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Renewable Energy Trends in Consumption and Electricity 2007

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Preface

The Energy Information Administration (EIA) reports detailed historical data on renewable energy consumption and electricity annually in its report, the *Renewable Energy Annual*. This report, *Renewable Energy Trends in Consumption and Electricity, 2007*, provides an overview and tables with historical data spanning as far back as 1989 through 2007, including revisions. These tables correspond to similar tables to be presented in chapter 1 of the *Renewable Energy Annual 2007* and are numbered accordingly.

The renewable energy resources in the report include: biomass (wood, wood waste, biogenic municipal solid waste (MSW), landfill gas, ethanol, biodiesel and other biomass); geothermal; wind; solar (solar thermal and photovoltaic); and conventional hydropower. Hydroelectric pumped storage is excluded, because it is usually based on non-renewable energy sources.

Definitions for terms used in this report can be found in EIA's Energy Glossary: http://www.eia.doe.gov/glossary/index.html. General information about all the EIA surveys with data related to renewable energy and referenced in this report can be found here: http://www.eia.doe.gov/oss/forms.html.

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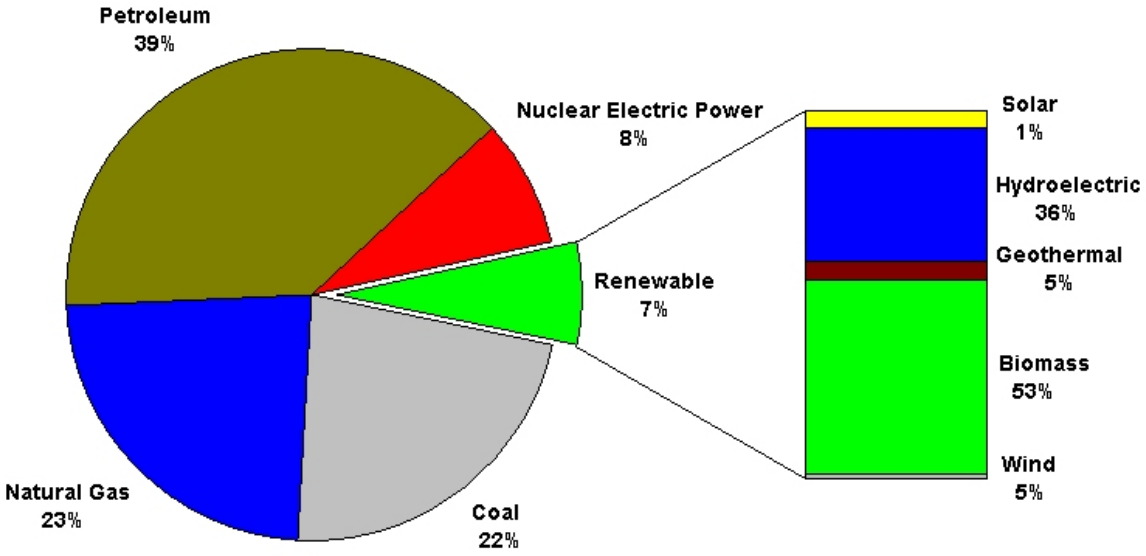
Renewable Energy Trends in Consumption and Electricity, 2007

Consumption

Total renewable energy consumption decreased by a modest 96 trillion British Thermal Units (Btu) or 1 percent between 2006 and 2007 to a total of 6,813 trillion Btu (Table 1.1). Gains in biofuels and wind energy consumption were offset by losses in hydroelectric power. Over the same period total U.S. energy consumption increased by 1,702 trillion Btu or 2 percent. Increases in natural gas consumption for the residential and electric power sectors led the U.S. trend in non-renewable energy. As a result, renewable energy consumption hovered at 7 percent of the U.S. total (Figure 1.1).

Figure 1.1 Renewable Energy Consumption in the Nation's Energy Supply, 2007

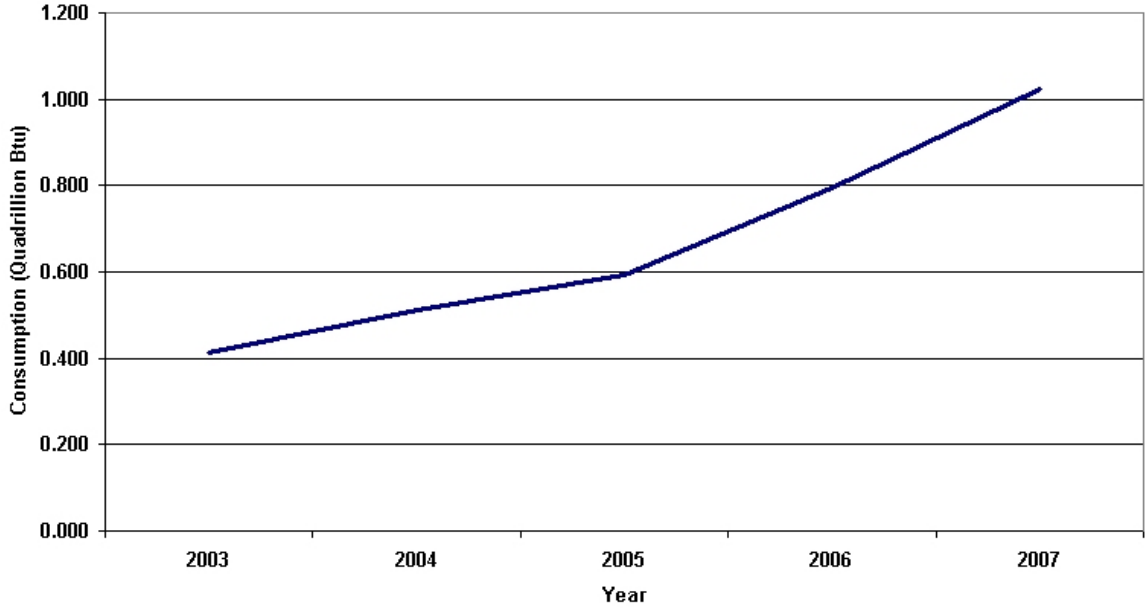


Source: Energy Information Administration, Office of Coal, Nuclear, Electric and Alternate Fuels.

Biomass energy consumption stood at 3,596 trillion Btu or 53 percent of the renewable energy market in 2007 (Table 1.2). Hydroelectric consumption was 2.446 trillion Btu or 36 percent of the market. Due to low water levels, that was the lowest level hydroelectric has been since 2001 which was also a low water year (Table 1.5b).

Some of the fastest annual rates of growth in consumption were for wind (29 percent) and ethanol (26 percent). By 2007 biofuels consumption (biomass for the transportation sector, primarily ethanol and biodiesel, and related losses and coproducts in the industrial sector) totaled more than 1,000 trillion Btu for the year (Figure 1.2). Wind consumption was 341 trillion Btu in 2007, all of it in the electric power sector.

Figure 1.2 Biofuels Consumption, 2003-2007



Source: Energy Information Administration, Office of Coal, Nuclear, Electric, and Alternate Fuels.

For 2007 the share of total renewable energy used for electricity production was just 54 percent or 3,699 trillion Btu. Ninety-four percent of renewable energy consumed for electricity generation in 2007 was by electric utilities and independent power producers in the electric power sector; just 6 percent was in the industrial sector.[1]

Renewable energy consumed for nonelectric uses increased by 240 trillion Btu to 3,114 trillion Btu, or almost 46 percent of total renewable energy consumption (Tables 1.2 and 1.4). Nonelectric uses include applications such as wood for space heating, noncentral station solar, process heat from biomass for manufacturers, geothermal heat pumps and direct use of geothermal. While a small portion of the 240 trillion Btu increase between 2006 and 2007 was increased consumption of wood for heating in the residential sector, most of the increase was for biofuels consumption in the transportation sector and the related biofuel feedstocks in the industrial sector.

Ethanol consumption increased 26 percent from 462 to 580 trillion Btu in 2007, or 6,886 million gallons, an amount that easily exceeded the Renewable Fuel Standard (RFS) established by the Energy Policy Act (EPACT) 2005 (Table 1.6). The Energy Independence and Security Act (EISA) passed in December 2007 raised the RFS. But unfavorable market conditions in the recession of 2008-2009 may limit the industry's response. By early 2009 fully 9 percent of all ethanol plants in the U.S. had filed for bankruptcy.[2]

[1] See the data revisions section at the end of this chapter for an explanation of changes in methodology to estimate energy consumption for electricity and energy consumption for useful thermal output at combined heat and power (CHP) plants. This change was implemented starting with 2004 data and continues.
[2] Energy Tribune, "Ethanol Bankruptcies Continue, 14 Studies Have Exposed the High Cost of Ethanol and Biofuels," February 4, 2009. See: http://www.energytribune.com/articles.cfm?aid=1281 .

EISA 2007 also set a standard of 500 million gallons for biodiesel consumption in 2009. How close the U.S. is to meeting this standard is uncertain. In this report, because there is no official trade data for biodiesel, consumption is assumed to equal production. However, there are indications that exports were substantial. If trade is accounted for, then the estimates of domestic biodiesel consumption could be considerably lower.

Biomass waste consumption stood at 430 trillion Btu for 2007, up from 414 trillion Btu in 2006 (Tables 1.2 and 1.7). More than half was consumed by independent power producers. Landfill gas and MSW biogenic provided the largest shares (40 and 38 percent respectively).

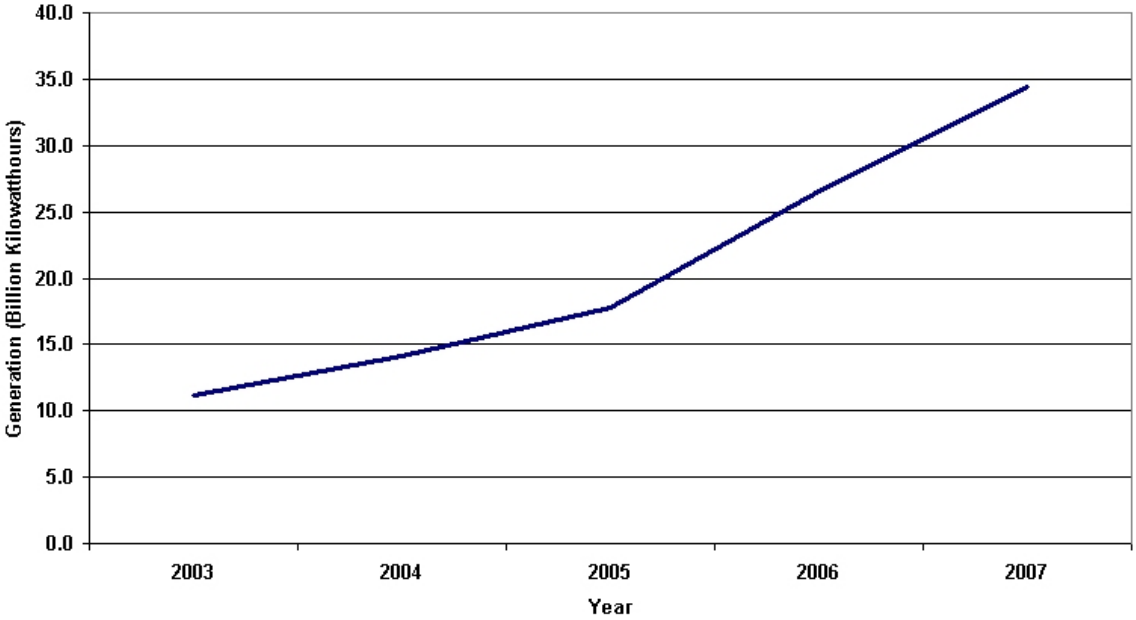
Industrial biomass consumption was only slightly higher at 2,012 trillion Btu in 2007 than in 2006 (Tables 1.2 and 1.8). Biomass consumption by the paper and allied products industries accounted for 59 percent of this, followed by biorefineries with 19 percent. Sixty-two power plants with total generating capacity of 8,121 megawatts (MW) reported having 5,080 MW of capacity capable of cofiring biomass and coal (Table 1.9).

Electricity

Renewable energy provided about 353 billion kilowatthours of electricity in 2007, down 9 percent from the year before, mainly due to a decrease in hydroelectric power generation partially offset by an increase in wind (Table 1.11 and Figure 1.3). In contrast, total U.S. generation increased over 2 percent year to year to 4,157 billion kilowatthours. Most of that increase was provided by natural gas.[3] As a result renewable's share of total U.S. generation stood at 8.5 percent in 2007, down from 9.5 percent in 2006, while the nonhydro renewable share of generation moved from 2.4 to 2.5 percent (Table 1.27).

[3] Energy Information Administration, Electric Power Annual 2007 (Washington, DC, January 2009), table 1.1. See: http://www.eia.doe.gov/cneaf/electricity/epa/epa_sum.html .

Figure 1.3 Wind Net Electricity Generation, 2003-2007



Source: Energy Information Administration, Office of Coal, Nuclear, Electric and Alternate Fuels.

Total U.S. electric net summer capacity grew by a net 8,673 megawatts (MW) between 2006 and 2007 (Table 1.12). The main drivers of this change were increases of 5,186 MW for wind and 4,582 MW for natural gas, which were partially offset by a decrease of 2,029 MW for petroleum.[4] There was also an increase of 341 MW for landfill gas capacity, but a large share of it was as a result of improving EIA's coverage in its power plant survey database for 2007. In addition, there was a 332 MW increase in capacity primarily using wood and derived fuels. Central station solar thermal/PV capacity increased 91 MW or 22 percent. A major share of this increase was the 64 MW Nevada Solar One plant in Boulder City.

Table 1.13 shows that hydroelectric conventional generation was concentrated in the Pacific Contiguous Division, where it accounted for 82 percent of the renewable electricity provided to that market. Geothermal and solar/PV generation was found mainly in the Pacific Contiguous and Mountain Divisions, while electricity from the remaining renewable sources tended to be scattered across the nation. Table 1.14 shows that generation from biomass including black liquor and wood/wood waste solids was concentrated largely in the three southern Census Divisions.

State Electricity

Hydroelectric generation decreased by some 42 billion kilowatthours from 2006 to 2007. Though losses were spread across the nation, California alone accounted for almost half of this decrease (21 billion kilowatthours) (Tables 1.17 and 1.20). By contrast, wind

[4] Energy Information Administration, Electric Power Annual 2007 (Washington, DC, January 2009), table 2.1. See: http://www.eia.doe.gov/cneaf/electricity/epa/epa_sum.html .

power experienced an 8 billion kilowatthour increase as more and more wind plants became fully deployed and integrated into daily grid operations. Texas and Washington contributed the most to this trend with increases of over 2 billion and 1 billion killowatthours, respectively.

In 2007, Texas strengthened its position as the nation's leader in installed wind capacity. By the end of the year, Texas wind capacity increased by 1,752 MW to 4,490 MW (Tables 1.23 and 1.26). But Texas was hardly alone; 17 other states expanded wind capacity and three of those (Maine, Massachusetts, and Missouri) added wind capacity for the first time. While built on a smaller scale, solar power had some interesting developments too, notably outside of California. Of the 91 MW increase nationally Nevada accounted for 79 MW. That included the new Nevada Solar One 64 MW solar thermal power plant and the Nellis Air Force 14 MW photovoltaic plant. Colorado also added the SunE Alomosa 8 MW photovoltaic project.

Whether this kind of growth will continue is debatable. Preliminary data for 2008 indicates that wind capacity did continue its rapid expansion through the year. In fact, the U.S may have reached first place for wind capacity worldwide, surpassing Germany. However by early 2009, industry sources reported that "new projects and new orders for turbines and components slowed to a trickle as the financial crisis hit the wind sector," so the future is uncertain.[5]

One of the ways states support renewable energy development is with renewable portfolio standards (RPS) or state mandates. In 2008 three states (Ohio, South Dakota, and Utah) adopted this type of provision for the first time and three others (Illinois, Michigan, and Missouri) changed from voluntary to required standards. By the end of 2008 there were 35 states spread across the country with an RPS or state mandate (Table 1.28).

Federal Legislation

The American Recovery and Reinvestment Act of 2009 was signed into law in February 2009 to stimulate the American economy. Among the provisions supporting renewable energy were:

- Extension of the wind energy production tax credit (PTC) to 2012 and the PTC for municipal solid waste, qualified hydropower, biomass and geothermal energy to 2013. The wind PTC had been set to expire by the end of 2009.
- Two-year extension of the PTC for marine and hydrokinetic renewable energy systems through 2013.
- Alternatively, the Act allows owners of non-solar renewable energy facilities to make an irrevocable election to earn a 30 percent investment credit rather than the

[5] See Global Wind Energy Council, Press Release, "U.S. and China in race to top of global wind industry" (February 2, 2009), here: http://www.gwec.net/ and PV News, "2009 PV Market Opens with Signs of Trouble" (February 2009).

PTC. The option remains in effect for the current period of the PTC (described above).

Data Revisions

For the EIA's Electric Power Annual 2007 and this report, EIA adopted a new method of allocating fuel consumption between electric power generation and useful thermal output (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.[6] The change is reflected from 2004 onwards. For 2006 using the old methodology the percent of renewable energy used for generating electricity was 61 percent; using the new methodology it is less – 58 percent – as expected (Tables 1.2 and 1.3).[7]

In addition, information on residential wood energy consumption became available from EIA's quadrennial Residential Energy Consumption Survey for 2005, so residential wood estimates for 2005-2007 in this report reflect benchmarking to this updated information. That resulted in a lowering of the estimate of residential wood consumption by 60 trillion Btu for 2005 and 80 trillion Btu for 2006. There was also a small adjustment to industrial landfill gas consumption in 2006 as a result of updated information from the Environmental Protection Agency's Landfill Methane Outreach Program.

[6] In historical data, UTO was consistently assumed to be 80 percent efficient and all other losses at the plant were allocated to production of electric power.

[7] For 2006 see Energy Information Administration, Renewable Energy Trends in Consumption and Electricity 2006 (Washington, DC, July 2008), Table 1.2 and table 1.3. See: http://www.eia.doe.gov/fuelrenewable.html .

Table 1.1 U.S. Energy Consumption by Energy Source, 2003 - 2007

(Quadrillion Btu)

Energy Source	2003	2004	2005	2006	2007
Total	98.208	100.350	100.486	99.843	101.545
Fossil Fuels	84.078	85.830	85.817	84.657	86.212
Coal	22.321	22.466	22.797	22.447	22.776
Coal Coke Net Imports	0.050	0.137	0.045	0.061	0.025
Natural Gas[1]	22.897	22.931	22.583	22.191	23.637
Petroleum[2]	38.809	40.294	40.393	39.958	39.773
Electricity Net Imports	0.022	0.039	0.084	0.063	0.106
Nuclear Electric Power	7.959	8.222	8.160	8.214	8.415
Renewable Energy	6.150	6.261	6.424	6.909	6.813
Biomass[3]	2.817	3.024	3.134	3.361	3.596
Biofuels	0.414	0.513	0.595	0.795	1.024
Waste	0.401	0.389	0.403	0.414	0.430
Wood Derived Fuels	2.002	2.121	2.136	2.152	2.142
Geothermal Energy	0.331	0.341	0.343	0.343	0.349
Hydroelectric Conventional	2.825	2.690	2.703	2.869	2.446
Solar/PV Energy	0.064	0.064	0.066	0.072	0.081
Wind Energy	0.115	0.142	0.178	0.264	0.341

[1]Includes supplemental gaseous fuels.
[2]Petroleum products supplied, including natural gas plant liquids and crude oil burned as fuel.
[3]Biomass includes: biofuels, waste (landfill gas, MSW biogenic, and other biomass), wood and wood derived fuels.
PV = Photovoltaic.
Notes: Data revisions are discussed in the Highlights section.
Totals may not equal sum of components due to independent rounding.
Sources: Non-renewable energy: Energy Information Administration (EIA), Monthly Energy Review (MER) December 2008, DOE/EIA-0035 (2008/12) (Washington, DC, December 2008,) Tables 1.3, 1.4a and 1.4b;
Renewable Energy: Table 1.2 of this report.

Table 1.2 Renewable Energy Consumption by Energy Use Sector and Energy Source, 2003 - 2007

(Quadrillion Btu)

Sector and Source	2003	2004	2005	2006	2007
Total	6.150	6.261	6.424	6.909	6.813
Biomass	2.817	3.024	3.134	3.361	3.596
Biofuels	0.414	0.513	0.595	0.795	1.024
Biodiesel[1]	0.002	0.004	0.012	0.032	0.062
Ethanol[2]	0.238	0.299	0.342	0.462	0.580
Losses and Coproducts	0.174	0.210	0.241	0.301	0.381
Biodiesel Feedstock[3]	*	*	*	*	0.001
Ethanol Feedstock[4]	0.174	0.210	0.241	0.301	0.380
Waste	0.401	0.389	0.403	0.414	0.430
Landfill Gas	0.141	0.144	0.148	0.157	0.173
MSW Biogenic[5]	0.165	0.164	0.168	0.171	0.165
Other Biomass[6]	0.096	0.081	0.088	0.086	0.092
Wood and Derived Fuels[7]	2.002	2.121	2.136	2.152	2.142
Geothermal	0.331	0.341	0.343	0.343	0.349
Hydroelectric Conventional	2.825	2.690	2.703	2.869	2.446
Solar/PV	0.064	0.064	0.066	0.072	0.081
Wind	0.115	0.142	0.178	0.264	0.341
Residential	0.471	0.483	0.507	0.475	0.527
Biomass	0.400	0.410	0.430	0.390	0.430
Wood and Derived Fuels[8]	0.400	0.410	0.430	0.390	0.430
Geothermal	0.013	0.014	0.016	0.018	0.022
Solar/PV[9]	0.058	0.059	0.061	0.067	0.075
Commercial	0.113	0.118	0.119	0.117	0.117
Biomass	0.101	0.105	0.105	0.102	0.102
Biofuels	0.001	0.001	0.001	0.001	0.002
Ethanol[2]	0.001	0.001	0.001	0.001	0.002
Waste	0.029	0.034	0.034	0.036	0.031
Landfill Gas	0.002	0.002	0.003	0.004	0.003
MSW Biogenic[5]	0.022	0.025	0.025	0.026	0.021
Other Biomass[6]	0.005	0.007	0.007	0.007	0.007
Wood and Derived Fuels[7]	0.071	0.070	0.070	0.065	0.069
Geothermal	0.011	0.012	0.014	0.014	0.014
Hydroelectric Conventional	0.001	0.001	0.001	0.001	0.001
Industrial	1.731	1.861	1.884	2.007	2.032
Biomass	1.684	1.825	1.848	1.973	2.012
Biofuels	0.178	0.217	0.248	0.311	0.393
Ethanol[2]	0.005	0.006	0.007	0.010	0.012
Losses and Coproducts	0.174	0.210	0.241	0.301	0.381
Biodiesel Feedstock[3]	*	*	*	*	0.001
Ethanol Feedstock[4]	0.174	0.210	0.241	0.301	0.380
Waste	0.142	0.132	0.148	0.147	0.162
Landfill Gas	0.076	0.076	0.081	0.081	0.093
MSW Biogenic[5]	0.005	0.006	0.007	0.006	0.006
Other Biomass[6]	0.062	0.050	0.061	0.061	0.063
Wood and Derived Fuels[7]	1.363	1.476	1.452	1.515	1.457
Geothermal	0.003	0.004	0.004	0.004	0.005
Hydroelectric Conventional	0.043	0.033	0.032	0.029	0.016
Solar/PV	-	-	-	-	-
Wind	-	-	-	-	-
Transportation	0.235	0.296	0.346	0.483	0.629
Biomass	0.235	0.296	0.346	0.483	0.629
Biofuels	0.235	0.296	0.346	0.483	0.629
Biodiesel[1]	0.002	0.004	0.012	0.032	0.062
Ethanol[2]	0.233	0.292	0.334	0.451	0.566
Electric Power[10]	3.601	3.503	3.568	3.827	3.508
Biomass	0.397	0.388	0.406	0.412	0.423
Waste	0.230	0.223	0.221	0.231	0.237
Landfill Gas	0.063	0.066	0.065	0.073	0.077
MSW Biogenic[5]	0.138	0.133	0.136	0.139	0.138
Other Biomass[6]	0.029	0.023	0.020	0.019	0.022
Wood and Derived Fuels[7]	0.167	0.165	0.185	0.182	0.186
Geothermal	0.303	0.311	0.309	0.306	0.308
Hydroelectric Conventional	2.781	2.656	2.670	2.839	2.430
Solar/PV	0.005	0.006	0.006	0.005	0.006
Wind	0.115	0.142	0.178	0.264	0.341

[1]Biodiesel primarily derived from soy bean oil.

[2]Ethanol primarily derived from corn.

Table 1.2 Renewable Energy Consumption by Energy Use Sector and Energy Source, 2003 - 2007 (Quadrillion Btu) (Continued)

Sector and Source	2003	2004	2005	2006	2007

[3]Difference between the energy in biodiesel feedstocks (principally soy bean oil) and the energy in biodiesel consumed in the transportation sector.
[4]Difference between energy in ethanol feedstocks (primarily corn) and its coproducts (wet and dry distiller grains), and the energy in ethanol consumed in the transportation sector.
[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/woodwaste solids and liquids.
[8]Wood and wood pellet fuels.
[9]Includes small amounts of distributed solar thermal and photovoltaic energy used in the commercial, industrial and electric power sectors.
[10]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.
Data revisions are discussed in the Highlights section.
Revisions to biomass removed MSW non-biogenic and tires from renewable waste energy.
Sources: Analysis conducted by Energy Information Administration, Office of Coal, Nuclear, Electric, and Alternate Fuels and specific sources described as follows. Residential: Energy Information Administration, Form EIA-457A/G, "Residential Energy Consumption Survey;" Oregon Institute of Technology, Geo-Heat Center; and Energy Information Administration, Form EIA-63-A, "Annual Solar Thermal Collector Manufacturers Survey" and Form EIA-63B, "Annual Photovoltaic Module/Cell Manufacturers Survey." Commercial: Energy Information Administration, Form EIA-906, "Power Plant Report," 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: Energy Information Administration, Form EIA-846 (A, B, C) "Manufacturing Energy Consumption Survey," Form EIA-906, "Power Plant Report," 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; Government Advisory Associates, Resource Recovery Yearbook and Methane Recovery Yearbook; U.S. Environmental Protection Agency, Landfill Methane Outreach Program estimates; and losses and coproducts from the production of biodiesel and ethanol calculated as the difference between energy in feedstocks and production. Biofuels for Transportation: Biodiesel: 2001-2005: U.S. Department of Agriculture, Commodity Credit Corporation, Bioenergy Program estimates of production assigned to consumption and 2006 and forward: U.S. Department of Commerce, Bureau of Census, Current Industrial Reports, Fats and Oils - Production, Consumption and Stocks, and Ethanol: 2001-2004: EIA, Petroleum Supply Annual, Tables 2 and 16. Calculated as ten percent of oxygenated finished motor gasoline field production (Table 2) plus fuel ethanol refinery input (Table 16). 2005-2007: 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). 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: Energy Information Administration, Form EIA-906, "Power Plant Report," Form EIA-920, "Combined Heat and Power Plant Report," and Form EIA-923, "Power Plant Operations Report."

Table 1.3 Renewable Energy Consumption for Electricity Generation by Energy Use Sector and Energy Source, 2003 - 2007
(Quadrillion Btu)

Sector and Source	2003	2004	2005	2006	2007
Total	4.016	3.723	3.781	4.035	3.699
Biomass	0.768	0.574	0.585	0.591	0.598
Waste	0.249	0.230	0.230	0.241	0.245
Landfill Gas	0.066	0.069	0.068	0.076	0.080
MSW Biogenic[1]	0.148	0.142	0.144	0.147	0.146
Other Biomass[2]	0.035	0.019	0.018	0.018	0.019
Wood and Derived Fuels[3]	0.519	0.344	0.355	0.350	0.353
Geothermal	0.303	0.311	0.309	0.306	0.308
Hydroelectric Conventional	2.825	2.690	2.703	2.869	2.446
Solar/PV	0.005	0.006	0.006	0.005	0.006
Wind	0.115	0.142	0.178	0.264	0.341
Commercial	0.021	0.021	0.021	0.022	0.020
Biomass	0.020	0.019	0.020	0.021	0.020
Waste	0.019	0.019	0.020	0.021	0.019
Landfill Gas	0.002	0.002	0.002	0.003	0.002
MSW Biogenic[1]	0.013	0.013	0.013	0.013	0.013
Other Biomass[2]	0.005	0.004	0.005	0.004	0.004
Wood and Derived Fuels[3]	*	*	*	*	*
Geothermal	-	-	-	-	-
Hydroelectric Conventional	0.001	0.001	0.001	0.001	0.001
Solar/PV	-	-	-	-	-
Wind	-	-	-	-	-
Industrial	0.419	0.231	0.226	0.219	0.208
Biomass	0.376	0.199	0.194	0.190	0.193
Waste	0.013	0.005	0.005	0.003	0.004
Landfill Gas	0.001	0.001	0.001	*	*
MSW Biogenic[1]	*	*	*	*	0.001
Other Biomass[2]	0.012	0.004	0.003	0.003	0.003
Wood and Derived Fuels[3]	0.362	0.194	0.189	0.187	0.188
Geothermal	-	-	-	-	-
Hydroelectric Conventional	0.043	0.033	0.032	0.029	0.016
Solar/PV	-	-	-	-	-
Wind	-	-	-	-	-
Electric Power[4]	3.576	3.471	3.534	3.794	3.470
Biomass	0.372	0.356	0.371	0.379	0.386
Waste	0.216	0.206	0.205	0.216	0.221
Landfill Gas	0.063	0.066	0.064	0.072	0.077
MSW Biogenic[1]	0.135	0.129	0.131	0.134	0.132
Other Biomass[2]	0.018	0.011	0.010	0.010	0.012
Wood and Derived Fuels[3]	0.156	0.150	0.166	0.163	0.165
Geothermal	0.303	0.311	0.309	0.306	0.308
Hydroelectric Conventional	2.781	2.656	2.670	2.839	2.430
Solar/PV	0.005	0.006	0.006	0.005	0.006
Wind	0.115	0.142	0.178	0.264	0.341

[1]Includes paper and paper board, wood, food, leather, textiles and yard trimmings.
[2]Agriculture byproducts/crops, sludge waste, and other biomass solids, liquids and gases.
[3]Black liquor, and wood/woodwaste solids and liquids.
[4]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 Energy Information Administration, Office of Coal, Nuclear, Electric, and Alternate Fuels and the following specific sources:
Energy Information Administration, Form EIA-923, "Power Plant Operations Report," and predecessor forms: Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

Table 1.4 Renewable Energy Consumption for Nonelectric Use by Energy Use Sector and Energy Source, 2003 - 2007
(Quadrillion Btu)

Sector and Source	2003	2004	2005	2006	2007
Total	2.135	2.538	2.643	2.874	3.114
Biomass	2.049	2.449	2.549	2.770	2.998
Biofuels	0.414	0.513	0.595	0.795	1.024
Biodiesel[1]	0.002	0.004	0.012	0.032	0.062
Ethanol[2]	0.238	0.299	0.342	0.462	0.580
Losses and Coproducts	0.174	0.210	0.241	0.301	0.381
Biodiesel Feedstock[3]	*	*	*	*	0.001
Ethanol Feedstock[4]	0.174	0.210	0.241	0.301	0.380
Waste	0.153	0.159	0.173	0.174	0.185
Landfill Gas	0.075	0.075	0.080	0.081	0.093
MSW Biogenic[5]	0.016	0.023	0.023	0.024	0.019
Other Biomass[6]	0.061	0.061	0.070	0.069	0.073
Wood and Derived Fuels[7]	1.483	1.777	1.781	1.802	1.789
Geothermal	0.027	0.030	0.034	0.037	0.041
Solar/PV	0.058	0.059	0.061	0.067	0.075
Residential	0.471	0.483	0.507	0.475	0.527
Biomass	0.400	0.410	0.430	0.390	0.430
Wood and Derived Fuels[8]	0.400	0.410	0.430	0.390	0.430
Geothermal	0.013	0.014	0.016	0.018	0.022
Solar/PV	0.058	0.059	0.061	0.067	0.075
Commercial	0.092	0.098	0.098	0.095	0.097
Biomass	0.081	0.086	0.085	0.081	0.082
Biofuels	0.001	0.001	0.001	0.001	0.002
Ethanol[2]	0.001	0.001	0.001	0.001	0.002
Waste	0.010	0.015	0.014	0.016	0.012
Landfill Gas	-	*	*	0.001	0.001
MSW Biogenic[5]	0.009	0.012	0.012	0.013	0.008
Other Biomass[6]	0.001	0.003	0.002	0.002	0.003
Wood and Derived Fuels[7]	0.071	0.070	0.069	0.064	0.069
Geothermal	0.011	0.012	0.014	0.014	0.014
Industrial	1.312	1.629	1.658	1.788	1.824
Biomass	1.308	1.626	1.654	1.783	1.819
Biofuels	0.178	0.217	0.248	0.311	0.393
Ethanol[2]	0.005	0.006	0.007	0.010	0.012
Losses and Coproducts	0.174	0.210	0.241	0.301	0.381
Biodiesel Feedstock[3]	*	*	*	*	0.001
Ethanol Feedstock[4]	0.174	0.210	0.241	0.301	0.380
Waste	0.129	0.127	0.143	0.144	0.157
Landfill Gas	0.075	0.074	0.079	0.080	0.093
MSW Biogenic[5]	0.004	0.006	0.007	0.006	0.005
Other Biomass[6]	0.050	0.047	0.057	0.058	0.060
Wood and Derived Fuels[7]	1.001	1.282	1.262	1.328	1.269
Geothermal	0.003	0.004	0.004	0.004	0.005
Solar/PV	-	-	-	-	-
Transportation	0.235	0.296	0.346	0.483	0.629
Biomass	0.235	0.296	0.346	0.483	0.629
Biofuels	0.235	0.296	0.346	0.483	0.629
Biodiesel[1]	0.002	0.004	0.012	0.032	0.062
Ethanol[2]	0.233	0.292	0.334	0.451	0.566
Electric Power[9]	0.025	0.032	0.035	0.033	0.038
Biomass	0.025	0.032	0.035	0.033	0.038
Waste	0.014	0.017	0.015	0.014	0.016
Landfill Gas	*	*	0.001	*	*
MSW Biogenic[5]	0.003	0.005	0.005	0.005	0.006
Other Biomass[6]	0.011	0.012	0.010	0.009	0.010
Wood and Derived Fuels[7]	0.011	0.015	0.019	0.019	0.021
Geothermal	-	-	-	-	-
Solar/PV	-	-	-	-	-

[1]Biodiesel primarily derived from soy bean oil.
[2]Ethanol primarily derived from corn.
[3]Difference between the energy in biodiesel feedstocks (principally soy bean oil) and the energy in biodiesel consumed in the transportation sector.
[4]Difference between energy in ethanol feedstocks (primarily corn) and its coproducts (wet and dry distiller grains), and the energy in ethanol consumed in the transportation sector.
[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/woodwaste solids and liquids.

Table 1.4 Renewable Energy Consumption for Nonelectric Use by Energy Use Sector and Energy Source, 2003 - 2007 (Quadrillion Btu) (Continued)

Sector and Source	2003	2004	2005	2006	2007

[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.
Revisions to biomass removed MSW non-biogenic and tires from renewable waste energy.
Sources: Analysis conducted by Energy Information Administration, Office of Coal, Nuclear, Electric, and Alternate Fuels and specific sources described as follows. Residential: Energy Information Administration, Form EIA-457A/G, "Residential Energy Consumption Survey;" Oregon Institute of Technology, Geo-Heat Center; and Energy Information Administration, Form EIA-63-A, "Annual Solar Thermal Collector Manufacturers Survey" and Form EIA-63B, "Annual Photovoltaic Module/Cell Manufacturers Survey." Commercial: 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: 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; Government Advisory Associates, Resource Recovery Yearbook and Methane Recovery Yearbook; U.S. Environmental Protection Agency, Landfill Methane Outreach Program estimates; and losses and coproducts from the production of biodiesel and ethanol calculated as the difference between energy in feedstocks and production. Biofuels for Transportation: Biodiesel: 2001-2005: U.S. Department of Agriculture, Commodity Credit Corporation, Bioenergy Program estimates of production assigned to consumption and 2006 and forward: U.S. Department of Commerce, Bureau of Census, Current Industrial Reports, Fats and Oils - Production, Consumption and Stocks, and Ethanol: 2001-2004: EIA, Petroleum Supply Annual, Tables 2 and 16. Calculated as ten percent of oxygenated finished motor gasoline field production (Table 2) plus fuel ethanol refinery input (Table 16). 2005-2007: 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). 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: Energy Information Administration, Form EIA-920, "Combined Heat and Power Plant Report," and Form EIA-923, "Power Plant Operations Report."

Table 1.5a Historical Renewable Energy Consumption by Sector and Energy Source, 1989-1999

(Quadrillion Btu)

Sector and Source	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total	6.391	6.206	6.238	5.993	6.262	6.155	6.705	7.168	7.178	6.657	6.681
Biomass	3.160	2.735	2.782	2.933	2.910	3.030	3.104	3.159	3.108	2.931	2.967
Biofuels[1]	0.126	0.111	0.129	0.146	0.171	0.190	0.202	0.145	0.187	0.205	0.213
Waste[2]	0.354	0.408	0.440	0.473	0.479	0.515	0.531	0.577	0.551	0.542	0.540
Wood and Derived Fuels[3]	2.680	2.216	2.214	2.313	2.260	2.324	2.370	2.437	2.371	2.184	2.214
Geothermal	0.317	0.336	0.346	0.349	0.364	0.338	0.294	0.316	0.325	0.328	0.331
Hydroelectric Conventional	2.837	3.046	3.016	2.617	2.892	2.683	3.205	3.590	3.640	3.297	3.268
Solar/PV[4]	0.055	0.060	0.063	0.064	0.066	0.069	0.070	0.071	0.070	0.070	0.069
Wind	0.022	0.029	0.031	0.030	0.031	0.036	0.033	0.033	0.034	0.031	0.046
Residential	0.978	0.641	0.674	0.706	0.618	0.590	0.591	0.612	0.503	0.452	0.462
Biomass	0.920	0.580	0.610	0.640	0.550	0.520	0.520	0.540	0.430	0.380	0.390
Wood and Derived Fuels	0.920	0.580	0.610	0.640	0.550	0.520	0.520	0.540	0.430	0.380	0.390
Geothermal	0.005	0.006	0.006	0.006	0.007	0.006	0.007	0.007	0.008	0.008	0.009
Solar/PV[4]	0.053	0.056	0.058	0.060	0.062	0.064	0.065	0.065	0.065	0.065	0.064
Commercial	0.102	0.098	0.100	0.109	0.114	0.112	0.118	0.135	0.138	0.127	0.129
Biomass	0.099	0.094	0.095	0.105	0.109	0.106	0.113	0.129	0.131	0.118	0.121
Biofuels[5]	0.001	0.001	*	*	*	*	*	*	*	*	*
Waste[2]	0.022	0.028	0.026	0.032	0.033	0.035	0.040	0.053	0.058	0.054	0.054
Wood and Derived Fuels[3]	0.076	0.066	0.068	0.072	0.076	0.072	0.072	0.076	0.073	0.064	0.067
Geothermal	0.003	0.003	0.003	0.003	0.003	0.004	0.005	0.005	0.006	0.007	0.007
Hydroelectric Conventional	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Industrial	1.870	1.716	1.683	1.737	1.772	1.927	1.992	2.033	2.058	1.931	1.936
Biomass	1.840	1.683	1.651	1.704	1.740	1.862	1.935	1.970	1.997	1.873	1.883
Biofuels[6]	0.056	0.049	0.057	0.064	0.075	0.083	0.087	0.062	0.082	0.090	0.093
Waste[2]	0.200	0.192	0.185	0.179	0.181	0.199	0.195	0.224	0.184	0.180	0.171
Wood and Derived Fuels[3]	1.584	1.442	1.410	1.461	1.484	1.580	1.652	1.683	1.731	1.603	1.620
Geothermal	0.002	0.002	0.002	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.004
Hydroelectric Conventional	0.028	0.031	0.030	0.031	0.030	0.062	0.055	0.061	0.058	0.055	0.049
Solar/PV	-	-	-	-	-	-	-	-	-	-	-
Wind	-	-	-	-	-	-	-	-	-	-	-
Transportation	0.069	0.062	0.072	0.081	0.096	0.107	0.115	0.082	0.104	0.115	0.120
Biomass	0.069	0.062	0.072	0.081	0.096	0.107	0.115	0.082	0.104	0.115	0.120
Biofuels[7]	0.069	0.062	0.072	0.081	0.096	0.107	0.115	0.082	0.104	0.115	0.120
Electric Power[8]	3.372	3.689	3.710	3.360	3.662	3.420	3.889	4.305	4.375	4.032	4.034
Electric Utilities	2.983	3.151	3.114	2.712	2.953	2.714	3.173	3.553	3.620	3.279	3.123
Biomass	0.020	0.022	0.021	0.022	0.021	0.021	0.017	0.020	0.020	0.021	0.020
Waste[2]	0.010	0.013	0.014	0.013	0.011	0.013	0.010	0.012	0.013	0.013	0.013
Wood and Derived Fuels[3]	0.010	0.008	0.008	0.008	0.009	0.008	0.007	0.008	0.008	0.007	0.007
Geothermal	0.197	0.181	0.170	0.169	0.158	0.145	0.099	0.110	0.115	0.109	0.036
Hydroelectric Conventional	2.765	2.948	2.923	2.521	2.774	2.549	3.056	3.423	3.485	3.149	3.067
Solar/PV	*	*	*	*	*	*	*	*	*	*	*
Wind	*	*	*	*	*	*	*	*	*	*	*
Independent Power Producers	0.389	0.538	0.596	0.648	0.709	0.705	0.716	0.752	0.754	0.753	0.910
Biomass	0.211	0.295	0.333	0.381	0.394	0.413	0.405	0.418	0.426	0.424	0.433
Waste[2]	0.122	0.175	0.215	0.249	0.253	0.269	0.286	0.288	0.296	0.294	0.302
Wood and Derived Fuels[3]	0.089	0.120	0.118	0.132	0.141	0.144	0.119	0.130	0.129	0.129	0.131
Geothermal	0.111	0.145	0.165	0.168	0.193	0.180	0.181	0.191	0.194	0.202	0.276

Table 1.5a Historical Renewable Energy Consumption by Sector and Energy Source, 1989-1999 (Quadrillion Btu) (Continued)

Sector and Source	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Hydroelectric Conventional	0.043	0.066	0.062	0.065	0.087	0.072	0.093	0.104	0.096	0.092	0.151
Solar/PV	0.003	0.004	0.005	0.004	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Wind	0.022	0.029	0.031	0.030	0.031	0.036	0.033	0.033	0.034	0.031	0.046

Table 1.5b Historical Renewable Energy Consumption by Sector and Energy Source, 2000-2007

(Quadrillion Btu)

Sector and Source	2000	2001	2002	2003	2004	2005	2006	2007
Total	6.264	5.316	5.893	6.150	6.261	6.424	6.909	6.813
Biomass	3.013	2.627	2.706	2.817	3.024	3.134	3.361	3.596
Biofuels[1]	0.241	0.258	0.309	0.414	0.513	0.595	0.795	1.024
Waste[2]	0.511	0.364	0.402	0.401	0.389	0.403	0.414	0.430
Wood and Derived Fuels[3]	2.262	2.006	1.995	2.002	2.121	2.136	2.152	2.142
Geothermal	0.317	0.311	0.328	0.331	0.341	0.343	0.343	0.349
Hydroelectric Conventional	2.811	2.242	2.689	2.825	2.690	2.703	2.869	2.446
Solar/PV[4]	0.066	0.065	0.064	0.064	0.064	0.066	0.072	0.081
Wind	0.057	0.070	0.105	0.115	0.142	0.178	0.264	0.341
Residential	0.490	0.439	0.449	0.471	0.483	0.507	0.475	0.527
Biomass	0.420	0.370	0.380	0.400	0.410	0.430	0.390	0.430
Wood and Derived Fuels	0.420	0.370	0.380	0.400	0.410	0.430	0.390	0.430
Geothermal	0.009	0.009	0.010	0.013	0.014	0.016	0.018	0.022
Solar/PV[4]	0.061	0.060	0.059	0.058	0.059	0.061	0.067	0.075
Commercial	0.128	0.101	0.104	0.113	0.118	0.119	0.117	0.117
Biomass	0.119	0.092	0.095	0.101	0.105	0.105	0.102	0.102
Biofuels[5]	*	*	*	0.001	0.001	0.001	0.001	0.002
Waste[2]	0.047	0.025	0.026	0.029	0.034	0.034	0.036	0.031
Wood and Derived Fuels[3]	0.071	0.067	0.069	0.071	0.070	0.070	0.065	0.069
Geothermal	0.008	0.008	0.009	0.011	0.012	0.014	0.014	0.014
Hydroelectric Conventional	0.001	0.001	*	0.001	0.001	0.001	0.001	0.001
Industrial	1.930	1.721	1.723	1.731	1.861	1.884	2.007	2.032
Biomass	1.884	1.684	1.679	1.684	1.825	1.848	1.973	2.012
Biofuels[6]	0.102	0.112	0.136	0.178	0.217	0.248	0.311	0.393
Waste[2]	0.145	0.129	0.146	0.142	0.132	0.148	0.147	0.162
Wood and Derived Fuels[3]	1.636	1.443	1.396	1.363	1.476	1.452	1.515	1.457
Geothermal	0.004	0.005	0.005	0.003	0.004	0.004	0.004	0.005
Hydroelectric Conventional	0.042	0.033	0.039	0.043	0.033	0.032	0.029	0.016
Solar/PV	-	-	-	-	-	-	-	-
Wind	-	-	-	-	-	-	-	-
Transportation	0.138	0.145	0.172	0.235	0.296	0.346	0.483	0.629
Biomass	0.138	0.145	0.172	0.235	0.296	0.346	0.483	0.629
Biofuels[7]	0.138	0.145	0.172	0.235	0.296	0.346	0.483	0.629
Electric Power[8]	3.579	2.910	3.445	3.601	3.503	3.568	3.827	3.508
Electric Utilities	2.607	2.063	2.529	2.615	2.522	2.530	2.688	2.356
Biomass	0.021	0.014	0.033	0.029	0.031	0.040	0.042	0.048
Waste[2]	0.014	0.008	0.022	0.012	0.011	0.013	0.015	0.016
Wood and Derived Fuels[3]	0.007	0.006	0.011	0.017	0.020	0.027	0.027	0.032
Geothermal	0.003	0.003	0.029	0.026	0.026	0.024	0.024	0.024
Hydroelectric Conventional	2.582	2.044	2.465	2.556	2.461	2.455	2.598	2.241
Solar/PV	*	*	*	*	*	*	*	*
Wind	*	0.001	0.002	0.004	0.004	0.010	0.023	0.043
Independent Power Producers	0.972	0.847	0.916	0.986	0.981	1.038	1.139	1.152
Biomass	0.432	0.323	0.347	0.368	0.357	0.365	0.370	0.376
Waste[2]	0.305	0.202	0.208	0.218	0.212	0.208	0.216	0.221
Wood and Derived Fuels[3]	0.127	0.121	0.140	0.151	0.145	0.158	0.154	0.154
Geothermal	0.293	0.286	0.275	0.277	0.285	0.285	0.282	0.284

Table 1.5b Historical Renewable Energy Consumption by Sector and Energy Source, 2000-2007 (Quadrillion Btu) (Continued)

Sector and Source	2000	2001	2002	2003	2004	2005	2006	2007
Hydroelectric Conventional	0.185	0.165	0.185	0.224	0.196	0.215	0.242	0.189
Solar/PV	0.005	0.006	0.006	0.005	0.006	0.005	0.005	0.006
Wind	0.057	0.068	0.103	0.111	0.138	0.168	0.240	0.297

Table 1.5a and 5b Historical Renewable Energy Consumption by Sector and Energy Source, 1989-2007

Notes and Sources

[1]Biofuels and biofuel losses and coproducts.
[2]Municipal solid waste biogenic, landfill gases, agriculture byproducts/crops, sludge waste, and other biomass solids, liquids and gases. Includes municipal solid waste nonbiogenic and tires for 1989-2000.
[3]Black liquor, and wood/woodwaste solids and liquids.
[4]Includes small amounts of distributed solar thermal and photovoltaic energy used in the commercial, industrial and electric power sectors.
[5]Ethanol primarily derived from corn.
[6]Ethanol primarily derived from corn and losses and coproducts from production of biodiesel and ethanol.
[7]Biodiesel primarily derived from soy bean oil and ethanol primarily derived from corn.
[8]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.
PV = Photovoltaic.
* = Less than 500 billion Btu.
- = No data reported.

Note: Totals may not equal sum of components due to independent rounding.

Sources: Analysis conducted by Energy Information Administration, Office of Coal, Nuclear, Electric, and Alternate Fuels and Specific sources described as follows. Residential: Energy Information Administration, Form EIA-457A/G, "Residential Energy Consumption Survey;"Oregon Institute of Technology, Geo-Heat Center and Energy Information Administration, Form EIA-63-A, "Annual Solar Thermal Collector Manufacturers Survey" and Form EIA-63B, "Annual Photovoltaic Module/Cell Manufacturers Survey." Commercial: Energy Information Administration, Form EIA-867, "Annual Nonutility Power Producer Report," Form EIA-860B, " Annual Electric Generator Report - Nonutility," Form EIA-906, "Power Plant Report," Form EIA-920, "Combined Heat and Power Plant Report," Form EIA-923, "Power Plant Operations Report;" and Oregon Institute of Technology, Geo-Heat Center.Industrial: Energy Information Administration, Form EIA-846 (A,B,C) "Manufacturing Energy Consumption Survey," Form EIA-867, "Annual Nonutility Power Producer Report," Form EIA-860B, "Annual Electric Generator Report - Nonutility," Form EIA-906, "Power Plant Report", Form EIA-920, "Combined Heat and Power Report," Form EIA-923, "Power Plant Operations Report;" Oregon Institute of Technology, Geo-Heat Center; Government Advisory Associates, Resource Recovery Yearbook and Methane Recovery Yearbook;
U.S. Environmental Protection Agency, Landfill Methane Outreach Program estimates; and losses and coproducts from the production of biodiesel and ethanol calculated as the difference between energy in feedstocks and production. Biofuels for Transportation: Biodiesel: 2001-2005: U.S. Department of Agriculture, Commodity Credit Corporation, Bioenergy Program estimates of production assigned to consumption and 2006 and forward: U.S. Department of Commerce, Bureau of Census, Current Industrial Reports, Fats and Oils - Production, Consumption and Stocks, and Ethanol: 1989: EIA, Estimates of U.S. Biofuels Consumption 1990, Table 10, 1990-1992: EIA, Estimates of U.S. Biomass Energy Consumption 1992, Table D2, 1993-2004: EIA, Petroleum Supply Monthly, Tables 2 and 16. Calculated as ten percent of oxygenated finished motor gasoline field production (Table 2) plus fuel ethanol refinery input (Table 16).2005-2007: 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).
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: Energy Information Administration, Form EIA-759, "Monthly Power Plant Report," Form EIA-867, "Annual Nonutility Power Producer Report," Form EIA-860B, " Annual Electric Generator Report - Nonutility," Form EIA-906, "Monthly Power Plant Report," Form EIA-920, "Combined Heat and Power Plant Report," and Form EIA-923, "Power Plant Operations Report."

Table 1.6 Biofuels Overview, 2003 - 2007

(Trillion Btu)

Type	2003	2004	2005	2006	2007
Ethanol					
Feedstock[1]	410	497	570	712	930
Losses and Coproducts[2]	174	210	241	301	380
Production[3]	236	287	329	412	549
Net Imports[4]	1	13	11	62	37
Stock Change[5]	-1	*	-2	11	6
Consumption	238	299	342	462	580
Biodiesel					
Feedstock[6]	2	4	12	32	63
Losses and Coproducts[7]	*	*	*	*	1
Production[8]	2	4	12	32	62

[1]Total corn and other biomass inputs to the production of fuel ethanol.
[2]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.
[3]Fuel ethanol production.
[4]Fuel ethanol imports. There are no exports.
[5]Fuel ethanol stock change. A negative number indicates a decrease in stocks and a positive number indicates an increase.
[6]Total soy bean oil and other biomass inputs to the production of biodiesel.
[7]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.
[8]Production of biofuels for use as diesel fuel substitutes or additives. Biodiesel consumption equals biodiesel production.
* = Less than 0.5 trillion Btu.
Note: Totals may not equal sum of components due to independent rounding.
Sources: (Note: For ethanol and biodiesel heat contents, see Table 10.) Ethanol Feedstock: Calculated as fuel ethanol production multiplied by the approximate heat content of the corn and other biomass inputs to the production of fuel ethanol. Ethanol Losses and Co-products: Calculated as ethanol feedstock minus fuel ethanol production. Ethanol Production: 2002 and forward: Energy Information Administration (EIA), Form EIA-819, "Monthly Oxygenate Report," and predecessor form. Ethanol Net Imports, Stocks and Stock Change: 2002-2005: EIA, Petroleum Supply Annual (PSA), annual reports. 2006: EIA, Petroleum Supply Monthly (PSM), monthly reports. Ethanol Consumption: 2002-2004: EIA, PSA, annual reports, Tables 2 and 16. Calculated as ten percent of oxygenated finished motor gasoline field production (Table 2), plus fuel ethanol refinery input (Table 16). 2005-2007: EIA, PSA (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 blender net inputs (Table 15). Biodiesel Feedstock: Calcualted as biodiesel production multiplied by the approximate heat content of the vegetable oil and other biomass inputs to the production of biodiesel. Biodiesel Losses and Co-products: Calculated as biodiesel feedstock minus biodiesel production. Biodiesel Production: 2001-2005 U.S. Department of Agriculture, Commodity Credit Corporation, Bioenergy Program records and 2006 and forward: U.S. Department of Commerce, Bureau of Census, Current Industrial Reports, Fats and Oils - Production, Consumption and Stocks, and analysis conducted by Energy Information Administration, Office of Coal, Nuclear, Electric and Alternate Fuels.

Table 1.7 Waste Energy Consumption by Type of Waste and Energy Use Sector, 2007

(Trillion Btu)

Type	Sector				
			Electric Power		
	Commercial	Industrial	Electric Utilities	Independent Power Producers	Total
Total	31	162	16	221	430
Landfill Gas	3	93	9	69	173
MSW Biogenic[1]	21	6	5	134	165
Other Biomass[2]	7	63	3	19	92

[1]Includes paper and paper board, wood, food, leather, textiles and yard trimmings.
[2]Agriculture byproducts/crops, sludge waste, and other biomass solids, liquids and gases.
MSW = Municipal Solid Waste.
Note: Totals may not equal sum of components due to independent rounding.
Sources: Energy Information Administration, Form EIA-906, "Power Plant Report," Form EIA-920, "Combined Heat and Power Plant Report," and Form EIA-923, "Power Plant Operations Report;" Government Advisory Associates, Resource Recovery Yearbook and Methane Recovery Yearbook; and U.S. Environmental Protection Agency, Landfill Methane Outreach Program estimates.

Table 1.8 Industrial Biomass Energy Consumption and Electricity Net Generation by Industry and Energy Sources, 2007

Industry	Energy Source	Biomass Energy Consumption (Trillon Btus)			Net Generation (Million Kilowatthours)
		Total	For Electricity	For Useful Thermal Output	
Total	Total	2,012.016	192.598	1,819.418	28,919
Agriculture, Forestry and Mining	Total	16.354	0.920	15.434	170
	Agricultural Byproducts/Crops	16.354	0.920	15.434	170
Manufacturing	Total	1,888.400	191.678	1,696.722	28,749
Food and Kindred Products	Total	37.018	0.624	36.394	107
	Agricultural Byproducts/Crops	33.776	0.178	33.597	37
	Other Biomass Gases	0.284	0.092	0.192	7
	Other Biomass Liquids	0.102	0.102	-	10
	Wood/Wood Waste Solids	2.857	0.253	2.604	52
Lumber	Total	259.626	9.495	250.131	1,214
	Sludge Waste	0.013	0.002	0.011	s
	Wood/Wood Waste Solids	259.613	9.493	250.120	1,214
Paper and Allied Products	Total	1,192.958	180.070	1,012.888	27,338
	Agricultural Byproducts/Crops	1.301	0.037	1.264	5
	Black Liquor	829.070	116.140	712.930	18,344
	Landfill Gas	0.062	0.007	0.055	1
	Municipal Solid Waste Biogenic[3]	1.359	0.158	1.201	33
	Other Biomass Gases	0.192	0.015	0.177	3
	Other Biomass Liquids	0.011	0.002	0.009	s
	Other Biomass Solids	4.173	0.476	3.697	96
	Sludge Waste	6.257	1.233	5.024	210
	Wood/Wood Waste Liquids	2.800	0.348	2.452	66
	Wood/Wood Waste Solids	347.732	61.654	286.079	8,579
Chemicals and Allied Products	Total	2.959	0.871	2.088	35
	Landfill Gas	0.136	0.017	0.119	4
	Municipal Solid Waste Biogenic[3]	0.706	0.706	-	3
	Other Biomass Liquids	0.028	0.004	0.024	1
	Other Biomass Solids	-	-	-	-
	Sludge Waste	0.394	0.057	0.337	11
	Wood/Wood Waste Solids	1.695	0.087	1.608	16
Biorefineries	Total	380.947	-	380.947	-
	Biofuel Losses and Coproducts[4]	380.947	-	380.947	-
	Biodiesel Feedstock	0.863	-	0.863	-
	Ethanol Feedstock	380.084	-	380.084	-
Other[1]	Total	14.891	0.618	14.274	55
Nonspecified[2]	Total	107.262	-	107.262	-
	Ethanol	12.393	-	12.393	-
	Landfill Gas	92.303	-	92.303	-
	Municipal Solid Waste Biogenic[3]	2.566	-	2.566	-

[1]Other includes Apparel; Petroleum Refining; Rubber and Misc. Plastic Products; Transportation Equipment; Stone, Clay, Glass, and Concrete Products; Furniture and Fixtures; and related industries.
[2]Primary purpose of business is not specified.
[3]Includes paper and paper board, wood, food, leather, textiles and yard trimmings.
[4]Losses and coproducts from production of biodiesel and ethanol calculated as the difference between energy in feedstocks and production.
s = Value is less than 0.5 of the table metric, but value is included in any associated total.
- = No data reported.
Note: 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.
Sources: Energy Information Administration, Form EIA-906, "Power Plant Report," Form EIA-920, "Combined Heat and Power Plant Report," and Form EIA-923, "Power Plant Operations Report;" Government Advisory Associates, Resource Recovery Yearbook and Methane Recovery Yearbook; U.S. Environmental Protection Agency, Landfill Methane Outreach Program estimates; ethanol and biofuel losses and coproducts: table 1.2 of this report; and analysis conducted by the Energy Information Administration, Office of Coal, Nuclear, Electric and Alternate Fuels.

Table 1.9 Net Summer Capacity of Plants Cofiring Biomass and Coal, 2007

(Megawatts)

State	Company Name	Plant I.D.	Plant Name	County	Biomass/ Coal Cofiring Capacity	Total Plant Capacity
AL	DTE Energy Services	50407	Mobile Energy Services LLC	Mobile	91	91
AL	Georgia-Pacific Corp	10699	Georgia Pacific Naheola Mill	Choctaw	31	78
AL	International Paper Co	52140	International Paper Prattville Mill	Autauga	49	90
AR	Domtar Industries Inc	54104	Ashdown	Little River	157	157
AZ	Tucson Electric Power Co	126	H Wilson Sundt Generating Station	Pima	173	559
DE	Conectiv Delmarva Gen Inc	593	Edge Moor	New Castle	252	710
FL	International Paper Co-Pensacola	50250	International Paper Pensacola	Escambia	83	83
FL	Jefferson Smurfit Corp	10202	Jefferson Smurfit Fernandina Beach	Nassau	74	128
FL	Stone Container Corp-Panama Ci	50807	Stone Container Panama City Mill	Bay	20	34
GA	Georgia Pacific CSO LLC	54101	Georgia Pacific Cedar Springs	Early	101	101
GA	International Paper Co-Augusta	54358	International Paper Augusta Mill	Richmond	85	85
GA	SP Newsprint Company	54004	SP Newsprint	Laurens	45	82
HI	Hawaiian Com & Sugar Co Ltd	10604	Hawaiian Comm & Sugar Puunene Mill	Maui	46	62
IA	Ames City of	1122	Ames Electric Services Power Plant	Story	109	109
IA	Archer Daniels Midland Co	10860	Archer Daniels Midland Clinton	Clinton	180	211
IA	University of Iowa	54775	University of Iowa Main Power Plant	Johnson	21	23
KY	East Kentucky Power Coop, Inc	6041	H L Spurlock	Mason	659	1,609
LA	International Paper Co	54090	International Paper Louisiana Mill	Morehouse	59	59
MD	NewPage Corporation	50282	Luke Mill	Allegany	65	65
ME	NewPage Corporation	10495	Rumford Cogeneration	Oxford	103	103
ME	S D Warren Co.- Westbrook	50447	S D Warren Westbrook	Cumberland	15	81
MI	Decorative Panels International, Inc.	10149	Decorative Panels Intl	Alpena	8	8
MI	NewPage Corporation	10208	Escanaba Paper Company	Delta	81	103
MI	S D Warren Co	50438	S D Warren Muskegon	Muskegon	51	51
MI	TES Filer City Station LP	50835	TES Filer City Station	Manistee	70	70
MN	Minnesota Power Inc	10686	Rapids Energy Center	Itasca	27	28
MN	Minnesota Power Inc	1897	M L Hibbard	St Louis	73	123
MO	University of Missouri-Columba	50969	University of Missouri Columbia	Boone	6	91
MS	Weyerhaeuser Co	50184	Weyerhaeuser Columbus MS	Lowndes	123	123
NC	Carlyle/Riverstone Renewable Energy	10381	Coastal Carolina Clean Power	Duplin	44	44
NC	Corn Products Intl Inc	54618	Corn Products Winston Salem	Forsyth	8	8
NC	Domtar Paper Company LLC	50189	Domtar Paper Co LLC Plymouth NC	Martin	162	162
NC	Primary Energy of North Carolina LLC	10379	Primary Energy Roxboro	Person	68	68
NY	AES Greenidge	2527	AES Greenidge LLC	Yates	113	163
NY	AES Hickling LLC	2529	AES Hickling LLC	Steuben	70	70
NY	AES Jennison LLC	2531	AES Jennison LLC	Chenango	60	60
NY	Black River Generation LLC	10464	Black River Generation	Jefferson	56	56
NY	Niagara Generation LLC	50202	WPS Power Niagara	Niagara	56	56
PA	Domtar LLC	54638	Johnsonburg Mill	Elk	54	54
PA	P H Glatfelter Co	50397	P H Glatfelter	York	6	110
SC	International Paper Co-Eastovr	52151	International Paper Eastover Facility	Richland	48	110
SC	Smurfit-Stone Container Enterprises Inc	50806	Stone Container Florence Mill	Florence	79	108
SC	South Carolina Electric&Gas Co	7737	Cogen South	Charleston	99	99
UT	Desert Power LP	55858	Desert Power LP	Tooele	43	135
VA	Bassett Furniture Industries Inc	50911	Bassett Table	Henry	2	2
VA	GP Big Island LLC	50479	Georgia Pacific Big Island	Bedford	8	8
VA	International Paper	52152	International Paper Franklin Mill	Isle of Wight	97	155
VA	MeadWestvaco Corp	50900	Covington Facility	Covington	105	105
VA	Virginia Electric & Power Co	56808	Virginia City Hybrid Energy Center	Wise	668	668
WA	Tacoma City of	3920	Steam plant	Pierce	50	50
WI	Fox Valley Energy Center LLC	56037	Fox Valley Energy Center	Winnebago	7	7
WI	Madison Gas & Electric Co	3992	Blount Street	Dane	100	188
WI	Manitowoc Public Utilities	4125	Manitowoc	Manitowoc	10	213
WI	Mosinee Paper Corp	50614	Mosinee Paper	Marathon	20	23
WI	NewPage Corporation	10234	Biron Mill	Wood	22	62
WI	NewPage Corporation	10476	Whiting Mill	Portage	4	4
WI	NewPage Corporation	10477	Wisconsin Rapids Pulp Mill	Wood	72	72
WI	NewPage Corporation	54857	Niagara Mill	Marinette	12	25
WI	Northern States Power Co	3982	Bay Front	Ashland	40	68
WI	State of Wisconsin	54407	Waupun Correctional Central Heating Plt	Dodge	2	2
WI	State of Wisconsin	54408	Univ of Wisc Madison Charter Sreet Plant	Dane	10	10
WI	Thilmany LLC	54098	International Paper Kaukauna Mill	Outagamie	33	45
Total					5,080	8,121

Note: State abbreviations are documented on the United States Postal Service website: http://www.usps.com/ncsc/lookups/usps_abbreviations.htm.
Source: Energy Information Administration, Form EIA-860, "Annual Electric Generator Report," Schedule 3, Part B.

Table 1.10 Average Heat Content of Selected Biomass Fuels

Fuel Type	Heat Content	Units
Agricultural Byproducts	8.248	Million Btu/Short Ton
Biodiesel	5.359	Million Btu/Barrel
Black Liquor	11.758	Million Btu/Short Ton
Digester Gas	0.619	Million Btu/Thousand Cubic Feet
Ethanol	3.539	Million Btu/Barrel
Landfill Gas	0.490	Million Btu/Thousand Cubic Feet
MSW Biogenic	9.696	Million Btu/Short Ton
Methane	0.841	Million Btu/Thousand Cubic Feet
Paper Pellets	13.029	Million Btu/Short Ton
Peat	8.000	Million Btu/Short Ton
Railroad Ties	12.618	Million Btu/Short Ton
Sludge Waste	7.512	Million Btu/Short Ton
Sludge Wood	10.071	Million Btu/Short Ton
Solid Byproducts	25.830	Million Btu/Short Ton
Spent Sulfite Liquor	12.720	Million Btu/Short Ton
Utility Poles	12.500	Million Btu/Short Ton
Waste Alcohol	3.800	Million Btu/Barrel

MSW = Municipal Solid Waste.

Note: For detailed characteristics of biomass feedstocks, see the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, website here: http://www1.eere.energy.gov/biomass/for_researchers.html .

Sources: Biodiesel and ethanol: Energy Information Administration, Monthly Energy Review December 2008, DOE/EIA-0035 (2008/12) (Washington, DC, October 2007), Table A3; MSW Biogenic: Energy Information Administration, Methodology for Allocating Municipal Solid Waste to Biogenic and Non-Biogenic Energy (Washington, DC, May 2007); and all other fuel types: Energy Information Administration, Form EIA-860B (1999), "Annual Electric Generator Report - Nonutility 1999."

Table 1.11 Electricity Net Generation From Renewable Energy by Energy Use Sector and Energy Source, 2003 - 2007

(Thousand Kilowatthours)

Sector/Source	2003	2004	2005	2006	2007
Total	355,293,117	351,484,632	357,650,653	385,771,908	352,747,486
Biomass	53,341,090	53,537,453	54,276,810	54,860,621	55,538,578
Waste	15,811,993	15,420,570	15,420,393	16,098,525	16,524,554
Landfill Gas	5,077,451	5,128,425	5,142,111	5,677,040	6,157,750
MSW Biogenic[1]	8,306,065	8,150,974	8,330,471	8,477,571	8,303,838
Other Biomass[2]	2,428,477	2,141,171	1,947,810	1,943,913	2,062,966
Wood and Derived Fuels[3]	37,529,097	38,116,883	38,856,417	38,762,096	39,014,024
Geothermal	14,424,231	14,810,975	14,691,745	14,568,029	14,637,213
Hydroelectric Conventional	275,806,328	268,417,308	270,321,255	289,246,416	247,509,974
Solar/PV	534,001	575,155	550,294	507,706	611,793
Wind	11,187,467	14,143,741	17,810,549	26,589,137	34,449,927
Commercial	1,374,208	1,680,155	1,758,789	1,712,691	1,691,439
Biomass	1,301,964	1,575,188	1,672,752	1,619,245	1,614,160
Waste	1,288,914	1,561,794	1,656,755	1,598,646	1,598,799
Landfill Gas	151,801	172,029	217,632	172,590	202,547
MSW Biogenic[1]	716,921	945,344	953,093	955,910	962,496
Other Biomass[2]	420,192	444,421	486,031	470,146	433,756
Wood and Derived Fuels[3]	13,049	13,394	15,997	20,599	15,361
Hydroelectric Conventional	72,245	104,967	86,037	93,446	77,279
Industrial	32,926,240	32,412,566	32,198,528	31,871,511	30,508,807
Biomass	28,703,816	29,164,073	29,003,087	28,972,463	28,918,826
Waste	715,445	796,988	732,553	572,447	631,452
Landfill Gas	96,018	120,018	113,155	28,786	27,087
MSW Biogenic[1]	35,997	30,213	34,441	34,541	39,782
Other Biomass[2]	583,431	646,757	584,957	509,120	564,583
Wood and Derived Fuels[3]	27,988,371	28,367,085	28,270,534	28,400,016	28,287,374
Hydroelectric Conventional	4,222,424	3,248,493	3,195,441	2,899,048	1,589,981
Electric Power[4]	320,992,669	317,391,910	323,693,336	352,187,707	320,547,239
Biomass	23,335,310	22,798,191	23,600,971	24,268,913	25,005,592
Waste	13,807,633	13,061,787	13,031,084	13,927,432	14,294,304
Landfill Gas	4,829,632	4,836,377	4,811,325	5,475,664	5,928,117
MSW Biogenic[1]	7,553,146	7,175,417	7,342,938	7,487,120	7,301,560
Other Biomass[2]	1,424,854	1,049,993	876,822	964,648	1,064,627
Wood and Derived Fuels[3]	9,527,677	9,736,404	10,569,886	10,341,481	10,711,288
Geothermal	14,424,231	14,810,975	14,691,745	14,568,029	14,637,213
Hydroelectric Conventional	271,511,659	265,063,848	267,039,777	286,253,922	245,842,714
Solar/PV	534,001	575,155	550,294	507,706	611,793
Wind	11,187,467	14,143,741	17,810,549	26,589,137	34,449,927

[1]Includes paper and paper board, wood, food, leather, textiles and yard trimmings.
[2]Agriculture byproducts/crops, sludge waste, and other biomass solids, liquids and gases.
[3]Black liquor, and wood/woodwaste solids and liquids.
[4]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.
Notes: Totals may not equal sum of components due to independent rounding.
Data revisions are discussed in the Highlights section.
Revisions to biomass removed MSW non-biogenic and tires from renewable waste energy.
Source: Electric Power: Energy Information Administration, Form EIA-923, "Power Plant Operations Report," and predecessor forms: Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

Table 1.12 U.S. Electric Net Summer Capacity, 2003 - 2007

(Megawatts)

Source	2003	2004	2005	2006	2007
Total	948,446	962,942	978,020	986,215	994,888
Renewable Total	96,847	96,357	98,746	101,934	107,954
Biomass	9,628	9,711	9,802	10,100	10,839
Waste	3,758	3,529	3,609	3,727	4,134
Landfill Gas	863	859	887	978	1,319
MSW[1]	2,442	2,196	2,167	2,188	2,218
Other Biomass[2]	453	474	554	561	598
Wood and Derived Fuels[3]	5,871	6,182	6,193	6,372	6,704
Geothermal	2,133	2,152	2,285	2,274	2,214
Hydroelectric Conventional	78,694	77,641	77,541	77,821	77,885
Solar/PV	397	398	411	411	502
Wind	5,995	6,456	8,706	11,329	16,515
Nonrenewable Total	851,599	866,585	879,274	884,281	886,934

[1]Includes total capacity whose primary energy source is MSW.
[2]Agriculture byproducts/crops, sludge waste and other biomass solids, liquids and gases. Does not include tires.
[3]Black liquor, and wood/woodwaste solids and liquids.
MSW = Municipal Solid Waste.
PV = Photovoltaic.
Notes: Totals may not equal sum of components due to independent rounding.
Data revisions are discussed in the Highlights section.
Revisions to biomass capacity removed tires from renewable waste energy.
Source: Energy Information Administration, Form EIA-860, "Annual Electric Generator Report."

Table 1.13 Renewable Electricity Net Generation by Energy Source and Census Division, 2007

(Thousand Kilowattthours)

Census Division	Biomass				Geothermal	Hydroelectric Conventional	Solar/PV	Wind	Total
	Waste			Wood and Derived Fuels[3]					
	Landfill Gas	MSW Biogenic[1]	Other Biomass[2]						
Total	6,157,750	8,303,838	2,062,966	39,014,024	14,637,213	247,509,974	611,793	34,449,927	352,747,486
New England	394,977	1,943,271	78,898	5,391,892	-	6,815,108	-	109,582	14,733,728
Middle Atlantic	1,104,706	2,600,360	24,057	1,111,828	-	27,509,447	-	1,323,906	33,674,303
East North Central	1,723,434	257,066	49,068	2,876,659	-	3,800,171	-	791,181	9,497,579
West North Central	256,007	358,319	207,085	727,590	-	7,401,115	-	7,535,581	16,485,697
South Atlantic	592,421	2,606,046	637,049	10,768,125	-	11,085,581	-	167,588	25,856,811
East South Central	116,188	-	53,460	6,510,550	-	10,744,302	-	49,937	17,474,436
West South Central	355,710	3,721	135,809	5,669,471	-	8,773,694	-	10,855,527	25,793,931
Mountain	53,583	5,954	51,582	591,526	1,416,616	30,252,605	54,824	4,107,679	36,534,369
Pacific Contiguous	1,560,725	359,651	699,936	5,366,361	12,990,711	139,744,385	556,969	9,269,751	170,548,489
Pacific Noncontiguous	-	169,450	126,023	s	229,886	1,383,566	-	239,196	2,148,143

[1]Includes paper and paper board, wood, food, leather, textiles and yard trimmings.
[2]Agriculture byproducts/crops, sludge waste, and other biomass solids, liquids and gases.
[3]Black liquor, and wood/woodwaste solids and liquids.
MSW = Municipal Solid Waste.
PV = Photovoltaic.
s = Less than 500 kilowatthours.
- = No data reported.
Note: Totals may not equal sum of components due to independent rounding.
Source: Energy Information Administration, Form EIA-923, "Power Plant Operations Report," and predecessor forms: Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

Table 1.14 Industrial Biomass Electricity Net Generation by Census Division and Energy Sources, 2007

(Thousand Kilowattthours)

Energy Source	Census Division										
	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific Contiguous	Pacific Noncontiguous	Total
Total	1,975,026	653,064	1,686,598	506,949	9,434,098	6,358,302	5,699,297	516,242	2,072,464	16,786	28,918,826
Agricultural Byproducts/Crops	-	-	-	13,507	167,595	5,017	19,291	-	-	6,590	211,999
Black Liquor	836,436	481,823	1,044,402	322,214	6,746,917	4,257,883	3,683,644	335,015	635,531	-	18,343,866
Landfill Gases	-	-	22,162	-	1,404	3,520	-	-	-	-	27,087
MSW Biogenic	-	-	-	-	36,061	-	3,721	-	-	-	39,782
Other Biomass Gases	-	-	3,197	7,245	-	-	-	-	-	-	10,442
Other Biomass Liquids	s	712	-	-	s	-	s	-	-	10,196	11,302
Other Biomass Solids	s	-	14,847	-	93,399	-	-	-	-	-	108,724
Sludge Waste	38,564	2,613	10,737	7,587	55,654	48,443	6,712	-	51,805	-	222,115
Wood/Wood Waste Liquids	-	66,331	-	-	-	-	-	-	-	-	66,331
Wood/Wood Waste Solids	1,099,354	101,584	591,252	156,396	2,332,970	2,043,439	1,985,827	181,226	1,385,129	-	9,877,177

MSW = Municipal Solid Waste.
s = Less than 500 kilowatthours.
- = No data reported.
Note: Totals may not equal sum of components due to independent rounding.
Source: Energy Information Administration, Form EIA-923, "Power Plant Operations Report," and predecessor forms: Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

Table 1.15 Renewable Electric Power Sector Net Generation by Energy Source and State, 2006

(Thousand Kilowattthours)

State	Biomass			Geothermal	Hydroelectric Conventional	Solar/PV	Wind	Total
	Waste		Wood and Derived Fuels[3]					
	Landfill Gas/MSW Biogenic[1]	Other Biomass[2]						
Alabama	-	-	206,459	-	7,251,786	-	-	7,458,245
Alaska	-	-	-	-	1,223,607	-	788	1,224,395
Arizona	27,929	-	8,240	-	6,792,904	13,134	-	6,842,207
Arkansas	7,407	20,439	-	-	1,550,558	-	-	1,578,404
California	1,561,782	275,651	2,564,860	12,821,434	48,039,986	494,572	4,882,801	70,641,086
Colorado	-	30,692	-	-	1,791,207	-	865,536	2,687,435
Connecticut	754,776	-	8,544	-	543,892	-	-	1,307,212
Delaware	s	-	-	-	-	-	-	s
District of Columbia	-	-	-	-	-	-	-	-
Florida	1,824,337	242,575	471,831	-	203,422	-	-	2,742,165
Georgia	14,908	-	-	-	2,545,504	-	-	2,560,412
Hawaii	-	129,092	-	212,276	81,792	-	79,674	502,834
Idaho	-	-	75,926	-	11,242,372	-	169,617	11,487,915
Illinois	581,899	11,993	-	-	173,272	-	254,571	1,021,735
Indiana	173,991	-	-	-	489,515	-	-	663,506
Iowa	100,268	-	-	-	909,348	-	2,317,821	3,327,437
Kansas	-	-	-	-	9,649	-	991,890	1,001,539
Kentucky	87,713	-	-	-	2,591,701	-	-	2,679,414
Louisiana	-	76,304	-	-	713,215	-	-	789,519
Maine	139,382	8,142	1,843,344	-	3,499,336	-	-	5,490,204
Maryland	392,946	-	-	-	2,104,275	-	-	2,497,221
Massachusetts	1,126,129	s	125,258	-	1,504,072	-	-	2,755,819
Michigan	583,153	-	1,062,967	-	1,488,242	-	2,212	3,136,574
Minnesota	400,307	-	96,578	-	475,342	-	2,054,947	3,027,174
Mississippi	-	-	-	-	-	-	-	-
Missouri	15,195	-	s	-	199,214	-	-	214,505
Montana	-	-	-	-	10,130,161	-	435,970	10,566,131
Nebraska	37,404	3,137	-	-	893,386	-	261,247	1,195,174
Nevada	-	-	-	1,343,711	2,057,626	-	-	3,401,337
New Hampshire	156,399	-	580,433	-	1,523,637	-	-	2,260,469
New Jersey	803,245	94,659	-	-	34,076	-	15,991	947,971
New Mexico	-	21,885	-	-	198,211	-	1,255,436	1,475,532
New York	1,276,047	9,631	292,366	-	27,252,046	-	655,371	29,485,461
North Carolina	88,110	-	447,833	-	3,333,173	-	-	3,869,116
North Dakota	-	-	-	-	1,521,034	-	369,485	1,890,519
Ohio	23,653	-	37,883	-	631,936	-	14,401	707,873
Oklahoma	-	-	-	-	623,579	-	1,712,441	2,336,020
Oregon	71,203	13,926	290,225	-	37,850,297	-	931,219	39,156,871
Pennsylvania	1,297,599	14,348	193,472	-	2,844,142	-	361,108	4,710,669
Rhode Island	148,913	-	-	-	5,909	-	-	154,822
South Carolina	61,042	-	348,887	-	1,805,295	-	-	2,215,224
South Dakota	-	-	-	-	3,396,833	-	148,965	3,545,798
Tennessee	23,675	1,286	-	-	7,167,342	-	54,598	7,246,901
Texas	201,073	2,023	-	-	661,971	-	6,670,515	7,535,582
Utah	6,158	-	-	190,608	746,783	-	-	943,549
Vermont	-	-	435,628	-	1,497,064	-	10,688	1,943,380
Virginia	443,218	-	482,711	-	1,344,890	-	-	2,270,819
Washington	165,496	6,843	600,223	-	81,943,845	-	1,037,651	83,754,058
West Virginia	-	-	-	-	1,048,467	-	173,757	1,222,224
Wisconsin	367,010	1,662	167,715	-	1,474,692	-	101,376	2,112,455
Wyoming	-	-	-	-	843,316	-	759,061	1,602,377
U.S. Total	**12,962,784**	**964,648**	**10,341,481**	**14,568,029**	**286,253,922**	**507,706**	**26,589,137**	**352,187,707**

[1]Includes landfill gas and MSW biogenic (paper and paper board, wood, food, leather, textiles and yard trimmings).
[2]Agriculture byproducts/crops, sludge waste, and other biomass solids, liquids and gases.
[3]Black liquor, and wood/woodwaste solids and liquids.
MSW = Municipal Solid Waste.
PV = Photovoltaic.
s = Less than 500 kilowatthours.
- = No data reported.
Notes: Totals may not equal sum of components due to independent rounding.
Revisions to biomass removed MSW non-biogenic and tires from renewable waste energy.
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.
Source: Energy Information Administration, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

Table 1.16 Renewable Commercial and Industrial Sector Net Generation by Energy Source and State, 2006

(Thousand Kilowattthours)

State	Biomass			Geothermal	Hydroelectric Conventional	Solar/PV	Wind	Total
	Waste		Wood and Derived Fuels[3]					
	Landfill Gas/MSW Biogenic[1]	Other Biomass[2]						
Alabama	3,937	15,514	3,658,551	-	-	-	-	3,678,002
Alaska	-	6,149	516	-	-	-	-	6,665
Arizona	-	4,264	-	-	-	-	-	4,264
Arkansas	-	5,580	1,689,379	-	-	-	-	1,694,959
California	123,151	333,912	857,232	-	7,394	-	-	1,321,689
Colorado	-	-	-	-	-	-	-	-
Connecticut	-	-	-	-	-	-	-	-
Delaware	-	-	-	-	-	-	-	-
District of Columbia	-	-	-	-	-	-	-	-
Florida	955	283,834	1,507,157	-	-	-	-	1,791,946
Georgia	9,710	32,090	3,362,210	-	23,333	-	-	3,427,343
Hawaii	189,162	7,439	-	-	38,295	-	-	234,896
Idaho	-	-	444,414	-	-	-	-	444,414
Illinois	-	s	-	-	-	-	-	s
Indiana	46,221	-	-	-	-	-	-	46,221
Iowa	-	36,628	-	-	-	-	-	36,628
Kansas	-	-	-	-	-	-	-	-
Kentucky	-	1,724	369,361	-	-	-	-	371,085
Louisiana	-	5,128	2,880,930	-	-	-	-	2,886,059
Maine	95,359	40,150	1,841,274	-	778,796	-	-	2,755,579
Maryland	15,149	-	218,066	-	-	-	-	233,215
Massachusetts	-	27,082	-	-	8,573	-	-	35,654
Michigan	151,927	1,743	640,557	-	32,111	-	-	826,338
Minnesota	11,212	2,748	493,092	-	96,388	-	-	603,440
Mississippi	-	6,480	1,534,602	-	-	-	-	1,541,082
Missouri	-	8,680	-	-	-	-	-	8,680
Montana	-	-	94,415	-	-	-	-	94,415
Nebraska	-	11,472	-	-	-	-	-	11,472
Nevada	-	-	-	-	-	-	-	-
New Hampshire	-	-	9,548	-	5,273	-	-	14,821
New Jersey	-	2,889	-	-	1,360	-	-	4,249
New Mexico	-	-	-	-	-	-	-	-
New York	133,763	-	229,463	-	92,609	-	-	455,836
North Carolina	-	3,631	1,288,732	-	505,839	-	-	1,798,201
North Dakota	-	3,544	-	-	-	-	-	3,544
Ohio	-	10,468	372,209	-	-	-	-	382,678
Oklahoma	-	-	297,283	-	-	-	-	297,283
Oregon	-	13,847	508,568	-	-	-	-	522,415
Pennsylvania	113,341	3,420	489,658	-	-	-	-	606,419
Rhode Island	-	-	-	-	-	-	-	-
South Carolina	45,011	-	1,455,497	-	1,653	-	-	1,502,161
South Dakota	-	-	-	-	-	-	-	-
Tennessee	-	33,221	697,819	-	581,308	-	-	1,312,348
Texas	17,740	34,865	892,044	-	-	-	-	944,649
Utah	8,710	-	-	-	-	-	-	8,710
Vermont	-	-	3,594	-	21,601	-	-	25,195
Virginia	218,611	16,578	1,297,332	-	6,304	-	-	1,538,825
Washington	-	11,674	680,966	-	63,784	-	-	756,424
West Virginia	-	s	-	-	523,966	-	-	524,262
Wisconsin	7,868	13,845	606,148	-	203,906	-	-	831,767
Wyoming	-	-	-	-	-	-	-	-
U.S. Total	**1,191,827**	**979,266**	**28,420,615**	**-**	**2,992,493**	**-**	**-**	**33,584,201**

[1]Includes landfill gas and MSW biogenic (paper and paper board, wood, food, leather, textiles and yard trimmings).
[2]Agriculture byproducts/crops, sludge waste, and other biomass solids, liquids and gases.
[3]Black liquor, and wood/woodwaste solids and liquids.
MSW = Municipal Solid Waste.
PV = Photovoltaic.
s = Less than 500 kilowatthours.
- = No data reported.
Notes: Totals may not equal sum of components due to independent rounding.
Revisions to biomass removed MSW non-biogenic and tires from renewable waste energy.
Source: Energy Information Administration, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

Table 1.17 Total Renewable Net Generation by Energy Source and State, 2006

(Thousand Kilowattthours)

State	Biomass			Geothermal	Hydroelectric Conventional	Solar/PV	Wind	Total
	Waste		Wood and Derived Fuels[3]					
	Landfill Gas/MSW Biogenic[1]	Other Biomass[2]						
Alabama	3,937	15,514	3,865,010	-	7,251,786	-	-	11,136,248
Alaska	-	6,149	516	-	1,223,607	-	788	1,231,060
Arizona	27,929	4,264	8,240	-	6,792,904	13,134	-	6,846,471
Arkansas	7,407	26,019	1,689,379	-	1,550,558	-	-	3,273,363
California	1,684,932	609,563	3,422,093	12,821,434	48,047,380	494,572	4,882,801	71,962,775
Colorado	-	30,692	-	-	1,791,207	-	865,536	2,687,435
Connecticut	754,776	-	8,544	-	543,892	-	-	1,307,212
Delaware	s	-	-	-	-	-	-	s
District of Columbia	-	-	-	-	-	-	-	-
Florida	1,825,292	526,409	1,978,988	-	203,422	-	-	4,534,112
Georgia	24,618	32,090	3,362,210	-	2,568,837	-	-	5,987,755
Hawaii	189,162	136,530	-	212,276	120,087	-	79,674	737,729
Idaho	-	-	520,340	-	11,242,372	-	169,617	11,932,329
Illinois	581,899	12,362	-	-	173,272	-	254,571	1,022,104
Indiana	220,212	-	-	-	489,515	-	-	709,727
Iowa	100,268	36,628	-	-	909,348	-	2,317,821	3,364,065
Kansas	-	-	-	-	9,649	-	991,890	1,001,539
Kentucky	87,713	1,724	369,361	-	2,591,701	-	-	3,050,499
Louisiana	-	81,432	2,880,930	-	713,215	-	-	3,675,578
Maine	234,741	48,292	3,684,618	-	4,278,132	-	-	8,245,783
Maryland	408,095	-	218,066	-	2,104,275	-	-	2,730,436
Massachusetts	1,126,129	27,442	125,258	-	1,512,645	-	-	2,791,473
Michigan	735,080	1,743	1,703,524	-	1,520,353	-	2,212	3,962,912
Minnesota	411,518	2,748	589,670	-	571,730	-	2,054,947	3,630,614
Mississippi	-	6,480	1,534,602	-	-	-	-	1,541,082
Missouri	15,195	8,680	s	-	199,214	-	-	223,185
Montana	-	-	94,415	-	10,130,161	-	435,970	10,660,546
Nebraska	37,404	14,610	-	-	893,386	-	261,247	1,206,647
Nevada	-	-	-	1,343,711	2,057,626	-	-	3,401,337
New Hampshire	156,399	-	589,981	-	1,528,910	-	-	2,275,290
New Jersey	803,245	97,548	-	-	35,436	-	15,991	952,220
New Mexico	-	21,885	-	-	198,211	-	1,255,436	1,475,532
New York	1,409,811	9,631	521,829	-	27,344,655	-	655,371	29,941,296
North Carolina	88,110	3,631	1,736,565	-	3,839,012	-	-	5,667,317
North Dakota	-	3,544	-	-	1,521,034	-	369,485	1,894,063
Ohio	23,653	10,468	410,093	-	631,936	-	14,401	1,090,551
Oklahoma	-	-	297,283	-	623,579	-	1,712,441	2,633,303
Oregon	71,203	27,773	798,793	-	37,850,297	-	931,219	39,679,286
Pennsylvania	1,410,940	17,768	683,130	-	2,844,142	-	361,108	5,317,088
Rhode Island	148,913	-	-	-	5,909	-	-	154,822
South Carolina	106,053	-	1,804,384	-	1,806,948	-	-	3,717,385
South Dakota	-	-	-	-	3,396,833	-	148,965	3,545,798
Tennessee	23,675	34,507	697,819	-	7,748,650	-	54,598	8,559,249
Texas	218,813	36,888	892,044	-	661,971	-	6,670,515	8,480,231
Utah	14,868	-	-	190,608	746,783	-	-	952,259
Vermont	-	-	439,222	-	1,518,665	-	10,688	1,968,575
Virginia	661,829	16,578	1,780,043	-	1,351,194	-	-	3,809,644
Washington	165,496	18,518	1,281,189	-	82,007,629	-	1,037,651	84,510,483
West Virginia	-	s	-	-	1,572,433	-	173,757	1,746,486
Wisconsin	374,878	15,507	773,863	-	1,678,598	-	101,376	2,944,221
Wyoming	-	-	-	-	843,316	-	759,061	1,602,377
U.S. Total	**14,154,611**	**1,943,913**	**38,762,096**	**14,568,029**	**289,246,416**	**507,706**	**26,589,137**	**385,771,908**

[1]Includes landfill gas and MSW biogenic (paper and paper board, wood, food, leather, textiles and yard trimmings).
[2]Agriculture byproducts/crops, sludge waste, and other biomass solids, liquids and gases.
[3]Black liquor, and wood/woodwaste solids and liquids.
MSW = Municipal Solid Waste.
PV = Photovoltaic.
s = Less than 500 kilowatthours.
- = No data reported.
Notes: Totals may not equal sum of components due to independent rounding.
Revisions to biomass removed MSW non-biogenic and tires from renewable waste energy.
Source: Energy Information Administration, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

Table 1.18 Renewable Electric Power Sector Net Generation by Energy Source and State, 2007

(Thousand Kilowattthours)

State	Biomass			Geothermal	Hydroelectric Conventional	Solar/PV	Wind	Total
	Waste							
	Landfill Gas/MSW Biogenic[1]	Other Biomass[2]	Wood and Derived Fuels[3]					
Alabama	-	-	209,227	-	4,136,114	-	-	4,345,341
Alaska	-	-	-	-	1,291,223	-	1,012	1,292,235
Arizona	28,507	-	-	-	6,597,671	8,649	-	6,634,827
Arkansas	33,438	5,091	-	-	3,236,753	-	-	3,275,282
California	1,538,096	346,943	2,536,524	12,990,711	27,314,363	556,969	5,584,933	50,868,540
Colorado	-	31,105	-	-	1,729,533	2,208	1,291,516	3,054,362
Connecticut	728,164	-	1,676	-	363,261	-	-	1,093,100
Delaware	48,116	-	-	-	-	-	-	48,116
District of Columbia	-	-	-	-	-	-	-	-
Florida	1,793,086	281,067	409,908	-	154,446	-	-	2,638,507
Georgia	12,808	-	-	-	2,217,013	-	-	2,229,821
Hawaii	-	109,237	-	229,886	54,611	-	238,184	631,918
Idaho	-	-	75,285	-	9,021,690	-	172,267	9,269,242
Illinois	603,225	16,348	-	-	153,727	-	664,427	1,437,727
Indiana	189,853	-	-	-	449,936	-	-	639,789
Iowa	122,715	-	-	-	962,346	-	2,756,676	3,841,737
Kansas	-	-	-	-	10,501	-	1,152,538	1,163,039
Kentucky	93,440	-	-	-	1,668,587	-	-	1,762,027
Louisiana	-	74,988	-	-	826,642	-	-	901,630
Maine	113,562	13,026	1,910,641	-	3,043,827	-	99,071	5,180,127
Maryland	383,974	-	-	-	1,652,216	-	-	2,036,191
Massachusetts	1,094,431	-	119,157	-	778,232	-	-	1,991,820
Michigan	555,824	s	1,014,377	-	1,243,903	-	2,723	2,816,882
Minnesota	413,529	135,303	248,844	-	558,269	-	2,638,812	3,994,757
Mississippi	-	-	-	-	-	-	-	-
Missouri	21,944	-	s	-	1,204,326	-	-	1,226,390
Montana	-	-	-	-	9,364,336	-	495,776	9,860,112
Nebraska	46,184	2,837	-	-	347,444	-	216,765	613,230
Nevada	-	-	-	1,252,691	2,003,191	43,967	-	3,299,849
New Hampshire	152,816	-	970,038	-	1,260,733	-	-	2,383,587
New Jersey	822,453	-	-	-	20,909	-	20,412	863,774
New Mexico	-	15,994	-	-	267,978	-	1,393,239	1,677,211
New York	1,312,795	7,416	270,749	-	25,190,534	-	833,476	27,614,970
North Carolina	85,745	-	432,033	-	2,974,677	-	-	3,492,455
North Dakota	-	-	-	-	1,305,393	-	620,772	1,926,165
Ohio	10,972	-	31,210	-	410,436	-	14,748	467,366
Oklahoma	-	-	-	-	3,065,862	-	1,849,144	4,915,006
Oregon	88,363	-	242,017	-	33,587,439	-	1,246,994	35,164,813
Pennsylvania	1,324,739	13,314	191,340	-	2,235,982	-	470,018	4,235,393
Rhode Island	154,757	-	-	-	4,364	-	-	159,121
South Carolina	63,842	-	375,755	-	1,555,213	-	-	1,994,809
South Dakota	-	-	-	-	2,917,283	-	150,018	3,067,301
Tennessee	19,228	-	-	-	4,939,601	-	49,937	5,008,766
Texas	302,739	8,770	-	-	1,644,437	-	9,006,383	10,962,329
Utah	5,954	-	-	163,925	538,782	-	-	708,662
Vermont	-	-	453,038	-	645,081	-	10,511	1,108,629
Virginia	498,237	-	459,154	-	1,241,501	-	-	2,198,892
Washington	162,890	s	567,160	-	78,781,231	-	2,437,823	81,949,105
West Virginia	-	-	-	-	805,854	-	167,588	973,442
Wisconsin	403,251	3,132	193,035	-	1,335,840	-	109,283	2,044,541
Wyoming	-	-	-	-	729,424	-	754,881	1,484,305
U.S. Total	**13,229,677**	**1,064,627**	**10,711,288**	**14,637,213**	**245,842,714**	**611,793**	**34,449,927**	**320,547,239**

[1]Includes landfill gas and MSW biogenic (paper and paper board, wood, food, leather, textiles and yard trimmings).
[2]Agriculture byproducts/crops, sludge waste, and other biomass solids, liquids and gases.
[3]Black liquor, and wood/woodwaste solids and liquids.
MSW = Municipal Solid Waste.
PV = Photovoltaic.
s = Less than 500 kilowatthours.
- = No data reported.
Notes: Totals may not equal sum of components due to independent rounding.
Revisions to biomass removed MSW non-biogenic and tires from renewable waste energy.
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.
Source: Energy Information Administration, Form EIA-923, "Power Plant Operations Report," and predecessor forms: Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

Table 1.19 Renewable Commercial and Industrial Sector Net Generation by Energy Source and State, 2007

(Thousand Kilowattthours)

State	Biomass			Geothermal	Hydroelectric Conventional	Solar/PV	Wind	Total
	Waste							
	Landfill Gas/MSW Biogenic[1]	Other Biomass[2]	Wood and Derived Fuels[3]					
Alabama	3,520	13,218	3,574,655	-	-	-	-	3,591,393
Alaska	-	10,196	s	-	-	-	-	10,218
Arizona	-	4,483	-	-	-	-	-	4,483
Arkansas	-	4,412	1,580,803	-	-	-	-	1,585,215
California	119,002	301,187	870,891	-	13,388	-	-	1,304,469
Colorado	-	-	-	-	-	-	-	-
Connecticut	-	-	-	-	-	-	-	-
Delaware	-	-	-	-	-	-	-	-
District of Columbia	-	-	-	-	-	-	-	-
Florida	1,404	297,462	1,519,891	-	-	-	-	1,818,757
Georgia	3,413	37,103	3,362,097	-	19,175	-	-	3,421,789
Hawaii	169,450	6,590	-	-	37,733	-	-	213,773
Idaho	-	-	405,297	-	-	-	-	405,297
Illinois	-	752	-	-	-	-	-	752
Indiana	41,394	-	-	-	-	-	-	41,394
Iowa	-	28,368	s	-	-	-	-	28,384
Kansas	-	-	-	-	-	-	-	-
Kentucky	-	1,973	370,210	-	-	-	-	372,183
Louisiana	-	6,524	2,898,371	-	-	-	-	2,904,895
Maine	94,519	39,236	1,936,925	-	694,340	-	-	2,765,020
Maryland	16,390	-	203,097	-	-	-	-	219,487
Massachusetts	-	26,636	-	-	19,250	-	-	45,886
Michigan	165,460	s	677,825	-	26,086	-	-	869,854
Minnesota	9,953	7,587	478,610	-	95,553	-	-	591,703
Mississippi	-	5,017	1,488,348	-	-	-	-	1,493,365
Missouri	-	7,245	-	-	-	-	-	7,245
Montana	-	-	110,945	-	-	-	-	110,945
Nebraska	-	12,238	-	-	-	-	-	12,238
Nevada	-	-	-	-	-	-	-	-
New Hampshire	-	-	s	-	4,496	-	-	4,914
New Jersey	-	713	-	-	-	-	-	713
New Mexico	-	-	-	-	-	-	-	-
New York	129,135	-	221,512	-	62,022	-	-	412,669
North Carolina	-	1,100	1,153,341	-	9,482	-	-	1,163,923
North Dakota	-	13,507	-	-	-	-	-	13,507
Ohio	-	10,045	368,169	-	-	-	-	378,214
Oklahoma	3,721	-	276,133	-	-	-	-	279,854
Oregon	12,026	38,345	600,549	-	-	-	-	650,919
Pennsylvania	115,944	2,613	428,226	-	-	-	-	546,784
Rhode Island	-	-	-	-	-	-	-	-
South Carolina	36,760	-	1,519,677	-	699	-	-	1,557,136
South Dakota	-	-	-	-	-	-	-	-
Tennessee	-	33,252	868,110	-	-	-	-	901,361
Texas	19,532	36,023	914,164	-	-	-	-	969,720
Utah	25,076	-	-	-	-	-	-	25,076
Vermont	-	-	-	-	1,524	-	-	1,524
Virginia	254,691	20,317	1,333,172	-	6,763	-	-	1,614,943
Washington	-	13,460	549,220	-	47,964	-	-	610,644
West Virginia	-	-	-	-	448,543	-	-	448,543
Wisconsin	10,520	18,252	592,044	-	180,243	-	-	801,059
Wyoming	-	-	-	-	-	-	-	-
U.S. Total	**1,231,911**	**998,339**	**28,302,736**	**-**	**1,667,260**	**-**	**-**	**32,200,246**

[1]Includes landfill gas and MSW biogenic (paper and paper board, wood, food, leather, textiles and yard trimmings).
[2]Agriculture byproducts/crops, sludge waste, and other biomass solids, liquids and gases.
[3]Black liquor, and wood/woodwaste solids and liquids.
MSW = Municipal Solid Waste.
PV = Photovoltaic.
s = Less than 500 kilowatthours.
- = No data reported.
Notes: Totals may not equal sum of components due to independent rounding.
Revisions to biomass removed MSW non-biogenic and tires from renewable waste energy.
Source: Energy Information Administration, Form EIA-923, "Power Plant Operations Report," and predecessor forms: Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

Table 1.20 Total Renewable Net Generation by Energy Source and State, 2007

(Thousand Kilowattthours)

State	Biomass			Geothermal	Hydroelectric Conventional	Solar/PV	Wind	Total
	Waste		Wood and Derived Fuels[3]					
	Landfill Gas/MSW Biogenic[1]	Other Biomass[2]						
Alabama	3,520	13,218	3,783,882	-	4,136,114	-	-	7,936,734
Alaska	-	10,196	s	-	1,291,223	-	1,012	1,302,453
Arizona	28,507	4,483	-	-	6,597,671	8,649	-	6,639,310
Arkansas	33,438	9,503	1,580,803	-	3,236,753	-	-	4,860,497
California	1,657,098	648,130	3,407,416	12,990,711	27,327,751	556,969	5,584,933	52,173,008
Colorado	-	31,105	-	-	1,729,533	2,208	1,291,516	3,054,362
Connecticut	728,164	-	1,676	-	363,261	-	-	1,093,100
Delaware	48,116	-	-	-	-	-	-	48,116
District of Columbia	-	-	-	-	-	-	-	-
Florida	1,794,490	578,529	1,929,798	-	154,446	-	-	4,457,264
Georgia	16,221	37,103	3,362,097	-	2,236,188	-	-	5,651,610
Hawaii	169,450	115,827	-	229,886	92,343	-	238,184	845,691
Idaho	-	-	480,582	-	9,021,690	-	172,267	9,674,539
Illinois	603,225	17,100	-	-	153,727	-	664,427	1,438,480
Indiana	231,247	-	-	-	449,936	-	-	681,183
Iowa	122,715	28,368	s	-	962,346	-	2,756,676	3,870,121
Kansas	-	-	-	-	10,501	-	1,152,538	1,163,039
Kentucky	93,440	1,973	370,210	-	1,668,587	-	-	2,134,210
Louisiana	-	81,512	2,898,371	-	826,642	-	-	3,806,525
Maine	208,081	52,262	3,847,566	-	3,738,168	-	99,071	7,945,147
Maryland	400,364	-	203,097	-	1,652,216	-	-	2,255,678
Massachusetts	1,094,431	26,636	119,157	-	797,482	-	-	2,037,706
Michigan	721,284	538	1,692,202	-	1,269,989	-	2,723	3,686,736
Minnesota	423,482	142,889	727,455	-	653,822	-	2,638,812	4,586,460
Mississippi	-	5,017	1,488,348	-	-	-	-	1,493,365
Missouri	21,944	7,245	s	-	1,204,326	-	-	1,233,635
Montana	-	-	110,945	-	9,364,336	-	495,776	9,971,057
Nebraska	46,184	15,075	-	-	347,444	-	216,765	625,468
Nevada	-	-	-	1,252,691	2,003,191	43,967	-	3,299,849
New Hampshire	152,816	-	970,456	-	1,265,229	-	-	2,388,501
New Jersey	822,453	713	-	-	20,909	-	20,412	864,487
New Mexico	-	15,994	-	-	267,978	-	1,393,239	1,677,211
New York	1,441,930	7,416	492,261	-	25,252,555	-	833,476	28,027,639
North Carolina	85,745	1,100	1,585,374	-	2,984,159	-	-	4,656,377
North Dakota	-	13,507	-	-	1,305,393	-	620,772	1,939,672
Ohio	10,972	10,045	399,378	-	410,436	-	14,748	845,579
Oklahoma	3,721	-	276,133	-	3,065,862	-	1,849,144	5,194,860
Oregon	100,389	38,345	842,565	-	33,587,439	-	1,246,994	35,815,732
Pennsylvania	1,440,683	15,928	619,567	-	2,235,982	-	470,018	4,782,178
Rhode Island	154,757	-	-	-	4,364	-	-	159,121
South Carolina	100,602	-	1,895,432	-	1,555,912	-	-	3,551,946
South Dakota	-	-	-	-	2,917,283	-	150,018	3,067,301
Tennessee	19,228	33,252	868,110	-	4,939,601	-	49,937	5,910,127
Texas	322,272	44,793	914,164	-	1,644,437	-	9,006,383	11,932,049
Utah	31,030	-	-	163,925	538,782	-	-	733,738
Vermont	-	-	453,038	-	646,605	-	10,511	1,110,153
Virginia	752,928	20,317	1,792,326	-	1,248,264	-	-	3,813,835
Washington	162,890	13,461	1,116,380	-	78,829,195	-	2,437,823	82,559,749
West Virginia	-	-	-	-	1,254,397	-	167,588	1,421,985
Wisconsin	413,771	21,384	785,079	-	1,516,083	-	109,283	2,845,600
Wyoming	-	-	-	-	729,424	-	754,881	1,484,305
U.S. Total	**14,461,588**	**2,062,966**	**39,014,024**	**14,637,213**	**247,509,974**	**611,793**	**34,449,927**	**352,747,486**

[1]Includes landfill gas and MSW biogenic (paper and paper board, wood, food, leather, textiles and yard trimmings).
[2]Agriculture byproducts/crops, sludge waste, and other biomass solids, liquids and gases.
[3]Black liquor, and wood/woodwaste solids and liquids.
MSW = Municipal Solid Waste.
PV = Photovoltaic.
s = Less than 500 kilowatthours.
- = No data reported.
Notes: Totals may not equal sum of components due to independent rounding.
Revisions to biomass removed MSW non-biogenic and tires from renewable waste energy.
Source: Energy Information Administration, Form EIA-923, "Power Plant Operations Report," and predecessor forms: Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

Table 1.21 Renewable Electric Power Sector Net Summer Capacity by Energy Source and State, 2006

(Megawatts)

State	Biomass			Geothermal	Hydroelectric Conventional	Solar/PV	Wind	Total
	Waste		Wood and Derived Fuels[3]					
	Landfill Gas/MSW[1]	Other Biomass[2]						
Alabama	-	-	-	-	3,271	-	-	3,271
Alaska	-	-	-	-	397	-	3	400
Arizona	4	-	3	-	2,720	9	-	2,736
Arkansas	5	4	-	-	1,389	-	-	1,397
California	263	49	436	2,032	10,078	402	2,255	15,514
Colorado	-	10	-	-	652	-	289	950
Connecticut	170	-	-	-	147	-	-	316
Delaware	7	-	-	-	-	-	-	7
District of Columbia	-	-	-	-	-	-	-	-
Florida	447	75	67	-	55	-	-	643
Georgia	2	-	-	-	2,020	-	-	2,022
Hawaii	-	46	-	31	18	-	43	138
Idaho	-	-	12	-	2,378	-	75	2,464
Illinois	111	13	-	-	33	-	105	262
Indiana	22	-	-	-	60	-	-	82
Iowa	11	-	-	-	131	-	921	1,064
Kansas	-	-	-	-	3	-	363	366
Kentucky	12	-	-	-	815	-	-	827
Louisiana	-	12	-	-	192	-	-	204
Maine	30	36	220	-	602	-	-	888
Maryland	118	-	-	-	566	-	-	684
Massachusetts	261	-	26	-	253	-	-	540
Michigan	83	-	158	-	253	-	2	496
Minnesota	123	-	79	-	147	-	827	1,176
Mississippi	-	-	-	-	-	-	-	-
Missouri	3	-	-	-	552	-	-	555
Montana	-	-	-	-	2,604	-	145	2,749
Nebraska	6	1	-	-	272	-	73	352
Nevada	-	-	-	188	1,047	-	-	1,236
New Hampshire	31	-	128	-	512	-	-	671
New Jersey	181	19	-	-	5	-	8	212
New Mexico	-	6	-	-	82	-	494	582
New York	280	-	37	-	4,292	-	370	4,979
North Carolina	14	-	80	-	1,794	-	-	1,889
North Dakota	-	-	-	-	443	-	164	607
Ohio	4	-	7	-	101	-	7	119
Oklahoma	-	-	-	-	851	-	594	1,446
Oregon	14	3	36	-	8,374	-	399	8,826
Pennsylvania	331	-	28	-	748	-	150	1,257
Rhode Island	24	-	-	-	4	-	-	28
South Carolina	20	-	-	-	1,344	-	-	1,364
South Dakota	-	-	-	-	1,516	-	43	1,559
Tennessee	5	2	-	-	2,429	-	29	2,465
Texas	42	-	-	-	681	-	2,738	3,461
Utah	1	-	-	23	255	-	-	279
Vermont	-	-	72	-	304	-	5	381
Virginia	95	-	80	-	669	-	-	843
Washington	35	4	136	-	21,148	-	821	22,145
West Virginia	-	-	-	-	163	-	66	229
Wisconsin	58	1	73	-	433	-	53	618
Wyoming	-	-	-	-	303	-	287	590
U.S. Total	**2,812**	**282**	**1,677**	**2,274**	**77,104**	**411**	**11,329**	**95,888**

[1]Total capacity whose primary energy source is landfill gas or MSW.
[2]Agriculture byproducts/crops, sludge waste, and other biomass solids, liquids and gases.
[3]Black liquor, and wood/woodwaste solids and liquids.
MSW = Municipal Solid Waste.
PV = Photovoltaic.
- = No data reported.
Notes: Totals may not equal sum of components due to independent rounding.
Revisions to biomass capacity removed tires from renewable waste energy.
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.
Source: Energy Information Administration, Form EIA-860, "Annual Electric Generator Report."

Table 1.22 Renewable Commercial and Industrial Sector Net Summer Capacity by Energy Source and State, 2006
(Megawatts)

State	Biomass			Geothermal	Hydroelectric Conventional	Solar/PV	Wind	Total
	Waste		Wood and Derived Fuels[3]					
	Landfill Gas/MSW[1]	Other Biomass[2]						
Alabama	-	-	581	-	-	-	-	581
Alaska	-	-	-	-	-	-	-	-
Arizona	-	-	-	-	-	-	-	-
Arkansas	-	2	292	-	-	-	-	293
California	12	96	148	-	6	-	-	262
Colorado	-	-	-	-	-	-	-	-
Connecticut	-	-	-	-	-	-	-	-
Delaware	-	-	-	-	-	-	-	-
District of Columbia	-	-	-	-	-	-	-	-
Florida	-	89	276	-	-	-	-	365
Georgia	2	44	450	-	7	-	-	504
Hawaii	60	3	-	-	5	-	-	68
Idaho	-	-	64	-	-	-	-	64
Illinois	-	3	-	-	-	-	-	3
Indiana	9	-	-	-	-	-	-	9
Iowa	-	3	-	-	-	-	-	3
Kansas	-	-	-	-	-	-	-	-
Kentucky	-	-	43	-	-	-	-	43
Louisiana	-	3	318	-	-	-	-	321
Maine	24	-	389	-	117	-	-	530
Maryland	7	-	2	-	-	-	-	9
Massachusetts	-	9	-	-	5	-	-	14
Michigan	67	-	52	-	4	-	-	122
Minnesota	4	-	49	-	29	-	-	82
Mississippi	-	-	229	-	-	-	-	229
Missouri	-	-	-	-	-	-	-	-
Montana	-	-	17	-	-	-	-	17
Nebraska	-	3	-	-	-	-	-	3
Nevada	-	-	-	-	-	-	-	-
New Hampshire	-	-	14	-	s	-	-	14
New Jersey	-	1	-	-	-	-	-	1
New Mexico	-	-	-	-	-	-	-	-
New York	33	-	-	-	15	-	-	48
North Carolina	-	-	244	-	160	-	-	403
North Dakota	-	10	-	-	-	-	-	10
Ohio	-	-	57	-	-	-	-	57
Oklahoma	16	-	63	-	-	-	-	78
Oregon	-	-	158	-	-	-	-	158
Pennsylvania	28	-	80	-	-	-	-	108
Rhode Island	-	-	-	-	-	-	-	-
South Carolina	10	-	220	-	1	-	-	231
South Dakota	-	-	-	-	-	-	-	-
Tennessee	-	-	147	-	209	-	-	356
Texas	-	16	130	-	-	-	-	145
Utah	3	-	-	-	-	-	-	3
Vermont	-	-	4	-	5	-	-	8
Virginia	76	-	330	-	2	-	-	408
Washington	-	-	190	-	8	-	-	198
West Virginia	-	-	-	-	101	-	-	101
Wisconsin	4	-	147	-	43	-	-	195
Wyoming	-	-	-	-	-	-	-	-
U.S. Total	**354**	**280**	**4,695**	**-**	**717**	**-**	**-**	**6,046**

[1]Total capacity whose primary energy source is landfill gas or MSW.
[2]Agriculture byproducts/crops, sludge waste, and other biomass solids, liquids and gases.
[3]Black liquor, and wood/woodwaste solids and liquids.
MSW = Municipal Solid Waste.
PV = Photovoltaic.
s = Less than 500 kilowatts.
- = No data reported.
Notes: Totals may not equal sum of components due to independent rounding.
Revisions to biomass capacity removed tires from renewable waste energy.
Source: Energy Information Administration, Form EIA-860, "Annual Electric Generator Report."

Table 1.23 Total Renewable Net Summer Capacity by Energy Source and State, 2006

(Megawatts)

State	Biomass			Geothermal	Hydroelectric Conventional	Solar/PV	Wind	Total
	Waste		Wood and Derived Fuels[3]					
	Landfill Gas/MSW[1]	Other Biomass[2]						
Alabama	-	-	581	-	3,271	-	-	3,852
Alaska	-	-	-	-	397	-	3	400
Arizona	4	-	3	-	2,720	9	-	2,736
Arkansas	5	6	292	-	1,389	-	-	1,691
California	275	145	584	2,032	10,083	402	2,255	15,776
Colorado	-	10	-	-	652	-	289	950
Connecticut	170	-	-	-	147	-	-	316
Delaware	7	-	-	-	-	-	-	7
District of Columbia	-	-	-	-	-	-	-	-
Florida	447	163	343	-	55	-	-	1,008
Georgia	5	44	450	-	2,027	-	-	2,526
Hawaii	60	49	-	31	24	-	43	206
Idaho	-	-	75	-	2,378	-	75	2,528
Illinois	111	15	-	-	33	-	105	264
Indiana	31	-	-	-	60	-	-	91
Iowa	11	3	-	-	131	-	921	1,067
Kansas	-	-	-	-	3	-	363	366
Kentucky	12	-	43	-	815	-	-	871
Louisiana	-	15	318	-	192	-	-	525
Maine	53	36	609	-	719	-	-	1,418
Maryland	126	-	2	-	566	-	-	693
Massachusetts	261	9	26	-	259	-	-	554
Michigan	149	-	210	-	257	-	2	618
Minnesota	127	-	129	-	175	-	827	1,259
Mississippi	-	-	229	-	-	-	-	229
Missouri	3	-	-	-	552	-	-	555
Montana	-	-	17	-	2,604	-	145	2,766
Nebraska	6	4	-	-	272	-	73	355
Nevada	-	-	-	188	1,047	-	-	1,236
New Hampshire	31	-	141	-	512	-	-	685
New Jersey	181	20	-	-	5	-	8	212
New Mexico	-	6	-	-	82	-	494	582
New York	313	-	37	-	4,307	-	370	5,027
North Carolina	14	-	324	-	1,954	-	-	2,292
North Dakota	-	10	-	-	443	-	164	617
Ohio	4	-	64	-	101	-	7	175
Oklahoma	16	-	63	-	851	-	594	1,524
Oregon	14	3	195	-	8,374	-	399	8,984
Pennsylvania	359	-	108	-	748	-	150	1,365
Rhode Island	24	-	-	-	4	-	-	28
South Carolina	29	-	220	-	1,345	-	-	1,594
South Dakota	-	-	-	-	1,516	-	43	1,559
Tennessee	5	2	147	-	2,638	-	29	2,821
Texas	42	16	130	-	681	-	2,738	3,607
Utah	4	-	-	23	255	-	-	282
Vermont	-	-	76	-	309	-	5	390
Virginia	170	-	410	-	671	-	-	1,251
Washington	35	4	326	-	21,156	-	821	22,343
West Virginia	-	-	-	-	264	-	66	330
Wisconsin	62	1	220	-	476	-	53	813
Wyoming	-	-	-	-	303	-	287	590
U.S. Total	**3,166**	**561**	**6,372**	**2,274**	**77,821**	**411**	**11,329**	**101,934**

[1]Total capacity whose primary energy source is landfill gas or MSW.
[2]Agriculture byproducts/crops, sludge waste, and other biomass solids, liquids and gases.
[3]Black liquor, and wood/woodwaste solids and liquids.
MSW = Municipal Solid Waste.
PV = Photovoltaic.
- = No data reported.
Notes: Totals may not equal sum of components due to independent rounding.
Revisions to biomass capacity removed tires from renewable waste energy.
Source: Energy Information Administration, Form EIA-860, "Annual Electric Generator Report."

Table 1.24 Renewable Electric Power Sector Net Summer Capacity by Energy Source and State, 2007

(Megawatts)

State	Biomass			Geothermal	Hydroelectric Conventional	Solar/PV	Wind	Total
	Waste		Wood and Derived Fuels[3]					
	Landfill Gas/MSW[1]	Other Biomass[2]						
Alabama	-	-	-	-	3,272	-	-	3,272
Alaska	-	-	-	-	397	-	3	400
Arizona	4	-	3	-	2,720	9	-	2,736
Arkansas	5	4	-	-	1,321	-	-	1,330
California	367	47	435	1,940	10,035	404	2,312	15,538
Colorado	-	10	-	-	665	8	1,063	1,746
Connecticut	163	-	-	-	122	-	-	285
Delaware	7	-	-	-	-	-	-	7
District of Columbia	-	-	-	-	-	-	-	-
Florida	463	105	67	-	55	-	-	690
Georgia	7	-	-	-	2,025	-	-	2,032
Hawaii	-	46	-	31	18	-	64	159
Idaho	-	-	12	-	2,367	-	75	2,454
Illinois	131	13	-	-	33	-	740	916
Indiana	30	-	-	-	60	-	-	90
Iowa	11	-	-	-	131	-	1,170	1,313
Kansas	-	-	-	-	3	-	363	366
Kentucky	15	-	-	-	817	-	-	833
Louisiana	-	11	-	-	192	-	-	203
Maine	30	36	220	-	601	-	42	929
Maryland	124	-	-	-	590	-	-	714
Massachusetts	264	-	26	-	253	-	2	545
Michigan	90	-	179	-	245	-	2	516
Minnesota	124	55	111	-	146	-	1,139	1,575
Mississippi	-	-	-	-	-	-	-	-
Missouri	3	-	-	-	552	-	57	612
Montana	-	-	-	22	2,620	-	149	2,792
Nebraska	6	2	-	-	273	-	25	305
Nevada	-	-	-	189	1,048	78	-	1,315
New Hampshire	29	-	139	-	494	-	-	662
New Jersey	182	19	-	-	4	2	8	215
New Mexico	-	6	-	-	82	-	494	582
New York	291	-	37	-	4,286	-	425	5,039
North Carolina	18	-	80	-	1,955	-	-	2,053
North Dakota	-	-	-	-	486	-	383	869
Ohio	41	-	7	-	101	-	7	157
Oklahoma	-	-	-	-	851	-	689	1,540
Oregon	17	3	37	-	8,385	-	885	9,327
Pennsylvania	351	-	28	-	748	-	293	1,421
Rhode Island	24	-	-	-	4	-	-	28
South Carolina	20	-	-	-	1,336	-	-	1,356
South Dakota	-	-	-	-	1,463	-	43	1,506
Tennessee	8	2	-	-	2,635	-	29	2,673
Texas	72	5	-	-	673	-	4,490	5,240
Utah	1	-	-	33	255	-	-	289
Vermont	-	-	72	-	304	-	5	381
Virginia	178	-	83	-	672	-	-	933
Washington	36	-	86	-	21,328	1	1,162	22,612
West Virginia	-	-	-	-	163	-	66	229
Wisconsin	65	1	73	-	444	-	44	626
Wyoming	-	-	-	-	303	-	287	590
U.S. Total	**3,176**	**364**	**1,694**	**2,214**	**77,532**	**501**	**16,515**	**101,996**

[1]Total capacity whose primary energy source is landfill gas or MSW.
[2]Agriculture byproducts/crops, sludge waste, and other biomass solids, liquids and gases.
[3]Black liquor, and wood/woodwaste solids and liquids.
MSW = Municipal Solid Waste.
PV = Photovoltaic.
- = No data reported.
Notes: Totals may not equal sum of components due to independent rounding.
Revisions to biomass capacity removed tires from renewable waste energy.
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.
Source: Energy Information Administration, Form EIA-860, "Annual Electric Generator Report."

Table 1.25 Renewable Commercial and Industrial Sector Net Summer Capacity by Energy Source and State, 2007
(Megawatts)

State	Biomass			Geothermal	Hydroelectric Conventional	Solar/PV	Wind	Total
	Waste		Wood and Derived Fuels[3]					
	Landfill Gas/MSW[1]	Other Biomass[2]						
Alabama	-	-	574	-	-	-	-	574
Alaska	-	-	-	-	-	-	-	-
Arizona	-	-	-	-	-	-	-	-
Arkansas	-	2	292	-	-	-	-	293
California	13	56	162	-	6	-	-	236
Colorado	-	-	-	-	-	-	-	-
Connecticut	-	-	-	-	-	-	-	-
Delaware	-	-	-	-	-	-	-	-
District of Columbia	-	-	-	-	-	-	-	-
Florida	-	71	287	-	-	-	-	358
Georgia	3	44	621	-	7	-	-	675
Hawaii	60	3	-	-	5	-	-	68
Idaho	-	-	60	-	-	-	-	60
Illinois	-	-	-	-	-	-	-	-
Indiana	9	-	-	-	-	-	-	9
Iowa	-	3	-	-	-	-	-	3
Kansas	-	-	-	-	-	-	-	-
Kentucky	-	-	47	-	-	-	-	47
Louisiana	-	3	380	-	-	-	-	383
Maine	24	-	392	-	117	-	-	533
Maryland	7	-	3	-	-	-	-	9
Massachusetts	-	9	-	-	6	-	-	15
Michigan	67	-	52	-	4	-	-	122
Minnesota	4	-	49	-	30	-	-	83
Mississippi	-	-	229	-	-	-	-	229
Missouri	-	-	-	-	-	-	-	-
Montana	-	-	17	-	-	-	-	17
Nebraska	-	3	-	-	-	-	-	3
Nevada	-	-	-	-	-	1	-	1
New Hampshire	-	-	1	-	s	-	-	2
New Jersey	-	1	-	-	-	-	-	1
New Mexico	-	-	-	-	-	-	-	-
New York	33	-	-	-	15	-	-	49
North Carolina	-	-	243	-	5	-	-	248
North Dakota	-	10	-	-	-	-	-	10
Ohio	-	-	57	-	-	-	-	57
Oklahoma	16	-	63	-	-	-	-	78
Oregon	3	15	178	-	-	-	-	196
Pennsylvania	28	-	80	-	-	-	-	108
Rhode Island	-	-	-	-	-	-	-	-
South Carolina	10	-	220	-	1	-	-	231
South Dakota	-	-	-	-	-	-	-	-
Tennessee	-	-	165	-	-	-	-	165
Texas	-	16	130	-	-	-	-	145
Utah	3	-	-	-	-	-	-	3
Vermont	-	-	4	-	5	-	-	8
Virginia	76	-	335	-	3	-	-	413
Washington	-	-	210	-	5	-	-	215
West Virginia	-	-	-	-	101	-	-	101
Wisconsin	7	-	159	-	44	-	-	210
Wyoming	-	-	-	-	-	-	-	-
U.S. Total	**360**	**235**	**5,010**	**-**	**353**	**1**	**-**	**5,958**

[1]Total capacity whose primary energy source is landfill gas or MSW.
[2]Agriculture byproducts/crops, sludge waste, and other biomass solids, liquids and gases.
[3]Black liquor, and wood/woodwaste solids and liquids.
MSW = Municipal Solid Waste.
PV = Photovoltaic.
s = Less than 500 kilowatts.
- = No data reported.
Notes: Totals may not equal sum of components due to independent rounding.
Revisions to biomass capacity removed tires from renewable waste energy.
Source: Energy Information Administration, Form EIA-860, "Annual Electric Generator Report."

Table 1.26 Total Renewable Net Summer Capacity by Energy Source and State, 2007

(Megawatts)

State	Biomass			Geothermal	Hydroelectric Conventional	Solar/PV	Wind	Total
	Waste		Wood and Derived Fuels[3]					
	Landfill Gas/MSW[1]	Other Biomass[2]						
Alabama	-	-	574	-	3,272	-	-	3,846
Alaska	-	-	-	-	397	-	3	400
Arizona	4	-	3	-	2,720	9	-	2,736
Arkansas	5	6	292	-	1,321	-	-	1,623
California	380	102	596	1,940	10,041	404	2,312	15,774
Colorado	-	10	-	-	665	8	1,063	1,746
Connecticut	163	-	-	-	122	-	-	285
Delaware	7	-	-	-	-	-	-	7
District of Columbia	-	-	-	-	-	-	-	-
Florida	463	176	354	-	55	-	-	1,048
Georgia	10	44	621	-	2,032	-	-	2,706
Hawaii	60	49	-	31	24	-	64	227
Idaho	-	-	71	-	2,367	-	75	2,514
Illinois	131	13	-	-	33	-	740	916
Indiana	39	-	-	-	60	-	-	99
Iowa	11	3	-	-	131	-	1,170	1,316
Kansas	-	-	-	-	3	-	363	366
Kentucky	15	-	47	-	817	-	-	880
Louisiana	-	14	380	-	192	-	-	586
Maine	53	36	612	-	718	-	42	1,462
Maryland	130	-	3	-	590	-	-	723
Massachusetts	264	9	26	-	259	-	2	560
Michigan	156	-	231	-	249	-	2	638
Minnesota	128	55	161	-	176	-	1,139	1,658
Mississippi	-	-	229	-	-	-	-	229
Missouri	3	-	-	-	552	-	57	612
Montana	-	-	17	22	2,620	-	149	2,809
Nebraska	6	5	-	-	273	-	25	308
Nevada	-	-	-	189	1,048	79	-	1,316
New Hampshire	29	-	140	-	494	-	-	663
New Jersey	182	20	-	-	4	2	8	215
New Mexico	-	6	-	-	82	-	494	582
New York	324	-	37	-	4,301	-	425	5,087
North Carolina	18	-	324	-	1,960	-	-	2,301
North Dakota	-	10	-	-	486	-	383	879
Ohio	41	-	64	-	101	-	7	213
Oklahoma	16	-	63	-	851	-	689	1,618
Oregon	20	18	215	-	8,385	-	885	9,523
Pennsylvania	379	-	108	-	748	-	293	1,529
Rhode Island	24	-	-	-	4	-	-	28
South Carolina	29	-	220	-	1,337	-	-	1,587
South Dakota	-	-	-	-	1,463	-	43	1,506
Tennessee	8	2	165	-	2,635	-	29	2,838
Texas	72	21	130	-	673	-	4,490	5,385
Utah	5	-	-	33	255	-	-	293
Vermont	-	-	76	-	308	-	5	389
Virginia	254	-	418	-	675	-	-	1,347
Washington	36	-	296	-	21,333	1	1,162	22,828
West Virginia	-	-	-	-	264	-	66	330
Wisconsin	71	1	232	-	488	-	44	836
Wyoming	-	-	-	-	303	-	287	590
U.S. Total	**3,536**	**598**	**6,704**	**2,214**	**77,885**	**502**	**16,515**	**107,954**

[1]Total capacity whose primary energy source is landfill gas or MSW.
[2]Agriculture byproducts/crops, sludge waste, and other biomass solids, liquids and gases.
[3]Black liquor, and wood/woodwaste solids and liquids.
MSW = Municipal Solid Waste.
PV = Photovoltaic.
- = No data reported.
Notes: Totals may not equal sum of components due to independent rounding.
Revisions to biomass capacity removed tires from renewable waste energy.
Source: Energy Information Administration, Form EIA-860, "Annual Electric Generator Report."

Table 1.27 Renewable Market Share of Net Generation by State, 2006 and 2007

(Thousand Kilowatthours)

State	2006			2007		
	Total Generation	Percent Renewable	Percent NonHydro Renewable	Total Generation	Percent Renewable	Percent NonHydro Renewable
Alabama	140,895,441	7.9	2.8	143,826,271	5.5	2.6
Alaska	6,674,197	18.4	0.1	6,821,392	19.1	0.2
Arizona	104,392,528	6.6	0.1	113,340,970	5.9	*
Arkansas	52,168,703	6.3	3.3	54,596,236	8.9	3.0
California	216,798,688	33.2	11.0	210,847,581	24.7	11.8
Colorado	50,698,353	5.3	1.8	53,907,492	5.7	2.5
Connecticut	34,681,736	3.8	2.2	33,171,209	3.3	2.2
Delaware	7,182,179	*	*	8,534,163	0.6	0.6
District of Columbia	81,467	-	-	75,251	-	-
Florida	223,751,621	2.0	1.9	225,416,060	2.0	1.9
Georgia	138,010,208	4.3	2.5	145,155,158	3.9	2.4
Hawaii	11,559,174	6.4	5.3	11,533,350	7.3	6.5
Idaho	13,386,085	89.1	5.2	11,484,091	84.2	5.7
Illinois	192,426,958	0.5	0.4	200,260,681	0.7	0.6
Indiana	130,489,788	0.5	0.2	130,637,999	0.5	0.2
Iowa	45,483,462	7.4	5.4	49,789,217	7.8	5.8
Kansas	45,523,736	2.2	2.2	50,122,196	2.3	2.3
Kentucky	98,792,014	3.1	0.5	97,225,319	2.2	0.5
Louisiana	90,921,829	4.0	3.3	92,578,329	4.1	3.2
Maine	16,816,173	49.0	23.6	16,128,567	49.3	26.1
Maryland	48,956,880	5.6	1.3	50,197,924	4.5	1.2
Massachusetts	45,597,775	6.1	2.8	47,075,975	4.3	2.6
Michigan	112,556,738	3.5	2.2	119,309,936	3.1	2.0
Minnesota	53,237,789	6.8	5.7	54,477,646	8.4	7.2
Mississippi	46,228,847	3.3	3.3	50,043,686	3.0	3.0
Missouri	91,686,343	0.2	*	91,153,081	1.4	*
Montana	28,243,536	37.7	1.9	28,931,493	34.5	2.1
Nebraska	31,669,969	3.8	1.0	32,442,699	1.9	0.9
Nevada	31,860,022	10.7	4.2	32,669,736	10.1	4.0
New Hampshire	22,063,695	10.3	3.4	23,277,171	10.3	4.8
New Jersey	60,700,139	1.6	1.5	62,671,245	1.4	1.3
New Mexico	37,265,625	4.0	3.4	35,985,333	4.7	3.9
New York	142,265,432	21.0	1.8	145,878,687	19.2	1.9
North Carolina	125,214,784	4.5	1.5	130,115,301	3.6	1.3
North Dakota	30,881,137	6.1	1.2	31,224,105	6.2	2.0
Ohio	155,434,075	0.7	0.3	155,155,545	0.5	0.3
Oklahoma	70,614,880	3.7	2.8	72,819,095	7.1	2.9
Oregon	53,340,695	74.4	3.4	55,077,794	65.0	4.0
Pennsylvania	218,811,595	2.4	1.1	226,088,340	2.1	1.1
Rhode Island	5,967,725	2.6	2.5	7,049,844	2.3	2.2
South Carolina	99,267,606	3.7	1.9	103,402,142	3.4	1.9
South Dakota	7,132,243	49.7	2.1	6,136,605	50.0	2.4
Tennessee	93,911,102	9.1	0.9	95,113,409	6.2	1.0
Texas	400,582,878	2.1	2.0	405,492,296	2.9	2.5
Utah	41,263,324	2.3	0.5	45,372,575	1.6	0.4
Vermont	7,084,344	27.8	6.4	5,823,582	19.1	8.0
Virginia	73,069,537	5.2	3.4	78,360,507	4.9	3.3
Washington	108,203,155	78.1	2.3	106,990,217	77.2	3.5
West Virginia	93,815,804	1.9	0.2	93,933,109	1.5	0.2
Wisconsin	61,639,843	4.8	2.1	63,390,630	4.5	2.1
Wyoming	45,400,370	3.5	1.7	45,633,486	3.3	1.7
U.S. Total	**4,064,702,227**	**9.5**	**2.4**	**4,156,744,724**	**8.5**	**2.5**

* = Less than 0.05 percent.

- = No data reported.

Note: Totals may not equal sum of components due to independent rounding.

Source: Electric Power: Energy Information Administration, Form EIA-923, "Power Plant Operations Report," and predecessor forms: Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

Table 1.28 Renewable Portfolio Standards and State Mandates by State, 2007

State	RPS or Mandate
Alabama	-
Alaska	-
Arizona	X
Arkansas	-
California	X
Colorado	X
Connecticut	X
Delaware	X
District of Columbia	X
Florida[1]	X
Georgia	-
Hawaii	X
Idaho	-
Illinois	X
Indiana	-
Iowa	X
Kansas	-
Kentucky	-
Lousiana	-
Maine	X
Maryland	X
Massachusetts	X
Michigan	X
Minnesota	X
Mississippi	-
Missouri	X
Montana	X
Nebraska	-
Nevada	X
New Hampshire	X
New Jersey	X
New Mexico	X
New York	X
North Carolina	X
North Dakota	X
Ohio	X
Oklahoma	-
Oregon	X
Pennsylvania	X
Rhode Island	X
South Carolina	-
South Dakota	X
Tennessee	-
Texas	X
Utah	X
Vermont	X
Virginia	X
Washington	X
West Virginia	-
Wisconsin	X
Wyoming	-

[1]In Florida the RPS is not statewide.
- = No RPS or state mandate for that state.
Note: In some states, including North Dakota, South Dakota, Vermont and Virginia, the renewable portfolio standard (RPS) is voluntary.
Source: North Carolina Solar Center, Database of State Incentives for Renewable Energy (DSIRE) website: http://www.dsireusa.org (January 28, 2009).

Table 1.A1 Other Non-Renewable Energy Consumption by Energy Use Sector and Energy Source, 2003 - 2007
(Quadrillion Btu)

Sector and Source	2003	2004	2005	2006	2007
Total	0.280	0.273	0.259	0.259	0.262
Commercial	0.018	0.021	0.020	0.021	0.017
MSW Non-Biogenic[1]	0.018	0.021	0.020	0.020	0.017
Other Non-Biogenic[2]	0.001	0.001	*	*	0.001
Industrial	0.121	0.113	0.116	0.114	0.121
MSW Non-Biogenic[1]	0.004	0.005	0.005	0.005	0.004
Other Non-Biogenic[2]	0.117	0.109	0.110	0.109	0.116
Electric Power[3]	0.140	0.138	0.123	0.125	0.124
MSW Non-Biogenic[1]	0.113	0.109	0.107	0.109	0.108
Other Non-Biogenic[2]	0.028	0.029	0.016	0.015	0.016

[1]Includes glass, steel, aluminum, other nonferous metals, plastic, rubber, other materials, and miscellaneuos inorganic wastes.
[2]Tires and other (nonspecified).
[3]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.
* = Less than 500 billion Btu.
Note: Details of EIA`s analysis that revised MSW consumption are found in the Energy Information Administration (EIA) report, Methodology for Allocating Municipal Solid Waste to Biogenic and Non-Biogenenic Energy (Washington, DC, May 2007). After 2003 small amounts of other non-renewable energy consumption in the industrial sector for certain plants, including those that capture energy from exothermic chemical and manufacturing processes, are no longer included due to a change in EIA survey reporting requirements.
Sources: Analysis conducted by Energy Information Administration, Office of Coal, Nuclear, Electric, and Alternate Fuels and the following specific sources:
Energy Information Administration, Form EIA-923, "Power Plant Operations Report," and predecessor forms: Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

Table 1.A2 Other Non-Renewable Net Electricity Generation by Energy Use Sector and Energy Source, 2003 - 2007
(Thousand Kilowatthours)

Sector and Source	2003	2004	2005	2006	2007
Total	14,044,507	14,232,401	12,821,059	12,974,399	12,231,131
Commercial	593,868	780,803	755,987	758,464	764,083
MSW Non-Biogenic[1]	586,572	773,464	748,861	751,077	756,260
Other Non-Biogenic[2]	7,296	7,340	7,126	7,388	7,823
Industrial	4,843,169	5,129,158	5,136,905	5,103,173	4,690,087
MSW Non-Biogenic[1]	29,452	24,722	27,059	27,138	31,258
Other Non-Biogenic[2]	4,813,717	5,104,436	5,109,845	5,076,035	4,658,829
Electric Power[3]	8,607,470	8,322,440	6,928,167	7,112,762	6,776,960
MSW Non-Biogenic[1]	6,179,847	5,870,804	5,769,465	5,882,743	5,736,991
Other Non-Biogenic[2]	2,427,623	2,451,636	1,158,702	1,230,019	1,039,970

[1]Includes glass, steel, aluminum, other nonferous metals, plastic, rubber, other materials, and miscellaneuos inorganic wastes.
[2]Tires and other (nonspecified).
[3]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.
Notes: Totals may not equal sum of components due to independent rounding.
Details of EIA`s analysis that revised MSW consumption are found in the Energy Information Administration (EIA) report, Methodology for Allocating Municipal Solid Waste to Biogenic and Non-Biogenenic Energy (Washington, DC, May 2007).
Sources: Analysis conducted by Energy Information Administration, Office of Coal, Nuclear, Electric, and Alternate Fuels and the following specific sources:
Energy Information Administration, Form EIA-923, "Power Plant Operations Report," and predecessor forms: Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."