Table 1.4 Renewable energy consumption for nonelectric use by energy-use sector and energy source, 2005 – 2009

(quadrillion Btu)

Sector and Source	2005	2006	2007	2008	2009
Total	2.623	2.786	3.015	3.373	3.450
Biomass	2.531	2.686	2.904	3.247	3.307
Biofuels	0.577	0.771	0.991	1.372	1.567
Biodiesel[1]	0.012	0.033	0.046	0.040	0.040
Ethanol[2]	0.335	0.453	0.569	0.800	0.910
Losses and Coproducts	0.230	0.285	0.377	0.532	0.617
Biodiesel Feedstock[3]	*	*	0.001	0.001	0.001
Ethanol Feedstock[4]	0.230	0.285	0.376	0.531	0.616
Waste	0.173	0.156	0.168	0.169	0.180
Landfill Gas	0.080	0.081	0.093	0.093	0.104
MSW Biogenic[5]	0.023	0.024	0.019	0.021	0.021
Other Biomass[6]	0.070	0.051	0.056	0.055	0.055
Wood and Derived Fuels[7]	1.781	1.759	1.745	1.705	1.560
Geothermal	0.034	0.037	0.041	0.046	0.054
Solar Thermal/PV	0.058	0.063	0.070	0.080	0.089
Residential	0.504	0.472	0.522	0.556	0.552
Biomass	0.430	0.390	0.430	0.450	0.430
Wood and Derived Fuels[8]	0.430	0.390	0.430	0.450	0.430
Geothermal	0.016	0.018	0.022	0.026	0.033
Solar Thermal/PV	0.058	0.063	0.070	0.080	0.089
Commercial	0.098	0.095	0.097	0.104	0.105
Biomass	0.085	0.081	0.083	0.089	0.088
Biofuels	0.001	0.001	0.002	0.002	0.003
Ethanol[2]	0.001	0.001	0.002	0.002	0.003
Waste	0.014	0.016	0.012	0.014	0.013
Landfill Gas	*	0.001	0.001	*	*
MSW Biogenic[5]	0.012	0.013	0.008	0.012	0.012
Other Biomass[6]	0.002	0.002	0.003	0.002	0.002
Wood and Derived Fuels[7]	0.069	0.064	0.069	0.073	0.072
Geothermal	0.014	0.014	0.014	0.015	0.017
Solar Thermal/PV	-	-	-	-	-
Industrial	1.647	1.711	1.756	1.852	1.822
Biomass	1.643	1.706	1.751	1.847	1.818
Biofuels	0.237	0.295	0.387	0.544	0.630
Ethanol[2]	0.007	0.010	0.010	0.012	0.013
Losses and Coproducts	0.230	0.285	0.377	0.532	0.617
Biodiesel Feedstock[3]	*	*	0.001	0.001	0.001
Ethanol Feedstock[4]	0.230	0.285	0.376	0.531	0.616
Waste	0.143	0.126	0.140	0.139	0.150
Landfill Gas	0.079	0.080	0.093	0.092	0.104
MSW Biogenic[5]	0.007	0.006	0.005	0.003	0.004
Other Biomass[6]	0.057	0.040	0.043	0.044	0.043
Wood and Derived Fuels[7]	1.262	1.286	1.225	1.165	1.038

See footnotes at end of table.

(quadrillion Btu)

Sector and Source	2005	2006	2007	2008	2009
Geothermal	0.004	0.004	0.005	0.005	0.004
Solar Thermal/PV	-	-	-	-	-
Transportation	0.339	0.475	0.603	0.827	0.934
Biomass	0.339	0.475	0.603	0.827	0.934
Biofuels[1]	0.339	0.475	0.603	0.827	0.934
Biodiesel	0.012	0.033	0.046	0.040	0.040
Ethanol[2]	0.328	0.442	0.557	0.786	0.894
Electric Power[9]	0.035	0.033	0.038	0.034	0.036
Biomass	0.035	0.033	0.038	0.034	0.036
Waste	0.015	0.014	0.016	0.016	0.017
Landfill Gas	0.001	*	*	*	*
MSW Biogenic[5]	0.005	0.005	0.006	0.006	0.006
Other Biomass[6]	0.010	0.009	0.010	0.010	0.010
Wood and Derived Fuels[7]	0.019	0.019	0.021	0.018	0.020
Geothermal	-	-	-	-	-
Solar Thermal/PV	-	-	-	-	-

[1]Biodiesel primarily derived from soybean oil.

[2]Ethanol primarily derived from corn minus denaturant.

[3]Losses and co-products from the production of biodiesel. Does not include
natural gas, electricity, and other non-biomass energy used in the production of biodiesel.

[4]Losses and co-products from the production of fuel ethanol. Does not
include natural gas, electricity, and other non-biomass energy used in the production of fuel ethanol.

[5]Includes paper and paper board, wood, food, leather, textiles and yard trimmings.

[6]Agriculture byproducts/crops, sludge waste, and other biomass solids, liquids and gases.

[7]Black liquor, and wood/wood waste solids and liquids.

[8]Wood and wood pellet fuels.

[9]The electric power sector comprises electricity-only and combined-heat-power (CHP) plants within North American Classification System (NAICS) 22 category whose primary business is to sell electricity, or electricity and heat, to the public.

MSW = Municipal Solid Waste.

PV = Photovoltaic.

* = Less than 500 billion Btu.

- = No data reported.

Notes: Totals may not equal sum of components due to independent rounding. Starting with 2004 EIA adopted a new method of allocating fuel consumption between electric power generation and useful thermal out put (UTO) for combined heat and power (CHP) plants. The new method proportionately distributes a CHP plant`s losses between the two output products (electric power and UTO) assuming the same efficiency for production of electricity as UTO.

Data revisions are discussed in the Highlights section.

Sources: Analysis conducted by U.S. Energy Information Administration, Office of Electricity, Coal, Nuclear, and Renewables Analysis and specific sources described as follows. Residential: U.S. Energy Information Administration, Form EIA-457A/G, "Residential Energy Consumption Survey;" Oregon Institute of Technology, Geo-Heat Center; and U.S. Energy Information Administration, Form EIA-63-A, "Annual Solar Thermal Collector Manufacturers Survey" and Form EIA-63B, "Annual Photovoltaic Module/Cell Manufacturers Survey." Commercial: U.S. Energy Information Administration, Form EIA-920, "Combined Heat and Power Plant Report" and Form EIA-923, "Power Plant Operations Report;" and Oregon Institute of Technology, Geo-Heat Center. Industrial: U.S. Energy Information Administration, Form EIA-846 (A, B, C) "Manufacturing Energy Consumption Survey," Form EIA-920, "Combined Heat and Power Plant Report," and Form EIA-923, "Power Plant Operations Report;" Oregon Institute of Technology, Geo-Heat Center;

U.S. Environmental Protection Agency, Landfill Methane Outreach Program estimates; and losses and coproducts from the production of biodiesel calculated as the difference between energy in feedstocks and production and from the production of ethanol calculated as the difference between energy feedstocks and production less denaturants. Biofuels for Transportation: Biodiesel: Consumption: 2005-2008: Calculated as biodiesel production plus net imports, 2009: January and February: EIA, Petroleum Supply Monthly, Table 1, data for refinery and blender net inputs of renewable fuels except ethanol. March through December: Calculated as biodiesel production plus biodiesel net imports minus biodiesel stock change; Production: 2001-2005: U.S. Department of Agriculture (USDA), Commodity Credit Corporation, Bioenergy Program, 2006: U.S. Department of Commerce, Bureau of Census, Current Industrial Reports, Fats and Oils - Production, Consumption and Stocks, data for soybean oil in methyl esters (biodiesel), 2007: U.S. Department of Commerce, Bureau of Census, Current Industrial Reports, Fats and Oils - Production, Consumption and Stocks, data for fats and oils in methyl esters, and 2008: U.S. Energy Information Administration, Form EIA-22S, "Supplement to the Monthly Biodiesel Production Survey," 2009: U.S. Energy Information Administration, "Form EIA-22M, Monthly Biodiesel Production Survey;" Trade: USDA imports data for Harmonized Tariff Schedule code 3824.90.40.20 (Fatty Esters Animal/ Vegetable Mixture) and exports data for Schedule B code 3824.90.40.00 (Fatty Substances Animal/ Vegetable Mixture; Stock Change: EIA Petroleum Supply Annual (PSA) various reports. Table 1 data for renewable fuels except ethanol; and Ethanol: 2005-2008: EIA Petroleum Supply Annual (Various Issues), Tables 1 and 15. Calculated as motor gasoline blending components adustments (Table 1), plus finished motor gasoline adjustments (Table 1), plus fuel ethanol refinery and blender net inputs (Table 15).   2009: EIA Petroleum Supply Annual 2009, Table 1. Calculated as fuel ethanol refinery and blender net inputs minus fuel ethanol adjustments. Small amounts of ethanol consumption are distributed to the commercial and industrial sectors according to those sector`s shares of U.S. motor gasoline supplied. Electric Power: U.S. Energy Information Administration, Form EIA-920, "Combined Heat and Power Plant Report," and Form EIA-923, "Power Plant Operations Report."