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Renewable Energy Consumption and Electricity Preliminary 2006 Statistics

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Preface

This report, *Renewable Energy Consumption and Electricity - Preliminary 2006 Statistics*, presents preliminary information on renewable energy consumption and electricity generation and capacity for 2006. Final renewable energy consumption and electricity data will be included as a chapter in the *Renewable Energy Annual 2006* scheduled to be released late in 2007.

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

The underlying energy data and the methodologies for the treatment of municipal solid waste (MSW) in this report are consistent with those in the Energy Information Administration (EIA) reports: *Electric Power Monthly March 2007* and *Annual Energy Review 2006*. The EIA is now allocating MSW into renewable and non-renewable portions, based on the characteristics of the underlying waste stream. Please see the article, *Methodology for Allocating Municipal Solid Waste to Biogenic and Non-Biogenenic Energy*, on the EIA website (http://www.eia.doe.gov/fuelrenewable.html) for further details.

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 at: http://www.eia.doe.gov/oss/forms.html.

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Table ES-1. Renewable Energy Profile, 2006

Renewable Energy Consumption	Quadrillion Btu	Change 2005-2006 (Percent)
Total	6.844	6.9
Biomass	3.277	5.2
Biofuels	0.758	27.6
Waste	0.404	0.3
Wood Derived Fuels	2.114	-0.1
Geothermal Energy	0.349	1.8
Hydroelectric Conventional	2.890	6.9
Solar/ PV Energy	0.070	6.5
Wind Energy	0.258	45.1

Source: Table 1 of this report.

Overview

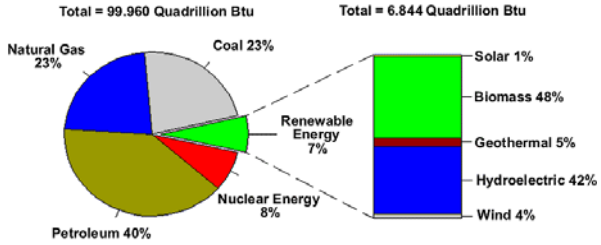
Preliminary data indicates that total renewable energy consumption increased 7 percent between 2005 and 2006 (Table 1). In contrast, total U.S. energy consumption declined 1 percent, mainly due to decreased consumption of fossil fuels (including decreased natural gas consumption in the residential sector and decreased coal and petroleum consumption in the electric power sector).[1]

Renewable energy's market share stood at almost 7 percent in 2006, slightly greater than for 2005 (Table 1 and Figure 1). Total renewable consumption stood at 6.844 quadrillion Btu. Consistent with historical patterns, the electric power sector consumed the majority (56 percent) of renewable energy (Table 2). The industrial sector consumed 28 percent, with the transportation and commercial sectors using the remainder. Hydroelectric conventional power had the largest absolute year-to-year change at 186 trillion Btu, but this represented only a 7 percent increase, while biofuels[2] consumption increased by 164 trillion Btu or 28 percent, and wind increased by 80 trillion Btu or 45 percent.

Following are topics of special interest for renewable energy during 2006.

[1] Energy Information Administration (EIA), *Monthly Energy Review May 2007*, DOE/EIA-0035 (2007/05) (Washington, DC, May 2007) Tables 2.1-2.6.
[2] Biodiesel, biodiesel feedstock, ethanol, and ethanol feedstock.

Figure 1. The Role of Renewable Energy Consumption in the Nation's Energy Supply, 2006



Source: Table 1 of this report.

Biofuels

Ethanol production increased about 25 percent from 3.9 billion gallons in 2005 to 4.9 billion gallons in 2006.[3] A number of factors contributed to this growth:

- Continued replacement of methyl tertiary butyl ether (MTBE) by ethanol as a gasoline additive.
- Strong world oil demand and higher crude oil prices, which have raised the price of gasoline and thus the demand for, and price of, ethanol as a substitute.
- Federal tax laws that provide incentives, such as the 51 cent per gallon tax credit available to blenders for each gallon of ethanol blended into gasoline.
- The Energy Policy Act of 2005, which mandates annual renewable fuel use in gasoline at 7.5 billion gallons by 2012.

At 2006 production levels, ethanol accounted for nearly 4 percent of U.S. finished motor gasoline production.[4] While this had a significant impact on the energy sector, the impact on the agricultural sector may have been greater.

The United States Department of Agriculture (USDA) estimates that 14 percent of corn use in the 2005/2006 crop year went for production of ethanol up from 11 percent in the 2004/2005 crop year and 6 percent in 1999/2000. [5] Furthermore, the price of corn hit nearly $4 per bushel during 2006, the highest price seen in the last two decades

[3] Energy Information Administration, Form EIA-819, "Monthly Oxygenate Report."
[4] Energy Information Administration, *Petroleum Supply Monthly, February 2007* (Washington, DC, February 2007) Table 2.
[5] Westcott, Paul C., United States Dept. of Agriculture (USDA), Economic Research Service (ERS), *Ethanol Expansion in the United States – How Will the Agricultural Sector Adjust?*, FDS-07D-01 (Washington, DC, May 2007) and the USDA ERS feed grains database here: http://www.ers.usda.gov/Data/Feedgrains .

and considerably higher than the average price of $2.40 seen over that twenty-year-period. [6] Increased ethanol production in the U.S., coupled with increased demand from Asian countries for meat from corn-fed livestock, is contributing to the increased demand for corn.

Meanwhile, the Renewable Fuels Association reported early in 2007 that the number of ethanol plants operating in the United States increased from 95 in January of 2006 to 110 in January 2007, with 76 plants under construction or expanding at that time.[7] Ethanol production capacity increased by almost 1.2 billion gallons per year for a total capacity of nearly 5.5 billion gallons per year online in January 2007. Consumption of ethanol in the transportation sector, which also includes the impact of trade and stock changes, increased from 334 to 448 trillion btu between 2005 and 2006 (Table 2). This included an expanding share of consumption of imports, largely from Brazil.[8]

Biodiesel production, currently a far smaller component of biofuels production than ethanol, was about 91 million gallons in 2005, based on data from the USDA Commodity Credit Corporation. The Commodity Credit Corporation ended its program and its data collection on March 31, 2006. While private estimates of biodiesel production for 2006 called for a steady increase, no verifiable alternative data source has been found to replace the discontinued Commodity Credit Corporation data.[9]

Renewable Electricity Generation and Capacity

In 2006, hydroelectric conventional generation increased to 288 billion kilowatthours, the highest level since 2003 (Table 3). However, 2006 output was not as high as levels seen during the high water years of the later 1990's. Furthermore, hydroelectric generation actually declined substantially in the Southeast, only to be more than offset by gains in the Northwest.

Wind generation increased to 26 billion kilowatthours, up from 18 billion kilowatthours in 2005. This moved wind's share of the renewable generation market from just 5 percent to 7 percent in one year. Altogether, renewable energy provided 9 percent of total U.S. generation in 2006.[10]

By state, the largest increases in renewable generation were for hydroelectric conventional power in California and the northwestern states: Idaho, Oregon and Washington (Tables 5 and 6). Hydroelectric conventional power accounted for 18 billion kilowatthours of the 27 billion kilowatthours increase in renewable generation. However, the increase in wind generation was also notable. Wind increased 8 billion kilowatthours between 2005 and 2006, spread across a number of states.

Total U.S. net summer capacity for all energy sources increased by 10,049 megawatts in 2006 to 988,069 megawatts, while renewable capacity expanded to 101,383 megawatts total and accounted for 2,637 megawatts or 26 percent of the national increase (Table 4). Wind capacity increased more during 2006 than any other renewable generation source with 2,413 megawatts of new capacity. This exceeds the increase of 2,251 megawatts during 2005.

The three states with the largest increases in wind capacity were Texas, Washington, and California, in order of capacity increase (Tables 7 and 8). Texas alone added 943 megawatts. All other renewable energy sources accounted for just 225 megawatts of the 2006 capacity increase. Hydroelectric conventional capacity remained essentially flat at 77,629 megawatts, increasing only 88 megawatts.

[6] Manor, Robert, Chicago Tribune, "Ethanol demand fuels corn price jump," January 12, 2007. The benchmark price of corn on the Chicago Board of Trade reached $3.965 a bushel on January 12th.

[7] See Renewable Fuels Association website here: http://www.ethanolrfa.org/industry/statistics/#C . Accessed May 25, 2007.

[8] Energy Information Administration (EIA), *Petroleum Supply Monthly* (Washington, DC, February 2006 and 2007), Table 38.

[9] Pursuant to provisions of Energy Policy Act 2005 and subject to actual funding, the Energy Information Administration is required to survey biodiesel producers, but it is unclear whether it will collect data for any years prior to 2008.

[10] Energy Information Administration (EIA), *Monthly Energy Review May 2007*, DOE/EIA-0035 (2007/05) (Washington, DC, May 2007) Table 7.2a.

Wind Energy

By the end of 2006, wind net summer capacity stood at 11,119 megawatts, or about 2 ½ times its level in 2002 (Table 4). Texas, with 2,698 megawatts of capacity in 2006, overtook California as the Nation's leader in wind capacity (Table 8). Fifteen states reported net increases in wind capacity. Total wind generation increased by 45 percent year to year. For 2007, the American Wind Energy Association reported the industry was on track to install over 3,000 megawatts of wind capacity.[11]

The following are factors driving this growth in wind energy:

- Federal Renewable Production Tax Credit (PTC). This directly affects the economics of projects that can take advantage of the credit. The PTC provides a 1.9 cent per kilowatthour tax credit (adjusted for inflation) for electricity generated in the first ten years of the life of the project to new projects beginning operation by the end of 2008, when the current PTC expires.[12]
- Renewable Portfolio Standards and State Mandates. The North Carolina Solar Center maintains the Database of State Incentives for Renewables & Efficiency (DSIRE), which contains summary information on renewable portfolio standards by state (see: http://www.dsireusa.org/) . While the objectives and conditions of renewable portfolio standards (RPS) and state mandates vary widely among the some 24 states reported by DSIRE to have them, some of the stricter ones (e.g., a mandatory RPS with a renewable generation requirement well above recent levels) are already providing an impetus to renewable development.[13] Differences in RPS provisions include variations in: what renewable energy sources will be counted; whether power can come from existing renewable capacity or must be from new capacity; what percentage of generation must be renewable and by when; how much of a challenge meeting that requirement will be for an individual state depending on the goal to be accomplished and the base from which the state starts; whether the provisions are mandatory or voluntary, or mandatory with conditions (such as a ceiling on cost increases); and whether renewable energy credits, as established by many RPS programs, will be traded.
- Higher Natural Gas Costs. Although the cost of natural gas may not be the single deciding factor in choosing to build a wind plant, the average cost of natural gas received by electric power plants has been in an upward trend over the last decade.[14] While the average cost of $6.92 per million Btu (nominal dollars including taxes) in 2006 was lower than the cost for 2005, it remained quite high by historical standards. Because wind power has no fuel costs, higher electricity prices, driven by higher natural gas and other fossil fuel costs, do improve wind's competitive position and make investment in wind more profitable, particularly as developers speculate that the trajectory of future natural gas costs may rise further.
- Global Warming. Concerns over the potential impact of global warming have resulted in some states and regions establishing commitments to reduce greenhouse gas emissions. To illustrate, seven northeastern states formed the Northeastern States Regional Greenhouse Gas Initiative (RGGI) with the nation's first multi-state cap-and-trade system for carbon. Also, California, Oregon and Washington have banded together to form the West Coast Governors Global Warming Initiative to reduce global warming.[15] Development of wind power to meet electricity demand can help states and localities meet these commitments.

The following states led the growth in wind capacity:

- Texas. With 943 megawatts of new capacity, Texas led the nation in expanding wind capacity. In 2006, Texas brought online the second and third phases of the existing mammoth Horse Hollow Wind Energy Center, bringing total project capacity up to 736 megawatts and likely making it the largest wind farm in the world.[16] The project lies on 47,000 acres in Taylor and Nolan counties and employs 291 GE 1.5 megawatt turbines and 130 2.3 megawatt Siemens turbines.

[11] American Wind Energy Association, "U.S. Wind Industry to Install Over 3,000 Megawatts of Wind Power in 2007: First Quarter Market Report," see website: http://www.awea.org/newsroom/releases/AWEA_First_Quarter_Market_Report_2007.html .

[12] Technologies that qualify are wind, solar, geothermal and "closed-loop" bioenergy facilities. Other technologies such as "open-loop" biomass, incremental hydropower, small irrigation systems, landfill gas, and municipal solid waste receive a lesser credit.

[13] Last accessed May 2007.

[14] Energy Information Administration, *Monthly Energy Review June 2007*, DOE/EIA-0035 (2007/06) (Washington, DC, June 2007) Table 9.10.

[15] See Environmental Defense Fund website: http://www.environmentaldefense.org/article.cfm?contentID=4889 and Pew Center – Global Climate Change website: http://www.pewclimate.org/what_s_being_done/targets .

[16] FPL Energy website: http://www.fplenergy.com/news/contents/090706.shtml .

In 1999, Texas adopted a renewable portfolio standard that required 2,000 megawatts of new renewable capacity be installed by 2009 in addition to the existing 880 megawatts. Texas has already met that requirement. In August 2005, realizing the 2009 goal would easily be met, Texas increased the mandate to 5,880 megawatts by 2015 (or about 5 percent of the state's electricity demand). New additions of wind capacity in Texas have contributed to the state's meeting these goals. The 2005 legislation also streamlined the ability of the state Public Utility Commission to order transmission lines to meet this goal.

- Washington. Washington was second in wind capacity additions with 428 megawatts coming online during 2006, which brought Washington's total non-hydro renewable capacity up to almost 1,200 megawatts. New capacity included the 200-megawatt Big Horn project in Klickitat county and the 229-megawatt Wild Horse project in Kittitas county.

  In recent years Washington has committed to reducing greenhouse gas emissions and increasing renewable electricity generation. In September 2003, Washington's governor joined with the governors of California and Oregon to announce the West Coast Governors' Global Warming Initiative to reduce global warming. Later in 2004, the governors issued detailed recommendations on how this might be accomplished. Following these efforts, Washington's voters passed a renewable energy standard (included in ballot Initiative 937) in November 2006.[17] It calls for electric utilities that serve more than 25,000 customers to obtain 15 percent of their electricity from new renewable sources by 2020. Further, in February 2007 the governor issued an executive order which sets a goal of reducing greenhouse gas emissions in the state of Washington to 1990 levels by 2020. New wind projects in 2006 and any that follow will contribute to the state's meeting these related commitments.

- California. This state was an early leader in the development of renewable energy for electricity generation in the U.S. It had 16 percent of the Nation's renewable electric capacity in 2006, and notably an even greater share – 24 percent – of nonhydro renewable capacity. Although California added just 212 megawatts of wind capacity (including the Shiloh I Wind Project) to its 2005 base of over 2000 megawatts of wind capacity, it may be expanding renewable capacity (including wind) even more in the future to meet its commitments described below.

California's current renewable portfolio standard requires retail sellers of electricity to purchase 20 percent of their electricity from renewable sources by 2010.[18] In addition, the governor signed Assembly Bill 32, the Global Warming Solution Act, into law in September 2006.[19] This Act caps California's greenhouse gas emissions at 1990 levels in 2020. Renewable energy is considered part of a broad-based solution. The speed of its development will depend in part on how fast issues such as the availability of adequate transmission capacity can be settled.

Data Revisions

Starting with EIA's March 2007 *Electric Power Monthly* and continuing with this and other reports, EIA has revised its methodology for classifying energy sources as renewable, and its estimates of renewable waste energy beginning in 2001. EIA's definition of renewable energy is "Energy sources that are naturally replenishing but flow limited. They are virtually inexhaustible in duration but limited in the amount of energy that is available per unit of time. Renewable energy sources include: biomass, hydro, geothermal, solar, wind, ocean thermal, wave action and tidal action."[20] Using this definition, EIA decided to revise renewable energy by excluding tires (whose natural rubber content is the smaller part of the total content) and the nonrenewable share of municipal solid waste (MSW).[21]

Details of EIA's analysis that revised MSW consumption are found in the EIA report, *Methodology for Allocating Municipal Solid Waste to Biogenic and Non-Biogenic Energy* (Washington, DC, May 2007).[22] In brief, most of the information EIA collects on MSW comes from the Form EIA-906, "Power Plant Report," and the Form EIA-920, "Combined Heat and Power Plant Report." However, power plants report only the total amount of MSW

[17] For details, see: http://www.dsireusa.org/library/includes/tabsrch.cfm?state=WA&type=RPS&back=regtab&Sector=S&CurrentPageID=7&EE=1&RE=1 .

[18] Originally SB 1078, which was enacted in 2002, required 20 percent by 2017. The schedule has been accelerated. Includes only hydropower projects less than 30 megawatts in capacity. For complete details of what's specified in the standard, how renewable sources are defined, etc. see http://www.dsireusa.org/library/includes/tabsrch.cfm?state=CA&type=RPS&back=regtab&Sector=S&CurrentPageID=7&EE=1&RE=1 .

[19] See California governor's press release for details: http://gov.ca.gov/index.php?/press-release/4111 .

[20] Other methodologies define any recurring waste stream as renewable.

[21] Refers to the share of MSW that is non-biogenic (or nonrenewable). This includes various plastics and rubber. Biogenic (or renewable) MSW includes paper and paper board, wood, food, leather, textiles and yard trimmings.

[22] See the EIA website here: http://www.eia.doe.gov/fuelrenewable.html .

consumed and the average heat content. No distinction is made on the EIA surveys between renewable and nonrenewable components of MSW, so EIA had to develop a methodology to approximate the split.

The Environmental Protection Agency reports some information on the material composition of MSW on a periodic basis for various years in its report, *Municipal Solid Waste in the United States: Facts and Figures*. Associating this information with the appropriate heat content for each material category in MSW, EIA divided MSW into its biogenic and non-biogenic portions. In 2005, the split on a thermal basis was about 56 percent biogenic (or renewable) and 44 percent non-biogenic (or non-renewable). Implementing this approach lowered the estimate of renewable energy consumption by about 135 trillion btu in 2006 compared to what it would have been using EIA's prior methodology. EIA also expanded the level of detail in many renewable tables so the estimates of MSW biogenic and landfill gas can be seen separately.

At the same time, EIA made a correction to classifying tires. Since only a minor portion of tires is made of natural rubber (considered to be renewable) and the larger share is non-renewable, EIA removed energy from tires from the other biomass category, following the EIA's definition of renewable energy. Implementing this change lowered renewable energy consumption by about 50 trillion btu in 2006.

Finally, unrelated to waste energy classification, EIA redistributed small portions of fuel ethanol consumption to the commercial and industrial sectors from the transportation sector, though the total remained unchanged, and revised its estimates from 1989 forward. The distribution is based on each sector's share of motor gasoline supplied.[23]

[23] Energy Information Administration, *Annual Energy Review 2006* (Washington, DC, June 2007), Tables 5.11 and 5.13a.

Table 1. U.S. Energy Consumption by Energy Source, 2002-2006
(Quadrillion Btu)

Energy Source	2002	2003	2004	2005	2006
Total[a]	97.927	98.280	100.413	100.756	99.960
Fossil Fuels	83.994	84.386	86.191	86.451	85.307
Coal	21.904	22.321	22.466	22.785	22.511
Coal Coke Net Imports	0.061	0.051	0.138	0.044	0.061
Natural Gas[b]	23.628	22.967	22.993	22.886	22.518
Petroleum[c]	38.401	39.047	40.594	40.735	40.217
Electricity Net Imports	0.072	0.022	0.039	0.084	0.060
Nuclear Electric Power	8.143	7.959	8.222	8.160	8.208
Renewable Energy	5.893	6.151	6.261	6.404	6.844
Biomass[d]	2.706	2.817	3.023	3.114	3.277
Biofuels	0.309	0.414	0.513	0.594	0.758
Waste	0.402	0.401	0.389	0.403	0.404
Wood Derived Fuels	1.995	2.002	2.121	2.116	2.114
Geothermal Energy	0.328	0.331	0.341	0.343	0.349
Hydroelectric Conventional	2.689	2.825	2.690	2.703	2.890
Solar/ PV Energy	0.064	0.064	0.064	0.066	0.070
Wind Energy	0.105	0.115	0.142	0.178	0.258

[a] Ethanol blended into motor gasoline is included in both "Petroleum" and "Biomass," but is counted only once in total consumption.
[b] Includes supplemental gaseous fuels.
[c] Petroleum products supplied, including natural gas plant liquids and crude oil burned as fuel.
[d] Biomass includes: biofuels, waste (landfill gas, MSW biogenic, and other biomass), wood and wood derived fuels.
MSW=Municipal Solid Waste.
Note: Data revisions are discussed in Highlights section. Totals may not equal sum of components due to independent rounding.
Data for 2006 is preliminary.
Sources: Non-renewable energy: Energy Information Administration (EIA), Monthly Energy Review (MER) May 2007, DOE/EIA-0035 (2007/05) (Washington, DC, May 2007,) Tables 1.3 and 1.4. Renewable Energy: Table 2 of this report.

Table 2. Renewable Energy Consumption by Energy Use Sector and Energy Source, 2002-2006
(Quadrillion Btu)

Sector and Source	2002	2003	2004	2005	2006
Total	5.893	6.151	6.261	6.404	6.844
Biomass	2.706	2.817	3.023	3.114	3.277
Biofuels	0.309	0.414	0.513	0.594	0.758
Biodiesel[a]	0.001	0.002	0.003	0.011	NA
Biodiesel Feedstock[b]	*	*	*	*	NA
Ethanol[c]	0.175	0.238	0.299	0.342	0.459
Ethanol Feedstock[d]	0.133	0.174	0.210	0.241	0.299
Waste	0.402	0.401	0.389	0.403	0.404
Landfill Gas	0.142	0.141	0.144	0.148	0.157
MSW Biogenic[e]	0.182	0.165	0.164	0.168	0.171
Other Biomass[f]	0.078	0.096	0.081	0.088	0.076
Wood and Derived Fuels	1.995	2.002	2.121	2.116	2.114
Geothermal	0.328	0.331	0.341	0.343	0.349
Hydroelectric Conventional	2.689	2.825	2.690	2.703	2.890
Solar/ PV	0.064	0.064	0.064	0.066	0.070
Wind	0.105	0.115	0.142	0.178	0.258
Residential	0.449	0.471	0.483	0.487	0.474
Biomass	0.380	0.400	0.410	0.410	0.390
Wood and Derived Fuels[g]	0.380	0.400	0.410	0.410	0.390
Geothermal	0.010	0.013	0.014	0.016	0.018
Solar/ PV[h]	0.059	0.058	0.059	0.061	0.065
Commercial	0.104	0.113	0.118	0.119	0.116
Biomass	0.095	0.101	0.105	0.105	0.101
Biofuels	*	0.001	0.001	0.001	0.001
Ethanol[c]	*	0.001	0.001	0.001	0.001
Waste	0.026	0.029	0.034	0.034	0.035
Landfill Gas	0.002	0.002	0.002	0.003	0.003
MSW Biogenic	0.020	0.022	0.025	0.025	0.025
Other Biomass[f]	0.004	0.005	0.007	0.007	0.007
Wood and Derived Fuels[i]	0.069	0.071	0.070	0.070	0.065
Geothermal	0.009	0.011	0.012	0.014	0.014
Hydroelectric Conventional	0.000	0.001	0.001	0.001	0.001
Industrial	1.723	1.731	1.861	1.885	1.949
Biomass	1.679	1.684	1.824	1.849	1.914
Biofuels	0.136	0.178	0.217	0.249	0.309
Ethanol[c]	0.003	0.004	0.006	0.007	0.010
Losses and Coproducts					
Biodiesel Feedstock[b]	*	*	*	*	NA
Ethanol Feedstock[d]	0.133	0.174	0.210	0.241	0.299
Waste	0.146	0.142	0.132	0.148	0.136
Landfill Gas	0.079	0.076	0.075	0.081	0.083
MSW Biogenic[e]	0.005	0.005	0.006	0.007	0.004
Other Biomass[f]	0.063	0.062	0.050	0.061	0.048
Wood and Derived Fuels[i]	1.396	1.363	1.476	1.452	1.469
Geothermal	0.005	0.003	0.004	0.004	0.004
Transportation					
Biofuels	0.172	0.235	0.295	0.345	0.448
Biodiesel[a]	0.001	0.002	0.003	0.011	NA
Ethanol[c]	0.171	0.233	0.292	0.334	0.448
Electric Power[j]	3.445	3.601	3.503	3.568	3.857
Biomass	0.380	0.397	0.388	0.406	0.423
Waste	0.230	0.230	0.223	0.221	0.233
Landfill Gas	0.062	0.063	0.066	0.065	0.071
MSW Biogenic	0.157	0.138	0.133	0.136	0.141
Other Biomass[f]	0.010	0.029	0.023	0.020	0.021
Wood and Derived Fuels[i]	0.150	0.167	0.165	0.185	0.190
Geothermal	0.305	0.303	0.311	0.309	0.312
Hydroelectric Conventional	2.650	2.781	2.656	2.670	2.859
Solar/ PV	0.006	0.005	0.006	0.006	0.005
Wind	0.105	0.115	0.142	0.178	0.258

[a] Biodiesel primarily derived from soy bean oil.

[b] Difference between the energy in biodiesel feedstocks (principally soy bean oil) and the energy in biodiesel consumed in the transportation sector.

[c] Ethanol primarily derived from corn.

[d] 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.

Table 2. Renewable Energy Consumption by Energy Use Sector and Energy Source, 2002-2006 (cont)

[e] Includes paper and paper board, wood, food, leather, textiles and yard trimmings.
[f] Agriculture byproducts/crops, sludge waste, and other biomass solids, liquids and gases.
[g] Wood and wood pellet fuels.
[h] Includes small amounts of distributed solar thermal and photovoltaic energy used in the commercial, industrial and electric power sectors.
[i] Black liquor, and wood/woodwaste solids and liquids.
[j] 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.
MSW=Municipal Solid Waste.
*=Less than 500 billion Btu.
NA=Not Available
Note: Data revisions are discussed in the Highlights section. Revisions to biomass removed MSW non-biogenic and tires from renewable waste energy. Totals may not equal sum of components due to independent rounding.
Data for 2006 is preliminary.
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 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" and Form EIA-920, "Combined Heat and Power Plant 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: U.S. Department of Agriculture, Commodity Credit Corporation, Bioenergy Program estimates of production assigned to consumption 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: EIA Petroleum Supply Annual 2005, 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).
2006: EIA Petroleum Supply Monthly, monthly reports, Tables 1 and 27. Calculated as motor gaoline blending components adjustments (Table 1), plus finished motor gaosline adjustments (Table 1), plus fuel ethanol refinery and blender net inputs (Table 27). 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" and Form EIA-920, "Combined Heat and Power Plant Report."

Table 3. Electricity Net Generation From Renewable Energy by Energy Use Sector and Energy Source, 2002-2006 (Thousand Kilowatthours)

Sector/Source	2002	2003	2004	2005	2006
Total	343,438,005	355,293,117	351,020,900	357,533,995	385,009,378
Biomass	53,708,752	53,341,090	53,073,722	54,160,152	55,574,081
Waste	15,043,713	15,811,993	15,497,303	15,479,005	16,165,384
Landfill Gas	4,759,765	5,077,451	5,128,416	5,135,256	5,509,189
MSW Biogenic[a]	8,637,916	8,306,065	8,153,230	8,334,720	8,652,039
Other Biomass[b]	1,646,032	2,428,477	2,215,658	2,009,029	2,004,157
Wood and Derived Fuels[c]	38,665,040	37,529,097	37,576,418	38,681,147	39,408,697
Geothermal	14,491,310	14,424,231	14,810,975	14,691,745	14,842,067
Hydroelectric Conventional	264,328,833	275,806,328	268,417,308	270,321,255	288,306,061
Solar/ PV	554,831	534,001	575,155	550,294	505,415
Wind	10,354,279	11,187,467	14,143,741	17,810,549	25,781,754
Commercial	1,078,017	1,374,208	1,645,981	1,752,519	1,806,221
Biomass	1,065,220	1,301,964	1,541,014	1,666,482	1,709,138
Waste	1,052,715	1,288,914	1,527,370	1,650,485	1,692,768
Landfill Gas	99,761	151,801	172,029	210,824	223,969
MSW Biogenic[a]	653,997	716,921	945,812	953,591	966,668
Other Biomass[b]	298,956	420,192	409,528	486,070	502,130
Wood and Derived Fuels[c]	12,505	13,049	13,644	15,998	16,370
Hydroelectric Conventional	12,797	72,245	104,967	86,037	97,083
Industrial	34,313,833	32,926,240	31,923,522	32,082,295	32,129,933
Biomass	30,489,185	28,703,816	28,675,029	28,886,854	29,136,109
Waste	845,978	715,445	839,555	789,325	712,533
Landfill Gas	70,882	96,018	120,014	113,082	116,898
MSW Biogenic[a]	73,543	35,997	31,333	37,463	36,673
Other Biomass[b]	701,553	583,431	688,208	638,781	558,961
Wood and Derived Fuels[c]	29,643,207	27,988,371	27,835,474	28,097,529	28,423,576
Hydroelectric Conventional	3,824,648	4,222,424	3,248,493	3,195,441	2,993,824
Electric Power[d]	308,046,156	320,992,669	317,451,398	323,699,181	351,073,224
Biomass	22,154,348	23,335,310	22,857,679	23,606,816	24,728,835
Waste	13,145,020	13,807,633	13,130,379	13,039,195	13,760,084
Landfill Gas	4,589,122	4,829,632	4,836,372	4,811,350	5,168,321
MSW Biogenic[a]	7,910,375	7,553,146	7,176,084	7,343,666	7,648,698
Other Biomass[b]	645,523	1,424,854	1,117,922	884,178	943,066
Wood and Derived Fuels[c]	9,009,328	9,527,677	9,727,300	10,567,621	10,968,751
Geothermal	14,491,310	14,424,231	14,810,975	14,691,745	14,842,067
Hydroelectric Conventional	260,491,388	271,511,659	265,063,848	267,039,777	285,215,154
Solar/ PV	554,831	534,001	575,155	550,294	505,415
Wind	10,354,279	11,187,467	14,143,741	17,810,549	25,781,754

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

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

[c] Black liquor, and wood/woodwaste solids and liquids.

[d] 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.

MSW=Municipal Solid Waste.

Note: Data revisions are discussed in the Highlights section. Revisions to biomass removed MSW non-biogenic and tires from renewable waste energy. Totals may not equal sum of components due to independent rounding. Data for 2006 is preliminary.

Sources: Energy Information Administration, Form EIA-906, "Power Plant Report," and Form EIA-920, "Combined Heat and Power Plant Report."

Table 4. U.S. Electric Net Summer Capacity by Energy Source, 2002-2006
(Megawatts)

Source	2002	2003	2004	2005	2006
Total	905,301	948,446	962,942	978,020	988,069
Renewable Total	96,066	96,847	96,357	98,746	101,383
Biomass	9,644	9,628	9,711	9,802	9,910
Waste	3,800	3,758	3,529	3,609	3,707
Landfill Gas	838	863	859	887	946
MSW[a]	2,492	2,442	2,196	2,167	2,188
Other Biomass[b]	470	453	474	554	573
Wood and Derived Fuels[c]	5,844	5,871	6,182	6,193	6,203
Geothermal	2,252	2,133	2,152	2,285	2,313
Hydroelectric Conventional	79,356	78,694	77,641	77,541	77,629
Solar/ PV	397	397	398	411	411
Wind	4,417	5,995	6,456	8,706	11,119
Nonrenewable Total	809,236	851,599	866,585	879,274	886,686

[a] Includes total capacity whose primary energy source is MSW.

[b] Agriculture byproducts/crops, sludge waste, tires, and other biomass solids, liquids and gases. Does not include tires.

[c] Black liquor, and wood/woodwaste solids and liquids.

MSW=Municipal Solid Waste.

Data for 2006 is preliminary.

Note: Data revisions are discussed in the Highlights section. Revisions to biomass capacity removed tires from renewable waste energy. Totals may not equal sum of components due to independent rounding.

Sources: Energy Information Administration, Form EIA-860, "Annual Electric Generator Report."

Table 5. Total Renewable Net Generation by Energy Source and State, 2005
(Thousand Kilowatthours)

State	Biomass			Geothermal	Hydroelectric Conventional	Solar/ PV	Wind	Total
	Waste							
	Landfill Gas/ MSW Biogenic[a]	Other Biomass[b]	Wood and Derived Fuels[c]					
Alabama	3,494	17,342	3,738,421	-	10,144,581	-	-	13,903,838
Alaska	-	4,873	381	-	1,463,942	-	589	1,469,785
Arizona	44,690	3,666	12,058	-	6,410,064	13,581	-	6,484,059
Arkansas	-	27,693	1,706,996	-	3,082,516	-	-	4,817,205
California	1,587,497	629,236	3,610,097	13,022,639	39,631,867	536,713	4,262,229	63,280,278
Colorado	-	33,879	448	-	1,415,296	-	776,234	2,225,857
Connecticut	746,021	-	7,314	-	478,199	-	-	1,231,534
Delaware	-	-	-	-	-	-	-	-
District of Columbia	-	-	-	-	-	-	-	-
Florida	1,775,272	582,645	2,005,937	-	266,159	-	-	4,630,013
Georgia	28,671	48,711	3,148,749	-	4,032,053	-	-	7,258,184
Hawaii	163,003	147,715	-	221,597	96,188	-	6,632	635,135
Idaho	-	-	577,040	-	8,542,121	-	-	9,119,161
Illinois	593,325	48,452	-	-	129,037	-	141,146	911,960
Indiana	67,779	-	-	-	438,282	-	-	506,061
Iowa	81,991	34,852	-	-	959,526	-	1,647,134	2,723,503
Kansas	-	-	-	-	11,337	-	425,823	437,160
Kentucky	62,098	1,222	359,065	-	2,961,193	-	-	3,383,578
Louisiana	-	80,507	2,643,987	-	810,948	-	-	3,535,442
Maine	233,803	54,554	3,786,633	-	4,090,926	-	-	8,165,916
Maryland	417,405	-	195,466	-	1,703,639	-	-	2,316,510
Massachusetts	1,113,754	24,510	120,027	-	1,041,950	-	-	2,300,240
Michigan	714,068	3,021	1,801,330	-	1,461,708	-	1,848	3,981,975
Minnesota	409,254	6,476	649,415	-	774,729	-	1,582,477	3,422,350
Mississippi	-	5,344	1,519,941	-	-	-	-	1,525,285
Missouri	-	9,249	-	-	1,159,326	-	-	1,168,575
Montana	-	-	65,245	-	9,587,349	-	-	9,652,594
Nebraska	24,566	18,080	-	-	871,473	-	96,608	1,010,727
Nevada	-	-	-	1,262,707	1,702,380	-	-	2,965,087
New Hampshire	156,166	-	785,733	-	1,798,903	-	-	2,740,802
New Jersey	872,481	2,425	-	-	31,113	-	-	906,018
New Mexico	-	4,644	-	-	164,993	-	794,630	964,267
New York	1,344,149	13,809	537,510	-	25,782,518	-	102,990	27,780,976
North Carolina	87,015	11,770	1,739,583	-	5,396,502	-	-	7,234,871
North Dakota	-	9,989	-	-	1,341,824	-	220,345	1,572,158
Ohio	22,526	4,279	359,014	-	515,744	-	13,268	914,831
Oklahoma	-	-	289,217	-	2,630,361	-	847,773	3,767,351
Oregon	70,693	27,350	809,306	-	30,948,345	-	734,274	32,589,968
Pennsylvania	1,352,035	5,695	687,496	-	2,232,179	-	284,241	4,561,646
Rhode Island	-	-	-	-	6,734	-	-	6,734
South Carolina	87,751	-	1,697,465	-	2,938,147	-	-	4,723,363
South Dakota	-	-	-	-	3,074,566	-	158,104	3,232,670
Tennessee	27,265	-	528,281	-	9,309,541	-	3,339	9,868,426
Texas	206,798	46,614	843,789	-	1,332,560	-	4,237,209	6,666,969
Utah	3,948	-	-	184,802	784,463	-	-	973,213
Vermont	-	-	410,491	-	1,210,811	-	11,486	1,632,789
Virginia	676,742	20,820	1,799,862	-	1,484,353	-	-	3,981,778
Washington	170,700	27,336	1,419,394	-	72,074,649	-	498,470	74,190,549
West Virginia	-	253	460	-	1,447,566	-	153,892	1,602,171
Wisconsin	325,019	52,018	824,996	-	1,740,219	-	92,544	3,034,797
Wyoming	-	-	-	-	808,375	-	717,264	1,525,639
Total	13,469,976	2,009,029	38,681,147	14,691,745	270,321,255	550,294	17,810,549	357,533,995

[a] Includes landfill gas and MSW biogenic (Paper and paper board, wood, food, leather, textiles and yard trimmings.).

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

[c] Black liquor, and wood/woodwaste solids and liquids.

PV=Photovoltaic.

MSW=Municipal Solid Waste.

Note: Revisions to biomass removed MSW non-biogenic and tires from renewable waste energy.

Dash indicates the state has no data to report for that energy source. Totals may not equal sum of components due to independent rounding.

Source: Energy Information Administration, Form EIA-906,"Power Plant Report," and Form EIA-920, " Combined Heat and Power Plant Report."

Table 6. Total Renewable Net Generation by Energy Source and State, 2006
(Thousand Kilowatthours)

State	Biomass			Geothermal	Hydroelectric Conventional	Solar/ PV	Wind	Total
	Waste							
	Landfill Gas/ MSW Biogenic[a]	Other Biomass[b]	Wood and Derived Fuels[c]					
Alabama	3,937	20,750	3,854,053	-	7,477,075	-	-	11,355,815
Alaska	-	5,205	514	-	1,414,518	-	885	1,421,122
Arizona	24,430	3,784	12,039	-	6,788,255	10,843	-	6,839,351
Arkansas	-	29,462	1,685,231	-	1,505,140	-	-	3,219,833
California	1,725,413	638,522	3,668,951	13,027,432	48,454,897	494,572	4,994,149	73,003,936
Colorado	-	34,972	-	-	1,732,622	-	843,959	2,611,552
Connecticut	790,494	-	8,043	-	413,010	-	-	1,211,547
Delaware	-	-	-	-	-	-	-	-
District of Columbia	-	-	-	-	-	-	-	-
Florida	1,853,300	554,504	2,000,307	-	215,633	-	-	4,623,744
Georgia	29,964	36,212	3,433,197	-	3,001,347	-	-	6,500,719
Hawaii	189,284	152,483	-	212,276	127,616	-	33,625	715,285
Idaho	-	-	529,598	-	11,022,104	-	143,696	11,695,398
Illinois	654,210	65,564	-	-	128,188	-	663,302	1,511,264
Indiana	68,842	-	-	-	450,147	-	-	518,989
Iowa	71,318	37,389	-	-	903,282	-	2,266,783	3,278,771
Kansas	-	-	-	-	9,649	-	946,794	956,443
Kentucky	59,543	1,691	372,193	-	2,574,188	-	-	3,007,616
Louisiana	-	89,087	2,727,765	-	713,215	-	-	3,530,067
Maine	237,516	48,398	3,891,914	-	4,303,552	-	-	8,481,381
Maryland	432,451	-	220,359	-	2,101,218	-	-	2,754,028
Massachusetts	1,168,917	24,845	130,377	-	1,101,040	-	-	2,425,178
Michigan	754,994	3,062	1,753,201	-	1,207,921	-	2,212	3,721,390
Minnesota	422,670	4,630	638,568	-	639,778	-	2,011,264	3,716,910
Mississippi	-	6,480	1,534,603	-	-	-	-	1,541,083
Missouri	-	9,374	96	-	298,700	-	-	308,170
Montana	-	-	66,129	-	10,000,458	-	-	10,066,587
Nebraska	37,404	18,324	-	-	839,881	-	278,191	1,173,800
Nevada	-	-	-	1,411,751	2,058,286	-	-	3,470,036
New Hampshire	175,782	-	883,071	-	1,834,890	-	-	2,893,742
New Jersey	936,636	2,457	-	-	33,763	-	-	972,857
New Mexico	-	4,794	-	-	188,949	-	1,255,166	1,448,909
New York	1,386,166	10,836	539,496	-	26,015,134	-	656,934	28,608,566
North Carolina	102,547	3,860	1,765,405	-	4,211,252	-	-	6,083,063
North Dakota	-	10,124	-	-	1,521,034	-	402,698	1,933,856
Ohio	24,027	5,035	359,240	-	514,978	-	19,945	923,225
Oklahoma	-	-	304,692	-	1,156,206	-	1,712,441	3,173,339
Oregon	70,655	26,267	872,703	-	37,422,132	-	879,699	39,271,456
Pennsylvania	1,402,240	17,347	688,972	-	2,676,669	-	322,322	5,107,551
Rhode Island	-	-	-	-	7,303	-	-	7,303
South Carolina	84,966	-	1,730,781	-	1,967,615	-	-	3,783,362
South Dakota	-	-	-	-	3,396,833	-	148,965	3,545,798
Tennessee	29,552	-	399,384	-	7,801,311	-	22,012	8,252,259
Texas	229,995	46,367	894,002	-	920,887	-	6,072,072	8,163,322
Utah	4,076	-	-	190,608	800,492	-	-	995,175
Vermont	-	-	451,964	-	1,226,629	-	10,688	1,689,282
Virginia	673,456	15,653	1,807,351	-	1,345,254	-	-	3,841,714
Washington	174,810	23,959	1,324,325	-	82,068,499	-	1,037,651	84,629,244
West Virginia	-	-	-	-	1,406,974	-	173,757	1,580,731
Wisconsin	341,631	52,722	860,171	-	1,461,577	-	102,559	2,818,659
Wyoming	-	-	-	-	845,963	-	779,987	1,625,950
Total	14,161,228	2,004,157	39,408,697	14,842,067	288,306,061	505,415	25,781,754	385,009,378

[a] Includes landfill gas and MSW biogenic (Paper and paper board, wood, food, leather, textiles and yard trimmings.).
[b] Agriculture byproducts/crops, sludge waste, and other biomass solids, liquids and gases.
[c] Black liquor, and wood/woodwaste solids and liquids.
PV=Photovoltaic.
MSW=Municipal Solid Waste.
Note: Revisions to biomass removed MSW non-biogenic and tires from renewable waste energy.
Dash indicates the state has no data to report for that energy source. Totals may not equal sum of components due to independent rounding.
Data for 2006 is preliminary.
Source: Energy Information Administration, Form EIA-906,"Power Plant Report," and Form EIA-920, " Combined Heat and Power Plant Report."

Table 7. Total Renewable Net Summer Capacity by Energy Source and State, 2005
(Megawatts)

State	Biomass			Geothermal	Hydroelectric Conventional	Solar/ PV	Wind	Total
	Waste							
	Landfill Gas/MSW[a]	Other Biomass[b]	Wood and Derived Fuels[c]					
Alabama	-	-	553	-	3,240	-	-	3,793
Alaska	-	-	-	-	397	-	10	406
Arizona	4	-	3	-	2,720	9	-	2,736
Arkansas	-	6	292	-	1,388	-	-	1,686
California	258	145	577	2,046	10,088	402	2,052	15,567
Colorado	-	10	-	-	652	-	228	889
Connecticut	166	-	-	-	146	-	-	313
Delaware	-	-	-	-	-	-	-	-
District of Columbia	-	-	-	-	-	-	-	-
Florida	442	145	343	-	55	-	-	985
Georgia	5	44	450	-	2,014	-	-	2,513
Hawaii	60	49	-	31	24	-	11	175
Idaho	-	-	78	-	2,390	-	11	2,478
Illinois	100	28	-	-	33	-	105	265
Indiana	19	-	-	-	60	-	-	78
Iowa	6	3	-	-	131	-	820	961
Kansas	-	-	-	-	3	-	263	266
Kentucky	10	-	43	-	817	-	-	870
Louisiana	-	15	318	-	192	-	-	525
Maine	53	35	605	-	720	-	-	1,413
Maryland	125	-	2	-	566	-	-	693
Massachusetts	261	9	26	-	260	-	-	556
Michigan	157	-	210	-	253	-	1	620
Minnesota	137	-	136	-	176	-	687	1,136
Mississippi	-	-	229	-	-	-	-	229
Missouri	-	-	-	-	552	-	-	552
Montana	-	-	17	-	2,619	-	135	2,772
Nebraska	3	4	-	-	269	-	73	349
Nevada	-	-	-	185	1,047	-	-	1,233
New Hampshire	31	-	104	-	507	-	-	643
New Jersey	181	20	-	-	3	-	-	204
New Mexico	-	6	-	-	82	-	404	492
New York	303	-	37	-	4,207	-	185	4,732
North Carolina	14	-	291	-	1,945	-	-	2,250
North Dakota	-	10	-	-	432	-	96	537
Ohio	4	-	24	-	101	-	7	135
Oklahoma	16	-	63	-	800	-	474	1,353
Oregon	14	3	193	-	8,336	-	298	8,844
Pennsylvania	344	-	108	-	748	-	223	1,423
Rhode Island	24	-	-	-	4	-	-	28
South Carolina	19	-	217	-	1,348	-	-	1,583
South Dakota	-	-	-	-	1,500	-	43	1,543
Tennessee	5	2	113	-	2,608	-	29	2,756
Texas	41	16	130	-	673	-	1,755	2,614
Utah	1	-	-	23	255	-	-	279
Vermont	-	-	76	-	309	-	5	389
Virginia	168	-	409	-	672	-	-	1,249
Washington	35	4	328	-	21,146	-	393	21,907
West Virginia	-	-	-	-	264	-	66	330
Wisconsin	50	1	221	-	487	-	45	805
Wyoming	-	-	-	-	303	-	287	590
Total	3,055	554	6,193	2,285	77,541	411	8,706	98,746

[a] Total capacity whose primary energy source is landfill gas or MSW.
[b] Agriculture byproducts/crops, sludge waste, and other biomass solids, liquids and gases.
[c] Black liquor, and wood/woodwaste solids and liquids.
PV=Photovoltaic.
MSW=Municipal Solid Waste.
*** =Less than 500 kilowatts.**
Note: Revisions to biomass capacity removed tires from renewable waste energy.
Dash indicates the state has no data to report for that energy source. Totals may not equal sum of components due to independent rounding.
Source: Energy Information Administration, Form EIA-860,"Annual Electric Generator Report."

Table 8. Total Renewable Net Summer Capacity by Energy Source and State, 2006
(Megawatts)

State	Biomass			Geothermal	Hydroelectric Conventional	Solar/ PV	Wind	Total
	Waste							
	Landfill Gas/MSW[a]	Other Biomass[b]	Wood and Derived Fuels[c]					
Alabama	-	-	553	-	3,240	-	-	3,793
Alaska	-	-	-	-	397	-	2	399
Arizona	4	-	3	-	2,720	9	-	2,736
Arkansas	-	6	292	-	1,388	-	-	1,686
California	271	145	577	2,068	10,088	402	2,264	15,814
Colorado	-	10	-	-	652	-	288	949
Connecticut	166	-	-	-	146	-	-	313
Delaware	7	-	-	-	-	-	-	7
District of Columbia	-	-	-	-	-	-	-	-
Florida	442	163	343	-	55	-	-	1,003
Georgia	5	44	450	-	2,014	-	-	2,513
Hawaii	60	49	-	31	24	-	43	206
Idaho	-	-	78	-	2,390	-	75	2,543
Illinois	100	28	-	-	33	-	105	265
Indiana	31	-	-	-	60	-	-	91
Iowa	6	3	-	-	131	-	919	1,060
Kansas	-	-	-	-	3	-	363	366
Kentucky	12	-	43	-	817	-	-	872
Louisiana	-	15	318	-	192	-	-	525
Maine	53	35	608	-	720	-	-	1,416
Maryland	125	-	2	-	566	-	-	693
Massachusetts	261	9	26	-	259	-	-	554
Michigan	157	-	210	-	253	-	1	620
Minnesota	137	-	125	-	176	-	786	1,224
Mississippi	-	-	229	-	-	-	-	229
Missouri	3	-	-	-	552	-	-	555
Montana	-	-	17	-	2,619	-	135	2,772
Nebraska	6	4	-	-	273	-	73	355
Nevada	-	-	-	191	1,047	-	-	1,239
New Hampshire	31	-	104	-	507	-	-	643
New Jersey	181	20	-	-	3	-	8	211
New Mexico	-	6	-	-	82	-	494	582
New York	314	-	37	-	4,257	-	370	4,978
North Carolina	14	-	291	-	1,945	-	-	2,250
North Dakota	-	10	-	-	432	-	164	606
Ohio	4	-	24	-	101	-	7	135
Oklahoma	16	-	63	-	800	-	480	1,359
Oregon	14	3	193	-	8,347	-	399	8,955
Pennsylvania	359	-	108	-	748	-	150	1,365
Rhode Island	24	-	-	-	4	-	-	28
South Carolina	29	-	217	-	1,348	-	-	1,594
South Dakota	-	-	-	-	1,500	-	43	1,543
Tennessee	5	2	113	-	2,632	-	29	2,780
Texas	41	16	130	-	673	-	2,698	3,557
Utah	1	-	-	23	255	-	-	279
Vermont	-	-	76	-	309	-	5	390
Virginia	170	-	409	-	672	-	-	1,251
Washington	35	4	328	-	21,146	-	821	22,334
West Virginia	-	-	-	-	264	-	66	330
Wisconsin	50	1	238	-	487	-	45	823
Wyoming	-	-	-	-	303	-	287	590
	-							
Total	3,134	573	6,203	2,313	77,629	411	11,119	101,383

[a] Total capacity whose primary energy source is landfill gas or MSW.
[b] Agriculture byproducts/crops, sludge waste, and other biomass solids, liquids and gases.
[c] Black liquor, and wood/woodwaste solids and liquids.
PV=Photovoltaic.
MSW=Municipal Solid Waste.
*** =Less than 500 kilowatts.**
Note: Revisions to biomass capacity removed tires from renewable waste energy.
Dash indicates the state has no data to report for that energy source. Totals may not equal sum of components due to independent rounding.
Data for 2006 is preliminary.
Source: Energy Information Administration, Form EIA-860,"Annual Electric Generator Report."