

Table 5.7 End uses of fuel consumption, 2022

Level: National and regional data  
Row: End uses  
Column: Energy sources, including net demand for electricity  
Unit: Physical units or British thermal units (Btu)

End use	Net demand for electricity <sup>a</sup> (million kilowatthours)	Residual fuel oil (million barrels)	Distillate fuel oil and diesel fuel <sup>b</sup> (million barrels)	Natural gas <sup>c</sup> (billion cubic feet)	HGL (excluding natural gasoline) <sup>d</sup> (million barrels)	Coal (excluding coal coke and breeze) (million short tons)
Total United States						
Total fuel consumption	932,709	2	14	6,827	24	19
Indirect Uses—Boiler Fuel	17,371	1	2	2,883	4	5
Conventional Boiler Use	17,371	*	*	837	2	1
CHP and/or Cogeneration Process	--	1	2	2,046	2	4
Direct Uses—Total Process	724,528	*	4	3,383	13	11
Process Heating	77,623	*	1	2,838	11	10
Process Cooling and Refrigeration	73,274	*	*	42	*	*
Machine Drive	484,175	*	2	241	1	*
Electro-Chemical Processes	62,274	--	--	--	--	--
Other Process Use	27,182	*	2	263	1	1
Direct Uses—Total Nonprocess	171,118	*	7	524	7	*
Facility HVAC <sup>e</sup>	87,333	*	*	397	1	*
Facility Lighting	53,882	--	--	--	--	--
Other Facility Support	17,242	*	*	54	*	*
Onsite Transportation	6,870	--	5	7	5	--
Conventional Electricity Generation	--	*	*	41	*	*
Other Nonprocess Use	5,790	*	1	25	*	*
End use not reported	19,692	*	1	36	*	4
Northeast Census Region						
Total fuel consumption	99,373	1	2	512	3	1
Indirect Uses—Boiler Fuel	1,723	*	*	195	*	*
Conventional Boiler Use	1,723	*	*	79	*	0
CHP and/or Cogeneration Process	--	*	*	116	*	*
Direct Uses—Total Process	72,584	*	1	244	2	1
Process Heating	8,421	*	*	215	2	1
Process Cooling and Refrigeration	7,076	*	*	4	*	0
Machine Drive	50,012	*	*	19	*	0
Electro-Chemical Processes	4,406	--	--	--	--	--
Other Process Use	2,669	*	*	6	*	*
Direct Uses—Total Nonprocess	19,319	*	1	65	1	*
Facility HVAC <sup>e</sup>	9,918	*	*	50	*	*
Facility Lighting	5,900	--	--	--	--	--
Other Facility Support	2,276	*	*	6	*	0
Onsite Transportation	643	--	*	1	*	--
Conventional Electricity Generation	--	*	*	5	*	0
Other Nonprocess Use	582	0	*	2	*	0
End use not reported	Q	*	*	8	*	0
Midwest Census Region						
Total fuel consumption	272,639	*	3	1,952	5	8
Indirect Uses—Boiler Fuel	5,927	*	*	712	1	2
Conventional Boiler Use	5,927	*	*	301	Q	*
CHP and/or Cogeneration Process	--	*	*	411	*	2
Direct Uses—Total Process	205,289	*	1	967	2	3
Process Heating	23,745	0	*	827	1	3
Process Cooling and Refrigeration	22,078	*	*	17	*	0
Machine Drive	144,069	*	*	56	*	*
Electro-Chemical Processes	5,266	--	--	--	--	--
Other Process Use	10,131	0	1	67	*	*
Direct Uses—Total Nonprocess	56,099	*	2	257	3	*
Facility HVAC <sup>e</sup>	27,237	0	*	213	1	0
Facility Lighting	18,201	--	--	--	--	--
Other Facility Support	5,268	0	*	25	*	0

Onsite Transportation	2,512	--	1	3	2	--
Conventional Electricity Generation	--	0	*	2	*	0
Other Nonprocess Use	2,881	*	*	14	*	*
<b>End use not reported</b>	5,324	0	*	17	*	3

#### South Census Region

<b>Total fuel consumption</b>	452,588	1	7	3,645	11	5
<b>Indirect Uses—Boiler Fuel</b>	8,265	*	1	1,707	2	2
Conventional Boiler Use	8,265	*	*	369	1	*
CHP and/or Cogeneration Process	--	*	1	1,338	1	2
<b>Direct Uses—Total Process</b>	362,858	*	2	1,783	6	3
Process Heating	36,128	*	*	1,472	5	3
Process Cooling and Refrigeration	33,289	0	*	18	*	*
Machine Drive	234,429	0	1	154	*	*
Electro-Chemical Processes	49,585	--	--	--	--	--
Other Process Use	9,426	0	Q	140	1	*
<b>Direct Uses—Total Nonprocess</b>	74,405	*	3	150	2	*
Facility HVAC <sup>c</sup>	39,267	*	*	100	*	*
Facility Lighting	23,215	--	--	--	--	--
Other Facility Support	7,503	0	*	15	*	*
Onsite Transportation	3,093	--	3	3	2	--
Conventional Electricity Generation	--	0	*	28	*	*
Other Nonprocess Use	1,327	*	*	4	*	0
<b>End use not reported</b>	7,061	*	*	5	*	*

#### West Census Region

<b>Total fuel consumption</b>	108,109	*	2	718	4	5
<b>Indirect Uses—Boiler Fuel</b>	1,457	*	*	269	1	*
Conventional Boiler Use	1,457	*	*	88	*	*
CHP and/or Cogeneration Process	--	*	*	181	*	*
<b>Direct Uses—Total Process</b>	83,798	*	Q	390	3	4
Process Heating	9,329	*	*	324	2	3
Process Cooling and Refrigeration	10,831	0	*	3	*	0
Machine Drive	55,665	0	*	12	*	*
Electro-Chemical Processes	3,017	--	--	--	--	--
Other Process Use	4,955	0	*	50	*	*
<b>Direct Uses—Total Nonprocess</b>	21,295	*	1	52	1	*
Facility HVAC <sup>c</sup>	10,912	*	*	33	*	*
Facility Lighting	6,566	--	--	--	--	--
Other Facility Support	2,194	0	*	7	*	0
Onsite Transportation	623	--	1	1	1	--
Conventional Electricity Generation	--	0	*	6	*	0
Other Nonprocess Use	1,000	0	*	5	*	*
<b>End use not reported</b>	1,560	0	*	7	*	1

Data source: U.S. Energy Information Administration, Office of Energy Demand and Integrated Statistics, Form EIA-846, *2022 Manufacturing Energy Consumption Survey*

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. CHP is defined as combined heat and power. Allocations to specific end uses are made based on reasonable approximations by respondents.

<sup>a</sup> *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.

<sup>b</sup> *Distillate fuel oil* includes Nos. 1, 2, and 4 fuel oils and Nos. 1, 2, and 4 diesel fuels.

<sup>c</sup> *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.

<sup>d</sup> 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).

<sup>e</sup> 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%.

NA=Not available.

-- Estimation is not applicable.

S=Negative value.

*The Census Bureau has reviewed this data product to ensure appropriate access, use, and disclosure protection of the confidential source data (Project No. 7504703, Disclosure Review Board (DRB) approval number: CBDRB-FY25-0054).*



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**RSE Table 5.7 Relative standard errors for table 5.7**

Unit: Percentage

End use	Net demand for electricity <sup>a</sup>	Residual fuel oil	Distillate fuel oil and diesel fuel <sup>b</sup>	Natural gas <sup>c</sup>	HGL (excluding natural gasoline) <sup>d</sup>	Coal (excluding coal coke and breeze)
<b>Total United States</b>						
<b>Total fuel consumption</b>	2.6	3.5	7.0	2.2	4.1	5.1
<b>Indirect Uses—Boiler Fuel</b>	7.3	3.5	11.2	3.3	9.3	0.3
Conventional Boiler Use	7.3	10.6	6.2	1.8	17.4	0.0
CHP and/or Cogeneration Process	--	1.8	13.9	4.6	6.2	0.3
<b>Direct Uses—Total Process</b>	2.5	13.0	17.7	2.1	3.7	9.1
Process Heating	4.1	13.1	6.1	2.5	4.0	10.0
Process Cooling and Refrigeration	2.9	69.0	75.5	12.2	41.1	1.7
Machine Drive	3.2	44.8	17.8	3.7	19.8	0.3
Electro-Chemical Processes	1.1	--	--	--	--	--
Other Process Use	11.7	0.0	39.4	1.8	5.8	0.0
<b>Direct Uses—Total Nonprocess</b>	3.9	6.7	6.2	3.8	7.2	0.6
Facility HVAC <sup>e</sup>	3.8	71.5	23.3	4.8	19.9	2.3
Facility Lighting	5.2	--	--	--	--	--
Other Facility Support	3.3	0.0	22.2	5.7	40.4	0.0
Onsite Transportation	14.3	--	5.9	6.0	7.1	--
Conventional Electricity Generation	--	0.0	31.2	1.2	52.7	0.0
Other Nonprocess Use	6.3	0.0	27.4	8.1	29.6	0.0
<b>End use not reported</b>	22.1	0.0	28.2	10.8	37.1	0.0
<b>Northeast Census Region</b>						
<b>Total fuel consumption</b>	5.6	8.5	16.0	4.5	10.8	0.1
<b>Indirect Uses—Boiler Fuel</b>	15.1	10.3	35.7	5.5	7.1	0.0
Conventional Boiler Use	15.1	20.5	0.4	9.0	9.0	X
CHP and/or Cogeneration Process	--	4.9	38.0	6.9	8.0	0.0
<b>Direct Uses—Total Process</b>	5.6	23.2	29.5	7.2	9.7	0.1
Process Heating	10.4	24.0	4.4	8.0	10.0	0.1
Process Cooling and Refrigeration	7.2	19.6	1.9	11.9	50.6	X
Machine Drive	7.3	49.9	42.5	8.6	51.5	X
Electro-Chemical Processes	2.2	--	--	--	--	--
Other Process Use	23.5	0.0	3.8	26.2	42.3	0.0
<b>Direct Uses—Total Nonprocess</b>	5.2	9.0	10.5	6.0	20.7	66.3
Facility HVAC <sup>e</sup>	5.3	47.6	32.2	6.7	32.2	66.3
Facility Lighting	5.4	--	--	--	--	--
Other Facility Support	9.5	0.0	23.1	12.8	39.2	X
Onsite Transportation	10.6	--	7.0	22.4	15.8	--
Conventional Electricity Generation	--	0.0	13.4	2.3	31.8	X
Other Nonprocess Use	38.2	X	10.6	42.9	73.8	X
<b>End use not reported</b>	69.2	0.0	93.0	9.3	69.9	X
<b>Midwest Census Region</b>						
<b>Total fuel consumption</b>	5.0	9.7	11.5	3.3	15.2	0.2
<b>Indirect Uses—Boiler Fuel</b>	20.5	9.8	3.0	7.1	42.1	0.6
Conventional Boiler Use	20.5	0.2	35.3	3.0	60.7	0.0
CHP and/or Cogeneration Process	--	26.2	0.2	12.2	20.3	0.7
<b>Direct Uses—Total Process</b>	5.0	99.0	28.6	2.3	20.9	0.0
Process Heating	5.5	X	6.3	2.4	24.7	0.0
Process Cooling and Refrigeration	6.9	99.0	62.1	24.6	8.0	X
Machine Drive	5.3	99.0	11.2	9.9	25.9	0.0
Electro-Chemical Processes	8.1	--	--	--	--	--
Other Process Use	29.4	X	47.8	3.6	51.0	0.0
<b>Direct Uses—Total Nonprocess</b>	5.6	0.0	12.3	5.9	13.8	X
Facility HVAC <sup>e</sup>	5.1	X	0.4	6.6	34.4	X
Facility Lighting	9.3	--	--	--	--	--
Other Facility Support	7.0	X	9.5	10.7	67.4	X

Onsite Transportation	19.7	--	6.9	7.4	14.5	--
Conventional Electricity Generation	--	X	31.4	11.0	0.8	X
Other Nonprocess Use	5.9	0.0	53.1	3.7	44.3	X
<b>End use not reported</b>	<b>17.3</b>	<b>X</b>	<b>14.4</b>	<b>19.4</b>	<b>26.2</b>	<b>0.0</b>

#### South Census Region

<b>Total fuel consumption</b>	<b>4.2</b>	<b>4.8</b>	<b>10.5</b>	<b>3.7</b>	<b>3.7</b>	<b>2.2</b>
<b>Indirect Uses—Boiler Fuel</b>	<b>3.7</b>	<b>0.0</b>	<b>4.4</b>	<b>4.7</b>	<b>5.9</b>	<b>0.1</b>
Conventional Boiler Use	3.7	0.0	6.6	2.8	9.8	0.0
CHP and/or Cogeneration Process	--	0.0	5.5	5.9	7.1	0.1
<b>Direct Uses—Total Process</b>	<b>3.8</b>	<b>19.2</b>	<b>28.9</b>	<b>3.6</b>	<b>3.2</b>	<b>3.2</b>
Process Heating	7.5	19.2	10.8	4.4	1.1	3.6
Process Cooling and Refrigeration	3.0	X	24.6	15.6	72.9	1.7
Machine Drive	5.5	X	23.1	4.2	43.1	2.1
Electro-Chemical Processes	0.6	--	--	--	--	--
Other Process Use	9.2	X	59.3	2.1	3.6	0.0
<b>Direct Uses—Total Nonprocess</b>	<b>7.8</b>	<b>7.6</b>	<b>9.5</b>	<b>8.4</b>	<b>10.0</b>	<b>0.1</b>
Facility HVAC <sup>c</sup>	7.4	96.5	59.0	12.5	33.4	0.4
Facility Lighting	9.4	--	--	--	--	--
Other Facility Support	5.0	X	12.6	6.5	83.6	0.0
Onsite Transportation	27.4	--	10.1	7.7	9.4	--
Conventional Electricity Generation	--	X	15.5	0.2	65.2	0.0
Other Nonprocess Use	12.3	0.0	36.2	27.5	27.2	X
<b>End use not reported</b>	<b>19.0</b>	<b>0.0</b>	<b>38.8</b>	<b>18.7</b>	<b>65.6</b>	<b>0.0</b>

#### West Census Region

<b>Total fuel consumption</b>	<b>4.6</b>	<b>4.4</b>	<b>21.1</b>	<b>2.8</b>	<b>5.0</b>	<b>19.6</b>
<b>Indirect Uses—Boiler Fuel</b>	<b>7.9</b>	<b>0.0</b>	<b>64.7</b>	<b>2.1</b>	<b>9.4</b>	<b>0.0</b>
Conventional Boiler Use	7.9	0.0	24.2	3.0	0.1	0.0
CHP and/or Cogeneration Process	--	0.0	78.6	2.5	29.3	0.0
<b>Direct Uses—Total Process</b>	<b>4.6</b>	<b>20.4</b>	<b>56.2</b>	<b>4.6</b>	<b>4.9</b>	<b>26.2</b>
Process Heating	7.0	20.4	13.8	5.1	5.2	29.5
Process Cooling and Refrigeration	10.0	X	94.6	17.8	69.2	X
Machine Drive	4.6	X	52.9	19.3	14.2	0.0
Electro-Chemical Processes	13.5	--	--	--	--	--
Other Process Use	4.9	X	5.0	4.7	23.9	0.0
<b>Direct Uses—Total Nonprocess</b>	<b>6.2</b>	<b>41.7</b>	<b>15.0</b>	<b>5.4</b>	<b>15.1</b>	<b>0.0</b>
Facility HVAC <sup>c</sup>	7.1	41.7	44.6	6.2	26.7	0.0
Facility Lighting	8.6	--	--	--	--	--
Other Facility Support	5.9	X	39.4	11.1	45.2	X
Onsite Transportation	8.6	--	12.6	16.1	16.1	--
Conventional Electricity Generation	--	X	45.6	6.6	35.0	X
Other Nonprocess Use	16.9	X	51.1	26.3	35.3	0.0
<b>End use not reported</b>	<b>20.3</b>	<b>X</b>	<b>68.2</b>	<b>26.6</b>	<b>37.8</b>	<b>0.0</b>

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S=Negative value.

X=Not defined because RSE corresponds to a data table value of zero.

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