

Appendix A  
**Reference Case**

**Table A1. Total Energy Supply, Disposition, and Price Summary**  
(Quadrillion Btu per Year, Unless Otherwise Noted)

Supply, Disposition, and Prices	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Production</b>								
Crude Oil and Lease Condensate .....	10.75	10.51	12.41	13.19	13.22	13.34	13.50	0.9%
Natural Gas Plant Liquids .....	2.41	2.57	2.27	2.31	2.24	2.32	2.37	-0.3%
Dry Natural Gas .....	19.62	21.14	19.83	20.54	21.90	23.00	23.92	0.5%
Coal <sup>1</sup> .....	23.49	23.86	23.31	23.71	24.36	24.68	25.19	0.2%
Nuclear Power .....	8.46	8.46	8.75	9.26	9.29	9.29	9.41	0.4%
Hydropower .....	2.45	2.46	2.96	2.96	2.98	2.98	2.99	0.7%
Biomass <sup>2</sup> .....	3.15	3.97	4.60	5.63	6.90	7.93	9.27	3.2%
Other Renewable Energy <sup>3</sup> .....	0.99	1.17	3.01	3.01	3.07	3.17	3.36	4.0%
Other <sup>4</sup> .....	0.81	0.10	0.73	0.89	0.94	0.92	0.81	7.9%
<b>Total</b> .....	<b>72.14</b>	<b>74.23</b>	<b>77.88</b>	<b>81.51</b>	<b>84.91</b>	<b>87.63</b>	<b>90.83</b>	<b>0.8%</b>
<b>Imports</b>								
Crude Oil .....	21.91	21.39	19.66	18.95	19.21	19.38	19.34	-0.4%
Liquid Fuels and Other Petroleum <sup>5</sup> .....	6.98	6.38	5.54	5.61	5.76	5.86	6.08	-0.2%
Natural Gas .....	4.72	4.06	3.59	4.10	3.94	3.79	3.49	-0.6%
Other Imports <sup>6</sup> .....	0.99	0.96	0.79	0.96	0.88	0.95	1.32	1.2%
<b>Total</b> .....	<b>34.60</b>	<b>32.79</b>	<b>29.58</b>	<b>29.62</b>	<b>29.80</b>	<b>29.97</b>	<b>30.23</b>	<b>-0.3%</b>
<b>Exports</b>								
Petroleum <sup>7</sup> .....	2.83	3.71	3.53	3.74	3.91	4.02	4.12	0.4%
Natural Gas .....	0.83	1.01	1.14	1.44	1.69	1.87	1.96	2.5%
Coal .....	1.51	2.07	1.49	1.33	1.20	0.87	0.79	-3.5%
<b>Total</b> .....	<b>5.17</b>	<b>6.80</b>	<b>6.16</b>	<b>6.50</b>	<b>6.80</b>	<b>6.76</b>	<b>6.87</b>	<b>0.0%</b>
<b>Discrepancy<sup>8</sup></b> .....	<b>-0.07</b>	<b>0.13</b>	<b>-0.30</b>	<b>-0.38</b>	<b>-0.35</b>	<b>-0.33</b>	<b>-0.32</b>	<b>--</b>
<b>Consumption</b>								
Liquid Fuels and Other Petroleum <sup>9</sup> .....	40.59	38.35	38.81	39.36	40.14	41.08	42.02	0.3%
Natural Gas .....	23.67	23.91	22.35	23.27	24.24	25.01	25.56	0.2%
Coal <sup>10</sup> .....	22.71	22.41	22.35	23.01	23.63	24.25	25.11	0.4%
Nuclear Power .....	8.46	8.46	8.75	9.26	9.29	9.29	9.41	0.4%
Hydropower .....	2.45	2.46	2.96	2.96	2.98	2.98	2.99	0.7%
Biomass <sup>11</sup> .....	2.54	3.10	3.17	3.93	4.70	5.19	5.83	2.4%
Other Renewable Energy <sup>3</sup> .....	0.99	1.17	3.01	3.01	3.07	3.17	3.36	4.0%
Other <sup>12</sup> .....	0.23	0.24	0.20	0.20	0.21	0.20	0.22	-0.3%
<b>Total</b> .....	<b>101.65</b>	<b>100.09</b>	<b>101.61</b>	<b>105.00</b>	<b>108.26</b>	<b>111.18</b>	<b>114.51</b>	<b>0.5%</b>
<b>Prices (2008 dollars per unit)</b>								
Petroleum (dollars per barrel)								
Imported Low Sulfur Light Crude Oil Price <sup>13</sup> ...	73.93	99.57	94.52	108.28	115.09	123.50	133.22	1.1%
Imported Crude Oil Price <sup>13</sup> .....	68.69	92.61	86.88	98.14	104.49	111.49	121.37	1.0%
Natural Gas (dollars per million Btu)								
Price at Henry Hub .....	7.12	8.86	6.27	6.64	6.99	8.05	8.88	0.0%
Wellhead Price <sup>14</sup> .....	6.38	7.85	5.54	5.87	6.18	7.11	7.84	-0.0%
Natural Gas (dollars per thousand cubic feet)								
Wellhead Price <sup>14</sup> .....	6.56	8.07	5.70	6.03	6.35	7.31	8.06	-0.0%
Coal (dollars per ton)								
Minemouth Price <sup>15</sup> .....	26.40	31.26	30.38	30.01	28.19	27.43	28.10	-0.4%
Coal (dollars per million Btu)								
Minemouth Price <sup>15</sup> .....	1.30	1.55	1.52	1.51	1.44	1.41	1.44	-0.3%
Average Delivered Price <sup>16</sup> .....	1.89	2.16	2.11	2.08	2.07	2.09	2.13	-0.0%
Average Electricity Price (cents per kilowatthour)	9.3	9.8	8.9	9.0	9.3	9.7	10.2	0.1%

## Reference Case

**Table A1. Total Energy Supply and Disposition Summary (Continued)**  
(Quadrillion Btu per Year, Unless Otherwise Noted)

Supply, Disposition, and Prices	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Prices (nominal dollars per unit)</b>								
Petroleum (dollars per barrel)								
Imported Low Sulfur Light Crude Oil Price <sup>13</sup> . . .	72.32	99.57	105.33	132.33	156.20	186.40	223.88	3.0%
Imported Crude Oil Price <sup>13</sup> . . . . .	67.19	92.61	96.82	119.94	141.80	168.28	203.97	3.0%
Natural Gas (dollars per million Btu)								
Price at Henry Hub . . . . .	6.96	8.86	6.99	8.11	9.49	12.15	14.92	1.9%
Wellhead Price <sup>14</sup> . . . . .	6.24	7.85	6.17	7.17	8.38	10.73	13.18	1.9%
Natural Gas (dollars per thousand cubic feet)								
Wellhead Price <sup>14</sup> . . . . .	6.42	8.07	6.35	7.37	8.62	11.03	13.55	1.9%
Coal (dollars per ton)								
Minemouth Price <sup>15</sup> . . . . .	25.82	31.26	33.86	36.67	38.25	41.40	47.23	1.5%
Coal (dollars per million Btu)								
Minemouth Price <sup>15</sup> . . . . .	1.27	1.55	1.69	1.84	1.95	2.13	2.43	1.7%
Average Delivered Price <sup>16</sup> . . . . .	1.85	2.16	2.35	2.55	2.81	3.16	3.58	1.9%
Average Electricity Price (cents per kilowatthour)	9.1	9.8	9.9	11.1	12.6	14.7	17.1	2.1%

<sup>1</sup>Includes waste coal.  
<sup>2</sup>Includes grid-connected electricity from wood and wood waste; biomass, such as corn, used for liquid fuels production; and non-electric energy demand from wood. Refer to Table A17 for details.  
<sup>3</sup>Includes grid-connected electricity from landfill gas; biogenic municipal waste; wind; photovoltaic and solar thermal sources; and non-electric energy from renewable sources, such as active and passive solar systems. Excludes electricity imports using renewable sources and nonmarketed renewable energy. See Table A17 for selected nonmarketed residential and commercial renewable energy.  
<sup>4</sup>Includes non-biogenic municipal waste, liquid hydrogen, methanol, and some domestic inputs to refineries.  
<sup>5</sup>Includes imports of finished petroleum products, unfinished oils, alcohols, ethers, blending components, and renewable fuels such as ethanol.  
<sup>6</sup>Includes coal, coal coke (net), and electricity (net).  
<sup>7</sup>Includes crude oil and petroleum products.  
<sup>8</sup>Balancing item. Includes unaccounted for supply, losses, gains, and net storage withdrawals.  
<sup>9</sup>Includes petroleum-derived fuels and non-petroleum derived fuels, such as ethanol and biodiesel, and coal-based synthetic liquids. Petroleum coke, which is a solid, is included. Also included are natural gas plant liquids and crude oil consumed as a fuel. Refer to Table A17 for detailed renewable liquid fuels consumption.  
<sup>10</sup>Excludes coal converted to coal-based synthetic liquids and coal-based synthetic natural gas.  
<sup>11</sup>Includes grid-connected electricity from wood and wood waste, non-electric energy from wood, and biofuels heat and coproducts used in the production of liquid fuels, but excludes the energy content of the liquid fuels.  
<sup>12</sup>Includes non-biogenic municipal waste and net electricity imports.  
<sup>13</sup>Weighted average price delivered to U.S. refiners.  
<sup>14</sup>Represents lower 48 onshore and offshore supplies.  
<sup>15</sup>Includes reported prices for both open market and captive mines.  
<sup>16</sup>Prices weighted by consumption; weighted average excludes residential and commercial prices, and export free-alongside-ship (f.a.s.) prices.  
 Btu = British thermal unit.  
 - - = Not applicable.  
 Note: Totals may not equal sum of components due to independent rounding. Data for 2007 and 2008 are model results and may differ slightly from official EIA data reports.  
**Sources:** 2007 natural gas supply values: Energy Information Administration (EIA), *Natural Gas Annual 2007*, DOE/EIA-0131(2007) (Washington, DC, January 2009). 2008 natural gas supply values and natural gas wellhead price: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2009/07) (Washington, DC, July 2009). 2007 natural gas wellhead price: Minerals Management Service and EIA, *Natural Gas Annual 2007*, DOE/EIA-0131(2007) (Washington, DC, January 2009). 2007 and 2008 coal minemouth and delivered coal prices: EIA, *Annual Coal Report 2008*, DOE/EIA-0584(2008) (Washington, DC, September 2009). 2008 petroleum supply values and 2007 crude oil and lease condensate production: EIA, *Petroleum Supply Annual 2008*, DOE/EIA-0340(2008)/1 (Washington, DC, June 2009). Other 2007 petroleum supply values: EIA, *Petroleum Supply Annual 2007*, DOE/EIA-0340(2007)/1 (Washington, DC, July 2008). 2007 and 2008 low sulfur light crude oil price: EIA, Form EIA-856, "Monthly Foreign Crude Oil Acquisition Report." Other 2007 and 2008 coal values: *Quarterly Coal Report, October-December 2008*, DOE/EIA-0121(2008/4Q) (Washington, DC, March 2009). Other 2007 and 2008 values: EIA, *Annual Energy Review 2008*, DOE/EIA-0384(2008) (Washington, DC, June 2009). **Projections:** EIA, AEO2010 National Energy Modeling System run AEO2010R.D111809A.

**Table A2. Energy Consumption by Sector and Source**  
(Quadrillion Btu per Year, Unless Otherwise Noted)

Sector and Source	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Energy Consumption</b>								
<b>Residential</b>								
Liquefied Petroleum Gases	0.48	0.45	0.41	0.40	0.40	0.40	0.40	-0.4%
Kerosene	0.04	0.04	0.04	0.04	0.03	0.03	0.03	-1.0%
Distillate Fuel Oil	0.73	0.68	0.59	0.53	0.49	0.45	0.41	-1.9%
Liquid Fuels and Other Petroleum Subtotal	1.25	1.18	1.04	0.97	0.92	0.88	0.85	-1.2%
Natural Gas	4.84	5.01	4.85	4.97	5.04	5.03	5.01	0.0%
Coal	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-1.3%
Renewable Energy <sup>1</sup>	0.41	0.45	0.40	0.42	0.42	0.42	0.43	-0.1%
Electricity	4.75	4.71	4.78	5.02	5.30	5.58	5.83	0.8%
<b>Delivered Energy</b>	<b>11.25</b>	<b>11.34</b>	<b>11.07</b>	<b>11.38</b>	<b>11.69</b>	<b>11.93</b>	<b>12.12</b>	<b>0.2%</b>
Electricity Related Losses	10.29	10.20	10.24	10.65	11.08	11.45	11.79	0.5%
<b>Total</b>	<b>21.54</b>	<b>21.54</b>	<b>21.31</b>	<b>22.03</b>	<b>22.76</b>	<b>23.38</b>	<b>23.92</b>	<b>0.4%</b>
<b>Commercial</b>								
Liquefied Petroleum Gases	0.08	0.08	0.09	0.09	0.09	0.09	0.09	0.5%
Motor Gasoline <sup>2</sup>	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.2%
Kerosene	0.01	0.01	0.01	0.01	0.01	0.01	0.01	1.7%
Distillate Fuel Oil	0.38	0.36	0.31	0.29	0.28	0.27	0.26	-1.2%
Residual Fuel Oil	0.08	0.07	0.09	0.09	0.09	0.09	0.09	0.7%
Liquid Fuels and Other Petroleum Subtotal	0.62	0.58	0.55	0.53	0.53	0.52	0.52	-0.4%
Natural Gas	3.10	3.21	3.32	3.43	3.55	3.66	3.79	0.6%
Coal	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.0%
Renewable Energy <sup>3</sup>	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.0%
Electricity	4.56	4.61	5.00	5.37	5.76	6.16	6.55	1.3%
<b>Delivered Energy</b>	<b>8.44</b>	<b>8.58</b>	<b>9.04</b>	<b>9.50</b>	<b>10.00</b>	<b>10.51</b>	<b>11.04</b>	<b>0.9%</b>
Electricity Related Losses	9.88	10.00	10.72	11.39	12.03	12.63	13.27	1.1%
<b>Total</b>	<b>18.32</b>	<b>18.58</b>	<b>19.77</b>	<b>20.89</b>	<b>22.03</b>	<b>23.14</b>	<b>24.30</b>	<b>1.0%</b>
<b>Industrial<sup>4</sup></b>								
Liquefied Petroleum Gases	2.28	2.14	2.31	2.61	2.55	2.46	2.35	0.3%
Motor Gasoline <sup>2</sup>	0.31	0.30	0.30	0.30	0.30	0.30	0.30	0.1%
Distillate Fuel Oil	1.26	1.19	1.19	1.19	1.17	1.17	1.17	-0.1%
Residual Fuel Oil	0.19	0.18	0.14	0.14	0.14	0.14	0.13	-1.1%
Petrochemical Feedstocks	1.31	1.12	1.09	0.81	0.82	0.82	0.81	-1.2%
Other Petroleum <sup>5</sup>	4.45	4.05	4.01	3.95	3.89	3.94	3.92	-0.1%
Liquid Fuels and Other Petroleum Subtotal	9.80	8.99	9.04	9.01	8.87	8.82	8.70	-0.1%
Natural Gas	6.81	6.84	7.08	7.23	7.14	6.94	6.91	0.0%
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>	1.22	1.32	1.11	1.12	1.23	1.26	1.29	-0.1%
Natural Gas Subtotal	8.03	8.16	8.19	8.35	8.37	8.20	8.20	0.0%
Metallurgical Coal	0.60	0.58	0.52	0.54	0.50	0.44	0.36	-1.7%
Other Industrial Coal	1.21	1.17	1.07	1.08	1.07	1.06	1.04	-0.4%
Coal-to-Liquids Heat and Power	0.00	0.00	0.16	0.24	0.34	0.45	0.55	27.6%
Net Coal Coke Imports	0.03	0.04	0.01	0.01	0.01	0.01	-0.00	--
Coal Subtotal	1.83	1.79	1.76	1.88	1.92	1.96	1.95	0.3%
Biofuels Heat and Coproducts <sup>7</sup>	0.40	1.03	0.77	1.02	1.49	1.90	2.56	3.4%
Renewable Energy <sup>8</sup>	1.62	1.50	1.59	1.69	1.74	1.79	1.83	0.7%
Electricity	3.51	3.35	3.40	3.51	3.49	3.47	3.47	0.1%
<b>Delivered Energy</b>	<b>25.19</b>	<b>24.81</b>	<b>24.76</b>	<b>25.45</b>	<b>25.88</b>	<b>26.14</b>	<b>26.70</b>	<b>0.3%</b>
Electricity Related Losses	7.60	7.26	7.29	7.45	7.29	7.12	7.01	-0.1%
<b>Total</b>	<b>32.79</b>	<b>32.07</b>	<b>32.05</b>	<b>32.90</b>	<b>33.18</b>	<b>33.26</b>	<b>33.72</b>	<b>0.2%</b>

## Reference Case

**Table A2. Energy Consumption by Sector and Source (Continued)**  
(Quadrillion Btu per Year, Unless Otherwise Noted)

Sector and Source	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Transportation</b>								
Liquefied Petroleum Gases .....	0.03	0.02	0.02	0.02	0.02	0.02	0.03	0.7%
E85 <sup>9</sup> .....	0.00	0.01	0.01	0.26	0.52	0.82	1.75	23.3%
Motor Gasoline <sup>2</sup> .....	17.32	16.76	17.02	16.77	16.91	16.97	16.44	-0.1%
Jet Fuel <sup>10</sup> .....	3.27	3.15	3.26	3.48	3.62	3.72	3.80	0.7%
Distillate Fuel Oil <sup>11</sup> .....	6.46	6.09	6.32	6.72	7.13	7.69	8.28	1.1%
Residual Fuel Oil .....	0.99	0.93	0.94	0.95	0.96	0.97	0.97	0.2%
Other Petroleum <sup>12</sup> .....	0.18	0.17	0.17	0.18	0.18	0.18	0.19	0.3%
Liquid Fuels and Other Petroleum Subtotal ..	28.26	27.14	27.73	28.38	29.34	30.37	31.47	0.5%
Pipeline Fuel Natural Gas .....	0.64	0.64	0.61	0.63	0.72	0.74	0.74	0.5%
Compressed Natural Gas .....	0.04	0.04	0.05	0.08	0.11	0.15	0.19	5.8%
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	0.05	0.06	3.5%
<b>Delivered Energy</b> .....	<b>28.96</b>	<b>27.85</b>	<b>28.42</b>	<b>29.12</b>	<b>30.21</b>	<b>31.30</b>	<b>32.46</b>	<b>0.6%</b>
Electricity Related Losses .....	0.05	0.05	0.05	0.06	0.08	0.09	0.11	3.2%
<b>Total</b> .....	<b>29.01</b>	<b>27.90</b>	<b>28.48</b>	<b>29.18</b>	<b>30.29</b>	<b>31.40</b>	<b>32.58</b>	<b>0.6%</b>
<b>Delivered Energy Consumption for All Sectors</b>								
Liquefied Petroleum Gases .....	2.88	2.70	2.82	3.12	3.06	2.98	2.87	0.2%
E85 <sup>9</sup> .....	0.00	0.01	0.01	0.26	0.52	0.82	1.75	23.3%
Motor Gasoline <sup>2</sup> .....	17.69	17.12	17.38	17.14	17.28	17.33	16.80	-0.1%
Jet Fuel <sup>10</sup> .....	3.27	3.15	3.26	3.48	3.62	3.72	3.80	0.7%
Kerosene .....	0.07	0.06	0.06	0.06	0.06	0.06	0.06	-0.3%
Distillate Fuel Oil .....	8.83	8.33	8.40	8.73	9.07	9.57	10.13	0.7%
Residual Fuel Oil .....	1.26	1.19	1.17	1.17	1.18	1.19	1.19	0.0%
Petrochemical Feedstocks .....	1.31	1.12	1.09	0.81	0.82	0.82	0.81	-1.2%
Other Petroleum <sup>13</sup> .....	4.62	4.21	4.17	4.12	4.06	4.11	4.10	-0.1%
Liquid Fuels and Other Petroleum Subtotal ..	39.93	37.89	38.35	38.89	39.66	40.59	41.53	0.3%
Natural Gas .....	14.79	15.10	15.31	15.71	15.84	15.78	15.91	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>5</sup> .....	1.22	1.32	1.11	1.12	1.23	1.26	1.29	-0.1%
Pipeline Natural Gas .....	0.64	0.64	0.61	0.63	0.72	0.74	0.74	0.5%
Natural Gas Subtotal .....	16.65	17.07	17.03	17.46	17.79	17.78	17.94	0.2%
Metallurgical Coal .....	0.60	0.58	0.52	0.54	0.50	0.44	0.36	-1.7%
Other Coal .....	1.28	1.24	1.15	1.16	1.15	1.13	1.11	-0.4%
Coal-to-Liquids Heat and Power .....	0.00	0.00	0.16	0.24	0.34	0.45	0.55	27.6%
Net Coal Coke Imports .....	0.03	0.04	0.01	0.01	0.01	0.01	-0.00	--
Coal Subtotal .....	1.91	1.86	1.84	1.95	2.00	2.03	2.02	0.3%
Biofuels Heat and Coproducts <sup>7</sup> .....	0.40	1.03	0.77	1.02	1.49	1.90	2.56	3.4%
Renewable Energy <sup>14</sup> .....	2.13	2.05	2.10	2.21	2.27	2.32	2.37	0.5%
Liquid Hydrogen .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Electricity .....	12.84	12.69	13.20	13.93	14.58	15.26	15.90	0.8%
<b>Delivered Energy</b> .....	<b>73.84</b>	<b>72.59</b>	<b>73.30</b>	<b>75.45</b>	<b>77.78</b>	<b>79.88</b>	<b>82.33</b>	<b>0.5%</b>
Electricity Related Losses .....	27.81	27.50	28.31	29.55	30.48	31.29	32.19	0.6%
<b>Total</b> .....	<b>101.65</b>	<b>100.09</b>	<b>101.61</b>	<b>105.00</b>	<b>108.26</b>	<b>111.18</b>	<b>114.51</b>	<b>0.5%</b>
<b>Electric Power<sup>15</sup></b>								
Distillate Fuel Oil .....	0.11	0.10	0.12	0.13	0.13	0.14	0.14	1.1%
Residual Fuel Oil .....	0.55	0.36	0.33	0.34	0.34	0.35	0.35	-0.1%
Liquid Fuels and Other Petroleum Subtotal ..	0.66	0.47	0.46	0.47	0.48	0.49	0.49	0.2%
Natural Gas .....	7.03	6.84	5.32	5.81	6.45	7.23	7.62	0.4%
Steam Coal .....	20.81	20.55	20.51	21.06	21.63	22.22	23.09	0.4%
Nuclear Power .....	8.46	8.46	8.75	9.26	9.29	9.29	9.41	0.4%
Renewable Energy <sup>16</sup> .....	3.45	3.65	6.27	6.69	7.00	7.13	7.26	2.6%
Electricity Imports .....	0.11	0.11	0.07	0.07	0.08	0.07	0.09	-0.9%
<b>Total<sup>17</sup></b> .....	<b>40.65</b>	<b>40.20</b>	<b>41.51</b>	<b>43.48</b>	<b>45.06</b>	<b>46.55</b>	<b>48.09</b>	<b>0.7%</b>

**Table A2. Energy Consumption by Sector and Source (Continued)**  
(Quadrillion Btu per Year, Unless Otherwise Noted)

Sector and Source	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Total Energy Consumption</b>								
Liquefied Petroleum Gases .....	2.88	2.70	2.82	3.12	3.06	2.98	2.87	0.2%
E85 <sup>9</sup> .....	0.00	0.01	0.01	0.26	0.52	0.82	1.75	23.3%
Motor Gasoline <sup>2</sup> .....	17.69	17.12	17.38	17.14	17.28	17.33	16.80	-0.1%
Jet Fuel <sup>10</sup> .....	3.27	3.15	3.26	3.48	3.62	3.72	3.80	0.7%
Kerosene .....	0.07	0.06	0.06	0.06	0.06	0.06	0.06	-0.3%
Distillate Fuel Oil .....	8.94	8.43	8.53	8.86	9.20	9.71	10.27	0.7%
Residual Fuel Oil .....	1.81	1.55	1.50	1.51	1.52	1.54	1.55	-0.0%
Petrochemical Feedstocks .....	1.31	1.12	1.09	0.81	0.82	0.82	0.81	-1.2%
Other Petroleum <sup>13</sup> .....	4.62	4.21	4.17	4.12	4.06	4.11	4.10	-0.1%
Liquid Fuels and Other Petroleum Subtotal ..	40.59	38.35	38.81	39.36	40.14	41.08	42.02	0.3%
Natural Gas .....	21.82	21.94	20.63	21.51	22.29	23.01	23.53	0.3%
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> .....	1.22	1.32	1.11	1.12	1.23	1.26	1.29	-0.1%
Pipeline Natural Gas .....	0.64	0.64	0.61	0.63	0.72	0.74	0.74	0.5%
Natural Gas Subtotal .....	23.67	23.91	22.35	23.27	24.24	25.01	25.56	0.2%
Metallurgical Coal .....	0.60	0.58	0.52	0.54	0.50	0.44	0.36	-1.7%
Other Coal .....	22.09	21.79	21.66	22.22	22.78	23.36	24.20	0.4%
Coal-to-Liquids Heat and Power .....	0.00	0.00	0.16	0.24	0.34	0.45	0.55	27.6%
Net Coal Coke Imports .....	0.03	0.04	0.01	0.01	0.01	0.01	-0.00	--
Coal Subtotal .....	22.71	22.41	22.35	23.01	23.63	24.25	25.11	0.4%
Nuclear Power .....	8.46	8.46	8.75	9.26	9.29	9.29	9.41	0.4%
Biofuels Heat and Coproducts <sup>7</sup> .....	0.40	1.03	0.77	1.02	1.49	1.90	2.56	3.4%
Renewable Energy <sup>18</sup> .....	5.58	5.70	8.37	8.90	9.27	9.44	9.63	2.0%
Liquid Hydrogen .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Electricity Imports .....	0.11	0.11	0.07	0.07	0.08	0.07	0.09	-0.9%
<b>Total</b> .....	<b>101.65</b>	<b>100.09</b>	<b>101.61</b>	<b>105.00</b>	<b>108.26</b>	<b>111.18</b>	<b>114.51</b>	<b>0.5%</b>
<b>Energy Use and Related Statistics</b>								
Delivered Energy Use .....	73.84	72.59	73.30	75.45	77.78	79.88	82.33	0.5%
Total Energy Use .....	101.65	100.09	101.61	105.00	108.26	111.18	114.51	0.5%
Ethanol Consumed in Motor Gasoline and E85	0.56	0.82	1.23	1.38	1.56	1.76	2.35	4.0%
Population (millions) .....	302.41	305.37	326.70	342.55	358.62	374.67	390.70	0.9%
Gross Domestic Product (billion 2000 dollars)	11524	11652	13289	15416	17561	19883	22362	2.4%
Carbon Dioxide Emissions (million metric tons)	5986.4	5814.4	5730.7	5851.5	6015.8	6175.9	6320.4	0.3%

<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 hot water heating, and electricity generation from wind and solar photovoltaic sources.

<sup>2</sup>Includes ethanol (blends of 10 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 hot 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>The energy content of biofuels feedstock minus the energy content of liquid fuel produced.

<sup>8</sup>Includes consumption of energy produced from hydroelectric, wood and wood waste, municipal waste, and other biomass sources. Excludes ethanol blends (10 percent or less) in motor gasoline.

<sup>9</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>10</sup>Includes only kerosene type.

<sup>11</sup>Diesel fuel for on- and off- road use.

<sup>12</sup>Includes aviation gasoline and lubricants.

<sup>13</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>14</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 hot water heaters.

<sup>15</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. Includes small power producers and exempt wholesale generators.

<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 hot water heaters.

Btu = British thermal unit.

-- = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 and 2008 are model results and may differ slightly from official EIA data reports.

Sources: 2007 and 2008 consumption based on: Energy Information Administration (EIA), *Annual Energy Review 2008*, DOE/EIA-0384(2008) (Washington, DC, June 2009). 2007 and 2008 population and gross domestic product: IHS Global Insight Industry and Employment models, August 2009. 2007 and 2008 carbon dioxide emissions: EIA, *Emissions of Greenhouse Gases in the United States 2008*, DOE/EIA-0573(2008) (Washington, DC, December 2009). Projections: EIA, AEO2010 National Energy Modeling System run AEO2010R.D111809A.

## Reference Case

**Table A3. Energy Prices by Sector and Source**  
(2008 Dollars per Million Btu, Unless Otherwise Noted)

Sector and Source	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Residential</b>								
Liquefied Petroleum Gases .....	26.25	29.35	28.03	30.29	31.55	32.81	34.65	0.6%
Distillate Fuel Oil .....	20.30	24.47	21.08	24.10	25.23	26.61	28.66	0.6%
Natural Gas .....	12.94	13.48	11.56	11.95	12.29	13.44	14.40	0.2%
Electricity .....	31.82	33.29	31.43	31.84	32.26	33.46	34.71	0.2%
<b>Commercial</b>								
Liquefied Petroleum Gases .....	20.65	26.15	24.77	27.02	28.26	29.50	31.32	0.7%
Distillate Fuel Oil .....	17.48	21.50	18.72	21.60	22.72	24.11	26.13	0.7%
Residual Fuel Oil .....	8.39	15.52	13.13	15.46	16.54	17.54	18.84	0.7%
Natural Gas .....	11.20	11.94	9.99	10.35	10.70	11.78	12.66	0.2%
Electricity .....	28.81	30.47	26.55	27.12	27.72	28.99	30.37	-0.0%
<b>Industrial<sup>1</sup></b>								
Liquefied Petroleum Gases .....	22.01	24.20	22.49	24.86	26.12	27.38	29.25	0.7%
Distillate Fuel Oil .....	18.07	22.31	19.00	21.83	22.97	24.40	26.48	0.6%
Residual Fuel Oil .....	8.84	16.31	16.47	18.20	19.23	20.27	21.72	1.1%
Natural Gas <sup>2</sup> .....	7.58	9.11	6.45	6.70	7.02	7.98	8.73	-0.2%
Metallurgical Coal .....	3.69	4.49	5.08	5.32	5.24	5.11	5.06	0.4%
Other Industrial Coal .....	2.48	2.84	2.69	2.66	2.63	2.66	2.71	-0.2%
Coal to Liquids .....	--	--	1.42	1.46	1.49	1.44	1.51	--
Electricity .....	19.02	20.21	17.37	17.92	18.50	19.58	20.71	0.1%
<b>Transportation</b>								
Liquefied Petroleum Gases <sup>3</sup> .....	23.83	29.93	27.88	30.13	31.36	32.58	34.38	0.5%
E85 <sup>4</sup> .....	27.43	26.93	25.55	26.95	28.86	30.64	32.23	0.7%
Motor Gasoline <sup>5</sup> .....	23.66	26.76	25.37	27.59	28.87	30.42	32.33	0.7%
Jet Fuel <sup>6</sup> .....	15.77	22.71	19.04	21.69	22.92	24.51	26.48	0.6%
Diesel Fuel (distillate fuel oil) <sup>7</sup> .....	21.55	27.65	22.93	25.60	26.63	27.96	29.96	0.3%
Residual Fuel Oil .....	9.19	14.49	13.58	14.99	15.93	17.10	18.60	0.9%
Natural Gas <sup>8</sup> .....	13.84	15.96	13.37	13.44	13.43	14.19	14.78	-0.3%
Electricity .....	32.03	33.73	28.79	28.55	28.63	31.01	33.26	-0.1%
<b>Electric Power<sup>9</sup></b>								
Distillate Fuel Oil .....	15.75	19.37	17.36	20.25	21.35	22.71	24.70	0.9%
Residual Fuel Oil .....	9.04	14.56	15.53	17.22	18.30	19.55	21.12	1.4%
Natural Gas .....	7.26	9.09	6.08	6.42	6.75	7.73	8.46	-0.3%
Steam Coal .....	1.80	2.05	2.01	1.98	1.99	2.03	2.09	0.1%
<b>Average Price to All Users<sup>10</sup></b>								
Liquefied Petroleum Gases .....	18.94	20.19	20.30	22.15	23.34	24.55	26.37	1.0%
E85 <sup>4</sup> .....	27.43	26.93	25.55	26.95	28.86	30.64	32.23	0.7%
Motor Gasoline <sup>5</sup> .....	23.55	26.54	25.36	27.59	28.87	30.41	32.32	0.7%
Jet Fuel .....	15.77	22.71	19.04	21.69	22.92	24.51	26.48	0.6%
Distillate Fuel Oil .....	20.71	26.27	22.03	24.79	25.89	27.29	29.34	0.4%
Residual Fuel Oil .....	9.07	14.77	14.26	15.81	16.80	17.96	19.46	1.0%
Natural Gas .....	9.19	10.53	8.14	8.44	8.75	9.74	10.54	0.0%
Metallurgical Coal .....	3.69	4.49	5.08	5.32	5.24	5.11	5.06	0.4%
Other Coal .....	1.84	2.10	2.05	2.02	2.02	2.06	2.12	0.0%
Coal to Liquids .....	--	--	1.42	1.46	1.49	1.44	1.51	--
Electricity .....	27.25	28.81	25.95	26.51	27.17	28.49	29.87	0.1%
<b>Non-Renewable Energy Expenditures by Sector (billion 2008 dollars)</b>								
Residential .....	241.67	254.66	230.89	245.14	258.70	280.40	301.11	0.6%
Commercial .....	176.61	191.19	176.90	193.15	210.07	234.79	261.07	1.2%
Industrial .....	219.69	244.81	213.14	234.86	241.75	253.51	267.18	0.3%
Transportation .....	613.37	705.86	655.77	729.77	782.71	846.64	908.01	0.9%
Total Non-Renewable Expenditures .....	1251.35	1396.52	1276.69	1402.91	1493.23	1615.34	1737.37	0.8%
Transportation Renewable Expenditures .....	0.05	0.17	0.21	7.12	15.06	25.05	56.42	24.1%
<b>Total Expenditures .....</b>	<b>1251.39</b>	<b>1396.69</b>	<b>1276.90</b>	<b>1410.03</b>	<b>1508.29</b>	<b>1640.39</b>	<b>1793.79</b>	<b>0.9%</b>

**Table A3. Energy Prices by Sector and Source (Continued)**  
(Nominal Dollars per Million Btu, Unless Otherwise Noted)

Sector and Source	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Residential</b>								
Liquefied Petroleum Gases .....	25.67	29.35	31.23	37.02	42.82	49.52	58.23	2.6%
Distillate Fuel Oil .....	19.86	24.47	23.49	29.45	34.24	40.16	48.16	2.5%
Natural Gas .....	12.66	13.48	12.88	14.61	16.68	20.29	24.20	2.2%
Electricity .....	31.12	33.29	35.02	38.92	43.78	50.50	58.33	2.1%
<b>Commercial</b>								
Liquefied Petroleum Gases .....	20.20	26.15	27.61	33.02	38.35	44.53	52.64	2.6%
Distillate Fuel Oil .....	17.10	21.50	20.86	26.39	30.83	36.38	43.92	2.7%
Residual Fuel Oil .....	8.21	15.52	14.63	18.90	22.45	26.47	31.66	2.7%
Natural Gas .....	10.96	11.94	11.14	12.65	14.53	17.78	21.27	2.2%
Electricity .....	28.18	30.47	29.58	33.15	37.62	43.75	51.04	1.9%
<b>Industrial<sup>1</sup></b>								
Liquefied Petroleum Gases .....	21.53	24.20	25.06	30.38	35.45	41.33	49.15	2.7%
Distillate Fuel Oil .....	17.68	22.31	21.18	26.68	31.18	36.83	44.51	2.6%
Residual Fuel Oil .....	8.65	16.31	18.35	22.24	26.10	30.60	36.50	3.0%
Natural Gas <sup>2</sup> .....	7.41	9.11	7.18	8.19	9.52	12.04	14.67	1.8%
Metallurgical Coal .....	3.61	4.49	5.66	6.50	7.11	7.72	8.50	2.4%
Other Industrial Coal .....	2.43	2.84	3.00	3.26	3.56	4.01	4.55	1.8%
Coal to Liquids .....	--	--	1.58	1.79	2.02	2.18	2.53	--
Electricity .....	18.60	20.21	19.36	21.90	25.11	29.55	34.80	2.0%
<b>Transportation</b>								
Liquefied Petroleum Gases <sup>3</sup> .....	23.31	29.93	31.07	36.82	42.56	49.17	57.77	2.5%
E85 <sup>4</sup> .....	26.83	26.93	28.47	32.94	39.17	46.25	54.17	2.6%
Motor Gasoline <sup>5</sup> .....	23.15	26.76	28.27	33.72	39.18	45.91	54.33	2.7%
Jet Fuel <sup>6</sup> .....	15.42	22.71	21.21	26.51	31.10	36.99	44.51	2.5%
Diesel Fuel (distillate fuel oil) <sup>7</sup> .....	21.08	27.65	25.56	31.28	36.13	42.20	50.35	2.2%
Residual Fuel Oil .....	8.99	14.49	15.13	18.32	21.63	25.81	31.26	2.9%
Natural Gas <sup>8</sup> .....	13.54	15.96	14.90	16.43	18.23	21.42	24.84	1.7%
Electricity .....	31.32	33.73	32.08	34.89	38.86	46.80	55.89	1.9%
<b>Electric Power<sup>9</sup></b>								
Distillate Fuel Oil .....	15.41	19.37	19.35	24.75	28.98	34.28	41.52	2.9%
Residual Fuel Oil .....	8.84	14.56	17.30	21.05	24.83	29.50	35.49	3.4%
Natural Gas .....	7.10	9.09	6.77	7.85	9.17	11.66	14.22	1.7%
Steam Coal .....	1.76	2.05	2.24	2.42	2.69	3.06	3.51	2.0%



# Reference Case

**Table A3. Energy Prices by Sector and Source (Continued)**  
(Nominal Dollars per Million Btu, Unless Otherwise Noted)

Sector and Source	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Average Price to All Users<sup>10</sup></b>								
Liquefied Petroleum Gases .....	18.53	20.19	22.62	27.06	31.68	37.05	44.32	3.0%
E85 <sup>4</sup> .....	26.83	26.93	28.47	32.94	39.17	46.25	54.17	2.6%
Motor Gasoline <sup>5</sup> .....	23.03	26.54	28.27	33.71	39.17	45.90	54.32	2.7%
Jet Fuel .....	15.42	22.71	21.21	26.51	31.10	36.99	44.51	2.5%
Distillate Fuel Oil .....	20.26	26.27	24.55	30.30	35.14	41.20	49.31	2.4%
Residual Fuel Oil .....	8.87	14.77	15.89	19.33	22.80	27.11	32.70	3.0%
Natural Gas .....	8.99	10.53	9.07	10.32	11.88	14.70	17.71	1.9%
Metallurgical Coal .....	3.61	4.49	5.66	6.50	7.11	7.72	8.50	2.4%
Other Coal .....	1.80	2.10	2.28	2.47	2.74	3.11	3.56	2.0%
Coal to Liquids .....	--	--	1.58	1.79	2.02	2.18	2.53	--
Electricity .....	26.66	28.81	28.92	32.40	36.87	43.00	50.19	2.1%
<b>Non-Renewable Energy Expenditures by Sector (billion nominal dollars)</b>								
Residential .....	236.38	254.66	257.29	299.59	351.09	423.22	506.03	2.6%
Commercial .....	172.75	191.19	197.13	236.05	285.09	354.37	438.74	3.1%
Industrial .....	214.89	244.81	237.51	287.03	328.09	382.62	449.00	2.3%
Transportation .....	599.94	705.86	730.78	891.87	1062.24	1277.85	1525.95	2.9%
Total Non-Renewable Expenditures .....	1223.96	1396.52	1422.72	1714.54	2026.51	2438.06	2919.72	2.8%
Transportation Renewable Expenditures .....	0.04	0.17	0.24	8.70	20.44	37.81	94.81	26.5%
<b>Total Expenditures .....</b>	<b>1224.00</b>	<b>1396.69</b>	<b>1422.95</b>	<b>1723.24</b>	<b>2046.94</b>	<b>2475.87</b>	<b>3014.53</b>	<b>2.9%</b>

<sup>1</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>2</sup>Excludes use for lease and plant fuel.

<sup>3</sup>Includes Federal and State taxes while excluding county and local taxes.

<sup>4</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>5</sup>Sales weighted-average price for all grades. Includes Federal, State and local taxes.

<sup>6</sup>Kerosene-type jet fuel. Includes Federal and State taxes while excluding county and local taxes.

<sup>7</sup>Diesel fuel for on-road use. Includes Federal and State taxes while excluding county and local taxes.

<sup>8</sup>Compressed natural gas used as a vehicle fuel. Includes estimated motor vehicle fuel taxes and estimated dispensing costs or charges.

<sup>9</sup>Includes electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public.

<sup>10</sup>Weighted averages of end-use fuel prices are derived from the prices shown in each sector and the corresponding sectoral consumption.

Btu = British thermal unit.

-- = Not applicable.

Note: Data for 2007 and 2008 are model results and may differ slightly from official EIA data reports.

**Sources:** 2007 and 2008 prices for motor gasoline, distillate fuel oil, and jet fuel are based on prices in the Energy Information Administration (EIA), *Petroleum Marketing Annual 2008*, DOE/EIA-0487(2008) (Washington, DC, August 2009). 2007 residential and commercial natural gas delivered prices: EIA, *Natural Gas Annual 2007*, DOE/EIA-0131(2007) (Washington, DC, January 2009). 2008 residential and commercial natural gas delivered prices: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2009/07) (Washington, DC, July 2009). 2007 and 2008 industrial natural gas delivered prices are estimated based on: EIA, *Manufacturing Energy Consumption Survey* and industrial and wellhead prices from the *Natural Gas Annual 2007*, DOE/EIA-0131(2007) (Washington, DC, January 2009) and the *Natural Gas Monthly*, DOE/EIA-0130(2009/07) (Washington, DC, July 2009). 2007 transportation sector natural gas delivered prices are based on: EIA, *Natural Gas Annual 2007*, DOE/EIA-0131(2007) (Washington, DC, January 2009) and estimated State taxes, Federal taxes, and dispensing costs or charges. 2008 transportation sector natural gas delivered prices are model results. 2007 and 2008 electric power sector natural gas prices: EIA, *Electric Power Monthly*, DOE/EIA-0226, April 2008 and April 2009, Table 4.13.B. 2007 and 2008 coal prices based on: EIA, *Quarterly Coal Report, October-December 2008*, DOE/EIA-0121(2008/4Q) (Washington, DC, March 2009) and EIA, AEO2010 National Energy Modeling System run AEO2010R.D111809A. 2007 and 2008 electricity prices: EIA, *Annual Energy Review 2008*, DOE/EIA-0384(2008) (Washington, DC, June 2009). 2007 and 2008 E85 prices derived from monthly prices in the Clean Cities Alternative Fuel Price Report. **Projections:** EIA, AEO2010 National Energy Modeling System run AEO2010R.D111809A.



**Table A4. Residential Sector Key Indicators and Consumption**  
(Quadrillion Btu per Year, Unless Otherwise Noted)

Key Indicators and Consumption	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Key Indicators</b>								
<b>Households (millions)</b>								
Single-Family .....	80.79	81.32	87.69	92.78	97.25	101.30	104.85	0.9%
Multifamily .....	24.91	25.27	27.01	28.86	30.82	32.73	34.59	1.2%
Mobile Homes .....	6.77	6.74	6.63	6.94	7.17	7.31	7.36	0.3%
<b>Total .....</b>	<b>112.48</b>	<b>113.33</b>	<b>121.33</b>	<b>128.58</b>	<b>135.25</b>	<b>141.34</b>	<b>146.79</b>	<b>1.0%</b>
<b>Average House Square Footage .....</b>	<b>1646</b>	<b>1658</b>	<b>1763</b>	<b>1831</b>	<b>1888</b>	<b>1938</b>	<b>1982</b>	<b>0.7%</b>
<b>Energy Intensity</b>								
<b>(million Btu per household)</b>								
Delivered Energy Consumption .....	100.1	100.1	91.2	88.5	86.4	84.4	82.6	-0.7%
Total Energy Consumption .....	191.5	190.1	175.7	171.3	168.3	165.4	162.9	-0.6%
<b>(thousand Btu per square foot)</b>								
Delivered Energy Consumption .....	60.8	60.4	51.8	48.4	45.8	43.5	41.7	-1.4%
Total Energy Consumption .....	116.4	114.6	99.6	93.6	89.1	85.3	82.2	-1.2%
<b>Delivered Energy Consumption by Fuel</b>								
<b>Electricity</b>								
Space Heating .....	0.27	0.28	0.28	0.28	0.28	0.28	0.28	-0.1%
Space Cooling .....	0.91	0.77	0.83	0.87	0.92	0.96	0.99	0.9%
Water Heating .....	0.43	0.43	0.48	0.51	0.53	0.53	0.53	0.7%
Refrigeration .....	0.38	0.38	0.36	0.37	0.39	0.41	0.43	0.5%
Cooking .....	0.10	0.11	0.12	0.12	0.13	0.14	0.15	1.2%
Clothes Dryers .....	0.26	0.26	0.27	0.28	0.29	0.31	0.32	0.7%
Freezers .....	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.6%
Lighting .....	0.73	0.72	0.57	0.53	0.52	0.52	0.52	-1.2%
Clothes Washers <sup>1</sup> .....	0.03	0.03	0.03	0.03	0.03	0.03	0.03	-0.5%
Dishwashers <sup>1</sup> .....	0.09	0.09	0.09	0.10	0.10	0.11	0.12	0.9%
Color Televisions and Set-Top Boxes .....	0.32	0.35	0.39	0.42	0.44	0.47	0.50	1.4%
Personal Computers and Related Equipment .....	0.15	0.17	0.19	0.19	0.19	0.21	0.21	0.9%
Furnace Fans and Boiler Circulation Pumps .....	0.13	0.14	0.15	0.16	0.18	0.19	0.19	1.2%
Other Uses <sup>2</sup> .....	0.86	0.89	0.94	1.07	1.21	1.34	1.46	1.9%
<b>Delivered Energy .....</b>	<b>4.75</b>	<b>4.71</b>	<b>4.78</b>	<b>5.02</b>	<b>5.30</b>	<b>5.58</b>	<b>5.83</b>	<b>0.8%</b>
<b>Natural Gas</b>								
Space Heating .....	3.21	3.38	3.20	3.27	3.31	3.32	3.33	-0.1%
Space Cooling .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Water Heating .....	1.34	1.33	1.35	1.40	1.42	1.40	1.36	0.1%
Cooking .....	0.22	0.22	0.22	0.23	0.23	0.24	0.24	0.4%
Clothes Dryers .....	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.6%
<b>Delivered Energy .....</b>	<b>4.84</b>	<b>5.01</b>	<b>4.85</b>	<b>4.97</b>	<b>5.04</b>	<b>5.03</b>	<b>5.01</b>	<b>0.0%</b>
<b>Distillate Fuel Oil</b>								
Space Heating .....	0.61	0.58	0.51	0.47	0.43	0.40	0.37	-1.6%
Water Heating .....	0.12	0.11	0.08	0.07	0.06	0.05	0.04	-3.3%
<b>Delivered Energy .....</b>	<b>0.73</b>	<b>0.68</b>	<b>0.59</b>	<b>0.53</b>	<b>0.49</b>	<b>0.45</b>	<b>0.41</b>	<b>-1.9%</b>
<b>Liquefied Petroleum Gases</b>								
Space Heating .....	0.22	0.19	0.16	0.14	0.14	0.13	0.12	-1.6%
Water Heating .....	0.09	0.09	0.06	0.05	0.05	0.04	0.04	-3.3%
Cooking .....	0.03	0.03	0.03	0.03	0.03	0.03	0.03	-0.7%
Other Uses <sup>3</sup> .....	0.14	0.15	0.16	0.18	0.19	0.21	0.22	1.5%
<b>Delivered Energy .....</b>	<b>0.48</b>	<b>0.45</b>	<b>0.41</b>	<b>0.40</b>	<b>0.40</b>	<b>0.40</b>	<b>0.40</b>	<b>-0.4%</b>
Marketed Renewables (wood) <sup>4</sup> .....	0.41	0.45	0.40	0.42	0.42	0.42	0.43	-0.1%
Other Fuels <sup>5</sup> .....	0.05	0.05	0.04	0.04	0.04	0.04	0.04	-1.0%

## Reference Case

**Table A4. Residential Sector Key Indicators and Consumption (Continued)**  
(Quadrillion Btu per Year, Unless Otherwise Noted)

Key Indicators and Consumption	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Delivered Energy Consumption by End Use</b>								
Space Heating .....	4.76	4.93	4.59	4.62	4.62	4.58	4.56	-0.3%
Space Cooling .....	0.91	0.77	0.83	0.87	0.92	0.96	0.99	0.9%
Water Heating .....	1.97	1.96	1.97	2.02	2.05	2.02	1.97	0.0%
Refrigeration .....	0.38	0.38	0.36	0.37	0.39	0.41	0.43	0.5%
Cooking .....	0.35	0.35	0.36	0.38	0.39	0.40	0.41	0.6%
Clothes Dryers .....	0.34	0.34	0.35	0.36	0.37	0.39	0.41	0.7%
Freezers .....	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.6%
Lighting .....	0.73	0.72	0.57	0.53	0.52	0.52	0.52	-1.2%
Clothes Washers <sup>1</sup> .....	0.03	0.03	0.03	0.03	0.03	0.03	0.03	-0.5%
Dishwashers <sup>1</sup> .....	0.09	0.09	0.09	0.10	0.10	0.11	0.12	0.9%
Color Televisions and Set-Top Boxes .....	0.32	0.35	0.39	0.42	0.44	0.47	0.50	1.4%
Personal Computers and Related Equipment .....	0.15	0.17	0.19	0.19	0.19	0.21	0.21	0.9%
Furnace Fans and Boiler Circulation Pumps .....	0.13	0.14	0.15	0.16	0.18	0.19	0.19	1.2%
Other Uses <sup>6</sup> .....	1.00	1.03	1.11	1.25	1.40	1.55	1.68	1.8%
<b>Delivered Energy</b> .....	<b>11.25</b>	<b>11.34</b>	<b>11.07</b>	<b>11.38</b>	<b>11.69</b>	<b>11.93</b>	<b>12.12</b>	<b>0.2%</b>
<b>Electricity Related Losses</b> .....	<b>10.29</b>	<b>10.20</b>	<b>10.24</b>	<b>10.65</b>	<b>11.08</b>	<b>11.45</b>	<b>11.79</b>	<b>0.5%</b>
<b>Total Energy Consumption by End Use</b>								
Space Heating .....	5.34	5.54	5.18	5.22	5.21	5.16	5.13	-0.3%
Space Cooling .....	2.88	2.45	2.62	2.72	2.83	2.93	3.01	0.8%
Water Heating .....	2.90	2.90	2.99	3.11	3.16	3.12	3.03	0.2%
Refrigeration .....	1.21	1.19	1.13	1.16	1.20	1.26	1.31	0.3%
Cooking .....	0.58	0.58	0.61	0.64	0.67	0.69	0.71	0.7%
Clothes Dryers .....	0.91	0.91	0.93	0.96	0.99	1.02	1.06	0.6%
Freezers .....	0.26	0.25	0.25	0.26	0.27	0.28	0.28	0.4%
Lighting .....	2.30	2.30	1.79	1.67	1.60	1.57	1.58	-1.4%
Clothes Washers <sup>1</sup> .....	0.11	0.11	0.09	0.08	0.08	0.09	0.09	-0.7%
Dishwashers <sup>1</sup> .....	0.30	0.29	0.29	0.30	0.32	0.34	0.36	0.7%
Color Televisions and Set-Top Boxes .....	1.03	1.09	1.23	1.30	1.37	1.44	1.51	1.2%
Personal Computers and Related Equipment .....	0.48	0.53	0.60	0.60	0.60	0.63	0.64	0.7%
Furnace Fans and Boiler Circulation Pumps .....	0.41	0.44	0.47	0.51	0.55	0.57	0.58	1.0%
Other Uses <sup>6</sup> .....	2.86	2.96	3.13	3.51	3.92	4.29	4.63	1.7%
<b>Total</b> .....	<b>21.54</b>	<b>21.54</b>	<b>21.31</b>	<b>22.03</b>	<b>22.76</b>	<b>23.38</b>	<b>23.92</b>	<b>0.4%</b>
<b>Nonmarketed Renewables<sup>7</sup></b>								
Geothermal Heat Pumps .....	0.00	0.00	0.02	0.03	0.03	0.04	0.04	9.5%
Solar Hot Water Heating .....	0.00	0.00	0.00	0.00	0.00	0.01	0.01	2.1%
Solar Photovoltaic .....	0.00	0.00	0.04	0.05	0.05	0.05	0.05	19.0%
Wind .....	0.00	0.00	0.01	0.01	0.01	0.01	0.01	19.2%
<b>Total</b> .....	<b>0.01</b>	<b>0.01</b>	<b>0.07</b>	<b>0.09</b>	<b>0.09</b>	<b>0.10</b>	<b>0.11</b>	<b>10.4%</b>

<sup>1</sup>Does not include water heating portion of load.

<sup>2</sup>Includes small electric devices, heating elements, and motors not listed above.

<sup>3</sup>Includes such appliances as outdoor grills and mosquito traps.

<sup>4</sup>Includes wood used for primary and secondary heating in wood stoves or fireplaces as reported in the *Residential Energy Consumption Survey 2005*.

<sup>5</sup>Includes kerosene and coal.

<sup>6</sup>Includes all other uses listed above.

<sup>7</sup>Represents delivered energy displaced.

Btu = British thermal unit.

-- = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 and 2008 are model results and may differ slightly from official EIA data reports.

Sources: 2007 and 2008 based on: Energy Information Administration (EIA), *Annual Energy Review 2008*, DOE/EIA-0384(2008) (Washington, DC, June 2009).

Projections: EIA, AEO2010 National Energy Modeling System run AEO2010R.D111809A.

**Table A5. Commercial Sector Key Indicators and Consumption**  
(Quadrillion Btu per Year, Unless Otherwise Noted)

Key Indicators and Consumption	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Key Indicators</b>								
<b>Total Floorspace (billion square feet)</b>								
Surviving .....	74.9	76.4	83.0	88.8	95.1	101.5	108.0	1.3%
New Additions .....	2.4	2.4	2.0	2.3	2.4	2.5	2.6	0.3%
<b>Total .....</b>	<b>77.3</b>	<b>78.8</b>	<b>85.1</b>	<b>91.1</b>	<b>97.5</b>	<b>103.9</b>	<b>110.5</b>	<b>1.3%</b>
<b>Energy Consumption Intensity (thousand Btu per square foot)</b>								
Delivered Energy Consumption .....	109.2	108.9	106.3	104.3	102.6	101.1	99.8	-0.3%
Electricity Related Losses .....	127.8	126.9	126.0	125.0	123.4	121.5	120.0	-0.2%
Total Energy Consumption .....	237.0	235.8	232.3	229.3	226.0	222.6	219.8	-0.3%
<b>Delivered Energy Consumption by Fuel</b>								
<b>Purchased Electricity</b>								
Space Heating <sup>1</sup> .....	0.17	0.18	0.17	0.17	0.17	0.17	0.17	-0.1%
Space Cooling <sup>1</sup> .....	0.55	0.50	0.55	0.58	0.61	0.64	0.67	1.1%
Water Heating <sup>1</sup> .....	0.10	0.09	0.09	0.09	0.09	0.09	0.09	-0.1%
Ventilation .....	0.49	0.49	0.55	0.59	0.63	0.66	0.68	1.2%
Cooking .....	0.02	0.02	0.02	0.02	0.02	0.02	0.02	-0.1%
Lighting .....	1.06	1.04	1.04	1.08	1.12	1.16	1.20	0.5%
Refrigeration .....	0.40	0.40	0.36	0.35	0.36	0.37	0.39	-0.2%
Office Equipment (PC) .....	0.21	0.23	0.24	0.24	0.24	0.26	0.26	0.5%
Office Equipment (non-PC) .....	0.22	0.24	0.32	0.37	0.40	0.44	0.46	2.5%
Other Uses <sup>2</sup> .....	1.34	1.42	1.66	1.88	2.11	2.35	2.61	2.3%
<b>Delivered Energy .....</b>	<b>4.56</b>	<b>4.61</b>	<b>5.00</b>	<b>5.37</b>	<b>5.76</b>	<b>6.16</b>	<b>6.55</b>	<b>1.3%</b>
<b>Natural Gas</b>								
Space Heating <sup>1</sup> .....	1.45	1.54	1.56	1.59	1.60	1.59	1.57	0.1%
Space Cooling <sup>1</sup> .....	0.04	0.03	0.04	0.04	0.04	0.04	0.04	0.3%
Water Heating <sup>1</sup> .....	0.44	0.44	0.48	0.52	0.56	0.59	0.61	1.3%
Cooking .....	0.16	0.17	0.19	0.20	0.21	0.22	0.24	1.3%
Other Uses <sup>3</sup> .....	1.01	1.03	1.05	1.08	1.14	1.22	1.34	1.0%
<b>Delivered Energy .....</b>	<b>3.10</b>	<b>3.21</b>	<b>3.32</b>	<b>3.43</b>	<b>3.55</b>	<b>3.66</b>	<b>3.79</b>	<b>0.6%</b>
<b>Distillate Fuel Oil</b>								
Space Heating <sup>1</sup> .....	0.16	0.15	0.13	0.12	0.11	0.10	0.10	-1.6%
Water Heating <sup>1</sup> .....	0.02	0.02	0.02	0.02	0.02	0.02	0.02	-0.4%
Other Uses <sup>4</sup> .....	0.21	0.19	0.16	0.15	0.15	0.15	0.15	-1.0%
<b>Delivered Energy .....</b>	<b>0.38</b>	<b>0.36</b>	<b>0.31</b>	<b>0.29</b>	<b>0.28</b>	<b>0.27</b>	<b>0.26</b>	<b>-1.2%</b>
Marketed Renewables (biomass) .....	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.0%
Other Fuels <sup>5</sup> .....	0.30	0.29	0.31	0.31	0.32	0.32	0.32	0.5%
<b>Delivered Energy Consumption by End Use</b>								
Space Heating <sup>1</sup> .....	1.77	1.87	1.86	1.88	1.88	1.86	1.84	-0.1%
Space Cooling <sup>1</sup> .....	0.59	0.53	0.59	0.61	0.64	0.67	0.70	1.0%
Water Heating <sup>1</sup> .....	0.56	0.55	0.59	0.63	0.67	0.70	0.72	1.0%
Ventilation .....	0.49	0.49	0.55	0.59	0.63	0.66	0.68	1.2%
Cooking .....	0.19	0.19	0.21	0.22	0.24	0.25	0.26	1.2%
Lighting .....	1.06	1.04	1.04	1.08	1.12	1.16	1.20	0.5%
Refrigeration .....	0.40	0.40	0.36	0.35	0.36	0.37	0.39	-0.2%
Office Equipment (PC) .....	0.21	0.23	0.24	0.24	0.24	0.26	0.26	0.5%
Office Equipment (non-PC) .....	0.22	0.24	0.32	0.37	0.40	0.44	0.46	2.5%
Other Uses <sup>6</sup> .....	2.95	3.03	3.29	3.53	3.81	4.14	4.52	1.5%
<b>Delivered Energy .....</b>	<b>8.44</b>	<b>8.58</b>	<b>9.04</b>	<b>9.50</b>	<b>10.00</b>	<b>10.51</b>	<b>11.04</b>	<b>0.9%</b>

## Reference Case

**Table A5. Commercial Sector Key Indicators and Consumption (Continued)**  
(Quadrillion Btu per Year, Unless Otherwise Noted)

Key Indicators and Consumption	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
Electricity Related Losses .....	9.88	10.00	10.72	11.39	12.03	12.63	13.27	1.1%
<b>Total Energy Consumption by End Use</b>								
Space Heating <sup>1</sup> .....	2.14	2.26	2.22	2.24	2.24	2.22	2.19	-0.1%
Space Cooling <sup>1</sup> .....	1.78	1.62	1.76	1.84	1.91	1.98	2.05	0.9%
Water Heating <sup>1</sup> .....	0.76	0.75	0.79	0.83	0.87	0.89	0.91	0.7%
Ventilation .....	1.55	1.57	1.74	1.84	1.93	2.00	2.06	1.0%
Cooking .....	0.24	0.24	0.26	0.27	0.28	0.29	0.30	0.9%
Lighting .....	3.35	3.29	3.26	3.36	3.47	3.55	3.63	0.4%
Refrigeration .....	1.27	1.28	1.13	1.10	1.10	1.13	1.17	-0.3%
Office Equipment (PC) .....	0.67	0.71	0.76	0.75	0.76	0.78	0.79	0.3%
Office Equipment (non-PC) .....	0.69	0.75	1.00	1.15	1.25	1.34	1.40	2.3%
Other Uses <sup>6</sup> .....	5.86	6.11	6.85	7.51	8.22	8.97	9.81	1.8%
<b>Total</b> .....	<b>18.32</b>	<b>18.58</b>	<b>19.77</b>	<b>20.89</b>	<b>22.03</b>	<b>23.14</b>	<b>24.30</b>	<b>1.0%</b>
<b>Nonmarketed Renewable Fuels<sup>7</sup></b>								
Solar Thermal .....	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.7%
Solar Photovoltaic .....	0.00	0.00	0.01	0.01	0.01	0.01	0.02	6.4%
Wind .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.3%
<b>Total</b> .....	<b>0.03</b>	<b>0.03</b>	<b>0.04</b>	<b>0.04</b>	<b>0.04</b>	<b>0.05</b>	<b>0.05</b>	<b>2.3%</b>

<sup>1</sup>Includes fuel consumption for district services.

<sup>2</sup>Includes miscellaneous uses, such as service station equipment, automated teller machines, telecommunications equipment, and medical equipment.

<sup>3</sup>Includes miscellaneous uses, such as pumps, emergency generators, combined heat and power in commercial buildings, and manufacturing performed in commercial buildings.

<sup>4</sup>Includes miscellaneous uses, such as cooking, emergency generators, and combined heat and power in commercial buildings.

<sup>5</sup>Includes residual fuel oil, liquefied petroleum gases, coal, motor gasoline, and kerosene.

<sup>6</sup>Includes miscellaneous uses, such as service station equipment, automated teller machines, telecommunications equipment, medical equipment, pumps, emergency generators, combined heat and power in commercial buildings, manufacturing performed in commercial buildings, and cooking (distillate), plus residual fuel oil, liquefied petroleum gases, coal, motor gasoline, and kerosene.

<sup>7</sup>Represents delivered energy displaced by solar thermal space heating and water heating, and electricity generation by solar photovoltaic systems.

Btu = British thermal unit.

PC = Personal computer.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 and 2008 are model results and may differ slightly from official EIA data reports.

Sources: 2007 and 2008 based on: Energy Information Administration (EIA), *Annual Energy Review 2008*, DOE/EIA-0384(2008) (Washington, DC, June 2009).

Projections: EIA, AEO2010 National Energy Modeling System run AEO2010R.D111809A.

Table A6. Industrial Sector Key Indicators and Consumption

Key Indicators and Consumption	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Key Indicators</b>								
<b>Value of Shipments (billion 2000 dollars)</b>								
Manufacturing .....	4215	4014	4497	5006	5324	5680	6010	1.5%
Nonmanufacturing .....	1436	1394	1547	1644	1673	1722	1776	0.9%
<b>Total .....</b>	<b>5652</b>	<b>5408</b>	<b>6044</b>	<b>6651</b>	<b>6997</b>	<b>7401</b>	<b>7786</b>	<b>1.4%</b>
<b>Energy Prices</b>								
(2008 dollars per million Btu)								
Liquefied Petroleum Gases .....	22.01	24.20	22.49	24.86	26.12	27.38	29.25	0.7%
Motor Gasoline .....	18.05	16.28	25.17	27.41	28.70	30.24	32.15	2.6%
Distillate Fuel Oil .....	18.07	22.31	19.00	21.83	22.97	24.40	26.48	0.6%
Residual Fuel Oil .....	8.84	16.31	16.47	18.20	19.23	20.27	21.72	1.1%
Asphalt and Road Oil .....	4.53	8.23	7.13	7.95	8.43	8.93	9.76	0.6%
Natural Gas Heat and Power .....	6.61	8.25	5.62	5.88	6.25	7.24	8.03	-0.1%
Natural Gas Feedstocks .....	8.32	9.85	7.25	7.52	7.82	8.78	9.54	-0.1%
Metallurgical Coal .....	3.69	4.49	5.08	5.32	5.24	5.11	5.06	0.4%
Other Industrial Coal .....	2.48	2.84	2.69	2.66	2.63	2.66	2.71	-0.2%
Coal for Liquids .....	--	--	1.42	1.46	1.49	1.44	1.51	--
Electricity .....	19.02	20.21	17.37	17.92	18.50	19.58	20.71	0.1%
(nominal dollars per million Btu)								
Liquefied Petroleum Gases .....	21.53	24.20	25.06	30.38	35.45	41.33	49.15	2.7%
Motor Gasoline .....	17.66	16.28	28.05	33.50	38.95	45.65	54.04	4.5%
Distillate Fuel Oil .....	17.68	22.31	21.18	26.68	31.18	36.83	44.51	2.6%
Residual Fuel Oil .....	8.65	16.31	18.35	22.24	26.10	30.60	36.50	3.0%
Asphalt and Road Oil .....	4.43	8.23	7.95	9.72	11.43	13.49	16.40	2.6%
Natural Gas Heat and Power .....	6.47	8.25	6.27	7.18	8.48	10.92	13.49	1.8%
Natural Gas Feedstocks .....	8.14	9.85	8.08	9.20	10.61	13.26	16.03	1.8%
Metallurgical Coal .....	3.61	4.49	5.66	6.50	7.11	7.72	8.50	2.4%
Other Industrial Coal .....	2.43	2.84	3.00	3.26	3.56	4.01	4.55	1.8%
Coal for Liquids .....	--	--	1.58	1.79	2.02	2.18	2.53	--
Electricity .....	18.60	20.21	19.36	21.90	25.11	29.55	34.80	2.0%
<b>Energy Consumption (quadrillion Btu)<sup>1</sup></b>								
<b>Industrial Consumption Excluding Refining</b>								
Liquefied Petroleum Gases Heat and Power ..	0.30	0.29	0.28	0.28	0.27	0.27	0.27	-0.2%
Liquefied Petroleum Gases Feedstocks .....	1.97	1.85	2.01	2.31	2.25	2.17	2.06	0.4%
Motor Gasoline .....	0.31	0.30	0.30	0.30	0.30	0.30	0.30	0.1%
Distillate Fuel Oil .....	1.26	1.19	1.19	1.19	1.17	1.17	1.17	-0.1%
Residual Fuel Oil .....	0.18	0.17	0.14	0.14	0.14	0.14	0.13	-0.9%
Petrochemical Feedstocks .....	1.31	1.12	1.09	0.81	0.82	0.82	0.81	-1.2%
Petroleum Coke .....	0.35	0.25	0.21	0.21	0.20	0.20	0.19	-1.0%
Asphalt and Road Oil .....	1.20	1.01	1.08	1.08	1.02	0.99	0.96	-0.2%
Miscellaneous Petroleum <sup>2</sup> .....	0.63	0.45	0.36	0.35	0.34	0.34	0.32	-1.2%
Petroleum Subtotal .....	7.51	6.62	6.65	6.66	6.52	6.39	6.22	-0.2%
Natural Gas Heat and Power .....	5.12	5.00	5.12	5.22	5.11	4.98	4.92	-0.1%
Natural Gas Feedstocks .....	0.56	0.57	0.55	0.56	0.52	0.48	0.45	-0.9%
Lease and Plant Fuel <sup>3</sup> .....	1.22	1.32	1.11	1.12	1.23	1.26	1.29	-0.1%
Natural Gas Subtotal .....	6.90	6.89	6.78	6.90	6.86	6.72	6.65	-0.1%
Metallurgical Coal and Coke <sup>4</sup> .....	0.62	0.62	0.53	0.55	0.51	0.45	0.36	-2.0%
Other Industrial Coal .....	1.15	1.10	1.02	1.02	1.01	1.00	0.98	-0.4%
Coal Subtotal .....	1.77	1.72	1.55	1.57	1.52	1.45	1.34	-0.9%
Renewables <sup>5</sup> .....	1.62	1.50	1.59	1.69	1.74	1.79	1.83	0.7%
Purchased Electricity .....	3.35	3.19	3.24	3.34	3.31	3.29	3.28	0.1%
<b>Delivered Energy .....</b>	<b>21.14</b>	<b>19.93</b>	<b>19.82</b>	<b>20.17</b>	<b>19.96</b>	<b>19.63</b>	<b>19.33</b>	<b>-0.1%</b>
Electricity Related Losses .....	7.25	6.91	6.94	7.09	6.92	6.74	6.63	-0.2%
<b>Total .....</b>	<b>28.39</b>	<b>26.83</b>	<b>26.76</b>	<b>27.26</b>	<b>26.88</b>	<b>26.38</b>	<b>25.96</b>	<b>-0.1%</b>

## Reference Case

**Table A6. Industrial Sector Key Indicators and Consumption (Continued)**

Key Indicators and Consumption	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Refining Consumption</b>								
Liquefied Petroleum Gases Heat and Power . . . . .	0.01	0.01	0.03	0.02	0.03	0.03	0.03	4.0%
Distillate Fuel Oil . . . . .	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Residual Fuel Oil . . . . .	0.01	0.01	0.00	0.00	0.00	0.00	0.00	--
Petroleum Coke . . . . .	0.55	0.58	0.59	0.59	0.61	0.61	0.62	0.3%
Still Gas . . . . .	1.70	1.73	1.74	1.70	1.68	1.77	1.80	0.2%
Miscellaneous Petroleum <sup>2</sup> . . . . .	0.02	0.04	0.03	0.03	0.03	0.03	0.03	-0.7%
Petroleum Subtotal . . . . .	2.30	2.36	2.38	2.34	2.35	2.44	2.48	0.2%
Natural Gas Heat and Power . . . . .	1.13	1.27	1.41	1.46	1.51	1.48	1.54	0.7%
Natural-Gas-to-Liquids Heat and Power . . . . .	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Natural Gas Subtotal . . . . .	1.13	1.27	1.41	1.46	1.51	1.48	1.54	0.7%
Other Industrial Coal . . . . .	0.06	0.06	0.06	0.06	0.06	0.06	0.06	-0.2%
Coal-to-Liquids Heat and Power . . . . .	0.00	0.00	0.16	0.24	0.34	0.45	0.55	27.6%
Coal Subtotal . . . . .	0.06	0.06	0.22	0.30	0.40	0.51	0.61	8.7%
Biofuels Heat and Coproducts <sup>6</sup> . . . . .	0.40	1.03	0.77	1.02	1.49	1.90	2.56	3.4%
Purchased Electricity . . . . .	0.16	0.16	0.16	0.17	0.18	0.18	0.19	0.5%
<b>Delivered Energy</b> . . . . .	<b>4.05</b>	<b>4.89</b>	<b>4.94</b>	<b>5.28</b>	<b>5.93</b>	<b>6.51</b>	<b>7.38</b>	<b>1.5%</b>
Electricity Related Losses . . . . .	0.35	0.35	0.35	0.36	0.37	0.37	0.38	0.3%
<b>Total</b> . . . . .	<b>4.40</b>	<b>5.24</b>	<b>5.29</b>	<b>5.64</b>	<b>6.30</b>	<b>6.88</b>	<b>7.76</b>	<b>1.5%</b>
<b>Total Industrial Sector Consumption</b>								
Liquefied Petroleum Gases Heat and Power . . . . .	0.30	0.30	0.31	0.30	0.30	0.29	0.30	-0.0%
Liquefied Petroleum Gases Feedstocks . . . . .	1.97	1.85	2.01	2.31	2.25	2.17	2.06	0.4%
Motor Gasoline . . . . .	0.31	0.30	0.30	0.30	0.30	0.30	0.30	0.1%
Distillate Fuel Oil . . . . .	1.26	1.19	1.19	1.19	1.17	1.17	1.17	-0.1%
Residual Fuel Oil . . . . .	0.19	0.18	0.14	0.14	0.14	0.14	0.13	-1.1%
Petrochemical Feedstocks . . . . .	1.31	1.12	1.09	0.81	0.82	0.82	0.81	-1.2%
Petroleum Coke . . . . .	0.91	0.83	0.80	0.80	0.82	0.81	0.81	-0.1%
Asphalt and Road Oil . . . . .	1.20	1.01	1.08	1.08	1.02	0.99	0.96	-0.2%
Still Gas . . . . .	1.70	1.73	1.74	1.70	1.68	1.77	1.80	0.2%
Miscellaneous Petroleum <sup>2</sup> . . . . .	0.65	0.49	0.39	0.38	0.37	0.37	0.35	-1.2%
Petroleum Subtotal . . . . .	9.80	8.99	9.04	9.01	8.87	8.82	8.70	-0.1%
Natural Gas Heat and Power . . . . .	6.25	6.27	6.53	6.67	6.62	6.46	6.47	0.1%
Natural-Gas-to-Liquids Heat and Power . . . . .	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Natural Gas Feedstocks . . . . .	0.56	0.57	0.55	0.56	0.52	0.48	0.45	-0.9%
Lease and Plant Fuel <sup>3</sup> . . . . .	1.22	1.32	1.11	1.12	1.23	1.26	1.29	-0.1%
Natural Gas Subtotal . . . . .	8.03	8.16	8.19	8.35	8.37	8.20	8.20	0.0%
Metallurgical Coal and Coke <sup>4</sup> . . . . .	0.62	0.62	0.53	0.55	0.51	0.45	0.36	-2.0%
Other Industrial Coal . . . . .	1.21	1.17	1.07	1.08	1.07	1.06	1.04	-0.4%
Coal-to-Liquids Heat and Power . . . . .	0.00	0.00	0.16	0.24	0.34	0.45	0.55	27.6%
Coal Subtotal . . . . .	1.83	1.79	1.76	1.88	1.92	1.96	1.95	0.3%
Biofuels Heat and Coproducts <sup>6</sup> . . . . .	0.40	1.03	0.77	1.02	1.49	1.90	2.56	3.4%
Renewables <sup>5</sup> . . . . .	1.62	1.50	1.59	1.69	1.74	1.79	1.83	0.7%
Purchased Electricity . . . . .	3.51	3.35	3.40	3.51	3.49	3.47	3.47	0.1%
<b>Delivered Energy</b> . . . . .	<b>25.19</b>	<b>24.81</b>	<b>24.76</b>	<b>25.45</b>	<b>25.88</b>	<b>26.14</b>	<b>26.70</b>	<b>0.3%</b>
Electricity Related Losses . . . . .	7.60	7.26	7.29	7.45	7.29	7.12	7.01	-0.1%
<b>Total</b> . . . . .	<b>32.79</b>	<b>32.07</b>	<b>32.05</b>	<b>32.90</b>	<b>33.18</b>	<b>33.26</b>	<b>33.72</b>	<b>0.2%</b>

Table A6. Industrial Sector Key Indicators and Consumption (Continued)

Key Indicators and Consumption	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Energy Consumption per dollar of Shipment (thousand Btu per 2000 dollars)</b>								
Liquefied Petroleum Gases Heat and Power . . .	0.05	0.05	0.05	0.05	0.04	0.04	0.04	-1.3%
Liquefied Petroleum Gases Feedstocks . . . .	0.35	0.34	0.33	0.35	0.32	0.29	0.26	-0.9%
Motor Gasoline . . . . .	0.05	0.05	0.05	0.05	0.04	0.04	0.04	-1.3%
Distillate Fuel Oil . . . . .	0.22	0.22	0.20	0.18	0.17	0.16	0.15	-1.4%
Residual Fuel Oil . . . . .	0.03	0.03	0.02	0.02	0.02	0.02	0.02	-2.5%
Petrochemical Feedstocks . . . . .	0.23	0.21	0.18	0.12	0.12	0.11	0.10	-2.5%
Petroleum Coke . . . . .	0.16	0.15	0.13	0.12	0.12	0.11	0.10	-1.4%
Asphalt and Road Oil . . . . .	0.21	0.19	0.18	0.16	0.15	0.13	0.12	-1.5%
Still Gas . . . . .	0.30	0.32	0.29	0.26	0.24	0.24	0.23	-1.2%
Miscellaneous Petroleum <sup>2</sup> . . . . .	0.12	0.09	0.06	0.06	0.05	0.05	0.05	-2.5%
Petroleum Subtotal . . . . .	1.73	1.66	1.50	1.35	1.27	1.19	1.12	-1.5%
Natural Gas Heat and Power . . . . .	1.11	1.16	1.08	1.00	0.95	0.87	0.83	-1.2%
Natural-Gas-to-Liquids Heat and Power . . . .	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Natural Gas Feedstocks . . . . .	0.10	0.10	0.09	0.08	0.07	0.06	0.06	-2.2%
Lease and Plant Fuel <sup>3</sup> . . . . .	0.22	0.24	0.18	0.17	0.18	0.17	0.17	-1.4%
Natural Gas Subtotal . . . . .	1.42	1.51	1.36	1.26	1.20	1.11	1.05	-1.3%
Metallurgical Coal and Coke <sup>4</sup> . . . . .	0.11	0.11	0.09	0.08	0.07	0.06	0.05	-3.3%
Other Industrial Coal . . . . .	0.21	0.22	0.18	0.16	0.15	0.14	0.13	-1.8%
Coal-to-Liquids Heat and Power . . . . .	0.00	0.00	0.03	0.04	0.05	0.06	0.07	25.9%
Coal Subtotal . . . . .	0.32	0.33	0.29	0.28	0.28	0.26	0.25	-1.0%
Biofuels Heat and Coproducts <sup>6</sup> . . . . .	0.07	0.19	0.13	0.15	0.21	0.26	0.33	2.0%
Renewables <sup>5</sup> . . . . .	0.29	0.28	0.26	0.25	0.25	0.24	0.24	-0.6%
Purchased Electricity . . . . .	0.62	0.62	0.56	0.53	0.50	0.47	0.45	-1.2%
<b>Delivered Energy</b> . . . . .	<b>4.46</b>	<b>4.59</b>	<b>4.10</b>	<b>3.83</b>	<b>3.70</b>	<b>3.53</b>	<b>3.43</b>	<b>-1.1%</b>
Electricity Related Losses . . . . .	1.34	1.34	1.21	1.12	1.04	0.96	0.90	-1.5%
<b>Total</b> . . . . .	<b>5.80</b>	<b>5.93</b>	<b>5.30</b>	<b>4.95</b>	<b>4.74</b>	<b>4.49</b>	<b>4.33</b>	<b>-1.2%</b>
<b>Industrial Combined Heat and Power</b>								
Capacity (gigawatts) . . . . .	25.80	25.78	31.32	35.76	44.54	52.39	56.45	2.9%
Generation (billion kilowatthours) . . . . .	142.17	136.65	175.43	208.16	273.39	331.57	362.91	3.7%

<sup>1</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>2</sup>Includes lubricants and miscellaneous petroleum products.

<sup>3</sup>Represents natural gas used in well, field, and lease operations, and in natural gas processing plant machinery.

<sup>4</sup>Includes net coal coke imports.

<sup>5</sup>Includes consumption of energy produced from hydroelectric, wood and wood waste, municipal waste, and other biomass sources.

<sup>6</sup>The energy content of biofuels feedstock minus the energy content of liquid fuel produced.

Btu = British thermal unit.

-- = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 and 2008 are model results and may differ slightly from official EIA data reports.

Sources: 2007 and 2008 prices for motor gasoline and distillate fuel oil are based on: Energy Information Administration (EIA), *Petroleum Marketing Annual 2008*, DOE/EIA-0487(2008) (Washington, DC, August 2009). 2007 and 2008 petrochemical feedstock and asphalt and road oil prices are based on: EIA, *State Energy Data Report 2007*, DOE/EIA-0214(2007) (Washington, DC, August 2009). 2007 and 2008 coal prices are based on: EIA, *Quarterly Coal Report, October-December 2008*, DOE/EIA-0121(2008/4Q) (Washington, DC, March 2009) and EIA, AEO2010 National Energy Modeling System run AEO2010R.D111809A. 2007 and 2008 electricity prices: EIA, *Annual Energy Review 2008*, DOE/EIA-0384(2008) (Washington, DC, June 2009). 2007 and 2008 natural gas prices are based on: EIA, *Manufacturing Energy Consumption Survey* and industrial and wellhead prices from the *Natural Gas Annual 2007*, DOE/EIA-0131(2007) (Washington, DC, January 2009) and the *Natural Gas Monthly*, DOE/EIA-0130(2009/07) (Washington, DC, July 2009). 2007 refining consumption values are based on: *Petroleum Supply Annual 2007*, DOE/EIA-0340(2007)1 (Washington, DC, July 2008). 2008 refining consumption based on: *Petroleum Supply Annual 2008*, DOE/EIA-0340(2008)1 (Washington, DC, June 2009). Other 2007 and 2008 consumption values are based on: EIA, *Annual Energy Review 2008*, DOE/EIA-0384(2008) (Washington, DC, June 2009). 2007 and 2008 shipments: IHS Global Insight Industry model, August 2009. Projections: EIA, AEO2010 National Energy Modeling System run AEO2010R.D111809A.



# Reference Case

**Table A7. Transportation Sector Key Indicators and Delivered Energy Consumption**

Key Indicators and Consumption	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Key Indicators</b>								
<b>Travel Indicators</b>								
(billion vehicle miles traveled)								
Light-Duty Vehicles less than 8,500 pounds	2746	2676	2916	3193	3554	3891	4203	1.7%
Commercial Light Trucks <sup>1</sup>	74	70	78	85	92	99	105	1.5%
Freight Trucks greater than 10,000 pounds	241	227	248	278	304	333	363	1.7%
(billion seat miles available)								
Air	1040	1030	1163	1264	1341	1408	1470	1.3%
(billion ton miles traveled)								
Rail	1771	1806	1881	2011	2108	2187	2257	0.8%
Domestic Shipping	584	576	587	617	643	667	691	0.7%
<b>Energy Efficiency Indicators</b>								
(miles per gallon)								
New Light-Duty Vehicle CAFE Standard <sup>2</sup>	24.8	25.0	32.5	35.2	35.5	35.6	35.8	1.3%
New Car <sup>2</sup>	28.0	28.0	37.4	40.0	40.0	40.0	40.0	1.3%
New Light Truck <sup>2</sup>	22.2	22.3	27.9	29.7	29.7	29.7	29.7	1.1%
Compliance New Light-Duty Vehicle <sup>3</sup>	27.4	27.6	32.0	35.6	37.2	38.5	40.0	1.4%
New Car <sup>3</sup>	32.1	32.2	37.1	40.3	41.5	42.8	44.2	1.2%
New Light Truck <sup>3</sup>	23.7	23.7	27.4	30.2	31.5	32.6	33.7	1.3%
Tested New Light-Duty Vehicle <sup>4</sup>	27.4	27.6	30.8	34.4	35.9	37.3	38.8	1.3%
New Car <sup>4</sup>	32.1	32.2	35.8	39.1	40.2	41.5	43.0	1.1%
New Light Truck <sup>4</sup>	23.7	23.7	26.2	29.0	30.3	31.4	32.5	1.2%
On-Road New Light-Duty Vehicle <sup>5</sup>	22.7	22.9	25.6	28.7	30.0	31.3	32.5	1.3%
New Car <sup>5</sup>	26.2	26.3	29.5	32.3	33.5	34.8	36.0	1.2%
New Light Truck <sup>5</sup>	19.9	19.9	22.0	24.3	25.4	26.3	27.3	1.2%
Light-Duty Stock <sup>6</sup>	20.4	20.9	22.3	24.3	26.2	28.0	29.3	1.3%
New Commercial Light Truck <sup>1</sup>	15.1	15.2	16.3	17.6	18.2	18.6	19.1	0.8%
Stock Commercial Light Truck <sup>1</sup>	14.1	14.3	15.1	16.2	17.2	18.0	18.5	1.0%
Freight Truck	6.0	6.0	6.3	6.6	6.8	6.9	7.0	0.6%
(seat miles per gallon)								
Aircraft	61.6	61.8	63.0	64.4	65.9	67.8	69.8	0.5%
(ton miles per thousand Btu)								
Rail	3.1	3.1	3.2	3.2	3.2	3.2	3.2	0.1%
Domestic Shipping	2.0	2.0	2.0	2.0	2.0	2.0	2.1	0.2%
<b>Energy Use by Mode</b>								
<b>(quadrillion Btu)</b>								
Light-Duty Vehicles	16.62	16.06	16.27	16.28	16.75	17.21	17.73	0.4%
Commercial Light Trucks <sup>1</sup>	0.65	0.61	0.64	0.66	0.67	0.69	0.71	0.6%
Bus Transportation	0.26	0.26	0.28	0.30	0.31	0.33	0.35	1.1%
Freight Trucks	5.01	4.72	4.93	5.26	5.58	6.00	6.46	1.2%
Rail, Passenger	0.05	0.05	0.05	0.05	0.06	0.06	0.06	1.2%
Rail, Freight	0.61	0.58	0.60	0.64	0.66	0.68	0.70	0.7%
Shipping, Domestic	0.30	0.29	0.30	0.31	0.32	0.33	0.33	0.5%
Shipping, International	0.96	0.90	0.91	0.91	0.92	0.92	0.93	0.1%
Recreational Boats	0.25	0.25	0.26	0.27	0.28	0.29	0.29	0.6%
Air	2.75	2.64	2.78	2.99	3.12	3.21	3.28	0.8%
Military Use	0.71	0.71	0.66	0.67	0.69	0.70	0.72	0.1%
Lubricants	0.15	0.14	0.14	0.15	0.15	0.15	0.15	0.3%
Pipeline Fuel	0.64	0.64	0.61	0.63	0.72	0.74	0.74	0.5%
<b>Total</b>	<b>28.96</b>	<b>27.85</b>	<b>28.42</b>	<b>29.12</b>	<b>30.21</b>	<b>31.30</b>	<b>32.46</b>	<b>0.6%</b>

**Table A7. Transportation Sector Key Indicators and Delivered Energy Consumption  
(Continued)**

Key Indicators and Consumption	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Energy Use by Mode</b>								
<b>(million barrels per day oil equivalent)</b>								
Light-Duty Vehicles .....	8.82	8.57	8.76	8.83	9.14	9.45	9.93	0.5%
Commercial Light Trucks <sup>1</sup> .....	0.33	0.31	0.33	0.34	0.34	0.35	0.36	0.6%
Bus Transportation .....	0.17	0.18	0.21	0.25	0.30	0.34	0.40	3.1%
Freight Trucks .....	2.41	2.27	2.37	2.53	2.68	2.89	3.11	1.2%
Rail, Passenger .....	0.02	0.02	0.02	0.03	0.03	0.03	0.03	1.2%
Rail, Freight .....	0.29	0.27	0.28	0.30	0.32	0.33	0.33	0.7%
Shipping, Domestic .....	0.14	0.14	0.14	0.14	0.15	0.15	0.16	0.5%
Shipping, International .....	0.42	0.39	0.40	0.40	0.40	0.41	0.41	0.1%
Recreational Boats .....	0.13	0.13	0.14	0.15	0.15	0.15	0.16	0.7%
Air .....	1.33	1.28	1.35	1.45	1.51	1.55	1.59	0.8%
Military Use .....	0.34	0.34	0.32	0.32	0.33	0.34	0.35	0.1%
Lubricants .....	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.3%
Pipeline Fuel .....	0.32	0.33	0.31	0.32	0.36	0.37	0.38	0.5%
<b>Total .....</b>	<b>14.80</b>	<b>14.30</b>	<b>14.70</b>	<b>15.13</b>	<b>15.77</b>	<b>16.43</b>	<b>17.27</b>	<b>0.7%</b>

<sup>1</sup>Commercial trucks 8,500 to 10,000 pounds.

<sup>2</sup>CAFE standard based on projected new vehicle sales.

<sup>3</sup>Includes CAFE credits for alternative fueled vehicle sales, but does not include banked credits used for compliance.

<sup>4</sup>Environmental Protection Agency rated miles per gallon.

<sup>5</sup>Tested new vehicle efficiency revised for on-road performance.

<sup>6</sup>Combined car and light truck "on-the-road" estimate.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 and 2008 are model results and may differ slightly from official EIA data reports.

Sources: 2007 and 2008: Energy Information Administration (EIA), *Natural Gas Annual 2007*, DOE/EIA-0131(2007) (Washington, DC, January 2009); EIA, *Annual Energy Review 2008*, DOE/EIA-0384(2008) (Washington, DC, June 2009); Federal Highway Administration, *Highway Statistics 2007* (Washington, DC, October 2008); Oak Ridge National Laboratory, *Transportation Energy Data Book: Edition 28 and Annual* (Oak Ridge, TN, 2009); National Highway Traffic and Safety Administration, *Summary of Fuel Economy Performance* (Washington, DC, January 15, 2008); U.S. Department of Commerce, Bureau of the Census, "Vehicle Inventory and Use Survey," EC97TV (Washington, DC, December 2004); EIA, *Alternatives to Traditional Transportation Fuels 2006 (Part II - User and Fuel Data)*, May 2008; EIA, *State Energy Data Report 2007*, DOE/EIA-0214(2007) (Washington, DC, August 2009); U.S. Department of Transportation, Research and Special Programs Administration, *Air Carrier Statistics Monthly, December 2008/2007* (Washington, DC, 2008); EIA, *Fuel Oil and Kerosene Sales 2007*, DOE/EIA-0535(2007) (Washington, DC, December 2008); and United States Department of Defense, Defense Fuel Supply Center. Projections: EIA, AEO2010 National Energy Modeling System run AEO2010R.D111809A.

# Reference Case

**Table A8. Electricity Supply, Disposition, Prices, and Emissions**  
(Billion Kilowatthours, Unless Otherwise Noted)

Supply, Disposition, and Prices	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Generation by Fuel Type</b>								
<b>Electric Power Sector<sup>1</sup></b>								
<b>Power Only<sup>2</sup></b>								
Coal .....	1962	1939	1977	2026	2075	2132	2222	0.5%
Petroleum .....	57	39	41	42	43	43	44	0.4%
Natural Gas <sup>3</sup> .....	686	682	507	568	650	778	833	0.7%
Nuclear Power .....	806	806	834	883	886	886	898	0.4%
Pumped Storage/Other <sup>4</sup> .....	0	1	1	1	1	1	1	-1.3%
Renewable Sources <sup>5</sup> .....	315	334	587	626	656	666	683	2.7%
Distributed Generation (Natural Gas) .....	0	0	0	0	0	0	0	--
<b>Total .....</b>	<b>3827</b>	<b>3801</b>	<b>3946</b>	<b>4146</b>	<b>4311</b>	<b>4506</b>	<b>4680</b>	<b>0.8%</b>
<b>Combined Heat and Power<sup>6</sup></b>								
Coal .....	36	37	30	31	31	32	32	-0.6%
Petroleum .....	4	4	0	0	0	0	0	-7.9%
Natural Gas .....	129	117	97	101	109	107	111	-0.2%
Renewable Sources .....	4	4	3	5	5	5	5	0.2%
<b>Total .....</b>	<b>178</b>	<b>165</b>	<b>130</b>	<b>137</b>	<b>145</b>	<b>144</b>	<b>148</b>	<b>-0.4%</b>
<b>Total Net Generation .....</b>	<b>4005</b>	<b>3966</b>	<b>4077</b>	<b>4283</b>	<b>4456</b>	<b>4650</b>	<b>4828</b>	<b>0.7%</b>
Less Direct Use .....	34	33	33	34	34	34	33	0.0%
<b>Net Available to the Grid .....</b>	<b>3971</b>	<b>3933</b>	<b>4043</b>	<b>4249</b>	<b>4422</b>	<b>4617</b>	<b>4794</b>	<b>0.7%</b>
<b>End-Use Generation<sup>7</sup></b>								
Coal .....	18	19	31	35	40	46	51	3.8%
Petroleum .....	4	3	5	5	5	5	5	1.5%
Natural Gas .....	82	80	86	98	112	129	149	2.3%
Other Gaseous Fuels <sup>8</sup> .....	5	5	16	15	15	16	16	4.0%
Renewable Sources <sup>9</sup> .....	34	35	59	82	135	181	204	6.8%
Other <sup>10</sup> .....	10	8	7	7	7	7	7	-0.3%
<b>Total .....</b>	<b>154</b>	<b>150</b>	<b>204</b>	<b>243</b>	<b>314</b>	<b>383</b>	<b>431</b>	<b>4.0%</b>
Less Direct Use .....	124	119	165	192	243	295	327	3.8%
<b>Total Sales to the Grid .....</b>	<b>30</b>	<b>30</b>	<b>39</b>	<b>50</b>	<b>71</b>	<b>89</b>	<b>104</b>	<b>4.7%</b>
<b>Total Electricity Generation by Fuel</b>								
Coal .....	2017	1995	2037	2093	2147	2210	2305	0.5%
Petroleum .....	65	45	46	47	48	48	49	0.3%
Natural Gas .....	897	879	690	767	871	1015	1093	0.8%
Nuclear Power .....	806	806	834	883	886	886	898	0.4%
Renewable Sources <sup>9,9</sup> .....	353	373	649	713	795	852	891	3.3%
Other <sup>11</sup> .....	20	17	23	23	23	23	23	1.2%
<b>Total Electricity Generation .....</b>	<b>4159</b>	<b>4116</b>	<b>4280</b>	<b>4525</b>	<b>4769</b>	<b>5034</b>	<b>5259</b>	<b>0.9%</b>
<b>Total Net Generation to the Grid .....</b>	<b>4001</b>	<b>3963</b>	<b>4082</b>	<b>4300</b>	<b>4493</b>	<b>4705</b>	<b>4898</b>	<b>0.8%</b>
<b>Net Imports .....</b>	<b>31</b>	<b>33</b>	<b>20</b>	<b>20</b>	<b>22</b>	<b>20</b>	<b>25</b>	<b>-0.9%</b>
<b>Electricity Sales by Sector</b>								
Residential .....	1392	1379	1400	1471	1553	1637	1707	0.8%
Commercial .....	1336	1352	1466	1573	1687	1805	1921	1.3%
Industrial .....	1028	982	997	1029	1023	1017	1016	0.1%
Transportation .....	6	7	7	9	11	13	16	3.5%
<b>Total .....</b>	<b>3763</b>	<b>3720</b>	<b>3870</b>	<b>4083</b>	<b>4274</b>	<b>4472</b>	<b>4660</b>	<b>0.8%</b>
Direct Use .....	158	152	198	226	277	328	361	3.2%
<b>Total Electricity Use .....</b>	<b>3921</b>	<b>3873</b>	<b>4068</b>	<b>4308</b>	<b>4550</b>	<b>4801</b>	<b>5021</b>	<b>1.0%</b>

**Table A8. Electricity Supply, Disposition, Prices, and Emissions (Continued)**  
(Billion Kilowatthours, Unless Otherwise Noted)

Supply, Disposition, and Prices	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>End-Use Prices</b>								
(2008 cents per kilowatthour)								
Residential .....	10.9	11.4	10.7	10.9	11.0	11.4	11.8	0.2%
Commercial .....	9.8	10.4	9.1	9.3	9.5	9.9	10.4	-0.0%
Industrial .....	6.5	6.9	5.9	6.1	6.3	6.7	7.1	0.1%
Transportation .....	10.9	11.5	9.8	9.7	9.8	10.6	11.3	-0.1%
<b>All Sectors Average</b> .....	<b>9.3</b>	<b>9.8</b>	<b>8.9</b>	<b>9.0</b>	<b>9.3</b>	<b>9.7</b>	<b>10.2</b>	<b>0.1%</b>
(nominal cents per kilowatthour)								
Residential .....	10.6	11.4	11.9	13.3	14.9	17.2	19.9	2.1%
Commercial .....	9.6	10.4	10.1	11.3	12.8	14.9	17.4	1.9%
Industrial .....	6.3	6.9	6.6	7.5	8.6	10.1	11.9	2.0%
Transportation .....	10.7	11.5	10.9	11.9	13.3	16.0	19.1	1.9%
<b>All Sectors Average</b> .....	<b>9.1</b>	<b>9.8</b>	<b>9.9</b>	<b>11.1</b>	<b>12.6</b>	<b>14.7</b>	<b>17.1</b>	<b>2.1%</b>
<b>Prices by Service Category</b>								
(2008 cents per kilowatthour)								
Generation .....	6.2	6.7	5.5	5.8	6.1	6.5	7.0	0.1%
Transmission .....	0.7	0.7	0.9	0.9	0.9	0.9	0.9	1.1%
Distribution .....	2.4	2.4	2.5	2.5	2.4	2.4	2.4	-0.0%
(nominal cents per kilowatthour)								
Generation .....	6.0	6.7	6.2	7.1	8.2	9.8	11.7	2.1%
Transmission .....	0.7	0.7	1.0	1.1	1.2	1.3	1.5	3.0%
Distribution .....	2.4	2.4	2.8	3.0	3.3	3.6	3.9	1.9%
<b>Electric Power Sector Emissions<sup>1</sup></b>								
Sulfur Dioxide (million tons) .....	8.93	7.61	4.69	4.23	3.79	3.70	3.77	-2.6%
Nitrogen Oxide (million tons) .....	3.29	3.00	2.05	2.02	2.04	2.05	2.07	-1.4%
Mercury (tons) .....	47.02	45.84	30.48	30.22	30.24	30.45	30.47	-1.5%

<sup>1</sup>Includes electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public.

<sup>2</sup>Includes plants that only produce electricity.

<sup>3</sup>Includes electricity generation from fuel cells.

<sup>4</sup>Includes non-biogenic municipal waste. The Energy Information Administration estimates approximately 7 billion kilowatthours of electricity were generated from a municipal waste stream containing petroleum-derived plastics and other non-renewable sources. See Energy Information Administration, *Methodology for Allocating Municipal Solid Waste to Biogenic and Non-Biogenic Energy*, (Washington, DC, May 2007).

<sup>5</sup>Includes conventional hydroelectric, geothermal, wood, wood waste, biogenic municipal waste, landfill gas, other biomass, solar, and wind power.

<sup>6</sup>Includes combined heat and power plants whose primary business is to sell electricity and heat to the public (i.e., those that report North American Industry Classification System code 22).

<sup>7</sup>Includes combined heat and power plants and electricity-only plants in the commercial and industrial sectors; and small on-site generating systems in the residential, commercial, and industrial sectors used primarily for own-use generation, but which may also sell some power to the grid.

<sup>8</sup>Includes refinery gas and still gas.

<sup>9</sup>Includes conventional hydroelectric, geothermal, wood, wood waste, all municipal waste, landfill gas, other biomass, solar, and wind power.

<sup>10</sup>Includes batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies.

<sup>11</sup>Includes pumped storage, non-biogenic municipal waste, refinery gas, still gas, batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies.

-- = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 and 2008 are model results and may differ slightly from official EIA data reports.

Sources: 2007 and 2008 electric power sector generation; sales to utilities; net imports; electricity sales; and emissions: Energy Information Administration (EIA), *Annual Energy Review 2008*, DOE/EIA-0384(2008) (Washington, DC, June 2009), and supporting databases. 2007 and 2008 prices: EIA, AEO2010 National Energy Modeling System run AEO2010R.D111809A. Projections: EIA, AEO2010 National Energy Modeling System run AEO2010R.D111809A.

# Reference Case

**Table A9. Electricity Generating Capacity  
(Gigawatts)**

Net Summer Capacity <sup>1</sup>	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Electric Power Sector<sup>2</sup></b>								
<b>Power Only<sup>3</sup></b>								
Coal .....	304.4	303.8	315.2	315.7	315.7	318.7	324.5	0.2%
Oil and Natural Gas Steam <sup>4</sup> .....	116.2	115.5	90.8	86.8	86.8	86.8	85.8	-1.1%
Combined Cycle .....	150.7	156.4	168.5	168.5	175.2	201.1	211.6	1.1%
Combustion Turbine/Diesel .....	130.3	131.7	130.3	133.5	146.3	151.8	172.5	1.0%
Nuclear Power <sup>5</sup> .....	100.5	100.6	104.5	110.9	110.9	110.9	112.9	0.4%
Pumped Storage .....	21.8	21.8	21.8	21.8	21.8	21.8	21.8	0.0%
Fuel Cells .....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
Renewable Sources <sup>6</sup> .....	100.5	109.4	154.0	154.2	156.3	159.5	167.8	1.6%
Distributed Generation <sup>7</sup> .....	0.0	0.0	0.0	0.0	0.0	0.0	0.3	--
<b>Total .....</b>	<b>924.5</b>	<b>939.2</b>	<b>985.2</b>	<b>991.5</b>	<b>1013.0</b>	<b>1050.7</b>	<b>1097.1</b>	<b>0.6%</b>
<b>Combined Heat and Power<sup>8</sup></b>								
Coal .....	4.6	4.6	4.6	4.6	4.6	4.6	4.6	-0.0%
Oil and Natural Gas Steam <sup>4</sup> .....	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.0%
Combined Cycle .....	31.8	31.7	32.3	32.3	32.3	32.3	32.3	0.1%
Combustion Turbine/Diesel .....	2.9	2.9	2.9	2.9	2.9	2.9	2.9	0.0%
Renewable Sources <sup>6</sup> .....	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.0%
<b>Total .....</b>	<b>40.3</b>	<b>40.3</b>	<b>40.8</b>	<b>40.8</b>	<b>40.8</b>	<b>40.8</b>	<b>40.8</b>	<b>0.0%</b>
<b>Cumulative Planned Additions<sup>9</sup></b>								
Coal .....	0.0	0.0	15.6	15.6	15.6	15.6	15.6	--
Oil and Natural Gas Steam <sup>4</sup> .....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
Combined Cycle .....	0.0	0.0	13.0	13.0	13.0	13.0	13.0	--
Combustion Turbine/Diesel .....	0.0	0.0	4.1	4.1	4.1	4.1	4.1	--
Nuclear Power .....	0.0	0.0	1.2	1.2	1.2	1.2	1.2	--
Pumped Storage .....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
Fuel Cells .....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
Renewable Sources <sup>6</sup> .....	0.0	0.0	1.1	1.2	1.3	1.4	1.5	--
Distributed Generation <sup>7</sup> .....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
<b>Total .....</b>	<b>0.0</b>	<b>0.0</b>	<b>35.0</b>	<b>35.1</b>	<b>35.2</b>	<b>35.3</b>	<b>35.4</b>	<b>--</b>
<b>Cumulative Unplanned Additions<sup>9</sup></b>								
Coal .....	0.0	0.0	0.0	2.0	2.0	5.0	10.8	--
Oil and Natural Gas Steam <sup>4</sup> .....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
Combined Cycle .....	0.0	0.0	0.0	0.0	6.7	32.6	43.0	--
Combustion Turbine/Diesel .....	0.0	0.0	3.6	7.0	19.8	25.6	46.3	--
Nuclear Power .....	0.0	0.0	0.0	5.2	5.2	5.2	7.2	--
Pumped Storage .....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
Fuel Cells .....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
Renewable Sources <sup>6</sup> .....	0.0	0.0	43.6	43.7	45.7	48.8	57.0	--
Distributed Generation <sup>7</sup> .....	0.0	0.0	0.0	0.0	0.0	0.0	0.3	--
<b>Total .....</b>	<b>0.0</b>	<b>0.0</b>	<b>47.2</b>	<b>58.0</b>	<b>79.4</b>	<b>117.2</b>	<b>164.6</b>	<b>--</b>
<b>Cumulative Electric Power Sector Additions</b>	<b>0.0</b>	<b>0.0</b>	<b>82.3</b>	<b>93.1</b>	<b>114.6</b>	<b>152.5</b>	<b>200.0</b>	<b>--</b>
<b>Cumulative Retirements<sup>10</sup></b>								
Coal .....	0.0	0.0	4.3	5.7	5.7	5.7	5.7	--
Oil and Natural Gas Steam <sup>4</sup> .....	0.0	0.0	24.7	28.7	28.7	28.7	29.7	--
Combined Cycle .....	0.0	0.0	0.4	0.4	0.4	0.4	0.4	--
Combustion Turbine/Diesel .....	0.0	0.0	9.1	9.3	9.3	9.6	9.6	--
Nuclear Power .....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
Pumped Storage .....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
Fuel Cells .....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
Renewable Sources <sup>6</sup> .....	0.0	0.0	0.1	0.1	0.1	0.1	0.1	--
<b>Total .....</b>	<b>0.0</b>	<b>0.0</b>	<b>38.5</b>	<b>44.2</b>	<b>44.2</b>	<b>44.5</b>	<b>45.5</b>	<b>--</b>
<b>Total Electric Power Sector Capacity .....</b>	<b>964.9</b>	<b>979.5</b>	<b>1026.0</b>	<b>1032.3</b>	<b>1053.8</b>	<b>1091.5</b>	<b>1137.9</b>	<b>0.6%</b>

**Table A9. Electricity Generating Capacity (Continued)**  
(Gigawatts)

Net Summer Capacity <sup>1</sup>	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>End-Use Generators<sup>11</sup></b>								
Coal .....	3.5	3.5	5.1	5.6	6.3	7.0	7.7	3.0%
Petroleum .....	0.9	0.9	1.2	1.2	1.2	1.2	1.2	1.2%
Natural Gas .....	14.7	14.7	15.2	16.7	18.6	20.9	23.7	1.8%
Other Gaseous Fuels .....	2.0	2.0	3.9	3.8	3.8	3.8	3.9	2.5%
Renewable Sources <sup>6</sup> .....	6.4	6.8	16.9	21.9	29.3	36.5	41.0	6.9%
Other .....	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.1%
<b>Total .....</b>	<b>28.3</b>	<b>28.5</b>	<b>43.0</b>	<b>50.0</b>	<b>59.9</b>	<b>70.2</b>	<b>78.1</b>	<b>3.8%</b>
<b>Cumulative Capacity Additions<sup>9</sup> .....</b>	<b>0.0</b>	<b>0.0</b>	<b>14.4</b>	<b>21.4</b>	<b>31.4</b>	<b>41.6</b>	<b>49.6</b>	<b>--</b>

<sup>1</sup>Net summer capacity is the steady hourly output that generating equipment is expected to supply to system load (exclusive of auxiliary power), as demonstrated by tests during summer peak demand.

<sup>2</sup>Includes electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public.

<sup>3</sup>Includes plants that only produce electricity. Includes capacity increases (uprates) at existing units.

<sup>4</sup>Includes oil-, gas-, and dual-fired capacity.

<sup>5</sup>Nuclear capacity includes 4.0 gigawatts of uprates through 2035.

<sup>6</sup>Includes conventional hydroelectric, geothermal, wood, wood waste, all municipal waste, landfill gas, other biomass, solar, and wind power. Facilities co-firing biomass and coal are classified as coal.

<sup>7</sup>Primarily peak load capacity fueled by natural gas.

<sup>8</sup>Includes combined heat and power plants whose primary business is to sell electricity and heat to the public (i.e., those that report North American Industry Classification System code 22).

<sup>9</sup>Cumulative additions after December 31, 2008.

<sup>10</sup>Cumulative retirements after December 31, 2008.

<sup>11</sup>Includes combined heat and power plants and electricity-only plants in the commercial and industrial sectors; and small on-site generating systems in the residential, commercial, and industrial sectors used primarily for own-use generation, but which may also sell some power to the grid.

-- = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 and 2008 are model results and may differ slightly from official EIA data reports.

Sources: 2007 and 2008 capacity and projected planned additions: Energy Information Administration (EIA), Form EIA-860, "Annual Electric Generator Report" (preliminary). Projections: EIA, AEO2010 National Energy Modeling System run AEO2010R.D111809A.

## Reference Case

**Table A10. Electricity Trade**  
(Billion Kilowatthours, Unless Otherwise Noted)

Electricity Trade	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Interregional Electricity Trade</b>								
Gross Domestic Sales								
Firm Power .....	124.5	122.9	110.9	81.8	44.9	37.6	37.6	-4.3%
Economy .....	133.1	192.8	145.3	143.0	186.1	185.0	182.2	-0.2%
<b>Total .....</b>	<b>257.6</b>	<b>315.7</b>	<b>256.2</b>	<b>224.8</b>	<b>231.0</b>	<b>222.6</b>	<b>219.7</b>	<b>-1.3%</b>
Gross Domestic Sales (million 2008 dollars)								
Firm Power .....	7292.7	7197.8	6495.1	4788.3	2632.1	2200.9	2200.9	-4.3%
Economy .....	8933.0	15234.5	6985.2	7455.4	9667.1	10958.5	11841.1	-0.9%
<b>Total .....</b>	<b>16225.7</b>	<b>22432.3</b>	<b>13480.3</b>	<b>12243.7</b>	<b>12299.2</b>	<b>13159.4</b>	<b>14041.9</b>	<b>-1.7%</b>
<b>International Electricity Trade</b>								
Imports from Canada and Mexico								
Firm Power .....	15.8	19.9	12.0	7.3	1.5	0.4	0.4	-13.6%
Economy .....	35.6	37.0	29.2	33.1	39.2	37.0	41.9	0.5%
<b>Total .....</b>	<b>51.4</b>	<b>56.9</b>	<b>41.2</b>	<b>40.4</b>	<b>40.8</b>	<b>37.4</b>	<b>42.2</b>	<b>-1.1%</b>
Exports to Canada and Mexico								
Firm Power .....	3.9	3.3	0.9	0.5	0.1	0.0	0.0	--
Economy .....	16.2	21.0	20.4	19.4	18.5	17.7	16.8	-0.8%
<b>Total .....</b>	<b>20.1</b>	<b>24.4</b>	<b>21.3</b>	<b>20.0</b>	<b>18.6</b>	<b>17.7</b>	<b>16.8</b>	<b>-1.4%</b>

-- = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 and 2008 are model results and may differ slightly from official EIA data reports. Firm Power Sales are capacity sales, meaning the delivery of the power is scheduled as part of the normal operating conditions of the affected electric systems. Economy Sales are subject to curtailment or cessation of delivery by the supplier in accordance with prior agreements or under specified conditions.

Sources: 2007 and 2008 interregional firm electricity trade data: North American Electric Reliability Council (NERC), Electricity Sales and Demand Database 2007. 2007 and 2008 Mexican electricity trade data: Energy Information Administration (EIA), *Annual Energy Review 2008* DOE/EIA-0384(2008) (Washington, DC, June 2009). 2007 Canadian international electricity trade data: National Energy Board, *Canadian Energy Overview 2007* (May 2008). 2008 Canadian electricity trade data: National Energy Board, *Canadian Energy Overview 2008* (May 2009). Projections: EIA, AEO2010 National Energy Modeling System run AEO2010R.D111809A.



**Table A11. Liquid Fuels Supply and Disposition**  
(Million Barrels per Day, Unless Otherwise Noted)

Supply and Disposition	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Crude Oil</b>								
Domestic Crude Production <sup>1</sup>	5.08	4.96	5.77	6.13	6.13	6.20	6.27	0.9%
Alaska	0.72	0.69	0.49	0.68	0.74	0.58	0.45	-1.6%
Lower 48 States	4.36	4.28	5.28	5.45	5.39	5.62	5.83	1.2%
Net Imports	10.00	9.75	8.88	8.51	8.60	8.65	8.65	-0.4%
Gross Imports	10.03	9.78	8.91	8.54	8.63	8.69	8.68	-0.4%
Exports	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.5%
Other Crude Supply <sup>2</sup>	0.09	-0.06	0.00	0.00	0.00	0.00	0.00	--
<b>Total Crude Supply</b>	<b>15.17</b>	<b>14.66</b>	<b>14.66</b>	<b>14.64</b>	<b>14.73</b>	<b>14.85</b>	<b>14.92</b>	<b>0.1%</b>
<b>Other Petroleum Supply</b>								
Natural Gas Plant Liquids	1.78	1.78	1.77	1.80	1.74	1.79	1.83	0.1%
Net Product Imports	2.09	1.39	1.24	1.16	1.10	1.01	1.02	-1.1%
Gross Refined Product Imports <sup>3</sup>	1.94	1.54	1.23	1.25	1.25	1.18	1.22	-0.9%
Unfinished Oil Imports	0.72	0.76	0.81	0.81	0.82	0.84	0.85	0.4%
Blending Component Imports	0.75	0.79	0.80	0.81	0.82	0.83	0.84	0.2%
Exports	1.32	1.71	1.60	1.71	1.79	1.84	1.89	0.4%
Refinery Processing Gain <sup>4</sup>	1.00	1.00	1.04	1.13	1.17	1.16	1.13	0.5%
Product Stock Withdrawal	0.10	-0.07	0.00	0.00	0.00	0.00	0.00	--
<b>Other Non-petroleum Supply</b>	<b>0.57</b>	<b>0.78</b>	<b>1.42</b>	<b>1.71</b>	<b>2.11</b>	<b>2.55</b>	<b>3.11</b>	<b>5.2%</b>
Supply from Renewable Sources	0.48	0.71	1.10	1.28	1.63	2.02	2.58	4.9%
Ethanol	0.45	0.65	0.95	1.07	1.21	1.37	1.82	3.9%
Domestic Production	0.43	0.61	0.91	1.01	1.10	1.12	1.49	3.4%
Net Imports	0.02	0.05	0.04	0.05	0.11	0.25	0.33	7.4%
Biodiesel	0.03	0.05	0.11	0.11	0.11	0.13	0.13	3.9%
Domestic Production	0.03	0.05	0.11	0.11	0.11	0.13	0.13	3.9%
Net Imports	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Other Biomass-derived Liquids <sup>5</sup>	0.00	0.01	0.04	0.10	0.31	0.53	0.63	16.5%
Liquids from Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Liquids from Coal	0.00	0.00	0.07	0.11	0.15	0.20	0.24	--
Other <sup>6</sup>	0.09	0.07	0.25	0.32	0.33	0.33	0.29	5.3%
<b>Total Primary Supply<sup>7</sup></b>	<b>20.71</b>	<b>19.54</b>	<b>20.13</b>	<b>20.44</b>	<b>20.86</b>	<b>21.36</b>	<b>22.00</b>	<b>0.4%</b>
<b>Liquid Fuels Consumption</b>								
<b>by Fuel</b>								
Liquefied Petroleum Gases	2.09	1.95	2.15	2.37	2.33	2.27	2.19	0.4%
E85 <sup>8</sup>	0.00	0.00	0.01	0.18	0.36	0.56	1.20	23.3%
Motor Gasoline <sup>9</sup>	9.29	8.99	9.37	9.24	9.32	9.35	9.06	0.0%
Jet Fuel <sup>10</sup>	1.62	1.54	1.57	1.68	1.75	1.80	1.84	0.7%
Distillate Fuel Oil <sup>11</sup>	4.20	3.94	4.08	4.24	4.41	4.65	4.91	0.8%
Diesel	3.47	3.44	3.56	3.75	3.93	4.20	4.48	1.0%
Residual Fuel Oil	0.72	0.62	0.66	0.66	0.66	0.67	0.67	0.3%
Other <sup>12</sup>	2.74	2.47	2.35	2.19	2.17	2.19	2.18	-0.5%
<b>by Sector</b>								
Residential and Commercial	1.05	0.98	0.89	0.85	0.83	0.81	0.79	-0.8%
Industrial <sup>13</sup>	5.16	4.75	4.82	4.89	4.81	4.76	4.67	-0.1%
Transportation	14.39	13.88	14.27	14.61	15.14	15.69	16.38	0.6%
Electric Power <sup>14</sup>	0.29	0.21	0.20	0.21	0.21	0.22	0.22	0.2%
<b>Total</b>	<b>20.65</b>	<b>19.53</b>	<b>20.18</b>	<b>20.56</b>	<b>20.99</b>	<b>21.48</b>	<b>22.06</b>	<b>0.5%</b>
<b>Discrepancy<sup>15</sup></b>	<b>0.06</b>	<b>0.01</b>	<b>-0.05</b>	<b>-0.13</b>	<b>-0.13</b>	<b>-0.12</b>	<b>-0.06</b>	<b>--</b>

## Reference Case

**Table A11. Liquid Fuels Supply and Disposition (Continued)**  
(Million Barrels per Day, Unless Otherwise Noted)

Supply and Disposition	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
Domestic Refinery Distillation Capacity <sup>16</sup> . . . . .	17.4	17.6	17.9	16.8	16.8	16.9	17.3	-0.1%
Capacity Utilization Rate (percent) <sup>17</sup> . . . . .	89.0	85.0	83.7	89.0	89.5	89.6	88.3	0.1%
Net Import Share of Product Supplied (percent) . . . . .	58.5	57.3	50.5	47.6	47.1	46.4	45.4	-0.9%
Net Expenditures for Imported Crude Oil and Petroleum Products (billion 2008 dollars) . . . . .	287.15	437.90	301.44	329.52	356.35	383.33	420.54	-0.1%

<sup>1</sup>Includes lease condensate.  
<sup>2</sup>Strategic petroleum reserve stock additions plus unaccounted for crude oil and crude stock withdrawals minus crude product supplied.  
<sup>3</sup>Includes other hydrocarbons and alcohols.  
<sup>4</sup>The volumetric amount by which total output is greater than input due to the processing of crude oil into products which, in total, have a lower specific gravity than the crude oil processed.  
<sup>5</sup>Includes pyrolysis oils, biomass-derived Fischer-Tropsch liquids, and renewable feedstocks used for the production of green diesel and gasoline.  
<sup>6</sup>Includes domestic sources of other blending components, other hydrocarbons, and ethers.  
<sup>7</sup>Total crude supply plus natural gas plant liquids, other inputs, refinery processing gain, and net product imports.  
<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 ethanol and ethers blended into gasoline.  
<sup>10</sup>Includes only kerosene type.  
<sup>11</sup>Includes distillate fuel oil and kerosene from petroleum and biomass feedstocks.  
<sup>12</sup>Includes aviation gasoline, petrochemical feedstocks, lubricants, waxes, asphalt, road oil, still gas, special naphthas, petroleum coke, crude oil product supplied, methanol, and miscellaneous petroleum products.  
<sup>13</sup>Includes consumption for combined heat and power, which produces electricity and other useful thermal energy.  
<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. Includes small power producers and exempt wholesale generators.  
<sup>15</sup>Balancing item. Includes unaccounted for supply, losses, and gains.  
<sup>16</sup>End-of-year operable capacity.  
<sup>17</sup>Rate is calculated by dividing the gross annual input to atmospheric crude oil distillation units by their operable refining capacity in barrels per calendar day.  
 - - = Not applicable.  
 Note: Totals may not equal sum of components due to independent rounding. Data for 2007 and 2008 are model results and may differ slightly from official EIA data reports.  
 Sources: 2007 and 2008 petroleum product supplied based on: Energy Information Administration (EIA), *Annual Energy Review 2008*, DOE/EIA-0384(2008) (Washington, DC, June 2009). Other 2007 data: EIA, *Petroleum Supply Annual 2007*, DOE/EIA-0340(2007)/1 (Washington, DC, July 2008). Other 2008 data: EIA, *Petroleum Supply Annual 2008*, DOE/EIA-0340(2008)/1 (Washington, DC, June 2009). Projections: EIA, AEO2010 National Energy Modeling System run AEO2010R.D111809A.

**Table A12. Petroleum Product Prices**  
(2008 Cents per Gallon, Unless Otherwise Noted)

Sector and Fuel	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Crude Oil Prices (2008 dollars per barrel)</b>								
Imported Low Sulfur Light Crude Oil <sup>1</sup> . . . . .	73.93	99.57	94.52	108.28	115.09	123.50	133.22	1.1%
Imported Crude Oil <sup>1</sup> . . . . .	68.69	92.61	86.88	98.14	104.49	111.49	121.37	1.0%
<b>Delivered Sector Product Prices</b>								
<b>Residential</b>								
Liquefied Petroleum Gases . . . . .	224.4	251.5	240.2	259.6	270.4	281.2	297.0	0.6%
Distillate Fuel Oil . . . . .	281.6	339.3	292.4	334.2	349.9	369.1	397.5	0.6%
<b>Commercial</b>								
Distillate Fuel Oil . . . . .	241.5	296.8	258.0	297.7	313.2	332.3	360.3	0.7%
Residual Fuel Oil . . . . .	125.6	232.4	196.5	231.5	247.6	262.5	282.0	0.7%
Residual Fuel Oil (2008 dollars per barrel) . .	52.75	97.61	82.52	97.22	104.01	110.25	118.45	0.7%
<b>Industrial<sup>2</sup></b>								
Liquefied Petroleum Gases . . . . .	188.2	207.4	192.7	213.0	223.9	234.7	250.6	0.7%
Distillate Fuel Oil . . . . .	249.5	307.4	260.9	299.6	315.4	335.0	363.6	0.6%
Residual Fuel Oil . . . . .	132.3	244.1	246.5	272.4	287.9	303.5	325.1	1.1%
Residual Fuel Oil (2008 dollars per barrel) . .	55.57	102.52	103.52	114.41	120.91	127.46	136.54	1.1%
<b>Transportation</b>								
Liquefied Petroleum Gases . . . . .	203.8	256.5	238.9	258.2	268.8	279.2	294.6	0.5%
Ethanol (E85) <sup>3</sup> . . . . .	260.2	255.5	242.4	255.7	273.8	290.7	305.8	0.7%
Ethanol Wholesale Price . . . . .	217.2	244.6	198.9	205.7	188.6	199.8	211.5	-0.5%
Motor Gasoline <sup>4</sup> . . . . .	290.6	326.7	306.9	333.8	349.3	368.0	391.1	0.7%
Jet Fuel <sup>5</sup> . . . . .	212.9	306.5	257.0	292.8	309.4	330.9	357.5	0.6%
Diesel Fuel (distillate fuel oil) <sup>6</sup> . . . . .	295.6	379.3	314.3	350.8	364.9	383.1	410.5	0.3%
Residual Fuel Oil . . . . .	137.5	216.9	203.3	224.4	238.5	255.9	278.5	0.9%
Residual Fuel Oil (2008 dollars per barrel) . .	57.76	91.11	85.37	94.27	100.18	107.49	116.95	0.9%
<b>Electric Power<sup>7</sup></b>								
Distillate Fuel Oil . . . . .	218.5	268.6	240.8	280.8	296.1	315.0	342.6	0.9%
Residual Fuel Oil . . . . .	135.3	218.0	232.4	257.8	273.9	292.6	316.1	1.4%
Residual Fuel Oil (2008 dollars per barrel) . .	56.83	91.57	97.61	108.26	115.04	122.90	132.75	1.4%
<b>Refined Petroleum Product Prices<sup>8</sup></b>								
Liquefied Petroleum Gases . . . . .	162.0	173.0	174.0	189.8	200.1	210.4	226.0	1.0%
Motor Gasoline <sup>4</sup> . . . . .	289.1	324.0	306.9	333.8	349.3	368.0	391.1	0.7%
Jet Fuel <sup>5</sup> . . . . .	212.9	306.5	257.0	292.8	309.4	330.9	357.5	0.6%
Distillate Fuel Oil . . . . .	285.0	361.2	302.3	340.2	355.2	374.4	402.5	0.4%
Residual Fuel Oil . . . . .	135.8	221.1	213.4	236.7	251.4	268.8	291.3	1.0%
Residual Fuel Oil (2008 dollars per barrel) . .	57.03	92.85	89.64	99.43	105.61	112.92	122.34	1.0%
<b>Average</b> . . . . .	<b>254.3</b>	<b>304.7</b>	<b>279.6</b>	<b>307.5</b>	<b>322.9</b>	<b>341.7</b>	<b>366.2</b>	<b>0.7%</b>

# Reference Case

**Table A12. Petroleum Product Prices (Continued)**  
(Nominal Cents per Gallon, Unless Otherwise Noted)

Sector and Fuel	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Crude Oil Prices (nominal dollars per barrel)</b>								
Imported Low Sulfur Light Crude Oil <sup>1</sup> . . . . .	72.32	99.57	105.33	132.33	156.20	186.40	223.88	3.0%
Imported Crude Oil <sup>1</sup> . . . . .	67.19	92.61	96.82	119.94	141.80	168.28	203.97	3.0%
<b>Delivered Sector Product Prices</b>								
<b>Residential</b>								
Liquefied Petroleum Gases . . . . .	219.5	251.5	267.7	317.3	367.0	424.4	499.1	2.6%
Distillate Fuel Oil . . . . .	275.4	339.3	325.8	408.4	474.9	557.0	667.9	2.5%
<b>Commercial</b>								
Distillate Fuel Oil . . . . .	236.2	296.8	287.6	363.9	425.1	501.6	605.5	2.7%
Residual Fuel Oil . . . . .	122.9	232.4	219.0	282.9	336.1	396.2	474.0	2.7%
Residual Fuel Oil (nominal dollars per barrel)	51.60	97.61	91.96	118.82	141.15	166.40	199.06	2.7%
<b>Industrial<sup>2</sup></b>								
Liquefied Petroleum Gases . . . . .	184.1	207.4	214.8	260.3	303.9	354.2	421.2	2.7%
Distillate Fuel Oil . . . . .	244.1	307.4	290.7	366.2	428.0	505.6	611.0	2.6%
Residual Fuel Oil . . . . .	129.4	244.1	274.7	332.9	390.7	458.0	546.4	3.0%
Residual Fuel Oil (nominal dollars per barrel)	54.36	102.52	115.36	139.83	164.09	192.38	229.47	3.0%
<b>Transportation</b>								
Liquefied Petroleum Gases . . . . .	199.3	256.5	266.3	315.6	364.8	421.4	495.1	2.5%
Ethanol (E85) <sup>3</sup> . . . . .	254.6	255.5	270.1	312.5	371.6	438.8	513.9	2.6%
Ethanol Wholesale Price . . . . .	212.4	244.6	221.6	251.4	256.0	301.5	355.4	1.4%
Motor Gasoline <sup>4</sup> . . . . .	284.2	326.7	342.1	408.0	474.0	555.5	657.3	2.6%
Jet Fuel <sup>5</sup> . . . . .	208.2	306.5	286.4	357.9	419.9	499.4	600.8	2.5%
Diesel Fuel (distillate fuel oil) <sup>6</sup> . . . . .	289.2	379.3	350.2	428.7	495.2	578.2	689.9	2.2%
Residual Fuel Oil . . . . .	134.5	216.9	226.5	274.3	323.7	386.3	468.0	2.9%
Residual Fuel Oil (nominal dollars per barrel)	56.49	91.11	95.13	115.21	135.96	162.24	196.55	2.9%
<b>Electric Power<sup>7</sup></b>								
Distillate Fuel Oil . . . . .	213.7	268.6	268.4	343.2	401.9	475.4	575.8	2.9%
Residual Fuel Oil . . . . .	132.4	218.0	259.0	315.0	371.7	441.6	531.2	3.4%
Residual Fuel Oil (nominal dollars per barrel)	55.59	91.57	108.78	132.31	156.12	185.49	223.09	3.4%
<b>Refined Petroleum Product Prices<sup>8</sup></b>								
Liquefied Petroleum Gases . . . . .	158.4	173.0	193.9	232.0	271.5	317.6	379.8	3.0%
Motor Gasoline <sup>4</sup> . . . . .	282.8	324.0	342.0	407.9	474.0	555.4	657.2	2.7%
Jet Fuel <sup>5</sup> . . . . .	208.2	306.5	286.4	357.9	419.9	499.4	600.8	2.5%
Distillate Fuel Oil . . . . .	278.7	361.2	336.9	415.8	482.1	565.1	676.4	2.4%
Residual Fuel Oil . . . . .	132.8	221.1	237.9	289.3	341.2	405.8	489.5	3.0%
Residual Fuel Oil (nominal dollars per barrel)	55.79	92.85	99.90	121.51	143.32	170.42	205.59	3.0%
<b>Average</b> . . . . .	<b>248.7</b>	<b>304.7</b>	<b>311.5</b>	<b>375.8</b>	<b>438.2</b>	<b>515.7</b>	<b>615.4</b>	<b>2.6%</b>

<sup>1</sup>Weighted average price delivered to U.S. refiners.

<sup>2</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>3</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>4</sup>Sales weighted-average price for all grades. Includes Federal, State and local taxes.

<sup>5</sup>Includes only kerosene type.

<sup>6</sup>Diesel fuel for on-road use. Includes Federal and State taxes while excluding county and local taxes.

<sup>7</sup>Includes electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public. Includes small power producers and exempt wholesale generators.

<sup>8</sup>Weighted averages of end-use fuel prices are derived from the prices in each sector and the corresponding sectoral consumption.

Note: Data for 2007 and 2008 are model results and may differ slightly from official EIA data reports.

Sources: 2007 and 2008 imported low sulfur light crude oil price: Energy Information Administration (EIA), Form EIA-856, "Monthly Foreign Crude Oil Acquisition Report." 2007 and 2008 imported crude oil price: EIA, *Annual Energy Review 2008*, DOE/EIA-0384(2008) (Washington, DC, June 2009). 2007 and 2008 prices for motor gasoline, distillate fuel oil, and jet fuel are based on: EIA, *Petroleum Marketing Annual 2008*, DOE/EIA-0487(2008) (Washington, DC, August 2009). 2007 and 2008 residential, commercial, industrial, and transportation sector petroleum product prices are derived from: EIA, Form EIA-782A, "Refiners'/Gas Plant Operators' Monthly Petroleum Product Sales Report." 2007 and 2008 electric power prices based on: Federal Energy Regulatory Commission, FERC Form 423, "Monthly Report of Cost and Quality of Fuels for Electric Plants." 2007 and 2008 E85 prices derived from monthly prices in the Clean Cities Alternative Fuel Price Report. 2007 and 2008 wholesale ethanol prices derived from Bloomberg U.S. average rack price. Projections: EIA, AEO2010 National Energy Modeling System run AEO2010R.D111809A.

**Table A13. Natural Gas Supply, Disposition, and Prices**  
(Trillion Cubic Feet per Year, Unless Otherwise Noted)

Supply, Disposition, and Prices	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Production</b>								
Dry Gas Production <sup>1</sup> .....	19.09	20.56	19.29	19.98	21.31	22.38	23.27	0.5%
Supplemental Natural Gas <sup>2</sup> .....	0.06	0.05	0.06	0.06	0.06	0.06	0.06	0.6%
<b>Net Imports</b> .....								
Pipeline <sup>3</sup> .....	3.79	2.95	2.38	2.57	2.17	1.84	1.46	-2.6%
Liquefied Natural Gas .....	3.06	2.65	1.29	1.07	0.89	0.94	0.64	-5.1%
	0.72	0.30	1.09	1.50	1.28	0.89	0.83	3.8%
<b>Total Supply</b> .....	<b>22.94</b>	<b>23.57</b>	<b>21.73</b>	<b>22.61</b>	<b>23.54</b>	<b>24.28</b>	<b>24.80</b>	<b>0.2%</b>
<b>Consumption by Sector</b>								
Residential .....	4.70	4.87	4.71	4.83	4.89	4.89	4.87	0.0%
Commercial .....	3.01	3.12	3.23	3.33	3.45	3.55	3.69	0.6%
Industrial <sup>4</sup> .....	6.62	6.65	6.88	7.03	6.94	6.74	6.72	0.0%
Natural-Gas-to-Liquids Heat and Power <sup>5</sup> .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Natural Gas to Liquids Production <sup>6</sup> .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Electric Power <sup>7</sup> .....	6.84	6.66	5.18	5.66	6.28	7.04	7.42	0.4%
Transportation <sup>8</sup> .....	0.04	0.04	0.05	0.08	0.11	0.15	0.19	5.9%
Pipeline Fuel .....	0.62	0.63	0.60	0.62	0.70	0.72	0.72	0.5%
Lease and Plant Fuel <sup>9</sup> .....	1.18	1.28	1.08	1.09	1.19	1.23	1.25	-0.1%
<b>Total</b> .....	<b>23.02</b>	<b>23.25</b>	<b>21.74</b>	<b>22.63</b>	<b>23.57</b>	<b>24.33</b>	<b>24.86</b>	<b>0.2%</b>
<b>Discrepancy<sup>10</sup></b> .....	<b>-0.08</b>	<b>0.32</b>	<b>-0.01</b>	<b>-0.02</b>	<b>-0.03</b>	<b>-0.05</b>	<b>-0.07</b>	<b>--</b>
<b>Natural Gas Prices</b>								
<b>(2008 dollars per million Btu)</b>								
Henry Hub Spot Price .....	7.12	8.86	6.27	6.64	6.99	8.05	8.88	0.0%
Average Lower 48 Wellhead Price <sup>11</sup> .....	6.38	7.85	5.54	5.87	6.18	7.11	7.84	-0.0%
<b>(2008 dollars per thousand cubic feet)</b>								
Average Lower 48 Wellhead Price <sup>11</sup> .....	6.56	8.07	5.70	6.03	6.35	7.31	8.06	-0.0%
<b>Delivered Prices</b>								
<b>(2008 dollars per thousand cubic feet)</b>								
Residential .....	13.32	13.87	11.89	12.30	12.65	13.83	14.82	0.2%
Commercial .....	11.53	12.29	10.28	10.65	11.01	12.12	13.03	0.2%
Industrial <sup>4</sup> .....	7.80	9.38	6.63	6.89	7.22	8.21	8.99	-0.2%
Electric Power <sup>7</sup> .....	7.45	9.34	6.24	6.59	6.94	7.94	8.69	-0.3%
Transportation <sup>12</sup> .....	14.24	16.42	13.76	13.83	13.82	14.60	15.21	-0.3%
<b>Average<sup>13</sup></b> .....	<b>9.45</b>	<b>10.83</b>	<b>8.37</b>	<b>8.68</b>	<b>9.00</b>	<b>10.01</b>	<b>10.83</b>	<b>0.0%</b>

## Reference Case

**Table A13. Natural Gas Supply, Disposition, and Prices (Continued)**  
(Trillion Cubic Feet per Year, Unless Otherwise Noted)

Supply, Disposition, and Prices	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Natural Gas Prices</b>								
<b>(nominal dollars per million Btu)</b>								
Henry Hub Spot Price . . . . .	6.96	8.86	6.99	8.11	9.49	12.15	14.92	1.9%
Average Lower 48 Wellhead Price <sup>11</sup> . . . . .	6.24	7.85	6.17	7.17	8.38	10.73	13.18	1.9%
<b>(nominal dollars per thousand cubic feet)</b>								
Average Lower 48 Wellhead Price <sup>11</sup> . . . . .	6.42	8.07	6.35	7.37	8.62	11.03	13.55	1.9%
<b>Delivered Prices</b>								
<b>(nominal dollars per thousand cubic feet)</b>								
Residential . . . . .	13.03	13.87	13.25	15.03	17.16	20.88	24.90	2.2%
Commercial . . . . .	11.28	12.29	11.46	13.02	14.95	18.30	21.89	2.2%
Industrial <sup>4</sup> . . . . .	7.63	9.38	7.39	8.43	9.80	12.39	15.10	1.8%
Electric Power <sup>7</sup> . . . . .	7.29	9.34	6.96	8.06	9.41	11.98	14.61	1.7%
Transportation <sup>12</sup> . . . . .	13.93	16.42	15.33	16.90	18.76	22.04	25.56	1.7%
<b>Average<sup>13</sup></b> . . . . .	<b>9.24</b>	<b>10.83</b>	<b>9.33</b>	<b>10.61</b>	<b>12.21</b>	<b>15.11</b>	<b>18.20</b>	<b>1.9%</b>

<sup>1</sup>Marketed production (wet) minus extraction losses.

<sup>2</sup>Synthetic natural gas, propane air, coke oven gas, refinery gas, biomass gas, air injected for Btu stabilization, and manufactured gas commingled and distributed with natural gas.

<sup>3</sup>Includes any natural gas regasified in the Bahamas and transported via pipeline to Florida, as well as gas from Canada and Mexico.

<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 any natural gas used in the process of converting natural gas to liquid fuel that is not actually converted.

<sup>6</sup>Includes any natural gas that is converted into liquid fuel.

<sup>7</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. Includes small power producers and exempt wholesale generators.

<sup>8</sup>Compressed natural gas used as vehicle fuel.

<sup>9</sup>Represents natural gas used in well, field, and lease operations, and in natural gas processing plant machinery.

<sup>10</sup>Balancing item. Natural gas lost as a result of converting flow data measured at varying temperatures and pressures to a standard temperature and pressure and the merger of different data reporting systems which vary in scope, format, definition, and respondent type. In addition, 2007 and 2008 values include net storage injections.

<sup>11</sup>Represents lower 48 onshore and offshore supplies.

<sup>12</sup>Compressed natural gas used as a vehicle fuel. Price includes estimated motor vehicle fuel taxes and estimated dispensing costs or charges.

<sup>13</sup>Weighted average prices. Weights used are the sectoral consumption values excluding lease, plant, and pipeline fuel.

-- = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 and 2008 are model results and may differ slightly from official EIA data reports.

Sources: 2007 supply values; and lease, plant, and pipeline fuel consumption: Energy Information Administration (EIA), *Natural Gas Annual 2007*, DOE/EIA-0131(2007) (Washington, DC, January 2009). 2008 supply values; and lease, plant, and pipeline fuel consumption; and wellhead price: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2009/07) (Washington, DC, July 2009). Other 2007 and 2008 consumption based on: EIA, *Annual Energy Review 2008*, DOE/EIA-0384(2008) (Washington, DC, June 2009). 2007 wellhead price: Minerals Management Service and EIA, *Natural Gas Annual 2007*, DOE/EIA-0131(2007) (Washington, DC, January 2009). 2007 residential and commercial delivered prices: EIA, *Natural Gas Annual 2007*, DOE/EIA-0131(2007) (Washington, DC, January 2009). 2008 residential and commercial delivered prices: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2009/07) (Washington, DC, July 2009). 2007 and 2008 electric power prices: EIA, *Electric Power Monthly*, DOE/EIA-0226, April 2008 and April 2009, Table 4.13.B. 2007 and 2008 industrial delivered prices are estimated based on: EIA, *Manufacturing Energy Consumption Survey* and industrial and wellhead prices from the *Natural Gas Annual 2007*, DOE/EIA-0131(2007) (Washington, DC, January 2009) and the *Natural Gas Monthly*, DOE/EIA-0130(2009/07) (Washington, DC, July 2009). 2007 transportation sector delivered prices are based on: EIA, *Natural Gas Annual 2007*, DOE/EIA-0131(2007) (Washington, DC, January 2009) and estimated state taxes, federal taxes, and dispensing costs or charges. 2008 transportation sector delivered prices are model results. Projections: EIA, AEO2010 National Energy Modeling System run AEO2010R.D111809A.

Table A14. Oil and Gas Supply

Production and Supply	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Crude Oil</b>								
<b>Lower 48 Average Wellhead Price<sup>1</sup></b> (2008 dollars per barrel) .....	<b>68.52</b>	<b>95.24</b>	<b>90.84</b>	<b>102.00</b>	<b>108.31</b>	<b>114.75</b>	<b>124.69</b>	<b>1.0%</b>
<b>Production (million barrels per day)<sup>2</sup></b>								
United States Total .....	5.08	4.96	5.77	6.13	6.13	6.20	6.27	0.9%
Lower 48 Onshore .....	2.95	3.00	3.34	3.37	3.25	3.43	3.46	0.5%
Lower 48 Offshore .....	1.40	1.27	1.94	2.08	2.14	2.19	2.36	2.3%
Alaska .....	0.72	0.69	0.49	0.68	0.74	0.58	0.45	-1.6%
<b>Lower 48 End of Year Reserves<sup>2</sup></b> (billion barrels) .....	<b>18.65</b>	<b>17.18</b>	<b>19.41</b>	<b>20.78</b>	<b>22.44</b>	<b>23.42</b>	<b>23.57</b>	<b>1.2%</b>
<b>Natural Gas</b>								
<b>Lower 48 Average Wellhead Price<sup>1</sup></b> (2008 dollars per million Btu)								
Henry Hub Spot Price .....	7.12	8.86	6.27	6.64	6.99	8.05	8.88	0.0%
Average Lower 48 Wellhead Price <sup>1</sup> .....	6.38	7.85	5.54	5.87	6.18	7.11	7.84	-0.0%
<b>(2008 dollars per thousand cubic feet)</b>								
Average Lower 48 Wellhead Price <sup>1</sup> .....	6.56	8.07	5.70	6.03	6.35	7.31	8.06	-0.0%
<b>Dry Production (trillion cubic feet)<sup>3</sup></b>								
United States Total .....	19.09	20.56	19.29	19.98	21.31	22.38	23.27	0.5%
Lower 48 Onshore .....	15.70	17.56	16.09	16.23	15.96	16.59	17.07	-0.1%
Associated-Dissolved <sup>4</sup> .....	1.31	1.39	1.44	1.42	1.25	1.12	1.03	-1.1%
Non-Associated .....	14.39	16.17	14.65	14.80	14.71	15.47	16.04	-0.0%
Conventional <sup>5</sup> .....	11.33	12.71	8.92	8.41	8.00	8.13	8.11	-1.7%
Unconventional .....	3.06	3.46	5.73	6.40	6.71	7.35	7.93	3.1%
Shale Gas .....	1.15	1.49	3.85	4.51	4.94	5.50	6.00	5.3%
Coalbed Methane .....	1.91	1.97	1.89	1.88	1.77	1.85	1.93	-0.1%
Lower 48 Offshore .....	2.98	2.62	2.91	3.48	3.46	3.91	4.33	1.9%
Associated-Dissolved <sup>4</sup> .....	0.62	0.55	0.79	0.93	0.90	0.95	1.00	2.2%
Non-Associated .....	2.36	2.06	2.12	2.55	2.56	2.96	3.33	1.8%
Alaska .....	0.41	0.38	0.29	0.27	1.88	1.88	1.87	6.1%
<b>Lower 48 End of Year Dry Reserves<sup>3</sup></b> (trillion cubic feet) .....	<b>225.81</b>	<b>235.63</b>	<b>254.61</b>	<b>260.13</b>	<b>259.77</b>	<b>263.33</b>	<b>267.94</b>	<b>0.5%</b>
<b>Supplemental Gas Supplies (trillion cubic feet)<sup>6</sup></b>	<b>0.06</b>	<b>0.05</b>	<b>0.06</b>	<b>0.06</b>	<b>0.06</b>	<b>0.06</b>	<b>0.06</b>	<b>0.6%</b>
<b>Total Lower 48 Wells Drilled (thousands) .....</b>	<b>50.94</b>	<b>55.72</b>	<b>54.40</b>	<b>56.08</b>	<b>56.68</b>	<b>59.04</b>	<b>60.93</b>	<b>0.3%</b>

<sup>1</sup>Represents lower 48 onshore and offshore supplies.

<sup>2</sup>Includes lease condensate.

<sup>3</sup>Marketed production (wet) minus extraction losses.

<sup>4</sup>Gas which occurs in crude oil reservoirs either as free gas (associated) or as gas in solution with crude oil (dissolved).

<sup>5</sup>Includes tight gas.

<sup>6</sup>Synthetic natural gas, propane air, coke oven gas, refinery gas, biomass gas, air injected for Btu stabilization, and manufactured gas commingled and distributed with natural gas.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 and 2008 are model results and may differ slightly from official EIA data reports.

Sources: 2007 and 2008 crude oil lower 48 average wellhead price: Energy Information Administration (EIA), *Petroleum Marketing Annual 2008*, DOE/EIA-0487(2008) (Washington, DC, August 2009). 2007 and 2008 lower 48 onshore, lower 48 offshore, and Alaska crude oil production: EIA, *Petroleum Supply Annual 2008*, DOE/EIA-0340(2008)/1 (Washington, DC, June 2009). 2007 U.S. crude oil and natural gas reserves: EIA, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves*, DOE/EIA-0216(2008) (Washington, DC, October 2009). 2007 Alaska and total natural gas production, and supplemental gas supplies: EIA, *Natural Gas Annual 2007*, DOE/EIA-0131(2007) (Washington, DC, January 2009). 2007 natural gas lower 48 average wellhead price: Minerals Management Service and EIA, *Natural Gas Annual 2007*, DOE/EIA-0131(2007) (Washington, DC, January 2009). 2008 natural gas lower 48 average wellhead price, Alaska and total natural gas production, and supplemental gas supplies: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2009/07) (Washington, DC, July 2009). Other 2007 and 2008 values: EIA, Office of Integrated Analysis and Forecasting. Projections: EIA, AEO2010 National Energy Modeling System run AEO2010R.D111809A.



## Reference Case

**Table A15. Coal Supply, Disposition, and Prices**  
(Million Short Tons per Year, Unless Otherwise Noted)

Supply, Disposition, and Prices	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Production<sup>1</sup></b>								
Appalachia .....	378	391	317	305	291	278	277	-1.3%
Interior .....	147	147	184	198	199	197	208	1.3%
West .....	621	634	654	681	744	785	800	0.9%
East of the Mississippi .....	478	493	444	444	422	407	415	-0.6%
West of the Mississippi .....	668	678	710	740	813	854	870	0.9%
<b>Total .....</b>	<b>1147</b>	<b>1172</b>	<b>1155</b>	<b>1183</b>	<b>1234</b>	<b>1260</b>	<b>1285</b>	<b>0.3%</b>
<b>Waste Coal Supplied<sup>2</sup> .....</b>	<b>14</b>	<b>14</b>	<b>16</b>	<b>15</b>	<b>15</b>	<b>14</b>	<b>15</b>	<b>0.3%</b>
<b>Net Imports</b>								
Imports <sup>3</sup> .....	34	32	30	37	34	38	53	1.9%
Exports .....	59	82	60	53	48	36	33	-3.3%
<b>Total .....</b>	<b>-25</b>	<b>-49</b>	<b>-30</b>	<b>-15</b>	<b>-14</b>	<b>2</b>	<b>20</b>	<b>--</b>
<b>Total Supply<sup>4</sup> .....</b>	<b>1136</b>	<b>1136</b>	<b>1141</b>	<b>1183</b>	<b>1235</b>	<b>1276</b>	<b>1320</b>	<b>0.6%</b>
<b>Consumption by Sector</b>								
Residential and Commercial .....	4	4	3	3	3	3	3	-0.2%
Coke Plants .....	23	22	20	20	19	17	14	-1.7%
Other Industrial <sup>5</sup> .....	57	55	53	53	53	52	51	-0.2%
Coal-to-Liquids Heat and Power .....	0	0	11	17	24	31	37	--
Coal to Liquids Production .....	0	0	9	15	20	26	31	--
Electric Power <sup>6</sup> .....	1045	1042	1044	1073	1116	1147	1183	0.5%
<b>Total .....</b>	<b>1128</b>	<b>1122</b>	<b>1141</b>	<b>1183</b>	<b>1235</b>	<b>1276</b>	<b>1319</b>	<b>0.6%</b>
<b>Discrepancy and Stock Change<sup>7</sup> .....</b>	<b>8</b>	<b>15</b>	<b>-0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>--</b>
<b>Average Minemouth Price<sup>8</sup></b>								
(2008 dollars per short ton) .....	26.40	31.26	30.38	30.01	28.19	27.43	28.10	-0.4%
(2008 dollars per million Btu) .....	1.30	1.55	1.52	1.51	1.44	1.41	1.44	-0.3%
<b>Delivered Prices (2008 dollars per short ton)<sup>9</sup></b>								
Coke Plants .....	97.09	118.09	132.98	139.25	137.06	133.66	132.10	0.4%
Other Industrial <sup>5</sup> .....	55.64	63.44	57.43	56.95	56.11	56.74	57.88	-0.3%
Coal to Liquids .....	--	--	20.14	20.37	21.22	20.91	22.34	--
Electric Power								
(2008 dollars per short ton) .....	36.08	40.71	39.46	38.90	38.49	39.29	40.74	0.0%
(2008 dollars per million Btu) .....	1.80	2.05	2.01	1.98	1.99	2.03	2.09	0.1%
<b>Average .....</b>	<b>38.31</b>	<b>43.36</b>	<b>41.58</b>	<b>40.95</b>	<b>40.16</b>	<b>40.44</b>	<b>41.42</b>	<b>-0.2%</b>
Exports <sup>10</sup> .....	71.82	97.68	109.63	124.95	113.11	102.92	96.29	-0.1%

**Table A15. Coal Supply, Disposition, and Prices (Continued)**  
(Million Short Tons per Year, Unless Otherwise Noted)

Supply, Disposition, and Prices	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Average Minemouth Price<sup>8</sup></b>								
(nominal dollars per short ton) . . . . .	25.82	31.26	33.86	36.67	38.25	41.40	47.23	1.5%
(nominal dollars per million Btu) . . . . .	1.27	1.55	1.69	1.84	1.95	2.13	2.43	1.7%
<b>Delivered Prices (nominal dollars per short ton)<sup>9</sup></b>								
Coke Plants . . . . .	94.97	118.09	148.19	170.18	186.00	201.73	221.99	2.4%
Other Industrial <sup>5</sup> . . . . .	54.42	63.44	64.00	69.59	76.14	85.64	97.27	1.6%
Coal to Liquids . . . . .	--	--	22.44	24.90	28.80	31.55	37.54	--
Electric Power								
(nominal dollars per short ton) . . . . .	35.29	40.71	43.97	47.55	52.24	59.30	68.46	1.9%
(nominal dollars per million Btu) . . . . .	1.76	2.05	2.24	2.42	2.69	3.06	3.51	2.0%
<b>Average . . . . .</b>	<b>37.47</b>	<b>43.36</b>	<b>46.34</b>	<b>50.05</b>	<b>54.50</b>	<b>61.03</b>	<b>69.60</b>	<b>1.8%</b>
Exports <sup>10</sup> . . . . .	70.25	97.68	122.17	152.70	153.50	155.34	161.81	1.9%

<sup>1</sup>Includes anthracite, bituminous coal, subbituminous coal, and lignite.

<sup>2</sup>Includes waste coal consumed by the electric power and industrial sectors. Waste coal supplied is counted as a supply-side item to balance the same amount of waste coal included in the consumption data.

<sup>3</sup>Excludes imports to Puerto Rico and the U.S. Virgin Islands.

<sup>4</sup>Production plus waste coal supplied plus net imports.

<sup>5</sup>Includes consumption for combined heat and power plants, except those plants whose primary business is to sell electricity, or electricity and heat, to the public. Excludes all coal use in the coal-to-liquids process.

<sup>6</sup>Includes all electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public.

<sup>7</sup>Balancing item: the sum of production, net imports, and waste coal supplied minus total consumption.

<sup>8</sup>Includes reported prices for both open market and captive mines.

<sup>9</sup>Prices weighted by consumption; weighted average excludes residential and commercial prices, and export free-alongside-ship (f.a.s.) prices.

<sup>10</sup>F.a.s. price at U.S. port of exit.

-- = Not applicable.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 and 2008 are model results and may differ slightly from official EIA data reports.

Sources: 2007 and 2008 data based on: Energy Information Administration (EIA), *Annual Coal Report 2008*, DOE/EIA-0584(2008) (Washington, DC, September 2009); EIA, *Quarterly Coal Report, October-December 2008*, DOE/EIA-0121(2008/4Q) (Washington, DC, March 2009); and EIA, AEO2010 National Energy Modeling System run AEO2010R.D111809A. Projections: EIA, AEO2010 National Energy Modeling System run AEO2010R.D111809A.

## Reference Case

**Table A16. Renewable Energy Generating Capacity and Generation**  
(Gigawatts, Unless Otherwise Noted)

Capacity and Generation	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Electric Power Sector<sup>1</sup></b>								
<b>Net Summer Capacity</b>								
Conventional Hydropower .....	76.51	76.51	77.03	77.03	77.34	77.34	77.52	0.0%
Geothermal <sup>2</sup> .....	2.35	2.44	3.24	3.24	3.27	3.53	3.82	1.7%
Municipal Waste <sup>3</sup> .....	3.42	3.43	4.75	4.75	4.75	4.75	4.75	1.2%
Wood and Other Biomass <sup>4,5</sup> .....	2.09	2.17	4.46	4.46	4.75	6.92	11.87	6.5%
Solar Thermal .....	0.53	0.53	0.87	0.89	0.91	0.93	0.96	2.2%
Solar Photovoltaic <sup>6</sup> .....	0.04	0.05	0.14	0.22	0.31	0.40	0.45	8.6%
Wind .....	16.19	24.89	63.98	64.05	65.42	66.08	68.88	3.8%
Offshore Wind .....	0.00	0.00	0.20	0.20	0.20	0.20	0.20	--
<b>Total .....</b>	<b>101.14</b>	<b>110.01</b>	<b>154.68</b>	<b>154.84</b>	<b>156.95</b>	<b>160.15</b>	<b>168.45</b>	<b>1.6%</b>
<b>Generation (billion kilowatthours)</b>								
Conventional Hydropower .....	245.13	245.45	296.56	296.63	298.57	298.64	299.45	0.7%
Geothermal <sup>2</sup> .....	14.64	14.86	23.53	23.54	23.79	25.88	28.13	2.4%
Biogenic Municipal Waste <sup>7</sup> .....	13.88	14.49	24.95	24.95	24.95	24.95	24.95	2.0%
Wood and Other Biomass <sup>5</sup> .....	10.59	10.90	47.22	86.80	109.06	114.66	117.45	9.2%
Dedicated Plants .....	8.65	9.00	26.78	27.11	29.85	46.51	82.01	8.5%
Cofiring .....	1.94	1.90	20.44	59.69	79.21	68.15	35.43	11.4%
Solar Thermal .....	0.60	0.81	1.80	1.87	1.94	2.02	2.10	3.6%
Solar Photovoltaic <sup>6</sup> .....	0.01	0.03	0.34	0.54	0.76	0.98	1.13	14.2%
Wind .....	34.45	52.03	195.18	195.47	200.51	202.88	213.84	5.4%
Offshore Wind .....	0.00	0.00	0.75	0.75	0.75	0.75	0.75	--
<b>Total .....</b>	<b>319.29</b>	<b>338.56</b>	<b>590.33</b>	<b>630.56</b>	<b>660.33</b>	<b>670.76</b>	<b>687.80</b>	<b>2.7%</b>
<b>End-Use Generators<sup>8</sup></b>								
<b>Net Summer Capacity</b>								
Conventional Hydropower <sup>9</sup> .....	0.68	0.69	0.69	0.69	0.69	0.69	0.69	0.0%
Geothermal .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Municipal Waste <sup>10</sup> .....	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.0%
Biomass .....	4.88	4.86	6.31	9.04	16.04	22.07	24.51	6.2%
Solar Photovoltaic <sup>6</sup> .....	0.47	0.80	8.07	9.91	10.27	11.28	13.14	10.9%
Wind .....	0.08	0.09	1.52	1.92	2.01	2.11	2.29	12.5%
<b>Total .....</b>	<b>6.45</b>	<b>6.77</b>	<b>16.92</b>	<b>21.89</b>	<b>29.34</b>	<b>36.48</b>	<b>40.96</b>	<b>6.9%</b>
<b>Generation (billion kilowatthours)</b>								
Conventional Hydropower <sup>9</sup> .....	2.38	3.35	3.35	3.35	3.35	3.35	3.35	0.0%
Geothermal .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Municipal Waste <sup>10</sup> .....	2.01	2.02	2.79	2.79	2.79	2.79	2.79	1.2%
Biomass .....	28.43	27.89	37.25	57.37	109.23	153.77	172.75	7.0%
Solar Photovoltaic <sup>6</sup> .....	0.74	1.26	13.12	16.12	16.73	18.43	21.58	11.1%
Wind .....	0.10	0.12	2.10	2.66	2.79	2.94	3.19	12.9%
<b>Total .....</b>	<b>33.65</b>	<b>34.63</b>	<b>58.60</b>	<b>82.28</b>	<b>134.88</b>	<b>181.28</b>	<b>203.65</b>	<b>6.8%</b>

**Table A16. Renewable Energy Generating Capacity and Generation (Continued)**  
(Gigawatts, Unless Otherwise Noted)

Capacity and Generation	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Total, All Sectors</b>								
<b>Net Summer Capacity</b>								
Conventional Hydropower .....	77.20	77.19	77.72	77.72	78.03	78.03	78.21	0.0%
Geothermal .....	2.35	2.44	3.24	3.24	3.27	3.53	3.82	1.7%
Municipal Waste .....	3.75	3.77	5.08	5.08	5.08	5.08	5.08	1.1%
Wood and Other Biomass <sup>4,5</sup> .....	6.98	7.02	10.76	13.50	20.80	28.99	36.38	6.3%
Solar <sup>6</sup> .....	1.04	1.38	9.08	11.02	11.49	12.60	14.55	9.1%
Wind .....	16.27	24.98	65.71	66.17	67.63	68.39	71.36	4.0%
<b>Total .....</b>	<b>107.59</b>	<b>116.78</b>	<b>171.60</b>	<b>176.73</b>	<b>186.29</b>	<b>196.63</b>	<b>209.40</b>	<b>2.2%</b>
<b>Generation (billion kilowatthours)</b>								
Conventional Hydropower .....	247.51	248.79	299.91	299.98	301.92	301.99	302.80	0.7%
Geothermal .....	14.64	14.86	23.53	23.54	23.79	25.88	28.13	2.4%
Municipal Waste .....	15.89	16.51	27.74	27.74	27.74	27.74	27.74	1.9%
Wood and Other Biomass <sup>5</sup> .....	39.01	38.79	84.47	144.17	218.29	268.44	290.19	7.7%
Solar <sup>6</sup> .....	1.35	2.10	15.26	18.53	19.44	21.43	24.81	9.6%
Wind .....	34.55	52.15	198.03	198.88	204.05	206.57	217.78	5.4%
<b>Total .....</b>	<b>352.95</b>	<b>373.20</b>	<b>648.94</b>	<b>712.84</b>	<b>795.22</b>	<b>852.04</b>	<b>891.45</b>	<b>3.3%</b>

<sup>1</sup>Includes electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public.

<sup>2</sup>Includes hydrothermal resources only (hot water and steam).

<sup>3</sup>Includes municipal waste, landfill gas, and municipal sewage sludge. Incremental growth is assumed to be for landfill gas facilities. All municipal waste is included, although a portion of the municipal waste stream contains petroleum-derived plastics and other non-renewable sources.

<sup>4</sup>Facilities co-firing biomass and coal are classified as coal.

<sup>5</sup>Includes projections for energy crops after 2012.

<sup>6</sup>Does not include off-grid photovoltaics (PV). Based on annual PV shipments from 1989 through 2007, EIA estimates that as much as 221 megawatts of remote electricity generation PV applications (i.e., off-grid power systems) were in service in 2007, plus an additional 542 megawatts in communications, transportation, and assorted other non-grid-connected, specialized applications. See Energy Information Administration, *Annual Energy Review 2008*, DOE/EIA-0384(2008) (Washington, DC, June 2009), Table 10.9 (annual PV shipments, 1989-2007). The approach used to develop the estimate, based on shipment data, provides an upper estimate of the size of the PV stock, including both grid-based and off-grid PV. It will overestimate the size of the stock, because shipments include a substantial number of units that are exported, and each year some of the PV units installed earlier will be retired from service or abandoned.

<sup>7</sup>Includes biogenic municipal waste, landfill gas, and municipal sewage sludge. Incremental growth is assumed to be for landfill gas facilities. Only biogenic municipal waste is included. The Energy Information Administration estimates that in 2007 approximately 6 billion kilowatthours of electricity were generated from a municipal waste stream containing petroleum-derived plastics and other non-renewable sources. See Energy Information Administration, *Methodology for Allocating Municipal Solid Waste to Biogenic and Non-Biogenic Energy* (Washington, DC, May 2007).

<sup>8</sup>Includes combined heat and power plants and electricity-only plants in the commercial and industrial sectors; and small on-site generating systems in the residential, commercial, and industrial sectors used primarily for own-use generation, but which may also sell some power to the grid.

<sup>9</sup>Represents own-use industrial hydroelectric power.

<sup>10</sup>Includes municipal waste, landfill gas, and municipal sewage sludge. All municipal waste is included, although a portion of the municipal waste stream contains petroleum-derived plastics and other non-renewable sources.

-- = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 and 2008 are model results and may differ slightly from official EIA data reports.

Sources: 2007 and 2008 capacity: Energy Information Administration (EIA), Form EIA-860, "Annual Electric Generator Report" (preliminary). 2007 and 2008 generation: EIA, *Annual Energy Review 2008*, DOE/EIA-0384(2008) (Washington, DC, June 2009). Projections: EIA, AEO2010 National Energy Modeling System run AEO2010R.D111809A.

## Reference Case

**Table A17. Renewable Energy, Consumption by Sector and Source<sup>1</sup>**  
(Quadrillion Btu per Year)

Sector and Source	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Marketed Renewable Energy<sup>2</sup></b>								
<b>Residential (wood)</b> .....	<b>0.41</b>	<b>0.45</b>	<b>0.40</b>	<b>0.42</b>	<b>0.42</b>	<b>0.42</b>	<b>0.43</b>	<b>-0.1%</b>
<b>Commercial (biomass)</b> .....	<b>0.10</b>	<b>0.10</b>	<b>0.10</b>	<b>0.10</b>	<b>0.10</b>	<b>0.10</b>	<b>0.10</b>	<b>0.0%</b>
<b>Industrial<sup>3</sup></b> .....	<b>2.02</b>	<b>2.53</b>	<b>2.37</b>	<b>2.70</b>	<b>3.23</b>	<b>3.69</b>	<b>4.39</b>	<b>2.1%</b>
Conventional Hydroelectric .....	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.0%
Municipal Waste <sup>4</sup> .....	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.1%
Biomass .....	1.42	1.30	1.39	1.48	1.54	1.59	1.63	0.8%
Biofuels Heat and Coproducts <sup>5</sup> .....	0.40	1.03	0.77	1.02	1.49	1.90	2.56	3.4%
<b>Transportation</b> .....	<b>0.64</b>	<b>0.96</b>	<b>1.53</b>	<b>1.81</b>	<b>2.41</b>	<b>3.10</b>	<b>3.92</b>	<b>5.4%</b>
Ethanol used in E85 <sup>6</sup> .....	0.00	0.00	0.01	0.17	0.34	0.54	1.15	23.3%
Ethanol used in Gasoline Blending .....	0.58	0.84	1.22	1.20	1.22	1.23	1.20	1.3%
Biodiesel used in Distillate Blending .....	0.06	0.09	0.21	0.23	0.22	0.25	0.25	3.9%
Liquids from Biomass .....	0.00	0.00	0.04	0.16	0.56	1.04	1.27	--
Green Liquids .....	0.00	0.02	0.05	0.05	0.06	0.04	0.04	2.6%
<b>Electric Power<sup>7</sup></b> .....	<b>3.45</b>	<b>3.65</b>	<b>6.27</b>	<b>6.69</b>	<b>7.00</b>	<b>7.13</b>	<b>7.26</b>	<b>2.6%</b>
Conventional Hydroelectric .....	2.42	2.43	2.93	2.93	2.95	2.95	2.96	0.7%
Geothermal .....	0.31	0.31	0.57	0.57	0.58	0.65	0.73	3.2%
Biogenic Municipal Waste <sup>8</sup> .....	0.17	0.17	0.31	0.31	0.31	0.31	0.31	2.3%
Biomass .....	0.21	0.22	0.50	0.91	1.14	1.18	1.11	6.1%
Dedicated Plants .....	0.14	0.14	0.30	0.31	0.33	0.47	0.74	6.3%
Cofiring .....	0.07	0.08	0.21	0.61	0.81	0.71	0.37	5.8%
Solar Thermal .....	0.01	0.01	0.02	0.02	0.02	0.02	0.02	3.6%
Solar Photovoltaic .....	0.00	0.00	0.00	0.01	0.01	0.01	0.01	14.2%
Wind .....	0.34	0.51	1.94	1.94	1.99	2.01	2.12	5.4%
<b>Total Marketed Renewable Energy</b> .....	<b>6.62</b>	<b>7.68</b>	<b>10.68</b>	<b>11.72</b>	<b>13.16</b>	<b>14.44</b>	<b>16.10</b>	<b>2.8%</b>
<b>Sources of Ethanol</b>								
From Corn .....	0.55	0.78	1.17	1.19	1.26	1.28	1.49	2.4%
From Cellulose .....	0.00	0.00	0.02	0.12	0.16	0.16	0.43	--
Imports .....	0.03	0.06	0.05	0.07	0.14	0.32	0.43	7.4%
<b>Total</b> .....	<b>0.58</b>	<b>0.84</b>	<b>1.23</b>	<b>1.38</b>	<b>1.56</b>	<b>1.76</b>	<b>2.35</b>	<b>3.9%</b>

**Table A17. Renewable Energy, Consumption by Sector and Source<sup>1</sup> (Continued)**  
(Quadrillion Btu per Year)

Sector and Source	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Nonmarketed Renewable Energy<sup>9</sup></b>								
<b>Selected Consumption</b>								
<b>Residential</b> .....	<b>0.01</b>	<b>0.01</b>	<b>0.07</b>	<b>0.09</b>	<b>0.09</b>	<b>0.10</b>	<b>0.11</b>	<b>10.4%</b>
Solar Hot Water Heating .....	0.00	0.00	0.00	0.00	0.00	0.01	0.01	2.1%
Geothermal Heat Pumps .....	0.00	0.00	0.02	0.03	0.03	0.04	0.04	9.5%
Solar Photovoltaic .....	0.00	0.00	0.04	0.05	0.05	0.05	0.05	19.0%
Wind .....	0.00	0.00	0.01	0.01	0.01	0.01	0.01	19.2%
<b>Commercial</b> .....	<b>0.03</b>	<b>0.03</b>	<b>0.04</b>	<b>0.04</b>	<b>0.04</b>	<b>0.05</b>	<b>0.05</b>	<b>2.3%</b>
Solar Thermal .....	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.7%
Solar Photovoltaic .....	0.00	0.00	0.01	0.01	0.01	0.01	0.02	6.4%
Wind .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.3%

<sup>1</sup>Actual heat rates used to determine fuel consumption for all renewable fuels except hydropower, solar, and wind. Consumption at hydroelectric, solar, and wind facilities determined by using the fossil fuel equivalent of 9,884 Btu per kilowatthour.

<sup>2</sup>Includes nonelectric renewable energy groups for which the energy source is bought and sold in the marketplace, although all transactions may not necessarily be marketed, and marketed renewable energy inputs for electricity entering the marketplace on the electric power grid. Excludes electricity imports; see Table A2.

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

<sup>4</sup>Includes municipal waste, landfill gas, and municipal sewage sludge. All municipal waste is included, although a portion of the municipal waste stream contains petroleum-derived plastics and other non-renewable sources.

<sup>5</sup>The energy content of biofuels feedstock minus the energy content of liquid fuel produced.

<sup>6</sup>Excludes motor gasoline component of E85.

<sup>7</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. Includes small power producers and exempt wholesale generators.

<sup>8</sup>Includes biogenic municipal waste, landfill gas, and municipal sewage sludge. Incremental growth is assumed to be for landfill gas facilities. Only biogenic municipal waste is included. The Energy Information Administration estimates that in 2007 approximately 0.3 quadrillion Btus were consumed from a municipal waste stream containing petroleum-derived plastics and other non-renewable sources. See Energy Information Administration, *Methodology for Allocating Municipal Solid Waste to Biogenic and Non-Biogenic Energy* (Washington, DC, May 2007).

<sup>9</sup>Includes selected renewable energy consumption data for which the energy is not bought or sold, either directly or indirectly as an input to marketed energy. The Energy Information Administration does not estimate or project total consumption of nonmarketed renewable energy.

-- = Not applicable.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 and 2008 are model results and may differ slightly from official EIA data reports.

Sources: 2007 and 2008 ethanol: Energy Information Administration (EIA), *Annual Energy Review 2008*, DOE/EIA-0384(2008) (Washington, DC, June 2009). 2007 and 2008 electric power sector: EIA, Form EIA-860, "Annual Electric Generator Report" (preliminary). Other 2007 and 2008 values: EIA, Office of Integrated Analysis and Forecasting. Projections: EIA, AEO2010 National Energy Modeling System run AEO2010R.D111809A.

## Reference Case

**Table A18. Carbon Dioxide Emissions by Sector and Source**  
(Million Metric Tons, Unless Otherwise Noted)

Sector and Source	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Residential</b>								
Petroleum .....	87	80	72	67	63	60	58	-1.2%
Natural Gas .....	257	265	257	263	267	267	266	0.0%
Coal .....	1	1	1	1	1	1	0	-1.2%
Electricity <sup>1</sup> .....	891	875	824	844	885	927	965	0.4%
<b>Total .....</b>	<b>1235</b>	<b>1220</b>	<b>1153</b>	<b>1175</b>	<b>1216</b>	<b>1255</b>	<b>1289</b>	<b>0.2%</b>
<b>Commercial</b>								
Petroleum .....	44	41	40	38	38	38	37	-0.4%
Natural Gas .....	164	170	176	182	188	194	201	0.6%
Coal .....	7	6	6	6	6	6	6	0.0%
Electricity <sup>1</sup> .....	856	858	862	903	961	1022	1086	0.9%
<b>Total .....</b>	<b>1071</b>	<b>1075</b>	<b>1085</b>	<b>1130</b>	<b>1194</b>	<b>1261</b>	<b>1331</b>	<b>0.8%</b>
<b>Industrial<sup>2</sup></b>								
Petroleum .....	417	385	397	390	387	391	390	0.0%
Natural Gas <sup>3</sup> .....	404	409	420	429	430	423	423	0.1%
Coal .....	177	172	171	181	186	189	188	0.3%
Electricity <sup>1</sup> .....	658	623	586	591	582	576	574	-0.3%
<b>Total .....</b>	<b>1655</b>	<b>1589</b>	<b>1574</b>	<b>1590</b>	<b>1586</b>	<b>1578</b>	<b>1575</b>	<b>-0.0%</b>
<b>Transportation</b>								
Petroleum <sup>4</sup> .....	1985	1889	1879	1914	1970	2028	2065	0.3%
Natural Gas <sup>5</sup> .....	35	36	35	38	44	47	50	1.2%
Electricity <sup>1</sup> .....	4	4	4	5	6	8	9	3.0%
<b>Total .....</b>	<b>2025</b>	<b>1929</b>	<b>1918</b>	<b>1957</b>	<b>2021</b>	<b>2083</b>	<b>2125</b>	<b>0.4%</b>
<b>Electric Power<sup>6</sup></b>								
Petroleum .....	55	40	35	36	37	37	38	-0.2%
Natural Gas .....	372	362	283	308	342	384	404	0.4%
Coal .....	1971	1946	1947	1987	2043	2100	2180	0.4%
Other <sup>7</sup> .....	12	12	12	12	12	12	12	0.0%
<b>Total .....</b>	<b>2409</b>	<b>2359</b>	<b>2277</b>	<b>2343</b>	<b>2434</b>	<b>2533</b>	<b>2634</b>	<b>0.4%</b>
<b>Total by Fuel</b>								
Petroleum <sup>3</sup> .....	2589	2436	2422	2445	2496	2554	2588	0.2%
Natural Gas .....	1232	1242	1171	1220	1272	1315	1345	0.3%
Coal .....	2155	2125	2125	2175	2236	2296	2376	0.4%
Other <sup>7</sup> .....	12	12	12	12	12	12	12	0.0%
<b>Total .....</b>	<b>5986</b>	<b>5814</b>	<b>5731</b>	<b>5851</b>	<b>6016</b>	<b>6176</b>	<b>6320</b>	<b>0.3%</b>
<b>Carbon Dioxide Emissions</b>								
<b>(tons per person) .....</b>	<b>19.8</b>	<b>19.0</b>	<b>17.5</b>	<b>17.1</b>	<b>16.8</b>	<b>16.5</b>	<b>16.2</b>	<b>-0.6%</b>

<sup>1</sup>Emissions from the electric power sector are distributed to the end-use sectors.

<sup>2</sup>Fuel consumption includes energy for combined heat and power plants, except those plants whose primary business is to sell electricity, or electricity and heat, to the public.

<sup>3</sup>Includes lease and plant fuel.

<sup>4</sup>This includes carbon dioxide from international bunker fuels, both civilian and military, which are excluded from the accounting of carbon dioxide emissions under the United Nations convention. From 1990 through 2008, international bunker fuels accounted for 86 to 130 million metric tons annually.

<sup>5</sup>Includes pipeline fuel natural gas and compressed natural gas used as vehicle fuel.

<sup>6</sup>Includes electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public.

<sup>7</sup>Includes emissions from geothermal power and nonbiogenic emissions from municipal waste.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 and 2008 are model results and may differ slightly from official EIA data reports.

Sources: 2007 and 2008 emissions and emission factors: Energy Information Administration (EIA), *Emissions of Greenhouse Gases in the United States 2008*, DOE/EIA-0573(2008) (Washington, DC, December 2009). Projections: EIA, AEO2010 National Energy Modeling System run AEO2010R.D111809A.



**Table A19. Energy-Related Carbon Dioxide Emissions by End Use**  
(Million Metric Tons)

Sector and Source	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Residential</b>								
Space Heating	282.53	289.92	267.63	266.98	265.74	262.58	259.98	-0.4%
Space Cooling	170.72	144.00	143.47	146.33	152.90	159.15	164.77	0.5%
Water Heating	165.45	164.53	163.75	168.19	171.03	169.05	164.76	0.0%
Refrigeration	71.48	69.90	62.10	62.69	64.97	68.33	71.63	0.1%
Cooking	32.94	33.04	33.42	34.70	36.00	37.42	38.75	0.6%
Clothes Dryers	53.45	52.99	50.92	51.42	53.25	55.63	57.68	0.3%
Freezers	15.15	14.86	13.63	13.90	14.43	15.01	15.59	0.2%
Lighting	136.32	134.71	97.95	89.78	86.20	85.58	86.49	-1.6%
Clothes Washers <sup>1</sup>	6.47	6.31	5.16	4.55	4.50	4.70	4.89	-0.9%
Dishwashers <sup>1</sup>	17.51	17.21	15.78	16.18	17.30	18.50	19.64	0.5%
Color Televisions and Set-Top Boxes	60.76	64.14	67.57	69.81	73.77	78.24	82.98	1.0%
Personal Computers and Related Equipment	28.48	31.17	32.95	32.35	32.54	34.37	35.28	0.5%
Furnace Fans and Boiler Circulation Pumps	24.13	25.62	25.89	27.45	29.76	30.87	31.66	0.8%
Other Uses	169.99	174.12	173.01	190.90	213.54	235.34	255.39	1.4%
Discrepancy <sup>2</sup>	0.10	-2.18	0.00	-0.00	0.00	-0.00	0.00	--
<b>Total Residential</b>	<b>1235.49</b>	<b>1220.34</b>	<b>1153.24</b>	<b>1175.21</b>	<b>1215.92</b>	<b>1254.76</b>	<b>1289.49</b>	<b>0.2%</b>
<b>Commercial</b>								
Space Heating <sup>3</sup>	119.84	125.84	121.41	121.42	121.61	120.35	118.90	-0.2%
Space Cooling <sup>3</sup>	105.04	94.70	96.71	99.04	103.14	107.54	112.17	0.6%
Water Heating <sup>3</sup>	42.73	42.01	42.97	44.75	46.76	47.98	49.01	0.6%
Ventilation	91.87	91.92	95.19	99.08	104.51	109.07	112.97	0.8%
Cooking	13.12	13.12	13.82	14.39	15.11	15.67	16.21	0.8%
Lighting	198.68	193.19	178.58	181.18	187.41	193.09	198.73	0.1%
Refrigeration	75.22	75.18	61.97	59.05	59.64	61.46	64.10	-0.6%
Office Equipment (PC)	40.01	41.96	41.43	40.61	40.81	42.38	43.03	0.1%
Office Equipment (non-PC)	40.90	44.17	54.90	62.10	67.50	72.73	76.91	2.1%
Other Uses <sup>4</sup>	343.32	353.26	377.86	408.02	447.10	490.32	538.70	1.6%
<b>Total Commercial</b>	<b>1070.73</b>	<b>1075.35</b>	<b>1084.84</b>	<b>1129.64</b>	<b>1193.59</b>	<b>1260.59</b>	<b>1330.73</b>	<b>0.8%</b>
<b>Industrial</b>								
<b>Manufacturing</b>								
Refining	252.93	266.30	287.20	295.60	310.27	324.85	341.97	0.9%
Food Products	100.43	100.19	101.47	106.04	111.96	117.46	123.83	0.8%
Paper Products	93.07	88.60	80.84	80.66	80.11	79.37	79.15	-0.4%
Bulk Chemicals	321.82	294.24	285.03	279.21	268.46	255.48	241.94	-0.7%
Glass	17.20	17.33	16.59	18.45	19.38	20.04	19.85	0.5%
Cement Manufacturing	41.63	38.73	36.68	38.40	38.33	37.77	35.74	-0.3%
Iron and Steel	140.11	126.80	113.79	122.17	115.24	101.27	80.51	-1.7%
Aluminum	43.56	42.47	40.33	38.33	35.67	32.69	29.63	-1.3%
Fabricated Metal Products	44.84	43.35	40.36	40.19	38.63	36.81	34.90	-0.8%
Machinery	22.56	21.59	21.82	22.48	22.11	21.79	21.01	-0.1%
Computers and Electronics	24.90	23.78	28.34	31.59	31.44	31.11	32.81	1.2%
Transportation Equipment	45.37	41.17	45.61	42.50	41.93	44.66	49.17	0.7%
Electrical Equipment	17.76	17.28	15.95	16.59	16.88	17.40	17.88	0.1%
Wood Products	17.37	16.29	18.70	18.27	17.08	16.24	15.99	-0.1%
Plastics	42.78	40.47	39.58	40.16	41.45	42.79	44.24	0.3%
Balance of Manufacturing	172.70	162.15	145.06	146.22	144.04	143.54	146.95	-0.4%
<b>Total Manufacturing</b>	<b>1399.03</b>	<b>1340.74</b>	<b>1317.36</b>	<b>1336.84</b>	<b>1333.00</b>	<b>1323.26</b>	<b>1315.57</b>	<b>-0.1%</b>
<b>Nonmanufacturing</b>								
Agriculture	85.24	88.58	83.41	82.05	82.07	82.66	84.24	-0.2%
Mining	74.41	68.80	74.07	74.84	72.04	70.60	69.96	0.1%
Construction	82.70	81.80	74.71	72.45	70.91	69.66	69.22	-0.6%
<b>Total Nonmanufacturing</b>	<b>242.34</b>	<b>239.17</b>	<b>232.19</b>	<b>229.34</b>	<b>225.02</b>	<b>222.92</b>	<b>223.42</b>	<b>-0.3%</b>
Discrepancy <sup>2</sup>	14.11	9.36	24.74	23.72	27.60	31.73	36.48	--
<b>Total Industrial</b>	<b>1655.48</b>	<b>1589.27</b>	<b>1574.29</b>	<b>1589.91</b>	<b>1585.62</b>	<b>1577.91</b>	<b>1575.47</b>	<b>-0.0%</b>

**Table A19. Energy-Related Carbon Dioxide Emissions by End Use (Continued)**  
(Million Metric Tons)

Sector and Source	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Transportation</b>								
Light-Duty Vehicles .....	1150.40	1098.07	1070.56	1061.28	1081.68	1101.06	1097.22	-0.0%
Commercial Light Trucks <sup>5</sup> .....	45.87	42.64	43.46	44.64	45.31	46.61	48.17	0.5%
Bus Transportation .....	18.70	18.05	19.03	19.96	20.91	21.78	22.69	0.9%
Freight Trucks .....	361.62	338.57	346.46	369.91	392.68	421.14	454.26	1.1%
Rail, Passenger .....	5.83	5.84	5.96	6.33	6.70	7.08	7.45	0.9%
Rail, Freight .....	43.83	41.62	42.23	44.92	46.97	48.41	49.82	0.7%
Shipping, Domestic .....	22.22	21.78	21.61	22.49	23.21	23.83	24.46	0.4%
Shipping, International .....	75.26	70.49	70.83	71.35	71.84	72.30	72.76	0.1%
Recreational Boats .....	17.66	17.00	17.39	17.99	18.62	19.19	19.70	0.5%
Air .....	194.85	187.28	197.09	211.87	221.07	227.35	232.61	0.8%
Military Use .....	50.57	50.30	46.94	47.90	49.00	50.03	51.05	0.1%
Lubricants .....	5.65	5.20	5.30	5.41	5.49	5.60	5.70	0.3%
Pipeline Fuel .....	33.97	34.21	32.57	33.65	38.05	39.09	39.52	0.5%
Discrepancy <sup>2</sup> .....	-1.77	-1.64	-1.06	-0.99	-0.90	-0.81	-0.73	--
<b>Total Transportation .....</b>	<b>2024.67</b>	<b>1929.42</b>	<b>1918.35</b>	<b>1956.71</b>	<b>2020.64</b>	<b>2082.65</b>	<b>2124.70</b>	<b>0.4%</b>

<sup>1</sup>Does not include water heating portion of load.

<sup>2</sup>Represents differences between total emissions by end-use and total emissions by fuel as reported in Table A18. Emissions by fuel may reflect benchmarking and other modeling adjustments to energy use and the associated emissions that are not assigned to specific end uses.

<sup>3</sup>Includes emissions related to fuel consumption for district services.

<sup>4</sup>Includes miscellaneous uses, such as service station equipment, automated teller machines, telecommunications equipment, medical equipment, pumps, emergency generators, combined heat and power in commercial buildings, manufacturing performed in commercial buildings, and cooking (distillate), plus emissions from residual fuel oil, liquefied petroleum gases, coal, motor gasoline, and kerosene.

<sup>5</sup>Commercial trucks 8,500 to 10,000 pounds.

-- = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 and 2008 are model results and may differ slightly from official EIA data reports.

Sources: 2007 and 2008 emissions and emission factors: Energy Information Administration (EIA), *Emissions of Greenhouse Gases in the United States 2008*, DOE/EIA-0573(2008) (Washington, DC, December 2009). Projections: EIA, AEO2010 National Energy Modeling System run AEO2010R.D111809A.

**Table A20. Macroeconomic Indicators**  
(Billion 2000 Chain-Weighted Dollars, Unless Otherwise Noted)

Indicators	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Real Gross Domestic Product</b> . . . . .	<b>11524</b>	<b>11652</b>	<b>13289</b>	<b>15416</b>	<b>17561</b>	<b>19883</b>	<b>22362</b>	<b>2.4%</b>
<b>Components of Real Gross Domestic Product</b>								
Real Consumption . . . . .	8253	8272	9343	10776	12348	14082	15932	2.5%
Real Investment . . . . .	1810	1689	2178	2600	2988	3486	4104	3.3%
Real Government Spending . . . . .	2012	2070	2085	2202	2319	2446	2569	0.8%
Real Exports . . . . .	1426	1514	2000	2839	3773	4882	6211	5.4%
Real Imports . . . . .	1972	1904	2240	2822	3574	4591	5881	4.3%
<b>Energy Intensity</b> (thousand Btu per 2000 dollar of GDP)								
Delivered Energy . . . . .	6.41	6.23	5.52	4.89	4.43	4.02	3.68	-1.9%
Total Energy . . . . .	8.82	8.59	7.65	6.81	6.16	5.59	5.12	-1.9%
<b>Price Indices</b>								
GDP Chain-type Price Index (2000=1.000) . . . .	1.198	1.225	1.365	1.497	1.662	1.849	2.059	1.9%
Consumer Price Index (1982-4=1.00)								
All-urban . . . . .	2.07	2.15	2.43	2.72	3.07	3.46	3.92	2.2%
Energy Commodities and Services . . . . .	2.08	2.36	2.41	2.81	3.23	3.79	4.46	2.4%
Wholesale Price Index (1982=1.00)								
All Commodities . . . . .	1.73	1.90	1.93	2.09	2.24	2.42	2.62	1.2%
Fuel and Power . . . . .	1.78	2.14	2.04	2.38	2.76	3.29	3.92	2.3%
Metals and Metal Products . . . . .	1.93	2.13	2.19	2.30	2.36	2.41	2.45	0.5%
<b>Interest Rates (percent, nominal)</b>								
Federal Funds Rate . . . . .	5.02	1.93	4.72	5.10	5.07	5.19	5.19	--
10-Year Treasury Note . . . . .	4.63	3.67	5.44	5.74	5.84	5.90	5.89	--
AA Utility Bond Rate . . . . .	5.94	6.19	7.22	7.59	7.79	8.05	8.30	--
<b>Value of Shipments (billion 2000 dollars)</b>								
Service Sectors . . . . .	19128	18812	20956	23808	27205	31356	36289	2.5%
Total Industrial . . . . .	5652	5408	6044	6651	6997	7401	7786	1.4%
Nonmanufacturing . . . . .	1436	1394	1547	1644	1673	1722	1776	0.9%
Manufacturing . . . . .	4215	4014	4497	5006	5324	5680	6010	1.5%
Energy-Intensive . . . . .	1238	1230	1315	1406	1467	1515	1542	0.8%
Non-energy Intensive . . . . .	2977	2784	3182	3600	3856	4164	4468	1.8%
<b>Total Shipments</b> . . . . .	<b>24779</b>	<b>24220</b>	<b>27001</b>	<b>30458</b>	<b>34202</b>	<b>38757</b>	<b>44074</b>	<b>2.2%</b>
<b>Population and Employment (millions)</b>								
Population, with Armed Forces Overseas . .	302.4	305.4	326.7	342.6	358.6	374.7	390.7	0.9%
Population, aged 16 and over . . . . .	237.2	240.0	257.4	270.3	283.6	297.2	310.7	1.0%
Population, over age 65 . . . . .	38.0	38.8	47.0	55.0	64.2	72.3	77.7	2.6%
Employment, Nonfarm . . . . .	137.5	137.0	142.5	151.0	157.4	165.2	171.4	0.8%
Employment, Manufacturing . . . . .	13.9	13.4	12.2	12.1	11.3	11.4	12.8	-0.2%
<b>Key Labor Indicators</b>								
Labor Force (millions) . . . . .	153.1	154.3	161.4	167.2	171.4	176.6	183.4	0.6%
Nonfarm Labor Productivity (1992=1.00) . . .	1.37	1.41	1.57	1.75	1.96	2.17	2.39	2.0%
Unemployment Rate (percent) . . . . .	4.63	5.81	7.32	5.28	5.31	5.36	5.49	--
<b>Key Indicators for Energy Demand</b>								
Real Disposable Personal Income . . . . .	8644	8753	10091	11967	13974	16069	18168	2.7%
Housing Starts (millions) . . . . .	1.44	0.98	1.88	2.03	1.89	1.78	1.70	2.0%
Commercial Floorspace (billion square feet)	77.3	78.8	85.1	91.1	97.5	103.9	110.5	1.3%
Unit Sales of Light-Duty Vehicles (millions)	16.09	13.13	17.25	17.43	17.92	19.00	20.09	1.6%

GDP = Gross domestic product.

Btu = British thermal unit.

-- = Not applicable.

**Sources:** 2007 and 2008: IHS Global Insight Industry and Employment models, August 2009. **Projections:** Energy Information Administration, AEO2010 National Energy Modeling System run AEO2010R.D111809A.

# Reference Case

**Table A21. International Liquids Supply and Disposition Summary**  
(Million Barrels per Day, Unless Otherwise Noted)

Supply and Disposition	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Crude Oil Prices (2008 dollars per barrel)<sup>1</sup></b>								
Imported Low Sulfur Light Crude Oil .....	73.93	99.57	94.52	108.28	115.09	123.50	133.22	1.1%
Imported Crude Oil .....	68.69	92.61	86.88	98.14	104.49	111.49	121.37	1.0%
<b>Crude Oil Prices (nominal dollars per barrel)<sup>1</sup></b>								
Imported Low Sulfur Light Crude Oil .....	72.32	99.57	105.33	132.33	156.20	186.40	223.88	3.0%
Imported Crude Oil .....	67.19	92.61	96.82	119.94	141.80	168.28	203.97	3.0%
<b>Conventional Production (Conventional)<sup>2</sup></b>								
OPEC <sup>3</sup>								
Middle East .....	23.06	24.24	25.42	26.57	27.87	29.50	30.94	0.9%
North Africa .....	4.02	4.06	4.42	4.31	4.32	4.33	4.53	0.4%
West Africa .....	4.12	4.18	5.30	5.65	5.87	6.09	6.43	1.6%
South America .....	2.58	2.50	2.14	2.37	2.60	2.63	2.75	0.4%
<b>Total OPEC .....</b>	<b>33.78</b>	<b>34.98</b>	<b>37.28</b>	<b>38.90</b>	<b>40.65</b>	<b>42.56</b>	<b>44.64</b>	<b>0.9%</b>
Non-OPEC								
OECD								
United States (50 states) .....	8.14	7.68	8.83	9.37	9.32	9.34	9.14	0.6%
Canada .....	2.05	1.84	1.52	1.23	1.10	1.01	1.02	-2.2%
Mexico .....	3.50	3.19	2.12	1.76	1.88	2.08	2.21	-1.3%
OECD Europe <sup>4</sup> .....	5.23	4.96	3.66	3.11	2.95	2.88	2.96	-1.9%
Japan .....	0.13	0.13	0.14	0.15	0.16	0.17	0.17	1.0%
Australia and New Zealand .....	0.63	0.65	0.57	0.55	0.54	0.55	0.57	-0.5%
<b>Total OECD .....</b>	<b>19.69</b>	<b>18.46</b>	<b>16.83</b>	<b>16.18</b>	<b>15.96</b>	<b>16.04</b>	<b>16.08</b>	<b>-0.5%</b>
Non-OECD								
Russia .....	9.87	9.79	9.71	10.92	11.63	12.03	12.68	1.0%
Other Europe and Eurasia <sup>5</sup> .....	2.88	2.88	4.22	4.42	4.63	4.98	5.27	2.3%
China .....	3.91	3.97	3.62	3.46	3.27	3.15	3.27	-0.7%
Other Asia <sup>6</sup> .....	3.75	3.76	3.66	3.62	3.56	3.38	3.49	-0.3%
Middle East .....	1.52	1.54	1.63	1.36	1.30	1.26	1.31	-0.6%
Africa .....	2.41	2.39	2.49	2.52	2.63	2.70	2.84	0.6%
Brazil .....	1.94	1.95	3.08	3.93	4.44	4.88	5.18	3.7%
Other Central and South America .....	1.79	1.82	1.68	1.65	1.82	2.11	2.28	0.8%
<b>Total Non-OECD .....</b>	<b>28.08</b>	<b>28.09</b>	<b>30.09</b>	<b>31.88</b>	<b>33.28</b>	<b>34.50</b>	<b>36.32</b>	<b>1.0%</b>
<b>Total Conventional Production .....</b>	<b>81.55</b>	<b>81.53</b>	<b>84.21</b>	<b>86.96</b>	<b>89.89</b>	<b>93.09</b>	<b>97.05</b>	<b>0.6%</b>
<b>Unconventional Production<sup>7</sup></b>								
United States (50 states) .....	0.46	0.66	1.14	1.34	1.72	2.11	2.86	5.6%
Other North America .....	1.39	1.53	2.88	3.49	4.10	4.57	4.84	4.4%
OECD Europe <sup>4</sup> .....	0.16	0.25	0.40	0.48	0.56	0.61	0.64	3.6%
Middle East .....	0.00	0.00	0.10	0.20	0.21	0.22	0.23	15.2%
Africa .....	0.22	0.23	0.35	0.49	0.57	0.65	0.70	4.3%
Central and South America .....	0.94	1.09	1.48	1.95	2.41	2.81	3.10	3.9%
Other .....	0.28	0.23	0.36	0.67	1.23	1.82	2.28	8.9%
<b>Total Unconventional Production .....</b>	<b>3.46</b>	<b>3.98</b>	<b>6.71</b>	<b>8.61</b>	<b>10.79</b>	<b>12.79</b>	<b>14.65</b>	<b>4.9%</b>
<b>Total Production .....</b>	<b>85.01</b>	<b>85.51</b>	<b>90.92</b>	<b>95.57</b>	<b>100.68</b>	<b>105.88</b>	<b>111.69</b>	<b>1.0%</b>

**Table A21. International Liquids Supply and Disposition Summary (Continued)**  
(Million Barrels per Day, Unless Otherwise Noted)

Supply and Disposition	Reference Case							Annual Growth 2008-2035 (percent)
	2007	2008	2015	2020	2025	2030	2035	
<b>Consumption<sup>8</sup></b>								
OECD								
United States (50 states) .....	20.65	19.53	20.18	20.56	20.99	21.48	22.06	0.5%
United States Territories .....	0.39	0.40	0.49	0.53	0.57	0.62	0.62	1.6%
Canada .....	2.40	2.40	2.34	2.37	2.45	2.55	2.65	0.4%
Mexico .....	1.62	1.61	1.65	1.81	1.88	1.95	2.02	0.8%
OECD Europe <sup>3</sup> .....	15.30	15.30	14.36	14.57	14.58	14.58	14.59	-0.2%
Japan .....	5.00	4.90	4.88	4.99	4.85	4.72	4.59	-0.2%
South Korea .....	2.83	2.83	2.75	2.59	2.63	2.65	2.67	-0.2%
Australia and New Zealand .....	1.05	1.05	1.10	1.18	1.24	1.30	1.37	1.0%
<b>Total OECD .....</b>	<b>49.24</b>	<b>48.03</b>	<b>47.75</b>	<b>48.60</b>	<b>49.20</b>	<b>49.84</b>	<b>50.55</b>	<b>0.2%</b>
Non-OECD								
Russia .....	2.66	2.71	2.70	2.72	2.70	2.67	2.64	-0.1%
Other Europe and Eurasia <sup>5</sup> .....	2.34	2.39	2.34	2.32	2.41	2.50	2.59	0.3%
China .....	7.60	8.00	10.42	12.36	14.21	15.77	17.50	2.9%
India .....	2.33	2.37	3.06	3.80	4.18	4.57	5.00	2.8%
Other Asia <sup>6</sup> .....	6.68	6.73	7.19	7.66	8.50	9.40	10.40	1.6%
Middle East .....	6.30	6.61	7.62	8.18	9.01	10.06	11.23	2.0%
Africa .....	3.09	3.24	3.53	3.57	3.70	3.79	3.89	0.7%
Brazil .....	2.27	2.38	2.86	3.11	3.49	3.94	4.45	2.3%
Other Central and South America .....	3.44	3.57	3.45	3.25	3.28	3.34	3.44	-0.1%
<b>Total Non-OECD .....</b>	<b>36.71</b>	<b>38.00</b>	<b>43.17</b>	<b>46.97</b>	<b>51.48</b>	<b>56.04</b>	<b>61.14</b>	<b>1.8%</b>
<b>Total Consumption .....</b>	<b>85.95</b>	<b>86.03</b>	<b>90.92</b>	<b>95.57</b>	<b>100.68</b>	<b>105.88</b>	<b>111.69</b>	<b>1.0%</b>
OPEC Production <sup>9</sup> .....	34.39	35.63	38.11	39.97	41.91	44.04	46.26	1.0%
Non-OPEC Production <sup>9</sup> .....	50.62	49.88	52.80	55.60	58.77	61.84	65.43	1.0%
Net Eurasia Exports .....	9.70	9.52	11.96	14.23	15.58	16.72	17.90	2.4%
OPEC Market Share (percent) .....	40.5	41.7	41.9	41.8	41.6	41.6	41.4	--

<sup>1</sup>Weighted average price delivered to U.S. refiners.

<sup>2</sup>Includes production of crude oil (including lease condensate), natural gas plant liquids, other hydrogen and hydrocarbons for refinery feedstocks, alcohol and other sources, and refinery gains.

<sup>3</sup>OPEC = Organization of Petroleum Exporting Countries - Algeria, Angola, Ecuador, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

<sup>4</sup>OECD Europe = Organization for Economic Cooperation and Development - Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Slovakia, Spain, Sweden, Switzerland, Turkey, and the United Kingdom.

<sup>5</sup>Other Europe and Eurasia = Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Macedonia, Malta, Moldova, Montenegro, Romania, Serbia, Slovenia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan.

<sup>6</sup>Other Asia = Afghanistan, Bangladesh, Bhutan, Brunei, Cambodia (Kampuchea), Fiji, French Polynesia, Guam, Hong Kong, Indonesia, Kiribati, Laos, Malaysia, Macau, Maldives, Mongolia, Myanmar (Burma), Nauru, Nepal, New Caledonia, Niue, North Korea, Pakistan, Papua New Guinea, Philippines, Samoa, Singapore, Solomon Islands, Sri Lanka, Taiwan, Thailand, Tonga, Vanuatu, and Vietnam.

<sup>7</sup>Includes liquids produced from energy crops, natural gas, coal, extra-heavy oil, oil sands, and shale. Includes both OPEC and non-OPEC producers in the regional breakdown.

<sup>8</sup>Includes both OPEC and non-OPEC consumers in the regional breakdown.

<sup>9</sup>Includes both conventional and unconventional liquids production.

-- = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 and 2008 are model results and may differ slightly from official EIA data reports.

Sources: 2007 and 2008 low sulfur light crude oil price: Energy Information Administration (EIA), Form EIA-856, "Monthly Foreign Crude Oil Acquisition Report." 2007 and 2008 imported crude oil price: EIA, *Annual Energy Review 2008*, DOE/EIA-0384(2008) (Washington, DC, June 2009). 2007 quantities derived from: EIA, *International Energy Annual 2007*, DOE/EIA-0219(2007) (Washington, DC, August 2009). **2008 quantities and projections:** EIA, AEO2010 National Energy Modeling System run AEO2010R.D111809A and EIA, Generate World Oil Balance Model.

