

Table 923. Renewable Energy Consumption Estimates by Source: 1990 to 2009

[In quadrillion Btu (6.21 represents 6,210,000,000,000). For definition of Btu, see source and text, this section. Renewable energy is obtained from sources that are essentially inexhaustible, unlike fossil fuels of which there is a finite supply]

Source and sector	1990	2000	2005	2006	2007	2008	2009 ¹
Consumption, total	6.21	6.26	6.41	6.82	6.72	7.37	7.74
Conventional hydroelectric power ²	3.05	2.81	2.70	2.87	2.45	2.51	2.68
Geothermal energy ³	0.34	0.32	0.34	0.34	0.35	0.36	0.37
Biomass ⁴	2.74	3.01	3.12	3.28	3.50	3.85	3.88
Solar energy ⁵	0.06	0.07	0.07	0.07	0.08	0.10	0.11
Wind energy ⁶	0.03	0.06	0.18	0.26	0.34	0.55	0.70
Residential ⁷	0.64	0.49	0.51	0.48	0.53	0.57	0.56
Biomass ⁴	0.58	0.42	0.43	0.39	0.43	0.45	0.43
Geothermal ³	0.01	0.01	0.02	0.02	0.02	0.03	0.03
Solar ⁵	0.06	0.06	0.06	0.07	0.07	0.09	0.10
Commercial ⁸	0.10	0.13	0.12	0.12	0.12	0.13	0.13
Biomass ⁴	0.09	0.12	0.10	0.10	0.10	0.11	0.11
Geothermal ³	(Z)	0.01	0.01	0.01	0.01	0.01	0.02
Hydroelectric ²	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)
Industrial ⁹	1.72	1.93	1.87	1.93	1.96	2.05	2.02
Biomass ⁴	1.68	1.88	1.84	1.90	1.94	2.03	2.00
Geothermal ³	(Z)	(Z)	(Z)	(Z)	0.01	0.01	(Z)
Hydroelectric ²	0.03	0.04	0.03	0.03	0.02	0.02	0.02
Transportation	0.06	0.14	0.34	0.48	0.60	0.83	0.92
Fuel ethanol ¹⁰	0.06	0.14	0.33	0.44	0.56	0.79	0.88
Biodiesel ¹¹	(NA)	(NA)	0.01	0.03	0.05	0.04	0.04
Electric power ¹²	3.69	3.58	3.57	3.83	3.51	3.80	4.11
Biomass ⁴	0.32	0.45	0.41	0.41	0.42	0.44	0.43
Geothermal ³	0.33	0.30	0.31	0.31	0.31	0.31	0.32
Hydroelectric ²	3.01	2.77	2.67	2.84	2.43	2.49	2.66
Solar ⁵	(Z)	0.01	0.01	0.01	0.01	0.01	0.01
Wind ⁶	0.03	0.06	0.18	0.26	0.34	0.55	0.70

Z Less than 5 trillion Btu. ¹ Preliminary. ² Power produced from natural stream flow as regulated by available storage.

³ As used at electric power plants, hot water or steam extracted from geothermal reservoirs in the Earth's crust that is supplied to steam turbines at electric power plants that drive generators to produce electricity. ⁴ Wood and wood-derived fuels, municipal solid waste (from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass), fuel ethanol, and biodiesel.

⁵ The radiant energy of the sun, which can be converted into other forms of energy, such as heat or electricity. Solar thermal and photovoltaic electricity net generation and solar thermal direct use energy. ⁶ Energy present in wind motion that can be converted to mechanical energy for driving pumps, mills, and electric power generators. Wind pushes against sails, vanes, or blades radiating from a central rotating shaft. ⁷ Consists of living quarters for private households, but excludes institutional living quarters. ⁸ Consists of service-providing facilities and equipment of businesses, governments, and other private and public organizations. Includes institutional living quarters and sewage treatment facilities. Includes commercial combined-heat-and-power and commercial electricity-only plants. ⁹ Consists of all facilities and equipment used for producing, processing, or assembling goods. Includes industrial combined-heat-and-power and industrial electricity-only plants. ¹⁰ Ethanol primarily derived from corn. ¹¹ Any liquid biofuel suitable as a diesel fuel substitute, additive, or extender. ¹² Consists of electricity-only and combined-heat-and-power plants whose primary business is to sell electricity and/or heat to the public. Includes sources not shown separately.

Source: U.S. Energy Information Administration, *Annual Energy Review 2009*, August 2010. See also <<http://www.eia.doe.gov/emeu/aer/renew.html>>.

Table 924. Fuel Ethanol and Biodiesel—Summary: 1990 to 2009

[110.9 represents 110,900,000,000,000. Data for 1990 are estimates. Beginning 1995, only feedstock data are estimates. Minus sign (-) indicates an excess of exports over imports, except where noted]

Fuel	1990	1995	2000	2004	2005	2006	2007	2008	2009 ¹
FUEL ETHANOL									
Feedstock ² (tril. Btu)	110.9	197.7	233.1	483.7	552.4	687.9	914.3	1,299.5	1,493.1
Production:									
1,000 bbl.	17,802	32,325	38,627	81,058	92,961	116,294	155,263	221,637	256,149
Tril. Btu.	63.4	115.2	137.6	288.8	331.2	414.4	553.2	789.7	912.7
Net imports ³ (1,000 bbl.)	(NA)	387	116	3,542	3,234	17,408	10,457	12,610	4,614
Stocks ⁴ (1,000 bbl.)	(NA)	2,186	3,400	6,002	5,563	8,760	10,535	14,226	16,711
Stock change ⁵ (1,000 bbl.)	(NA)	-207	-624	24	-439	3,197	1,775	3,691	⁶ 2,492
Consumption:									
1,000 bbl.	17,802	32,919	39,367	84,576	96,634	130,505	163,945	230,556	258,271
Tril. Btu.	63.4	117.3	140.3	301.3	344.3	465.0	584.1	821.5	920.2
BIODIESEL									
Feedstock ⁷ (tril. Btu)	(NA)	(NA)	(NA)	3.6	11.7	32.4	63.4	87.7	68.8
Production:									
1,000 bbl.	(NA)	(NA)	(NA)	666	2,162	5,963	11,662	16,145	12,657
Tril. Btu.	(NA)	(NA)	(NA)	3.6	11.6	32.0	62.5	86.5	67.8
Net imports ³ (1,000 bbl.)	(NA)	(NA)	(NA)	-26	1	242	-3,135	-8,626	-4,489
Consumption:									
1,000 bbl.	(NA)	(NA)	(NA)	640	2,163	6,204	8,528	7,519	8,082
Tril. Btu.	(NA)	(NA)	(NA)	3.4	11.6	33.2	45.7	40.3	43.3

NA Not available. ¹ Preliminary. ² Total corn and other biomass inputs to the production of fuel ethanol. ³ Net imports equal imports minus exports. ⁴ Imports minus exports. Stocks are at end of year. ⁵ A negative number indicates a decrease in stocks.

⁶ Derived from preliminary 2008 stock value, not final 2008 value. ⁷ Total vegetable oil and other biomass inputs to the production of biodiesel.

Source: U.S. Energy Information Administration, *Annual Energy Review 2009*, August, 2010. See also <<http://www.eia.doe.gov/emeu/aer/renew.html>>.