

Released: August 2021

Next MECS will be fielded in 2023.

Table 1.4 Number of Establishments by First Use of Energy for All Purposes (Fuel and Nonfuel), 2018;

Level: National Data;

Row: NAICS Codes; Column: Energy Sources and Shipments;

Unit: Establishment Counts.

NAICS Code(a)	Subsector and Industry	Any Energy Source(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											
311	Food	15,842	15,800	16	1,763	12,813	3,243	27	9	1,529	4
3112	Grain and Oilseed Milling	611	611	6	132	508	146	11	0	107	4
311221	Wet Corn Milling	52	52	0	22	46	28	4	0	25	0
31131	Sugar Manufacturing	70	70	D	23	62	21	17	9	29	0
3114	Fruit and Vegetable Preserving and Specialty Food	1,047	1,047	D	163	888	323	0	0	136	0
3115	Dairy Product	1,036	1,036	4	166	916	231	0	0	120	0
3116	Animal Slaughtering and Processing	1,842	1,842	D	285	1,527	353	0	0	153	0
312	Beverage and Tobacco Products	3,938	3,938	5	374	1,809	2,108	3	0	427	0
3121	Beverages	3,853	3,853	D	354	1,756	2,081	3	0	419	0
3122	Tobacco	85	85	D	20	53	27	0	0	8	0
313	Textile Mills	1,352	1,352	Q	181	819	516	10	0	76	0
314	Textile Product Mills	4,116	4,116	0	Q	2,016	799	D	0	Q	0
315	Apparel	3,856	3,856	0	D	1,060	Q	Q	0	Q	0
316	Leather and Allied Products	655	655	0	D	284	152	0	0	7	0
321	Wood Products	9,433	9,229	24	2,168	4,606	4,418	Q	0	1,983	0
32113	Sawmills	1,787	1,782	D	850	411	461	0	0	617	0
3212	Veneer, Plywood, and Engineered Woods	1,083	1,079	D	270	794	470	Q	0	180	0
321219	Reconstituted Wood Products	158	158	D	78	127	79	0	0	62	0
3219	Other Wood Products	6,284	6,089	Q	948	3,232	3,393	Q	0	1,141	0
322	Paper	3,009	3,009	47	246	2,662	1,545	37	0	274	0
322110	Pulp Mills	28	28	D	18	27	18	D	0	21	0
322121	Paper Mills, except Newsprint	156	156	20	71	147	91	23	0	78	0
322122	Newsprint Mills	11	11	0	9	9	10	0	0	10	0
322130	Paperboard Mills	143	143	17	77	137	91	10	0	78	0
323	Printing and Related Support	12,614	12,614	D	402	8,458	1,692	0	0	400	0
324	Petroleum and Coal Products	1,883	1,880	48	756	1,191	440	9	0	1,241	23
324110	Petroleum Refineries	136	136	D	72	128	51	0	0	128	0
324121	Asphalt Paving Mixture and Block	1,289	1,288	42	571	724	196	D	0	933	0
324122	Asphalt Shingle and Coating Materials	168	168	D	35	156	98	0	0	117	D
324191	Petroleum Lubricating Oil and Grease Products	211	211	0	39	127	72	0	0	30	D
324199	Other Petroleum and Coal Products	79	78	0	39	56	23	D	0	32	19
325	Chemicals	8,901	8,872	19	1,375	7,121	4,080	68	D	1,417	40
325110	Petrochemicals	66	66	0	32	49	41	0	0	33	12
325120	Industrial Gases	525	525	0	3	242	111	0	0	69	8
325180	Other Basic Inorganic Chemicals	501	501	12	118	416	224	5	D	181	0
325193	Ethyl Alcohol	207	207	0	103	199	74	3	0	92	0
325194	Cyclic Crudes, Intermediate and Gum and Wood Chemicals	61	61	0	18	56	22	5	0	44	D
325199	Other Basic Organic Chemicals	524	524	3	159	473	233	Q	0	183	11
325211	Plastics Materials and Resins	813	813	0	173	669	557	D	0	175	D
325212	Synthetic Rubber	87	87	0	17	76	38	D	0	28	0
325220	Artificial and Synthetic Fibers and Filaments	99	99	0	12	83	56	D	0	9	0
325311	Nitrogenous Fertilizers	148	148	0	100	139	93	0	0	25	0

325312	Phosphatic Fertilizers	55	55	D	18	34	21	D	0	15	0
3254	Pharmaceuticals and Medicines	1,326	1,297	0	199	1,055	220	D	0	125	0
325412	Pharmaceutical Preparation	716	687	0	100	531	104	D	0	54	0
325992	Photographic Film, Paper, Plate, and Chemicals	108	108	D	14	87	23	0	0	15	0
326	Plastics and Rubber Products	8,317	8,317	3	763	5,532	3,441	0	0	694	0
327	Nonmetallic Mineral Products	12,035	12,035	Q	4,014	7,131	3,242	143	D	1,968	0
327120	Clay Building Material and Refractories	415	415	0	132	361	181	4	0	66	0
327211	Flat Glass	60	60	0	14	40	23	D	0	12	0
327212	Other Pressed and Blown Glass and Glassware	164	164	0	32	148	83	0	0	18	0
327213	Glass Containers	57	57	0	19	56	21	0	0	17	0
327215	Glass Products from Purchased Glass	686	686	0	62	534	225	0	0	55	0
327310	Cements	187	187	0	70	121	49	82	6	96	0
327410	Lime	86	86	0	47	49	19	48	5	38	0
327420	Gypsum	148	148	0	87	135	87	0	0	13	0
327993	Mineral Wool	191	191	0	24	164	93	D	D	15	0
331	Primary Metals	3,226	3,226	D	625	2,835	2,095	61	70	723	13
331110	Iron and Steel Mills and Ferroalloys	390	390	D	158	337	229	48	29	154	D
3312	Steel Products from Purchased Steel	498	498	0	113	435	359	3	4	184	0
3313	Alumina and Aluminum	399	399	0	102	356	240	0	0	76	D
331314	Secondary Smelting and Alloying of Aluminum	109	109	0	37	98	70	0	0	15	0
331315	Aluminum Sheet, Plate and Foils	65	65	0	30	62	37	0	0	18	D
331318	Other Aluminum Rolling, Drawing and Extruding	191	191	0	27	162	123	0	0	35	0
3314	Nonferrous Metals, except Aluminum	651	651	0	55	572	363	3	13	85	0
331410	Nonferrous Metal (except Aluminum) Smelting and Refining	107	107	0	14	92	75	3	D	16	0
3315	Foundries	1,288	1,288	Q	196	1,135	904	6	25	224	0
331511	Iron Foundries	373	373	0	83	329	306	3	25	72	0
331523	Nonferrous Metal Die-Casting Foundries	257	257	Q	34	250	192	0	0	52	0
331524	Aluminum Foundries, except Die-Casting	277	277	0	18	204	173	0	0	27	0
332	Fabricated Metal Products	37,949	37,949	0	2,095	23,099	14,651	Q	0	5,420	0
333	Machinery	14,919	14,919	Q	1,411	9,986	5,326	Q	0	1,781	0
334	Computer and Electronic Products	6,646	6,646	3	152	3,802	804	0	0	325	0
334413	Semiconductors and Related Devices	344	344	D	65	146	25	0	0	72	0
335	Electrical Equip., Appliances, and Components	3,295	3,295	D	275	2,119	902	0	0	391	0
336	Transportation Equipment	7,032	7,032	14	986	4,565	2,570	0	D	1,162	0
336111	Automobiles	71	71	0	21	59	26	0	0	28	0
336112	Light Trucks and Utility Vehicles	69	69	0	21	52	33	0	0	26	0
3364	Aerospace Product and Parts	1,199	1,199	D	150	769	350	0	0	192	0
336411	Aircraft	347	347	0	38	216	103	0	0	55	0
337	Furniture and Related Products	8,347	8,201	0	359	4,276	2,642	D	0	466	0
339	Miscellaneous	13,589	13,589	0	583	7,015	2,599	Q	0	741	0
	Total	180,953	180,529	300	18,696	113,200	57,598	1,074	99	21,185	80

(a) The Bureau of the Census classifies establishments using the 2017 North American Industry Classification System (NAICS).

(b) Any *Energy Source* represents the non-duplicative total of establishments identified with any of the listed energy sources. This count includes only those establishments that reported this activity in 2018.

(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 supplier(s), such as independent gas producers, gas brokers, marketers, and any marketing subsidiaries of utilities.

(f) *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).

(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.

(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, then 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.

* Estimate less than 0.5.

D=Withheld to avoid disclosing data for individual establishments.

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

NA=Not available.

Notes: 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 feedstocks 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.

Source: U.S. Energy Information Administration, Office of Energy Consumption and Efficiency 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: CDRB-FY20-260).

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RSE Table 1.4 Relative Standard Errors for Table 1.4;

Unit: Percents.

NAICS Code(a)	Subsector and Industry	Any Energy Source(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											
311	Food	0.0	0.1	5.4	3.9	1.5	4.1	0.3	0.0	4.1	8.5
3112	Grain and Oilseed Milling	0.0	0.0	34.8	4.7	2.9	4.7	1.0	X	4.4	
311221	Wet Corn Milling	0.0	0.0	X	0.0	0.0	0.0	0.0	X	0.0	X
31131	Sugar Manufacturing	0.0	0.0	D	0.0	0.0	0.0	0.0	0.0	0.0	X
3114	Fruit and Vegetable Preserving and Specialty Food	0.0	0.0	D	14.9	5.8	14.7	X	X	22.9	X
3115	Dairy Product	0.0	0.0	46.1	19.9	3.9	15.4	X	X	27.8	X
3116	Animal Slaughtering and Processing	0.0	0.0	D	14.8	4.4	17.3	X	X	22.9	X
312	Beverage and Tobacco Products	0.0	0.0	0.0	6.7	3.4	4.5	0.0	X	11.9	X
3121	Beverages	0.0	0.0	D	23.9	8.2	7.1	0.0	X	22.3	X
3122	Tobacco	0.0	0.0	D	0.0	0.0	0.0	X	X	0.0	X
313	Textile Mills	0.5	0.5	62.7	28.4	9.3	14.3	42.4	X	36.9	X
314	Textile Product Mills	0.0	0.0	X	71.0	19.9	38.8	D	X	82.0	X
315	Apparel	0.0	0.0	X	D	32.4	64.2	96.7	X	99.5	X
316	Leather and Allied Products	0.0	0.0	X	D	19.7	29.5	X	X	19.9	X
321	Wood Products	0.0	0.4	16.3	8.4	4.5	7.2	53.8	X	8.0	X
321113	Sawmills	0.0	0.0	D	7.3	11.1	9.1	X	X	8.0	X
3212	Veneer, Plywood, and Engineered Woods	0.0	0.2	D	16.2	5.5	13.2	80.8	X	14.9	X
321219	Reconstituted Wood Products	0.0	0.0	D	21.6	7.9	21.5	X	X	19.3	X
3219	Other Wood Products	0.0	1.8	86.4	17.9	9.0	8.5	70.6	X	18.2	X
322	Paper	0.0	0.0	0.0	0.5	1.0	1.9	0.0	X	0.7	X
322110	Pulp Mills	0.0	0.0	D	0.0	0.0	0.0	D	X	0.0	X
322121	Paper Mills, except Newsprint	0.0	0.0	0.0	0.0	0.0	0.0	0.0	X	0.0	X
322122	Newsprint Mills	0.0	0.0	X	0.0	0.0	0.0	X	X	0.0	X
322130	Paperboard Mills	0.0	0.0	0.0	0.0	0.0	0.0	0.0	X	0.0	X
323	Printing and Related Support	0.0	0.0	D	39.8	5.4	18.5	X	X	37.4	X
324	Petroleum and Coal Products	0.0	0.0	9.7	3.0	2.5	5.3	0.0	X	3.7	3.9
324110	Petroleum Refineries	0.0	0.0	D	0.0	0.0	0.0	X	X	0.0	X
324121	Asphalt Paving Mixture and Block	0.0	0.0	22.9	6.3	5.4	16.5	D	X	4.6	X
324122	Asphalt Shingle and Coating Materials	0.0	0.0	D	12.3	1.4	9.8	X	X	12.4	D
324191	Petroleum Lubricating Oil and Grease Products	0.0	0.0	X	22.3	14.4	19.5	X	X	36.9	D
324199	Other Petroleum and Coal Products	0.0	0.0	X	0.0	0.0	0.0	D	X	0.0	0.0
325	Chemicals	0.0	0.3	8.0	4.6	1.5	3.8	7.6	D	3.7	1.1
325110	Petrochemicals	0.0	0.0	X	0.0	0.0	0.0	X	X	0.0	0.0
325120	Industrial Gases	0.0	0.0	X	12.1	16.3	40.7	X	X	46.8	12.1
325180	Other Basic Inorganic Chemicals	0.0	0.0	17.8	16.9	7.9	14.8	9.4	D	17.2	X
325193	Ethyl Alcohol	0.0	0.0	X	6.0	1.1	7.5	4.1	X	7.2	X
325194	Cyclic Crudes, Intermediate and Gum and Wood Chemicals	0.0	0.0	X	0.0	0.0	0.0	0.0	X	0.0	D
325199	Other Basic Organic Chemicals	0.0	0.0	8.8	12.5	2.7	11.7	53.2	X	12.7	8.8
325211	Plastics Materials and Resins	0.0	0.0	X	18.2	6.1	7.0	D	X	16.5	D
325212	Synthetic Rubber	0.0	0.0	X	0.0	0.0	0.0	D	X	0.0	X
325220	Artificial and Synthetic Fibers and Filaments	0.0	0.0	X	0.0	0.0	0.0	D	X	0.0	X
325311	Nitrogenous Fertilizers	0.0	0.0	X	22.6	2.6	26.6	X	X	46.2	X
325312	Phosphatic Fertilizers	0.0	0.0	D	0.0	0.0	0.0	D	X	0.0	X
3254	Pharmaceuticals and Medicines	0.0	2.0	X	14.9	5.7	21.0	D	X	26.4	X

325412	Pharmaceutical Preparation	0.0	4.0	X	16.7	9.3	32.8	D	X	25.5	X
325992	Photographic Film, Paper, Plate, and Chemicals	0.0	0.0	D	22.3	10.6	27.2	X	X	18.8	X
326	Plastics and Rubber Products	0.0	0.0	0.0	24.9	6.1	10.0	X	X	25.4	X
327	Nonmetallic Mineral Products	0.0	0.0	97.5	5.1	1.9	6.0	6.8	D	5.1	X
327120	Clay Building Material and Refractories	0.0	0.0	X	15.0	5.8	12.0	8.6	X	13.2	X
327211	Flat Glass	0.0	0.0	X	0.0	0.0	0.0	D	X	0.0	X
327212	Other Pressed and Blown Glass and Glassware	0.0	0.0	X	29.4	5.0	23.0	X	X	26.5	X
327213	Glass Containers	0.0	0.0	X	0.0	0.0	0.0	X	X	0.0	X
327215	Glass Products from Purchased Glass	0.0	0.0	X	25.9	6.4	17.5	X	X	17.1	X
327310	Cements	0.0	0.0	X	25.4	14.8	38.2	15.8	19.0	18.2	X
327410	Lime	0.0	0.0	X	0.0	0.0	0.0	0.0	0.0	0.0	X
327420	Gypsum	0.0	0.0	X	15.3	4.0	16.5	X	X	15.0	X
327993	Mineral Wool	0.0	0.0	X	18.9	5.3	22.0	D	D	20.5	X
331	Primary Metals	0.0	0.0	D	4.0	1.4	2.3	3.4	7.5	4.5	0.0
331110	Iron and Steel Mills and Ferroalloys	0.0	0.0	D	0.0	0.0	0.0	0.0	0.0	0.0	D
3312	Steel Products from Purchased Steel	0.0	0.0	X	24.0	4.0	8.4	10.0	10.0	18.0	X
3313	Alumina and Aluminum	0.0	0.0	X	4.5	1.6	3.9	X	X	5.5	D
331314	Secondary Smelting and Alloying of Aluminum	0.0	0.0	X	14.8	1.4	8.7	X	X	18.4	X
331315	Aluminum Sheet, Plate and Foils	0.0	0.0	X	0.0	0.0	0.0	X	X	0.0	D
331318	Other Aluminum Rolling, Drawing and Extruding	0.0	0.0	X	10.2	6.6	10.1	X	X	20.7	X
3314	Nonferrous Metals, except Aluminum	0.0	0.0	X	14.8	3.9	7.2	18.0	14.2	14.0	X
331410	Nonferrous Metal (except Aluminum) Smelting and Refining	0.0	0.0	X	21.6	3.0	8.3	18.0	D	21.7	X
3315	Foundries	0.0	0.0	88.2	11.4	3.2	3.8	16.1	18.7	10.4	X
331511	Iron Foundries	0.0	0.0	X	20.4	7.1	7.1	17.5	18.7	21.6	X
331523	Nonferrous Metal Die-Casting Foundries	0.0	0.0	88.2	28.9	0.6	4.1	X	X	20.1	X
331524	Aluminum Foundries, except Die-Casting	0.0	0.0	X	15.9	12.4	11.1	X	X	13.2	X
332	Fabricated Metal Products	0.0	0.0	X	24.8	4.9	7.7	70.2	X	14.9	X
333	Machinery	0.0	0.0	98.9	19.5	4.6	8.8	98.9	X	17.4	X
334	Computer and Electronic Products	0.0	0.0	12.0	17.7	9.8	17.6	X	X	27.0	X
334413	Semiconductors and Related Devices	0.0	0.0	D	18.9	19.9	15.4	X	X	31.5	X
335	Electrical Equip., Appliances, and Components	0.0	0.0	D	37.2	11.5	22.6	X	X	34.4	X
336	Transportation Equipment	0.2	0.2	37.8	5.2	3.9	6.9	X	D	4.6	X
336111	Automobiles	0.0	0.0	X	0.0	0.0	0.0	X	X	0.0	X
336112	Light Trucks and Utility Vehicles	0.0	0.0	X	0.0	0.0	0.0	X	X	0.0	X
3364	Aerospace Product and Parts	0.0	0.0	D	15.8	10.1	19.6	X	X	14.5	X
336411	Aircraft	0.0	0.0	X	23.3	18.0	36.0	X	X	21.2	X
337	Furniture and Related Products	0.0	1.2	X	40.1	8.7	12.8	D	X	34.4	X
339	Miscellaneous	0.7	0.7	X	34.5	7.7	16.1	98.8	X	31.8	X
	Total	0.1	0.1	3.5	1.7	0.7	1.5	4.1	3.6	1.5	1.8

- (a) The Bureau of the Census classifies establishments using the 2017 North American Industry Classification System (NAICS).
- (b) *Any Energy Source* represents the non-duplicative total of establishments identified with any of the listed energy sources. This count includes only those establishments that reported this activity in 2018.
- (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 supplier(s), such as independent gas producers, gas brokers, marketers, and any marketing subsidiaries of utilities.
- (f) *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).
- (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.
- (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, then 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.

* Estimate less than 0.5.

D=Withheld to avoid disclosing data for individual establishments.

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

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

NA=Not available.

Notes: 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

Notes: 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 feedstocks 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.

Source: U.S. Energy Information Administration, Office of Energy Consumption and Efficiency 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).