

Released: August 2021
 Next MECS will be fielded in 2023.

Table 10.3 Number of Establishments with Capability to Switch Natural Gas to Alternative Energy Sources, 2018;

Level: National Data;
Row: NAICS Codes;
Column: Energy Sources;
Unit: Establishment Counts.

NAICS Code(a)	Subsector and Industry	Natural Gas(b)			Alternative Energy Sources(c)						Coal Coke and Breeze	
		Total Consumed(d)	Switchable	Not Switchable	Electricity Receipts(e)	Distillate Fuel Oil	Residual Fuel Oil	Coal	HGL (excluding natural gasoline)		Other(f)	
Total United States												
311	Food	12,659	871	12,266	256	498	64	30	313	0	60	
3112	Grain and Oilseed Milling	508	53	470	7	19	10	5	15	0	5	
311221	Wet Corn Milling	46	7	42	0	0	0	D	5	0	0	
31131	Sugar Manufacturing	61	9	57	0	D	D	D	D	0	D	
3114	Fruit and Vegetable Preserving and Specialty Food	880	56	851	5	37	7	0	11	0	D	
3115	Dairy Product	875	107	826	D	58	16	0	25	0	12	
3116	Animal Slaughtering and Processing	1,500	148	1,390	D	76	D	D	83	0	Q	
312	Beverage and Tobacco Products	1,768	60	1,725	4	24	11	0	18	0	13	
3121	Beverages	1,716	50	1,677	D	20	Q	0	Q	0	13	
3122	Tobacco	52	9	48	D	4	3	0	3	0	0	
313	Textile Mills	818	124	743	20	75	18	D	28	D	0	
314	Textile Product Mills	2,016	34	1,990	D	26	0	0	15	0	0	
315	Apparel	1,054	12	1,044	4	6	0	0	3	0	0	
316	Leather and Allied Products	281	8	276	3	5	D	0	3	0	0	
321	Wood Products	4,528	318	4,255	225	24	8	D	41	0	46	
321113	Sawmills	410	29	387	18	4	3	0	11	0	11	
3212	Veneer, Plywood, and Engineered Woods	794	99	703	Q	D	D	D	17	0	7	
321219	Reconstituted Wood Products	127	15	117	0	D	D	0	9	0	3	
3219	Other Wood Products	3,156	186	3,000	Q	0	3	0	Q	0	Q	
322	Paper	2,534	336	2,305	140	98	23	15	122	D	16	
322110	Pulp Mills	27	5	25	0	D	D	D	0	0	D	
322121	Paper Mills, except Newsprint	145	33	139	D	12	7	7	D	D	5	
322122	Newsprint Mills	9	D	7	0	0	0	0	D	0	D	
322130	Paperboard Mills	136	31	128	4	11	12	5	D	0	7	
323	Printing and Related Support	8,297	375	8,004	Q	Q	Q	0	Q	0	D	
324	Petroleum and Coal Products	1,171	220	1,004	50	149	100	4	68	0	26	
324110	Petroleum Refineries	128	33	127	6	D	D	0	21	0	6	
324121	Asphalt Paving Mixture and Block	704	174	542	39	141	D	D	43	0	20	
324122	Asphalt Shingle and Coating Materials	156	10	154	D	5	0	0	D	0	0	
324191	Petroleum Lubricating Oil and Grease Products	127	3	126	D	D	0	D	D	0	0	
324199	Other Petroleum and Coal Products	56	0	56	0	0	0	0	0	0	0	
325	Chemicals	7,048	563	6,707	272	232	36	6	73	0	19	
325110	Petrochemicals	48	9	46	D	4	D	0	D	0	D	
325120	Industrial Gases	236	Q	186	Q	0	0	0	D	0	0	
325180	Other Basic Inorganic Chemicals	410	14	407	0	Q	D	D	0	0	D	
325193	Ethyl Alcohol	198	D	195	0	D	0	0	6	0	D	
325194	Cyclic Crudes, Intermediate and Gum and Wood Chemicals	56	27	56	0	25	0	0	0	0	D	
325199	Other Basic Organic Chemicals	457	48	432	5	32	9	3	3	0	4	
325211	Plastics Materials and Resins	665	47	640	D	8	3	0	27	0	8	
325212	Synthetic Rubber	76	13	70	5	5	D	D	3	0	0	
325220	Artificial and Synthetic Fibers and Filaments	82	13	74	5	10	D	0	4	0	0	
325311	Nitrogenous Fertilizers	135	D	133	0	D	0	0	0	0	0	
325312	Phosphatic Fertilizers	29	0	29	0	0	0	0	0	0	0	
3254	Pharmaceuticals and Medicines	1,030	78	987	Q	59	5	D	11	0	D	
325412	Pharmaceutical Preparation	524	50	491	D	39	D	D	6	0	D	
325992	Photographic Film, Paper, Plate, and Chemicals	86	15	80	0	D	D	0	6	0	0	
326	Plastics and Rubber Products	5,457	247	5,302	Q	Q	Q	0	Q	0	Q	
327	Nonmetallic Mineral Products	7,002	531	6,647	230	6	57	33	201	8	18	
327120	Clay Building Material and Refractories	361	35	338	16	D	0	6	Q	0	Q	
327211	Flat Glass	40	4	37	0	D	0	0	3	0	0	

327212	Other Pressed and Blown Glass and Glassware	148	8	146	D	0	0	0	D	0	D
327213	Glass Containers	56	0	56	0	0	0	0	0	0	0
327215	Glass Products from Purchased Glass	519	Q	466	Q	D	0	0	7	0	D
327310	Cements	91	23	76	D	0	D	20	0	8	3
327410	Lime	48	8	46	0	0	0	8	0	0	0
327420	Gypsum	134	D	133	0	D	0	0	0	0	0
327993	Mineral Wool	163	7	160	D	D	0	0	D	0	D
331	Primary Metals	2,797	145	2,720	58	18	9	4	71	0	11
331110	Iron and Steel Mills and Ferroalloys	334	26	323	15	D	D	4	11	0	0
3312	Steel Products from Purchased Steel	424	9	422	Q	D	D	0	D	0	D
3313	Alumina and Aluminum	354	12	350	3	5	D	0	D	0	4
331314	Secondary Smelting and Alloying of Aluminum	97	D	97	D	0	0	0	D	0	0
331315	Aluminum Sheet, Plate and Foils	62	D	62	0	D	D	0	D	0	D
331318	Other Aluminum Rolling, Drawing and Extruding	162	D	158	D	D	0	0	0	0	D
3314	Nonferrous Metals, except Aluminum	564	28	546	11	8	D	0	7	0	D
331410	Nonferrous Metal (except Aluminum) Smelting and Refining	89	5	86	3	0	0	0	D	0	0
3315	Foundries	1,121	70	1,079	26	0	Q	0	49	0	4
331511	Iron Foundries	326	23	309	10	0	Q	0	21	0	0
331523	Nonferrous Metal Die-Casting Foundries	250	25	236	Q	0	0	0	19	0	D
331524	Aluminum Foundries, except Die-Casting	194	3	193	3	0	0	0	0	0	0
332	Fabricated Metal Products	22,655	1,442	21,362	1,204	Q	Q	0	Q	0	0
333	Machinery	9,780	358	9,436	297	4	0	0	Q	0	D
334	Computer and Electronic Products	3,678	123	3,638	Q	6	D	0	3	0	Q
334413	Semiconductors and Related Devices	126	10	126	D	D	0	0	3	0	0
335	Electrical Equip., Appliances, and Components	2,119	Q	2,074	D	0	0	0	Q	0	0
336	Transportation Equipment	4,396	256	4,239	159	13	D	0	Q	0	72
336111	Automobiles	59	D	59	D	0	0	0	0	0	D
336112	Light Trucks and Utility Vehicles	51	D	51	D	0	0	0	0	0	0
3364	Aerospace Product and Parts	763	29	749	12	D	D	0	6	0	0
336411	Aircraft	216	3	215	D	0	0	0	D	0	0
337	Furniture and Related Products	4,276	Q	4,137	Q	0	0	0	Q	0	0
339	Miscellaneous	6,744	380	6,376	Q	Q	Q	Q	Q	Q	Q
	Total	111,078	6,650	106,249	3,744	1,518	658	194	2,164	105	525

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

(b) These counts include only those establishments that reported this activity in 2018. Establishments for which only a portion of the total consumed fuel was reported as switchable contribute to the establishment counts in both the *Switchable* and *Not Switchable* columns. Therefore, the sum of these establishment counts may be greater than the corresponding establishment count of the total number of establishments consuming the fuel.

(c) *Alternative Energy Sources* consist of those energy sources that could have been substituted for natural gas during 2018. The quantities are expressed in billions of cubic feet, and therefore represent the quantity of natural gas that could have been displaced by the given alternative type of energy.

(d) *Total Consumed* represents those quantities (Total Inputs) of natural gas that were ascertained switchable or not switchable, plus an additional quantity for which the switching status was not ascertained.

(e) *Electricity Receipts* represents those quantities of electricity generated off the manufacturing establishment site and available at the site for consumption. It includes those quantities for which payment was made, quantities transferred in, quantities purchased and paid for by a central purchasing entity, and quantities for which payment was made in kind. It does not include electricity generated onsite. *Electricity Receipts* has not been adjusted to account for any quantities that might have been resold or transferred out. The estimates include those quantities that were ascertained switchable or not switchable, plus an additional quantity for which the switching status was not ascertained.

(f) *Other* includes all other types of energy not already identified that respondents indicated could have been consumed in place of natural gas.

* 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.

Notes: Totals may not equal sum of components because of independent rounding.

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 10.3 Relative Standard Errors for Table 10.3;

Unit: Percents.

NAICS Code(a)	Subsector and Industry	Natural Gas(b)			Alternative Energy Sources(c)					Coal Coke and Breeze		Other(f)
		Total Consumed(d)	Switchable	Not Switchable	Electricity Receipts(e)	Distillate Fuel Oil	Residual Fuel Oil	Coal	HGL (excluding natural gasoline)	Breeze		
Total United States												
311	Food	1.6	5.4	1.7	28.4	12.0	15.4	15.1	9.7	X	22.0	
3112	Grain and Oilseed Milling	2.9	5.9	3.1	31.5	21.5	24.8	0.6	6.2	X	19.5	
311221	Wet Corn Milling	0.0	0.0	0.0	X	X	X	D	0.0	X	X	
31131	Sugar Manufacturing	0.0	0.0	0.0	X	D	D	D	D	X	D	
3114	Fruit and Vegetable Preserving and Specialty Food	5.8	16.2	6.0	29.0	21.8	13.4	X	18.8	X	D	
3115	Dairy Product	4.9	15.7	5.2	D	21.4	22.3	X	28.6	X	47.6	
3116	Animal Slaughtering and Processing	4.6	24.8	5.3	D	34.3	D	D	42.1	X	61.9	
312	Beverage and Tobacco Products	3.5	2.7	3.7	0.0	3.9	6.2	X	6.1	X	34.4	
3121	Beverages	8.3	25.3	8.5	D	39.7	91.4	X	55.3	X	34.4	
3122	Tobacco	0.0	0.0	0.0	D	0.0	0.0	X	0.0	X	X	
313	Textile Mills	9.3	21.8	10.4	38.7	30.4	41.2	D	39.6	D	X	
314	Textile Product Mills	19.9	37.0	20.2	D	44.3	X	X	33.7	X	X	
315	Apparel	32.5	23.4	32.8	0.0	27.2	X	X	0.0	X	X	
316	Leather and Allied Products	19.9	19.2	20.2	15.0	23.6	D	X	15.0	X	X	
321	Wood Products	4.5	20.4	5.1	41.8	45.3	11.1	D	27.5	X	13.2	
321113	Sawmills	11.1	20.1	11.6	30.6	0.0	0.0	X	34.8	X	21.3	
3212	Veneer, Plywood, and Engineered Woods	5.5	25.7	6.9	60.2	D	D	D	30.6	X	14.3	
321219	Reconstituted Wood Products	7.9	24.8	9.8	X	D	D	X	34.3	X	18.0	
3219	Other Wood Products	9.2	47.7	9.6	58.7	X	0.0	X	76.4	X	58.9	
322	Paper	1.2	4.1	1.5	30.9	9.2	0.0	0.0	10.2	D	0.0	
322110	Pulp Mills	0.0	0.0	0.0	X	D	D	D	X	X	D	
322121	Paper Mills, except Newsprint	0.0	0.0	0.0	D	0.0	0.0	0.0	D	D	0.0	
322122	Newsprint Mills	0.0	D	0.0	X	X	X	X	D	X	D	
322130	Paperboard Mills	0.0	0.0	0.0	0.0	0.0	0.0	0.0	D	X	0.0	
323	Printing and Related Support	5.6	42.4	5.9	50.2	95.6	96.6	X	64.5	X	D	
324	Petroleum and Coal Products	2.5	3.4	2.6	7.5	8.0	13.3	14.1	3.6	X	6.7	
324110	Petroleum Refineries	0.0	0.0	0.0	0.0	D	D	X	0.0	X	0.0	
324121	Asphalt Paving Mixture and Block	5.5	10.0	6.3	23.7	11.2	D	D	21.5	X	25.6	
324122	Asphalt Shingle and Coating Materials	1.4	12.1	1.6	D	12.2	X	X	D	X	X	
324191	Petroleum Lubricating Oil and Grease Products	14.4	12.7	14.5	D	D	X	D	D	X	X	
324199	Other Petroleum and Coal Products	0.0	X	0.0	X	X	X	X	X	X	X	
325	Chemicals	1.5	6.7	1.6	23.3	6.3	7.6	2.4	10.0	X	6.1	
325110	Petrochemicals	0.0	0.0	0.0	D	0.0	D	X	D	X	D	
325120	Industrial Gases	16.8	75.6	18.9	75.6	X	X	X	D	X	X	
325180	Other Basic Inorganic Chemicals	7.9	33.2	8.0	X	54.4	D	D	X	X	D	
325193	Ethyl Alcohol	1.1	D	1.2	X	D	X	X	41.4	X	D	
325194	Cyclic Crudes, Intermediate and Gum and Wood Chemicals	0.0	0.0	0.0	X	0.0	X	X	X	X	D	
325199	Other Basic Organic Chemicals	3.1	22.9	4.1	12.5	32.1	33.9	8.8	30.8	X	35.0	
325211	Plastics Materials and Resins	6.2	28.5	6.5	D	22.6	21.3	X	47.0	X	39.0	
325212	Synthetic Rubber	0.0	0.0	0.0	0.0	0.0	D	D	0.0	X	X	
325220	Artificial and Synthetic Fibers and Filaments	0.0	0.0	0.0	0.0	0.0	D	X	0.0	X	X	
325311	Nitrogenous Fertilizers	4.6	D	5.2	X	D	X	X	X	X	X	
325312	Phosphatic Fertilizers	0.0	X	0.0	X	X	X	X	X	X	X	
3254	Pharmaceuticals and Medicines	6.0	22.5	6.2	50.2	27.6	45.8	D	13.9	X	D	
325412	Pharmaceutical Preparation	9.3	28.6	9.7	D	33.3	D	D	23.0	X	D	
325992	Photographic Film, Paper, Plate, and Chemicals	10.7	36.8	11.6	X	D	D	X	18.8	X	X	
326	Plastics and Rubber Products	6.2	42.0	6.4	74.3	65.4	61.5	X	66.3	X	87.2	
327	Nonmetallic Mineral Products	1.8	10.6	1.9	32.1	3.7	48.1	7.9	19.1	16.4	20.7	
327120	Clay Building Material and Refractories	5.8	25.2	6.2	42.7	D	X	8.6	63.0	X	50.6	
327211	Flat Glass	0.0	0.0	0.0	X	D	X	X	0.0	X	X	
327212	Other Pressed and Blown Glass and Glassware	5.0	39.0	5.5	D	X	X	X	D	X	D	
327213	Glass Containers	0.0	X	0.0	X	X	X	X	X	X	X	
327215	Glass Products from Purchased Glass	6.5	57.8	9.0	68.6	D	X	X	16.3	X	D	

327310	Cements	16.5	15.5	17.2	D	X	D	15.5	X	16.4	15.1
327410	Lime	0.0	0.0	0.0	X	X	X	0.0	X	X	X
327420	Gypsum	4.1	D	4.2	X	D	X	X	X	X	X
327993	Mineral Wool	5.4	17.6	5.8	D	D	X	X	D	X	D
331	Primary Metals	1.4	7.9	1.5	13.5	5.7	13.3	0.0	13.8	X	5.1
331110	Iron and Steel Mills and Ferroalloys	0.0	0.0	0.0	0.0	D	D	0.0	0.0	X	X
3312	Steel Products from Purchased Steel	4.2	25.7	4.3	70.4	D	D	X	D	X	D
3313	Alumina and Aluminum	1.6	3.1	1.6	18.1	8.0	D	X	D	X	7.4
331314	Secondary Smelting and Alloying of Aluminum	1.7	D	1.7	D	X	X	X	D	X	X
331315	Aluminum Sheet, Plate and Foils	0.0	D	0.0	X	D	D	X	D	X	D
331318	Other Aluminum Rolling, Drawing and Extruding	6.6	D	6.6	D	D	X	X	X	X	D
3314	Nonferrous Metals, except Aluminum	4.5	12.9	4.7	17.8	15.4	D	X	13.9	X	D
331410	Nonferrous Metal (except Aluminum) Smelting and Refining	5.1	18.0	5.9	18.0	X	X	X	D	X	X
3315	Foundries	3.2	18.3	3.4	29.2	X	81.8	X	23.0	X	4.6
331511	Iron Foundries	7.2	42.1	7.9	48.0	X	81.8	X	44.5	X	X
331523	Nonferrous Metal Die-Casting Foundries	0.6	22.1	1.1	57.2	X	X	X	25.0	X	D
331524	Aluminum Foundries, except Die-Casting	12.8	21.2	12.8	21.2	X	X	X	X	X	X
332	Fabricated Metal Products	5.0	30.4	5.4	34.1	99.4	74.1	X	52.0	X	X
333	Machinery	4.8	38.8	5.0	44.5	0.0	X	X	58.9	X	D
334	Computer and Electronic Products	9.6	30.5	9.6	57.8	12.6	D	X	12.9	X	98.6
334413	Semiconductors and Related Devices	19.9	20.2	19.9	D	D	X	X	12.9	X	X
335	Electrical Equip., Appliances, and Components	11.5	58.1	11.7	D	X	X	X	64.0	X	X
336	Transportation Equipment	4.0	17.8	4.0	24.4	26.8	D	X	53.5	X	45.7
336111	Automobiles	0.0	D	0.0	D	X	X	X	X	X	D
336112	Light Trucks and Utility Vehicles	0.0	D	0.0	D	X	X	X	X	X	X
3364	Aerospace Product and Parts	10.2	21.3	10.3	42.6	D	D	X	23.8	X	X
336411	Aircraft	18.0	19.1	18.0	D	X	X	X	D	X	X
337	Furniture and Related Products	8.7	54.9	8.9	70.5	X	X	X	87.7	X	X
339	Miscellaneous	8.0	46.6	8.4	54.6	96.9	69.6	98.8	92.7	98.8	98.8
	Total	0.7	2.8	0.8	8.9	4.0	4.0	4.8	4.4	16.6	3.8

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

(b) These counts include only those establishments that reported this activity in 2018. Establishments for which only a portion of the total consumed fuel was reported as switchable contribute to the establishment counts in both the *Switchable* and *Not Switchable* columns. Therefore, the sum of these establishment counts may be greater than the corresponding establishment count of the total number of establishments consuming the fuel.

(c) *Alternative Energy Sources* consist of those energy sources that could have been substituted for natural gas during 2018. The quantities are expressed in billions of cubic feet, and therefore represent the quantity of natural gas that could have been displaced by the given alternative type of energy.

(d) *Total Consumed* represents those quantities (Total Inputs) of natural gas that were ascertained switchable or not switchable, plus an additional quantity for which the switching status was not ascertained.

(e) *Electricity Receipts* represents those quantities of electricity generated off the manufacturing establishment site and available at the site for consumption. It includes those quantities for which payment was made, quantities transferred in, quantities purchased and paid for by a central purchasing entity, and quantities for which payment was made in kind. It does not include electricity generated onsite. *Electricity Receipts* has not been adjusted to account for any quantities that might have been resold or transferred out. The estimates include those quantities that were ascertained switchable or not switchable, plus an additional quantity for which the switching status was not ascertained.

(f) *Other* includes all other types of energy not already identified that respondents indicated could have been consumed in place of natural gas.

* Estimate less than 0.5.

D=Withheld to avoid disclosing data for individual establishments.

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

=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.

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).