



**Table 10.4 Capability to Switch Residual Fuel Oil to Alternative Energy Sources, 2010;**

**Level: National and Regional Data;**  
**Row: NAICS Codes, Value of Shipments and Employment Sizes;**  
**Column: Energy Sources;**  
**Unit: Million Barrels.**

NAICS Code(a)	Selected Subsectors and Industry	Residual Fuel Oil				Alternative Energy Sources(b)					
		Total Consumed(c)	Switchable	Not Switchable	Electricity Receipts(d)	Natural Gas	Distillate Fuel Oil	Coal	LPG	Coal Coke and Breeze	Other(e)
331	Primary Metals	*	*	*	0	*	*	0	0	0	0
331111	Iron and Steel Mills	*	*	*	0	*	*	0	0	0	0
331112	Electrometallurgical Ferroalloy Products	0	0	0	0	0	0	0	0	0	0
3312	Steel Products from Purchased Steel	*	0	*	0	0	0	0	0	0	0
3313	Alumina and Aluminum	*	*	0	0	*	0	0	0	0	0
331314	Secondary Smelting and Alloying of Aluminum	*	0	0	0	0	0	0	0	0	0
331315	Aluminum Sheet, Plate and Foils	*	*	0	0	*	0	0	0	0	0
331316	Aluminum Extruded Products	0	0	0	0	0	0	0	0	0	0
3314	Nonferrous Metals, except Aluminum	*	0	*	0	0	0	0	0	0	0
331419	Primary Smelting and Refining of Nonferrous Metals, except Copper and Al	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
331521	Aluminum 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	*	0	*	0	0	0	0	0	0	0
333	Machinery	*	0	*	0	0	0	0	0	0	0
334	Computer and Electronic Products	*	*	*	0	*	*	0	*	0	0
334413	Semiconductors and Related Devices	*	0	*	0	0	0	0	0	0	0
335	Electrical Equip., Appliances, and Components	*	*	*	0	*	*	0	0	0	0
336	Transportation Equipment	*	*	*	0	*	*	0	0	0	0
336111	Automobiles	0	0	0	0	0	0	0	0	0	0
336112	Light Trucks and Utility Vehicles	0	0	0	0	0	0	0	0	0	0
3364	Aerospace Product and Parts	*	*	*	0	*	*	0	0	0	0
336411	Aircraft	*	*	*	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
	Total	13	4	8	*	3	1	*	*	0	*

**Northeast Census Region**

311	Food	*	*	*	0	*	*	0	0	0	*
3112	Grain and Oilseed Milling	*	0	*	0	0	0	0	0	0	0
311221	Wet Corn Milling	*	0	*	0	0	0	0	0	0	0
31131	Sugar Manufacturing	0	0	0	0	0	0	0	0	0	0
3114	Fruit and Vegetable Preserving and Specialty Foods	*	*	*	0	*	0	0	0	0	0
3115	Dairy Products	*	*	*	0	*	0	0	0	0	0
3116	Animal Slaughtering and Processing	*	*	0	0	*	*	0	0	0	*
312	Beverage and Tobacco Products	*	*	*	0	*	0	0	0	0	0
3121	Beverages	*	*	*	0	*	0	0	0	0	0
3122	Tobacco	*	0	*	0	0	0	0	0	0	0
313	Textile Mills	*	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
321	Wood Products	*	0	*	0	0	0	0	0	0	0
321113	Sawmills	*	0	*	0	0	0	0	0	0	0
3212	Veneer, Plywood, and Engineered Woods	0	0	0	0	0	0	0	0	0	0
321219	Reconstituted Wood Products	0	0	0	0	0	0	0	0	0	0
3219	Other Wood Products	*	0	*	0	0	0	0	0	0	0
322	Paper	2	*	2	*	*	*	0	0	0	*
322110	Pulp Mills	*	0	*	0	0	0	0	0	0	0
322121	Paper Mills, except Newsprint	1	*	1	*	*	*	0	0	0	*
322122	Newsprint Mills	*	0	*	0	0	0	0	0	0	0
322130	Paperboard Mills	*	*	*	*	*	*	0	0	0	0
323	Printing and Related Support	*	0	0	0	0	0	0	0	0	0
324	Petroleum and Coal Products	1	*	1	0	*	*	*	0	0	0
324110	Petroleum Refineries	1	*	1	0	*	*	0	0	0	0
324121	Asphalt Paving Mixture and Block	*	*	*	0	*	*	0	0	0	0
324199	Other Petroleum and Coal Products	*	*	0	0	*	0	*	0	0	0

**Table 10.4 Capability to Switch Residual Fuel Oil to Alternative Energy Sources, 2010;**

**Level: National and Regional Data;**  
**Row: NAICS Codes, Value of Shipments and Employment Sizes;**  
**Column: Energy Sources;**  
**Unit: Million Barrels.**

NAICS Code(a)	Selected Subsectors and Industry	Residual Fuel Oil				Alternative Energy Sources(b)					
		Total Consumed(c)	Switchable	Not Switchable	Electricity Receipts(d)	Natural Gas	Distillate Fuel Oil	Coal	LPG	Coal Coke and Breeze	Other(e)
325	Chemicals	1	*	*	0	*	*	0	0	0	0
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
325181	Alkalies and Chlorine	0	0	0	0	0	0	0	0	0	0
325182	Carbon Black	0	0	0	0	0	0	0	0	0	0
325188	Other Basic Inorganic Chemicals	*	0	*	0	0	0	0	0	0	0
325192	Cyclic Crudes and Intermediates	*	*	0	0	*	0	0	0	0	0
325193	Ethyl Alcohol	0	0	0	0	0	0	0	0	0	0
325199	Other Basic Organic Chemicals	0	0	0	0	0	0	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
325222	Noncellulosic Organic Fibers	0	0	0	0	0	0	0	0	0	0
325311	Nitrogenous Fertilizers	*	0	*	0	0	0	0	0	0	0
325312	Phosphatic Fertilizers	0	0	0	0	0	0	0	0	0	0
3254	Pharmaceuticals and Medicines	*	0	*	0	0	0	0	0	0	0
325412	Pharmaceutical Preparation	*	0	*	0	0	0	0	0	0	0
325992	Photographic Film, Paper, Plate, and Chemicals	*	*	*	0	*	*	0	0	0	0
326	Plastics and Rubber Products	0	0	0	0	0	0	0	0	0	0
327	Nonmetallic Mineral Products	*	*	*	*	0	0	0	0	0	0
327121	Brick and Structural Clay Tile	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
327410	Lime	0	0	0	0	0	0	0	0	0	0
327420	Gypsum	*	*	0	*	0	0	0	0	0	0
327993	Mineral Wool	0	0	0	0	0	0	0	0	0	0
331	Primary Metals	*	*	*	0	*	0	0	0	0	0
331111	Iron and Steel Mills	0	0	0	0	0	0	0	0	0	0
331112	Electrometallurgical Ferroalloy Products	0	0	0	0	0	0	0	0	0	0
3312	Steel Products from Purchased Steel	*	0	*	0	0	0	0	0	0	0
3313	Alumina and Aluminum	*	*	0	0	*	0	0	0	0	0
331314	Secondary Smelting and Alloying of Aluminum	*	0	0	0	0	0	0	0	0	0
331315	Aluminum Sheet, Plate and Foils	*	*	0	0	*	0	0	0	0	0
331316	Aluminum Extruded Products	0	0	0	0	0	0	0	0	0	0
3314	Nonferrous Metals, except Aluminum	*	0	*	0	0	0	0	0	0	0
331419	Primary Smelting and Refining of Nonferrous Metals, except Copper and Al	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
331521	Aluminum 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	*	0	*	0	0	0	0	0	0	0
333	Machinery	0	0	0	0	0	0	0	0	0	0
334	Computer and Electronic Products	*	*	*	0	*	*	0	*	0	0
334413	Semiconductors and Related Devices	*	0	*	0	0	0	0	0	0	0
335	Electrical Equip., Appliances, and Components	*	*	*	0	*	*	0	0	0	0
336	Transportation Equipment	*	*	*	0	*	*	0	0	0	0
336111	Automobiles	0	0	0	0	0	0	0	0	0	0
336112	Light Trucks and Utility Vehicles	0	0	0	0	0	0	0	0	0	0
3364	Aerospace Product and Parts	*	*	*	0	*	*	0	0	0	0
336411	Aircraft	*	*	*	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	5	1	3	*	1	*	*	*	0	*

**Midwest Census Region**

311	Food	*	*	*	0	*	*	0	0	0	0
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**Table 10.4 Capability to Switch Residual Fuel Oil to Alternative Energy Sources, 2010;**

**Level: National and Regional Data;**  
**Row: NAICS Codes, Value of Shipments and Employment Sizes;**  
**Column: Energy Sources;**  
**Unit: Million Barrels.**

NAICS Code(a)	Selected Subsectors and Industry	Residual Fuel Oil				Alternative Energy Sources(b)					
		Total Consumed(c)	Switchable	Not Switchable	Electricity Receipts(d)	Natural Gas	Distillate Fuel Oil	Coal	LPG	Coal Coke and Breeze	Other(e)
325182	Carbon Black	*	0	*	0	0	0	0	0	0	0
325188	Other Basic Inorganic Chemicals	*	*	0	0	*	0	0	0	0	0
325192	Cyclic Crudes and Intermediates	*	0	*	0	0	0	0	0	0	0
325193	Ethyl Alcohol	0	0	0	0	0	0	0	0	0	0
325199	Other Basic Organic Chemicals	*	0	*	0	0	0	0	0	0	0
325211	Plastics Materials and Resins	*	*	*	0	*	*	0	0	0	0
325212	Synthetic Rubber	0	0	0	0	0	0	0	0	0	0
325222	Noncellulosic Organic Fibers	*	*	*	0	*	*	*	0	0	0
325311	Nitrogenous Fertilizers	0	0	0	0	0	0	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, and Chemicals	0	0	0	0	0	0	0	0	0	0
326	Plastics and Rubber Products	*	*	*	0	*	0	0	0	0	0
327	Nonmetallic Mineral Products	*	*	*	0	*	*	0	0	0	0
327121	Brick and Structural Clay Tile	*	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
327410	Lime	0	0	0	0	0	0	0	0	0	0
327420	Gypsum	0	0	0	0	0	0	0	0	0	0
327993	Mineral Wool	0	0	0	0	0	0	0	0	0	0
331	Primary Metals	*	*	0	0	*	*	0	0	0	0
331111	Iron and Steel Mills	*	*	0	0	*	*	0	0	0	0
331112	Electrometallurgical Ferroalloy Products	0	0	0	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	*	*	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
331316	Aluminum Extruded Products	0	0	0	0	0	0	0	0	0	0
3314	Nonferrous Metals, except Aluminum	0	0	0	0	0	0	0	0	0	0
331419	Primary Smelting and Refining of Nonferrous Metals, except Copper and Al	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
331521	Aluminum 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	0	0	0	0	0	0	0	0	0	0
333	Machinery	0	0	0	0	0	0	0	0	0	0
334	Computer and Electronic Products	0	0	0	0	0	0	0	0	0	0
334413	Semiconductors and Related Devices	0	0	0	0	0	0	0	0	0	0
335	Electrical Equip., Appliances, and Components	0	0	0	0	0	0	0	0	0	0
336	Transportation Equipment	*	0	*	0	0	0	0	0	0	0
336111	Automobiles	0	0	0	0	0	0	0	0	0	0
336112	Light Trucks and Utility Vehicles	0	0	0	0	0	0	0	0	0	0
3364	Aerospace Product and Parts	*	0	*	0	0	0	0	0	0	0
336411	Aircraft	*	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
	Total	6	2	4	*	1	1	*	*	0	*
<b>West Census Region</b>											
311	Food	*	*	0	0	*	0	0	0	0	0
3112	Grain and Oilseed Milling	0	0	0	0	0	0	0	0	0	0
311221	Wet Corn Milling	0	0	0	0	0	0	0	0	0	0
31131	Sugar Manufacturing	0	0	0	0	0	0	0	0	0	0
3114	Fruit and Vegetable Preserving and Specialty Foods	*	*	0	0	*	0	0	0	0	0



**Table 10.4 Capability to Switch Residual Fuel Oil to Alternative Energy Sources, 2010;**

**Level: National and Regional Data;**  
**Row: NAICS Codes, Value of Shipments and Employment Sizes;**  
**Column: Energy Sources;**  
**Unit: Million Barrels.**

NAICS Code(a)	Selected Subsectors and Industry	Residual Fuel Oil				Alternative Energy Sources(b)					
		Total Consumed(c)	Switchable	Not Switchable	Electricity Receipts(d)	Natural Gas	Distillate Fuel Oil	Coal	LPG	Coal Coke and Breeze	Other(e)
3314	Nonferrous Metals, except Aluminum	0	0	0	0	0	0	0	0	0	0
331419	Primary Smelting and Refining of Nonferrous Metals, except Copper and Al	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
331521	Aluminum 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	0	0	0	0	0	0	0	0	0	0
333	Machinery	0	0	0	0	0	0	0	0	0	0
334	Computer and Electronic Products	0	0	0	0	0	0	0	0	0	0
334413	Semiconductors and Related Devices	0	0	0	0	0	0	0	0	0	0
335	Electrical Equip., Appliances, and Components	0	0	0	0	0	0	0	0	0	0
336	Transportation Equipment	0	0	0	0	0	0	0	0	0	0
336111	Automobiles	0	0	0	0	0	0	0	0	0	0
336112	Light Trucks and Utility Vehicles	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	1	*	1	0	*	*	0	*	0	0
<b>Economic Characteristic (f)</b>											
<b>Value of Shipments and Receipts (million dollars)</b>											
	Under 20	1	*	*	*	*	*	0	*	0	*
	20-49	2	*	2	*	*	*	0	0	0	*
	50-99	1	*	*	0	*	*	*	*	0	*
	100-249	3	*	2	*	*	*	0	0	0	0
	250-499	3	1	2	*	*	*	0	0	0	*
	500 and Over	3	1	2	*	1	*	*	*	0	*
	Total	13	4	8	*	3	1	*	*	0	*
<b>Employment Size</b>											
	Under 50	2	*	1	*	*	*	0	*	0	*
	50-99	1	*	*	*	*	*	*	0	0	*
	100-249	3	1	2	0	1	*	*	0	0	*
	250-499	3	1	2	*	*	*	*	*	0	*
	500-999	3	1	2	*	1	*	*	0	0	*
	1000 and Over	1	*	1	*	*	*	*	*	0	*
	Total	13	4	8	*	3	1	*	*	0	*

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

(b) 'Alternative Energy Sources' consist of those energy sources that could have been substituted for residual fuel oil during 2010. 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.

(c) '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.

(d) '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



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**Level: National and Regional Data;**

**Row: NAICS Codes, Value of Shipments and Employment Sizes;**

**Column: Energy Sources;**

**Unit: Million Barrels.**

NAICS Code(a)	Selected Subsectors and Industry	Residual Fuel Oil			Alternative Energy Sources(b)					
		Total Consumed(c)	Switchable	Not Switchable	Electricity Receipts(d)	Natural Gas	Distillate Fuel Oil	Coal	LPG	Coal Coke and Breeze

switchable or not switchable, plus an additional quantity for which the switching status was not ascertained.

(e) 'Other' includes all other types of energy not already identified that respondents indicated could have been consumed in place of residual fuel oil.

(f) Value of Shipments and Receipts and Employment Size categories were supplied by the Bureau of the Census.

NF=No applicable RSE row/column factor.

\* Estimate less than 0.5.

W=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.

Source: Energy Information Administration, Office of Energy Consumption and Efficiency Statistics, Form EIA-846, '2010 Manufacturing Energy Consumption Survey,' and the Bureau of the Census, data files for the '2010 Annual Survey of Manufactures.'

**RSE Table 10.4 Relative Standard Errors for Table 10.4;**  
**Unit: Percents.**

NAICS Code(a)	Selected Subsectors and Industry	Residual Fuel Oil				Alternative Energy Sources(b)					
		Total Consumed(c)	Switchable	Not Switchable	Electricity Receipts(d)	Natural Gas	Distillate Fuel Oil	Coal	LPG	Coal Coke and Breeze	Other(e)
<b>Total United States</b>											
311	Food	15.4	10.1	27.2	41.1	9.9	16.6	X	X	X	20.9
3112	Grain and Oilseed Milling	38.6	37.2	41.0	X	37.2	0.0	X	X	X	40.4
311221	Wet Corn Milling	0.0	X	0.0	X	X	X	X	X	X	X
31131	Sugar Manufacturing	0.0	0.0	0.0	X	0.0	0.0	X	X	X	X
3114	Fruit and Vegetable Preserving and Specialty Foods	13.1	27.3	13.4	X	27.3	30.8	X	X	X	X
3115	Dairy Products	18.3	0.0	2.7	X	0.0	X	X	X	X	X
3116	Animal Slaughtering and Processing	10.3	14.1	14.4	41.1	14.2	20.0	X	X	X	21.0
312	Beverage and Tobacco Products	0.0	0.0	0.0	X	0.0	X	0.0	X	X	X
3121	Beverages	0.0	0.0	0.0	X	0.0	X	0.0	X	X	X
3122	Tobacco	0.0	0.0	0.0	X	0.0	X	X	X	X	X
313	Textile Mills	34.5	52.3	36.0	X	66.2	91.6	77.1	66.2	X	X
314	Textile Product Mills	67.5	67.5	X	X	X	67.5	X	X	X	X
315	Apparel	X	X	X	X	X	X	X	X	X	X
316	Leather and Allied Products	0.0	X	0.0	X	X	X	X	X	X	X
321	Wood Products	30.7	0.0	45.9	X	X	0.0	X	X	X	X
321113	Sawmills	71.8	0.0	81.5	X	X	0.0	X	X	X	X
3212	Veneer, Plywood, and Engineered Woods	0.0	0.0	0.0	X	X	0.0	X	X	X	X
321219	Reconstituted Wood Products	0.0	0.0	0.0	X	X	0.0	X	X	X	X
3219	Other Wood Products	69.7	X	69.7	X	X	X	X	X	X	X
322	Paper	1.1	4.8	0.0	0.0	0.6	0.0	0.0	X	X	40.7
322110	Pulp Mills	0.0	0.0	0.0	X	0.0	0.0	X	X	X	X
322121	Paper Mills, except Newsprint	0.0	0.0	0.0	0.0	0.0	0.0	0.0	X	X	0.0
322122	Newsprint Mills	0.0	X	0.0	X	X	X	X	X	X	X
322130	Paperboard Mills	0.0	0.0	0.0	0.0	0.0	0.0	X	X	X	0.0
323	Printing and Related Support	92.3	X	X	X	X	X	X	X	X	X
324	Petroleum and Coal Products	2.0	6.3	0.9	0.0	17.0	3.1	0.0	19.5	X	0.0
324110	Petroleum Refineries	0.0	0.0	0.0	0.0	0.0	0.0	X	0.0	X	0.0
324121	Asphalt Paving Mixture and Block	10.6	16.1	9.3	0.0	27.5	8.9	X	26.2	X	X
324199	Other Petroleum and Coal Products	0.0	0.0	X	X	0.0	X	0.0	X	X	X
325	Chemicals	15.4	24.6	0.2	X	27.7	30.4	0.0	78.1	X	X
325110	Petrochemicals	0.0	0.0	0.0	X	0.0	0.0	X	X	X	X
325120	Industrial Gases	X	X	X	X	X	X	X	X	X	X
325181	Alkalies and Chlorine	X	X	X	X	X	X	X	X	X	X
325182	Carbon Black	0.0	X	0.0	X	X	X	X	X	X	X
325188	Other Basic Inorganic Chemicals	4.3	61.2	0.0	X	61.2	X	X	X	X	X
325192	Cyclic Crudes and Intermediates	0.0	0.0	0.0	X	0.0	0.0	X	X	X	X
325193	Ethyl Alcohol	X	X	X	X	X	X	X	X	X	X
325199	Other Basic Organic Chemicals	0.0	X	0.0	X	X	X	X	X	X	X
325211	Plastics Materials and Resins	61.9	62.3	0.0	X	62.3	62.2	X	78.1	X	X
325212	Synthetic Rubber	X	X	X	X	X	X	X	X	X	X
325222	Noncellulosic Organic Fibers	0.0	0.0	0.0	X	0.0	0.0	0.0	X	X	X
325311	Nitrogenous Fertilizers	0.0	X	0.0	X	X	X	X	X	X	X
325312	Phosphatic Fertilizers	0.0	0.0	0.0	X	X	0.0	X	X	X	X
3254	Pharmaceuticals and Medicines	20.4	0.0	39.8	X	0.0	X	X	X	X	X
325412	Pharmaceutical Preparation	20.9	0.0	41.7	X	0.0	X	X	X	X	X
325992	Photographic Film, Paper, Plate, and Chemicals	0.0	0.0	0.0	X	0.0	0.0	X	X	X	X
326	Plastics and Rubber Products	87.6	61.7	95.7	X	61.7	X	X	X	X	X
327	Nonmetallic Mineral Products	41.9	2.1	63.5	0.0	2.1	84.6	X	X	X	X
327121	Brick and Structural Clay Tile	69.8	X	69.8	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	0.0	0.0	0.0	X	0.0	X	X	X	X	X
327410	Lime	0.0	X	0.0	X	X	X	X	X	X	X
327420	Gypsum	0.0	0.0	X	0.0	X	X	X	X	X	X
327993	Mineral Wool	X	X	X	X	X	X	X	X	X	X
331	Primary Metals	3.1	0.0	5.6	X	0.0	0.0	X	X	X	X



**RSE Table 10.4 Relative Standard Errors for Table 10.4;**  
**Unit: Percents.**

NAICS Code(a)	Selected Subsectors and Industry	Residual Fuel Oil				Alternative Energy Sources(b)					
		Total Consumed(c)	Switchable	Not Switchable	Electricity Receipts(d)	Natural Gas	Distillate Fuel Oil	Coal	LPG	Coal Coke and Breeze	Other(e)
325120	Industrial Gases	X	X	X	X	X	X	X	X	X	X
325181	Alkalies and Chlorine	X	X	X	X	X	X	X	X	X	X
325182	Carbon Black	X	X	X	X	X	X	X	X	X	X
325188	Other Basic Inorganic Chemicals	0.0	X	0.0	X	X	X	X	X	X	X
325192	Cyclic Crudes and Intermediates	0.0	0.0	X	X	0.0	X	X	X	X	X
325193	Ethyl Alcohol	X	X	X	X	X	X	X	X	X	X
325199	Other Basic Organic Chemicals	X	X	X	X	X	X	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
325222	Noncellulosic Organic Fibers	X	X	X	X	X	X	X	X	X	X
325311	Nitrogenous Fertilizers	0.0	X	0.0	X	X	X	X	X	X	X
325312	Phosphatic Fertilizers	X	X	X	X	X	X	X	X	X	X
3254	Pharmaceuticals and Medicines	75.9	X	75.9	X	X	X	X	X	X	X
325412	Pharmaceutical Preparation	75.9	X	75.9	X	X	X	X	X	X	X
325992	Photographic Film, Paper, Plate, and Chemicals	0.0	0.0	0.0	X	0.0	0.0	X	X	X	X
326	Plastics and Rubber Products	X	X	X	X	X	X	X	X	X	X
327	Nonmetallic Mineral Products	70.6	0.0	71.0	0.0	X	X	X	X	X	X
327121	Brick and Structural Clay Tile	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	0.0	X	0.0	X	X	X	X	X	X	X
327410	Lime	X	X	X	X	X	X	X	X	X	X
327420	Gypsum	0.0	0.0	X	0.0	X	X	X	X	X	X
327993	Mineral Wool	X	X	X	X	X	X	X	X	X	X
331	Primary Metals	12.4	0.0	60.3	X	0.0	X	X	X	X	X
331111	Iron and Steel Mills	X	X	X	X	X	X	X	X	X	X
331112	Electrometallurgical Ferroalloy Products	X	X	X	X	X	X	X	X	X	X
3312	Steel Products from Purchased Steel	79.4	X	79.4	X	X	X	X	X	X	X
3313	Alumina and Aluminum	0.0	0.0	X	X	0.0	X	X	X	X	X
331314	Secondary Smelting and Alloying of Aluminum	0.0	X	X	X	X	X	X	X	X	X
331315	Aluminum Sheet, Plate and Foils	0.0	0.0	X	X	0.0	X	X	X	X	X
331316	Aluminum Extruded Products	X	X	X	X	X	X	X	X	X	X
3314	Nonferrous Metals, except Aluminum	0.0	X	0.0	X	X	X	X	X	X	X
331419	Primary Smelting and Refining of Nonferrous Metals, except Copper and Al	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
331521	Aluminum 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	0.0	0.0	X	0.0	0.0	X	0.0	X	X
334413	Semiconductors and Related Devices	0.0	X	0.0	X	X	X	X	X	X	X
335	Electrical Equip., Appliances, and Components	73.3	86.1	90.6	X	86.1	86.1	X	X	X	X
336	Transportation Equipment	0.1	0.1	0.0	X	0.1	0.0	X	X	X	X
336111	Automobiles	X	X	X	X	X	X	X	X	X	X
336112	Light Trucks and Utility Vehicles	X	X	X	X	X	X	X	X	X	X
3364	Aerospace Product and Parts	0.0	0.0	0.0	X	0.0	0.0	X	X	X	X
336411	Aircraft	0.0	0.0	0.0	X	0.0	0.0	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	7.4	15.2	5.4	0.0	22.4	4.8	0.0	0.0	X	40.7
<b>Midwest Census Region</b>											
311	Food	11.9	0.3	2.0	X	0.3	4.4	X	X	X	X
3112	Grain and Oilseed Milling	30.7	X	30.7	X	X	X	X	X	X	X
311221	Wet Corn Milling	X	X	X	X	X	X	X	X	X	X
31131	Sugar Manufacturing	0.0	0.0	X	X	0.0	0.0	X	X	X	X



**RSE Table 10.4 Relative Standard Errors for Table 10.4;  
 Unit: Percents.**

NAICS Code(a)	Selected Subsectors and Industry	Residual Fuel Oil				Alternative Energy Sources(b)					
		Total Consumed(c)	Switchable	Not Switchable	Electricity Receipts(d)	Natural Gas	Distillate Fuel Oil	Coal	LPG	Coal Coke and Breeze	Other(e)
3314	Nonferrous Metals, except Aluminum	X	X	X	X	X	X	X	X	X	X
331419	Primary Smelting and Refining of Nonferrous Metals, except Copper and Al	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
331521	Aluminum 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	X	X	X	X	X	X	X	X	X	X
333	Machinery	99.0	X	99.0	X	X	X	X	X	X	X
334	Computer and Electronic Products	X	X	X	X	X	X	X	X	X	X
334413	Semiconductors and Related Devices	X	X	X	X	X	X	X	X	X	X
335	Electrical Equip., Appliances, and Components	X	X	X	X	X	X	X	X	X	X
336	Transportation Equipment	0.0	0.0	0.0	X	0.0	X	X	X	X	X
336111	Automobiles	X	X	X	X	X	X	X	X	X	X
336112	Light Trucks and Utility Vehicles	X	X	X	X	X	X	X	X	X	X
3364	Aerospace Product and Parts	0.0	0.0	0.0	X	0.0	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	6.6	1.1	14.5	0.0	1.3	0.7	0.0	0.0	X	0.0
<b>South Census Region</b>											
311	Food	23.4	16.1	40.7	41.1	16.8	18.0	X	X	X	21.7
3112	Grain and Oilseed Milling	74.2	37.2	83.7	X	37.2	0.0	X	X	X	40.4
311221	Wet Corn Milling	X	X	X	X	X	X	X	X	X	X
31131	Sugar Manufacturing	0.0	X	0.0	X	X	X	X	X	X	X
3114	Fruit and Vegetable Preserving and Specialty Foods	30.1	29.4	82.4	X	29.4	30.8	X	X	X	X
3115	Dairy Products	X	X	X	X	X	X	X	X	X	X
3116	Animal Slaughtering and Processing	12.2	18.3	14.4	41.1	19.5	21.0	X	X	X	21.8
312	Beverage and Tobacco Products	0.0	0.0	X	X	0.0	X	0.0	X	X	X
3121	Beverages	0.0	0.0	X	X	X	X	0.0	X	X	X
3122	Tobacco	0.0	0.0	X	X	0.0	X	X	X	X	X
313	Textile Mills	48.8	52.3	53.3	X	66.2	91.6	77.1	66.2	X	X
314	Textile Product Mills	67.5	67.5	X	X	X	67.5	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	0.0	0.0	X	X	X	0.0	X	X	X	X
321113	Sawmills	X	X	X	X	X	X	X	X	X	X
3212	Veneer, Plywood, and Engineered Woods	0.0	0.0	X	X	X	0.0	X	X	X	X
321219	Reconstituted Wood Products	0.0	0.0	X	X	X	0.0	X	X	X	X
3219	Other Wood Products	X	X	X	X	X	X	X	X	X	X
322	Paper	0.0	0.0	0.0	0.0	0.0	0.0	0.0	X	X	0.0
322110	Pulp Mills	0.0	0.0	0.0	X	0.0	0.0	X	X	X	X
322121	Paper Mills, except Newsprint	0.0	0.0	0.0	X	0.0	X	X	X	X	0.0
322122	Newsprint Mills	X	X	X	X	X	X	X	X	X	X
322130	Paperboard Mills	0.0	0.0	0.0	0.0	0.0	0.0	0.0	X	X	0.0
323	Printing and Related Support	X	X	X	X	X	X	X	X	X	X
324	Petroleum and Coal Products	8.6	11.9	8.3	0.0	38.0	3.1	X	26.2	X	X
324110	Petroleum Refineries	0.0	0.0	0.0	X	X	0.0	X	X	X	X
324121	Asphalt Paving Mixture and Block	17.1	24.4	14.9	0.0	38.1	9.2	X	26.2	X	X
324199	Other Petroleum and Coal Products	X	X	X	X	X	X	X	X	X	X
325	Chemicals	17.9	39.1	0.0	X	40.6	45.0	0.0	X	X	X
325110	Petrochemicals	0.0	X	0.0	X	X	X	X	X	X	X
325120	Industrial Gases	X	X	X	X	X	X	X	X	X	X
325181	Alkalies and Chlorine	X	X	X	X	X	X	X	X	X	X
325182	Carbon Black	0.0	X	0.0	X	X	X	X	X	X	X
325188	Other Basic Inorganic Chemicals	61.2	61.2	X	X	61.2	X	X	X	X	X
325192	Cyclic Crudes and Intermediates	0.0	X	0.0	X	X	X	X	X	X	X
325193	Ethyl Alcohol	X	X	X	X	X	X	X	X	X	X
325199	Other Basic Organic Chemicals	0.0	X	0.0	X	X	X	X	X	X	X

**RSE Table 10.4 Relative Standard Errors for Table 10.4;  
 Unit: Percents.**

NAICS Code(a)	Selected Subsectors and Industry	Residual Fuel Oil				Alternative Energy Sources(b)					
		Total Consumed(c)	Switchable	Not Switchable	Electricity Receipts(d)	Natural Gas	Distillate Fuel Oil	Coal	LPG	Coal Coke and Breeze	Other(e)
325211	Plastics Materials and Resins	61.9	62.3	0.0	X	62.3	62.3	X	X	X	X
325212	Synthetic Rubber	X	X	X	X	X	X	X	X	X	X
325222	Noncellulosic Organic Fibers	0.0	0.0	0.0	X	0.0	0.0	0.0	X	X	X
325311	Nitrogenous Fertilizers	X	X	X	X	X	X	X	X	X	X
325312	Phosphatic Fertilizers	0.0	0.0	0.0	X	X	0.0	X	X	X	X
3254	Pharmaceuticals and Medicines	0.0	0.0	0.0	X	0.0	X	X	X	X	X
325412	Pharmaceutical Preparation	0.0	0.0	0.0	X	0.0	X	X	X	X	X
325992	Photographic Film, Paper, Plate, and Chemicals	X	X	X	X	X	X	X	X	X	X
326	Plastics and Rubber Products	87.6	61.7	95.7	X	61.7	X	X	X	X	X
327	Nonmetallic Mineral Products	2.2	2.1	69.8	X	2.1	84.6	X	X	X	X
327121	Brick and Structural Clay Tile	69.8	X	69.8	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	0.0	0.0	X	X	0.0	X	X	X	X	X
327410	Lime	X	X	X	X	X	X	X	X	X	X
327420	Gypsum	X	X	X	X	X	X	X	X	X	X
327993	Mineral Wool	X	X	X	X	X	X	X	X	X	X
331	Primary Metals	0.0	0.0	X	X	0.0	0.0	X	X	X	X
331111	Iron and Steel Mills	0.0	0.0	X	X	0.0	0.0	X	X	X	X
331112	Electrometallurgical Ferroalloy Products	X	X	X	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	0.0	0.0	X	X	0.0	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	0.0	0.0	X	X	0.0	X	X	X	X	X
331316	Aluminum Extruded Products	X	X	X	X	X	X	X	X	X	X
3314	Nonferrous Metals, except Aluminum	X	X	X	X	X	X	X	X	X	X
331419	Primary Smelting and Refining of Nonferrous Metals, except Copper and Al	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
331521	Aluminum 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	X	X	X	X	X	X	X	X	X	X
333	Machinery	X	X	X	X	X	X	X	X	X	X
334	Computer and Electronic Products	X	X	X	X	X	X	X	X	X	X
334413	Semiconductors and Related Devices	X	X	X	X	X	X	X	X	X	X
335	Electrical Equip., Appliances, and Components	X	X	X	X	X	X	X	X	X	X
336	Transportation Equipment	0.0	X	0.0	X	X	X	X	X	X	X
336111	Automobiles	X	X	X	X	X	X	X	X	X	X
336112	Light Trucks and Utility Vehicles	X	X	X	X	X	X	X	X	X	X
3364	Aerospace Product and Parts	0.0	X	0.0	X	X	X	X	X	X	X
336411	Aircraft	0.0	X	0.0	X	X	X	X	X	X	X
337	Furniture and Related Products	X	X	X	X	X	X	X	X	X	X
339	Miscellaneous	99.0	X	99.0	X	X	X	X	X	X	X
	Total	4.4	6.0	6.1	0.2	8.4	10.7	0.1	24.8	X	20.9
<b>West Census Region</b>											
311	Food	0.0	0.0	X	X	0.0	X	X	X	X	X
3112	Grain and Oilseed Milling	X	X	X	X	X	X	X	X	X	X
311221	Wet Corn Milling	X	X	X	X	X	X	X	X	X	X
31131	Sugar Manufacturing	X	X	X	X	X	X	X	X	X	X
3114	Fruit and Vegetable Preserving and Specialty Foods	0.0	0.0	X	X	0.0	X	X	X	X	X
3115	Dairy Products	X	X	X	X	X	X	X	X	X	X
3116	Animal Slaughtering and Processing	X	X	X	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	0.0	X	0.0	X	X	X	X	X	X	X





**RSE Table 10.4 Relative Standard Errors for Table 10.4;  
 Unit: Percents.**

NAICS Code(a)	Selected Subsectors and Industry	Residual Fuel Oil				Alternative Energy Sources(b)					
		Total Consumed(c)	Switchable	Not Switchable	Electricity Receipts(d)	Natural Gas	Distillate Fuel Oil	Coal	LPG	Coal Coke and Breeze	Other(e)
333	Machinery	X	X	X	X	X	X	X	X	X	X
334	Computer and Electronic Products	X	X	X	X	X	X	X	X	X	X
334413	Semiconductors and Related Devices	X	X	X	X	X	X	X	X	X	X
335	Electrical Equip., Appliances, and Components	X	X	X	X	X	X	X	X	X	X
336	Transportation Equipment	X	X	X	X	X	X	X	X	X	X
336111	Automobiles	X	X	X	X	X	X	X	X	X	X
336112	Light Trucks and Utility Vehicles	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	3.8	13.5	3.8	X	13.5	1.3	X	78.1	X	X
<b>Economic Characteristic (f)</b>											
<b>Value of Shipments and Receipts (million dollars)</b>											
	Under 20	13.5	18.5	19.4	0.0	28.2	19.8	X	26.2	X	54.6
	20-49	4.6	19.4	3.6	0.0	16.3	9.4	X	X	X	25.3
	50-99	31.4	43.8	36.8	X	45.7	0.0	0.0	66.2	X	0.0
	100-249	8.6	14.3	10.3	41.1	15.1	39.7	0.7	X	X	X
	250-499	3.1	9.7	1.8	0.0	17.8	17.1	0.0	X	X	14.2
	500 and Over	0.2	0.4	0.0	0.0	0.6	0.0	0.0	0.0	X	0.0
	Total	3.5	5.6	3.5	0.1	7.6	7.3	0.1	17.6	X	18.6
<b>Employment Size</b>											
	Under 50	12.4	15.7	15.2	0.0	23.5	8.9	X	26.2	X	47.5
	50-99	25.5	40.7	9.4	0.0	45.0	37.5	0.0	X	X	49.8
	100-249	7.9	9.9	11.6	X	9.1	19.8	0.0	X	X	29.6
	250-499	8.6	1.0	0.1	0.0	2.1	2.0	0.0	28.1	X	0.0
	500-999	0.3	0.5	0.4	0.0	1.0	0.1	1.0	X	X	0.0
	1000 and Over	3.0	3.5	4.1	41.1	3.6	0.0	0.0	0.0	X	0.0
	Total	3.5	5.6	3.5	0.1	7.6	7.3	0.1	17.6	X	18.6

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

(b) 'Alternative Energy Sources' consist of those energy sources that could have been substituted for residual fuel oil during 2010. 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.

(c) '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.

(d) '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.

(e) 'Other' includes all other types of energy not already identified that respondents indicated could have been consumed in place of residual fuel oil.

(f) Value of Shipments and Receipts and Employment Size categories were supplied by the Bureau of the Census.

NF=No applicable RSE row/column factor.

\* Estimate less than 0.5.

W=Withheld to avoid disclosing data for individual establishments.

**RSE Table 10.4 Relative Standard Errors for Table 10.4;**

**Unit: Percents.**

NAICS Code(a)	Selected Subsectors and Industry	Residual Fuel Oil			Alternative Energy Sources(b)					
		Total Consumed(c)	Switchable	Not Switchable	Electricity Receipts(d)	Natural Gas	Distillate Fuel Oil	Coal	LPG	Coal Coke and Breeze

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

NA=Not available.

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

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

Source: Energy Information Administration, Office of Energy Consumption and Efficiency Statistics, Form EIA-846, '2010 Manufacturing Energy Consumption Survey,' and the Bureau of the Census, data files for the '2010 Annual Survey of Manufactures.'