

Released: February 2021
 Next MECS will be fielded in 2022.

Table 5.7 End Uses of Fuel Consumption, 2018;

Level: National and Regional Data;
 Row: End Uses;
 Column: Energy Sources, including Net Demand for Electricity;
 Unit: Physical Units or Btu.

End Use	Net Demand for Electricity(a) (million kWh)	Residual Fuel Oil (million bbl)	Distillate Fuel Oil and Diesel Fuel(b) (million bbl)	Natural Gas(c) (billion cu ft)	HGL (excluding natural gasoline)(d) (million bbl)	Coal (excluding Coal Coke and Breeze) (million short tons)
Total United States						
TOTAL FUEL CONSUMPTION	894,476	3	15	6,129	17	21
Indirect Uses-Boiler Fuel	13,268	2	1	2,475	2	9
Conventional Boiler Use	13,268	1	*	793	1	1
CHP and/or Cogeneration Process	--	1	1	1,683	1	8
Direct Uses-Total Process	718,068	1	6	3,149	D	12
Process Heating	86,292	1	2	2,707	6	9
Process Cooling and Refrigeration	74,977	*	*	24	*	*
Machine Drive	460,930	*	2	165	1	1
Electro-Chemical Processes	73,394	--	--	--	--	--
Other Process Use	22,475	*	1	253	D	2
Direct Uses-Total Nonprocess	152,648	*	7	464	D	*
Facility HVAC (e)	75,538	*	*	372	D	*
Facility Lighting	53,024	--	--	--	--	--
Other Facility Support	16,147	0	*	51	*	*
Onsite Transportation	4,266	--	6	3	5	--
Conventional Electricity Generation	--	*	1	27	*	*
Other Nonprocess Use	3,673	*	1	11	*	0
End Use Not Reported	10,492	*	*	42	1	0
Northeast Census Region						
TOTAL FUEL CONSUMPTION	80,879	1	3	472	2	1
Indirect Uses-Boiler Fuel	1,628	*	*	171	*	1
Conventional Boiler Use	1,628	*	*	65	*	*
CHP and/or Cogeneration Process	--	*	*	106	*	1
Direct Uses-Total Process	58,690	*	2	233	1	*
Process Heating	9,185	*	Q	202	*	*
Process Cooling and Refrigeration	6,886	*	*	3	*	0
Machine Drive	37,805	*	*	21	*	*
Electro-Chemical Processes	2,070	--	--	--	--	--
Other Process Use	2,744	*	*	7	*	--
Direct Uses-Total Nonprocess	18,962	*	1	65	1	*
Facility HVAC (e)	9,176	*	*	56	1	*
Facility Lighting	6,406	--	--	--	--	--
Other Facility Support	2,076	0	*	4	*	*
Onsite Transportation	433	--	*	*	1	--
Conventional Electricity Generation	--	*	*	3	*	0
Other Nonprocess Use	871	*	*	Q	*	0
End Use Not Reported	1,599	0	*	3	*	0
Midwest Census Region						
TOTAL FUEL CONSUMPTION	264,048	*	4	1,757	5	9
Indirect Uses-Boiler Fuel	4,053	*	*	617	1	4
Conventional Boiler Use	4,053	*	*	257	*	*
CHP and/or Cogeneration Process	--	*	*	361	*	4
Direct Uses-Total Process	211,014	*	2	893	2	4
Process Heating	29,639	*	*	791	1	3
Process Cooling and Refrigeration	21,705	0	*	8	*	0
Machine Drive	135,376	*	1	27	*	*

Electro-Chemical Processes	17,902	--	--	--	--	--
Other Process Use	6,394	0	Q	67	*	1
Direct Uses-Total Nonprocess	45,831	*	2	231	2	*
Facility HVAC (e)	21,569	*	*	201	1	*
Facility Lighting	17,372	--	--	--	--	--
Other Facility Support	4,753	0	*	24	*	*
Onsite Transportation	1,654	--	2	1	2	--
Conventional Electricity Generation	--	0	*	1	*	*
Other Nonprocess Use	482	*	*	4	*	0
End Use Not Reported	3,150	0	*	16	*	0

South Census Region

TOTAL FUEL CONSUMPTION	430,596	1	6	3,235	5	7
Indirect Uses-Boiler Fuel	5,967	1	1	1,431	1	3
Conventional Boiler Use	5,967	1	*	358	*	*
CHP and/or Cogeneration Process	--	1	1	1,073	1	2
Direct Uses-Total Process	357,258	*	2	1,662	D	4
Process Heating	38,982	*	1	1,384	1	3
Process Cooling and Refrigeration	34,765	0	*	10	*	*
Machine Drive	229,194	*	1	100	*	*
Electro-Chemical Processes	46,578	--	--	--	--	--
Other Process Use	7,738	*	*	167	D	*
Direct Uses-Total Nonprocess	62,814	0	3	121	D	*
Facility HVAC (e)	32,473	0	*	81	D	*
Facility Lighting	20,163	--	--	--	--	--
Other Facility Support	7,358	0	*	17	*	0
Onsite Transportation	1,625	--	3	2	2	--
Conventional Electricity Generation	--	0	*	19	*	0
Other Nonprocess Use	1,195	0	*	4	*	0
End Use Not Reported	4,557	*	*	21	*	0

West Census Region

TOTAL FUEL CONSUMPTION	118,953	1	3	666	4	4
Indirect Uses-Boiler Fuel	1,620	*	*	257	*	2
Conventional Boiler Use	1,620	*	*	113	*	*
CHP and/or Cogeneration Process	--	*	*	143	*	1
Direct Uses-Total Process	91,105	*	1	360	3	3
Process Heating	8,485	*	*	330	3	2
Process Cooling and Refrigeration	11,621	0	*	1	*	*
Machine Drive	58,555	0	*	16	*	*
Electro-Chemical Processes	6,845	--	--	--	--	--
Other Process Use	5,599	0	*	12	*	Q
Direct Uses-Total Nonprocess	25,041	*	2	47	1	0
Facility HVAC (e)	12,320	0	*	35	*	0
Facility Lighting	9,082	--	--	--	--	--
Other Facility Support	1,960	0	*	6	*	0
Onsite Transportation	554	--	1	*	1	--
Conventional Electricity Generation	--	*	*	4	*	0
Other Nonprocess Use	1,125	0	*	2	*	0
End Use Not Reported	1,186	0	*	2	*	0

(a) *Net Demand for Electricity* is the sum of purchases, transfers in, and total onsite electricity generation, minus sales and transfers offsite. It is the total amount of electricity used by establishments. *Net Demand for Electricity* is not directly comparable with *Net Electricity*, which specifically excludes electricity generated onsite by combustible energy sources.

(b) *Distillate Fuel Oil* includes Nos. 1, 2, and 4 fuel oils and Nos. 1, 2, and 4 diesel fuels.

(c) *Natural Gas* includes natural gas obtained from utilities, local distribution companies, and any other supplier(s), such as independent gas producers, gas brokers, marketers, and any marketing subsidiaries of utilities.

(d) Hydrocarbon Gas Liquids (*HGL*) include ethane, ethylene, propane, propylene, normal butane, butylene, ethane-propane mixtures, propane-butane mixtures, and isobutane produced at refineries or natural gas processing plants, including plants that fractionate raw Natural Gas Liquids (NGL).

(e) Facility Heating, Ventilation, and Air Conditioning (*Facility HVAC*) excludes steam and hot water.

* Estimate less than 0.5.

D=Withheld to avoid disclosing data for individual establishments.

Q=Withheld because Relative Standard Error (RSE) is greater than 50 percent.

NA=Not available.

-- Estimation is not applicable.

S=Negative value.

Notes: Totals may not equal sum of components because of independent rounding. The estimates presented in this table are for the total consumption of energy (formerly total inputs of energy) for the production of heat, power, and electricity generation, regardless of where the energy was produced. Specifically, the estimates include the quantities of energy that were originally produced offsite and purchased by or transferred to the establishment, plus those that were produced onsite from other energy or input materials not classified as energy, or were extracted from captive (onsite) mines or wells. Allocations to specific end uses are made on the basis of reasonable approximations by respondents.

Source: U.S. Energy Information Administration, Office of Energy Demand and Integrated Statistics, Form EIA-846, *2018 Manufacturing Energy Consumption Survey*.

The Census Bureau has reviewed this data product for unauthorized disclosure of confidential information and has approved the disclosure avoidance practices applied (Approval ID: CBDRB-FY20-260).

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RSE Table 5.7 Relative Standard Errors for Table 5.7;

Unit: Percents.

End Use	Net Demand for Electricity(a)	Residual Fuel Oil	Distillate Fuel Oil and Diesel Fuel(b)	Natural Gas(c)	HGL (excluding natural gasoline)(d)	Coal (excluding Coal Coke and Breeze)
Total United States						
TOTAL FUEL CONSUMPTION	1.6	2.5	7.9	0.9	3.9	3.3
Indirect Uses-Boiler Fuel	3.2	0.7	7.0	1.0	9.2	0.2
Conventional Boiler Use	3.2	1.3	17.8	1.7	12.1	1.8
CHP and/or Cogeneration Process	--	0.2	4.2	1.2	14.0	0.1
Direct Uses-Total Process	1.3	6.3	16.3	1.3	D	5.9
Process Heating	2.4	6.3	29.1	1.4	6.7	0.2
Process Cooling and Refrigeration	4.1	0.0	8.5	4.8	20.0	4.9
Machine Drive	1.5	72.5	14.9	3.4	40.8	0.0
Electro-Chemical Processes	1.7	--	--	--	--	--
Other Process Use	4.7	90.0	46.3	3.3	D	31.0
Direct Uses-Total Nonprocess	3.7	30.1	6.5	3.3	D	17.7
Facility HVAC (e)	3.8	7.4	29.2	3.9	D	27.6
Facility Lighting	5.1	--	--	--	--	--
Other Facility Support	2.7	X	49.1	6.2	19.2	0.0
Onsite Transportation	4.8	--	6.3	13.4	4.6	--
Conventional Electricity Generation	--	0.0	23.8	1.3	46.3	0.0
Other Nonprocess Use	18.8	61.2	24.7	12.1	15.0	X
End Use Not Reported	13.1	0.0	12.7	8.5	21.8	X
Northeast Census Region						
TOTAL FUEL CONSUMPTION	4.7	5.3	28.8	4.0	8.7	0.3
Indirect Uses-Boiler Fuel	7.9	0.3	14.9	3.9	12.9	0.1
Conventional Boiler Use	7.9	0.0	7.1	5.5	9.0	0.0
CHP and/or Cogeneration Process	--	0.8	23.1	5.3	47.6	0.1
Direct Uses-Total Process	5.1	0.8	38.6	6.4	16.2	0.1
Process Heating	8.2	0.8	51.0	7.3	17.8	0.1
Process Cooling and Refrigeration	15.2	0.0	52.1	10.1	63.9	X
Machine Drive	4.6	0.0	25.2	3.7	38.5	0.0
Electro-Chemical Processes	2.5	--	--	--	--	--
Other Process Use	19.6	50.9	13.1	18.5	40.8	0.0
Direct Uses-Total Nonprocess	5.1	31.6	19.1	5.8	11.8	68.0
Facility HVAC (e)	5.4	7.4	38.4	5.8	19.3	70.9
Facility Lighting	5.5	--	--	--	--	--
Other Facility Support	8.6	X	85.8	11.1	30.9	0.0
Onsite Transportation	9.8	--	12.1	35.1	15.6	--
Conventional Electricity Generation	--	0.0	40.6	0.9	62.3	X
Other Nonprocess Use	43.6	61.5	43.3	58.3	42.9	X
End Use Not Reported	40.9	X	88.8	29.1	22.2	X
Midwest Census Region						
TOTAL FUEL CONSUMPTION	2.3	29.3	20.0	2.2	7.0	0.3
Indirect Uses-Boiler Fuel	9.1	13.5	31.8	2.3	14.1	0.3
Conventional Boiler Use	9.1	24.0	7.7	2.7	18.9	0.0
CHP and/or Cogeneration Process	--	0.3	39.0	3.6	21.2	0.3
Direct Uses-Total Process	2.3	73.8	37.6	3.2	9.6	0.3
Process Heating	5.7	74.2	12.4	3.5	10.4	0.4
Process Cooling and Refrigeration	3.8	X	12.6	7.5	24.2	X
Machine Drive	2.8	89.7	26.5	10.1	13.8	0.0
Electro-Chemical Processes	6.7	--	--	--	--	--
Other Process Use	10.6	X	73.8	5.9	20.8	0.0
Direct Uses-Total Nonprocess	3.6	11.1	15.1	5.5	8.4	0.0
Facility HVAC (e)	3.6	72.9	38.8	6.2	25.2	0.0
Facility Lighting	4.7	--	--	--	--	--
Other Facility Support	4.9	X	25.1	6.0	29.5	0.0
Onsite Transportation	8.5	--	16.5	7.4	7.5	--

Conventional Electricity Generation	--	X	14.2	16.6	23.7	0.0
Other Nonprocess Use	13.5	8.7	25.9	7.0	50.2	X
End Use Not Reported	30.0	X	0.0	8.1	37.8	X

South Census Region

TOTAL FUEL CONSUMPTION	1.6	1.0	6.6	1.0	6.1	0.2
Indirect Uses-Boiler Fuel	2.4	0.1	3.4	1.2	18.3	0.5
Conventional Boiler Use	2.4	0.1	9.1	2.6	31.8	8.1
CHP and/or Cogeneration Process	--	0.3	3.2	1.4	21.2	0.0
Direct Uses-Total Process	1.4	8.0	15.4	1.3	D	0.2
Process Heating	2.3	5.7	28.7	1.3	10.0	0.2
Process Cooling and Refrigeration	3.5	X	0.1	8.3	25.1	67.5
Machine Drive	1.9	97.3	20.4	2.9	30.7	0.0
Electro-Chemical Processes	0.5	--	--	--	--	--
Other Process Use	4.0	91.0	36.7	3.9	D	0.0
Direct Uses-Total Nonprocess	3.2	X	8.6	5.6	D	58.6
Facility HVAC (e)	3.5	X	47.7	7.4	D	58.6
Facility Lighting	3.7	--	--	--	--	--
Other Facility Support	4.4	X	3.6	16.0	35.3	X
Onsite Transportation	8.7	--	7.0	22.9	7.8	--
Conventional Electricity Generation	--	X	15.9	1.7	1.0	X
Other Nonprocess Use	9.9	X	31.7	5.0	16.8	X
End Use Not Reported	15.8	0.0	0.1	15.4	27.7	X

West Census Region

TOTAL FUEL CONSUMPTION	8.8	7.0	14.0	3.2	9.8	15.8
Indirect Uses-Boiler Fuel	5.6	0.0	29.6	3.1	8.6	0.0
Conventional Boiler Use	5.6	0.0	45.2	5.7	2.0	0.0
CHP and/or Cogeneration Process	--	0.0	6.4	3.4	31.4	0.0
Direct Uses-Total Process	6.3	9.5	25.6	3.5	13.4	25.0
Process Heating	3.6	9.5	8.9	3.5	12.5	0.5
Process Cooling and Refrigeration	21.3	X	30.0	10.8	15.6	0.0
Machine Drive	6.4	X	46.7	23.8	68.4	0.0
Electro-Chemical Processes	1.5	--	--	--	--	--
Other Process Use	9.8	X	59.9	24.0	28.0	79.2
Direct Uses-Total Nonprocess	20.0	0.0	15.3	9.7	9.2	X
Facility HVAC (e)	20.2	X	48.9	12.7	20.5	X
Facility Lighting	27.3	--	--	--	--	--
Other Facility Support	5.6	X	30.7	10.1	21.0	X
Onsite Transportation	8.4	--	15.2	7.6	10.4	--
Conventional Electricity Generation	--	0.0	30.1	0.1	74.3	X
Other Nonprocess Use	49.9	X	75.1	16.2	52.6	X
End Use Not Reported	20.4	X	0.0	12.4	40.1	X

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* Estimate less than 0.5.

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