

**Table A2. Energy consumption by sector and source**  
(quadrillion Btu per year, unless otherwise noted)

Sector and source	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
<b>Energy consumption</b>								
<b>Residential</b>								
Liquefied petroleum gases	0.51	0.56	0.51	0.50	0.50	0.51	0.51	-0.4%
Kerosene	0.03	0.03	0.02	0.02	0.02	0.02	0.02	-1.7%
Distillate fuel oil	0.60	0.63	0.55	0.48	0.43	0.38	0.35	-2.3%
Liquid fuels and other petroleum subtotal	1.14	1.22	1.08	1.01	0.95	0.91	0.87	-1.3%
Natural gas	4.90	5.06	4.97	4.95	4.88	4.84	4.76	-0.2%
Coal	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-1.1%
Renewable energy <sup>1</sup>	0.43	0.42	0.43	0.43	0.43	0.43	0.43	0.1%
Electricity	4.66	4.95	4.75	4.96	5.23	5.55	5.86	0.7%
<b>Delivered energy</b>	<b>11.13</b>	<b>11.66</b>	<b>11.24</b>	<b>11.36</b>	<b>11.51</b>	<b>11.73</b>	<b>11.93</b>	<b>0.1%</b>
Electricity related losses	9.80	10.39	9.58	10.01	10.52	10.95	11.35	0.4%
<b>Total</b>	<b>20.93</b>	<b>22.05</b>	<b>20.81</b>	<b>21.36</b>	<b>22.02</b>	<b>22.68</b>	<b>23.28</b>	<b>0.2%</b>
<b>Commercial</b>								
Liquefied petroleum gases	0.13	0.14	0.14	0.14	0.15	0.15	0.16	0.3%
Motor gasoline <sup>2</sup>	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.4%
Kerosene	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.7%
Distillate fuel oil	0.41	0.43	0.35	0.34	0.33	0.33	0.32	-1.2%
Residual fuel oil	0.08	0.08	0.08	0.08	0.08	0.08	0.08	-0.0%
Liquid fuels and other petroleum subtotal	0.68	0.72	0.62	0.62	0.62	0.62	0.62	-0.5%
Natural gas	3.20	3.28	3.41	3.51	3.53	3.60	3.69	0.5%
Coal	0.07	0.06	0.06	0.06	0.06	0.06	0.06	-0.0%
Renewable energy <sup>3</sup>	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.0%
Electricity	4.46	4.54	4.59	4.88	5.16	5.48	5.80	1.0%
<b>Delivered energy</b>	<b>8.51</b>	<b>8.70</b>	<b>8.80</b>	<b>9.18</b>	<b>9.48</b>	<b>9.87</b>	<b>10.28</b>	<b>0.7%</b>
Electricity related losses	9.39	9.52	9.27	9.85	10.38	10.82	11.23	0.7%
<b>Total</b>	<b>17.90</b>	<b>18.22</b>	<b>18.06</b>	<b>19.03</b>	<b>19.86</b>	<b>20.69</b>	<b>21.50</b>	<b>0.7%</b>
<b>Industrial<sup>4</sup></b>								
Liquefied petroleum gases	2.00	2.00	1.83	2.06	2.17	2.18	2.15	0.3%
Motor gasoline <sup>2</sup>	0.24	0.25	0.28	0.30	0.30	0.30	0.30	0.8%
Distillate fuel oil	1.11	1.16	1.25	1.18	1.19	1.17	1.18	0.1%
Residual fuel oil	0.11	0.12	0.09	0.08	0.08	0.08	0.08	-1.3%
Petrochemical feedstocks	0.90	0.94	1.01	1.20	1.29	1.31	1.30	1.3%
Other petroleum <sup>5</sup>	3.57	3.59	3.44	3.18	3.11	3.09	3.19	-0.5%
Liquid fuels and other petroleum subtotal	7.93	8.05	7.89	7.99	8.13	8.13	8.21	0.1%
Natural gas	6.32	6.76	7.19	7.26	7.32	7.21	7.18	0.2%
Natural-gas-to-liquids heat and power	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Lease and plant fuel <sup>6</sup>	1.31	1.37	1.43	1.55	1.57	1.59	1.63	0.7%
Natural gas subtotal	7.63	8.14	8.62	8.80	8.89	8.80	8.81	0.3%
Metallurgical coal	0.40	0.55	0.57	0.48	0.49	0.46	0.43	-1.0%
Other industrial coal	0.94	1.01	1.03	1.04	1.08	1.08	1.08	0.3%
Coal-to-liquids heat and power	0.00	0.00	0.00	0.26	0.36	0.48	0.60	--
Net coal coke imports	-0.02	-0.01	-0.01	-0.02	-0.03	-0.04	-0.06	9.3%
Coal subtotal	1.32	1.56	1.59	1.76	1.90	1.98	2.06	1.1%
Biofuels heat and coproducts	0.82	0.84	0.81	0.96	1.27	1.92	2.57	4.6%
Renewable energy <sup>7</sup>	1.37	1.50	1.61	1.67	1.82	1.87	1.95	1.1%
Electricity	3.13	3.28	3.44	3.46	3.52	3.44	3.33	0.1%
<b>Delivered energy</b>	<b>22.20</b>	<b>23.37</b>	<b>23.96</b>	<b>24.64</b>	<b>25.53</b>	<b>26.14</b>	<b>26.94</b>	<b>0.6%</b>
Electricity related losses	6.59	6.89	6.94	6.97	7.09	6.80	6.46	-0.3%
<b>Total</b>	<b>28.79</b>	<b>30.26</b>	<b>30.90</b>	<b>31.61</b>	<b>32.61</b>	<b>32.93</b>	<b>33.39</b>	<b>0.4%</b>

**Table A2. Energy consumption by sector and source (continued)**  
(quadrillion Btu per year, unless otherwise noted)

Sector and source	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
<b>Transportation</b>								
Liquefied petroleum gases .....	0.05	0.04	0.04	0.04	0.04	0.05	0.05	0.5%
E85 <sup>8</sup> .....	0.00	0.00	0.01	0.13	0.30	0.72	1.22	27.0%
Motor gasoline <sup>2</sup> .....	16.84	16.91	16.13	15.31	14.90	14.69	14.53	-0.6%
Jet fuel <sup>9</sup> .....	2.98	3.07	3.03	3.09	3.19	3.27	3.33	0.3%
Distillate fuel oil <sup>10</sup> .....	5.53	5.77	6.55	6.80	7.03	7.20	7.44	1.0%
Residual fuel oil .....	0.81	0.90	0.91	0.92	0.93	0.93	0.94	0.2%
Other petroleum <sup>11</sup> .....	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.0%
Liquid fuels and other petroleum subtotal ..	26.36	26.88	26.83	26.46	26.57	27.02	27.67	0.1%
Pipeline fuel natural gas .....	0.61	0.65	0.68	0.67	0.67	0.68	0.69	0.2%
Compressed / liquefied natural gas .....	0.04	0.04	0.06	0.09	0.11	0.14	0.16	5.7%
Liquid hydrogen .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Electricity .....	0.02	0.02	0.03	0.03	0.04	0.06	0.07	4.8%
<b>Delivered energy</b> .....	<b>27.04</b>	<b>27.59</b>	<b>27.60</b>	<b>27.25</b>	<b>27.40</b>	<b>27.90</b>	<b>28.60</b>	<b>0.1%</b>
Electricity related losses .....	0.05	0.05	0.05	0.06	0.08	0.11	0.14	4.5%
<b>Total</b> .....	<b>27.09</b>	<b>27.63</b>	<b>27.65</b>	<b>27.32</b>	<b>27.49</b>	<b>28.01</b>	<b>28.75</b>	<b>0.2%</b>
<b>Delivered energy consumption for all sectors</b>								
Liquefied petroleum gases .....	2.69	2.75	2.51	2.74	2.86	2.88	2.86	0.2%
E85 <sup>8</sup> .....	0.00	0.00	0.01	0.13	0.30	0.72	1.22	27.0%
Motor gasoline <sup>2</sup> .....	17.13	17.21	16.46	15.66	15.25	15.04	14.88	-0.6%
Jet fuel <sup>9</sup> .....	2.98	3.07	3.03	3.09	3.19	3.27	3.33	0.3%
Kerosene .....	0.04	0.04	0.03	0.03	0.03	0.03	0.03	-1.2%
Distillate fuel oil .....	7.65	7.99	8.69	8.81	8.99	9.08	9.29	0.6%
Residual fuel oil .....	0.99	1.11	1.08	1.08	1.09	1.09	1.11	0.0%
Petrochemical feedstocks .....	0.90	0.94	1.01	1.20	1.29	1.31	1.30	1.3%
Other petroleum <sup>12</sup> .....	3.72	3.76	3.61	3.34	3.27	3.26	3.36	-0.4%
Liquid fuels and other petroleum subtotal ..	36.10	36.87	36.43	36.08	36.28	36.68	37.38	0.1%
Natural gas .....	14.46	15.15	15.64	15.81	15.85	15.79	15.79	0.2%
Natural-gas-to-liquids heat and power .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Lease and plant fuel <sup>6</sup> .....	1.31	1.37	1.43	1.55	1.57	1.59	1.63	0.7%
Pipeline natural gas .....	0.61	0.65	0.68	0.67	0.67	0.68	0.69	0.2%
Natural gas subtotal .....	16.38	17.17	17.75	18.03	18.09	18.06	18.11	0.2%
Metallurgical coal .....	0.40	0.55	0.57	0.48	0.49	0.46	0.43	-1.0%
Other coal .....	1.01	1.08	1.09	1.10	1.14	1.14	1.15	0.3%
Coal-to-liquids heat and power .....	0.00	0.00	0.00	0.26	0.36	0.48	0.60	--
Net coal coke imports .....	-0.02	-0.01	-0.01	-0.02	-0.03	-0.04	-0.06	9.3%
Coal subtotal .....	1.39	1.62	1.65	1.82	1.96	2.04	2.12	1.1%
Biofuels heat and coproducts .....	0.82	0.84	0.81	0.96	1.27	1.92	2.57	4.6%
Renewable energy <sup>13</sup> .....	1.91	2.03	2.15	2.21	2.36	2.41	2.50	0.8%
Liquid hydrogen .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Electricity .....	12.27	12.79	12.81	13.33	13.96	14.53	15.06	0.7%
<b>Delivered energy</b> .....	<b>68.87</b>	<b>71.32</b>	<b>71.59</b>	<b>72.43</b>	<b>73.92</b>	<b>75.64</b>	<b>77.75</b>	<b>0.3%</b>
Electricity related losses .....	25.83	26.84	25.84	26.89	28.07	28.67	29.18	0.3%
<b>Total</b> .....	<b>94.71</b>	<b>98.16</b>	<b>97.43</b>	<b>99.32</b>	<b>101.99</b>	<b>104.32</b>	<b>106.93</b>	<b>0.3%</b>
<b>Electric power<sup>14</sup></b>								
Distillate fuel oil .....	0.07	0.08	0.08	0.09	0.09	0.09	0.09	0.5%
Residual fuel oil .....	0.32	0.30	0.21	0.21	0.22	0.22	0.23	-1.1%
Liquid fuels and other petroleum subtotal ..	0.39	0.38	0.29	0.30	0.31	0.31	0.32	-0.7%
Natural gas .....	7.04	7.54	8.25	8.05	8.04	8.66	9.16	0.8%
Steam coal .....	18.23	19.13	16.15	16.91	18.06	18.55	19.03	-0.0%
Nuclear / uranium <sup>15</sup> .....	8.36	8.44	8.68	9.28	9.60	9.56	9.28	0.4%
Renewable energy <sup>16</sup> .....	3.77	3.85	4.96	5.40	5.75	5.87	6.22	1.9%
Electricity imports .....	0.12	0.09	0.10	0.09	0.08	0.05	0.04	-2.9%
<b>Total<sup>17</sup></b> .....	<b>38.10</b>	<b>39.63</b>	<b>38.64</b>	<b>40.22</b>	<b>42.03</b>	<b>43.20</b>	<b>44.24</b>	<b>0.4%</b>

**Table A2. Energy consumption by sector and source (continued)**  
(quadrillion Btu per year, unless otherwise noted)

Sector and source	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
<b>Total energy consumption</b>								
Liquefied petroleum gases	2.69	2.75	2.51	2.74	2.86	2.88	2.86	0.2%
E85 <sup>8</sup>	0.00	0.00	0.01	0.13	0.30	0.72	1.22	27.0%
Motor gasoline <sup>2</sup>	17.13	17.21	16.46	15.66	15.25	15.04	14.88	-0.6%
Jet fuel <sup>9</sup>	2.98	3.07	3.03	3.09	3.19	3.27	3.33	0.3%
Kerosene	0.04	0.04	0.03	0.03	0.03	0.03	0.03	-1.2%
Distillate fuel oil	7.72	8.07	8.78	8.89	9.07	9.17	9.38	0.6%
Residual fuel oil	1.32	1.41	1.29	1.29	1.31	1.32	1.34	-0.2%
Petrochemical feedstocks	0.90	0.94	1.01	1.20	1.29	1.31	1.30	1.3%
Other petroleum <sup>12</sup>	3.72	3.76	3.61	3.34	3.27	3.26	3.36	-0.4%
Liquid fuels and other petroleum subtotal	36.50	37.25	36.72	36.38	36.58	36.99	37.70	0.0%
Natural gas	21.51	22.69	23.89	23.85	23.89	24.45	24.94	0.4%
Natural-gas-to-liquids heat and power	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Lease and plant fuel <sup>6</sup>	1.31	1.37	1.43	1.55	1.57	1.59	1.63	0.7%
Pipeline natural gas	0.61	0.65	0.68	0.67	0.67	0.68	0.69	0.2%
Natural gas subtotal	23.43	24.71	26.00	26.07	26.14	26.72	27.26	0.4%
Metallurgical coal	0.40	0.55	0.57	0.48	0.49	0.46	0.43	-1.0%
Other coal	19.23	20.21	17.24	18.01	19.20	19.69	20.18	-0.0%
Coal-to-liquids heat and power	0.00	0.00	0.00	0.26	0.36	0.48	0.60	--
Net coal coke imports	-0.02	-0.01	-0.01	-0.02	-0.03	-0.04	-0.06	9.3%
Coal subtotal	19.62	20.76	17.80	18.73	20.02	20.59	21.15	0.1%
Nuclear / uranium <sup>15</sup>	8.36	8.44	8.68	9.28	9.60	9.56	9.28	0.4%
Biofuels heat and coproducts	0.82	0.84	0.81	0.96	1.27	1.92	2.57	4.6%
Renewable energy <sup>18</sup>	5.68	5.88	7.11	7.61	8.11	8.29	8.71	1.6%
Liquid hydrogen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Electricity imports	0.12	0.09	0.10	0.09	0.08	0.05	0.04	-2.9%
<b>Total</b>	<b>94.71</b>	<b>98.16</b>	<b>97.43</b>	<b>99.32</b>	<b>101.99</b>	<b>104.32</b>	<b>106.93</b>	<b>0.3%</b>
<b>Energy use and related statistics</b>								
Delivered energy use	68.87	71.32	71.59	72.43	73.92	75.64	77.75	0.3%
Total energy use	94.71	98.16	97.43	99.32	101.99	104.32	106.93	0.3%
Ethanol consumed in motor gasoline and E85	0.96	1.11	1.22	1.35	1.55	1.82	2.15	2.7%
Population (millions)	307.84	310.83	326.16	342.01	358.06	374.09	390.09	0.9%
Gross domestic product (billion 2005 dollars)	12703	13088	14803	16740	19185	21725	24539	2.5%
Carbon dioxide emissions (million metric tons)	5424.8	5633.6	5407.2	5434.4	5552.5	5647.3	5757.9	0.1%

<sup>1</sup>Includes wood used for residential heating. See Table A4 and/or Table A17 for estimates of nonmarketed renewable energy consumption for geothermal heat pumps, solar thermal water heating, and electricity generation from wind and solar photovoltaic sources.

<sup>2</sup>Includes ethanol (blends of 15 percent or less) and ethers blended into gasoline.

<sup>3</sup>Excludes ethanol. Includes commercial sector consumption of wood and wood waste, landfill gas, municipal waste, and other biomass for combined heat and power. See Table A5 and/or Table A17 for estimates of nonmarketed renewable energy consumption for solar thermal water heating and electricity generation from wind and solar photovoltaic sources.

<sup>4</sup>Includes energy for combined heat and power plants, except those whose primary business is to sell electricity, or electricity and heat, to the public.

<sup>5</sup>Includes petroleum coke, asphalt, road oil, lubricants, still gas, and miscellaneous petroleum products.

<sup>6</sup>Represents natural gas used in well, field, and lease operations, and in natural gas processing plant machinery.

<sup>7</sup>Includes consumption of energy produced from hydroelectric, wood and wood waste, municipal waste, and other biomass sources. Excludes ethanol blends (15 percent or less) in motor gasoline.

<sup>8</sup>E85 refers to a blend of 85 percent ethanol (renewable) and 15 percent motor gasoline (nonrenewable). To address cold starting issues, the percentage of ethanol varies seasonally. The annual average ethanol content of 74 percent is used for this forecast.

<sup>9</sup>Includes only kerosene type.

<sup>10</sup>Diesel fuel for on- and off- road use.

<sup>11</sup>Includes aviation gasoline and lubricants.

<sup>12</sup>Includes unfinished oils, natural gasoline, motor gasoline blending components, aviation gasoline, lubricants, still gas, asphalt, road oil, petroleum coke, and miscellaneous petroleum products.

<sup>13</sup>Includes electricity generated for sale to the grid and for own use from renewable sources, and non-electric energy from renewable sources. Excludes ethanol and nonmarketed renewable energy consumption for geothermal heat pumps, buildings photovoltaic systems, and solar thermal water heaters.

<sup>14</sup>Includes consumption of energy by electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public.

<sup>15</sup>These values represent the energy obtained from uranium when it is used in light water reactors. The total energy content of uranium is much larger, but alternative processes are required to take advantage of it.

<sup>16</sup>Includes conventional hydroelectric, geothermal, wood and wood waste, biogenic municipal waste, other biomass, wind, photovoltaic, and solar thermal sources. Excludes net electricity imports.

<sup>17</sup>Includes non-biogenic municipal waste not included above.

<sup>18</sup>Includes conventional hydroelectric, geothermal, wood and wood waste, biogenic municipal waste, other biomass, wind, photovoltaic, and solar thermal sources. Excludes ethanol, net electricity imports, and nonmarketed renewable energy consumption for geothermal heat pumps, buildings photovoltaic systems, and solar thermal water heaters.

Btu = British thermal unit.

-- = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 2009 and 2010 are model results and may differ slightly from official EIA data reports.

Sources: 2009 and 2010 consumption based on: U.S. Energy Information Administration (EIA), *Annual Energy Review 2010*, DOE/EIA-0384(2010) (Washington, DC, October 2011). 2009 and 2010 population and gross domestic product: IHS Global Insight Industry and Employment models, August 2011. 2009 and 2010 carbon dioxide emissions: EIA, *Monthly Energy Review, October 2011* DOE/EIA-0035(2011/10) (Washington, DC, October 2011). Projections: EIA, AEO2012 National Energy Modeling System run REF2012.D020112C.