Pacific Noncontiguous	140.5	161.5	119.3	116.8	119.3	163.9	134.1	140.8	230.6	334.9	325.7
Alaska	140.5	161.5	155.1	176.9	136.9	193.1	184.1	245.5	230.6	334.9	325.7
Hawaii			99.4	83.2	112.0	151.9	113.4	97.3			
U.S. Total	111.9	114.2	117.0	119.8	117.0	121.4	122.2	116.0	125.7	131.1	123.9

Census Division and State	IEEE: Loss of Supply Removed										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
New England	429.4	303.4	140.0	229.4	780.4	721.4	351.7	1,284.0	357.7	349.9	481.2
Connecticut	171.5	93.6	111.7	199.6	348.6	759.0	246.6	3,032.5	169.7	187.1	188.2
Maine	916.5	1,046.1	171.3	510.3	2,440.6	639.3	881.8	1,718.4	312.1	930.7	1,781.4
Massachusetts	422.4	128.1	87.6	153.3	186.1	907.0	256.4	231.0	600.8	186.4	268.5
New Hampshire	206.5	821.9	117.0	190.9	915.0	449.7	219.6	407.9	165.0	487.4	587.7
Rhode Island	782.9	54.2	341.8	163.2	716.8	537.4	223.8	452.9	436.0	81.1	100.8
Vermont	240.0	240.0	179.4	187.4	1,782.7	732.1	329.4	151.0	210.1	877.6	480.1
Middle Atlantic	169.9	276.6	188.6	133.5	163.7	506.5	253.6	573.1	180.4	176.3	185.9
New Jersey	152.4	109.1	259.0	115.7	80.4	491.6	240.2	911.3	127.1	81.4	99.2
New York	294.2	198.0	143.0	185.1	350.0	402.7	327.5	455.1	221.0	354.0	207.5
Pennsylvania	136.7	426.9	157.4	122.1	169.1	551.3	240.3	343.6	209.6	195.1	248.3
East North Central	342.8	271.9	210.1	178.1	322.9	239.8	301.3	294.2	355.2	288.6	483.4
Illinois	183.1	197.3	168.1	133.0	117.1	140.5	110.3	333.9	125.6	89.2	209.9
Indiana	213.9	218.7	244.0	234.4	197.5	263.0	217.4	205.1	225.2	217.6	462.1
Michigan	793.9	589.0	363.7	262.6	798.2	448.0	565.5	414.3	882.1	519.9	1,131.2
Ohio	205.5	142.1	149.8	142.1	225.1	210.4	277.4	261.5	191.7	318.9	336.0
Wisconsin	161.5	152.9	102.9	144.4	215.3	108.8	377.5	114.0	360.7	305.2	200.9
West North Central	328.6	127.2	170.1	198.9	218.7	126.1	194.8	249.4	229.3	191.7	215.6
Iowa	129.5	136.3	85.7	122.5	109.7	102.8	111.0	1,053.0	115.7	80.1	75.5
Kansas	237.8	138.5	242.1	151.4	359.5	140.0	266.1	100.7	327.9	157.9	274.4
Minnesota	392.8	118.8	159.9	302.6	129.1	120.2	137.6	124.4	115.7	270.3	123.6
Missouri	317.0	139.8	249.2	149.8	445.9	174.1	372.9	159.8	265.6	144.2	391.2
Nebraska	63.0	86.3	49.0	52.2	110.4	96.1	54.9	96.1	555.3	71.1	66.4
North Dakota	91.8	76.7	80.2	147.1	81.8	83.8	131.6	113.3	77.0	789.8	259.0
South Dakota	1,080.7	93.5	98.1	119.1	87.7	75.7	250.6	86.7	78.2	244.7	62.2
South Atlantic	185.7	379.2	183.5	559.7	1,237.8	630.8	196.5	283.3	184.8	635.0	211.7
Delaware	152.6	162.7	180.0	147.3	153.1	135.3	102.0	276.1	64.8	80.8	112.1
District of Columbia	117.0	96.0	112.4	115.0	57.5	109.2	77.0	44.0	52.0	33.7	71.9
Florida	77.9	122.4	80.3	387.0	2,666.6	302.8	83.2	194.9	77.2	1,012.6	160.0
Georgia	116.7	210.7	355.1	177.8	906.4	238.9	117.2	509.8	122.9	185.2	300.3
Maryland	104.9	244.4	113.8	115.5	100.7	328.4	139.3	109.2	125.1	224.6	156.1
North Carolina	231.0	471.1	200.5	852.6	253.4	1,670.3	266.1	414.4	207.3	423.1	249.9
South Carolina	120.0	777.9	195.3	1,663.3	371.1	463.6	319.8	308.9	106.2	274.4	140.4
Virginia	817.5	259.3	231.8	302.8	232.1	1,099.9	439.2	308.6	793.3	1,103.6	280.6
West Virginia	497.0	597.6	771.6	582.9	618.0	676.3	691.2	538.6	1,002.0	850.9	700.4
East South Central	178.4	253.6	255.7	210.9	406.0	299.8	266.7	798.5	582.0	393.0	876.2
Alabama	250.9	289.6	224.2	161.0	199.5	195.4	158.4	3,440.8	215.8	230.1	380.2
Kentucky	158.9	233.4	232.0	183.9	173.9	399.8	192.1	275.0	630.1	328.1	841.1
Mississippi	199.3	278.6	316.9	302.7	588.0	310.2	537.3	1,558.2	1,419.2	519.9	991.9
Tennessee	176.7	263.0	256.3	206.4	603.1	213.1	251.6	601.1	299.5	425.9	933.4
West South Central	208.9	242.0	295.2	260.2	425.5	197.5	286.5	1,044.4	1,400.7	238.8	671.2
Arkansas	322.6	593.9	324.8	404.8	383.0	325.8	376.1	727.9	286.2	427.2	879.0
Louisiana	232.9	271.9	392.1	429.8	400.9	260.7	441.5	4,204.5	5,836.4	306.6	633.7
Oklahoma	474.7	92.1	346.0	316.1	147.8	135.5	153.5	475.5	132.9	141.7	1,012.7
Texas	149.5	206.6	270.2	208.7	457.5	165.9	248.4	426.3	683.7	202.6	604.3
Mountain	124.1	99.3	128.8	134.0	125.2	106.8	125.3	179.7	138.1	123.5	101.2
Arizona	62.8	83.4	87.4	85.9	82.9	94.3	71.6	65.0	91.0	103.7	88.7
Colorado	106.8	80.9	103.0	147.2	122.1	96.5	181.9	131.5	168.4	138.2	96.2
Idaho	201.2	145.9	204.2	174.0	239.0	155.7	122.9	173.6	223.8	112.7	95.9
Montana	167.5	137.3	284.7	110.7	209.1	107.4	138.9	240.7	211.2	187.7	93.9
Nevada	120.0		153.8	457.0	82.8	93.3	92.0	54.4	6.8	424.3	96.9
New Mexico	112.9	27.0	53.3	103.3	105.1	118.1	141.6	136.4	190.9	134.6	139.0
Utah	183.9	167.9	217.6	206.4	139.1	119.8	140.5	614.0	114.9	103.4	119.9
Wyoming	371.3	166.5	159.4	172.5	190.1	116.9	151.1	263.5	165.1	157.3	106.4
Pacific Contiguous	98.3	158.6	170.5	141.4	217.7	159.8	522.5	266.3	421.8	232.3	287.3
California	95.2	116.8	123.9	119.7	190.2	150.0	615.7	266.0	266.0	195.3	351.5
Oregon	110.4	227.3	220.5	175.8	315.6	103.6	224.4	317.9	1,500.8	304.0	115.9
Washington	121.1	362.8	417.2	236.7	301.3	244.2	292.2	237.8	468.6	345.6	113.4
Pacific Noncontiguous	430.2	264.9	782.3	153.3	225.5	238.3	209.3	157.1	501.7	820.6	472.5
Alaska	430.2	264.9	782.3	272.5	159.6	359.2	317.1	251.4	501.7	820.6	472.5
Hawaii				98.9	252.7	188.7	164.8	118.0			
U.S. Total	225.5	244.8	198.2	257.0	489.6	338.5	289.1	460.5	404.5	324.7	357.7

Census Division and State	Any Method: All Events (With Major Event Days)										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
New England	439.4	319.6	137.3	211.1	682.4	715.4	335.8	1,067.1	364.0	333.0	480.5
Connecticut	179.6	86.3	103.3	174.0	291.3	655.5	236.4	2,642.6	145.2	157.4	164.6
Maine	971.3	1,049.3	213.6	535.4	2,492.6	665.3	908.1	1,725.0	325.2	963.6	1,863.0
Massachusetts	427.3	124.5	91.2	144.9	275.5	813.3	250.2	318.9	518.7	163.2	259.4
New Hampshire	249.7	862.9	149.3	192.0	1,113.3	508.8	292.0	499.4	234.4	616.7	645.8
Rhode Island	783.2	54.2	341.8	168.9	728.3	594.8	236.5	548.4	448.6	81.9	104.6
Vermont	436.0	745.0	204.2	359.4	873.9	897.6	443.8	255.6	313.2	963.5	744.4
Middle Atlantic	134.2	199.6	148.7	120.2	178.8	465.4	213.6	512.4	165.6	175.9	159.5
New Jersey	165.8	112.0	260.6	137.2	85.8	509.7	247.7	965.2	138.8	89.7	108.3
New York	124.1	92.7	86.5	107.2	227.3	405.5	171.0	407.7	142.0	203.0	120.0
Pennsylvania	138.6	399.6	156.7	126.2	176.8	518.0	249.1	334.2	217.8	200.4	252.7
East North Central	327.0	278.1	214.2	189.1	323.5	249.5	310.4	301.9	366.2	313.6	472.8
Illinois	181.8	195.7	169.3	134.9	119.7	142.9	116.2	331.1	127.0	90.4	208.2
Indiana	231.8	239.9	244.0	252.5	212.4	285.9	260.6	280.1	285.8	279.3	455.4
Michigan	782.3	574.7	363.4	267.8	778.8	442.9	554.9	410.7	873.3	513.1	1,093.6
Ohio	217.2	187.9	172.1	174.1	248.4	242.0	305.2	283.4	244.2	413.2	366.2
Wisconsin	146.2	144.7	105.0	136.5	203.5	122.8	356.2	113.3	311.6	273.5	183.0
West North Central	291.9	134.8	167.7	200.9	210.2	139.8	187.2	372.0	223.6	194.8	213.8
Iowa	124.6	164.7	96.8	117.7	119.0	126.8	122.8	1,758.7	133.1	85.8	104.9
Kansas	255.5	152.4	347.3	167.8	364.8	154.8	240.0	107.1	341.5	178.8	283.1
Minnesota	367.2	119.4	154.5	301.2	129.7	127.4	150.1	127.6	120.9	273.7	126.4
Missouri	319.9	136.7	171.1	205.7	305.8	149.6	255.2	152.6	259.7	148.0	371.8
Nebraska	125.7	123.0	86.2	83.6	154.3	188.2	84.0	113.4	516.0	82.1	72.6
North Dakota	108.3	87.0	113.9	123.8	85.9	94.4	107.1	101.1	85.4	559.6	208.6
South Dakota	959.8	115.8	133.3	252.2	100.6	92.1	295.0	97.3	105.6	327.1	77.0
South Atlantic	190.9	281.2	185.6	518.9	1,118.6	615.0	205.6	307.2	192.8	663.7	227.4
Delaware	157.7	169.1	189.9	149.1	153.9	135.9	101.6	271.9	64.3	79.8	108.2
District of Columbia	124.0	96.0	112.4	115.0	57.5	109.2	77.0	44.0	52.0	33.7	71.9
Florida	87.0	92.1	85.4	352.1	2,504.2	325.4	89.0	188.7	80.8	1,146.3	160.1
Georgia	151.6	246.3	243.7	424.4	1,049.2	373.2	152.3	509.9	145.8	264.3	349.2
Maryland	116.8	244.8	124.4	120.3	116.5	337.1	141.3	120.3	127.1	259.1	166.2
North Carolina	226.6	481.9	210.6	824.6	264.0	1,761.5	287.6	417.9	205.5	456.3	252.0
South Carolina	117.0	799.5	224.1	1,645.4	372.8	470.5	326.5	323.8	120.9	301.1	167.2
Virginia	467.8	187.3	203.5	237.7	192.9	507.4	309.0	308.6	434.4	593.9	221.1
West Virginia	542.1	662.8	814.6	743.4	690.8	739.7	755.2	604.2	1,117.2	1,003.2	751.5
East South Central	193.4	226.4	239.7	203.1	389.2	290.6	269.5	902.2	513.1	349.2	715.5
Alabama	237.3	206.1	212.3	174.8	314.5	308.0	174.1	1,743.5	234.9	210.1	294.2
Kentucky	176.1	246.8	243.9	191.9	194.1	406.2	203.3	282.4	707.8	345.8	868.2
Mississippi	198.4	226.0	310.4	277.4	566.8	267.5	536.5	1,496.7	1,134.4	448.5	802.1
Tennessee	171.1	225.0	222.4	197.2	512.8	199.8	266.9	588.0	302.7	404.5	857.9
West South Central	247.9	193.6	343.2	260.6	440.0	194.6	330.0	1,101.8	1,456.9	237.4	579.1
Arkansas	276.7	235.1	306.7	397.3	395.4	322.9	437.7	708.4	315.9	415.5	911.2
Louisiana	327.8	310.4	361.1	392.9	390.6	276.0	472.3	3,624.4	4,811.1	304.0	584.2
Oklahoma	620.9	119.1	831.4	316.6	291.2	175.6	334.9	2,922.0	179.4	195.6	896.6
Texas	185.5	192.5	271.7	210.8	477.6	167.2	290.7	432.7	1,175.3	212.0	496.2
Mountain	130.6	111.6	148.6	136.5	161.4	125.5	134.4	181.6	174.8	155.9	120.2
Arizona	75.2	87.2	90.9	86.3	90.7	114.6	85.8	71.9	106.2	139.7	106.8
Colorado	129.0	84.0	110.1	165.5	228.5	113.3	180.5	134.2	180.9	141.5	99.2
Idaho	261.0	245.2	465.3	197.2	313.8	174.1	166.6	324.9	475.2	180.7	137.5
Montana	161.7	138.8	287.9	160.7	215.4	142.7	169.3	271.3	309.9	225.6	118.7
Nevada	68.2	75.7	107.0	95.7	114.4	126.2	87.0	73.3	102.4	195.1	138.7
New Mexico	149.2	82.4	122.3	136.3	140.6	138.3	170.2	148.2	221.2	182.6	168.9
Utah	189.7	187.2	199.6	190.1	139.0	125.3	146.2	575.1	116.0	111.3	127.1
Wyoming	363.4	193.2	184.6	192.5	217.6	136.7	164.5	289.7	170.5	170.1	127.0
Pacific Contiguous	113.9	157.8	204.8	145.3	244.7	200.0	507.7	270.2	464.7	242.3	294.2
California	98.9	108.8	118.4	117.1	233.4	195.2	587.6	267.1	325.2	198.5	346.6
Oregon	170.7	289.3	212.6	240.3	295.7	113.1	221.6	311.0	1,489.2	322.9	126.9
Washington	154.8	330.5	646.3	226.0	269.5	270.4	300.0	261.6	527.3	395.3	151.7
Pacific Noncontiguous	205.1	274.1	361.1	151.7	216.6	243.9	226.2	174.3	285.5	330.8	448.4
Alaska	360.7	313.8	605.4	192.5	152.7	335.3	280.1	268.0	379.1	575.2	374.8
Hawaii	145.0	262.5	266.1	128.7	252.3	191.4	195.2	118.7	229.7	187.2	491.8
U.S. Total	215.7	219.0	205.0	249.2	473.1	346.4	284.6	491.9	440.0	335.5	342.0

Census Division and State	Any Method: Without Major Event Days										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
New England	117.9	114.5	100.3	131.9	114.3	124.2	104.4	144.5	109.5	104.2	107.8
Connecticut	87.9	86.3	70.2	92.0	68.2	75.8	60.9	64.6	68.6	66.1	70.3
Maine	249.5	235.3	198.7	264.4	238.5	273.0	213.7	244.8	223.5	216.7	247.4
Massachusetts	84.8	83.2	75.6	113.1	92.2	99.0	96.1	168.1	87.2	83.0	82.2
New Hampshire	162.8	172.5	138.2	141.1	151.1	151.7	111.0	121.8	127.1	107.5	124.6
Rhode Island	57.3	54.2	64.3	69.1	59.1	65.1	68.2	69.1	68.8	63.2	52.2
Vermont	258.6	216.4	205.6	273.2	246.4	262.1	170.1	255.6	262.4	267.6	221.3
Middle Atlantic	84.5	79.0	80.9	89.2	83.7	94.0	96.4	90.4	97.3	93.4	89.9
New Jersey	123.4	78.7	64.6	85.7	71.4	87.7	86.8	87.0	84.7	79.0	88.5
New York	65.1	63.4	76.0	82.2	72.0	79.2	78.9	79.8	80.3	77.6	70.0
Pennsylvania	99.5	99.7	98.8	101.4	108.7	119.3	127.7	107.8	130.2	126.1	119.2
East North Central	119.3	123.8	124.1	124.3	123.0	127.4	134.8	112.8	119.7	120.2	107.1
Illinois	83.3	92.5	88.8	80.8	73.3	72.6	73.9	57.1	63.5	59.0	56.2
Indiana	109.1	120.5	120.1	127.4	131.1	142.0	146.2	124.8	133.1	137.4	110.3
Michigan	198.6	180.0	178.8	193.1	179.4	185.0	211.1	167.2	178.4	166.0	162.7
Ohio	111.9	131.8	141.0	128.9	143.4	151.5	146.0	129.2	135.9	144.0	127.0
Wisconsin	77.9	75.9	70.3	79.2	78.8	79.6	93.0	86.4	86.4	99.6	72.4
West North Central	91.3	91.9	91.7	93.6	90.4	92.1	95.8	87.6	88.1	89.6	85.5
Iowa	79.1	93.4	85.5	92.0	95.2	92.6	89.8	87.9	79.5	75.5	70.4
Kansas	121.0	114.9	130.7	131.9	131.0	108.9	117.3	92.3	113.0	108.1	101.7
Minnesota	87.4	76.4	77.8	87.7	73.5	87.6	81.2	85.6	82.5	82.2	73.4
Missouri	98.2	101.0	98.2	86.7	93.3	94.6	112.8	95.1	97.3	97.0	106.7
Nebraska	54.1	66.7	51.9	52.0	69.9	74.2	62.4	68.8	60.8	62.3	56.8
North Dakota	88.9	87.0	99.0	108.3	67.5	95.2	74.3	82.5	85.9	99.6	89.9
South Dakota	94.9	106.2	106.5	83.8	81.2	74.0	106.7	73.2	62.7	123.5	63.2
South Atlantic	112.3	115.5	119.3	128.6	119.9	131.9	123.7	121.5	112.1	125.6	117.5
Delaware	128.8	113.7	114.7	103.2	83.2	74.1	74.0	84.9	64.3	66.4	60.4
District of Columbia	124.0	82.0	112.4	115.0	57.5	52.9	55.0	39.0	42.0	26.3	33.3
Florida	77.8	85.5	77.9	81.8	78.6	77.4	74.2	73.0	64.8	69.7	69.2
Georgia	95.6	99.1	109.1	134.5	122.1	122.5	127.7	133.3	129.4	134.6	136.8
Maryland	111.4	93.0	109.0	105.3	85.6	95.0	90.6	80.9	80.2	84.2	66.9
North Carolina	111.2	117.1	128.2	148.6	146.3	162.3	146.2	143.7	123.6	148.6	153.5
South Carolina	102.4	100.1	119.3	121.3	117.8	137.0	105.6	119.9	100.7	114.8	126.1
Virginia	143.3	148.3	148.0	164.8	142.2	187.8	182.1	165.3	164.9	187.5	159.3
West Virginia	417.6	449.8	458.0	439.1	451.8	513.1	471.3	467.9	451.6	543.6	385.7
East South Central	125.1	137.6	140.5	142.1	140.5	147.4	156.0	146.2	147.5	175.5	168.7
Alabama	121.6	125.4	124.9	115.8	115.9	120.6	120.2	127.3	119.1	138.8	120.2
Kentucky	132.8	145.1	139.7	137.4	120.1	146.7	148.5	125.1	129.8	151.7	143.4
Mississippi	124.4	155.7	197.5	187.3	211.3	211.9	220.0	211.3	220.6	246.7	252.8
Tennessee	121.3	131.0	124.9	144.4	142.4	139.6	161.4	148.4	149.4	188.3	186.1
West South Central	121.8	128.7	154.9	145.1	145.7	134.6	142.4	171.3	161.2	154.9	142.0
Arkansas	211.4	212.2	216.8	208.3	178.3	210.0	221.9	204.7	195.9	274.7	221.7
Louisiana	132.4	154.1	188.9	185.7	192.1	206.1	208.1	216.4	228.2	246.1	195.0
Oklahoma	118.3	104.1	166.8	149.5	140.6	127.2	139.0	144.3	146.5	144.2	139.3
Texas	110.2	116.9	139.1	129.3	133.8	113.7	121.8	163.7	147.4	127.5	124.7
Mountain	95.2	90.9	100.5	91.7	98.1	91.6	94.5	90.7	99.7	98.5	91.7
Arizona	61.7	59.7	66.0	67.5	51.4	61.1	67.2	63.6	71.7	72.3	69.3
Colorado	82.9	79.0	83.4	82.5	78.6	85.5	83.6	82.6	102.6	96.2	88.4
Idaho	174.4	183.8	266.4	166.0	248.5	144.9	143.9	180.7	162.1	158.3	119.4
Montana	139.4	123.5	142.3	129.9	161.4	118.0	127.0	140.9	146.0	146.1	117.1
Nevada	53.3	62.6	55.4	73.7	87.7	76.7	77.5	55.3	69.6	77.0	81.2
New Mexico	104.7	79.8	99.2	104.1	115.7	126.0	128.4	118.8	131.7	129.1	132.3
Utah	176.2	148.9	155.5	105.6	114.6	126.6	115.4	101.5	100.9	100.4	109.8
Wyoming	170.9	177.6	165.7	150.2	191.1	117.6	130.0	111.3	116.3	113.0	96.0
Pacific Contiguous	88.4	103.0	95.5	100.5	106.3	98.5	104.2	107.7	141.6	148.8	144.6
California	87.3	99.8	91.9	98.7	100.9	96.0	103.9	104.0	142.7	150.5	152.0
Oregon	86.1	107.0	102.1	100.5	111.2	92.5	103.6	104.4	116.5	123.4	108.0
Washington	95.7	117.9	110.9	109.3	129.9	114.0	105.6	127.0	150.4	154.9	130.6
Pacific Noncontiguous	120.4	126.3	127.0	123.6	119.3	163.9	134.1	140.8	145.5	162.9	184.6
Alaska	135.9	161.5	155.1	176.9	136.9	193.1	184.1	245.5	230.6	334.9	325.7
Hawaii	116.2	117.0	116.7	103.9	112.0	151.9	113.4	97.3	115.7	105.9	148.6
U.S. Total	106.1	109.7	113.1	116.9	114.4	117.2	118.6	119.0	121.5	125.7	118.4

SAIDI = System Average Interruption Duration Index. It is the minutes of non-momentary electric interruptions, per year, the average customer experienced.
IEEE refers to the IEEE 1366-2003 or the IEEE 1366-2012 standard. Any method combines data from utilities that use IEEE standard with data from utilities that do not.
For utilities using the IEEE method, a Major Event Day is any day that exceeds a daily SAIDI threshold called Tmed. Tmed is a duration statistic calculated from daily SAIDI values from the past five years. For utilities not using IEEE methods, Major Events are self-determined by the reporting utility.
Loss of Supply Removed excludes outages due to loss of supply from the high-voltage/bulk power system.

For a five minute video explanation of these metrics, go to https://youtu.be/oVH9L0fCMTU.

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

Table 11.5 SAIFI Values (Times Per Year) of U.S. Distribution System by State, 2013 - 2023

Census Division and State	IEEE										
	All Events (With Major Event Days)										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
New England	1.4	1.6	1.1	1.4	1.5	1.8	1.4	2.0	1.4	1.3	1.4
Connecticut	0.9	0.8	0.8	1.2	1.0	1.3	1.0	2.0	1.0	0.9	0.9
Maine	2.9	5.1	1.9	2.7	2.8	2.8	2.5	3.9	2.5	3.0	3.3
Massachusetts	1.1	1.0	0.8	1.0	1.0	1.7	1.1	1.2	1.2	1.1	1.1
New Hampshire	2.0	2.0	1.1	1.5	2.0	1.9	1.2	1.5	1.1	1.4	1.5
Rhode Island	1.3	0.8	1.2	1.2	1.2	1.6	1.4	2.0	1.4	1.0	0.8
Vermont	2.8	2.5	1.8	1.6	2.6	3.4	2.0	1.6	1.9	2.4	2.3
Middle Atlantic	1.1	1.1	1.0	1.2	1.1	1.5	1.3	1.5	1.2	1.1	1.0
New Jersey	1.4	1.0	1.0	1.2	0.9	1.4	1.2	1.6	1.0	0.9	0.9
New York	1.3	1.2	1.2	1.3	1.4	1.5	1.5	1.5	1.3	1.5	1.1
Pennsylvania	1.0	1.3	1.0	1.1	1.1	1.5	1.3	1.3	1.2	1.2	1.1
East North Central	1.2	1.2	1.2	1.1	1.2	1.2	1.3	1.2	1.3	1.2	1.2
Illinois	1.1	1.1	1.1	1.0	0.9	0.9	0.9	0.9	0.9	0.8	0.8
Indiana	1.2	1.3	1.3	1.3	1.3	1.5	1.5	1.3	1.4	1.4	1.4
Michigan	1.5	1.2	1.2	1.1	1.4	1.4	1.5	1.4	1.6	1.3	1.5
Ohio	1.2	1.2	1.2	1.2	1.4	1.4	1.5	1.4	1.3	1.5	1.3
Wisconsin	0.9	0.8	1.5	0.9	0.9	0.8	1.1	0.8	1.1	1.1	0.9
West North Central	1.3	1.1	1.1	1.2	1.1	1.0	1.2	1.0	1.2	1.1	1.1
Iowa	1.1	1.2	1.0	1.2	1.1	1.0	1.1	1.5	1.0	1.0	0.9
Kansas	1.6	1.4	1.6	1.4	1.5	1.2	1.4	0.9	1.5	1.3	1.3
Minnesota	1.2	1.0	1.0	1.2	1.0	1.0	1.0	1.0	1.0	1.2	1.0
Missouri	1.1	1.1	1.0	1.0	1.2	1.0	1.3	1.0	1.3	1.1	1.3
Nebraska	0.8	0.7	0.7	0.7	0.9	1.1	0.7	0.8	1.2	0.6	0.6
North Dakota	1.6	1.8	2.4	2.1	1.0	1.0	1.0	1.2	1.0	1.4	1.2
South Dakota	1.9	1.0	1.1	1.4	1.2	1.1	1.6	1.1	1.0	1.2	1.0
South Atlantic	1.2	1.4	1.3	1.6	1.8	1.6	1.3	1.5	1.2	1.7	1.3
Delaware	1.5	1.4	1.5	1.3	1.1	1.0	1.0	1.5	1.0	0.9	0.8
District of Columbia	0.9	0.7	0.7	0.8	0.6	0.6	0.6	0.4	0.5	0.3	0.4
Florida	1.0	1.1	1.1	1.4	2.1	1.1	1.0	1.1	0.9	1.5	1.0
Georgia	1.3	1.5	1.6	1.5	2.2	1.5	1.4	2.0	1.3	1.7	1.9
Maryland	1.1	1.3	1.0	1.1	0.9	1.2	1.0	0.9	1.0	1.2	0.9
North Carolina	1.4	1.5	1.4	1.9	1.4	2.3	1.4	1.7	1.2	2.0	1.5
South Carolina	1.1	1.9	1.5	2.4	1.6	1.8	1.5	1.5	1.2	1.9	1.5
Virginia	2.1	1.6	1.5	1.7	1.6	2.6	2.1	1.8	2.0	2.5	1.7
West Virginia	2.3	2.4	2.4	2.4	2.3	2.6	2.8	2.4	2.4	2.7	2.4
East South Central	1.6	1.8	1.8	1.7	1.7	1.9	1.9	2.0	1.8	2.5	2.4
Alabama	2.0	2.0	2.0	1.8	1.9	2.0	1.8	3.5	1.4	2.3	2.3
Kentucky	1.5	1.7	1.6	1.5	1.3	1.8	1.6	1.4	1.5	1.7	1.9
Mississippi	1.7	2.0	2.1	1.9	2.1	1.7	2.0	2.4	2.3	2.2	2.6
Tennessee	1.7	1.8	1.8	1.8	1.9	2.0	2.1	2.1	2.0	3.3	2.8
West South Central	1.5	1.5	1.9	1.7	1.8	1.6	1.8	1.9	3.0	1.8	1.9
Arkansas	1.8	1.8	2.1	2.1	2.1	1.7	1.9	1.9	1.7	2.2	2.1
Louisiana	2.8	3.0	2.3	2.1	2.3	2.0	2.1	3.3	3.4	2.0	1.9
Oklahoma	1.7	1.1	1.9	1.7	1.5	1.4	1.6	1.8	1.5	1.5	2.1
Texas	1.4	1.5	1.8	1.6	1.7	1.4	1.7	1.6	3.3	1.7	1.9
Mountain	1.1	1.0	1.0	1.1	1.1	1.0	1.0	1.0	1.1	1.0	1.0
Arizona	0.8	0.8	0.9	0.8	0.9	0.9	0.9	0.8	1.1	1.0	1.0
Colorado	1.2	1.0	1.0	1.2	1.2	1.0	1.1	1.0	1.1	1.0	0.9
Idaho	1.6	1.3	1.7	1.3	1.7	1.2	1.2	1.6	1.8	1.2	1.1
Montana	1.4	1.2	1.7	1.3	1.6	1.2	1.3	1.3	1.6	1.4	1.1
Nevada	0.6	0.7	0.7	0.8	0.9	1.0	0.8	0.7	0.8	1.0	0.9
New Mexico	1.0	0.8	1.0	1.3	1.2	1.1	1.1	0.9	1.2	1.1	1.1
Utah	1.5	1.4	1.4	1.3	1.1	1.0	1.0	1.3	0.9	0.9	0.9
Wyoming	1.9	1.6	1.5	1.5	1.7	1.3	1.5	1.9	1.1	1.3	0.9
Pacific Contiguous	0.9	1.0	1.0	1.1	1.3	1.0	1.2	1.1	1.4	1.3	1.3
California	0.8	0.9	0.9	1.0	1.3	1.0	1.3	1.1	1.3	1.3	1.4
Oregon	0.8	1.3	1.1	1.1	1.3	0.9	1.0	1.1	1.6	1.3	0.8
Washington	1.1	1.7	1.7	1.2	1.4	1.2	1.2	1.3	1.8	1.5	1.1
Pacific Noncontiguous	2.3	2.3	2.1	1.7	1.7	2.3	1.7	1.5	2.4	5.0	3.4
Alaska	2.3	2.3	2.3	2.1	1.6	2.9	1.9	2.0	2.4	5.0	3.3
Hawaii			1.9	1.3	1.8	1.9	1.6	1.2			3.9
U.S. Total	1.2	1.3	1.3	1.3	1.4	1.3	1.3	1.4	1.4	1.4	1.3

Census Division and State	IEEE										
	Without Major Event Days										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
New England	1.1	1.0	1.0	1.2	0.9	1.1	0.9	1.0	1.0	1.0	0.9
Connecticut	0.9	0.8	0.7	1.0	0.8	0.7	0.7	0.7	0.7	0.7	0.7
Maine	2.0	2.0	1.8	2.2	1.9	2.0	1.7	2.1	2.1	2.0	2.0
Massachusetts	0.9	0.8	0.7	0.9	0.3	0.9	0.8	0.8	0.9	0.9	0.8
New Hampshire	1.1	1.4	1.1	1.4	1.1	1.1	0.8	0.9	0.9	0.7	0.8
Rhode Island	0.7	0.8	0.9	1.0	0.8	1.0	1.0	0.9	0.9	0.8	0.7
Vermont	1.9	1.4	1.8	1.6	1.6	2.3	1.5	1.6	1.9	2.0	1.4
Middle Atlantic	1.0	0.9	0.9	1.0	0.9	1.0	1.0	1.0	1.0	1.0	0.9
New Jersey	1.2	0.9	0.8	1.0	0.9	1.0	0.9	0.9	0.9	0.8	0.8
New York	0.9	1.0	1.1	1.2	1.0	1.1	1.0	1.1	1.1	1.2	1.0
Pennsylvania	0.9	1.0	0.9	1.0	0.9	1.0	1.0	0.9	1.0	1.0	0.9
East North Central	0.9	1.0	1.0	0.9	0.9	1.0	1.0	0.9	0.9	0.9	0.8
Illinois	0.9	1.0	0.9	0.8	0.7	0.8	0.8	0.7	0.7	0.6	0.6
Indiana	1.0	1.0	1.0	1.1	1.0	1.2	1.2	1.0	1.1	1.1	0.9
Michigan	0.9	0.9	1.0	1.0	1.0	1.1	1.2	1.1	1.0	1.0	0.9
Ohio	0.9	1.1	1.1	1.1	1.1	1.2	1.1	1.1	1.1	1.1	0.9
Wisconsin	0.7	0.7	1.2	0.7	0.6	0.6	0.7	0.7	0.7	0.8	0.6
West North Central	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.8	0.9	0.8
Iowa	0.9	1.0	1.0	1.0	1.0	0.9	0.9	0.9	0.8	0.8	0.6
Kansas	1.3	1.2	1.3	1.2	1.1	1.0	1.0	0.9	1.1	1.1	1.0
Minnesota	0.9	0.9	0.8	0.9	0.8	0.9	0.8	0.9	0.9	0.8	0.8
Missouri	0.8	1.0	0.9	0.8	0.8	0.8	1.0	0.9	0.8	0.9	0.9
Nebraska	0.7	0.6	0.6	0.6	0.7	0.7	0.5	0.6	0.5	0.5	0.5
North Dakota	1.6	1.7	2.3	1.9	0.9	0.9	0.8	1.0	1.0	1.1	0.9
South Dakota	1.0	1.0	0.9	1.0	1.1	0.9	1.1	0.9	0.7	0.8	0.9
South Atlantic	1.1	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.0	1.1	1.1
Delaware	1.3	1.2	1.3	1.1	1.0	0.9	0.9	1.0	1.0	0.8	0.7
District of Columbia	0.9	0.6	0.7	0.8	0.6	0.5	0.5	0.4	0.4	0.3	0.3
Florida	0.9	1.1	1.0	1.1	1.0	1.0	0.9	0.9	0.8	0.8	0.8
Georgia	1.1	1.2	1.3	1.3	1.2	1.2	1.2	1.3	1.2	1.3	1.3
Maryland	1.0	1.0	1.0	1.0	0.8	0.9	0.9	0.8	0.8	0.8	0.7
North Carolina	1.0	1.0	1.1	1.1	1.2	1.2	1.1	1.2	1.1	1.2	1.3
South Carolina	1.0	1.1	1.2	1.2	1.1	1.2	1.0	1.1	1.0	1.2	1.3
Virginia	1.6	1.4	1.4	1.5	1.4	1.7	1.7	1.6	1.6	1.8	1.5
West Virginia	1.7	2.1	2.2	2.1	2.1	2.4	2.4	2.2	2.1	2.2	1.9
East South Central	1.4	1.4	1.5	1.5	1.3	1.5	1.5	1.4	1.4	1.7	1.6
Alabama	1.7	1.7	1.6	1.5	1.4	1.5	1.1	1.4	1.2	2.0	1.5
Kentucky	1.3	1.3	1.3	1.3	1.1	1.3	1.4	1.1	1.1	1.3	1.1
Mississippi	1.4	1.4	1.8	1.6	1.5	1.6	1.6	1.4	1.5	1.7	2.1
Tennessee	1.6	1.5	1.5	1.6	1.5	1.7	1.8	1.5	1.7	2.0	1.9
West South Central	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.3	1.4	1.5	1.4
Arkansas	1.6	1.6	1.8	1.7	1.5	1.5	1.5	1.4	1.4	1.8	1.6
Louisiana	1.2	1.5	1.8	1.7	1.7	1.8	1.6	1.6	1.8	1.9	1.5
Oklahoma	1.2	1.1	1.3	1.3	1.2	1.2	1.3	1.2	1.3	1.3	1.1
Texas	1.3	1.2	1.3	1.3	1.3	1.2	1.3	1.2	1.4	1.4	1.4
Mountain	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.9	0.9	0.8
Arizona	0.8	0.7	0.8	0.8	0.6	0.6	0.7	0.7	0.8	0.8	0.8
Colorado	1.1	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Idaho	1.4	1.1	1.4	1.2	1.6	1.1	1.1	1.2	1.2	1.1	1.0
Montana	1.3	1.1	1.4	1.1	1.4	1.2	1.2	1.1	1.3	1.2	1.1
Nevada	0.6	0.6	0.6	0.7	0.8	0.8	0.8	0.6	0.7	0.7	0.7
New Mexico	0.9	0.8	0.9	1.0	1.1	1.1	1.0	0.9	1.0	1.0	0.9
Utah	1.3	1.2	1.2	1.0	1.0	1.0	0.9	0.9	0.9	0.8	0.9
Wyoming	1.6	1.5	1.4	1.4	1.6	1.2	1.4	1.1	1.0	1.1	0.8
Pacific Contiguous	0.8	0.9	0.8	0.9	0.9	0.8	0.8	0.9	1.0	1.1	1.0
California	0.8	0.9	0.8	0.9	0.9	0.9	0.9	0.9	1.0	1.1	1.1
Oregon	0.7	0.9	0.7	0.8	0.9	0.8	0.7	0.7	0.8	0.8	0.7
Washington	0.8	0.9	0.8	0.8	0.9	0.8	0.8	0.9	1.0	1.0	0.9
Pacific Noncontiguous	1.4	1.6	1.5	1.3	1.5	2.0	1.3	1.4	1.7	3.4	2.4
Alaska	1.4	1.6	1.5	1.9	1.8	2.6	1.6	2.2	1.7	3.4	2.4
Hawaii			1.5	1.0	1.3	1.7	1.2	1.1			
U.S. Total	1.0	1.0	1.1	1.1	1.0	1.1	1.0	1.0	1.0	1.1	1.0

Census Division and State	IEEE										
	Loss of Supply Removed										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
New England	1.3	1.5	1.0	1.3	1.4	1.7	1.3	1.9	1.3	1.3	1.3
Connecticut	0.9	0.8	0.7	1.2	1.0	1.3	1.0	2.0	1.0	0.9	0.9
Maine	2.6	5.1	1.7	2.4	2.6	2.6	2.3	3.8	2.2	2.8	3.0
Massachusetts	1.1	1.0	0.8	0.9	1.0	1.6	1.1	1.2	1.1	1.0	1.0
New Hampshire	1.1	1.8	1.1	1.5	2.0	1.9	1.2	1.5	1.0	1.4	1.5
Rhode Island	1.2	0.8	1.2	1.0	1.1	1.4	1.2	1.4	1.4	0.9	0.7
Vermont	2.8	2.3	1.5	1.4	2.5	2.9	1.9	1.6	1.8	2.3	2.0
Middle Atlantic	1.0	1.1	1.0	1.1	1.0	1.4	1.2	1.3	1.1	1.0	1.0
New Jersey	1.2	0.9	1.0	1.1	0.9	1.3	1.1	1.4	0.9	0.8	0.8
New York	1.3	1.2	1.1	1.2	1.4	1.5	1.5	1.5	1.3	1.5	1.1
Pennsylvania	0.9	1.1	0.9	1.0	1.0	1.4	1.2	1.2	1.1	1.1	1.0
East North Central	1.1	1.1	1.0	1.0	1.1	1.1	1.2	1.1	1.2	1.1	1.1
Illinois	1.1	1.1	1.1	1.0	0.9	0.9	0.9	0.9	0.9	0.7	0.8
Indiana	0.9	1.1	1.1	1.2	1.1	1.2	1.2	1.0	1.1	1.2	1.3
Michigan	1.5	1.2	1.1	1.1	1.4	1.3	1.5	1.3	1.6	1.3	1.5
Ohio	1.0	1.0	1.0	1.0	1.1	1.2	1.2	1.2	1.1	1.2	1.1
Wisconsin	0.8	0.8	0.8	0.8	0.9	0.7	1.1	0.8	1.1	1.1	0.9
West North Central	1.2	1.0	1.0	1.1	1.0	0.9	1.1	1.0	1.0	1.0	1.0
Iowa	0.9	1.1	0.8	0.9	0.9	0.9	1.0	1.3	0.8	0.8	0.7
Kansas	1.3	1.2	1.4	1.3	1.2	1.0	1.3	0.9	1.3	1.1	1.2
Minnesota	1.2	1.0	0.9	1.1	0.9	0.9	0.9	1.0	0.9	1.1	0.9
Missouri	1.1	1.1	1.3	1.0	1.3	1.1	1.6	1.0	1.1	1.0	1.3
Nebraska	0.1	0.6	0.5	0.6	0.7	0.7	0.7	0.9	1.1	0.6	0.5
North Dakota	0.9	1.0	0.7	1.0	0.7	0.7	0.8	0.8	0.6	1.1	0.8
South Dakota	1.4	0.7	0.9	0.9	0.9	0.7	1.1	0.7	0.7	0.9	0.7
South Atlantic	1.1	1.4	1.2	1.5	1.6	1.5	1.2	1.3	1.1	1.5	1.2
Delaware	1.4	1.3	1.4	1.3	1.1	1.0	1.0	1.5	1.0	0.9	0.9
District of Columbia	0.8	0.7	0.7	0.8	0.6	0.6	0.6	0.4	0.5	0.3	0.4
Florida	0.9	1.5	1.0	1.3	2.0	1.1	0.9	1.1	0.9	1.4	0.9
Georgia	0.8	1.3	1.4	1.2	2.1	1.4	1.2	1.7	1.1	1.5	1.8
Maryland	1.0	1.2	1.0	1.1	0.9	1.2	1.0	0.9	0.9	1.1	0.9
North Carolina	1.3	1.3	1.2	1.8	1.2	2.0	1.3	1.5	1.2	1.8	1.4
South Carolina	1.0	1.6	1.2	2.2	1.5	1.5	1.3	1.2	1.0	1.6	1.2
Virginia	1.9	1.4	1.4	1.3	1.5	2.4	1.9	1.7	1.9	2.4	1.6
West Virginia	1.7	2.1	2.2	2.1	2.0	2.4	2.5	2.1	2.1	2.3	2.1
East South Central	1.4	1.5	1.6	1.5	1.6	1.7	1.8	1.8	1.7	2.3	2.3
Alabama	1.7	2.0	1.8	1.5	1.8	1.7	1.5	3.4	1.6	2.2	2.0
Kentucky	1.3	1.4	1.3	1.2	1.1	1.6	1.4	1.2	1.3	1.5	1.7
Mississippi	1.6	1.8	1.9	1.9	2.3	1.9	2.2	2.4	2.5	2.3	2.9
Tennessee	1.5	1.7	1.7	1.7	1.8	1.9	2.1	2.0	1.8	3.1	2.8
West South Central	1.5	1.5	1.8	1.6	1.6	1.5	1.6	1.8	3.0	1.7	1.8
Arkansas	1.8	2.2	1.9	1.9	1.9	1.6	1.7	1.7	1.4	1.9	1.9
Louisiana	1.5	1.6	2.0	1.9	2.0	1.8	2.0	3.1	3.1	1.9	1.8
Oklahoma	1.4	0.9	1.6	1.4	1.2	1.2	1.3	1.4	1.2	1.2	1.7
Texas	1.4	1.5	1.7	1.5	1.5	1.3	1.5	1.5	3.5	1.7	1.8
Mountain	1.0	0.9	1.0	1.0	1.0	0.9	0.9	1.0	1.0	1.0	0.9
Arizona	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.0	1.0	0.9
Colorado	1.0	0.9	0.9	1.0	1.0	0.9	1.0	1.0	1.0	1.0	0.9
Idaho	1.4	1.1	1.5	1.2	1.6	1.1	1.0	1.2	1.2	0.8	0.8
Montana	1.4	1.1	1.6	0.9	1.5	0.8	1.0	1.1	1.1	1.1	0.9
Nevada	1.0		1.8	1.4	1.0	1.4	0.9	0.6	0.1	2.0	1.1
New Mexico	0.8	0.3	0.4	0.9	0.9	0.9	0.9	0.9	1.1	1.0	1.0
Utah	1.2	1.1	1.4	1.4	1.1	1.0	1.0	1.3	0.9	0.9	0.9
Wyoming	1.5	1.3	1.3	1.4	1.5	1.1	1.4	1.7	1.1	1.2	0.9
Pacific Contiguous	0.8	1.0	1.0	1.0	0.9	0.6	0.9	0.7	1.0	1.2	1.2
California	0.8	0.9	0.9	1.0	0.8	0.5	0.9	0.4	0.8	1.2	1.4
Oregon	0.7	1.1	1.0	1.0	1.3	0.8	0.9	1.1	1.5	1.2	0.8
Washington	0.9	1.5	1.3	1.1	1.2	1.0	1.1	1.1	1.5	1.2	0.7
Pacific Noncontiguous	2.3	2.7	2.6	1.5	1.6	1.8	1.4	1.1	1.8	3.4	2.5
Alaska	2.3	2.7	2.6	2.4	1.5	2.3	1.6	1.5	1.8	3.4	2.5
Hawaii				1.0	1.7	1.5	1.4	1.0			
U.S. Total	1.1	1.2	1.2	1.2	1.3	1.2	1.2	1.2	1.3	1.3	1.2

Census Division and State	Any Method										
	All Events (With Major Event Days)										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
New England	1.5	1.6	1.0	1.3	1.5	1.7	1.4	1.9	1.4	1.4	1.4
Connecticut	0.9	0.7	0.7	1.1	0.9	1.3	1.0	1.8	0.9	0.8	0.9
Maine	2.9	5.1	1.9	2.7	2.8	2.8	2.5	3.9	2.5	3.0	3.3
Massachusetts	1.1	1.0	0.8	1.0	1.1	1.6	1.2	1.3	1.2	1.1	1.1
New Hampshire	2.2	2.3	1.4	1.5	2.3	2.2	1.4	1.8	1.4	1.8	1.8
Rhode Island	1.3	0.8	1.2	1.2	1.2	1.6	1.4	2.0	1.4	1.0	0.8
Vermont	2.4	2.2	1.7	1.9	2.4	2.6	2.0	1.9	2.1	2.6	2.4
Middle Atlantic	0.9	0.9	0.8	1.0	1.0	1.2	1.1	1.2	1.0	1.0	0.9
New Jersey	1.3	1.0	1.0	1.2	0.9	1.4	1.2	1.6	1.0	0.9	0.9
New York	0.7	0.6	0.7	0.8	0.8	1.0	0.9	1.0	0.9	0.9	0.7
Pennsylvania	1.0	1.2	1.0	1.1	1.1	1.4	1.3	1.3	1.2	1.1	1.1
East North Central	1.2	1.1	1.2	1.1	1.2	1.2	1.3	1.2	1.3	1.2	1.2
Illinois	1.1	1.1	1.1	1.0	0.9	0.9	0.9	0.9	0.9	0.8	0.8
Indiana	1.2	1.3	1.3	1.3	1.3	1.5	1.5	1.3	1.4	1.4	1.4
Michigan	1.5	1.2	1.1	1.1	1.4	1.4	1.5	1.4	1.7	1.3	1.5
Ohio	1.2	1.2	1.2	1.2	1.4	1.4	1.5	1.4	1.3	1.5	1.3
Wisconsin	0.8	0.8	1.3	0.8	0.9	0.8	1.1	0.8	1.0	1.0	0.9
West North Central	1.3	1.1	1.1	1.1	1.1	1.0	1.1	1.1	1.1	1.1	1.1
Iowa	1.0	1.2	1.0	1.0	1.0	1.0	1.1	1.5	0.9	0.9	0.9
Kansas	1.6	1.3	1.6	1.4	1.5	1.2	1.4	0.9	1.5	1.3	1.3
Minnesota	1.2	1.0	1.0	1.2	0.9	1.0	1.0	1.0	1.0	1.2	1.0
Missouri	1.1	1.1	1.1	1.1	1.2	1.0	1.3	1.0	1.2	1.1	1.3
Nebraska	0.8	0.9	0.7	0.7	0.9	1.1	0.7	0.8	1.2	0.6	0.6
North Dakota	2.8	1.4	2.1	1.6	1.0	0.9	0.9	1.0	0.9	1.3	1.1
South Dakota	1.9	1.0	1.1	1.4	1.2	1.1	1.6	1.1	1.0	1.2	1.0
South Atlantic	1.3	1.4	1.3	1.6	1.7	1.6	1.3	1.5	1.2	1.7	1.3
Delaware	1.5	1.4	1.5	1.4	1.1	1.0	1.0	1.5	1.0	0.9	0.8
District of Columbia	0.9	0.7	0.7	0.8	0.6	0.6	0.6	0.4	0.5	0.3	0.4
Florida	1.1	1.1	1.1	1.4	2.0	1.1	1.0	1.2	0.9	1.5	1.0
Georgia	1.3	1.5	1.5	1.5	2.4	1.6	1.4	2.0	1.3	1.7	1.9
Maryland	1.1	1.3	1.1	1.1	1.0	1.3	1.0	1.0	1.0	1.2	0.9
North Carolina	1.3	1.5	1.3	1.8	1.3	2.2	1.4	1.7	1.2	1.9	1.5
South Carolina	1.0	1.8	1.5	2.4	1.6	1.7	1.5	1.5	1.2	1.9	1.5
Virginia	1.6	1.4	1.4	1.5	1.4	1.8	1.7	1.6	1.6	1.9	1.5
West Virginia	2.3	2.4	2.4	2.4	2.3	2.6	2.8	2.4	2.4	2.7	2.4
East South Central	1.6	1.7	1.7	1.7	1.8	1.8	1.8	2.0	1.8	2.3	2.3
Alabama	1.4	1.5	1.7	1.6	2.0	1.5	1.4	2.4	1.4	1.4	1.6
Kentucky	1.5	1.7	1.6	1.5	1.3	1.8	1.6	1.4	1.5	1.8	1.9
Mississippi	1.7	1.7	2.0	1.9	2.2	1.8	2.1	2.5	2.4	2.4	2.7
Tennessee	1.8	1.8	1.8	1.8	1.8	1.9	2.2	2.1	2.0	3.2	2.8
West South Central	1.6	1.5	1.9	1.7	1.8	1.5	1.7	2.3	2.7	1.7	1.8
Arkansas	1.8	1.8	2.0	2.0	2.0	1.8	1.9	1.8	1.7	2.1	2.1
Louisiana	2.5	2.4	2.3	2.1	2.3	2.1	2.2	3.2	3.3	2.1	2.1
Oklahoma	1.5	1.1	1.8	1.6	1.4	1.3	1.5	2.1	1.4	1.4	1.9
Texas	1.5	1.4	1.8	1.6	1.7	1.4	1.7	2.2	2.9	1.7	1.8
Mountain	1.0	1.0	1.1	1.1	1.1	1.0	1.0	1.0	1.2	1.1	1.0
Arizona	0.8	0.8	0.9	0.8	0.9	0.9	0.9	0.8	1.2	1.1	1.0
Colorado	1.0	0.9	1.0	1.2	1.2	1.0	1.1	1.0	1.1	1.0	0.9
Idaho	1.6	1.3	1.7	1.4	1.7	1.2	1.2	1.6	1.8	1.2	1.1
Montana	1.4	1.1	1.8	1.3	1.6	1.3	1.3	1.4	1.7	1.4	1.1
Nevada	0.6	0.7	0.7	0.8	0.9	1.0	0.8	0.7	0.8	1.0	0.9
New Mexico	1.0	0.8	1.1	1.5	1.3	1.1	1.2	1.0	1.4	1.2	1.2
Utah	1.4	1.4	1.4	1.3	1.1	1.0	1.0	1.3	0.9	0.9	0.9
Wyoming	1.8	1.5	1.5	1.5	1.7	1.3	1.5	1.8	1.2	1.3	1.0
Pacific Contiguous	0.9	1.0	1.0	1.1	1.3	1.0	1.2	1.1	1.4	1.3	1.3
California	0.8	0.9	0.9	1.0	1.3	1.0	1.3	1.1	1.3	1.2	1.4
Oregon	1.0	1.3	1.0	1.1	1.3	0.9	1.0	1.1	1.6	1.3	0.8
Washington	1.0	1.5	1.7	1.2	1.3	1.2	1.2	1.3	1.7	1.5	1.0
Pacific Noncontiguous	2.2	2.3	2.9	2.0	2.0	2.4	2.1	1.6	1.8	2.3	2.1
Alaska	2.3	2.5	2.6	2.3	1.7	3.1	2.2	2.2	2.1	3.5	2.7
Hawaii	2.1	2.3	3.0	1.9	2.1	2.0	2.1	1.2	1.6	1.6	1.8
U.S. Total	1.2	1.2	1.2	1.3	1.4	1.3	1.3	1.4	1.4	1.4	1.3

Census Division and State	Any Method										
	Without Major Event Days										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
New England	1.1	1.1	1.0	1.1	0.9	1.1	0.9	1.1	1.0	1.0	0.9
Connecticut	0.9	0.7	0.6	0.9	0.7	0.7	0.6	0.7	0.6	0.6	0.7
Maine	2.0	2.0	1.8	2.2	1.9	2.0	1.7	2.1	2.1	2.0	2.0
Massachusetts	0.9	0.8	0.7	0.9	0.6	0.9	0.8	1.0	0.9	0.9	0.8
New Hampshire	1.3	1.6	1.4	1.4	1.3	1.3	0.9	1.1	1.1	0.9	1.0
Rhode Island	0.7	0.8	0.9	1.0	0.8	1.0	1.0	0.9	0.9	0.8	0.7
Vermont	1.9	1.5	1.7	1.8	1.9	1.9	1.5	1.9	2.1	2.0	1.6
Middle Atlantic	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7
New Jersey	1.2	0.9	0.8	1.0	0.9	1.0	0.9	0.9	0.9	0.8	0.8
New York	0.6	0.6	0.6	0.7	0.6	0.6	0.6	0.7	0.7	0.7	0.6
Pennsylvania	0.9	0.9	0.9	1.0	0.9	1.0	1.0	0.9	1.0	1.0	0.9
East North Central	0.9	1.0	1.0	0.9	0.9	1.0	1.0	0.9	0.9	0.9	0.8
Illinois	0.9	1.0	0.9	0.8	0.8	0.8	0.8	0.7	0.7	0.6	0.6
Indiana	0.9	1.0	1.0	1.0	1.0	1.1	1.2	1.0	1.1	1.1	0.9
Michigan	0.9	0.9	1.0	1.0	1.0	1.1	1.2	1.1	1.0	1.0	0.9
Ohio	1.0	1.1	1.1	1.1	1.1	1.2	1.1	1.1	1.1	1.1	0.9
Wisconsin	0.7	0.7	1.1	0.7	0.6	0.7	0.8	0.7	0.7	0.8	0.6
West North Central	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.8	0.8	0.9	0.8
Iowa	0.8	1.0	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.7
Kansas	1.2	1.2	1.3	1.2	1.1	1.0	1.0	0.9	1.1	1.1	1.0
Minnesota	0.9	0.9	0.8	0.9	0.8	0.9	0.8	0.9	0.9	0.9	0.8
Missouri	0.9	1.0	1.0	0.8	0.8	0.8	1.0	0.9	0.8	0.9	0.9
Nebraska	0.6	0.7	0.6	0.6	0.7	0.7	0.5	0.6	0.5	0.5	0.5
North Dakota	3.4	1.7	2.3	1.9	0.9	0.9	0.8	1.0	1.0	1.0	0.9
South Dakota	1.1	0.9	0.9	1.0	1.0	0.9	1.1	0.9	0.7	0.8	0.9
South Atlantic	1.1	1.2	1.2	1.2	1.1	1.2	1.1	1.1	1.0	1.1	1.1
Delaware	1.3	1.2	1.3	1.2	1.0	0.9	0.9	1.0	1.0	0.8	0.7
District of Columbia	0.9	0.6	0.7	0.8	0.6	0.5	0.5	0.4	0.4	0.3	0.3
Florida	1.0	1.1	1.1	1.1	1.0	1.0	0.9	1.0	0.8	0.9	0.8
Georgia	1.2	1.2	1.3	1.3	1.2	1.3	1.2	1.4	1.3	1.3	1.4
Maryland	1.0	1.0	1.0	1.0	0.9	1.0	0.9	0.8	0.8	0.8	0.7
North Carolina	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.2	1.1	1.2	1.3
South Carolina	1.0	1.1	1.2	1.2	1.1	1.2	1.0	1.1	1.0	1.2	1.3
Virginia	1.2	1.2	1.2	1.3	1.2	1.4	1.3	1.3	1.3	1.3	1.3
West Virginia	1.7	2.1	2.2	2.1	2.1	2.4	2.4	2.2	2.1	2.2	1.9
East South Central	1.4	1.3	1.4	1.4	1.3	1.4	1.5	1.3	1.4	1.6	1.5
Alabama	1.2	1.1	1.2	1.2	1.1	1.2	1.1	1.1	1.1	1.2	1.0
Kentucky	1.3	1.3	1.3	1.3	1.1	1.3	1.4	1.1	1.1	1.3	1.2
Mississippi	1.3	1.2	1.6	1.7	1.6	1.6	1.6	1.5	1.6	2.0	2.1
Tennessee	1.5	1.6	1.5	1.6	1.5	1.7	1.8	1.6	1.7	1.9	1.9
West South Central	1.3	1.2	1.4	1.4	1.3	1.2	1.2	1.5	1.3	1.3	1.3
Arkansas	1.6	1.6	1.8	1.7	1.5	1.5	1.5	1.4	1.4	1.8	1.5
Louisiana	1.4	1.5	1.8	1.8	1.7	1.8	1.6	1.7	1.8	1.9	1.6
Oklahoma	1.0	1.0	1.2	1.3	1.2	1.1	1.1	1.1	1.2	1.3	1.1
Texas	1.2	1.2	1.3	1.3	1.3	1.1	1.1	1.5	1.2	1.2	1.2
Mountain	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8	1.0	0.9	0.9
Arizona	0.8	0.7	0.8	0.8	0.6	0.6	0.8	0.8	1.0	0.9	0.8
Colorado	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.9	0.9	0.9
Idaho	1.4	1.2	1.4	1.2	1.6	1.1	1.1	1.2	1.2	1.1	1.0
Montana	1.3	1.1	1.4	1.1	1.4	1.2	1.2	1.1	1.3	1.2	1.1
Nevada	0.6	0.6	0.6	0.7	0.8	0.8	0.8	0.6	0.7	0.7	0.7
New Mexico	0.9	0.8	1.0	1.1	1.1	1.1	1.1	0.9	1.2	1.0	1.0
Utah	1.3	1.2	1.2	1.0	0.9	1.0	0.9	0.9	0.9	0.9	0.9
Wyoming	1.6	1.5	1.4	1.4	1.6	1.2	1.3	1.0	0.9	1.1	0.8
Pacific Contiguous	0.8	0.9	0.8	0.9	0.9	0.8	0.9	0.9	1.0	1.1	1.0
California	0.8	0.9	0.8	0.9	0.9	0.9	0.9	0.9	1.0	1.1	1.1
Oregon	0.7	0.9	0.7	0.8	0.9	0.8	0.7	0.8	0.8	0.8	0.8
Washington	0.8	0.9	0.8	0.8	0.9	0.8	0.8	0.9	1.0	1.0	0.9
Pacific Noncontiguous	1.6	1.8	1.7	1.6	1.5	2.0	1.3	1.4	1.3	1.7	1.6
Alaska	1.4	1.6	1.5	1.9	1.8	2.6	1.6	2.2	1.7	3.4	2.4
Hawaii	1.6	1.8	1.7	1.4	1.3	1.7	1.2	1.1	1.2	1.2	1.4
U.S. Total	1.0	1.0	1.0	1.1	1.0	1.0	1.0	1.0	1.0	1.1	1.0

SAIFI = System Average Interruption Frequency Index. It is the number of non-momentary electric interruptions, per year, the average customer experienced.
IEEE refers to the IEEE 1366-2003 or the IEEE 1366-2012 standard. Any method combines data from utilities that use IEEE standard with data from utilities that do not.
For utilities using the IEEE method, a Major Event Day is any day that exceeds a daily SAIDI threshold called Tmed. Tmed is a duration statistic calculated from daily SAIDI values from the past five years. For utilities not using IEEE methods, Major Events are self-determined by the reporting utility.
Loss of Supply Removed excludes outages due to loss of supply from the high-voltage/bulk power system.

For a five minute video explanation of these metrics, go to https://youtu.be/oVH9L0fCMTU.

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

Table 11.6 CAIDI Values (Minutes Per Interruption) of U.S. Distribution System by State, 2013 - 2023

IEEE — All Events (With Major Event Days)

Census Division and State	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
New England	317.4	195.7	137.9	163.9	521.7	405.4	258.6	643.0	282.2	230.7	357.7
Connecticut	193.0	120.6	148.6	173.4	333.8	592.4	247.1	1,531.0	172.8	207.0	212.4
Maine	335.7	204.8	114.2	198.8	885.7	237.5	359.6	446.5	130.5	321.1	562.2
Massachusetts	382.1	130.9	110.6	144.7	174.2	521.1	219.1	184.4	428.8	151.7	248.2
New Hampshire	105.7	414.2	103.9	125.5	456.7	238.6	188.0	269.7	161.2	349.6	397.7
Rhode Island	621.6	71.1	277.7	140.0	614.6	378.8	169.3	278.9	313.9	85.4	133.7
Vermont	84.6	95.2	109.6	128.1	687.1	274.3	170.4	97.2	112.7	374.8	216.1
Middle Atlantic	155.5	247.8	184.9	129.1	157.2	352.2	203.0	406.2	165.1	167.7	189.0
New Jersey	123.5	117.2	265.1	118.7	91.3	357.2	209.2	596.4	139.0	102.3	122.9
New York	209.5	172.2	124.8	157.0	246.6	261.2	219.5	302.4	166.8	237.2	181.7
Pennsylvania	143.2	341.8	162.9	121.2	163.8	378.8	192.6	266.1	181.4	178.3	232.0
East North Central	281.3	248.2	182.6	171.7	278.3	211.9	241.3	263.9	298.3	263.8	412.3
Illinois	166.6	175.8	153.7	134.0	130.2	157.7	126.1	362.7	141.2	120.2	252.4
Indiana	204.8	188.0	198.9	188.7	170.2	202.6	174.9	224.7	217.8	193.7	330.6
Michigan	516.5	481.9	325.4	237.5	567.8	327.6	369.7	303.1	540.8	388.7	730.9
Ohio	183.8	155.0	140.4	143.5	182.7	170.7	206.1	209.1	184.1	272.4	292.7
Wisconsin	187.5	184.7	74.1	171.2	236.2	152.3	341.8	144.0	334.6	279.6	223.3
West North Central	252.2	117.8	157.6	184.5	198.4	135.2	169.7	217.1	201.0	183.2	203.8
Iowa	131.5	123.6	96.2	117.1	119.4	112.9	111.7	716.5	143.6	97.2	97.7
Kansas	163.0	113.3	215.2	118.8	247.7	130.1	177.2	112.8	225.1	134.9	216.3
Minnesota	311.2	121.1	165.4	253.7	136.2	124.1	150.9	123.5	116.5	228.0	130.6
Missouri	268.0	124.5	161.3	206.8	264.7	155.3	200.6	153.8	211.8	141.5	286.1
Nebraska	134.7	142.4	102.6	89.9	176.9	168.9	119.7	145.7	477.9	123.8	125.2
North Dakota	61.6	57.0	47.7	74.0	87.8	116.6	131.8	107.2	101.3	475.5	227.9
South Dakota	537.7	115.1	120.4	187.8	88.0	84.1	191.5	89.0	103.4	281.1	76.8
South Atlantic	155.9	217.9	146.4	360.4	702.1	403.4	159.0	219.5	165.8	370.5	179.4
Delaware	108.2	120.1	125.1	110.7	136.8	131.3	104.0	180.0	66.8	93.5	130.4
District of Columbia	140.9	139.1	163.9	140.2	104.0	169.9	130.5	110.0	115.6	111.5	194.2
Florida	82.2	78.9	78.6	282.9	1,302.1	274.7	90.3	175.9	92.0	691.2	175.5
Georgia	98.7	165.0	158.9	278.1	465.6	149.7	110.1	267.2	108.9	127.3	184.5
Maryland	104.9	199.3	114.6	109.8	114.8	264.8	137.1	123.8	132.1	224.2	180.7
North Carolina	178.0	343.3	159.7	461.9	204.4	822.2	198.4	254.6	172.3	246.7	172.1
South Carolina	111.2	424.7	157.3	694.7	240.5	276.1	226.0	224.4	106.2	161.7	112.3
Virginia	422.6	180.6	160.9	187.7	172.7	435.1	228.6	186.8	402.9	436.1	176.9
West Virginia	236.4	280.1	337.3	316.2	296.1	279.5	269.6	247.9	468.8	366.5	319.4
East South Central	117.7	150.8	154.4	128.9	250.9	170.1	141.8	420.5	314.4	156.7	359.0
Alabama	138.3	138.6	135.9	99.0	126.3	233.7	103.0	948.8	127.5	101.4	175.4
Kentucky	116.4	149.9	154.1	132.5	144.7	228.6	126.3	210.2	457.7	202.4	463.4
Mississippi	114.9	136.8	169.1	148.4	273.5	156.7	231.7	677.5	519.6	210.2	334.1
Tennessee	109.0	156.1	144.1	117.9	333.2	111.2	118.5	290.6	157.9	128.8	330.7
West South Central	133.7	133.5	166.1	153.2	255.8	131.0	175.9	530.9	633.9	136.8	355.7
Arkansas	142.8	129.5	159.1	192.2	194.2	192.3	232.5	415.3	184.2	202.5	431.2
Louisiana	199.2	167.1	180.8	212.5	186.8	140.6	244.4	1,297.0	1,749.4	162.6	352.5
Oklahoma	288.7	103.8	319.2	193.0	132.6	106.7	116.4	316.2	109.2	114.0	644.3
Texas	104.9	132.9	151.8	132.3	287.8	119.3	153.5	256.3	449.4	120.1	308.7
Mountain	123.8	110.7	125.8	121.6	117.9	118.4	129.1	175.8	147.1	146.7	122.0
Arizona	90.5	103.0	104.6	103.6	103.3	121.6	96.3	88.6	96.6	133.7	109.2
Colorado	117.6	89.1	106.5	132.3	109.3	103.6	165.9	132.1	162.8	138.1	108.4
Idaho	149.4	133.0	142.7	136.8	149.7	141.8	125.0	180.3	246.2	143.4	125.5
Montana	120.0	122.0	174.4	123.6	141.1	113.5	123.3	204.9	155.3	160.7	108.3
Nevada	110.6	107.8	146.3	114.6	126.5	129.2	106.8	101.6	122.3	198.2	147.2
New Mexico	138.4	91.7	113.3	97.3	97.6	119.4	142.1	152.2	164.9	160.9	141.6
Utah	143.2	141.2	149.2	147.3	132.2	114.6	144.2	448.7	124.4	126.6	140.0
Wyoming	208.6	129.0	120.5	119.3	119.6	95.0	114.6	155.1	148.4	123.6	129.8
Pacific Contiguous	134.3	154.3	184.6	140.5	199.9	204.4	431.4	249.5	342.6	188.5	230.9
California	119.4	123.5	131.5	118.3	190.7	208.1	485.2	256.8	254.9	160.7	250.2
Oregon	223.5	193.0	215.0	211.4	234.0	123.8	232.9	288.4	990.2	248.1	152.1
Washington	161.1	246.7	364.7	207.5	227.7	227.2	258.0	202.4	315.8	265.4	146.5
Pacific Noncontiguous	167.2	138.1	161.6	89.3	125.7	110.7	125.0	116.5	226.6	179.7	135.2
Alaska	167.2	138.1	283.6	93.1	94.8	115.8	145.3	130.5	226.6	179.7	153.2
Hawaii			79.6	84.1	141.7	106.1	111.0	102.5			63.4
U.S. Total	191.5	188.0	163.9	202.2	356.2	260.5	221.8	329.3	331.2	233.5	271.8

IEEE — Without Major Event Days

Census Division and State	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
New England	104.5	105.7	100.3	105.1	125.8	110.8	103.0	99.0	102.8	101.0	112.5
Connecticut	96.9	120.6	111.6	103.9	102.9	110.7	102.6	101.7	111.1	109.4	114.0
Maine	126.3	115.3	109.3	122.0	123.6	134.0	127.3	115.7	107.8	110.8	125.0
Massachusetts	94.0	100.5	95.4	100.6	286.4	95.3	87.7	79.3	99.1	94.0	105.7
New Hampshire	132.5	100.2	95.7	99.5	105.1	112.8	110.9	108.4	114.5	111.8	116.6
Rhode Island	79.6	71.1	68.6	71.0	76.3	65.0	66.6	73.1	72.6	78.2	78.3
Vermont	94.0	129.7	109.6	128.1	114.1	152.8	114.4	97.2	112.7	91.5	148.1
Middle Atlantic	111.7	104.6	104.5	107.7	106.0	111.4	115.2	109.3	115.7	117.3	126.1
New Jersey	102.3	90.3	76.8	86.6	81.0	90.9	91.7	92.1	95.2	94.0	106.0
New York	128.2	120.8	121.2	134.7	129.5	137.4	131.2	131.9	118.5	129.1	135.1
Pennsylvania	109.4	109.4	112.3	107.9	115.9	117.6	126.9	114.5	129.5	128.6	137.7
East North Central	135.5	131.1	121.2	132.5	133.1	131.4	135.4	125.2	129.7	130.4	134.6
Illinois	95.9	96.8	94.3	97.2	97.3	93.3	96.8	87.5	90.4	91.9	93.0
Indiana	116.5	116.8	115.0	121.6	129.6	126.7	125.9	127.0	127.5	123.2	118.0
Michigan	218.0	204.2	187.3	193.5	183.0	176.8	184.1	157.5	175.6	164.2	177.1
Ohio	117.1	118.7	123.6	120.2	125.0	127.9	127.8	120.5	121.4	128.5	138.4
Wisconsin	111.1	115.9	58.6	114.2	118.5	117.7	124.5	125.4	126.6	137.3	121.4
West North Central	100.4	92.3	95.7	101.1	105.0	103.8	105.7	102.5	105.5	103.9	104.3
Iowa	95.3	91.8	91.5	97.0	107.2	99.5	89.4	99.1	99.4	93.5	94.1
Kansas	96.8	95.2	100.7	106.8	114.3	107.1	114.0	103.2	107.1	99.5	101.4
Minnesota	100.5	83.5	95.9	102.9	93.1	98.8	100.7	94.6	94.2	95.8	93.6
Missouri	115.2	104.6	105.5	111.6	116.0	110.5	111.5	112.1	117.2	110.3	118.9
Nebraska	114.8	83.9	87.8	85.1	107.1	105.2	107.7	122.1	116.1	105.2	116.2
North Dakota	59.4	53.1	43.6	57.1	74.7	109.8	92.6	86.9	92.5	96.6	99.7
South Dakota	91.4	111.9	114.6	84.5	75.4	78.6	98.3	79.9	91.2	159.4	71.4
South Atlantic	114.7	104.1	105.0	108.2	110.1	117.8	114.5	111.0	111.0	116.6	111.9
Delaware	100.8	96.9	89.0	89.2	83.8	85.9	85.9	89.3	66.8	86.5	87.2
District of Columbia	140.9	128.1	163.9	140.2	104.0	98.3	112.2	105.4	102.4	95.1	104.6
Florida	80.7	78.4	76.2	78.7	76.8	83.5	81.8	81.2	82.0	83.8	89.0
Georgia	77.7	83.0	84.8	90.1	96.9	95.2	103.0	98.3	99.8	100.2	99.9
Maryland	108.6	92.7	103.2	102.2	99.8	99.7	103.0	98.9	101.5	100.2	95.1
North Carolina	109.7	116.9	115.0	132.4	130.1	143.8	132.0	120.7	118.2	121.6	121.9
South Carolina	102.8	90.1	103.2	99.5	106.1	112.1	105.7	107.5	98.6	99.4	98.1
Virginia	169.3	168.2	143.9	145.6	151.0	176.5	167.9	155.8	167.9	186.2	157.6
West Virginia	244.4	211.0	213.0	208.7	219.7	218.1	200.4	216.3	215.5	244.3	206.2
East South Central	96.1	108.0	104.7	101.6	109.6	104.1	103.7	108.9	107.6	111.0	114.7
Alabama	92.3	92.5	103.3	91.0	93.3	92.0	97.4	105.4	95.5	100.6	128.0
Kentucky	102.4	108.9	105.2	109.2	109.6	115.6	107.1	113.7	115.0	118.6	124.5
Mississippi	95.7	131.3	125.8	110.1	138.3	130.8	135.0	144.9	150.3	140.7	126.2
Tennessee	83.4	95.7	89.5	90.1	96.2	85.4	90.0	93.9	89.8	97.6	101.9
West South Central	100.2	103.2	108.6	105.2	106.6	111.3	119.3	117.8	130.1	119.0	116.2
Arkansas	135.8	136.6	125.1	124.5	118.9	145.4	149.8	146.5	142.3	155.1	146.2
Louisiana	110.0	105.8	109.9	108.9	114.8	117.8	138.6	134.1	148.8	135.7	132.8
Oklahoma	102.7	94.5	96.0	94.4	99.7	94.8	103.4	116.2	99.2	96.9	109.2
Texas	89.9	97.9	106.8	102.5	103.9	104.9	110.4	108.5	126.5	109.8	108.1
Mountain	100.5	99.4	102.6	100.5	106.7	103.5	101.3	104.4	105.6	105.5	106.5
Arizona	80.8	83.4	85.0	89.8	90.3	98.9	85.6	83.5	85.2	79.4	84.9
Colorado	84.9	85.4	91.2	89.3	89.1	94.5	95.5	95.5	114.5	105.0	102.2
Idaho	121.0	121.9	136.3	135.9	138.6	128.7	115.7	130.5	111.4	132.5	123.6
Montana	111.0	109.8	99.2	113.4	118.1	100.1	98.4	129.0	105.8	115.0	108.3
Nevada	91.8	99.1	99.4	100.4	108.2	94.3	100.3	95.1	104.1	106.7	108.9
New Mexico	107.4	95.9	105.6	100.6	107.9	112.9	118.2	131.4	115.4	130.3	136.3
Utah	138.7	124.8	127.9	109.1	121.5	115.0	118.6	115.9	114.4	117.8	125.3
Wyoming	108.6	118.6	113.1	99.9	106.5	90.0	97.8	96.5	120.5	101.3	124.3
Pacific Contiguous	115.4	120.8	120.1	115.2	122.7	119.4	125.3	126.0	143.2	140.1	142.8
California	112.8	118.3	114.2	109.2	117.6	116.2	122.3	121.9	142.0	136.5	143.2
Oregon	130.0	122.8	143.7	130.0	130.0	113.6	136.1	138.1	150.2	150.5	140.4
Washington	123.2	136.1	142.6	146.2	146.7	141.5	135.1	139.4	145.9	155.0	141.9
Pacific Noncontiguous	98.1	102.8	80.5	89.3	82.3	83.9	102.5	98.0	133.8	98.3	137.6
Alaska	98.1	102.8	101.3	95.2	75.0	74.2	116.0	110.7	133.8	98.3	137.6
Hawaii			68.4	83.1	86.5	90.0	95.1	87.5			
U.S. Total	112.6	110.0	109.1	110.7	114.3	115.5	117.5	114.5	120.9	120.2	121.3

IEEE — Loss of Supply Removed

Census Division and State	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
New England	329.3	196.3	138.2	177.7	542.0	423.1	270.7	677.0	280.1	262.4	370.7
Connecticut	187.5	120.5	149.4	173.5	336.7	604.1	248.1	1,545.5	173.8	208.5	214.9
Maine	350.9	205.1	102.2	215.4	927.4	246.1	384.8	458.2	140.4	334.1	590.9
Massachusetts	372.3	134.2	112.1	174.9	188.3	562.7	235.5	199.3	542.0	186.9	262.0
New Hampshire	195.4	452.6	111.1	128.1	461.7	240.4	188.0	271.2	173.1	352.5	397.2
Rhode Island	669.1	71.3	277.7	156.0	649.8	385.5	179.5	314.1	312.7	87.0	136.9
Vermont	84.6	103.0	117.2	136.6	715.5	256.0	173.4	96.8	120.1	388.3	235.3
Middle Atlantic	163.9	260.9	193.8	123.2	160.9	373.9	212.5	427.3	171.9	173.3	195.5
New Jersey	129.0	119.4	271.7	106.9	91.3	382.1	222.2	633.9	146.4	104.9	126.8
New York	223.4	172.2	125.7	149.9	247.9	262.8	220.2	304.0	168.7	237.7	182.0
Pennsylvania	151.5	373.7	173.0	120.7	169.4	408.3	202.4	282.8	188.8	184.2	242.3
East North Central	302.3	254.5	201.7	174.7	292.7	220.7	254.8	274.8	307.2	264.8	434.5
Illinois	168.0	178.5	156.7	133.2	130.2	158.5	121.7	369.8	143.3	119.8	256.4
Indiana	231.2	197.6	213.7	202.1	173.9	213.5	174.2	202.9	197.5	177.0	357.6
Michigan	527.9	491.4	324.9	237.7	574.9	332.7	375.8	309.5	546.2	391.9	738.0
Ohio	202.1	141.3	146.8	143.7	195.9	181.3	226.7	224.0	174.5	264.8	312.6
Wisconsin	192.9	188.4	136.8	175.0	243.2	147.5	359.4	147.3	340.7	289.8	228.0
West North Central	285.8	124.1	165.7	188.8	219.8	137.2	183.3	253.2	219.9	195.7	221.5
Iowa	141.1	128.6	101.0	136.6	129.0	120.7	115.5	785.4	148.3	105.4	101.9
Kansas	181.0	113.7	174.2	118.2	288.1	139.1	198.3	110.7	243.6	138.2	234.3
Minnesota	334.0	124.2	177.1	276.2	147.2	132.5	156.6	129.2	123.1	245.5	143.9
Missouri	282.3	129.4	195.3	155.6	342.3	157.2	239.5	164.9	231.6	146.3	309.8
Nebraska	818.0	151.6	93.6	80.5	164.2	147.6	83.8	104.9	485.6	124.0	121.8
North Dakota	107.4	80.2	112.4	140.6	121.2	120.8	167.6	139.3	119.8	701.2	307.2
South Dakota	750.5	134.1	112.8	135.3	97.5	108.9	225.0	116.3	113.5	274.9	90.1
South Atlantic	166.8	268.7	155.5	382.0	771.5	429.4	167.6	223.0	175.8	416.1	180.0
Delaware	110.9	122.2	131.5	113.0	140.4	138.0	104.0	184.1	68.0	93.4	130.6
District of Columbia	153.9	139.1	163.9	140.2	104.6	169.9	130.5	110.0	115.6	111.5	194.2
Florida	83.3	81.6	79.1	302.9	1,337.8	276.5	90.5	184.2	89.9	719.3	172.3
Georgia	150.9	163.3	253.6	143.2	439.1	167.9	94.9	291.9	106.9	119.9	170.1
Maryland	104.7	200.5	116.2	109.5	116.8	267.1	136.8	123.8	132.3	213.0	176.9
North Carolina	184.0	361.7	163.5	484.7	209.6	818.6	208.3	271.8	179.9	236.6	178.6
South Carolina	121.2	479.4	164.1	764.9	253.0	309.9	248.9	251.8	111.7	174.7	117.3
Virginia	429.2	187.9	163.5	224.5	153.7	449.5	226.1	182.0	421.3	451.6	179.8
West Virginia	287.1	286.1	351.2	284.0	304.9	287.2	278.0	254.9	475.7	378.0	333.5
East South Central	127.1	163.9	161.1	138.8	257.5	171.5	149.2	437.5	342.8	168.6	375.6
Alabama	144.6	147.0	121.7	108.0	113.8	112.1	103.7	1,023.0	136.5	106.9	192.8
Kentucky	126.5	170.7	177.0	151.3	151.5	256.3	134.8	224.5	476.7	215.2	507.5
Mississippi	128.6	158.2	164.4	157.9	253.5	165.9	249.4	656.3	575.1	230.7	338.3
Tennessee	116.0	157.7	147.4	120.9	344.0	112.4	121.8	299.9	164.2	138.6	336.5
West South Central	143.8	159.9	166.5	161.5	265.3	136.0	177.7	581.5	464.0	142.7	376.3
Arkansas	180.1	272.8	175.2	216.8	206.1	202.1	224.3	436.2	199.6	226.5	460.4
Louisiana	158.7	170.4	194.1	224.7	197.3	141.0	222.3	1,345.8	1,886.8	165.3	360.3
Oklahoma	335.1	98.0	218.7	233.9	124.9	111.2	120.8	332.9	114.3	121.2	591.2
Texas	107.0	140.9	155.9	134.9	298.8	123.0	160.4	276.4	194.0	122.3	340.0
Mountain	125.5	112.2	130.0	133.1	121.4	118.5	134.3	186.1	140.8	128.3	114.5
Arizona	88.6	105.8	110.9	110.0	102.4	114.5	91.5	86.7	92.1	106.0	96.8
Colorado	106.4	85.8	109.8	146.1	118.8	110.5	176.9	137.4	167.6	142.4	113.1
Idaho	146.2	130.7	140.4	141.4	151.8	142.1	127.9	148.0	183.1	138.3	126.7
Montana	121.8	124.3	180.9	117.3	136.8	134.0	135.9	210.6	186.4	177.2	110.2
Nevada	120.0		87.9	336.0	80.1	64.6	104.6	97.5	111.0	217.2	85.7
New Mexico	141.6	103.6	137.2	111.3	119.9	131.4	151.7	158.6	177.8	134.5	143.9
Utah	148.7	147.5	153.1	152.1	128.9	117.1	138.6	466.5	124.6	120.6	130.4
Wyoming	243.9	128.4	126.8	119.4	123.3	101.9	106.5	154.8	149.8	126.5	116.3
Pacific Contiguous	118.1	155.1	171.6	136.9	245.8	261.4	575.6	382.7	430.6	189.9	236.5
California	112.5	124.2	132.9	117.1	246.7	297.5	708.4	600.9	332.4	160.0	252.4
Oregon	163.1	214.2	214.9	170.8	242.5	123.0	244.1	295.7	1,019.0	250.3	153.9
Washington	132.7	241.5	310.9	215.5	245.2	246.9	274.0	209.0	323.1	278.8	156.4
Pacific Noncontiguous	185.2	97.3	306.8	103.1	138.8	133.8	145.1	139.1	282.1	239.2	188.8
Alaska	185.2	97.3	306.8	111.5	103.1	153.2	201.0	167.5	282.1	239.2	188.8
Hawaii				94.2	152.5	121.8	118.8	121.0			
U.S. Total	202.6	203.7	170.4	209.0	390.6	283.8	243.0	371.9	312.6	246.9	288.0

Any Method — All Events (With Major Event Days)

Census Division and State	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
New England	299.6	203.8	133.5	161.4	470.8	410.3	242.2	575.0	267.3	240.9	343.7
Connecticut	193.0	116.3	147.6	163.8	307.7	522.5	243.3	1,446.4	162.2	191.8	188.8
Maine	335.7	204.8	114.2	198.8	885.7	237.5	359.6	446.5	130.5	321.1	562.2
Massachusetts	378.4	130.2	115.8	146.3	253.4	524.1	204.4	244.9	426.3	151.0	245.4
New Hampshire	114.9	381.1	107.9	124.9	484.7	234.2	204.3	274.3	171.3	345.9	368.5
Rhode Island	621.6	71.1	277.7	140.0	614.6	378.8	169.3	278.9	313.9	85.4	133.7
Vermont	180.9	339.3	122.3	193.1	362.1	342.8	224.0	134.7	151.0	367.8	316.5
Middle Atlantic	151.6	221.1	175.1	125.3	188.2	376.3	196.5	420.5	165.8	183.6	180.7
New Jersey	124.4	117.5	262.9	118.9	91.8	358.6	208.1	609.8	138.8	102.4	123.0
New York	171.6	145.9	128.9	137.0	269.3	403.4	195.2	418.1	166.3	232.7	165.6
Pennsylvania	142.3	328.0	157.7	118.2	159.3	362.0	190.4	257.6	181.5	175.9	228.0
East North Central	275.8	242.7	180.4	171.2	273.4	208.9	239.3	258.6	292.7	260.3	401.6
Illinois	165.3	173.9	152.4	132.0	129.3	156.0	125.5	358.4	140.1	118.9	249.2
Indiana	196.3	187.5	193.3	189.1	167.3	196.3	173.4	217.3	210.5	195.3	314.8
Michigan	513.6	473.8	318.5	233.6	550.9	322.6	361.5	296.8	527.5	383.2	723.5
Ohio	184.7	155.4	142.8	147.1	183.6	171.6	207.1	209.0	184.1	272.4	292.5
Wisconsin	179.2	172.8	79.6	162.3	224.0	151.3	325.3	141.3	308.0	262.2	208.6
West North Central	232.7	122.0	151.2	176.0	191.0	136.2	165.4	350.8	195.3	179.8	198.1
Iowa	129.8	137.2	100.4	112.1	118.8	125.0	113.7	1,183.1	144.1	96.6	115.7
Kansas	162.6	113.0	213.3	119.1	246.3	132.6	175.4	113.3	222.7	135.4	214.9
Minnesota	302.1	120.1	159.4	252.4	137.1	125.4	151.0	123.1	116.2	226.3	129.9
Missouri	282.2	126.7	161.7	195.9	254.6	153.8	196.8	153.1	208.8	141.0	282.9
Nebraska	150.0	141.5	117.8	124.0	175.6	173.4	128.4	143.6	447.0	134.9	130.1
North Dakota	39.3	61.3	54.9	76.7	88.9	103.4	123.0	104.0	97.2	431.4	197.7
South Dakota	514.2	114.9	117.7	180.2	87.3	84.9	187.2	88.8	104.6	264.9	76.2
South Atlantic	147.7	203.1	141.1	332.2	642.2	394.4	155.6	208.3	163.2	401.0	169.3
Delaware	108.0	119.4	124.8	110.4	136.5	131.7	104.0	180.0	66.8	93.5	130.3
District of Columbia	140.9	139.1	163.9	140.2	104.0	169.9	130.5	110.0	115.6	111.5	194.2
Florida	77.3	80.2	78.3	259.4	1,241.6	288.2	87.9	161.2	87.0	774.5	157.7
Georgia	114.2	163.3	158.4	278.1	428.3	239.7	110.2	259.6	110.7	155.9	185.2
Maryland	103.9	193.5	114.2	110.2	120.1	260.1	134.7	125.9	132.1	224.1	180.7
North Carolina	169.0	327.5	157.6	460.8	197.9	812.7	200.1	246.3	165.4	236.8	167.4
South Carolina	112.0	440.3	154.1	680.7	235.2	269.4	220.2	219.6	104.1	161.0	110.9
Virginia	289.6	135.7	142.4	153.9	140.2	279.2	178.9	189.0	275.6	320.4	151.3
West Virginia	236.4	280.1	337.3	316.2	296.1	279.5	269.6	247.9	468.8	366.5	319.4
East South Central	121.5	136.1	138.9	122.3	219.8	165.4	149.1	444.6	287.5	152.4	317.2
Alabama	164.0	139.6	124.9	111.2	160.5	202.3	123.5	732.4	164.3	145.1	186.9
Kentucky	117.2	149.5	153.6	131.7	144.2	227.6	126.3	209.0	462.8	194.1	456.3
Mississippi	116.2	131.9	157.6	143.9	258.2	151.8	255.9	595.7	479.3	184.6	295.2
Tennessee	96.8	124.8	125.8	110.7	284.0	105.1	124.1	274.8	149.9	126.6	305.1
West South Central	155.2	131.1	184.2	153.1	250.4	129.2	189.4	477.9	542.9	138.0	314.2
Arkansas	154.1	131.1	154.8	195.4	193.3	182.3	226.3	386.5	190.5	196.9	433.4
Louisiana	129.0	130.1	159.3	185.5	170.6	131.7	218.0	1,122.7	1,459.9	146.4	275.1
Oklahoma	401.2	110.8	466.5	200.2	201.6	131.9	218.9	1,384.5	128.1	135.6	481.6
Texas	120.7	133.5	152.6	131.8	286.5	120.4	173.8	194.8	405.2	128.1	281.5
Mountain	125.3	116.3	138.6	125.2	143.3	122.7	131.1	177.0	146.2	147.0	121.6
Arizona	91.3	103.7	106.0	103.5	102.5	121.6	96.8	88.0	87.0	132.7	108.6
Colorado	118.7	90.7	108.9	143.2	191.5	116.4	167.3	134.5	164.0	137.2	108.3
Idaho	158.8	190.6	266.9	145.9	185.3	145.3	134.1	204.5	267.1	154.8	128.4
Montana	118.6	122.4	164.3	127.4	136.8	111.7	127.6	199.0	181.7	163.9	111.1
Nevada	110.6	107.8	146.3	114.6	126.5	129.2	106.8	101.6	122.3	198.2	147.2
New Mexico	143.4	97.4	108.2	93.9	108.4	120.6	140.3	146.7	152.9	156.5	136.0
Utah	140.3	138.1	147.8	145.1	130.6	122.9	146.5	435.6	124.1	125.5	138.7
Wyoming	200.3	128.7	124.3	129.4	130.9	107.7	110.4	157.8	146.6	127.7	127.8
Pacific Contiguous	132.9	152.8	195.7	137.7	189.3	201.5	415.0	241.3	332.9	187.9	229.2
California	118.8	119.4	128.0	114.0	181.8	204.5	465.9	247.9	248.4	159.1	248.1
Oregon	215.6	227.5	211.2	220.3	224.4	123.4	222.5	272.4	947.7	250.8	153.8
Washington	151.0	218.5	380.0	192.8	203.9	223.2	255.6	200.9	311.5	267.0	148.0
Pacific Noncontiguous	94.3	117.0	125.7	74.8	110.8	102.1	107.6	110.2	158.7	141.3	210.8
Alaska	156.7	126.4	236.9	85.1	89.3	106.9	127.8	122.1	177.8	163.3	138.8
Hawaii	68.1	113.8	89.1	67.9	120.6	97.7	95.2	97.5	143.5	113.7	275.1
U.S. Total	179.8	179.6	164.5	192.9	339.3	261.5	214.8	341.7	308.8	238.8	256.6

Any Method — Without Major Event Days

Census Division and State	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
New England	106.8	108.4	103.2	114.9	125.6	114.5	111.5	131.2	105.1	104.5	114.2
Connecticut	97.2	116.3	108.4	101.5	100.1	107.4	98.2	98.1	107.3	106.4	107.3
Maine	126.3	115.3	109.3	122.0	123.6	134.0	127.3	115.7	107.8	110.8	125.0
Massachusetts	93.7	100.3	101.3	122.5	159.8	107.8	114.1	166.5	99.0	93.8	105.4
New Hampshire	125.2	109.1	102.1	102.1	116.7	119.7	120.8	112.3	117.9	115.6	126.1
Rhode Island	79.6	71.1	68.6	71.0	76.3	65.0	66.6	73.1	72.6	78.2	78.3
Vermont	138.7	145.1	117.6	151.8	130.4	137.4	116.2	132.7	127.5	136.0	140.0
Middle Atlantic	110.5	105.8	105.6	105.6	107.2	111.9	116.0	110.3	118.5	116.5	122.2
New Jersey	102.5	90.7	77.5	87.5	81.7	90.9	92.1	92.8	95.7	94.3	106.5
New York	114.4	114.9	118.8	118.5	116.0	122.3	124.2	116.9	117.1	116.5	119.4
Pennsylvania	110.3	108.5	110.8	105.6	115.9	116.7	124.6	116.1	135.2	130.4	135.8
East North Central	134.8	129.4	120.7	132.4	133.9	130.7	134.8	124.3	129.0	129.8	133.3
Illinois	96.2	96.9	94.4	97.2	97.2	93.3	96.8	87.3	90.4	91.4	92.9
Indiana	115.6	114.9	117.6	121.6	129.8	125.4	125.0	125.3	125.5	122.4	116.6
Michigan	217.1	201.5	184.8	190.8	181.5	175.4	181.7	154.6	172.6	163.6	176.7
Ohio	117.6	118.5	123.6	121.0	126.1	128.6	128.5	120.4	121.2	128.4	138.4
Wisconsin	112.0	109.5	64.0	115.4	126.1	113.3	123.1	122.8	124.8	132.7	114.7
West North Central	93.6	93.0	95.1	100.6	104.5	104.4	105.5	103.2	105.0	104.0	105.5
Iowa	93.8	94.2	92.5	98.2	104.9	98.7	94.9	103.5	98.8	93.3	99.3
Kansas	96.9	95.0	99.6	107.1	114.4	110.2	113.4	104.2	106.8	99.5	101.9
Minnesota	101.7	84.8	95.7	102.6	94.8	98.9	100.9	95.0	94.2	96.0	93.5
Missouri	114.3	103.6	103.3	108.5	113.4	112.5	110.9	111.6	117.5	110.7	121.7
Nebraska	93.7	95.5	93.8	93.6	103.4	105.0	114.1	123.8	119.0	115.1	118.3
North Dakota	26.1	50.5	42.7	58.5	75.2	107.2	90.7	86.6	88.7	96.1	99.1
South Dakota	90.0	111.9	114.9	84.6	77.4	80.9	97.5	81.8	92.3	155.8	70.8
South Atlantic	103.7	100.3	102.3	107.2	107.5	114.4	112.4	107.4	108.3	113.6	108.6
Delaware	100.6	96.4	88.8	89.3	83.9	86.5	86.0	89.3	66.8	86.5	87.3
District of Columbia	140.9	128.1	163.9	140.2	104.0	98.3	112.2	105.4	102.4	95.1	104.6
Florida	76.4	75.2	73.6	76.3	75.5	79.7	79.1	76.7	77.7	80.4	84.1
Georgia	83.0	84.8	86.2	100.2	101.8	97.5	102.9	98.0	102.0	102.3	100.8
Maryland	107.5	92.3	104.4	103.1	99.1	98.5	103.1	100.5	101.5	100.2	95.1
North Carolina	109.7	116.1	114.8	130.5	128.7	141.5	131.9	119.2	116.0	120.2	120.5
South Carolina	104.3	89.2	102.3	98.8	105.6	111.9	105.2	106.7	97.7	99.3	97.7
Virginia	122.4	120.8	118.9	122.4	120.9	135.2	135.8	124.9	131.5	139.6	124.2
West Virginia	244.4	211.0	213.0	208.7	219.7	218.1	200.4	216.3	215.5	244.3	206.2
East South Central	92.5	102.6	100.9	102.0	110.2	103.3	106.2	110.3	107.3	110.5	111.7
Alabama	99.7	110.1	100.4	99.3	108.3	102.8	109.3	112.6	110.3	119.8	122.8
Kentucky	101.7	108.1	104.9	108.9	109.6	115.6	107.4	113.8	114.8	116.7	122.9
Mississippi	94.5	125.7	125.1	109.4	134.5	129.8	136.9	142.1	141.8	125.4	118.0
Tennessee	79.5	84.4	83.8	92.3	97.0	82.7	90.0	94.4	87.6	96.6	98.1
West South Central	95.8	103.0	110.7	105.9	108.6	110.0	116.5	116.5	123.7	115.2	113.0
Arkansas	134.9	136.8	123.8	124.2	122.6	141.6	147.1	142.7	141.7	155.2	144.0
Louisiana	91.4	100.5	104.7	104.7	111.2	112.0	126.3	125.7	123.5	127.5	118.8
Oklahoma	117.4	101.4	142.1	119.2	122.1	112.2	121.0	131.1	117.8	113.9	121.8
Texas	88.8	98.5	106.3	101.8	104.3	104.4	108.9	110.2	122.7	105.9	106.1
Mountain	100.4	103.3	107.1	101.0	109.5	106.0	104.2	107.4	104.1	107.5	106.3
Arizona	80.9	83.3	85.0	89.8	89.4	100.1	86.8	82.9	73.7	80.6	84.8
Colorado	83.2	87.0	91.6	89.3	89.8	95.3	97.4	97.5	115.0	105.0	102.2
Idaho	125.0	159.1	187.1	140.8	153.9	132.4	125.8	149.1	131.3	145.1	121.2
Montana	109.4	109.6	98.4	114.4	118.6	99.7	102.2	133.4	108.9	121.5	111.0
Nevada	91.8	99.1	99.4	100.4	108.2	94.3	100.3	95.1	104.1	106.7	108.9
New Mexico	113.3	96.7	96.0	93.2	105.8	112.8	116.9	127.3	108.1	128.4	132.7
Utah	136.7	124.9	127.6	109.5	121.2	124.5	122.6	115.1	115.6	117.5	124.9
Wyoming	108.6	118.7	114.7	110.7	118.4	98.8	101.2	108.7	129.6	105.3	124.7
Pacific Contiguous	112.6	116.6	116.2	111.6	118.1	116.5	122.6	123.4	140.5	138.1	140.8
California	109.4	114.2	110.3	105.1	112.8	112.4	118.6	118.3	138.1	133.5	140.0
Oregon	129.8	123.2	142.4	129.6	128.3	115.1	139.0	138.6	152.5	151.9	143.7
Washington	121.8	124.5	134.2	139.8	137.2	137.9	135.6	140.1	146.9	156.4	143.8
Pacific Noncontiguous	76.6	70.7	76.4	79.5	82.3	83.9	102.5	98.0	109.0	93.3	115.8
Alaska	94.9	102.8	101.3	95.2	75.0	74.2	116.0	110.7	133.8	98.3	137.6
Hawaii	72.4	63.4	68.2	71.9	86.5	90.0	95.1	87.5	96.5	88.6	106.3
U.S. Total	106.9	107.7	108.1	110.0	113.6	114.0	116.6	114.7	118.5	118.1	118.5

CAIDI = Customer Average Interruption Duration Index. It is average number of minutes it takes to restore non-momentary electric interruptions.
IEEE refers to the IEEE 1366-2003 or the IEEE 1366-2012 standard. Any method combines data from utilities that use IEEE standard with data from utilities that do not.
For utilities using the IEEE method, a Major Event Day is any day that exceeds a daily SAIDI threshold called Tmed. Tmed is a duration statistic calculated from daily SAIDI values from the past five years. For utilities not using IEEE methods, Major Events are self-determined by the reporting utility.
Loss of Supply Removed excludes outages due to loss of supply from the high-voltage/bulk power system.

For a five minute video explanation of these metrics, go to https://youtu.be/oVH9L0fCMTU.

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

Chapter 12

U.S. Territories

Table 12.1 Puerto Rico- Number of Ultimate Customers Served: by Sector, 2013 through 2023

Period	Residential	Commercial	Industrial	Transportation	All Sectors
Annual Totals					
2013	1,340,989	131,034	694	--	1,472,717
2014	1,328,546	129,122	662	--	1,458,330
2015	1,326,631	127,365	647	--	1,454,643
2016	1,332,152	127,179	633	--	1,459,964
2017	1,337,756	127,065	618	--	1,465,439
2018	1,346,102	126,527	602	--	1,473,231
2019	1,341,424	124,912	588	--	1,466,924
2020	1,351,190	125,391	587	--	1,477,168
2021	1,358,513	126,159	591	--	1,485,263
2022	1,370,811	127,741	589	--	1,499,141
2023	1,379,341	127,792	582	--	1,507,715
Year 2021					
January	1,351,470	125,338	588	--	1,477,396
February	1,352,011	125,416	588	--	1,478,015
March	1,353,210	125,563	590	--	1,479,363
April	1,354,747	125,718	590	--	1,481,055
May	1,356,556	125,951	590	--	1,483,097
June	1,357,962	126,093	590	--	1,484,645
July	1,358,817	126,125	591	--	1,485,533
August	1,360,699	126,312	592	--	1,487,603
September	1,361,984	126,528	593	--	1,489,105
October	1,363,578	126,710	595	--	1,490,883
November	1,365,047	127,017	593	--	1,492,657
December	1,366,080	127,134	593	--	1,493,807
Year 2022					
January	1,366,102	127,193	590	--	1,493,885
February	1,365,877	127,084	590	--	1,493,551
March	1,366,362	127,176	589	--	1,494,127
April	1,368,406	127,392	587	--	1,496,385
May	1,369,833	127,589	585	--	1,498,007
June	1,372,587	127,921	588	--	1,501,096
July	1,372,079	127,976	588	--	1,500,643
August	1,372,668	127,954	589	--	1,501,211
September	1,373,141	128,077	590	--	1,501,808
October	1,374,149	128,107	590	--	1,502,846
November	1,374,192	128,189	589	--	1,502,970
December	1,374,331	128,237	590	--	1,503,158
Year 2023					
January	1,374,717	128,302	589	--	1,503,608
February	1,375,176	128,312	588	--	1,504,076
March	1,376,298	128,040	580	--	1,504,918
April	1,377,070	127,611	580	--	1,505,261
May	1,378,115	127,668	579	--	1,506,362
June	1,379,369	127,598	580	--	1,507,547
July	1,380,020	127,637	581	--	1,508,238
August	1,380,809	127,612	580	--	1,509,001
September	1,381,572	127,766	581	--	1,509,919
October	1,382,416	127,596	582	--	1,510,594
November	1,383,057	127,673	583	--	1,511,313
December	1,383,477	127,690	585	--	1,511,752

Sources: U.S. Energy Information Administration, Form EIA-861M (formerly EIA-826), Monthly Electric Industry Power Report.
Form EIA-826, Monthly Electric Sales and Revenue Report with State Distributions Report;
Form EIA-861, Annual Electric Power Industry Report

Table 12.2 Puerto Rico- Sales of Electricity to Ultimate Customers: by Sector, 2013 through 2023 (Megawatthours)

Period	Residential	Commercial	Industrial	Transportation	All Sectors
Annual Totals					
2013	6,319,746	8,968,572	2,504,182	--	17,792,500
2014	6,218,352	8,761,182	2,376,022	--	17,355,556
2015	6,313,615	8,586,457	2,355,385	--	17,255,457
2016	6,524,304	8,568,874	2,251,095	--	17,344,273
2017	5,045,346	6,819,591	1,746,554	--	13,611,491
2018	6,102,980	8,202,893	2,128,354	--	16,434,227
2019	6,205,152	7,905,084	2,048,192	--	16,158,428
2020	6,908,138	7,320,018	1,909,660	--	16,137,816
2021	7,119,383	7,484,529	1,853,200	--	16,457,112
2022	6,723,199	7,511,478	1,768,396	--	16,003,073
2023	7,402,045	8,083,092	1,684,002	--	17,169,139
Year 2021					
January	532,424	560,917	131,716	--	1,225,056
February	452,617	506,470	147,034	--	1,106,121
March	526,332	637,225	176,561	--	1,340,118
April	539,985	640,589	139,000	--	1,319,574
May	611,123	657,148	159,558	--	1,427,829
June	596,088	629,036	125,964	--	1,351,087
July	657,113	700,286	149,432	--	1,506,831
August	677,918	626,895	217,158	--	1,521,971
September	720,426	669,943	170,459	--	1,560,828
October	627,930	586,868	141,522	--	1,356,320
November	607,586	567,940	136,956	--	1,312,483
December	569,841	701,213	157,840	--	1,428,894
Year 2022					
January	529,162	572,918	163,052	--	1,265,132
February	447,525	578,680	141,256	--	1,167,461
March	504,302	569,385	146,676	--	1,220,362
April	509,408	552,580	128,935	--	1,190,924
May	558,688	724,155	178,453	--	1,461,296
June	691,409	696,464	137,232	--	1,525,105
July	677,481	707,421	160,056	--	1,544,958
August	641,604	644,816	159,043	--	1,445,462
September	614,175	676,030	144,496	--	1,434,702
October	426,129	525,960	116,067	--	1,068,155
November	587,283	624,719	149,591	--	1,361,593
December	536,033	638,350	143,540	--	1,317,923
Year 2023					
January	476,437	585,902	125,879	--	1,188,218
February	428,728	547,881	123,762	--	1,100,372
March	497,284	606,624	142,910	--	1,246,818
April	522,925	621,366	143,333	--	1,287,624
May	630,969	689,494	125,636	--	1,446,100
June	695,670	698,032	145,894	--	1,539,596
July	765,237	722,232	146,190	--	1,633,660
August	743,125	723,022	163,155	--	1,629,302
September	725,204	747,147	146,118	--	1,618,469
October	742,232	768,617	149,438	--	1,660,286
November	598,657	688,244	133,467	--	1,420,367
December	575,576	684,531	138,220	--	1,398,327

Sources: U.S. Energy Information Administration, Form EIA-861M (formerly EIA-826), Monthly Electric Industry Power Report.
Form EIA-826, Monthly Electric Sales and Revenue Report with State Distributions Report;
Form EIA-861, Annual Electric Power Industry Report

Table 12.3 Puerto Rico- Revenue from Sales of Electricity to Ultimate Customers: by Sector, 2013 through 2023 (Thousand Dollars)

Period	Residential	Commercial	Industrial	Transportation	All Sectors
Annual Totals					
2013	1,633,328	2,474,088	570,210	--	4,677,626
2014	1,636,166	2,394,155	550,673	--	4,580,994
2015	1,282,008	1,850,101	417,158	--	3,549,267
2016	1,169,715	1,677,209	356,310	--	3,203,233
2017	1,123,005	1,549,337	344,034	--	3,016,376
2018	1,265,179	1,893,330	405,173	--	3,563,682
2019	1,329,706	1,810,611	420,178	--	3,560,495
2020	1,329,048	1,568,470	360,707	--	3,258,225
2021	1,506,288	1,799,862	380,303	--	3,686,454
2022	1,901,871	2,334,964	505,081	--	4,741,916
2023	1,685,843	1,978,615	390,129	--	4,054,587
Year 2021					
January	92,458	108,040	21,947	--	222,446
February	71,983	94,985	22,734	--	189,702
March	120,334	149,060	40,528	--	309,922
April	107,979	149,748	23,272	--	281,000
May	120,633	135,551	28,707	--	284,890
June	138,421	151,987	29,364	--	319,772
July	132,591	169,736	31,136	--	333,462
August	157,689	162,524	49,331	--	369,544
September	160,601	179,239	36,921	--	376,761
October	142,406	166,884	32,199	--	341,489
November	138,109	161,498	31,160	--	330,767
December	123,085	170,610	33,003	--	326,699
Year 2022					
January	136,075	154,251	40,378	--	330,704
February	116,007	168,487	36,286	--	320,780
March	138,639	188,166	40,864	--	367,669
April	135,982	182,484	34,936	--	353,402
May	151,008	225,891	47,947	--	424,846
June	190,133	204,465	40,191	--	434,788
July	237,463	238,282	56,584	--	532,329
August	190,956	212,419	48,442	--	451,816
September	170,168	202,916	40,893	--	413,977
October	140,294	194,981	40,032	--	375,307
November	157,125	187,145	40,552	--	384,822
December	138,021	175,478	37,978	--	351,476
Year 2023					
January	107,600	147,132	28,698	--	283,431
February	101,169	144,459	29,577	--	275,205
March	123,536	167,523	37,382	--	328,442
April	127,840	167,604	36,386	--	331,829
May	152,487	187,613	31,346	--	371,446
June	153,899	145,348	32,048	--	331,294
July	184,185	198,081	38,885	--	421,151
August	173,819	180,163	36,641	--	390,624
September	142,739	158,096	28,399	--	329,233
October	178,311	193,748	37,359	--	409,418
November	128,361	150,841	26,953	--	306,156
December	111,895	138,007	26,455	--	276,358

Sources: U.S. Energy Information Administration, Form EIA-861M (formerly EIA-826), Monthly Electric Industry Power Report.
Form EIA-826, Monthly Electric Sales and Revenue Report with State Distributions Report;
Form EIA-861, Annual Electric Power Industry Report

Table 12.4 Puerto Rico- Average Price of Electricity to Ultimate Customers: by Sector, 2013 through 2023 (Cents per Kilowatthour)

Period	Residential	Commercial	Industrial	Transportation	All Sectors
Annual Totals					
2013	25.84	27.59	22.77	--	26.29
2014	26.31	27.33	23.18	--	26.39
2015	20.31	21.55	17.71	--	20.57
2016	17.93	19.57	15.83	--	18.47
2017	22.26	22.72	19.70	--	22.16
2018	20.73	23.08	19.04	--	21.68
2019	21.43	22.90	20.51	--	22.03
2020	19.24	21.43	18.89	--	20.19
2021	21.16	24.05	20.52	--	22.40
2022	28.29	31.09	28.56	--	29.63
2023	22.78	24.48	23.17	--	23.62
Year 2021					
January	17.37	19.26	16.66	--	18.16
February	15.90	18.75	15.46	--	17.15
March	22.86	23.39	22.95	--	23.13
April	20.00	23.38	16.74	--	21.29
May	19.74	20.63	17.99	--	19.95
June	23.22	24.16	23.31	--	23.67
July	20.18	24.24	20.84	--	22.13
August	23.26	25.93	22.72	--	24.28
September	22.29	26.75	21.66	--	24.14
October	22.68	28.44	22.75	--	25.18
November	22.73	28.44	22.75	--	25.20
December	21.60	24.33	20.91	--	22.86
Year 2022					
January	25.72	26.92	24.76	--	26.14
February	25.92	29.12	25.69	--	27.48
March	27.49	33.05	27.86	--	30.13
April	26.69	33.02	27.10	--	29.67
May	27.03	31.19	26.87	--	29.07
June	27.50	29.36	29.29	--	28.51
July	35.05	33.68	35.35	--	34.46
August	29.76	32.94	30.46	--	31.26
September	27.71	30.02	28.30	--	28.85
October	32.92	37.07	34.49	--	35.14
November	26.75	29.96	27.11	--	28.26
December	25.75	27.49	26.46	--	26.67
Year 2023					
January	22.58	25.11	22.80	--	23.85
February	23.60	26.37	23.90	--	25.01
March	24.84	27.62	26.16	--	26.34
April	24.45	26.97	25.39	--	25.77
May	24.17	27.21	24.95	--	25.69
June	22.12	20.82	21.97	--	21.52
July	24.07	27.43	26.60	--	25.78
August	23.39	24.92	22.46	--	23.97
September	19.68	21.16	19.44	--	20.34
October	24.02	25.21	25.00	--	24.66
November	21.44	21.92	20.19	--	21.55
December	19.44	20.16	19.14	--	19.76

Sources: U.S. Energy Information Administration, Form EIA-861M (formerly EIA-826), Monthly Electric Industry Power Report.
Form EIA-826, Monthly Electric Sales and Revenue Report with State Distributions Report;
Form EIA-861, Annual Electric Power Industry Report

Table 12.5. American Samoa
By Sector, 2013 through 2023

Year	Residential	Commercial	Industrial	Transportation	Total
Number of Ultimate Customers					
2013	10,945	1,411	4	--	12,360
2014	11,561	1,386	4	--	12,951
2015	11,023	1,356	4	--	12,383
2016	10,916	1,363	6	--	12,285
2017	10,930	1,386	4	--	12,320
2018	10,866	1,395	4	--	12,265
2019	10,762	1,450	4	--	12,216
2020	10,720	1,452	4	--	12,176
2021	10,802	1,522	4	--	12,328
2022	10,893	1,575	4	--	12,472
2023	10,903	1,581	12	--	12,496
Sales of Electricity to Ultimate Customers (megawatthours)					
2013	40,719	71,069	23,724	--	135,512
2014	41,029	70,598	23,142	--	134,769
2015	43,306	72,007	25,974	--	141,287
2016	46,493	69,617	32,232	--	148,342
2017	49,538	71,173	26,699	--	147,410
2018	45,621	72,185	24,546	--	142,352
2019	47,127	75,151	25,415	--	147,693
2020	50,304	74,463	25,714	--	150,481
2021	55,625	72,814	24,867	--	153,306
2022	56,424	70,418	24,745	--	151,587
2023	57,015	70,466	28,750	--	156,231
Revenue from Sales of Electricity to Ultimate Customers (thousand dollars)					
2013	15,809	27,905	8,339	--	52,053
2014	17,286	27,553	8,076	--	52,915
2015	15,035	22,981	7,695	--	45,710
2016	13,184	18,402	7,962	--	39,548
2017	15,020	20,626	7,294	--	42,940
2018	15,434	23,557	7,668	--	46,659
2019	16,617	25,328	8,211	--	50,155
2020	16,513	23,480	7,680	--	47,672
2021	17,640	22,745	7,335	--	47,720
2022	25,373	31,668	10,835	--	67,875
2023	25,286	30,386	12,115	--	67,787
Average Price of Electricity to Ultimate Customers (cents per kilowatthour)					
2013	38.82	39.26	35.15	--	38.41
2014	42.13	39.03	34.90	--	39.26
2015	34.72	31.91	29.63	--	32.35
2016	28.36	26.43	24.70	--	26.66
2017	30.32	28.98	27.32	--	29.13
2018	33.83	32.63	31.24	--	32.78
2019	35.26	33.70	32.31	--	33.96
2020	32.83	31.53	29.87	--	31.68
2021	31.71	31.24	29.50	--	31.13
2022	44.97	44.97	43.79	--	44.78
2023	44.35	43.12	42.14	--	43.39

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

Table 12.6. Guam
By Sector, 2013 through 2023

Year	Residential	Commercial	Industrial	Transportation	Total
Number of Ultimate Customers					
2013	41,708	6,890	--	--	48,598
2014	41,999	6,925	--	--	48,924
2015	42,752	6,940	--	--	49,692
2016	43,943	6,956	--	--	50,899
2017	43,756	7,087	--	--	50,843
2018	44,006	7,366	--	--	51,372
2019	44,226	7,517	--	--	51,743
2020	44,420	7,518	--	--	51,938
2021	44,748	7,516	--	--	52,264
2022	45,271	7,602	--	--	52,873
2023	45,302	7,708	--	--	53,010
Sales of Electricity to Ultimate Customers (megawatthours)					
2013	462,163	1,104,247	--	--	1,566,410
2014	457,835	1,075,511	--	--	1,533,346
2015	463,990	1,078,018	--	--	1,542,008
2016	494,842	1,087,317	--	--	1,582,159
2017	516,682	1,103,757	--	--	1,620,439
2018	510,725	1,071,705	--	--	1,582,430
2019	514,829	1,071,513	--	--	1,586,342
2020	552,083	991,159	--	--	1,543,242
2021	603,924	970,623	--	--	1,574,547
2022	574,292	984,602	--	--	1,558,894
2023	495,407	952,195	--	--	1,447,602
Revenue from Sales of Electricity to Ultimate Customers (thousand dollars)					
2013	122,463	315,369	--	--	437,832
2014	125,028	309,439	--	--	434,467
2015	106,057	260,652	--	--	366,709
2016	93,568	214,840	--	--	308,408
2017	103,327	230,472	--	--	333,799
2018	121,331	260,506	--	--	381,837
2019	128,641	275,267	--	--	403,908
2020	116,537	221,583	--	--	338,121
2021	121,239	207,645	--	--	328,883
2022	172,623	305,997	--	--	478,620
2023	188,415	360,267	--	--	548,681
Average Price of Electricity to Ultimate Customers (cents per kilowatthour)					
2013	26.50	28.56	--	--	27.95
2014	27.31	28.77	--	--	28.33
2015	22.86	24.18	--	--	23.78
2016	18.91	19.76	--	--	19.49
2017	20.00	20.88	--	--	20.60
2018	23.76	24.31	--	--	24.13
2019	24.99	25.69	--	--	25.46
2020	21.11	22.36	--	--	21.91
2021	20.08	21.39	--	--	20.89
2022	30.06	31.08	--	--	30.70
2023	38.03	37.84	--	--	37.90

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

Table 12.7. Northern Mariana Islands
By Sector, 2011 through 2023

Year	Residential	Commercial	Industrial	Transportation	Total
Number of Ultimate Customers					
2013	11,138	3,524	--	--	14,662
2014	11,045	3,651	--	--	14,696
2015	11,318	3,612	--	--	14,930
2016	11,869	3,952	--	--	15,821
2017	12,106	3,952	--	--	16,058
2018	12,323	4,243	--	--	16,566
2019	11,525	3,983	--	--	15,508
2020	12,329	3,212	--	--	15,541
2021	12,394	4,381	--	--	16,775
2022	12,770	4,195	--	--	16,965
2023	13,027	4,256	--	--	17,283
Sales of Electricity to Ultimate Customers (megawatthours)					
2013	54,056	154,505	--	--	208,561
2014	57,532	153,959	--	--	211,491
2015	52,928	145,170	--	--	198,098
2016	70,404	177,766	--	--	248,170
2017	80,502	193,399	--	--	273,901
2018	75,128	182,533	--	--	257,661
2019	76,795	180,421	--	--	257,216
2020	86,601	121,698	--	--	208,299
2021	98,119	106,158	--	--	204,277
2022	94,566	163,706	--	--	258,272
2023	92,078	169,896	--	--	261,974
Revenue from Sales of Electricity to Ultimate Customers (thousand dollars)					
2013	20,128	67,020	--	--	87,148
2014	20,714	66,034	--	--	86,749
2015	12,197	43,521	--	--	55,718
2016	12,657	42,870	--	--	55,527
2017	18,653	52,614	--	--	71,268
2018	20,530	58,788	--	--	79,318
2019	19,410	55,434	--	--	74,844
2020	18,655	32,784	--	--	51,439
2021	24,881	30,748	--	--	55,629
2022	25,079	37,702	--	--	62,781
2023	33,050	68,374	--	--	101,424
Average Price of Electricity to Ultimate Customers (cents per kilowatthour)					
2013	37.24	43.38	--	--	41.79
2014	36.01	42.89	--	--	41.02
2015	23.04	29.98	--	--	28.13
2016	17.98	24.12	--	--	22.37
2017	23.17	27.21	--	--	26.02
2018	27.33	32.21	--	--	30.78
2019	25.28	30.72	--	--	29.10
2020	21.54	26.94	--	--	24.69
2021	25.36	28.96	--	--	27.23
2022	26.52	23.03	--	--	24.31
2023	35.89	40.24	--	--	38.72

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

Table 12.8. Virgin Islands
By Sector, 2013 through 2023

Year	Residential	Commercial	Industrial	Transportation	Total
Number of Ultimate Customers					
2013	44,736	8,785	1,050	--	54,571
2014	45,066	8,808	1,043	--	54,917
2015	45,090	8,747	1,044	--	54,881
2016	49,559	9,951	1,089	--	60,599
2017	49,559	9,951	1,089	--	60,599
2018	46,721	7,491	2,238	--	56,450
2019	46,283	7,526	2,324	--	56,133
2020	46,283	7,526	2,324	--	56,133
2021	46,386	7,535	2,386	--	56,307
2022	45,850	7,524	2,292	--	55,666
2023	44,216	7,924	2,292	--	54,432
Sales of Electricity to Ultimate Customers (megawatthours)					
2013	231,148	123,234	326,158	--	680,540
2014	219,402	113,517	308,119	--	641,038
2015	211,753	109,530	299,598	--	620,881
2016	224,268	115,464	298,959	--	638,691
2017	174,208	85,273	201,822	--	461,303
2018	191,200	75,000	256,100	--	522,300
2019	217,003	87,000	257,313	--	561,316
2020	244,849	86,350	256,827	--	588,026
2021	253,666	100,239	263,702	--	617,607
2022	258,812	101,485	261,772	--	622,069
2023	266,288	148,402	234,226	--	648,916
Revenue from Sales of Electricity to Ultimate Customers (thousand dollars)					
2013	112,133	62,760	158,869	--	333,762
2014	108,204	58,361	153,232	--	319,797
2015	90,567	43,840	134,197	--	268,603
2016	76,907	45,969	101,434	--	224,310
2017	72,035	38,703	93,206	--	203,944
2018	66,093	36,220	83,192	--	185,505
2019	84,090	43,842	95,311	--	223,243
2020	84,094	43,816	95,297	--	223,207
2021	85,613	43,653	95,974	--	225,240
2022	87,199	43,788	95,359	--	226,347
2023	88,316	64,490	96,543	--	249,349
Average Price of Electricity to Ultimate Customers (cents per kilowatthour)					
2013	48.51	50.93	48.71	--	49.04
2014	49.32	51.41	49.73	--	49.89
2015	42.77	40.03	44.79	--	43.26
2016	34.29	39.81	33.93	--	35.12
2017	41.35	45.39	46.18	--	44.21
2018	34.57	48.29	32.48	--	35.52
2019	38.75	50.39	37.04	--	39.77
2020	34.35	50.74	37.11	--	37.96
2021	33.75	43.55	36.39	--	36.47
2022	33.69	43.15	36.43	--	36.39
2023	33.17	43.46	41.22	--	38.43

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

Appendix

Table A.1. Sulfur Dioxide Uncontrolled Emission Factors

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

Notes:
* For these fuels, emissions are estimated by multiplying the emissions factor by the physical volume of fuel and the sulfur percentage of the fuel (other fuels do not require the sulfur percentage in the calculation). Note that EIA data do not provide the sulfur content of TDF. The value used (1.56 percent) is from U.S. EPA, Control of Mercury Emissions from Coal-Fired Electric Utility Boilers, April 2002, EPA-600/R-01-109, Table A-11 .
** Although Sludge Waste and Black Liquor consist substantially of liquids, these fuels are measured and reported to EIA in tons.

Sources:

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

Table A.2. Nitrogen Oxides Uncontrolled Emission Factors

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

Sources:

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

Table A.3. Carbon Dioxide Uncontrolled Emission Factors

Fuel	EIA Fuel Code	Factor (Kilograms of CO2 Per Million Btu)**	Notes
Bituminous Coal	BIT	93.24	
Distillate Fuel Oil	DFO	74.14	
Geothermal (Steam)	GEO	11.81	
Geothermal (Binary Cycle)	GEO	0.00	
Jet Fuel	JF	72.23	
Kerosene	KER	73.19	
Lignite Coal	LIG	98.27	
Municipal Solid Waste	MSW	49.89	
Natural Gas	NG	52.91	
Petroleum Coke	PC	102.12	
Propane Gas	PG	62.88	
Refined Coal	RC	93.24	Assumed to have emissions similar to Bituminous Coal.
Residual Fuel Oil	RFO	75.09	
Synthesis Gas Derived from Coal	SGC	*	Factor is based on the fuel source used to produce the synthesis gas
Synthesis Gas Derived from Petroleum Coke	SGP	*	Factor is based on the fuel source used to produce the synthesis gas
Subbituminous Coal	SUB	97.13	
Tire-Derived Fuel	TDF	85.97	
Waste Coal	WC	93.24	Assumed to have emissions similar to Bituminous Coal.
Waste Oil	WO	74.00	

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

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

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

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

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

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

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

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

Table A.5. Unit of Measure Equivalents

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

Source: U.S. Energy Information Administration

Technical Notes

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

Data Quality and Submission

The Electric Power Annual (EPA) is prepared by the Office of Energy Production, Conversion, and Delivery (EPCD), U.S. Energy Information Administration (EIA), U.S. Department of Energy (DOE). EPCD performs routine reviews of the data collection respondent frames, survey forms, and reviews the quality of the data received.

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

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

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

Reliability of Data

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

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

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

Data Revision Procedure

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

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

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

Rounding and Percent Change Calculations

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

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

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

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

Data Sources for Electric Power Annual

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

- Form EIA-111, "Quarterly Electricity Imports and Exports Report;"
- Form EIA-860, "Annual Electric Generator Report;"
- Form EIA-861, "Annual Electric Power Industry Report;"
- Form EIA-861M, "Monthly Electric Power Industry Report;"
- Form EIA-861S, "Annual Electric Power Industry Report (Short Form);"
- Form EIA-923, "Power Plant Operations Report."

These forms can be found on the EIA Internet website at: https://www.eia.gov/survey/

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

- FERC Form 1, "Annual Report of Major Electric Utilities, Licensees, and Others;"

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

Form EIA-111

The Form EIA-111 is a mandatory census that collects import/export data from importers and exporters of electricity, border balancing authorities, and entities authorized to export electric energy and to construct, connect, operate, or maintain facilities for the transmission of electric energy at an international boundary. Respondents report monthly data quarterly. These data are used by EIA to track electricity being imported into and exported from the United States. There are currently 173 respondents to the EIA-111. These data were first collected for the 2016 data year.

Form EIA-860

The Form EIA-860 is a mandatory annual census of all existing and planned electric generating facilities in the United States with a total generator nameplate capacity of 1 or more megawatts. The survey is used to collect data on existing power plants and 10-year plans for constructing new plants, as well as generating unit additions, modifications, and retirements in existing plants. Data on the survey are collected at the individual generator level. Certain power plant environmental-related data are collected at the boiler level. These data include environmental equipment design parameters and boiler air emission standards and boiler emission controls. There are approximately 5,700 respondents on the EIA-860 data collection.

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

In 1989, the Form EIA-867, "Annual Nonutility Power Producer Report," was initiated to collect plant data on unregulated entities with a total generator nameplate capacity of 5 or more megawatts. In 1992, the reporting threshold of the Form EIA-867 was lowered to include all facilities with a combined nameplate capacity of 1 or more megawatts. Previously, data were collected every 3 years from facilities with a nameplate capacity between 1 and 5 megawatts. In 1998, the Form EIA-867, was renamed Form EIA-860B, "Annual Electric Generator Report – Nonutility." The Form EIA-860B was a mandatory survey of all existing and planned nonutility electric generating facilities in the United States with a total generator nameplate capacity of 1 or more megawatts.

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

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

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

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

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

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

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

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

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

Prime Mover Code	Prime Mover Description
BA	Energy Storage, Battery
BT	Turbines Used in a Binary Cycle. Including those used for geothermal applications
CA	Combined-Cycle -- Steam Part
CE	Energy Storage, Compressed Air
CP	Energy Storage, Concentrated Solar Power
CS	Combined-Cycle Single-Shaft Combustion Turbine and Steam Turbine share of single generator
CT	Combined-Cycle Combustion Turbine Part
ES	Energy Storage, Other (Specify on Schedule 9, Comments)
FC	Fuel Cell
FW	Energy Storage, Flywheel
GT	Combustion (Gas) Turbine. Including Jet Engine design
HA	Hydrokinetic, Axial Flow Turbine
HB	Hydrokinetic, Wave Buoy
HK	Hydrokinetic, Other
HY	Hydraulic Turbine. Including turbines associated with delivery of water by pipeline.
IC	Internal Combustion (diesel, piston, reciprocating) Engine
PS	Energy Storage, Reversible Hydraulic Turbine (Pumped Storage)
OT	Other
ST	Steam Turbine. Including Nuclear, Geothermal, and Solar Steam (does not include Combined Cycle).
PV	Photovoltaic
WT	Wind Turbine, Onshore
WS	Wind Turbine, Offshore

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
		Fossil Fuels
Coal	ANT	Anthracite Coal
	BIT	Bituminous Coal
	LIG	Lignite Coal
	RC	Refined Coal (A coal product that is created when impurities and/or moisture are removed to improve heat content and reduce emissions. Includes any coal which meets the IRS definition of refined coal [Notice 2010-54 or any superseding IRS notices]. Does not include coal processed by coal preparation plants.)
	SGC	Coal-Derived Synthesis Gas
	SUB	Subbituminous Coal
	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	Propane, gaseous
	RFO	Residual Fuel Oil (including No. 5 and No. 6 fuel oils, and bunker C fuel oil)
	SGP	Petroleum Coke Derived Synthesis Gas
	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 Fossil Gas	BFG	Blast Furnace Gas
	NG	Natural Gas
	OG	Other Gas (Specify the fuel in the text box in the applicable schedule.)
		Renewable Fuels
Solid Renewable Fuels	AB	Agricultural By-products
	MSW	Municipal Solid Waste
	OBS	Other Biomass Solids

Energy Source Grouping	Energy Source Code	Energy Source Description
	WDS	Wood/Wood Waste Solids (including paper pellets, railroad ties, utility poles, wood chips, bark, and wood waste solids)
Liquid Renewable (Biomass) Fuels	BLQ	Black Liquor
	OBL	Other Biomass Liquids
	SLW	Sludge Waste
	WDL	Wood Waste Liquids excluding Black Liquor (includes red liquor, sludge wood, spent sulfite liquor, and other wood-based liquids)
Gaseous Renewable (Biomass) Fuels	LFG	Landfill Gas
	OBG	Other Biomass Gas (includes digester gas, methane, and other biomass gasses)
All Other Renewable Fuels	GEO	Geothermal
	SUN	Solar
	WAT	Water at a Conventional Hydroelectric Turbine, and water used in Wave Buoy Hydrokinetic Technology, Current Hydrokinetic Technology, and Tidal Hydrokinetic Technology.
	WND	Wind
		All Other Fuels
	H2	Hydrogen
	MWH	Electricity used for energy storage
	NUC	Nuclear Uranium, Plutonium, Thorium
	PUR	Purchased Steam
	TDF	Tire-derived Fuels
	WAT	Pumping Energy for Reversible (Pumped Storage) Hydroelectric Turbine
	WH	Waste heat not directly attributed to a fuel source
	OTH	Other

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

Form EIA-861

The Form EIA-861 is a mandatory annual census of electric power industry participants in the United States. Prior to data year 2012, the survey was used to collect information on power sales and revenue data from approximately 3,300 respondents. About 3,100 are electric utilities, and the remainders are nontraditional entities such as energy service providers or the unregulated subsidiaries of electric utilities and power marketers. The current frame has since expanded to about 3,400 respondents, with about 3,000 of those respondents being electric utilities and about 400 nontraditional entities.

For data year 2012 and forward, EIA modified the frame of the Form EIA-861, "Annual Electric Power Industry Report," from a census to a sample, and EIA is using model-based methods to estimate the sales, revenues, and customer counts by sector and state for those respondents that have been removed from the frame. EIA created a new Form EIA-861S, "Annual Electric Power Industry Report (Short Form)," for the respondents that have been removed from the Form EIA-861 frame. Respondents removed from the EIA-861 frame and placed on the EIA-861S are smaller utilities with annual sales volumes. Form EIA-861S with fewer data elements compared to the EIA-861, collects limited data on total sales, revenues, and customer counts by state. Every eighth data year, EIA-861S respondents are required to fill out the full EIA-861 form. For data year 2019, EIA-861S respondents were required to complete the full EIA-861 form. There are about 1,700 respondents on the EIA-861S data collection.

Transportation Sector: Prior to 2003, sales of electric power for transportation (e.g., city subway systems) were included in a sector labeled other, along with sales to customers for public buildings, traffic signals and public street lighting. Beginning with the 2003 data collection, sales to the other sector was removed and the transportation was created. Non transportation that was previously reported in the sector other was reclassified as commercial.

The transportation sector is defined as electrified rail, primarily urban transit, light rail, automated guideway, and other rail systems whose primary propulsive energy source is electricity. Electricity sales to transportation sector consumers whose primary propulsive energy source is not electricity (i.e., gasoline, diesel fuel, etc.) are not included.

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

Data Reconciliation: The Electric Power Annual reports total sales volumes (megawatthours) of electricity to ultimate consumers and customer counts in states with deregulated markets as the sum of bundled sales reported by full-service providers and delivery reported by transmission and distribution

utilities. EIA has concluded that the sales of electricity to ultimate consumers data reported by delivery utilities are more reliable than data reported by power marketers and Energy Service Providers (ESPs).

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

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

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

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

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

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

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

Demand-Side Management (DSM): Prior to 2011, DSM data was separated into two categories, large and small utilities. Some tables contained data for just large utilities and others contained both

categories, published separately. Starting in 2011, there is no longer a division in the data. All tables now include all DSM data from utilities; this change is also reflected in the historical data.

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

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

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

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

In 2013, the number of standard meters (non-AMR/AMI) was added to this schedule. Starting in 2020, EIA imputes the number of standard meters for the short form (EIA-861S) by estimating the number of total meters based on the revenue, sales, and customer count schedule and subtracting the number of advanced meters.

Reliability: New in 2021, reliability metrics SAIDI (System Average Interruption Duration Index), SAIFI (System Average Interruption Frequency Index), and CAIDI (Customer Average Interruption Duration Index) are reported in aggregate by the state, census, and U.S. level dating back to 2013. Data are weighted by customers reported on the schedule and divided by all customers who reported by that metric. For example,

$$SAIDI_{All\ Events} = \frac{\sum(SAIDI_{All\ Events} * customers\ reported_{All\ Events})}{\sum customers\ reported_{All\ Events}}$$

Some respondents may report SAIDI for all events, but not with major events removed. In this case their values would be included in the calculations for $SAIDI_{All\ Events}$ but their values (and customers reported) would not be included in the $SAIDI_{w/o\ Major\ Events}$.

CAIDI is not collected on the form and is a derived value of SAIDI/SAIFI. If a utility reports only one of these values (such as SAIDI) and not the other (SAIFI), it would be included in the regional CAIDI value. The final metric of percent reporting in some of the tables is a sum of customers who reported at least one reliability metric divided by the total number of customers on the revenue, sales, and customer counts schedule.

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

The Form EIA 861M, "Monthly Electric Power Industry Report," is a monthly collection of data from a sample of approximately 650 of the largest electric utilities (primarily investor and publicly owned) as well as a census of energy service providers with sales to ultimate consumers in deregulated States. Form EIA-861 (see below), with approximately 3,400 respondents, serves as a frame from which the Form EIA-861M sample is drawn. Based on this sample, a model is used to estimate for the entire universe of U.S. electric utilities monthly.

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 survey has gone by various other names, such as "Electric Utility Company Monthly Statement," "Monthly Electric Utility Sales and Revenue Report with State Distributions," and "Monthly Electric Utility Sales and Revenues with State Distributions Report."

In 1993, EIA for the first time used a model sample for the Form EIA-861M. A stratified random sample, employing auxiliary data, was used for each of the four previous years. The sample for the Form EIA-861M was designed to obtain estimates of electricity sales and average retail price of electricity at the state level by end use sector.

Starting with data for January 2001, the restructuring of the electric power industry was considered by forming different schedules on the Form EIA-861M. These schedules group customers based on services provided by the utility: full service (or bundled) providers), electric service providers (energy) only, distribution service (delivery) only, and energy service providers that also provide the customers' bill. -

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 between commercial and industrial data 2003 and after with data prior.

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

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

The average retail price of electricity reported in this publication by sector represents a weighted average of consumer revenue and sales within sectors and across sectors for all consumers and does not reflect the per kWh rate charged by the electric utility to the individual consumers. Electric utilities typically employ several 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-861M 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.

Form EIA-861S (Short Form)

The Form EIA 861S, "Annual Electric Power Industry Report (Short Form)," which started in year 2012. EIA-861S was created to lower the burden for bundled-service utilities with small annual sales that model-based estimation methods can be used to estimate the remaining parts of the survey. Starting in data year 2020, EIA raised the thresholds of utilities that could report on the short form and still ensure acceptable quality of statistical estimates. Respondents report on the long form (EIA-861) once every eight years. The most recent year all respondents were required to complete the full EIA-861 form was 2019. There are currently about 1,700 respondents on the Form EIA-861S.

Short form respondents report data on total sales, revenues, and customer counts by state. They answer a yes/no questions about demand side management (DSM) programs and the number of water heaters added to DSM programs. For time-based rate programs they provide the number of customers enrolled by state. Number of advanced meters are also provided by state, as well as a yes/no question about having any net-metering programs.

Form EIA-923

Form EIA-923, "Power Plant Operations Report," is used to collect information on receipts and cost of fossil fuels, fuel stocks, generation, consumption of fuel for generation, nonutility source and disposition of electricity, combustion by-product collection and disposal, and cooling systems, as well as operational data for flue gas desulfurization, particulates, and nitrous oxide controls. Data are collected from a monthly sample of approximately 3,000 plants, which includes a census of nuclear and pumped-storage hydroelectric plants. The plants in the monthly sample report their receipts, cost and stocks of fossil

fuels, electric power generation, and the total consumption of fuels for both electric power generation and, at combined heat and power (CHP) plants, useful thermal output. At the end of the year, the monthly respondents report their annual source and disposition of electric power (nonutilities only), operational data for air emissions controls and cooling systems, and the collection and disposal of combustion by-products on the Form EIA-923 Supplemental Form (Schedules 6, 7, and 8A to 8F). Approximately 9,500 plants, representing all generators not included in the monthly sample and with a nameplate capacity of 1 MW or more, report applicable data on the entire form annually. In addition to electric power generating plants, respondents include fuel storage terminals without generating capacity that receive shipments of fossil fuel for eventual use in electric power generation. The monthly data are due by the last day of the month following the reporting period.

Receipts of fossil fuels, fuel cost and quality information, and fuel stocks at the end of the reporting period are all reported at the plant level. Fuel receipts and costs are collected from plants with a total generator nameplate capacity of 50 megawatts or greater where coal is the primary fuel; or the total generator nameplate capacity is 200 megawatts or greater where the primary fuel is any combination of natural gas, petroleum coke, distillate fuel oil, or residual fuel oil. Plants that burn organic fuels and have a steam turbine capacity of at least 10 megawatts report consumption at the boiler level and generation at the generator level for each month, regardless of whether the plant reports in the monthly sample or reports annually. For all other plants, consumption is reported at the prime-mover level and generation is reported at the prime-mover level or, for noncombustible sources (e.g., wind, nuclear), at the prime-mover and energy source levels (including generating units for nuclear only). The source and disposition of electricity are reported annually for nonutilities at the plant level, as is revenue from sales for resale. Operational data for air emissions equipment are collected annually from facilities that have a steam turbine capacity of at least 10 megawatts, and operational data on cooling systems and data on the collection and disposal of combustion by-products are collected from facilities that have a steam turbine capacity of at least 100 megawatts.

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

Imputation: For data collected monthly, regression prediction, or imputation, is done for all missing data including non-sampled units and any non-respondents. For data collected annually, imputation is performed for non-respondents. For gross generation and total fuel consumption, multiple regression is used for imputation (see discussion, above). Approximately 0.12 percent of the national total generation for is imputed, although this will vary by State and energy source.

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

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

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

Receipts of Fossil Fuels: Receipts data, including cost and quality of fuels, are collected at the plant level from selected electric generating plants and fossil-fuel storage terminals in the United States. Power plants include independent power producers, electric utilities, and commercial and industrial CHP facilities. Power plants required to report receipts data are plants with 50 megawatts of capacity that has coal as its primary fuel, as well as plants with a combined capacity of 200 megawatts with its primary fuel being any combination of natural gas, petroleum coke, distillate fuel oil, or residual fuel oil. The data on cost and quality of fuel shipments are used to produce aggregates and weighted averages for each fuel type at the State, Census division, and U.S. levels.

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

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

Combustion By-Product Collection and Disposal: Data are collected in thousand tons. Associated financial data for by-products (O&M and capital expenses and revenue) are collected in thousand dollars.

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

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

Methodology to Estimate Biogenic and Non-biogenic Municipal Solid Waste:[2] Municipal solid waste (MSW) consumption for generation of electric power is split into its biogenic and non-biogenic components beginning with the 2001 data year.

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 U.S. Environmental Protection Agency (USEPA). For data years 2001 through 2009, the MSW composition was based on the USEPA annual publication, *Municipal Solid Waste in the United States: Facts and Figures*. The compositions developed for the 2009 data year were carried forward for the 2010 through 2018 data years. The most updated composition and categorization of MSW (for the 2019 data year) were also derived from a USEPA publication: *Advancing Sustainable Materials Management: Facts and Figures Report: 2015 Data Tables*. The updated composition values were applied in the October EPM 2019 on the preliminary 2019 values and will be applied going forward in future data years until EIA revises the MSW composition ratios again. The Btu contents of the components of MSW were obtained from various sources.

The numbers in Tables 1 and 2 illustrate two interrelated trends in the composition of the MSW stream. First, the heat content (per unit weight) of the waste stream has been steadily increasing overtime due to higher concentrations of non-biogenic materials. Second, the shares of energy contributed to the waste stream by biogenic and non-biogenic components have been changing over time with the percentage of biogenic materials falling and the share of non-biogenic materials rising.

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 was attributed to non-biogenic components (see Tables 1 and 2, below). Note, 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.

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	…	2018	2019
Biogenic	57	56	55	55	56	57	55	54	51	51	51	45
Non-biogenic	43	44	45	45	44	43	46	46	49	49	49	55

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

	2001	2002	2003	2004	2005	2006	2007	2008	2009	…	2018	2019
Biogenic	77	77	76	76	75	67	65	65	64	64	64	61
Non-biogenic	23	23	24	24	25	34	35	35	36	36	36	39

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

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

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

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

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

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

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

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

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

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

efficiency. This results in the appearance of an increase in efficiency of production of electric power between periods.

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

Capacity Factors and Usage Factors

This section describes the methodology for calculating capacity factors and usages 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, using a ratio of the actual output to the maximum possible output over that period.

The monthly capacity factor calculation includes all operating electric generators which operated for the entire month using the net generation reported on the Form EIA-923 and the net summer capacity reported on the Form EIA-860. The capacity factor for a particular fuel/technology type is given by:

$$capacity\ factor = \frac{\sum_{x,m} net\ generation_{x,m}}{\sum_{x,m} capacity_{x,m} * hours\ in\ month_m}$$

where x represents generators of that fuel/technology combination and m represents individual months. Net 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. Net generation and capacity for a generator is excluded from the summations during the month that the generator initially began operation and if applicable during the month that the generator retired. Therefore, these published capacity factors will differ from a simple calculation using annual generation and capacity totals from the appropriate tables in this publication.

Usage factors are calculated for energy storage technologies using gross generation instead of net generation:

$$usage\ factor = \frac{\sum_{x,m} gross\ generation_{x,m}}{\sum_{x,m} capacity_{x,m} * hours\ in\ month_m}$$

Air Emissions

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

Methodology Overview: Initial estimates of uncontrolled SO_2 and NOx emissions for all plants are made by applying an emissions factor to fuel consumption data collected by EIA on the Form EIA-923. An emission factor is the average quantity of a pollutant released from a power plant when a unit of fuel is burned, assuming no use of pollution control equipment. The basic relationship is:

Emissions = Quantity of Fuel Consumed x Emission Factor

Quantity is defined in physical units (e.g., tons of solid fuels, million cubic feet of gaseous fuels, and thousands of barrels of liquid fuels) for determining NO_x and SO_2 emissions. As discussed below, physical quantities are converted to millions of Btus for calculating CO_2 emissions.

For some fuels, the calculation of SO_2 emissions requires including in the formula the sulfur content of the fuel measured in percentage of weight. Examples include coal and fuel oil. In these cases, the formula is:

Emissions = Quantity of Fuel Consumed x Emission Factor x Sulfur Content

The fuels that require the percent sulfur as part of the emissions calculation are indicated in Table A.1., which lists the SO_2 emission factors used for this report.

In the case of SO_2 and NO_x emissions, the factor applied to a fuel can also vary with the combustion system: a steam-producing boiler, a combustion turbine, or an internal combustion engine. In the case of boilers, NO_x emissions can also vary with the firing configuration of a boiler and whether the boiler is a wet-bottom or dry-bottom design.[3] These distinctions are shown in Tables A.1. and A.2.

For SO_2 and NO_x, the initial estimate of uncontrolled emissions is reduced to account for the plant's operational pollution control equipment, when data on control equipment are available from the historical Form EIA-767 survey (i.e., data for the years 2005 and earlier) and the EIA-860 and EIA-923 surveys for the years 2007 through 2010. A special case for removal of SO_2 is the fluidized bed boiler, in which the sulfur removal process is integral with the operation of the boiler. The SO_2 emission factors shown in Table A.1. for fluidized bed boilers already account for 90 percent removal of SO_2 since, in effect, the plant has no uncontrolled emissions of this pollutant.

Although SO_2 and NO_x emission estimates are made for all plants, in many cases the estimated emissions can be replaced with actual emissions data collected by the U.S. Environmental Protection Agency's (U.S. EPA's) Continuous Emissions Monitoring System (CEMS) program. (CEMS data for CO_2 are incomplete and are not used in this report.) The CEMS data account for the bulk of SO_2 and NO_x emissions from the electric power industry. For those plants for which CEMS data are available, the EIA estimates of SO_2 and NO_x emissions are employed for the limited purpose of allocating emissions by fuel, since the CEMS data itself do not provide a detailed breakdown of plant emissions by fuel. For plants for which CEMS data are unavailable, the EIA-computed values are used as the final emissions estimates.

There are several reasons why the historical data are periodically revised. These include data revisions, revisions in emission and technology factors, and changes in methodology. For instance, the 2008 Electric Power Annual report features a revision in historic CO_2 values. This revision occurred due to a change in the accepted methodology regarding adjustments made for the percentage combustion of fuels.

The emissions estimation methodologies are described in more detail below.

CO_2 Emissions: CO_2 emissions are estimated using the information on fuel consumption in physical units and the heat content of fuel collected on the Form EIA-923 and predecessors. Heat content information

is used to convert physical units to millions of Btu (MMBtu) consumed. To estimate CO_2 emissions, the fuel-specific emission factor from Table A.3. is multiplied by the fuel consumption in MMBtu.

The estimation procedure calculates uncontrolled CO_2 emissions. CO_2 control technologies are currently in the early stages of research and there are no commercial systems installed. Therefore, no estimates of controlled CO_2 emissions are made.

SO_2 and NO_x Emissions: To comply with environmental regulations controlling SO_2 emissions, many coal-fired generating plants have installed flue gas desulfurization (FGD) units. Similarly, NO_x control regulations require many fossil-fueled plants to install low-NO_x burners, selective catalytic reduction systems, or other technologies to reduce emissions. It is common for power plants to employ two or even three NO_x control technologies; accordingly, the NO_x emissions estimation approach accounts for the combined effect of the equipment (Table A.4.). However, control equipment information is available only for plants that reported on the Form EIA-923 and for historical data from the Form EIA-767. The Form EIA-860, EIA-923, and the historical EIA-767 surveys are limited to plants with boilers fired by combustible fuels[4] with a minimum generating capacity of 10 megawatts (nameplate). Pollution control equipment data are unavailable from EIA sources for plants that did not report on the historical EIA-767 survey, or the Forms EIA-860 and EIA-923.

The following method is used to estimate SO_2 and NO_x emissions:

- For steam electric plants, uncontrolled emissions are estimated using the emission factors shown in Tables A.1. and A.2. as well as reported data on fuel consumption, sulfur content, and boiler firing configuration. Controlled emissions are then determined when pollution control equipment is present. Although information on control equipment was not collected in 2006, updates for new installations during this period were made based on EPA data. Beginning in 2007, these data were collected on the Forms EIA-860 and EIA-923. For SO_2, the reported efficiency of the plant's FGD units is used to convert uncontrolled to controlled emission estimates. For NO_x, the reduction percentages shown in Table A.4. are applied to the uncontrolled estimates.
- For plants and prime movers not reported on the historical Form EIA-767 survey or Forms EIA-860 and EIA-923, uncontrolled emissions are estimated using the Table A.1. and Table A.2. emission factors and the following data and assumptions:
- Fuel consumption is taken from the Form EIA-923 and predecessors.
- The sulfur content of the fuel is estimated from fuel receipts for the plant reported on the Form EIA-923. When plant-specific sulfur content data are unavailable, the national average sulfur content for the fuel, computed from the Form EIA-923 is applied to the plant.
- As noted earlier, the emission factor for plants with boilers depends in part on the type of combustion system, including whether a boiler is wet-bottom or dry-bottom, and the boiler firing configuration. However, this boiler information is unavailable for steam electric plants that did not report on the historical Forms EIA-767 or EIA-860. For these cases, the plant is assumed to have a dry-bottom, non-cyclone boiler using a firing method that falls into the "All Other" category shown on Table A.1.[5]

For the plants that did not report on the historical Form EIA-767 or EIA-860, pollution control equipment data are unavailable and the uncontrolled estimates are not reduced.

- If actual emissions of SO_2 or NO_x are reported in the EPA's CEMS data, the EIA estimates are replaced with the CEMS values, using the EIA estimates to allocate the CEMS plant-level data by fuel. If CEMS data are unavailable, the EIA estimates are used as the final values.

Conversion Factors for Propane, Petroleum Coke, and Synthesis Gases.

The quantity conversion for petroleum coke is 5 barrels (of 42 U.S. gallons each) per short ton (2,000 pounds), propane is 1.53 thousand cubic feet per barrel, coal-derived synthesis gas is 98.06 thousand cubic feet per ton, and petroleum coke-derived synthesis gas is 107.31 thousand cubic feet per ton.

Relative Standard Error

The relative standard error (RSE) statistic, usually given as a percent, describes the magnitude of sampling error that might reasonably be incurred. The RSE is the square root of the estimated variance, divided by the variable of interest. The variable of interest may be the ratio of two variables, or a single variable.

The sampling error may be less than the non-sampling error. In fact, large RSE estimates found in preliminary work with these data have often indicated non-sampling errors, which were then identified and corrected. Non-sampling errors may be attributed to many sources, including response errors, definitional difficulties, differences in the interpretation of questions, mistakes in recording or coding data obtained, and other errors of collection, response, or coverage. These non-sampling errors also occur in complete censuses.

Using the Central Limit Theorem, which applies to sums and means such as are applicable here, there is approximately a 68 percent chance that the true total or mean is within one RSE of the estimated total. Note that reported RSEs are always estimates, themselves, and are usually, as here, reported as percents. As an example, suppose that a net generation from coal value is estimated to be 1,507 total million kilowatthours with an estimated RSE of 4.9 percent. This means that, ignoring any non-sampling error, there is approximately a 68 percent chance that the true million kilowatthour value is within approximately 4.9 percent of 1,507 million kilowatthours (that is, between 1,433 and 1,581 million kilowatthours). Also under the Central Limit Theorem, there is approximately a 95 percent chance that the true mean or total is within 2 RSEs of the estimated mean or total.

Note that there are times when a model may not apply, such as in the case of a substantial reclassification of sales, when the relationship between the variable of interest and the regressor data does not hold. In such a case, the new information represents only itself, and such numbers are added to model results when estimating totals. Further, there are times when sample data may be known to be in error or are not reported. Such cases are treated as if they were never part of the model-based sample, and values are imputed.

Business Classification

Nonutility power producers consist of entities that own or operate electric generating units but are not subject to direct economic regulation of rates, such as by state utility commissions. Nonutility power

producers do not have a designated franchised service area. In addition to entities whose primary business is the production and sale of electric power, entities with other primary business classifications can and do sell electric power. These can consist of, for example, manufacturing facilities and paper mills.

The EIA, in the Electric Power Annual and other data products, classifies nonutility power producers into the following categories:

- **Electric Utility (Sector 1):** All regulated plants with a primary purpose of selling electricity in the public markets (NAICS = 22).
- **Independent Power Producers (Sector 2):** All non-regulated plants with a primary purpose of electric power generation and a primary purpose of selling electricity in the public markets (NAICS = 22) with no ability to cogenerate heat and power.
- **Electric Power, Combined Heat and Power (Sector 3):** All non-regulated plants with a primary purpose of electric power generation and a primary purpose of selling electricity in the public markets (NAICS = 22) with the ability to cogenerate heat and power.
- **Commercial, Non-Combined Heat and Power (Sector 4):** All plants with a commercial primary purpose with no ability to cogenerate heat and power.
- **Commercial, Combined Heat and Power (Sector 5):** All plants with a commercial primary purpose with the ability to cogenerate heat and power.
- **Industrial, Non-Combined Heat and Power (Sector 6):** All plants with an industrial primary purpose with no ability to cogenerate heat and power.
- **Industrial, Combined Heat and Power (Sector 7):** All plants with an industrial primary purpose with the ability to cogenerate heat and power.

The following is a list of the North American Industry Classification System (NAICS) classifications used by EIA.

	Agriculture, Forestry, Fishing and Hunting
111	Crop Production
112	Animal Production
113	Forestry and Logging
114	Fishing, Hunting and Trapping
115	Support Activities for Agriculture and Forestry
	Mining, Quarrying, and Oil and Gas Extraction
211	Oil and Gas Extraction
2121	Coal Mining
2122	Metal Ore Mining
2123	Nonmetallic Mineral Mining and Quarrying
	Utilities
22	Electric Power Generation, Transmission and Distribution (other than 2212, 2213, 22131, 22132 or 22133)
2212	Natural Gas Distribution
22131	Water Supply and Irrigation Systems
22132	Sewage Treatment Facilities

22133	Steam and Air-Conditioning Supply
	Manufacturing
311	Food Manufacturing
312	Beverage and Tobacco Product Manufacturing
313	Textile Mills (Fiber, Yarn, Thread, Fabric, and Textiles)
314	Textile Product Mills
315	Apparel Manufacturing
316	Leather and Allied Product Manufacturing
321	Wood Product Manufacturing
322	Paper Manufacturing (other than 322122 or 32213)
322122	Newsprint Mills
32213	Paperboard Mills
323	Printing and Related Support Activities
324	Petroleum and Coal Products Manufacturing (other than 32411)
32411	Petroleum Refineries
325	Chemical Manufacturing (other than 32511, 32512, 325193, 325188, 3252 325211, 3253 or 325311)
32511	Petrochemical Manufacturing
32512	Industrial Gas Manufacturing
325193	Ethyl Alcohol Manufacturing (including Ethanol)
325188	Industrial Inorganic Chemicals
3252	Resin, Synthetic Rubber, and Artificial Synthetic Fibers and Filaments Manufacturing (other than 325211)
325211	Plastics Material and Resin Manufacturing
3253	Pesticide, Fertilizer, and Other Agricultural Chemical Manufacturing (other than 325311)
325311	Nitrogenous Fertilizer Manufacturing
326	Plastics and Rubber Products Manufacturing
327	Nonmetallic Mineral Product Manufacturing (other than 32731)
32731	Cement Manufacturing
331	Primary Metal Manufacturing (other than 331111 or 331312)
331111	Iron and Steel Mills
331312	Primary Aluminum Production
332	Fabricated Metal Product Manufacturing
333	Machinery Manufacturing
334	Computer and Electronic Product Manufacturing
335	Electrical Equipment, Appliance, and Component Manufacturing
336	Transportation Equipment Manufacturing
337	Furniture and Related Product Manufacturing
339	Miscellaneous Manufacturing
421	**Wholesale Trade**
441	**Retail Trade**
	Transportation and Warehousing
481	Air Transportation
482	Rail Transportation
483	Water Transportation
484	Truck Transportation
485	Transit and Ground Passenger Transportation
486	Pipeline Transportation
487	Scenic and Sightseeing Transportation

488	Support Activities for Transportation (other than 4881, 4882, 4883 or 4884)
4881	Support Activities for Air Transportation (including Airports)
4882	Support Activities for Rail Transportation (including Rail Stations)
4883	Support Activities for Water Transportation (including Marinas)
4884	Support Activities for Road Transportation
491	Postal Service
492	Couriers and Messengers
493	Warehousing and Storage
	Information
511	Publishing Industries (except Internet)
512	Motion Picture and Sound Recording Industries
515	Broadcasting (except Internet)
517	Telecommunications
518	Data Processing, Hosting, and Related Services
519	Other Information Services
521	**Finance and Insurance**
53	**Real Estate and Rental and Leasing (including Convention Centers and Office Buildings)**
541	**Professional, Scientific, and Technical Services**
55	**Management of Companies and Enterprises**
	Administrative and Support and Waste Management and Remediation Services
561	Administrative and Support Services
562	Waste Management and Remediation Services (other than 562212 or 562213)
562212	Solid Waste Landfill
562213	Solid Waste Combustors and Incinerators
611	**Educational Services**
	Health Care and Social Assistance
621	Ambulatory Health Care Services
622	Hospitals
623	Nursing and Residential Care Facilities
624	Social Assistance
	Arts, Entertainment, and Recreation
711	Performing Arts, Spectator Sports, and Related Industries
712	Museums, Historical Sites, and Similar Institutions
713	Amusement, Gambling, and Recreation Industries
	Accommodation and Food Services
721	Accommodation
722	Food Services and Drinking Places
	Other Services (except Public Administration)
811	Repair and Maintenance
812	Personal and Laundry Services
813	Religious, Grantmaking, Civic, Professional, and Similar Organizations
814	Private Households

92	**Public Administration (other than 921, 922, 92214 or 928)**
921	Executive, Legislative, and Other General Government Services
922	Justice, Public Order and Safety Activities (other than 92214)
92214	Correctional Facilities
928	National Security and International Affairs (including Military Bases)

Multiple Survey Programs- Small Scale PV Solar Estimation of Generation

Monthly generation from small scale PV solar resources is an estimation of the generation produced from PV solar resources and not the results of a data collection effort for generation directly, except for "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. 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-861M. Form EIA-61M is a cutoff sample drawn from the annual survey Form EIA-861 which collects this data from all respondents. Using data from both surveys we have a regression model to impute for the non-sampled monthly capacity.

The survey instruments collect solar net metering capacity from reporting utilities by state and customer class. There are four customer classes: residential, commercial, industrial and transportation. However, the estimation process included only the residential, commercial, and industrial customers.[1] Data for these customer classes were further classified by U.S. Census Regions, to ensure adequate number of customer observations in for each estimation group.

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

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

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

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

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

β_1 is effectively the growth rate of reported month m solar PV capacity

e_i is the error term

The model checks for outliers and removes them from the regression equation inputs. The model calculates RSEs by sector, state, census region, and U.S. total. Once we have imputed for all the monthly net-metered PV solar capacity we add to total net metered capacity, the PV solar capacity collected for the non net-metered capacity.

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 is 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-861M 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-861 to obtain a final estimate for generation and a blended KWh/KW rate is calculated. The estimate for generation is aggregated by US census regions and US totals. The RSEs for capacity are checked for level of error and if they pass, the summary data by state, US census region and US total are reported in the EPM.

Appendix 2 contains a flow diagram of the data inputs, data quality control checks and data analysis required to perform this estimation.

Appendix 1- MSAs

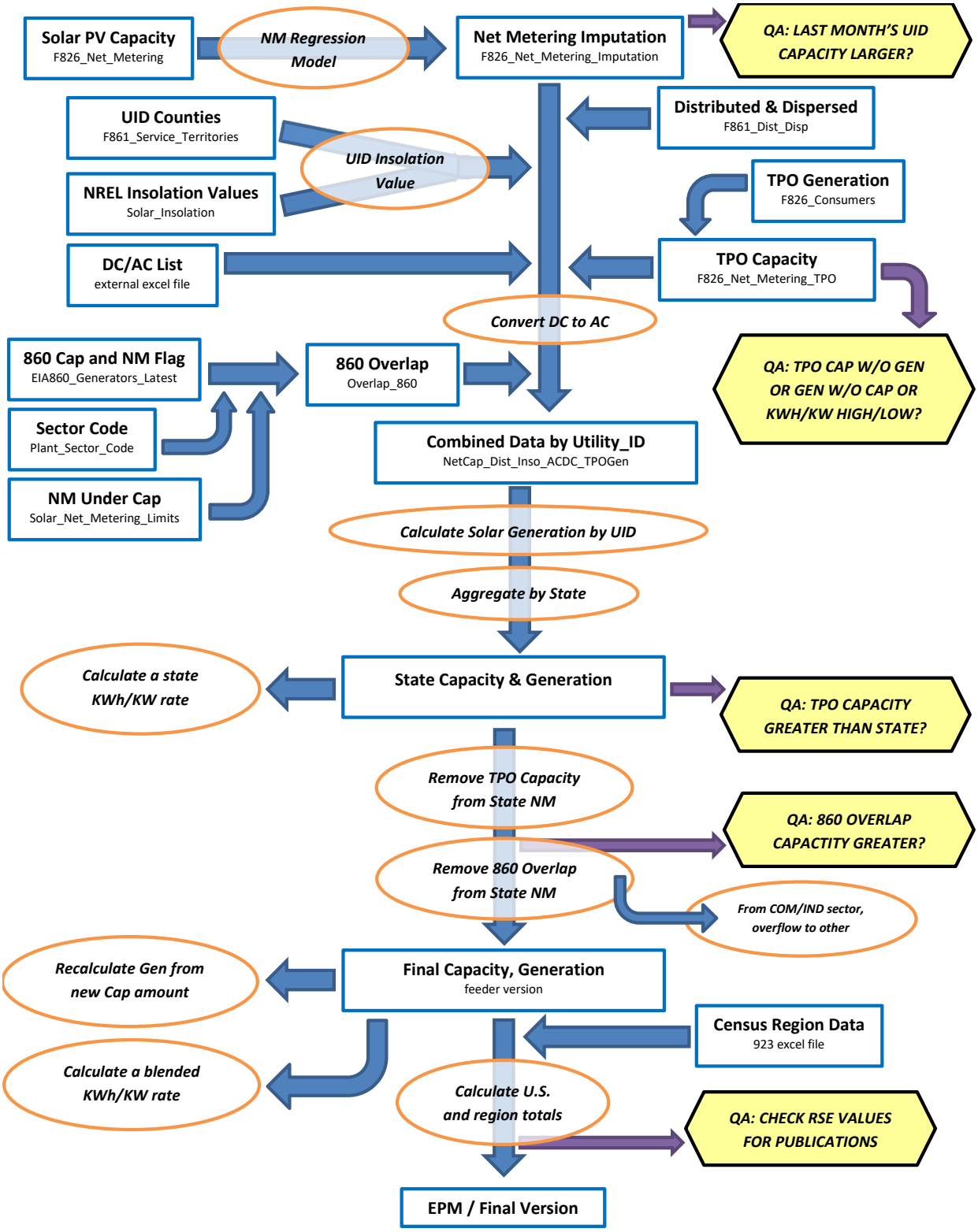
TMY3 (1991-2005) Weather Stations by MSA

Site	Weather Location	MSA
1	USA NY New York Central Park Obs.	New York-Newark-Jersey City, NY-NJ-PA MSA
2	USA CA Los Angeles Intl Airport	Los Angeles-Long Beach-Anaheim, CA MSA
3	USA IL Chicago Midway Airport	Chicago-Naperville-Elgin, IL-IN-WI MSA
4	USA TX Dallas-Fort Worth Intl Airport	Dallas-Fort Worth-Arlington, TX MSA
5	USA TX Houston Bush Intercontinental	Houston-The Woodlands-Sugar Land, TX MSA
6	USA PA Philadelphia Int'l Airport	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
7	USA VA Washington Dc Reagan Airport	Washington-Arlington-Alexandria, DC-VA-MD-WV MSA
8	USA FL Miami Intl Airport	Miami-Fort Lauderdale-West Palm Beach, FL MSA
9	USA GA Atlanta Hartsfield Intl Airport	Atlanta-Sandy Springs-Roswell, GA MSA
10	USA MA Boston Logan Int'l Airport	Boston-Cambridge-Newton, MA-NH MSA
11	USA CA San Francisco Intl Airport	San Francisco–Oakland–Hayward, CA MSA
12	USA AZ Phoenix Sky Harbor Intl Airport	Phoenix-Mesa-Scottsdale, AZ MSA
13	USA CA Riverside Municipal Airport	Riverside-San Bernardino-Ontario, CA MSA
14	USA MI Detroit City Airport	Detroit-Warren-Dearborn, MI MSA
15	USA WA Seattle Seattle-Tacoma Intl Airport	Seattle-Tacoma-Bellevue, WA MSA
16	USA MN Minneapolis-St. Paul Int'l Arp	Minneapolis-St. Paul-Bloomington, MN-WI MSA
17	USA CA San Diego Lindbergh Field	San Diego-Carlsbad, CA MSA
18	USA FL Tampa Int'l Airport	Tampa-St. Petersburg-Clearwater, FL MSA
19	USA MO St Louis Lambert Int'l Airport	St. Louis, MO-IL MSA
20	USA MD Baltimore-Washington Int'l Airport	Baltimore-Columbia-Towson, MD MSA
21	USA CO Denver Centennial [Golden - NREL]	Denver-Aurora-Lakewood, CO MSA
22	USA PA Pittsburgh Allegheny Co Airport	Pittsburgh, PA MSA
23	USA NC Charlotte Douglas Intl Airport	Charlotte-Concord-Gastonia, NC-SC MSA
24	USA OR Portland Hillsboro	Portland-Vancouver-Hillsboro, OR-WA MSA
25	USA TX San Antonio Intl Airport	San Antonio-New Braunfels, TX MSA
26	USA FL Orlando Intl Airport	Orlando-Kissimmee-Sanford, FL MSA
27	USA CA Sacramento Executive Airport	Sacramento–Roseville–Arden-Arcade, CA MSA
28	USA OH Cincinnati Municipal Airport	Cincinnati, OH-KY-IN MSA
29	USA OH Cleveland Hopkins Intl Airport	Cleveland-Elyria, OH MSA
30	USA MO Kansas City Int'l Airport	Kansas City, MO-KS MSA
31	USA NV Las Vegas McCarran Intl Airport	Las Vegas-Henderson-Paradise, NV MSA
32	USA OH Columbus Port Columbus Intl A	Columbus, OH MSA
33	USA IN Indianapolis Intl Airport	Indianapolis-Carmel-Anderson, IN MSA
34	USA CA San Jose Intl Airport	San Jose-Sunnyvale-Santa Clara, CA MSA
35	USA TX Austin Mueller Municipal Airport	Austin-Round Rock, TX MSA

36	USA TN Nashville Int'l Airport	Nashville-Davidson–Murfreesboro–Franklin, TN MSA
37	USA VA Norfolk Int'l Airport	Virginia Beach-Norfolk-Newport News, VA-NC MSA
38	USA RI Providence T F Green State	Providence-Warwick, RI-MA MSA
39	USA WI Milwaukee Mitchell Intl Airport	Milwaukee-Waukesha-West Allis, WI MSA
40	USA FL Jacksonville Craig	Jacksonville, FL MSA
41	USA TN Memphis Int'l Airport	Memphis, TN-MS-AR MSA
42	USA OK Oklahoma City Will Rogers	Oklahoma City, OK MSA
43	USA KY Louisville Bowman Field	Louisville/Jefferson County, KY-IN MSA
44	USA VA Richmond Int'l Airport	Richmond, VA MSA
45	USA LA New Orleans Alvin Callender	New Orleans-Metairie, LA MSA
46	USA CT Hartford Bradley Intl Airport	Hartford-West Hartford-East Hartford, CT MSA
47	USA NC Raleigh Durham Int'l	Raleigh, NC MSA
48	USA UT Salt Lake City Int'l Airport	Salt Lake City, UT MSA
49	USA AL Birmingham Municipal Airport	Birmingham-Hoover, AL MSA
50	USA NY Buffalo Niagara Intl Airport	Buffalo-Cheektowaga-Niagara Falls, NY MSA
51	USA NY Rochester Greater Rochester	Rochester, NY MSA
52	USA MI Grand Rapids Kent County Int'l Airport	Grand Rapids-Wyoming, MI MSA
53	USA AZ Tucson Int'l Airport	Tucson, AZ MSA
54	USA HI Honolulu Intl Airport	Urban Honolulu, HI MSA
55	USA OK Tulsa Int'l Airport	Tulsa, OK MSA
56	USA CA Fresno Yosemite Intl Airport	Fresno, CA MSA
57	USA CT Bridgeport Sikorsky Memorial	Bridgeport-Stamford-Norwalk, CT MSA
58	USA MA Worchester Regional Airport	Worcester, MA-CT MSA
59	USA NM Albuquerque Intl Airport	Albuquerque, NM MSA
60	USA NE Omaha Eppley Airfield	Omaha-Council Bluffs, NE-IA MSA
61	USA NY Albany County Airport	Albany-Schenectady-Troy, NY MSA
62	USA CA Bakersfield Meadows Field	Bakersfield, CA MSA
63	USA CT New Haven Tweed Airport	New Haven-Milford, CT MSA
64	USA TN Knoxville McGhee Tyson Airport	Knoxville, TN MSA
65	USA SC Greenville Downtown Airport	Greenville-Anderson-Mauldin, SC MSA
66	USA CA Oxnard Airport	Oxnard-Thousand Oaks-Ventura, CA MSA
67	USA TX El Paso Int'l Airport	El Paso, TX MSA
68	USA PA Allentown Lehigh Valley Intl	Allentown-Bethlehem-Easton, PA-NJ MSA
69	USA LA Baton Rouge Ryan Airport	Baton Rouge, LA MSA
70	USA TX McCallen Miller Intl Airport	McAllen-Edinburg-Mission, TX MSA
71	USA OH Dayton Int'l Airport	Dayton, OH MSA
72	USA SC Columbia Metro Airport	Columbia, SC MSA
73	USA NC Greensboro Piedmont Triad Int'l Airport	Greensboro-High Point, NC MSA
74	USA FL Sarasota Bradenton	North Port-Sarasota-Bradenton, FL MSA
75	USA AR Little Rock Adams Field	Little Rock-North Little Rock-Conway, AR MSA
76	USA SC Charleston Intl Airport	Charleston-North Charleston, SC MSA

77	USA OH Akron Akron-canton Reg. Airport	Akron, OH MSA
78	USA CA Stockton Metropolitan Airport	Stockton-Lodi, CA MSA
79	USA CO Colorado Springs Muni Airport	Colorado Springs, CO MSA
80	USA NY Syracuse Hancock Int'l Airport	Syracuse, NY MSA
81	USA FL Fort Myers Page Field	Cape Coral-Fort Myers, FL MSA
82	USA NC Winston-Salem Reynolds Airport	Winston-Salem, NC MSA
83	USA ID Boise Air Terminal	Boise City, ID MSA
84	USA KS Wichita Mid-continent Airport	Wichita, KS MSA
85	USA WI Madison Dane Co Regional Airport	Madison, WI MSA
86	USA MA Worchester Regional Airport	Springfield, MA MSA
87	USA FL Lakeland Linder Regional Airport	Lakeland-Winter Haven, FL MSA
88	USA UT Ogden Hinkley Airport	Ogden-Clearfield, UT MSA
89	USA OH Toledo Express Airport	Toledo, OH MSA
90	USA FL Daytona Beach Intl Airport	Deltona-Daytona Beach-Ormond Beach, FL MSA
91	USA IA Des Moines Intl Airport	Des Moines-West Des Moines, IA MSA
92	USA GA Augusta Bush Field	Augusta-Richmond County, GA-SC MSA
93	USA MS Jackson Int’l Airport	Jackson, MS MSA
94	USA UT Provo Muni	Provo-Orem, UT MSA
95	USA PA Wilkes-Barre Scranton Intl Airport	Scranton–Wilkes-Barre–Hazleton, PA MSA
96	USA PA Harrisburg Capital City Airport	Harrisburg-Carlisle, PA MSA
97	USA OH Youngstown Regional Airport	Youngstown-Warren-Boardman, OH-PA MSA
98	USA FL Melbourne Regional Airport	Palm Bay-Melbourne-Titusville, FL MSA
99	USA TN Chattanooga Lovell Field Airport	Chattanooga, TN-GA MSA
100	USA WA Spokane Int’l Airport	Spokane Spokane Valley, WA MSA

Appendix 2 – Flow diagram of data sources and analysis



Endnotes

[1] The basic technique employed is described in the paper "Model-Based Sampling and Inference," on the EIA website. Additional references can be found on the InterStat website (http://interstat.statjournals.net/). See the following sources: Knaub, J.R., Jr. (1999a), "Using Prediction-Oriented Software for Survey Estimation," InterStat, August 1999, http://interstat.statjournals.net/; Knaub, J.R. Jr. (1999b), "Model-Based Sampling, Inference and Imputation," EIA web site: http://www.eia.gov/cneaf/electricity/forms/eiawebme.pdf; Knaub, J.R., Jr. (2005), "Classical Ratio Estimator," InterStat, October 2005, http://interstat.statjournals.net/; Knaub, J.R., Jr. (2007a), "Cutoff Sampling and Inference," InterStat, April 2007, http://interstat.statjournals.net/; Knaub, J.R., Jr. (2008), "Cutoff Sampling." Definition in Encyclopedia of Survey Research Methods, Editor: Paul J. Lavrakas, Sage, to appear; Knaub, J.R., Jr. (2000), "Using Prediction-Oriented Software for Survey Estimation - Part II: Ratios of Totals," InterStat, June 2000, http://interstat.statjournals.net/; Knaub, J.R., Jr. (2001), "Using Prediction-Oriented Software for Survey Estimation - Part III: Full-Scale Study of Variance and Bias," InterStat, June 2001, http://interstat.statjournals.net/.

[2] 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

[3] A boiler's firing configuration relates to the arrangement of the fuel burners in the boiler, and whether the boiler is of conventional or cyclone design. Wet- and dry-bottom boilers use different methods to collect a portion of the ash that results from burning coal. For information on wet- and dry-bottom boilers, see the EIA Glossary at http://www.eia.gov/glossary/index.html. Additional information on wet- and dry-bottom boilers and on other aspects of boiler design and operation, including the differences between conventional and cyclone designs, can be found in Babcock and Wilcox, *Steam: Its Generation and Use*, 41st Edition, 2005.

[4] Boilers that rely entirely on waste heat to create steam, including the heat recovery portion of most combined cycle plants, did not report on the historical Form EIA-767 or EIA-923.

[5] The "All Other" firing configuration category includes, for example, arch firing and concentric firing. For a full list of firing method options for reporting on the historical Form EIA-767, see the form instructions, page xi, at http://www.eia.gov/survey/form/eia_767/instructions_form.pdf.