

**Table 17. Renewable Energy Consumption by Sector and Source 1/**

	2003 <sup>2</sup>	2004	2005	2006	2007	2008	2009	2010	2011	2012
<b>Marketed Renewable Energy 2/</b>										
Residential (wood)	0.40	0.41	0.43	0.46	0.45	0.45	0.44	0.44	0.43	0.43
Commercial (biomass)	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Industrial 3/	1.59	1.68	1.64	1.68	1.71	1.74	1.77	1.79	1.82	1.84
Conventional Hydroelectric	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Municipal Solid Waste	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Biomass	1.53	1.62	1.59	1.62	1.66	1.68	1.71	1.74	1.76	1.78
Transportation	0.23	0.28	0.32	0.34	0.43	0.50	0.57	0.66	0.73	0.80
Ethanol used in E85 4/	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ethanol used in Gasoline Blending	0.23	0.28	0.32	0.34	0.43	0.50	0.57	0.65	0.73	0.80
Electric Power 5/	3.62	3.57	3.72	4.14	4.45	4.50	4.57	4.76	4.77	4.77
Conventional Hydroelectric	2.77	2.67	2.64	2.90	2.98	2.98	2.98	2.98	2.98	2.98
Geothermal	0.30	0.30	0.30	0.31	0.32	0.33	0.36	0.39	0.43	0.46
Municipal Solid Waste 6/	0.30	0.31	0.31	0.31	0.31	0.33	0.33	0.33	0.34	0.34
Biomass	0.12	0.14	0.23	0.25	0.32	0.33	0.36	0.52	0.48	0.44
Dedicated Plants	0.12	0.11	0.13	0.12	0.10	0.09	0.08	0.11	0.10	0.11
Cofiring	0.00	0.03	0.10	0.13	0.22	0.24	0.29	0.41	0.38	0.33
Solar Thermal	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Solar Photovoltaic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wind	0.11	0.14	0.24	0.36	0.50	0.51	0.52	0.52	0.53	0.54
<b>Total Marketed Renewable Energy</b>	<b>5.93</b>	<b>6.02</b>	<b>6.20</b>	<b>6.70</b>	<b>7.14</b>	<b>7.27</b>	<b>7.44</b>	<b>7.73</b>	<b>7.84</b>	<b>7.93</b>
<b>Sources of Ethanol</b>										
From Corn	0.23	0.28	0.32	0.34	0.42	0.48	0.55	0.61	0.67	0.73
From Cellulose	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.02
Ethanol Imports	0.00	0.00	0.00	0.00	0.01	0.02	0.03	0.04	0.05	0.05
Total	0.23	0.28	0.32	0.34	0.43	0.50	0.57	0.66	0.73	0.80
<b>Non-Marketed Renewable Energy</b>										
<b>-- Selected Consumption 7/</b>										
Residential	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04
Solar Hot Water Heating	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Geothermal Heat Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
Solar Photovoltaic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Commercial	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Solar Thermal	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Solar Photovoltaic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Table 17. Renewable Energy Consumption by Sector and Source 1/**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Marketed Renewable Energy 2/</b>										
Residential (wood)	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.42	0.42
Commercial (biomass)	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Industrial 3/	1.86	1.87	1.90	1.92	1.94	1.97	1.99	2.01	2.04	2.06
Conventional Hydroelectric	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Municipal Solid Waste	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Biomass	1.80	1.82	1.84	1.86	1.89	1.91	1.94	1.96	1.98	2.01
Transportation	0.84	0.86	0.87	0.89	0.90	0.93	0.94	0.96	0.97	0.99
Ethanol used in E85 4/	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ethanol used in Gasoline Blending	0.84	0.86	0.87	0.89	0.90	0.92	0.94	0.95	0.97	0.98
Electric Power 5/	4.84	4.92	5.01	5.11	5.18	5.24	5.34	5.47	5.56	5.67
Conventional Hydroelectric	2.98	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99
Geothermal	0.49	0.53	0.57	0.61	0.65	0.73	0.80	0.92	1.01	1.09
Municipal Solid Waste 6/	0.34	0.35	0.35	0.35	0.35	0.36	0.36	0.36	0.36	0.36
Biomass	0.47	0.50	0.52	0.58	0.58	0.55	0.56	0.57	0.56	0.57
Dedicated Plants	0.11	0.11	0.10	0.11	0.11	0.12	0.12	0.14	0.14	0.16
Cofiring	0.36	0.39	0.42	0.47	0.47	0.44	0.44	0.43	0.41	0.41
Solar Thermal	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02
Solar Photovoltaic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wind	0.54	0.55	0.58	0.58	0.61	0.61	0.61	0.62	0.62	0.64
<b>Total Marketed Renewable Energy</b>	<b>8.05</b>	<b>8.17</b>	<b>8.30</b>	<b>8.43</b>	<b>8.54</b>	<b>8.65</b>	<b>8.79</b>	<b>8.96</b>	<b>9.08</b>	<b>9.23</b>
<b>Sources of Ethanol</b>										
From Corn	0.77	0.78	0.80	0.81	0.82	0.85	0.86	0.87	0.89	0.90
From Cellulose	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Ethanol Imports	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Total	0.84	0.86	0.87	0.89	0.90	0.93	0.94	0.96	0.97	0.99
<b>Non-Marketed Renewable Energy</b>										
<b>-- Selected Consumption 7/</b>										
Residential	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05
Solar Hot Water Heating	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Geothermal Heat Pumps	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Solar Photovoltaic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Commercial	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Solar Thermal	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Solar Photovoltaic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Table 17. Renewable Energy Consumption by Sector and Source 1/**

	2023	2024	2025	2026	2027	2028	2029	2030	2004-2030
<b>Marketed Renewable Energy 2/</b>									
Residential (wood)	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.41	0.1%
Commercial (biomass)	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.0%
Industrial 3/	2.09	2.11	2.14	2.17	2.20	2.23	2.26	2.29	1.2%
Conventional Hydroelectric	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	N/A
Municipal Solid Waste	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	N/A
Biomass	2.03	2.06	2.09	2.12	2.15	2.18	2.21	2.24	1.3%
Transportation	0.99	0.99	1.00	1.00	1.00	1.01	1.01	1.01	5.0%
Ethanol used in E85 4/	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.4%
Ethanol used in Gasoline Blending	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00	5.0%
Electric Power 5/	5.76	5.88	5.95	6.06	6.11	6.16	6.18	6.22	2.2%
Conventional Hydroelectric	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	0.4%
Geothermal	1.17	1.27	1.33	1.41	1.46	1.50	1.52	1.54	6.5%
Municipal Solid Waste 6/	0.36	0.36	0.37	0.37	0.37	0.37	0.37	0.37	0.8%
Biomass	0.56	0.60	0.58	0.61	0.60	0.61	0.60	0.63	6.1%
Dedicated Plants	0.17	0.21	0.24	0.27	0.28	0.30	0.30	0.34	4.4%
Cofiring	0.39	0.39	0.34	0.34	0.32	0.32	0.31	0.30	9.6%
Solar Thermal	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	5.1%
Solar Photovoltaic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
Wind	0.65	0.65	0.65	0.66	0.66	0.66	0.66	0.66	6.1%
<b>Total Marketed Renewable Energy</b>	<b>9.35</b>	<b>9.50</b>	<b>9.60</b>	<b>9.74</b>	<b>9.82</b>	<b>9.91</b>	<b>9.95</b>	<b>10.02</b>	<b>2.0%</b>
<b>Sources of Ethanol</b>									
From Corn	0.91	0.91	0.91	0.92	0.92	0.92	0.92	0.92	4.6%
From Cellulose	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	N/A
Ethanol Imports	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.07	N/A
Total	0.99	0.99	1.00	1.00	1.00	1.01	1.01	1.01	5.0%
<b>Non-Marketed Renewable Energy</b>									
<b>-- Selected Consumption 7/</b>									
Residential	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	3.5%
Solar Hot Water Heating	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	2.8%
Geothermal Heat Pumps	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	7.1%
Solar Photovoltaic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.8%
Commercial	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	1.6%
Solar Thermal	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.5%
Solar Photovoltaic	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	10.2%

**Table 17. Renewable Energy Consumption by Sector and Source 1/**

1/ Actual heat rates used to determine fuel consumption for all renewable fuels except hydropower, solar, and wind. Consumption at hydroelectric, solar, and wind facilities determined by using the fossil fuel equivalent of 10,280 Btu per kilowatt-hour.

2/ Includes nonelectric renewable energy groups for which the energy source is bought and sold in the marketplace, although all transactions may not necessarily be marketed, and marketed renewable energy inputs for electricity entering the marketplace on the electric power grid. Excludes electricity imports; see Table A8.

3/ Includes all electricity production by industrial and other combined heat and power for the grid and for own use.

4/ Excludes motor gasoline component of E85.

5/ Includes consumption of energy by electricity-only and combined heat and power (CHP) plants whose primary business is to sell electricity, or electricity and heat, to the public. Includes small power producers and exempt wholesale generators.

6/ Includes landfill gas.

7/ Includes selected renewable energy consumption data for which the energy is not bought or sold, either directly or indirectly as an input to marketed energy. The Energy Information Administration does not estimate or project total consumption of nonmarketed renewable energy.

N/A = Not applicable.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2003 and 2004 are model results and may differ slightly from official EIA data reports.

Sources: 2003 and 2004 ethanol: Energy Information Administration (EIA), Annual Energy Review 2004, DOE/EIA-0384(2004) (Washington, DC, August 2005). 2003 and 2004 electric power sector: EIA, Form EIA-860, "Annual Electric Generator Report" (preliminary). Other 2003 and 2004 values: EIA, Office of Integrated Analysis and Forecasting. Projections: EIA, AEO2006 National Energy Modeling System run aeo2006.d111905a.