

Table 10.23 Reasons that made HGL (excluding natural gasoline) unswitchable, 2022

		Non switchable amount attributed to:										
NAICS code <sup>a</sup>	Subsector and industry	Total amount of HGL (excluding natural gasoline) consumed as fuel	Total amount of unswitchable HGL (excluding natural gasoline) fuel use	Equipment is not capable of using another fuel	Switching adversely affects the products	Unavailable alternative fuel supply	Environmental restrictions <sup>b</sup>	Long-term contract in place <sup>c</sup>	Unavailable storage for alternative fuels <sup>d</sup>	Another reason	Combinations of cols. F, G, H, I, J, and K	Don't know/ didn't answer
Total United States												
311	Food	2	2	2	*	*	*	*	*	*	*	*
3112	Grain and Oilseed Milling	*	*	*	0	*	0	0	0	*	*	*
311221	Wet Corn Milling and Starch Manufacturing	*	*	*	0	0	0	0	0	0	0	*
31131	Sugar Manufacturing	*	*	*	*	0	0	0	*	0	0	0
3114	Fruit and Vegetable Preserving and Specialty Food	*	*	*	*	0	0	*	*	*	*	*
3115	Dairy Product Manufacturing	Q	Q	Q	*	0	0	0	0	*	0	*
3116	Animal Slaughtering and Processing	*	*	*	0	*	*	0	0	*	0	*
312	Beverage and Tobacco Products	*	*	*	*	*	*	*	*	*	0	*
3121	Beverages	*	*	*	*	*	*	*	*	*	0	*
3122	Tobacco	*	*	*	0	0	0	*	0	*	0	*
313	Textile Mills	*	*	*	*	*	0	0	0	*	0	*
314	Textile Product Mills	*	*	*	0	0	0	0	0	*	0	*
315	Apparel	*	*	*	0	0	0	0	0	0	0	*
316	Leather and Allied Products	*	*	*	0	0	0	0	0	*	*	*
321	Wood Products	1	1	1	*	*	*	*	*	*	*	*
321113	Sawmills	*	*	*	*	*	0	0	*	*	*	*
3212	Veneer, Plywood, and Engineered Wood Product Manufacturing	*	*	*	*	0	*	*	0	*	*	*
321219	Reconstituted Wood Products	*	*	*	0	0	0	*	0	*	0	*
3219	Other Wood Products	*	*	*	0	*	*	*	*	*	0	*
322	Paper	1	1	*	*	*	*	*	*	*	*	*
322110	Pulp Mills	*	*	*	*	0	0	0	0	0	0	*
322120	Paper Mills	*	*	*	0	*	0	0	0	*	*	*
322130	Paperboard Mills	*	*	*	*	0	*	0	*	*	*	*
323	Printing and Related Support	*	*	*	0	0	0	0	*	*	0	*
324	Petroleum and Coal Products	8	7	5	*	*	0	*	0	1	*	1
324110	Petroleum Refineries	8	7	5	0	*	0	0	0	1	0	1
324121	Asphalt Paving Mixture and Block	*	*	*	*	0	0	0	0	*	0	*
324122	Asphalt Shingle and Coating Materials	*	*	*	*	*	0	*	0	*	*	*
324191	Petroleum Lubricating Oil and Grease Manufacturing	*	*	*	*	0	0	0	0	*	*	*
324199	All Other Petroleum and Coal Products Manufacturing	*	*	*	0	*	0	0	0	*	0	*
325	Chemicals	5	4	3	*	*	*	*	*	*	*	2
325110	Petrochemicals	2	1	*	*	*	0	0	0	0	0	1
325120	Industrial Gases	*	*	*	0	0	0	0	0	*	0	*
325180	Other Basic Inorganic Chemical Manufacturing	*	*	*	0	0	*	*	0	*	0	*
325193	Ethyl Alcohol	*	*	*	0	0	0	0	0	*	0	*
325194	Cyclic Crudes, Intermediate and Gum and Wood Chemicals	2	2	2	0	0	*	*	0	0	0	*
325199	All Other Basic Organic Chemical Manufacturing	*	*	*	0	*	0	0	0	*	*	*
325211	Plastics Materials and Resins	1	1	*	*	0	*	*	*	*	*	1
325212	Synthetic Rubber	*	*	*	*	0	0	0	*	*	0	*
325220	Artificial and Synthetic Fibers and Filaments	*	*	*	0	*	0	0	0	*	*	*
325311	Nitrogenous Fertilizers	*	*	*	*	0	*	0	0	*	0	*
325312	Phosphatic Fertilizers	*	*	*	0	0	0	0	0	*	0	*
3254	Pharmaceuticals and Medicines	*	*	*	0	0	0	0	0	*	0	*
325412	Pharmaceutical Preparation	*	*	*	0	0	0	0	0	*	0	*
325992	Photographic Film, Paper, Plate, Chemical, and Copy Toner Manufacturing	*	*	*	0	0	0	0	0	0	*	*
326	Plastics and Rubber Products	1	1	*	*	*	0	*	0	*	*	*
327	Nonmetallic Mineral Products	1	1	*	*	*	*	*	*	*	*	*
327120	Clay Building Material and Refractories	*	*	*	0	0	0	*	0	*	*	*
327211	Flat Glass	*	*	*	*	*	*	0	0	*	*	*

327212	Other Pressed and Blown Glass and Glassware	*	*	*	*	0	0	*	*	*	0	*
327213	Glass Containers	*	*	*	0	0	0	*	0	0	0	*
327215	Glass Products from Purchased Glass	*	*	*	*	0	0	0	0	*	0	*
327310	Cements	*	*	*	*	0	0	*	0	*	*	*
327410	Lime	*	*	*	*	*	0	0	0	0	0	*
327420	Gypsum	*	*	*	0	0	*	0	0	*	0	*
327993	Mineral Wool	*	*	*	*	*	*	0	0	*	0	*
331	Primary Metals	1	1	1	*	*	*	*	*	*	*	*
331110	Iron and Steel Mills and Ferroalloys	*	*	*	*	0	0	0	*	*	*	*
3312	Steel Products from Purchased Steel	*	*	*	*	*	*	*	*	*	*	*
3313	Alumina and Aluminum Production and Processing	*	*	*	*	0	0	*	0	*	*	*
331314	Secondary Smelting and Alloying of Aluminum	*	*	*	0	0	0	0	0	*	*	*
331315	Aluminum Sheet, Plate and Foils	*	*	*	0	0	0	0	0	*	*	*
331318	Other Aluminum Rolling, Drawing and Extruding	*	*	*	*	0	0	*	0	*	0	*
3314	Nonferrous Metal (except Aluminum) Production and Processing	*	*	*	*	*	0	0	*	*	*	*
331410	Nonferrous Metal (except Aluminum) Smelting and Refining	*	*	*	*	*	0	0	0	*	*	*
3315	Foundries	*	*	*	*	*	*	*	*	*	*	*
331511	Iron Foundries	*	*	*	*	*	*	*	0	*	*	*
331523	Nonferrous Metal Die-Casting Foundries	*	*	*	*	*	*	*	0	*	0	*
331524	Aluminum Foundries, except Die-Casting	*	*	*	0	0	*	*	*	*	*	*
332	Fabricated Metal Products	1	1	1	*	*	*	*	*	*	*	*
333	Machinery	1	1	*	*	*	0	*	*	*	*	*
334	Computer and Electronic Products	*	*	*	0	0	*	0	0	*	0	*
334413	Semiconductors and Related Devices	*	*	*	0	0	*	0	0	0	0	*
335	Electrical Equip., Appliances, and Components	*	*	*	*	*	0	0	0	*	*	*
336	Transportation Equipment	1	1	1	*	*	*	*	*	*	*	*
336110	Automobile and Light Duty Motor Vehicle Manufacturing	*	*	*	*	0	0	0	0	0	0	*
3364	Aerospace Product and Parts	*	*	*	*	*	*	*	*	*	*	*
336411	Aircraft	*	*	*	*	0	0	0	0	*	*	*
337	Furniture and Related Products	*	*	*	*	0	0	*	*	*	*	*
339	Miscellaneous	*	*	*	*	0	*	0	0	*	0	*
	Total	24	21	15	*	*	*	*	*	1	Q	5

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.

<sup>a</sup> The Bureau of the Census classifies establishments using the 2022 North American Industry Classification System (NAICS).

<sup>b</sup> The environmental restrictions related to air quality limiting the amount of the usable alternative fuel that could be used instead.

<sup>c</sup> Long-term contracts are typically with a utility or third-party supplier such as an energy broker and require the purchase of fuel for an extended amount of time.

<sup>d</sup> The storage of usable alternative fuels is not available due to the potential environmental impact of storage tanks.

\* 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).

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NAICS code <sup>a</sup>	Subsector and industry	Total amount of HGL (excluding natural gasoline) consumed as fuel	Total amount of unswitchable HGL (excluding natural gasoline) fuel use	Equipment is not capable of using another fuel	Switching adversely affects the products	Unavailable alternative fuel supply	Environmental restrictions <sup>b</sup>	Long-term contract in place <sup>c</sup>	Unavailable storage for alternative fuels <sup>d</sup>	Another reason	Combinations of cols. F, G, H, I, J, and K	Don't know/ didn't answer
Total United States												
311	Food	36.4	38.6	44.2	0.4	11.6	0.0	18.4	79.0	17.8	63.3	26.6
3112	Grain and Oilseed Milling	16.5	16.8	21.7	X	59.6	X	X	X	32.0	0.0	33.8
311221	Wet Corn Milling and Starch Manufacturing	0.0	0.0	0.0	X	X	X	X	X	X	X	0.0
31131	Sugar Manufacturing	0.0	0.0	0.0	0.0	X	X	X	0.0	X	X	X
3114	Fruit and Vegetable Preserving and Specialty Food	11.7	12.4	12.4	0.0	X	X	18.4	95.0	41.2	0.0	4.5
3115	Dairy Product Manufacturing	77.0	83.4	83.8	39.3	X	X	X	X	20.4	X	24.9
3116	Animal Slaughtering and Processing	25.5	27.4	30.4	X	11.7	0.0	X	X	10.7	X	44.7
312	Beverage and Tobacco Products	9.8	10.2	12.4	62.6	78.7	97.3	5.7	71.2	45.5	X	23.2
3121	Beverages	10.9	11.4	14.2	62.6	78.7	97.3	36.3	71.2	53.9	X	23.3
3122	Tobacco	0.0	0.0	0.0	X	X	X	0.0	X	0.0	X	0.0
313	Textile Mills	6.4	6.2	9.9	76.1	44.3	X	X	X	3.8	X	49.7
314	Textile Product Mills	55.3	55.3	57.6	X	X	X	X	X	63.7	X	36.8
315	Apparel	27.5	27.9	31.5	X	X	X	X	X	X	X	47.4
316	Leather and Allied Products	13.6	13.7	14.2	X	X	X	X	X	0.0	0.0	46.7
321	Wood Products	12.8	12.9	16.4	4.6	2.2	20.2	87.8	91.4	43.3	24.8	25.5
321113	Sawmills	9.6	9.8	11.6	20.8	0.9	X	X	0.0	79.7	0.0	9.0
3212	Veneer, Plywood, and Engineered Wood Product Manufacturing	8.1	8.2	8.4	0.0	X	0.0	0.0	X	32.3	25.1	25.5
321219	Reconstituted Wood Products	26.6	26.6	31.5	X	X	X	0.0	X	0.0	X	7.6
3219	Other Wood Products	16.9	17.0	21.8	X	56.7	99.0	98.2	92.7	48.3	X	39.9
322	Paper	16.6	16.8	14.9	97.2	0.0	0.0	41.2	40.4	37.3	0.0	43.1
322110	Pulp Mills	0.0	0.0	0.0	X	X	X	X	X	X	X	0.0
322120	Paper Mills	0.0	0.0	0.0	X	0.0	X	X	X	0.0	0.0	0.0
322130	Paperboard Mills	0.0	0.0	0.0	0.0	X	0.0	X	0.0	0.0	0.0	0.0
323	Printing and Related Support	22.2	20.8	38.4	X	X	X	X	83.0	20.1	X	58.0
324	Petroleum and Coal Products	0.1	0.1	0.2	0.0	0.0	X	9.8	X	0.1	0.0	0.2
324110	Petroleum Refineries	0.0	0.0	0.0	X	0.0	X	X	X	0.0	X	0.0
324121	Asphalt Paving Mixture and Block	6.1	7.2	9.6	0.0	X	X	X	X	0.0	X	7.2
324122	Asphalt Shingle and Coating Materials	2.3	2.4	3.9	0.0	0.0	X	9.8	X	10.3	0.0	0.6
324191	Petroleum Lubricating Oil and Grease Manufacturing	9.3	10.5	15.2	0.0	X	X	X	X	14.3	0.0	27.8
324199	All Other Petroleum and Coal Products Manufacturing	0.0	0.0	0.0	X	0.0	X	X	X	0.0	X	0.0
325	Chemicals	4.0	4.7	6.8	81.3	4.7	0.0	68.6	94.4	5.0	61.2	4.7
325110	Petrochemicals	0.0	0.0	0.0	0.0	0.0	X	X	X	X	X	0.0
325120	Industrial Gases	66.9	64.6	1.6	X	X	X	X	X	88.9	X	82.1
325180	Other Basic Inorganic Chemical Manufacturing	26.1	26.9	36.2	X	X	0.0	0.0	X	57.3	X	39.5
325193	Ethyl Alcohol	0.5	0.5	1.3	X	X	X	X	X	0.0	X	0.0
325194	Cyclic Crudes, Intermediate and Gum and Wood Chemicals	0.0	0.0	0.0	X	X	0.0	0.0	X	X	X	0.0
325199	All Other Basic Organic Chemical Manufacturing	10.7	10.8	7.9	X	70.4	X	X	X	41.4	95.1	24.1
325211	Plastics Materials and Resins	3.2	2.2	10.6	73.1	X	0.0	43.9	73.7	7.7	3.2	0.5
325212	Synthetic Rubber	0.0	0.0	0.0	0.0	X	X	X	0.0	0.0	X	0.0
325220	Artificial and Synthetic Fibers and Filaments	0.0	0.0	0.0	X	0.0	X	X	X	0.0	0.0	0.0
325311	Nitrogenous Fertilizers	0.0	0.0	0.0	0.0	X	0.0	X	X	0.0	X	0.0
325312	Phosphatic Fertilizers	0.0	0.0	0.0	X	X	X	X	X	0.0	X	0.0
3254	Pharmaceuticals and Medicines	4.5	4.9	12.3	X	X	X	X	X	2.7	X	16.7
325412	Pharmaceutical Preparation	5.8	6.4	35.0	X	X	X	X	X	2.7	X	7.5
325992	Photographic Film, Paper, Plate, Chemical, and Copy Toner Manufacturing	0.0	0.0	0.0	X	X	X	X	X	X	0.0	0.0
326	Plastics and Rubber Products	34.2	34.3	32.8	99.0	73.7	X	90.6	X	94.4	93.5	68.7
327	Nonmetallic Mineral Products	19.6	19.9	24.9	60.2	45.0	0.0	0.0	91.7	54.1	80.6	53.5
327120	Clay Building Material and Refractories	1.8	1.8	3.7	X	X	X	0.0	X	0.2	46.0	1.4
327211	Flat Glass	0.0	0.0	0.0	0.0	0.0	0.0	X	X	0.0	0.0	0.0
327212	Other Pressed and Blown Glass and Glassware	36.6	44.3	72.4	73.0	X	X	0.0	0.0	0.0	X	0.0
327213	Glass Containers	0.0	0.0	0.0	X	X	X	0.0	X	X	X	0.0
327215	Glass Products from Purchased Glass	28.1	28.2	3.5	92.1	X	X	X	X	2.9	X	0.8
327310	Cements	0.5	0.5	0.0	66.8	X	X	0.0	X	0.0	0.0	0.0

327410	Lime	0.0	0.0	0.0	0.0	0.0	X	X	X	X	X	0.0
327420	Gypsum	6.4	6.6	8.2	X	X	0.0	X	X	0.0	0.0	0.0
327993	Mineral Wool	67.3	67.3	5.2	0.0	0.0	0.0	X	X	20.4	X	88.4
331	Primary Metals	4.1	4.3	4.2	10.4	31.9	11.7	12.0	0.0	4.8	0.3	15.9
331110	Iron and Steel Mills and Ferroalloys	0.0	0.0	0.0	0.0	X	X	X	0.0	0.0	0.0	0.0
3312	Steel Products from Purchased Steel	9.0	9.3	9.2	0.0	0.0	62.5	14.6	0.0	8.0	0.0	25.3
3313	Alumina and Aluminum Production and Processing	16.9	17.8	24.8	0.0	X	X	0.0	X	7.4	0.0	0.2
331314	Secondary Smelting and Alloying of Aluminum	0.0	0.0	0.0	X	X	X	X	X	0.0	0.0	0.0
331315	Aluminum Sheet, Plate and Foils	0.5	0.5	0.0	X	X	X	X	X	4.0	0.0	0.0
331318	Other Aluminum Rolling, Drawing and Extruding	26.7	26.9	39.7	0.0	X	X	0.0	X	18.1	X	0.3
3314	Nonferrous Metal (except Aluminum) Production and Processing	5.9	6.0	1.0	17.8	37.1	X	X	0.0	19.4	0.0	54.6
331410	Nonferrous Metal (except Aluminum) Smelting and Refining	8.1	8.1	10.6	0.0	0.0	X	X	X	0.0	0.0	0.1
3315	Foundries	4.9	5.4	1.8	12.6	63.8	0.0	28.3	0.0	13.9	0.8	22.5
331511	Iron Foundries	1.9	2.1	1.5	0.0	66.6	0.0	55.2	X	11.5	1.2	14.6
331523	Nonferrous Metal Die-Casting Foundries	13.9	14.1	5.0	0.0	0.0	0.0	0.0	X	0.0	X	35.9
331524	Aluminum Foundries, except Die-Casting	17.3	17.8	4.6	X	X	X	86.6	0.0	0.0	0.0	37.4
332	Fabricated Metal Products	21.6	22.5	29.6	89.0	99.5	99.0	68.5	56.7	60.0	99.5	26.7
333	Machinery	35.3	37.5	46.7	84.4	99.0	X	95.6	97.1	55.8	97.3	42.7
334	Computer and Electronic Products	42.9	43.4	31.2	X	X	0.0	X	X	71.0	X	54.9
334413	Semiconductors and Related Devices	4.6	6.9	16.9	X	X	0.0	X	X	X	X	0.0
335	Electrical Equip., Appliances, and Components	24.7	24.8	40.3	96.3	88.8	X	X	X	52.4	0.0	56.3
336	Transportation Equipment	26.7	27.4	32.9	48.4	0.0	0.0	0.8	82.8	56.2	7.6	45.1
336110	Automobile and Light Duty Motor Vehicle Manufacturing	0.3	0.4	0.5	0.0	X	X	X	X	X	X	0.0
3364	Aerospace Product and Parts	14.5	14.7	18.2	83.4	0.0	0.0	66.5	65.4	33.9	7.6	41.7
336411	Aircraft	26.3	26.3	38.7	0.0	X	X	X	X	0.3	0.0	68.9
337	Furniture and Related Products	26.1	26.4	37.1	60.3	X	X	99.0	99.0	64.4	99.0	41.8
339	Miscellaneous	33.6	33.7	44.1	76.3	X	0.0	X	X	73.2	X	45.2
	Total	4.1	4.6	5.9	40.4	7.8	4.9	27.6	42.2	11.3	59.0	7.2

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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\* Estimate less than 0.5.

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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.

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