

Open this link:

<https://www.eia.gov/tools/faqs/faq.php?id=667&t=2>

- Amount of fuel used per kWh = Heat rate (in [British Thermal Units \(Btu\)](#) per kWh) divided by Fuel heat content (in Btu per physical unit)
- Kilowatthour generated per unit of fuel used = Fuel heat content (in Btu per physical unit) divided by Heat rate (in Btu per kWh)

Data sources for the calculations:

[Electric Power Annual](#)

- [Table 7.3. Average Quality of Fossil Fuel Receipts for the Electric Power Industry \(xls \)](#)
- [Table 8.1. Average Operating Heat Rate for Selected Energy Sources \(xls \)](#)
- [Table 8.2 Average Tested Heat Rates by Prime Mover and Energy Source \(xls \)](#)

[Monthly Energy Review](#), Appendices with fuel heat contents, electricity heat rates, and conversion factors

You can calculate the average amounts of fuels used to generate electricity in the United States, in each state, and at individual power plants using

- [Data on total U.S. electricity generation \(Table\(s\) 7.2 \) and fuel consumption for electricity generation \(Table\(s\) 7.3\)](#)
- [State-level historical electricity data files with annual and monthly electricity generation and fuel consumption](#)
- [Data on fuel consumption and electricity generation by fuel/energy source at U.S. power plants](#)

Last updated: February 27, 2020

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Direct link:

<https://www.eia.gov/totalenergy/data/monthly/index.php#electricity>

- Electricity

Topic

Available formats: [PDF \(entire section\)](#)

7.1 Overview
 Available formats: [PDF](#) [XLS](#) [CSV](#) [PDF \(graph\)](#) | [Interactive](#)

7.2 Electricity net generation:
Open this link for data on kilowatts generated from coal, oil, and gas

7.2a Total (all sectors)
 Available formats: [PDF](#) [XLS](#) [CSV](#) [PDF \(graph\)](#) | [Interactive](#)

7.2b Electric power sector
 Available formats: [PDF](#) [XLS](#) [CSV](#) [PDF \(graph\)](#) | [Interactive](#)

7.2c Commercial and industrial sectors
 Available formats: [PDF](#) [XLS](#) [CSV](#) [PDF \(graph\)](#) | [Interactive](#)

7.3 Consumption of combustible fuels for electricity generation:
Open this link for data tons, barrels, and cubic feet of coal, oil, and gas consumed

7.3a Total (all sectors)
 Available formats: [PDF](#) [XLS](#) [CSV](#) [PDF \(graph\)](#) | [Interactive](#)

- Data updates
- [See list of previous changes](#)

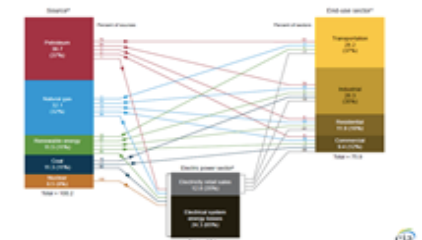
Diagrams

Energy flows 2019



- [Total energy](#)
- [Petroleum](#)
- [Natural gas](#)
- [Coal](#)
- [Electricity](#)

Energy consumption by source and sector 2019



- [Total energy](#)
- [Renewable energy](#)

Direct link: https://www.eia.gov/totalenergy/data/monthly/pdf/sec7_5.pdf

Direct link: https://www.eia.gov/totalenergy/data/monthly/pdf/sec7_9.pdf

	Fossil Fuels						Renewable Energy						Total
	Coal ^a	Petroleum ^b	Natural Gas ^c	Other Gases ^d	Nuclear Electric Power	Hydro-electric Pumped Storage ^e	Conventional Hydro-electric Power ^f	Biomass		Geo-thermal	Solar ⁱ	Wind	
								Wood ^g	Waste ^h				
1950 Total	154,520	33,734	44,559	NA	0	()	100,885	390	NA	NA	NA	NA	334,088
1955 Total	301,363	37,138	95,285	NA	0	()	116,236	276	NA	NA	NA	NA	550,299
1960 Total	403,067	47,987	157,970	NA	518	()	149,440	140	NA	33	NA	NA	759,156
1965 Total	570,926	64,801	221,559	NA	3,657	()	196,984	269	NA	189	NA	NA	1,058,386
1970 Total	704,394	184,183	372,890	NA	21,804	()	250,957	136	220	525	NA	NA	1,535,111
1975 Total	852,786	289,095	299,778	NA	172,505	()	303,153	18	174	3,246	NA	NA	1,920,755
1980 Total	1,161,562	245,994	346,240	NA	251,116	()	279,182	275	158	5,073	NA	NA	2,289,600
1985 Total	1,402,128	100,202	291,946	NA	383,691	()	284,311	743	640	9,325	11	6	2,473,002
1990 Total ^k	1,594,011	126,460	372,765	10,383	576,862	-3,508	292,866	32,522	13,260	15,434	367	2,789	3,037,827
1995 Total	1,709,426	74,554	496,058	13,870	673,402	-2,725	310,833	36,521	20,405	13,378	497	3,164	3,353,487
2000 Total	1,966,265	111,221	601,038	13,955	753,893	-5,539	275,573	37,595	23,131	14,093	493	5,593	3,802,105
2001 Total	1,903,956	124,880	639,129	9,039	768,826	-8,823	216,961	35,200	14,548	13,741	543	6,737	3,736,644
2002 Total	1,933,130	94,567	691,006	11,463	780,064	-8,743	264,329	38,665	15,044	14,491	555	10,354	3,858,452
2003 Total	1,973,737	119,406	649,908	15,600	763,733	-8,535	275,806	37,529	15,812	14,424	534	11,187	3,883,185
2004 Total	1,978,301	121,145	710,100	15,252	788,528	-8,488	268,417	38,117	15,421	14,811	575	14,144	3,970,555
2005 Total	2,012,873	122,225	760,960	13,464	781,986	-6,558	270,321	38,856	15,420	14,692	550	17,811	4,055,423
2006 Total	1,990,511	64,166	816,441	14,177	787,219	-6,558	289,246	38,762	16,099	14,568	508	26,589	4,064,702
2007 Total	2,016,456	65,739	896,590	13,453	806,425	-6,896	247,510	39,014	16,525	14,637	612	34,450	4,156,745
2008 Total	1,985,801	46,243	882,981	11,707	806,208	-6,288	254,831	37,300	17,734	14,840	864	55,363	4,119,388
2009 Total	1,755,904	38,937	920,979	10,632	798,855	-4,627	273,445	36,050	18,443	15,009	891	73,886	3,950,331
2010 Total	1,847,290	37,061	987,697	11,313	806,968	-5,501	260,203	37,172	18,917	15,219	1,212	94,652	4,125,060
2011 Total	1,733,430	30,182	1,013,689	11,566	790,204	-6,421	319,355	37,449	19,222	15,316	1,818	120,177	4,100,141
2012 Total	1,514,043	23,190	1,225,894	11,898	769,331	-4,950	276,240	37,799	19,823	15,562	4,327	140,822	4,047,765
2013 Total													964
2014 Total													606
2015 Total													601
2016 Total													675
2017 Total													271
2018 January													230
February													394
March													547
April													756
May													948
June													886
July													290
August													028
September													258
October													932
November													369
December													139
Total													277
2019 January													754
February													580
March													323,782
April	78,516	1,462	112,945	1,251	65,080	-409	25,546	3,257	1,590	1,437	5,910	26,116	294,577
May	60,008	1,234	103,006	1,071	60,581	-103	25,483	3,027	1,464	1,239	6,835	29,711	328,269
June	71,883	1,690	116,236	1,101	67,124	-368	30,061	3,365	1,542	1,347	7,191	25,973	351,363
July	78,610	1,531	136,999	1,025	68,805	-385	26,469	3,339	1,554	1,362	8,006	22,947	411,616
August	100,981	1,775	174,348	1,290	72,199	-622	23,730	3,569	1,587	1,412	8,169	22,024	401,665
September	94,177	1,777	176,478	1,202	71,911	-579	21,041	3,717	1,602	1,409	7,888	19,869	359,545
October	85,913	1,589	150,753	1,139	66,064	-671	16,324	3,282	1,506	1,384	6,752	24,385	321,875
November	66,299	1,413	117,567	997	62,033	-373	16,292	3,081	1,565	1,277	6,131	28,136	316,672
December	75,299	1,413	117,567	1,196	64,125	-509	20,520	3,107	1,497	1,112	4,377	25,603	337,253
Total	966,148	18,567	1,581,815	13,634	809,409	-5,261	273,707	39,851	18,561	16,011	72,234	300,071	4,118,051

These values represent millions of kWh of electricity generated from coal, petroleum, and natural gas. Copy these numbers down.

Table 7.3a Consumption of Combustible Fuels for Electricity Generation: Total (All Sectors) (Sum of Tables 7.3b and 7.3c)

	Coal ^a Thousand Short Tons	Petroleum					Natural Gas ^f Billion Cubic Feet	Other Gases ^g	Biomass		Other ⁱ
		Distillate Fuel Oil ^b Thousand Barrels	Residual Fuel Oil ^c Thousand Barrels	Other Liquids ^d Thousand Barrels	Petroleum Coke ^e Thousand Short Tons	Total ^h Thousand Barrels			Wood ^h Trillion Btu	Waste ⁱ Trillion Btu	
1950 Total	91,871	5,423	69,998	NA	NA	75,421	629	NA	5	NA	NA
1955 Total	143,759	5,412	69,862	NA	NA	75,274	1,153	NA	3	NA	NA
1960 Total	176,685	3,824	84,371	NA	NA	88,195	1,725	NA	2	NA	NA
1965 Total	244,788	4,928	110,274	NA	NA	115,203	2,321	NA	3	NA	NA
1970 Total	320,182	24,123	311,381	NA	636	338,686	3,932	NA	1	2	NA
1975 Total	405,962	38,907	467,221	NA	70	506,479	3,158	NA	(s)	2	NA
1980 Total	569,274	29,051	391,163	NA	179	421,110	3,682	NA	3	2	NA
1985 Total	693,841	14,635	158,779	NA	231	174,571	3,044	NA	8	7	NA
1990 Total ^k	792,457	18,143	190,652	437	1,914	218,800	3,692	112	442	211	36
1995 Total	860,594	19,615	95,507	680	3,355	132,578	4,738	133	480	316	42
2000 Total	994,933	31,675	143,381	1,450	3,744	195,228	5,691	126	496	330	46
2001 Total	972,691	31,150	165,312	855	3,871	216,672	5,832	97	486	228	160
2002 Total	987,583	23,286	109,235	1,894	6,836	168,597	6,126	131	605	257	191
2003 Total	1,014,058	29,672	142,518	2,947	6,303	206,653	5,616	156	519	249	193
2004 Total	1,020,523	20,163	142,088	2,856	7,677	203,494	5,675	135	344	230	183
2005 Total	1,041,448	20,651	141,518	2,968	8,330	206,785	6,036	110	355	230	173
2006 Total	1,030,556	13,174	58,473	2,174	7,363	110,634	6,462	115	350	241	172
2007 Total	1,046,795	15,683	63,833	2,917	6,036	112,615	7,089	115	353	245	168
2008 Total	1,042,335	12,832	38,191	2,822	5,417	80,932	6,896	97	339	267	172
2009 Total	934,683	12,658	28,576	2,328	4,821	67,668	7,121	84	320	272	170
2010 Total	979,684	14,050	23,997	2,056	4,994	65,071	7,680	90	350	281	184
2011 Total	934,938	11,231	14,251	1,844	5,012	52,387	7,884	91	348	279	205
2012 Total	825,734	9,285	11,755	1,565	3,675	40,977	9,485	103	390	290	204
2013 Total	860,729	9,784	11,766	1,681	4,852	47,492	8,596	115	398	298	200
2014 Total	853,634	14,465	14,704	2,363	4,412	53,593	8,544	110	431	314	200
2015 Total	739,594	12,438	14,124	2,363	4,044	49,145	10,017	106	407	313	204
2016 Total	677,371	9,662	11,195	1,548	4,253	43,671	10,170	74	360	305	199
2017 Total	663,911	9,707	10,442	1,547	3,490	39,144	9,508	71	364	304	190
2018 January										6	16
February										4	15
March										6	16
April										5	15
May										5	16
June										5	16
July										5	16
August										5	17
September										3	15
October										4	16
November										4	16
December										5	16
Total										8	190
2019 January										2	17
February										9	14
March										2	16
April	33,432	618	618	161	182	2,308	755	6	26	20	15
May	40,061	771	744	138	298	3,140	852	6	30	21	16
June	44,274	775	808	148	218	2,822	1,013	6	28	21	16
July	56,067	767	900	152	314	3,390	1,295	7	31	22	17
August	52,522	763	967	163	278	3,281	1,300	7	33	22	17
September	47,478	702	800	159	259	2,950	1,115	7	29	21	16
October	37,435	728	795	174	82	2,107	1,114	6	26	21	16
November	47,418	760	714	133	130	2,455	1,114	7	26	21	16
December	47,229	754	774	162	167	2,455	1,119	6	30	22	16
Total	663,911	9,707	10,442	1,547	3,490	39,144	9,508	71	364	304	190



















These values amounts of coal, petroleum, and gas consumed. Copy these numbers down.

Plugging Values into the spreadsheet

- Values for electricity generated from each fuel are in millions of kWh per fuel. **Multiply each by 1,000,000** for plugging them into the spreadsheet template.
- Values for coal consumed are in thousands of tons. **Multiply each by 1,000** for plugging into the spreadsheet.
- Values for petroleum consumed are in thousands of barrels. **Multiply each by 1,000** for plugging into the spreadsheet.
- Values for natural gas consumed are in billions of cubic feet. **Multiply each by 1,000,000,000** for plugging into the spreadsheet.

Plugging Values into the spreadsheet

- Plug in your values in these blanks
- The spreadsheet will automatically calculate everything related to electricity generation from these different fuels.

PART A							
Fuel used	Total kWh per fuel	Total fuel consumed	kWh per unit fuel	Original fuel unit	Unit conversion	kWh per new fuel unit	New fuel unit
coal			 #DIV/0!	per ton	2000 lbs / ton	 #DIV/0!	per lb
oil			 #DIV/0!	per barrel	42 gal. / bbl	 #DIV/0!	per gallon
gas			 #DIV/0!	per cubic ft.	N/A	 #DIV/0!	per cubic ft.
Fuel used	kWh per new fuel unit	Transmission efficiency	Charging efficiency	Miles per kWh	Miles per unit fuel	Fuel unit	
coal	 #DIV/0!	0.94	0.81	3.1	 #DIV/0!	per lb	
oil	 #DIV/0!	0.94	0.81	3.1	 #DIV/0!	per gallon	
gas	 #DIV/0!	0.94	0.81	3.1	 #DIV/0!	per cubic ft.	