

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

Table 5.8 End Uses of Fuel Consumption, 2018;

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

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	3,052	17	86	6,362	64	432
Indirect Uses-Boiler Fuel	45	11	8	2,570	9	189
Conventional Boiler Use	45	6	3	823	5	14
CHP and/or Cogeneration Process	--	5	5	1,746	4	175
Direct Uses-Total Process	2,450	5	35	3,268	D	243
Process Heating	294	5	13	2,810	22	178
Process Cooling and Refrigeration	256	*	*	24	*	3
Machine Drive	1,573	*	14	171	2	15
Electro-Chemical Processes	250	--	--	--	--	--
Other Process Use	77	*	8	263	D	46
Direct Uses-Total Nonprocess	521	1	43	481	D	1
Facility HVAC (e)	258	*	2	386	D	*
Facility Lighting	181	--	--	--	--	--
Other Facility Support	55	0	*	52	*	*
Onsite Transportation	15	--	33	3	18	--
Conventional Electricity Generation	--	*	3	28	*	*
Other Nonprocess Use	13	*	4	12	1	0
End Use Not Reported	36	*	*	43	3	0
Northeast Census Region						
TOTAL FUEL CONSUMPTION	276	4	15	490	9	19
Indirect Uses-Boiler Fuel	6	2	1	177	1	13
Conventional Boiler Use	6	1	*	67	1	1
CHP and/or Cogeneration Process	--	1	1	110	*	12
Direct Uses-Total Process	200	1	10	242	2	6
Process Heating	31	1	Q	209	2	5
Process Cooling and Refrigeration	23	*	*	4	*	0
Machine Drive	129	*	2	21	*	1
Electro-Chemical Processes	7	--	--	--	--	--
Other Process Use	9	*	*	8	*	*
Direct Uses-Total Nonprocess	65	1	5	68	5	*
Facility HVAC (e)	31	*	2	58	2	*
Facility Lighting	22	--	--	--	--	--
Other Facility Support	7	0	*	4	*	*
Onsite Transportation	1	--	2	*	3	--
Conventional Electricity Generation	--	*	*	3	*	0
Other Nonprocess Use	3	*	*	Q	*	0
End Use Not Reported	5	0	*	3	*	0
Midwest Census Region						
TOTAL FUEL CONSUMPTION	901	1	21	1,823	18	182
Indirect Uses-Boiler Fuel	14	1	*	641	2	91

Conventional Boiler Use	14	*	*	266	1	6
CHP and/or Cogeneration Process	--	*	*	374	1	85
Direct Uses-Total Process	720	*	10	927	6	91
Process Heating	101	*	1	821	5	67
Process Cooling and Refrigeration	74	0	*	9	*	0
Machine Drive	462	*	5	28	*	5
Electro-Chemical Processes	61	--	--	--	--	--
Other Process Use	22	0	Q	69	*	18
Direct Uses-Total Nonprocess	156	*	10	239	8	*
Facility HVAC (e)	74	*	*	209	2	*
Facility Lighting	59	--	--	--	--	--
Other Facility Support	16	0	*	25	*	*
Onsite Transportation	6	--	9	1	6	--
Conventional Electricity Generation	--	0	*	1	*	*
Other Nonprocess Use	2	*	*	4	*	0
End Use Not Reported	11	0	*	16	2	0

South Census Region

TOTAL FUEL CONSUMPTION	1,469	8	32	3,358	20	141
Indirect Uses-Boiler Fuel	20	7	5	1,485	4	52
Conventional Boiler Use	20	4	1	372	2	3
CHP and/or Cogeneration Process	--	4	3	1,113	2	49
Direct Uses-Total Process	1,219	1	9	1,725	D	89
Process Heating	133	1	3	1,437	5	71
Process Cooling and Refrigeration	119	0	*	11	*	*
Machine Drive	782	*	4	104	1	8
Electro-Chemical Processes	159	--	--	--	--	--
Other Process Use	26	*	1	174	D	10
Direct Uses-Total Nonprocess	214	0	19	126	D	*
Facility HVAC (e)	111	0	*	84	D	*
Facility Lighting	69	--	--	--	--	--
Other Facility Support	25	0	*	17	*	0
Onsite Transportation	6	--	15	2	6	--
Conventional Electricity Generation	--	0	*	19	*	0
Other Nonprocess Use	4	0	3	4	*	0
End Use Not Reported	16	*	*	22	1	0

West Census Region

TOTAL FUEL CONSUMPTION	406	4	18	691	17	90
Indirect Uses-Boiler Fuel	6	1	2	266	2	33
Conventional Boiler Use	6	*	1	118	1	4
CHP and/or Cogeneration Process	--	1	1	149	*	29
Direct Uses-Total Process	311	3	7	374	12	57
Process Heating	29	3	2	343	10	35
Process Cooling and Refrigeration	40	0	*	2	*	2
Machine Drive	200	0	3	17	Q	1
Electro-Chemical Processes	23	--	--	--	--	--
Other Process Use	19	0	Q	12	*	Q
Direct Uses-Total Nonprocess	85	*	10	48	3	0
Facility HVAC (e)	42	0	*	36	*	0
Facility Lighting	31	--	--	--	--	--
Other Facility Support	7	0	*	6	*	0
Onsite Transportation	2	--	6	*	3	--
Conventional Electricity Generation	--	*	3	4	*	0
Other Nonprocess Use	4	0	Q	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 5.8 Relative Standard Errors for Table 5.8;

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)	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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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

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