



Independent Statistics & Analysis

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EIA Electric Industry Data Collection

Chapter 1

National Summary Data

Table 1.1. Total Electric Power Industry Summary Statistics, 2022 and 2021

Net Generation and Consumption of Fuels for January through December														
		Total (All Sectors)			Electric Power Sector				Commercial		Industrial		Residential	
Fuel	Facility Type	Year 2022	Year 2021	Percentage Change	Electric Utilities		Independent Power Producers		Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
					Year 2022	Year 2021	Year 2022	Year 2021						
Net Generation (Thousand Megawatthours)														
Coal	Utility Scale Facilities	831,512	897,999	-7.4%	621,853	674,804	204,243	217,636	287	280	5,128	5,278	0	0
Petroleum Liquids	Utility Scale Facilities	15,805	11,663	35.5%	9,356	8,791	5,734	2,378	101	94	614	400	0	0
Petroleum Coke	Utility Scale Facilities	7,126	7,511	-5.1%	5,383	5,728	1,354	1,413	10	4	379	367	0	0
Natural Gas	Utility Scale Facilities	1,687,067	1,579,190	6.8%	832,421	777,057	750,266	699,547	7,830	7,346	96,550	95,240	0	0
Other Gas	Utility Scale Facilities	11,722	11,397	2.9%	0	12	3,451	3,292	0	0	8,271	8,093	0	0
Nuclear	Utility Scale Facilities	771,537	779,645	-1.0%	427,933	430,683	343,604	348,981	0	0	0	0	0	0
Hydroelectric Conventional	Utility Scale Facilities	254,789	251,585	1.3%	232,953	228,689	20,673	21,702	263	258	899	936	0	0
Renewable Sources Excluding Hydroelectric	Utility Scale Facilities	646,028	563,682	14.6%	103,930	89,249	512,744	445,396	4,854	3,576	24,500	25,461	0	0
... Wind	Utility Scale Facilities	434,297	378,197	14.8%	80,962	70,338	353,032	307,579	173	168	130	112	0	0
... Solar Thermal and Photovoltaic	Utility Scale Facilities	143,797	115,258	24.8%	17,697	13,911	125,155	100,612	669	598	276	137	0	0
... Wood and Wood-Derived Fuels	Utility Scale Facilities	35,464	36,463	-2.7%	3,263	2,796	8,739	9,101	175	153	23,287	24,413	0	0
... Other Biomass	Utility Scale Facilities	16,383	17,790	-7.9%	982	1,197	10,757	13,637	3,838	2,156	806	800	0	0
... Geothermal	Utility Scale Facilities	16,087	15,975	0.7%	1,026	1,007	15,061	14,466	0	502	0	0	0	0
Hydroelectric Pumped Storage	Utility Scale Facilities	-6,028	-5,112	17.9%	-4,752	-3,876	-1,276	-1,235	0	0	0	0	0	0
Other Energy Sources	Utility Scale Facilities	11,114	12,140	-8.5%	534	508	3,487	6,449	3,391	1,209	3,702	3,975	0	0
All Energy Sources	Utility Scale Facilities	4,230,672	4,109,699	2.9%	2,229,611	2,211,643	1,844,282	1,745,538	16,737	12,768	140,043	139,750	0	0
Estimated Small Scale Solar Photovoltaic	Small Scale Facilities	61,282	49,164	24.6%	0	0	0	0	17,724	15,124	4,048	3,858	39,510	30,182
Estimated Total Solar Photovoltaic	All Facilities	202,080	161,499	25.1%	17,669	13,883	122,184	97,717	18,393	15,722	4,324	3,994	39,510	30,182
Estimated Total Solar	All Facilities	205,079	164,422	24.7%	17,697	13,911	125,155	100,612	18,393	15,722	4,324	3,994	39,510	30,182
Consumption of Fossil Fuels for Electricity Generation														
Coal (1000 tons)	Utility Scale Facilities	471,576	500,367	-5.8%	349,320	372,694	120,514	125,920	87	87	1,655	1,666	0	0
Petroleum Liquids (1000 barrels)	Utility Scale Facilities	28,760	21,633	32.9%	18,375	16,850	9,474	4,102	254	250	657	432	0	0
Petroleum Coke (1000 tons)	Utility Scale Facilities	2,985	3,070	-2.8%	2,271	2,323	578	618	3	1	132	127	0	0
Natural Gas (1000 Mcf)	Utility Scale Facilities	12,384,098	11,502,569	7.7%	6,376,042	5,876,442	5,364,051	4,995,247	48,658	45,537	595,347	585,343	0	0
Consumption of Fossil Fuels for Useful Thermal Output														
Coal (1000 tons)	Utility Scale Facilities	11,356	11,301	0.5%	2,269	2,153	731	667	448	447	7,908	8,034	0	0
Petroleum Liquids (1000 barrels)	Utility Scale Facilities	4,181	2,072	101.8%	106	80	403	278	495	330	3,177	1,384	0	0
Petroleum Coke (1000 tons)	Utility Scale Facilities	718	760	-5.6%	23	21	92	113	13	6	589	621	0	0
Natural Gas (1000 Mcf)	Utility Scale Facilities	1,206,240	1,221,841	-1.3%	46,329	49,103	305,125	307,795	74,683	71,094	780,102	793,849	0	0
Consumption of Fossil Fuels for Electricity Generation and Useful Thermal Output														
Coal (1000 tons)	Utility Scale Facilities	482,931	511,669	-5.6%	351,589	374,848	121,245	126,587	535	534	9,563	9,700	0	0
Petroleum Liquids (1000 barrels)	Utility Scale Facilities	32,940	23,705	39.0%	18,480	16,929	9,877	4,379	749	580	3,835	1,816	0	0
Petroleum Coke (1000 tons)	Utility Scale Facilities	3,702	3,830	-3.3%	2,294	2,344	671	731	16	7	721	748	0	0
Natural Gas (1000 Mcf)	Utility Scale Facilities	13,590,337	12,724,410	6.8%	6,422,370	5,925,545	5,669,176	5,303,041	123,342	116,631	1,375,449	1,379,193	0	0

Sales, Revenue, and Average Price of Electricity to Ultimate Customers for January through December									
Total U.S. Electric Power Industry									
Sector	Sales of Electricity to Ultimate Customers (million kWh)			Revenue from Sales of Electricity to Ultimate Customers (million dollars)			Average Price of Electricity to Ultimate Customers (cents/kWh)		
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Percentage Change
Residential	1,509,233	1,470,487	2.6%	226,990	200,834	13.0%	15.04	13.66	10.1%
Commercial	1,390,873	1,328,439	4.7%	172,600	149,008	15.8%	12.41	11.22	10.6%
Industrial	1,020,464	1,000,613	2.0%	84,895	71,835	18.2%	8.32	7.18	15.9%
Transportation	6,599	6,334	4.2%	765	646	18.4%	11.59	10.20	13.6%
All Sectors	3,927,169	3,805,874	3.2%	485,249	422,323	14.9%	12.36	11.10	11.4%

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

Table 1.2. Summary Statistics for the United States, 2012 - 2022

(From Table 2.1.) Number of Ultimate Customers

Year	Residential	Commer-cial	Industrial	Transpor-tation	Other	Total
2012	126,832,343	17,729,029	732,385	83	N/A	145,293,840
2013	127,777,153	17,679,562	831,790	75	N/A	146,288,580
2014	128,680,416	17,853,995	839,212	79	N/A	147,373,702
2015	129,811,718	17,985,690	835,536	78	N/A	148,633,022
2016	131,068,760	18,148,353	838,059	86	N/A	150,055,258
2017	132,579,747	18,359,427	840,329	86	N/A	151,779,589
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

(From Table 2.2.) Sales to Ultimate Customers

(Thousand Megawatthours)

Year	Residential	Commer-cial	Industrial	Transpor-tation	Other	Total
2012	1,374,515	1,327,101	985,714	7,320	N/A	3,694,650
2013	1,394,812	1,337,079	985,352	7,625	N/A	3,724,868
2014	1,407,208	1,352,158	997,576	7,758	N/A	3,764,700
2015	1,404,096	1,360,752	986,508	7,637	N/A	3,758,992
2016	1,411,058	1,367,191	976,715	7,497	N/A	3,762,462
2017	1,378,648	1,352,888	984,298	7,523	N/A	3,723,356
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

(From Table 2.3.) Revenue From Ultimate Customers

(Million Dollars)

Year	Residential	Commer-cial	Industrial	Transpor-tation	Other	Total
2012	163,280	133,898	65,761	747	N/A	363,687
2013	169,131	137,188	67,934	805	N/A	375,058
2014	176,178	145,253	70,855	810	N/A	393,096
2015	177,624	144,781	68,166	771	N/A	391,341
2016	177,077	142,643	66,068	722	N/A	386,509
2017	177,661	144,242	67,691	728	N/A	390,322
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

Table 1.2. Summary Statistics for the United States, 2012 - 2022

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

Year	Residential	Commer-cial	Industrial	Transpor-tation	Other	Total
2012	11.88	10.09	6.67	10.21	N/A	9.84
2013	12.13	10.26	6.89	10.55	N/A	10.07
2014	12.52	10.74	7.10	10.45	N/A	10.44
2015	12.65	10.64	6.91	10.09	N/A	10.41
2016	12.55	10.43	6.76	9.63	N/A	10.27
2017	12.89	10.66	6.88	9.68	N/A	10.48
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

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

Year	Purchases	Sales for Resale	Imports	Exports
2012	4,985,968	5,013,766	59,257	11,996
2013	4,684,977	4,842,508	68,947	11,373
2014	4,802,227	4,908,839	66,510	13,298
2015	4,761,523	4,797,395	75,770	9,100
2016	4,723,571	4,746,967	72,716	6,214
2017	4,861,257	4,889,947	65,685	9,371
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

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

Generation at Utility Scale Facilities									
Year	Coal	Petroleum	Natural Gas	Other Gas	Nuclear	Hydro Conventional	Hydro Pumped Storage	Geothermal	Wind
2012	1,514,043	23,190	1,225,894	11,898	769,331	276,240	-4,950	15,562	140,822
2013	1,581,115	27,164	1,124,836	12,853	789,016	268,565	-4,681	15,775	167,840
2014	1,581,710	30,232	1,126,635	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	1,687,067	11,722	771,537	254,789	-6,028	16,087	434,297

Table 1.2. Summary Statistics for the United States, 2012 - 2022

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
2012	3,451	876	37,799	19,823	13,787	4,047,765	--	3,451	4,327
2013	8,121	915	40,028	20,830	13,588	4,065,964	--	8,121	9,036
2014	15,250	2,441	42,340	21,650	13,393	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	140,798	2,999	35,464	16,383	11,114	4,230,672	61,282	202,080	205,079

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

Utility Scale Capacity									
Year	Coal	Petroleum	Natural Gas	Other Gas	Nuclear	Hydro Conventional	Hydro Pumped Storage	Geothermal	Wind
2012	309,680.4	47,167.2	422,364.4	1,945.6	101,885.0	78,738.0	22,368.3	2,592.1	59,074.8
2013	303,306.3	43,523.0	425,389.7	2,107.8	99,240.3	79,200.0	22,389.3	2,607.0	59,973.4
2014	299,094.2	41,135.4	432,150.3	1,914.3	98,569.3	79,677.3	22,485.1	2,514.3	64,231.5
2015	279,719.9	36,830.3	439,425.4	2,500.4	98,672.0	79,664.2	22,575.1	2,541.5	72,573.4
2016	266,619.9	34,382.4	446,823.2	2,456.9	99,564.8	79,912.9	22,778.7	2,516.6	81,286.6
2017	256,547.3	33,306.7	456,011.6	2,375.8	99,628.9	79,794.5	22,810.4	2,483.3	87,597.5
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

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
2012	2,694.1	476.0	7,507.6	4,810.6	1,728.9	1,063,033.0	--	2,694.1	3,170.1
2013	5,336.1	1,286.4	8,354.2	5,043.0	2,307.0	1,060,063.5	--	5,336.1	6,622.5
2014	8,656.6	1,666.7	8,368.1	5,166.5	2,792.6	1,068,422.2	7,326.6	15,983.2	17,649.9
2015	11,905.4	1,757.9	8,968.9	5,124.5	1,795.6	1,064,054.5	9,778.5	21,683.9	23,441.8
2016	20,192.9	1,757.9	8,936.1	5,088.8	2,015.1	1,074,332.8	12,765.1	32,958.0	34,715.9
2017	25,209.0	1,757.9	8,830.9	5,129.5	2,886.3	1,084,369.6	16,147.8	41,356.8	43,114.7
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

Table 1.2. Summary Statistics for the United States, 2012 - 2022

(From Chapter 5.) Consumption of Fossil Fuels

Year	For Electricity Generation				For Useful Thermal Output			
	Coal (Thousand Tons)	Petroleum (Thousand Barrels)	Natural Gas (Millions of Cubic Feet)	Other Gas (Millions of BTU)	Coal (Thousand Tons)	Petroleum (Thousand Barrels)	Natural Gas (Millions of Cubic Feet)	Other Gas (Millions of BTU)
2012	825,734	40,977	9,484,710	103,353	19,333	9,828	886,103	199,121
2013	860,729	47,492	8,596,299	115,303	18,350	10,886	882,385	189,902
2014	853,634	53,593	8,544,387	110,010	18,107	9,513	865,146	194,088
2015	739,594	49,145	10,016,576	105,997	16,632	8,864	935,098	183,596
2016	677,371	43,671	10,170,110	73,785	16,586	7,770	1,151,866	221,835
2017	663,911	39,144	9,508,062	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	12,384,098	64,285	11,356	7,769	1,206,240	194,981

Year	Total			
	Coal (Thousand Tons)	Petroleum (Thousand Barrels)	Natural Gas (Millions of Cubic Feet)	Other Gas (Millions of BTU)
2012	845,066	50,805	10,370,812	302,475
2013	879,078	58,378	9,478,685	305,205
2014	871,741	63,106	9,409,532	304,098
2015	756,226	58,009	10,951,674	289,593
2016	693,958	51,441	11,321,975	295,619
2017	678,578	46,043	10,676,606	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	13,590,337	259,266

(From Tables 6.1. and 7.1)

Year End Stocks, Annual Receipts and Average Costs

Year	Electric Power Sector Year End Stocks		Annual Receipts at All Electricity Generators			Average Cost of Fuel at All Electricity Generators		
	Coal (Thousand Tons)	Petroleum (Thousand Barrels)	Coal (Thousand Tons)	Petroleum (Thousand Barrels)	Natural Gas (Millions of Cubic Feet)	Coal (Dollars per MMBtu)	Petroleum (Dollars per MMBtu)	Natural Gas (Dollars per MMBtu)
2012	185,116	33,336	841,183	40,364	9,531,389	2.38	12.48	3.42
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

Table 1.2. Summary Statistics for the United States, 2012 - 2022

(From Table 9.1.) Emissions

(Thousand Metric Tons)

Year	Carbon Dioxide (CO2)	Sulfur Dioxide (SO2)	Nitrogen Oxides (NOx)
2012	2,156,875	3,704	2,148
2013	2,173,806	3,609	2,163
2014	2,168,284	3,454	2,100
2015	2,031,452	2,548	1,824
2016	1,928,401	1,807	1,630
2017	1,849,750	1,599	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

(From Tables 10.1. and 10.2.) Energy Efficiency

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

(From Tables 10.3. and 10.4.) Demand Response

Year	Yearly Energy and Demand Savings				Program Costs	
	Customers	Energy (MWh)	Potential Peak Demand (MW)	Actual Peak Demand (MW)	Incentives (thousand dollars)	Other (thousand dollars)
2013	9,187,350	1,401,987	27,095	11,883	1,112,782	485,133
2014	9,265,629	1,436,449	31,191	12,683	1,217,796	447,659
2015	9,094,138	1,251,006	32,875	13,036	1,120,446	381,918
2016	9,839,355	1,336,136	35,924	11,841	1,039,890	379,707
2017	9,440,938	1,310,862	31,508	12,248	1,003,124	370,700
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

Table 1.2. Summary Statistics for the United States, 2012 - 2022

Coal includes anthracite, bituminous, subbituminous and lignite coal. Starting in 2002 waste coal is included in all coal metrics except for year-end stocks. Starting in 2002 Synthetic coal is included in all coal metrics. Starting in 2011 Coal-derived synthesis gas is included in all coal metrics. Prior to 2011 coal-derived synthesis gas was included in Other Gases.

Petroleum includes Distillate fuel oil (all diesel and No. 1, No. 2, and No. 4 fuel oils), residual fuel oil (No. 5 and No. 6 fuel oils and bunker C fuel oil), jet fuel, kerosene, petroleum coke (converted to liquid petroleum, see Technical Notes for conversion methodology) and waste oil. Prior to 2011 propane was in the Other Gas category. Beginning in 2004 small quantities of waste oil were excluded from petroleum stocks.

Natural gas includes a small number of generators for which waste heat is the primary energy source. Natural gas also includes a small amount of supplemental gaseous fuels that cannot be identified separately.

Prior to 2011, synthesis gas derived from petroleum coke was in the Other Gas category. Other Gas includes blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.

Conventional hydroelectric power excludes pumped storage facilities.

Wood and wood derived fuels include wood/wood waste solids (including paper pellets, railroad ties, utility poles, wood chips, bark, and wood waste solids), wood waste liquids (red liquor, sludge wood, spent sulfite liquor, and other wood-based liquids), and black liquor.

Other biomass includes biogenic municipal solid waste, landfill gas, sludge waste, agricultural byproducts, other biomass solids, other biomass liquids, and other biomass gases (including digester gases, methane, and other biomass gases). The reported summer capacity for other biomass also includes non-biogenic municipal solid waste.

Pumped storage is the capacity to generate electricity from water previously pumped to an elevated reservoir and then released through a conduit to turbine generators located at a lower level. The generation from a hydroelectric pumped storage facility is the net value of production minus the energy used for pumping.

Other energy sources include batteries, hydrogen, purchased steam, sulfur, tire-derived fuels and other miscellaneous energy sources, and for generation values, non-biogenic municipal solid waste.

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

N/A = Not available.

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

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

Imports and Exports: National Energy Board of Canada; FERC 714, Annual Electric Balancing Authority Area and Planning Report; California Energy Commission; and EIA estimates

Table 1.3. Supply and Disposition of Electricity, 2012 through 2022

(From Chapter 3.) Supply (Thousand Megawatthours)

Year	Generation					Total Imports	Total Supply
	Electric Utilities	IPP (Non-CHP)	IPP (CHP)	Commercial Sector	Industrial Sector		
2012	2,339,172	1,386,991	164,194	11,301	146,107	59,257	4,107,022
2013	2,388,058	1,368,038	147,619	12,234	150,015	68,947	4,134,911
2014	2,382,500	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	2,229,611	1,714,778	129,503	16,737	140,043	56,970	4,287,643

(From Chapter 2.) Disposition (Thousand Megawatthours)

Year	Sales to Ultimate Customers				Total Exports	Losses and Unaccounted For	Total Disposition
	Full-Service Providers	Energy-Only Providers	Facility Direct	Direct Use			
2012	3,172,096	514,290	8,263	137,657	11,996	262,720	4,107,022
2013	3,147,192	559,211	18,465	143,462	11,373	255,208	4,134,911
2014	3,184,841	563,441	16,418	138,574	13,298	243,502	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	204,989	4,287,643

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, 2012 through 2022

Year	Residential	Commercial	Industrial	Transportation	Total
Total Electric Industry					
2012	126,832,343	17,729,029	732,385	83	145,293,840
2013	127,777,153	17,679,562	831,790	75	146,288,580
2014	128,680,416	17,853,995	839,212	79	147,373,702
2015	129,811,718	17,985,690	835,536	78	148,633,022
2016	131,068,760	18,148,353	838,059	86	150,055,258
2017	132,579,747	18,359,427	840,329	86	151,779,589
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
Full-Service Providers					
2012	118,650,233	16,111,883	681,074	48	135,443,238
2013	116,624,884	15,817,442	780,759	48	133,223,133
2014	117,230,661	15,942,158	789,803	50	133,962,672
2015	119,477,949	16,108,931	787,466	48	136,374,394
2016	120,875,548	16,197,174	788,641	53	137,861,416
2017	121,964,414	16,329,808	789,732	52	139,084,006
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
Energy-Only Providers					
2012	8,182,110	1,617,146	51,311	35	9,850,602
2013	11,152,269	1,862,120	51,031	27	13,065,447
2014	11,449,755	1,911,837	49,409	29	13,411,030
2015	10,333,769	1,876,759	48,070	30	12,258,628
2016	10,193,212	1,951,179	49,418	33	12,193,842
2017	10,615,333	2,029,619	50,597	34	12,695,583
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

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, 2012 through 2022 (Megawatthours)

Year	Residential	Commercial	Industrial	Transportation	Total	Direct Use	Total End Use
Total Electric Industry							
2012	1,374,514,708	1,327,101,196	985,713,854	7,320,028	3,694,649,786	137,656,510	3,832,306,296
2013	1,394,812,129	1,337,078,777	985,351,874	7,625,041	3,724,867,821	143,461,937	3,868,329,758
2014	1,407,208,311	1,352,158,263	997,576,138	7,757,555	3,764,700,267	138,573,884	3,903,274,151
2015	1,404,096,499	1,360,751,527	986,507,732	7,636,632	3,758,992,390	141,167,519	3,900,159,909
2016	1,411,058,153	1,367,191,386	976,715,181	7,496,910	3,762,461,630	139,836,699	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
Full-Service Providers							
2012	1,297,818,441	1,073,346,766	807,805,140	1,389,340	3,180,359,687	N/A	3,180,359,687
2013	1,291,368,071	1,074,915,884	797,769,849	1,603,318	3,165,657,122	N/A	3,165,657,122
2014	1,301,458,851	1,083,806,639	814,206,541	1,787,408	3,201,259,439	N/A	3,201,259,439
2015	1,307,918,081	1,089,268,864	805,111,979	1,749,450	3,204,048,374	N/A	3,204,048,374
2016	1,316,113,416	1,091,957,177	792,712,354	1,663,475	3,202,446,422	N/A	3,202,446,422
2017	1,285,787,376	1,078,679,288	797,505,332	1,656,960	3,163,628,956	N/A	3,163,628,956
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
Energy-Only Providers							
2012	76,696,267	253,754,430	177,908,714	5,930,688	514,290,099	N/A	514,290,099
2013	103,444,058	262,162,893	187,582,025	6,021,723	559,210,699	N/A	559,210,699
2014	105,749,460	268,351,624	183,369,597	5,970,147	563,440,828	N/A	563,440,828
2015	96,178,418	271,482,663	181,395,753	5,887,182	554,944,016	N/A	554,944,016
2016	94,944,737	275,234,209	184,002,827	5,833,435	560,015,208	N/A	560,015,208
2017	92,860,366	274,208,406	186,792,613	5,865,633	559,727,018	N/A	559,727,018
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

N/A = Not Available.

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

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

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

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

Table 2.3. Revenue from Sales of Electricity to Ultimate Customers by Sector, by Provider, 2012 through 2022 (Million Dollars)

Year	Residential	Commercial	Industrial	Transportation	Total
Total Electric Industry					
2012	163,280	133,898	65,761	747	363,687
2013	169,131	137,188	67,934	805	375,058
2014	176,178	145,253	70,855	810	393,096
2015	177,624	144,781	68,166	771	391,341
2016	177,077	142,643	66,068	722	386,509
2017	177,661	144,242	67,691	728	390,322
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
Full-Service Providers					
2012	152,817	106,012	52,667	132	311,628
2013	155,203	108,460	54,309	167	318,138
2014	160,637	113,880	57,140	187	331,845
2015	162,857	113,225	54,787	170	331,038
2016	162,395	111,218	52,958	164	326,735
2017	162,762	112,576	54,412	171	329,921
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
Competitive Service Providers					
2012	10,464	27,886	13,094	615	52,059
2013	13,928	28,729	13,625	638	56,919
2014	15,541	31,373	13,715	623	61,251
2015	14,767	31,557	13,379	601	60,303
2016	14,682	31,425	13,110	557	59,774
2017	14,899	31,666	13,279	557	60,402
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
Energy-Only Providers					
2012	5,776	17,397	9,895	432	33,500
2013	7,755	17,876	10,330	451	36,412
2014	9,079	19,948	10,813	436	40,277
2015	8,428	19,657	10,298	407	38,791
2016	7,947	18,850	9,896	360	37,053
2017	7,666	18,368	9,829	363	36,227
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
Delivery-Only Providers					
2012	4,687	10,489	3,199	183	18,559
2013	6,172	10,853	3,295	187	20,507
2014	6,462	11,425	2,901	187	20,975
2015	6,339	11,900	3,081	193	21,512
2016	6,735	12,575	3,213	197	22,720
2017	7,232	13,298	3,450	194	24,174
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

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 2012 through 2022 (Cents per kilowatthour)

Year	Residential	Commercial	Industrial	Transportation	Total
Total Electric Industry					
2012	11.88	10.09	6.67	10.21	9.84
2013	12.13	10.26	6.89	10.55	10.07
2014	12.52	10.74	7.10	10.45	10.44
2015	12.65	10.64	6.91	10.09	10.41
2016	12.55	10.43	6.76	9.63	10.27
2017	12.89	10.66	6.88	9.68	10.48
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
Full-Service Providers					
2012	11.77	9.88	6.52	9.50	9.80
2013	12.02	10.09	6.81	10.40	10.05
2014	12.34	10.51	7.02	10.49	10.37
2015	12.45	10.39	6.80	9.71	10.33
2016	12.34	10.19	6.68	9.87	10.20
2017	12.66	10.44	6.82	10.32	10.43
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
Competitive Service Providers					
2012	13.64	10.99	7.36	10.38	10.12
2013	13.46	10.96	7.26	10.60	10.18
2014	14.70	11.69	7.48	10.44	10.87
2015	15.35	11.62	7.38	10.20	10.87
2016	15.46	11.42	7.12	9.56	10.67
2017	16.04	11.55	7.11	9.50	10.79
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
Energy-Only Providers					
2012	7.53	6.86	5.56	7.29	6.51
2013	7.50	6.82	5.51	7.49	6.51
2014	8.59	7.43	5.90	7.31	7.15
2015	8.76	7.24	5.68	6.92	6.99
2016	8.37	6.85	5.38	6.17	6.62
2017	8.26	6.70	5.26	6.19	6.47
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
Delivery-Only Providers					
2012	6.11	4.13	1.80	3.09	3.61
2013	5.97	4.14	1.76	3.11	3.67
2014	6.11	4.26	1.58	3.12	3.72
2015	6.59	4.38	1.70	3.28	3.88
2016	7.09	4.57	1.75	3.38	4.06
2017	7.79	4.85	1.85	3.31	4.32
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

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, 2012 - December 2022 (Thousand Megawatthours)**

Period	Residential	Commercial	Industrial	Transportation	All Sectors
Annual Totals					
2012	1,374,515	1,327,101	985,714	7,320	3,694,650
2013	1,394,812	1,337,079	985,352	7,625	3,724,868
2014	1,407,208	1,352,158	997,576	7,758	3,764,700
2015	1,404,096	1,360,752	986,508	7,637	3,758,992
2016	1,411,058	1,367,191	976,715	7,497	3,762,462
2017	1,378,648	1,352,888	984,298	7,523	3,723,356
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
Year 2020					
January	124,442	109,812	80,609	670	315,533
February	112,123	103,015	78,903	619	294,659
March	104,255	104,110	80,931	598	289,894
April	97,759	91,406	72,791	444	262,401
May	105,681	94,299	74,273	454	274,707
June	131,538	109,593	78,445	480	320,056
July	167,108	127,107	84,758	556	379,530
August	158,939	123,057	86,366	522	368,885
September	127,824	113,220	80,977	534	322,555
October	105,514	108,468	82,371	523	296,877
November	99,661	97,897	79,167	525	277,249
December	129,761	105,456	79,492	622	315,330
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

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, 2012 - December 2022 (Million Dollars)**

Period	Residential	Commercial	Industrial	Transportation	All Sectors
Annual Totals					
2012	163,280	133,898	65,761	747	363,687
2013	169,131	137,188	67,934	805	375,058
2014	176,178	145,253	70,855	810	393,096
2015	177,624	144,781	68,166	771	391,341
2016	177,077	142,643	66,068	722	386,509
2017	177,661	144,242	67,691	728	390,322
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
Year 2020					
January	15,876	11,184	5,132	65	32,256
February	14,371	10,615	5,078	59	30,123
March	13,596	10,763	5,173	58	29,589
April	12,943	9,480	4,654	43	27,119
May	13,841	9,812	4,859	42	28,554
June	17,389	11,938	5,447	51	34,824
July	22,067	13,785	6,070	57	41,979
August	21,077	13,412	6,105	54	40,648
September	17,247	12,473	5,670	55	35,445
October	14,409	11,626	5,536	52	31,623
November	13,269	10,310	5,135	52	28,766
December	16,578	10,976	5,098	61	32,713
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

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, 2012 - December 2022 (Cents per Kilowatthour)**

Period	Residential	Commercial	Industrial	Transportation	All Sectors
Annual Totals					
2012	11.88	10.09	6.67	10.21	9.84
2013	12.13	10.26	6.89	10.55	10.07
2014	12.52	10.74	7.10	10.45	10.44
2015	12.65	10.64	6.91	10.09	10.41
2016	12.55	10.43	6.76	9.63	10.27
2017	12.89	10.66	6.88	9.68	10.48
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
Year 2020					
January	12.76	10.18	6.37	9.64	10.22
February	12.82	10.30	6.44	9.45	10.22
March	13.04	10.34	6.39	9.67	10.21
April	13.24	10.37	6.39	9.72	10.34
May	13.10	10.40	6.54	9.30	10.39
June	13.22	10.89	6.94	10.55	10.88
July	13.21	10.84	7.16	10.27	11.06
August	13.26	10.90	7.07	10.29	11.02
September	13.49	11.02	7.00	10.37	10.99
October	13.66	10.72	6.72	9.87	10.65
November	13.31	10.53	6.49	9.95	10.38
December	12.78	10.41	6.41	9.86	10.37
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

See Technical notes for additional information on the Commercial, Industrial, and Transportation sectors. NA = Not available. See Glossary for definitions.

Geographic coverage is the 50 States and the District of Columbia. Values include energy service provider (power marketer) data.

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Sources: U.S. Energy Information Administration, Form EIA-861M (formerly EIA-826), Monthly Electric Industry Power Report.

Form EIA-826, Monthly Electric Sales and Revenue Report with State Distributions Report;

Form EIA-861, Annual Electric Power Industry Report; and Form EIA-861S, Annual Electric Power Industry Report (Short Form).

Table 2.8. Sales of Electricity to Ultimate Customers by End-Use Sector, by State, 2022 and 2021 (Thousand Megawatthours)

Census Division and State	Residential		Commercial		Industrial		Transportation		All Sectors	
	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
New England	48,452	48,598	49,946	49,061	15,601	15,662	493	478	114,491	113,799
Connecticut	13,191	13,092	11,626	11,701	2,780	2,799	171	145	27,767	27,738
Maine	5,091	5,062	4,129	3,949	2,655	2,574	0	0	11,876	11,585
Massachusetts	20,007	20,305	24,444	23,832	6,234	6,346	299	315	50,983	50,798
New Hampshire	4,808	4,832	4,085	4,107	1,925	1,929	0	0	10,818	10,867
Rhode Island	3,168	3,132	3,746	3,605	639	644	23	18	7,576	7,398
Vermont	2,187	2,174	1,916	1,867	1,367	1,371	0	0	5,470	5,413
Middle Atlantic	138,703	138,192	146,799	143,046	73,814	73,484	3,382	3,112	362,698	357,834
New Jersey	30,062	30,090	37,374	36,137	6,754	6,593	253	249	74,443	73,070
New York	52,227	52,157	72,206	69,920	16,178	16,891	2,600	2,455	143,211	141,424
Pennsylvania	56,413	55,945	37,219	36,988	50,883	50,000	530	407	145,045	143,340
East North Central	191,773	192,188	177,245	174,951	186,406	184,734	507	513	555,931	552,387
Illinois	46,479	46,813	47,120	46,923	41,818	41,498	455	455	135,872	135,689
Indiana	34,058	33,472	23,494	22,921	42,480	43,329	13	18	100,044	99,740
Michigan	35,035	35,868	37,114	36,861	28,486	27,081	4	3	100,639	99,813
Ohio	53,312	53,171	46,091	44,980	50,063	49,529	34	37	149,500	147,718
Wisconsin	22,888	22,864	23,427	23,266	23,560	23,296	1	1	69,876	69,427
West North Central	111,878	107,760	103,538	99,433	100,350	98,747	45	43	315,811	305,983
Iowa	15,193	14,652	12,470	12,135	26,541	26,106	0	0	54,204	52,893
Kansas	14,444	13,769	15,781	15,356	11,736	11,366	0	0	41,961	40,492
Minnesota	23,418	23,246	22,549	22,093	20,649	21,227	20	23	66,635	66,589
Missouri	37,245	35,668	29,791	28,987	13,246	13,087	25	21	80,306	77,763
Nebraska	10,984	10,492	9,619	9,260	13,242	12,588	0	0	33,844	32,341
North Dakota	5,272	4,888	8,392	6,808	11,729	11,166	0	0	25,393	22,863
South Dakota	5,323	5,044	4,936	4,792	3,208	3,206	0	0	13,467	13,041
South Atlantic	383,766	374,746	334,808	313,129	142,955	144,329	1,006	1,098	862,536	833,301
Delaware	5,210	5,170	4,299	4,196	2,030	2,113	0	0	11,539	11,480
District of Columbia	2,519	2,528	7,290	7,044	240	182	251	272	10,242	10,083
Florida	134,246	130,412	96,864	93,965	17,636	17,113	75	72	248,821	241,562
Georgia	61,140	58,685	49,541	45,777	34,210	32,759	144	143	145,035	137,364
Maryland	28,065	27,965	27,623	27,437	3,602	3,480	392	422	59,683	59,304
North Carolina	62,444	60,915	49,229	47,715	27,519	27,049	15	14	139,207	135,693
South Carolina	32,287	31,386	24,131	21,114	26,341	27,292	0	0	82,758	79,792
Virginia	46,718	46,634	68,556	58,724	16,861	19,712	130	175	132,265	125,245
West Virginia	11,137	11,051	7,275	7,156	14,574	14,571	0	0	32,986	32,778
East South Central	122,286	119,430	91,874	89,070	99,298	99,239	0	0	313,458	307,739
Alabama	32,924	31,585	22,391	21,844	31,713	32,156	0	0	87,028	85,585
Kentucky	26,840	26,434	19,674	18,686	28,825	29,397	0	0	75,339	74,517
Mississippi	18,918	18,570	14,090	13,676	15,972	15,769	0	0	48,980	48,015
Tennessee	43,604	42,840	35,719	34,863	22,789	21,917	0	0	102,112	99,621
West South Central	246,771	228,147	218,257	201,819	223,806	209,480	190	190	689,025	639,636
Arkansas	19,251	18,918	11,787	11,517	17,960	18,228	0	0	48,998	48,663
Louisiana	31,445	30,408	23,540	22,460	40,144	37,942	9	9	95,139	90,819
Oklahoma	25,479	23,746	22,212	19,999	21,796	20,780	0	0	69,487	64,525
Texas	170,596	155,075	160,719	147,843	143,906	132,530	180	180	475,401	435,628
Mountain	110,762	107,925	102,416	98,680	85,753	83,947	155	153	299,086	290,707
Arizona	38,368	37,130	31,507	29,990	14,312	14,089	10	11	84,197	81,220
Colorado	20,594	20,625	21,059	20,584	15,018	15,053	91	89	56,763	56,351
Idaho	9,964	9,301	6,837	6,600	9,401	9,384	0	0	26,201	25,286
Montana	5,894	5,559	5,020	4,906	4,670	4,496	0	0	15,584	14,962
Nevada	14,307	14,373	12,428	12,294	12,579	12,360	7	5	39,320	39,032
New Mexico	7,283	7,088	9,084	8,656	10,790	9,650	0	0	27,156	25,394
Utah	11,344	10,950	12,871	12,207	9,105	9,472	46	49	33,366	32,878
Wyoming	3,009	2,897	3,611	3,443	9,880	9,444	0	0	16,499	15,785
Pacific Contiguous	150,044	148,591	160,576	153,908	87,651	86,338	822	747	399,093	389,584
California	89,542	90,284	114,141	108,762	47,500	47,583	685	621	251,869	247,250
Oregon	20,726	20,285	16,655	16,509	18,924	17,319	23	23	56,327	54,135
Washington	39,776	38,021	29,780	28,637	21,227	21,436	114	104	90,897	88,199
Pacific Noncontiguous	4,799	4,909	5,414	5,343	4,828	4,654	0	0	15,041	14,906
Alaska	2,050	2,084	2,576	2,559	1,376	1,327	0	0	6,002	5,969
Hawaii	2,748	2,825	2,838	2,785	3,453	3,327	0	0	9,039	8,936
U.S. Total	1,509,233	1,470,487	1,390,873	1,328,439	1,020,464	1,000,613	6,599	6,334	3,927,169	3,805,874

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, 2022 and 2021 (Million Dollars)

Census Division and State	Residential		Commercial		Industrial		Transportation		All Sectors	
	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
New England	11,981	10,454	9,057	8,015	2,344	2,004	56	42	23,438	20,516
Connecticut	3,246	2,868	2,156	1,926	419	270	31	18	5,852	5,082
Maine	1,143	862	636	509	293	246	0	0	2,072	1,617
Massachusetts	5,196	4,648	4,562	4,048	1,063	963	21	21	10,843	9,680
New Hampshire	1,224	959	763	662	292	266	0	0	2,279	1,888
Rhode Island	735	698	608	559	115	103	4	4	1,462	1,364
Vermont	436	419	331	310	162	156	0	0	930	884
Middle Atlantic	25,558	22,780	22,266	19,119	6,218	5,045	434	362	54,476	47,307
New Jersey	5,032	4,921	5,138	4,585	818	706	33	23	11,021	10,235
New York	11,532	10,162	13,133	11,238	1,221	1,072	360	311	26,246	22,783
Pennsylvania	8,995	7,698	3,995	3,295	4,178	3,268	41	28	17,209	14,289
East North Central	29,460	27,043	20,575	18,654	15,360	13,334	38	34	65,433	59,066
Illinois	7,274	6,168	5,332	4,529	3,585	3,028	33	29	16,223	13,754
Indiana	4,970	4,476	3,020	2,654	3,674	3,200	2	2	11,666	10,332
Michigan	6,256	6,290	4,658	4,537	2,372	2,083	1	0	13,286	12,910
Ohio	7,384	6,789	4,790	4,385	3,730	3,247	3	3	15,906	14,424
Wisconsin	3,576	3,320	2,775	2,548	2,000	1,777	0	0	8,351	7,645
West North Central	14,133	13,137	10,813	9,912	7,843	7,255	5	4	32,793	30,307
Iowa	1,997	1,865	1,316	1,234	1,875	1,732	0	0	5,187	4,831
Kansas	2,021	1,788	1,817	1,615	974	839	0	0	4,812	4,241
Minnesota	3,336	3,138	2,773	2,478	1,911	1,760	2	2	8,023	7,379
Missouri	4,374	4,072	2,846	2,658	1,015	930	2	2	8,237	7,661
Nebraska	1,186	1,128	848	816	955	914	0	0	2,989	2,858
North Dakota	576	530	709	624	854	823	0	0	2,139	1,977
South Dakota	644	617	504	486	258	257	0	0	1,405	1,360
South Atlantic	51,579	45,362	36,248	29,480	11,136	9,389	95	90	99,057	84,321
Delaware	714	647	472	398	179	161	0	0	1,365	1,206
District of Columbia	357	331	1,137	915	14	19	21	27	1,530	1,292
Florida	18,664	15,518	10,842	8,932	1,615	1,309	8	6	31,129	25,764
Georgia	8,438	7,340	5,995	4,859	2,960	2,126	13	9	17,406	14,333
Maryland	4,058	3,669	3,495	2,814	360	294	37	32	7,950	6,810
North Carolina	7,253	6,897	4,308	4,054	1,801	1,660	1	1	13,363	12,612
South Carolina	4,387	4,037	2,620	2,254	1,878	1,656	0	0	8,885	7,947
Virginia	6,233	5,580	6,621	4,575	1,347	1,280	14	15	14,215	11,450
West Virginia	1,473	1,343	758	680	982	885	0	0	3,214	2,907
East South Central	15,845	14,021	11,214	9,864	7,146	5,928	0	0	34,205	29,812
Alabama	4,691	4,092	2,946	2,587	2,447	2,034	0	0	10,085	8,713
Kentucky	3,466	3,041	2,318	2,009	2,136	1,748	0	0	7,920	6,798
Mississippi	2,349	2,146	1,656	1,479	1,071	939	0	0	5,076	4,563
Tennessee	5,339	4,742	4,293	3,790	1,492	1,207	0	0	11,124	9,738
West South Central	33,032	26,868	20,853	18,037	16,129	12,813	14	13	70,028	57,730
Arkansas	2,321	2,132	1,209	1,101	1,325	1,197	0	0	4,855	4,430
Louisiana	4,067	3,352	2,809	2,298	3,027	2,357	1	1	9,905	8,008
Oklahoma	3,170	2,612	2,296	1,740	1,517	1,143	0	0	6,984	5,495
Texas	23,475	18,772	14,539	12,898	10,259	8,115	12	12	48,285	39,797
Mountain	14,162	12,996	10,635	9,584	6,482	5,611	16	15	31,296	28,207
Arizona	4,995	4,656	3,404	3,099	1,126	956	1	1	9,525	8,712
Colorado	2,922	2,696	2,440	2,232	1,296	1,205	9	8	6,667	6,142
Idaho	1,034	945	565	521	631	600	0	0	2,230	2,065
Montana	668	624	536	517	350	280	0	0	1,553	1,421
Nevada	1,972	1,652	1,261	955	1,069	744	1	0	4,302	3,351
New Mexico	1,008	958	1,006	935	707	594	0	0	2,722	2,487
Utah	1,230	1,142	1,079	992	623	586	6	5	2,938	2,726
Wyoming	334	324	345	333	681	645	0	0	1,359	1,302
Pacific Contiguous	29,583	26,756	29,282	24,983	10,715	9,330	108	86	69,688	61,154
California	23,137	20,604	24,896	20,861	8,117	7,050	94	73	56,244	48,589
Oregon	2,368	2,307	1,558	1,503	1,289	1,035	2	2	5,217	4,847
Washington	4,079	3,844	2,827	2,619	1,309	1,245	11	10	8,227	7,718
Pacific Noncontiguous	1,656	1,416	1,657	1,361	1,521	1,126	0	0	4,834	3,903
Alaska	474	470	517	502	254	224	0	0	1,244	1,195
Hawaii	1,183	946	1,140	860	1,268	902	0	0	3,590	2,708
U.S. Total	228,990	200,834	172,600	149,008	84,895	71,835	765	646	485,249	422,323

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

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

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

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

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

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

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

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

Table 2.10. Average Price of Electricity to Ultimate Customers by End-Use Sector, by State, 2022 and 2021 (Cents per Kilowatthour)

Census Division and State	Residential		Commercial		Industrial		Transportation		All Sectors	
	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
New England	24.73	21.51	18.13	16.34	15.02	12.80	11.37	8.83	20.47	18.03
Connecticut	24.61	21.91	18.54	16.46	15.07	9.63	18.07	12.50	21.08	18.32
Maine	22.44	17.02	15.40	12.90	11.03	9.55	--	--	17.44	13.96
Massachusetts	25.97	22.89	18.67	16.99	17.06	15.18	7.08	6.51	21.27	19.06
New Hampshire	25.46	19.85	18.69	16.13	15.15	13.81	--	--	21.07	17.37
Rhode Island	23.21	22.30	16.23	15.51	17.96	16.06	17.52	19.75	19.30	18.44
Vermont	19.93	19.26	17.29	16.59	11.88	11.38	--	--	16.99	16.34
Middle Atlantic	18.43	16.48	15.17	13.37	8.42	6.87	12.82	11.63	15.02	13.22
New Jersey	16.74	16.35	13.75	12.69	12.12	10.70	12.90	9.24	14.80	14.01
New York	22.08	19.48	18.19	16.07	7.55	6.34	13.84	12.67	18.33	16.11
Pennsylvania	15.94	13.76	10.73	8.91	8.21	6.54	7.81	6.84	11.86	9.97
East North Central	15.36	14.07	11.61	10.66	8.24	7.22	7.51	6.67	11.77	10.69
Illinois	15.65	13.18	11.32	9.65	8.57	7.30	7.21	6.42	11.94	10.14
Indiana	14.59	13.37	12.86	11.58	8.65	7.39	13.03	10.05	11.66	10.36
Michigan	17.86	17.54	12.55	12.31	8.33	7.69	12.35	12.30	13.20	12.93
Ohio	13.85	12.77	10.39	9.75	7.45	6.55	8.54	7.41	10.64	9.76
Wisconsin	15.62	14.52	11.85	10.95	8.49	7.63	16.55	15.12	11.95	11.01
West North Central	12.63	12.19	10.44	9.97	7.82	7.35	10.44	9.36	10.38	9.90
Iowa	13.15	12.73	10.55	10.17	7.06	6.63	--	--	9.57	9.13
Kansas	13.99	12.98	11.51	10.52	8.30	7.38	--	--	11.47	10.47
Minnesota	14.25	13.50	12.30	11.22	9.25	8.29	12.29	10.38	12.04	11.08
Missouri	11.74	11.41	9.55	9.17	7.67	7.11	8.97	8.23	10.26	9.85
Nebraska	10.79	10.75	8.82	8.81	7.21	7.26	--	--	8.83	8.84
North Dakota	10.92	10.85	8.45	9.17	7.28	7.37	--	--	8.42	8.65
South Dakota	12.09	12.22	10.21	10.15	8.04	8.02	--	--	10.44	10.43
South Atlantic	13.44	12.10	10.83	9.41	7.79	6.51	9.41	8.19	11.48	10.12
Delaware	13.71	12.52	10.98	9.48	8.79	7.60	--	--	11.83	10.50
District of Columbia	14.18	13.09	15.60	13.00	7.74	7.87	8.50	9.76	14.94	12.81
Florida	13.90	11.90	11.19	9.51	9.16	7.65	10.19	8.31	12.51	10.67
Georgia	13.80	12.51	12.10	10.61	8.65	6.49	9.33	6.61	12.00	10.43
Maryland	14.46	13.12	12.65	10.26	10.01	8.46	9.45	7.58	13.32	11.48
North Carolina	11.62	11.32	8.75	8.50	6.54	6.14	7.61	7.85	9.60	9.29
South Carolina	13.59	12.86	10.86	10.67	7.13	6.07	--	--	10.74	9.96
Virginia	13.34	11.96	9.66	7.79	7.99	6.49	10.85	8.49	10.75	9.14
West Virginia	13.23	12.15	10.42	9.50	6.74	6.07	--	--	9.74	8.87
East South Central	12.96	11.74	12.21	11.07	7.20	5.97	--	--	10.91	9.69
Alabama	14.25	12.96	13.16	11.84	7.72	6.33	--	--	11.59	10.18
Kentucky	12.91	11.50	11.78	10.75	7.41	5.95	--	--	10.51	9.12
Mississippi	12.41	11.56	11.76	10.81	6.71	5.95	--	--	10.36	9.50
Tennessee	12.25	11.07	12.02	10.87	6.55	5.51	--	--	10.89	9.78
West South Central	13.39	11.78	9.55	8.94	7.21	6.12	7.13	6.81	10.16	9.03
Arkansas	12.05	11.27	10.26	9.56	7.38	6.57	15.48	13.56	9.91	9.10
Louisiana	12.93	11.02	11.93	10.23	7.54	6.21	12.45	10.77	10.41	8.82
Oklahoma	12.44	11.00	10.34	8.70	6.96	5.50	--	--	10.05	8.52
Texas	13.76	12.11	9.05	8.72	7.13	6.12	6.82	6.59	10.16	9.14
Mountain	12.79	12.04	10.38	9.71	7.56	6.68	10.62	9.94	10.46	9.70
Arizona	13.02	12.54	10.80	10.33	7.86	6.79	9.62	9.33	11.31	10.73
Colorado	14.19	13.07	11.58	10.84	8.63	8.01	9.91	9.44	11.75	10.90
Idaho	10.37	10.16	8.27	7.89	6.71	6.39	--	--	8.51	8.17
Montana	11.33	11.22	10.68	10.54	7.49	6.24	--	--	9.97	9.50
Nevada	13.78	11.49	10.14	7.77	8.50	6.02	9.74	7.72	10.94	8.58
New Mexico	13.84	13.52	11.07	10.80	6.56	6.16	--	--	10.02	9.79
Utah	10.84	10.43	8.39	8.13	6.84	6.19	12.38	11.21	8.80	8.34
Wyoming	11.09	11.17	9.55	9.68	6.89	6.83	--	--	8.24	8.25
Pacific Contiguous	19.72	18.01	18.24	16.23	12.22	10.81	13.15	11.47	17.46	15.70
California	25.84	22.82	21.81	19.18	17.09	14.82	13.76	11.79	22.33	19.65
Oregon	11.42	11.37	9.35	9.10	6.81	5.97	10.45	9.71	9.26	8.95
Washington	10.26	10.11	9.49	9.14	6.17	5.81	10.05	9.89	9.05	8.75
Pacific Noncontiguous	34.51	28.85	30.61	25.48	31.50	24.19	--	--	32.14	26.19
Alaska	23.10	22.55	20.06	19.61	18.43	16.85	--	--	20.73	20.02
Hawaii	43.03	33.49	40.18	30.88	36.71	27.12	--	--	39.72	30.31
U.S. Total	15.04	13.66	12.41	11.22	8.32	7.18	11.59	10.20	12.36	11.10

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

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

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

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

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

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

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

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

Table 2.11. Number of Ultimate Customers by Sector by State, 2021 and 2022

Census Division and State	Residential		Commercial		Industrial		Transportation		All Sectors	
	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
New England	6,564,756	6,496,631	930,147	917,495	21,703	22,532	6	6	7,516,612	7,436,664
Connecticut	1,536,217	1,530,251	155,784	155,791	3,976	4,049	3	3	1,695,980	1,690,094
Maine	728,053	722,038	106,211	98,304	2,155	2,498	--	--	836,419	822,840
Massachusetts	2,888,583	2,840,311	435,521	432,903	10,524	10,907	2	2	3,334,630	3,284,123
New Hampshire	642,870	638,267	110,915	110,003	3,167	3,180	--	--	756,952	751,450
Rhode Island	448,184	446,320	60,133	60,091	1,628	1,650	1	1	509,946	508,062
Vermont	320,849	319,444	61,583	60,403	253	248	--	--	382,685	380,095
Middle Atlantic	16,526,130	16,382,493	2,430,244	2,416,755	34,111	33,822	22	19	18,990,507	18,833,089
New Jersey	3,675,569	3,648,914	532,838	529,178	11,427	11,503	7	6	4,219,841	4,189,601
New York	7,346,236	7,256,212	1,166,974	1,161,852	7,333	7,313	8	8	8,520,551	8,425,385
Pennsylvania	5,504,325	5,477,367	730,432	725,725	15,351	15,006	7	5	6,250,115	6,218,103
East North Central	20,709,073	20,572,452	2,556,100	2,549,871	55,261	55,449	12	11	23,320,446	23,177,783
Illinois	5,376,734	5,361,717	636,011	633,019	5,486	5,456	4	3	6,018,235	6,000,195
Indiana	2,988,151	2,948,803	370,420	364,549	19,116	19,066	1	1	3,377,688	3,332,419
Michigan	4,475,317	4,458,038	554,487	550,701	5,689	5,706	2	2	5,035,495	5,014,447
Ohio	5,082,414	5,041,904	631,665	640,013	19,383	19,556	3	3	5,733,465	5,701,476
Wisconsin	2,786,457	2,761,990	363,517	361,589	5,587	5,665	2	2	3,155,563	3,129,246
West North Central	9,818,380	9,738,760	1,509,487	1,502,864	129,706	128,943	3	3	11,457,676	11,370,570
Iowa	1,428,164	1,417,424	245,328	246,568	9,458	9,479	--	--	1,680,950	1,673,471
Kansas	1,297,400	1,289,344	245,577	245,045	24,109	23,965	--	--	1,567,086	1,558,354
Minnesota	2,523,110	2,496,406	308,250	306,605	9,234	9,130	1	1	2,840,595	2,812,142
Missouri	2,882,259	2,861,933	398,806	395,150	9,883	9,985	2	2	3,290,950	3,267,070
Nebraska	877,619	869,656	158,569	157,335	63,679	63,253	--	--	1,099,867	1,090,244
North Dakota	392,470	391,340	76,800	77,174	9,142	8,980	--	--	478,412	477,494
South Dakota	419,358	412,657	76,157	74,987	4,201	4,151	--	--	499,716	491,795
South Atlantic	29,674,453	29,242,289	3,967,438	3,940,011	85,507	85,352	13	13	33,727,411	33,267,665
Delaware	461,484	453,758	59,162	58,353	868	864	--	--	521,514	512,975
District of Columbia	306,464	298,337	27,136	26,783	1	1	3	3	333,604	325,124
Florida	10,066,753	9,917,113	1,282,170	1,272,939	23,673	23,036	2	2	11,372,598	11,213,090
Georgia	4,648,898	4,560,653	607,578	599,964	24,135	24,211	1	1	5,280,612	5,184,829
Maryland	2,415,655	2,395,954	260,799	257,947	9,156	8,991	5	5	2,685,615	2,662,897
North Carolina	4,855,658	4,774,592	739,530	731,526	9,152	9,567	1	1	5,604,341	5,515,686
South Carolina	2,472,265	2,426,703	403,966	402,005	3,635	3,652	--	--	2,879,866	2,832,360
Virginia	3,583,371	3,551,532	437,391	442,263	3,663	3,687	1	1	4,024,426	3,997,483
West Virginia	863,905	863,647	149,706	148,231	11,224	11,343	--	--	1,024,835	1,023,221
East South Central	8,762,386	8,679,019	1,472,328	1,454,293	24,576	24,468	--	--	10,259,290	10,157,780
Alabama	2,329,559	2,308,226	380,269	376,180	7,223	7,233	--	--	2,717,051	2,691,639
Kentucky	2,045,252	2,032,575	318,516	316,806	5,419	5,424	--	--	2,369,187	2,354,805
Mississippi	1,329,184	1,321,576	245,252	241,509	10,911	10,795	--	--	1,585,347	1,573,880
Tennessee	3,058,391	3,016,642	528,291	519,798	1,023	1,016	--	--	3,587,705	3,537,456
West South Central	17,476,183	17,196,465	2,378,193	2,348,629	397,549	369,764	6	6	20,251,931	19,914,864
Arkansas	1,445,528	1,436,246	203,432	201,408	35,670	36,628	2	2	1,684,632	1,674,284
Louisiana	2,128,425	2,126,155	299,424	297,724	19,695	19,928	1	1	2,447,545	2,443,808
Oklahoma	1,839,083	1,818,813	300,361	296,856	20,064	20,174	--	--	2,159,508	2,135,843
Texas	12,063,147	11,815,251	1,574,976	1,552,641	322,120	293,034	3	3	13,960,246	13,660,929
Mountain	10,541,628	10,354,186	1,486,495	1,469,263	98,732	97,851	5	5	12,126,860	11,921,305
Arizona	3,013,393	2,953,823	340,035	335,377	7,808	7,548	2	2	3,361,238	3,296,750
Colorado	2,480,555	2,443,109	390,861	388,601	15,078	15,287	1	1	2,886,495	2,846,998
Idaho	826,329	806,421	119,688	117,323	29,155	28,974	--	--	975,172	962,718
Montana	540,745	531,398	114,645	112,777	11,917	11,670	--	--	667,307	655,845
Nevada	1,270,155	1,249,392	173,757	171,686	3,386	3,303	1	1	1,447,299	1,424,382
New Mexico	921,109	914,495	147,142	146,312	9,278	9,271	--	--	1,077,529	1,070,078
Utah	1,207,878	1,176,949	141,960	139,168	10,380	10,180	1	1	1,360,219	1,326,298
Wyoming	281,464	278,599	58,407	58,019	11,730	11,618	--	--	351,601	348,236
Pacific Contiguous	19,041,965	18,910,491	2,410,589	2,387,183	200,867	202,079	19	19	21,653,440	21,489,772
California	13,942,174	13,883,994	1,767,719	1,750,923	147,928	149,389	12	12	15,857,833	15,784,318
Oregon	1,826,286	1,805,684	244,617	242,237	26,560	26,447	2	2	2,097,465	2,074,370
Washington	3,273,505	3,220,813	398,253	394,023	26,379	26,243	5	5	3,698,142	3,641,084
Pacific Noncontiguous	739,224	735,986	116,508	115,940	1,971	1,952	--	--	857,703	853,878
Alaska	294,370	292,451	56,372	56,005	1,149	1,135	--	--	351,891	349,591
Hawaii	444,854	443,535	60,136	59,935	822	817	--	--	505,812	504,287
U.S. Total	139,854,178	138,308,772	19,257,529	19,102,304	1,049,983	1,022,212	86	82	160,161,776	158,433,370

Table 2.12. Electric Power Industry - Electricity Purchases, 2012 through 2022 (Thousand Megawatthours)

Year	Electric Utilities	Energy-Only Providers	Independent Power Producers	Combined Heat and Power	U.S. Total
2012	2,149,234	2,740,043	17,726	78,965	4,985,968
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

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, 2012 through 2022 (Thousand Megawatthours)

Year	Electric Utilities	Energy-Only Providers	Independent Power Producers	Combined Heat and Power	U.S. Total
2012	1,456,774	2,135,819	1,384,156	37,017	5,013,766
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

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, 2012-2022 (Megawatthours)

Year	Canada		Mexico		U.S. Total	
	Imports from	Exports to	Imports from	Exports to	Imports	Exports
2012	57,971,110	11,392,267	1,285,959	603,382	59,257,069	11,995,649
2013	62,739,038	10,694,907	6,207,597	678,300	68,946,635	11,373,207
2014	59,369,660	12,860,889	7,140,624	437,364	66,510,284	13,298,253
2015	68,462,277	8,707,873	7,308,192	392,016	75,770,469	9,099,889
2016	65,173,818	2,682,381	7,542,445	3,531,636	72,716,263	6,214,017
2017	59,909,320	3,312,798	5,775,597	6,058,005	65,684,917	9,370,803
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

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: 2016-2022, 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.B. Net Generation from Renewable Sources: Total (All Sectors), 2012 - 2022
(Thousand Megawatthours)

Period	Generation at Utility Scale Facilities										Small Scale Generation	Generation From Utility and Small Scale Facilities	
	Wind	Solar Photovoltaic	Solar Thermal	Wood and Wood-Derived Fuels	Landfill Gas	Biogenic Municipal Solid Waste	Other Waste Biomass	Geothermal	Conventional Hydroelectric	Total Renewable Generation at Utility Scale Facilities	Estimated Solar Photovoltaic	Estimated Total Solar Photovoltaic	Estimated Total Solar
Annual Totals													
2012	140,822	3,451	876	37,799	9,803	7,320	2,700	15,562	276,240	494,573	N/A	N/A	N/A
2013	167,840	8,121	915	40,028	10,658	7,196	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	140,798	2,999	35,464	8,535	5,776	2,073	16,087	254,789	900,817	61,282	202,080	205,079
Year 2020													
January	28,121	4,353	106	3,326	921	520	213	1,148	24,498	63,206	2,313	6,665	6,771
February	29,110	5,383	178	3,120	855	464	194	1,230	25,868	66,402	2,623	8,006	8,184
March	29,320	6,157	193	3,170	911	535	201	1,465	23,823	65,774	3,424	9,581	9,774
April	29,752	7,615	305	2,844	872	504	182	1,379	23,194	66,648	3,816	11,431	11,736
May	28,378	9,241	413	2,919	882	517	190	1,362	29,976	73,878	4,267	13,508	13,921
June	30,212	9,284	370	2,823	810	473	174	1,274	27,999	73,419	4,269	13,553	13,923
July	22,866	10,181	429	3,022	841	527	173	1,331	26,742	66,113	4,405	14,586	15,015
August	23,029	8,960	356	3,160	852	538	171	1,323	23,284	61,672	4,199	13,158	13,514
September	23,186	7,463	269	2,895	816	492	174	1,288	18,679	55,263	3,722	11,185	11,454
October	28,823	6,827	258	2,840	820	486	183	1,288	18,810	60,335	3,310	10,137	10,395
November	33,129	5,603	164	2,951	796	488	169	1,399	20,893	65,591	2,687	8,290	8,453
December	32,011	5,000	91	3,148	838	535	177	1,403	21,508	64,710	2,489	7,489	7,580
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	75,444	3,376	11,066	11,198
February	37,645	8,869	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	16,816
April	46,167	13,081	321	2,736	699	482	161	1,282	20,066	84,995	5,671	18,752	19,073
May	42,124	14,750	371	2,905	722	492	157	1,327	23,359	86,206	6,236	20,986	21,357
June	33,768	15,681	372	3,045	710	498	166	1,276	25,988	81,502	6,229	21,910	22,282
July	29,475	15,478	288	3,276	723	510	173	1,341	24,567	75,832	6,438	21,916	22,204
August	24,718	14,224	279	3,206	707	498	174	1,354	21,133	66,293	6,194	20,418	20,697
September	27,331	13,002	285	2,864	686	470	159	1,329	17,026	63,152	5,544	18,546	18,831
October	32,745	11,653	289	2,624	714	473	182	1,298	14,367	64,345	5,022	16,675	16,964
November	41,199	8,254	149	2,865	678	473	167	1,397	17,898	73,080	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

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, 2012 - 2022
(Thousand Megawatthours)

Period	Generation at Utility Scale Facilities											Total
	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gas	Nuclear	Hydroelectric Conventional	Solar	Renewable Sources Excluding Hydroelectric and Solar	Hydroelectric Pumped Storage	Other	
Annual Totals												
2012	1,146,480	9,892	5,664	504,958	0	394,823	252,936	639	27,378	-4,202	603	2,339,172
2013	1,188,452	9,446	9,522	501,427	798	406,114	243,040	943	31,474	-3,773	615	2,388,058
2014	1,173,073	10,696	9,147	501,440	112	419,871	238,195	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	893,839	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	17,697	86,233	-4,752	534	2,229,611
Year 2020												
January	48,398	749	493	67,674	0	40,721	22,509	540	4,647	-325	55	185,460
February	41,703	574	366	64,327	8	36,079	23,948	611	5,264	-182	53	172,751
March	38,368	484	521	64,323	19	35,133	21,612	795	5,045	-252	53	166,102
April	29,904	437	455	56,884	6	32,827	20,901	910	4,988	-252	47	147,107
May	34,966	509	436	61,430	8	34,392	27,694	1,086	4,690	-273	52	164,989
June	49,771	612	647	72,469	1	36,388	26,532	1,013	5,087	-420	43	192,144
July	69,484	677	664	89,966	6	37,583	25,226	1,052	3,708	-595	53	227,824
August	71,205	671	607	86,083	0	37,544	21,967	955	4,194	-675	57	222,608
September	53,212	571	289	68,800	0	36,043	17,567	823	4,765	-438	43	181,674
October	44,186	666	169	65,427	0	31,641	17,451	775	5,420	-346	48	165,437
November	43,774	586	438	54,351	-1	32,605	19,456	676	6,231	-281	55	157,891
December	57,404	645	578	63,681	-1	37,995	19,787	710	5,758	-287	59	186,330
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	34,862	17,373	992	7,861	-302	41	162,702
December	43,993	686	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	1,837	6,114	-460	40	206,025
July	66,631	678	388	95,306	0	38,888	23,132	1,812	5,104	-623	40	231,356
August	64,386	661	421	93,582	0	38,921	19,778	1,718	4,893	-495	36	223,901
September	49,704	680	480	75,975	0	35,914	15,593	1,490	5,846	-493	33	185,223
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	164,538
December	56,116	1,575	636	69,839	0	38,335	18,352	982	7,992	-437	39	193,428

Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; synthetic coal and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.

Petroleum Liquids includes distillate and residual fuel oils, jet fuel, kerosene, waste oil, and beginning in 2011, propane. Prior to 2011 propane was included in Other Gases.

Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.

Other Gas includes blast furnace gas and other manufactured and waste gases derived from fossil fuels. Prior to 2011, Other Gas included propane and synthesis gases.

See the Technical Notes for fuel conversion factors.

Renewable Sources include wood, black liquor, other wood waste, biogenic municipal solid waste, landfill gas, sludge waste, agriculture byproducts, other biomass, geothermal, solar thermal, photovoltaic energy, and wind.

Other includes non-biogenic municipal solid waste, batteries, hydrogen, purchased steam, sulfur, tire-derived fuel, and other miscellaneous energy sources.

Notes: Beginning with 2001 data, non-biogenic municipal solid waste and tire-derived fuels are reclassified as non-renewable energy sources and included in Other. Biogenic municipal solid waste is included in Other Renewable Sources.

See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.

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

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

Sources: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report; U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report; and predecessor forms.

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

Table 3.2.B. Net Generation from Renewable Sources: Electric Utilities, 2012 - 2022
(Thousand Megawatthours)

Period	Generation at Utility Scale Facilities										Small Scale Generation	Generation From Utility and Small Scale Facilities	
	Wind	Solar Photovoltaic	Solar Thermal	Wood and Wood-Derived Fuels	Landfill Gas	Biogenic Municipal Solid Waste	Other Waste Biomass	Geothermal	Conventional Hydroelectric	Total Renewable Generation at Utility Scale Facilities	Estimated Solar Photovoltaic	Estimated Total Solar Photovoltaic	Estimated Total Solar
Annual Totals													
2012	22,926	551	89	1,836	1,022	184	265	1,143	252,936	280,953	N/A	N/A	N/A
2013	26,436	841	102	2,534	1,114	197	188	1,005	243,040	275,457	N/A	N/A	N/A
2014	27,671	1,094	124	3,050	1,068	191	182	1,116	238,185	272,681	0	1,094	1,218
2015	30,412	1,388	106	3,018	1,061	195	218	1,089	229,640	267,125	0	1,388	1,494
2016	35,070	1,920	75	3,038	1,040	201	237	1,080	247,787	290,448	0	1,920	1,995
2017	37,068	3,326	22	3,226	1,103	184	161	1,022	275,677	321,788	0	3,326	3,348
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	17,669	28	3,263	813	111	58	1,026	232,953	336,883	0	17,669	17,697
Year 2020													
January	4,261	538	2	225	85	7	9	61	22,509	27,696	0	538	540
February	4,895	609	2	204	80	7	9	68	23,948	29,822	0	609	611
March	4,676	792	3	173	89	12	10	86	21,612	27,453	0	792	795
April	4,689	908	2	125	87	12	9	67	20,901	26,799	0	908	910
May	4,376	1,080	6	125	87	12	10	81	27,694	33,470	0	1,080	1,086
June	4,759	1,009	4	146	81	11	11	79	26,532	32,632	0	1,009	1,013
July	3,316	1,048	4	206	84	11	10	81	25,226	29,985	0	1,048	1,052
August	3,759	951	4	250	83	11	11	79	21,967	27,115	0	951	955
September	4,454	821	2	138	79	10	11	72	17,567	23,155	0	821	823
October	5,111	775	1	129	85	12	10	73	17,451	23,647	0	775	775
November	5,865	676	0	183	81	11	10	81	19,456	26,363	0	676	676
December	5,393	710	1	173	85	11	10	86	19,787	26,255	0	710	710
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	28,595	0	1,187	1,188
March	8,171	1,531	2	224	77	6	4	79	21,943	32,038	0	1,531	1,533
April	8,302	1,711	3	182	69	9	3	87	17,583	27,949	0	1,711	1,714
May	7,057	1,846	4	254	70	12	6	89	21,195	30,533	0	1,846	1,850
June	5,665	1,835	2	281	67	10	5	84	24,296	32,247	0	1,835	1,837
July	4,587	1,809	2	347	68	11	6	87	23,132	30,047	0	1,809	1,812
August	4,364	1,716	2	360	65	11	4	88	19,778	26,389	0	1,716	1,718
September	5,420	1,488	2	263	64	8	6	86	15,593	22,930	0	1,488	1,490
October	6,352	1,460	1	222	65	10	5	82	12,963	21,159	0	1,460	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

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, 2012 - 2022
(Thousand Megawatthours)

Period	Generation at Utility Scale Facilities											Total
	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gas	Nuclear	Hydroelectric Conventional	Solar	Renewable Sources Excluding Hydroelectric and Solar	Hydroelectric Pumped Storage	Other	
Annual Totals												
2012	354,076	2,757	1,758	627,833	2,984	374,509	20,923	3,525	156,539	-748	7,030	1,551,168
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
Year 2020												
January	16,168	121	90	58,750	357	33,448	1,869	3,883	27,010	-52	605	142,251
February	13,982	124	135	54,868	359	29,832	1,794	4,908	27,248	-65	541	133,704
March	11,863	170	143	53,018	274	28,864	2,071	5,502	28,000	-101	617	130,421
April	10,330	137	132	45,761	166	26,343	2,165	6,948	28,162	-73	590	120,661
May	11,124	145	136	47,731	172	29,946	2,158	8,490	27,171	-94	579	127,557
June	15,092	168	111	61,993	156	30,817	1,372	8,563	28,378	-79	534	147,105
July	19,762	197	129	82,313	176	31,802	1,431	9,476	22,691	-91	601	168,487
August	19,491	183	134	78,246	316	31,438	1,237	8,291	22,480	-109	609	162,314
September	14,713	151	105	64,220	296	29,684	1,043	6,850	21,756	-87	562	139,294
October	15,153	168	135	57,833	213	27,721	1,292	6,259	26,636	-77	560	135,894
November	16,974	171	128	47,260	297	29,154	1,355	5,049	30,300	-88	555	131,155
December	20,697	249	126	54,893	347	31,876	1,622	4,348	29,802	-81	617	144,496
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	24,608	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	32,872	-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	153,653

Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; synthetic coal and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.

Petroleum Liquids includes distillate and residual fuel oils, jet fuel, kerosene, waste oil, and beginning in 2011, propane. Prior to 2011 propane was included in Other Gases.

Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.

Other Gas includes blast furnace gas and other manufactured and waste gases derived from fossil fuels. Prior to 2011, Other Gas included propane and synthesis gases.

See the Technical Notes for fuel conversion factors.

Renewable Sources include wood, black liquor, other wood waste, biogenic municipal solid waste, landfill gas, sludge waste, agriculture byproducts, other biomass, geothermal, solar thermal, photovoltaic energy, and wind.

Other includes non-biogenic municipal solid waste, batteries, hydrogen, purchased steam, sulfur, tire-derived fuel, and other miscellaneous energy sources.

Notes: Beginning with 2001 data, non-biogenic municipal solid waste and tire-derived fuels are reclassified as non-renewable energy sources and included in Other. Biogenic municipal solid waste is included in Other Renewable Sources.

See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.

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

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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, 2012 - 2022
(Thousand Megawatthours)

Period	Generation at Utility Scale Facilities										Small Scale Generation	Generation From Utility and Small Scale Facilities	
	Wind	Solar Photovoltaic	Solar Thermal	Wood and Wood-Derived Fuels	Landfill Gas	Biogenic Municipal Solid Waste	Other Waste Biomass	Geothermal	Conventional Hydroelectric	Total Renewable Generation at Utility Scale Facilities	Estimated Solar Photovoltaic	Estimated Total Solar Photovoltaic	Estimated Total Solar
Annual Totals													
2012	117,822	2,737	787	9,214	7,852	6,056	1,176	14,419	20,923	180,987	N/A	N/A	N/A
2013	141,306	6,969	813	9,768	8,442	5,838	1,139	14,770	22,018	211,063	N/A	N/A	N/A
2014	153,825	13,769	2,317	11,977	9,062	5,838	1,261	14,761	19,861	232,670	0	13,769	16,086
2015	160,135	19,841	3,121	11,545	9,202	5,806	1,342	14,829	17,996	243,816	0	19,841	22,962
2016	191,720	30,194	3,308	10,382	9,255	5,965	1,486	14,746	18,539	285,594	0	30,194	33,502
2017	217,006	46,128	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
Year 2020													
January	23,836	3,779	105	828	768	441	86	1,051	1,869	32,763	0	3,779	3,883
February	24,191	4,731	176	760	706	392	78	1,121	1,794	33,949	0	4,731	4,908
March	24,618	5,313	189	766	749	452	79	1,336	2,071	35,573	0	5,313	5,502
April	25,037	6,645	303	641	718	427	66	1,272	2,165	37,275	0	6,645	6,948
May	23,978	8,083	407	714	729	433	74	1,243	2,158	37,818	0	8,083	8,490
June	25,378	8,197	366	709	667	394	67	1,162	1,372	38,313	0	8,197	8,563
July	19,472	9,051	425	803	690	443	64	1,220	1,431	33,598	0	9,051	9,476
August	19,203	7,939	352	847	702	455	59	1,214	1,237	32,007	0	7,939	8,291
September	18,647	6,582	268	768	672	415	72	1,182	1,043	29,650	0	6,582	6,850
October	23,606	6,001	258	709	675	407	64	1,176	1,292	34,187	0	6,001	6,259
November	27,146	4,885	163	758	652	407	60	1,277	1,355	36,703	0	4,885	5,049
December	26,486	4,257	91	832	689	452	70	1,273	1,622	35,772	0	4,257	4,348
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

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.

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

Table 3.4.A. Net Generation by Energy Source: Commercial Sector, 2012 - 2022
(Thousand Megawatthours)

Period	Generation at Utility Scale Facilities											Small Scale Generation	Net Generation From Utility and Small Scale Facilities			
	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gas	Nuclear	Hydroelectric Conventional	Solar	Renewable Sources Excluding Hydroelectric and Solar	Hydroelectric Pumped Storage	Other	Total Generation at Utility Scale Facilities	Estimated Solar Photovoltaic	Estimated Total Solar Photovoltaic	Estimated Total Solar	
Annual Totals																
2012	883	191	6	6,603	0	0	28	148	2,397	0	1,046	11,301	N/A	N/A	N/A	
2013	839	118	5	7,154	0	0	44	294	2,862	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	
Year 2020																
January	25	10	2	731	0	0	18	32	238	0	90	1,145	736	767	767	
February	31	6	1	689	0	0	18	37	231	0	80	1,074	833	871	871	
March	24	7	0	623	0	0	17	46	246	0	88	1,050	1,082	1,128	1,128	
April	13	5	0	546	0	0	17	54	226	0	81	943	1,189	1,244	1,244	
May	14	9	0	578	0	0	23	66	234	0	89	1,012	1,309	1,375	1,375	
June	17	7	0	685	0	0	22	66	222	0	84	1,103	1,305	1,371	1,371	
July	16	10	0	855	0	0	21	69	231	0	91	1,293	1,355	1,424	1,424	
August	15	10	0	819	0	0	18	59	232	0	90	1,241	1,301	1,360	1,360	
September	23	8	0	695	0	0	14	50	223	0	83	1,097	1,159	1,209	1,209	
October	17	8	0	638	0	0	14	43	227	0	84	1,032	1,011	1,055	1,055	
November	20	8	0	596	0	0	15	36	227	0	85	987	804	840	840	
December	26	10	0	675	0	0	16	28	224	0	90	1,069	774	802	802	
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	688	0	0	20	29	347	0	284	1,397	1,007	1,037	1,037	

Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; synthetic coal and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.

Petroleum Liquids includes distillate and residual fuel oils, jet fuel, kerosene, waste oil, and beginning in 2011, propane. Prior to 2011 propane was included in Other Gases.

Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.

Other Gas includes blast furnace gas and other manufactured and waste gases derived from fossil fuels. Prior to 2011, Other Gas included propane and synthesis gases.

See the Technical Notes for fuel conversion factors.

Renewable Sources include wood, black liquor, other wood waste, biogenic municipal solid waste, landfill gas, sludge waste, agriculture byproducts, other biomass, geothermal, solar thermal, photovoltaic energy, and wind.

Other includes non-biogenic municipal solid waste, batteries, hydrogen, purchased steam, sulfur, tire-derived fuel, and other miscellaneous energy sources.

Notes: Beginning with 2001 data, non-biogenic municipal solid waste and tire-derived fuels are reclassified as non-renewable energy sources and included in Other. Biogenic municipal solid waste is included in Other Renewable Sources.

See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.

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

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Sources: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report; U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report; and predecessor forms.

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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, 2012 - 2022
(Thousand Megawatthours)

Period	Generation at Utility Scale Facilities										Small Scale Generation	Generation From Utility and Small Scale Facilities	
	Wind	Solar Photovoltaic	Solar Thermal	Wood and Wood-Derived Fuels	Landfill Gas	Biogenic Municipal Solid Waste	Other Waste Biomass	Geothermal	Conventional Hydroelectric	Total Renewable Generation at Utility Scale Facilities	Estimated Solar Photovoltaic	Estimated Total Solar Photovoltaic	Estimated Total Solar
Annual Totals													
2012	54	148	0	24	846	1,070	402	0	28	2,573	N/A	N/A	N/A
2013	61	294	0	34	925	1,149	493	0	44	3,000	N/A	N/A	N/A
2014	107	371	0	74	905	1,202	575	0	38	3,271	5,146	5,516	5,516
2015	118	416	0	48	847	1,199	592	0	35	3,255	5,689	6,106	6,106
2016	131	529	0	69	753	1,093	649	0	217	3,443	6,158	6,687	6,687
2017	144	521	0	70	753	1,114	648	0	240	3,490	7,685	8,206	8,206
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
Year 2020													
January	15	32	0	7	55	73	52	35	18	287	736	767	767
February	16	37	0	6	56	64	48	41	18	287	833	871	871
March	17	46	0	4	60	71	51	43	17	309	1,082	1,128	1,128
April	18	54	0	1	56	65	48	39	17	298	1,189	1,244	1,244
May	15	66	0	4	55	71	50	39	23	323	1,309	1,375	1,375
June	15	66	0	8	52	68	46	34	22	310	1,305	1,371	1,371
July	10	69	0	13	57	73	47	30	21	321	1,355	1,424	1,424
August	11	59	0	14	56	72	48	30	18	308	1,301	1,360	1,360
September	12	50	0	7	56	67	47	34	14	288	1,159	1,209	1,209
October	12	43	0	10	51	67	48	38	14	284	1,011	1,055	1,055
November	14	36	0	8	52	69	44	41	15	278	804	840	840
December	12	28	0	10	52	72	34	44	16	268	774	802	802
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

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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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, 2012 - 2022
(Thousand Megawatthours)

Period	Generation at Utility Scale Facilities											Small Scale Generation	Net Generation From Utility and Small Scale Facilities		
	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gas	Nuclear	Hydroelectric Conventional	Solar	Renewable Sources Excluding Hydroelectric and Solar	Hydroelectric Pumped Storage	Other	Total Generation at Utility Scale Facilities	Estimated Solar Photovoltaic	Estimated Total Solar Photovoltaic	Estimated Total Solar
Annual Totals															
2012	12,603	563	2,359	86,500	8,913	0	2,353	14	27,693	0	5,108	146,107	N/A	N/A	N/A
2013	12,554	495	2,036	88,733	8,531	0	3,463	17	29,074	0	5,113	150,015	N/A	N/A	N/A
2014	12,341	544	1,389	88,209	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	96,550	8,271	0	899	276	24,224	0	3,702	140,043	4,048	4,324	4,324
Year 2020															
January	551	35	48	8,028	799	0	102	4	2,354	0	343	13,164	192	196	196
February	506	45	39	8,154	784	0	108	6	2,230	0	297	12,169	212	218	218
March	476	31	40	8,222	755	0	123	7	2,310	0	333	12,297	292	299	299
April	429	47	26	7,373	631	0	111	8	2,156	0	355	11,136	316	324	324
May	422	28	39	7,447	705	0	102	12	2,152	0	371	11,278	349	361	361
June	403	30	42	7,909	710	0	73	12	2,079	0	357	11,615	354	367	367
July	447	30	44	8,433	755	0	64	13	2,132	0	348	12,267	370	383	383
August	435	23	47	8,497	777	0	62	11	2,168	0	352	12,372	358	369	369
September	459	25	45	7,683	718	0	54	9	2,108	0	327	11,427	321	330	330
October	449	34	47	7,515	705	0	53	8	2,157	0	375	11,341	291	299	299
November	414	34	46	7,604	654	0	67	6	2,174	0	370	11,370	226	232	232
December	461	36	46	8,614	653	0	83	5	2,328	0	403	12,628	203	208	208
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	8,767	624	0	62	7	1,888	0	286	10,136	230	237	237
March	432	35	36	7,177	683	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	12,679	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	7,792	671	0	84	28	2,043	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

Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; synthetic coal and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.

Petroleum Liquids includes distillate and residual fuel oils, jet fuel, kerosene, waste oil, and beginning in 2011, propane. Prior to 2011 propane was included in Other Gases.

Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.

Other Gas includes blast furnace gas and other manufactured and waste gases derived from fossil fuels. Prior to 2011, Other Gas included propane and synthesis gases.

See the Technical Notes for fuel conversion factors.

Renewable Sources include wood, black liquor, other wood waste, biogenic municipal solid waste, landfill gas, sludge waste, agriculture byproducts, other biomass, geothermal, solar thermal, photovoltaic energy, and wind.

Other includes non-biogenic municipal solid waste, batteries, hydrogen, purchased steam, sulfur, tire-derived fuel, and other miscellaneous energy sources.

Notes: Beginning with 2001 data, non-biogenic municipal solid waste and tire-derived fuels are reclassified as non-renewable energy sources and included in Other. Biogenic municipal solid waste is included in Other Renewable Sources.

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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, 2012 - 2022
(Thousand Megawatthours)

Period	Generation at Utility Scale Facilities										Small Scale Generation	Generation From Utility and Small Scale Facilities	
	Wind	Solar Photovoltaic	Solar Thermal	Wood and Wood-Derived Fuels	Landfill Gas	Biogenic Municipal Solid Waste	Other Waste Biomass	Geothermal	Conventional Hydroelectric	Total Renewable Generation at Utility Scale Facilities	Estimated Solar Photovoltaic	Estimated Total Solar Photovoltaic	Estimated Total Solar
Annual Totals													
2012	19	14	0	26,725	81	10	857	0	2,353	30,060	N/A	N/A	N/A
2013	37	17	0	27,691	178	2	1,166	0	3,463	32,554	N/A	N/A	N/A
2014	53	16	0	27,239	185	-2	1,185	0	1,282	29,957	1,139	1,156	1,156
2015	53	21	0	27,318	182	12	1,049	0	1,410	30,045	1,451	1,472	1,472
2016	71	27	0	27,458	170	6	959	0	1,269	29,960	2,060	2,087	2,087
2017	84	42	0	27,412	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	23,287	128	0	678	0	899	25,398	4,048	4,324	4,324
Year 2020													
January	9	4	0	2,265	13	0	67	0	102	2,460	192	196	196
February	9	6	0	2,150	13	0	59	0	108	2,344	212	218	218
March	9	7	0	2,227	13	0	61	0	123	2,440	292	299	299
April	8	8	0	2,077	12	0	59	0	111	2,275	316	324	324
May	9	12	0	2,077	10	1	56	0	102	2,267	349	361	361
June	60	12	0	1,960	10	1	49	0	73	2,164	354	367	367
July	69	13	0	2,000	11	0	52	0	64	2,208	370	383	383
August	56	11	0	2,049	10	1	52	0	62	2,241	358	369	369
September	72	9	0	1,983	10	1	43	0	54	2,171	321	330	330
October	94	8	0	1,992	10	0	61	0	53	2,217	291	299	299
November	105	6	0	2,003	11	0	55	0	67	2,247	226	232	232
December	119	5	0	2,134	12	0	62	0	83	2,415	203	208	208
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	1,959	10	0	62	0	84	2,155	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

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

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

Sources: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report; U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report; and predecessor forms.

Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report; Form EIA-423, Monthly Cost and Quality of Fuels for Electric Plants Report; and Federal Energy Regulatory Commission, FERC Form

423, Monthly Report of Cost and Quality of Fuels for Electric Plants.

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

**Table 3.6. Net Generation by Energy Source: Residential Sector, 2014 - 2022
(Thousand Megawatthours)**

Period	Small Scale Generation	
		Estimated Small Scale Solar Photovoltaic Generation
Annual Totals		
2014		4,947
2015		6,999
2016		10,595
2017		13,942
2018		17,105
2019		20,914
2020		25,179
2021		30,182
2022		39,510
Year 2020		
January		1,385
February		1,578
March		2,049
April		2,310
May		2,610
June		2,610
July		2,680
August		2,540
September		2,241
October		2,008
November		1,657
December		1,512
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

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, 2022 and 2021 (Thousand Megawatthours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
New England	105,612	103,089	2.4%	1,563	1,535	99,270	97,816	2,217	1,133	2,563	2,606
Connecticut	43,054	44,080	-2.3%	103	113	42,036	43,008	295	314	620	645
Maine	12,764	10,908	17.0%	1	2	11,090	9,236	104	98	1,568	1,573
Massachusetts	21,026	19,477	8.0%	529	510	18,612	18,167	1,690	598	195	203
New Hampshire	18,764	17,193	9.1%	11	12	18,659	17,088	66	65	28	29
Rhode Island	7,819	9,323	-16.1%	0	0	7,609	9,111	58	56	151	155
Vermont	2,184	2,108	3.6%	918	899	1,263	1,205	3	3	0	0
Mid-Atlantic	429,507	427,537	0.5%	35,249	37,096	384,965	384,301	3,994	2,065	5,300	4,076
New Jersey	65,061	61,434	5.9%	246	212	63,174	60,127	1,129	627	511	468
New York	125,185	124,772	0.3%	34,872	36,775	87,212	86,134	2,267	1,059	834	805
Pennsylvania	239,261	241,331	-0.9%	130	109	234,578	238,040	598	379	3,955	2,803
East North Central	597,830	581,539	2.8%	210,129	211,243	375,154	357,602	1,825	1,830	10,722	10,864
Illinois	185,223	181,638	2.0%	4,345	4,200	177,941	174,382	447	501	2,490	2,554
Indiana	98,055	94,165	4.1%	61,240	60,648	31,791	28,622	240	252	4,784	4,643
Michigan	117,497	115,513	1.7%	81,578	81,452	33,807	31,986	750	677	1,362	1,399
Ohio	135,810	125,948	7.8%	15,623	14,318	119,252	110,654	248	252	687	724
Wisconsin	61,244	64,276	-4.7%	47,343	50,625	12,361	11,959	139	148	1,400	1,544
West North Central	376,502	358,241	5.1%	278,252	272,683	93,293	80,995	762	676	4,196	3,887
Iowa	72,982	67,207	8.6%	58,913	56,115	11,790	8,895	191	145	2,088	2,052
Kansas	62,198	56,631	9.8%	34,212	32,726	27,700	23,656	16	16	269	234
Minnesota	58,967	59,196	-0.4%	42,148	42,497	15,277	15,390	335	301	1,207	1,007
Missouri	79,361	76,941	3.1%	72,498	70,529	6,615	6,174	200	195	47	44
Nebraska	40,693	37,911	7.3%	27,762	28,008	12,587	9,555	19	18	325	331
North Dakota	44,401	43,032	3.2%	33,585	33,386	10,626	9,480	0	1	190	166
South Dakota	17,900	17,322	3.3%	9,134	9,422	8,697	7,846	0	0	69	54
South Atlantic	807,112	802,487	0.6%	656,810	658,961	130,655	124,200	2,829	1,579	16,819	17,747
Delaware	5,308	4,305	23.3%	69	28	4,145	3,360	7	6	1,087	911
District of Columbia	160	211	-24.1%	0	0	22	18	138	193	0	0
Florida	258,910	247,907	4.4%	240,393	231,114	13,270	11,625	1,105	437	4,143	4,730
Georgia	126,485	124,201	1.8%	100,542	103,521	20,738	15,541	6	3	5,198	5,136
Maryland	37,139	38,235	-2.9%	3,941	3,470	32,881	34,470	267	247	51	48
North Carolina	134,257	129,923	3.3%	111,135	108,153	21,152	19,659	288	362	1,681	1,750
South Carolina	98,710	98,390	0.3%	92,255	92,974	4,965	3,828	1	2	1,489	1,587
Virginia	89,477	93,478	-4.3%	69,673	72,449	16,657	18,385	1,017	328	2,130	2,316
West Virginia	56,665	65,836	-13.9%	38,802	47,252	16,824	17,315	0	0	1,040	1,269
East South Central	359,754	359,422	0.1%	308,431	313,416	42,388	36,148	200	201	8,735	9,658
Alabama	144,789	142,733	1.4%	103,495	106,804	36,783	30,973	0	0	4,511	4,956
Kentucky	69,147	69,908	-1.1%	67,901	68,762	682	594	3	0	562	553
Mississippi	67,781	67,723	0.1%	62,601	62,630	3,389	3,196	0	0	1,791	1,898
Tennessee	78,036	79,057	-1.3%	74,434	75,221	1,534	1,385	197	201	1,871	2,251
West South Central	781,608	722,414	8.2%	249,924	235,985	457,375	414,192	928	894	73,381	71,343
Arkansas	65,905	61,100	7.9%	58,598	54,354	6,193	5,597	65	65	1,056	1,084
Louisiana	105,505	98,715	6.9%	67,520	63,845	7,730	6,913	146	184	30,109	27,773
Oklahoma	84,635	80,755	4.8%	36,521	37,602	47,260	42,314	-21	0	874	839
Texas	525,563	481,844	9.1%	87,284	80,184	396,192	359,368	744	645	41,342	41,647
Mountain	375,324	370,201	1.4%	267,880	272,129	103,874	93,891	592	1,110	2,978	3,071
Arizona	104,699	108,605	-3.6%	82,574	86,412	21,952	22,041	154	151	19	0
Colorado	58,044	56,838	2.1%	40,494	41,492	17,299	15,079	27	27	225	241
Idaho	16,278	16,836	-3.3%	10,388	10,457	5,300	5,760	69	69	521	550
Montana	27,089	24,948	8.6%	11,423	10,545	15,636	14,367	0	0	30	35
Nevada	42,592	41,755	2.0%	25,718	27,234	16,402	13,567	109	615	363	339
New Mexico	40,889	35,192	16.2%	23,940	21,859	16,817	13,151	113	134	19	48
Utah	39,386	42,566	-7.5%	33,562	36,931	5,359	5,104	120	114	344	417
Wyoming	46,347	43,461	6.6%	39,781	37,198	5,109	4,821	0	0	1,458	1,441
Pacific Contiguous	381,392	368,990	3.4%	210,093	197,960	153,604	152,306	2,677	2,564	15,018	16,160
California	203,384	197,165	3.2%	65,373	62,190	122,993	119,127	2,585	2,458	12,433	13,389
Oregon	61,318	61,017	0.5%	42,568	40,153	18,093	20,199	72	82	584	583
Washington	116,690	110,808	5.3%	102,152	95,617	12,517	12,980	20	24	2,001	2,188
Pacific Noncontiguous	16,032	15,778	1.6%	11,282	10,636	3,705	4,087	713	716	331	338
Alaska	6,694	6,596	1.5%	6,032	5,911	208	223	339	352	115	110
Hawaii	9,337	9,182	1.7%	5,249	4,725	3,498	3,865	374	364	217	228
U.S. Total	4,230,672	4,109,699	2.9%	2,229,611	2,211,643	1,844,282	1,745,538	16,737	12,768	140,043	139,750

Displayed values of zero may represent small values that round to zero. The Excel version of this table provides additional precision which may be accessed by selecting individual cells. NM = Not meaningful due to large relative standard error or excessive percentage change.

Notes: See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923.

Negative generation denotes that electric power consumed for plant use exceeds gross generation.

Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.

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

Table 3.8. Utility Scale Facility Net Generation from Coal by State, by Sector, 2022 and 2021 (Thousand Megawatthours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
New England	348	579	-39.9%	0	0	348	579	0	0	0	0
Connecticut	0	245	-100.0%	0	0	0	245	0	0	0	0
Maine	42	50	-15.1%	0	0	42	50	0	0	0	0
Massachusetts	0	0	--	0	0	0	0	0	0	0	0
New Hampshire	305	284	7.5%	0	0	305	284	0	0	0	0
Rhode Island	0	0	--	0	0	0	0	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	24,428	30,324	-19.4%	0	0	24,338	30,246	0	0	89	78
New Jersey	498	1,026	-51.5%	0	0	498	1,026	0	0	0	0
New York	0	0	--	0	0	0	0	0	0	0	0
Pennsylvania	23,930	29,297	-18.3%	0	0	23,840	29,219	0	0	89	78
East North Central	191,341	207,904	-8.0%	109,949	120,608	80,019	85,782	64	40	1,310	1,473
Illinois	40,559	43,298	-6.3%	1,920	1,841	37,503	40,185	17	9	1,119	1,263
Indiana	51,384	54,448	-5.6%	46,854	49,724	4,484	4,693	46	31	0	0
Michigan	34,482	37,054	-6.9%	34,118	36,710	359	341	0	0	5	2
Ohio	42,993	45,662	-5.8%	5,319	5,099	37,673	40,563	0	0	0	0
Wisconsin	21,923	27,442	-20.1%	21,738	27,233	0	0	0	0	185	208
West North Central	154,044	160,100	-3.8%	151,873	158,040	0	0	89	67	2,082	1,993
Iowa	18,172	22,107	-17.8%	16,634	20,641	0	0	62	48	1,477	1,418
Kansas	20,229	19,396	4.3%	20,229	19,396	0	0	0	0	0	0
Minnesota	16,159	15,764	2.5%	16,008	15,621	0	0	16	9	134	134
Missouri	52,832	57,858	-8.7%	52,822	57,848	0	0	11	10	0	0
Nebraska	19,945	18,934	5.3%	19,621	18,603	0	0	0	0	325	331
North Dakota	24,831	24,403	1.8%	24,685	24,293	0	0	0	0	146	110
South Dakota	1,875	1,638	14.4%	1,875	1,638	0	0	0	0	0	0
South Atlantic	120,035	141,421	-15.1%	101,394	121,434	18,140	19,430	19	29	482	528
Delaware	105	277	-62.1%	0	0	105	277	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	15,532	18,385	-15.5%	15,496	18,338	0	0	0	0	36	46
Georgia	16,778	19,076	-12.0%	16,623	18,895	0	0	0	0	155	181
Maryland	4,639	5,174	-10.3%	0	0	4,639	5,174	0	0	0	0
North Carolina	14,674	20,405	-28.1%	14,506	20,220	0	16	19	29	149	140
South Carolina	14,243	15,188	-6.2%	14,022	15,014	202	150	0	0	19	25
Virginia	3,346	3,248	3.0%	3,224	3,023	0	90	0	0	122	136
West Virginia	50,718	59,668	-15.0%	37,524	45,944	13,194	13,724	0	0	0	0
East South Central	94,534	100,554	-6.0%	91,261	97,376	2,909	2,753	0	0	364	425
Alabama	25,944	26,901	-3.6%	25,944	26,901	0	0	0	0	0	0
Kentucky	47,053	49,863	-5.6%	47,053	49,863	0	0	0	0	0	0
Mississippi	5,651	5,531	2.2%	2,742	2,778	2,909	2,753	0	0	0	0
Tennessee	15,886	18,260	-13.0%	15,522	17,835	0	0	0	0	364	425
West South Central	122,825	129,356	-5.0%	62,655	67,717	60,071	61,564	0	0	99	75
Arkansas	20,361	21,419	-4.9%	15,987	17,350	4,335	4,034	0	0	38	34
Louisiana	8,173	7,873	3.8%	5,049	5,454	3,124	2,419	0	0	0	0
Oklahoma	8,954	11,246	-20.4%	8,894	11,205	0	0	0	0	60	41
Texas	85,337	88,818	-3.9%	32,725	33,708	52,612	55,110	0	0	0	0
Mountain	118,765	122,498	-3.0%	104,260	109,197	14,075	12,913	0	0	430	387
Arizona	13,449	14,301	-6.0%	13,449	14,301	0	0	0	0	0	0
Colorado	21,723	23,602	-8.0%	21,723	23,602	0	0	0	0	0	0
Idaho	6	16	-61.1%	0	0	0	0	0	0	6	16
Montana	11,651	10,876	7.1%	0	64	11,643	10,803	0	0	8	9
Nevada	2,735	2,752	-0.6%	1,395	1,562	1,340	1,190	0	0	0	0
New Mexico	13,292	12,536	6.0%	13,292	12,536	0	0	0	0	0	0
Utah	22,390	26,376	-15.1%	21,987	25,976	404	399	0	0	0	0
Wyoming	33,518	32,038	4.6%	32,414	31,156	688	520	0	0	416	362
Pacific Contiguous	3,818	3,427	11.4%	0	0	3,546	3,107	0	0	272	319
California	252	294	-14.5%	0	0	0	0	0	0	252	294
Oregon	0	0	--	0	0	0	0	0	0	0	0
Washington	3,566	3,133	13.8%	0	0	3,546	3,107	0	0	20	25
Pacific Noncontiguous	1,375	1,837	-25.2%	461	431	797	1,262	116	144	0	0
Alaska	727	753	-3.4%	461	431	149	177	116	144	0	0
Hawaii	648	1,085	-40.3%	0	0	648	1,085	0	0	0	0
U.S. Total	831,512	897,999	-7.4%	621,853	674,804	204,243	217,636	287	280	5,128	5,278

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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 3.9. Utility Scale Facility Net Generation from Petroleum Liquids by State, by Sector, 2022 and 2021 (Thousand Megawatthours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
New England	1,855	244	660.0%	75	21	1,726	188	28	24	26	11
Connecticut	314	46	584.2%	4	5	303	37	4	1	2	3
Maine	274	32	767.8%	0	0	252	23	1	NM	22	7
Massachusetts	756	81	831.7%	65	14	681	60	8	7	2	1
New Hampshire	445	70	536.5%	0	0	434	59	12	11	0	0
Rhode Island	60	13	378.0%	0	0	56	10	NM	NM	0	0
Vermont	5	3	82.5%	5	3	0	0	0	0	0	0
Middle Atlantic	2,307	849	171.8%	819	552	1,456	276	17	8	16	13
New Jersey	138	37	272.9%	0	0	135	36	2	1	1	0
New York	1,857	688	170.0%	817	552	1,018	124	11	4	10	8
Pennsylvania	313	124	152.0%	2	0	303	116	4	3	4	4
East North Central	660	620	6.5%	280	434	370	171	2	4	8	11
Illinois	38	54	-30.4%	7	18	30	35	0	0	0	0
Indiana	114	128	-11.0%	104	123	9	4	0	1	1	1
Michigan	106	117	-9.7%	102	111	0	0	0	2	3	4
Ohio	372	154	141.5%	38	21	330	131	1	0	3	2
Wisconsin	31	167	-81.7%	29	161	0	1	0	1	1	4
West North Central	41	742	-94.5%	27	726	9	11	2	3	2	2
Iowa	82	103	-20.2%	80	100	1	3	0	0	0	0
Kansas	-224	149	-249.8%	-224	149	0	0	0	0	0	0
Minnesota	-61	105	-158.5%	-73	93	8	8	2	2	2	2
Missouri	163	259	-37.0%	163	258	0	0	0	0	0	0
Nebraska	35	55	-36.3%	35	55	0	0	0	0	0	0
North Dakota	29	33	-11.5%	29	33	0	0	0	0	0	0
South Dakota	17	38	-55.9%	17	38	0	0	0	0	0	0
South Atlantic	2,391	1,313	82.1%	1,597	956	507	210	44	51	243	96
Delaware	108	17	546.4%	11	2	97	15	0	0	0	0
District of Columbia	0	0	-53.2%	0	0	0	0	0	0	0	0
Florida	487	353	37.9%	445	312	26	22	0	0	NM	20
Georgia	386	81	375.6%	149	19	42	16	4	1	191	45
Maryland	143	73	96.6%	10	0	133	72	0	1	NM	0
North Carolina	278	195	42.6%	246	170	14	6	4	0	14	18
South Carolina	187	86	116.6%	170	73	6	4	0	0	11	9
Virginia	652	341	91.3%	432	217	175	71	35	48	10	4
West Virginia	150	167	-10.1%	136	163	15	5	0	0	0	0
East South Central	277	199	38.9%	262	177	0	12	0	0	14	10
Alabama	41	22	86.7%	32	4	0	12	0	0	9	6
Kentucky	80	66	21.2%	80	66	0	0	0	0	0	0
Mississippi	9	8	10.9%	6	6	0	0	0	0	3	2
Tennessee	147	103	42.3%	144	101	0	0	0	0	2	2
West South Central	388	308	25.9%	184	209	199	94	1	0	4	4
Arkansas	64	56	15.8%	46	43	18	12	0	0	0	0
Louisiana	17	14	22.6%	17	14	0	0	0	0	0	0
Oklahoma	29	35	-18.8%	27	34	0	0	0	0	1	1
Texas	278	204	36.7%	94	117	181	82	1	0	3	4
Mountain	183	220	-17.1%	170	207	13	13	0	0	0	0
Arizona	32	44	-26.0%	32	44	0	0	0	0	0	0
Colorado	27	28	-2.2%	24	28	3	0	0	0	0	0
Idaho	0	0	-65.7%	0	0	0	0	0	0	0	0
Montana	11	9	21.9%	5	0	6	9	0	0	0	0
Nevada	9	8	13.6%	7	6	2	2	0	0	0	0
New Mexico	19	33	-43.0%	19	33	0	0	0	0	0	0
Utah	31	38	-18.6%	30	37	1	2	0	0	0	0
Wyoming	53	60	-12.1%	53	60	0	0	0	0	0	0
Pacific Contiguous	200	109	83.1%	51	38	42	19	4	1	103	52
California	155	77	101.2%	34	34	33	10	4	1	84	33
Oregon	2	0	297.8%	1	0	0	0	0	0	0	0
Washington	44	32	36.5%	16	4	9	9	NM	0	18	19
Pacific Noncontiguous	7,503	7,058	6.3%	5,890	5,469	1,411	1,383	3	4	198	202
Alaska	848	902	-6.1%	806	856	0	0	-1	1	42	45
Hawaii	6,655	6,155	8.1%	5,084	4,613	1,411	1,383	4	3	156	156
U.S. Total	15,805	11,663	35.5%	9,356	8,791	5,734	2,378	101	94	614	400

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, 2022 and 2021 (Thousand Megawatthours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
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	2,494	2,157	15.6%	1,443	1,037	900	971	0	0	150	149
Illinois	0	0	--	0	0	0	0	0	0	0	0
Indiana	0	0	--	0	0	0	0	0	0	0	0
Michigan	1,449	1,032	40.4%	1,298	883	0	0	0	0	150	149
Ohio	900	971	-7.3%	0	0	900	971	0	0	0	0
Wisconsin	145	154	-6.0%	145	154	0	0	0	0	0	0
West North Central	12	29	-59.1%	0	0	0	0	10	4	NM	26
Iowa	12	29	-59.1%	0	0	0	0	10	4	NM	26
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	963	907	6.2%	832	809	0	0	0	0	131	98
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	832	809	2.9%	832	809	0	0	0	0	0	0
Georgia	131	98	34.2%	0	0	0	0	0	0	131	98
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	18	0	--	18	0	0	0	0	0	0	0
Alabama	0	0	--	0	0	0	0	0	0	0	0
Kentucky	18	0	--	18	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	3,185	3,976	-19.9%	3,090	3,882	0	0	0	0	95	94
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	3,090	3,882	-20.4%	3,090	3,882	0	0	0	0	0	0
Oklahoma	0	0	--	0	0	0	0	0	0	0	0
Texas	95	94	1.4%	0	0	0	0	0	0	95	94
Mountain	454	442	2.8%	0	0	454	442	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	454	442	2.8%	0	0	454	442	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	7,126	7,511	-5.1%	5,383	5,728	1,354	1,413	10	4	379	367

Displayed values of zero may represent small values that round to zero. The Excel version of this table provides additional precision which may be accessed by selecting individual cells. NM = Not meaningful due to large relative standard error or excessive percentage change.

Notes: See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923.

Negative generation denotes that electric power consumed for plant use exceeds gross generation.

Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.

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

Table 3.11. Utility Scale Facility Net Generation from Natural Gas by State, by Sector, 2022 and 2021 (Thousand Megawatthours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
New England	55,917	55,956	-0.1%	184	142	53,150	53,285	1,053	931	1,530	1,599
Connecticut	24,531	24,489	0.2%	69	62	23,559	23,476	285	309	618	642
Maine	4,143	3,348	23.7%	0	0	3,567	2,741	32	31	544	575
Massachusetts	15,776	15,010	5.1%	115	79	14,794	14,203	678	530	189	198
New Hampshire	4,502	4,466	0.8%	0	0	4,465	4,425	9	12	28	29
Rhode Island	6,964	8,641	-19.4%	0	0	6,765	8,439	48	47	151	155
Vermont	1	2	-27.0%	1	1	0	0	1	1	0	0
Middle Atlantic	223,870	212,550	5.3%	11,357	12,422	207,389	196,556	1,197	913	3,928	2,659
New Jersey	33,394	29,543	13.0%	128	97	32,645	28,924	240	177	381	344
New York	60,312	56,343	7.0%	11,193	12,311	47,729	42,862	786	607	603	563
Pennsylvania	130,164	126,665	2.8%	35	14	127,014	124,770	170	130	2,944	1,751
East North Central	185,235	156,500	18.4%	63,962	51,943	115,116	98,603	1,534	1,542	4,624	4,412
Illinois	19,789	20,665	-4.2%	2,245	2,101	16,284	17,289	424	486	836	788
Indiana	32,121	27,600	16.4%	13,178	9,755	16,641	15,807	166	176	2,136	1,863
Michigan	41,184	30,513	35.0%	17,154	11,772	22,815	17,570	653	573	561	598
Ohio	68,865	56,381	22.1%	9,931	8,813	58,423	47,069	231	235	280	263
Wisconsin	23,276	21,342	9.1%	21,454	19,502	953	867	59	72	811	901
West North Central	31,727	32,038	-1.0%	25,482	24,646	4,616	6,068	356	334	1,273	991
Iowa	7,339	6,464	13.5%	6,704	5,837	0	0	96	81	539	545
Kansas	3,363	2,662	26.3%	3,107	2,436	0	0	0	0	255	226
Minnesota	8,736	12,791	-31.7%	5,523	8,300	2,718	4,252	113	107	381	131
Missouri	8,152	6,059	34.5%	6,063	4,059	1,898	1,816	146	143	45	41
Nebraska	1,260	1,173	7.4%	1,260	1,171	0	0	1	3	0	0
North Dakota	1,453	1,578	-7.9%	1,441	1,562	0	0	0	0	13	15
South Dakota	1,424	1,312	8.6%	1,384	1,280	0	0	0	0	41	32
South Atlantic	405,126	384,065	5.5%	339,011	322,881	60,821	55,405	586	574	4,708	5,205
Delaware	4,750	3,734	27.2%	51	20	3,831	2,956	0	0	868	758
District of Columbia	80	137	-41.4%	0	0	0	0	80	137	0	0
Florida	193,310	182,620	5.9%	181,529	173,101	10,165	7,674	108	69	1,508	1,777
Georgia	59,849	56,673	5.6%	46,494	46,566	12,594	9,335	0	0	760	772
Maryland	13,950	13,977	-0.2%	3,923	3,462	9,736	10,246	241	221	51	48
North Carolina	58,131	47,445	22.5%	49,018	38,977	8,815	8,150	136	151	163	166
South Carolina	24,144	23,242	3.9%	22,381	22,358	1,649	723	0	0	114	161
Virginia	48,802	53,611	-9.0%	35,195	38,048	12,819	14,745	22	-4	765	823
West Virginia	2,110	2,626	-19.6%	420	349	1,211	1,577	0	0	479	700
East South Central	147,375	131,627	12.0%	107,451	96,747	36,535	31,034	193	196	3,195	3,649
Alabama	62,217	54,448	14.3%	24,992	22,318	35,871	30,448	0	0	1,355	1,683
Kentucky	16,918	14,572	16.1%	16,047	13,757	651	562	0	0	220	253
Mississippi	51,719	48,621	6.4%	51,211	48,074	8	7	0	0	500	540
Tennessee	16,521	13,986	18.1%	15,201	12,599	6	18	193	196	1,121	1,173
West South Central	390,475	351,568	11.1%	144,133	123,203	179,922	163,741	876	817	65,543	63,808
Arkansas	26,037	20,629	26.2%	24,509	19,347	1,276	999	39	42	213	241
Louisiana	72,275	63,961	13.0%	42,918	37,006	3,455	3,190	146	184	25,756	23,582
Oklahoma	36,023	33,857	6.4%	23,455	21,925	12,062	11,436	-1	0	508	496
Texas	256,140	233,121	9.9%	53,252	44,925	163,129	148,116	693	591	39,067	39,489
Mountain	114,153	116,487	-2.0%	88,782	90,270	23,399	24,170	424	432	1,548	1,614
Arizona	45,053	48,053	-6.2%	31,062	33,643	13,861	14,278	130	132	0	0
Colorado	15,446	14,560	6.1%	13,111	12,201	2,157	2,173	3	3	174	184
Idaho	4,335	4,935	-12.2%	2,521	2,948	1,656	1,823	39	39	119	126
Montana	729	528	37.9%	582	402	144	123	0	0	3	4
Nevada	24,844	26,130	-4.9%	22,464	23,547	1,967	2,186	62	62	352	335
New Mexico	10,978	10,093	8.8%	7,348	6,440	3,500	3,473	111	133	19	48
Utah	11,107	10,686	3.9%	10,671	10,225	113	115	79	65	244	282
Wyoming	1,661	1,501	10.7%	1,023	865	0	1	0	0	638	635
Pacific Contiguous	129,959	135,313	-4.0%	48,902	51,782	69,318	70,684	1,611	1,606	10,128	11,240
California	96,372	97,427	-1.1%	29,465	29,983	56,078	55,545	1,561	1,550	9,268	10,349
Oregon	19,055	21,297	-10.5%	10,125	10,875	8,818	10,308	40	43	71	70
Washington	14,532	16,589	-12.4%	9,311	10,924	4,422	4,831	10	13	789	822
Pacific Noncontiguous	3,229	3,085	4.7%	3,157	3,020	0	0	0	0	72	65
Alaska	3,229	3,085	4.7%	3,157	3,020	0	0	0	0	72	65
Hawaii	0	0	-	0	0	0	0	0	0	0	0
U.S. Total	1,687,067	1,579,190	6.8%	832,421	777,057	750,266	699,547	7,830	7,346	96,550	95,240

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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 Gases by State, by Sector, 2022 and 2021 (Thousand Megawatthours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
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	652	643	1.5%	0	0	2	0	0	0	652	641
New Jersey	120	92	30.3%	0	0	0	0	0	0	120	92
New York	0	0	--	0	0	0	0	0	0	0	0
Pennsylvania	533	551	-3.3%	0	0	2	0	0	0	533	549
East North Central	4,477	4,510	-0.7%	0	12	1,984	1,862	0	0	2,493	2,637
Illinois	265	242	9.5%	0	0	0	0	0	0	265	242
Indiana	2,145	2,254	-4.9%	0	0	0	0	0	0	2,145	2,254
Michigan	1,330	1,202	10.6%	0	12	1,330	1,190	0	0	0	0
Ohio	738	813	-9.2%	0	0	654	672	0	0	84	141
Wisconsin	0	0	--	0	0	0	0	0	0	0	0
West North Central	31	38	-19.7%	0	0	0	0	0	0	31	38
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	31	38	-19.7%	0	0	0	0	0	0	31	38
South Dakota	0	0	--	0	0	0	0	0	0	0	0
South Atlantic	234	195	19.8%	0	0	0	0	0	0	234	195
Delaware	198	142	40.0%	0	0	0	0	0	0	198	142
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	0	0	-14.4%	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	35	53	-34.0%	0	0	0	0	0	0	35	53
East South Central	11	11	7.2%	0	0	0	0	0	0	11	11
Alabama	0	0	-93.3%	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	7.8%	0	0	0	0	0	0	11	11
West South Central	4,312	4,009	7.6%	0	0	1,463	1,417	0	0	2,848	2,591
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	1,882	1,791	5.1%	0	0	0	0	0	0	1,882	1,791
Oklahoma	0	0	--	0	0	0	0	0	0	0	0
Texas	2,430	2,218	9.6%	0	0	1,463	1,417	0	0	967	801
Mountain	339	385	-12.1%	0	0	4	12	0	0	334	373
Arizona	0	0	--	0	0	0	0	0	0	0	0
Colorado	3	6	-59.6%	0	0	0	0	0	0	3	6
Idaho	0	0	--	0	0	0	0	0	0	0	0
Montana	4	13	-67.3%	0	0	4	12	0	0	0	1
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	5	-42.6%	0	0	0	0	0	0	3	5
Wyoming	329	360	-8.8%	0	0	0	0	0	0	329	360
Pacific Contiguous	1,667	1,607	3.7%	0	0	0	0	0	0	1,667	1,607
California	1,412	1,369	3.1%	0	0	0	0	0	0	1,412	1,369
Oregon	0	0	--	0	0	0	0	0	0	0	0
Washington	255	238	7.4%	0	0	0	0	0	0	255	238
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	11,722	11,397	2.9%	0	12	3,451	3,292	0	0	8,271	8,093

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, 2022 and 2021 (Thousand Megawatthours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
New England	27,386	27,073	1.2%	0	0	27,386	27,073	0	0	0	0
Connecticut	16,464	17,217	-4.4%	0	0	16,464	17,217	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	10,922	9,856	10.8%	0	0	10,922	9,856	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	131,297	135,221	-2.9%	0	0	131,297	135,221	0	0	0	0
New Jersey	28,319	28,142	0.6%	0	0	28,319	28,142	0	0	0	0
New York	26,812	31,177	-14.0%	0	0	26,812	31,177	0	0	0	0
Pennsylvania	76,166	75,903	0.3%	0	0	76,166	75,903	0	0	0	0
East North Central	151,787	158,786	-4.4%	23,283	27,324	128,504	131,462	0	0	0	0
Illinois	98,870	96,994	1.9%	0	0	98,870	96,994	0	0	0	0
Indiana	0	0	--	0	0	0	0	0	0	0	0
Michigan	26,013	34,338	-24.2%	23,283	27,324	2,730	7,015	0	0	0	0
Ohio	16,827	17,483	-3.8%	0	0	16,827	17,483	0	0	0	0
Wisconsin	10,077	9,970	1.1%	0	0	10,077	9,970	0	0	0	0
West North Central	38,171	33,871	12.7%	38,171	33,871	0	0	0	0	0	0
Iowa	0	0	--	0	0	0	0	0	0	0	0
Kansas	8,982	8,575	4.7%	8,982	8,575	0	0	0	0	0	0
Minnesota	14,696	14,123	4.1%	14,696	14,123	0	0	0	0	0	0
Missouri	8,875	4,292	106.8%	8,875	4,292	0	0	0	0	0	0
Nebraska	5,619	6,881	-18.3%	5,619	6,881	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	204,864	203,921	0.5%	190,053	188,928	14,811	14,994	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	30,768	29,515	4.2%	30,768	29,515	0	0	0	0	0	0
Georgia	34,074	33,952	0.4%	34,074	33,952	0	0	0	0	0	0
Maryland	14,811	14,994	-1.2%	0	0	14,811	14,994	0	0	0	0
North Carolina	42,644	43,118	-1.1%	42,644	43,118	0	0	0	0	0	0
South Carolina	54,370	53,771	1.1%	54,370	53,771	0	0	0	0	0	0
Virginia	28,197	28,572	-1.3%	28,197	28,572	0	0	0	0	0	0
West Virginia	0	0	--	0	0	0	0	0	0	0	0
East South Central	86,549	93,139	-7.1%	86,549	93,139	0	0	0	0	0	0
Alabama	42,314	46,036	-8.1%	42,314	46,036	0	0	0	0	0	0
Kentucky	0	0	--	0	0	0	0	0	0	0	0
Mississippi	8,600	11,772	-26.9%	8,600	11,772	0	0	0	0	0	0
Tennessee	35,635	35,330	0.9%	35,635	35,330	0	0	0	0	0	0
West South Central	72,095	71,016	1.5%	30,488	30,804	41,607	40,211	0	0	0	0
Arkansas	14,324	13,556	5.7%	14,324	13,556	0	0	0	0	0	0
Louisiana	16,165	17,249	-6.3%	16,165	17,249	0	0	0	0	0	0
Oklahoma	0	0	--	0	0	0	0	0	0	0	0
Texas	41,607	40,211	3.5%	0	0	41,607	40,211	0	0	0	0
Mountain	31,943	31,630	1.0%	31,943	31,630	0	0	0	0	0	0
Arizona	31,943	31,630	1.0%	31,943	31,630	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	27,445	24,989	9.8%	27,445	24,989	0	0	0	0	0	0
California	17,593	16,477	6.8%	17,593	16,477	0	0	0	0	0	0
Oregon	0	0	--	0	0	0	0	0	0	0	0
Washington	9,852	8,511	15.7%	9,852	8,511	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	771,537	779,645	-1.0%	427,933	430,683	343,604	348,961	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, 2022 and 2021 (Thousand Megawatthours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
	Generation at Utility Scale Facilities			Electric Utilities		Independent Power Producers		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
New England	6,602	6,258	5.5%	622	684	5,895	5,488	5	6	79	80
Connecticut	312	478	-34.6%	29	44	283	434	0	0	0	0
Maine	3,063	2,541	20.6%	1	2	2,983	2,459	0	0	79	80
Massachusetts	877	1,118	-21.5%	209	278	663	834	5	6	0	0
New Hampshire	1,201	1,025	17.2%	11	12	1,190	1,013	0	0	0	0
Rhode Island	7	4	65.5%	0	0	7	4	0	0	0	0
Vermont	1,141	1,093	4.4%	373	349	768	744	0	0	0	0
Middle Atlantic	30,089	31,919	-5.7%	23,405	24,388	6,639	7,459	5	8	40	64
New Jersey	5	18	-71.3%	0	0	5	18	0	0	0	0
New York	27,432	28,765	-4.6%	23,312	24,293	4,074	4,401	5	8	40	64
Pennsylvania	2,653	3,135	-15.4%	93	95	2,560	3,040	0	0	0	0
East North Central	4,370	4,579	-4.6%	3,854	3,991	406	454	4	1	107	132
Illinois	115	129	-10.4%	61	67	54	61	0	1	0	0
Indiana	371	387	-4.2%	367	387	0	0	4	0	0	0
Michigan	1,386	1,340	3.4%	1,318	1,262	58	67	0	0	10	11
Ohio	507	578	-12.3%	322	370	185	208	0	0	0	0
Wisconsin	1,991	2,145	-7.2%	1,785	1,905	109	119	0	0	97	122
West North Central	10,475	11,481	-8.8%	10,148	11,196	254	234	0	0	73	51
Iowa	1,010	980	3.0%	1,004	974	5	6	0	0	0	0
Kansas	24	30	-21.0%	0	0	24	30	0	0	0	0
Minnesota	950	679	39.9%	652	430	225	198	0	0	73	51
Missouri	1,384	1,697	-18.5%	1,384	1,697	0	0	0	0	0	0
Nebraska	1,057	1,123	-5.9%	1,057	1,123	0	0	0	0	0	0
North Dakota	1,791	1,989	-9.9%	1,791	1,989	0	0	0	0	0	0
South Dakota	4,259	4,983	-14.5%	4,259	4,983	0	0	0	0	0	0
South Atlantic	14,839	17,397	-14.7%	11,184	13,242	3,104	3,602	12	16	539	537
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	231	252	-8.2%	231	252	0	0	0	0	0	0
Georgia	3,177	3,661	-13.2%	3,158	3,633	6	8	0	0	13	20
Maryland	1,780	2,117	-15.9%	0	0	1,780	2,117	0	0	0	0
North Carolina	4,686	5,813	-19.4%	3,927	4,907	748	891	11	14	0	0
South Carolina	2,181	2,544	-14.3%	2,119	2,460	61	82	1	2	0	0
Virginia	1,137	1,306	-12.9%	1,027	1,194	110	111	0	0	0	0
West Virginia	1,647	1,705	-3.4%	722	796	400	392	0	0	526	516
East South Central	23,916	27,269	-12.3%	23,123	26,311	793	957	0	0	0	0
Alabama	10,188	11,521	-11.6%	10,188	11,521	0	0	0	0	0	0
Kentucky	4,530	4,876	-7.1%	4,516	4,861	14	16	0	0	0	0
Mississippi	0	0	-	0	0	0	0	0	0	0	0
Tennessee	9,198	10,871	-15.4%	8,419	9,930	779	942	0	0	0	0
West South Central	6,774	8,987	-24.6%	5,757	7,780	1,018	1,206	0	1	0	0
Arkansas	3,469	4,029	-13.9%	3,411	3,968	57	60	0	0	0	0
Louisiana	916	1,109	-17.4%	0	0	916	1,109	0	0	0	0
Oklahoma	1,770	2,766	-36.0%	1,770	2,766	0	0	0	0	0	0
Texas	620	1,082	-42.7%	576	1,045	44	37	0	1	0	0
Mountain	28,035	28,176	-0.5%	26,929	27,113	1,059	1,014	47	49	0	0
Arizona	5,298	5,973	-11.3%	5,298	5,973	0	0	0	0	0	0
Colorado	1,345	1,598	-15.9%	1,142	1,411	187	173	15	14	0	0
Idaho	8,360	7,995	4.6%	7,686	7,321	674	675	0	0	0	0
Montana	9,886	9,258	6.8%	9,762	9,149	124	110	0	0	0	0
Nevada	1,686	1,944	-13.3%	1,629	1,905	57	39	0	0	0	0
New Mexico	121	123	-1.7%	121	123	0	0	0	0	0	0
Utah	595	494	20.6%	556	450	8	9	31	35	0	0
Wyoming	745	790	-5.8%	735	781	10	9	0	0	0	0
Pacific Contiguous	127,865	113,717	12.4%	126,396	112,455	1,461	1,253	8	9	0	0
California	17,644	14,678	20.2%	16,606	13,873	1,030	796	8	9	0	0
Oregon	31,304	27,660	13.2%	31,096	27,461	208	199	0	0	0	0
Washington	78,916	71,379	10.6%	78,693	71,121	223	259	0	0	0	0
Pacific Noncontiguous	1,824	1,804	1.1%	1,536	1,529	43	34	183	169	61	72
Alaska	1,713	1,689	1.5%	1,530	1,520	0	0	183	169	0	0
Hawaii	110	115	-4.3%	6	9	43	34	0	0	61	72
U.S. Total	254,789	251,585	1.3%	232,953	228,689	20,673	21,702	263	258	899	936

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

NM = Not meaningful due to large relative standard error or excessive percentage change.

Notes: See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923.

Negative generation denotes that electric power consumed for plant use exceeds gross generation.

Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.

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

Table 3.15. Utility Scale Facility Net Generation from Renewable Sources Excluding Hydroelectric by State, by Sector, 2022 and 2021 (Thousand Megawatthours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
	Generation at Utility Scale Facilities			Electric Utilities		Independent Power Producers		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
New England	12,149	11,583	4.9%	678	686	10,113	9,973	575	137	783	786
Connecticut	940	1,035	-9.2%	1	2	933	1,029	6	3	0	0
Maine	4,961	4,671	6.2%	0	0	4,150	3,860	32	29	778	782
Massachusetts	3,087	2,769	11.5%	142	139	2,458	2,570	482	55	5	5
New Hampshire	1,339	1,437	-6.8%	0	0	1,294	1,395	45	42	0	0
Rhode Island	789	664	18.8%	0	0	782	658	7	7	0	0
Vermont	1,034	1,008	2.6%	536	544	496	462	2	2	0	0
Middle Atlantic	15,839	14,768	7.3%	119	115	13,786	13,438	1,364	618	571	597
New Jersey	2,204	2,105	4.7%	119	115	1,594	1,706	485	278	6	7
New York	8,233	7,219	14.1%	0	0	7,386	6,843	666	206	180	170
Pennsylvania	5,403	5,444	-0.8%	0	0	4,805	4,889	212	135	385	420
East North Central	57,432	46,293	24.1%	8,205	6,587	47,786	38,245	157	163	1,283	1,297
Illinois	25,325	20,011	26.6%	112	173	25,208	19,833	5	5	0	0
Indiana	11,453	8,859	29.3%	737	660	10,658	8,118	11	21	47	60
Michigan	12,268	10,489	17.0%	5,172	4,093	6,435	5,731	43	46	618	620
Ohio	4,605	3,902	18.0%	12	14	4,264	3,561	17	17	312	310
Wisconsin	3,780	3,032	24.7%	2,171	1,648	1,222	1,002	80	76	306	307
West North Central	141,512	119,566	18.4%	52,251	44,032	88,264	74,524	265	229	732	782
Iowa	46,367	37,525	23.6%	34,490	28,563	11,783	8,886	23	12	71	63
Kansas	29,823	25,813	15.5%	2,117	2,170	27,676	23,626	16	16	13	3
Minnesota	18,179	15,421	17.9%	5,222	3,814	12,177	10,773	164	144	616	690
Missouri	7,790	6,774	15.0%	3,027	2,372	4,717	4,358	43	41	3	3
Nebraska	12,776	9,745	31.1%	171	175	12,588	9,555	18	15	0	0
North Dakota	16,250	14,937	8.8%	5,624	5,455	10,626	9,480	0	0	0	2
South Dakota	10,326	9,351	10.4%	1,600	1,483	8,697	7,846	0	0	29	23
South Atlantic	58,161	51,215	13.6%	15,792	12,654	31,985	28,319	1,107	570	9,278	9,672
Delaware	147	136	8.6%	7	6	113	112	7	6	21	11
District of Columbia	80	74	8.1%	0	0	22	18	58	56	0	0
Florida	15,348	13,277	15.6%	11,129	8,790	2,076	2,488	459	178	1,684	1,820
Georgia	12,674	10,714	18.3%	688	589	8,100	6,182	2	2	3,885	3,940
Maryland	1,524	1,524	0.0%	8	8	1,489	1,491	26	25	0	0
North Carolina	13,636	12,660	7.7%	796	762	11,575	10,543	118	167	1,147	1,189
South Carolina	4,414	4,284	3.0%	64	66	3,040	2,860	0	0	1,310	1,358
Virginia	8,322	6,912	20.4%	3,100	2,434	3,553	2,989	437	135	1,232	1,353
West Virginia	2,017	1,634	23.4%	0	0	2,017	1,634	0	0	0	0
East South Central	7,506	7,124	5.4%	203	172	2,150	1,391	7	4	5,147	5,557
Alabama	4,085	3,605	7.3%	25	24	912	514	0	0	3,147	3,267
Kentucky	494	461	7.3%	133	145	17	16	3	0	343	300
Mississippi	1,801	1,791	0.5%	42	0	471	436	0	0	1,288	1,356
Tennessee	1,126	1,066	5.6%	3	3	750	426	4	4	369	634
West South Central	180,499	152,219	18.6%	3,386	2,189	173,120	145,938	62	76	3,931	4,016
Arkansas	1,578	1,321	19.4%	254	6	505	491	20	23	799	800
Louisiana	2,273	2,286	-0.6%	41	35	235	195	0	0	1,997	2,056
Oklahoma	37,946	32,935	15.2%	2,452	1,758	35,198	30,878	-9	0	304	299
Texas	138,702	115,677	19.9%	639	390	137,182	114,374	51	53	831	859
Mountain	80,791	69,644	16.0%	15,647	13,598	64,627	55,044	121	629	395	373
Arizona	8,838	8,521	3.7%	697	732	8,099	7,770	23	19	19	0
Colorado	19,474	17,025	14.4%	4,514	4,286	14,950	12,726	8	10	2	3
Idaho	3,527	3,828	-7.9%	181	189	2,970	3,263	30	31	345	345
Montana	4,081	3,538	15.3%	1,074	931	2,988	2,587	0	0	19	21
Nevada	13,311	10,893	22.2%	193	185	13,060	10,151	47	553	11	4
New Mexico	16,480	12,407	32.8%	3,161	2,727	13,317	9,678	2	2	0	0
Utah	5,114	4,805	6.4%	270	211	4,833	4,579	11	14	0	0
Wyoming	9,966	8,627	15.5%	5,556	4,337	4,410	4,290	0	0	0	0
Pacific Contiguous	90,294	89,468	0.9%	7,471	9,026	79,457	77,112	987	949	2,380	2,382
California	69,916	66,585	5.0%	1,855	2,153	66,167	62,747	945	899	949	785
Oregon	10,921	12,025	-9.2%	1,346	1,817	9,031	9,656	32	39	513	513
Washington	9,457	10,859	-12.9%	4,270	5,056	4,258	4,709	10	11	918	1,084
Pacific Noncontiguous	1,846	1,802	2.5%	180	191	1,456	1,410	210	201	0	0
Alaska	180	170	5.8%	81	87	58	45	41	38	0	0
Hawaii	1,666	1,632	2.1%	99	104	1,398	1,365	169	163	0	0
U.S. Total	646,028	563,682	14.6%	103,930	89,249	512,744	445,396	4,854	3,576	24,500	25,461

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

NM = Not meaningful due to large relative standard error or excessive percentage change.

Notes: See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923.

Negative generation denotes that electric power consumed for plant use exceeds gross generation.

Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.

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

Table 3.16. Utility Scale Facility Net Generation from Hydroelectric (Pumped Storage) Power by State, by Sector, 2022 and 2021 (Thousand Megawatthours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
	Generation at Utility Scale Facilities			Electric Utilities		Independent Power Producers		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
New England	-398	-424	-6.0%	0	0	-398	-424	0	0	0	0
Connecticut	1	0	202.3%	0	0	1	0	0	0	0	0
Maine	0	0	--	0	0	0	0	0	0	0	0
Massachusetts	-400	-424	-5.8%	0	0	-400	-424	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	-1,328	-1,193	11.3%	-451	-382	-878	-812	0	0	0	0
New Jersey	-136	-120	13.1%	0	0	-136	-120	0	0	0	0
New York	-451	-382	18.1%	-451	-382	0	0	0	0	0	0
Pennsylvania	-742	-692	7.3%	0	0	-742	-692	0	0	0	0
East North Central	-868	-715	21.4%	-868	-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	-868	-715	21.4%	-868	-715	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	165	1	NM	165	1	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	165	1	NM	165	1	0	0	0	0	0	0
Nebraska	0	0	--	0	0	0	0	0	0	0	0
North Dakota	0	0	--	0	0	0	0	0	0	0	0
South Dakota	0	0	--	0	0	0	0	0	0	0	0
South Atlantic	-3,015	-1,941	55.4%	-3,015	-1,941	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	-643	-134	380.9%	-643	-134	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	-870	-768	13.3%	-870	-768	0	0	0	0	0	0
Virginia	-1,502	-1,039	44.6%	-1,502	-1,039	0	0	0	0	0	0
West Virginia	0	0	--	0	0	0	0	0	0	0	0
East South Central	-491	-577	-14.9%	-491	-577	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	-491	-577	-14.9%	-491	-577	0	0	0	0	0	0
West South Central	-23	-3	610.7%	-23	-3	0	0	0	0	0	0
Arkansas	67	84	-19.4%	67	84	0	0	0	0	0	0
Louisiana	0	0	--	0	0	0	0	0	0	0	0
Oklahoma	-90	-87	4.0%	-90	-87	0	0	0	0	0	0
Texas	0	0	--	0	0	0	0	0	0	0	0
Mountain	76	55	36.8%	76	55	0	0	0	0	0	0
Arizona	97	91	6.7%	97	91	0	0	0	0	0	0
Colorado	-21	-36	-40.2%	-21	-36	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	-145	-315	-54.1%	-145	-315	0	0	0	0	0	0
California	-155	-317	-51.2%	-155	-317	0	0	0	0	0	0
Oregon	0	0	--	0	0	0	0	0	0	0	0
Washington	10	2	411.2%	10	2	0	0	0	0	0	0
Pacific Noncontiguous	0	0	--	0	0	0	0	0	0	0	0
Alaska	0	0	--	0	0	0	0	0	0	0	0
Hawaii	0	0	--	0	0	0	0	0	0	0	0
U.S. Total	-6,028	-5,112	17.9%	-4,752	-3,876	-1,276	-1,235	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, 2022 and 2021 (Thousand Megawatthours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
New England	1,754	1,820	-3.7%	2	2	1,051	1,653	556	35	145	129
Connecticut	492	571	-13.9%	0	0	492	571	0	0	0	0
Maine	280	267	4.9%	0	0	96	103	40	35	145	129
Massachusetts	930	924	0.6%	-1	-1	415	924	516	0	0	0
New Hampshire	50	55	-9.9%	0	0	50	55	0	0	0	0
Rhode Island	-1	0	--	0	0	-1	0	0	0	0	0
Vermont	3	2	31.4%	3	3	0	0	0	0	0	0
Middle Atlantic	2,353	2,457	-4.2%	0	0	937	1,914	1,412	518	4	25
New Jersey	519	590	-12.1%	0	0	114	394	401	171	4	25
New York	991	963	2.9%	0	0	192	728	798	235	0	0
Pennsylvania	843	904	-6.8%	0	0	631	793	212	111	0	0
East North Central	902	907	-0.5%	21	22	70	51	65	80	747	753
Illinois	263	246	7.0%	0	0	-7	-16	0	0	270	262
Indiana	467	489	-4.5%	0	0	0	0	12	24	455	465
Michigan	147	143	2.8%	0	0	81	72	53	56	13	16
Ohio	3	3	-7.7%	0	-1	-5	-4	0	0	8	8
Wisconsin	22	25	-12.4%	22	23	0	0	0	0	NM	2
West North Central	324	373	-13.2%	134	170	149	159	40	39	1	5
Iowa	0	0	-18.4%	0	0	0	0	0	0	0	0
Kansas	1	5	-83.3%	0	0	0	0	0	0	1	5
Minnesota	308	313	-1.7%	119	116	149	159	40	39	0	0
Missouri	0	0	-100.0%	0	0	0	0	0	0	0	0
Nebraska	0	0	275.0%	0	0	0	0	0	0	0	0
North Dakota	15	54	-72.3%	15	54	0	0	0	0	0	0
South Dakota	0	0	--	0	0	0	0	0	0	0	0
South Atlantic	3,514	3,994	-12.0%	-37	-2	1,287	2,240	1,061	339	1,204	1,417
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	2,402	2,697	-10.9%	-37	-2	1,003	1,441	538	190	898	1,067
Georgia	58	79	-26.2%	0	0	-4	0	0	0	62	79
Maryland	294	376	-22.0%	0	0	294	376	0	0	0	0
North Carolina	208	289	-27.9%	-1	0	0	52	0	0	209	237
South Carolina	42	42	-0.5%	0	0	7	9	0	0	35	33
Virginia	523	528	-0.9%	0	0	0	379	523	149	0	0
West Virginia	-12	-16	-24.1%	0	0	-12	-16	0	0	0	0
East South Central	58	77	-25.1%	54	70	0	0	0	0	4	7
Alabama	0	0	-278.6%	0	0	0	0	0	0	0	0
Kentucky	54	70	-23.1%	54	70	0	0	0	0	0	0
Mississippi	0	0	--	0	0	0	0	0	0	0	0
Tennessee	4	7	-45.4%	0	0	0	0	0	0	4	7
West South Central	1,078	979	10.1%	255	205	-26	20	-11	0	860	755
Arkansas	5	8	-35.3%	0	0	0	0	0	0	5	8
Louisiana	715	550	30.0%	241	206	0	0	0	0	474	344
Oklahoma	4	2	152.9%	15	0	0	0	-11	0	0	2
Texas	353	420	-15.8%	-1	-1	-26	20	0	0	380	401
Mountain	587	665	-11.7%	74	58	243	283	0	0	270	324
Arizona	-11	-8	48.6%	-4	-1	-8	-6	0	0	0	0
Colorado	48	55	-12.3%	0	0	2	7	0	0	47	48
Idaho	51	62	-18.4%	0	0	0	0	0	0	51	62
Montana	272	283	-3.6%	0	0	272	283	0	0	0	0
Nevada	6	27	-77.7%	30	28	-24	-1	0	0	0	0
New Mexico	0	0	12.4%	0	0	0	0	0	0	0	0
Utah	146	162	-10.0%	48	32	0	0	0	0	97	130
Wyoming	76	84	-9.7%	0	0	0	0	0	0	76	84
Pacific Contiguous	290	677	-57.2%	-26	-14	-220	131	68	0	469	560
California	196	576	-65.9%	-26	-13	-314	29	68	0	469	560
Oregon	35	35	0.0%	0	0	36	36	0	0	0	0
Washington	58	66	-11.4%	0	0	58	66	0	0	0	0
Pacific Noncontiguous	255	192	33.1%	57	-4	-3	-2	201	198	0	0
Alaska	-3	-4	-21.6%	-3	-4	0	0	0	0	0	0
Hawaii	259	196	31.9%	60	0	-3	-2	201	198	0	0
U.S. Total	11,114	12,140	-8.5%	534	508	3,487	6,449	3,391	1,209	3,702	3,975

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 3.18. Utility Scale Facility Net Generation from Wind by State, by Sector, 2022 and 2021 (Thousand Megawatthours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
New England	4,046	3,780	7.0%	248	215	3,766	3,535	32	30	0	0
Connecticut	13	13	0.6%	0	0	13	13	0	0	0	0
Maine	2,716	2,544	6.8%	0	0	2,716	2,544	0	0	0	0
Massachusetts	216	209	3.4%	51	53	140	133	25	23	0	0
New Hampshire	482	504	-4.3%	0	0	482	504	0	0	0	0
Rhode Island	209	172	21.6%	0	0	202	165	7	7	0	0
Vermont	409	338	21.0%	197	162	212	176	0	0	0	0
Middle Atlantic	8,161	7,631	6.9%	0	0	8,157	7,626	3	3	2	2
New Jersey	22	20	9.6%	0	0	22	20	0	0	0	0
New York	4,568	4,156	9.9%	0	0	4,563	4,151	3	3	2	2
Pennsylvania	3,572	3,455	3.4%	0	0	3,572	3,455	0	0	0	0
East North Central	47,600	38,867	22.5%	6,264	5,032	41,195	33,712	32	29	109	94
Illinois	23,494	19,133	22.8%	14	11	23,475	19,117	5	5	0	0
Indiana	9,985	7,857	27.1%	0	0	9,985	7,857	0	0	0	0
Michigan	9,151	7,697	18.9%	5,094	4,007	4,057	3,690	0	0	0	0
Ohio	3,154	2,587	21.9%	5	7	3,044	2,489	4	3	101	88
Wisconsin	1,816	1,593	13.9%	1,151	1,007	633	559	24	21	8	7
West North Central	137,224	115,451	18.9%	51,766	43,675	85,397	71,731	47	43	13	3
Iowa	45,761	37,098	23.4%	34,299	28,529	11,457	8,566	5	3	0	0
Kansas	29,687	25,694	15.5%	2,108	2,167	27,551	23,509	16	16	13	3
Minnesota	15,091	12,271	23.0%	5,072	3,640	9,992	8,608	26	24	0	0
Missouri	7,525	6,534	15.2%	2,971	2,312	4,553	4,223	0	0	0	0
Nebraska	12,614	9,592	31.5%	92	90	12,522	9,502	0	0	0	0
North Dakota	16,250	14,935	8.8%	5,624	5,455	10,626	9,480	0	0	0	0
South Dakota	10,295	9,327	10.4%	1,600	1,483	8,695	7,844	0	0	0	0
South Atlantic	3,106	2,711	14.6%	51	50	3,051	2,656	4	5	0	0
Delaware	4	5	-9.7%	0	0	0	0	4	5	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	0	0	--	0	0	0	0	0	0	0	0
Georgia	0	0	--	0	0	0	0	0	0	0	0
Maryland	498	517	-3.8%	0	0	498	517	0	0	0	0
North Carolina	547	515	6.2%	0	0	547	515	0	0	0	0
South Carolina	0	0	--	0	0	0	0	0	0	0	0
Virginia	51	50	2.6%	51	50	0	0	0	0	0	0
West Virginia	2,007	1,624	23.6%	0	0	2,007	1,624	0	0	0	0
East South Central	15	28	-47.3%	0	0	15	28	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	15	28	-47.3%	0	0	15	28	0	0	0	0
West South Central	152,340	132,015	15.4%	2,570	1,887	149,723	130,073	47	50	0	4
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	0	0	--	0	0	0	0	0	0	0	0
Oklahoma	37,553	32,540	15.4%	2,374	1,685	35,179	30,855	0	0	0	0
Texas	114,787	99,474	15.4%	196	202	114,544	99,218	47	50	0	4
Mountain	50,193	43,073	16.5%	14,047	12,041	36,142	31,027	2	2	2	3
Arizona	1,564	1,600	-2.2%	0	0	1,564	1,600	0	0	0	0
Colorado	16,911	15,126	11.8%	4,501	4,272	12,409	10,851	0	0	2	3
Idaho	2,442	2,680	-8.9%	163	175	2,279	2,505	0	0	0	0
Montana	4,022	3,473	15.8%	1,065	919	2,957	2,553	0	0	0	0
Nevada	316	340	-7.2%	0	0	316	340	0	0	0	0
New Mexico	14,435	10,581	36.4%	2,762	2,338	11,670	8,241	2	2	0	0
Utah	723	825	-12.3%	0	0	723	825	0	0	0	0
Wyoming	9,780	8,448	15.8%	5,556	4,337	4,224	4,111	0	0	0	0
Pacific Contiguous	30,848	33,851	-8.9%	5,935	7,351	24,902	26,487	6	6	4	6
California	14,638	15,177	-3.6%	693	873	13,935	14,292	6	6	4	6
Oregon	8,149	9,376	-13.1%	1,284	1,751	6,865	7,624	0	0	0	0
Washington	8,061	9,298	-13.3%	3,959	4,726	4,102	4,571	0	0	0	0
Pacific Noncontiguous	765	790	-3.2%	81	87	684	703	0	0	0	0
Alaska	139	132	5.3%	81	87	58	45	0	0	0	0
Hawaii	625	658	-4.9%	0	0	625	658	0	0	0	0
U.S. Total	434,297	378,197	14.8%	80,962	70,338	353,032	307,579	173	168	130	112

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Negative generation denotes that electric power consumed for plant use exceeds gross generation.

Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.

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

Table 3.19. Utility Scale Facility Net Generation from Biomass by State, by Sector, 2022 and 2021 (Thousand Megawatthours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector					
	Year 2022	Year 2021	Percentage Change	Electric Utilities		Independent Power Producers		Year 2022	Year 2021	Year 2022	Year 2021				
				Generation at Utility Scale Facilities		Generation at Utility Scale Facilities						Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
				Year 2022	Year 2021	Year 2022	Year 2021					Year 2022	Year 2021	Year 2022	Year 2021
New England	4,757	5,332	-10.8%	277	326	3,175	4,126	527	98	778	782				
Connecticut	514	757	-32.1%	0	0	514	757	0	0	0	0				
Maine	1,813	1,969	-7.9%	0	0	1,002	1,158	32	29	778	782				
Massachusetts	937	973	-3.7%	0	0	489	947	448	26	0	0				
New Hampshire	853	929	-8.2%	0	0	807	887	45	42	0	0				
Rhode Island	218	208	4.9%	0	0	218	208	0	0	0	0				
Vermont	422	496	-14.9%	277	326	143	168	2	2	0	0				
Middle Atlantic	4,137	4,377	-5.5%	0	0	2,399	3,330	1,194	473	544	574				
New Jersey	863	708	-6.3%	0	0	329	558	335	149	0	0				
New York	1,880	1,903	-1.2%	0	0	1,058	1,549	653	193	168	162				
Pennsylvania	1,593	1,766	-9.8%	0	0	1,011	1,222	206	131	376	413				
East North Central	4,610	4,877	-5.5%	877	836	2,447	2,717	114	123	1,173	1,201				
Illinois	283	364	-22.4%	96	159	186	205	0	0	0	0				
Indiana	386	429	-10.0%	274	288	54	62	10	19	47	60				
Michigan	2,258	2,369	-4.7%	0	0	1,596	1,703	43	45	618	620				
Ohio	530	643	-17.5%	0	0	313	414	7	8	210	221				
Wisconsin	1,154	1,072	7.7%	506	388	296	333	53	51	298	300				
West North Central	1,698	1,757	-3.3%	261	287	501	605	218	185	719	780				
Iowa	220	201	9.3%	32	25	98	105	19	9	71	63				
Kansas	61	59	3.6%	0	0	61	59	0	0	0	0				
Minnesota	1,187	1,256	-5.5%	131	142	302	304	138	120	616	690				
Missouri	113	124	-8.5%	27	42	40	38	43	41	3	3				
Nebraska	89	92	-4.3%	70	77	0	0	18	15	0	0				
North Dakota	0	2	-100.0%	0	0	0	0	0	0	0	2				
South Dakota	29	23	26.1%	0	0	0	0	0	0	29	23				
South Atlantic	17,655	18,209	-3.0%	1,898	1,769	5,536	6,352	952	424	9,269	9,665				
Delaware	79	74	7.2%	0	0	58	62	0	0	21	11				
District of Columbia	58	56	3.5%	0	0	0	0	58	56	0	0				
Florida	4,006	4,228	-5.3%	706	685	1,166	1,555	452	171	1,681	1,817				
Georgia	5,727	5,846	-2.0%	0	0	1,843	1,905	0	0	3,885	3,940				
Maryland	312	375	-16.6%	0	0	306	366	7	9	0	0				
North Carolina	1,825	2,023	-9.8%	0	0	678	779	0	55	1,147	1,189				
South Carolina	1,992	2,005	-0.6%	56	58	632	593	0	0	1,304	1,354				
Virginia	3,645	3,594	1.4%	1,136	1,026	842	1,081	436	134	1,232	1,353				
West Virginia	10	10	0.4%	0	0	10	10	0	0	0	0				
East South Central	5,369	5,792	-7.3%	92	100	137	141	0	0	5,141	5,551				
Alabama	3,190	3,311	-3.7%	0	0	43	44	0	0	3,147	3,267				
Kentucky	448	415	7.9%	92	100	13	15	0	0	343	300				
Mississippi	1,297	1,367	-5.1%	0	0	9	11	0	0	1,288	1,356				
Tennessee	434	700	-38.0%	0	0	71	72	0	0	363	628				
West South Central	4,703	4,598	2.3%	429	173	364	412	-8	4	3,918	4,009				
Arkansas	841	859	-2.0%	0	0	46	57	1	4	795	797				
Louisiana	2,077	2,140	-3.0%	0	0	80	84	0	0	1,997	2,056				
Oklahoma	312	318	-2.0%	0	0	16	19	-9	0	304	299				
Texas	1,473	1,281	14.9%	429	173	222	253	0	0	822	856				
Mountain	995	1,057	-5.9%	23	25	570	624	41	45	361	364				
Arizona	204	210	-2.8%	0	0	204	210	0	0	0	0				
Colorado	163	169	-3.6%	0	0	163	169	0	0	0	0				
Idaho	460	490	-6.0%	14	14	74	103	30	31	342	343				
Montana	28	32	-13.4%	9	12	0	0	0	0	19	21				
Nevada	49	50	-2.1%	0	0	49	50	0	0	0	0				
New Mexico	17	26	-33.5%	0	0	17	26	0	0	0	0				
Utah	74	81	-8.6%	0	0	63	66	11	14	0	0				
Wyoming	0	0	-	0	0	0	0	0	0	0	0				
Pacific Contiguous	7,605	7,932	-4.1%	373	452	4,272	4,435	769	756	2,190	2,289				
California	5,307	5,416	-2.0%	12	70	3,809	3,948	727	706	759	692				
Oregon	985	1,005	-2.0%	56	60	384	393	32	39	513	513				
Washington	1,313	1,511	-13.1%	305	322	80	94	10	11	918	1,084				
Pacific Noncontiguous	318	321	-0.9%	16	24	96	96	205	200	0	0				
Alaska	41	38	7.3%	0	0	0	0	41	38	0	0				
Hawaii	277	283	-2.0%	16	24	96	96	165	162	0	0				
U.S. Total	51,847	54,252	-4.4%	4,245	3,993	19,496	22,738	4,012	2,309	24,093	25,213				

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, 2022 and 2021 (Thousand Megawatthours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
	Generation at Utility Scale Facilities			Electric Utilities		Independent Power Producers		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
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	4,519	4,481	0.8%	262	211	4,257	3,768	0	502	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	91	93	-1.6%	0	0	91	93	0	0	0	0
Montana	0	0	--	0	0	0	0	0	0	0	0
Nevada	3,917	3,917	0.0%	0	0	3,917	3,416	0	502	0	0
New Mexico	47	51	-7.6%	0	0	47	51	0	0	0	0
Utah	463	420	10.4%	262	211	201	208	0	0	0	0
Wyoming	0	0	--	0	0	0	0	0	0	0	0
Pacific Contiguous	11,360	11,310	0.4%	764	796	10,596	10,514	0	0	0	0
California	11,181	11,128	0.5%	764	796	10,417	10,331	0	0	0	0
Oregon	179	183	-2.2%	0	0	179	183	0	0	0	0
Washington	0	0	--	0	0	0	0	0	0	0	0
Pacific Noncontiguous	208	184	13.4%	0	0	208	184	0	0	0	0
Alaska	0	0	--	0	0	0	0	0	0	0	0
Hawaii	208	184	13.4%	0	0	208	184	0	0	0	0
U.S. Total	16,087	15,975	0.7%	1,026	1,007	15,061	14,466	0	502	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 3.22. Utility Scale Facility Net Generation from Solar Thermal by State, by Sector, 2022 and 2021 (Thousand Megawatthours)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
	Generation at Utility Scale Facilities			Electric Utilities		Independent Power Producers		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
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	28	29	-1.9%	28	29	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	28	29	-1.9%	28	29	0	0	0	0	0	0
Georgia	0	0	--	0	0	0	0	0	0	0	0
Maryland	0	0	--	0	0	0	0	0	0	0	0
North Carolina	0	0	--	0	0	0	0	0	0	0	0
South Carolina	0	0	--	0	0	0	0	0	0	0	0
Virginia	0	0	--	0	0	0	0	0	0	0	0
West Virginia	0	0	--	0	0	0	0	0	0	0	0
East South Central	0	0	--	0	0	0	0	0	0	0	0
Alabama	0	0	--	0	0	0	0	0	0	0	0
Kentucky	0	0	--	0	0	0	0	0	0	0	0
Mississippi	0	0	--	0	0	0	0	0	0	0	0
Tennessee	0	0	--	0	0	0	0	0	0	0	0
West South Central	0	0	--	0	0	0	0	0	0	0	0
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	0	0	--	0	0	0	0	0	0	0	0
Oklahoma	0	0	--	0	0	0	0	0	0	0	0
Texas	0	0	--	0	0	0	0	0	0	0	0
Mountain	888	865	2.7%	0	0	888	865	0	0	0	0
Arizona	696	695	0.2%	0	0	696	695	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	192	170	12.9%	0	0	192	170	0	0	0	0
New Mexico	0	0	--	0	0	0	0	0	0	0	0
Utah	0	0	--	0	0	0	0	0	0	0	0
Wyoming	0	0	--	0	0	0	0	0	0	0	0
Pacific Contiguous	2,083	2,030	2.6%	0	0	2,083	2,030	0	0	0	0
California	2,083	2,030	2.6%	0	0	2,083	2,030	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	2,999	2,924	2.6%	28	29	2,971	2,895	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), 2012 - 2022
(Billion Btus)

Period	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gas	Renewable Sources	Other	Total
Annual Totals								
2012	252,605	12,452	24,419	556,945	113,147	580,513	24,571	1,564,653
2013	243,043	12,828	25,224	553,696	103,719	611,443	22,171	1,572,124
2014	232,509	11,990	23,457	545,624	104,868	624,086	21,390	1,563,923
2015	211,030	11,796	21,748	591,749	98,910	626,887	19,729	1,581,849
2016	220,162	8,607	20,122	785,413	148,881	698,858	25,342	1,907,384
2017	193,164	7,922	17,322	789,485	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	805,548	133,148	587,466	18,475	1,719,729
Year 2020								
January	14,223	537	1,205	79,227	12,634	55,761	1,802	165,390
February	12,903	666	782	72,512	12,266	52,121	1,812	153,063
March	11,772	453	624	73,085	12,642	53,110	1,753	153,439
April	10,321	936	477	68,293	10,215	49,909	1,806	141,958
May	10,169	371	994	64,264	10,791	50,049	1,615	138,252
June	10,054	430	1,160	65,419	10,655	46,834	1,648	136,200
July	11,352	432	1,206	71,798	11,071	48,571	1,694	146,123
August	11,028	462	1,241	70,526	11,354	47,815	1,721	144,146
September	10,676	442	1,169	65,054	9,828	46,229	1,720	135,119
October	12,138	509	1,142	66,947	11,186	49,237	1,719	142,878
November	11,473	550	1,096	65,000	10,947	49,683	1,689	140,440
December	13,313	676	1,262	73,540	11,460	52,714	1,919	154,885
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	62,339	10,702	49,043	1,450	137,473
May	11,936	1,243	1,100	63,856	11,755	50,015	1,389	141,295
June	11,579	1,442	921	65,043	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	63,797	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

Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; synthetic coal and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.

Petroleum Liquids includes distillate and residual fuel oils, jet fuel, kerosene, waste oil, and beginning in 2011, propane. Prior to 2011 propane was included in Other Gases.

Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.

Other Gas includes blast furnace gas and other manufactured and waste gases derived from fossil fuels. Prior to 2011, Other Gas included propane and synthesis gases.

See the Technical Notes for fuel conversion factors.

Renewable Sources include wood, black liquor, other wood waste, biogenic municipal solid waste, landfill gas, sludge waste, agriculture byproducts, other biomass, geothermal, and solar thermal.

Other includes non-biogenic municipal solid waste, batteries, hydrogen, purchased steam, sulfur, tire-derived fuel, and other miscellaneous energy sources.

Notes: Beginning with 2001 data, non-biogenic municipal solid waste and tire-derived fuels are reclassified as non-renewable energy sources and included in Other. Biogenic municipal solid waste is included in Other Renewable Sources.

Beginning with the collection of Form EIA-923 in January 2008, the methodology for separating the fuel used for electricity generation and useful thermal output from combined heat and power plants changed. The new methodology was retroactively applied to 2004-2007, as well as 2008-2015. Beginning with the 2016 Form EIA-923 data, the methodology for separating the fuel used for electricity generation and useful thermal output from CHP plants was updated. This update will apply to the 2016 data and future data years. See the Technical Notes (Appendix C) for further information.

See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.

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

Sources: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report; U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report; and predecessor forms.

Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report; Form EIA-423, Monthly Cost and Quality of Fuels for Electric Plants Report; and Federal Energy Regulatory Commission, FERC Form 423, Monthly Report of Cost and Quality of Fuels for Electric Plants.

Table 3.24. Useful Thermal Output by Energy Source: Electric Power Sector Combined Heat and Power, 2012 - 2022
(Billion Btus)

Period	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gas	Renewable Sources	Other	Total
Annual Totals								
2012	26,093	4,405	1,246	200,294	20,948	16,369	5,545	274,900
2013	21,306	4,614	993	188,094	10,303	16,225	4,966	246,501
2014	15,513	4,931	936	182,148	7,732	17,736	5,666	234,662
2015	16,036	4,894	1,143	178,167	7,161	16,999	5,180	229,580
2016	13,922	695	1,237	227,427	17,400	24,993	8,046	293,719
2017	11,269	627	1,267	192,299	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
Year 2020								
January	753	32	114	17,876	1,623	2,538	661	23,597
February	686	33	125	16,663	1,697	2,413	634	22,251
March	586	37	114	16,995	1,788	2,447	646	22,613
April	607	40	100	15,526	1,365	1,851	666	20,154
May	504	35	103	16,158	1,308	1,947	548	20,604
June	545	32	88	16,788	1,188	1,937	630	21,208
July	599	39	99	18,126	1,192	1,889	617	22,561
August	584	43	118	18,321	1,508	1,854	583	23,010
September	538	46	122	17,061	1,141	1,716	567	21,190
October	619	57	104	16,363	1,279	1,782	573	20,778
November	665	53	99	15,739	1,560	2,132	534	20,782
December	724	83	113	17,489	1,668	2,310	664	23,052
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

Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; synthetic coal and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.

Petroleum Liquids includes distillate and residual fuel oils, jet fuel, kerosene, waste oil, and beginning in 2011, propane. Prior to 2011 propane was included in Other Gases.

Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.

Other Gas includes blast furnace gas and other manufactured and waste gases derived from fossil fuels. Prior to 2011, Other Gas included propane and synthesis gases.

See the Technical Notes for fuel conversion factors.

Renewable Sources include wood, black liquor, other wood waste, biogenic municipal solid waste, landfill gas, sludge waste, agriculture byproducts, other biomass, geothermal, and solar thermal.

Other includes non-biogenic municipal solid waste, batteries, hydrogen, purchased steam, sulfur, tire-derived fuel, and other miscellaneous energy sources.

Notes: Beginning with 2001 data, non-biogenic municipal solid waste and tire-derived fuels are reclassified as non-renewable energy sources and included in Other. Biogenic municipal solid waste is included in Other Renewable Sources.

Beginning with the collection of Form EIA-923 in January 2008, the methodology for separating the fuel used for electricity generation and useful thermal output from combined heat and power plants changed. The new methodology was retroactively applied to 2004-2007, as well as 2008-2015. Beginning with the 2016 Form EIA-923 data, the methodology for separating the fuel used for electricity generation and useful thermal output from CHP plants was updated. This update will apply to the 2016 data and future data years. See the Technical Notes (Appendix C) for further information.

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Sources: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report; U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report; and predecessor forms.

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Table 3.25. Useful Thermal Output by Energy Source: Commercial Sector Combined Heat and Power, 2012 - 2022
(Billion Btus)

Period	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gas	Renewable Sources	Other	Total
Annual Totals								
2012	13,992	523	229	27,922	0	7,970	6,426	57,063
2013	10,942	1,017	222	27,562	0	7,054	5,693	52,489
2014	11,081	820	327	26,876	0	7,610	5,123	51,837
2015	7,966	823	325	26,498	0	8,228	5,641	49,482
2016	8,313	924	140	57,356	0	11,017	5,381	83,131
2017	7,360	806	234	71,149	0	10,762	5,140	95,450
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
Year 2020								
January	615	75	31	5,237	0	707	245	6,911
February	607	53	19	4,911	0	681	225	6,496
March	504	48	0	4,547	0	636	258	5,992
April	335	31	0	3,977	0	541	243	5,127
May	345	70	0	3,823	0	586	244	5,067
June	362	37	0	4,351	0	600	201	5,550
July	387	64	0	5,290	0	548	247	6,536
August	403	84	0	4,994	0	555	259	6,296
September	453	46	0	4,446	0	472	220	5,637
October	373	53	0	4,585	0	523	246	5,779
November	439	56	0	4,436	0	511	232	5,675
December	622	76	0	4,911	0	569	244	6,422
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

Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; synthetic coal and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.

Petroleum Liquids includes distillate and residual fuel oils, jet fuel, kerosene, waste oil, and beginning in 2011, propane. Prior to 2011 propane was included in Other Gases.

Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.

Other Gas includes blast furnace gas and other manufactured and waste gases derived from fossil fuels. Prior to 2011, Other Gas included propane and synthesis gases.

See the Technical Notes for fuel conversion factors.

Renewable Sources include wood, black liquor, other wood waste, biogenic municipal solid waste, landfill gas, sludge waste, agriculture byproducts, other biomass, geothermal, and solar thermal.

Other includes non-biogenic municipal solid waste, batteries, hydrogen, purchased steam, sulfur, tire-derived fuel, and other miscellaneous energy sources.

Notes: Beginning with 2001 data, non-biogenic municipal solid waste and tire-derived fuels are reclassified as non-renewable energy sources and included in Other. Biogenic municipal solid waste is included in Other Renewable Sources.

Beginning with the collection of Form EIA-923 in January 2008, the methodology for separating the fuel used for electricity generation and useful thermal output from combined heat and power plants changed. The new methodology was retroactively applied to 2004-2007, as well as 2008-2015. Beginning with the 2016 Form EIA-923 data, the methodology for separating the fuel used for electricity generation and useful thermal output from CHP plants was updated. This update will apply to the 2016 data and future data years. See the Technical Notes (Appendix C) for further information.

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Table 3.26. Useful Thermal Output by Energy Source: Industrial Sector Combined Heat and Power, 2012 - 2022
(Billion Btus)

Period	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gas	Renewable Sources	Other	Total
Annual Totals								
2012	212,520	7,524	22,944	328,729	92,199	556,174	12,599	1,232,689
2013	210,795	7,196	24,009	338,041	93,416	588,165	11,512	1,273,134
2014	199,512	6,120	22,167	334,901	97,137	596,087	10,600	1,266,524
2015	180,501	5,965	20,203	384,369	91,749	598,890	8,899	1,290,576
2016	173,589	6,792	18,692	478,068	131,481	655,831	11,904	1,476,358
2017	151,780	6,289	15,721	503,614	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	537,785	115,764	555,226	9,245	1,358,444
Year 2020								
January	11,613	410	1,049	53,564	11,011	52,304	895	130,845
February	10,446	564	625	48,560	10,569	48,816	952	120,532
March	9,803	359	500	48,935	10,854	49,812	849	121,112
April	8,708	848	351	46,461	8,850	47,362	897	113,477
May	8,527	257	861	41,960	9,483	47,446	821	109,355
June	8,206	347	1,066	41,985	9,467	44,209	817	106,097
July	9,042	317	1,101	45,718	9,879	46,032	829	112,918
August	8,776	322	1,115	44,711	9,846	45,313	878	110,960
September	8,672	342	1,038	41,420	8,687	43,924	932	105,016
October	10,036	384	1,035	44,075	9,906	46,724	899	113,060
November	9,440	428	981	43,044	9,387	46,851	923	111,055
December	10,763	502	1,140	48,503	9,792	49,744	1,010	121,453
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	43,137	9,930	47,766	618	113,476
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

Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; synthetic coal and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.

Petroleum Liquids includes distillate and residual fuel oils, jet fuel, kerosene, waste oil, and beginning in 2011, propane. Prior to 2011 propane was included in Other Gases.

Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.

Other Gas includes blast furnace gas and other manufactured and waste gases derived from fossil fuels. Prior to 2011, Other Gas included propane and synthesis gases.

See the Technical Notes for fuel conversion factors.

Renewable Sources include wood, black liquor, other wood waste, biogenic municipal solid waste, landfill gas, sludge waste, agriculture byproducts, other biomass, geothermal, and solar thermal.

Other includes non-biogenic municipal solid waste, batteries, hydrogen, purchased steam, sulfur, tire-derived fuel, and other miscellaneous energy sources.

Notes: Beginning with 2001 data, non-biogenic municipal solid waste and tire-derived fuels are reclassified as non-renewable energy sources and included in Other. Biogenic municipal solid waste is included in Other Renewable Sources.

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Table 3.27 Gross/Net Generation by Energy Storage Technology: Total (All Sectors), 2012 - 2022
(Thousand Megawatthours)

Period	Gross Generation					Net Generation				
	Battery	Compressed Air	Flywheels	Hydroelectric Pumped Storage	Total	Battery	Compressed Air	Flywheels	Hydroelectric Pumped Storage	Total
Annual Totals										
2012	0	0	0	19,776	19,776	0	0	0	-4,950	-4,950
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	363	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
Year 2020										
January	41	0	4	1,530	1,575	-11	0	-2	-377	-390
February	42	0	4	1,445	1,491	-10	0	-2	-247	-259
March	50	0	4	1,347	1,402	-10	0	-2	-353	-366
April	44	0	4	1,348	1,396	-9	0	-2	-325	-337
May	43	0	4	1,839	1,887	-10	0	-2	-367	-379
June	43	1	4	2,213	2,260	-9	-1	-2	-499	-511
July	45	1	5	2,718	2,769	-11	-1	-2	-686	-700
August	48	1	5	2,553	2,606	-12	-1	-2	-784	-799
September	50	1	4	1,919	1,973	-12	0	-2	-525	-539
October	50	0	4	1,430	1,484	-10	0	-2	-423	-435
November	52	0	4	1,263	1,320	-13	0	-2	-369	-384
December	50	0	5	1,470	1,525	-13	0	-2	-368	-383
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

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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.

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Chapter 4

Generation Capacity

Table 4.1. Count of Electric Power Industry Power Plants, by Sector, by Predominant Energy Sources within Plant, 2012 through 2022

Year	Coal	Petroleum	Natural Gas	Other Gases	Nuclear	Hydroelectric Conventional	Other Renewables	Hydroelectric Pumped Storage	Other Energy Sources
Total (All Sectors)									
2012	557	1,129	1,714	44	66	1,426	1,956	41	64
2013	518	1,101	1,725	44	63	1,435	2,299	41	78
2014	491	1,082	1,749	43	62	1,441	2,674	41	94
2015	427	1,082	1,779	45	62	1,440	3,043	41	83
2016	381	1,076	1,801	45	61	1,451	3,624	40	117
2017	359	1,080	1,820	44	61	1,458	4,174	40	148
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
Electric Utilities									
2012	315	815	797	--	34	875	238	36	5
2013	300	795	787	1	32	873	253	36	15
2014	286	780	803	1	32	889	272	35	20
2015	256	782	816	1	32	890	318	35	15
2016	230	771	819	1	31	893	375	35	36
2017	219	765	820	1	31	894	417	35	53
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
Independent Power Producers, Non-Combined Heat and Power Plants									
2012	88	150	368	--	32	494	1,388	5	16
2013	86	147	384	1	31	505	1,670	5	15
2014	87	148	395	1	30	499	2,006	5	18
2015	80	143	397	--	30	497	2,309	5	21
2016	75	142	406	--	30	500	2,826	5	34
2017	71	145	415	--	30	505	3,320	5	43
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
Independent Power Producers, Combined Heat and Power Plants									
2012	42	12	157	2	--	--	47	--	--
2013	35	11	152	2	--	1	51	--	5
2014	30	9	145	2	--	--	54	--	7
2015	27	8	143	3	--	--	58	--	3
2016	24	7	143	3	--	--	57	--	2
2017	22	7	138	3	--	--	56	--	3
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
Commercial Sector									
2012	22	89	153	--	--	9	129	--	2
2013	19	92	164	--	--	9	160	--	3
2014	17	93	169	--	--	10	178	1	6
2015	12	94	176	--	--	10	186	1	3
2016	9	101	181	--	--	14	195	--	3
2017	9	112	189	--	--	15	203	--	4
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
Industrial Sector									
2012	90	63	239	42	--	48	154	--	41
2013	78	56	238	40	--	47	165	--	40
2014	71	52	237	39	--	43	164	--	43
2015	52	55	247	41	--	43	172	--	41
2016	43	55	252	41	--	44	171	--	42
2017	38	51	258	40	--	44	178	--	45
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

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, 2012 through 2022 (Megawatts)

Year	Utility Scale Capacity											Small Scale Capacity Estimated Photovoltaic
	Coal	Petroleum	Natural Gas	Other Gases	Nuclear	Hydroelectric Conventional	Other Renewable Sources	Hydroelectric Pumped Storage	Other Energy Sources	Utility Total		
Total (All Sectors)												
2012	309,680.4	47,167.2	422,364.4	1,945.6	101,885.0	78,738.0	77,155.2	22,368.3	1,728.9	1,063,033.0	--	
2013	303,306.3	43,523.0	425,389.7	2,107.8	99,240.3	79,200.0	82,600.1	22,389.3	2,307.0	1,060,063.5	--	
2014	299,094.2	41,135.4	432,150.3	1,914.3	98,589.3	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	1,084,389.6	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	478,587.4	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	27,563.3	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	169,316.3	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	
Electric Utilities												
2012	232,078.5	26,731.8	206,774.4	--	54,716.7	72,505.1	9,823.8	19,993.9	60.7	621,784.9	--	
2013	228,478.0	24,648.8	206,485.7	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	18,218.8	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	--	
Independent Power Producers, Non-Combined Heat and Power Plants												
2012	69,068.4	18,643.9	170,653.8	--	47,168.3	5,568.6	60,116.8	3,274.4	470.2	374,964.4	--	
2013	67,153.5	17,444.7	171,653.6	47.0	46,841.2	5,762.2	64,890.5	3,274.4	231.2	377,298.3	--	
2014	71,994.6	15,724.4	172,224.5	47.0	46,178.4	5,651.2	72,144.4	3,358.4	238.7	387,561.6	--	
2015	70,217.8	13,102.9	172,519.2	--	46,214.8	5,650.5	82,014.6	3,358.4	354.3	393,432.5	--	
2016	67,667.7	12,587.4	173,455.8	--	46,290.7	5,676.9	97,408.4	3,380.4	487.5	406,954.8	--	
2017	64,419.3	11,777.0	176,029.0	--	46,285.3	5,697.9	107,618.0	3,380.4	989.3	416,196.2	--	
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	--	
Independent Power Producers, Combined Heat and Power Plants												
2012	4,755.9	317.2	29,128.6	83.0	--	--	981.2	--	--	35,265.9	--	
2013	4,313.7	322.2	29,081.2	83.0	--	4.3	945.1	--	121.8	34,871.3	--	
2014	4,073.0	308.2	27,676.7	83.0	--	--	885.9	--	335.8	33,362.6	--	
2015	3,843.6	307.2	27,284.1	350.0	--	--	970.5	--	126.0	32,881.4	--	
2016	3,552.4	301.2	27,222.4	350.0	--	--	1,068.3	--	19.0	32,513.3	--	
2017	3,338.0	301.2	26,922.1	350.0	--	--	969.8	--	21.0	31,902.1	--	
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	--	
Commercial Sector												
2012	435.6	442.7	1,544.9	--	--	18.4	776.8	--	4.2	3,222.6	--	
2013	341.9	455.7	1,778.9	--	--	17.8	947.6	--	9.1	3,551.0	--	
2014	290.1	463.5	1,832.6	--	--	21.4	1,066.8	5.4	15.6	3,695.4	3,279.7	
2015	226.6	466.1	1,932.5	--	--	21.4	1,126.5	5.4	6.7	3,785.2	3,706.7	
2016	202.4	511.0	1,982.6	--	--	74.5	1,132.0	--	6.7	3,909.2	4,022.8	
2017	202.4	596.5	2,018.7	--	--	74.9	1,162.0	--	11.6	4,066.1	5,155.8	
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	7,167.0	
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	
Industrial Sector												
2012	3,342.0	1,031.6	14,262.7	1,862.6	--	645.9	5,456.6	--	1,193.8	27,795.2	--	
2013	3,019.2	851.6	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	
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	

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

Table 4.2.B. Existing Net Summer Capacity of Other Renewable Sources by Producer Type, 2012 through 2022 (Megawatts) (Page 1)

Year	Utility Scale Capacity							Utility and Small Scale Capacity		
	Wind	Solar Photovoltaic	Solar Thermal	Wood and Wood-Derived Fuels	Geothermal	Other Biomass	Total Utility (Other Renewable Sources)	Estimated Small Scale Photovoltaic	Total Solar Photovoltaic	Total Solar
Total (All Sectors)										
2012	59,074.8	2,694.1	476.0	7,507.6	2,592.1	4,810.6	77,155.2	--	2,694.1	3,170.1
2013	59,973.4	5,336.1	1,286.4	8,354.2	2,607.0	5,043.0	82,600.1	--	5,336.1	6,622.5
2014	64,231.5	8,656.6	1,666.7	8,368.1	2,514.3	5,166.5	90,603.7	7,326.6	15,983.2	17,649.9
2015	72,573.4	11,905.4	1,757.9	8,968.9	2,541.5	5,124.5	102,871.6	9,778.5	21,683.9	23,441.8
2016	81,286.6	20,192.9	1,757.9	8,936.1	2,516.6	5,088.8	119,778.9	12,765.1	32,958.0	34,715.9
2017	87,597.5	25,209.0	1,757.9	8,930.9	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
Electric Utilities										
2012	8,488.7	331.2	1.0	364.1	162.1	476.7	9,823.8	--	331.2	332.2
2013	8,424.7	487.9	--	564.3	164.1	477.4	10,118.4	--	487.9	487.9
2014	9,022.6	568.5	--	654.8	164.1	483.7	10,893.7	--	568.5	568.5
2015	10,580.9	842.9	--	623.8	165.9	440.8	12,654.3	--	842.9	842.9
2016	11,552.6	1,388.4	--	708.8	167.9	418.7	14,236.4	--	1,388.4	1,388.4
2017	12,150.8	1,724.5	--	811.3	161.9	432.8	15,281.3	--	1,724.5	1,724.5
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
Independent Power Producers, Non-Combined Heat and Power Plants										
2012	50,547.6	2,255.7	475.0	1,398.8	2,384.2	3,055.5	60,116.8	--	2,255.7	2,730.7
2013	51,497.8	4,647.6	1,286.4	1,845.4	2,401.1	3,212.2	64,890.5	--	4,647.6	5,934.0
2014	55,133.0	7,857.0	1,666.7	1,816.6	2,308.8	3,362.3	72,144.4	--	7,857.0	9,523.7
2015	61,905.4	10,768.2	1,757.9	1,873.3	2,375.6	3,334.2	82,014.6	--	10,768.2	12,526.1
2016	69,645.4	18,483.3	1,757.9	1,789.6	2,348.7	3,383.5	97,408.4	--	18,483.3	20,241.2
2017	75,346.6	23,127.0	1,757.9	1,649.1	2,321.4	3,416.0	107,618.0	--	23,127.0	24,884.9
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

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, 2012 through 2022 (Megawatts) (Page 2)

Year	Utility Scale Capacity							Utility and Small Scale Capacity		
	Wind	Solar Photovoltaic	Solar Thermal	Wood and Wood-Derived Fuels	Geothermal	Other Biomass	Total Utility (Other Renewable Sources)	Estimated Small Scale Photovoltaic	Total Solar Photovoltaic	Total Solar
Independent Power Producers, Combined Heat and Power Plants										
2012	--	--	--	489.8	45.8	445.6	981.2	--	--	--
2013	--	--	--	469.2	41.8	434.1	945.1	--	--	--
2014	--	--	--	465.5	41.4	379.0	885.9	--	--	--
2015	--	--	--	568.2	--	402.3	970.5	--	--	--
2016	--	1.0	--	667.2	--	400.1	1,068.3	--	1.0	1.0
2017	--	2.5	--	582.0	--	385.3	969.8	--	2.5	2.5
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
Commercial Sector										
2012	29.8	99.9	--	7.6	--	639.5	776.8	--	99.9	99.9
2013	33.2	192.9	--	8.4	--	713.1	947.6	--	192.9	192.9
2014	51.6	223.4	--	65.4	--	726.4	1,066.8	3,279.7	3,503.1	3,503.1
2015	55.3	282.1	--	65.3	--	723.8	1,126.5	3,706.7	3,988.8	3,988.8
2016	56.8	300.8	--	67.1	--	707.3	1,132.0	4,022.8	4,323.6	4,323.6
2017	60.8	311.6	--	63.1	--	726.5	1,162.0	5,155.8	5,467.4	5,467.4
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
Industrial Sector										
2012	8.7	7.3	--	5,247.3	--	193.3	5,456.6	--	7.3	7.3
2013	17.7	7.7	--	5,466.9	--	206.2	5,698.5	--	7.7	7.7
2014	24.3	7.7	--	5,365.8	--	215.1	5,612.9	700.6	708.3	708.3
2015	31.8	12.2	--	5,838.3	--	223.4	6,105.7	880.3	892.5	892.5
2016	31.8	19.4	--	5,703.4	--	179.2	5,933.8	1,215.3	1,234.7	1,234.7
2017	39.3	43.4	--	5,725.4	--	168.9	5,977.0	1,365.1	1,408.5	1,408.5
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
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

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, 2022 (Megawatts)

Energy Source	Facility Type	Number of Generators	Generator Nameplate Capacity	Net Summer Capacity	Net Winter Capacity
Coal	Utility Scale	510	205,445.8	189,316.3	190,502.2
Petroleum	Utility Scale	3,978	35,526.9	30,775.3	33,884.8
Natural Gas	Utility Scale	6,542	565,950.7	502,396.9	536,698.0
Other Gases	Utility Scale	71	1,891.6	1,728.2	1,737.6
Nuclear	Utility Scale	92	99,435.0	94,658.9	97,026.0
Hydroelectric Conventional	Utility Scale	4,005	79,959.8	80,067.6	79,496.8
Wind	Utility Scale	1,509	141,951.9	141,402.2	141,426.4
Solar Photovoltaic	Utility Scale	5,777	71,699.1	71,381.5	70,770.3
Solar Thermal	Utility Scale	13	1,497.0	1,480.0	1,352.5
Wood and Wood-Derived Fuels	Utility Scale	313	8,874.4	7,804.5	7,923.8
Geothermal	Utility Scale	165	3,965.2	2,648.6	3,093.0
Other Biomass	Utility Scale	1,715	4,899.4	4,322.3	4,376.0
Hydroelectric Pumped Storage	Utility Scale	152	22,008.1	23,043.9	22,948.6
Other Energy Sources	Utility Scale	536	10,638.6	10,405.6	10,463.2
Total	Utility Scale	25,378	1,253,743.5	1,161,431.8	1,201,699.2
Small Scale Photovoltaic	Small Scale	--	--	39,828.0	--
Estimated Total Photovoltaic	Utility and Small Scale	--	--	111,209.5	--
Estimated Total Solar	Utility and Small Scale	--	--	112,689.5	--

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 Gases.

Petroleum includes distillate fuel oil (all diesel and No. 1, No. 2, and No. 4 fuel oils), residual fuel oil (No. 5 and No. 6 fuel oils and bunker C fuel oil), jet fuel, kerosene, petroleum coke (converted to liquid petroleum, see Technical Notes for conversion methodology), waste oil, and beginning in 2011, synthetic gas and propane. Prior to 2011, synthetic gas and propane were included in Other Gases.

Other Gases includes blast furnace gas. Prior to 2011, waste heat was included in Natural Gas.

Hydroelectric Conventional capacity includes conventional hydroelectric power excluding pumped storage facilities.

Wood and wood-derived fuels include wood/wood waste solids (including paper pellets, railroad ties, utility poles, wood chips, bark, and wood waste solids), wood waste liquids (red liquor, sludge wood, spent sulfite liquor, and other wood-based liquids), and black liquor.

Other Biomass include municipal solid waste, landfill gas, sludge waste, agricultural byproducts, other biomass solids, other biomass liquids, and other biomass gases (including digester gases, methane, and other biomass gases).

Hydroelectric Conventional capacity includes conventional hydroelectric power excluding pumped storage facilities.

Other Energy Sources include batteries, hydrogen, purchased steam, sulfur, tire-derived fuels and other miscellaneous energy sources.

Capacity by energy source is based on the capacity associated with the energy source reported as the most predominant (primary) one, where more than one energy source is associated with a generator.

In 2011, EIA corrected the NAICS codes of several plants which resulted in a net capacity shift from the electric utility sector to the commercial sector.

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

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

Table 4.4. Existing Capacity by Producer Type, 2022 (Megawatts)

Producer Type	Facility Type	Number of Generators	Generator Nameplate Capacity	Net Summer Capacity	Net Winter Capacity
Electric Power Sector					
Electric Utilities	Utility Scale	9,649	664,893.0	612,812.4	633,531.4
Independent Power Producers, Non-Combined Heat and Power Plants	Utility Scale	11,854	521,243.4	488,925.3	504,486.8
Independent Power Producers, Combined Heat and Power Plants	Utility Scale	441	30,627.5	27,462.9	29,488.4
Total	Utility Scale	21,944	1,216,763.9	1,129,200.6	1,167,506.6
Commercial and Industrial Sectors					
Commercial Sector	Utility Scale	1,904	5,973.7	5,450.0	5,551.3
Industrial Sector	Utility Scale	1,530	31,005.9	26,781.2	28,641.3
Total	Utility Scale	3,434	36,979.6	32,231.2	34,192.6
All Sectors					
Total	Utility Scale	25,378	1,253,743.5	1,161,431.8	1,201,699.2
Small Scale					
Estimated Solar Photovoltaic	Small Scale	--	--	39,828.0	--

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, 2023-2027 (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 2023						
U.S. Total	862	51,490.4	157	14,947.6	705	36,542.8
Coal	--	--	25	9,377.1	-25	-9,377.1
Petroleum	19	45.7	45	1,482.3	-26	-1,436.6
Natural Gas	71	7,775.9	42	3,849.9	29	3,926.0
Other Gases	1	26.9	3	30.0	-2	-3.1
Nuclear	1	1,114.0	--	--	1	1,114.0
Hydroelectric Conventional	6	29.5	7	41.0	-1	-11.5
Wind	47	8,334.9	4	15.0	43	8,319.9
Solar Thermal and Photovoltaic	529	24,545.7	1	1.4	528	24,544.3
Wood and Wood-Derived Fuels	1	26.8	8	115.7	-7	-88.9
Geothermal	1	25.0	--	--	1	25.0
Other Biomass	4	7.1	20	30.0	-16	-22.9
Hydroelectric Pumped Storage	--	--	--	--	--	--
Other Energy Sources	182	9,558.9	2	5.2	180	9,553.7
Year 2024						
U.S. Total	602	62,394.2	59	5,585.5	543	56,808.7
Coal	--	--	6	1,501.4	-6	-1,501.4
Petroleum	2	4.0	6	29.3	-4	-25.3
Natural Gas	36	2,619.9	30	2,920.0	6	-300.1
Other Gases	1	0.1	--	--	1	0.1
Nuclear	1	1,114.0	1	1,122.0	--	-8.0
Hydroelectric Conventional	10	11.7	6	4.8	4	6.9
Wind	30	6,440.1	--	--	30	6,440.1
Solar Thermal and Photovoltaic	353	38,136.9	--	--	353	38,136.9
Wood and Wood-Derived Fuels	--	--	--	--	--	--
Geothermal	4	16.0	--	--	4	16.0
Other Biomass	6	56.6	10	8.0	-4	48.6
Hydroelectric Pumped Storage	--	--	--	--	--	--
Other Energy Sources	159	13,994.9	--	--	159	13,994.9
Year 2025						
U.S. Total	280	41,633.6	85	15,135.6	195	26,498.0
Coal	--	--	25	10,875.7	-25	-10,875.7
Petroleum	--	--	5	201.0	-5	-201.0
Natural Gas	42	5,476.2	37	2,935.8	5	2,540.4
Other Gases	--	--	--	--	--	--
Nuclear	--	--	1	1,118.0	-1	-1,118.0
Hydroelectric Conventional	4	10.4	4	1.1	--	9.3
Wind	29	5,634.2	9	1.5	20	5,632.7
Solar Thermal and Photovoltaic	144	22,183.6	--	--	144	22,183.6
Wood and Wood-Derived Fuels	1	20.0	--	--	1	20.0
Geothermal	--	--	--	--	--	--
Other Biomass	--	--	4	2.5	-4	-2.5
Hydroelectric Pumped Storage	--	--	--	--	--	--
Other Energy Sources	60	8,309.2	--	--	60	8,309.2

Notes: These data reflect plans as of December 31, 2022

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

Petroleum includes distillate fuel oil (all diesel and No. 1, No. 2, and No. 4 fuel oils), residual fuel oil (No. 5 and No. 6 fuel oils and bunker C fuel oil), jet fuel, kerosene, petroleum coke (converted to liquid petroleum, see Technical Notes for conversion methodology), waste oil, synthetic gas, and propane.

Other Gases also includes blast furnace gas.

Hydroelectric Conventional capacity includes conventional hydroelectric power excluding pumped storage facilities.

Wood and wood-derived fuels include wood/wood waste solids (including paper pellets, railroad ties, utility poles, wood chips, bark, and wood waste solids), wood waste liquids (red liquor, sludge wood, spent sulfite liquor, and other wood-based liquids), and black liquor.

Other Biomass include municipal solid waste, landfill gas, sludge waste, agricultural byproducts, other biomass solids, other biomass liquids, and other biomass gases (including digester gases, methane, and other biomass gases).

Hydroelectric Conventional capacity includes conventional hydroelectric power excluding pumped storage facilities.

Other Energy Sources include batteries, hydrogen, purchased steam, sulfur, tire-derived fuels and other miscellaneous energy sources.

Capacity by energy source is based on the capacity associated with the energy source reported as the most predominant (primary) one, where more than one energy source is associated with a generator.

In the case of wind, solar and wave energy sites, the capacity for multiple generators is reported in a single generator record and is presented as a single generator in the generator count.

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

Table 4.5. Planned Generating Capacity Changes, by Energy Source, 2023-2027 (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 2026						
U.S. Total	145	22,751.4	54	7,918.1	91	14,833.3
Coal	--	--	7	3,311.1	-7	-3,311.1
Petroleum	--	--	7	8.8	-7	-8.8
Natural Gas	16	4,475.1	35	4,589.3	-19	-114.2
Other Gases	--	--	--	--	--	--
Nuclear	--	--	--	--	--	--
Hydroelectric Conventional	11	31.4	1	2.8	10	28.6
Wind	16	5,996.7	--	--	16	5,996.7
Solar Thermal and Photovoltaic	75	9,149.3	3	1.1	72	9,148.2
Wood and Wood-Derived Fuels	--	--	--	--	--	--
Geothermal	--	--	--	--	--	--
Other Biomass	4	6.4	--	--	4	6.4
Hydroelectric Pumped Storage	--	--	--	--	--	--
Other Energy Sources	23	3,092.5	1	5.0	22	3,087.5
Year 2027						
U.S. Total	59	13,447.0	56	9,907.5	3	3,539.5
Coal	--	--	20	6,646.0	-20	-6,646.0
Petroleum	--	--	5	34.4	-5	-34.4
Natural Gas	9	2,190.5	12	3,170.0	-3	-979.5
Other Gases	--	--	--	--	--	--
Nuclear	--	--	--	--	--	--
Hydroelectric Conventional	13	51.1	10	16.3	3	34.8
Wind	8	3,622.0	--	--	8	3,622.0
Solar Thermal and Photovoltaic	20	6,208.0	4	3.8	16	6,204.2
Wood and Wood-Derived Fuels	--	--	--	--	--	--
Geothermal	--	--	--	--	--	--
Other Biomass	--	--	4	36.0	-4	-36.0
Hydroelectric Pumped Storage	3	600.0	--	--	3	600.0
Other Energy Sources	6	775.4	1	1.0	5	774.4
Years 2023-2027						
U.S. Total	1,948	191,716.6	411	53,494.3	1,537	138,222.3
Coal	--	--	83	31,711.3	-83	-31,711.3
Petroleum	21	49.7	68	1,755.8	-47	-1,706.1
Natural Gas	174	22,537.6	156	17,465.0	18	5,072.6
Other Gases	2	27.0	3	30.0	-1	-3.0
Nuclear	2	2,228.0	2	2,240.0	--	-12.0
Hydroelectric Conventional	44	134.1	28	66.0	16	68.1
Wind	130	30,027.9	13	16.5	117	30,011.4
Solar Thermal and Photovoltaic	1,121	100,223.5	8	6.3	1,113	100,217.2
Wood and Wood-Derived Fuels	2	46.8	8	115.7	-6	-68.9
Geothermal	5	41.0	--	--	5	41.0
Other Biomass	14	70.1	38	76.5	-24	-6.4
Hydroelectric Pumped Storage	3	600.0	--	--	3	600.0
Other Energy Sources	430	35,730.9	4	11.2	426	35,719.7

Notes: These data reflect plans as of December 31, 2022

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

Petroleum includes distillate fuel oil (all diesel and No. 1, No. 2, and No. 4 fuel oils), residual fuel oil (No. 5 and No. 6 fuel oils and bunker C fuel oil), jet fuel, kerosene, petroleum coke (converted to liquid petroleum, see Technical Notes for conversion methodology), waste oil, synthetic gas, and propane.

Other Gases also includes blast furnace gas.

Hydroelectric Conventional capacity includes conventional hydroelectric power excluding pumped storage facilities.

Wood and wood-derived fuels include wood/wood waste solids (including paper pellets, railroad ties, utility poles, wood chips, bark, and wood waste solids), wood waste liquids (red liquor, sludge wood, spent sulfite liquor, and other wood-based liquids), and black liquor.

Other Biomass include municipal solid waste, landfill gas, sludge waste, agricultural byproducts, other biomass solids, other biomass liquids, and other biomass gases (including digester gases, methane, and other biomass gases).

Hydroelectric Conventional capacity includes conventional hydroelectric power excluding pumped storage facilities.

Other Energy Sources include batteries, hydrogen, purchased steam, sulfur, tire-derived fuels and other miscellaneous energy sources.

Capacity by energy source is based on the capacity associated with the energy source reported as the most predominant (primary) one, where more than one energy source is associated with a generator.

In the case of wind, solar and wave energy sites, the capacity for multiple generators is reported in a single generator record and is presented as a single generator in the generator count.

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

Table 4.6. Utility-Scale Capacity Additions, Retirements and Changes by Energy Source, 2022 (Count, Megawatts)

Energy Source	Generator Additions				Generator Retirements			
	Number of Generators	Generator Nameplate Capacity	Net Summer Capacity	Net Winter Capacity	Number of Generators	Generator Nameplate Capacity	Net Summer Capacity	Net Winter Capacity
Coal	--	--	--	--	41	15,124.6	13,679.8	13,854.8
Petroleum	32	52.7	52.6	52.7	61	680.1	568.2	634.9
Natural Gas	96	7,042.9	6,210.1	6,299.7	55	2,329.6	2,350.5	2,549.2
Other Gases	1	70.0	69.3	60.0	1	5.5	5.3	5.3
Nuclear	--	--	--	--	1	811.8	768.5	815.6
Hydroelectric Conventional	4	14.2	14.2	14.2	9	10.4	9.4	9.8
Wind	41	9,174.5	9,154.5	9,154.5	8	234.6	234.5	234.7
Solar Thermal and Photovoltaic	410	11,058.3	11,053.2	10,963.1	3	4.0	4.0	3.2
Wood and Wood-Derived Fuels	1	12.6	12.0	12.0	3	47.6	38.5	39.4
Geothermal	9	134.3	96.6	134.3	15	58.5	44.7	53.2
Other Biomass	5	8.3	7.4	7.4	60	187.0	149.4	153.1
Hydroelectric Pumped Storage	--	--	--	--	--	--	--	--
Other Energy Sources	108	4,124.5	4,109.6	4,108.4	7	89.6	86.3	86.3
Total	707	31,692.3	30,779.5	30,806.3	264	19,583.3	17,939.1	18,439.5

Energy Source	Other Changes to Existing Capacity		
	Generator Nameplate Capacity	Net Summer Capacity	Net Winter Capacity
Coal	-7,921.1	-7,284.0	-7,172.0
Petroleum	-382.6	-532.7	-74.3
Natural Gas	2,731.0	5,321.5	5,225.6
Other Gases	-337.3	-223.8	-239.8
Nuclear	286.5	-119.0	-24.0
Hydroelectric Conventional	-123.6	55.0	-5.4
Wind	-573.3	-370.2	-258.0
Solar Thermal and Photovoltaic	94.1	107.6	123.0
Wood and Wood-Derived Fuels	-104.5	-92.2	-87.3
Geothermal	--	--	--
Other Biomass	-5.6	-9.7	-9.7
Hydroelectric Pumped Storage	--	36.2	-40.1
Other Energy Sources	52.6	40.5	40.6
Total	-6,283.8	-3,070.8	-2,521.4

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

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

Table 4.7.A. Net Summer Capacity of Utility Scale Units by Technology and by State, 2022 and 2021 (Megawatts)

Census Division and State	Renewable Sources		Fossil Fuels		Hydroelectric Pumped Storage		Other Energy Storage		Nuclear		All Other Sources		All Sources	
	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
New England	7,021.5	6,843.1	22,933.0	23,029.7	1,830.4	1,830.4	303.1	241.5	3,356.1	3,345.4	22.0	22.0	35,466.1	35,312.1
Connecticut	536.7	571.0	7,432.7	7,412.3	29.4	29.4	1.6	1.6	2,108.0	2,097.3	0.0	0.0	10,108.4	10,111.6
Maine	2,541.7	2,425.2	2,516.4	2,532.0	0.0	0.0	46.3	46.3	0.0	0.0	22.0	22.0	5,126.4	5,025.5
Massachusetts	1,917.5	1,854.8	8,807.4	8,908.9	1,801.0	1,801.0	241.3	182.7	0.0	0.0	0.0	0.0	12,767.2	12,747.4
New Hampshire	944.1	944.1	2,270.4	2,270.4	0.0	0.0	0.0	0.0	1,248.1	1,248.1	0.0	0.0	4,462.6	4,462.6
Rhode Island	379.0	351.0	1,780.1	1,780.1	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	2,162.1	2,131.1
Vermont	702.5	697.0	126.0	126.0	0.0	0.0	10.9	10.9	0.0	0.0	0.0	0.0	839.4	833.9
Middle Atlantic	12,880.2	12,371.0	73,120.8	75,322.8	3,343.2	3,348.8	257.4	182.1	15,854.5	15,891.2	11.2	11.2	105,467.3	107,127.1
New Jersey	1,280.0	1,237.7	11,501.4	12,302.8	420.0	420.0	42.7	42.7	3,456.7	3,456.7	11.2	11.2	16,712.0	17,471.1
New York	8,585.0	8,139.2	26,230.5	26,917.5	1,408.8	1,406.8	160.1	84.8	3,304.6	3,341.3	0.0	0.0	39,689.0	39,889.6
Pennsylvania	3,015.2	2,994.1	35,388.9	36,102.5	1,514.4	1,522.0	54.6	54.6	9,093.2	9,093.2	0.0	0.0	49,066.3	49,766.4
East North Central	20,994.3	20,212.0	104,044.2	106,827.5	2,185.6	2,143.8	165.5	199.8	18,215.6	19,022.9	169.8	166.0	145,775.0	148,572.0
Illinois	8,022.3	7,926.2	24,399.0	26,156.6	0.0	0.0	96.1	135.7	11,567.6	11,582.4	78.0	78.0	44,163.0	45,878.9
Indiana	4,226.0	4,201.0	22,553.2	22,516.5	0.0	0.0	36.0	36.0	0.0	0.0	88.0	88.0	26,903.2	26,841.5
Michigan	4,700.1	4,284.6	20,329.2	19,597.2	2,185.6	2,143.8	1.3	1.3	3,318.0	4,113.8	3.8	0.0	30,538.0	30,140.7
Ohio	1,785.0	1,816.1	23,501.3	25,305.7	0.0	0.0	26.8	26.8	2,134.0	2,134.0	0.0	0.0	27,447.1	29,282.6
Wisconsin	2,260.9	1,984.1	13,261.5	13,251.5	0.0	0.0	5.3	0.0	1,196.0	1,192.7	0.0	0.0	16,723.7	16,428.3
West North Central	43,759.9	41,956.5	57,796.0	58,812.5	657.0	657.0	26.8	24.8	4,842.0	4,899.0	12.2	12.2	107,093.9	106,362.0
Iowa	12,869.0	12,084.3	9,673.5	9,682.4	0.0	0.0	3.9	3.9	0.0	0.0	0.0	0.0	22,546.4	21,770.6
Kansas	8,290.6	8,284.3	8,910.2	8,922.2	0.0	0.0	0.0	0.0	1,225.0	1,225.0	0.8	0.8	18,426.6	18,432.3
Minnesota	6,500.5	6,326.4	10,280.3	10,281.4	0.0	0.0	16.0	15.0	1,657.0	1,657.0	6.1	6.1	18,459.9	18,285.9
Missouri	3,028.2	2,780.5	16,250.7	17,168.0	657.0	657.0	2.2	2.2	1,190.0	1,247.0	0.0	0.0	21,128.1	21,834.7
Nebraska	3,854.1	3,282.9	6,172.0	6,199.8	0.0	0.0	3.9	2.9	770.0	770.0	0.0	0.0	10,800.0	10,255.6
North Dakota	4,845.9	4,846.5	4,557.8	4,650.9	0.0	0.0	0.0	0.0	0.0	0.0	5.3	5.3	9,409.0	9,502.7
South Dakota	4,371.6	4,371.6	1,951.5	1,907.8	0.0	0.0	0.8	0.8	0.0	0.0	0.0	0.0	6,323.9	6,280.2
South Atlantic	32,864.1	29,910.9	155,415.9	157,995.8	8,100.4	8,100.4	727.8	629.3	24,752.8	24,752.8	366.9	506.9	222,227.9	221,896.1
Delaware	105.7	54.2	3,215.9	3,218.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3,321.6	3,272.6
District of Columbia	30.5	27.3	20.6	20.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	51.1	47.9
Florida	7,179.1	6,148.8	55,184.1	53,973.0	0.0	0.0	540.9	509.0	3,666.0	3,666.0	312.9	312.9	66,883.0	64,609.7
Georgia	6,626.1	6,064.8	23,532.2	26,140.7	1,897.4	1,897.4	81.2	42.2	4,061.0	4,061.0	0.0	44.0	36,197.9	38,250.1
Maryland	1,432.3	1,321.3	8,759.7	9,971.7	0.0	0.0	7.7	5.0	1,707.8	1,707.8	0.0	0.0	11,907.5	13,005.8
North Carolina	8,722.8	8,391.0	21,342.6	21,318.2	86.0	86.0	36.0	21.6	5,149.6	5,149.6	54.0	54.0	35,391.0	35,020.4
South Carolina	3,094.7	2,999.9	11,710.8	11,787.5	2,876.0	2,876.0	4.0	4.0	6,600.4	6,600.4	0.0	0.0	24,285.9	24,267.8
Virginia	4,473.7	3,818.6	17,876.0	17,791.7	3,241.0	3,241.0	10.5	0.0	3,568.0	3,568.0	0.0	96.0	29,169.2	28,515.3
West Virginia	1,199.2	1,085.0	13,774.0	13,774.0	0.0	0.0	47.5	47.5	0.0	0.0	0.0	0.0	15,020.7	14,906.5
East South Central	9,386.5	9,036.7	60,452.4	60,468.4	1,616.3	1,616.3	1.0	1.0	11,375.9	11,376.4	1.4	1.4	82,833.5	82,500.2
Alabama	4,330.7	4,332.2	19,125.2	19,125.1	0.0	0.0	1.0	1.0	5,452.7	5,452.7	0.0	0.0	28,909.6	28,911.0
Kentucky	1,289.7	1,239.3	16,343.5	16,343.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17,633.2	17,582.8
Mississippi	621.7	440.2	12,699.9	12,762.5	0.0	0.0	0.0	0.0	1,400.5	1,401.0	1.4	1.4	14,723.5	14,605.1
Tennessee	3,144.4	3,025.0	12,283.8	12,237.3	1,616.3	1,616.3	0.0	0.0	4,522.7	4,522.7	0.0	0.0	21,567.2	21,401.3
West South Central	66,909.2	58,065.5	142,398.7	140,620.8	288.0	288.0	2,114.8	819.4	8,934.0	8,930.7	548.2	549.1	221,192.9	209,273.5
Arkansas	1,821.9	1,716.5	11,257.8	11,256.0	30.0	30.0	22.0	12.0	1,822.0	1,817.8	0.0	0.0	14,953.7	14,832.3
Louisiana	738.6	688.6	21,519.7	21,714.0	0.0	0.0	0.5	0.5	2,132.0	2,132.9	329.2	330.1	24,720.0	24,866.1
Oklahoma	12,561.4	11,371.1	19,789.9	18,184.7	258.0	258.0	10.0	10.0	0.0	0.0	0.0	0.0	32,619.3	29,823.8
Texas	51,787.3	44,289.3	89,831.3	89,466.1	0.0	0.0	2,082.3	796.9	4,980.0	4,980.0	219.0	219.0	148,899.9	139,751.3
Mountain	38,243.9	36,412.6	58,152.8	58,812.6	797.1	797.1	323.0	234.0	3,937.0	3,937.0	123.7	123.7	101,577.5	100,317.0
Arizona	6,364.1	6,148.7	17,587.5	17,197.0	216.3	216.3	97.0	97.0	3,937.0	3,937.0	0.0	0.0	28,201.9	27,596.0
Colorado	7,156.7	6,770.5	10,335.0	10,925.0	580.8	580.8	10.2	10.2	0.0	0.0	9.1	9.1	18,091.8	18,295.6
Idaho	4,095.7	3,932.5	1,244.8	1,128.3	0.0	0.0	0.0	0.0	0.0	0.0	14.8	14.8	5,355.3	5,075.6
Montana	4,326.8	3,954.8	2,072.0	2,072.0	0.0	0.0	0.0	0.0	0.0	0.0	40.0	40.0	6,438.8	6,066.8
Nevada	5,255.0	4,910.1	8,079.6	7,821.6	0.0	0.0	200.0	125.0	0.0	0.0	6.5	6.5	13,541.1	12,863.2
New Mexico	5,365.4	5,101.3	4,849.0	5,702.1	0.0	0.0	14.8	1.8	0.0	0.0	0.7	0.7	10,229.9	10,805.9
Utah	2,274.2	2,188.7	7,311.5	7,289.3	0.0	0.0	1.0	0.0	0.0	0.0	40.2	40.2	9,626.9	9,518.2
Wyoming	3,406.0	3,406.0	6,673.4	6,677.3	0.0	0.0	0.0	0.0	0.0	0.0	12.4	12.4	10,091.8	10,095.7
Pacific Contiguous	75,719.5	73,101.0	45,740.3	45,528.1	4,225.9	4,225.9	4,905.4	2,338.7	3,391.0	3,391.0	94.4	125.1	134,076.5	128,709.8
California	36,944.9	34,868.5	37,925.7	37,710.5	3,911.9	3,911.9	4,864.4	2,327.7	2,240.0	2,240.0	94.4	125.1	85,981.3	81,183.7
Oregon	13,452.5	13,157.4	3,755.0	3,755.0	0.0	0.0	35.0	5.0	0.0	0.0	0.0	0.0	17,242.5	16,917.4
Washington	25,322.1	25,075.1	4,059.6	4,062.6	314.0	314.0	6.0	6.0	1,151.0	1,151.0	0.0	0.0	30,852.7	30,608.7
Pacific Noncontiguous	1,332.4	1,293.0	4,162.4	4,371.2	0.0	0.0	202.6	123.1	0.0	0.0	28.4	0.0	5,725.8	5,787.3
Alaska	542.8	542.4	2,182.5	2,184.7	0.0	0.0	93.7	47.2	0.0	0.0	0.9	0.0	2,819.9	2,774.3
Hawaii	789.6	750.6	1,979.9	2,186.5	0.0	0.0	108.9	75.9	0.0	0.0	27.5	0.0	2,905.9	3,013.0
U.S. Total	309,111.5	289,202.3	724,216.5	731,789.4	23,043.9	23,007.7	9,027.4	4,793.7	94,658.9	95,546.4	1,378.2	1,517.6	1,161,436.4	1,145,857.1

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, 2022 and 2021 (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		Estimated Total Solar	
	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
New England	1,575.7	2,242.2	2,013.0	2,013.0	0.0	0.0	1,950.2	1,950.9	1,253.4	1,319.6	0.0	0.0	7,021.5	6,843.1	4,318.4	3,346.0	6,560.6	5,359.0	6,560.6	5,359.0
Connecticut	5.0	5.0	272.9	247.5	0.0	0.0	119.2	119.4	139.6	199.1	0.0	0.0	536.7	571.0	795.5	708.7	1,068.4	956.2	1,068.4	956.2
Maine	1,029.5	1,009.5	297.8	201.3	0.0	0.0	725.8	725.8	488.6	488.6	0.0	0.0	2,541.7	2,425.2	298.5	116.0	596.3	317.3	596.3	317.3
Massachusetts	101.8	105.7	1,271.0	1,197.2	0.0	0.0	267.2	267.7	277.5	284.2	0.0	0.0	1,917.5	1,854.8	2,516.9	1,907.1	3,787.9	3,104.3	3,787.9	3,104.3
New Hampshire	211.9	211.9	2.4	2.4	0.0	0.0	504.0	504.0	225.8	225.8	0.0	0.0	944.1	944.1	182.4	149.9	184.8	152.3	184.8	152.3
Rhode Island	77.3	77.3	258.9	230.9	0.0	0.0	2.7	2.7	40.1	40.1	0.0	0.0	379.0	351.0	362.8	317.7	621.7	548.6	621.7	548.6
Vermont	150.2	150.2	139.2	133.7	0.0	0.0	331.3	331.3	81.8	81.8	0.0	0.0	702.5	697.0	162.3	146.7	301.5	280.4	301.5	280.4
Middle Atlantic	3,657.4	3,657.4	2,621.8	2,103.0	0.0	0.0	5,505.2	5,507.7	1,095.8	1,102.9	0.0	0.0	12,880.2	12,371.0	5,612.6	4,750.6	8,234.4	6,853.6	8,234.4	6,853.6
New Jersey	7.6	7.6	1,069.4	1,024.0	0.0	0.0	12.3	12.3	190.7	193.8	0.0	0.0	1,280.0	1,237.7	2,346.1	2,022.8	3,415.5	3,046.8	3,415.5	3,046.8
New York	2,189.8	2,189.8	1,376.6	924.3	0.0	0.0	4,583.3	4,585.8	455.3	459.3	0.0	0.0	8,585.0	8,139.2	2,637.9	2,207.9	4,014.5	3,132.2	4,014.5	3,132.2
Pennsylvania	1,460.0	1,460.0	175.8	154.7	0.0	0.0	929.6	929.6	449.8	449.8	0.0	0.0	3,015.2	2,994.1	628.6	519.9	804.4	674.6	804.4	674.6
East North Central	15,558.6	15,815.6	3,491.0	2,589.4	0.0	0.0	876.7	876.9	1,068.0	1,130.1	0.0	0.0	20,994.3	20,212.0	1,792.1	1,445.4	5,283.1	4,034.8	5,283.1	4,034.8
Illinois	7,034.6	7,173.1	899.0	647.0	0.0	0.0	32.9	32.9	55.8	73.2	0.0	0.0	8,022.3	7,926.2	953.6	770.1	1,852.6	1,417.1	1,852.6	1,417.1
Indiana	3,453.1	3,453.1	629.2	606.7	0.0	0.0	71.6	69.1	72.1	72.1	0.0	0.0	4,226.0	4,201.0	212.8	162.1	842.0	768.8	842.0	768.8
Michigan	3,239.0	3,167.8	707.7	353.3	0.0	0.0	264.1	263.5	489.3	500.0	0.0	0.0	4,700.1	4,284.6	190.9	152.5	898.6	505.8	898.6	505.8
Ohio	1,097.3	1,097.3	481.2	479.8	0.0	0.0	101.9	101.9	104.6	137.1	0.0	0.0	1,785.0	1,816.1	264.0	219.4	745.2	699.2	745.2	699.2
Wisconsin	734.6	724.3	773.9	502.6	0.0	0.0	406.2	409.5	346.2	347.7	0.0	0.0	2,260.9	1,984.1	170.9	141.2	944.8	643.8	944.8	643.8
West North Central	38,429.0	38,843.9	1,572.6	1,350.8	0.0	0.0	3,364.6	3,363.1	393.7	398.7	0.0	0.0	43,759.9	41,966.5	846.7	673.7	2,419.3	2,024.5	2,419.3	2,024.5
Iowa	12,378.5	11,740.3	260.5	118.0	0.0	0.0	209.4	205.4	20.6	20.6	0.0	0.0	12,869.0	12,084.3	221.5	177.0	482.0	295.0	482.0	295.0
Kansas	8,238.1	8,238.1	36.5	30.2	0.0	0.0	7.0	7.0	9.0	9.0	0.0	0.0	8,290.6	8,284.3	62.4	43.5	98.9	73.7	98.9	73.7
Minnesota	4,828.7	4,694.1	1,143.2	1,093.5	0.0	0.0	212.0	214.5	316.6	324.3	0.0	0.0	6,500.5	6,326.4	188.6	142.5	1,331.8	1,236.0	1,331.8	1,236.0
Missouri	2,374.9	2,121.9	90.8	76.0	0.0	0.0	548.5	548.5	14.0	14.1	0.0	0.0	3,028.2	2,780.5	345.6	291.3	436.4	367.3	436.4	367.3
Nebraska	3,518.3	2,955.6	40.6	32.1	0.0	0.0	279.7	279.7	15.5	15.5	0.0	0.0	3,854.1	3,252.9	25.7	17.1	66.3	49.2	66.3	49.2
North Dakota	4,323.3	4,326.7	0.0	0.0	0.0	0.0	510.0	510.0	12.6	9.8	0.0	0.0	4,845.9	4,846.5	1.4	1.0	1.0	1.4	1.0	1.4
South Dakota	2,767.2	2,767.2	1.0	1.0	0.0	0.0	1,598.0	1,598.0	5.4	5.4	0.0	0.0	4,371.6	4,371.6	1.6	1.2	2.6	2.2	2.6	2.2
South Atlantic	1,267.2	1,153.0	20,447.6	17,480.6	0.0	0.0	7,139.6	7,142.9	4,009.7	4,134.4	0.0	0.0	32,864.1	29,910.9	4,244.8	3,354.2	24,692.4	20,834.8	24,692.4	20,834.8
Delaware	2.0	2.0	89.5	88.0	0.0	0.0	0.0	0.0	14.2	14.2	0.0	0.0	105.7	54.2	112.9	99.4	202.4	137.4	202.4	137.4
District of Columbia	0.0	0.0	18.5	15.3	0.0	0.0	0.0	0.0	12.0	12.0	0.0	0.0	30.5	27.3	117.3	100.5	135.8	115.8	135.8	115.8
Florida	0.0	0.0	5,994.4	4,951.8	0.0	0.0	43.5	43.5	1,141.2	1,153.5	0.0	0.0	7,179.1	6,148.8	1,763.2	1,187.1	7,757.6	6,138.9	7,757.6	6,138.9
Georgia	0.0	0.0	3,631.3	3,068.4	0.0	0.0	1,985.0	1,985.0	1,009.8	1,011.4	0.0	0.0	6,626.1	6,064.8	242.4	234.1	3,873.7	3,302.5	3,873.7	3,302.5
Maryland	190.0	190.0	512.4	402.7	0.0	0.0	590.0	590.0	139.9	138.6	0.0	0.0	1,432.3	1,321.3	980.4	883.6	1,492.8	1,286.3	1,492.8	1,286.3
North Carolina	208.0	208.0	6,069.6	5,733.0	0.0	0.0	2,008.7	2,005.7	436.5	444.3	0.0	0.0	8,722.8	8,391.0	400.7	306.3	6,470.3	6,039.3	6,470.3	6,039.3
South Carolina	0.0	0.0	1,339.0	1,134.0	0.0	0.0	1,305.0	1,311.9	450.7	553.7	0.0	0.0	3,094.7	2,999.9	343.0	299.6	1,682.0	1,433.9	1,682.0	1,433.9
Virginia	12.0	12.0	2,792.9	2,137.1	0.0	0.0	866.6	866.0	802.2	803.5	0.0	0.0	4,473.7	3,818.6	258.4	225.9	3,051.3	2,363.0	3,051.3	2,363.0
West Virginia	855.2	741.0	0.0	0.0	0.0	0.0	340.8	340.8	3.2	3.2	0.0	0.0	1,199.2	1,085.0	26.4	17.7	26.4	17.7	26.4	17.7
East South Central	29.1	29.1	1,180.0	858.9	0.0	0.0	7,037.8	7,037.8	1,139.6	1,110.9	0.0	0.0	9,386.5	9,036.7	139.0	139.6	1,319.0	996.5	1,319.0	996.5
Alabama	0.0	0.0	421.1	421.1	0.0	0.0	3,291.8	3,291.8	817.8	619.3	0.0	0.0	4,330.7	4,332.2	10.9	14.4	432.0	435.5	432.0	435.5
Kentucky	0.0	0.0	77.8	27.4	0.0	0.0	1,137.4	1,137.4	74.5	74.5	0.0	0.0	1,289.7	1,239.3	71.3	57.5	149.1	84.9	149.1	84.9
Mississippi	0.0	0.0	319.3	219.3	0.0	0.0	0.0	0.0	302.4	220.9	0.0	0.0	621.7	440.2	12.3	11.7	331.6	231.0	331.6	231.0
Tennessee	29.1	29.1	361.8	191.1	0.0	0.0	2,608.6	2,608.6	144.9	196.2	0.0	0.0	3,144.4	3,025.0	44.5	56.1	406.3	247.2	406.3	247.2
West South Central	50,937.9	44,782.1	11,867.2	9,178.7	0.0	0.0	3,016.1	3,004.5	1,088.0	1,100.2	0.0	0.0	66,909.2	58,065.5	2,516.2	1,841.6	14,383.4	11,020.3	14,383.4	11,020.3
Arkansas	0.0	0.0	329.7	223.7	0.0	0.0	1,265.2	1,265.8	227.0	227.0	0.0	0.0	1,821.9	1,716.5	176.3	112.8	506.0	336.5	506.0	336.5
Louisiana	0.0	0.0	124.5	74.5	0.0	0.0	192.0	192.0	422.1	422.1	0.0	0.0	738.6	688.6	160.8	155.5	285.3	230.0	285.3	230.0
Oklahoma	11,594.0	10,411.8	47.5	42.5	0.0	0.0	843.7	840.6	76.2	76.2	0.0	0.0	12,561.4	11,371.1	64.7	37.2	112.2	79.7	112.2	79.7
Texas	39,343.9	34,370.3	11,365.5	8,836.0	0.0	0.0	715.2	706.1	362.7	374.9	0.0	0.0	51,787.3	44,289.3	2,114.3	1,536.0	13,479.8	10,374.0	13,479.8	10,374.0
Mountain	16,158.2	15,504.1	10,108.6	9,017.1	474.2	474.2	10,609.2	10,557.4	174.4	175.5	719.3	684.3	38,243.9	36,412.6	4,709.4	4,101.8	14,818.0	13,118.9	15,292.2	13,593.1
Arizona	617.3	617.3	2,703.6	2,487.0	295.6	295.6	2,719.7	2,720.9	27.9	27.9	0.0	0.0	6,364.1	6,148.7	2,111.4	1,959.7	4,815.0	4,446.7	5,110.6	4,742.3
Colorado	5,136.2	4,991.2	1,302.1	1,059.6	0.0	0.0	699.7	691.0	28.7	28.7	0.0	0.0	7,156.7	6,770.5	862.8	722.0	2,164.9	1,781.6	2,164.9	1,781.6
Idaho	968.3	970.4	362.0	242.0	0.0	0.0	2,672.3	2,623.8	83.1	86.3	10.0	10.0	4,095.7	3,932.5	124.7	90.0	486.7	332.0	486.7	332.0
Montana	1,478.9	1,112.7	17.0	17.0	0.0	0.0	2,826.3	2,820.5	4.6	4.6	0.0	0.0	4,326.8	3,954.8	40.4	30.1	57.4	47.1	57.4	47.1
Nevada	150.0	150.0	3,235.0	2,925.1	178.5	178.5	1,051.7	1,051.7	9.8	9.8	630.0	595.0	5,255.0	4,910.1	775.6	637.2	4,010.6	3,562.3	4,189.1	3,740.8
New Mexico	4,410.9	4,265.9	855.7	738.7	0.0	0.0	82.7	82.7	7.5	5.4	8.6	8.6	5,365.4	5,101.3	313.4	262.3	1,169.1	1,001.0	1,169.1	1,001.0
Utah	389.7	389.7	1,541.2	1,465.7	0.1	0.1	259.7	259.7	12.8	12.8	70.7	70.7	2,274.2	2,188.7	465.5	388.6	2,006.7	1,844.3	2,006.8	1,844.4
Wyoming	3,006.9	3,006.9	92.0	92.0	0.0	0.0	307.1	307.1	0.0	0.0	0.0	0.0	3,406.0	3,406.0	15.6	11.9	107.6	103.9	107.6	103.9
Pacific Contiguous	13,496.9	13,316.4	17,527.4	15,189.7	1,005.8	1,005.8	40,059.8	39,960.5	1,743.3	1,759.2	1,886.3	1								

Table 4.7.C. Net Summer Capacity of Utility Scale Units Using Primarily Fossil Fuels and by State, 2022 and 2021 (Megawatts)

Census Division and State	Natural Gas Fired Combined Cycle		Natural Gas Fired Combustion Turbine		Other Natural Gas		Coal		Petroleum Coke		Petroleum Liquids		Other Gases		Total Fossil Fuels	
	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
New England	14,343.8	14,357.3	1,710.1	1,765.6	762.8	572.7	533.9	533.9	0.0	0.0	5,582.4	4,800.2	0.0	0.0	22,933.0	23,029.7
Connecticut	3,919.4	3,932.6	585.7	579.8	555.2	960.0	0.0	0.0	0.0	0.0	2,372.4	1,939.9	0.0	0.0	7,432.7	7,412.3
Maine	1,279.7	1,282.8	312.0	312.0	80.0	92.5	0.0	0.0	0.0	0.0	844.7	844.7	0.0	0.0	2,516.4	2,532.0
Massachusetts	6,171.0	6,168.2	796.2	857.6	102.2	94.6	0.0	0.0	0.0	0.0	1,738.0	1,788.5	0.0	0.0	8,807.4	8,908.9
New Hampshire	1,238.5	1,238.5	3.8	3.8	0.0	400.2	533.9	533.9	0.0	0.0	494.2	94.0	0.0	0.0	2,270.4	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	37,143.4	37,332.0	7,607.0	8,081.7	14,537.6	13,677.3	8,023.2	10,907.6	11.6	11.6	5,663.1	5,197.7	114.9	114.9	73,120.8	75,322.8
New Jersey	8,386.5	8,588.4	2,740.5	3,039.0	73.7	75.7	0.0	463.0	11.6	11.6	290.1	96.1	29.0	29.0	11,931.4	12,302.8
New York	9,910.2	9,946.9	2,915.7	3,089.5	9,330.1	9,862.9	0.0	445.0	0.0	0.0	4,074.5	3,552.0	0.0	0.0	26,230.5	26,917.5
Pennsylvania	18,876.7	18,796.7	1,950.8	1,953.2	5,133.8	3,718.7	8,023.2	9,999.6	0.0	0.0	1,318.5	1,548.4	85.9	85.9	35,388.9	36,102.5
East North Central	27,799.9	24,158.8	26,500.5	26,541.7	5,776.2	5,694.9	40,352.3	46,899.5	249.9	250.6	2,285.4	2,397.1	1,080.0	1,084.9	104,044.2	106,827.5
Illinois	4,772.4	3,561.8	10,351.4	10,512.0	1,723.0	1,724.6	6,853.5	9,547.8	0.0	0.0	662.2	773.9	36.5	36.5	24,399.0	26,156.6
Indiana	3,875.0	3,875.0	3,365.8	3,338.3	829.0	752.9	13,842.5	13,835.2	0.0	0.0	95.8	95.8	545.1	619.3	22,553.2	22,516.5
Michigan	6,864.8	4,442.6	3,896.0	3,848.4	2,540.3	2,530.5	6,291.1	8,034.9	47.2	47.2	439.8	443.6	250.0	250.0	20,329.2	19,597.2
Ohio	8,764.8	8,765.2	6,636.8	5,996.2	102.2	103.0	8,097.5	10,011.5	144.3	145.0	507.3	505.7	248.4	179.1	23,501.3	25,305.7
Wisconsin	3,522.9	3,514.2	3,250.5	3,246.8	581.7	583.9	5,267.7	5,270.1	58.4	58.4	580.3	578.1	0.0	0.0	13,261.5	13,251.5
West North Central	7,089.6	7,064.1	11,603.9	11,725.5	3,685.9	3,540.9	31,476.7	32,402.9	39.5	32.0	3,894.8	4,038.7	5.6	8.4	57,796.0	58,812.5
Iowa	1,752.5	1,732.7	1,123.4	1,193.0	757.2	584.3	5,068.5	5,267.5	39.5	32.0	932.4	872.9	0.0	0.0	9,673.5	9,682.4
Kansas	266.0	266.0	2,192.6	2,197.1	1,392.7	1,336.7	4,521.4	4,524.6	0.0	0.0	537.5	595.8	0.0	0.0	8,910.2	8,922.2
Minnesota	2,532.9	2,532.9	2,545.8	2,551.4	445.5	419.0	3,978.6	4,309.1	0.0	0.0	773.5	769.0	0.0	0.0	10,280.3	10,281.4
Missouri	1,905.2	1,899.0	3,296.0	3,344.9	399.9	569.5	9,656.2	10,242.2	0.0	0.0	1,012.4	1,113.4	0.0	0.0	16,250.7	17,169.0
Nebraska	338.0	338.5	1,106.9	1,077.8	517.4	507.4	3,845.6	3,867.0	0.0	0.0	384.1	409.3	0.0	0.0	6,172.0	6,199.8
North Dakota	0.0	0.0	454.0	454.0	106.8	106.8	3,931.4	4,018.5	0.0	0.0	60.0	63.2	5.6	8.4	4,557.8	4,650.9
South Dakota	295.0	295.0	895.2	907.5	71.4	16.2	475.0	474.0	0.0	0.0	214.9	215.1	0.0	0.0	1,951.5	1,907.6
South Atlantic	64,694.6	61,922.8	31,826.1	33,411.8	14,607.6	10,384.0	36,997.0	45,674.7	83.8	142.8	7,081.8	6,324.7	135.0	135.0	155,415.9	157,995.8
Delaware	1,504.0	1,504.0	314.0	314.0	738.8	738.9	410.0	410.0	0.0	0.0	114.1	114.1	135.0	135.0	3,215.9	3,218.4
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	34,563.0	31,987.3	8,834.0	9,553.6	5,562.9	5,936.9	4,562.0	4,776.0	0.0	59.0	1,662.2	1,660.2	0.0	0.0	55,184.1	53,973.0
Georgia	8,073.2	8,076.7	7,143.5	7,800.1	850.1	850.1	5,780.0	6,384.0	83.8	83.8	1,601.6	946.0	0.0	0.0	23,532.2	26,140.7
Maryland	2,766.0	2,726.0	1,675.7	1,758.9	1,209.5	1,209.5	1,758.0	2,963.0	0.0	0.0	1,350.5	1,314.3	0.0	0.0	8,759.7	9,971.7
North Carolina	5,579.0	5,554.0	6,002.5	6,002.5	4,665.7	1.0	4,594.0	9,258.7	0.0	0.0	501.4	502.0	0.0	0.0	21,342.6	21,318.2
South Carolina	3,237.2	3,196.0	2,497.0	2,624.9	883.0	950.0	4,789.0	4,789.0	0.0	0.0	304.6	227.6	0.0	0.0	11,710.8	11,787.5
Virginia	8,972.2	8,878.8	4,249.3	4,245.3	582.1	582.1	2,536.0	2,536.0	0.0	0.0	1,536.4	1,549.5	0.0	0.0	17,976.0	17,791.7
West Virginia	0.0	0.0	1,089.5	1,089.5	115.5	115.5	12,558.0	12,558.0	0.0	0.0	11.0	11.0	0.0	0.0	13,774.0	13,774.0
East South Central	21,884.4	21,868.4	12,253.0	12,680.5	4,805.8	4,393.7	21,171.5	21,415.3	0.0	0.0	533.9	106.7	3.8	3.8	60,452.4	60,468.4
Alabama	9,795.3	9,795.3	2,572.8	2,572.8	1,982.7	1,982.6	4,728.0	4,728.0	0.0	0.0	42.6	42.6	3.8	3.8	19,125.2	19,125.1
Kentucky	1,763.0	1,763.0	4,905.6	4,905.6	483.0	260.0	9,180.0	9,403.0	0.0	0.0	11.9	11.9	0.0	0.0	16,343.5	16,343.5
Mississippi	7,871.0	7,855.0	1,369.3	1,369.6	2,006.6	2,084.9	1,444.0	1,444.0	0.0	0.0	9.0	9.0	0.0	0.0	12,699.9	12,762.5
Tennessee	2,455.1	2,455.1	3,405.3	3,832.5	133.5	66.2	5,819.5	5,840.3	0.0	0.0	470.4	43.2	0.0	0.0	12,283.8	12,237.3
West South Central	65,720.9	63,824.3	16,628.8	16,218.5	29,710.1	30,416.3	26,568.9	28,631.0	882.1	879.0	701.4	312.4	186.5	339.3	142,398.7	140,620.8
Arkansas	4,613.3	4,592.1	702.8	702.8	824.0	824.0	5,108.7	5,128.1	0.0	0.0	9.0	9.0	0.0	0.0	11,257.8	11,256.0
Louisiana	9,695.8	9,630.2	2,972.9	2,985.7	5,746.2	5,959.4	2,074.1	2,114.3	818.3	815.2	49.7	49.7	162.7	159.5	21,519.7	21,714.0
Oklahoma	8,954.9	7,339.9	1,643.0	1,636.3	5,881.1	5,887.1	3,244.5	3,247.0	0.0	0.0	66.4	74.4	0.0	0.0	19,789.9	18,184.7
Texas	42,456.9	42,262.1	11,310.1	10,893.7	17,258.8	17,745.8	18,141.6	18,141.6	63.8	63.8	576.3	179.3	23.8	179.8	89,831.3	89,466.1
Mountain	23,093.2	22,645.8	9,479.1	9,081.8	3,702.8	4,070.8	21,307.9	22,494.9	52.0	52.0	510.0	469.7	7.8	7.8	58,152.8	58,812.6
Arizona	10,193.6	9,988.9	3,084.8	2,899.0	1,097.6	1,276.8	2,943.0	2,943.0	0.0	0.0	268.5	87.5	0.0	0.0	17,587.5	17,197.0
Colorado	3,193.5	3,254.5	2,538.0	2,538.0	646.0	850.0	3,804.0	4,129.0	0.0	0.0	150.5	150.5	3.0	3.0	10,335.0	10,925.0
Idaho	595.0	549.3	627.7	556.9	16.7	11.7	0.0	5.0	0.0	0.0	5.4	5.4	0.0	0.0	1,244.8	1,128.3
Montana	0.0	0.0	315.8	315.8	72.2	72.2	1,630.5	1,630.5	52.0	52.0	0.0	0.0	1.5	1.5	2,072.0	2,072.0
Nevada	5,703.0	5,445.0	1,185.6	1,185.6	444.6	444.6	740.4	740.4	0.0	0.0	6.0	6.0	0.0	0.0	8,079.6	7,821.6
New Mexico	1,484.1	1,484.1	945.3	804.6	833.6	839.7	1,540.0	2,387.0	0.0	0.0	46.0	186.7	0.0	0.0	4,849.0	5,702.1
Utah	1,830.0	1,830.0	534.6	534.6	338.1	315.9	4,581.0	4,581.0	0.0	0.0	27.8	27.8	0.0	0.0	7,311.5	7,289.3
Wyoming	94.0	94.0	247.3	247.3	254.0	257.9	6,069.0	6,069.0	0.0	0.0	5.8	5.8	3.3	3.3	6,673.4	6,677.3
Pacific Contiguous	26,589.1	26,499.4	12,276.9	12,178.2	5,493.7	5,488.5	7,227.0	7,227.0	20.0	20.0	439.0	421.1	194.6	193.9	45,740.3	45,528.1
California	20,567.3	20,477.6	11,433.7	11,335.0	5,237.9	5,227.7	57.0	57.0	20.0	20.0	415.2	399.3	194.6	193.9	37,925.7	37,710.5
Oregon	3,395.2	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	3,755.0	3,755.0
Washington	2,626.6	2,626.6	719.2	719.2	26.6	31.6	670.0	670.0	0.0	0.0	17.2	15.2	0.0	0.0	4,059.6	4,062.6
Pacific Noncontiguous	374.6	374.6	721.1	721.1	174.4	174.4	167.9	348.9	0.0	0.0	2,724.4	2,749.2	0.0	0.0	4,162.4	4,371.2
Alaska	374.6	374.6	721.1	721.1	174.4	174.4	167.9	168.9	0.0	0.0	744.5	742.7	0.0	0.0	2,182.5	2,184.7
Hawaii	0.0	0.0	0.0	0.0	0.0	0.0	0.0	180.0	0.0	0.0	1,979.9	2,006.5	0.0	0.0	1,979.9	2,186.5
U.S. Total	288,733.5	280,047.5	130,606.5	132,406.4	83,056.9	79,416.3	189,316.3	209,825.7	1,339.9	1,388.0	29,436.2	26,817.5	1,728.2	1,888.0	724,216.5	731,789.4

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 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		
Annual Data																
2012	304,974.9	56.2%	217,938.2	52.2%	119,319.4	8.9%	74,200.2	13.3%	2,988.8	7.3%	22,483.7	13.7%	17,773.5	1.3%	4,942.5	2.0%
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%	5,082.5	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%
Year 2020																
January	224,000.9	39.4%	270,457.6	58.9%	129,134.8	10.8%	75,759.1	9.4%	5,022.2	14.8%	8,509.9	13.7%	14,106.6	1.3%	5,302.8	2.1%
February	223,958.4	36.8%	270,600.6	59.1%	129,212.5	11.1%	75,759.1	9.4%	5,021.6	14.0%	8,509.9	10.7%	14,082.6	1.1%	5,304.8	1.9%
March	223,101.0	31.2%	271,881.9	53.0%	129,140.8	10.8%	75,735.3	10.7%	5,024.6	14.9%	8,509.9	14.7%	13,850.6	1.1%	5,309.8	1.7%
April	223,121.0	25.8%	272,881.9	48.0%	129,138.0	9.4%	75,735.3	10.2%	5,122.3	12.9%	8,509.9	13.6%	13,850.6	0.8%	5,302.3	1.6%
May	222,401.0	28.8%	274,128.1	48.4%	129,126.0	9.9%	75,597.3	11.9%	5,160.7	12.3%	8,509.9	13.0%	13,850.6	1.0%	5,302.7	1.5%
June	221,034.1	41.8%	275,883.2	60.0%	128,925.2	12.7%	75,478.8	18.3%	5,153.4	14.9%	8,509.9	15.6%	13,850.6	1.2%	5,295.2	1.7%
July	221,034.1	55.3%	275,883.2	71.6%	129,015.4	16.8%	75,461.0	28.4%	5,155.8	18.3%	8,509.9	16.2%	13,850.6	1.7%	5,301.2	1.9%
August	219,894.1	56.5%	275,897.3	69.9%	129,136.8	14.5%	75,449.0	24.1%	5,157.0	18.7%	8,509.9	16.3%	13,850.6	1.4%	5,309.1	1.8%
September	218,736.1	44.1%	275,939.6	60.5%	129,076.1	11.4%	75,449.0	15.2%	5,158.2	16.0%	8,509.9	11.4%	13,850.6	1.1%	5,295.0	1.8%
October	217,597.1	37.7%	275,952.2	53.5%	129,035.1	11.4%	75,111.0	14.8%	5,161.4	15.8%	8,509.9	9.2%	13,826.6	1.1%	5,295.0	1.9%
November	217,184.1	39.6%	275,967.2	47.6%	128,966.1	9.4%	75,111.0	9.0%	5,163.0	14.5%	8,509.9	15.0%	13,826.6	1.0%	5,296.4	1.5%
December	215,554.2	49.1%	276,007.2	54.3%	129,120.9	10.3%	74,918.0	8.4%	5,172.7	13.9%	7,723.9	17.4%	13,721.9	1.2%	5,294.2	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	8.3%	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	20.2%	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	18.6%	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	13.9%	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	10.3%	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	11.3%	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%

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

Year/Month	Geothermal		Hydroelectric		Nuclear		Other Biomass		Other Gas		Solar				Wind		Wood	
	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																		
2012	2,531.8	68.3%	78,296.6	39.6%	101,166.0	86.6%	4,639.7	63.3%	1,802.8	59.6%	1,527.1	20.4%	476.0	23.6%	49,458.0	31.8%	7,089.1	61.3%
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	71.8%	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%
Year 2020																		
January	2,554.7	59.0%	79,765.8	41.3%	98,093.5	101.6%	4,700.3	64.5%	2,275.2	69.7%	35,875.0	15.7%	1,747.9	8.2%	103,858.1	36.2%	8,351.2	62.7%
February	2,554.7	67.7%	79,765.8	46.6%	98,093.5	96.5%	4,700.9	62.6%	2,275.2	67.2%	37,077.5	20.6%	1,747.9	14.6%	104,551.4	39.9%	8,321.7	63.0%
March	2,554.7	75.5%	79,765.8	40.1%	98,093.5	87.7%	4,700.0	65.0%	2,275.2	57.9%	37,500.2	21.8%	1,747.9	14.7%	104,636.5	37.5%	8,321.7	59.2%
April	2,540.1	72.8%	79,765.8	40.4%	97,082.0	83.9%	4,700.0	63.4%	2,275.2	60.6%	37,735.2	27.5%	1,747.9	24.3%	106,196.7	38.6%	8,321.7	56.2%
May	2,550.8	69.9%	79,769.8	50.5%	97,082.0	89.1%	4,698.0	62.9%	2,275.2	62.6%	38,408.7	31.4%	1,747.9	31.7%	106,475.5	35.4%	8,321.7	54.7%
June	2,550.8	67.6%	79,769.8	48.8%	97,082.0	96.2%	4,622.3	60.0%	2,275.2	64.1%	38,802.8	32.1%	1,747.9	29.9%	107,334.9	38.7%	8,308.0	55.2%
July	2,571.9	68.3%	79,771.8	45.1%	97,082.0	96.1%	4,619.2	63.0%	2,275.2	65.7%	39,865.9	33.3%	1,747.9	33.3%	107,951.1	28.2%	8,308.0	56.0%
August	2,571.9	68.0%	79,793.0	39.2%	97,082.0	95.5%	4,619.2	63.7%	2,275.2	66.9%	40,454.3	29.0%	1,747.9	28.2%	108,153.1	28.4%	8,308.0	58.5%
September	2,571.9	68.3%	79,793.0	32.5%	97,082.0	94.0%	4,618.4	61.6%	2,275.2	68.3%	41,058.4	24.8%	1,747.9	22.5%	108,677.1	29.3%	8,346.0	56.5%
October	2,571.9	65.9%	79,919.7	31.6%	97,102.0	82.2%	4,617.1	59.5%	2,275.2	60.5%	41,672.4	21.7%	1,747.9	20.0%	109,470.5	34.9%	8,346.0	54.3%
November	2,571.9	74.0%	79,919.7	36.3%	96,500.6	88.9%	4,629.9	60.7%	2,275.2	64.4%	42,042.0	17.9%	1,747.9	13.0%	109,794.4	41.1%	8,346.0	57.5%
December	2,571.9	71.8%	79,921.7	36.2%	96,500.6	97.3%	4,621.9	63.5%	2,275.2	67.9%	42,910.0	14.9%	1,747.9	7.1%	111,449.8	36.5%	8,326.5	60.5%
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	84.2%	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	40.0%	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	85.7%	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%

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

Year/Month	Battery		Pumped Storage	
	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	205.8	3.8%	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%	22,938.6	10.5%
2021	2,627.6	6.1%	23,007.7	10.2%
2022	6,566.1	6.4%	23,033.9	11.1%
Year 2020				
January	1,023.4	5.3%	22,917.9	9.0%
February	1,038.8	5.7%	22,917.9	9.1%
March	1,052.5	6.3%	22,917.9	7.9%
April	1,077.2	5.8%	22,917.9	8.2%
May	1,093.1	5.3%	22,917.9	10.8%
June	1,106.9	5.4%	22,917.9	13.4%
July	1,110.5	5.3%	22,917.9	15.9%
August	1,363.8	4.7%	22,917.9	15.0%
September	1,395.5	5.0%	22,917.9	11.6%
October	1,395.5	4.8%	22,997.9	8.4%
November	1,419.8	5.0%	22,997.9	7.6%
December	1,440.6	4.6%	23,016.2	8.6%
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	6.9%	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	6.6%	23,043.9	9.6%

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.A. Total Capacity of Distributed and Dispersed Generators by Technology Type, 2012 through 2015 (Table Discontinued)

Year	Capacity (MW)										Number of Generators
	Internal Combustion	Combustion Turbine	Steam Turbine	Hydro	Wind	Photovoltaic	Storage	Other	Wind and Other	Total	
Distributed Generators											
2012	756.1	105.8	60.2	119.9	252.9	543.7	15.2	324.4	--	1,990.6	28,252
2013	981.3	106.4	31.1	103.9	78.3	556.0	2.0	89.0	--	1,947.4	196,141
2014	813.8	81.3	12.9	108.2	33.7	692.0	7.2	101.0	--	1,855.5	203,099
2015	797.6	49.3	10.5	121.2	26.7	876.4	24.4	88.4	--	1,994.6	215,825
Dispersed Generators											
2012	3,180.9	49.8	--	2.2	3.1	8.5	7.7	13.5	--	3,265.5	14,557
2013	3,249.7	159.8	17.0	1.9	4.5	21.6	8.7	25.8	--	3,489.0	17,929
2014	3,479.3	169.7	16.7	0.7	3.7	14.3	6.6	5.7	--	3,696.8	22,599
2015	3,160.9	199.1	16.7	0.7	4.7	17.6	7.2	5.7	--	3,412.6	23,665
Distributed and Dispersed Generators											
2012	3,937.0	155.6	60.2	122.1	256.0	552.2	22.9	337.9	--	5,256.1	42,809
2013	4,231.0	266.2	48.1	105.8	82.8	577.6	10.7	114.8	--	5,436.4	214,070
2014	4,293.1	251.0	29.6	108.9	37.5	706.3	13.8	106.7	--	5,552.2	225,698
2015	3,958.5	248.5	27.2	121.9	31.4	893.9	31.6	94.1	--	5,407.1	239,490

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

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

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

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

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

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

Table 4.9.B Total Capacity of Non Net Metered Distributed Generators by Technology Type and Sector, 2012 through 2022

Year	Generators by Technology and Sector					Total
	Residential	Commercial	Industrial	Transportation	Direct Connected	
Internal Combustion						
2012	--	--	--	--	--	758,100
2013	--	--	--	--	--	981,311
2014	--	--	--	--	--	813,847
2015	--	--	--	--	--	797,585
2016	48,974	679,239	223,037	--	69,217	1,018,467
2017	86,768	851,363	306,305	--	78,180	1,322,614
2018	69,429	906,278	336,970	--	91,199	1,408,876
2019	79,894	895,455	283,507	0.275	111,981	1,468,152
2020	56,878	862,333	299,805	--	81,835	1,300,751
2021	70,081	906,179	345,146	--	78,941	1,400,347
2022	85,208	844,560	328,954	--	77,922	1,434,244
Combustion Turbine						
2012	--	--	--	--	--	105,800
2013	--	--	--	--	--	108,385
2014	--	--	--	--	--	81,325
2015	--	--	--	--	--	49,329
2016	0.233	62,127	24,415	--	2,728	89,503
2017	11,760	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	0,167	102,084	22,333	--	1,253	125,867
2022	0,213	105,087	21,588	--	1,253	132,151
Steam Turbine						
2012	--	--	--	--	--	60,200
2013	--	--	--	--	--	31,050
2014	--	--	--	--	--	12,925
2015	--	--	--	--	--	10,531
2016	--	3,995	0,524	--	0,431	3,950
2017	1,250	1,920	1,254	--	0,431	4,855
2018	--	4,620	0,539	--	2,581	7,740
2019	--	8,439	0,539	--	2,581	11,559
2020	--	7,464	0,539	--	2,581	10,584
2021	--	7,580	0,539	--	2,581	10,709
2022	--	8,256	0,019	--	2,581	11,856
Hydroelectric						
2012	--	--	--	--	--	119,900
2013	--	--	--	--	--	103,935
2014	--	--	--	--	--	108,285
2015	--	--	--	--	--	121,234
2016	6,140	39,630	8,533	--	101,146	155,749
2017	5,915	30,763	8,033	--	103,607	148,318
2018	4,422	36,048	5,503	--	113,562	160,565
2019	7,462	37,818	5,503	--	113,910	164,713
2020	2,822	39,538	2,793	--	104,293	149,447
2021	2,529	43,226	6,053	--	102,912	154,720
2022	2,529	45,890	4,893	--	99,542	152,853
Wind						
2012	--	--	--	--	--	252,900
2013	--	--	--	--	--	78,299
2014	--	--	--	--	--	33,727
2015	--	--	--	--	--	28,658
2016	2,816	15,742	1,386	--	8,828	28,552
2017	2,632	16,453	1,044	--	8,868	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	2,090	15,108	1,153	--	9,571	27,852
2022	1,884	13,303	1,171	--	9,572	25,930
Photovoltaic						
2012	--	--	--	--	--	543,700
2013	--	--	--	--	--	555,965
2014	--	--	--	--	--	692,034
2015	--	--	--	--	--	876,351
2016	80,572	388,911	132,970	--	112,922	715,380
2017	186,910	513,251	177,162	--	120,946	998,269
2018	289,151	694,877	188,874	--	128,793	1,199,698
2019	437,911	696,600	202,869	--	131,391	1,468,800
2020	653,125	872,946	211,173	--	138,251	1,875,496
2021	981,281	1,035,068	214,531	--	148,136	2,379,018
2022	1,334,849	1,106,717	188,958	--	150,016	2,780,530
Storage						
2012	--	--	--	--	--	15,200
2013	--	--	--	--	--	1,950
2014	--	--	--	--	--	7,227
2015	--	--	--	--	--	24,443
2016	0,070	32,678	8,714	--	1,246	42,708
2017	3,916	42,884	12,271	--	1,444	60,515
2018	4,936	79,042	10,674	--	7,278	103,930
2019	14,308	113,788	15,519	--	15,929	159,544
2020	26,048	136,448	16,876	--	17,245	196,617
2021	108,878	196,042	18,733	--	20,719	312,370
2022	171,343	221,159	16,594	--	20,535	429,622
Fuel Cell						
2012	--	--	--	--	--	--
2013	--	--	--	--	--	--
2014	--	--	--	--	--	--
2015	--	--	--	--	--	--
2016	0,167	6,229	3,700	--	0,625	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	19,843	3,601	--	0,625	24,319
2020	1,133	18,599	4,599	--	0,625	24,966
2021	0,133	20,608	5,564	--	0,625	26,930
2022	0,134	23,207	5,310	--	0,625	29,276
Other						
2012	--	--	--	--	--	324,400
2013	--	--	--	--	--	89,000
2014	--	--	--	--	--	100,995
2015	--	--	--	--	--	88,423
2016	0,753	34,050	10,389	--	6,050	51,242
2017	1,139	33,093	12,729	--	4,950	51,911
2018	0,629	36,452	16,209	--	3,310	56,600
2019	0,464	37,308	14,954	--	3,579	56,305
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
Total						
2012	--	--	--	--	--	2,178,200
2013	--	--	--	--	--	1,947,394
2014	--	--	--	--	--	1,855,455
2015	--	--	--	--	--	1,994,564
2016	137,524	1,261,901	413,648	--	302,793	2,115,868
2017	300,445	1,553,897	590,233	--	325,064	2,769,639
2018	374,388	1,763,795	588,737	--	357,895	3,084,795
2019	539,763	1,953,751	530,102	0.275	384,402	3,418,292
2020	744,304	2,084,824	575,111	--	380,820	3,785,160
2021	1,166,388	2,341,854	627,616	--	366,757	4,502,607
2022	1,597,081	2,321,175	580,579	--	363,665	5,062,412
Total Number of Generators						
2012	--	--	--	--	--	28,252
2013	--	--	--	--	--	198,141
2014	--	--	--	--	--	203,099
2015	--	--	--	--	--	215,825
2016	--	--	--	--	--	185,703
2017	--	--	--	--	--	215,889
2018	--	--	--	--	--	231,220
2019	--	--	--	--	--	251,357
2020	--	--	--	--	--	279,739
2021	--	--	--	--	--	323,085
2022	--	--	--	--	--	389,197

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 customer 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, 2012 through 2022

Year	Capacity (MW)				Total	Customers				
	Residential	Commercial	Industrial	Transportation		Residential	Commercial	Industrial	Transportation	Total
Historical Data										
2012	1,583,249	1,882,262	495,993	--	3,961,504	300,095	29,068	1,487	--	330,650
2013	2,332,339	2,468,054	661,209	--	5,461,602	448,058	37,018	2,741	--	487,817
2014	3,498,538	3,137,541	834,422	--	7,470,501	648,512	45,083	3,426	--	697,021
2015	5,400,124	3,674,592	1,030,581	--	10,105,297	965,058	53,380	3,982	--	1,022,420
2016	7,715,715	4,576,384	1,289,946	--	13,582,045	1,341,796	64,346	4,840	--	1,410,982
2017	9,584,177	5,865,147	1,453,826	--	16,903,148	1,647,404	74,567	5,727	--	1,727,698
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
Photovoltaic										
2012	1,542,226	1,741,821	395,328	--	3,679,630	294,437	27,611	1,317	--	323,365
2013	2,286,567	2,294,831	565,962	--	5,147,360	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
Storage										
2016	4,489	7,575	11,698	--	23,762	793	79	31	--	903
2017	13,276	15,356	12,328	--	40,960	2,316	137	34	--	2,487
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
Virtual PV (1 MW and over)										
2016	15,171	194,318	--	--	209,489	5,193	322	--	--	5,515
2017	11,115	287,440	2,000	--	300,555	3,611	535	2	--	4,148
2018	19,719	360,749	2,603	--	383,071	6,045	2,037	17	--	8,099
2019	19,883	401,179	4,212	--	425,274	5,939	2,164	22	--	8,125
2020	22,989	571,974	5,123	--	600,086	6,983	2,544	27	--	9,554
2021	27,123	779,409	4,444	--	810,976	6,362	5,389	27	--	11,788
2022	24,148	1,219,085	7,460	--	1,250,693	6,208	17,932	30	--	24,170
Virtual PV (under 1 MW)										
2016	27,482	73,116	3,168	--	103,766	8,705	1,506	11	--	10,222
2017	42,005	129,547	5,136	--	176,689	11,337	2,372	17	--	13,726
2018	49,232	163,228	5,466	--	217,926	13,071	2,959	16	--	16,046
2019	57,609	223,409	6,472	--	287,489	14,814	3,744	18	--	18,576
2020	85,477	246,525	6,722	--	338,724	16,428	3,973	19	--	20,420
2021	129,669	302,048	7,798	--	439,516	22,518	5,816	22	--	28,356
2022	136,161	274,328	8,420	--	418,911	23,193	6,829	24	--	30,046
Wind										
2012	33,484	74,620	17,495	--	125,599	4,796	1,143	48	--	5,987
2013	38,987	92,818	14,659	--	146,464	5,265	1,308	92	--	6,665
2014	37,918	101,622	25,426	--	164,966	5,379	1,351	94	--	6,824
2015	34,893	103,086	29,137	--	167,116	5,387	1,434	109	--	6,930
2016	37,030	108,726	41,454	--	187,210	5,759	1,470	113	--	7,342
2017	35,005	119,651	49,507	--	204,163	5,258	1,429	111	--	6,798
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
Other										
2012	7,539	65,821	83,170	--	156,530	862	314	122	--	1,298
2013	6,785	80,405	80,568	--	167,758	598	331	169	--	1,098
2014	7,633	102,797	98,277	--	208,707	857	397	201	--	1,455
2015	7,873	116,382	116,780	--	241,035	821	445	249	--	1,515
2016	7,952	155,889	149,608	--	313,449	862	592	325	--	1,779
2017	9,064	208,639	199,398	--	417,101	915	693	330	--	1,938
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
All Technologies										
2012	1,583,249	1,882,262	495,993	--	3,961,504	300,095	29,068	1,487	--	330,650
2013	2,332,339	2,468,054	661,209	--	5,461,602	448,058	37,018	2,741	--	487,817
2014	3,498,538	3,137,541	834,422	--	7,470,501	648,512	45,083	3,426	--	697,021
2015	5,400,124	3,674,592	1,030,581	--	10,105,297	965,058	53,380	3,982	--	1,022,420
2016	7,715,715	4,576,384	1,289,946	--	13,582,045	1,341,796	64,346	4,840	--	1,410,982
2017	9,584,177	5,865,147	1,453,826	--	16,903,148	1,647,404	74,567	5,727	--	1,727,698
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

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, 2022
(Megawatts, Percent)**

Producer Type	Fuel-Switchable Part of Total				
	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	266,709.4	82,706.3	31.0%	78,396.2	19,755.3
Independent Power Producers, Non-Combined Heat and Power Plants	192,400.0	41,538.3	21.6%	38,152.4	8,250.6
Independent Power Producers, Combined Heat and Power Plants	24,505.3	3,479.4	14.2%	3,440.1	300.4
Electric Power Sector Subtotal	483,614.7	127,724.0	26.4%	119,988.8	28,306.3
Commercial Sector	2,378.2	950.7	40.0%	899.9	138.9
Industrial Sector	16,404.0	897.1	5.5%	873.6	66.8
All Sectors	502,396.9	129,571.8	25.8%	121,762.3	28,512.0

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, 2022 (Megawatts, Percent)

Producer Type	Total Net Summer Capacity of All Generators Reporting Petroleum Liquids as the Primary Fuel	Fuel-Switchable Part of Total		
		Net Summer Capacity of Petroleum Liquids-Fired Generators Reporting the Ability to Switch to Natural Gas	Fuel Switchable Capacity as Percent of Total	Maximum Achievable Net Summer Capacity Using Natural Gas
Electric Utilities	15,534.6	1,713.4	11.0%	1,698.3
Independent Power Producers, Non-Combined Heat and Power Plants	12,386.6	4,168.9	33.7%	2,930.0
Independent Power Producers, Combined Heat and Power Plants	259.6	--	0.0%	--
Electric Power Sector Subtotal	28,180.8	5,882.3	20.9%	4,628.3
Commercial Sector	950.6	--	0.0%	--
Industrial Sector	305.0	29.0	9.5%	25.0
All Sectors	29,436.4	5,911.3	20.1%	4,660.8

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, 2022 (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	23,898.5	9,513.0
Combined Cycle	371	48,952.5	6,622.9
Internal Combustion	308	1,233.4	379.6
Gas Turbine	806	55,487.4	11,996.5
All Fuel Switchable Prime Movers	1,646	129,571.8	28,512.0

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, 2022 (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	242	10,391.4	4,281.7
1970-1974	213	10,592.2	3,775.8
1975-1979	89	10,530.4	3,959.0
1980-1984	39	1,038.2	203.8
1985-1989	75	2,249.7	193.2
1990-1994	176	10,345.1	1,302.7
1995-1999	121	8,760.9	1,663.5
2000-2004	390	37,110.2	6,293.1
2005-2009	116	15,524.6	1,731.0
2010-2014	100	11,464.0	246.4
2015-2019	66	8,953.8	2,681.0
2020-2022	19	2,611.3	2,180.8
Total	1,646	129,571.8	28,512.0

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, 2012 - 2022 (Thousand Tons)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	825,734	615,467	205,295	307	4,665
2013	860,729	638,327	217,219	513	4,670
2014	853,634	624,235	224,568	202	4,629
2015	739,594	539,506	195,927	163	3,999
2016	677,371	496,192	178,047	111	3,021
2017	663,911	484,389	176,643	95	2,783
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
Year 2020					
January	36,810	27,330	9,285	7	189
February	32,074	23,698	8,192	9	175
March	29,028	21,713	7,145	7	163
April	23,654	17,026	6,481	4	143
May	26,801	19,829	6,829	4	139
June	36,589	27,777	8,677	5	129
July	49,751	38,259	11,347	5	141
August	50,406	38,919	11,340	4	142
September	38,685	29,643	8,884	7	151
October	33,823	24,914	8,758	6	145
November	34,271	24,622	9,506	6	137
December	43,459	31,623	11,680	8	149
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

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

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

Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.

Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; synthetic coal and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.

See the Technical Notes for fuel conversion factors.

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

Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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

Table 5.1.B. Coal: Consumption for Useful Thermal Output, by Sector, 2012 - 2022 (Thousand Tons)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	19,333	0	2,790	1,143	15,400
2013	18,350	0	2,416	843	15,090
2014	18,107	978	1,821	861	14,448
2015	16,632	1,032	1,980	635	12,985
2016	16,586	2,979	1,336	572	11,700
2017	14,667	2,802	1,158	515	10,192
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
Year 2020					
January	1,057	167	69	43	778
February	974	146	64	44	719
March	864	111	56	38	660
April	763	93	58	26	586
May	758	112	49	26	571
June	743	122	48	27	546
July	850	162	52	27	609
August	837	158	57	30	592
September	813	131	55	33	594
October	904	148	67	29	661
November	846	124	65	33	624
December	993	162	74	45	712
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

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

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

Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.

Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; synthetic coal and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.

See the Technical Notes for fuel conversion factors.

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

Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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

Table 5.1.C. Coal: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2012 - 2022 (Thousand Tons)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	845,066	615,467	208,085	1,450	20,065
2013	879,078	638,327	219,635	1,356	19,761
2014	871,741	625,212	226,389	1,063	19,076
2015	756,226	540,538	197,906	798	16,984
2016	693,958	499,172	179,383	683	14,720
2017	678,578	487,192	177,801	610	12,975
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
Year 2020					
January	37,867	27,497	9,354	50	967
February	33,048	23,845	8,256	54	894
March	29,892	21,823	7,201	45	823
April	24,417	17,118	6,539	30	729
May	27,559	19,941	6,878	30	709
June	37,331	27,899	8,725	32	676
July	50,601	38,421	11,400	31	749
August	51,243	39,078	11,397	34	734
September	39,498	29,774	8,939	40	745
October	34,727	25,061	8,825	34	806
November	35,117	24,746	9,572	39	761
December	44,452	31,784	11,754	53	861
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

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

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Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.

Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; synthetic coal and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.

See the Technical Notes for fuel conversion factors.

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

Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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

Table 5.1.D. Coal: Consumption for Electricity Generation, by Sector, 2012 - 2022 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	15,867,141	11,995,971	3,767,011	6,383	97,775
2013	16,509,468	12,421,537	3,981,216	9,444	97,270
2014	16,472,004	12,217,628	4,154,134	4,344	95,898
2015	14,167,878	10,456,910	3,624,869	3,443	82,656
2016	12,979,911	9,641,625	3,274,103	2,293	61,889
2017	12,606,527	9,328,961	3,219,833	1,914	55,820
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
Year 2020					
January	691,080	516,320	170,867	136	3,758
February	596,761	445,631	147,505	170	3,454
March	539,584	408,658	127,523	132	3,270
April	436,881	322,899	111,046	70	2,866
May	501,143	377,476	120,834	77	2,755
June	701,329	536,117	162,548	95	2,569
July	954,198	737,509	213,761	91	2,837
August	963,558	752,136	208,476	83	2,863
September	730,081	566,209	160,768	130	2,975
October	634,124	471,096	160,027	95	2,905
November	647,729	466,121	178,744	108	2,757
December	827,694	605,981	218,562	143	3,008
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

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

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

Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.

Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; synthetic coal and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.

See the Technical Notes for fuel conversion factors.

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

Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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

Table 5.1.E. Coal: Consumption for Useful Thermal Output, by Sector, 2012 - 2022 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	420,923	0	58,275	23,673	338,975
2013	401,108	0	47,677	18,535	334,897
2014	391,550	18,332	37,139	18,805	317,274
2015	356,895	18,640	37,815	13,483	286,956
2016	342,370	51,590	29,330	11,736	249,714
2017	297,521	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
Year 2020					
January	21,198	2,704	1,515	832	16,148
February	19,437	2,445	1,392	838	14,762
March	17,475	1,898	1,238	692	13,648
April	15,396	1,556	1,244	442	12,154
May	15,145	1,875	1,038	466	11,767
June	14,851	2,053	1,106	496	11,195
July	17,040	2,704	1,223	530	12,583
August	16,739	2,657	1,210	555	12,317
September	16,052	2,125	1,129	626	12,171
October	17,981	2,356	1,371	503	13,751
November	16,891	1,951	1,378	592	12,970
December	19,848	2,629	1,530	852	14,837
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

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

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Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.

Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; synthetic coal and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.

See the Technical Notes for fuel conversion factors.

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

Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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

Table 5.1.F. Coal: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2012 - 2022 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	16,288,063	11,995,971	3,825,286	30,056	436,750
2013	16,910,576	12,421,537	4,028,894	27,979	432,167
2014	16,863,554	12,235,960	4,191,273	23,149	413,173
2015	14,524,773	10,475,551	3,662,685	16,926	369,612
2016	13,322,281	9,693,215	3,303,433	14,029	311,604
2017	12,904,048	9,377,705	3,244,514	12,198	269,630
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
Year 2020					
January	712,278	519,024	172,382	967	19,905
February	616,198	448,076	148,898	1,009	18,216
March	557,059	410,556	128,761	824	16,918
April	452,277	324,455	112,291	512	15,020
May	516,288	379,351	121,872	544	14,522
June	716,179	538,170	163,654	591	13,764
July	971,238	740,212	214,984	621	15,420
August	980,297	754,793	209,686	638	15,180
September	746,133	568,333	161,897	756	15,146
October	652,104	473,452	161,398	598	16,656
November	664,620	468,072	180,122	699	15,727
December	847,542	608,610	220,092	996	17,844
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

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

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

Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.

Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; synthetic coal and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.

See the Technical Notes for fuel conversion factors.

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

Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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

Table 5.2.A. Petroleum Liquids: Consumption for Electricity Generation, by Sector, 2012 - 2022 (Thousand Barrels)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	22,604	17,521	4,110	272	702
2013	23,231	16,827	5,494	328	582
2014	31,531	19,652	10,689	451	739
2015	28,925	18,562	9,473	249	641
2016	22,405	16,137	5,624	108	536
2017	21,696	15,567	5,461	191	476
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
Year 2020					
January	1,741	1,438	244	23	37
February	1,446	1,146	243	13	45
March	1,292	962	280	17	33
April	1,169	878	235	13	44
May	1,323	1,015	254	22	31
June	1,536	1,189	293	20	34
July	1,700	1,296	345	25	33
August	1,648	1,285	314	24	25
September	1,405	1,106	250	23	26
October	1,580	1,257	272	17	34
November	1,461	1,116	290	21	34
December	1,708	1,225	427	21	35
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

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 Gases.

See the Technical Notes for fuel conversion factors.

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

Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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

Table 5.2.B. Petroleum Liquids: Consumption for Useful Thermal Output, by Sector, 2012 - 2022 (Thousand Barrels)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	3,097	0	992	122	1,984
2013	3,456	0	1,050	498	1,908
2014	3,099	64	1,170	216	1,650
2015	3,142	62	1,155	282	1,643
2016	2,277	68	245	245	1,719
2017	2,012	72	220	238	1,482
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
Year 2020					
January	145	7	9	26	103
February	168	6	10	17	135
March	124	3	12	20	89
April	219	6	14	12	188
May	114	4	13	29	68
June	124	5	12	17	89
July	124	5	15	25	79
August	125	5	15	32	74
September	121	3	16	23	80
October	134	5	19	17	92
November	154	5	19	25	106
December	178	6	26	27	119
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

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 Gases.

See the Technical Notes for fuel conversion factors.

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

Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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Table 5.2.C. Petroleum Liquids: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2012 - 2022 (Thousand Barrels)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	25,702	17,521	5,102	394	2,685
2013	26,687	16,827	6,544	826	2,490
2014	34,630	19,716	11,859	667	2,389
2015	32,067	18,624	10,629	531	2,283
2016	24,682	16,205	5,869	352	2,255
2017	23,708	15,640	5,681	429	1,958
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
Year 2020					
January	1,886	1,445	253	49	140
February	1,614	1,151	252	30	180
March	1,416	965	292	37	122
April	1,388	883	249	24	232
May	1,437	1,019	267	52	99
June	1,660	1,194	306	37	123
July	1,824	1,301	360	50	113
August	1,773	1,290	329	55	99
September	1,526	1,109	266	46	106
October	1,714	1,263	291	34	126
November	1,616	1,121	309	46	140
December	1,886	1,231	453	48	154
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

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

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Petroleum Liquids includes distillate and residual fuel oils, jet fuel, kerosene, waste oil, and beginning in 2011, propane. Prior to 2011 propane was included in Other Gases.

See the Technical Notes for fuel conversion factors.

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

Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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, 2012 - 2022 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	134,956	105,179	24,081	1,618	4,078
2013	139,139	101,217	32,504	2,038	3,380
2014	188,814	118,226	63,488	2,765	4,335
2015	172,884	111,808	55,979	1,482	3,616
2016	133,457	96,967	32,922	639	2,928
2017	128,649	92,975	31,895	1,125	2,654
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
Year 2020					
January	10,242	8,523	1,391	131	196
February	8,502	6,788	1,394	76	245
March	7,557	5,659	1,624	102	172
April	6,835	5,189	1,334	74	239
May	7,761	6,026	1,443	131	160
June	9,022	7,033	1,689	116	183
July	9,982	7,645	2,002	145	190
August	9,675	7,577	1,817	140	141
September	8,261	6,555	1,425	135	145
October	9,307	7,466	1,554	98	189
November	8,557	6,575	1,671	124	187
December	10,035	7,240	2,477	124	195
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

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

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

Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.

Petroleum Liquids includes distillate and residual fuel oils, jet fuel, kerosene, waste oil, and beginning in 2011, propane. Prior to 2011 propane was included in Other Gases.

See the Technical Notes for fuel conversion factors.

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

Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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

Table 5.2.E. Petroleum Liquids: Consumption for Useful Thermal Output, by Sector, 2012 - 2022 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	18,233	0	5,871	746	11,616
2013	20,717	0	6,176	3,292	11,248
2014	18,181	395	6,802	1,311	9,672
2015	18,449	379	6,748	1,755	9,568
2016	13,164	395	1,391	1,496	9,882
2017	11,825	405	1,253	1,432	8,736
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
Year 2020					
January	823	38	55	157	572
February	965	30	59	104	772
March	707	17	71	118	502
April	1,254	31	81	70	1,072
May	638	22	74	171	370
June	713	27	71	103	511
July	716	24	85	148	459
August	730	25	87	182	436
September	710	16	93	133	469
October	770	29	112	100	529
November	895	26	110	149	609
December	1,041	31	157	160	693
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

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

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Petroleum Liquids includes distillate and residual fuel oils, jet fuel, kerosene, waste oil, and beginning in 2011, propane. Prior to 2011 propane was included in Other Gases.

See the Technical Notes for fuel conversion factors.

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

Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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

Table 5.2.F. Petroleum Liquids: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2012 - 2022 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	153,189	105,179	29,952	2,364	15,695
2013	159,855	101,217	38,681	5,330	14,628
2014	206,995	118,621	70,291	4,076	14,008
2015	191,333	112,186	62,727	3,236	13,184
2016	146,621	97,363	34,313	2,135	12,810
2017	140,474	93,380	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
Year 2020					
January	11,064	8,561	1,447	288	768
February	9,467	6,818	1,453	180	1,017
March	8,264	5,676	1,694	220	674
April	8,089	5,220	1,415	144	1,311
May	8,398	6,048	1,517	302	531
June	9,735	7,061	1,761	219	694
July	10,698	7,669	2,087	293	649
August	10,405	7,602	1,905	321	577
September	8,971	6,571	1,518	268	614
October	10,077	7,495	1,666	198	717
November	9,452	6,602	1,781	272	797
December	11,076	7,270	2,633	284	888
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

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

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Petroleum Liquids includes distillate and residual fuel oils, jet fuel, kerosene, waste oil, and beginning in 2011, propane. Prior to 2011 propane was included in Other Gases.

See the Technical Notes for fuel conversion factors.

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

Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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, 2012 - 2022 (Thousand Tons)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	3,675	2,105	756	1	812
2013	4,852	3,409	779	1	662
2014	4,412	3,440	599	2	371
2015	4,044	3,120	669	2	253
2016	4,253	3,427	591	2	233
2017	3,490	2,731	542	3	214
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
Year 2020					
January	257	204	38	0	15
February	217	147	58	0	12
March	285	210	63	0	13
April	245	179	57	0	9
May	256	183	59	0	14
June	323	258	52	0	13
July	332	261	58	0	13
August	308	236	57	0	14
September	175	116	46	0	13
October	155	82	59	0	14
November	226	157	55	0	14
December	297	227	56	0	14
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

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

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

Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.

Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.

See the Technical Notes for fuel conversion factors.

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

Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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

Table 5.3.B. Petroleum Coke: Consumption for Useful Thermal Output, by Sector, 2012 - 2022 (Thousand Tons)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	1,346	0	113	11	1,222
2013	1,486	0	96	11	1,379
2014	1,283	3	90	16	1,174
2015	1,144	9	109	16	1,010
2016	1,099	6	113	9	971
2017	977	11	115	15	836
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
Year 2020					
January	74	1	11	2	60
February	56	1	12	1	41
March	46	1	11	0	34
April	39	3	9	0	26
May	62	3	10	0	49
June	73	1	9	0	64
July	73	1	10	0	63
August	75	1	11	0	63
September	72	1	12	0	60
October	67	0	9	0	57
November	67	2	9	0	56
December	76	1	11	0	65
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

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

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Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.

See the Technical Notes for fuel conversion factors.

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

Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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

Table 5.3.C. Petroleum Coke: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2012 - 2022 (Thousand Tons)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	5,021	2,105	869	13	2,034
2013	6,338	3,409	875	12	2,041
2014	5,695	3,443	689	18	1,545
2015	5,188	3,128	779	18	1,263
2016	5,352	3,433	705	10	1,204
2017	4,467	2,742	657	17	1,050
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
Year 2020					
January	331	205	49	2	75
February	273	148	70	1	53
March	331	211	74	0	46
April	284	182	67	0	35
May	318	187	69	0	63
June	396	258	61	0	78
July	405	261	68	0	76
August	384	237	69	0	77
September	247	117	58	0	73
October	222	83	68	0	70
November	293	159	64	0	70
December	373	228	67	0	78
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

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

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Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.

See the Technical Notes for fuel conversion factors.

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

Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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

Table 5.3.D. Petroleum Coke: Consumption for Electricity Generation, by Sector, 2012 - 2022 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	105,488	60,862	21,643	39	22,944
2013	138,774	97,626	22,052	38	19,058
2014	123,736	95,642	17,032	59	11,003
2015	113,568	87,210	18,889	58	7,411
2016	118,303	94,892	16,591	47	6,774
2017	94,136	72,919	15,100	72	6,045
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
Year 2020					
January	7,023	5,522	1,073	11	417
February	5,979	4,008	1,615	7	350
March	7,817	5,727	1,739	0	350
April	6,837	4,958	1,615	0	264
May	6,885	4,846	1,655	0	383
June	8,833	6,972	1,462	0	398
July	9,159	7,123	1,638	0	398
August	8,456	6,394	1,632	0	431
September	4,790	3,109	1,290	0	391
October	4,139	2,094	1,642	0	402
November	6,334	4,385	1,527	0	422
December	8,175	6,204	1,558	0	413
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

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

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Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.

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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 5.3.E. Petroleum Coke: Consumption for Useful Thermal Output, by Sector, 2012 - 2022 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	38,777	0	3,281	315	35,181
2013	40,846	0	2,769	305	37,772
2014	36,602	90	2,597	449	33,467
2015	33,138	255	3,167	446	29,269
2016	32,473	159	3,255	241	28,817
2017	28,680	297	3,335	403	24,645
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
Year 2020					
January	2,096	33	307	54	1,702
February	1,521	36	346	33	1,107
March	1,240	28	314	0	898
April	1,097	89	273	0	736
May	1,802	98	283	0	1,422
June	2,147	15	246	0	1,885
July	2,135	17	279	0	1,839
August	2,225	23	332	0	1,870
September	2,132	26	338	0	1,768
October	1,973	9	275	0	1,690
November	2,002	53	260	0	1,689
December	2,252	26	310	0	1,916
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

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

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

Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.

Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.

See the Technical Notes for fuel conversion factors.

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

Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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

Table 5.3.F. Petroleum Coke: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2012 - 2022 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	144,266	60,862	24,925	353	58,126
2013	179,621	97,626	24,821	343	56,831
2014	160,338	95,731	19,629	508	44,470
2015	146,706	87,465	22,056	505	36,680
2016	150,776	95,051	19,846	288	35,591
2017	122,816	73,216	18,435	475	30,690
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
Year 2020					
January	9,119	5,556	1,380	65	2,118
February	7,501	4,044	1,960	40	1,456
March	9,057	5,755	2,053	0	1,248
April	7,934	5,047	1,887	0	1,000
May	8,687	4,944	1,938	0	1,805
June	10,980	6,988	1,709	0	2,283
July	11,295	7,140	1,918	0	2,237
August	10,681	6,417	1,964	0	2,301
September	6,922	3,135	1,627	0	2,159
October	6,112	2,103	1,917	0	2,091
November	8,336	4,437	1,787	0	2,111
December	10,427	6,231	1,867	0	2,329
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

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

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Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.

See the Technical Notes for fuel conversion factors.

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

Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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

Table 5.4.A. Natural Gas: Consumption for Electricity Generation, by Sector, 2012 - 2022 (Million Cubic Feet)

Period	Total (all sectors)	Electric Power Sector			Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers			
Annual Totals						
2012	9,484,710	4,101,927	4,686,260		63,116	633,407
2013	8,596,299	3,970,447	3,917,131		66,570	642,152
2014	8,544,387	3,895,008	3,954,032		71,957	623,390
2015	10,016,576	4,745,255	4,576,683		70,092	624,545
2016	10,170,110	5,018,894	4,571,375		46,304	533,537
2017	9,508,062	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	12,384,098	6,376,042	5,364,051		48,658	595,347
Year 2020						
January	976,483	504,731	411,105		4,616	56,032
February	917,866	478,737	383,490		4,211	51,428
March	915,706	486,128	373,112		3,944	52,521
April	799,298	428,329	320,603		3,491	46,874
May	858,837	465,031	342,427		3,664	47,715
June	1,065,962	559,710	450,418		4,366	51,468
July	1,372,851	704,273	607,755		5,434	55,389
August	1,302,728	665,889	576,428		5,247	55,165
September	1,038,152	525,453	459,392		4,433	48,874
October	971,619	502,114	416,665		4,222	48,618
November	796,405	407,055	336,578		3,818	48,953
December	912,197	468,702	383,595		4,381	55,518
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	947,261	488,790	406,341		3,767	48,363
June	1,168,712	623,024	491,993		4,050	49,645
July	1,430,805	752,312	619,375		4,873	54,245
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	928,163	480,119	394,845		3,849	49,349
December	1,015,892	524,610	437,788		4,265	49,228

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, 2012 - 2022 (Million Cubic Feet)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	886,103	0	322,607	47,883	515,613
2013	882,385	0	303,177	51,057	528,151
2014	865,146	4,926	292,016	46,635	521,569
2015	935,098	8,060	283,372	46,287	597,379
2016	1,151,866	38,096	356,905	80,943	675,922
2017	1,168,544	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	1,206,240	46,329	305,125	74,683	780,102
Year 2020					
January	129,482	4,242	28,854	7,419	88,968
February	118,342	3,980	26,837	6,952	80,572
March	118,437	4,270	27,273	6,437	80,457
April	110,653	3,892	24,979	5,617	76,165
May	96,238	3,816	25,835	5,410	61,178
June	98,513	3,863	27,110	6,221	61,318
July	107,695	4,465	29,304	7,589	66,337
August	106,062	4,198	29,533	7,184	65,147
September	97,666	3,544	27,518	6,366	60,238
October	102,031	3,214	26,299	6,455	66,063
November	97,482	3,022	25,404	6,268	62,788
December	110,021	4,518	28,032	6,926	70,546
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	66,155
April	92,922	2,748	22,502	5,734	61,937
May	95,758	3,356	24,200	5,623	62,579
June	97,703	3,887	25,622	5,855	62,339
July	106,539	4,604	28,679	6,816	66,439
August	106,095	4,242	27,578	6,894	67,380
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	104,563	4,401	25,603	6,659	67,900

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

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Values 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.

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Table 5.4.C. Natural Gas: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2012 - 2022 (Million Cubic Feet)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	10,370,812	4,101,927	5,008,867	110,999	1,149,020
2013	9,478,685	3,970,447	4,220,309	117,626	1,170,303
2014	9,409,532	3,899,934	4,246,048	118,591	1,144,959
2015	10,951,674	4,753,315	4,860,055	116,380	1,221,924
2016	11,321,975	5,056,990	4,928,280	127,246	1,209,459
2017	10,676,606	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	13,590,337	6,422,370	5,669,176	123,342	1,375,449
Year 2020					
January	1,105,965	508,973	439,958	12,034	145,000
February	1,036,208	482,717	410,328	11,163	132,001
March	1,034,143	490,399	400,385	10,381	132,978
April	909,952	432,222	345,582	9,108	123,040
May	955,075	468,847	368,261	9,074	108,893
June	1,164,475	563,573	477,528	10,587	112,787
July	1,480,547	708,738	637,059	13,023	121,727
August	1,408,790	670,087	605,961	12,431	120,311
September	1,135,818	528,997	486,910	10,799	109,112
October	1,073,650	505,328	442,965	10,677	114,681
November	893,886	410,077	361,982	10,086	111,741
December	1,022,219	473,220	411,627	11,308	126,064
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	1,043,019	492,145	430,541	9,390	110,942
June	1,266,415	626,911	517,616	9,905	111,984
July	1,537,344	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	484,137	417,970	9,543	114,655
December	1,120,456	529,011	463,391	10,924	117,129

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

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Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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Table 5.4.D. Natural Gas: Consumption for Electricity Generation, by Sector, 2012 - 2022 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector			Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers			
Annual Totals						
2012	9,696,575	4,179,725	4,802,741		64,987	649,122
2013	8,813,288	4,059,838	4,026,793		67,918	658,740
2014	8,795,303	4,001,826	4,076,787		74,194	642,495
2015	10,360,990	4,905,009	4,739,438		71,929	644,615
2016	10,515,826	5,189,543	4,728,444		47,550	550,288
2017	9,827,794	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	12,792,601	6,580,270	5,550,640		50,198	611,493
Year 2020						
January	1,011,544	522,536	426,723		4,736	57,549
February	949,941	494,950	397,868		4,323	52,799
March	948,033	503,000	387,055		4,045	53,933
April	828,199	443,644	332,835		3,579	48,141
May	886,047	479,695	353,936		3,768	48,648
June	1,098,382	576,128	465,080		4,479	52,696
July	1,415,363	725,475	627,718		5,567	56,604
August	1,344,082	686,935	595,290		5,378	56,479
September	1,072,651	542,760	475,247		4,557	50,087
October	1,003,144	518,238	430,726		4,335	49,845
November	822,719	420,145	348,452		3,918	50,204
December	944,744	485,053	398,177		4,492	57,022
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	851,166	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	976,907	503,588	419,789		3,875	49,655
June	1,205,401	642,073	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	1,052,599	543,210	454,312		4,413	50,664

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

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

Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.

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

Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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

Table 5.4.E. Natural Gas: Consumption for Useful Thermal Output, by Sector, 2012 - 2022 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	909,087	0	330,354	48,944	529,788
2013	905,583	0	311,058	51,939	542,587
2014	891,994	5,033	300,870	47,579	538,514
2015	965,573	8,254	292,629	47,573	617,118
2016	1,188,399	39,123	367,919	83,938	697,418
2017	1,204,582	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	1,241,802	47,619	313,753	77,225	803,204
Year 2020					
January	132,924	4,370	29,791	7,665	91,096
February	121,538	4,100	27,747	7,187	82,505
March	121,655	4,389	28,177	6,657	82,432
April	113,772	4,009	25,887	5,809	78,068
May	99,246	3,922	26,735	5,603	62,987
June	101,332	3,965	27,873	6,427	63,068
July	110,815	4,589	30,155	7,828	68,243
August	109,236	4,318	30,395	7,417	67,105
September	100,534	3,653	28,244	6,575	62,063
October	105,228	3,301	27,020	6,670	68,237
November	100,423	3,107	26,110	6,492	64,715
December	113,521	4,655	28,891	7,160	72,815
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	115,424	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	95,491	2,808	23,111	5,921	63,651
May	98,431	3,439	24,825	5,804	64,362
June	100,539	3,996	26,351	6,061	64,130
July	109,613	4,736	29,480	7,039	68,358
August	109,238	4,375	28,378	7,127	69,359
September	99,548	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

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

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

Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.

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

Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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

Table 5.4.F. Natural Gas: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2012 - 2022 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	10,605,661	4,179,725	5,133,095	113,932	1,178,910
2013	9,718,871	4,059,838	4,337,851	119,857	1,201,326
2014	9,687,297	4,006,859	4,377,657	121,773	1,181,009
2015	11,326,564	4,913,263	5,032,066	119,502	1,261,732
2016	11,704,224	5,228,667	5,096,363	131,489	1,247,706
2017	11,032,375	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	14,034,403	6,627,890	5,864,393	127,423	1,414,697
Year 2020					
January	1,144,468	526,907	456,514	12,401	148,646
February	1,071,479	499,050	425,615	11,509	135,304
March	1,069,688	507,390	415,232	10,701	136,366
April	941,971	447,653	358,721	9,388	126,208
May	985,293	483,617	380,670	9,371	111,635
June	1,199,714	580,093	492,952	10,905	115,763
July	1,526,178	730,064	657,873	13,395	124,846
August	1,453,318	691,254	625,686	12,794	123,584
September	1,173,185	546,413	503,490	11,132	112,150
October	1,108,372	521,539	457,746	11,005	118,082
November	923,141	423,251	374,562	10,410	114,919
December	1,058,265	489,708	427,068	11,652	129,837
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	887,364	406,504	360,181	9,559	111,120
May	1,075,338	507,028	444,615	9,679	114,017
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	125,224
September	1,288,914	602,784	561,511	10,493	114,125
October	1,102,096	510,470	467,408	9,358	114,859
November	1,059,735	499,434	432,459	9,857	117,985
December	1,160,367	547,747	480,662	11,290	120,668

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

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

Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.

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

Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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

Table 5.5.D. Wood / Wood Waste Biomass: Consumption for Electricity Generation, by Sector, 2012 - 2022 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	390,342	32,723	138,217	478	218,924
2013	397,929	43,363	143,721	536	210,308
2014	431,285	45,643	174,513	961	210,167
2015	406,650	43,919	171,387	504	190,840
2016	359,983	41,036	149,516	473	168,959
2017	363,646	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	323,764	46,357	125,125	1,140	151,142
Year 2020					
January	29,263	3,341	11,363	49	14,510
February	27,502	3,095	10,658	41	13,708
March	27,511	2,644	10,423	32	14,412
April	23,851	1,872	8,674	8	13,298
May	25,105	1,918	9,789	30	13,367
June	24,647	2,209	9,540	54	12,844
July	27,217	3,084	10,984	89	13,060
August	28,930	3,838	11,730	90	13,272
September	25,307	2,138	10,529	45	12,595
October	24,776	2,099	9,962	58	12,656
November	26,008	2,737	10,309	49	12,913
December	28,265	2,629	11,734	64	13,838
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	26,037	3,542	9,711	110	12,675
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

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

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Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.

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

Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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

Table 5.5.E. Wood / Wood Waste Biomass: Consumption for Useful Thermal Output, by Sector, 2012 - 2022 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	883,158	0	19,251	949	862,958
2013	919,631	0	20,342	950	898,339
2014	946,344	8,835	22,262	3,766	911,481
2015	943,962	9,351	19,200	3,714	911,697
2016	969,841	10,950	22,905	4,520	931,465
2017	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	819,395	4,629	21,579	3,158	790,029
Year 2020					
January	77,620	368	2,309	483	74,460
February	73,345	368	2,284	453	70,240
March	75,205	368	2,277	353	72,207
April	70,552	262	1,929	238	68,122
May	72,051	123	2,109	321	69,497
June	67,936	155	2,099	394	65,288
July	68,586	179	2,086	250	66,072
August	69,298	167	1,994	244	66,893
September	67,269	208	1,902	166	64,993
October	70,984	362	1,726	191	68,704
November	71,706	328	2,103	233	69,042
December	75,513	165	2,205	269	72,875
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	69,868	269	1,639	274	67,686
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

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

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

Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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

Table 5.5.F. Wood / Wood Waste Biomass: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2012 - 2022 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector			Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers			
Annual Totals						
2012	1,273,500	32,723	157,468		1,427	1,081,882
2013	1,317,560	43,363	164,063		1,486	1,108,647
2014	1,377,629	54,478	196,775		4,727	1,121,648
2015	1,350,612	53,269	190,587		4,219	1,102,537
2016	1,329,824	51,986	172,421		4,993	1,100,424
2017	1,303,279	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	1,143,159	50,986	146,704		4,297	941,171
Year 2020						
January	106,883	3,709	13,672		532	88,970
February	100,847	3,462	12,942		495	83,948
March	102,716	3,012	12,700		385	86,619
April	94,403	2,134	10,603		246	81,420
May	97,155	2,041	11,899		351	82,864
June	92,583	2,364	11,640		448	78,132
July	95,803	3,263	13,069		339	79,132
August	98,227	4,005	13,723		334	80,165
September	92,575	2,346	12,430		210	77,589
October	95,760	2,462	11,688		249	81,361
November	97,713	3,064	12,412		282	81,955
December	103,779	2,794	13,939		333	86,713
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	95,906	3,810	11,350		384	80,361
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

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.A. Landfill Gas: Consumption for Electricity Generation, by Sector, 2012 - 2022 (Million Cubic Feet)

Period	Total (all sectors)	Electric Power Sector			Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers			
Annual Totals						
2012	256,376	25,193	201,965		26,672	2,545
2013	271,967	27,259	211,942		28,143	4,623
2014	285,982	25,819	228,447		27,038	4,678
2015	282,530	25,257	227,381		25,250	4,642
2016	273,557	24,280	224,993		20,445	3,839
2017	278,112	25,074	229,050		20,121	3,866
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
Year 2020						
January	22,731	1,990	18,938		1,537	267
February	21,038	1,879	17,436		1,476	247
March	22,584	2,089	18,650		1,595	250
April	21,604	2,037	17,837		1,504	226
May	21,856	2,046	18,033		1,575	203
June	20,106	1,892	16,567		1,449	198
July	20,832	1,966	17,074		1,582	210
August	21,086	1,959	17,368		1,563	196
September	20,174	1,864	16,589		1,535	185
October	20,164	1,979	16,617		1,385	182
November	19,682	1,892	16,114		1,474	203
December	20,645	1,981	16,973		1,461	231
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

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

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

Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.

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

Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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

Table 5.6.B. Landfill Gas: Consumption for Useful Thermal Output, by Sector, 2012 - 2022 (Million Cubic Feet)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	3,189	0	2,788	340	61
2013	831	0	261	423	147
2014	1,710	176	525	674	335
2015	1,522	2	644	515	362
2016	4,163	3	2,339	1,034	788
2017	3,940	2	1,948	1,099	891
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
Year 2020					
January	343	0	211	36	95
February	352	0	196	65	91
March	331	0	167	73	91
April	270	0	111	70	89
May	324	0	188	54	83
June	322	0	177	65	80
July	352	0	197	76	79
August	347	0	196	74	76
September	345	0	197	74	74
October	372	0	195	106	72
November	309	0	167	61	81
December	343	0	186	67	90
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

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

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

Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.

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

Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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

Table 5.6.C. Landfill Gas: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2012 - 2022 (Million Cubic Feet)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	259,564	25,193	204,753	27,012	2,606
2013	272,798	27,259	212,203	28,566	4,770
2014	287,692	25,995	228,971	27,713	5,013
2015	284,052	25,259	228,024	25,765	5,004
2016	277,720	24,283	227,332	21,479	4,626
2017	282,051	25,076	230,998	21,220	4,757
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
Year 2020					
January	23,074	1,990	19,149	1,573	362
February	21,390	1,879	17,632	1,541	338
March	22,915	2,089	18,817	1,667	342
April	21,874	2,037	17,948	1,574	315
May	22,181	2,046	18,221	1,628	286
June	20,428	1,892	16,743	1,515	278
July	21,184	1,966	17,271	1,659	289
August	21,433	1,959	17,564	1,637	272
September	20,519	1,864	16,786	1,609	259
October	20,536	1,979	16,812	1,491	254
November	19,991	1,892	16,281	1,534	284
December	20,988	1,981	17,159	1,528	320
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

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

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Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.

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

Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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

Table 5.6.D. Landfill Gas: Consumption for Electricity Generation, by Sector, 2012 - 2022 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector			Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers			
Annual Totals						
2012	124,297	12,721	99,938		10,356	1,282
2013	132,766	13,819	105,330		11,290	2,327
2014	140,779	13,132	114,333		10,937	2,377
2015	138,085	12,846	112,911		10,023	2,304
2016	135,365	12,294	112,770		8,374	1,927
2017	137,635	13,071	114,131		8,508	1,926
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
Year 2020						
January	11,222	1,040	9,405		639	138
February	10,389	983	8,653		626	127
March	11,158	1,094	9,259		675	130
April	10,666	1,069	8,850		631	117
May	10,761	1,072	8,940		644	106
June	9,919	990	8,228		599	102
July	10,280	1,027	8,492		651	110
August	10,420	1,023	8,654		641	103
September	9,950	976	8,247		631	96
October	9,967	1,037	8,261		575	95
November	9,708	990	8,015		598	105
December	10,206	1,037	8,449		600	119
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

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

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

Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.

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

Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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

Table 5.6.E. Landfill Gas: Consumption for Useful Thermal Output, by Sector, 2012 - 2022 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	1,630	0	1,441	156	32
2013	414	0	132	206	76
2014	852	88	266	326	173
2015	756	1	326	250	179
2016	2,236	1	1,266	589	380
2017	2,196	1	1,066	698	431
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
Year 2020					
January	182	0	112	21	49
February	197	0	105	45	47
March	186	0	89	49	48
April	152	0	61	45	46
May	179	0	102	34	43
June	179	0	95	42	41
July	197	0	106	49	41
August	194	0	105	48	41
September	191	0	105	47	38
October	206	0	104	65	38
November	174	0	89	43	42
December	188	0	96	46	46
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

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.F. Landfill Gas: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2012 - 2022 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	125,927	12,721	101,379	10,512	1,315
2013	133,180	13,819	105,462	11,497	2,403
2014	141,632	13,220	114,599	11,263	2,550
2015	138,841	12,847	113,238	10,273	2,483
2016	137,600	12,295	114,036	8,963	2,307
2017	139,831	13,072	115,197	9,206	2,357
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
Year 2020					
January	11,405	1,041	9,518	660	187
February	10,586	983	8,758	671	174
March	11,344	1,094	9,348	724	178
April	10,818	1,069	8,911	675	163
May	10,941	1,072	9,041	679	149
June	10,097	990	8,323	641	144
July	10,477	1,027	8,598	701	151
August	10,614	1,023	8,759	689	143
September	10,140	976	8,352	678	135
October	10,173	1,037	8,365	640	132
November	9,882	990	8,104	641	147
December	10,394	1,037	8,545	647	166
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

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 5.7.A. Biogenic Municipal Solid Waste: Consumption for Electricity Generation, by Sector, 2012 - 2022 (Thousand Tons)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	16,968	418	14,235	2,304	12
2013	17,007	456	14,057	2,485	8
2014	16,706	444	13,809	2,447	6
2015	16,631	452	13,797	2,375	8
2016	16,994	464	13,953	2,566	11
2017	16,348	422	13,381	2,537	8
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
Year 2020					
January	1,323	19	1,107	196	1
February	1,204	14	1,014	175	1
March	1,331	26	1,109	195	1
April	1,266	25	1,061	179	1
May	1,312	24	1,094	192	1
June	1,222	25	1,010	187	1
July	1,355	26	1,130	199	1
August	1,380	26	1,160	194	1
September	1,274	23	1,072	179	1
October	1,259	24	1,052	183	1
November	1,255	24	1,046	184	1
December	1,334	22	1,121	190	1
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

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 5.7.B. Biogenic Municipal Solid Waste: Consumption for Useful Thermal Output, by Sector, 2012 - 2022 (Thousand Tons)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	1,986	0	522	1,273	190
2013	1,865	0	517	1,160	187
2014	1,955	0	650	1,104	200
2015	1,986	0	655	1,127	203
2016	2,232	0	885	1,134	213
2017	2,124	0	814	1,102	208
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
Year 2020					
January	146	0	73	59	13
February	139	0	69	53	16
March	138	0	62	61	15
April	139	0	61	61	16
May	148	0	67	65	16
June	131	0	67	51	13
July	135	0	59	62	15
August	149	0	64	64	21
September	122	0	51	55	15
October	132	0	60	57	14
November	129	0	57	57	16
December	141	0	67	58	16
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

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

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

Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.

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

Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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

Table 5.7.C. Biogenic Municipal Solid Waste: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2012 - 2022 (Thousand Tons)

Period	Electric Power Sector				
	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2012	18,954	418	14,757	3,577	203
2013	18,871	456	14,574	3,646	195
2014	18,661	444	14,459	3,551	206
2015	18,617	452	14,452	3,502	211
2016	19,226	464	14,838	3,700	224
2017	18,473	422	14,195	3,639	216
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
Year 2020					
January	1,469	19	1,180	256	14
February	1,342	14	1,083	228	17
March	1,469	26	1,171	256	16
April	1,405	25	1,122	241	17
May	1,459	24	1,161	257	17
June	1,353	25	1,077	238	14
July	1,491	26	1,188	261	16
August	1,530	26	1,224	258	22
September	1,397	23	1,123	234	16
October	1,391	24	1,112	240	15
November	1,384	24	1,102	241	16
December	1,475	22	1,188	248	17
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

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

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Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.

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

Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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

Table 5.7.D. Biogenic Municipal Solid Waste: Consumption for Electricity Generation, by Sector, 2012 - 2022 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	135,735	3,910	113,418	18,307	100
2013	135,764	4,459	111,430	19,811	64
2014	134,408	4,429	110,569	19,366	45
2015	133,117	4,295	109,691	19,068	63
2016	135,957	4,434	111,003	20,431	89
2017	130,942	4,172	106,382	20,320	67
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
Year 2020					
January	9,839	149	8,235	1,447	8
February	8,926	117	7,527	1,275	6
March	9,960	214	8,289	1,451	5
April	9,340	207	7,828	1,299	7
May	9,720	199	8,118	1,394	9
June	9,032	210	7,452	1,363	7
July	9,994	213	8,333	1,442	6
August	10,167	212	8,532	1,415	8
September	9,376	183	7,873	1,313	7
October	9,342	199	7,792	1,347	5
November	9,176	200	7,629	1,343	4
December	9,943	182	8,334	1,422	5
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

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

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Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.

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Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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

Table 5.7.E. Biogenic Municipal Solid Waste: Consumption for Useful Thermal Output, by Sector, 2012 - 2022 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	16,310	0	4,180	10,615	1,515
2013	15,168	0	4,145	9,530	1,493
2014	15,783	0	5,140	9,046	1,597
2015	16,623	0	5,195	9,752	1,676
2016	18,259	0	6,877	9,665	1,717
2017	17,720	0	6,475	9,474	1,772
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
Year 2020					
January	1,078	0	529	445	104
February	1,017	0	507	395	115
March	1,002	0	442	453	107
April	994	0	442	428	123
May	1,023	0	458	444	121
June	927	0	464	367	96
July	972	0	422	438	112
August	1,081	0	453	470	159
September	884	0	367	400	117
October	977	0	439	429	109
November	943	0	408	418	117
December	1,040	0	488	430	121
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

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, 2012 - 2022 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector			Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers			
Annual Totals						
2012	152,045	3,910	117,598		28,923	1,614
2013	150,932	4,459	115,574		29,342	1,557
2014	150,191	4,429	115,709		28,411	1,643
2015	149,740	4,295	114,886		28,821	1,739
2016	154,216	4,434	117,880		30,095	1,806
2017	148,662	4,172	112,857		29,794	1,839
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
Year 2020						
January	10,917	149	8,764		1,892	111
February	9,943	117	8,034		1,670	122
March	10,962	214	8,731		1,904	112
April	10,333	207	8,270		1,727	130
May	10,743	199	8,576		1,838	130
June	9,959	210	7,916		1,730	103
July	10,966	213	8,755		1,880	118
August	11,249	212	8,985		1,885	166
September	10,259	183	8,240		1,713	124
October	10,319	199	8,231		1,776	114
November	10,120	200	8,038		1,761	121
December	10,982	182	8,821		1,853	126
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

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

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

Table 5.8.D. Other Waste Biomass: Consumption for Electricity Generation, by Sector, 2012 - 2022 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	30,342	4,191	15,740	4,016	6,395
2013	29,385	2,432	13,671	4,979	8,303
2014	38,361	2,360	21,628	5,745	8,627
2015	41,785	2,853	25,058	5,935	7,939
2016	33,786	2,553	18,194	5,504	7,536
2017	35,755	1,845	22,517	5,288	6,105
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
Year 2020					
January	2,189	69	1,157	463	499
February	1,982	80	1,043	419	440
March	2,054	91	1,059	457	447
April	1,827	81	883	429	433
May	1,918	87	979	444	409
June	1,732	93	865	416	358
July	1,750	82	866	424	378
August	1,699	95	796	430	378
September	1,747	96	917	421	313
October	1,798	85	835	426	451
November	1,730	84	835	391	420
December	1,809	82	959	295	473
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

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

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Table 5.8.E. Other Waste Biomass: Consumption for Useful Thermal Output, by Sector, 2012 - 2022 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	46,863	0	6,914	1,796	38,153
2013	62,445	0	6,768	1,259	54,418
2014	65,201	15	6,930	1,543	56,712
2015	67,512	1	7,845	2,000	57,666
2016	57,123	18	11,252	3,569	42,284
2017	50,518	15	10,543	3,218	36,742
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
Year 2020					
January	4,944	0	1,211	294	3,438
February	4,380	0	1,108	282	2,990
March	4,458	8	1,208	272	2,970
April	3,656	8	622	268	2,759
May	3,428	1	560	260	2,607
June	2,615	0	552	264	1,799
July	2,507	0	467	260	1,780
August	2,665	0	541	257	1,866
September	2,228	0	453	257	1,518
October	3,827	0	666	254	2,907
November	4,122	0	902	230	2,990
December	4,553	0	1,068	267	3,217
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

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

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Table 5.8.F. Other Waste Biomass: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2012 - 2022 (Billion Btus)

Period	Total (all sectors)	Electric Power Sector		Commercial Sector	Industrial Sector
		Electric Utilities	Independent Power Producers		
Annual Totals					
2012	77,205	4,191	22,654	5,812	44,548
2013	91,830	2,432	20,439	6,238	62,721
2014	103,561	2,375	28,558	7,289	65,339
2015	109,297	2,854	32,903	7,935	65,605
2016	90,909	2,571	29,446	9,073	49,820
2017	86,274	1,860	33,060	8,506	42,848
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
Year 2020					
January	7,133	70	2,368	757	3,938
February	6,362	80	2,151	701	3,430
March	6,512	99	2,267	729	3,417
April	5,483	89	1,505	697	3,192
May	5,347	88	1,539	703	3,017
June	4,347	93	1,417	680	2,157
July	4,258	82	1,333	685	2,158
August	4,363	95	1,337	687	2,244
September	3,975	96	1,370	678	1,831
October	5,625	85	1,501	680	3,358
November	5,852	84	1,737	621	3,410
December	6,362	82	2,028	562	3,690
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

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

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

Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.

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

Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.

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

Table 5.9. Consumption of Coal for Electricity Generation by State by Sector, 2022 and 2021 (Thousand Tons)

Census Division and State	Electric Power Sector										
	All Sectors			Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
New England	159	294	-46.0%	0	0	159	294	0	0	0	0
Connecticut	0	158	-100.0%	0	0	0	158	0	0	0	0
Maine	12	12	-0.9%	0	0	12	0	0	0	0	0
Massachusetts	0	0	--	0	0	0	0	0	0	0	0
New Hampshire	147	123	19.0%	0	0	147	123	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	14,815	16,642	-11.0%	0	0	14,796	16,625	0	0	19	17
New Jersey	204	444	-54.0%	0	0	204	444	0	0	0	0
New York	0	0	--	0	0	0	0	0	0	0	0
Pennsylvania	14,611	16,198	-9.8%	0	0	14,592	16,181	0	0	19	17
East North Central	101,886	108,932	-6.5%	60,118	64,620	41,354	43,861	17	11	396	440
Illinois	24,665	26,080	-5.4%	1,076	1,060	23,276	24,670	5	3	308	347
Indiana	26,748	27,631	-3.2%	24,599	25,399	2,137	2,226	12	7	0	0
Michigan	19,845	20,693	-4.1%	19,680	20,539	164	154	0	0	1	1
Ohio	18,087	19,030	-5.0%	2,310	2,218	15,777	16,812	0	0	0	0
Wisconsin	12,541	15,498	-19.0%	12,454	15,406	0	0	0	0	87	93
West North Central	97,543	101,042	-3.5%	96,679	100,228	0	0	25	18	839	796
Iowa	10,341	12,673	-18.0%	9,833	12,195	0	0	16	12	492	465
Kansas	13,053	12,595	3.6%	13,053	12,595	0	0	0	0	0	0
Minnesota	9,366	9,222	1.6%	9,319	9,176	0	0	6	4	41	42
Missouri	30,999	33,737	-8.1%	30,996	33,734	0	0	3	3	0	0
Nebraska	12,191	11,882	2.6%	11,929	11,626	0	0	0	0	261	256
North Dakota	20,423	19,911	2.6%	20,379	19,878	0	0	0	0	44	33
South Dakota	1,171	1,024	14.0%	1,171	1,024	0	0	0	0	0	0
South Atlantic	52,975	61,394	-14.0%	45,215	53,117	7,622	8,129	5	7	134	141
Delaware	70	172	-59.0%	0	0	70	172	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	7,160	8,313	-14.0%	7,153	8,304	0	0	0	0	7	9
Georgia	8,895	9,968	-11.0%	8,858	9,930	0	0	0	0	36	38
Maryland	1,991	2,264	-12.0%	0	0	1,991	2,264	0	0	0	0
North Carolina	6,062	8,479	-29.0%	6,029	8,438	0	7	5	7	29	28
South Carolina	5,912	6,404	-7.7%	5,862	6,365	46	33	0	0	4	5
Virginia	1,710	1,544	11.0%	1,652	1,441	0	41	0	0	58	62
West Virginia	21,176	24,250	-13.0%	15,660	18,639	5,516	5,611	0	0	0	0
East South Central	50,338	51,951	-3.1%	47,051	48,812	3,209	3,050	0	0	78	90
Alabama	14,635	14,588	0.3%	14,635	14,588	0	0	0	0	0	0
Kentucky	22,339	23,584	-5.3%	22,339	23,584	0	0	0	0	0	0
Mississippi	4,915	4,774	3.0%	1,706	1,724	3,209	3,050	0	0	0	0
Tennessee	8,450	9,005	-6.2%	8,371	8,915	0	0	0	0	78	90
West South Central	82,170	87,034	-5.6%	40,736	44,249	41,400	42,760	0	0	34	25
Arkansas	11,933	12,284	-2.9%	9,508	9,965	2,418	2,313	0	0	7	6
Louisiana	5,288	5,535	-4.5%	3,125	3,741	2,163	1,794	0	0	0	0
Oklahoma	5,881	7,453	-21.0%	5,854	7,435	0	0	0	0	27	19
Texas	59,068	61,762	-4.4%	22,248	23,108	36,819	38,654	0	0	0	0
Mountain	68,285	69,672	-2.0%	59,112	61,277	9,073	8,304	0	0	100	91
Arizona	8,152	8,419	-3.2%	8,152	8,419	0	0	0	0	0	0
Colorado	12,275	13,400	-8.4%	12,275	13,400	0	0	0	0	0	0
Idaho	1	3	-60.0%	0	0	0	0	0	0	1	3
Montana	7,399	6,913	7.0%	0	64	7,395	6,844	0	0	4	5
Nevada	1,577	1,490	5.8%	835	825	742	665	0	0	0	0
New Mexico	7,370	7,075	4.2%	7,370	7,075	0	0	0	0	0	0
Utah	10,571	12,274	-14.0%	10,155	11,871	416	403	0	0	0	0
Wyoming	20,939	20,096	4.2%	20,324	19,622	520	392	0	0	94	82
Pacific Contiguous	2,460	2,185	13.0%	0	0	2,405	2,120	0	0	55	65
California	50	58	-15.0%	0	0	0	0	0	0	50	58
Oregon	0	0	--	0	0	0	0	0	0	0	0
Washington	2,410	2,126	13.0%	0	0	2,405	2,120	0	0	6	7
Pacific Noncontiguous	945	1,220	-23.0%	408	392	497	777	41	51	0	0
Alaska	575	591	-2.7%	408	392	126	147	41	51	0	0
Hawaii	370	630	-41.0%	0	0	370	630	0	0	0	0
U.S. Total	471,576	500,367	-5.8%	349,320	372,694	120,514	125,920	87	87	1,655	1,666

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, 2022 and 2021 (Thousand Barrels)

Census Division and State	Electric Power Sector										
	All Sectors			Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
New England	3,040	496	513.0%	135	45	2,853	414	31	29	21	9
Connecticut	636	155	311.0%	8	9	621	142	4	2	2	2
Maine	456	58	688.0%	0	0	437	43	3	NM	17	5
Massachusetts	1,176	150	685.0%	109	25	1,056	118	10	6	2	1
New Hampshire	655	104	527.0%	0	0	644	94	11	11	0	0
Rhode Island	99	19	426.0%	1	0	96	16	NM	2	0	1
Vermont	18	10	73.0%	18	10	0	0	0	0	0	0
Middle Atlantic	3,815	1,633	134.0%	1,382	1,013	2,363	573	34	16	36	30
New Jersey	228	62	271.0%	0	1	226	60	2	1	1	0
New York	2,966	1,289	130.0%	1,379	1,012	1,555	262	22	7	10	8
Pennsylvania	621	282	120.0%	2	1	581	251	11	8	26	23
East North Central	1,423	1,440	-1.2%	608	1,098	806	329	3	5	6	8
Illinois	85	113	-25.0%	14	37	70	75	1	0	0	0
Indiana	235	257	-8.7%	208	249	26	7	0	1	1	1
Michigan	204	285	-29.0%	201	281	0	0	1	2	2	2
Ohio	831	319	161.0%	119	72	709	245	1	0	2	1
Wisconsin	69	466	-85.0%	66	458	1	2	1	2	1	4
West North Central	1,136	1,695	-33.0%	1,113	1,671	17	18	3	3	2	2
Iowa	228	240	-5.1%	224	234	3	5	0	0	0	0
Kansas	226	363	-38.0%	226	363	0	0	0	0	0	0
Minnesota	100	215	-53.0%	82	198	14	13	2	3	2	2
Missouri	396	589	-33.0%	395	588	0	0	1	0	0	0
Nebraska	82	136	-39.0%	82	136	0	0	0	0	0	0
North Dakota	60	67	-11.0%	60	67	0	0	NM	0	0	0
South Dakota	44	84	-48.0%	44	84	0	0	0	0	0	0
South Atlantic	4,375	2,594	69.0%	3,063	1,870	954	456	155	182	204	87
Delaware	197	42	375.0%	21	4	177	38	0	0	0	0
District of Columbia	0	0	-51.0%	0	0	0	0	0	0	0	0
Florida	883	622	42.0%	814	559	55	45	0	0	15	18
Georgia	524	186	182.0%	296	115	78	32	6	3	144	35
Maryland	325	194	68.0%	22	6	303	186	1	1	NM	0
North Carolina	535	376	43.0%	487	346	25	12	9	1	15	17
South Carolina	359	158	126.0%	337	143	10	7	0	0	12	9
Virginia	1,264	714	77.0%	826	403	279	127	139	176	19	7
West Virginia	288	303	-4.9%	261	294	27	9	0	0	0	0
East South Central	669	468	43.0%	656	431	1	28	0	0	12	9
Alabama	81	43	89.0%	72	9	1	27	0	0	8	6
Kentucky	210	156	34.0%	210	156	0	0	0	0	0	0
Mississippi	14	13	6.7%	12	12	0	0	0	0	2	2
Tennessee	364	256	42.0%	362	254	0	1	0	0	2	2
West South Central	778	595	31.0%	360	380	411	210	1	1	5	5
Arkansas	115	95	21.0%	85	75	30	20	0	0	0	0
Louisiana	33	26	24.0%	33	26	0	0	0	0	0	0
Oklahoma	56	67	-17.0%	53	66	0	0	0	0	2	1
Texas	574	406	41.0%	190	213	381	189	1	1	NM	3
Mountain	368	436	-15.0%	344	411	24	24	0	0	0	1
Arizona	62	86	-27.0%	62	85	0	0	0	0	0	0
Colorado	67	66	1.1%	61	66	6	0	0	0	0	0
Idaho	0	0	-44.0%	0	0	0	0	0	0	0	0
Montana	22	17	30.0%	10	1	12	16	0	0	0	0
Nevada	19	16	20.0%	15	12	4	4	0	0	0	0
New Mexico	38	67	-43.0%	38	67	0	0	0	0	0	0
Utah	55	68	-19.0%	53	65	2	3	0	0	0	0
Wyoming	105	117	-10.0%	105	116	0	0	0	0	0	1
Pacific Contiguous	335	178	88.0%	92	71	103	45	12	2	128	60
California	269	137	97.0%	65	66	82	29	12	1	111	42
Oregon	3	1	465.0%	3	0	0	0	0	0	0	0
Washington	63	41	55.0%	24	5	21	16	NM	0	18	19
Pacific Noncontiguous	12,819	12,099	6.0%	10,621	9,860	1,942	2,006	13	11	242	221
Alaska	1,533	1,594	-3.8%	1,440	1,526	0	0	1	1	92	66
Hawaii	11,286	10,505	7.4%	9,182	8,334	1,942	2,006	12	10	150	155
U.S. Total	28,760	21,633	33.0%	18,375	16,850	9,474	4,102	254	250	657	432

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 5.11. Consumption of Petroleum Coke for Electricity Generation by State, by Sector, 2022 and 2021 (Thousand Tons)

Census Division and State	Electric Power Sector										
	All Sectors			Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
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	1,220	1,027	19.0%	748	516	411	450	0	0	61	60
Illinois	0	0	--	0	0	0	0	0	0	0	0
Indiana	0	0	--	0	0	0	0	0	0	0	0
Michigan	749	512	46.0%	689	452	0	0	0	0	61	60
Ohio	411	450	-8.8%	0	0	411	450	0	0	0	0
Wisconsin	59	64	-7.2%	59	64	0	0	0	0	0	0
West North Central	3	5	-35.0%	0	0	0	0	3	1	0	4
Iowa	3	5	-35.0%	0	0	0	0	3	1	0	4
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	355	338	5.1%	324	315	0	0	0	0	31	23
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	324	315	2.8%	324	315	0	0	0	0	0	0
Georgia	31	23	37.0%	0	0	0	0	0	0	31	23
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	7	0	--	7	0	0	0	0	0	0	0
Alabama	0	0	--	0	0	0	0	0	0	0	0
Kentucky	7	0	--	7	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	1,232	1,533	-20.0%	1,192	1,493	0	0	0	0	40	40
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	1,192	1,493	-20.0%	1,192	1,493	0	0	0	0	0	0
Oklahoma	0	0	--	0	0	0	0	0	0	0	0
Texas	40	40	0.8%	0	0	0	0	0	0	40	40
Mountain	167	168	-0.4%	0	0	167	168	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	167	168	-0.4%	0	0	167	168	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	2,985	3,070	-2.8%	2,271	2,323	578	618	3	1	132	127

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Notes: See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923.

Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.

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

Table 5.12. Consumption of Natural Gas for Electricity Generation by State, by Sector, 2022 and 2021 (Million Cubic Feet)

Census Division and State	Electric Power Sector										
	All Sectors			Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
New England	395,712	396,620	-0.2%	1,737	1,329	379,760	380,835	5,806	5,414	8,410	9,042
Connecticut	169,159	168,273	0.5%	626	536	163,271	162,176	1,622	1,806	3,640	3,755
Maine	27,387	22,079	24.0%	0	0	25,028	19,309	155	153	2,205	2,616
Massachusetts	114,921	110,245	4.2%	1,103	785	109,161	105,328	3,746	3,168	911	964
New Hampshire	32,197	32,336	-0.4%	0	0	31,983	32,104	37	49	177	183
Rhode Island	52,036	63,672	-18.0%	0	0	50,317	61,918	242	231	1,477	1,523
Vermont	12	15	-17.0%	8	8	0	0	4	7	0	0
Middle Atlantic	1,597,094	1,495,416	6.8%	102,751	112,679	1,457,850	1,359,905	8,447	6,772	28,046	16,059
New Jersey	235,068	205,766	14.0%	1,275	985	229,865	201,617	1,888	1,345	2,040	1,818
New York	462,958	433,973	6.7%	101,155	111,570	352,298	313,888	5,706	4,792	3,799	3,723
Pennsylvania	899,068	855,677	5.1%	322	123	875,687	844,400	853	636	22,207	10,518
East North Central	1,341,250	1,161,268	15.0%	495,530	409,304	802,039	711,994	8,367	8,185	35,315	31,784
Illinois	148,706	175,879	-15.0%	18,284	18,681	122,166	148,896	2,476	2,577	5,780	5,724
Indiana	241,284	211,215	14.0%	107,773	87,551	113,966	108,304	905	900	18,640	14,460
Michigan	299,800	234,659	28.0%	134,633	101,110	158,553	127,125	3,322	2,990	3,292	3,434
Ohio	477,154	388,926	23.0%	74,038	64,058	400,050	321,994	1,157	1,184	1,908	1,689
Wisconsin	174,307	150,588	16.0%	160,802	137,904	7,303	5,674	507	534	5,695	6,476
West North Central	266,033	248,752	6.9%	221,556	197,732	34,084	43,863	1,774	1,705	8,619	5,451
Iowa	57,910	45,271	28.0%	54,626	42,024	2	0	513	443	2,769	2,803
Kansas	32,577	23,997	36.0%	30,569	22,668	0	0	0	0	2,008	1,329
Minnesota	66,079	92,297	-28.0%	42,284	60,624	20,225	30,558	510	499	3,060	616
Missouri	70,716	49,711	42.0%	55,950	35,519	13,857	13,305	745	735	164	152
Nebraska	12,672	11,304	12.0%	12,666	11,276	0	0	6	28	0	0
North Dakota	13,851	14,641	-5.4%	13,678	14,441	0	0	0	0	174	199
South Dakota	12,228	11,532	6.0%	11,784	11,180	0	0	0	0	444	352
South Atlantic	2,988,674	2,806,649	6.5%	2,481,886	2,344,711	474,688	424,983	5,986	6,023	26,114	30,932
Delaware	36,019	27,687	30.0%	553	232	30,980	23,545	0	0	4,485	3,910
District of Columbia	823	1,465	-44.0%	0	0	0	0	823	1,465	0	0
Florida	1,396,145	1,324,799	5.4%	1,302,952	1,251,996	84,478	63,098	703	332	8,012	9,373
Georgia	436,809	407,901	7.1%	336,359	334,250	95,919	68,968	0	0	4,531	4,683
Maryland	99,960	100,483	-0.5%	26,642	23,472	70,288	74,190	2,793	2,596	236	224
North Carolina	465,832	363,318	28.0%	398,255	301,722	65,194	59,082	1,508	1,628	875	886
South Carolina	186,120	174,408	6.7%	169,439	166,884	15,909	6,495	0	1	771	1,029
Virginia	348,317	384,287	-9.4%	242,981	262,268	99,853	113,949	159	0	5,323	8,071
West Virginia	18,651	22,300	-16.0%	4,705	3,887	12,064	15,656	0	0	1,881	2,756
East South Central	1,094,416	952,120	15.0%	818,108	712,653	255,024	216,615	920	908	20,364	21,945
Alabama	446,421	381,952	17.0%	190,930	162,547	246,708	209,502	0	0	8,783	9,902
Kentucky	136,522	109,022	25.0%	127,460	101,115	8,169	6,862	0	0	893	1,046
Mississippi	379,340	353,612	7.3%	376,536	350,577	95	87	0	0	2,709	2,948
Tennessee	132,133	107,534	23.0%	123,181	98,414	51	164	920	908	7,980	8,049
West South Central	2,863,514	2,563,876	12.0%	1,176,465	1,003,404	1,291,808	1,171,052	4,755	4,505	390,487	384,915
Arkansas	184,973	146,707	26.0%	176,450	139,489	6,981	5,497	437	479	1,105	1,242
Louisiana	515,085	451,466	14.0%	334,275	289,353	26,658	22,709	647	813	153,506	138,591
Oklahoma	290,767	268,342	8.4%	199,005	182,126	87,896	82,396	1	0	3,865	3,820
Texas	1,872,689	1,697,362	10.0%	466,734	392,436	1,170,274	1,060,451	3,670	3,213	232,011	241,262
Mountain	883,239	889,043	-0.7%	696,158	695,835	173,047	178,686	2,223	2,225	11,810	12,297
Arizona	339,055	358,191	-5.3%	238,735	254,535	99,747	103,080	574	576	0	0
Colorado	127,968	117,513	8.9%	106,665	96,637	20,080	19,646	19	15	1,204	1,214
Idaho	33,554	38,025	-12.0%	21,640	24,976	11,215	12,310	166	166	534	573
Montana	7,746	5,744	35.0%	6,448	4,586	1,282	1,107	0	0	17	51
Nevada	186,318	194,865	-4.4%	169,306	176,499	13,834	15,290	256	256	2,922	2,819
New Mexico	90,587	83,186	8.9%	64,102	55,940	25,709	26,036	555	644	221	567
Utah	83,768	79,440	5.4%	79,177	74,754	1,176	1,202	653	567	2,762	2,916
Wyoming	14,242	12,078	18.0%	10,086	7,909	5	13	0	0	4,151	4,156
Pacific Contiguous	927,070	963,043	-3.7%	355,060	373,284	495,752	507,313	10,379	9,801	65,880	72,645
California	694,753	700,138	-0.8%	220,115	221,343	403,833	401,692	9,672	9,535	61,133	67,568
Oregon	131,895	147,409	-11.0%	69,741	74,478	61,571	72,225	187	213	396	493
Washington	100,423	115,496	-13.0%	65,204	77,463	30,348	33,396	520	53	4,350	4,585
Pacific Noncontiguous	27,094	25,782	5.1%	26,791	25,510	0	0	1	0	302	272
Alaska	27,094	25,782	5.1%	26,791	25,510	0	0	1	0	302	272
Hawaii	0	0	--	0	0	0	0	0	0	0	0
U.S. Total	12,384,098	11,502,569	7.7%	6,376,042	5,876,442	5,364,051	4,995,247	48,658	45,537	595,347	585,343

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

Notes: See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923.

Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.

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

Table 5.13. Consumption of Landfill Gas for Electricity Generation by State, by Sector, 2022 and 2021 (Million Cubic Feet)

Census Division and State	Electric Power Sector										
	All Sectors			Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
New England	10,882	11,536	-5.7%	1,051	1,201	9,582	10,109	249	226	0	0
Connecticut	150	142	5.3%	0	0	150	142	0	0	0	0
Maine	485	474	2.3%	0	0	485	474	0	0	0	0
Massachusetts	2,546	3,284	-22.0%	0	0	2,546	3,284	0	0	0	0
New Hampshire	2,144	2,159	-0.7%	0	0	1,895	1,933	249	226	0	0
Rhode Island	4,288	4,058	5.7%	0	0	4,288	4,058	0	0	0	0
Vermont	1,269	1,419	-11.0%	1,051	1,201	217	217	0	0	0	0
Middle Atlantic	33,397	36,218	-7.8%	0	0	32,235	34,801	401	479	760	937
New Jersey	4,139	4,423	-6.4%	0	0	4,080	4,315	59	108	0	0
New York	14,964	15,348	-2.5%	0	0	14,964	15,348	0	0	0	0
Pennsylvania	14,294	16,447	-13.0%	0	0	13,192	15,139	342	371	760	937
East North Central	49,981	57,258	-13.0%	8,104	10,387	41,394	46,502	275	236	208	133
Illinois	8,316	10,201	-18.0%	2,879	4,179	5,438	6,022	0	0	0	0
Indiana	6,491	7,667	-15.0%	5,225	6,207	1,266	1,460	0	0	0	0
Michigan	18,883	20,454	-7.7%	0	0	18,883	20,454	0	0	0	0
Ohio	7,937	10,040	-21.0%	0	0	7,937	10,040	0	0	0	0
Wisconsin	8,353	8,895	-6.1%	0	0	7,870	8,526	275	236	208	133
West North Central	7,506	7,908	-5.1%	2,841	3,369	4,541	4,512	0	0	123	27
Iowa	2,108	2,191	-3.8%	0	0	2,108	2,191	0	0	0	0
Kansas	1,357	1,281	6.0%	0	0	1,357	1,281	0	0	0	0
Minnesota	985	1,127	-13.0%	560	739	425	387	0	0	0	0
Missouri	1,333	1,593	-16.0%	683	940	650	653	0	0	0	0
Nebraska	1,598	1,689	-5.4%	1,598	1,689	0	0	0	0	0	0
North Dakota	0	0	--	0	0	0	0	0	0	0	0
South Dakota	123	27	354.0%	0	0	0	0	0	0	123	27
South Atlantic	40,634	46,375	-12.0%	2,323	3,302	37,230	40,950	167	1,007	915	1,116
Delaware	1,461	1,512	-3.4%	0	0	1,312	1,411	0	0	149	101
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	8,694	10,478	-17.0%	933	1,545	7,760	8,933	0	0	0	0
Georgia	5,394	6,154	-12.0%	0	0	5,343	6,080	0	0	51	74
Maryland	1,447	1,486	-2.6%	0	0	1,447	1,467	0	19	0	0
North Carolina	8,622	9,856	-13.0%	0	0	8,622	9,115	0	740	0	0
South Carolina	2,301	2,985	-23.0%	1,389	1,757	196	286	0	0	715	941
Virginia	12,602	13,785	-8.6%	0	0	12,435	13,537	167	247	0	0
West Virginia	114	120	-4.7%	0	0	114	120	0	0	0	0
East South Central	5,222	5,582	-6.4%	2,187	2,412	3,035	3,170	0	0	0	0
Alabama	898	1,090	-18.0%	0	0	898	1,090	0	0	0	0
Kentucky	2,550	2,756	-7.5%	2,187	2,412	363	344	0	0	0	0
Mississippi	179	200	-10.0%	0	0	179	200	0	0	0	0
Tennessee	1,595	1,536	3.9%	0	0	1,595	1,536	0	0	0	0
West South Central	7,512	8,121	-7.5%	0	0	7,512	8,121	0	0	0	0
Arkansas	1,087	1,327	-18.0%	0	0	1,087	1,327	0	0	0	0
Louisiana	0	0	--	0	0	0	0	0	0	0	0
Oklahoma	854	513	66.0%	0	0	854	513	0	0	0	0
Texas	5,571	6,280	-11.0%	0	0	5,571	6,280	0	0	0	0
Mountain	6,665	6,942	-4.0%	521	561	5,337	5,502	807	879	0	0
Arizona	412	429	-3.9%	0	0	412	429	0	0	0	0
Colorado	1,033	1,165	-11.0%	0	0	1,033	1,165	0	0	0	0
Idaho	1,418	1,402	1.2%	329	337	520	537	569	529	0	0
Montana	192	224	-15.0%	192	224	0	0	0	0	0	0
Nevada	1,642	1,506	9.0%	0	0	1,642	1,506	0	0	0	0
New Mexico	347	448	-22.0%	0	0	347	448	0	0	0	0
Utah	1,622	1,769	-8.3%	0	0	1,384	1,418	238	350	0	0
Wyoming	0	0	--	0	0	0	0	0	0	0	0
Pacific Contiguous	49,281	51,162	-3.7%	1,460	1,599	35,293	36,364	12,212	12,870	317	328
California	43,022	44,335	-3.0%	85	105	30,804	31,573	11,816	12,329	317	328
Oregon	5,353	5,980	-10.0%	1,374	1,495	3,582	3,945	396	541	0	0
Washington	907	846	7.1%	0	0	907	846	0	0	0	0
Pacific Noncontiguous	787	775	1.6%	0	0	0	0	787	775	0	0
Alaska	787	775	1.6%	0	0	0	0	787	775	0	0
Hawaii	0	0	--	0	0	0	0	0	0	0	0
U.S. Total	211,866	231,876	-8.6%	18,486	22,831	176,160	190,031	14,898	16,472	2,323	2,542

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, 2022 and 2021 (Thousand Tons)

Census Division and State	Electric Power Sector										
	All Sectors			Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
New England	3,069,970	3,344,496	-8.2%	0	0	1,934,921	3,244,211	1,135,049	100,285	0	0
Connecticut	971,932	1,148,439	-15.0%	0	0	971,932	1,148,439	0	0	0	0
Maine	166,372	211,752	-21.0%	0	0	57,122	111,467	109,250	100,285	0	0
Massachusetts	1,827,699	1,869,241	-2.2%	0	0	801,900	1,869,241	1,025,799	0	0	0
New Hampshire	103,967	115,064	-9.6%	0	0	103,967	115,064	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	4,799,291	4,954,537	-3.1%	0	0	1,921,316	3,809,753	2,877,975	1,144,784	0	0
New Jersey	1,206,951	1,271,018	-5.0%	0	0	318,991	932,814	887,960	338,204	0	0
New York	1,794,844	1,789,899	0.3%	0	0	282,065	1,232,967	1,512,779	556,932	0	0
Pennsylvania	1,797,496	1,893,620	-5.1%	0	0	1,320,260	1,643,972	477,236	249,648	0	0
East North Central	166,463	165,759	0.4%	37,584	36,086	0	0	128,879	129,673	0	0
Illinois	0	0	--	0	0	0	0	0	0	0	0
Indiana	17,163	17,503	-1.9%	0	0	0	0	17,163	17,503	0	0
Michigan	111,716	112,170	-0.4%	0	0	0	0	111,716	112,170	0	0
Ohio	0	0	--	0	0	0	0	0	0	0	0
Wisconsin	37,584	36,086	4.2%	37,584	36,086	0	0	0	0	0	0
West North Central	464,470	450,830	3.0%	236,629	216,240	214,489	222,644	13,352	11,946	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	464,470	450,830	3.0%	236,629	216,240	214,489	222,644	13,352	11,946	0	0
Missouri	0	0	--	0	0	0	0	0	0	0	0
Nebraska	0	0	--	0	0	0	0	0	0	0	0
North Dakota	0	0	--	0	0	0	0	0	0	0	0
South Dakota	0	0	--	0	0	0	0	0	0	0	0
South Atlantic	5,054,505	5,248,506	-3.7%	0	0	2,799,708	4,524,786	2,254,797	723,720	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	3,459,828	3,539,384	-2.2%	0	0	2,296,823	3,202,380	1,163,005	337,004	0	0
Georgia	0	0	--	0	0	0	0	0	0	0	0
Maryland	502,885	606,695	-17.0%	0	0	502,885	606,695	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	1,091,792	1,102,427	-1.0%	0	0	0	715,711	1,091,792	386,716	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	744	7,394	-90.0%	0	0	0	0	744	0	0	7,394
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	0	0	--	0	0	0	0	0	0	0	0
Oklahoma	744	7,394	-90.0%	0	0	0	0	744	0	0	7,394
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	619,616	640,719	-3.3%	0	0	475,081	640,719	144,535	0	0	0
California	379,246	377,052	0.6%	0	0	234,711	377,052	144,535	0	0	0
Oregon	96,917	109,422	-11.0%	0	0	96,917	109,422	0	0	0	0
Washington	143,453	154,245	-7.0%	0	0	143,453	154,245	0	0	0	0
Pacific Noncontiguous	413,795	410,448	0.8%	0	0	0	0	413,795	410,448	0	0
Alaska	0	0	--	0	0	0	0	0	0	0	0
Hawaii	413,795	410,448	0.8%	0	0	0	0	413,795	410,448	0	0
U.S. Total	14,588,854	15,222,689	-4.2%	274,213	252,326	7,345,515	12,442,113	6,969,126	2,520,856	0	7,394

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, 2012 - 2022

Period	Electric Power Sector			Electric Utilities			Independent Power Producers		
	Coal (Thousand Tons)	Petroleum Liquids (Thousand Barrels)	Petroleum Coke (Thousand Tons)	Coal (Thousand Tons)	Petroleum Liquids (Thousand Barrels)	Petroleum Coke (Thousand Tons)	Coal (Thousand Tons)	Petroleum Liquids (Thousand Barrels)	Petroleum Coke (Thousand Tons)
End of Year Stocks									
2012	185,116	30,862	495	150,942	22,513	414	34,174	8,349	81
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
Year 2020, End of Month Stocks									
January	134,134	25,154	562	108,361	16,011	503	25,773	9,144	59
February	139,112	25,101	650	112,119	16,018	584	26,992	9,084	66
March	145,034	25,609	566	116,444	16,448	527	28,590	9,162	39
April	151,534	25,732	549	122,120	16,491	524	29,413	9,240	25
May	153,716	25,937	529	123,725	16,552	516	29,991	9,385	11
June	149,935	26,095	479	120,396	16,530	471	29,539	9,565	9
July	137,149	26,870	455	110,533	16,670	437	26,616	10,200	19
August	128,330	25,881	408	103,893	16,437	402	24,436	9,444	6
September	127,902	26,404	416	103,165	16,229	402	24,736	10,175	15
October	132,058	26,484	457	106,722	16,355	435	25,336	10,129	21
November	134,522	26,224	472	109,153	16,178	452	25,369	10,045	21
December	131,431	26,063	298	107,965	15,941	273	23,466	10,123	25
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	12,572	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

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, 2022 and 2021**

Census Division and State	Coal (Thousand Tons)			Petroleum Liquids (Thousand Barrels)			Petroleum Coke (Thousand Tons)		
	December 2022	December 2021	Percentage Change	December 2022	December 2021	Percentage Change	December 2022	December 2021	Percentage Change
New England	W	W	W	1,985	3,301	-39.9%	0	0	--
Connecticut	0	0	--	825	1,323	-37.6%	0	0	--
Maine	0	0	--	182	256	-28.9%	0	0	--
Massachusetts	0	0	--	648	1,143	-43.3%	0	0	--
New Hampshire	W	W	W	190	387	-50.8%	0	0	--
Rhode Island	0	0	--	114	166	-31.1%	0	0	--
Vermont	0	0	--	NM	28	NM	0	0	--
Middle Atlantic	2,587	2,949	-12.3%	4,336	5,564	-22.1%	0	0	--
New Jersey	0	W	W	477	744	-35.9%	0	0	--
New York	0	0	--	2,628	3,335	-21.2%	0	0	--
Pennsylvania	2,587	W	W	1,231	1,484	-17.0%	0	0	--
East North Central	17,206	18,182	-5.4%	1,555	1,669	-6.8%	53	W	W
Illinois	2,990	4,208	-28.9%	NM	94	NM	0	0	--
Indiana	6,728	5,506	22.2%	187	107	74.5%	0	0	--
Michigan	3,109	2,371	31.1%	187	225	-17.0%	W	W	W
Ohio	1,728	3,450	-49.9%	348	462	-24.7%	W	0	W
Wisconsin	2,652	2,647	0.2%	763	781	-2.3%	W	W	W
West North Central	17,704	19,903	-11.0%	1,615	1,082	49.3%	0	0	--
Iowa	3,584	3,680	-2.6%	NM	127	NM	0	0	--
Kansas	3,254	3,242	0.4%	198	196	1.3%	0	0	--
Minnesota	2,283	1,925	18.6%	765	125	512.0%	0	0	--
Missouri	4,406	6,179	-28.7%	339	425	-20.4%	0	0	--
Nebraska	2,555	3,067	-16.7%	NM	116	NM	0	0	--
North Dakota	W	W	W	NM	33	NM	0	0	--
South Dakota	W	W	W	NM	60	NM	0	0	--
South Atlantic	14,698	13,623	7.9%	8,208	9,547	-14.0%	W	W	W
Delaware	W	W	W	446	561	-20.6%	0	0	--
District of Columbia	0	0	--	0	0	--	0	0	--
Florida	1,385	1,660	-16.6%	3,496	3,582	-2.4%	W	W	W
Georgia	W	2,939	W	951	1,105	-13.9%	0	0	--
Maryland	567	849	-33.2%	565	737	-23.3%	0	0	--
North Carolina	3,591	3,402	5.6%	866	1,097	-21.1%	0	0	--
South Carolina	W	967	W	522	655	-20.4%	0	0	--
Virginia	W	551	W	1,240	1,653	-25.0%	0	0	--
West Virginia	4,289	W	W	123	157	-21.7%	W	W	W
East South Central	9,197	7,696	19.5%	901	1,048	-14.1%	0	0	--
Alabama	W	W	W	221	211	4.8%	0	0	--
Kentucky	5,070	3,441	47.3%	204	265	-22.8%	0	0	--
Mississippi	W	W	W	NM	6	NM	0	0	--
Tennessee	2,124	2,207	-3.7%	470	566	-17.0%	0	0	--
West South Central	15,756	14,740	6.9%	2,139	1,907	12.2%	W	W	W
Arkansas	3,564	2,946	20.9%	163	172	-5.3%	0	0	--
Louisiana	1,835	2,166	-15.3%	201	201	0.2%	W	W	W
Oklahoma	2,446	2,025	20.8%	40	20	95.9%	0	0	--
Texas	7,912	7,603	4.1%	1,736	1,514	14.7%	0	0	--
Mountain	W	W	W	320	334	-4.2%	W	W	W
Arizona	2,387	2,150	11.1%	114	105	9.0%	0	0	--
Colorado	1,903	2,985	-36.2%	109	129	-15.4%	0	0	--
Idaho	0	0	--	0	0	53.1%	0	0	--
Montana	W	W	W	NM	17	NM	W	W	W
Nevada	W	W	W	3	2	42.8%	0	0	--
New Mexico	0	W	W	NM	16	NM	0	0	--
Utah	2,512	2,884	-12.9%	37	36	4.4%	0	0	--
Wyoming	2,968	4,300	-31.0%	30	29	4.6%	0	0	--
Pacific Contiguous	W	W	W	338	356	-4.9%	0	0	--
California	0	0	--	177	186	-5.3%	0	0	--
Oregon	0	0	--	72	74	-2.9%	0	0	--
Washington	W	W	W	NM	95	NM	0	0	--
Pacific Noncontiguous	W	208	W	1,414	1,195	18.3%	0	0	--
Alaska	W	W	W	NM	204	NM	0	0	--
Hawaii	0	W	W	1,262	991	27.3%	0	0	--
U.S. Total	88,861	91,884	-3.3%	22,812	26,002	-12.3%	318	302	5.4%

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

NM = Not meaningful due to large relative standard error or excessive percentage change.

Notes: See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923.

Negative generation denotes that electric power consumed for plant use exceeds gross generation.

Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.

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

**Table 6.3 Stocks of Coal, Petroleum Liquids, and Petroleum Coke:
Electric Power Sector, by Census Division, 2022 and 2021**

Census Division	Electric Power Sector			Electric Utilities		Independent Power Producers	
	December 2022	December 2021	Percentage Change	December 2022	December 2021	December 2022	December 2021
Coal (Thousand Tons)							
New England	W	W	W	0	0	W	W
Middle Atlantic	2,587	2,949	-12.3%	W	W	W	W
East North Central	17,206	18,182	-5.4%	W	11,625	W	6,557
West North Central	17,704	19,903	-11.0%	17,704	19,903	0	0
South Atlantic	14,698	13,623	7.9%	13,452	12,137	1,246	1,486
East South Central	9,197	7,696	19.5%	9,197	7,696	0	0
West South Central	15,756	14,740	6.9%	11,707	10,657	4,050	4,083
Mountain	W	W	W	W	W	W	W
Pacific Contiguous	W	W	W	0	0	W	W
Pacific Noncontiguous	W	208	W	W	W	W	W
U.S. Total	88,861	91,884	-3.3%	74,917	75,231	13,943	16,653
Petroleum Liquids (Thousand Barrels)							
New England	1,985	3,301	-39.9%	190	247	1,795	3,054
Middle Atlantic	4,336	5,564	-22.1%	1,689	2,103	2,647	3,461
East North Central	1,555	1,669	-6.8%	1,172	1,300	383	369
West North Central	1,615	1,082	49.3%	935	1,051	680	31
South Atlantic	8,208	9,547	-14.0%	6,448	7,273	1,759	2,274
East South Central	901	1,048	-14.1%	862	948	39	100
West South Central	2,139	1,907	12.2%	972	984	1,167	923
Mountain	320	334	-4.2%	296	305	23	29
Pacific Contiguous	338	356	-4.9%	255	267	83	88
Pacific Noncontiguous	1,414	1,195	18.3%	1,383	1,157	31	38
U.S. Total	22,812	26,002	-12.3%	14,204	15,634	8,608	10,368
Petroleum Coke (Thousand Tons)							
New England	0	0	--	0	0	0	0
Middle Atlantic	0	0	--	0	0	0	0
East North Central	53	W	W	W	W	W	0
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	318	302	5.4%	297	290	21	12

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, 2012 - 2022
(Thousand Tons)

Period	Electric Power Sector			
	Bituminous Coal	Subbituminous Coal	Lignite Coal	Total
End of Year Stocks				
2012	86,437	93,833	4,846	185,116
2013	73,113	69,720	5,051	147,884
2014	72,771	72,552	6,225	151,548
2015	82,004	108,614	4,931	195,548
2016	67,241	90,376	4,393	162,009
2017	56,140	77,875	3,672	137,687
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
Year 2020, End of Month Stocks				
January	56,091	74,481	3,307	134,134
February	57,076	78,570	3,235	139,112
March	59,686	81,468	3,624	145,034
April	61,656	85,644	3,947	151,534
May	61,180	88,062	4,117	153,716
June	58,888	86,582	4,140	149,935
July	52,910	79,680	4,245	137,149
August	49,667	74,075	4,338	128,330
September	49,058	74,579	4,070	127,902
October	52,037	76,055	3,772	132,058
November	53,051	77,576	3,702	134,522
December	50,649	77,033	3,556	131,431
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

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, 2012 through 2022

Period	Coal				Petroleum				Natural Gas		All Fossil Fuels
	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Cost		Receipts (Thousand Barrels)	Average Sulfur Percent by Weight	Average Cost		Receipts (Thousand Mcf)	Average Cost	Average Cost
			(Dollars per MMBtu)	(Dollars per Ton)			(Dollars per MMBtu)	(Dollars per Barrel)		(Dollars per MMBtu)	(Dollars per MMBtu)
2012	841,183	1.25	2.38	46.09	40,364	3.61	12.48	73.30	9,531,389	3.42	2.83
2013	823,222	1.29	2.34	45.33	43,714	3.54	11.57	68.09	8,503,424	4.33	3.09
2014	854,560	1.32	2.37	45.96	54,488	3.56	11.60	68.12	8,431,423	5.00	3.31
2015	782,929	1.29	2.22	42.86	48,804	3.38	6.74	39.51	9,842,581	3.23	2.65
2016	650,770	1.34	2.11	40.64	37,637	3.69	5.24	30.46	10,271,180	2.87	2.47
2017	642,364	1.28	2.06	39.27	32,672	3.59	7.10	41.23	9,628,733	3.37	2.65
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

* = 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, 2012 through 2022

Period	Bituminous			Subbituminous			Lignite		
	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight
2012	317,398	2.23	10.6	442,674	0.32	5.8	71,848	0.93	14.6
2013	312,821	2.33	10.5	429,283	0.32	5.8	71,191	0.92	14.3
2014	334,082	2.34	10.3	440,013	0.31	5.8	71,534	0.90	14.1
2015	289,093	2.40	10.4	421,127	0.32	5.8	65,826	0.89	14.1
2016	245,141	2.43	10.3	333,241	0.31	5.8	64,426	0.91	14.0
2017	224,500	2.45	10.3	350,580	0.31	5.6	59,665	0.96	14.0
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

* = Value is less than half of the smallest unit of measure. (e.g., for values with no decimals, the smallest unit is 1 then values under 0.5 are shown as *.)

NM = Not meaningful due to large relative standard error or excessive percentage change.

W = Withheld to avoid disclosure of individual company data.

Notes:

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

- 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 7.3. Average Quality of Fossil Fuel Receipts for the Electric Power Industry, 2012 through 2022

Period	Coal			Petroleum			Natural Gas
	Average Btu per Pound	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Average Btu per Gallon	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Average Btu per Cubic Foot
2012	9,668	1.25	8.8	139,567	3.61	0.5	1,023
2013	9,661	1.29	8.7	139,671	3.54	0.5	1,026
2014	9,710	1.32	8.6	139,713	3.56	0.5	1,029
2015	9,634	1.29	8.6	139,681	3.38	0.5	1,034
2016	9,617	1.34	8.7	138,384	3.69	0.5	1,034
2017	9,544	1.28	8.4	138,324	3.59	0.4	1,034
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

* Value is less than half of the smallest unit of measure. (e.g., for values with no decimals, the smallest unit is 1 then values under 0.5 are shown as *.)

NM = Not meaningful due to large relative standard error or excessive percentage change.

W = Withheld to avoid disclosure of individual company data.

Notes:

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

COAL - includes anthracite, bituminous, subbituminous, lignite, waste coal, and coal-derived synthesis gas. Prior to 2011, synthesis gas was included in the category of Other Gases.

PETROLEUM - includes petroleum liquids (distillate fuel oil and residual fuel oil) and petroleum coke which includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases. Prior to 2013, petroleum liquids included distillate fuel oil, residual fuel oil, kerosene, jet fuel, waste oil, and, beginning in 2011, propane. Prior to 2011, propane was included in the category of Other Gases.

NATURAL GAS - includes natural gas only. Prior to 2011, includes Other Gases.

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- See 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, 2012 through 2022

Period	Coal								Petroleum		Natural Gas		Total Fossil	
	Bituminous		Subbituminous		Lignite		All Coal Ranks		Receipts (Trillion Btu)	Average Cost (Dollars per MMBtu)	Receipts (Trillion Btu)	Average Cost (Dollars per MMBtu)	Receipts (Trillion Btu)	Average Cost (Dollars per MMBtu)
	Receipts (Trillion Btu)	Average Cost (Dollars per MMBtu)	Receipts (Trillion Btu)	Average Cost (Dollars per MMBtu)	Receipts (Trillion Btu)	Average Cost (Dollars per MMBtu)	Receipts (Trillion Btu)	Average Cost (Dollars per MMBtu)						
2012	7,502	2.89	7,722	1.97	931	1.80	16,266	2.38	237	12.48	9,747	3.42	26,249	2.83
2013	7,351	2.77	7,511	2.00	927	1.78	15,907	2.34	256	11.57	8,721	4.33	24,884	3.09
2014	7,883	2.74	7,681	2.06	934	1.77	16,595	2.37	320	11.60	8,679	5.00	25,594	3.31
2015	6,797	2.58	7,353	1.94	855	1.92	15,086	2.22	286	6.74	10,174	3.23	25,546	2.65
2016	5,770	2.40	5,818	1.89	840	1.74	12,516	2.11	219	5.24	10,619	2.87	23,354	2.47
2017	5,279	2.31	6,123	1.90	773	1.66	12,261	2.06	190	7.10	9,952	3.37	22,403	2.65
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

* = Value is less than half of the smallest unit of measure. (e.g., for values with no decimals, the smallest unit is 1 then values under 0.5 are shown as *.)

NM = Not meaningful due to large relative standard error or excessive percentage change.

W = Withheld to avoid disclosure of individual company data.

Notes:

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

COAL - All coal ranks subtotal includes anthracite, bituminous, subbituminous, lignite, waste coal, and coal-derived synthesis gas. Prior to 2011, synthesis gas was included in the category of Other Gases.

Bituminous coal includes anthracite coal and beginning in 2011, coal-derived synthesis gas.

PETROLEUM - includes petroleum liquids (distillate fuel oil and residual fuel oil) and petroleum coke which includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases. Prior to 2013, petroleum liquids included distillate fuel oil, residual fuel oil, kerosene, jet fuel, waste oil, and, beginning in 2011, propane. Prior to 2011, propane was included in the category of Other Gases.

NATURAL GAS - includes natural gas only. Prior to 2011, includes Other Gases.

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- See the 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, 2012 - 2022

Period	Coal						Petroleum Liquids					
	Receipts		Average Cost		Average Sulfur Percent by Weight	Percentage of Consumption	Receipts		Average Cost		Average Sulfur Percent by Weight	Percentage of Consumption
	(Billion Btu)	(Thousand Tons)	(Dollars per MMBtu)	(Dollars per Ton)			(Billion Btu)	(Thousand Barrels)	(Dollars per MMBtu)	(Dollars per Barrel)		
Annual Totals												
2012	11,939,543	609,445	2.43	47.51	1.18	99.0	86,030	14,252	22.11	133.44	0.41	81.3
2013	11,595,328	592,772	2.38	46.51	1.23	92.9	78,101	12,814	21.09	128.57	0.43	76.2
2014	12,064,810	614,728	2.39	46.95	1.21	98.3	98,357	16,161	19.90	121.14	0.44	82.0
2015	11,088,631	571,707	2.25	43.71	1.17	105.8	90,041	14,747	11.32	69.13	0.46	79.2
2016	9,256,878	476,207	2.16	42.01	1.21	95.4	73,294	11,985	9.16	56.02	0.45	74.0
2017	9,011,629	467,595	2.12	40.81	1.16	96.0	70,422	11,640	11.60	70.19	0.47	74.4
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
Year 2020												
January	607,032	31,970	1.97	37.43	1.11	116.3	4,738	793	13.76	82.24	0.48	54.9
February	514,565	27,219	1.94	36.69	1.11	114.2	5,900	976	12.90	77.97	0.46	84.8
March	493,867	25,974	1.96	37.29	1.13	119.0	5,397	890	10.39	62.96	0.47	92.2
April	434,599	22,675	1.97	37.73	1.18	132.5	2,763	465	8.47	50.32	0.47	52.7
May	403,390	21,343	1.92	36.34	1.08	107.0	4,283	718	6.79	40.50	0.48	70.4
June	467,961	24,558	1.95	37.21	1.13	88.0	4,390	726	6.78	41.00	0.47	60.8
July	551,833	28,915	1.95	37.25	1.15	75.3	5,830	960	8.50	51.60	0.47	73.8
August	603,152	31,307	1.99	38.37	1.16	80.1	3,924	651	10.21	61.56	0.47	50.4
September	554,014	28,885	2.00	38.29	1.12	97.0	3,475	573	9.75	59.06	0.46	51.7
October	535,411	27,744	1.96	37.82	1.23	110.7	5,944	979	9.32	56.60	0.46	77.5
November	527,752	27,451	1.96	37.63	1.21	110.9	4,108	680	9.44	57.04	0.48	60.7
December	563,234	29,446	1.96	37.41	1.16	92.6	5,778	959	10.23	61.60	0.48	77.9
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	0.46	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

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

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Table 7.6. Receipts, Average Cost, and Quality of Fossil Fuels: Electric Utilities, 2012 - 2022 (continued)

Period	Petroleum Coke						Natural Gas					All Fossil Fuels Average Cost
	Receipts		Average Cost				Receipts		Average Cost			
	(Billion Btu)	(Thousand Tons)	(Dollars per MMBtu)	(Dollars per Ton)	Average Sulfur Percent by Weight	Percentage of Consumption	(Billion Btu)	(Thousand Mcf)	(Dollars per MMBtu)	(Dollars per Mcf)	Percentage of Consumption	
Annual Totals												
2012	72,782	2,521	2.30	66.40	5.46	119.8	4,083,579	4,003,457	3.74	3.81	97.6	2.86
2013	99,088	3,463	2.11	60.30	5.34	101.6	3,939,408	3,851,241	4.49	4.59	97.0	2.99
2014	123,793	4,349	1.89	53.77	5.56	126.3	3,876,549	3,772,596	5.17	5.31	96.7	3.16
2015	115,929	4,069	1.77	50.44	5.23	130.1	4,717,748	4,565,040	3.52	3.64	96.0	2.67
2016	99,706	3,538	1.52	42.85	5.38	103.1	5,075,337	4,907,538	3.15	3.26	97.0	2.54
2017	90,481	3,224	2.15	60.31	5.55	117.6	4,794,383	4,640,827	3.62	3.74	96.8	2.68
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
Year 2020												
January	8,421	295	1.53	43.68	5.34	144.1	494,557	478,242	2.85	2.95	94.0	2.41
February	6,913	244	1.47	41.75	4.99	164.5	480,707	465,156	2.64	2.73	96.4	2.33
March	4,942	174	1.36	38.61	5.46	82.4	489,559	473,210	2.34	2.42	96.5	2.19
April	5,150	180	1.38	39.50	5.35	98.8	432,300	416,434	2.33	2.42	96.4	2.16
May	5,495	195	1.61	45.35	5.30	104.2	468,904	454,580	2.43	2.51	97.0	2.21
June	5,648	199	1.46	41.45	6.01	77.0	561,203	545,307	2.26	2.33	96.8	2.14
July	6,801	240	1.53	43.25	5.87	92.0	701,448	681,154	2.23	2.29	96.1	2.13
August	6,229	219	1.89	53.72	5.63	92.4	665,360	644,967	2.59	2.67	96.3	2.33
September	3,305	119	1.97	54.59	5.08	102.2	528,058	511,503	2.70	2.79	96.7	2.36
October	3,340	118	2.12	59.66	4.87	143.2	503,542	487,926	2.74	2.83	96.6	2.38
November	4,711	167	2.25	63.61	4.99	105.0	411,438	398,719	3.38	3.49	97.2	2.61
December	4,729	167	2.33	66.30	5.44	73.1	469,963	454,046	3.40	3.52	96.0	2.65
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	5.80	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

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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.

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Table 7.7 Receipts, Average Cost, and Quality of Fossil Fuels: Independent Power Producers, 2012 - 2022

Period	Coal						Petroleum Liquids						
	Receipts		Average Cost			Average Sulfur Percent by Weight	Percentage of Consumption	Receipts		Average Cost		Average Sulfur Percent by Weight	Percentage of Consumption
	(Billion Btu)	(Thousand Tons)	(Dollars per MMBtu)	(Dollars per Ton)	(Billion Btu)			(Thousand Barrels)	(Dollars per MMBtu)	(Dollars per Barrel)			
Annual Totals													
2012	4,036,436	218,341	2.21	40.92	1.42	104.9	23,922	4,073	22.34	131.28	0.44	79.8	
2013	4,032,431	217,572	2.20	40.95	1.48	99.1	43,432	7,205	19.71	118.88	0.45	110.1	
2014	4,243,949	226,600	2.25	42.20	1.61	100.1	71,774	11,980	19.90	119.36	0.45	101.0	
2015	3,731,508	198,982	2.10	39.39	1.66	100.5	55,248	9,189	11.69	70.36	0.46	86.5	
2016	3,047,358	164,648	1.93	35.69	1.73	91.8	25,975	4,410	9.93	58.56	0.48	75.1	
2017	3,056,215	165,567	1.85	34.19	1.64	93.1	24,704	4,190	12.67	74.73	0.46	73.8	
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	
Year 2020													
January	204,384	10,993	1.79	33.36	1.63	117.5	767	132	15.20	88.67	0.56	52.0	
February	171,467	9,284	1.76	32.52	1.73	112.5	765	130	14.78	86.92	0.57	51.5	
March	157,521	8,456	1.78	33.11	1.91	117.4	1,400	238	10.94	64.41	0.52	81.4	
April	122,808	7,138	1.72	29.55	1.47	109.2	1,594	273	8.43	49.32	0.52	109.6	
May	127,290	7,319	1.75	30.51	1.37	106.4	2,434	416	6.31	36.86	0.50	156.1	
June	149,025	8,115	1.72	31.63	1.80	93.0	2,598	437	8.36	49.77	0.48	142.9	
July	155,687	8,460	1.72	31.65	1.84	74.2	1,418	243	9.48	55.19	0.48	67.7	
August	169,527	9,246	1.71	31.48	1.73	81.1	1,180	201	9.72	56.97	0.50	61.2	
September	163,030	8,829	1.72	31.78	1.80	98.8	1,315	226	9.46	55.17	0.52	84.8	
October	167,811	8,964	1.71	32.08	1.84	101.6	1,303	222	8.75	51.26	0.52	76.4	
November	173,645	9,286	1.72	32.19	1.73	97.0	1,703	285	9.72	58.12	0.39	92.2	
December	175,520	9,538	1.74	32.07	1.65	81.1	2,476	414	9.97	59.69	0.48	91.3	
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	

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 NM = Not meaningful due to large relative standard error or excessive percentage change.
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Notes:
 Beginning in January 2013, the threshold for reporting fuel receipts data was changed from 50 megawatts to 200 megawatts of nameplate capacity for plants primarily fueled by natural gas, petroleum coke, distillate fuel oil, and residual fuel oil. In addition, the requirement to report self-produced and minor fuels, i.e., blast furnace gas, other manufactured gases, kerosene, jet fuel, propane, and waste oils was eliminated. The threshold for coal plants remained at 50 megawatts. The following caveats for each fuel type should be noted:
 COAL - includes anthracite, bituminous, subbituminous, lignite, waste coal, and coal-derived synthesis gas. Prior to 2011, synthesis gas was included in the category of Other Gases.
 PETROLEUM LIQUIDS - includes distillate fuel oil and residual fuel oil. Prior to 2013, petroleum liquids included distillate fuel oil, residual fuel oil, kerosene, jet fuel, waste oil, and, beginning in 2011, propane. Prior to 2011, propane was included in the category of Other Gases.

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

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

Table 7.8. Receipts, Average Cost, and Quality of Fossil Fuels: Independent Power Producers, 2012 - 2022 (continued)

Period	Petroleum Coke						Natural Gas					All Fossil Fuels Average Cost (Dollars per MMBtu)
	Receipts		Average Cost		Average Sulfur Percent by Weight	Percentage of Consumption	Receipts		Average Cost		Percentage of Consumption	
	(Billion Btu)	(Thousand Tons)	(Dollars per MMBtu)	(Dollars per Ton)			(Billion Btu)	(Thousand Mcf)	(Dollars per MMBtu)	(Dollars per Mcf)		
Annual Totals												
2012	23,024	801	0.82	23.98	5.49	92.1	4,810,553	4,696,637	3.17	3.25	93.8	2.74
2013	16,150	575	W	W	5.39	65.6	4,025,263	3,917,898	4.25	4.36	92.8	W
2014	13,781	488	2.48	70.31	5.33	70.9	4,054,540	3,934,672	4.90	5.05	92.7	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	--	--	--	0.0	5,602,375	5,414,698	6.95	7.20	95.5	5.50
Year 2020												
January	0	0	--	--	--	0.0	439,277	423,067	2.36	2.45	96.2	2.17
February	0	0	--	--	--	0.0	408,600	394,000	2.10	2.18	96.0	2.00
March	0	0	--	--	--	0.0	395,838	381,693	1.87	1.94	95.3	1.87
April	0	0	--	--	--	0.0	343,630	331,126	1.80	1.87	95.8	1.80
May	0	0	--	--	--	0.0	363,766	352,083	1.81	1.88	95.6	1.82
June	0	0	--	--	--	0.0	476,065	460,955	1.72	1.78	96.5	1.75
July	0	0	--	--	--	0.0	636,749	616,411	1.86	1.93	96.8	1.85
August	0	0	--	--	--	0.0	601,965	582,838	2.18	2.25	96.2	2.07
September	0	0	--	--	--	0.0	483,385	467,471	2.02	2.09	96.0	1.95
October	0	0	--	--	--	0.0	439,690	425,470	2.16	2.23	96.1	2.03
November	0	0	--	--	--	0.0	360,175	348,114	2.47	2.56	96.2	2.22
December	0	0	--	--	--	0.0	410,405	395,711	2.89	3.00	96.1	2.53
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	--	--	--	0.0	440,567	425,442	6.15	6.38	95.6	4.92
February	0	0	--	--	--	0.0	375,891	363,057	5.88	6.09	94.2	4.62
March	0	0	--	--	--	0.0	359,407	347,490	4.96	5.14	95.0	3.87
April	0	0	--	--	--	0.0	344,208	332,882	6.22	6.44	95.5	4.66
May	0	0	--	--	--	0.0	428,890	414,929	7.60	7.86	96.4	5.80
June	0	0	--	--	--	0.0	513,920	497,609	7.55	7.81	96.1	6.03
July	0	0	--	--	--	0.0	644,066	623,293	7.29	7.54	96.2	6.04
August	0	0	--	--	--	0.0	645,276	623,863	8.56	8.86	95.5	6.95
September	0	0	--	--	--	0.0	538,145	519,483	7.58	7.86	95.8	6.04
October	0	0	--	--	--	0.0	446,464	431,379	5.29	5.48	95.5	4.32
November	0	0	--	--	--	0.0	407,043	393,319	5.35	5.54	94.1	4.44
December	0	0	--	--	--	0.0	458,497	441,951	9.26	9.61	95.4	7.27

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

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Table 7.9. Receipts, Average Cost, and Quality of Fossil Fuels: Commercial Sector, 2012 - 2022

Period	Coal						Petroleum Liquids					
	Receipts		Average Cost		Average Sulfur Percent by Weight	Percentage of Consumption	Receipts		Average Cost		Average Sulfur Percent by Weight	Percentage of Consumption
	(Billion Btu)	(Thousand Tons)	(Dollars per MMBtu)	(Dollars per Ton)			(Billion Btu)	(Thousand Barrels)	(Dollars per MMBtu)	(Dollars per Barrel)		
Annual Totals												
2012	4,427	192	3.41	78.71	2.75	13.2	247	43	W	W	0.00	11.0
2013	3,507	151	W	W	3.05	11.2	0	0	--	--	--	0.0
2014	4,096	182	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	--	--	--	0.0
Year 2020												
January	26	1	2.96	67.40	2.94	2.3	0	0	--	--	--	0.0
February	58	3	2.96	67.58	2.96	4.7	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	0	0	--	--	--	0.0	0	0	--	--	--	0.0
October	0	0	--	--	--	0.0	0	0	--	--	--	0.0
November	24	1	2.98	68.21	2.89	2.7	0	0	--	--	--	0.0
December	24	1	2.96	67.61	2.87	2.0	0	0	--	--	--	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	--	--	--	0.0
February	19	1	3.95	90.65	3.00	1.5	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	106	5	4.28	97.46	3.05	10.0	0	0	--	--	--	0.0
October	54	2	4.28	97.11	3.24	5.2	0	0	--	--	--	0.0
November	0	0	--	--	--	0.0	0	0	--	--	--	0.0
December	15	1	4.28	96.94	3.02	1.1	0	0	--	--	--	0.0

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Notes:

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

COAL - includes anthracite, bituminous, subbituminous, lignite, waste coal, and coal-derived synthesis gas. Prior to 2011, synthesis gas was included in the category of Other Gases.

PETROLEUM LIQUIDS - includes distillate fuel oil and residual fuel oil. Prior to 2013, petroleum liquids included distillate fuel oil, residual fuel oil, kerosene, jet fuel, waste oil, and, beginning in 2011, propane. Prior to 2011, propane was included in the category of Other Gases.

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Table 7.10. Receipts, Average Cost, and Quality of Fossil Fuels: Commercial Sector, 2012 - 2022 (continued)

Period	Petroleum Coke						Natural Gas					All Fossil Fuels Average Cost
	Receipts		Average Cost				Receipts		Average Cost			
	(Billion Btu)	(Thousand Tons)	(Dollars per MMBtu)	(Dollars per Ton)	Average Sulfur Percent by Weight	Percentage of Consumption	(Billion Btu)	(Thousand Mcf)	(Dollars per MMBtu)	(Dollars per Mcf)	Percentage of Consumption	
Annual Totals												
2012	0	0	--	--	--	0.0	18,315	18,008	5.88	5.98	16.2	W
2013	0	0	--	--	--	0.0	5,497	5,450	W	W	4.6	W
2014	0	0	--	--	--	0.0	5,849	5,795	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	--	--	--	0.0	8,636	8,322	3.88	4.02	6.8	3.89
Year 2020												
January	0	0	--	--	--	0.0	795	763	3.09	3.22	6.3	3.09
February	0	0	--	--	--	0.0	693	663	3.12	3.26	5.9	3.11
March	0	0	--	--	--	0.0	751	722	3.10	3.22	7.0	3.10
April	0	0	--	--	--	0.0	661	638	3.09	3.20	7.0	3.09
May	0	0	--	--	--	0.0	657	631	3.09	3.22	7.0	3.09
June	0	0	--	--	--	0.0	626	599	3.09	3.23	5.7	3.09
July	0	0	--	--	--	0.0	624	599	3.11	3.24	4.6	3.11
August	0	0	--	--	--	0.0	775	739	3.03	3.17	5.9	3.03
September	0	0	--	--	--	0.0	780	748	2.98	3.11	6.9	2.98
October	0	0	--	--	--	0.0	769	738	3.03	3.15	6.9	3.03
November	0	0	--	--	--	0.0	698	671	3.09	3.22	6.7	3.09
December	0	0	--	--	--	0.0	704	677	3.10	3.23	6.0	3.10
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	--	--	--	0.0	759	731	3.29	3.42	6.5	3.35
February	0	0	--	--	--	0.0	711	683	3.32	3.45	6.8	3.33
March	0	0	--	--	--	0.0	712	687	3.30	3.42	6.8	3.30
April	0	0	--	--	--	0.0	786	758	4.35	4.51	8.2	4.35
May	0	0	--	--	--	0.0	886	861	4.13	4.29	7.0	4.13
June	0	0	--	--	--	0.0	628	603	3.89	4.05	6.1	3.89
July	0	0	--	--	--	0.0	693	668	3.86	4.00	5.7	3.86
August	0	0	--	--	--	0.0	732	703	4.86	5.06	5.9	4.86
September	0	0	--	--	--	0.0	766	738	4.56	4.73	7.3	4.53
October	0	0	--	--	--	0.0	657	634	3.96	4.12	7.0	4.00
November	0	0	--	--	--	0.0	656	636	3.18	3.28	6.7	3.18
December	0	0	--	--	--	0.0	850	821	3.73	3.86	7.5	3.74

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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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- 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 7.11. Receipts, Average Cost, and Quality of Fossil Fuels: Industrial Sector, 2012 - 2022

Period	Coal						Petroleum Liquids					
	Receipts		Average Cost		Average Sulfur Percent by Weight	Percentage of Consumption	Receipts		Average Cost		Average Sulfur Percent by Weight	Percentage of Consumption
	(Billion Btu)	(Thousand Tons)	(Dollars per MMBtu)	(Dollars per Ton)			(Billion Btu)	(Thousand Barrels)	(Dollars per MMBtu)	(Dollars per Barrel)		
Annual Totals												
2012	285,172	13,206	3.02	65.24	1.33	65.8	6,739	1,095	W	W	1.52	40.8
2013	275,543	12,727	W	W	1.32	64.4	2,431	394	18.20	112.29	1.43	15.8
2014	281,867	13,050	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
Year 2020												
January	13,104	636	2.52	51.83	1.21	65.8	162	27	13.38	81.13	1.71	19.1
February	11,665	575	2.41	48.84	1.19	64.4	188	31	12.36	76.04	0.93	17.0
March	13,415	639	2.61	54.81	1.33	77.7	192	31	10.77	66.35	1.35	25.5
April	10,044	489	2.48	50.98	1.29	67.1	115	19	10.75	65.79	1.36	8.1
May	10,108	496	2.43	49.59	1.22	70.0	129	21	7.84	48.89	0.84	20.9
June	10,235	507	2.39	48.16	1.28	75.1	95	16	8.89	53.81	1.06	12.8
July	10,373	503	2.44	50.28	1.25	67.1	125	20	9.45	57.95	1.22	18.0
August	9,962	480	2.43	50.45	1.30	65.4	138	22	9.83	61.55	0.75	22.4
September	10,003	495	2.38	48.02	1.18	66.5	166	27	9.38	57.45	1.59	25.6
October	12,211	581	2.57	53.99	1.24	72.1	141	23	10.61	64.14	1.19	18.4
November	11,193	536	2.51	52.50	1.41	70.5	83	14	10.02	61.29	1.30	9.8
December	12,208	577	2.61	55.29	1.30	67.0	166	27	10.92	66.90	1.26	17.6
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

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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.

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

Table 7.12. Receipts, Average Cost, and Quality of Fossil Fuels: Industrial Sector, 2012 - 2022 (continued)

Period	Petroleum Coke						Natural Gas					All Fossil Fuels
	Receipts		Average Cost				Receipts		Average Cost			Average Cost
	(Billion Btu)	(Thousand Tons)	(Dollars per MMBtu)	(Dollars per Ton)	Average Sulfur Percent by Weight	Percentage of Consumption	(Billion Btu)	(Thousand Mcf)	(Dollars per MMBtu)	(Dollars per Mcf)	Percentage of Consumption	(Dollars per MMBtu)
Annual Totals												
2012	23,861	858	2.62	72.96	5.86	42.2	834,245	813,288	2.97	3.05	70.8	W
2013	17,236	623	W	W	5.82	30.5	750,946	728,835	W	W	62.3	W
2014	9,736	358	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
Year 2020												
January	0	0	--	--	--	0.0	73,310	71,097	2.36	2.43	49.0	2.40
February	0	0	--	--	--	0.0	66,947	64,971	2.12	2.18	49.2	2.19
March	0	0	--	--	--	0.0	67,628	65,733	1.99	2.05	49.4	2.11
April	0	0	--	--	--	0.0	63,624	61,742	1.86	1.92	50.2	1.96
May	0	0	--	--	--	0.0	65,435	63,624	1.97	2.02	58.4	2.04
June	0	0	--	--	--	0.0	66,093	64,260	1.82	1.88	57.0	1.91
July	506	19	1.72	47.01	6.06	24.4	68,624	66,821	1.84	1.89	54.9	1.93
August	674	25	1.72	46.47	5.81	32.2	67,571	65,724	2.30	2.36	54.6	2.32
September	571	21	1.74	47.01	5.96	29.0	62,909	61,194	2.52	2.59	56.1	2.51
October	407	15	1.75	47.00	5.69	21.5	63,751	62,043	2.51	2.57	54.1	2.53
November	0	0	--	--	--	0.0	66,442	64,570	3.01	3.10	57.8	2.95
December	0	0	--	--	--	0.0	73,453	71,402	2.96	3.05	56.6	2.93
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	--	--	--	0.0	76,455	74,275	4.68	4.82	59.9	4.42
February	0	0	--	--	--	0.0	65,784	63,860	5.74	5.91	59.0	5.34
March	0	0	--	--	--	0.0	71,461	69,559	4.69	4.82	60.3	4.39
April	0	0	--	--	--	0.0	67,470	65,714	5.97	6.13	60.8	5.55
May	0	0	--	--	--	0.0	67,025	65,283	7.68	7.89	58.8	6.90
June	0	0	--	--	--	0.0	68,964	67,264	8.29	8.50	60.1	7.47
July	0	0	--	--	--	0.0	72,749	70,916	6.93	7.11	58.8	6.33
August	0	0	--	--	--	0.0	73,848	72,011	8.69	8.91	59.1	7.94
September	0	0	--	--	--	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	65,821	63,673	5.82	5.99	57.1	5.52
November	0	0	--	--	--	0.0	69,498	67,553	5.11	5.26	58.9	4.92
December	0	0	--	--	--	0.0	70,500	68,450	6.26	6.45	58.4	5.81

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Notes:

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

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Table 7.13. Receipts of Coal Delivered for Electricity Generation by State, 2022 and 2021
(Thousand Tons)

Census Division and State	Electric Power Sector										
	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
	Year 2022	Year 2021	Percentage Change	Electric Utilities		Independent Power Producers		Year 2022	Year 2021	Year 2022	Year 2021
New England	241	87	176.0%	0	0	241	87	0	0	0	0
Connecticut	0	0	--	0	0	0	0	0	0	0	0
Maine	65	69	-5.0%	0	0	65	69	0	0	0	0
Massachusetts	0	0	--	0	0	0	0	0	0	0	0
New Hampshire	176	18	851.0%	0	0	176	18	0	0	0	0
Rhode Island	0	0	--	0	0	0	0	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	13,538	15,006	-9.8%	0	7	13,439	14,902	0	0	99	97
New Jersey	184	551	-67.0%	0	0	184	551	0	0	0	0
New York	0	0	--	0	0	0	0	0	0	0	0
Pennsylvania	13,354	14,455	-7.6%	0	7	13,255	14,351	0	0	99	97
East North Central	99,350	96,755	2.7%	58,164	54,740	39,490	40,088	0	0	1,696	1,927
Illinois	27,628	26,117	5.8%	3,800	2,003	22,142	22,190	0	0	1,687	1,924
Indiana	24,350	19,529	25.0%	21,862	17,381	2,488	2,148	0	0	0	0
Michigan	18,380	19,393	-5.2%	18,203	19,222	168	169	0	0	9	2
Ohio	16,609	17,458	-4.9%	1,916	1,876	14,692	15,582	0	0	0	0
Wisconsin	12,384	14,258	-13.0%	12,384	14,258	0	0	0	0	0	0
West North Central	99,908	98,142	1.8%	96,876	95,307	0	0	12	11	3,020	2,823
Iowa	12,694	11,702	8.5%	10,474	9,612	0	0	0	0	2,220	2,091
Kansas	13,126	12,456	5.4%	13,126	12,456	0	0	0	0	0	0
Minnesota	9,997	8,105	23.0%	9,997	8,105	0	0	0	0	0	0
Missouri	28,993	31,268	-7.3%	28,982	31,256	0	0	12	11	0	0
Nebraska	12,358	11,986	3.1%	11,557	11,253	0	0	0	0	800	733
North Dakota	21,441	21,381	0.3%	21,441	21,381	0	0	0	0	0	0
South Dakota	1,299	1,244	4.4%	1,299	1,244	0	0	0	0	0	0
South Atlantic	54,045	54,193	-0.3%	45,730	45,536	7,666	7,999	0	0	649	658
Delaware	144	134	7.5%	0	0	144	134	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	6,698	7,503	-11.0%	6,678	7,466	0	0	0	0	20	37
Georgia	8,771	8,175	7.3%	8,609	8,028	0	0	0	0	162	147
Maryland	1,857	2,095	-11.0%	0	0	1,857	2,095	0	0	0	0
North Carolina	5,924	7,816	-24.0%	5,686	7,570	0	6	0	0	238	241
South Carolina	6,658	6,029	10.0%	6,407	5,826	221	169	0	0	30	34
Virginia	1,854	1,585	17.0%	1,655	1,385	0	0	0	0	199	200
West Virginia	22,139	20,855	6.2%	16,696	15,260	5,444	5,595	0	0	0	0
East South Central	52,092	48,182	8.1%	48,306	44,576	3,209	3,050	0	0	577	556
Alabama	14,380	13,190	9.0%	14,380	13,190	0	0	0	0	0	0
Kentucky	27,859	25,233	10.0%	27,859	25,233	0	0	0	0	0	0
Mississippi	4,842	4,742	2.1%	1,632	1,692	3,209	3,050	0	0	0	0
Tennessee	5,012	5,017	-0.1%	4,434	4,461	0	0	0	0	577	556
West South Central	81,726	80,928	1.0%	40,212	40,896	41,392	39,950	0	0	122	82
Arkansas	12,617	11,416	11.0%	10,030	9,216	2,529	2,146	0	0	59	54
Louisiana	5,145	3,706	39.0%	3,064	3,196	2,081	511	0	0	0	0
Oklahoma	6,197	6,912	-10.0%	6,134	6,883	0	0	0	0	63	29
Texas	57,766	58,895	-1.9%	20,984	21,601	36,783	37,294	0	0	0	0
Mountain	65,200	64,823	0.6%	56,464	56,789	8,737	8,034	0	0	0	0
Arizona	8,402	7,192	17.0%	8,402	7,192	0	0	0	0	0	0
Colorado	11,077	12,316	-10.0%	11,077	12,316	0	0	0	0	0	0
Idaho	0	0	--	0	0	0	0	0	0	0	0
Montana	7,082	6,654	6.4%	0	64	7,082	6,590	0	0	0	0
Nevada	1,645	1,259	31.0%	927	610	718	649	0	0	0	0
New Mexico	7,520	7,235	3.9%	7,520	7,235	0	0	0	0	0	0
Utah	10,047	10,629	-5.5%	9,631	10,226	416	403	0	0	0	0
Wyoming	19,427	19,539	-0.6%	18,907	19,147	520	392	0	0	0	0
Pacific Contiguous	2,992	2,410	24.0%	0	0	2,434	1,773	0	0	559	638
California	559	638	-12.0%	0	0	0	0	0	0	559	638
Oregon	0	0	--	0	0	0	0	0	0	0	0
Washington	2,434	1,773	37.0%	0	0	2,434	1,773	0	0	0	0
Pacific Noncontiguous	625	950	-34.0%	368	353	256	597	0	0	0	0
Alaska	368	353	4.4%	368	353	0	0	0	0	0	0
Hawaii	256	597	-57.0%	0	0	256	597	0	0	0	0
U.S. Total	469,718	461,477	1.8%	346,120	338,205	116,864	116,480	12	11	6,721	6,781

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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 7.14. Receipts of Petroleum Liquids Delivered for Electricity Generation by State, 2022 and 2021
(Thousand Barrels)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
	Year 2022	Year 2021	Percentage Change	Electric Utilities		Independent Power Producers		Year 2022	Year 2021	Year 2022	Year 2021
				Year 2022	Year 2021	Year 2022	Year 2021				
New England	2,296	337	582.0%	57	15	2,239	322	0	0	0	0
Connecticut	684	30	NM	0	0	684	30	0	0	0	0
Maine	348	77	353.0%	0	0	348	77	0	0	0	0
Massachusetts	690	44	NM	57	15	633	29	0	0	0	0
New Hampshire	527	174	203.0%	0	0	527	174	0	0	0	0
Rhode Island	46	12	287.0%	0	0	46	12	0	0	0	0
Vermont	0	0	-	0	0	0	0	0	0	0	0
Middle Atlantic	2,251	1,482	52.0%	599	881	1,585	530	0	0	66	72
New Jersey	28	27	6.9%	0	0	28	27	0	0	0	0
New York	1,855	1,143	62.0%	599	881	1,255	263	0	0	0	0
Pennsylvania	367	312	18.0%	0	0	301	241	0	0	66	72
East North Central	685	882	-22.0%	427	506	225	346	0	0	32	30
Illinois	59	114	-48.0%	2	14	57	100	0	0	0	0
Indiana	199	248	-20.0%	199	244	0	4	0	0	0	0
Michigan	170	182	-6.5%	153	163	0	0	0	0	17	19
Ohio	212	281	-25.0%	29	31	168	239	0	0	15	11
Wisconsin	45	57	-22.0%	45	55	0	2	0	0	0	0
West North Central	821	1,332	-38.0%	818	1,321	4	10	0	0	0	0
Iowa	143	129	11.0%	143	129	0	0	0	0	0	0
Kansas	208	329	-37.0%	208	329	0	0	0	0	0	0
Minnesota	66	178	-63.0%	62	168	4	10	0	0	0	0
Missouri	295	509	-42.0%	295	509	0	0	0	0	0	0
Nebraska	32	87	-63.0%	32	87	0	0	0	0	0	0
North Dakota	67	69	-2.4%	67	69	0	0	0	0	0	0
South Dakota	10	31	-69.0%	10	31	0	0	0	0	0	0
South Atlantic	2,589	2,210	17.0%	1,840	1,564	463	380	0	0	286	266
Delaware	38	33	14.0%	0	0	38	33	0	0	0	0
District of Columbia	0	0	-	0	0	0	0	0	0	0	0
Florida	666	584	14.0%	618	536	25	10	0	0	23	38
Georgia	493	348	42.0%	300	218	85	7	0	0	108	123
Maryland	128	206	-38.0%	0	0	128	206	0	0	0	0
North Carolina	249	155	60.0%	181	108	0	0	0	0	68	47
South Carolina	251	166	51.0%	185	127	32	6	0	0	34	33
Virginia	514	421	22.0%	311	290	151	106	0	0	52	24
West Virginia	249	296	-16.0%	245	286	4	10	0	0	0	0
East South Central	489	326	50.0%	470	271	0	36	0	0	19	19
Alabama	83	37	124.0%	83	1	0	36	0	0	0	0
Kentucky	140	170	-18.0%	140	170	0	0	0	0	0	0
Mississippi	11	10	8.8%	11	10	0	0	0	0	0	0
Tennessee	255	109	134.0%	236	90	0	0	0	0	19	19
West South Central	631	1,238	-49.0%	229	282	402	956	0	0	0	0
Arkansas	105	123	-15.0%	71	98	34	24	0	0	0	0
Louisiana	28	22	26.0%	28	22	0	0	0	0	0	0
Oklahoma	76	56	34.0%	76	56	0	0	0	0	0	0
Texas	422	1,037	-59.0%	54	105	368	932	0	0	0	0
Mountain	273	315	-13.0%	255	289	18	26	0	0	0	0
Arizona	56	75	-25.0%	56	75	0	0	0	0	0	0
Colorado	12	17	-31.0%	12	17	0	0	0	0	0	0
Idaho	0	0	-	0	0	0	0	0	0	0	0
Montana	23	20	12.0%	11	1	12	19	0	0	0	0
Nevada	20	17	15.0%	16	12	4	5	0	0	0	0
New Mexico	20	44	-55.0%	20	44	0	0	0	0	0	0
Utah	55	51	9.4%	53	49	2	2	0	0	0	0
Wyoming	87	90	-3.7%	87	90	0	0	0	0	0	0
Pacific Contiguous	39	17	128.0%	20	5	20	13	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	39	17	128.0%	20	5	20	13	0	0	0	0
Pacific Noncontiguous	9,288	8,162	14.0%	7,416	6,334	1,872	1,828	0	0	0	0
Alaska	25	21	18.0%	25	21	0	0	0	0	0	0
Hawaii	9,264	8,141	14.0%	7,392	6,313	1,872	1,828	0	0	0	0
U.S. Total	19,362	16,302	19.0%	12,131	11,468	6,827	4,447	0	0	404	387

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

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

Table 7.15. Receipts of Petroleum Coke Delivered for Electricity Generation by State, 2022 and 2021
(Thousand Tons)

Census Division and State	Electric Power Sector										
	All Sectors			Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
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	715	477	50.0%	715	477	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	648	406	60.0%	648	406	0	0	0	0	0	0
Ohio	0	0	--	0	0	0	0	0	0	0	0
Wisconsin	67	72	-6.7%	67	72	0	0	0	0	0	0
West North Central	3	0	--	0	0	0	0	0	0	3	0
Iowa	3	0	--	0	0	0	0	0	0	3	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	335	296	13.0%	335	296	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	335	296	13.0%	335	296	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	7	0	--	7	0	0	0	0	0	0	0
Alabama	0	0	--	0	0	0	0	0	0	0	0
Kentucky	7	0	--	7	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	1,225	1,523	-20.0%	1,225	1,523	0	0	0	0	0	0
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	1,225	1,523	-20.0%	1,225	1,523	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	2,286	2,296	-0.4%	2,283	2,296	0	0	0	0	3	0

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

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

**Table 7.16. Receipts of Natural Gas Delivered for Electricity Generation by State, 2022 and 2021
(Million Cubic Feet)**

Census Division and State	Electric Power Sector										
	All Sectors			Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
New England	380,100	384,576	-1.2%	776	635	379,324	383,941	0	0	0	0
Connecticut	157,191	159,374	-1.4%	0	0	157,191	159,374	0	0	0	0
Maine	25,923	19,660	32.0%	0	0	25,923	19,660	0	0	0	0
Massachusetts	113,585	110,095	3.2%	776	635	112,809	109,460	0	0	0	0
New Hampshire	31,968	32,122	-0.5%	0	0	31,968	32,122	0	0	0	0
Rhode Island	51,433	63,325	-19.0%	0	0	51,433	63,325	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	1,550,392	1,465,715	5.8%	96,471	113,768	1,430,160	1,339,677	0	0	23,761	12,271
New Jersey	244,378	214,529	14.0%	0	0	244,378	214,529	0	0	0	0
New York	431,794	415,529	3.9%	96,471	113,768	328,513	294,851	0	0	6,810	6,910
Pennsylvania	874,220	835,656	4.6%	0	0	857,269	830,296	0	0	16,951	5,360
East North Central	1,301,760	1,119,704	16.0%	474,247	381,952	799,254	712,136	6,095	6,243	22,164	19,374
Illinois	138,654	161,282	-14.0%	16,012	15,841	115,754	141,390	0	0	6,887	4,051
Indiana	219,964	195,235	13.0%	103,406	85,488	116,558	109,747	0	0	0	0
Michigan	294,690	229,961	28.0%	119,172	79,802	163,442	137,720	6,095	6,243	5,981	6,197
Ohio	475,742	385,386	23.0%	73,391	63,323	396,250	316,600	0	0	6,101	5,463
Wisconsin	172,711	147,841	17.0%	162,266	137,498	7,250	6,679	0	0	3,195	3,663
West North Central	242,613	242,167	0.2%	204,337	193,571	32,286	42,181	2,227	2,285	3,763	4,130
Iowa	61,373	57,155	7.4%	57,610	53,025	0	0	0	0	3,763	4,130
Kansas	22,331	17,324	29.0%	22,331	17,324	0	0	0	0	0	0
Minnesota	56,099	82,781	-32.0%	37,021	53,250	19,064	29,513	14	17	0	0
Missouri	68,294	49,849	37.0%	52,859	34,914	13,222	12,667	2,213	2,268	0	0
Nebraska	12,337	11,099	11.0%	12,337	11,099	0	0	0	0	0	0
North Dakota	13,791	15,538	-11.0%	13,791	15,538	0	0	0	0	0	0
South Dakota	8,388	8,421	-0.4%	8,388	8,421	0	0	0	0	0	0
South Atlantic	2,970,372	2,773,119	7.1%	2,473,444	2,331,380	460,824	403,128	0	0	36,105	38,611
Delaware	28,590	20,981	36.0%	0	0	28,590	20,981	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	1,361,682	1,291,719	5.4%	1,288,364	1,239,841	68,970	47,429	0	0	4,347	4,450
Georgia	443,671	411,132	7.9%	339,404	335,256	94,349	65,571	0	0	9,918	10,305
Maryland	98,380	97,680	0.7%	26,946	23,426	71,434	74,254	0	0	0	0
North Carolina	472,533	366,122	29.0%	398,248	301,388	71,058	61,431	0	0	3,227	3,303
South Carolina	186,182	171,948	8.3%	172,295	167,052	12,689	3,545	0	0	1,198	1,350
Virginia	357,535	387,138	-7.6%	244,012	260,777	101,463	114,182	0	0	12,061	12,179
West Virginia	21,798	26,399	-17.0%	4,174	3,640	12,270	15,735	0	0	5,354	7,024
East South Central	1,101,503	955,512	15.0%	815,994	706,434	257,127	220,148	0	0	28,383	28,930
Alabama	428,005	364,691	17.0%	179,238	151,572	248,767	213,119	0	0	0	0
Kentucky	135,881	108,445	25.0%	127,712	101,583	8,169	6,862	0	0	0	0
Mississippi	386,054	355,032	8.7%	385,862	354,866	191	167	0	0	0	0
Tennessee	151,564	127,344	19.0%	123,181	98,414	0	0	0	0	28,383	28,930
West South Central	3,265,503	2,953,583	11.0%	1,143,699	970,184	1,448,516	1,337,790	0	0	673,289	645,609
Arkansas	187,013	149,452	25.0%	171,363	136,190	12,444	9,886	0	0	3,206	3,375
Louisiana	578,463	504,403	15.0%	328,529	276,806	30,992	28,262	0	0	218,942	199,336
Oklahoma	285,069	264,185	7.9%	190,516	175,359	87,898	82,405	0	0	6,655	6,421
Texas	2,214,958	2,035,543	8.8%	453,291	381,830	1,317,181	1,217,236	0	0	444,487	436,477
Mountain	819,049	828,452	-0.9%	666,919	668,362	152,130	157,805	0	0	0	285
Arizona	335,961	355,100	-5.4%	236,451	252,298	99,510	102,802	0	0	0	0
Colorado	120,363	110,077	9.3%	102,785	92,408	17,578	17,670	0	0	0	0
Idaho	26,778	31,238	-14.0%	16,563	18,928	10,215	12,310	0	0	0	0
Montana	4,554	3,210	42.0%	4,521	3,176	33	35	0	0	0	0
Nevada	169,097	176,194	-4.0%	169,097	176,194	0	0	0	0	0	0
New Mexico	79,348	74,648	6.3%	54,559	49,673	24,790	24,976	0	0	0	0
Utah	72,944	68,220	6.9%	72,944	67,935	0	0	0	0	0	285
Wyoming	10,004	7,764	29.0%	9,999	7,751	5	13	0	0	0	0
Pacific Contiguous	790,169	843,445	-6.3%	309,694	333,590	455,077	480,204	0	0	25,398	29,651
California	569,679	593,557	-4.0%	180,431	188,682	363,850	375,224	0	0	25,398	29,651
Oregon	132,193	147,598	-10.0%	71,069	76,014	61,125	71,584	0	0	0	0
Washington	88,297	102,290	-14.0%	58,195	68,894	30,102	33,396	0	0	0	0
Pacific Noncontiguous	14,611	13,979	4.5%	14,611	13,979	0	0	0	0	0	0
Alaska	14,611	13,979	4.5%	14,611	13,979	0	0	0	0	0	0
Hawaii	0	0	--	0	0	0	0	0	0	0	0
U.S. Total	12,436,074	11,578,254	7.4%	6,200,191	5,713,855	5,414,698	5,077,009	8,322	8,528	812,863	778,861

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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, 2022 and 2021
(Dollars per MMBtu)**

Census Division and State	Electric Power Sector			Electric Utilities		Independent Power Producers	
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021
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	3.19	1.94	64.0%	--	2.88	3.19	1.94
New Jersey	W	W	W	--	--	W	W
New York	--	--	--	--	--	--	--
Pennsylvania	W	W	W	--	2.88	W	W
East North Central	2.25	1.93	17.0%	2.54	2.12	1.83	1.68
Illinois	1.91	W	W	2.02	1.72	1.89	W
Indiana	W	W	W	2.76	2.28	W	W
Michigan	W	W	W	2.37	2.06	W	W
Ohio	W	1.66	W	2.82	1.87	W	1.64
Wisconsin	2.44	2.06	18.0%	2.44	2.06	--	--
West North Central	1.83	1.60	14.0%	1.83	1.60	--	--
Iowa	1.81	1.60	13.0%	1.81	1.60	--	--
Kansas	1.88	1.43	31.0%	1.88	1.43	--	--
Minnesota	2.33	2.15	8.4%	2.33	2.15	--	--
Missouri	1.92	1.66	16.0%	1.92	1.66	--	--
Nebraska	1.29	1.18	9.3%	1.29	1.18	--	--
North Dakota	1.67	1.61	3.7%	1.67	1.61	--	--
South Dakota	2.08	1.90	9.5%	2.08	1.90	--	--
South Atlantic	3.12	2.41	29.0%	3.17	2.50	2.81	1.95
Delaware	W	W	W	--	--	W	W
District of Columbia	--	--	--	--	--	--	--
Florida	3.63	2.66	36.0%	3.63	2.66	--	--
Georgia	3.88	2.75	41.0%	3.88	2.75	--	--
Maryland	W	W	W	--	--	W	W
North Carolina	3.55	W	W	3.55	2.67	--	W
South Carolina	W	W	W	3.54	2.91	W	W
Virginia	3.28	2.38	38.0%	3.28	2.38	--	--
West Virginia	2.27	1.94	17.0%	2.44	2.09	1.75	1.53
East South Central	W	W	W	2.64	1.99	W	W
Alabama	2.81	2.19	28.0%	2.81	2.19	--	--
Kentucky	2.38	1.88	27.0%	2.38	1.88	--	--
Mississippi	W	W	W	3.95	2.56	W	W
Tennessee	3.49	1.93	81.0%	3.49	1.93	--	--
West South Central	2.20	2.04	7.8%	2.38	2.31	2.01	1.74
Arkansas	W	W	W	2.33	2.08	W	W
Louisiana	W	W	W	2.66	5.12	W	W
Oklahoma	2.59	1.74	49.0%	2.59	1.74	--	--
Texas	W	W	W	2.30	2.16	W	W
Mountain	2.13	W	W	2.17	1.94	1.81	W
Arizona	2.84	2.31	23.0%	2.84	2.31	--	--
Colorado	1.91	1.60	19.0%	1.91	1.60	--	--
Idaho	--	--	--	--	--	--	--
Montana	W	W	W	--	2.31	W	W
Nevada	W	W	W	3.29	2.34	W	W
New Mexico	2.93	2.61	12.0%	2.93	2.61	--	--
Utah	2.16	1.99	8.5%	2.16	1.99	--	--
Wyoming	W	W	W	1.64	1.69	W	W
Pacific Contiguous	W	W	W	--	--	W	W
California	--	--	--	--	--	--	--
Oregon	--	--	--	--	--	--	--
Washington	W	W	W	--	--	W	W
Pacific Noncontiguous	W	W	W	3.85	3.37	W	W
Alaska	3.85	3.37	14.0%	3.85	3.37	--	--
Hawaii	W	W	W	--	--	W	W
U.S. Total	2.36	1.97	20.0%	2.41	2.03	2.19	1.79

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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, 2022 and 2021
(Dollars per MMBtu)**

Census Division and State	Electric Power Sector			Electric Utilities		Independent Power Producers	
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021
New England	W	W	W	21.71	16.48	W	W
Connecticut	W	12.38	W	--	--	W	12.38
Maine	W	W	W	--	--	W	W
Massachusetts	14.72	17.95	-18.0%	21.71	16.48	13.56	18.90
New Hampshire	W	W	W	--	--	W	W
Rhode Island	W	W	W	--	--	W	W
Vermont	--	--	--	--	--	--	--
Middle Atlantic	20.55	14.08	46.0%	19.04	13.14	21.39	15.73
New Jersey	26.98	15.50	74.0%	--	--	26.98	15.50
New York	19.29	13.85	41.0%	19.04	13.14	19.47	15.41
Pennsylvania	27.97	16.12	74.0%	--	--	27.97	16.12
East North Central	26.33	17.17	53.0%	26.19	15.45	26.61	19.99
Illinois	27.79	W	W	21.13	17.54	28.00	W
Indiana	27.13	W	W	27.13	15.16	--	W
Michigan	25.73	15.39	67.0%	25.73	15.39	--	--
Ohio	26.14	20.45	28.0%	26.09	16.45	26.15	20.95
Wisconsin	23.83	W	W	23.83	15.86	--	W
West North Central	W	W	W	25.38	15.46	W	W
Iowa	26.04	15.77	65.0%	26.04	15.77	--	--
Kansas	24.71	14.84	67.0%	24.71	14.84	--	--
Minnesota	W	W	W	25.28	15.15	W	W
Missouri	25.93	15.56	67.0%	25.93	15.56	--	--
Nebraska	23.33	16.69	40.0%	23.33	16.69	--	--
North Dakota	25.07	16.06	56.0%	25.07	16.06	--	--
South Dakota	23.11	16.26	42.0%	23.11	16.26	--	--
South Atlantic	25.79	15.48	67.0%	25.61	15.84	26.68	13.93
Delaware	W	W	W	--	--	W	W
District of Columbia	--	--	--	--	--	--	--
Florida	W	W	W	26.40	15.97	W	W
Georgia	W	W	W	28.73	17.63	W	W
Maryland	27.70	15.07	84.0%	--	--	27.70	15.07
North Carolina	25.14	15.85	59.0%	25.14	15.85	--	--
South Carolina	W	W	W	27.63	15.50	W	W
Virginia	W	W	W	19.81	13.84	W	W
West Virginia	W	W	W	25.97	16.41	W	W
East South Central	26.60	W	W	26.60	16.00	--	W
Alabama	26.31	W	W	26.31	15.38	--	W
Kentucky	25.93	15.69	65.0%	25.93	15.69	--	--
Mississippi	23.88	15.81	51.0%	23.88	15.81	--	--
Tennessee	27.24	16.61	64.0%	27.24	16.61	--	--
West South Central	25.45	15.96	59.0%	25.13	15.04	25.64	16.23
Arkansas	W	W	W	25.20	15.76	W	W
Louisiana	25.85	14.76	75.0%	25.85	14.76	--	--
Oklahoma	24.88	15.87	57.0%	24.88	15.87	--	--
Texas	W	W	W	25.04	13.98	W	W
Mountain	28.02	18.30	53.0%	28.03	18.38	27.84	17.41
Arizona	27.87	17.38	60.0%	27.87	17.38	--	--
Colorado	26.00	18.51	40.0%	26.00	18.51	--	--
Idaho	--	--	--	--	--	--	--
Montana	W	W	W	23.36	15.86	W	W
Nevada	W	W	W	26.85	18.57	W	W
New Mexico	30.80	19.94	54.0%	30.80	19.94	--	--
Utah	W	W	W	28.82	18.84	W	W
Wyoming	28.11	18.27	54.0%	28.11	18.27	--	--
Pacific Contiguous	W	W	W	23.43	16.50	W	W
California	--	--	--	--	--	--	--
Oregon	--	--	--	--	--	--	--
Washington	W	W	W	23.43	16.50	W	W
Pacific Noncontiguous	W	W	W	24.16	13.92	W	W
Alaska	30.16	18.32	65.0%	30.16	18.32	--	--
Hawaii	W	W	W	24.14	13.91	W	W
U.S. Total	23.94	14.76	62.0%	24.43	14.53	22.83	15.38

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

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

**Table 7.19. Average Cost of Petroleum Coke Delivered for Electricity Generation by State, 2022 and 2021
(Dollars per MMBtu)**

Census Division and State	Electric Power Sector			Electric Utilities		Independent Power Producers	
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021
New England	--	--	--	--	--	--	--
Connecticut	--	--	--	--	--	--	--
Maine	--	--	--	--	--	--	--
Massachusetts	--	--	--	--	--	--	--
New Hampshire	--	--	--	--	--	--	--
Rhode Island	--	--	--	--	--	--	--
Vermont	--	--	--	--	--	--	--
Middle Atlantic	--	--	--	--	--	--	--
New Jersey	--	--	--	--	--	--	--
New York	--	--	--	--	--	--	--
Pennsylvania	--	--	--	--	--	--	--
East North Central	1.46	1.31	11.0%	1.46	1.31	--	--
Illinois	--	--	--	--	--	--	--
Indiana	--	--	--	--	--	--	--
Michigan	1.16	1.20	-3.3%	1.16	1.20	--	--
Ohio	--	--	--	--	--	--	--
Wisconsin	4.38	1.90	131.0%	4.38	1.90	--	--
West North Central	--	--	--	--	--	--	--
Iowa	--	--	--	--	--	--	--
Kansas	--	--	--	--	--	--	--
Minnesota	--	--	--	--	--	--	--
Missouri	--	--	--	--	--	--	--
Nebraska	--	--	--	--	--	--	--
North Dakota	--	--	--	--	--	--	--
South Dakota	--	--	--	--	--	--	--
South Atlantic	7.01	4.67	50.0%	7.01	4.67	--	--
Delaware	--	--	--	--	--	--	--
District of Columbia	--	--	--	--	--	--	--
Florida	7.01	4.67	50.0%	7.01	4.67	--	--
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	5.25	3.43	53.0%	5.25	3.43	--	--
Arkansas	--	--	--	--	--	--	--
Louisiana	5.25	3.43	53.0%	5.25	3.43	--	--
Oklahoma	--	--	--	--	--	--	--
Texas	--	--	--	--	--	--	--
Mountain	--	--	--	--	--	--	--
Arizona	--	--	--	--	--	--	--
Colorado	--	--	--	--	--	--	--
Idaho	--	--	--	--	--	--	--
Montana	--	--	--	--	--	--	--
Nevada	--	--	--	--	--	--	--
New Mexico	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--
Wyoming	--	--	--	--	--	--	--
Pacific Contiguous	--	--	--	--	--	--	--
California	--	--	--	--	--	--	--
Oregon	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--
Pacific Noncontiguous	--	--	--	--	--	--	--
Alaska	--	--	--	--	--	--	--
Hawaii	--	--	--	--	--	--	--
U.S. Total	4.35	3.16	38.0%	4.35	3.16	--	--

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

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

**Table 7.20. Average Cost of Natural Gas Delivered for Electricity Generation by State, 2022 and 2021
(Dollars per MMBtu)**

Census Division and State	Electric Power Sector			Electric Utilities		Independent Power Producers	
	Year 2022	Year 2021	Percentage Change	Year 2022	Year 2021	Year 2022	Year 2021
New England	W	W	W	8.82	4.38	W	W
Connecticut	8.89	4.69	90.0%	--	--	8.89	4.69
Maine	W	W	W	--	--	W	W
Massachusetts	11.77	5.75	105.0%	8.82	4.38	11.79	5.76
New Hampshire	W	W	W	--	--	W	W
Rhode Island	8.39	4.37	92.0%	--	--	8.39	4.37
Vermont	--	--	--	--	--	--	--
Middle Atlantic	6.56	3.54	85.0%	7.38	4.16	6.49	3.47
New Jersey	7.00	3.63	93.0%	--	--	7.00	3.63
New York	7.18	3.92	83.0%	7.38	4.16	7.11	3.82
Pennsylvania	6.10	3.31	84.0%	--	--	6.10	3.31
East North Central	6.27	3.90	61.0%	6.44	4.05	6.18	3.82
Illinois	6.88	4.18	65.0%	7.46	4.65	6.79	4.12
Indiana	6.27	4.16	51.0%	6.57	4.35	6.00	4.01
Michigan	6.56	4.02	63.0%	7.11	4.45	6.16	3.78
Ohio	6.10	3.67	66.0%	6.27	3.74	6.07	3.66
Wisconsin	5.83	3.70	58.0%	5.83	3.70	--	--
West North Central	W	W	W	9.58	6.01	W	W
Iowa	6.02	4.10	47.0%	6.02	4.10	--	--
Kansas	7.13	9.66	-26.0%	7.13	9.66	--	--
Minnesota	W	W	W	7.54	4.46	W	W
Missouri	W	W	W	19.07	9.72	W	W
Nebraska	8.38	12.59	-33.0%	8.38	12.59	--	--
North Dakota	3.11	2.83	9.9%	3.11	2.83	--	--
South Dakota	4.49	3.41	32.0%	4.49	3.41	--	--
South Atlantic	7.86	4.61	70.0%	7.94	4.71	7.27	3.93
Delaware	W	W	W	--	--	W	W
District of Columbia	--	--	--	--	--	--	--
Florida	8.31	5.07	64.0%	8.33	5.08	7.84	4.75
Georgia	7.87	W	W	7.94	4.25	7.57	W
Maryland	8.29	4.35	91.0%	7.79	4.52	8.47	4.29
North Carolina	7.31	4.40	66.0%	7.37	4.52	6.88	3.80
South Carolina	7.11	4.22	68.0%	7.11	4.22	--	--
Virginia	7.14	3.93	82.0%	7.46	4.12	6.10	3.38
West Virginia	W	W	W	6.75	4.16	W	W
East South Central	6.75	4.04	67.0%	6.64	3.98	7.19	4.27
Alabama	W	W	W	7.65	4.28	W	W
Kentucky	W	W	W	6.61	4.16	W	W
Mississippi	W	W	W	6.42	3.90	W	W
Tennessee	5.86	3.64	61.0%	5.86	3.64	--	--
West South Central	6.70	8.48	-21.0%	6.96	7.98	6.44	8.92
Arkansas	W	W	W	6.94	6.99	W	W
Louisiana	W	W	W	7.04	5.28	W	W
Oklahoma	W	W	W	7.53	12.41	W	W
Texas	6.50	8.98	-28.0%	6.66	8.26	6.44	9.24
Mountain	7.90	5.09	55.0%	7.76	5.11	9.31	4.98
Arizona	8.42	W	W	8.03	4.78	10.02	W
Colorado	W	W	W	7.00	7.45	W	W
Idaho	10.44	4.31	142.0%	10.44	4.31	--	--
Montana	W	W	W	4.13	3.31	W	W
Nevada	7.92	4.50	76.0%	7.92	4.50	--	--
New Mexico	6.50	5.40	20.0%	6.50	5.40	--	--
Utah	8.17	4.45	84.0%	8.17	4.45	--	--
Wyoming	W	W	W	8.11	5.84	W	W
Pacific Contiguous	8.57	4.79	79.0%	7.92	4.73	9.32	4.85
California	9.89	5.42	82.0%	9.48	5.58	10.23	5.27
Oregon	W	W	W	5.69	3.49	W	W
Washington	W	W	W	6.68	4.04	W	W
Pacific Noncontiguous	6.23	6.25	-0.3%	6.23	6.25	--	--
Alaska	6.23	6.25	-0.3%	6.23	6.25	--	--
Hawaii	--	--	--	--	--	--	--
U.S. Total	7.27	5.25	38.0%	7.49	5.21	6.95	5.29

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

Notes:
 See Glossary for definitions. Values are final.
 See Technical Notes for a discussion of the sample design for the Form EIA-923.
 Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.

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, 2022

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	241	2.42	7.5	0	--	--	0	--	--
Connecticut	0	--	--	0	--	--	0	--	--
Maine	65	0.94	7.0	0	--	--	0	--	--
Massachusetts	0	--	--	0	--	--	0	--	--
New Hampshire	176	2.83	7.7	0	--	--	0	--	--
Rhode Island	0	--	--	0	--	--	0	--	--
Vermont	0	--	--	0	--	--	0	--	--
Middle Atlantic	7,149	2.55	8.9	0	--	--	0	--	--
New Jersey	184	1.34	7.2	0	--	--	0	--	--
New York	0	--	--	0	--	--	0	--	--
Pennsylvania	6,965	2.58	8.9	0	--	--	0	--	--
East North Central	50,862	3.20	10.6	48,488	0.25	4.7	0	--	--
Illinois	8,831	3.43	20.0	18,797	0.22	4.6	0	--	--
Indiana	23,070	2.88	9.1	1,280	0.30	5.1	0	--	--
Michigan	1,787	2.29	7.9	16,593	0.27	4.7	0	--	--
Ohio	16,550	3.66	9.3	59	0.44	5.0	0	--	--
Wisconsin	624	2.26	7.7	11,760	0.26	4.9	0	--	--
West North Central	431	3.22	8.9	78,036	0.26	5.0	21,117	0.73	9.8
Iowa	175	3.61	8.7	12,519	0.25	4.9	0	--	--
Kansas	0	--	--	13,126	0.28	5.3	0	--	--
Minnesota	0	--	--	9,997	0.32	5.7	0	--	--
Missouri	257	2.96	9.0	28,737	0.23	4.7	0	--	--
Nebraska	0	--	--	12,358	0.26	4.9	0	--	--
North Dakota	0	--	--	0	--	--	21,117	0.73	9.8
South Dakota	0	--	--	1,299	0.33	5.2	0	--	--
South Atlantic	48,534	2.58	9.9	4,951	0.33	5.4	0	--	--
Delaware	144	2.17	7.5	0	--	--	0	--	--
District of Columbia	0	--	--	0	--	--	0	--	--
Florida	6,698	2.68	8.5	0	--	--	0	--	--
Georgia	3,820	2.29	8.6	4,951	0.33	5.4	0	--	--
Maryland	1,857	2.27	12.4	0	--	--	0	--	--
North Carolina	5,924	1.80	9.0	0	--	--	0	--	--
South Carolina	6,658	2.00	9.2	0	--	--	0	--	--
Virginia	1,854	1.52	16.7	0	--	--	0	--	--
West Virginia	21,579	3.10	10.3	0	--	--	0	--	--
East South Central	27,682	2.72	9.7	21,201	0.29	5.3	3,209	0.57	14.8
Alabama	2,498	0.91	11.3	11,882	0.31	5.3	0	--	--
Kentucky	21,320	3.03	9.7	6,539	0.26	5.1	0	--	--
Mississippi	84	0.68	8.3	1,549	0.36	5.6	3,209	0.57	14.8
Tennessee	3,780	2.10	8.9	1,231	0.21	4.6	0	--	--
West South Central	271	2.32	9.4	64,162	0.29	5.1	17,292	1.15	18.0
Arkansas	59	0.67	9.1	12,559	0.22	4.7	0	--	--
Louisiana	202	2.91	8.5	4,943	0.24	4.8	0	--	--
Oklahoma	11	0.89	32.9	6,186	0.25	5.1	0	--	--
Texas	0	--	--	40,475	0.32	5.3	17,292	1.15	18.0
Mountain	13,055	0.60	12.3	51,729	0.50	8.8	0	--	--
Arizona	0	--	--	8,402	0.55	9.6	0	--	--
Colorado	1,158	0.45	11.3	9,919	0.32	6.0	0	--	--
Idaho	0	--	--	0	--	--	0	--	--
Montana	0	--	--	7,082	0.70	9.1	0	--	--
Nevada	545	0.47	8.9	1,100	0.35	6.8	0	--	--
New Mexico	2,037	0.80	24.1	5,482	0.79	19.1	0	--	--
Utah	9,315	0.59	10.5	316	0.92	8.7	0	--	--
Wyoming	0	--	--	19,427	0.41	7.0	0	--	--
Pacific Contiguous	559	0.42	8.5	2,434	0.39	8.3	0	--	--
California	559	0.42	8.5	0	--	--	0	--	--
Oregon	0	--	--	0	--	--	0	--	--
Washington	0	--	--	2,434	0.39	8.3	0	--	--
Pacific Noncontiguous	0	--	--	256	0.21	7.6	269	0.13	7.5
Alaska	0	--	--	0	--	--	269	0.13	7.5
Hawaii	0	--	--	256	0.21	7.6	0	--	--
U.S. Total	148,785	2.64	10.2	271,258	0.32	5.8	41,887	0.89	13.5

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 Utilities by State, 2022

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	25,566	2.85	9.0	32,598	0.26	4.8	0	--	--
Illinois	834	2.79	9.1	2,966	0.22	4.8	0	--	--
Indiana	20,582	2.85	9.1	1,280	0.30	5.1	0	--	--
Michigan	1,610	2.39	8.0	16,593	0.27	4.7	0	--	--
Ohio	1,916	3.47	9.4	0	--	--	0	--	--
Wisconsin	624	2.26	7.7	11,760	0.26	4.9	0	--	--
West North Central	245	2.96	9.0	75,191	0.26	5.0	21,117	0.73	9.8
Iowa	0	--	--	10,474	0.26	4.9	0	--	--
Kansas	0	--	--	13,126	0.28	5.3	0	--	--
Minnesota	0	--	--	9,997	0.32	5.7	0	--	--
Missouri	245	2.96	9.0	28,737	0.23	4.7	0	--	--
Nebraska	0	--	--	11,557	0.26	4.9	0	--	--
North Dakota	0	--	--	0	--	--	21,117	0.73	9.8
South Dakota	0	--	--	1,299	0.33	5.2	0	--	--
South Atlantic	40,779	2.50	9.9	4,951	0.33	5.4	0	--	--
Delaware	0	--	--	0	--	--	0	--	--
District of Columbia	0	--	--	0	--	--	0	--	--
Florida	6,678	2.69	8.5	0	--	--	0	--	--
Georgia	3,658	2.35	8.7	4,951	0.33	5.4	0	--	--
Maryland	0	--	--	0	--	--	0	--	--
North Carolina	5,686	1.85	9.1	0	--	--	0	--	--
South Carolina	6,407	2.04	9.2	0	--	--	0	--	--
Virginia	1,655	1.56	18.2	0	--	--	0	--	--
West Virginia	16,696	2.93	10.5	0	--	--	0	--	--
East South Central	27,104	2.76	9.8	21,201	0.29	5.3	0	--	--
Alabama	2,498	0.91	11.3	11,882	0.31	5.3	0	--	--
Kentucky	21,320	3.03	9.7	6,539	0.26	5.1	0	--	--
Mississippi	84	0.68	8.3	1,549	0.36	5.6	0	--	--
Tennessee	3,203	2.34	9.0	1,231	0.21	4.6	0	--	--
West South Central	213	2.83	9.4	34,444	0.26	5.0	5,555	1.64	22.7
Arkansas	0	--	--	10,030	0.22	4.7	0	--	--
Louisiana	202	2.91	8.5	2,862	0.21	4.7	0	--	--
Oklahoma	11	0.89	32.9	6,123	0.25	5.1	0	--	--
Texas	0	--	--	15,429	0.30	5.2	5,555	1.64	22.7
Mountain	13,055	0.60	12.3	43,408	0.47	8.9	0	--	--
Arizona	0	--	--	8,402	0.55	9.6	0	--	--
Colorado	1,158	0.45	11.3	9,919	0.32	6.0	0	--	--
Idaho	0	--	--	0	--	--	0	--	--
Montana	0	--	--	0	--	--	0	--	--
Nevada	545	0.47	8.9	382	0.41	9.5	0	--	--
New Mexico	2,037	0.80	24.1	5,482	0.79	19.1	0	--	--
Utah	9,315	0.59	10.5	316	0.92	8.7	0	--	--
Wyoming	0	--	--	18,907	0.41	7.0	0	--	--
Pacific Contiguous	0	--	--	0	--	--	0	--	--
California	0	--	--	0	--	--	0	--	--
Oregon	0	--	--	0	--	--	0	--	--
Washington	0	--	--	0	--	--	0	--	--
Pacific Noncontiguous	0	--	--	0	--	--	269	0.13	7.5
Alaska	0	--	--	0	--	--	269	0.13	7.5
Hawaii	0	--	--	0	--	--	0	--	--
U.S. Total	106,962	2.43	9.9	211,794	0.31	5.8	26,941	0.90	12.2

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, 2022

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	241	2.42	7.5	0	--	--	0	--	--
Connecticut	0	--	--	0	--	--	0	--	--
Maine	65	0.94	7.0	0	--	--	0	--	--
Massachusetts	0	--	--	0	--	--	0	--	--
New Hampshire	176	2.83	7.7	0	--	--	0	--	--
Rhode Island	0	--	--	0	--	--	0	--	--
Vermont	0	--	--	0	--	--	0	--	--
Middle Atlantic	7,050	2.55	8.9	0	--	--	0	--	--
New Jersey	184	1.34	7.2	0	--	--	0	--	--
New York	0	--	--	0	--	--	0	--	--
Pennsylvania	6,867	2.58	9.0	0	--	--	0	--	--
East North Central	23,838	3.58	12.5	15,652	0.22	4.6	0	--	--
Illinois	6,548	3.52	25.0	15,594	0.22	4.6	0	--	--
Indiana	2,488	3.15	8.9	0	--	--	0	--	--
Michigan	168	1.45	7.6	0	--	--	0	--	--
Ohio	14,634	3.68	9.2	59	0.44	5.0	0	--	--
Wisconsin	0	--	--	0	--	--	0	--	--
West North Central	0	--	--	0	--	--	0	--	--
Iowa	0	--	--	0	--	--	0	--	--
Kansas	0	--	--	0	--	--	0	--	--
Minnesota	0	--	--	0	--	--	0	--	--
Missouri	0	--	--	0	--	--	0	--	--
Nebraska	0	--	--	0	--	--	0	--	--
North Dakota	0	--	--	0	--	--	0	--	--
South Dakota	0	--	--	0	--	--	0	--	--
South Atlantic	7,106	3.21	10.2	0	--	--	0	--	--
Delaware	144	2.17	7.5	0	--	--	0	--	--
District of Columbia	0	--	--	0	--	--	0	--	--
Florida	0	--	--	0	--	--	0	--	--
Georgia	0	--	--	0	--	--	0	--	--
Maryland	1,857	2.27	12.4	0	--	--	0	--	--
North Carolina	0	--	--	0	--	--	0	--	--
South Carolina	221	1.07	9.7	0	--	--	0	--	--
Virginia	0	--	--	0	--	--	0	--	--
West Virginia	4,884	3.70	9.5	0	--	--	0	--	--
East South Central	0	--	--	0	--	--	3,209	0.57	14.8
Alabama	0	--	--	0	--	--	0	--	--
Kentucky	0	--	--	0	--	--	0	--	--
Mississippi	0	--	--	0	--	--	3,209	0.57	14.8
Tennessee	0	--	--	0	--	--	0	--	--
West South Central	0	--	--	29,655	0.33	5.3	11,737	0.96	16.1
Arkansas	0	--	--	2,529	0.23	4.7	0	--	--
Louisiana	0	--	--	2,081	0.28	4.9	0	--	--
Oklahoma	0	--	--	0	--	--	0	--	--
Texas	0	--	--	25,046	0.34	5.3	11,737	0.96	16.1
Mountain	0	--	--	8,320	0.65	8.6	0	--	--
Arizona	0	--	--	0	--	--	0	--	--
Colorado	0	--	--	0	--	--	0	--	--
Idaho	0	--	--	0	--	--	0	--	--
Montana	0	--	--	7,082	0.70	9.1	0	--	--
Nevada	0	--	--	718	0.32	5.3	0	--	--
New Mexico	0	--	--	0	--	--	0	--	--
Utah	0	--	--	0	--	--	0	--	--
Wyoming	0	--	--	520	0.40	5.9	0	--	--
Pacific Contiguous	0	--	--	2,434	0.39	8.3	0	--	--
California	0	--	--	0	--	--	0	--	--
Oregon	0	--	--	0	--	--	0	--	--
Washington	0	--	--	2,434	0.39	8.3	0	--	--
Pacific Noncontiguous	0	--	--	256	0.21	7.6	0	--	--
Alaska	0	--	--	0	--	--	0	--	--
Hawaii	0	--	--	256	0.21	7.6	0	--	--
U.S. Total	38,236	3.29	11.3	56,318	0.35	5.7	14,946	0.89	15.9

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, 2022

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	12	3.08	9.2	0	--	--	0	--	--
Iowa	0	--	--	0	--	--	0	--	--
Kansas	0	--	--	0	--	--	0	--	--
Minnesota	0	--	--	0	--	--	0	--	--
Missouri	12	3.08	9.2	0	--	--	0	--	--
Nebraska	0	--	--	0	--	--	0	--	--
North Dakota	0	--	--	0	--	--	0	--	--
South Dakota	0	--	--	0	--	--	0	--	--
South Atlantic	0	--	--	0	--	--	0	--	--
Delaware	0	--	--	0	--	--	0	--	--
District of Columbia	0	--	--	0	--	--	0	--	--
Florida	0	--	--	0	--	--	0	--	--
Georgia	0	--	--	0	--	--	0	--	--
Maryland	0	--	--	0	--	--	0	--	--
North Carolina	0	--	--	0	--	--	0	--	--
South Carolina	0	--	--	0	--	--	0	--	--
Virginia	0	--	--	0	--	--	0	--	--
West Virginia	0	--	--	0	--	--	0	--	--
East South Central	0	--	--	0	--	--	0	--	--
Alabama	0	--	--	0	--	--	0	--	--
Kentucky	0	--	--	0	--	--	0	--	--
Mississippi	0	--	--	0	--	--	0	--	--
Tennessee	0	--	--	0	--	--	0	--	--
West South Central	0	--	--	0	--	--	0	--	--
Arkansas	0	--	--	0	--	--	0	--	--
Louisiana	0	--	--	0	--	--	0	--	--
Oklahoma	0	--	--	0	--	--	0	--	--
Texas	0	--	--	0	--	--	0	--	--
Mountain	0	--	--	0	--	--	0	--	--
Arizona	0	--	--	0	--	--	0	--	--
Colorado	0	--	--	0	--	--	0	--	--
Idaho	0	--	--	0	--	--	0	--	--
Montana	0	--	--	0	--	--	0	--	--
Nevada	0	--	--	0	--	--	0	--	--
New Mexico	0	--	--	0	--	--	0	--	--
Utah	0	--	--	0	--	--	0	--	--
Wyoming	0	--	--	0	--	--	0	--	--
Pacific Contiguous	0	--	--	0	--	--	0	--	--
California	0	--	--	0	--	--	0	--	--
Oregon	0	--	--	0	--	--	0	--	--
Washington	0	--	--	0	--	--	0	--	--
Pacific Noncontiguous	0	--	--	0	--	--	0	--	--
Alaska	0	--	--	0	--	--	0	--	--
Hawaii	0	--	--	0	--	--	0	--	--
U.S. Total	12	3.08	9.2	0	--	--	0	--	--

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

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

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

Table 7.25. Receipts and Quality of Coal by Rank Delivered for Electricity Generation: Industrial Sector by State, 2022

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	99	2.57	8.3	0	--	--	0	--	--
New Jersey	0	--	--	0	--	--	0	--	--
New York	0	--	--	0	--	--	0	--	--
Pennsylvania	99	2.57	8.3	0	--	--	0	--	--
East North Central	1,458	3.48	8.5	238	0.21	4.6	0	--	--
Illinois	1,449	3.50	8.5	238	0.21	4.6	0	--	--
Indiana	0	--	--	0	--	--	0	--	--
Michigan	9	0.48	7.0	0	--	--	0	--	--
Ohio	0	--	--	0	--	--	0	--	--
Wisconsin	0	--	--	0	--	--	0	--	--
West North Central	175	3.61	8.7	2,845	0.21	4.5	0	--	--
Iowa	175	3.61	8.7	2,045	0.21	4.5	0	--	--
Kansas	0	--	--	0	--	--	0	--	--
Minnesota	0	--	--	0	--	--	0	--	--
Missouri	0	--	--	0	--	--	0	--	--
Nebraska	0	--	--	800	0.21	4.4	0	--	--
North Dakota	0	--	--	0	--	--	0	--	--
South Dakota	0	--	--	0	--	--	0	--	--
South Atlantic	649	0.97	7.2	0	--	--	0	--	--
Delaware	0	--	--	0	--	--	0	--	--
District of Columbia	0	--	--	0	--	--	0	--	--
Florida	20	0.64	6.9	0	--	--	0	--	--
Georgia	162	0.98	7.3	0	--	--	0	--	--
Maryland	0	--	--	0	--	--	0	--	--
North Carolina	238	0.80	7.3	0	--	--	0	--	--
South Carolina	30	0.63	6.7	0	--	--	0	--	--
Virginia	199	1.27	7.1	0	--	--	0	--	--
West Virginia	0	--	--	0	--	--	0	--	--
East South Central	577	0.86	8.0	0	--	--	0	--	--
Alabama	0	--	--	0	--	--	0	--	--
Kentucky	0	--	--	0	--	--	0	--	--
Mississippi	0	--	--	0	--	--	0	--	--
Tennessee	577	0.86	8.0	0	--	--	0	--	--
West South Central	59	0.67	9.1	63	0.32	5.6	0	--	--
Arkansas	59	0.67	9.1	0	--	--	0	--	--
Louisiana	0	--	--	0	--	--	0	--	--
Oklahoma	0	--	--	63	0.32	5.6	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	559	0.42	8.5	0	--	--	0	--	--
California	559	0.42	8.5	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	3,575	1.97	8.2	3,146	0.21	4.5	0	--	--

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

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

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

Chapter 8

Electric Power System Characteristics and Performance

**Table 8.1. Average Operating Heat Rate for Selected Energy Sources,
2012 through 2022 (Btu per Kilowatthour)**

Year	Coal	Petroleum	Natural Gas	Nuclear
2012	10,498	10,991	8,039	10,479
2013	10,459	10,713	7,948	10,449
2014	10,428	10,814	7,907	10,459
2015	10,495	10,687	7,869	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

Coal includes anthracite, bituminous, subbituminous and lignite coal. Waste coal and synthetic coal are included starting in 2002.

Petroleum includes distillate fuel oil (all diesel and No. 1 and No. 2 fuel oils), residual fuel oil (No. 5 and No. 6 fuel oils and bunker C fuel oil, jet fuel, kerosene, petroleum coke, and waste oil.

Notes:

Included in the calculation for coal, petroleum, and natural gas average operating heat rate are electric power plants in the utility and independent power producer sectors.

Combined heat and power plants, and all plants in the commercial and industrial sectors are excluded from the calculations.

The nuclear average heat rate is the weighted average tested heat rate for nuclear units as reported on the Form EIA-860.

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

Table 8.2. Average Tested Heat Rates by Prime Mover and Energy Source, 2012 - 2022
(Btu per Kilowatthour)

Prime Mover	Coal	Petroleum	Natural Gas	Nuclear
2012				
Steam Generator	10,107	10,359	10,385	10,479
Gas Turbine	--	13,622	11,499	--
Internal Combustion	--	10,416	9,991	--
Combined Cycle	W	10,195	7,615	--
2013				
Steam Generator	10,089	10,334	10,354	10,449
Gas Turbine	--	13,555	11,371	--
Internal Combustion	--	10,401	9,573	--
Combined Cycle	W	9,937	7,667	--
2014				
Steam Generator	10,080	10,156	10,408	10,459
Gas Turbine	--	13,457	11,378	--
Internal Combustion	--	10,403	9,375	--
Combined Cycle	W	9,924	7,658	--
2015				
Steam Generator	10,059	10,197	10,372	10,458
Gas Turbine	--	13,550	11,302	--
Internal Combustion	--	10,379	9,322	--
Combined Cycle	W	9,676	7,655	--
2016				
Steam Generator	10,045	10,189	10,382	10,459
Gas Turbine	--	13,535	11,214	--
Internal Combustion	--	10,331	9,179	--
Combined Cycle	W	9,860	7,652	--
2017				
Steam Generator	10,043	10,199	10,353	10,459
Gas Turbine	--	13,491	11,176	--
Internal Combustion	--	10,301	9,120	--
Combined Cycle	W	9,811	7,649	--
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	--

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, 2012 through 2022 (Million Dollars)

Description	2012	2013	2014	2015	2016	2017
Utility Operating Revenues	270,912	281,901	298,430	282,695	282,499	286,501
.....Electric Utility	249,166	257,718	271,832	260,121	261,047	263,265
.....Other Utility	21,745	24,183	26,598	22,574	21,451	23,235
Utility Operating Expenses	235,694	244,316	258,936	242,728	239,037	240,041
.....Electric Utility	220,722	227,483	240,643	228,366	226,457	226,110
.....Operation	152,379	156,077	165,989	149,939	145,077	142,000
.....Production	111,714	115,046	123,366	107,201	100,852	98,859
.....Cost of Fuel	38,998	41,127	42,545	34,711	32,621	32,165
.....Purchased Power	54,570	55,529	62,066	52,970	49,962	49,030
.....Other	18,146	18,390	18,755	19,521	18,269	17,664
.....Transmission	7,183	7,881	8,902	9,624	10,447	10,804
.....Distribution	4,181	4,197	4,331	4,406	4,734	4,358
.....Customer Accounts	5,086	5,107	5,255	5,184	5,077	4,789
.....Customer Service	5,640	5,906	6,396	6,445	6,187	5,961
.....Sales	221	203	208	201	205	213
.....Administrative and General	18,353	17,738	17,532	16,878	17,575	17,016
.....Maintenance	15,489	15,505	16,801	16,392	16,982	17,996
.....Depreciation	23,677	24,723	25,919	26,847	30,097	30,323
.....Taxes and Other	29,177	31,179	31,934	35,188	34,301	35,791
.....Other Utility	14,972	16,833	18,293	14,362	12,579	13,931
Net Utility Operating Income	35,218	37,585	39,494	39,968	43,462	46,460

Description	2018	2019	2020	2021	2022
Utility Operating Revenues	293,868	293,000	294,756	329,138	381,129
.....Electric Utility	268,421	266,876	269,869	299,956	344,355
.....Other Utility	25,447	26,124	24,888	29,181	36,774
Utility Operating Expenses	253,944	250,136	240,802	271,078	315,491
.....Electric Utility	238,526	234,892	227,084	253,979	292,247
.....Operation	163,479	157,265	144,335	163,952	196,589
.....Production	104,185	99,518	93,505	110,775	140,287
.....Cost of Fuel	33,592	29,614	25,856	34,771	49,486
.....Purchased Power	53,060	50,378	50,407	61,627	80,032
.....Other	17,533	19,526	17,242	14,377	10,768
.....Transmission	11,387	11,941	12,949	15,310	15,872
.....Distribution	4,806	5,218	5,480	5,659	5,973
.....Customer Accounts	4,969	4,978	5,775	5,249	5,658
.....Customer Service	6,019	6,156	5,868	6,192	6,659
.....Sales	203	204	211	215	255
.....Administrative and General	31,911	29,248	20,546	20,553	21,886
.....Maintenance	17,786	19,898	20,030	20,875	21,834
.....Depreciation	32,125	34,883	38,208	39,666	42,104
.....Taxes and Other	25,136	22,846	24,510	29,485	31,720
.....Other Utility	15,418	15,245	13,718	17,100	23,244
Net Utility Operating Income	39,924	42,864	53,954	58,060	65,638

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, 2012 through 2022 (Mills per Kilowatthour)

Year	Operation				Maintenance			
	Nuclear	Fossil Steam	Hydro-electric	Gas Turbine and Small Scale	Nuclear	Fossil Steam	Hydro-electric	Gas Turbine and Small Scale
2012	12.49	4.38	6.71	2.46	7.32	4.48	4.63	2.76
2013	12.51	4.57	6.56	2.56	6.64	4.41	4.32	2.80
2014	12.41	4.55	7.30	2.63	6.67	5.11	4.59	2.90
2015	11.17	5.16	8.37	2.34	7.06	5.41	5.06	2.68
2016	10.90	5.05	6.65	2.49	7.01	5.53	4.34	2.74
2017	10.27	5.01	6.33	2.45	6.63	5.13	3.96	2.83
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

Year	Fuel				Total			
	Nuclear	Fossil Steam	Hydro-electric	Gas Turbine and Small Scale	Nuclear	Fossil Steam	Hydro-electric	Gas Turbine and Small Scale
2012	7.61	28.34	--	30.45	27.42	37.20	11.34	35.67
2013	8.14	28.94	--	32.56	27.29	37.92	10.88	37.92
2014	7.71	29.39	--	37.06	26.79	39.04	11.90	42.60
2015	7.48	26.70	--	28.22	25.71	37.26	13.42	33.24
2016	7.45	25.50	--	24.97	25.36	36.08	10.98	30.19
2017	7.47	25.27	--	26.48	24.38	35.41	10.29	31.76
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

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 2012 through 2022 (Thousand Metric Tons)

Year	Carbon Dioxide (CO2)	Sulfur Dioxide (SO2)	Nitrogen Oxides (NOx)
2012	2,156,875	3,704	2,148
2013	2,173,806	3,609	2,163
2014	2,168,284	3,454	2,100
2015	2,031,452	2,548	1,824
2016	1,928,401	1,807	1,630
2017	1,849,750	1,599	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

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, 2012 - 2022

Year	Flue Gas Desulfurization Systems		Electrostatic Precipitators		Baghouses		Select Catalytic and Non-Catalytic Reduction Systems		Activated Carbon Injection Systems		Direct Sorbent Injection Systems	
	Quantity	Associated Net Summer Capacity (MW)	Quantity	Associated Net Summer Capacity (MW)	Quantity	Associated Net Summer Capacity (MW)	Quantity	Associated Net Summer Capacity (MW)	Quantity	Associated Net Summer Capacity (MW)	Quantity	Associated Net Summer Capacity (MW)
2012	727	219,359	1,292	298,788	629	101,593	1,456	345,897	287	63,709	84	10,754
2013	705	219,359	1,219	289,545	637	104,331	1,462	352,143	262	61,215	98	13,121
2014	702	223,835	1,173	284,303	621	105,990	1,476	359,336	280	69,287	105	16,913
2015	693	224,143	1,038	265,268	623	110,820	1,484	360,796	364	106,450	123	23,443
2016	697	228,583	944	253,267	614	112,824	1,488	363,432	482	153,800	126	26,815
2017	682	222,592	887	244,450	603	109,759	1,497	366,830	477	151,208	128	25,916
2018	663	214,161	842	229,774	584	105,546	1,494	367,414	455	143,471	121	26,415
2019	618	203,115	784	217,711	537	102,103	1,467	364,602	431	136,597	116	25,615
2020	594	193,201	749	207,516	514	98,754	1,446	361,268	410	130,761	112	23,917
2021	569	186,384	708	197,689	483	94,981	1,426	358,669	396	127,791	108	22,975
2022	550	178,106	665	183,139	465	91,537	1,400	352,120	364	117,573	103	22,308

Note:

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

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

Table 9.3. Quantity and Net Summer Capacity of Operable Cooling Systems, by Energy Source and Cooling System Type, 2012 - 2022

Energy Source	Once-Through Cooling Systems		Recirculating Cooling Systems		Cooling Ponds		Dry Cooling Systems		Hybrid Wet and Dry Cooling Systems		Other Cooling System Types	
	Quantity	Associated Net Summer Capacity (MW)	Quantity	Associated Net Summer Capacity (MW)	Quantity	Associated Net Summer Capacity (MW)	Quantity	Associated Net Summer Capacity (MW)	Quantity	Associated Net Summer Capacity (MW)	Quantity	Associated Net Summer Capacity (MW)
2012												
Coal	372	124,589	366	166,915	88	39,933	4	1,412	1	766	15	6,918
Natural Gas	172	52,020	448	92,518	55	18,573	59	13,813	4	637	2	459
Nuclear	49	51,846	38	39,561	13	15,105	--	--	--	--	8	6,900
Petroleum	63	15,326	17	4,046	4	4,692	--	--	--	--	2	2,022
Other	15	1,258	27	2,167	--	--	1	53	--	--	2	63
2013												
Coal	345	120,340	357	164,826	77	39,462	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	49	11,910	11	3,481	4	4,692	--	--	--	--	--	--
Solar Thermal	--	--	2	591	--	--	4	516	--	--	--	--
Other	15	1,301	31	2,561	1	66	--	--	--	--	1	128
2014												
Coal	328	115,930	340	160,534	74	38,906	4	1,422	1	750	22	8,322
Natural Gas	161	50,985	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	40	10,043	11	3,473	4	4,691	--	--	--	--	--	--
Solar Thermal	--	--	4	841	--	--	5	900	--	--	--	--
Other	16	1,332	31	2,756	1	66	1	72	--	--	1	128
2015												
Coal	259	93,180	313	153,917	77	45,026	4	1,422	1	750	25	9,883
Natural Gas	160	49,219	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	27	8,254	9	2,308	4	4,299	--	--	--	--	--	--
Solar Thermal	--	--	4	866	--	--	5	900	1	110	--	--
Other	18	1,676	26	2,104	1	66	1	72	--	--	1	128
2016												
Coal	210	82,047	294	149,187	79	44,702	4	1,422	1	750	22	10,148
Natural Gas	168	49,664	440	88,509	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	25	7,771	8	2,222	3	3,904	--	--	--	--	--	--
Solar Thermal	--	--	4	866	--	--	5	900	1	110	--	--
Other	18	1,689	24	2,035	1	66	1	72	--	--	1	128
2017												
Coal	197	76,492	281	142,578	75	44,341	4	1,422	1	750	19	9,581
Natural Gas	172	50,053	439	91,217	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	445	92,897	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	447	95,492	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	452	96,970	56	23,018	82	19,420	4	801	8	4,804
Nuclear	39	43,183	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	459	100,843	52	22,762	81	19,407	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	457	102,442	52	21,970	84	21,664	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

Notes:

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

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

Table 9.4. Average Costs of Existing Flue Gas Desulfurization Units Operating in Electric Power Sector, 2012 - 2022

Year	Average Operation and Maintenance Costs (Dollars per Megawatthour)	Average Installed Capital Costs (Dollars per Kilowatt)
2012	1.87	266.40
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

This table reported the average installation cost of all units that were operating during each year, and this means is intended to portray a more accurate understanding of how installation costs have changed over time.

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; prior publications of this table included commercial and industrial facilities when calculating average costs.

Sources:

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

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

Table 9.5. Emissions from Energy Consumption at Conventional Power Plants and Combined-Heat-and-Power Plants, by State, 2021 and 2022 (Thousand Metric Tons)

Census Division and State	Carbon Dioxide (CO2)		Sulfur Dioxide (SO2)		Nitrogen Oxides (NOx)	
	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
New England	28,152	27,442	9	8	22	22
Connecticut	10,757	10,940	1	1	5	6
Maine	2,792	2,285	5	5	5	5
Massachusetts	9,098	8,388	2	2	7	7
New Hampshire	2,543	2,261	1	0	2	2
Rhode Island	2,949	3,558	0	0	2	2
Vermont	13	11	0	0	1	1
Middle Atlantic	124,234	123,092	49	55	74	77
New Jersey	15,891	14,786	1	1	8	9
New York	30,788	28,355	8	7	27	26
Pennsylvania	77,555	79,951	40	46	39	42
East North Central	287,484	288,036	229	252	188	205
Illinois	53,796	57,167	52	55	28	31
Indiana	70,490	70,434	31	33	50	52
Michigan	58,510	55,045	49	58	49	53
Ohio	71,710	68,982	85	92	42	47
Wisconsin	32,978	36,408	12	14	20	22
West North Central	183,329	185,906	201	210	159	159
Iowa	26,163	28,923	23	27	26	24
Kansas	23,881	22,791	4	4	18	16
Minnesota	22,327	23,176	14	14	21	21
Missouri	57,147	59,653	87	92	45	49
Nebraska	22,174	21,255	41	38	20	19
North Dakota	28,813	27,590	32	34	28	28
South Dakota	2,825	2,519	1	1	2	1
South Atlantic	297,954	306,359	179	188	194	194
Delaware	2,682	2,464	0	1	2	2
District of Columbia	64	112	0	0	0	1
Florida	97,615	96,324	34	36	50	48
Georgia	43,772	43,566	42	44	36	34
Maryland	11,240	12,040	3	5	5	6
North Carolina	41,255	41,244	23	26	40	39
South Carolina	24,857	25,193	21	21	16	15
Virginia	26,093	27,575	12	13	17	18
West Virginia	50,376	57,839	42	43	28	31
East South Central	161,158	158,502	100	113	82	81
Alabama	52,252	49,610	27	30	24	23
Kentucky	55,012	56,157	44	46	31	31
Mississippi	27,308	25,628	11	12	16	15
Tennessee	26,586	27,107	17	24	11	11
West South Central	319,796	309,490	209	239	251	242
Arkansas	31,303	29,586	37	40	20	19
Louisiana	48,266	45,917	33	36	52	53
Oklahoma	26,607	27,812	12	15	22	22
Texas	213,621	206,175	126	148	157	148
Mountain	175,133	178,267	66	65	135	140
Arizona	32,948	34,275	7	7	23	23
Colorado	29,739	31,128	9	9	18	18
Idaho	2,287	2,573	3	4	4	4
Montana	13,656	12,777	8	8	12	11
Nevada	13,509	13,899	3	2	10	10
New Mexico	18,112	17,204	2	3	11	12
Utah	26,262	29,710	8	9	29	33
Wyoming	38,619	36,701	25	23	30	29
Pacific Contiguous	63,109	64,833	19	20	91	99
California	44,448	45,075	1	1	63	69
Oregon	7,874	8,710	4	4	16	18
Washington	10,787	11,048	14	15	12	12
Pacific Noncontiguous	10,018	9,986	19	18	34	34
Alaska	3,592	3,557	2	2	18	19
Hawaii	6,427	6,429	17	16	16	15
U.S. Total	1,650,367	1,651,911	1,079	1,168	1,230	1,253

Notes:

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

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

Chapter 10

Energy Efficiency, Demand Response and Advanced Meters

**Table 10.1. Energy Efficiency
Category, by Sector, 2013 through 2022**

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

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 2022

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

* = 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 2022**

Year	Residential	Commercial	Industrial	Transportation	Total
Number of Customers Enrolled					
2013	8,419,233	611,826	155,893	398	9,187,350
2014	8,603,402	605,094	57,129	4	9,265,629
2015	8,140,688	890,284	63,163	3	9,094,138
2016	8,739,535	1,033,649	66,170	1	9,839,355
2017	8,287,913	1,084,392	68,630	3	9,440,938
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
Energy Savings (MWh)					
2013	799,743	486,348	115,895	1	1,401,987
2014	881,563	462,337	92,549	--	1,436,449
2015	855,017	273,089	122,900	--	1,251,006
2016	1,005,144	225,174	105,818	--	1,336,136
2017	948,037	244,603	118,230	--	1,310,862
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
Potential Peak Demand Savings (MW)					
2013	7,003	5,124	14,800	168	27,095
2014	8,118	6,215	16,505	353	31,191
2015	8,703	6,989	17,169	14	32,875
2016	10,518	11,053	14,339	14	35,924
2017	8,996	6,995	15,512	5	31,508
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
Actual Peak Demand Savings (MW)					
2013	3,381	2,548	5,805	149	11,883
2014	3,147	2,652	6,883	1	12,683
2015	3,430	3,047	6,546	13	13,036
2016	3,608	3,598	4,632	4	11,841
2017	3,960	2,743	5,546	--	12,248
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

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 2022**

Year	Residential	Commercial	Industrial	Transportation	Total
Customer Incentives (thousand dollars)					
2013	398,598	286,057	421,208	6,919	1,112,782
2014	345,894	345,435	514,751	11,716	1,217,796
2015	320,683	338,153	461,271	339	1,120,446
2016	306,635	448,332	284,584	339	1,039,890
2017	292,443	345,226	365,451	--	1,003,124
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
All Other Costs (thousand dollars)					
2013	338,353	95,748	50,982	50	485,133
2014	301,389	101,127	45,028	115	447,659
2015	256,519	78,758	46,613	28	381,918
2016	253,180	66,084	60,443	--	379,707
2017	245,231	68,251	57,221	--	370,700
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

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

Table 10.05. Advanced Metering Count by Technology Type, 2013 through 2022

Year	Residential	Commercial	Industrial	Transportation	Total
Automated Meter Reading (AMR)					
2013	42,491,242	4,632,744	196,132	1,202	47,321,320
2014	41,830,781	4,781,167	216,459	1,252	46,829,659
2015	42,326,302	5,049,978	226,908	1,023	47,604,211
2016	41,508,261	5,074,877	223,584	971	46,807,693
2017	39,325,014	4,813,029	230,099	707	44,368,849
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
Advanced Metering Infrastructure (AMI)					
2013	47,321,995	5,770,067	248,515	845	53,341,422
2014	51,710,725	6,563,614	270,683	916	58,545,938
2015	57,107,785	7,324,345	310,889	813	64,743,832
2016	62,360,132	8,119,223	342,766	1,345	70,823,466
2017	69,474,626	9,060,128	365,447	1,389	78,901,590
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
Standard (non-AMR/AMI) Meters					
2013	32,059,522	5,104,322	244,114	132	37,408,090
2014	32,995,176	5,642,247	254,621	1,331	38,893,375
2015	32,430,105	5,744,831	290,354	432	38,465,722
2016	28,491,094	4,929,344	280,406	416	33,701,260
2017	24,351,523	4,261,918	225,949	445	28,839,835
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
Total Number of Meters					
2013	121,872,759	15,507,133	688,761	2,179	138,070,832
2014	126,536,682	16,987,028	741,763	3,499	144,268,972
2015	131,864,192	18,119,154	828,151	2,268	150,813,765
2016	132,359,487	18,123,444	846,756	2,732	151,332,419
2017	133,151,163	18,135,075	821,495	2,541	152,110,274
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

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

Year	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		
	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

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, 2022 and 2021

Census Division and State	Percent of Customers Reported		All Events (With Major Event Days)						Without Major Event Days						Loss of Supply Removed					
			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)	
	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
New England	85.5%	85.8%	309.3	382.1	1.3	1.4	230.7	282.2	98.2	104.1	1.0	1.0	101.0	102.8	349.9	357.7	1.3	1.3	262.4	280.1
Connecticut	78.5%	78.3%	187.4	170.9	0.9	1.0	207.0	172.8	73.7	76.7	0.7	0.7	109.4	111.1	187.1	169.7	0.9	1.0	208.5	173.8
Maine	102.7%	103.0%	963.6	325.2	3.0	2.5	321.1	130.5	216.7	223.5	2.0	2.1	110.8	107.8	930.7	312.1	2.8	2.2	334.1	140.4
Massachusetts	90.9%	91.4%	165.8	527.8	1.1	1.2	151.7	428.8	84.4	88.1	0.9	0.9	94.0	99.1	186.4	600.8	1.0	1.1	186.9	542.0
New Hampshire	88.2%	88.3%	495.5	176.5	1.4	1.1	349.6	161.2	78.2	98.3	0.7	0.9	111.8	114.5	487.4	165.0	1.4	1.0	352.5	173.1
Rhode Island	98.2%	98.4%	81.9	448.6	1.0	1.4	85.4	313.9	63.2	68.8	0.8	0.9	78.2	72.6	81.1	436.0	0.9	1.4	87.0	312.7
Vermont	10.5%	10.5%	914.6	215.3	2.4	1.9	374.8	112.7	178.5	215.3	2.0	1.9	91.5	112.7	877.6	210.1	2.3	1.8	388.3	120.1
Middle Atlantic	58.7%	58.9%	184.7	190.8	1.1	1.2	167.7	165.1	111.7	110.9	1.0	1.0	117.3	115.7	176.3	180.4	1.0	1.1	173.3	171.9
New Jersey	99.2%	99.1%	89.6	139.2	0.9	1.0	102.3	139.0	78.7	84.3	0.8	0.9	94.0	95.2	81.4	127.1	0.8	0.9	104.9	146.4
New York	20.1%	20.3%	347.7	218.8	1.5	1.3	237.2	166.8	150.0	131.5	1.2	1.1	129.1	118.5	354.0	221.0	1.5	1.3	237.7	168.7
Pennsylvania	84.1%	84.2%	207.5	222.6	1.2	1.2	178.3	181.4	125.4	125.2	1.0	1.0	128.6	129.5	195.1	209.6	1.1	1.1	184.2	188.8
East North Central	90.8%	90.6%	319.7	377.0	1.2	1.3	263.8	298.3	121.4	120.8	0.9	0.9	130.4	129.7	288.6	355.2	1.1	1.2	264.8	307.2
Illinois	95.8%	95.8%	90.8	127.3	0.8	0.9	120.2	141.2	59.1	63.6	0.6	0.7	91.9	90.4	89.2	125.6	0.7	0.9	119.8	143.3
Indiana	83.3%	83.7%	276.5	302.7	1.4	1.4	193.7	217.8	139.9	137.4	1.1	1.1	123.2	127.5	217.6	225.2	1.2	1.1	177.0	197.5
Michigan	94.1%	93.2%	520.7	890.9	1.3	1.6	388.7	540.8	166.8	178.6	1.0	1.0	164.2	175.6	519.9	882.1	1.3	1.6	391.9	546.2
Ohio	96.2%	96.1%	413.6	244.9	1.5	1.3	272.4	184.1	144.1	136.0	1.1	1.1	128.5	121.4	318.9	191.7	1.2	1.1	264.8	174.5
Wisconsin	74.3%	74.0%	307.9	361.2	1.1	1.1	279.6	334.6	104.7	88.0	0.8	0.7	137.3	126.6	305.2	360.7	1.1	1.1	289.8	340.7
West North Central	75.9%	75.0%	202.8	236.4	1.1	1.2	183.2	201.0	90.1	88.9	0.9	0.8	103.9	105.5	191.7	229.3	1.0	1.0	195.7	219.9
Iowa	52.8%	52.0%	95.0	137.8	1.0	1.0	97.2	143.6	78.2	80.7	0.8	0.8	93.5	99.4	80.1	115.7	0.8	0.8	105.4	148.3
Kansas	79.7%	76.4%	178.3	346.0	1.3	1.5	134.9	225.1	108.1	113.9	1.1	1.1	99.5	107.1	157.9	327.9	1.1	1.3	138.2	243.6
Minnesota	86.6%	86.4%	275.2	121.0	1.2	1.0	228.0	116.5	81.0	81.0	0.8	0.9	95.8	94.2	270.3	115.7	1.1	0.9	245.5	123.1
Missouri	83.1%	82.9%	149.5	267.9	1.1	1.3	141.5	211.8	97.0	97.8	0.9	0.8	110.3	117.2	144.2	265.6	1.0	1.1	146.3	231.6
Nebraska	66.1%	65.9%	73.0	556.9	0.6	1.2	123.8	477.9	56.2	73.0	0.5	0.5	105.2	116.1	71.1	555.3	0.6	1.1	124.0	485.6
North Dakota	63.2%	58.7%	677.6	101.6	1.4	1.0	475.5	101.3	102.8	88.4	1.1	1.0	96.6	92.5	789.8	77.0	1.1	0.6	701.2	119.8
South Dakota	67.8%	66.7%	338.3	101.3	1.2	1.0	281.1	103.4	126.3	61.9	0.8	0.7	159.4	78.2	244.7	78.2	0.9	0.7	274.9	113.5
South Atlantic	80.2%	80.0%	615.8	191.2	1.7	1.2	370.5	165.8	127.9	113.0	1.1	1.0	116.6	111.0	635.0	184.8	1.5	1.1	416.1	175.8
Delaware	87.1%	87.2%	79.8	64.3	0.9	1.0	93.5	66.8	64.3	64.3	0.8	1.0	86.5	66.8	80.8	64.8	0.9	1.0	93.4	68.0
District of Columbia	98.2%	98.6%	33.7	52.0	0.3	0.5	111.5	115.6	26.3	42.0	0.3	0.4	95.1	102.4	33.7	52.0	0.3	0.5	111.5	115.6
Florida	83.7%	84.0%	1,011.3	82.9	1.5	0.9	691.2	92.0	69.8	65.3	0.8	0.8	83.8	82.0	1,012.6	77.2	1.4	0.9	719.3	89.9
Georgia	86.1%	86.0%	212.4	140.5	1.7	1.3	127.3	108.9	129.3	123.8	1.3	1.2	100.2	99.8	185.2	122.9	1.5	1.1	119.9	106.9
Maryland	98.1%	98.2%	260.0	127.6	1.2	1.0	224.2	132.1	84.2	80.2	0.8	0.8	100.2	101.5	224.6	125.1	1.1	0.9	213.0	132.3
North Carolina	86.5%	86.0%	486.0	215.2	2.0	1.2	246.7	172.3	150.7	125.9	1.2	1.1	121.6	118.2	423.1	207.3	1.8	1.2	236.6	179.9
South Carolina	92.0%	90.6%	302.4	122.9	1.9	1.2	161.7	106.2	114.8	101.3	1.2	1.0	99.4	98.6	274.4	106.2	1.6	1.0	174.7	111.7
Virginia	26.5%	26.5%	1,108.2	798.2	2.5	2.0	436.1	402.9	342.3	262.7	1.8	1.6	166.2	167.9	1,103.6	793.3	2.4	1.9	451.6	421.3
West Virginia	98.1%	97.9%	1,003.2	1,117.2	2.7	2.4	366.5	468.8	543.6	451.6	2.2	2.1	244.3	215.5	850.9	1,002.0	2.3	2.1	378.0	475.7
East South Central	62.0%	66.8%	392.5	573.8	2.5	1.8	156.7	314.4	187.8	152.6	1.7	1.4	111.0	107.6	393.0	582.0	2.3	1.7	168.6	342.8
Alabama	14.4%	21.8%	231.3	175.7	2.3	1.4	101.4	127.5	198.4	110.9	2.0	1.2	100.6	95.5	230.1	215.8	2.2	1.6	106.9	136.5
Kentucky	93.0%	94.9%	345.5	698.8	1.7	1.5	202.4	457.7	151.5	130.3	1.3	1.1	118.6	115.0	328.1	630.1	1.5	1.3	215.2	476.7
Mississippi	68.7%	70.4%	455.9	1,189.8	2.2	2.3	210.2	519.6	243.3	224.5	1.7	1.5	140.7	150.3	519.9	1,419.2	2.3	2.5	230.7	575.1
Tennessee	74.5%	80.8%	428.3	316.8	3.3	2.0	128.8	157.9	194.1	151.7	2.0	1.7	97.6	89.8	425.9	299.5	3.1	1.8	138.6	164.2
West South Central	64.8%	63.5%	242.8	1,893.7	1.8	3.0	136.8	633.9	178.3	186.6	1.5	1.4	119.0	130.1	238.8	1,400.7	1.7	3.0	142.7	464.0
Arkansas	82.4%	82.2%	437.5	308.4	2.2	1.7	202.5	184.2	279.6	199.4	1.8	1.4	155.1	142.3	427.2	288.2	1.9	1.4	226.5	199.6
Louisiana	74.1%	74.3%	323.8	5,868.8	2.0	3.4	162.6	1,749.4	252.2	265.0	1.9	1.8	135.7	148.8	306.6	5,836.4	1.9	3.1	165.3	1,886.8
Oklahoma	45.1%	45.0%	165.6	165.9	1.5	1.5	114.0	109.2	122.4	126.2	1.3	1.3	96.9	99.2	141.7	132.9	1.2	1.2	121.2	114.3
Texas	64.1%	62.1%	204.6	1,496.4	1.7	3.3	120.1	449.4	153.7	174.7	1.4	1.4	109.8	126.5	202.6	683.7	1.7	3.5	122.3	194.0
Mountain	90.4%	89.8%	153.2	166.3	1.0	1.1	146.7	147.1	95.4	95.5	0.9	0.9	105.5	105.6	123.5	138.1	1.0	1.0	128.3	140.8
Arizona	95.9%	95.7%	136.9	101.9	1.0	1.1	133.7	96.6	69.1	69.3	0.9	0.8	79.4	85.2	103.7	91.0	1.0	1.0	106.0	92.1
Colorado	89.4%	86.7%	143.7	185.4	1.0	1.1	138.1	162.8	96.9	104.8	0.9	0.9	105.0	114.5	138.2	168.4	1.0	1.0	142.4	167.6
Idaho	92.2%	92.0%	167.4	438.0	1.2	1.8	143.4	246.2	144.5	137.5	1.1	1.2	132.5	111.4	112.7	223.8	0.8	1.2	138.3	183.1
Montana	67.9%	69.4%	224.7	251.7	1.4	1.6	160.7	139.6	142.6	155.3	1.2	1.3	115.0	105.8	187.7	211.2	1.1	1.1	177.2	186.4
Nevada	102.6%	102.7%	195.1	102.4	1.0	0.8	198.2	122.3	77.0	69.6	0.7	0.7	106.7	104.1	424.3	6.8	2.0	0.1	217.2	111.0
New Mexico	85.6%	83.1%	175.2	204.3	1.1	1.2	160.9	125.4	124.0	120.0	1.0	1.0	130.3	115.4	134.6	190.9	1.0	1.1	134.5	177.8
Utah	86.7%	88.6%	108.7	113.4	0.9	0.9	126.6	124.4	96.6	98.0	0.8	0.9	117.8	114.4	103.4	114.9	0.9	0.9	120.6	124.6
Wyoming	62.9%	63.2%	159.0	167.9	1.3	1.1	123.6	148.4	115.6	116.1	1.1	1.0	101.3	120.5	157.3	165.1	1.2	1.1	126.5	149.8
Pacific Contiguous	92.4%	92.3%	246.2	483.8	1.3	1.4	188.5	342.6	152.8	145.5	1.1	1.0	140.1	143.2	232.3	421.8	1.2	1.0	189.9	430.6
California	94.3%	94.1%	202.4	335.2	1.3	1.3	160.7	254.9	156.5	148.0	1.1	1.0	136.5	142.0	195.3	266.0	1.2	0.8	160.0	332.4
Oregon	86.2%	86.4%	325.2	1,588.3	1.3	1.6	248.1	990.2	121.0	113.9	0.8	0.8	150.5	150.2	304.0	1,500.8	1.2	1.5	250.3	1,019.0
Washington	87.8%	87.9%	403.6	554.5	1.5	1.8	265.4	415.8	153.5	151.1	1.0	1.0	155.0	145.9	345.6	468.6	1.2	1.5	278.8	323.1
Pacific Noncontiguous	19.5%	19.2%	891.3	537.3	5.0	2.4	179.7	226.6	334.9	230.6	3.4	1.7	98.3	133.8	820.6	501.7	3.4	1.8	239.2	282.1
Alaska	47.6%	47.0%	891.3	537.3	5.0	2.4	179.7	226.6	334.9	230.6	3.4	1.7	98.3	133.8	820.6	501.7	3.4	1.8	239.2	282.1
Hawaii																				

Table 11.3 Reliability Metrics Using Any Method of U.S. Distribution System by State, 2022 and 2021

Census Division and State	Percent of Customers Reported		All Events (With Major Events)						Without Major Events					
			SAIDI (minutes per year)		SAIFI (times per year)		CAIDI (minutes per interruption)		SAIDI (minutes per year)		SAIFI (times per year)		CAIDI (minutes per interruption)	
	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021	Year 2022	Year 2021
New England	96.4%	96.5%	333.0	364.0	1.4	1.4	240.9	267.3	104.2	109.5	1.0	1.0	104.5	105.1
Connecticut	100.2%	100.0%	157.4	145.2	0.8	0.9	191.8	162.2	66.1	68.6	0.6	0.6	106.4	107.3
Maine	102.7%	103.0%	963.6	325.2	3.0	2.5	321.1	130.5	216.7	223.5	2.0	2.1	110.8	107.8
Massachusetts	93.1%	93.2%	163.2	518.7	1.1	1.2	151.0	426.3	83.0	87.2	0.9	0.9	93.8	99.0
New Hampshire	99.3%	99.4%	616.7	234.4	1.8	1.4	345.9	171.3	107.5	127.1	0.9	1.1	115.6	117.9
Rhode Island	98.2%	98.4%	81.9	448.6	1.0	1.4	85.4	313.9	63.2	68.8	0.8	0.9	78.2	72.6
Vermont	87.2%	87.4%	963.5	313.2	2.6	2.1	367.8	151.0	267.6	262.4	2.0	2.1	136.0	127.5
Middle Atlantic	97.0%	97.1%	175.9	165.6	1.0	1.0	183.6	166.8	93.4	97.3	0.8	0.8	116.5	118.5
New Jersey	100.9%	100.8%	89.7	138.8	0.9	1.0	102.4	138.8	79.0	84.7	0.8	0.9	94.3	95.7
New York	97.1%	97.3%	203.0	142.0	0.9	0.9	232.7	166.3	77.6	80.3	0.7	0.7	116.5	117.1
Pennsylvania	94.1%	94.3%	200.4	217.8	1.1	1.2	175.9	181.5	126.1	130.2	1.0	1.0	130.4	135.2
East North Central	95.5%	95.5%	313.6	366.2	1.2	1.3	260.3	292.7	120.2	119.7	0.9	0.9	129.8	129.0
Illinois	97.4%	97.4%	90.4	127.0	0.8	0.9	118.9	140.1	59.0	63.5	0.6	0.7	91.4	90.4
Indiana	91.0%	91.5%	279.3	285.8	1.4	1.4	195.3	210.5	137.4	133.1	1.1	1.1	122.4	125.5
Michigan	97.5%	97.2%	513.1	873.3	1.3	1.7	383.2	527.5	166.0	178.4	1.0	1.0	163.6	172.6
Ohio	96.3%	96.4%	413.2	244.2	1.5	1.3	272.4	184.1	144.0	135.9	1.1	1.1	128.4	121.2
Wisconsin	92.1%	91.8%	273.5	311.6	1.0	1.0	262.2	308.0	99.6	86.4	0.8	0.7	132.7	124.8
West North Central	84.7%	83.8%	194.8	223.6	1.1	1.1	179.8	195.3	89.6	88.1	0.9	0.8	104.0	105.0
Iowa	84.9%	84.5%	85.8	133.1	0.9	0.9	96.6	144.1	75.5	79.5	0.8	0.8	93.3	98.8
Kansas	81.3%	78.4%	178.8	341.5	1.3	1.5	135.4	222.7	108.1	113.0	1.1	1.1	99.5	106.8
Minnesota	88.6%	88.1%	273.7	120.9	1.2	1.0	226.3	116.2	82.2	82.5	0.9	0.9	96.0	94.2
Missouri	87.8%	87.6%	148.0	259.7	1.1	1.2	141.0	208.8	97.0	97.3	0.9	0.8	110.7	117.5
Nebraska	72.7%	72.6%	82.1	516.0	0.6	1.2	134.9	447.0	62.3	60.8	0.5	0.5	115.1	119.0
North Dakota	89.1%	84.5%	559.6	85.4	1.3	0.9	431.4	97.2	99.6	85.9	1.0	1.0	96.1	88.7
South Dakota	74.1%	72.8%	327.1	105.6	1.2	1.0	264.9	104.6	123.5	62.7	0.8	0.7	155.8	92.3
South Atlantic	95.9%	95.8%	663.7	192.8	1.7	1.2	401.0	163.2	125.6	112.1	1.1	1.0	113.6	108.3
Delaware	87.1%	87.2%	79.8	64.3	0.9	1.0	93.5	66.8	66.4	64.3	0.8	1.0	86.5	66.8
District of Columbia	98.2%	98.6%	33.7	52.0	0.3	0.5	111.5	115.6	26.3	42.0	0.3	0.4	95.1	102.4
Florida	99.6%	99.8%	1,146.3	80.8	1.5	0.9	774.5	87.0	69.7	64.8	0.9	0.8	80.4	77.7
Georgia	87.8%	87.7%	264.3	145.8	1.7	1.3	155.9	110.7	134.6	129.4	1.3	1.3	102.3	102.0
Maryland	98.5%	98.6%	259.1	127.1	1.2	1.0	224.1	132.1	84.2	80.2	0.8	0.8	100.2	101.5
North Carolina	94.7%	94.2%	456.3	205.5	1.9	1.2	236.8	165.4	148.6	123.6	1.2	1.1	120.2	116.0
South Carolina	95.7%	95.1%	301.1	120.9	1.9	1.2	181.0	104.1	114.8	100.7	1.2	1.0	99.3	97.7
Virginia	96.8%	96.7%	593.9	434.4	1.9	1.6	320.4	275.6	187.5	164.9	1.3	1.3	139.6	131.5
West Virginia	98.1%	97.9%	1,003.2	1,117.2	2.7	2.4	366.5	468.8	543.6	451.6	2.2	2.1	244.3	215.5
East South Central	87.0%	88.0%	349.2	513.1	2.3	1.8	152.4	287.5	175.5	147.5	1.6	1.4	110.5	107.3
Alabama	79.3%	79.5%	210.1	234.9	1.4	1.4	145.1	164.3	138.8	119.1	1.2	1.1	119.8	110.3
Kentucky	96.6%	96.4%	345.8	707.8	1.8	1.5	194.1	462.8	151.7	129.8	1.3	1.1	116.7	114.8
Mississippi	83.5%	84.2%	448.5	1,134.4	2.4	2.4	184.6	479.3	246.7	220.6	2.0	1.6	125.4	141.8
Tennessee	88.0%	90.6%	404.5	302.7	3.2	2.0	126.6	149.9	188.3	149.4	1.7	1.7	96.6	87.6
West South Central	95.1%	93.9%	237.4	1,456.9	1.7	2.7	138.0	542.9	154.9	161.2	1.3	1.3	115.2	123.7
Arkansas	89.6%	89.4%	415.5	315.9	2.1	1.7	196.9	190.5	274.7	195.9	1.8	1.4	155.2	141.7
Louisiana	95.4%	95.3%	304.0	4,811.1	2.1	3.3	146.4	1,459.9	246.1	228.2	1.9	1.8	127.5	123.5
Oklahoma	90.3%	90.3%	195.6	179.4	1.4	1.4	135.6	128.1	144.2	146.5	1.3	1.2	113.9	117.8
Texas	96.5%	94.7%	212.0	1,175.3	1.7	2.9	128.1	405.2	127.5	147.4	1.2	1.2	105.9	122.7
Mountain	93.1%	93.3%	155.9	174.8	1.1	1.2	147.0	146.2	98.5	99.7	0.9	1.0	107.5	104.1
Arizona	96.8%	96.7%	139.7	106.2	1.1	1.2	132.7	87.0	72.3	71.7	0.9	1.0	80.6	73.7
Colorado	92.4%	92.5%	141.5	180.9	1.0	1.1	137.2	164.0	96.2	102.6	0.9	0.9	105.0	115.0
Idaho	94.1%	93.9%	180.7	475.2	1.2	1.8	154.8	267.1	158.3	162.1	1.1	1.2	145.1	131.3
Montana	74.6%	76.2%	225.6	309.9	1.4	1.7	163.9	181.7	146.1	146.0	1.2	1.3	121.5	108.9
Nevada	102.6%	102.7%	195.1	102.4	1.0	0.8	198.2	122.3	77.0	69.6	0.7	0.7	106.7	104.1
New Mexico	90.6%	90.4%	182.6	221.2	1.2	1.4	156.5	152.9	129.1	131.7	1.0	1.2	128.4	108.1
Utah	89.7%	91.7%	111.3	116.0	0.9	0.9	125.5	124.1	100.4	100.9	0.9	0.9	117.5	115.6
Wyoming	76.7%	76.8%	170.1	170.5	1.3	1.2	127.7	146.6	113.0	116.3	1.1	0.9	105.3	129.6
Pacific Contiguous	98.6%	98.6%	242.3	464.7	1.3	1.4	187.9	332.9	148.8	141.6	1.1	1.0	138.1	140.5
California	100.2%	100.1%	198.5	325.2	1.2	1.3	159.1	248.4	150.5	142.7	1.1	1.0	133.5	138.1
Oregon	93.2%	93.4%	322.9	1,489.2	1.3	1.6	250.8	947.7	123.4	116.5	0.8	0.8	151.9	152.5
Washington	95.0%	95.3%	395.3	527.3	1.5	1.7	267.0	311.5	154.9	150.4	1.0	1.0	156.4	146.9
Pacific Noncontiguous	93.5%	94.2%	330.8	285.5	2.3	1.8	141.3	158.7	162.9	145.5	1.7	1.3	93.3	109.0
Alaska	84.4%	85.9%	575.2	379.1	3.5	2.1	163.3	177.8	334.9	230.6	3.4	1.7	98.3	133.8
Hawaii	99.9%	100.0%	187.2	229.7	1.6	1.6	113.7	143.5	105.9	115.7	1.2	1.2	88.6	96.5
U.S. Total	94.7%	94.5%	335.5	440.0	1.4	1.4	238.8	308.8	125.7	121.5	1.1	1.0	118.1	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.

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.

For a five minute video explanation of these metrics, go to <https://youtu.be/vH9LQfCMTU>.

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, 2012 through 2022**

Period	Residential	Commercial	Industrial	Transportation	All Sectors
Annual Totals					
2012	1,349,750	131,264	721	--	1,481,735
2013	1,340,989	131,034	694	--	1,472,717
2014	1,328,546	129,122	662	--	1,458,330
2015	1,326,631	127,365	647	--	1,454,643
2016	1,332,152	127,179	633	--	1,459,964
2017	1,337,756	127,065	618	--	1,465,439
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
Year 2020					
January	1,347,813	125,360	589	--	1,473,762
February	1,347,163	125,296	587	--	1,473,046
March	1,346,663	125,159	585	--	1,472,407
April	1,347,149	125,148	586	--	1,472,883
May	1,348,106	125,175	586	--	1,473,867
June	1,348,993	125,185	587	--	1,474,765
July	1,350,313	125,209	588	--	1,476,110
August	1,352,453	125,317	589	--	1,478,359
September	1,354,645	125,523	588	--	1,480,756
October	1,355,783	125,643	587	--	1,482,013
November	1,356,794	125,745	588	--	1,483,127
December	1,358,407	125,937	588	--	1,484,932
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

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, 2012 through 2022 (Megawatthours)**

Period	Residential	Commercial	Industrial	Transportation	All Sectors
Annual Totals					
2012	6,770,865	8,879,105	2,500,360	--	18,150,330
2013	6,319,746	8,968,572	2,504,182	--	17,792,500
2014	6,218,352	8,761,182	2,376,022	--	17,355,556
2015	6,313,615	8,586,457	2,355,385	--	17,255,457
2016	6,524,304	8,568,874	2,251,095	--	17,344,273
2017	5,045,346	6,819,591	1,746,554	--	13,611,491
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
Year 2020					
January	474,259	601,786	137,176	--	1,213,221
February	372,027	540,764	120,284	--	1,033,075
March	487,654	691,912	184,448	--	1,364,014
April	509,462	476,415	138,227	--	1,124,103
May	650,518	500,890	160,005	--	1,311,414
June	641,098	623,979	173,066	--	1,438,143
July	702,776	692,873	171,516	--	1,567,165
August	649,134	642,660	176,646	--	1,468,439
September	678,434	644,356	166,999	--	1,489,789
October	633,549	704,022	157,242	--	1,494,812
November	578,589	637,772	162,109	--	1,378,470
December	530,637	562,590	161,942	--	1,255,170
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

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, 2012 through 2022 (Thousand Dollars)**

Period	Residential	Commercial	Industrial	Transportation	All Sectors
Annual Totals					
2012	1,689,700	2,604,712	647,414	--	4,941,826
2013	1,633,328	2,474,088	570,210	--	4,677,626
2014	1,636,166	2,394,155	550,673	--	4,580,994
2015	1,282,008	1,850,101	417,158	--	3,549,267
2016	1,169,715	1,677,209	356,310	--	3,203,233
2017	1,123,005	1,549,337	344,034	--	3,016,376
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
Year 2020					
January	122,103	180,295	35,719	--	338,116
February	99,199	161,038	31,851	--	292,087
March	86,911	143,095	33,910	--	263,915
April	85,405	78,985	21,851	--	186,240
May	151,421	118,362	37,143	--	306,927
June	109,032	118,731	29,232	--	256,995
July	141,112	145,083	32,826	--	319,021
August	103,402	124,157	27,208	--	254,768
September	116,298	121,327	28,028	--	265,652
October	97,087	117,254	22,656	--	236,997
November	111,192	135,759	29,720	--	276,671
December	105,886	124,386	30,563	--	260,835
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

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, 2012 through 2022 (Cents per Kilowatthour)**

Period	Residential	Commercial	Industrial	Transportation	All Sectors
Annual Totals					
2012	24.96	29.34	25.89	--	27.23
2013	25.84	27.59	22.77	--	26.29
2014	26.31	27.33	23.18	--	26.39
2015	20.31	21.55	17.71	--	20.57
2016	17.93	19.57	15.83	--	18.47
2017	22.26	22.72	19.70	--	22.16
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
Year 2020					
January	25.75	29.96	26.04	--	27.87
February	26.66	29.78	26.48	--	28.27
March	17.82	20.68	18.38	--	19.35
April	16.76	16.58	15.81	--	16.57
May	23.28	23.63	23.21	--	23.40
June	17.01	19.03	16.89	--	17.87
July	20.08	20.94	19.14	--	20.36
August	15.93	19.32	15.40	--	17.35
September	17.14	18.83	16.78	--	17.83
October	15.32	16.65	14.41	--	15.85
November	19.22	21.29	18.33	--	20.07
December	19.95	22.11	18.87	--	20.78
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

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, 2012 through 2022**

Year	Residential	Commercial	Industrial	Transportation	Total
Number of Ultimate Customers					
2012	10,736	1,437	4	--	12,177
2013	10,945	1,411	4	--	12,360
2014	11,561	1,386	4	--	12,951
2015	11,023	1,356	4	--	12,383
2016	10,916	1,363	6	--	12,285
2017	10,930	1,386	4	--	12,320
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
Sales of Electricity to Ultimate Customers (megawatthours)					
2012	39,935	71,952	22,539	--	134,426
2013	40,719	71,069	23,724	--	135,512
2014	41,029	70,598	23,142	--	134,769
2015	43,306	72,007	25,974	--	141,287
2016	46,493	69,617	32,232	--	148,342
2017	49,538	71,173	26,699	--	147,410
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
Revenue from Sales of Electricity to Ultimate Customers (thousand dollars)					
2012	17,343	29,092	8,233	--	54,668
2013	15,809	27,905	8,339	--	52,053
2014	17,286	27,553	8,076	--	52,915
2015	15,035	22,981	7,695	--	45,710
2016	13,184	18,402	7,962	--	39,548
2017	15,020	20,626	7,294	--	42,940
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
Average Price of Electricity to Ultimate Customers (cents per kilowatthour)					
2012	43.43	40.43	36.53	--	40.67
2013	38.82	39.26	35.15	--	38.41
2014	42.13	39.03	34.90	--	39.26
2015	34.72	31.91	29.63	--	32.35
2016	28.36	26.43	24.70	--	26.66
2017	30.32	28.98	27.32	--	29.13
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

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

**Table 12.6. Guam
By Sector, 2012 through 2022**

Year	Residential	Commercial	Industrial	Transportation	Total
Number of Ultimate Customers					
2012	41,612	6,908	--	--	48,520
2013	41,708	6,890	--	--	48,598
2014	41,999	6,925	--	--	48,924
2015	42,752	6,940	--	--	49,692
2016	43,943	6,956	--	--	50,899
2017	43,756	7,087	--	--	50,843
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
Sales of Electricity to Ultimate Customers (megawatthours)					
2012	459,499	1,103,976	--	--	1,563,475
2013	462,163	1,104,247	--	--	1,566,410
2014	457,835	1,075,511	--	--	1,533,346
2015	463,990	1,078,018	--	--	1,542,008
2016	494,842	1,087,317	--	--	1,582,159
2017	516,682	1,103,757	--	--	1,620,439
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
Revenue from Sales of Electricity to Ultimate Customers (thousand dollars)					
2012	122,259	315,853	--	--	438,112
2013	122,463	315,369	--	--	437,832
2014	125,028	309,439	--	--	434,467
2015	106,057	260,652	--	--	366,709
2016	93,568	214,840	--	--	308,408
2017	103,327	230,472	--	--	333,799
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
Average Price of Electricity to Ultimate Customers (cents per kilowatthour)					
2012	26.61	28.61	--	--	28.02
2013	26.50	28.56	--	--	27.95
2014	27.31	28.77	--	--	28.33
2015	22.86	24.18	--	--	23.78
2016	18.91	19.76	--	--	19.49
2017	20.00	20.88	--	--	20.60
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

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

**Table 12.7. Northern Mariana Islands
By Sector, 2011 through 2022**

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

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

**Table 12.8. Virgin Islands
By Sector, 2012 through 2022**

Year	Residential	Commercial	Industrial	Transportation	Total
Number of Ultimate Customers					
2012	44,780	8,826	1,023	--	54,629
2013	44,736	8,785	1,050	--	54,571
2014	45,066	8,808	1,043	--	54,917
2015	45,090	8,747	1,044	--	54,881
2016	49,559	9,951	1,089	--	60,599
2017	49,559	9,951	1,089	--	60,599
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
Sales of Electricity to Ultimate Customers (megawatthours)					
2012	249,011	156,328	318,578	--	723,917
2013	231,148	123,234	326,158	--	680,540
2014	219,402	113,517	308,119	--	641,038
2015	211,753	109,530	299,598	--	620,881
2016	224,268	115,464	298,959	--	638,691
2017	174,208	85,273	201,822	--	461,303
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
Revenue from Sales of Electricity to Ultimate Customers (thousand dollars)					
2012	109,441	57,856	150,636	--	317,932
2013	112,133	62,760	158,869	--	333,762
2014	108,204	58,361	153,232	--	319,797
2015	90,567	43,840	134,197	--	268,603
2016	76,907	45,969	101,434	--	224,310
2017	72,035	38,703	93,206	--	203,944
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
Average Price of Electricity to Ultimate Customers (cents per kilowatthour)					
2012	43.95	37.01	47.28	--	43.92
2013	48.51	50.93	48.71	--	49.04
2014	49.32	51.41	49.73	--	49.89
2015	42.77	40.03	44.79	--	43.26
2016	34.29	39.81	33.93	--	35.12
2017	41.35	45.39	46.18	--	44.21
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

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

Appendix

Table A.1. Sulfur Dioxide Uncontrolled Emission Factors

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

Notes:

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

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

Sources:

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

Table A.2. Nitrogen Oxides Uncontrolled Emission Factors

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

Notes:

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

Sources:

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

Table A.3. Carbon Dioxide Uncontrolled Emission Factors

Fuel	EIA Fuel Code	Factor (Kilograms of CO2 Per Million Btu)**	Notes
Bituminous Coal	BIT	93.24	
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

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

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

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

Source 1: AP-42, Table 1.1-2

Source 2: AP-42, Section 1.3.4.3 Text

Source 3: AP-42, Table 1.4-1

Source 4: AP-42, Section 1.4.4 Text

Source 5: AP-42, Section 1.6.4 Text

Source 6: Average of Selective Catalytic Reduction and Selective Noncatalytic Reduction

Source 7: Minimum of other technologies for fuel group

Source 8: Matches Other selection

Source 9: Assumed to have reduction similar to coal

Source 10: Assumed to have reduction similar to Residual Fuel Oil and Distillate Fuel Oil

Source 11: Assumed to have reduction similar to natural gas

Notes:

Coal reduction factors are applied to Bituminous Coal, Subbituminous Coal, Lignite Coal, and Waste Coal.

Wood reduction factors are applied to Wood Waste Solids, Black Liquor, and Wood Waste Liquids.

Other Solids reduction factors are applied to Petroleum Coke, Municipal Solid Waste, Tire-Derived Fuels, Sludge Waste, Agricultural Biproducts, and Other Biomass Solids.

Other Liquids reduction factors are applied to Jet Fuel, Kerosene, Waste Oil, and Other Biomass Liquids.

Other Gases reduction factors are applied to Blast Furnace Gas, Landfill Gas, Propane Gas, Coal-Derived Synthesis Gas, Synthesis Gas from Petroleum Coke, Other Biomass Gas, and Other Gas.

Table A.5. Unit of Measure Equivalents

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

Source: U.S. Energy Information Administration

Technical Notes

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

Data Quality and Submission

The Electric Power Annual (EPA) is prepared by the Office of 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:

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

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
Natural Gas and Other Gases	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		
	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, Energytrust 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 2,600 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 8,400 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:

$$\text{capacity factor} = \frac{\sum_{x,m} \text{net generation}_{x,m}}{\sum_{x,m} \text{capacity}_{x,m} * \text{hours in month}_m}$$

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:

$$\text{usage factor} = \frac{\sum_{x,m} \text{gross generation}_{x,m}}{\sum_{x,m} \text{capacity}_{x,m} * \text{hours in month}_m}$$

Air Emissions

This section describes the methodology for calculating estimated emissions of carbon dioxide (CO₂) from electric generating plants for 1989 through the present, as well as the estimated emissions of sulfur dioxide (SO₂) and nitrogen oxides (NO_x) from electric generating plants for 2001 through the present. For a description of the methodology used for other years, see the technical notes to the EPA 2003.

Methodology Overview: Initial estimates of uncontrolled SO₂ and NO_x emissions for all plants are made by applying an emissions factor to fuel consumption data collected by EIA on the Form EIA-923. An emission factor is the average quantity of a pollutant released from a power plant when a unit of fuel is burned, assuming no use of pollution control equipment. The basic relationship is:

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

Quantity is defined in physical units (e.g., tons of solid fuels, million cubic feet of gaseous fuels, and thousands of barrels of liquid fuels) for determining NO_x and SO₂ emissions. As discussed below, physical quantities are converted to millions of Btus for calculating CO₂ emissions.

For some fuels, the calculation of SO₂ emissions requires including in the formula the sulfur content of the fuel measured in percentage of weight. Examples include coal and fuel oil. In these cases, the formula is:

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

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

In the case of SO₂ and NO_x emissions, the factor applied to a fuel can also vary with the combustion system: a steam-producing boiler, a combustion turbine, or an internal combustion engine. In the case of boilers, NO_x emissions can also vary with the firing configuration of a boiler and whether the boiler is a wet-bottom or dry-bottom design.³ These distinctions are shown in Tables A.1. and A.2.

For SO₂ and NO_x, the initial estimate of uncontrolled emissions is reduced to account for the plant's operational pollution control equipment, when data on control equipment are available from the historical Form EIA-767 survey (i.e., data for the years 2005 and earlier) and the EIA-860 and EIA-923 surveys for the years 2007 through 2010. A special case for removal of SO₂ is the fluidized bed boiler, in which the sulfur removal process is integral with the operation of the boiler. The SO₂ emission factors shown in Table A.1. for fluidized bed boilers already account for 90 percent removal of SO₂ since, in effect, the plant has no uncontrolled emissions of this pollutant.

Although SO₂ and NO_x emission estimates are made for all plants, in many cases the estimated emissions can be replaced with actual emissions data collected by the U.S. Environmental Protection Agency's (U.S. EPA's) Continuous Emissions Monitoring System (CEMS) program. (CEMS data for CO₂ are incomplete and are not used in this report.) The CEMS data account for the bulk of SO₂ and NO_x emissions from the electric power industry. For those plants for which CEMS data are available, the EIA estimates of SO₂ and NO_x emissions are employed for the limited purpose of allocating emissions by fuel, since the CEMS data itself do not provide a detailed breakdown of plant emissions by fuel. For plants for which CEMS data are unavailable, the EIA-computed values are used as the final emissions estimates.

There are 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 CO₂ values. This revision occurred due to a change in the accepted methodology regarding adjustments made for the percentage combustion of fuels.

The emissions estimation methodologies are described in more detail below.

CO₂ Emissions: CO₂ emissions are estimated using the information on fuel consumption in physical units and the heat content of fuel collected on the Form EIA-923 and predecessors. Heat content information

is used to convert physical units to millions of Btu (MMBtu) consumed. To estimate CO₂ emissions, the fuel-specific emission factor from Table A.3. is multiplied by the fuel consumption in MMBtu.

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

SO₂ and NO_x Emissions: To comply with environmental regulations controlling SO₂ emissions, many coal-fired generating plants have installed flue gas desulfurization (FGD) units. Similarly, NO_x control regulations require many fossil-fueled plants to install low-NO_x burners, selective catalytic reduction systems, or other technologies to reduce emissions. It is common for power plants to employ two or even three NO_x control technologies; accordingly, the NO_x emissions estimation approach accounts for the combined effect of the equipment (Table A.4.). However, control equipment information is available only for plants that reported on the Form EIA-923 and for historical data from the Form EIA-767. The Form EIA-860, EIA-923, and the historical EIA-767 surveys are limited to plants with boilers fired by combustible fuels⁴ with a minimum generating capacity of 10 megawatts (nameplate). Pollution control equipment data are unavailable from EIA sources for plants that did not report on the historical EIA-767 survey, or the Forms EIA-860 and EIA-923.

The following method is used to estimate SO₂ and NO_x emissions:

- For steam electric plants, uncontrolled emissions are estimated using the emission factors shown in Tables A.1. and A.2. as well as reported data on fuel consumption, sulfur content, and boiler firing configuration. Controlled emissions are then determined when pollution control equipment is present. Although information on control equipment was not collected in 2006, updates for new installations during this period were made based on EPA data. Beginning in 2007, these data were collected on the Forms EIA-860 and EIA-923. For SO₂, the reported efficiency of the plant's FGD units is used to convert uncontrolled to controlled emission estimates. For NO_x, the reduction percentages shown in Table A.4. are applied to the uncontrolled estimates.
- For plants and prime movers not reported on the historical Form EIA-767 survey or Forms EIA-860 and EIA-923, uncontrolled emissions are estimated using the Table A.1. and Table A.2. emission factors and the following data and assumptions:
 - Fuel consumption is taken from the Form EIA-923 and predecessors.
 - The sulfur content of the fuel is estimated from fuel receipts for the plant reported on the Form EIA-923. When plant-specific sulfur content data are unavailable, the national average sulfur content for the fuel, computed from the Form EIA-923 is applied to the plant.
 - As noted earlier, the emission factor for plants with boilers depends in part on the type of combustion system, including whether a boiler is wet-bottom or dry-bottom, and the boiler firing configuration. However, this boiler information is unavailable for steam electric plants that did not report on the historical Forms EIA-767 or EIA-860. For these cases, the plant is assumed to have a dry-bottom, non-cyclone boiler using a firing method that falls into the "All Other" category shown on Table A.1.⁵

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 SO₂ or NO_x are reported in the EPA's CEMS data, the EIA estimates are replaced with the CEMS values, using the EIA estimates to allocate the CEMS plant-level data by fuel. If CEMS data are unavailable, the EIA estimates are used as the final values.

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

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

Relative Standard Error

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

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

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

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

Business Classification

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

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

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

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

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

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

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

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

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

Multiple Survey Programs- Small Scale PV Solar Estimation of Generation

Monthly generation from small scale PV solar resources is an estimation of the generation produced from PV solar resources and not the results of a data collection effort for generation directly, 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

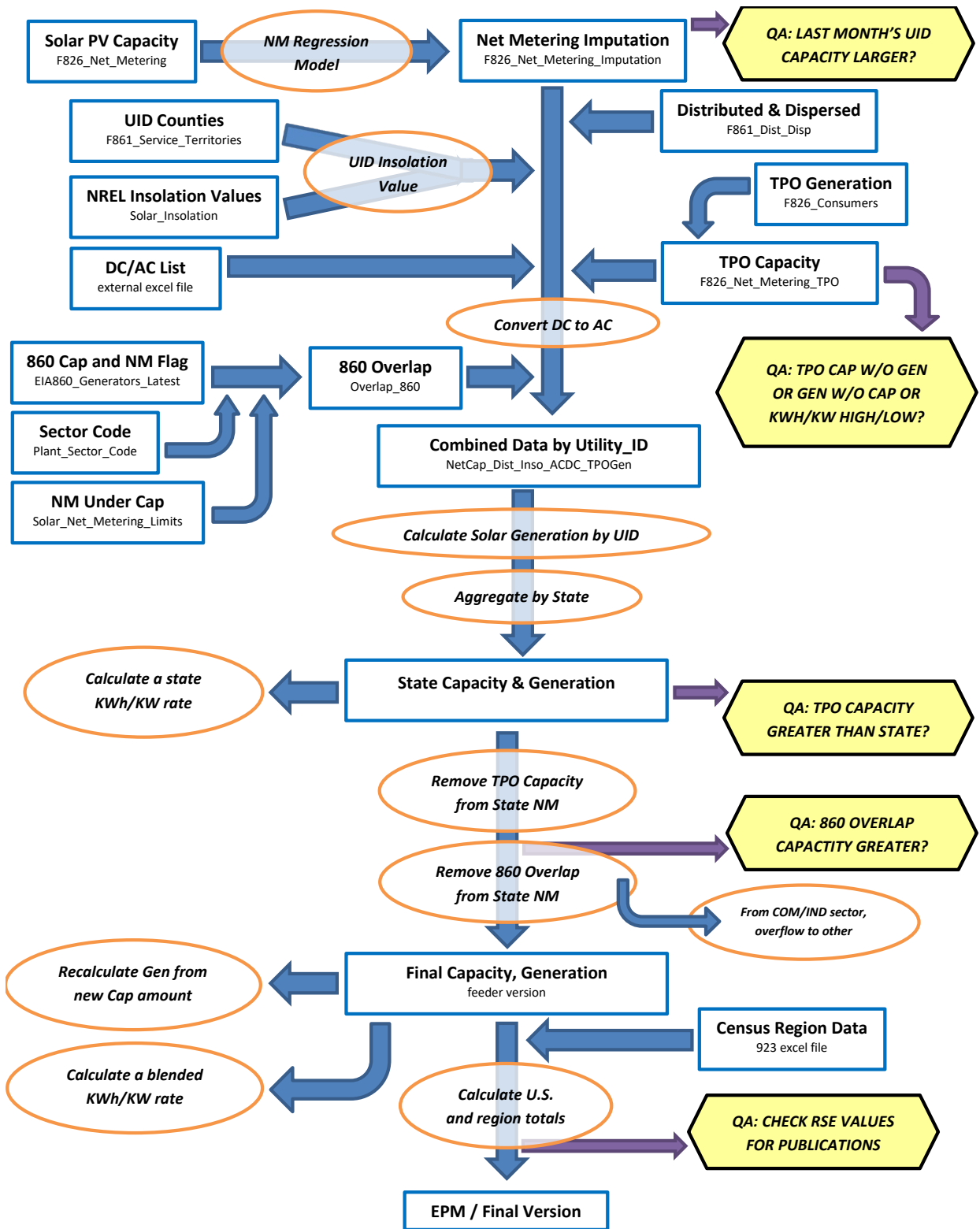
TMY3 (1991-2005) Weather Stations by MSA

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 Worcester Regional Airport	Worcester, MA-CT MSA
59	USA NM Albuquerque Intl Airport	Albuquerque, NM MSA
60	USA NE Omaha Eppley Airfield	Omaha-Council Bluffs, NE-IA MSA
61	USA NY Albany County Airport	Albany-Schenectady-Troy, NY MSA
62	USA CA Bakersfield Meadows Field	Bakersfield, CA MSA
63	USA CT New Haven Tweed Airport	New Haven-Milford, CT MSA
64	USA TN Knoxville McGhee Tyson Airport	Knoxville, TN MSA
65	USA SC Greenville Downtown Airport	Greenville-Anderson-Mauldin, SC MSA
66	USA CA Oxnard Airport	Oxnard-Thousand Oaks-Ventura, CA MSA
67	USA TX El Paso Int'l Airport	El Paso, TX MSA
68	USA PA Allentown Lehigh Valley Intl	Allentown-Bethlehem-Easton, PA-NJ MSA
69	USA LA Baton Rouge Ryan Airport	Baton Rouge, LA MSA
70	USA TX McCallen Miller Intl Airport	McAllen-Edinburg-Mission, TX MSA
71	USA OH Dayton Int'l Airport	Dayton, OH MSA
72	USA SC Columbia Metro Airport	Columbia, SC MSA
73	USA NC Greensboro Piedmont Triad Int'l Airport	Greensboro-High Point, NC MSA
74	USA FL Sarasota Bradenton	North Port-Sarasota-Bradenton, FL MSA
75	USA AR Little Rock Adams Field	Little Rock-North Little Rock-Conway, AR MSA
76	USA SC Charleston Intl Airport	Charleston-North Charleston, SC MSA

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

Appendix 2 – Flow diagram of data sources and analysis



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.