

Released: December 2025
Next MECS will be fielded in 2027

Table 10.5 Number of establishments with capability to switch residual fuel oil to alternative energy sources, 2022

Level: National data
Row: NAICS codes
Column: Energy sources
Unit: Establishment counts

NAICS code ^a	Subsector and industry	Residual fuel oil ^b			Alternative energy sources ^c						Coal coke and breeze	
		Total consumed ^d	Switchable	Not switchable	Electricity receipts ^e	Natural gas	Distillate fuel oil	Coal	HGL (excluding natural gasoline)	Other ^f		
Total United States												
311	Food	15	D	7	D	D	0	0	D	0	0	
3112	Grain and Oilseed Milling	6	6	0	D	4	0	0	D	0	0	
311221	Wet Corn Milling and Starch Manufacturing	0	0	0	0	0	0	0	0	0	0	
31131	Sugar Manufacturing	D	0	D	0	0	0	0	0	0	0	
3114	Fruit and Vegetable Preserving and Specialty Food	D	0	D	0	0	0	0	0	0	0	
3115	Dairy Product Manufacturing	Q	D	Q	0	D	0	0	0	0	0	
3116	Animal Slaughtering and Processing	D	0	D	0	0	0	0	0	0	0	
312	Beverage and Tobacco Products	0	0	0	0	0	0	0	0	0	0	
3121	Beverages	0	0	0	0	0	0	0	0	0	0	
3122	Tobacco	0	0	0	0	0	0	0	0	0	0	
313	Textile Mills	0	0	0	0	0	0	0	0	0	0	
314	Textile Product Mills	0	0	0	0	0	0	0	0	0	0	
315	Apparel	0	0	0	0	0	0	0	0	0	0	
316	Leather and Allied Products	0	0	0	0	0	0	0	0	0	0	
321	Wood Products	Q	0	Q	0	0	0	0	0	0	0	
321113	Sawmills	Q	0	Q	0	0	0	0	0	0	0	
3212	Veneer, Plywood, and Engineered Wood Product Manufacturing	3	0	3	0	0	0	0	0	0	0	
321219	Reconstituted Wood Products	D	0	D	0	0	0	0	0	0	0	
3219	Other Wood Products	0	0	0	0	0	0	0	0	0	0	
322	Paper	39	13	29	D	11	0	0	0	0	D	
322110	Pulp Mills	3	0	3	0	0	0	0	0	0	0	
322120	Paper Mills	9	D	7	D	D	0	0	0	0	D	
322130	Paperboard Mills	17	D	11	0	7	0	0	0	0	D	
323	Printing and Related Support	Q	0	Q	0	0	0	0	0	0	0	
324	Petroleum and Coal Products	131	D	102	0	29	24	0	D	0	0	
324110	Petroleum Refineries	D	D	D	0	D	0	0	D	0	0	
324121	Asphalt Paving Mixture and Block	D	28	D	0	D	24	0	24	0	0	
324122	Asphalt Shingle and Coating Materials	0	0	0	0	0	0	0	0	0	0	
324191	Petroleum Lubricating Oil and Grease Manufacturing	0	0	0	0	0	0	0	0	0	0	
324199	All Other Petroleum and Coal Products Manufacturing	0	0	0	0	0	0	0	0	0	0	
325	Chemicals	D	D	0	0	D	D	0	0	0	D	
325110	Petrochemicals	0	0	0	0	0	0	0	0	0	0	
325120	Industrial Gases	0	0	0	0	0	0	0	0	0	0	
325180	Other Basic Inorganic Chemical Manufacturing	0	0	0	0	0	0	0	0	0	0	
325193	Ethyl Alcohol	0	0	0	0	0	0	0	0	0	0	
325194	Cyclic Crudes, Intermediate and Gum and Wood Chemicals	0	0	0	0	0	0	0	0	0	0	
325199	All Other Basic Organic Chemical Manufacturing	D	D	0	0	D	D	0	0	0	0	
325211	Plastics Materials and Resins	0	0	0	0	0	0	0	0	0	0	
325212	Synthetic Rubber	0	0	0	0	0	0	0	0	0	0	
325220	Artificial and Synthetic Fibers and Filaments	0	0	0	0	0	0	0	0	0	0	
325311	Nitrogenous Fertilizers	0	0	0	0	0	0	0	0	0	0	
325312	Phosphatic Fertilizers	D	D	0	0	D	0	0	0	0	D	
3254	Pharmaceuticals and Medicines	0	0	0	0	0	0	0	0	0	0	
325412	Pharmaceutical Preparation	0	0	0	0	0	0	0	0	0	0	
325992	Photographic Film, Paper, Plate, Chemical, and Copy Toner Manufacturing	0	0	0	0	0	0	0	0	0	0	
326	Plastics and Rubber Products	Q	Q	Q	0	D	0	0	0	0	0	
327	Nonmetallic Mineral Products	D	0	D	0	0	0	0	0	0	0	

327120	Clay Building Material and Refractories	0	0	0	0	0	0	0	0	0	0
327211	Flat Glass	0	0	0	0	0	0	0	0	0	0
327212	Other Pressed and Blown Glass and Glassware	0	0	0	0	0	0	0	0	0	0
327213	Glass Containers	0	0	0	0	0	0	0	0	0	0
327215	Glass Products from Purchased Glass	0	0	0	0	0	0	0	0	0	0
327310	Cements	0	0	0	0	0	0	0	0	0	0
327410	Lime	0	0	0	0	0	0	0	0	0	0
327420	Gypsum	D	0	D	0	0	0	0	0	0	0
327993	Mineral Wool	0	0	0	0	0	0	0	0	0	0
331	Primary Metals	D	0	D	0	0	0	0	0	0	0
331110	Iron and Steel Mills and Ferroalloys	D	0	D	0	0	0	0	0	0	0
3312	Steel Products from Purchased Steel	0	0	0	0	0	0	0	0	0	0
3313	Alumina and Aluminum Production and Processing	0	0	0	0	0	0	0	0	0	0
331314	Secondary Smelting and Alloying of Aluminum	0	0	0	0	0	0	0	0	0	0
331315	Aluminum Sheet, Plate and Foils	0	0	0	0	0	0	0	0	0	0
331318	Other Aluminum Rolling, Drawing and Extruding	0	0	0	0	0	0	0	0	0	0
3314	Nonferrous Metal (except Aluminum) Production and Processing	0	0	0	0	0	0	0	0	0	0
331410	Nonferrous Metal (except Aluminum) Smelting and Refining	0	0	0	0	0	0	0	0	0	0
3315	Foundries	0	0	0	0	0	0	0	0	0	0
331511	Iron Foundries	0	0	0	0	0	0	0	0	0	0
331523	Nonferrous Metal Die-Casting Foundries	0	0	0	0	0	0	0	0	0	0
331524	Aluminum Foundries, except Die-Casting	0	0	0	0	0	0	0	0	0	0
332	Fabricated Metal Products	Q	0	Q	0	0	0	0	0	0	0
333	Machinery	0	0	0	0	0	0	0	0	0	0
334	Computer and Electronic Products	9	0	9	0	0	0	0	0	0	0
334413	Semiconductors and Related Devices	9	0	9	0	0	0	0	0	0	0
335	Electrical Equipment, Appliances, and Components	0	0	0	0	0	0	0	0	0	0
336	Transportation Equipment	Q	0	Q	0	0	0	0	0	0	0
336110	Automobile and Light Duty Motor Vehicle Manufacturing	0	0	0	0	0	0	0	0	0	0
3364	Aerospace Product and Parts	0	0	0	0	0	0	0	0	0	0
336411	Aircraft	0	0	0	0	0	0	0	0	0	0
337	Furniture and Related Products	0	0	0	0	0	0	0	0	0	0
339	Miscellaneous	0	0	0	0	0	0	0	0	0	0
	Total	584	61	526	D	58	D	0	27	0	4

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

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

^a The Bureau of the Census classifies establishments using the 2022 North American Industry Classification System (NAICS).

^b These counts include only those establishments that reported this activity in 2022. 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 residual fuel oil during 2022. The quantities are expressed in thousands of barrels and therefore represent the quantity of residual fuel oil that could have been displaced by the given alternative type of energy.

^d *Total consumed* represents those quantities (total inputs) of residual fuel oil that were ascertained switchable or not switchable, plus an additional quantity for which the switching status was not ascertained.

^e *Electricity receipts* represent 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* have 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 residual fuel oil.

* 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).

Released: December 2025

Next MECS will be fielded in 2027

RSE Table 10.5 Relative standard errors for Table 10.5

Unit: Percentage

NAICS code ^a	Subsector and industry	Residual fuel oil ^b			Alternative energy sources ^c							Coal coke and breeze	
		Total consumed ^d	Switchable	Not switchable	Electricity receipts ^e	Natural gas	Distillate fuel oil	Coal	HGL (excluding natural gasoline)	Other ^f			
Total United States													
311	Food	23.9	D	40.4	D	D	X	X	D	X	X		
3112	Grain and Oilseed Milling	34.0	34.0	X	D	42.7	X	X	D	X	X		
311221	Wet Corn Milling and Starch Manufacturing	X	X	X	X	X	X	X	X	X	X		
31131	Sugar Manufacturing	D	X	D	X	X	X	X	X	X	X		
3114	Fruit and Vegetable Preserving and Specialty Food	D	X	D	X	X	X	X	X	X	X		
3115	Dairy Product Manufacturing	54.2	D	79.2	X	D	X	X	X	X	X		
3116	Animal Slaughtering and Processing	D	X	D	X	X	X	X	X	X	X		
312	Beverage and Tobacco Products	X	X	X	X	X	X	X	X	X	X		
3121	Beverages	X	X	X	X	X	X	X	X	X	X		
3122	Tobacco	X	X	X	X	X	X	X	X	X	X		
313	Textile Mills	X	X	X	X	X	X	X	X	X	X		
314	Textile Product Mills	X	X	X	X	X	X	X	X	X	X		
315	Apparel	X	X	X	X	X	X	X	X	X	X		
316	Leather and Allied Products	X	X	X	X	X	X	X	X	X	X		
321	Wood Products	63.6	X	63.6	X	X	X	X	X	X	X		
321113	Sawmills	70.6	X	70.6	X	X	X	X	X	X	X		
3212	Veneer, Plywood, and Engineered Wood Product Manufacturing	0.0	X	0.0	X	X	X	X	X	X	X		
321219	Reconstituted Wood Products	D	X	D	X	X	X	X	X	X	X		
3219	Other Wood Products	X	X	X	X	X	X	X	X	X	X		
322	Paper	8.1	0.0	10.8	D	0.0	X	X	X	X	D		
322110	Pulp Mills	0.0	X	0.0	X	X	X	X	X	X	X		
322120	Paper Mills	0.0	D	0.0	D	D	X	X	X	X	D		
322130	Paperboard Mills	0.0	D	0.0	X	0.0	X	X	X	X	D		
323	Printing and Related Support	99.0	X	99.0	X	X	X	X	X	X	X		
324	Petroleum and Coal Products	16.4	D	18.8	X	35.8	42.7	X	D	X	X		
324110	Petroleum Refineries	D	D	D	X	D	X	X	D	X	X		
324121	Asphalt Paving Mixture and Block	D	37.4	D	X	D	42.7	X	42.7	X	X		
324122	Asphalt Shingle and Coating Materials	X	X	X	X	X	X	X	X	X	X		
324191	Petroleum Lubricating Oil and Grease Manufacturing	X	X	X	X	X	X	X	X	X	X		
324199	All Other Petroleum and Coal Products Manufacturing	X	X	X	X	X	X	X	X	X	X		
325	Chemicals	D	D	X	X	D	D	X	X	X	D		
325110	Petrochemicals	X	X	X	X	X	X	X	X	X	X		
325120	Industrial Gases	X	X	X	X	X	X	X	X	X	X		
325180	Other Basic Inorganic Chemical Manufacturing	X	X	X	X	X	X	X	X	X	X		
325193	Ethyl Alcohol	X	X	X	X	X	X	X	X	X	X		
325194	Cyclic Crudes, Intermediate and Gum and Wood Chemicals	X	X	X	X	X	X	X	X	X	X		
325199	All Other Basic Organic Chemical Manufacturing	D	D	X	X	D	D	X	X	X	X		
325211	Plastics Materials and Resins	X	X	X	X	X	X	X	X	X	X		
325212	Synthetic Rubber	X	X	X	X	X	X	X	X	X	X		
325220	Artificial and Synthetic Fibers and Filaments	X	X	X	X	X	X	X	X	X	X		
325311	Nitrogenous Fertilizers	X	X	X	X	X	X	X	X	X	X		
325312	Phosphatic Fertilizers	D	D	X	X	D	X	X	X	X	D		
3254	Pharmaceuticals and Medicines	X	X	X	X	X	X	X	X	X	X		
325412	Pharmaceutical Preparation	X	X	X	X	X	X	X	X	X	X		
325992	Photographic Film, Paper, Plate, Chemical, and Copy Toner Manufacturing	X	X	X	X	X	X	X	X	X	X		
326	Plastics and Rubber Products	87.0	92.1	99.0	X	D	X	X	X	X	X		
327	Nonmetallic Mineral Products	D	X	D	X	X	X	X	X	X	X		
327120	Clay Building Material and Refractories	X	X	X	X	X	X	X	X	X	X		
327211	Flat Glass	X	X	X	X	X	X	X	X	X	X		
327212	Other Pressed and Blown Glass and Glassware	X	X	X	X	X	X	X	X	X	X		

327213	Glass Containers	X	X	X	X	X	X	X	X	X	X
327215	Glass Products from Purchased Glass	X	X	X	X	X	X	X	X	X	X
327310	Cements	X	X	X	X	X	X	X	X	X	X
327410	Lime	X	X	X	X	X	X	X	X	X	X
327420	Gypsum	D	X	D	X	X	X	X	X	X	X
327993	Mineral Wool	X	X	X	X	X	X	X	X	X	X
331	Primary Metals	D	X	D	X	X	X	X	X	X	X
331110	Iron and Steel Mills and Ferroalloys	D	X	D	X	X	X	X	X	X	X
3312	Steel Products from Purchased Steel	X	X	X	X	X	X	X	X	X	X
3313	Alumina and Aluminum Production and Processing	X	X	X	X	X	X	X	X	X	X
331314	Secondary Smelting and Alloying of Aluminum	X	X	X	X	X	X	X	X	X	X
331315	Aluminum Sheet, Plate and Foils	X	X	X	X	X	X	X	X	X	X
331318	Other Aluminum Rolling, Drawing and Extruding	X	X	X	X	X	X	X	X	X	X
3314	Nonferrous Metal (except Aluminum) Production and Processing	X	X	X	X	X	X	X	X	X	X
331410	Nonferrous Metal (except Aluminum) Smelting and Refining	X	X	X	X	X	X	X	X	X	X
3315	Foundries	X	X	X	X	X	X	X	X	X	X
331511	Iron Foundries	X	X	X	X	X	X	X	X	X	X
331523	Nonferrous Metal Die-Casting Foundries	X	X	X	X	X	X	X	X	X	X
331524	Aluminum Foundries, except Die-Casting	X	X	X	X	X	X	X	X	X	X
332	Fabricated Metal Products	99.5	X	99.5	X	X	X	X	X	X	X
333	Machinery	X	X	X	X	X	X	X	X	X	X
334	Computer and Electronic Products	0.0	X	0.0	X	X	X	X	X	X	X
334413	Semiconductors and Related Devices	0.0	X	0.0	X	X	X	X	X	X	X
335	Electrical Equipment, Appliances, and Components	X	X	X	X	X	X	X	X	X	X
336	Transportation Equipment	96.5	X	96.5	X	X	X	X	X	X	X
336110	Automobile and Light Duty Motor Vehicle Manufacturing	X	X	X	X	X	X	X	X	X	X
3364	Aerospace Product and Parts	X	X	X	X	X	X	X	X	X	X
336411	Aircraft	X	X	X	X	X	X	X	X	X	X
337	Furniture and Related Products	X	X	X	X	X	X	X	X	X	X
339	Miscellaneous	X	X	X	X	X	X	X	X	X	X
	Total	33.6	22.3	37.2	D	23.7	D	X	38.6	X	0.0

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

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

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^e *Electricity receipts* represent 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* have 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 residual fuel oil.

* 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).