

Appendix D

# Results from Side Cases

**Table D1. Key Results for Residential and Commercial Sector Technology Cases**

Energy Consumption	2006	2010				2020			
		2008 Technology	Reference	High Technology	Best Available Technology	2008 Technology	Reference	High Technology	Best Available Technology
<b>Residential</b>									
<b>Energy Consumption (quadrillion Btu)</b>									
Liquefied Petroleum Gases .....	0.47	0.48	0.48	0.48	0.47	0.53	0.52	0.51	0.49
Kerosene .....	0.07	0.08	0.08	0.08	0.08	0.09	0.08	0.08	0.07
Distillate Fuel Oil .....	0.70	0.75	0.75	0.75	0.74	0.74	0.73	0.72	0.65
Liquid Fuels and Other Petroleum .....	1.25	1.32	1.31	1.31	1.28	1.36	1.33	1.31	1.20
Natural Gas .....	4.50	4.97	4.95	4.93	4.78	5.49	5.30	5.18	4.46
Coal .....	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Renewable Energy <sup>1</sup> .....	0.41	0.44	0.44	0.44	0.43	0.42	0.40	0.40	0.37
Electricity .....	4.61	5.00	4.95	4.94	4.40	5.53	5.25	5.08	4.30
<b>Delivered Energy .....</b>	<b>10.77</b>	<b>11.74</b>	<b>11.66</b>	<b>11.63</b>	<b>10.91</b>	<b>12.81</b>	<b>12.30</b>	<b>11.97</b>	<b>10.34</b>
Electricity Related Losses .....	10.04	10.70	10.59	10.57	9.42	11.66	11.08	10.72	9.06
<b>Total .....</b>	<b>20.82</b>	<b>22.45</b>	<b>22.25</b>	<b>22.20</b>	<b>20.33</b>	<b>24.47</b>	<b>23.39</b>	<b>22.69</b>	<b>19.41</b>
<b>Delivered Energy Intensity (million Btu per household) .....</b>	<b>95.8</b>	<b>101.2</b>	<b>100.5</b>	<b>100.2</b>	<b>94.0</b>	<b>99.2</b>	<b>95.3</b>	<b>92.7</b>	<b>80.1</b>
<b>Nonmarketed Renewables Consumption (quadrillion Btu) .....</b>	<b>0.02</b>	<b>0.02</b>	<b>0.02</b>	<b>0.02</b>	<b>0.02</b>	<b>0.03</b>	<b>0.04</b>	<b>0.04</b>	<b>0.03</b>
<b>Commercial</b>									
<b>Energy Consumption (quadrillion Btu)</b>									
Liquefied Petroleum Gases .....	0.08	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Motor Gasoline <sup>2</sup> .....	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Kerosene .....	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Distillate Fuel Oil .....	0.42	0.38	0.38	0.38	0.38	0.42	0.41	0.41	0.45
Residual Fuel Oil .....	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Liquid Fuels and Other Petroleum .....	0.68	0.63	0.63	0.63	0.64	0.68	0.68	0.67	0.71
Natural Gas .....	2.92	3.05	3.04	3.03	3.00	3.50	3.47	3.41	3.29
Coal .....	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Renewable Energy <sup>3</sup> .....	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Electricity .....	4.43	4.78	4.73	4.69	4.58	5.95	5.67	5.39	4.90
<b>Delivered Energy .....</b>	<b>8.25</b>	<b>8.68</b>	<b>8.62</b>	<b>8.56</b>	<b>8.43</b>	<b>10.34</b>	<b>10.03</b>	<b>9.69</b>	<b>9.11</b>
Electricity Related Losses .....	9.66	10.24	10.12	10.03	9.80	12.56	11.96	11.38	10.34
<b>Total .....</b>	<b>17.91</b>	<b>18.92</b>	<b>18.74</b>	<b>18.59</b>	<b>18.23</b>	<b>22.90</b>	<b>21.98</b>	<b>21.06</b>	<b>19.45</b>
<b>Delivered Energy Intensity (thousand Btu per square foot) .....</b>	<b>110.3</b>	<b>110.1</b>	<b>109.3</b>	<b>108.6</b>	<b>107.0</b>	<b>115.9</b>	<b>112.3</b>	<b>108.5</b>	<b>102.1</b>
<b>Commercial Sector Generation</b>									
<b>Net Summer Generation Capacity (megawatts)</b>									
Natural Gas .....	630	662	665	671	672	908	1106	1325	1452
Solar Photovoltaic .....	243	505	505	505	506	789	860	902	1013
Wind .....	18	18	18	19	21	45	71	118	254
<b>Electricity Generation (billion kilowatthours)</b>									
Natural Gas .....	4.54	4.76	4.79	4.83	4.84	6.53	8.00	9.59	10.52
Solar Photovoltaic .....	0.38	0.81	0.81	0.81	0.81	1.27	1.41	1.48	1.66
Wind .....	0.02	0.02	0.02	0.03	0.03	0.06	0.10	0.17	0.36
<b>Nonmarketed Renewables Consumption (quadrillion Btu) .....</b>	<b>0.03</b>	<b>0.03</b>	<b>0.03</b>	<b>0.03</b>	<b>0.03</b>	<b>0.03</b>	<b>0.03</b>	<b>0.03</b>	<b>0.03</b>

<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 solar photovoltaic electricity generation.

<sup>2</sup>Includes ethanol (blends of 10 percent or less) and ethers blended into gasoline.

<sup>3</sup>Includes commercial sector consumption of wood and wood waste, landfill gas, biogenic municipal waste, and other biomass for combined heat and power.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2006 are model results and may differ slightly from official EIA data reports. Side cases were run without the fully integrated modeling system, so not all feedbacks are captured. The reference case ratio of electricity losses to electricity use was used to compute electricity losses for the technology cases.

Source: Energy Information Administration, AEO2008 National Energy Modeling System, runs BLDFRZN.D030408A, AEO2008.D030208F, BLDHIGH.D030408A, and BLDBEST.D030408A.

## Results from Side Cases

2030				Annual Growth 2006-2030 (percent)			
2008 Technology	Reference	High Technology	Best Available Technology	2008 Technology	Reference	High Technology	Best Available Technology
0.58	0.55	0.54	0.50	0.9%	0.7%	0.6%	0.3%
0.09	0.08	0.08	0.05	0.7%	0.5%	0.1%	-1.4%
0.69	0.65	0.63	0.55	-0.1%	-0.3%	-0.5%	-1.1%
1.35	1.29	1.24	1.10	0.3%	0.1%	-0.0%	-0.5%
5.72	5.32	5.04	3.96	1.0%	0.7%	0.5%	-0.5%
0.01	0.01	0.01	0.01	-0.1%	-0.4%	-0.5%	-0.6%
0.40	0.38	0.36	0.33	-0.1%	-0.3%	-0.5%	-0.9%
6.30	5.88	5.58	4.59	1.3%	1.0%	0.8%	-0.0%
<b>13.78</b>	<b>12.88</b>	<b>12.24</b>	<b>9.99</b>	<b>1.0%</b>	<b>0.7%</b>	<b>0.5%</b>	<b>-0.3%</b>
13.01	12.14	11.53	9.49	1.1%	0.8%	0.6%	-0.2%
<b>26.78</b>	<b>25.01</b>	<b>23.77</b>	<b>19.48</b>	<b>1.1%</b>	<b>0.8%</b>	<b>0.6%</b>	<b>-0.3%</b>
<b>98.0</b>	<b>91.6</b>	<b>87.0</b>	<b>71.1</b>	<b>0.1%</b>	<b>-0.2%</b>	<b>-0.4%</b>	<b>-1.2%</b>
<b>0.05</b>	<b>0.07</b>	<b>0.07</b>	<b>0.08</b>	<b>4.2%</b>	<b>5.9%</b>	<b>6.2%</b>	<b>6.7%</b>
0.09	0.09	0.09	0.09	0.6%	0.6%	0.6%	0.6%
0.05	0.05	0.05	0.05	0.4%	0.4%	0.4%	0.4%
0.02	0.02	0.02	0.02	0.2%	0.2%	0.2%	0.2%
0.42	0.41	0.41	0.48	0.0%	-0.0%	-0.1%	0.6%
0.10	0.10	0.10	0.10	-0.4%	-0.4%	-0.4%	-0.4%
0.69	0.68	0.68	0.75	0.1%	0.0%	-0.0%	0.4%
3.81	3.78	3.75	3.62	1.1%	1.1%	1.1%	0.9%
0.08	0.08	0.08	0.08	-0.1%	-0.1%	-0.1%	-0.1%
0.13	0.13	0.13	0.13	0.0%	0.0%	-0.0%	0.0%
7.07	6.62	6.17	5.38	2.0%	1.7%	1.4%	0.8%
<b>11.79</b>	<b>11.30</b>	<b>10.81</b>	<b>9.95</b>	<b>1.5%</b>	<b>1.3%</b>	<b>1.1%</b>	<b>0.8%</b>
14.61	13.68	12.73	11.11	1.7%	1.5%	1.2%	0.6%
<b>26.40</b>	<b>24.98</b>	<b>23.55</b>	<b>21.06</b>	<b>1.6%</b>	<b>1.4%</b>	<b>1.1%</b>	<b>0.7%</b>
<b>117.0</b>	<b>112.2</b>	<b>107.3</b>	<b>98.8</b>	<b>0.2%</b>	<b>0.1%</b>	<b>-0.1%</b>	<b>-0.5%</b>
1462	2621	3631	4720	3.6%	6.1%	7.6%	8.8%
1098	1700	2235	4628	6.5%	8.4%	9.7%	13.1%
168	239	588	2249	9.8%	11.4%	15.7%	22.3%
10.53	19.02	26.37	34.29	3.6%	6.2%	7.6%	8.8%
1.75	2.84	3.73	7.73	6.6%	8.7%	10.0%	13.4%
0.24	0.35	0.84	3.08	10.2%	11.9%	16.0%	22.5%
<b>0.03</b>	<b>0.04</b>	<b>0.04</b>	<b>0.07</b>	<b>1.1%</b>	<b>1.7%</b>	<b>2.2%</b>	<b>4.0%</b>

## Results from Side Cases

**Table D2. Key Results for Industrial Sector Technology Cases, Excluding Refining**

Consumption	2006	2010			2020			2030		
		2008 Technology	Reference	High Technology	2008 Technology	Reference	High Technology	2008 Technology	Reference	High Technology
<b>Value of Shipments (billion 2000 dollars)</b>										
Manufacturing .....	4290	4577	4577	4577	5493	5493	5493	6283	6283	6283
Nonmanufacturing .....	1531	1419	1419	1419	1619	1619	1619	1715	1715	1715
<b>Total .....</b>	<b>5821</b>	<b>5997</b>	<b>5997</b>	<b>5997</b>	<b>7113</b>	<b>7113</b>	<b>7113</b>	<b>7997</b>	<b>7997</b>	<b>7997</b>
<b>Energy Consumption excluding Refining<sup>1</sup> (quadrillion Btu)</b>										
Liquefied Petroleum Gases .....	2.08	2.15	2.08	2.02	2.07	1.80	1.59	1.99	1.70	1.48
Heat and Power .....	0.16	0.17	0.17	0.17	0.18	0.16	0.16	0.18	0.16	0.15
Feedstocks .....	1.91	1.98	1.92	1.86	1.90	1.64	1.43	1.82	1.55	1.34
Motor Gasoline .....	0.38	0.38	0.38	0.37	0.40	0.37	0.34	0.42	0.38	0.35
Distillate Fuel Oil .....	1.28	1.31	1.29	1.27	1.34	1.23	1.14	1.39	1.23	1.11
Residual Fuel Oil .....	0.27	0.29	0.28	0.27	0.27	0.22	0.21	0.27	0.21	0.20
Petrochemical Feedstocks .....	1.41	1.38	1.36	1.35	1.45	1.39	1.34	1.37	1.29	1.23
Petroleum Coke .....	0.36	0.35	0.34	0.34	0.38	0.31	0.29	0.39	0.30	0.27
Asphalt and Road Oil .....	1.26	1.26	1.22	1.19	1.27	1.08	0.93	1.36	1.13	0.92
Miscellaneous Petroleum <sup>2</sup> .....	0.56	0.41	0.39	0.38	0.46	0.33	0.31	0.44	0.29	0.26
Petroleum Subtotal .....	7.60	7.53	7.34	7.20	7.65	6.73	6.14	7.63	6.55	5.82
Natural Gas Heat and Power .....	5.01	5.30	5.12	5.10	6.05	5.22	5.13	6.16	5.22	5.07
Natural Gas Feedstocks .....	0.57	0.56	0.54	0.52	0.55	0.46	0.40	0.48	0.39	0.33
Lease and Plant Fuel <sup>3</sup> .....	1.17	1.21	1.21	1.21	1.25	1.25	1.25	1.27	1.27	1.27
Natural Gas Subtotal .....	6.74	7.08	6.86	6.83	7.85	6.93	6.78	7.90	6.88	6.66
Metallurgical Coal and Coke <sup>4</sup> .....	0.66	0.64	0.63	0.61	0.63	0.57	0.49	0.60	0.52	0.42
Other Industrial Coal .....	1.20	1.26	1.25	1.24	1.23	1.14	1.10	1.23	1.12	1.07
Coal Subtotal .....	1.86	1.90	1.87	1.85	1.86	1.71	1.59	1.82	1.64	1.49
Renewables <sup>5</sup> .....	1.69	1.66	1.66	1.68	1.79	1.83	1.91	1.92	2.02	2.17
Purchased Electricity .....	3.27	3.40	3.35	3.30	3.67	3.42	3.26	3.73	3.35	3.08
<b>Delivered Energy .....</b>	<b>21.17</b>	<b>21.57</b>	<b>21.09</b>	<b>20.86</b>	<b>22.81</b>	<b>20.62</b>	<b>19.68</b>	<b>23.00</b>	<b>20.44</b>	<b>19.22</b>
Electricity Related Losses .....	7.13	7.28	7.17	7.06	7.73	7.22	6.87	7.70	6.92	6.36
<b>Total .....</b>	<b>28.29</b>	<b>28.85</b>	<b>28.27</b>	<b>27.92</b>	<b>30.54</b>	<b>27.84</b>	<b>26.55</b>	<b>30.70</b>	<b>27.35</b>	<b>25.58</b>
<b>Delivered Energy Use per Dollar of Shipments (thousand Btu per 2000 dollar) .....</b>										
	<b>4.31</b>	<b>4.38</b>	<b>4.31</b>	<b>4.27</b>	<b>4.06</b>	<b>3.75</b>	<b>3.62</b>	<b>3.79</b>	<b>3.46</b>	<b>3.31</b>
<b>Onsite Industrial Combined Heat and Power</b>										
Capacity (gigawatts) .....	25.69	28.05	28.11	28.28	36.43	36.84	37.90	43.57	44.85	47.23
Generation (billion kilowatthours) .....	139.50	155.16	155.59	156.67	218.02	220.78	227.59	272.50	281.41	296.46

<sup>1</sup>Fuel consumption 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 the field gathering and processing plant machinery.

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

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

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2006 are model results and may differ slightly from official EIA data reports. Side cases were run without the fully integrated modeling system, so not all potential feedbacks were captured. The reference case ratio of electricity losses to electricity use was used to compute electricity losses for the technology cases.

Source: Energy Information Administration, AEO2008 National Energy Modeling System runs INDFRZN.D030608A, AEO2008.D030208F, and INDHIGH.D032208A.

## Results from Side Cases

**Table D3. Key Results for Transportation Sector Technology Cases**

Consumption and Indicators	2006	2010		2020		2030	
		Reference	High Technology	Reference	High Technology	Reference	High Technology
<b>Level of Travel</b>							
(billion vehicle miles traveled)							
Light-Duty Vehicles less than 8,500	2693	2777	2777	3375	3379	4069	4074
Commercial Light Trucks <sup>1</sup>	70	73	73	87	87	101	101
Freight Trucks greater than 10,000	235	250	250	304	304	351	351
(billion seat miles available)							
Air	994	1130	1130	1457	1457	1665	1665
(billion ton miles traveled)							
Rail	1656	1702	1703	1932	1933	2147	2148
Domestic Shipping	619	643	643	701	701	721	721
<b>Energy Efficiency Indicators</b>							
(miles per gallon)							
New Light-Duty Vehicle <sup>2</sup>	26.5	27.2	27.6	35.8	36.1	36.6	37.2
New Car <sup>2</sup>	31.1	31.5	32.2	42.0	42.2	42.1	42.6
New Light Truck <sup>2</sup>	23.2	23.7	24.1	31.4	32.2	32.4	33.4
Light-Duty Stock <sup>3</sup>	20.3	20.3	20.3	23.7	23.9	27.9	28.2
New Commercial Light Truck <sup>1</sup>	15.6	15.7	16.0	19.8	20.7	20.2	21.4
Stock Commercial Light Truck <sup>1</sup>	14.3	14.9	14.9	17.4	17.8	19.8	20.6
Freight Truck	6.0	6.0	6.1	6.5	6.7	6.8	7.2
(seat miles per gallon)							
Aircraft	62.2	63.5	63.5	67.2	67.4	70.0	70.6
(ton miles per thousand Btu)							
Rail	2.9	2.9	2.9	3.0	3.1	3.0	3.2
Domestic Shipping	2.0	2.0	2.0	2.0	2.1	2.0	2.2
<b>Energy Use (quadrillion Btu)</b>							
<b>by Mode</b>							
Light-Duty Vehicles	16.41	16.52	16.48	17.10	16.98	17.52	17.37
Commercial Light Trucks <sup>1</sup>	0.62	0.62	0.61	0.63	0.62	0.64	0.62
Bus Transportation	0.26	0.26	0.26	0.27	0.26	0.29	0.27
Freight Trucks	4.89	5.18	5.15	5.85	5.66	6.44	6.14
Rail, Passenger	0.04	0.05	0.05	0.05	0.05	0.06	0.06
Rail, Freight	0.57	0.58	0.58	0.65	0.63	0.72	0.67
Shipping, Domestic	0.32	0.33	0.32	0.35	0.33	0.36	0.33
Shipping, International	0.78	0.79	0.79	0.79	0.79	0.80	0.80
Recreational Boats	0.24	0.25	0.25	0.28	0.28	0.30	0.30
Air	2.65	2.90	2.90	3.61	3.60	4.22	4.18
Military Use	0.69	0.73	0.73	0.73	0.73	0.76	0.76
Lubricants	0.15	0.14	0.14	0.14	0.14	0.15	0.15
Pipeline Fuel	0.59	0.64	0.64	0.69	0.69	0.72	0.72
<b>Total</b>	<b>28.20</b>	<b>28.98</b>	<b>28.91</b>	<b>31.15</b>	<b>30.77</b>	<b>32.98</b>	<b>32.37</b>
<b>by Fuel</b>							
Liquefied Petroleum Gases	0.02	0.02	0.02	0.01	0.01	0.01	0.01
E85 <sup>4</sup>	0.00	0.00	0.00	0.97	0.98	1.34	1.35
Motor Gasoline <sup>5</sup>	17.20	17.25	17.21	16.56	16.42	15.97	15.78
Jet Fuel <sup>6</sup>	3.16	3.44	3.44	4.15	4.14	4.79	4.75
Distillate Fuel Oil <sup>7</sup>	6.18	6.54	6.51	7.63	7.39	8.98	8.60
Residual Fuel Oil	0.83	0.85	0.85	0.86	0.85	0.87	0.86
Liquid Hydrogen	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Petroleum <sup>8</sup>	0.18	0.17	0.17	0.18	0.18	0.18	0.18
Liquid Fuels and Other Petroleum	27.57	28.29	28.21	30.37	29.98	32.15	31.54
Pipeline Fuel Natural Gas	0.59	0.64	0.64	0.69	0.69	0.72	0.72
Compressed Natural Gas	0.02	0.04	0.04	0.07	0.07	0.08	0.08
Electricity	0.02	0.02	0.02	0.03	0.03	0.03	0.03
<b>Delivered Energy</b>	<b>28.20</b>	<b>28.98</b>	<b>28.91</b>	<b>31.15</b>	<b>30.76</b>	<b>32.98</b>	<b>32.37</b>
Electricity Related Losses	0.05	0.05	0.05	0.06	0.06	0.06	0.06
<b>Total</b>	<b>28.25</b>	<b>29.03</b>	<b>28.96</b>	<b>31.21</b>	<b>30.82</b>	<b>33.04</b>	<b>32.43</b>

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

<sup>2</sup>Environmental Protection Agency rated miles per gallon.

<sup>3</sup>Combined car and light truck "on-the-road" estimate.

<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>Includes ethanol (blends of 10 percent or less) and ethers blended into gasoline.

<sup>6</sup>Includes only kerosene type.

<sup>7</sup>Diesel fuel for on- and off- road use.

<sup>8</sup>Includes aviation gasoline and lubricants.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2006 are model results and may differ slightly from official EIA data reports. Side cases were run without the fully integrated modeling system, so not all potential feedbacks were captured. The reference case ratio of electricity losses to electricity use was used to compute electricity losses for the technology cases.

Source: Energy Information Administration, AEO2008 National Energy Modeling System runs AEO2008.D030208F, and TRNHIGH.D031408A.

# Results from Side Cases

**Table D4. Key Results for Integrated Technology Cases**

Consumption and Emissions	2006	2010			2020			2030		
		2008 Technology	Reference	High Technology	2008 Technology	Reference	High Technology	2008 Technology	Reference	High Technology
<b>Energy Consumption by Sector (quadrillion Btu)</b>										
Residential	10.77	11.73	11.66	11.64	12.79	12.30	12.00	13.73	12.88	12.29
Commercial	8.25	8.66	8.62	8.57	10.30	10.03	9.73	11.69	11.30	10.88
Industrial <sup>1</sup>	25.10	26.30	25.82	25.58	28.96	26.70	25.79	30.15	27.70	26.57
Transportation	28.20	28.98	28.98	28.92	31.18	31.15	30.80	33.00	32.98	32.44
Electric Power <sup>2</sup>	39.68	41.77	41.46	41.23	47.34	45.21	43.63	52.40	49.21	45.79
<b>Total</b>	<b>99.52</b>	<b>104.11</b>	<b>103.34</b>	<b>102.82</b>	<b>115.28</b>	<b>110.85</b>	<b>107.94</b>	<b>123.83</b>	<b>118.01</b>	<b>112.79</b>
<b>Energy Consumption by Fuel (quadrillion Btu)</b>										
Liquid Fuels and Other Petroleum <sup>3</sup>	40.06	40.69	40.46	40.24	43.25	42.24	41.30	45.16	43.99	42.68
Natural Gas	22.30	24.44	23.93	23.68	25.24	24.01	23.10	24.96	23.39	22.19
Coal	22.50	23.06	23.03	23.01	28.11	25.87	24.82	33.61	29.90	28.00
Nuclear Power	8.21	8.31	8.31	8.31	8.98	9.05	9.15	8.85	9.57	8.99
Renewable Energy <sup>4</sup>	6.27	7.42	7.43	7.39	9.52	9.50	9.39	11.02	10.97	10.75
Other <sup>5</sup>	0.19	0.19	0.18	0.18	0.18	0.17	0.17	0.23	0.20	0.18
<b>Total</b>	<b>99.52</b>	<b>104.11</b>	<b>103.34</b>	<b>102.82</b>	<b>115.28</b>	<b>110.85</b>	<b>107.94</b>	<b>123.83</b>	<b>118.01</b>	<b>112.79</b>
<b>Energy Intensity (thousand Btu per 2000 dollar of GDP)</b>	<b>8.79</b>	<b>8.37</b>	<b>8.30</b>	<b>8.25</b>	<b>7.22</b>	<b>6.93</b>	<b>6.74</b>	<b>6.14</b>	<b>5.84</b>	<b>5.57</b>
<b>Carbon Dioxide Emissions by Sector (million metric tons)</b>										
Residential	338	356	355	354	385	374	367	396	372	354
Commercial	213	215	215	215	242	241	238	259	258	257
Industrial <sup>1</sup>	1010	1074	1052	1044	1173	1069	1032	1193	1086	1038
Transportation	1985	1975	1976	1971	2074	2072	2047	2188	2188	2149
Electric Power <sup>6</sup>	2344	2429	2413	2404	2827	2627	2509	3299	2948	2746
<b>Total</b>	<b>5890</b>	<b>6049</b>	<b>6011</b>	<b>5987</b>	<b>6701</b>	<b>6384</b>	<b>6193</b>	<b>7335</b>	<b>6851</b>	<b>6543</b>
<b>Carbon Dioxide Emissions by Fuel (million metric tons)</b>										
Petroleum	2581	2565	2555	2546	2692	2650	2607	2816	2767	2701
Natural Gas	1163	1282	1256	1243	1325	1262	1216	1312	1231	1169
Coal	2134	2190	2188	2186	2671	2459	2359	3194	2841	2661
Other <sup>7</sup>	12	12	12	12	12	12	12	12	12	12
<b>Total</b>	<b>5890</b>	<b>6049</b>	<b>6011</b>	<b>5987</b>	<b>6701</b>	<b>6384</b>	<b>6193</b>	<b>7335</b>	<b>6851</b>	<b>6543</b>
<b>Carbon Dioxide Emissions (tons per person)</b>	<b>19.6</b>	<b>19.5</b>	<b>19.3</b>	<b>19.3</b>	<b>19.8</b>	<b>18.9</b>	<b>18.3</b>	<b>20.1</b>	<b>18.7</b>	<b>17.9</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>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 petroleum-derived fuels and non-petroleum derived fuels, such as ethanol and biodiesel. Petroleum coke, which is a solid, is included. Also included are natural gas plant liquids, crude oil consumed as a fuel, and liquid hydrogen.

<sup>4</sup>Includes grid-connected electricity from conventional hydroelectric; wood and wood waste; landfill gas; municipal waste; other biomass; wind; photovoltaic and solar thermal sources; and non-electric energy from renewable sources, such as active and passive solar systems, and wood; and both the ethanol and gasoline components of E85, but not the ethanol component of blends less than 85 percent. Excludes electricity imports using renewable sources and nonmarketed renewable energy.

<sup>5</sup>Includes non-biogenic municipal waste and net electricity imports.

<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. Does not include emissions from the nonbiogenic component of municipal waste because under international guidelines these are accounted for as waste, not energy.

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

Btu = British thermal unit.

GDP = Gross domestic product.

Note: Includes end-use, fossil electricity, and renewable technology assumptions. Totals may not equal sum of components due to independent rounding. Data for 2006 are model results and may differ slightly from official EIA data reports.

Source: Energy Information Administration, AEO2008 National Energy Modeling System runs HTECHCOST.D031408A, AEO2008.D030208F, and LTECHCOST.D032208A.

## Results from Side Cases

**Table D5. Key Results for Advanced Nuclear Cost Cases**  
(Gigawatts, Unless Otherwise Noted)

Net Summer Capacity, Generation, Emissions, and Fuel Prices	2006	2010			2020			2030		
		High Nuclear Cost	Reference	Low Nuclear Cost	High Nuclear Cost	Reference	Low Nuclear Cost	High Nuclear Cost	Reference	Low Nuclear Cost
<b>Capacity</b>										
Coal	309.8	316.0	316.0	316.0	343.8	343.1	341.5	415.1	406.1	389.8
Oil and Natural Gas Steam	119.7	118.4	118.4	118.4	92.8	93.3	91.4	92.4	92.9	89.9
Combined Cycle	176.5	190.0	190.0	190.0	196.8	196.7	196.8	213.5	210.0	208.4
Combustion Turbine/Diesel	130.9	137.4	137.4	137.4	132.1	132.1	132.0	162.9	164.7	162.3
Nuclear Power	100.2	100.9	100.9	100.9	108.9	110.9	113.6	104.4	114.9	136.6
Pumped Storage	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5
Fuel Cells	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Renewable Sources	96.3	111.6	111.6	111.6	123.6	123.6	123.5	133.1	132.5	131.2
Distributed Generation (Natural Gas)	0.0	0.3	0.3	0.3	2.6	2.7	2.7	9.1	9.8	9.7
Combined Heat and Power <sup>1</sup>	27.9	30.7	30.7	30.7	40.5	40.4	40.5	51.8	51.8	52.4
<b>Total</b>	<b>982.9</b>	<b>1026.7</b>	<b>1026.7</b>	<b>1026.7</b>	<b>1062.5</b>	<b>1064.2</b>	<b>1063.5</b>	<b>1203.8</b>	<b>1204.2</b>	<b>1201.8</b>
<b>Cumulative Additions</b>										
Coal	0.0	7.7	7.7	7.7	37.7	37.0	35.5	109.2	100.2	83.8
Oil and Natural Gas Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Combined Cycle	0.0	13.5	13.5	13.5	20.3	20.2	20.3	36.9	33.4	31.8
Combustion Turbine/Diesel	0.0	7.2	7.2	7.2	10.5	10.5	10.3	42.0	43.4	41.9
Nuclear Power	0.0	0.0	0.0	0.0	6.0	8.0	10.7	6.0	16.6	38.2
Pumped Storage	0.0	0.0	0.0	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	0.0	0.0	0.0
Renewable Sources	0.0	15.2	15.3	15.3	27.3	27.3	27.2	36.8	36.2	34.9
Distributed Generation	0.0	0.3	0.3	0.3	2.6	2.7	2.7	9.1	9.8	9.7
Combined Heat and Power <sup>1</sup>	0.0	2.9	2.9	2.9	12.6	12.5	12.7	23.9	23.9	24.5
<b>Total</b>	<b>0.0</b>	<b>46.7</b>	<b>46.8</b>	<b>46.8</b>	<b>117.0</b>	<b>118.2</b>	<b>119.3</b>	<b>264.0</b>	<b>263.5</b>	<b>264.8</b>
<b>Cumulative Retirements</b>	<b>0.0</b>	<b>3.6</b>	<b>3.6</b>	<b>3.6</b>	<b>40.0</b>	<b>39.5</b>	<b>41.4</b>	<b>45.7</b>	<b>44.8</b>	<b>48.6</b>
<b>Generation by Fuel (billion kilowatthours)</b>										
Coal	1966	2034	2034	2034	2332	2319	2310	2856	2787	2656
Petroleum	59	50	50	50	53	53	53	57	57	56
Natural Gas	732	821	820	820	724	722	710	610	599	574
Nuclear Power	787	797	797	797	854	868	888	837	917	1082
Pumped Storage	0	1	1	1	1	1	1	1	1	1
Renewable Sources	351	424	424	424	521	522	523	557	558	554
Distributed Generation	0	0	0	0	1	1	1	3	4	4
Combined Heat and Power <sup>1</sup>	152	169	169	169	238	238	239	313	313	317
<b>Total</b>	<b>4047</b>	<b>4294</b>	<b>4294</b>	<b>4294</b>	<b>4723</b>	<b>4723</b>	<b>4724</b>	<b>5234</b>	<b>5235</b>	<b>5243</b>
<b>Carbon Dioxide Emissions by the Electric Power Sector (million metric tons)<sup>2</sup></b>										
Petroleum	55	43	43	43	45	45	45	48	48	47
Natural Gas	340	366	365	366	324	323	318	275	272	263
Coal	1938	1992	1993	1992	2259	2247	2241	2675	2615	2515
Other <sup>3</sup>	12	12	12	12	12	12	12	12	12	12
<b>Total</b>	<b>2344</b>	<b>2413</b>	<b>2413</b>	<b>2413</b>	<b>2641</b>	<b>2627</b>	<b>2616</b>	<b>3010</b>	<b>2948</b>	<b>2837</b>
<b>Prices to the Electric Power Sector<sup>2</sup> (2006 dollars per million Btu)</b>										
Petroleum	9.63	10.80	10.79	10.79	8.58	8.57	8.57	10.38	10.37	10.29
Natural Gas	6.87	6.97	6.96	6.97	5.95	5.95	5.92	6.95	6.93	6.85
Coal	1.69	1.84	1.84	1.84	1.72	1.72	1.72	1.80	1.78	1.76

<sup>1</sup>Includes combined heat and power plants and electricity-only plants in commercial and industrial sectors. Includes 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. Excludes off-grid photovoltaics and other generators not connected to the distribution or transmission systems.

<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 emissions from geothermal power and nonbiogenic emissions from municipal waste.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2006 are model results and may differ slightly from official EIA data reports.

Source: Energy Information Administration, AEO2008 National Energy Modeling System runs HCNUC08.D030308A, AEO2008.D030208F, and LCNUC08.D030308A.

# Results from Side Cases

**Table D6. Key Results for Electric Power Sector Fossil Technology Cases**  
(Gigawatts, Unless Otherwise Noted)

Net Summer Capacity, Generation Consumption, and Emissions	2006	2010			2020			2030		
		High Fossil Cost	Reference	Low Fossil Cost	High Fossil Cost	Reference	Low Fossil Cost	High Fossil Cost	Reference	Low Fossil Cost
<b>Capacity</b>										
Pulverized Coal	309.3	315.5	315.5	315.5	341.5	338.2	325.3	397.5	376.1	331.7
Coal Gasification Combined-Cycle	0.5	0.5	0.5	0.5	3.1	4.8	17.6	4.7	30.0	94.6
Conventional Natural Gas Combined-Cycle	176.5	190.0	190.0	190.0	192.3	192.1	192.1	194.5	192.1	192.1
Advanced Natural Gas Combined-Cycle	0.0	0.0	0.0	0.0	0.5	4.6	8.7	0.9	17.9	37.4
Conventional Combustion Turbine	130.9	136.6	136.5	136.5	128.2	127.9	127.7	132.1	128.4	125.7
Advanced Combustion Turbine	0.0	0.8	0.9	0.9	7.9	4.2	3.1	37.9	36.3	25.8
Fuel Cells	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nuclear	100.2	100.9	100.9	100.9	111.2	110.9	109.9	121.5	114.9	105.4
Oil and Natural Gas Steam	119.7	118.4	118.4	118.4	91.3	93.3	94.6	90.9	92.9	92.6
Renewable Sources/Pumped Storage	117.8	133.1	133.1	133.1	145.5	145.1	144.4	154.1	154.0	150.8
Distributed Generation	0.0	0.3	0.3	0.3	2.7	2.7	1.5	12.6	9.8	5.7
Combined Heat and Power <sup>1</sup>	27.9	30.7	30.7	30.7	40.6	40.4	40.5	52.1	51.8	51.0
<b>Total</b>	<b>982.9</b>	<b>1026.7</b>	<b>1026.7</b>	<b>1026.7</b>	<b>1065.0</b>	<b>1064.2</b>	<b>1065.4</b>	<b>1198.9</b>	<b>1204.2</b>	<b>1212.8</b>
<b>Cumulative Additions</b>										
Pulverized Coal	0.0	7.7	7.7	7.7	36.0	32.7	19.8	92.2	70.7	26.4
Coal Gasification Combined-Cycle	0.0	0.0	0.0	0.0	2.5	4.3	17.1	4.2	29.5	94.1
Conventional Natural Gas Combined-Cycle	0.0	13.5	13.5	13.5	15.8	15.5	15.5	17.9	15.5	15.5
Advanced Natural Gas Combined-Cycle	0.0	0.0	0.0	0.0	0.5	4.6	8.7	0.9	17.9	37.4
Conventional Combustion Turbine	0.0	6.4	6.3	6.3	6.9	6.4	6.3	10.7	7.1	6.3
Advanced Combustion Turbine	0.0	0.8	0.9	0.9	7.9	4.2	3.1	37.9	36.3	25.8
Fuel Cells	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nuclear	0.0	0.0	0.0	0.0	8.4	8.0	7.0	23.1	16.6	7.0
Oil and Natural Gas Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Renewable Sources	0.0	15.3	15.3	15.3	27.7	27.3	26.6	36.3	36.2	33.0
Distributed Generation	0.0	0.3	0.3	0.3	2.7	2.7	1.5	12.6	9.8	5.7
Combined Heat and Power <sup>1</sup>	0.0	2.9	2.9	2.9	12.8	12.5	12.6	24.2	23.9	23.1
<b>Total</b>	<b>0.0</b>	<b>46.8</b>	<b>46.8</b>	<b>46.8</b>	<b>121.2</b>	<b>118.2</b>	<b>118.2</b>	<b>260.1</b>	<b>263.5</b>	<b>274.4</b>
<b>Cumulative Retirements</b>	<b>0.0</b>	<b>3.6</b>	<b>3.6</b>	<b>3.6</b>	<b>41.8</b>	<b>39.5</b>	<b>38.3</b>	<b>46.8</b>	<b>44.8</b>	<b>47.0</b>
<b>Generation by Fuel (billion kilowatthours)</b>										
Coal	1966	2034	2034	2034	2334	2319	2319	2749	2787	2917
Petroleum	59	50	50	50	53	53	51	58	57	52
Natural Gas	732	820	820	820	704	722	733	575	599	588
Nuclear Power	787	797	797	797	871	868	861	967	917	845
Renewable Sources/Pumped Storage	351	425	425	425	523	523	524	558	559	553
Distributed Generation	0	0	0	0	1	1	1	4	4	2
Combined Heat and Power <sup>1</sup>	152	169	169	169	240	238	238	315	313	308
<b>Total</b>	<b>4047</b>	<b>4294</b>	<b>4294</b>	<b>4294</b>	<b>4727</b>	<b>4723</b>	<b>4727</b>	<b>5225</b>	<b>5235</b>	<b>5266</b>
<b>Fuel Consumption by the Electric Power Sector (quadrillion Btu)<sup>2</sup></b>										
Coal	20.48	21.01	21.01	21.01	23.84	23.67	23.54	27.45	27.55	27.62
Petroleum	0.64	0.56	0.56	0.56	0.59	0.59	0.57	0.63	0.63	0.59
Natural Gas	6.42	6.89	6.89	6.89	5.99	6.09	6.12	5.06	5.13	4.83
Nuclear Power	8.21	8.31	8.31	8.31	9.08	9.05	8.98	10.08	9.57	8.81
Renewable Sources	3.74	4.52	4.53	4.52	5.66	5.64	5.66	6.10	6.13	6.06
<b>Total</b>	<b>39.62</b>	<b>41.42</b>	<b>41.41</b>	<b>41.41</b>	<b>45.29</b>	<b>45.16</b>	<b>45.00</b>	<b>49.46</b>	<b>49.13</b>	<b>48.04</b>
<b>Carbon Dioxide Emissions by the Electric Power Sector (million metric tons)<sup>2</sup></b>										
Coal	1938	1992	1993	1992	2263	2247	2235	2608	2615	2623
Petroleum	55	43	43	43	45	45	44	49	48	45
Natural Gas	340	366	365	366	318	323	325	268	272	256
Other <sup>1</sup>	12	12	12	12	12	12	12	12	12	12
<b>Total</b>	<b>2344</b>	<b>2413</b>	<b>2413</b>	<b>2413</b>	<b>2639</b>	<b>2627</b>	<b>2616</b>	<b>2938</b>	<b>2948</b>	<b>2937</b>

<sup>1</sup>Includes combined heat and power plants and electricity-only plants in the commercial and industrial sectors. Includes small on-site generating systems in the residential, commercial, and industrial sectors used primarily for on-site generation, but which may also sell some power to the grid. Excludes off-grid photovoltaics and other generators not connected to the distribution or transmission systems.

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

<sup>3</sup>Includes emissions from geothermal power and nonbiogenic emissions from municipal waste.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2006 are model results and may differ slightly from official EIA data reports.

Source: Energy Information Administration, AEO2008 National Energy Modeling System runs HCFOSS08.D030308A, AEO2008.D030208F, and LCFOSS08.D030308A.

## Results from Side Cases

**Table D7. Key Results for Renewable Technology Cases**

Capacity, Generation, and Emissions	2006	2010			2020			2030		
		High Renewable Cost	Reference	Low Renewable Cost	High Renewable Cost	Reference	Low Renewable Cost	High Renewable Cost	Reference	Low Renewable Cost
<b>Net Summer Capacity (gigawatts)</b>										
<b>Electric Power Sector<sup>1</sup></b>										
Conventional Hydropower	76.72	76.73	76.73	76.73	77.35	77.26	77.13	77.35	77.32	77.32
Geothermal <sup>2</sup>	2.29	2.50	2.50	2.50	3.15	3.28	3.26	4.06	4.18	3.96
Municipal Waste <sup>3</sup>	3.39	3.99	3.99	3.92	4.06	4.02	3.96	4.07	4.06	3.97
Wood and Other Biomass <sup>4</sup>	2.01	2.20	2.20	2.20	4.56	4.39	4.53	5.33	5.58	6.48
Solar Thermal	0.40	0.54	0.54	0.54	0.82	0.82	0.82	0.86	0.86	0.86
Solar Photovoltaic	0.03	0.07	0.07	0.07	0.22	0.22	0.22	0.39	0.39	0.39
Wind	11.50	25.61	25.61	25.61	31.53	33.64	36.92	36.57	40.15	43.80
<b>Total</b>	<b>96.34</b>	<b>111.63</b>	<b>111.63</b>	<b>111.57</b>	<b>121.68</b>	<b>123.62</b>	<b>126.83</b>	<b>128.63</b>	<b>132.54</b>	<b>136.77</b>
<b>End-Use Sector<sup>5</sup></b>										
Conventional Hydropower	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Municipal Waste <sup>6</sup>	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
Wood and Other Biomass	4.64	4.87	4.89	4.95	8.32	8.57	8.95	11.97	12.60	13.13
Solar Photovoltaic	0.27	0.67	0.67	0.70	1.01	1.13	1.23	1.39	2.80	3.97
Wind	0.04	0.04	0.04	0.04	0.07	0.09	0.11	0.19	0.26	0.33
<b>Total</b>	<b>6.00</b>	<b>6.63</b>	<b>6.65</b>	<b>6.74</b>	<b>10.45</b>	<b>10.85</b>	<b>11.33</b>	<b>14.60</b>	<b>16.72</b>	<b>18.48</b>
<b>Generation (billion kilowatthours)</b>										
<b>Electric Power Sector<sup>1</sup></b>										
Coal	1966	2035	2034	2035	2316	2319	2315	2784	2787	2777
Petroleum	59	50	50	50	52	53	53	56	57	56
Natural Gas	732	821	820	820	728	722	720	606	599	593
<b>Total Fossil</b>	<b>2757</b>	<b>2905</b>	<b>2903</b>	<b>2904</b>	<b>3097</b>	<b>3093</b>	<b>3088</b>	<b>3447</b>	<b>3443</b>	<b>3426</b>
Conventional Hydropower	285.07	289.47	289.47	289.47	298.51	298.00	297.16	298.72	298.53	298.35
Geothermal	14.84	17.52	17.52	17.52	22.95	23.96	23.80	30.13	31.05	29.32
Municipal Waste <sup>3</sup>	13.46	18.85	18.85	18.30	19.44	19.08	18.67	19.48	19.47	18.70
Wood and Other Biomass <sup>4</sup>	10.97	21.75	22.98	22.42	86.48	77.53	68.58	92.57	82.55	71.51
Dedicated Plants	9.06	10.94	11.06	11.21	28.80	27.74	28.50	34.54	36.64	42.84
Cofiring	1.91	10.80	11.92	11.22	57.68	49.79	40.07	58.03	45.91	28.68
Solar Thermal	0.49	1.15	1.15	1.15	2.04	2.04	2.04	2.18	2.18	2.18
Solar Photovoltaic	0.01	0.16	0.16	0.16	0.52	0.52	0.52	0.96	0.96	0.96
Wind	25.78	72.85	74.13	73.50	89.99	101.23	113.36	105.86	123.18	137.80
<b>Total Renewable</b>	<b>350.62</b>	<b>421.75</b>	<b>424.27</b>	<b>422.53</b>	<b>519.94</b>	<b>522.35</b>	<b>524.12</b>	<b>549.91</b>	<b>557.91</b>	<b>558.82</b>
<b>End-Use Sector<sup>5</sup></b>										
Total Fossil	99	115	115	115	156	157	158	201	198	200
Conventional Hydropower <sup>7</sup>	3.24	3.24	3.24	3.24	3.24	3.24	3.24	3.24	3.24	3.24
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Municipal Waste <sup>6</sup>	2.06	2.82	2.82	2.82	2.82	2.82	2.82	2.82	2.82	2.82
Wood and Other Biomass	28.44	29.83	29.98	30.29	55.52	57.00	59.20	83.13	86.99	89.54
Solar Photovoltaic	0.43	1.07	1.07	1.12	1.61	1.85	2.01	2.22	4.76	6.75
Wind	0.06	0.06	0.06	0.06	0.09	0.13	0.15	0.27	0.38	0.48
<b>Total Renewable</b>	<b>34.22</b>	<b>37.02</b>	<b>37.17</b>	<b>37.53</b>	<b>63.30</b>	<b>65.05</b>	<b>67.43</b>	<b>91.69</b>	<b>98.19</b>	<b>102.84</b>
<b>Carbon Dioxide Emissions by the</b>										
<b>Electric Power Sector</b>										
<b>(million metric tons)<sup>1</sup></b>										
Coal	1938	1994	1993	1993	2243	2247	2246	2610	2615	2609
Petroleum	55	43	43	43	45	45	45	48	48	47
Natural Gas	340	366	365	366	326	323	323	275	272	270
Other <sup>8</sup>	12	12	12	12	12	12	12	12	12	12
<b>Total</b>	<b>2344</b>	<b>2414</b>	<b>2413</b>	<b>2414</b>	<b>2625</b>	<b>2627</b>	<b>2626</b>	<b>2945</b>	<b>2948</b>	<b>2938</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 biogenic municipal waste, landfill gas, and municipal sewage sludge. Incremental growth is assumed to be for landfill gas facilities.

<sup>4</sup>Includes projections for energy crops after 2010.

<sup>5</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. Excludes off-grid photovoltaics and other generators not connected to the distribution or transmission systems.

<sup>6</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>7</sup>Represents own-use industrial hydroelectric power.

<sup>8</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 2006 are model results and may differ slightly from official EIA data reports.

Source: Energy Information Administration, AEO2008 National Energy Modeling System runs HIRENCST08.D030408A, AEO2008.D030208F, and LORENCST08.D030408A.



# Results from Side Cases

**Table D8. Natural Gas Supply and Disposition, Oil and Gas Technological Progress Cases**  
(Trillion Cubic Feet per Year, Unless Otherwise Noted)

Supply, Disposition, and Prices	2006	2010			2020			2030		
		Slow Technology	Reference	Rapid Technology	Slow Technology	Reference	Rapid Technology	Slow Technology	Reference	Rapid Technology
<b>Natural Gas Prices</b>										
<b>(2006 dollars per million Btu)</b>										
Henry Hub Spot Price .....	6.73	6.94	6.90	6.86	6.13	5.95	5.69	7.72	7.22	6.66
Average Lower 48 Wellhead Price <sup>1</sup> ..	6.24	6.19	6.16	6.12	5.45	5.29	5.05	6.90	6.45	5.94
<b>(2006 dollars per thousand cubic feet)</b>										
Average Lower 48 Wellhead Price <sup>1</sup> ..	6.42	6.37	6.33	6.30	5.61	5.44	5.20	7.10	6.63	6.11
<b>Dry Gas Production<sup>2</sup></b> .....	<b>18.51</b>	<b>19.27</b>	<b>19.29</b>	<b>19.32</b>	<b>19.27</b>	<b>19.67</b>	<b>20.40</b>	<b>18.50</b>	<b>19.44</b>	<b>20.69</b>
Lower 48 Onshore .....	15.04	15.27	15.26	15.26	13.90	14.16	14.70	12.82	13.95	15.21
Associated-Dissolved .....	1.42	1.41	1.41	1.41	1.29	1.33	1.38	1.10	1.20	1.24
Non-Associated .....	13.62	13.86	13.85	13.84	12.61	12.83	13.32	11.72	12.76	13.97
Conventional .....	5.14	4.82	4.81	4.80	3.59	3.47	3.31	3.57	3.23	2.83
Unconventional .....	8.48	9.04	9.04	9.05	9.02	9.36	10.01	8.15	9.53	11.14
Lower 48 Offshore .....	3.05	3.58	3.61	3.65	4.18	4.31	4.51	3.32	3.47	3.47
Associated-Dissolved .....	0.62	0.72	0.73	0.74	0.93	0.97	1.02	0.73	0.77	0.83
Non-Associated .....	2.43	2.86	2.88	2.91	3.25	3.35	3.49	2.59	2.69	2.64
Alaska .....	0.42	0.42	0.42	0.42	1.19	1.19	1.19	2.37	2.01	2.01
Supplemental Natural Gas <sup>3</sup> .....	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
<b>Net Imports</b> .....	<b>3.46</b>	<b>3.85</b>	<b>3.85</b>	<b>3.85</b>	<b>3.60</b>	<b>3.55</b>	<b>3.41</b>	<b>3.23</b>	<b>3.18</b>	<b>2.73</b>
Pipeline <sup>4</sup> .....	2.94	2.64	2.64	2.65	1.14	1.18	1.22	0.23	0.33	0.44
Liquefied Natural Gas .....	0.52	1.21	1.20	1.20	2.46	2.37	2.19	3.00	2.84	2.29
<b>Total Supply</b> .....	<b>22.03</b>	<b>23.18</b>	<b>23.20</b>	<b>23.23</b>	<b>22.93</b>	<b>23.28</b>	<b>23.87</b>	<b>21.80</b>	<b>22.68</b>	<b>23.48</b>
<b>Consumption by Sector</b>										
Residential .....	4.37	4.80	4.81	4.81	5.13	5.15	5.17	5.12	5.17	5.22
Commercial .....	2.83	2.95	2.96	2.96	3.35	3.37	3.39	3.63	3.67	3.72
Industrial <sup>5</sup> .....	6.49	6.94	6.95	6.96	6.88	6.93	6.99	6.76	6.87	7.02
Electric Power <sup>6</sup> .....	6.24	6.69	6.70	6.72	5.69	5.92	6.36	4.37	4.99	5.49
Transportation <sup>7</sup> .....	0.02	0.03	0.03	0.03	0.07	0.07	0.07	0.08	0.09	0.09
Pipeline Fuel .....	0.58	0.62	0.62	0.62	0.66	0.67	0.69	0.68	0.70	0.72
Lease and Plant Fuel <sup>8</sup> .....	1.14	1.18	1.18	1.18	1.20	1.22	1.25	1.20	1.23	1.28
<b>Total</b> .....	<b>21.66</b>	<b>23.23</b>	<b>23.25</b>	<b>23.28</b>	<b>22.98</b>	<b>23.33</b>	<b>23.92</b>	<b>21.85</b>	<b>22.72</b>	<b>23.53</b>
<b>Discrepancy<sup>9</sup></b> .....	<b>0.37</b>	<b>-0.05</b>	<b>-0.05</b>	<b>-0.05</b>	<b>-0.05</b>	<b>-0.05</b>	<b>-0.05</b>	<b>-0.05</b>	<b>-0.05</b>	<b>-0.04</b>
<b>Lower 48 End of Year Reserves</b> .....	<b>202.99</b>	<b>219.82</b>	<b>220.62</b>	<b>221.61</b>	<b>209.51</b>	<b>219.31</b>	<b>237.64</b>	<b>176.29</b>	<b>200.42</b>	<b>233.48</b>

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

<sup>2</sup>Marketed production (wet) minus extraction losses.

<sup>3</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>4</sup>Includes any natural gas regasified in the Bahamas and transported via pipeline to Florida.

<sup>5</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>6</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>7</sup>Compressed natural gas used as a vehicle fuel. Price includes estimated motor vehicle fuel taxes and estimated dispensing costs or charges.

<sup>8</sup>Represents natural gas used in field gathering and processing plant machinery.

<sup>9</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, 2006 values include net storage injections.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2006 are model results and may differ slightly from official EIA data reports.

Sources: 2006 supply values: Energy Information Administration (EIA), *Natural Gas Monthly*, DOE/EIA-0130(2007/04) (Washington, DC, April 2007). 2006 consumption based on: EIA, *Annual Energy Review 2006*, DOE/EIA-0384(2006) (Washington, DC, June 2007). Projections: EIA, AEO2008 National Energy Modeling System runs OGLTEC08.D030508A, AEO2008.D030208F, and OGHTEC08.D030508A.

## Results from Side Cases

**Table D9. Liquid Fuels Supply and Disposition, Oil and Gas Technological Progress Cases**  
(Million Barrels per Day, Unless Otherwise Noted)

Supply, Disposition, and Prices	2006	2010			2020			2030		
		Slow Technology	Reference	Rapid Technology	Slow Technology	Reference	Rapid Technology	Slow Technology	Reference	Rapid Technology
<b>Prices (2006 dollars per barrel)</b>										
Imported Low Sulfur Light Crude Oil <sup>1</sup>	66.02	74.11	74.03	73.96	60.00	59.70	59.39	71.11	70.45	70.03
Imported Crude Oil <sup>1</sup>	59.05	65.25	65.18	65.02	51.85	51.55	51.08	61.36	58.66	57.97
<b>Crude Oil Supply</b>										
Domestic Crude Oil Production <sup>2</sup>	5.10	5.88	5.93	5.98	5.94	6.23	6.53	4.98	5.59	5.94
Alaska	0.74	0.69	0.69	0.69	0.69	0.70	0.70	0.29	0.30	0.30
Lower 48 Onshore	2.93	3.08	3.10	3.13	3.08	3.28	3.46	2.88	3.38	3.58
Lower 48 Offshore	1.43	2.12	2.14	2.16	2.17	2.25	2.37	1.80	1.92	2.06
Net Crude Oil Imports	10.09	9.61	9.60	9.58	10.01	9.75	9.53	11.50	11.03	10.78
Other Crude Oil Supply	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Crude Oil Supply</b>	<b>15.24</b>	<b>15.49</b>	<b>15.53</b>	<b>15.56</b>	<b>15.95</b>	<b>15.98</b>	<b>16.06</b>	<b>16.48</b>	<b>16.63</b>	<b>16.72</b>
<b>Other Supply</b>										
Natural Gas Plant Liquids	1.74	1.68	1.68	1.68	1.70	1.72	1.74	1.50	1.57	1.61
Net Product Imports <sup>3</sup>	2.31	1.76	1.72	1.70	1.39	1.37	1.29	1.38	1.26	1.13
Refinery Processing Gain <sup>4</sup>	0.99	1.05	1.05	1.05	1.00	1.00	1.01	0.98	0.99	0.99
Other Supply <sup>5</sup>	0.45	1.04	1.04	1.04	2.00	1.97	1.98	2.44	2.41	2.44
<b>Total Primary Supply<sup>6</sup></b>	<b>20.74</b>	<b>21.01</b>	<b>21.02</b>	<b>21.03</b>	<b>22.05</b>	<b>22.04</b>	<b>22.08</b>	<b>22.79</b>	<b>22.86</b>	<b>22.89</b>
<b>Liquid Fuels Consumption by Sector</b>										
Residential and Commercial	1.07	1.08	1.08	1.08	1.12	1.13	1.13	1.11	1.12	1.12
Industrial <sup>7</sup>	5.15	5.06	5.06	5.06	4.79	4.79	4.80	4.71	4.73	4.73
Transportation	14.05	14.59	14.60	14.60	15.79	15.79	15.81	16.63	16.66	16.69
Electric Power <sup>8</sup>	0.29	0.25	0.25	0.25	0.26	0.26	0.26	0.28	0.28	0.28
<b>Total</b>	<b>20.65</b>	<b>20.98</b>	<b>20.99</b>	<b>21.00</b>	<b>21.96</b>	<b>21.96</b>	<b>21.99</b>	<b>22.74</b>	<b>22.80</b>	<b>22.83</b>
<b>Discrepancy<sup>9</sup></b>	<b>0.09</b>	<b>0.03</b>	<b>0.03</b>	<b>0.03</b>	<b>0.08</b>	<b>0.08</b>	<b>0.09</b>	<b>0.05</b>	<b>0.06</b>	<b>0.06</b>
<b>Lower 48 End of Year Reserves (billion barrels)<sup>2</sup></b>										
	19.02	19.59	19.89	20.20	19.68	20.78	21.91	17.69	19.89	20.98

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

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

<sup>3</sup>Includes net imports of finished petroleum products, unfinished oils, other hydrocarbons, alcohols, ethers, and blending components.

<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 ethanol (including imports), alcohols, ethers, petroleum product stock withdrawals, domestic sources of blending components, other hydrocarbons, biodiesel (including imports), natural gas converted to liquid fuel, coal converted to liquid fuel, and biomass converted to liquid fuel.

<sup>6</sup>Total crude supply plus natural gas plant liquids, other inputs, refinery processing gain, and net product imports.

<sup>7</sup>Includes consumption for combined heat and power, which produces electricity and other useful thermal energy.

<sup>8</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>9</sup>Balancing item. Includes unaccounted for supply, losses and gains.

Note: Totals may not equal sum of components due to independent rounding. Data for 2006 are model results and may differ slightly from official EIA data reports.

Sources: 2006 product supplied data based on: Energy Information Administration (EIA), *Annual Energy Review 2006*, DOE/EIA-0384(2006) (Washington, DC, June 2007). 2006 imported low sulfur light crude oil price: EIA, Form EIA-856, "Monthly Foreign Crude Oil Acquisition Report." Other 2006 data: EIA, *Petroleum Supply Annual 2006*, DOE/EIA-0340(2006)/1 (Washington, DC, September 2007). Projections: EIA, AEO2008 National Energy Modeling System runs OGLTEC08.D030508A, AEO2008.D030208F, and OGHTEC08.D030508A.

# Results from Side Cases

**Table D10. Natural Gas Supply and Disposition, Liquefied Natural Gas Supply Cases**  
(Trillion Cubic Feet per Year, Unless Otherwise Noted)

Supply, Disposition, and Prices	2006	2010			2020			2030		
		Low LNG Supply	Reference	High LNG Supply	Low LNG Supply	Reference	High LNG Supply	Low LNG Supply	Reference	High LNG Supply
<b>Dry Gas Production<sup>1</sup></b> .....	<b>18.51</b>	<b>19.46</b>	<b>19.29</b>	<b>19.30</b>	<b>20.52</b>	<b>19.67</b>	<b>18.57</b>	<b>20.63</b>	<b>19.44</b>	<b>16.86</b>
Lower 48 Onshore .....	15.04	15.39	15.26	15.26	14.94	14.16	13.19	14.74	13.95	11.75
Associated-Dissolved .....	1.42	1.41	1.41	1.41	1.34	1.33	1.33	1.20	1.20	1.19
Non-Associated .....	13.62	13.98	13.85	13.85	13.61	12.83	11.86	13.54	12.76	10.55
Conventional .....	5.14	4.87	4.81	4.81	3.74	3.47	3.11	3.53	3.23	2.48
Unconventional .....	8.48	9.11	9.04	9.04	9.87	9.36	8.75	10.01	9.53	8.08
Lower 48 Offshore .....	3.05	3.65	3.61	3.61	4.38	4.31	4.19	3.53	3.47	3.10
Associated-Dissolved .....	0.62	0.73	0.73	0.73	0.97	0.97	0.97	0.78	0.77	0.76
Non-Associated .....	2.43	2.92	2.88	2.88	3.41	3.35	3.23	2.75	2.69	2.34
Alaska .....	0.42	0.42	0.42	0.42	1.19	1.19	1.19	2.37	2.01	2.01
Supplemental Natural Gas <sup>2</sup> .....	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
<b>Net Imports</b> .....	<b>3.46</b>	<b>3.67</b>	<b>3.85</b>	<b>3.85</b>	<b>2.36</b>	<b>3.55</b>	<b>5.71</b>	<b>1.56</b>	<b>3.18</b>	<b>8.33</b>
Pipeline <sup>3</sup> .....	2.94	2.67	2.64	2.64	1.33	1.18	0.97	0.53	0.33	-0.19
Liquefied Natural Gas .....	0.52	0.99	1.20	1.20	1.03	2.37	4.74	1.03	2.84	8.53
<b>Total Supply</b> .....	<b>22.03</b>	<b>23.19</b>	<b>23.20</b>	<b>23.20</b>	<b>22.94</b>	<b>23.28</b>	<b>24.35</b>	<b>22.26</b>	<b>22.68</b>	<b>25.25</b>
<b>Consumption by Sector</b>										
Residential .....	4.37	4.80	4.81	4.81	5.13	5.15	5.19	5.14	5.17	5.27
Commercial .....	2.83	2.95	2.96	2.96	3.35	3.37	3.40	3.65	3.67	3.77
Industrial <sup>4</sup> .....	6.49	6.95	6.95	6.95	6.87	6.93	7.04	6.82	6.87	7.19
Electric Power <sup>5</sup> .....	6.24	6.69	6.70	6.70	5.65	5.92	6.84	4.61	4.99	7.13
Transportation <sup>6</sup> .....	0.02	0.03	0.03	0.03	0.07	0.07	0.07	0.08	0.09	0.09
Pipeline Fuel .....	0.58	0.62	0.62	0.62	0.67	0.67	0.68	0.70	0.70	0.73
Lease and Plant Fuel <sup>7</sup> .....	1.14	1.19	1.18	1.18	1.25	1.22	1.17	1.29	1.23	1.12
<b>Total</b> .....	<b>21.66</b>	<b>23.23</b>	<b>23.25</b>	<b>23.25</b>	<b>22.98</b>	<b>23.33</b>	<b>24.39</b>	<b>22.30</b>	<b>22.72</b>	<b>25.30</b>
<b>Discrepancy<sup>8</sup></b> .....	<b>0.37</b>	<b>-0.05</b>	<b>-0.05</b>	<b>-0.05</b>	<b>-0.05</b>	<b>-0.05</b>	<b>-0.05</b>	<b>-0.05</b>	<b>-0.05</b>	<b>-0.04</b>
<b>Lower 48 End of Year Reserves</b> .....	<b>202.99</b>	<b>221.15</b>	<b>220.62</b>	<b>220.63</b>	<b>226.28</b>	<b>219.31</b>	<b>212.07</b>	<b>207.46</b>	<b>200.42</b>	<b>183.11</b>
<b>Natural Gas Prices</b>										
<b>(2006 dollars per million Btu)</b>										
Henry Hub Spot Price .....	6.73	7.00	6.90	6.90	6.18	5.95	5.51	7.52	7.22	6.03
Average Lower 48 Wellhead Price <sup>9</sup> ..	6.24	6.25	6.16	6.16	5.50	5.29	4.89	6.72	6.45	5.37
<b>(2006 dollars per thousand cubic feet)</b>										
Average Lower 48 Wellhead Price <sup>9</sup> ..	6.42	6.43	6.33	6.34	5.66	5.44	5.03	6.92	6.63	5.52
<b>Delivered Prices</b>										
<b>(2006 dollars per thousand cubic feet)</b>										
Residential .....	13.80	12.61	12.52	12.52	11.97	11.74	11.30	13.59	13.30	12.09
Commercial .....	11.85	11.00	10.91	10.91	10.43	10.20	9.77	12.07	11.78	10.59
Industrial <sup>4</sup> .....	7.89	7.52	7.43	7.43	6.62	6.40	5.98	7.80	7.50	6.35
Electric Power <sup>5</sup> .....	7.07	7.25	7.16	7.16	6.33	6.11	5.74	7.41	7.13	6.05
Transportation <sup>10</sup> .....	14.71	14.09	14.01	14.01	12.74	12.52	12.12	13.49	13.22	12.13
<b>Average<sup>11</sup></b> .....	<b>9.49</b>	<b>9.06</b>	<b>8.97</b>	<b>8.97</b>	<b>8.47</b>	<b>8.22</b>	<b>7.72</b>	<b>9.96</b>	<b>9.63</b>	<b>8.25</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.

<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 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>6</sup>Compressed natural gas used as vehicle fuel.

<sup>7</sup>Represents natural gas used in field gathering and processing plant machinery.

<sup>8</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, 2006 values include net storage injections.

<sup>9</sup>Represents lower 48 onshore and offshore supplies.

<sup>10</sup>Compressed natural gas used as a vehicle fuel. Price includes estimated motor vehicle fuel taxes and estimated dispensing costs or charges.

<sup>11</sup>Weighted average prices. Weights used are the sectoral consumption values excluding lease, plant, and pipeline fuel.

LNG = Liquefied natural gas.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2006 are model results and may differ slightly from official EIA data reports.

Sources: 2006 supply values: Energy Information Administration (EIA), *Natural Gas Monthly*, DOE/EIA-0130(2007/04) (Washington, DC, April 2007). 2006 consumption based on: EIA, *Annual Energy Review 2006*, DOE/EIA-0384(2006) (Washington, DC, June 2007). Projections: EIA, AEO2008 National Energy Modeling System runs LOLNG08.D0305086A, AEO2008.D030208F, and HILNG08.D030508A.

## Results from Side Cases

**Table D11. Liquid Fuels Supply and Disposition, ANWR Drilling Case**  
(Million Barrels per Day, Unless Otherwise Noted)

Supply, Disposition, and Prices	2006	2010		2020		2030	
		Reference	ANWR	Reference	ANWR	Reference	ANWR
<b>Crude Oil</b>							
Domestic Crude Production <sup>1</sup> .....	5.10	5.93	5.93	6.23	6.48	5.59	6.28
Alaska .....	0.74	0.69	0.69	0.70	0.95	0.30	1.01
Lower 48 States .....	4.36	5.24	5.24	5.53	5.53	5.30	5.27
Net Imports .....	10.09	9.60	9.60	9.75	9.53	11.03	10.58
Other Crude Supply <sup>2</sup> .....	0.05	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Crude Supply .....</b>	<b>15.24</b>	<b>15.53</b>	<b>15.53</b>	<b>15.98</b>	<b>16.00</b>	<b>16.63</b>	<b>16.86</b>
<b>Other Supply</b>							
Natural Gas Plant Liquids .....	1.74	1.68	1.68	1.72	1.73	1.57	1.60
Net Product Imports <sup>3</sup> .....	2.31	1.72	1.72	1.37	1.37	1.26	1.09
Refinery Processing Gain <sup>4</sup> .....	0.99	1.05	1.05	1.00	1.01	0.99	1.04
Ethanol <sup>5</sup> .....	0.36	0.81	0.81	1.41	1.41	1.56	1.54
Biodiesel <sup>5</sup> .....	0.02	0.04	0.04	0.07	0.07	0.08	0.08
Liquids from Coal .....	0.00	0.00	0.00	0.15	0.13	0.24	0.20
Liquids from Biomass .....	0.00	0.00	0.00	0.14	0.14	0.29	0.30
Other <sup>6</sup> .....	0.07	0.18	0.18	0.21	0.21	0.24	0.25
<b>Total Primary Supply<sup>7</sup> .....</b>	<b>20.74</b>	<b>21.02</b>	<b>21.02</b>	<b>22.04</b>	<b>22.08</b>	<b>22.86</b>	<b>22.97</b>
<b>Liquid Fuels Consumption</b>							
<b>by Fuel</b>							
Liquefied Petroleum Gases .....	2.05	2.05	2.05	1.86	1.86	1.80	1.80
E85 <sup>8</sup> .....	0.00	0.00	0.00	0.67	0.67	0.92	0.90
Motor Gasoline <sup>9</sup> .....	9.25	9.59	9.59	9.24	9.24	8.91	8.96
Jet Fuel <sup>10</sup> .....	1.63	1.66	1.66	2.01	2.01	2.31	2.31
Distillate Fuel Oil <sup>11</sup> .....	4.17	4.40	4.40	4.91	4.91	5.53	5.53
Residual Fuel Oil .....	0.69	0.70	0.70	0.69	0.69	0.70	0.70
Other <sup>12</sup> .....	2.86	2.58	2.58	2.58	2.60	2.62	2.67
<b>by Sector</b>							
Residential and Commercial .....	1.07	1.08	1.08	1.13	1.13	1.12	1.12
Industrial <sup>13</sup> .....	5.15	5.06	5.06	4.79	4.80	4.73	4.78
Transportation .....	14.05	14.60	14.60	15.79	15.80	16.66	16.68
Electric Power <sup>14</sup> .....	0.29	0.25	0.25	0.26	0.26	0.28	0.28
<b>Total .....</b>	<b>20.65</b>	<b>20.99</b>	<b>20.99</b>	<b>21.96</b>	<b>21.98</b>	<b>22.80</b>	<b>22.86</b>
<b>Discrepancy<sup>15</sup> .....</b>	<b>0.09</b>	<b>0.03</b>	<b>0.03</b>	<b>0.08</b>	<b>0.10</b>	<b>0.06</b>	<b>0.11</b>
<b>Imported Low Sulfur Light Crude Oil Price<sup>16</sup></b>							
(2006 dollars per barrel) .....	66.02	74.03	74.03	59.70	59.46	70.45	69.78
<b>Imported Crude Oil Price<sup>16</sup></b>							
(2006 dollars per barrel) .....	59.05	65.18	65.18	51.55	51.00	58.66	57.32
Import Share of Product Supplied (percent) .....	60.0	54.2	54.2	51.6	50.5	54.3	51.3
<b>Net Expenditures for Imported Crude Oil and Petroleum Products (billion 2006 dollars) .....</b>							
<b>264.86</b>	<b>254.07</b>	<b>254.07</b>	<b>207.19</b>	<b>200.42</b>	<b>261.91</b>	<b>241.11</b>	

<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 net imports.

<sup>6</sup>Includes petroleum product stock withdrawals; domestic sources of blending components, other hydrocarbons, alcohols, and ethers.

<sup>7</sup>Total crude supply plus all components of Other Supply.

<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 and kerosene.

<sup>12</sup>Includes aviation gasoline, liquefied petroleum gas, petrochemical feedstocks, lubricants, waxes, asphalt, road oil, still gas, special naphthas, petroleum coke, crude oil product supplied, and miscellaneous petroleum products.

<sup>13</sup>Includes consumption for combined heat and power (CHP), 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>Weighted average price delivered to U.S. refiners.

ANWR = Arctic National Wildlife Refuge.

Note: Totals may not equal sum of components due to independent rounding. Data for 2006 are model results and may differ slightly from official EIA data reports.

Sources: 2006 imported crude oil price and petroleum product supplied based on: Energy Information Administration (EIA), *Annual Energy Review 2006*, DOE/EIA-0384(2006) (Washington, DC, June 2007). 2006 imported low sulfur light crude oil price: EIA, Form EIA-856, "Monthly Foreign Crude Oil Acquisition Report." Other 2006 data: EIA, *Petroleum Supply Annual 2006*, DOE/EIA-0340(2006)/1 (Washington, DC, September 2007). Projections: EIA, AEO2008 National Energy Modeling System runs AEO2008.D030208F and ANWR2008.D031008A.

# Results from Side Cases

**Table D12. Key Results for Coal Cost Cases**  
(Million Short Tons per Year, Unless Otherwise Noted)

Supply, Disposition, and Prices	2006	2015			2030			Growth Rate, 2006-2030		
		Low Coal Cost	Reference	High Coal Cost	Low Coal Cost	Reference	High Coal Cost	Low Coal Cost	Reference	High Coal Cost
<b>Supply</b>										
Production <sup>1</sup> .....	1163	1240	1215	1180	1620	1455	1110	1.4%	0.9%	-0.2%
Appalachia .....	392	347	340	335	365	328	309	-0.3%	-0.7%	-1.0%
Interior .....	151	189	193	186	241	241	236	2.0%	2.0%	1.9%
West .....	619	703	682	659	1015	885	565	2.1%	1.5%	-0.4%
Waste Coal Supplied <sup>2</sup> .....	14	11	14	16	8	12	18	-2.0%	-0.4%	1.1%
Net Imports .....	-15	-5	-3	0	52	78	118	--	--	--
<b>Total Supply<sup>3</sup></b> .....	<b>1161</b>	<b>1245</b>	<b>1225</b>	<b>1197</b>	<b>1681</b>	<b>1545</b>	<b>1246</b>	<b>1.6%</b>	<b>1.2%</b>	<b>0.3%</b>
<b>Consumption by Sector</b>										
Residential and Commercial .....	4	4	4	4	4	4	4	-0.2%	-0.2%	-0.2%
Coke Plants .....	23	21	21	21	19	18	18	-0.8%	-0.9%	-1.0%
Other Industrial <sup>4</sup> .....	61	60	60	59	57	58	56	-0.2%	-0.2%	-0.3%
Coal-to-Liquids Heat and Power .....	0	14	9	6	63	35	8	--	--	--
Coal-to-Liquids Liquids Production .....	0	12	7	5	53	29	6	--	--	--
Electric Power <sup>5</sup> .....	1026	1135	1125	1102	1485	1401	1155	1.5%	1.3%	0.5%
<b>Total Coal Use</b> .....	<b>1114</b>	<b>1245</b>	<b>1225</b>	<b>1197</b>	<b>1681</b>	<b>1545</b>	<b>1246</b>	<b>1.7%</b>	<b>1.4%</b>	<b>0.5%</b>
<b>Average Minemouth Price<sup>6</sup></b>										
(2006 dollars per short ton) .....	24.63	19.64	23.38	28.25	13.13	23.32	44.23	-2.6%	-0.2%	2.5%
(2006 dollars per million Btu) .....	1.21	0.98	1.17	1.41	0.67	1.19	2.21	-2.4%	-0.1%	2.5%
<b>Delivered Prices<sup>7</sup></b>										
<b>(2006 dollars per short ton)</b>										
Coke Plants .....	92.87	82.67	92.85	105.20	65.65	94.68	131.91	-1.4%	0.1%	1.5%
Other Industrial <sup>4</sup> .....	51.67	45.43	49.16	54.03	38.70	49.91	69.85	-1.2%	-0.1%	1.3%
Coal to Liquids .....	--	15.03	14.44	17.29	12.42	20.60	32.23	--	--	--
Electric Power <sup>5</sup> .....										
(2006 dollars per short ton) .....	33.85	30.75	34.24	38.95	25.22	35.03	54.10	-1.2%	0.1%	2.0%
(2006 dollars per million Btu) .....	1.69	1.56	1.74	1.97	1.28	1.78	2.69	-1.1%	0.2%	2.0%
<b>Average</b> .....	<b>36.03</b>	<b>32.00</b>	<b>35.71</b>	<b>40.63</b>	<b>25.24</b>	<b>35.70</b>	<b>55.68</b>	<b>-1.5%</b>	<b>-0.0%</b>	<b>1.8%</b>
Exports <sup>8</sup> .....	70.93	64.55	71.83	79.72	55.19	79.44	95.10	-1.0%	0.5%	1.2%
<b>Cumulative Electricity Generating Capacity Additions (gigawatts)<sup>9</sup></b>										
Coal .....	0.0	22.7	18.4	14.2	134.8	104.2	40.1	--	--	--
Conventional: Pulverized Coal .....	0.0	18.0	15.8	11.9	99.8	70.7	33.5	--	--	--
Advanced: IGCC .....	0.0	4.8	2.6	2.3	34.9	33.5	6.6	--	--	--
Petroleum .....	0.0	0.5	0.5	0.5	0.9	0.9	1.0	--	--	--
Natural Gas .....	0.0	28.0	28.3	29.8	91.7	94.9	97.6	--	--	--
Nuclear .....	0.0	0.0	0.0	0.0	6.0	16.6	59.8	--	--	--
Renewables <sup>10</sup> .....	0.0	22.9	23.2	22.6	47.8	46.9	44.9	--	--	--
Other .....	0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	--	--	--
<b>Total</b> .....	<b>0.0</b>	<b>74.1</b>	<b>70.5</b>	<b>67.1</b>	<b>281.0</b>	<b>263.5</b>	<b>243.4</b>	<b>--</b>	<b>--</b>	<b>--</b>
Liquids from Coal (million barrels per day)	0.00	0.10	0.06	0.04	0.43	0.24	0.05	--	--	--
<b>Labor Productivity</b>										
Coal Mining										
(short tons per miner per hour) .....	6.26	8.36	6.71	5.29	14.93	7.25	2.98	3.7%	0.6%	-3.0%
Rail: Eastern Railroads (billion freight ton-miles per employee per year) .....	8.58	15.09	12.49	10.29	29.86	17.20	9.77	5.3%	2.9%	0.5%
Rail: Western Railroads (billion freight ton-miles per employee per year) .....	12.49	18.87	15.56	12.77	33.35	19.08	10.77	4.2%	1.8%	-0.6%

## Results from Side Cases

**Table D12. Key Results for Coal Cost Cases (Continued)**  
(Million Short Tons per Year, Unless Otherwise Noted)

Supply, Disposition, and Prices	2006	2015			2030			Growth Rate, 2006-2030		
		Low Coal Cost	Reference	High Coal Cost	Low Coal Cost	Reference	High Coal Cost	Low Coal Cost	Reference	High Coal Cost
<b>Cost Indices</b> (constant dollar index, 2006=1.000)										
Transportation Rate Multipliers										
Eastern Railroads .....	1.000	1.013	1.031	1.048	0.936	1.006	1.080	-0.3%	0.0%	0.3%
Western Railroads .....	1.000	1.016	1.031	1.045	0.962	1.018	1.077	-0.2%	0.1%	0.3%
Equipment Costs										
Mining										
Underground .....	1.000	0.954	1.024	1.098	0.821	1.024	1.275	-0.8%	0.1%	1.0%
Surface .....	1.000	0.933	1.001	1.073	0.803	1.001	1.246	-0.9%	0.0%	0.9%
Railroads .....	1.000	0.893	0.967	1.047	0.785	0.987	1.238	-1.0%	-0.1%	0.9%
<b>Average Coal Miner Wage</b>										
<b>(2006 dollars per hour) .....</b>	<b>22.08</b>	<b>20.58</b>	<b>22.08</b>	<b>23.67</b>	<b>17.71</b>	<b>22.08</b>	<b>27.49</b>	<b>-0.9%</b>	<b>0.0%</b>	<b>0.9%</b>

<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>Production plus waste coal supplied plus net imports.

<sup>4</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>5</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>6</sup>Includes reported prices for both open market and captive mines.

<sup>7</sup>Prices weighted by consumption tonnage; weighted average excludes residential and commercial prices, and export free-alongside-ship (f.a.s.) prices.

<sup>8</sup>F.a.s. price at U.S. port of exit.

<sup>9</sup>Cumulative additions after December 31, 2006. Includes all additions of electricity only and combined heat and power plants projected for the electric power, industrial, and commercial sectors.

<sup>10</sup>Includes conventional hydroelectric, geothermal, wood, wood waste, municipal solid waste, landfill gas, other biomass, solar, and wind power. Facilities co-firing biomass and coal are classified as coal.

Btu = British thermal unit.

IGCC = Integrated gasification combined cycle.

-- = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 2006 are model results and may differ slightly from official EIA data reports.

**Sources:** 2006 data based on: Energy Information Administration (EIA), *Annual Coal Report 2006*, DOE/EIA-0584(2006) (Washington, DC, November 2007); EIA, *Quarterly Coal Report, October-December 2006*, DOE/EIA-0121(2006/4Q) (Washington, DC, March 2007); Securities and Exchange Commission Form 10K filings (BNSF, Norfolk Southern, and Union Pacific), web site [www.sec.gov](http://www.sec.gov); CSX Corporation, web site [www.csx.com](http://www.csx.com); U.S. Department of Labor, Bureau of Labor Statistics, Average Hourly Earnings of Production Workers: Coal Mining, Series ID : ceu1021210008; and EIA, AEO2008 National Energy Modeling System run AEO2008.D030208F. **Projections:** EIA, AEO2008 National Energy Modeling System runs LCCST08.D030508A, AEO2008.D030208F, and HCCST08.D030508A.

# Results from Side Cases

**Table D13. Energy Supply, Disposition, Prices, and Emissions, Natural Gas Cases**

Supply, Disposition, and Prices	2006	2015				2030			
		Reference	Restricted Natural Gas Supply	Restricted Non-Natural Gas Electricity Generation	Combined High Demand/Low Natural Gas Supply	Reference	Restricted Natural Gas Supply	Restricted Non-Natural Gas Electricity Generation	Combined High Demand/Low Natural Gas Supply
<b>Production (quadrillion Btu)</b>									
Crude Oil and Lease Condensate	10.80	13.25	12.21	13.27	12.23	12.04	10.17	12.10	10.24
Natural Gas Plant Liquids	2.36	2.29	2.28	2.30	2.28	2.11	2.05	2.32	2.26
Dry Natural Gas	19.04	20.08	19.97	20.30	20.53	20.00	17.46	22.26	19.48
Coal <sup>1</sup>	23.79	24.48	25.22	23.99	24.05	28.63	29.38	21.39	22.33
Nuclear Power	8.21	8.41	8.41	8.29	8.29	9.57	10.12	7.88	7.88
Hydropower	2.89	2.99	3.00	2.99	3.02	3.00	3.01	3.07	3.10
Biomass <sup>2</sup>	2.94	5.12	5.18	5.05	5.04	8.12	8.04	8.46	8.59
Other Renewable Energy <sup>3</sup>	0.88	1.75	1.82	1.74	1.88	2.45	3.05	2.96	3.94
Other <sup>4</sup>	0.50	0.58	0.59	0.58	0.59	0.64	0.64	0.66	0.63
<b>Total</b>	<b>71.41</b>	<b>78.96</b>	<b>78.67</b>	<b>78.50</b>	<b>77.92</b>	<b>86.56</b>	<b>83.92</b>	<b>81.09</b>	<b>78.44</b>
<b>Net Imports (quadrillion Btu)</b>									
Liquid Fuels and Other Petroleum <sup>5</sup>	26.70	24.23	25.26	24.24	25.34	26.52	28.82	26.62	28.96
Natural Gas	3.56	4.15	2.95	4.25	3.05	3.28	2.03	4.70	3.06
Other <sup>6</sup>	-0.28	-0.09	-0.09	-0.01	0.02	1.86	1.98	2.80	2.90
<b>Total</b>	<b>29.99</b>	<b>28.29</b>	<b>28.12</b>	<b>28.49</b>	<b>28.41</b>	<b>31.66</b>	<b>32.83</b>	<b>34.12</b>	<b>34.92</b>
<b>Consumption (quadrillion Btu)</b>									
Liquid Fuels and Other Petroleum <sup>7</sup>	40.06	41.80	41.81	41.80	41.88	43.99	44.79	44.05	44.90
Natural Gas	22.30	24.35	23.05	24.67	23.70	23.39	19.20	27.08	22.26
Coal <sup>8</sup>	22.50	24.19	24.92	23.81	23.88	29.90	30.74	23.91	24.90
Nuclear Power	8.21	8.41	8.41	8.29	8.29	9.57	10.12	7.88	7.88
Hydropower	2.89	2.99	3.00	2.99	3.02	3.00	3.01	3.07	3.10
Biomass <sup>9</sup>	2.50	3.60	3.66	3.53	3.53	5.51	5.47	5.84	5.98
Other Renewable Energy <sup>3</sup>	0.88	1.75	1.82	1.74	1.88	2.45	3.05	2.96	3.94
Other <sup>10</sup>	0.19	0.17	0.17	0.17	0.18	0.20	0.23	0.27	0.33
<b>Total</b>	<b>99.52</b>	<b>107.26</b>	<b>106.83</b>	<b>107.00</b>	<b>106.36</b>	<b>118.01</b>	<b>116.60</b>	<b>115.05</b>	<b>113.28</b>
<b>Prices (2006 dollars per unit)</b>									
Imported Low Sulfur Light Crude Oil <sup>11</sup> (dollars per barrel)	66.02	59.85	60.44	59.86	60.49	70.45	71.62	70.57	71.79
Natural Gas Wellhead Price <sup>12</sup> (dollars per thousand cubic feet)	6.42	5.36	6.13	5.43	6.48	6.63	9.61	7.57	12.55
Coal Minemouth Price <sup>13</sup> (dollars per ton)	24.63	23.38	23.72	28.29	28.43	23.32	23.88	44.35	45.27
Average Electricity Price (cents per kilowatthour)	8.9	8.5	8.8	8.7	9.1	8.8	9.3	10.0	12.1
<b>Carbon Dioxide Emissions by Fuel (million metric tons)</b>									
Petroleum	2581	2636	2638	2637	2644	2767	2837	2787	2862
Natural Gas	1163	1279	1210	1296	1245	1231	999	1427	1157
Coal	2134	2299	2369	2262	2270	2841	2921	2264	2271
<b>Total</b>	<b>5890</b>	<b>6226</b>	<b>6229</b>	<b>6207</b>	<b>6171</b>	<b>6851</b>	<b>6769</b>	<b>6490</b>	<b>6303</b>

<sup>1</sup>Includes waste coal.

<sup>2</sup>Includes grid-connected electricity from wood and waste; biomass, such as corn, used for liquid fuels production; and non-electric energy demand from wood.

<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.

<sup>4</sup>Includes non-biogenic municipal waste, liquid hydrogen, methanol, and some domestic inputs to refineries.

<sup>5</sup>Includes crude oil, finished petroleum products, unfinished oils, alcohols, ethers, blending components, and renewable fuels such as ethanol.

<sup>6</sup>Includes coal, coal coke, and electricity.

<sup>7</sup>Includes petroleum-derived fuels and non-petroleum derived fuels, such as ethanol, biodiesel, and coal-based synthetic liquids. Petroleum coke, which is a solid, is included. Also included are natural gas plant liquids, crude oil consumed as a fuel, and liquid hydrogen.

<sup>8</sup>Excludes coal converted to coal-based synthetic liquids.

<sup>9</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>10</sup>Includes non-biogenic municipal waste and net electricity imports.

<sup>11</sup>Weighted average price delivered to U.S. refiners.

<sup>12</sup>Represents lower 48 onshore and offshore supplies.

<sup>13</sup>Includes reported prices for both open market and captive mines.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2006 are model results and may differ slightly from official EIA data reports.

Sources: 2006 natural gas supply values and natural gas wellhead price: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2007/04) (Washington, DC, April 2007). 2006 coal minemouth price: EIA, *Annual Coal Report 2006*, DOE/EIA-0584(2006) (Washington, DC, November 2007). 2006 petroleum supply values: EIA, *Petroleum Supply Annual 2006*, DOE/EIA-0340(2006)/1 (Washington, DC, September 2007). 2006 low sulfur light crude oil price: EIA, Form EIA-856, "Monthly Foreign Crude Oil Acquisition Report." Other 2006 coal values: *Quarterly Coal Report, October-December 2006*, DOE/EIA-0121(2006/4Q) (Washington, DC, March 2007). Other 2006 values: EIA, *Annual Energy Review 2006*, DOE/EIA-0384(2006) (Washington, DC, June 2007). Projections: EIA, AEO2008 National Energy Modeling System runs AEO2008.D030208F, and LOGASSUP.D030408A, HIGASDEM.D030408A, and HDEMLSUP.D030408A.

## Results from Side Cases

**Table D14. Natural Gas Supply and Disposition, Natural Gas Cases**  
(Trillion Cubic Feet per Year, Unless Otherwise Noted)

Supply, Disposition, and Prices	2006	2015				2030			
		Reference	Restricted Natural Gas Supply	Restricted Non-Natural Gas Electricity Generation	Combined High Demand/Low Natural Gas Supply	Reference	Restricted Natural Gas Supply	Restricted Non-Natural Gas Electricity Generation	Combined High Demand/Low Natural Gas Supply
<b>Dry Gas Production<sup>1</sup></b> .....	<b>18.51</b>	<b>19.52</b>	<b>19.41</b>	<b>19.73</b>	<b>19.95</b>	<b>19.44</b>	<b>16.97</b>	<b>21.64</b>	<b>18.93</b>
Lower 48 Onshore .....	15.04	14.81	14.83	14.98	15.30	13.95	12.57	15.65	14.17
Associated-Dissolved .....	1.42	1.40	1.32	1.40	1.32	1.20	1.00	1.20	1.01
Non-Associated .....	13.62	13.41	13.51	13.59	13.98	12.76	11.57	14.45	13.16
Conventional .....	5.14	3.96	4.25	4.02	4.44	3.23	3.86	3.86	4.48
Unconventional .....	8.48	9.45	9.26	9.56	9.53	9.53	7.71	10.59	8.68
Lower 48 Offshore .....	3.05	4.32	4.20	4.36	4.27	3.47	3.50	3.62	3.65
Associated-Dissolved .....	0.62	0.95	0.90	0.95	0.90	0.77	0.72	0.78	0.74
Non-Associated .....	2.43	3.37	3.30	3.41	3.37	2.69	2.77	2.84	2.90
Alaska .....	0.42	0.38	0.38	0.38	0.38	2.01	0.90	2.37	1.12
Supplemental Natural Gas <sup>2</sup> .....	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
<b>Net Imports</b> .....	<b>3.46</b>	<b>4.03</b>	<b>2.87</b>	<b>4.13</b>	<b>2.96</b>	<b>3.18</b>	<b>1.97</b>	<b>4.57</b>	<b>2.97</b>
Pipeline .....	2.94	1.91	1.83	1.95	1.93	0.33	0.93	0.74	1.94
Liquefied Natural Gas .....	0.52	2.12	1.03	2.18	1.03	2.84	1.03	3.83	1.03
<b>Total Supply</b> .....	<b>22.03</b>	<b>23.61</b>	<b>22.34</b>	<b>23.92</b>	<b>22.98</b>	<b>22.68</b>	<b>19.00</b>	<b>26.27</b>	<b>21.96</b>
<b>Consumption by Sector</b>									
Residential .....	4.37	5.01	4.95	5.01	4.92	5.17	4.92	5.09	4.74
Commercial .....	2.83	3.20	3.14	3.19	3.12	3.67	3.46	3.63	3.30
Industrial <sup>3</sup> .....	6.49	7.00	6.80	6.99	6.74	6.87	5.53	6.49	5.40
Natural Gas-to-Liquids Heat and Power <sup>4</sup> .....	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.28
Natural Gas-to-Liquids Production <sup>5</sup> .....	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.38
Electric Power <sup>6</sup> .....	6.24	6.56	5.65	6.88	6.35	4.99	2.84	8.91	6.06
Transportation <sup>7</sup> .....	0.02	0.06	0.05	0.06	0.05	0.09	0.08	0.08	0.07
Pipeline Fuel .....	0.58	0.64	0.61	0.64	0.62	0.70	0.53	0.78	0.58
Lease and Plant Fuel <sup>8</sup> .....	1.14	1.19	1.19	1.20	1.21	1.23	1.10	1.34	1.19
<b>Total</b> .....	<b>21.66</b>	<b>23.66</b>	<b>22.39</b>	<b>23.97</b>	<b>23.02</b>	<b>22.72</b>	<b>18.92</b>	<b>26.31</b>	<b>22.01</b>
<b>Lower 48 End of Year Reserves</b> .....	<b>202.99</b>	<b>227.01</b>	<b>209.85</b>	<b>228.55</b>	<b>212.55</b>	<b>200.42</b>	<b>156.39</b>	<b>214.14</b>	<b>165.54</b>
<b>Natural Gas Prices</b>									
<b>(2006 dollars per million Btu)</b>									
Henry Hub Spot Price .....	6.73	5.87	6.69	5.94	7.06	7.22	10.37	8.21	13.47
Average Lower 48 Wellhead Price <sup>9</sup> ..	6.24	5.21	5.96	5.28	6.30	6.45	9.34	7.35	12.20
<b>(2006 dollars per thousand cubic feet)</b>									
Average Lower 48 Wellhead Price <sup>9</sup> ..	6.42	5.36	6.13	5.43	6.48	6.63	9.61	7.57	12.55
<b>Delivered Prices</b>									
<b>(2006 dollars per thousand cubic feet)</b>									
Residential .....	13.80	11.54	12.39	11.61	12.74	13.30	16.53	14.26	19.61
Commercial .....	11.85	9.97	10.80	10.04	11.13	11.78	14.93	12.72	17.94
Industrial <sup>5</sup> .....	7.89	6.33	7.12	6.41	7.48	7.50	10.61	8.51	13.63
Electric Power <sup>6</sup> .....	7.07	6.10	6.84	6.19	7.23	7.13	9.90	8.24	13.14
Transportation <sup>10</sup> .....	14.71	12.71	13.46	12.78	13.80	13.22	16.24	14.17	19.16
<b>Average<sup>11</sup></b> .....	<b>9.49</b>	<b>8.00</b>	<b>8.89</b>	<b>8.06</b>	<b>9.18</b>	<b>9.63</b>	<b>13.13</b>	<b>10.27</b>	<b>15.67</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 energy for combined heat and power plants, except those whose primary business is to sell electricity, or electricity and heat, to the public.

<sup>4</sup>Includes any natural gas used in the process of converting natural gas to liquid fuel that is not actually converted.

<sup>5</sup>Includes any natural gas that is converted into liquid fuel.

<sup>6</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>7</sup>Compressed natural gas used as vehicle fuel.

<sup>8</sup>Represents natural gas used in field gathering and processing plant machinery.

<sup>9</sup>Represents lower 48 onshore and offshore supplies.

<sup>10</sup>Compressed natural gas used as a vehicle fuel. Price includes estimated motor vehicle fuel taxes and estimated dispensing costs or charges.

<sup>11</sup>Weighted average prices. Weights used are the sectoral consumption values excluding lease, plant, and pipeline fuel.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2006 are model results and may differ slightly from official EIA data reports.

Sources: 2006 supply values: Energy Information Administration (EIA), *Natural Gas Monthly*, DOE/EIA-0130(2007/04) (Washington, DC, April 2007). 2006 consumption based on: EIA, *Annual Energy Review 2006*, DOE/EIA-0384(2006) (Washington, DC, June 2007). Projections: EIA, AEO2008 National Energy Modeling System runs AEO2008.D030208F, and LOGASSUP.D030408A, HIGASDEM.D030408A, and HDEMLSUP.D030408A.



# Results from Side Cases

**Table D15. Electricity Generating Capacity, Natural Gas Cases**  
(Gigawatts, Unless Otherwise Noted)

Net Summer Capacity <sup>1</sup>	2006	2015				2030			
		Reference	Restricted Natural Gas Supply	Restricted Non-Natural Gas Electricity Generation	Combined High Demand/Low Natural Gas Supply	Reference	Restricted Natural Gas Supply	Restricted Non-Natural Gas Electricity Generation	Combined High Demand/Low Natural Gas Supply
<b>Capacity</b>									
Coal	309.8	323.9	336.0	318.3	319.0	406.1	436.3	319.1	336.3
Oil and Natural Gas Steam	119.7	93.6	84.7	99.0	94.5	92.9	83.3	97.6	92.5
Combined Cycle	176.5	192.4	192.3	195.0	194.8	210.0	195.2	289.1	255.3
Combustion Turbine/Diesel	130.9	130.0	123.7	130.8	129.8	164.7	153.3	145.3	144.2
Nuclear Power	100.2	102.1	102.1	102.1	102.1	114.9	121.5	114.9	114.9
Pumped Storage	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5
Fuel Cells	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Renewable Sources	96.3	117.3	119.1	117.4	118.6	132.5	142.4	138.4	142.6
Distributed Generation (Natural Gas)	0.0	0.9	0.5	1.0	0.4	9.8	5.1	6.0	3.1
Combined Heat and Power <sup>1</sup>	27.9	34.6	34.1	34.6	34.1	51.8	49.9	53.1	53.0
<b>Total</b>	<b>982.9</b>	<b>1016.3</b>	<b>1013.8</b>	<b>1019.6</b>	<b>1014.7</b>	<b>1204.2</b>	<b>1208.4</b>	<b>1185.0</b>	<b>1163.4</b>
<b>Cumulative Additions</b>									
Coal	0.0	17.5	28.3	11.3	11.3	100.2	129.4	12.1	28.6
Oil and Natural Gas Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Combined Cycle	0.0	15.8	15.8	18.5	18.3	33.4	18.7	112.6	78.8
Combustion Turbine/Diesel	0.0	8.4	8.1	10.1	9.2	43.4	39.9	25.7	25.1
Nuclear Power	0.0	0.0	0.0	0.0	0.0	16.6	23.1	16.6	16.6
Pumped Storage	0.0	0.0	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	0.0	0.0
Renewable Sources	0.0	21.0	22.8	21.1	22.3	36.2	46.1	42.1	46.2
Distributed Generation	0.0	0.9	0.5	1.0	0.4	9.8	5.1	6.0	3.1
Combined Heat and Power <sup>1</sup>	0.0	6.8	6.2	6.7	6.2	23.9	22.0	25.2	25.1
<b>Total</b>	<b>0.0</b>	<b>70.5</b>	<b>81.5</b>	<b>68.7</b>	<b>67.6</b>	<b>263.5</b>	<b>284.2</b>	<b>240.3</b>	<b>223.6</b>
<b>Cumulative Retirements</b>	<b>0.0</b>	<b>38.9</b>	<b>52.4</b>	<b>33.8</b>	<b>37.7</b>	<b>44.8</b>	<b>61.4</b>	<b>40.9</b>	<b>45.7</b>
<b>Generation by Fuel (billion kilowatthours)</b>									
Coal	1966	2154	2235	2115	2122	2787	2904	2136	2256
Petroleum	59	51	52	51	59	57	90	61	152
Natural Gas	732	806	684	848	785	599	310	1218	809
Nuclear Power	787	807	807	795	795	917	970	756	756
Pumped Storage	0	1	1	1	1	1	1	1	1
Renewable Sources	351	469	482	464	474	558	602	613	652
Distributed Generation	0	1	0	2	0	4	2	5	1
Combined Heat and Power <sup>1</sup>	152	197	193	197	193	313	294	318	301
<b>Total</b>	<b>4047</b>	<b>4485</b>	<b>4455</b>	<b>4473</b>	<b>4429</b>	<b>5235</b>	<b>5174</b>	<b>5107</b>	<b>4928</b>
<b>Carbon Dioxide Emissions by the Electric Power Sector (million metric tons)<sup>2</sup></b>									
Petroleum	55	44	45	44	51	48	78	54	116
Natural Gas	340	358	308	375	347	272	155	486	331
Coal	1938	2105	2176	2072	2080	2615	2698	2088	2097
Other <sup>3</sup>	12	12	12	12	12	12	12	13	13
<b>Total</b>	<b>2344</b>	<b>2519</b>	<b>2541</b>	<b>2503</b>	<b>2490</b>	<b>2948</b>	<b>2943</b>	<b>2640</b>	<b>2557</b>
<b>Prices to the Electric Power Sector<sup>2</sup> (2006 dollars per million Btu)</b>									
Petroleum	9.63	8.45	8.55	8.47	8.36	10.37	10.10	9.91	10.55
Natural Gas	6.87	5.93	6.66	6.02	7.03	6.93	9.63	8.02	12.78
Coal	1.69	1.74	1.76	1.97	1.98	1.78	1.81	2.69	2.76

<sup>1</sup>Includes combined heat and power plants and electricity-only plants in commercial and industrial sectors. Includes 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. Excludes off-grid photovoltaics and other generators not connected to the distribution or transmission systems.

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

<sup>3</sup>Includes emissions from geothermal power and nonbiogenic emissions from municipal waste.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2006 are model results and may differ slightly from official EIA data reports.

Sources: 2006 capacity and projected planned additions: Energy Information Administration (EIA), Form EIA-860, "Annual Electric Generator Report" (preliminary). Projections: EIA, AEO2008 National Energy Modeling System runs AEO2008.D030208F, and LOGASSUP.D030408A, HIGASDEM.D030408A, and HDEMLSUP.D030408A.

## Results from Side Cases

**Table D16. Electricity Generating Capacity, Commodity Cost Cases**  
(Gigawatts, Unless Otherwise Noted)

Net Summer Capacity, Generation, Emissions, and Fuel Prices	2006	2010			2020			2030		
		Low Commodity Cost	Reference	High Commodity Cost	Low Commodity Cost	Reference	High Commodity Cost	Low Commodity Cost	Reference	High Commodity Cost
<b>Capacity</b>										
Coal	309.8	316.0	316.0	316.0	344.4	343.1	337.3	410.9	406.1	393.2
Oil and Natural Gas Steam	119.7	118.4	118.4	118.4	95.6	93.3	92.7	93.4	92.9	92.6
Combined Cycle	176.5	190.0	190.0	190.0	197.6	196.7	193.5	208.9	210.0	209.8
Combustion Turbine/Diesel	130.9	137.4	137.4	137.4	132.1	132.1	140.1	155.8	164.7	176.9
Nuclear Power	100.2	100.9	100.9	100.9	113.6	110.9	102.9	125.2	114.9	98.4
Pumped Storage	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5
Fuel Cells	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Renewable Sources	96.3	111.6	111.6	111.9	125.4	123.6	120.3	135.2	132.5	124.1
Distributed Generation (Natural Gas)	0.0	0.3	0.3	0.2	4.0	2.7	0.5	16.5	9.8	0.5
Combined Heat and Power <sup>1</sup>	27.9	30.8	30.7	30.8	41.1	40.4	40.0	52.5	51.8	54.1
<b>Total</b>	<b>982.9</b>	<b>1026.7</b>	<b>1026.7</b>	<b>1026.8</b>	<b>1075.4</b>	<b>1064.2</b>	<b>1048.8</b>	<b>1219.7</b>	<b>1204.2</b>	<b>1171.0</b>
<b>Cumulative Additions</b>										
Coal	0.0	7.7	7.7	7.7	38.2	37.0	31.5	104.7	100.2	87.6
Oil and Natural Gas Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Combined Cycle	0.0	13.5	13.5	13.5	21.1	20.2	16.9	32.4	33.4	33.3
Combustion Turbine/Diesel	0.0	7.2	7.2	7.1	10.1	10.5	20.1	35.6	43.4	56.9
Nuclear Power	0.0	0.0	0.0	0.0	10.7	8.0	0.0	26.8	16.6	0.0
Pumped Storage	0.0	0.0	0.0	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	0.0	0.0	0.0
Renewable Sources	0.0	15.2	15.3	15.5	29.1	27.3	24.0	38.9	36.2	27.8
Distributed Generation	0.0	0.3	0.3	0.2	4.0	2.7	0.5	16.5	9.8	0.5
Combined Heat and Power <sup>1</sup>	0.0	2.9	2.9	2.9	13.3	12.5	12.2	24.6	23.9	26.2
<b>Total</b>	<b>0.0</b>	<b>46.8</b>	<b>46.8</b>	<b>46.9</b>	<b>126.6</b>	<b>118.2</b>	<b>105.2</b>	<b>279.4</b>	<b>263.5</b>	<b>232.3</b>
<b>Cumulative Retirements</b>	<b>0.0</b>	<b>3.6</b>	<b>3.6</b>	<b>3.6</b>	<b>36.7</b>	<b>39.5</b>	<b>42.0</b>	<b>45.2</b>	<b>44.8</b>	<b>46.8</b>
<b>Generation by Fuel (billion kilowatthours)</b>										
Coal	1966	2034	2034	2033	2343	2319	2235	2809	2787	2664
Petroleum	59	50	50	49	53	53	51	55	57	53
Natural Gas	732	823	820	813	698	722	814	533	599	749
Nuclear Power	787	797	797	797	888	868	812	999	917	789
Pumped Storage	0	1	1	1	1	1	1	1	1	1
Renewable Sources	351	423	424	427	522	522	534	559	558	563
Distributed Generation	0	0	0	0	2	1	1	6	4	1
Combined Heat and Power <sup>1</sup>	152	169	169	169	244	238	235	320	313	325
<b>Total</b>	<b>4047</b>	<b>4296</b>	<b>4294</b>	<b>4289</b>	<b>4750</b>	<b>4723</b>	<b>4683</b>	<b>5282</b>	<b>5235</b>	<b>5146</b>
<b>Carbon Dioxide Emissions by the Electric Power Sector (million metric tons)<sup>2</sup></b>										
Petroleum	55	43	43	43	45	45	44	47	48	46
Natural Gas	340	367	365	363	314	323	362	248	272	331
Coal	1938	1993	1993	1991	2269	2247	2164	2623	2615	2502
Other <sup>3</sup>	12	12	12	12	12	12	12	12	12	12
<b>Total</b>	<b>2344</b>	<b>2414</b>	<b>2413</b>	<b>2408</b>	<b>2640</b>	<b>2627</b>	<b>2582</b>	<b>2931</b>	<b>2948</b>	<b>2890</b>
<b>Prices to the Electric Power Sector<sup>2</sup> (2006 dollars per million Btu)</b>										
Petroleum	9.63	10.81	10.79	10.81	8.60	8.57	8.57	10.39	10.37	10.44
Natural Gas	6.87	6.93	6.96	6.99	5.66	5.95	6.34	6.58	6.93	7.55
Coal	1.69	1.84	1.84	1.84	1.72	1.72	1.73	1.77	1.78	1.79
<b>Average Electricity Price (2006 cents per kilowatthour)</b>	<b>8.9</b>	<b>9.1</b>	<b>9.2</b>	<b>9.2</b>	<b>8.4</b>	<b>8.6</b>	<b>9.0</b>	<b>8.5</b>	<b>8.8</b>	<b>9.7</b>

<sup>1</sup>Includes combined heat and power plants and electricity-only plants in commercial and industrial sectors. Includes 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. Excludes off-grid photovoltaics and other generators not connected to the distribution or transmission systems.

<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 emissions from geothermal power and nonbiogenic emissions from municipal waste.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2006 are model results and may differ slightly from official EIA data reports.

Source: Energy Information Administration, AEO2008 National Energy Modeling System runs LC2008.D030308A, AEO2008.D030208F, and HC2008.D030308A.

# Results from Side Cases

**Table D17. Oil and Gas Supply, Commodity Cost Cases**

Production and Prices	2006	2010			2020			2030		
		Low Commodity Cost	Reference	High Commodity Cost	Low Commodity Cost	Reference	High Commodity Cost	Low Commodity Cost	Reference	High Commodity Cost
<b>Crude Oil</b>										
<b>Lower 48 Average Wellhead Price<sup>1</sup></b> (2006 dollars per barrel) .....	<b>60.18</b>	<b>79.17</b>	<b>78.45</b>	<b>78.00</b>	<b>52.26</b>	<b>52.54</b>	<b>52.85</b>	<b>60.77</b>	<b>60.59</b>	<b>62.05</b>
<b>Production (million barrels per day)<sup>2</sup></b>										
United States Total .....	5.10	5.93	5.93	5.89	6.25	6.23	6.18	5.61	5.59	5.29
Lower 48 Onshore .....	2.93	3.11	3.10	3.10	3.30	3.28	3.23	3.40	3.38	3.05
Lower 48 Offshore .....	1.43	2.14	2.14	2.10	2.25	2.25	2.25	1.92	1.92	1.95
Alaska .....	0.74	0.69	0.69	0.69	0.70	0.70	0.70	0.30	0.30	0.30
<b>Lower 48 End of Year Reserves<sup>2</sup></b> (billion barrels) .....	<b>19.02</b>	<b>19.91</b>	<b>19.89</b>	<b>19.79</b>	<b>20.86</b>	<b>20.78</b>	<b>20.60</b>	<b>19.94</b>	<b>19.89</b>	<b>18.79</b>
<b>Natural Gas</b>										
<b>Prices (2006 dollars per million Btu)</b>										
Henry Hub Spot Price .....	6.73	6.88	6.90	6.92	5.66	5.95	6.34	6.87	7.22	7.74
Average Lower 48 Wellhead Price <sup>3</sup> .....	6.24	6.13	6.16	6.17	5.02	5.29	5.65	6.13	6.45	6.92
<b>Prices (2006 dollars per thousand cubic feet)</b>										
Average Lower 48 Wellhead Price <sup>3</sup> .....	6.42	6.31	6.33	6.35	5.17	5.44	5.81	6.30	6.63	7.12
<b>Production (trillion cubic feet) .....</b>	<b>18.57</b>	<b>19.37</b>	<b>19.36</b>	<b>19.28</b>	<b>19.25</b>	<b>19.73</b>	<b>20.36</b>	<b>18.98</b>	<b>19.50</b>	<b>20.61</b>
Dry Gas Production <sup>4</sup> .....	18.51	19.30	19.29	19.21	19.19	19.67	20.29	18.91	19.44	20.55
Lower 48 Onshore .....	15.04	15.27	15.26	15.23	13.78	14.16	14.66	13.50	13.95	14.62
Lower 48 Offshore .....	3.05	3.61	3.61	3.56	4.22	4.31	4.44	3.40	3.47	3.56
Alaska .....	0.42	0.42	0.42	0.42	1.19	1.19	1.19	2.01	2.01	2.37
Supplemental Gaseous Supplies <sup>5</sup> .....	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
<b>Net Imports (trillion cubic feet) .....</b>	<b>3.46</b>	<b>3.88</b>	<b>3.85</b>	<b>3.83</b>	<b>3.98</b>	<b>3.55</b>	<b>3.53</b>	<b>3.35</b>	<b>3.18</b>	<b>3.14</b>
Pipeline .....	2.94	2.64	2.64	2.65	1.41	1.18	1.41	0.54	0.33	0.61
Liquefied Natural Gas .....	0.52	1.24	1.20	1.18	2.57	2.37	2.12	2.81	2.84	2.54
<b>Total Supply (trillion cubic feet) .....</b>	<b>22.03</b>	<b>23.25</b>	<b>23.20</b>	<b>23.11</b>	<b>23.23</b>	<b>23.28</b>	<b>23.89</b>	<b>22.33</b>	<b>22.68</b>	<b>23.76</b>
<b>Consumption by Sector (trillion cubic feet)</b>										
Residential .....	4.37	4.81	4.81	4.80	5.18	5.15	5.11	5.20	5.17	5.12
Commercial .....	2.83	2.96	2.96	2.96	3.39	3.37	3.34	3.69	3.67	3.66
Industrial <sup>6</sup> .....	6.49	6.97	6.95	6.91	7.02	6.93	6.85	6.95	6.87	6.85
Electric Power <sup>7</sup> .....	6.24	6.72	6.70	6.65	5.75	5.92	6.63	4.55	4.99	6.06
Transportation <sup>8</sup> .....	0.02	0.03	0.03	0.03	0.07	0.07	0.07	0.09	0.09	0.08
Pipeline Fuel .....	0.58	0.62	0.62	0.62	0.67	0.67	0.68	0.69	0.70	0.73
Lease and Plant Fuel <sup>9</sup> .....	1.14	1.18	1.18	1.17	1.20	1.22	1.25	1.21	1.23	1.29
<b>Total .....</b>	<b>21.66</b>	<b>23.30</b>	<b>23.25</b>	<b>23.15</b>	<b>23.28</b>	<b>23.33</b>	<b>23.93</b>	<b>22.37</b>	<b>22.72</b>	<b>23.80</b>
<b>Lower 48 End of Year Dry Reserves</b> (trillion cubic feet) .....	<b>202.99</b>	<b>221.43</b>	<b>220.62</b>	<b>219.40</b>	<b>219.15</b>	<b>219.31</b>	<b>218.76</b>	<b>197.47</b>	<b>200.42</b>	<b>204.82</b>
<b>Total Lower 48 Wells Drilled (thousands) ...</b>	<b>49.72</b>	<b>64.60</b>	<b>62.33</b>	<b>60.72</b>	<b>36.07</b>	<b>37.19</b>	<b>40.30</b>	<b>35.80</b>	<b>35.78</b>	<b>38.59</b>

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

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

<sup>3</sup>Represents lower 48 onshore and offshore supplies.

<sup>4</sup>Marketed production (wet) minus extraction losses.

<sup>5</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>6</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>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 field gathering and processing plant machinery.

Note: Totals may not equal sum of components due to independent rounding. Data for 2005 and 2006 are model results and may differ slightly from official EIA data reports.

Sources: 2006 crude oil lower 48 average wellhead price: Energy Information Administration (EIA), *Petroleum Marketing Annual 2006*, DOE/EIA-0487(2006) (Washington, DC, August 2007). 2006 lower 48 onshore, lower 48 offshore, and Alaska crude oil production: EIA, *Petroleum Supply Annual 2006*, DOE/EIA-0340(2006)/1 (Washington, DC, September 2007). 2006 natural gas lower 48 average wellhead price, Alaska and total natural gas production, and supplemental gas supplies: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2007/04) (Washington, DC, April 2007). Other 2006 values: EIA, Office of Integrated Analysis and Forecasting. Projections: EIA, AEO2008 National Energy Modeling System runs LC2008.D030308A, AEO2008.D030208F, and HC2008.D030308A.

**Table D18. Energy Supply, Disposition, and Prices  
AEO2008 Reference Case Compared to the Early Release**

Supply, Disposition, and Prices	2006	2010		2020		2030	
		Reference	Early-Release Reference	Reference	Early-Release Reference	Reference	Early-Release Reference
<b>Production (quadrillion Btu)</b>							
Petroleum <sup>1</sup> .....	13.16	15.03	14.92	15.71	16.02	14.15	14.30
Dry Natural Gas .....	19.04	19.85	19.61	20.24	20.28	20.00	20.41
Coal <sup>2</sup> .....	23.79	23.97	23.31	25.20	25.61	28.63	31.16
Nuclear Power .....	8.21	8.31	8.31	9.05	9.15	9.57	9.89
Hydropower .....	2.89	2.92	2.92	3.00	3.00	3.00	3.00
Biomass <sup>3</sup> .....	2.94	4.05	4.11	6.42	4.93	8.12	5.52
Other Renewable Energy <sup>4</sup> .....	0.88	1.51	1.50	2.00	1.99	2.45	2.49
Other <sup>5</sup> .....	0.50	0.54	0.55	0.58	0.64	0.64	0.72
Total .....	71.41	76.17	75.22	82.21	81.62	86.56	87.48
<b>Net Imports (quadrillion Btu)</b>							
Petroleum <sup>6</sup> .....	26.70	23.93	24.49	24.03	26.72	26.52	31.20
Natural Gas .....	3.56	3.96	4.13	3.66	4.40	3.28	3.51
Other Imports <sup>7</sup> .....	-0.28	-0.84	-0.26	1.06	1.03	1.86	1.79
Total .....	29.99	27.04	28.36	28.75	32.15	31.66	36.50
<b>Consumption (quadrillion Btu)</b>							
Liquid Fuels and Other Petroleum <sup>8</sup> .....	40.06	40.46	40.82	42.24	44.41	43.99	48.23
Natural Gas .....	22.30	23.93	23.90	24.01	24.83	23.39	24.07
Coal <sup>9</sup> .....	22.50	23.03	22.94	25.87	26.23	29.90	31.71
Nuclear Power .....	8.21	8.31	8.31	9.05	9.15	9.57	9.89
Hydropower .....	2.89	2.92	2.92	3.00	3.00	3.00	3.00
Biomass <sup>10</sup> .....	2.50	3.01	3.08	4.50	3.83	5.51	4.17
Other Renewable Energy <sup>4</sup> .....	0.88	1.51	1.50	2.00	1.99	2.45	2.49
Other <sup>11</sup> .....	0.19	0.18	0.18	0.17	0.18	0.20	0.20
Total .....	99.52	103.34	103.64	110.85	113.61	118.01	123.76
<b>Prices (2006 dollars per unit)</b>							
Imported Low Sulfur Light Crude Oil Price <sup>12</sup> (dollars per barrel) .....	66.02	74.03	66.89	59.70	61.05	70.45	71.87
Natural Gas Wellhead Price <sup>13</sup> (dollars per thousand cubic feet) .....	6.42	6.33	6.09	5.44	5.42	6.63	6.60
Coal Minemouth Price <sup>14</sup> (dollars per ton) .....	24.63	26.16	24.53	22.51	22.63	23.32	23.45
Average Electricity Price (cents per kilowatthour) .....	8.9	9.2	9.1	8.6	8.6	8.8	8.8
<b>Liquids Supply and Disposition (million barrels per day)</b>							
Domestic Crude Oil Production <sup>15</sup> .....	5.10	5.93	5.91	6.23	6.39	5.59	5.63
Net Petroleum Imports .....	12.41	11.32	11.60	11.12	12.50	12.29	14.46
Natural Gas Plant Liquids .....	1.74	1.68	1.64	1.72	1.68	1.57	1.61
Refinery Processing Gain <sup>16</sup> .....	0.99	1.05	1.08	1.00	1.10	0.99	1.14
Biofuels <sup>17</sup> .....	0.38	0.85	0.84	1.62	1.04	1.93	1.33
of which: Ethanol <sup>18</sup> .....	0.36	0.81	0.83	1.41	0.96	1.56	1.11
Liquids from Coal .....	0.00	0.00	0.00	0.15	0.16	0.24	0.58
Other <sup>19</sup> .....	0.12	0.18	0.18	0.21	0.23	0.24	0.27
Total Primary Supply .....	20.74	21.02	21.24	22.04	23.10	22.86	25.03
Liquid Fuels Consumption .....	20.65	20.99	21.18	21.96	23.01	22.80	24.93
Net Import Share of Product Supplied (percent) ...	60.0	54.2	54.8	51.6	55.0	54.3	59.2
<b>Natural Gas Supply and Disposition (trillion cubic feet)</b>							
Dry Gas Production <sup>20</sup> .....	18.51	19.29	19.06	19.67	19.70	19.43	19.84
Supplemental Natural Gas <sup>21</sup> .....	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Net Imports .....	3.46	3.85	4.01	3.55	4.28	3.18	3.41
Total Supply .....	22.03	23.20	23.14	23.28	24.04	22.68	23.31
Total Consumption .....	21.66	23.25	23.22	23.33	24.12	22.72	23.39

# Results from Side Cases

**Table D18. Energy Supply, Disposition, and Prices (Continued)  
AEO2008 Reference Case Compared to the Early Release**

Supply, Disposition, Indicators and Emissions	2006	2010		2020		2030	
		Reference	Early-Release Reference	Reference	Early-Release Reference	Reference	Early-Release Reference
<b>Coal Supply and Disposition (million tons)</b>							
Production	1163	1166	1139	1270	1289	1455	1595
Waste Coal Supplied <sup>22</sup>	14	13	13	11	11	12	13
Net Imports	-15	-34	-11	46	45	78	75
Total Supply	1161	1144	1141	1326	1345	1545	1683
Total Consumption	1114	1145	1141	1327	1344	1545	1682
<b>Macroeconomic Indicators</b>							
Real Gross Domestic Product (billion 2000 chain-weighted dollars)	11319	12453	12555	15984	16177	20219	20832
GDP Chain-type Price Index (2000=1.000)	1.166	1.260	1.267	1.520	1.509	1.871	1.838
Industrial Value of Shipments (billion 2000 dollars)	5821	5997	5882	7113	7044	7997	8226
Nonmanufacturing	1531	1419	1494	1619	1672	1715	1804
Manufacturing	4290	4577	4389	5493	5372	6283	6422
Energy-Intensive	1225	1283	1204	1387	1338	1447	1442
Non-energy Intensive	3065	3295	3185	4107	4034	4836	4980
Real Disposable Personal Income (billion 2000 dollars)	8397	9472	9594	12654	12811	16246	16916
Housing Starts (millions)	1.93	1.68	1.85	1.78	1.84	1.70	1.72
Commercial Floorspace (billion square feet)	74.8	78.8	78.7	89.3	89.3	100.8	100.9
Unit Sales of Light-Duty Vehicles (millions)	16.50	16.38	16.92	17.47	18.72	19.39	20.04
<b>Energy Intensity (thousand Btu per 2000 dollar of GDP)</b>	<b>8.79</b>	<b>8.30</b>	<b>8.25</b>	<b>6.91</b>	<b>7.02</b>	<b>5.80</b>	<b>5.94</b>
<b>Carbon Dioxide Emissions (million metric tons)</b>	<b>5890</b>	<b>6011</b>	<b>6034</b>	<b>6384</b>	<b>6646</b>	<b>6851</b>	<b>7373</b>

<sup>1</sup>Includes crude oil, lease condensate, and natural gas plant liquids.

<sup>2</sup>Includes waste coal.

<sup>3</sup>Includes grid-connected electricity from wood and waste; biomass, such as corn, used for liquid fuels production; and non-electric energy demand from wood. Refer to Table A17 for details.

<sup>4</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>5</sup>Includes non-biogenic municipal waste, liquid hydrogen, methanol, and some domestic inputs to refineries.

<sup>6</sup>Includes crude oil, finished petroleum products, unfinished oils, alcohols, ethers, blending components, and renewable fuels such as ethanol.

<sup>7</sup>Includes coal, coal coke, and electricity.

<sup>8</sup>Includes petroleum-derived fuels and non-petroleum derived fuels, such as ethanol, biodiesel, and coal-based synthetic liquids. Petroleum coke, which is a solid, is included. Also included are natural gas plant liquids, crude oil consumed as a fuel, and liquid hydrogen. Refer to Table A17 for detailed renewable liquid fuels consumption.

<sup>9</sup>Excludes coal converted to coal-based synthetic liquids.

<sup>10</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>11</sup>Includes non-biogenic municipal waste and net electricity imports.

<sup>12</sup>Weighted average price delivered to U.S. refiners.

<sup>13</sup>Represents lower 48 onshore and offshore supplies.

<sup>14</sup>Includes reported prices for both open market and captive mines.

<sup>15</sup>Includes lease condensate.

<sup>16</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>17</sup>Domestic production and net imports of ethanol, biodiesel, and liquids from biomass.

<sup>18</sup>Includes net imports.

<sup>19</sup>Includes petroleum product stock withdrawals, domestic sources of blending components, other hydrocarbons, ethers, and renewable fuels such as biodiesel.

<sup>20</sup>Marketed production (wet) minus extraction losses.

<sup>21</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>22</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.

Btu = British thermal unit.

GDP = Gross domestic product.

Note: Totals may not equal sum of components due to independent rounding. Data for 2006 are model results and may differ slightly from official EIA data reports.

Sources: 2006 natural gas supply values and natural gas wellhead price: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2007/04) (Washington, DC, April 2007). 2006 coal minemouth and delivered coal prices: EIA, *Annual Coal Report 2006*, DOE/EIA-0584(2006) (Washington, DC, November 2007). 2006 petroleum supply values: EIA, #PSA#. 2006 low sulfur light crude oil price: EIA, Form EIA-856, "Monthly Foreign Crude Oil Acquisition Report." Other 2006 coal values: *Quarterly Coal Report, October-December 2006*, DOE/EIA-0121(2006/4Q) (Washington, DC, March 2007). Other 2006 values: EIA, *Annual Energy Review 2006*, DOE/EIA-0384(2006) (Washington, DC, June 2007). Projections: EIA, AEO2008 National Energy Modeling System runs AEO2008.D030208F and AEO2008.D112607A.