

Trends in Renewable Energy Consumption and Electricity 2010

Release Date: December 11, 2012

Next Release Date: August 2013

Table 4. Renewable energy consumption for non-electric use by energy-use sector and energy source, 2006 - 2010

(quadrillion Btu)

Sector and Source	2006	2007	2008	2009	2010
Total	2.776	2.987	3.369	^R 3.464	3.836
Biomass	2.676	2.876	3.243	^R 3.321	3.662
Biofuels	0.771	0.991	1.372	^R 1.569	1.836
Biodiesel ¹	0.033	0.046	0.040	^R 0.042	0.034
Ethanol ²	0.453	0.569	0.800	0.910	1.060
Losses and Co-products	0.285	0.377	0.532	0.617	0.742
Biodiesel Feedstock ³	*	0.001	0.001	0.001	0.001
Ethanol Feedstock ⁴	0.285	0.376	0.531	0.616	0.741
Waste	0.156	0.168	0.169	0.181	0.188
Landfill Gas	0.081	0.093	0.093	0.104	0.107
MSW Biogenic ⁵	0.024	0.019	0.021	0.021	0.020
Other Biomass ⁶	0.051	0.056	0.056	0.056	0.061
Wood and Derived Fuels ⁷	1.749	1.717	1.702	1.571	1.638
Geothermal	0.037	0.041	0.046	0.054	0.060
Solar Thermal/PV	0.063	0.070	0.080	0.089	0.114
Residential	0.462	0.502	0.557	0.552	0.571
Biomass	0.380	0.410	0.450	0.430	0.420
Wood and Derived Fuels ⁸	0.380	0.410	0.450	0.430	0.420
Geothermal	0.018	0.022	0.026	0.033	0.037
Solar Thermal/PV	0.063	0.070	0.080	0.089	0.114
Commercial	0.096	0.097	0.103	0.105	0.105
Biomass	0.082	0.083	0.089	0.088	0.086
Biofuels	0.001	0.002	0.002	0.003	0.003
Ethanol ²	0.001	0.002	0.002	0.003	0.003
Waste	0.016	0.012	0.014	0.013	0.012
Landfill Gas	0.001	0.001	*	*	*
MSW Biogenic ⁵	0.013	0.008	0.012	0.012	0.010
Other Biomass ⁶	0.002	0.003	0.002	0.002	0.002
Wood and Derived Fuels ⁷	0.065	0.070	0.073	0.072	0.071
Geothermal	0.014	0.014	0.015	0.017	0.019
Solar Thermal/PV	-	-	-	-	-
Industrial	1.711	1.748	1.849	1.834	2.053
Biomass	1.706	1.743	1.844	1.829	2.049
Biofuels	0.295	0.387	0.544	0.630	0.759
Ethanol ²	0.010	0.010	0.012	0.013	0.017
Losses and Co-products	0.285	0.377	0.532	0.617	0.742
Biodiesel Feedstock ³	*	0.001	0.001	0.001	0.001
Ethanol Feedstock ⁴	0.285	0.376	0.531	0.616	0.741

Waste	0.126	0.140	0.139	0.151	0.161
Landfill Gas	0.080	0.093	0.092	0.104	0.106
MSW Biogenic ⁵	0.006	0.005	0.003	0.004	0.004
Other Biomass ⁶	0.040	0.043	0.044	0.044	0.051
Wood and Derived Fuels ⁷	1.286	1.217	1.161	1.049	1.129
Geothermal	0.004	0.005	0.005	0.004	0.004
Solar Thermal/PV	-	-	-	-	-
Transportation	0.475	0.602	0.826	^R 0.935	1.074
Biomass	0.475	0.602	0.826	^R 0.935	1.074
Biofuels ¹	0.475	0.602	0.826	^R 0.935	1.074
Biodiesel	0.033	0.046	0.040	^R 0.042	0.034
Ethanol ²	0.442	0.557	0.786	0.894	1.040
Electric Power ⁹	0.033	0.038	0.034	0.036	0.033
Biomass	0.033	0.038	0.034	0.036	0.033
Waste	0.014	0.016	0.016	0.017	0.015
Landfill Gas	*	*	*	*	0.001
MSW Biogenic ⁵	0.005	0.006	0.006	0.006	0.006
Other Biomass ⁶	0.009	0.010	0.010	0.010	0.008
Wood and Derived Fuels ⁷	0.019	0.021	0.018	0.020	0.018
Geothermal	-	-	-	-	-
Solar Thermal/PV	-	-	-	-	-

¹Biodiesel primarily derived from soybean oil.

²Ethanol primarily derived from corn minus denaturant.

³Losses 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.

⁴Losses 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.

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

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

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

⁸Wood and wood pellet fuels.

⁹The electric power sector comprises electricity-only and combined-heat-power (CHP) plants within North American Industry Classification System (NAICS) 22 category whose primary business is to sell electricity, or electricity and heat, to 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. EIA uses a method of allocating fuel consumption between electric power generation and useful thermal output (UTO) for combined heat and power (CHP) plants. The 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.

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," Form EIA-63B, "Annual Photovoltaic Module/Cell Manufacturers Survey" (pre-2010) and "Annual Photovoltaic Cell/Module Shipments Report" (2010); SEIA/GTM Research, U.S. Solar Market Insight: 2010 Year in Review. 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 co-products 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: 2006-2008: Calculated as biodiesel production plus net imports, 2009-2010: biodiesel production plus biodiesel net imports minus biodiesel stock change; Production: 2006-2007: U.S. Department of Commerce, Bureau of the Census, Current Industrial Reports, "M311K--Fats and Oils: Production, Consumption and Stocks," data for soybean oil consumed in methyl esters (biodiesel), 2008: U.S. Energy Information Administration, Form EIA-22S, "Supplement to the Monthly Biodiesel Production Survey," 2009-2010: 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 issues. Table 1 data for renewable fuels except ethanol; and Ethanol: 2006-2008: EIA Petroleum Supply Annual (various issues), Tables 1 and 15. Calculated as motor gasoline blending components adjustments (Table 1), plus finished motor gasoline adjustments (Table 1), plus fuel ethanol refinery and blender net inputs (Table 15). 2009 -2010: EIA Petroleum Supply Annual (various issues), 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."