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Next MECS will be fielded in 2027

Table 1.3 First use of energy for all purposes (fuel and nonfuel), 2022

Level: National and regional data

Row: Values of shipments and employment sizes

Column: Energy sources and shipments

Unit: Trillion British thermal units (Btu)

Economic characteristic ^a	Total ^b	Net electricity ^c	Residual fuel oil	Distillate fuel oil ^d	Natural gas ^e	HGL (excluding natural gasoline) ^f	Coke and breeze			Shipments of energy sources produced onsite ^h
							Coal	Other ^g		
Total United States										
Value of shipments and receipts (million dollars)										
Under 20	1,473	336	2	19	455	186	17	2	472	17
20–49	1,260	237	*	8	532	8	44	5	482	56
50–99	1,631	370	7	13	746	73	98	6	326	7
100–249	2,317	556	19	14	D	21	D	13	490	*
250–499	2,453	345	3	8	D	77	D	4	742	11
500 and over	11,055	829	2	22	3,914	2,785	470	211	3,478	655
Subtotal	20,188	2,674	33	83	7,866	3,150	899	240	5,991	747
Not ascertained ⁱ	499	0	0	0	0	0	0	0	499	0
Total	20,687	2,674	33	83	7,866	3,150	899	240	6,490	747
Employment size										
Under 50	2,186	368	D	23	D	186	D	1	795	18
50–99	1,704	298	D	8	D	140	D	8	D	86
100–249	3,906	649	12	21	1,672	550	217	14	793	23
250–499	4,223	547	3	9	1,632	727	247	4	1,357	302
500–999	4,584	464	5	11	D	1,131	D	5	D	219
1,000 and over	3,585	347	*	11	1,542	416	225	208	935	100
Subtotal	20,188	2,674	33	83	7,866	3,150	899	240	5,991	747
Not ascertained ⁱ	499	0	0	0	0	0	0	0	499	0
Total	20,687	2,674	33	83	7,866	3,150	899	240	6,490	747
Northeast Census Region										
Value of shipments and receipts (million dollars)										
Under 20	306	35	*	4	66	4	5	0	193	1
20–49	166	40	*	2	38	2	2	*	82	0
50–99	146	57	*	1	71	1	3	1	13	1
100–249	223	64	2	1	126	5	2	0	24	0
250–499	183	37	1	1	83	*	6	*	55	0
500 and over	376	46	1	1	170	2	123	9	108	83
Total	1,400	279	4	10	555	14	139	10	475	86
Employment size										
Under 50	365	34	D	D	D	D	6	0	247	2
50–99	129	50	*	D	D	1	D	1	D	1
100–249	188	64	D	D	92	Q	D	0	26	0
250–499	291	65	1	D	153	5	D	*	D	0
500–999	225	32	D	D	D	D	D	0	107	0
1,000 and over	203	34	0	1	113	*	123	9	7	83
Total	1,400	279	4	10	555	14	139	10	475	86
Midwest Census Region										
Value of shipments and receipts (million dollars)										
Under 20	376	103	*	4	161	6	6	2	95	*
20–49	450	87	*	1	173	2	16	2	170	0
50–99	371	88	3	1	171	2	37	1	68	0
100–249	737	229	0	2	D	4	D	9	85	*
250–499	770	107	*	Q	D	5	D	3	83	1
500 and over	2,284	261	*	7	811	127	291	202	604	20
Total	4,989	873	3	18	2,154	147	491	218	1,105	21
Employment size										
Under 50	790	122	3	D	D	D	D	1	243	*
50–99	626	114	*	D	D	D	16	3	D	*
100–249	862	209	*	3	418	4	113	9	108	1
250–499	1,181	173	D	D	448	130	D	3	D	6
500–999	522	121	D	D	D	D	D	4	D	0
1,000 and over	1,008	135	*	D	381	3	D	198	D	14
Total	4,989	873	3	18	2,154	147	491	218	1,105	21
South Census Region										

Value of shipments and receipts

(million dollars)										
Under 20	D	159	1	7	162	173	7	0	125	D
20–49	479	81	*	3	279	2	8	3	160	56
50–99	D	170	3	Q	426	69	29	3	163	D
100–249	1,025	192	16	9	454	11	21	2	319	0
250–499	1,316	158	1	4	502	71	39	1	549	10
500 and over	7,420	446	1	12	2,565	2,645	55	*	2,246	552
Total	11,723	1,205	24	42	4,389	2,972	159	8	3,562	637

Employment size

Under 50	D	168	D	D	233	173	5	*	198	D
50–99	D	99	D	D	403	136	D	4	199	D
100–249	2,384	282	11	D	1,006	539	D	D	512	22
250–499	2,198	244	D	D	823	585	D	D	814	296
500–999	3,480	268	2	D	1,006	1,128	D	1	1,266	219
1,000 and over	2,082	143	0	D	919	411	D	*	573	2
Total	11,723	1,205	24	42	4,389	2,972	159	8	3,562	637

West Census Region
Value of shipments and receipts

(million dollars)										
Under 20	D	40	*	4	66	3	*	0	59	D
20–49	165	30	*	2	42	1	19	1	70	*
50–99	D	57	*	Q	78	1	28	1	Q	D
100–249	332	71	1	2	134	1	58	2	62	0
250–499	184	42	*	1	82	1	3	*	56	0
500 and over	975	76	0	1	367	10	1	0	519	*
Total	2,076	316	2	14	769	17	110	3	849	3

Employment size

Under 50	D	45	*	D	88	D	10	1	106	D
50–99	D	35	0	2	50	D	D	*	D	D
100–249	472	95	D	D	157	4	64	D	147	0
250–499	553	64	D	2	208	7	D	D	D	0
500–999	358	43	*	D	136	D	2	*	D	*
1,000 and over	292	35	0	D	129	2	D	0	D	0
Total	2,076	316	2	14	769	17	110	3	849	3

Data source: U.S. Energy Information Administration, Office of Energy Consumption and Efficiency Statistics, Form EIA-846, *2022 Manufacturing Energy Consumption Survey*, and the Bureau of the Census, data files for the *2022 Economic Census, Manufacturing – Industry Series*

Note: Totals may not equal sum of components because of independent rounding. The derived estimates presented in this table are for the first use (formerly primary consumption) of energy for heat and power and as feedstock or raw material inputs. *First use* is defined as the consumption of the energy that was originally produced offsite or was produced onsite from input materials not classified as energy. Examples of the latter are hydrogen produced from the electrolysis of brine; the output of captive (onsite) mines or wells; wood chips, bark, and wood waste from wood purchased as a raw material input; and waste materials, such as wastepaper and packing materials. First use excludes quantities of energy that are produced from other energy inputs and, therefore, avoids double counting.

^a *Value of shipments and receipts* and *employment size* categories were supplied by the Bureau of the Census.

^b *Total* is the sum of all the listed energy sources, including *Other*, minus the *Shipments of energy sources produced onsite*. It is the total amount of first use of energy for all (fuel and nonfuel) purposes.

^c *Net electricity* is obtained by summing purchases, transfers in, and generation from noncombustible renewable resources, minus quantities sold and transferred out. It does not include electricity inputs from onsite cogeneration or generation from combustible fuels because that energy has already been included as generating fuel (for example, coal).

^d *Distillate fuel oil* includes Nos. 1, 2, and 4 fuel oils and Nos. 1, 2, and 4 diesel fuels.

^e *Natural gas* includes natural gas obtained from utilities, local distribution companies, and any other suppliers, such as independent gas producers, gas brokers, marketers, and any marketing subsidiaries of utilities.

^f Hydrocarbon gas liquids (HGLs) 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 (NGLs).

^g *Other* includes net steam (the sum of purchases, generation from renewables, and net transfers) and other energy that respondents indicated was used to produce heat and power or as feedstock/raw material inputs. See also Footnote *i*.

^h *Shipments of energy sources produced onsite* are those shipments produced or transformed onsite from the nonfuel use of other energy sources. For example, at an establishment that processes coal to make coke for later use, the entire quantity of coal is counted as first use. Any onsite consumption of coke is not counted as first use because it would duplicate the coal use. If some of the coke is then sold to another establishment, that second establishment will consider this coke to be a shipment of an offsite-produced energy source. Hence, the second establishment will count this coke as its first use, thereby resulting in double counting. In order to eliminate the double counting, the energy equivalent of the coke shipment must be subtracted from first use.

ⁱ Previously, the *Manufacturing Energy Consumption Survey* (MECS) accounted for energy consumed in petroleum refineries by measuring their own fuel use, assuming shipments of fuel products would later be counted in the industries that use them, and assigning the heat equivalent of the nonfuel products to the petroleum refinery (for a more detailed explanation see, *Feedstock and Offsite-Produced Fuel at Petroleum Refineries*). Starting with the 2014 MECS, however, EIA began collecting asphalt and petrochemical feedstock data from establishments that use those nonfuel products. These data are included in the *Other* column. However, other *Miscellaneous Nonfuel Products* (that is, lubricants, solvents, waxes, and special naphthas) from refineries and used elsewhere throughout the manufacturing sector as energy are not collected on the MECS. An estimate of the *Miscellaneous Nonfuel Products* used in manufacturing was derived using EIA's [U.S. Product Supplied for Crude Oil and Petroleum Products](#) data.

* 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

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).

RSE Table 1.3 Relative standard errors for Table 1.3
Unit: Percentage

Economic characteristic ^a	Total ^b	Net electricity ^c	Residual fuel oil	Distillate fuel oil ^d	Natural gas ^e	HGL (excluding natural gasoline) ^f	Coal	Coke and breeze	Other ^g	Shipments of energy sources produced onsite ^h
Total United States										
Value of shipments and receipts (million dollars)										
Under 20	6.9	17.2	17.2	15.2	6.8	1.6	15.4	44.0	15.6	4.3
20–49	7.3	7.7	56.5	15.1	13.4	15.0	1.5	16.4	10.2	0.1
50–99	9.4	8.2	1.0	32.8	14.9	1.9	11.7	8.1	18.6	0.0
100–249	3.6	8.0	1.4	8.5	D	11.3	D	0.0	8.6	0.0
250–499	1.3	2.8	6.2	17.1	D	0.4	D	0.0	1.2	0.0
500 and over	1.0	2.6	0.0	2.7	1.7	0.1	0.0	0.0	1.6	0.2
Subtotal	1.2	3.1	1.4	6.7	2.0	0.1	2.3	0.5	2.1	0.2
Not ascertained ⁱ	0.0	X	X	X	X	X	X	X	0.0	X
Total	1.2	3.1	1.4	6.7	2.0	0.1	2.3	0.5	2.1	0.2
Employment size										
Under 50	4.7	15.6	D	16.3	D	1.5	D	10.2	9.6	4.2
50–99	4.4	8.3	D	13.4	D	0.8	D	13.7	D	0.0
100–249	5.1	7.6	0.5	17.5	8.6	0.4	9.3	3.0	9.4	4.5
250–499	1.1	4.0	8.8	5.4	2.0	0.2	0.1	3.4	0.8	0.0
500–999	0.6	2.1	3.7	3.7	D	0.1	D	0.0	D	0.0
1,000 and over	1.6	3.4	0.0	12.7	0.7	0.1	0.0	0.0	5.6	0.0
Subtotal	1.2	3.1	1.4	6.7	2.0	0.1	2.3	0.5	2.1	0.2
Not ascertained ⁱ	0.0	X	X	X	X	X	X	X	0.0	X
Total	1.2	3.1	1.4	6.7	2.0	0.1	2.3	0.5	2.1	0.2
Northeast Census Region										
Value of shipments and receipts (million dollars)										
Under 20	23.7	9.4	28.9	28.9	25.3	6.0	0.2	X	36.3	0.0
20–49	8.6	34.1	0.0	37.0	6.8	32.0	0.0	0.0	1.8	X
50–99	11.1	23.0	57.7	19.4	9.6	27.5	0.0	0.0	2.1	0.0
100–249	7.5	10.4	16.3	10.9	9.0	45.8	0.0	X	0.6	X
250–499	8.6	11.2	0.0	3.2	12.8	8.1	0.0	0.0	8.9	X
500 and over	1.8	7.1	0.0	0.1	1.2	5.4	0.0	0.0	2.6	0.0
Total	5.6	6.7	8.5	15.4	4.3	16.6	0.1	0.0	14.8	0.0
Employment size										
Under 50	19.9	8.6	D	D	D	D	0.1	X	28.3	0.0
50–99	13.5	30.6	0.0	D	D	46.5	D	0.0	D	0.0
100–249	6.2	10.5	D	D	6.2	58.0	D	X	1.0	X
250–499	6.0	8.8	45.1	D	7.4	27.1	D	0.0	D	X
500–999	4.4	11.3	D	D	D	D	D	X	0.1	X
1,000 and over	5.5	13.2	X	1.8	5.5	44.4	0.0	0.0	40.5	0.0
Total	5.6	6.7	8.5	15.4	4.3	16.6	0.1	0.0	14.8	0.0
Midwest Census Region										
Value of shipments and receipts (million dollars)										
Under 20	7.5	11.0	99.0	30.4	11.1	42.7	0.1	44.0	10.2	0.4
20–49	16.7	10.7	79.2	10.8	32.0	31.9	0.0	47.2	28.0	X
50–99	8.8	9.4	0.0	12.4	15.7	37.8	0.0	25.9	12.5	X
100–249	6.7	18.8	X	7.1	D	19.5	D	0.0	1.9	0.0
250–499	2.3	4.6	1.5	51.4	D	2.9	D	0.0	7.0	0.0
500 and over	2.4	2.9	0.0	7.0	1.2	0.2	0.0	0.0	8.7	0.0
Total	2.3	5.3	2.1	10.8	3.1	2.1	0.1	0.5	6.5	0.1
Employment size										
Under 50	4.5	8.3	2.4	D	D	D	D	20.1	8.4	96.1
50–99	8.3	14.5	0.0	D	D	D	0.0	39.4	D	0.0
100–249	8.2	19.6	0.0	6.6	13.1	24.7	0.0	0.0	4.2	0.0
250–499	2.8	4.9	D	D	6.0	0.6	D	4.3	D	0.0
500–999	2.9	5.1	D	D	D	D	D	0.0	D	X
1,000 and over	5.4	5.9	0.0	D	1.7	9.6	D	0.0	D	0.0
Total	2.3	5.3	2.1	10.8	3.1	2.1	0.1	0.5	6.5	0.1
South Census Region										
Value of shipments and receipts (million dollars)										
Under 20	D	35.7	23.2	25.9	9.6	0.5	38.9	X	6.3	D
20–49	10.4	9.3	85.7	23.0	16.1	21.4	8.6	1.0	7.9	0.0
50–99	D	13.0	0.0	53.0	25.1	1.6	1.4	14.2	1.5	D

100–249	6.1	4.8	0.0	12.9	9.2	3.8	0.0	0.0	13.3	X
250–499	1.4	3.5	11.2	1.7	2.4	0.2	0.1	0.0	0.8	0.0
500 and over	1.4	4.5	0.0	2.3	2.6	0.1	0.0	0.0	0.7	0.2
Total	1.5	5.4	1.4	9.9	3.2	0.1	1.7	5.2	1.3	0.2

Employment size

Under 50	D	33.7	D	D	4.8	0.4	0.0	72.2	7.3	D
50–99	D	9.3	D	D	11.7	0.6	D	0.0	1.5	D
100–249	6.6	8.3	0.0	D	13.1	0.2	D	D	8.7	4.8
250–499	1.3	7.8	D	D	1.6	0.1	D	D	0.9	0.0
500–999	0.5	2.0	8.7	D	1.1	0.1	D	0.0	0.5	0.0
1,000 and over	0.7	5.4	X	D	0.7	0.1	D	0.0	0.3	0.0
Total	1.5	5.4	1.4	9.9	3.2	0.1	1.7	5.2	1.3	0.2

West Census Region

Value of shipments and receipts

(million dollars)										
Under 20	D	11.3	43.1	38.4	16.5	18.0	0.0	X	32.1	D
20–49	5.6	12.1	41.7	24.7	12.9	36.5	0.0	0.0	5.9	38.5
50–99	D	25.2	0.0	58.0	20.5	28.3	40.3	0.0	72.7	D
100–249	6.2	7.2	0.0	0.7	3.2	17.9	28.3	0.0	0.1	X
250–499	4.2	10.4	0.0	7.1	4.5	45.0	0.0	0.0	2.4	X
500 and over	0.4	3.2	X	0.2	0.3	0.9	0.0	X	0.1	0.0
Total	5.1	5.3	4.4	21.0	2.7	4.9	18.3	0.0	7.4	22.8

Employment size

Under 50	D	9.5	23.7	D	12.1	D	0.0	0.0	17.8	D
50–99	D	11.9	X	24.9	6.1	D	D	0.0	D	D
100–249	21.7	15.7	D	D	10.7	10.3	31.6	D	40.6	X
250–499	1.4	6.4	D	10.0	2.1	5.6	D	D	D	X
500–999	1.8	8.9	0.0	D	2.2	D	0.0	0.0	D	0.0
1,000 and over	0.8	3.9	X	D	0.8	6.2	D	X	D	X
Total	5.1	5.3	4.4	21.0	2.7	4.9	18.3	0.0	7.4	22.8

Data source: U.S. Energy Information Administration, Office of Energy Consumption and Efficiency Statistics, Form EIA-846, *2022 Manufacturing Energy Consumption Survey*, and the Bureau of the Census, data files for the *2022 Economic Census, Manufacturing – Industry Series*

Note: Totals may not equal sum of components because of independent rounding. The derived estimates presented in this table are for the first use (formerly primary consumption) of energy for heat and power and as feedstock or raw material inputs. *First use* is defined as the consumption of the energy that was originally produced offsite or was produced onsite from input materials not classified as energy. Examples of the latter are hydrogen produced from the electrolysis of brine; the output of captive (onsite) mines or wells; wood chips, bark, and wood waste from wood purchased as a raw material input; and waste materials, such as wastepaper and packing materials. First use excludes quantities of energy that are produced from other energy inputs and, therefore, avoids double counting.

^a *Value of shipments and receipts and employment size* categories were supplied by the Bureau of the Census.

^b *Total* is the sum of all the listed energy sources, including *Other*, minus the *Shipments of energy sources produced onsite*. It is the total amount of first use of energy for all (fuel and nonfuel) purposes.

^c *Net electricity* is obtained by summing purchases, transfers in, and generation from noncombustible renewable resources, minus quantities sold and transferred out. It does not include electricity inputs from onsite cogeneration or generation from combustible fuels because that energy has already been included as generating fuel (for example, coal).

^d *Distillate fuel oil* includes Nos. 1, 2, and 4 fuel oils and Nos. 1, 2, and 4 diesel fuels.

^e *Natural gas* includes natural gas obtained from utilities, local distribution companies, and any other suppliers, such as independent gas producers, gas brokers, marketers, and any marketing subsidiaries of utilities.

^f Hydrocarbon gas liquids (HGLs) 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 (NGLs).

^g *Other* includes net steam (the sum of purchases, generation from renewables, and net transfers) and other energy that respondents indicated was used to produce heat and power or as feedstock/raw material inputs. See also Footnote *i*.

^h *Shipments of energy sources produced onsite* are those shipments produced or transformed onsite from the nonfuel use of other energy sources. For example, at an establishment that processes coal to make coke for later use, the entire quantity of coal is counted as first use. Any onsite consumption of coke is not counted as first use because it would duplicate the coal use. If some of the coke is then sold to another establishment, that second establishment will consider this coke to be a shipment of an offsite-produced energy source. Hence, the second establishment will count this coke as its first use, thereby resulting in double counting. In order to eliminate the double counting, the energy equivalent of the coke shipment must be subtracted from first use.

ⁱ Previously, the *Manufacturing Energy Consumption Survey* (MECS) accounted for energy consumed in petroleum refineries by measuring their own fuel use, assuming shipments of fuel products would later be counted in the industries that use them, and assigning the heat equivalent of the nonfuel products to the petroleum refinery (for a more detailed explanation see, *Feedstock and Offsite-Produced Fuel at Petroleum Refineries*). Starting with the 2014 MECS, however, EIA began collecting asphalt and petrochemical feedstock data from establishments that use those nonfuel products. These data are included in the *Other* column. However, other *Miscellaneous Nonfuel Products* (that is, lubricants, solvents, waxes, and special naphthas) from refineries and used elsewhere throughout the manufacturing sector as energy are not collected on the MECS. An estimate of the *Miscellaneous Nonfuel Products* used in manufacturing was derived using EIA's [U.S. Product Supplied for Crude Oil and Petroleum Products](#) data.

* 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

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

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).