

Table 10.4 Capability to Switch Residual Fuel Oil to Alternative Energy Sources, 2002;
Level: National Data and Regional Totals;
Row: NAICS Codes, Value of Shipments and Employment Sizes;
Column: Energy Sources;
Unit: Thousand Barrels.

NAICS Code(a)	Subsector and Industry	Residual Fuel Oil			Alternative Energy Sources(b)							RSE Row Factors
		Total Consumed(c)	Switchable	Not Switchable	Electricity Receipts(d)	Natural Gas	Distillate Fuel Oil	Coal	LPG	Coal Coke and Breeze	Other(e)	
Total United States												
	RSE Column Factors:	1.9	1.4	1.9	0.6	1.5	0.6	0.6	0.9	0	0.7	
311	Food	2,125	1,411	508	0	819	W	W	Q	0	Q	11.1
311221	Wet Corn Milling	61	W	45	0	0	W	0	0	0	0	0.8
31131	Sugar	346	193	98	0	169	0	W	0	0	0	0.7
311421	Fruit and Vegetable Canning	153	29	Q	0	29	*	0	0	0	0	24.6
312	Beverage and Tobacco Products	274	153	122	0	153	35	1	0	0	0	2.3
3121	Beverages	147	111	Q	0	111	W	0	0	0	0	2.1
3122	Tobacco	128	42	86	0	42	W	1	0	0	0	0.8
313	Textile Mills	647	288	268	0	177	148	Q	Q	0	*	21.8
314	Textile Product Mills	278	267	0	0	244	252	6	Q	0	0	41.8
315	Apparel	23	0	23	0	0	0	0	0	0	0	26
316	Leather and Allied Products	48	0	48	0	0	0	0	0	0	0	0.5
321	Wood Products	155	74	81	*	64	W	0	0	0	Q	5.5
321113	Sawmills	6	*	5	*	0	0	0	0	0	0	0.8
3212	Veneer, Plywood, and Engineered Woods	106	64	43	0	64	W	0	0	0	0	7.3
3219	Other Wood Products	Q	Q	Q	0	0	0	0	0	0	Q	0
322	Paper	15,937	6,041	8,808	505	4,433	1,049	W	286	0	498	2.7
322110	Pulp Mills	W	716	W	88	628	89	0	1	0	0	1
322121	Paper Mills, except Newsprint	7,539	2,311	4,348	416	1,375	235	W	113	0	396	3.7
322122	Newsprint Mills	W	1	W	0	1	0	0	0	0	0	0.6
322130	Paperboard Mills	5,392	2,877	2,332	1	2,293	725	W	W	0	W	2.4
323	Printing and Related Support	Q	Q	0	Q	Q	Q	0	0	0	Q	0
324	Petroleum and Coal Products	3,995	1,879	1,977	W	1,762	652	0	893	0	W	4.2
324110	Petroleum Refineries	3,340	1,470	1,852	W	1,372	392	0	893	0	W	1.6
324199	Other Petroleum and Coal Products	W	0	W	0	0	0	0	0	0	0	0.5
325	Chemicals	6,487	1,996	1,665	40	1,848	454	58	0	Q	0	14.4
325110	Petrochemicals	W	W	W	0	W	0	0	0	0	0	0.6
325120	Industrial Gases	0	0	0	0	0	0	0	0	0	0	0
325181	Alkalies and Chlorine	Q	0	Q	0	0	0	0	0	0	0	0
325182	Carbon Black	1,724	*	1,723	0	*	0	0	0	0	0	0.6
325188	Other Basic Inorganic Chemicals	304	0	269	0	0	0	0	0	0	0	3.7
325192	Cyclic Crudes and Intermediates	W	W	W	0	W	0	0	0	0	0	0.6
325193	Ethyl Alcohol	0	0	0	0	0	0	0	0	0	0	0
325199	Other Basic Organic Chemicals	2,108	Q	268	0	Q	W	0	0	0	0	6.2
325211	Plastics Materials and Resins	87	Q	65	Q	8	0	Q	0	Q	0	4.2
325212	Synthetic Rubber	9	9	0	0	9	Q	0	0	0	0	29.5

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NAICS Code(a)	Subsector and Industry	Residual Fuel Oil		Alternative Energy Sources(b)							RSE Row Factors	
		Total Consumed(c)	Switchable	Not Switchable	Electricity Receipts(d)	Natural Gas	Distillate Fuel Oil	Coal	LPG	Coal Coke and Breeze		Other(e)
325222	Noncellulosic Organic Fibers	W	213	W	W	158	W	W	0	0	0	1.5
325311	Nitrogenous Fertilizers	0	0	*	0	0	0	0	0	0	0	0.5
325312	Phosphatic Fertilizers	182	20	162	0	20	0	0	0	0	0	0.6
3254	Pharmaceuticals and Medicines	287	249	38	0	W	W	0	0	0	0	1.4
325412	Pharmaceutical Preparation	254	249	Q	0	W	W	0	0	0	0	1
325992	Photographic Film, Paper, Plate, and Chemicals	156	W	W	0	22	0	W	0	0	0	0.7
326	Plastics and Rubber Products	1,174	685	430	0	685	115	0	*	0	*	3.8
327	Nonmetallic Mineral Products	459	167	283	Q	167	0	*	0	0	W	1.6
3272	Glass and Glass Products	W	41	W	0	41	0	0	0	0	0	0.6
327211	Flat Glass	W	0	W	0	0	0	0	0	0	0	0.5
327213	Glass Containers	0	0	0	0	0	0	0	0	0	0	0
327310	Cements	106	41	65	0	41	0	0	0	0	0	0.6
327410	Lime	W	W	0	*	W	0	0	0	0	W	0.8
327993	Mineral Wool	0	0	0	0	0	0	0	0	0	0	0.5
331	Primary Metals	142	24	88	0	24	6	0	0	0	0	5
331111	Iron and Steel Mills	96	0	71	0	0	0	0	0	0	0	0.5
331112	Electrometallurgical Ferroalloy Products	0	0	0	0	0	0	0	0	0	0	0
3312	Steel Products from Purchased Steel	24	8	Q	0	8	0	0	0	0	0	2.2
3313	Alumina and Aluminum	*	*	0	0	*	0	0	0	0	0	0.6
331312	Primary Aluminum	*	*	0	0	*	0	0	0	0	0	0.6
3314	Nonferrous Metals, except Aluminum	21	16	0	0	16	6	0	0	0	0	8.4
3315	Foundries	Q	*	0	0	*	0	0	0	0	0	0.7
331511	Iron Foundries	0	0	0	0	0	0	0	0	0	0	0
331521	Aluminum Die-Casting Foundries	*	*	0	0	*	0	0	0	0	0	0.6
331524	Aluminum Foundries, except Die-Casting	Q	0	0	0	0	0	0	0	0	0	0
332	Fabricated Metal Products	Q	Q	12	0	Q	0	0	0	0	0	13.1
333	Machinery	7	Q	*	0	Q	0	0	0	0	0	3.3
334	Computer and Electronic Products	123	56	66	0	53	3	0	0	0	0	10
334413	Semiconductors and Related Devices	1	1	0	0	1	0	0	0	0	0	0.6
335	Electrical Equip., Appliances, and Components	36	31	3	0	31	0	0	0	0	0	4.9
336	Transportation Equipment	990	475	399	159	475	10	4	7	0	13	1.5
336112	Light Trucks and Utility Vehicles	W	1	W	0	1	0	0	0	0	0	0.6
337	Furniture and Related Products	Q	0	0	0	0	0	0	0	0	0	0
339	Miscellaneous	36	36	0	0	36	0	0	0	0	0	1.3
	Total	33,132	13,710	14,782	714	11,095	3,348	683	1,263	Q	615	4.8
Northeast Census Region												
RSE Column Factors:		1.9	1.4	1.9	0.6	1.5	0.6	0.6	0.9	0	0.7	

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NAICS Code(a)	Subsector and Industry	Residual Fuel Oil			Alternative Energy Sources(b)							RSE Row Factors
		Total Consumed(c)	Switchable	Not Switchable	Electricity Receipts(d)	Natural Gas	Distillate Fuel Oil	Coal	LPG	Coal Coke and Breeze	Other(e)	
	Total	10,742	3,400	5,929	556	2,434	678	46	100	Q	371	6.4
Midwest Census Region												
	RSE Column Factors:	1.9	1.4	1.9	0.6	1.5	0.6	0.6	0.9	0	0.7	
	Total	3,442	2,964	451	W	2,920	W	40	716	0	W	9.9
South Census Region												
	RSE Column Factors:	1.9	1.4	1.9	0.6	1.5	0.6	0.6	0.9	0	0.7	
	Total	17,001	6,664	7,451	144	5,059	2,249	596	W	0	187	4.7
West Census Region												
	RSE Column Factors:	1.9	1.4	1.9	0.6	1.5	0.6	0.6	0.9	0	0.7	
	Total	1,947	683	951	W	682	W	0	W	0	W	1.2
Economic Characteristic (f)												
	RSE Column Factors:	1.1	1.9	0.9	0.3	2.1	1.9	0.5	1.2	0	0.8	
Value of Shipments and Receipts (million dollars)												
	Under 20	2,406	1,267	742	Q	721	Q	W	0	Q	Q	18.7
	20-49	4,485	1,586	917	*	1,380	Q	*	W	0	0	6.2
	50-99	2,774	839	1,659	W	677	238	0	99	0	0	9.8
	100-249	6,909	2,719	3,379	88	2,512	385	44	42	0	*	12.2
	250-499	9,019	3,724	5,157	W	2,846	1,015	W	W	0	337	1.9
	500 and Over	7,540	3,575	2,929	268	2,959	715	358	900	0	204	2.1
	Total	33,132	13,710	14,782	714	11,095	3,348	683	1,263	Q	615	4.8
Employment Size												
	Under 50	910	493	274	Q	461	Q	W	W	Q	W	24.3
	50-99	3,779	1,099	639	*	465	Q	0	0	0	Q	10.9

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	100-249	5,242	2,329	2,561	0	2,216	378	*	91	0	0	10.9
	250-499	6,893	2,417	3,846	211	2,077	849	W	628	0	W	2.9
	500-999	10,110	3,705	5,123	148	2,933	940	282	181	0	123	2.2
	1000 and Over	6,197	3,667	2,339	340	2,943	385	363	W	0	388	2
	Total	33,132	13,710	14,782	714	11,095	3,348	683	1,263	Q	615	4.8

(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 2002. 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.

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

NA=Not available.

Notes: To obtain the RSE percentage for any table cell, multiply the cell's corresponding RSE column and RSE row factors. Totals may not equal sum of components because of independent rounding.

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

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy Consumption Division, Form EIA-846, '2002 Manufacturing Energy Consumption Survey,' and the Bureau of the Census, data files for the '2002 Economic Census, Manufacturing - Industry Series.'