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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 (<u>http://www.eia.doe.gov/fuelrenewable.html</u>) for further details.

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

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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 biofuels² 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.

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

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.

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 ¹/₂ 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:

 $[\]label{eq: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.

¹⁷ For details, see:

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 broadbased 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-Biogenenic 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

 $[\]label{eq:http://www.dsireusa.org/library/includes/tabsrch.cfm?state=W A&type=RPS&back=regtab&Sector=S&CurrentPageID=7&E E=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 nonrenewable, 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 I	by Energy Source, 2002-2006
(Quadrillion Btu)	

(Quadrillon Diu)					
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
2					

^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 Sec	tor and Energy	Source, 2002-2006
(Quadrillion Btu)				

Sector and source 2002 2003 2004 2003 2004 2003 Bioruels 5.893 6.151 6.513 6.544 6.753 6.544 6.753 Biodiesel Feedstock ¹ 0.001 0.002 0.003 0.011 NA Biodiesel Feedstock ¹ 0.175 0.238 0.299 0.342 0.458 Ethanol Feedstock ¹ 0.133 0.174 0.210 0.241 0.299 Waste 0.402 0.411 0.144 0.144 0.144 0.144 0.144 0.144 0.144 0.144 0.144 0.144 0.144 0.144 0.148 0.171 Other Biomass ¹ 0.162 0.165 0.164 0.168 0.171 Other Biomass ¹ 0.076 0.996 0.081 0.088 0.402 Vidot and Derived Fuels 1.995 2.002 2.121 2.116 2.114 Geothermal 0.320 0.040 0.410 0.410 0.300 Solar/ PV ¹⁰	(Quadrillion Blu)	2002	2002	2004	2005	2006
Data 0.355 0.371 0.301 0.301 0.301 0.3021 0.3021 0.303 0.414 0.513 0.594 0.758 Biodiesel [®] 0.001 0.002 0.003 0.011 NA Biodiesel [®] 0.0175 0.238 0.299 0.342 0.458 Ethanol ⁶ 0.175 0.238 0.299 0.342 0.464 Landfill Gas 0.142 0.141 0.141 0.148 0.141 MSW Biogenic ^a 0.182 0.165 0.164 0.168 0.077 Woad and Derived Fuels 1.995 2.002 2.121 2.116 2.114 Geothermal 0.064 0.064 0.064 0.066 0.070 Wind 0.105 0.115 0.142 0.178 0.238 Solar PV 0.069 0.058 0.059 0.061 0.065 Outo 0.113 0.118 0.119 0.116 0.165 Solar PV ¹ 0.059 0.058 0.	Total	5 803	6 151	6 261	6 404	6 8//
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Biodiesel Feedstock ¹ 0.001 0.002 0.002 0.002 0.017 Biodiesel Feedstock ¹ 0.175 0.238 0.299 0.342 0.459 Ethanol ² 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 0.168 0.177 Other Biomass ¹ 0.078 0.096 0.081 0.688 0.076 Wood and Derived Fuels 1.995 2.002 2.121 2.116 2.114 Ceothermal 0.328 0.331 0.341 0.343 0.349 Hydroelectric Conventional 2.689 2.825 2.690 2.703 2.980 Solar/ PV 0.064 0.064 0.064 0.064 0.410 0.410 0.310 Wood and Derived Fuels ⁹ 0.380 0.400 0.410 0.410 0.390 Geothermal 0.010 0.011 0.016 0.011<	Piodiocol ^a	0.003	0.414	0.010	0.034	0.750
Biolocies i Feedstock Image: Section of the section of t		0.001	0.002	0.003	0.011	NA NA
Ethanof 0.175 0.238 0.299 0.342 0.429 Waste 0.402 0.401 0.389 0.403 0.404 Landfill Gas 0.142 0.141 0.144 0.148 0.165 MSW Biogenic* 0.182 0.165 0.164 0.168 0.171 Other Biomass* 0.078 0.096 0.081 0.088 0.073 Wood and Derived Fuels 1.995 2.002 2.121 2.116 2.177 3.178 <td< td=""><td>Biodiesel Feedstock</td><td>•</td><td>-</td><td></td><td>•</td><td>NA</td></td<>	Biodiesel Feedstock	•	-		•	NA
Ethanol Feedstock ^a 0.133 0.174 0.210 0.241 0.240 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 ^a 0.182 0.165 0.164 0.168 0.076 Other Biomass ¹ 0.328 0.331 0.341 0.343 0.343 Geothermal 0.328 0.331 0.434 0.433 0.437 Geothermal 0.064 0.064 0.0664 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 0.390 Wood and Derived Fuels ¹⁰ 0.380 0.400 0.410 0.390 Wood and Derived Fuels 0.380 0.400 0.410 0.390 0.061 0.065 0.061 0.065 0.061 0.065 0.061 <td>Ethanol</td> <td>0.175</td> <td>0.238</td> <td>0.299</td> <td>0.342</td> <td>0.459</td>	Ethanol	0.175	0.238	0.299	0.342	0.459
Waste 0.402 0.401 0.389 0.403 0.404 Landfill Gas 0.142 0.141 0.144 0.141 0.380 0.400 0.410 0.410 0.380 0.400 0.410 0.410 0.380 0.400 0.410 0.410 0.380 0.400 0.410 0.416 0.380 0.400 0.410 0.416 0.380 0.400 0.410 0.416 0.115 0.161 0.065 0.061 0.016 0.016 0.016 0.016 0.016 0.016 0.010 0.010	Ethanol Feedstock ^a	0.133	0.174	0.210	0.241	0.299
Landfil Gas 0.142 0.141 0.144 0.148 0.171 MSW Biogenic* 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 0.344 Hydroelectric Conventional 2.689 2.825 2.690 2.703 2.890 Solar/ PV 0.064 0.064 0.064 0.064 0.064 0.390 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 Geothermal 0.010 0.013 0.014 0.118 0.119 0.116 Solar/ PV* 0.059 0.058 0.059 0.061 0.061 Commercial 0.104 0.113 0.118 0.119 0.011 Biotreis </td <td>Waste</td> <td>0.402</td> <td>0.401</td> <td>0.389</td> <td>0.403</td> <td>0.404</td>	Waste	0.402	0.401	0.389	0.403	0.404
MSW Biogenic* 0.182 0.164 0.164 0.164 0.168 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 0.343 Hydroelectric Conventional 2.689 2.825 2.680 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 0.471 Biomass 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 0.051 0.061 0.061 Commercial 0.104 0.113 0.118 0.119 0.116 Biorass 0.095 0.101 0.105 0.105 0.022 Commercial 0.002 </td <td>Landfill Gas</td> <td>0.142</td> <td>0.141</td> <td>0.144</td> <td>0.148</td> <td>0.157</td>	Landfill Gas	0.142	0.141	0.144	0.148	0.157
Other Biomass ¹ 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 0.344 Hydroelectric Conventional 2.689 2.825 2.690 2.703 2.890 Solar/ PV 0.64 0.640 0.064 0.064 0.640 0.770 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 Geothermal 0.010 0.013 0.014 0.016 0.016 Solar/ PV ^h 0.059 0.058 0.059 0.661 0.665 Commercial 0.104 0.113 0.118 0.119 0.116 Biomass 0.095 0.010 0.001 0.001 0.001 Landfill Gas 0.0	MSW Biogenic ^e	0.182	0.165	0.164	0.168	0.171
Wood and Derived Fuels 1.995 2.002 2.121 2.116 2.116 2.116 Geothermal 0.328 0.331 0.343 0.343 0.343 Hydroelectric Conventional 2.689 2.825 2.680 2.703 2.890 Solar/ PV 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 ⁹ 0.380 0.400 0.410 0.410 0.390 Geothermal 0.010 0.013 0.014 0.016 0.016 0.016 Solar/ PV ^h 0.059 0.058 0.059 0.061 0.001 0.001 0.001 Biomass 0.095 0.101 0.105 0.105 0.101 Biomass 0.002 0.002 0.002 0.002 0.003 0.003 <td>Other Biomass^f</td> <td>0.078</td> <td>0.096</td> <td>0.081</td> <td>0.088</td> <td>0.076</td>	Other Biomass ^f	0.078	0.096	0.081	0.088	0.076
Geothermal 0.328 0.331 0.341 0.343 0.343 Hydroelectric Conventional 2.689 2.825 2.690 2.703 2.890 Solar/ PV 0.064 0.061 0.016 0.016 0.016 0.016 0.016 0.016 0.016 0.016 0.016 0.016 0.016 0.016 0.016 0.016 0.001	Wood and Derived Fuels	1.995	2.002	2.121	2.116	2.114
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 0.447 0.378 0.2703 Biomass 0.380 0.400 0.410 0.410 0.390 0.400 0.410 0.410 0.390 Geothermal 0.010 0.013 0.014 0.016 0.018 0.016 0.018 Solar/ PV ^h 0.059 0.059 0.059 0.061 0.002 0	Geothermal	0.328	0.331	0.341	0.343	0.349
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 ⁰ 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 0.101 0.001 0.001 0.001 Waste 0.226 0.229 0.034 0.033 0.034 0.033 0.033 0.033 0.034 0.035 0.025 0.025 0.025 0.025 0.025 0.025 0.025 0.025 0.025 0.025 0.025 0.026 0.070 <td>Hydroelectric Conventional</td> <td>2.689</td> <td>2.825</td> <td>2.690</td> <td>2.703</td> <td>2.890</td>	Hydroelectric Conventional	2.689	2.825	2.690	2.703	2.890
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 ⁸ 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 0.101 Biofuels * 0.001 0.001 0.001 0.001 Waste 0.026 0.022 0.025 0.025 0.025 Other Biomass' 0.004 0.005 0.007 0.007 0.007 Wood and Derived Fuels ¹ 0.669 0.071 0.070 0.070 0.065 Geothermal 0.009 0.011 0.011 0.001 0.001 Industrial 1.723 1.731	Solar/ PV	0.064	0.064	0.064	0.066	0.070
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 ⁹ 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 0.001 0.001 0.001 Biorelass 0.026 0.029 0.034 0.035 0.033 Landfill Gas 0.002 0.002 0.002 0.002 0.002 0.007 0.007 Wood and Derived Fuels ¹ 0.069 0.071 0.070 0.0665 0.071 0.070 0.0665 Geothermal 0.000 0.001 0.001 0.001 0.001 0.001 Industrial 1.723 1.731 1.861 <td< td=""><td>Wind</td><td>0.105</td><td>0.115</td><td>0.142</td><td>0.178</td><td>0.258</td></td<>	Wind	0.105	0.115	0.142	0.178	0.258
Biomass 0.380 0.400 0.410 0.410 0.410 0.390 Wood and Derived Fuels ⁰ 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 Ethanol ^e 0.001 0.001 0.001 0.001 0.001 Waste 0.022 0.022 0.025 0.025 0.025 MSW Biogenic 0.020 0.022 0.025 0.025 0.025 Other Biomass ¹ 0.004 0.001 0.001 0.001 0.001 Industrial 1.723 1.731 1.861 1.885 1.949 Biomass 0.679 0.074 0.217 0.249 0.309 Ethanol ^e 0.036	Residential	0.449	0.471	0.483	0.487	0.474
Wood and Derived Fuels [®] 0.380 0.400 0.410 0.410 0.410 0.410 0.410 0.410 0.410 0.410 0.410 0.410 0.018 0.016 0.016 0.016 0.016 0.016 0.016 0.016 0.065 0.061 0.065 Commercial 0.104 0.113 0.114 0.113 0.116 0.001 0.007 0.007 0.065 0.025 0.025 0.025 0.025 0.025 0.025 0.025 0.025 0.025 0.025 0.025 0.025 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0	Biomass	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 0.101 0.001 0.001 Ethanof * 0.001 0.001 0.001 0.001 0.001 Waste 0.022 0.002 0.002 0.003 0.003 Landfill Gas 0.002 0.002 0.007 0.007 0.007 Wood and Derived Fuels ¹ 0.009 0.011 0.011 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 0.33 0.04 0.066 0.007 0.010 Losses and Coproduct	Wood and Derived Fuels ^g	0.380	0.400	0.410	0.410	0.390
Solar/ PV ^h 0.059 0.058 0.059 0.061 0.0658 Commercial 0.104 0.113 0.118 0.119 0.116 Biomass 0.095 0.101 0.105 0.105 0.101 Biotuels * 0.001 0.001 0.001 0.001 Ethanof" * 0.002 0.002 0.002 0.003 0.003 MSW Biogenic 0.026 0.022 0.025 0.025 0.025 0.025 Other Biomass' 0.004 0.005 0.007 0.007 0.007 Wood and Derived Fuels' 0.069 0.071 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 Biodiesel Feedstock ^b * * * NA Ethanolf Feedstock ^b * * * NA Ethanol Feedstock ^b * * *	Geothermal	0.010	0.013	0.014	0.016	0.018
Commercial 0.104 0.113 0.118 0.119 0.116 Biomass 0.095 0.101 0.105 0.101 0.001 0.001 Biofuels * 0.001 0.001 0.001 0.001 0.001 Waste 0.026 0.029 0.034 0.033 0.003 Landfill Gas 0.002 0.022 0.025 0.025 0.025 0.025 Other Biomass ¹ 0.004 0.005 0.007 0.007 0.007 Wood and Derived Fuels ¹ 0.069 0.071 0.070 0.065 Geothermal 0.000 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 ⁶ 0.003 0.004 0.006 0.007 0.010 Losses and Coproducts Siodiesel Feedstock ⁶ * * NA Ethanol Fe	Solar/ PV ^h	0.059	0.058	0.059	0.061	0.065
Biomass 0.095 0.101 0.105 0.101 Biorules * 0.001 0.001 0.001 0.001 Waste 0.026 0.022 0.002 0.002 0.003 0.003 MSW Biogenic 0.020 0.022 0.022 0.025 0.025 0.025 0.025 0.025 0.025 0.025 0.025 0.025 0.025 0.025 0.025 0.025 0.025 0.025 0.025 0.025 0.025 0.025 0.027 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.001 0.011 0.011 0.011 0.011 0.011 0.014 0.014 0.014 0.014 0.014 0.014 0.014 0.014 0.011 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.005 0.006 0.007 0.010 0.05 0.05 0.061	Commercial	0 104	0 113	0 118	0 119	0 116
Distribution 0.001 0.001 0.001 0.001 Biofuels * 0.001 0.001 0.001 0.001 Waste 0.026 0.029 0.034 0.033 0.003 Landfill Gas 0.002 0.002 0.002 0.007 0.007 MSW Biogenic 0.020 0.022 0.007 0.007 0.007 Wood and Derived Fuels ¹ 0.069 0.071 0.070 0.070 0.001 Industrial 1.723 1.731 1.861 1.885 1.949 Biomass 1.679 1.684 1.824 1.849 1.914 Bioruls 0.136 0.178 0.217 0.249 0.309 Ethanol ⁶ 0.003 0.004 0.006 0.007 0.010 Losses and Coproducts Biodiesel Feedstock ⁶ * * * NA Ethanol ⁶ 0.063 0.062 0.050 0.064 0.044 Landfill Gas 0.079 0.76 0.75	Biomass	0.095	0.110	0.110	0.105	0.101
Ethanol ⁶ 0.001 0.001 0.001 Waste 0.026 0.029 0.034 0.034 Landfill Gas 0.002 0.002 0.002 0.003 MSW Biogenic 0.020 0.022 0.025 0.025 Other Biomass ¹ 0.004 0.005 0.007 0.007 Wood and Derived Fuels ¹ 0.069 0.071 0.070 0.001 Industrial 1.723 1.731 1.861 1.885 1.949 Biomass 1.679 1.684 1.824 1.849 1.914 Biordiels 0.136 0.174 0.249 0.309 Ethanol ⁶ 0.003 0.004 0.006 0.007 0.010 Losses and Coproducts * * * NA Ethanol ⁶ 0.033 0.074 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 </td <td>Biofuels</td> <td>*</td> <td>0.001</td> <td>0.001</td> <td>0.001</td> <td>0.001</td>	Biofuels	*	0.001	0.001	0.001	0.001
Waste 0.001 0.001 0.001 0.0034 Waste 0.020 0.002 0.002 0.0033 0.0035 Landfill Gas 0.002 0.002 0.002 0.0035 0.0035 MSW Biogenic 0.004 0.005 0.007 0.007 0.007 Wood and Derived Fuels ¹ 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 ⁶ 0.003 0.004 0.006 0.007 0.010 Losses and Coproducts s * * * NA Ethanol Feedstock ⁴ 0.133 0.174 0.210 0.241 0.299 Waste 0.015 0.005 0.006<	Ethanol ^c	*	0.001	0.001	0.001	0.001
Unster 0.020 0.023 0.034 0.034 0.034 Landfill Gas 0.002 0.002 0.003 0.003 MSW Biogenic 0.020 0.022 0.025 0.025 0.007 Other Biomass ¹ 0.004 0.005 0.007 0.007 0.007 Wood and Derived Fuels ¹ 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 Biorless 0.136 0.178 0.217 0.249 0.309 Ethanol ⁶ 0.003 0.004 0.006 0.007 0.010 Losses and Coproducts * * * * NA Ethanol Feedstock ^d 0.133 0.174 0.210 0.241 0.299 Waste 0.005 0.005 <td< td=""><td>Wasta</td><td>0.026</td><td>0.001</td><td>0.001</td><td>0.001</td><td>0.001</td></td<>	Wasta	0.026	0.001	0.001	0.001	0.001
Landmin Gass 0.002 0.002 0.002 0.003 0.003 0.003 MSW Biogenic 0.004 0.005 0.007 0.007 0.007 Wood and Derived Fuels ¹ 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 ⁶ 0.003 0.004 0.006 0.007 0.010 Losses and Coproducts * * * * NA Ethanol Feedstock ⁴ 0.133 0.174 0.210 0.241 0.138 Landfill Gas 0.079 0.076 0.075 0.081 0.083 MSW Biogenic ⁶		0.020	0.029	0.034	0.034	0.035
Misw Bidgenic 0.020 0.022 0.023 0.023 0.024 Other Biomass ¹ 0.004 0.005 0.007 0.007 Wood and Derived Fuels ¹ 0.069 0.071 0.070 0.070 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 Biodiesel Feedstock ⁰ * * * NA Ethanol ⁶ 0.003 0.004 0.006 0.007 0.010 Losses and Coproducts Biodiesel Feedstock ⁴ 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 0.081 0.003 MSW Biogenic ⁶ 0.005 0.005 0.061	Lanulli Gas	0.002	0.002	0.002	0.003	0.003
Under Biomass 0.004 0.005 0.007 0.007 0.007 Wood and Derived Fuels ¹ 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 Biotels 0.136 0.178 0.217 0.249 0.309 Ethanol ⁶ 0.003 0.004 0.006 0.007 0.010 Losses and Coproducts * * * * 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 0.006 0.007 0.004 Other Biomass ¹ 0.063 0.622		0.020	0.022	0.025	0.025	0.025
Wood and Derived Fuels' 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 * * * * NA Ethanol Feedstock ^d 0.133 0.174 0.210 0.241 0.299 Waste 0.146 0.142 0.132 0.148 0.183 Landfill Gas 0.079 0.076 0.081 0.083 MSW Biogenic ^a 0.005 0.006 0.007 0.004 Other Biomass ¹ 0.063 0.662 0.050	Other Biomass	0.004	0.005	0.007	0.007	0.007
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 ⁶ 0.003 0.004 0.006 0.007 0.010 Losses and Coproducts * * * NA Ethanol ⁶ 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 ^a 0.005 0.005 0.006 0.007 0.004 Other Biomass ¹ 0.005 0.003 0.044 0.004 0.004 Geothermal 0.001 0.002 0.003 0.011 <td>Wood and Derived Fuels'</td> <td>0.069</td> <td>0.071</td> <td>0.070</td> <td>0.070</td> <td>0.065</td>	Wood and Derived Fuels'	0.069	0.071	0.070	0.070	0.065
Hydroelectric Conventional 0.000 0.001 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 ¹ 0.063 0.062 0.050 0.064 0.004 Wood and Derived Fuels ¹ 1.396 1.363 1.476 1.452 1.469 <td< td=""><td>Geothermal</td><td>0.009</td><td>0.011</td><td>0.012</td><td>0.014</td><td>0.014</td></td<>	Geothermal	0.009	0.011	0.012	0.014	0.014
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 ⁶ 0.003 0.004 0.006 0.007 0.010 Losses and Coproducts Biodiesel Feedstock ⁰ * * * NA Ethanol Feedstock ⁰ * * * NA Ethanol Feedstock ¹ 0.221 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 ⁶ 0.005 0.005 0.006 0.007 0.004 Other Biomass ¹ 0.063 0.062 0.050 0.061 0.048 Wood and Derived Fuels ¹ 1.396 1.363 1.476 1.452 1.469 Biodiesel ^a 0.017 0.235 0.295 0.345 0.448 <td>Hydroelectric Conventional</td> <td>0.000</td> <td>0.001</td> <td>0.001</td> <td>0.001</td> <td>0.001</td>	Hydroelectric Conventional	0.000	0.001	0.001	0.001	0.001
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 ^a 0.005 0.005 0.006 0.007 0.004 Other Biomass ¹ 0.063 0.062 0.050 0.064 0.004 Wood and Derived Fuels ¹ 1.396 1.363 1.476 1.452 1.469 Geothermal 0.001 0.002 0.003 0.011 NA Ethanol ^a 0.172 0.235 0.295 0.345 0.448 Biodiesel ^a 0.0011	Industrial	1.723	1.731	1.861	1.885	1.949
Biofuels 0.136 0.178 0.217 0.249 0.309 Ethanol ⁶ 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 ¹ 0.063 0.062 0.050 0.004 0.004 Wood and Derived Fuels ¹ 1.396 1.363 1.476 1.452 1.469 Geothermal 0.005 0.003 0.004 0.004 0.004 Transportation Biodiesel ^a 0.017 0.235 0.295 0.345 0.448 Electric Power ¹ 3.445 3.601 3.503 3.568 3.857	Biomass	1.679	1.684	1.824	1.849	1.914
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 0.132 Landfill Gas 0.079 0.076 0.075 0.081 0.008 MSW Biogenic [®] 0.005 0.006 0.007 0.004 Other Biomass ¹ 0.063 0.062 0.050 0.061 0.048 Wood and Derived Fuels ¹ 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 Biodiesel ^a <	Biofuels	0.136	0.178	0.217	0.249	0.309
Losses and Coproducts Note	Ethanol ^c	0.003	0.004	0.006	0.007	0.010
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 ^a 0.005 0.005 0.0062 0.050 0.061 0.048 Wood and Derived Fuels ¹ 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 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 ⁱ	Losses and Coproducts	0.000	0.001	0.000	0.000	0.010
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 [®] 0.005 0.005 0.006 0.007 0.004 Other Biomass ¹ 0.063 0.062 0.050 0.061 0.048 Wood and Derived Fuels ¹ 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 ^e 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	Biodiesel Feedstock ^b	*	*	*	*	ΝΑ
Enhance 0.173 0.174 0.210 0.241 0.291 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* 0.005 0.005 0.006 0.007 0.004 Other Biomass* 0.063 0.062 0.050 0.061 0.048 Wood and Derived Fuels* 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* 0.171 0.233 0.292 0.334 0.448 Electric Power ⁱ 3.445 3.601 3.503 3.568 3.857 Biomass 0.380 0.397 0.388 0.406 0.423 Waste 0.230 0.223 0.221 0.233 Landfill Gas 0.062 0.663<	Ethanal Faadataak ^d	0 122	0 174	0.210	0.241	0 200
Waste 0.142 0.132 0.143 0.135 Landfill Gas 0.079 0.076 0.075 0.081 0.083 MSW Biogenic [®] 0.005 0.006 0.007 0.004 0.004 Other Biomass ¹ 0.063 0.062 0.050 0.061 0.048 Wood and Derived Fuels ¹ 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 ¹ 3.445 3.601 3.503 3.568 3.857 Biomass 0.380 0.397 0.388 0.406 0.423 Waste 0.230 0.223 0.221 0.233 Landfill Gas 0.062 0.063 <t< td=""><td>Masta</td><td>0.133</td><td>0.174</td><td>0.210</td><td>0.241</td><td>0.299</td></t<>	Masta	0.133	0.174	0.210	0.241	0.299
Landnin Gas 0.073 0.073 0.073 0.081 0.003 MSW Biogenic [®] 0.005 0.006 0.006 0.007 0.004 0.004 Other Biomass ¹ 0.063 0.062 0.050 0.061 0.048 Wood and Derived Fuels ¹ 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 ⁱ 3.445 3.601 3.503 3.568 3.857 Biomass 0.380 0.397 0.388 0.406 0.423 Waste 0.230 0.223 0.221 0.233 Landfill Gas 0.062 0.063 0.066 0.065 0.071 MSW Biogenic		0.146	0.142	0.132	0.140	0.130
MSW Biogenic 0.005 0.006 0.006 0.007 0.004 Other Biomass ¹ 0.063 0.062 0.050 0.061 0.048 Wood and Derived Fuels ¹ 1.396 1.363 1.476 1.452 1.469 Geothermal 0.005 0.003 0.004 0.004 0.004 Transportation Bioduels 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 ⁱ 3.445 3.601 3.503 3.568 3.857 Biomass 0.380 0.397 0.388 0.406 0.423 Waste 0.230 0.223 0.221 0.233 Landfill Gas 0.062 0.063 0.066 0.065 MSW Biogenic 0.157 0.138 0.133 0.136 0.141 Other Biomass ¹ 0.010 0.029		0.079	0.076	0.075	0.061	0.063
Other Biomass' 0.063 0.062 0.050 0.061 0.048 Wood and Derived Fuels ¹ 1.396 1.363 1.476 1.452 1.469 Geothermal 0.005 0.003 0.004 0.004 0.004 Transportation Bioduels 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 ⁱ 3.445 3.601 3.503 3.568 3.857 Biomass 0.380 0.397 0.388 0.406 0.423 Waste 0.230 0.223 0.221 0.233 Landfill Gas 0.062 0.063 0.066 0.061 MSW Biogenic 0.157 0.138 0.133 0.136 0.141 Other Biomass ¹ 0.010 0.029 0.023 0.020 0.021 Wood and Derived Fuels ¹ 0.150 0.		0.005	0.005	0.006	0.007	0.004
Wood and Derived Fuels' 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 0.223 0.221 0.233 Landfill Gas 0.062 0.063 0.066 0.067 MSW Biogenic 0.157 0.138 0.133 0.136 0.141 Other Biomass' 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	Other Biomass'	0.063	0.062	0.050	0.061	0.048
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 ⁱ 3.445 3.601 3.503 3.568 3.857 Biomass 0.380 0.397 0.388 0.406 0.423 Waste 0.230 0.223 0.221 0.233 Landfill Gas 0.062 0.063 0.666 0.065 0.071 MSW Biogenic 0.157 0.138 0.133 0.136 0.141 Other Biomass ¹ 0.010 0.029 0.023 0.020 0.021 Wood and Derived Fuels ¹ 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 <td< td=""><td>Wood and Derived Fuels¹</td><td>1.396</td><td>1.363</td><td>1.476</td><td>1.452</td><td>1.469</td></td<>	Wood and Derived Fuels ¹	1.396	1.363	1.476	1.452	1.469
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 ⁱ 3.445 3.601 3.503 3.568 3.857 Biomass 0.380 0.397 0.388 0.406 0.423 Waste 0.230 0.223 0.221 0.233 Landfill Gas 0.062 0.063 0.066 0.071 MSW Biogenic 0.157 0.138 0.133 0.136 0.141 Other Biomass ¹ 0.010 0.029 0.023 0.020 0.021 Wood and Derived Fuels ¹ 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	Geothermal	0.005	0.003	0.004	0.004	0.004
Biotuels 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 ⁱ 0.171 0.233 0.292 0.334 0.448 Electric Power ⁱ 3.445 3.601 3.503 3.568 3.857 Biomass 0.380 0.397 0.388 0.406 0.423 Waste 0.230 0.223 0.221 0.233 Landfill Gas 0.062 0.063 0.066 0.061 MSW Biogenic 0.157 0.138 0.133 0.136 0.141 Other Biomass ¹ 0.010 0.029 0.023 0.020 0.021 Wood and Derived Fuels ¹ 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 </td <td>Transportation</td> <td></td> <td></td> <td></td> <td></td> <td></td>	Transportation					
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 ⁱ 3.445 3.601 3.503 3.568 3.857 Biomass 0.380 0.397 0.388 0.406 0.423 Waste 0.230 0.223 0.221 0.233 Landfill Gas 0.062 0.066 0.066 0.065 0.071 MSW Biogenic 0.157 0.138 0.133 0.136 0.141 Other Biomass ¹ 0.010 0.029 0.023 0.020 0.021 Wood and Derived Fuels ¹ 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	Biofuels	0.172	0.235	0.295	0.345	0.448
Ethanol ^c 0.171 0.233 0.292 0.334 0.448 Electric Power ⁱ 3.445 3.601 3.503 3.568 3.857 Biomass 0.380 0.397 0.388 0.406 0.423 Waste 0.230 0.223 0.221 0.233 Landfill Gas 0.062 0.066 0.066 0.065 0.071 MSW Biogenic 0.157 0.138 0.133 0.136 0.141 Other Biomass ¹ 0.010 0.029 0.023 0.020 0.021 Wood and Derived Fuels ¹ 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	Biodiesel ^a	0.001	0.002	0.003	0.011	NA
Electric Power ⁱ 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 ¹ 0.010 0.029 0.023 0.020 0.021 Wood and Derived Fuels ¹ 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 0.006 0.005	Ethanol ^c	0.171	0.233	0.292	0.334	0.448
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 ¹ 0.010 0.029 0.023 0.020 0.021 Wood and Derived Fuels ¹ 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 0.005 0.006 0.005 Wind 0.105 0.115 0.142 0.178 0.258	Electric Power ⁱ	3.445	3.601	3.503	3.568	3.857
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 ¹ 0.010 0.029 0.023 0.020 0.021 Wood and Derived Fuels ¹ 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	Biomass	0.380	0.397	0.388	0.406	0.423
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 ¹ 0.010 0.029 0.023 0.020 0.021 Wood and Derived Fuels ¹ 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 0.006 Wind 0.105 0.115 0.142 0.178 0.258	Waste	0.230	0.230	0.223	0.221	0.233
MSW Biogenic 0.157 0.138 0.133 0.136 0.141 Other Biomass ¹ 0.010 0.029 0.023 0.020 0.021 Wood and Derived Fuels ¹ 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 0.115 0.115 0.142 0.178 0.258	Landfill Gas	0.062	0.063	0.066	0.065	0.071
Other Biomass ¹ 0.010 0.029 0.023 0.020 0.021 Wood and Derived Fuels ¹ 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	MSW Biogenic	0.157	0.138	0.133	0.136	0.141
Wood and Derived Fuels ¹ 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 0.2859	Other Biomass ^f	0.010	0.029	0.023	0.020	0.021
Geothermal 0.305 0.107 0.103 0.103 0.103 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 0.2859	Wood and Derived Fuels ⁱ	0 150	0 167	0 165	0 185	0 100
Used Used <thused< th=""> Used Used <thu< td=""><td>Geothermal</td><td>0.100</td><td>0.107</td><td>0.100</td><td>0.100</td><td>0.100</td></thu<></thused<>	Geothermal	0.100	0.107	0.100	0.100	0.100
Solar/PV 0.006 0.006 0.006 0.006 0.006 0.006 0.006 0.006 0.005 0.006 0.006 0.005 0.006 0.006 0.005 0.006 0.006 0.005 0.006 0.006 0.005	Hydroelectric Conventional	2 650	2 781	2 656	2 670	2 850
Wind 0.105 0.115 0.142 0.178 0.258	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.

ⁱBlack liquor, and wood/woodwaste solids and liquids.

^jThe 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-906, "Power Plant Report," Term 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; Id-9306, "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 Gene	ration From Renewable	Energy by Energy Us	se Sector and	Energy Source,	2002-2006
(Thousand Kilowatth	ours)				

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.

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.

^cBlack liquor, and wood/woodwaste solids and liquids.

MSW=Municipal Solid Waste. 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)

		Biomass						
	Wa	aste						
	Landfill	•						
	Gas/ MSW	Other	Wood and		Hydroelectric			
State	Biogenic ^a	Biomass [∞]	Derived Fuels ^c	Geothermal	Conventional	Solar/ PV	Wind	Total
	0.404	17.040	0 700 404		40 444 504			10 000 000
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
lowa	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)

	Biomass							
	Wast	te						
	Landfill Gas/	Other	Wood and		Hydroelectric			
State	MSW Biogenic ^a	Biomass ^b	Derived Fuels ^c	Geothermal	Conventional	Solar/ PV	Wind	Total
	0.007		0.054.050					
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
lowa	71 318	37 380			400,147		2 266 783	3 278 771
Kancac	71,510	57,505	-	-	0.640	-	2,200,703	056 442
Kantualar	- E0 E 42	1 601	-	-	9,049	-	940,794	300,443
Leuisiana	59,545	1,091	372,193	-	2,374,100	-	-	3,007,010
Louisiana	-	89,087	2,727,765	-	/13,215	-	-	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
Dennsylvania	1 402 240	17 3/7	688 072		2 676 660		322 322	5 107 551
Dhodo Jolond	1,402,240	17,547	000,972	-	2,070,003	-	522,522	3,107,331
Rilloue Islanu	-	-	-	-	1,303	-	-	2,303
South Dalvata	04,900	-	1,730,701	-	1,907,015	-	-	3,703,302
South Dakota	-	-	-	-	3,396,833	-	148,965	3,545,798
Tennessee	29,552	-	399,384	-	7,801,311	-	22,012	8,252,259
lexas	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)

Image: state Image: state <tt>Image: state <tt>Image: state<</tt></tt>		Biomass							
Landfill Other Wood and Derived Fuels Hydroelectric Geothermal Johnson Johnson Johnson Alabama - - 553 - 3,240 - 3,793 Alabama - - 397 - 10 3,793 Alabaka - - 397 2,708 9 2,736 Arizona 4 - 577 2,046 10,088 402 2,052 15,667 California 258 145 577 2,046 10,088 402 2,052 15,567 Colorado - 10 - - 65 - 2,883 Colorado - 10 - 13 2,4 11 2,475 Delaware - - 31 2,4 11 2,476 Beaware - 131 2,4 11 2,478 Hawaii 60 49 - 131 2,4 12 <t< th=""><th></th><th colspan="2">Waste</th><th></th><th></th><th></th><th></th><th></th><th></th></t<>		Waste							
Date Unitary Wood and bit of the sector of a									
State Gas/MSW Biomase" Derived Fuels' Geothermal Conventional Solar/ PV Wind Total Alabama - - 553 - 3,240 - - 3,793 Alaska - - - 397 - 10 406 Arizona 4 - 3 - 2,720 9 - 2,738 Arkansas - 6 292 - 1,888 - - 2,858 Collorado - 10 - - 652 228 889 Connectiout 166 - - - - - - - - - - - - - - - - - - - 11 11 175 131 24 - 11 12,478 Delaware 6 3 - - 131 24 - - 780	_	Landfill	Other	Wood and		Hydroelectric			
Alabama - - 553 - 3,240 - - 3,793 Alaska - - - 3 - 2,720 9 - 1,846 Arkonas - 6 292 - 1,388 - - 1,686 California 258 145 577 2,046 10,088 402 2,025 15,567 Connecticut 166 - - - 146 - - 313 Delaware - - - - - - - - - - - - - - - - - 11 175 11 - - - 78 - 2,300 - 11 2,753 - 78 - 2,300 - 11 2,754 14 140 - - 78 - 2,33 - 105 265 166 - - 78 - 2,33 - 115 2,133 - 2,020 <t< th=""><th>State</th><th>Gas/MSW^a</th><th>Biomass</th><th>Derived Fuels[®]</th><th>Geothermal</th><th>Conventional</th><th>Solar/ PV</th><th>Wind</th><th>Total</th></t<>	State	Gas/MSW ^a	Biomass	Derived Fuels [®]	Geothermal	Conventional	Solar/ PV	Wind	Total
Atabina - </td <td>Alabama</td> <td></td> <td></td> <td>552</td> <td></td> <td>2 240</td> <td></td> <td></td> <td>2 702</td>	Alabama			552		2 240			2 702
Arasona 1 </td <td>Alapana</td> <td></td> <td>-</td> <td></td> <td>-</td> <td>3,240</td> <td>-</td> <td>- 10</td> <td>3,793</td>	Alapana		-		-	3,240	-	- 10	3,793
Arbana - 6 22 - 1.388 - 1.288 California 258 145 577 2,046 10,088 402 2,052 15,567 Colorado - 0 - - 662 - 228 868 Conrecticut 166 - 2,014 - 11 17.5 2,653 - 2,380 - 11 12.7 - 188 - - 33 1005 2.65 11.680 - - 2.7 78 1660 - - 87.7 - 2.7 78 1643 - - 78 10.413 13.3 - - 1.413	Arizona	- 4		- 3		2 720	- Q	- 10	2 736
Namesol Loss Loss <thloss< th=""> <thloss< th=""> <thloss< th=""> <tl< td=""><td>Arkansas</td><td></td><td>6</td><td>202</td><td>_</td><td>1 388</td><td>-</td><td></td><td>1 686</td></tl<></thloss<></thloss<></thloss<>	Arkansas		6	202	_	1 388	-		1 686
Colorado Los Los <thlos< th=""> <thlos< th=""> <thlos< th=""> <thlos< t<="" td=""><td>California</td><td>258</td><td>145</td><td>577</td><td>2 046</td><td>10.088</td><td>402</td><td>2 052</td><td>15 567</td></thlos<></thlos<></thlos<></thlos<>	California	258	145	577	2 046	10.088	402	2 052	15 567
Connecticut 166 - - 146 - - 313 Delaware - <td>Colorado</td> <td>-</td> <td>10</td> <td>-</td> <td>-</td> <td>652</td> <td>-</td> <td>2,002</td> <td>889</td>	Colorado	-	10	-	-	652	-	2,002	889
Defaware -<	Connecticut	166	-	-	-	146	-	-	313
District of Columbia - - - - - - - - Particle of Columbia - - - Particle of Columbia Paricle of Colembia Particle of Colembia	Delaware	-	-	-	-	-	-	-	-
Fonda 442 145 343 - 55 - - 986 Georgia 5 44 450 - 2,014 - - 2,513 Idawaii 60 49 - 31 24 - 11 2,473 Idaho - - 78 - 2,300 - 11 2,475 Idaho - - 78 - 2,300 - 11 2,478 Illinois 100 28 - - 33 - 78 Iowa 6 3 - - 33 - 600 - 78 Iowa 6 3 - - 31 24 - 820 961 Kansas - - 43 - 817 - 820 961 Kansas - 15 318 - 192 - - 141 14 Louisiana 157 - 210 253 - 1423 <th< td=""><td>District of Columbia</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></th<>	District of Columbia	-	-	-	-	-	-	-	-
Georgia 5 44 450 - 2,014 - - 2,11 Hawaii 60 49 - 31 24 - 11 175 Idaho - - 78 - 2,390 - 11 2,478 Ilinias 100 28 - - 33 - 105 268 Iowa 6 3 - - 131 - 820 961 Louisiana - 15 318 - 192 - 525 Maine 53 35 605 - 720 - 1,413 Massachusetts 261 9 26 - 260 - 252 Michigan 157 - 210 - 2,619 - 14 60 Missouin - - 136 - 176 - 687 1,36 Missouin -	Florida	442	145	343	-	55	-	-	985
Hawaii6049-3124-112/75Idaho78-2,30-112,478Illinois1002833-1052,665Indiana196078Iowa63131-820961Kansas3-2,632,666Kentucky10-43-112525Maine5335605-7201,413Maryland125-2-566-693Massachusetts261926-260556Michigan157-136-176-6871,136Mississipi229229Missour552-552552Motana177-2,619-1352,772New Jarsey181203-204New Jarsey181203-204New Jarsey181203-204New Jarsey181203-204New Jarsey181203	Georgia	5	44	450	-	2.014	-	-	2.513
Idaho - - 78 - 2,390 - 11 2,478 Illinois 100 28 - - 33 - 105 265 Indiana 19 - - 60 - - 78 Iowa 6 3 - - 13 283 266 Kansas - - 13 122 - 870 Louisiana - 15 318 - 192 - - 1,413 Marken 53 35 605 - 720 - - 1,413 Massachuzetts 261 9 266 260 - - 693 Massachuzetts 261 9 266 260 - - 622 Mississippi - - 210 - 255 Mississippi - - 263 - 123 Newtampshire 3 4 - - 269 - 73 349 Ne	Hawaii	60	49	-	31	24	-	11	175
Illinois 100 28 - - 33 - 105 265 Indiana 19 - - - 60 - - 78 Kansas - - 131 - 820 961 Kansas - - - 3 - 263 266 Kentucky 10 - 43 - 192 - - 525 Maine 53 35 605 - 720 - - 1,413 Maryland 125 - 2 253 - 1 667 1,413 Massachusetts 261 9 266 - 260 - - 556 Michigan 157 - 210 - 552 - 552 Missoippi - - 135 2,772 Nethaska 3 4 - 269 73 349	Idaho	-	_	78	-	2.390	-	11	2.478
Indiana 19 - - - 60 - - 78 lowa 6 3 - - 131 - 820 961 Kansas - - - 3 - 78 820 961 Kantucky 10 - 43 - 817 - - 870 Louisiana - 15 318 - 192 - - 666 Maryland 125 - 2 - 566 - - 693 Massachusetts 261 9 26 - 260 - - 556 Michigan 157 - 210 - 253 - 1 667 1,136 Mississippi - - 177 - 2,619 - 3 2,772 Mostana - - 17 - 2,619 - 3 3 Newada - - 185 1,047 - - 1,233	Illinois	100	28	-	-	33	-	105	265
Iowa 6 3 - - 131 - 820 961 Kansas - - - 3 - 263 266 Kentucky 10 - 43 - 817 - - 870 Louisiana - 15 318 - 192 - - 525 Maine 53 35 605 - 260 - - 693 Massachusetts 261 9 26 - 260 - - 525 Minesota 137 - 136 - 176 - 272 Missispipi - - 272 - - 552 - - 552 Mississipi - - 177 2.619 - 1.233 Newlarska 3 4 - - 269 - 264 New Jensci 31 -	Indiana	19	_	-	-	60	-	-	78
Kansas - - - - - 3 - 263 266 Kentucky 10 - 43 - 817 - - 870 Louisiana - 15 318 - 192 - - 525 Maine 53 35 605 - 720 - - 1413 Massachusetts 261 9 26 - 260 - - 556 Michigan 157 - 210 - 253 - 1 620 Mississippi - - 229 - - - 229 Montana - - 177 - 2619 - 135 2,772 Nebraska 3 4 - - 269 - 73 349 New Hampshire 31 - 104 - 507 - 643 New Mexico - 6 - - 82 404 492 <	lowa	6	3	-	-	131	-	820	961
Kentucky10-43-817870Louisiana-15318-192525Maine5335605-7201.413Maryland125-2-566693Massachusetts261926-260556Michigan157-136-176-6871.136Mississippi229552Mississippi17-2619-12352.772Metraska34269-73349New da1851.047-1.233New Hampshire31-104-507-643New Jersey181203New Karico-682404492North Carolina14-291-1,945-2,250North Dakota-1043296537Ohio4-217-1,368-2,28North Dakota-102,608-2,29North Dakota1,500-431,543Tennessee52113-2,608	Kansas	-	-	-	-	3	-	263	266
Louisiana - 15 318 - 192 - - 525 Maine 53 35 605 - 720 - - 1413 Maryland 125 - 2 - 566 - - 683 Massachusetts 261 9 26 - 280 - - 566 Minnesota 137 - 136 - 176 - 687 138 Mississippi - - 229 - - - 229 Missouri - - 177 2,619 - 135 2,772 Netraska 3 4 - - 269 - 73 349 New Varda - - 185 1,047 - 1,233 New Hampshire 31 - 104 - 507 - 643 New Jersey 181 20 - - 82 404 492 New Vark 303 - 37 -	Kentuckv	10	-	43	-	817	-	-	870
Maine 53 35 605 - 720 - - 1,413 Maryland 125 - 2 - 566 - - 693 Massachusetts 261 9 26 - 260 - - 555 Michigan 157 - 210 - 253 - 1 620 Mississippi - - 229 - - - 229 Missouri - - 17 - 2,619 - 135 2,772 Nebraska 3 4 - - 2,619 - 1,233 New Jersey 181 20 - - 3 - - 2,44 New Jersey 181 20 - - 3 - - 2,44 New Maxico - 6 - - 4,207 - 185 4,732 Nort	Louisiana	-	15	318	-	192	-	-	525
Maryland 125 - 2 - 566 - - 693 Massachusetts 261 9 26 - 260 - - 556 Michigan 157 - 210 - 253 - 1 625 Misnesota 137 - 136 - 176 - 687 1,136 Missouri - - 229 - - - 229 Motana - - 177 - 2,619 - 135 2,772 Nebraska 3 4 - - 1655 1,047 - 1,233 New Hampshire 31 - 104 - 507 - - 643 New Jersey 181 20 - - 82 - 404 492 New Vork 303 - 37 - 4,207 - 185 4,732 North Carolina 14 - 291 - 1945 - - <td>Maine</td> <td>53</td> <td>35</td> <td>605</td> <td>-</td> <td>720</td> <td>-</td> <td>-</td> <td>1,413</td>	Maine	53	35	605	-	720	-	-	1,413
Massachusetts 261 9 26 - 260 - - 556 Michigan 157 - 210 - 253 - 1 620 Misnesota 137 - 229 - - - 229 Mississippi - - 229 - - - 229 Missouri - - - 552 - - 552 Nebraska 3 4 - - 269 - 73 349 New Janpshire 31 - 104 - 507 - - 643 New Jersey 181 20 - - 82 404 492 New Mexico - 6 - - 82 404 492 North Carolina 14 - 291 - 1,945 - - 2,250 North Carolina 14 -	Maryland	125	-	2	-	566	-	-	693
Michigan 157 - 210 - 253 - 1 620 Minnesota 137 - 136 - 176 - 687 1,136 Missisipi - - 229 - - - 229 Missouri - - - 552 - - 552 Montana - - 177 - 2,619 - 135 2,772 Nebraska 3 4 - - 269 - 73 349 Newada - - - 185 1,047 - - 1,233 New Hampshire 31 - 104 - 507 - - 643 New Jersey 181 20 - - 82 - 404 492 New Vork 303 - 37 - 4,207 - 185 4,732 North Carolina 14 - 291 - 1,432 96 537	Massachusetts	261	9	26	-	260	-	-	556
Minnesota 137 - 136 - 176 - 687 1,136 Missisipi - - 229 - - - 229 Missouri - - - 552 - - 552 Montana - - 177 - 2,619 - 135 2,772 Nebraska 3 4 - - 269 - 73 349 New Hampshire 31 - 104 - 507 - 643 New Jersey 181 20 - - 3 - 204 New Mexico - 6 - - 82 - 404 492 North Carolina 14 - 291 - 1,945 - - 2,250 North Carolina 14 - 291 - 101 - 7 135 Oklahoma 16	Michigan	157	-	210	-	253	-	1	620
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 - - 82 - 404 492 New Vork 303 - 37 - 4,207 - 185 4,732 North Carolina 14 - 291 - 1,945 - - 2,250 North Dakota - 10 - - 4,207 - 185 4,732 Origon 14 - 10 - - 4,207 - 185 3,772 <	Minnesota	137	-	136	-	176	-	687	1,136
Missouri - - - 552 - - 552 Montana - - 17 - 2,619 - 135 2,772 Nebraska 3 4 - - 2,69 - 73 349 Nevada - - - 185 1,047 - - 1,233 New Hampshire 31 - 104 - 507 - - 643 New Jersey 181 20 - - 82 - 404 492 New Mexico - 6 - - 82 - 404 492 New York 303 - 37 - 4,207 - 185 4,732 North Dakota - 10 - - 4,207 - 185 4,732 North Dakota - 10 - - 4,207 - 185 4,732 North Dakota - 10 - - 101 - 7	Mississippi	-	-	229	-	-	-	-	229
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Nebraska 3 4 - - 269 - 73 349 Nevada - - - 104 - 507 - - 1,233 New Hampshire 31 - 104 - 507 - - 643 New Jersey 181 20 - - 82 - 404 492 New Mexico - 6 - - 82 - 404 492 New Vork 303 - 37 - 4,207 - 185 4,732 North Carolina 14 - 291 - 1,945 - - 2,250 North Carolina 14 - 10 - - 432 - 96 537 Ohio 4 - 24 - 101 - 7 135 Oklahoma 16 - 63 - 800 - 474 1,353 Oregon 14 3 193 - 8,36	Montana	-	-	17	-	2,619	-	135	2,772
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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 - 291 - 101 - 7 135 Oregon 14 3 193 - 8,336 - 298 8,844 Pennsylvania 344 - 108 - 748 - 213 1,423 South Carolina 19 - 217 - 1,348 - - 1,	Nevada	-	-	-	185	1,047	-	-	1,233
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 Roode Island 24 - - 1,548 - 41583 <tr< td=""><td>New Hampshire</td><td>31</td><td>-</td><td>104</td><td>-</td><td>507</td><td>-</td><td>-</td><td>643</td></tr<>	New Hampshire	31	-	104	-	507	-	-	643
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<	New Jersey	181	20	-	-	3	-	-	204
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 <td>New Mexico</td> <td>-</td> <td>6</td> <td>-</td> <td>-</td> <td>82</td> <td>-</td> <td>404</td> <td>492</td>	New Mexico	-	6	-	-	82	-	404	492
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 Carolina 19 - 217 - 1,500 - 43 1,543 Tennessee 5 2 113 - 2,608 - 29	New York	303	-	37	-	4,207	-	185	4,732
North Dakota - 10 - - 432 - 96 537 Ohio 4 - 24 - 101 - 7 135 Oklahoma 16 - 63 - 800 - 474 1,553 Oregon 14 3 193 - 8,336 - 298 8,844 Pennsylvania 344 - 108 - 748 - 223 1,423 Rhode Island 24 - - - 4 - 223 1,423 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,	North Carolina	14	-	291	-	1,945	-	-	2,250
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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 - - 2199 Vermont - - 76 - 309 - 5 389	Ohio	4	-	24	-	101	-	7	135
Oregon 14 3 193 - 8,336 - 298 8,844 Pennsylvania 344 - 108 - 748 - 223 1,423 Rhode Island 24 - - - 4 - 223 1,423 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 Wash	Oklahoma	16	-	63	-	800	-	474	1,353
Pennsylvania 344 - 108 - 748 - 223 1,423 Rhode Island 24 - - - 4 - - 28 South Carolina 19 - 217 - 1,348 - - 1,583 South Carolina 19 - 217 - 1,500 - 43 1,543 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 - 279 279 Vermont - - 76 - 309 - 5 389 Virginia 168 - 409 - 672 - 1,249 Washington 35 4 328 - 21,146 - 393	Oregon	14	3	193	-	8,336	-	298	8,844
Rhode Island 24 - - - 4 - - 28 South Carolina 19 - 217 - 1,348 - - 1,583 South Carolina 19 - - - 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 <t< td=""><td>Pennsylvania</td><td>344</td><td>-</td><td>108</td><td>-</td><td>748</td><td>-</td><td>223</td><td>1,423</td></t<>	Pennsylvania	344	-	108	-	748	-	223	1,423
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	Rhode Island	24	-	-	-	4	-	-	28
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 - 66 300 Wisconsin 50 1 221 - 487 - 45 805 Wyoming - - - 303 - 287 590 Total	South Carolina	19	-	217	-	1,348	-		1,583
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 - - - - 287 590 Total 3,055 554 6,193 2,285 77,541 411 8,706 98,746 <td>South Dakota</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>1,500</td> <td>-</td> <td>43</td> <td>1,543</td>	South Dakota	-	-	-	-	1,500	-	43	1,543
Iexas 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	Tennessee	5	2	113	-	2,608	-	29	2,756
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	lexas	41	16	130	-	673	-	1,755	2,614
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	Utah	1	-	-	23	255	-		279
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	Vermont	-	-	76	-	309	-	5	389
vvashington 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	Virginia	168	• .	409	-	672	-	-	1,249
vvest 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	Washington	35	4	328	-	21,146	-	393	21,907
vvisconsin 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	vvest Virginia	-		-	-	264	-	66	330
wyoming - - - - 303 - 287 590 Total 3,055 554 6,193 2,285 77,541 411 8,706 98,746	VVISCONSIN	50	1	221	-	487	-	45	805
Total 3,055 554 6,193 2,285 77,541 411 8,706 98,746	vvyoming	-	-	-	-	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)

	Biomass							
	Waste							
	Landfill	Other	Wood and		Hydroelectric			
State	Gas/MSW ^a	Biomass ^b	Derived Fuels ^c	Geothermal	Conventional	Solar/ PV	Wind	Total
Al-1					0.040			0.700
Alabama	-	-	553	-	3,240	-	-	3,793
Alaska	-	-	-	-	397	-	2	399
Arizona	4	-	3	-	2,720	9	-	2,736
Arkansas	-	145	292	-	1,388	-	-	1,080
California	271	145	577	2,000	10,000	402	2,204	15,614
Connactiout	-	10	-	-	002	-	200	949
Deleware	100	-	-	-	140	-	-	313
Delaware District of Columbia	,	-	-	-	-	-	-	,
Elorido	-	-	- 242	-	-	-	-	1 002
Coorgio	442	103	343	-	2 014	-	-	1,003
Georgia	5	44	450	- 21	2,014	-	-	2,515
Idaho	- 00	49	- 78		2 3 0 0	-	43	200
Illinois	100	- 28	70		2,000		105	2,545
Indiana	31	20			55 60		105	203
lowo	51	-	-	-	121	-	- 010	1 060
Kansas	0	- 3	-	-	131	-	363	1,000
Kentucky	- 12		13		817		505	872
	12	15	40		102			525
Maine	- 53	35	608		720			1 / 16
Mandand	125		008	-	720	-	-	1,410
Massachusette	261	- 0	26		250			554
Michigon	157	5	20	-	253	-	- 1	620
Minnesota	137		125		176		786	1 224
Mississinni			220		-		700	229
Missouri	з	-	-	_	552	-		555
Montana		-	17	_	2 619	-	135	2 772
Nebraska	-	- 1			2,013		73	2,112
Nevada	0	- 7		101	1 047		- 15	1 230
New Hampshire	- 31		104	-	507			643
New Jersey	181	20	104	_	3	-	8	211
New Mexico	-	20			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	- 10	24	_	101	-	7	135
Oklahoma	16	-	63	_	800	-	480	1 359
Oregon	10	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
Litah	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
	-				000		201	000
Total	3.134	573	6.203	2.313	77.629	411	11.119	101.383
	-,		-,_50	_,	,		.,	.,

^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."