

Appendix A
Reference Case

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

Supply, Disposition, and Prices	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Production								
Crude Oil and Lease Condensate	11.58	10.96	11.99	12.52	12.48	11.82	11.40	0.2%
Natural Gas Plant Liquids	2.46	2.33	2.43	2.45	2.38	2.32	2.31	-0.0%
Dry Natural Gas	19.32	18.77	19.93	20.19	21.41	21.21	21.15	0.5%
Coal ¹	22.85	23.20	24.47	25.74	26.61	30.09	33.52	1.5%
Nuclear Power	8.22	8.13	8.23	8.47	9.23	9.23	9.33	0.6%
Hydropower	2.71	2.71	3.02	3.07	3.08	3.09	3.09	0.5%
Biomass ²	2.81	2.71	4.22	4.45	4.69	5.04	5.26	2.7%
Other Renewable Energy ³	0.74	0.76	1.18	1.26	1.33	1.37	1.44	2.6%
Other ⁴	0.29	0.22	0.67	0.98	0.89	0.89	1.12	6.8%
Total	70.98	69.80	76.13	79.12	82.09	85.06	88.63	1.0%
Imports								
Crude Oil ⁵	22.02	22.09	21.88	22.96	24.72	26.70	28.63	1.0%
Liquid Fuels and Other Petroleum ⁶	6.11	7.16	6.02	6.56	7.05	7.81	9.02	0.9%
Natural Gas	4.36	4.42	5.36	6.43	6.17	6.53	6.47	1.5%
Other Imports ⁷	0.82	0.85	0.92	1.02	1.73	1.89	2.26	4.0%
Total	33.30	34.52	34.18	36.97	39.66	42.93	46.37	1.2%
Exports								
Petroleum ⁸	2.07	2.31	2.71	2.77	2.84	2.85	2.90	0.9%
Natural Gas	0.87	0.75	0.69	0.66	0.69	0.80	0.87	0.6%
Coal	1.25	1.27	1.12	0.96	0.80	0.67	0.69	-2.4%
Total	4.19	4.33	4.52	4.39	4.33	4.32	4.47	0.1%
Discrepancy⁹	-0.58	-0.20	-0.70	-0.58	-0.74	-0.73	-0.63	N/A
Consumption								
Liquid Fuels and Other Petroleum ¹⁰	40.79	40.61	41.76	44.26	46.52	49.05	52.17	1.0%
Natural Gas	23.05	22.63	24.73	26.07	27.04	27.08	26.89	0.7%
Coal	22.60	22.87	24.24	25.64	27.29	30.62	34.14	1.6%
Nuclear Power	8.22	8.13	8.23	8.47	9.23	9.23	9.33	0.6%
Hydropower	2.71	2.71	3.02	3.07	3.08	3.09	3.09	0.5%
Biomass ¹¹	2.53	2.38	3.30	3.48	3.64	3.91	4.06	2.2%
Other Renewable Energy ³	0.74	0.76	1.18	1.26	1.33	1.37	1.44	2.6%
Other ¹²	0.04	0.08	0.04	0.03	0.04	0.04	0.04	-2.6%
Total	100.67	100.19	106.50	112.28	118.16	124.39	131.16	1.1%

Reference Case

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

Supply, Disposition, and Prices	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Prices (2005 dollars per unit)								
Petroleum (dollars per barrel)								
Imported Low Sulfur Light Crude Oil Price ¹³ . . .	42.87	56.76	57.47	49.87	52.04	56.37	59.12	0.2%
Imported Crude Oil Price ¹³	37.09	49.19	51.20	44.61	46.47	49.57	51.63	0.2%
Natural Gas (dollars per million Btu)								
Price at Henry Hub	6.08	8.60	6.28	5.46	5.71	6.14	6.52	-1.1%
Wellhead Price ¹⁴	5.63	7.29	5.59	4.84	5.07	5.46	5.80	-0.9%
Natural Gas (dollars per thousand cubic feet)								
Wellhead Price ¹⁴	5.80	7.51	5.76	4.99	5.22	5.62	5.98	-0.9%
Coal (dollars per ton)								
Minemouth Price ¹⁵	20.68	23.34	24.20	22.41	21.58	21.55	22.60	-0.1%
Coal (dollars per million Btu)								
Minemouth Price ¹⁵	1.01	1.15	1.18	1.11	1.08	1.09	1.15	-0.0%
Average Delivered Price ¹⁶	1.45	1.61	1.77	1.65	1.62	1.66	1.71	0.2%
Average Electricity Price (cents per kilowatthour)	7.9	8.1	8.1	7.7	7.9	8.0	8.1	-0.0%

¹Includes waste coal.

²Includes 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.

³Includes grid-connected electricity from landfill gas; municipal solid 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.

⁴Includes liquid hydrogen, methanol, and some domestic inputs to refineries.

⁵Includes imports of crude oil for the Strategic Petroleum Reserve.

⁶Includes imports of finished petroleum products, unfinished oils, alcohols, ethers, blending components, and renewable fuels such as ethanol.

⁷Includes coal, coal coke (net), and electricity (net).

⁸Includes crude oil and petroleum products.

⁹Balancing item. Includes unaccounted for supply, losses, gains, and net storage withdrawals.

¹⁰Includes 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. Refer to Table A17 for detailed renewable liquid fuels consumption.

¹¹Includes 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.

¹²Includes net electricity imports.

¹³Weighted average price delivered to U.S. refiners.

¹⁴Represents lower 48 onshore and offshore supplies.

¹⁵Includes reported prices for both open market and captive mines.

¹⁶Prices weighted by consumption; weighted average excludes residential and commercial prices, and export free-alongside-ship (f.a.s.) prices.

Btu = British thermal unit.

N/A = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 2004 and 2005 are model results and may differ slightly from official EIA data reports.

Sources: 2004 natural gas supply values: Energy Information Administration (EIA), *Natural Gas Annual 2004*, DOE/EIA-0131(2004) (Washington, DC, December 2005). 2005 natural gas supply values and natural gas wellhead price: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2006/04) (Washington, DC, April 2006). 2004 natural gas wellhead price: Minerals Management Service and EIA, *Natural Gas Annual 2004*, DOE/EIA-0131(2004) (Washington, DC, December 2005). 2004 and 2005 coal minemouth and delivered coal prices: EIA, *Annual Coal Report 2005*, DOE/EIA-0584(2005) (Washington, DC, October 2006). 2005 petroleum supply values and 2004 crude oil and lease condensate production: EIA, *Petroleum Supply Annual 2005*, DOE/EIA-0340(2005)/1 (Washington, DC, October 2006). Other 2004 petroleum supply values: EIA, *Petroleum Supply Annual 2004*, DOE/EIA-0340(2004)/1 (Washington, DC, June 2005). 2004 and 2005 low sulfur light crude oil price: EIA, Form EIA-856, "Monthly Foreign Crude Oil Acquisition Report." Other 2004 and 2005 coal values: *Quarterly Coal Report, October-December 2005*, DOE/EIA-0121(2005/4Q) (Washington, DC, March 2006). Other 2004 and 2005 values: EIA, *Annual Energy Review 2005*, DOE/EIA-0384(2005) (Washington, DC, July 2006). **Projections:** EIA, AEO2007 National Energy Modeling System run AEO2007.D112106A.

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

Sector and Source	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Energy Consumption								
Residential								
Liquefied Petroleum Gases	0.54	0.51	0.53	0.56	0.58	0.60	0.62	0.8%
Kerosene	0.09	0.10	0.10	0.10	0.10	0.09	0.09	-0.3%
Distillate Fuel Oil	0.93	0.93	0.90	0.89	0.85	0.80	0.76	-0.8%
Liquid Fuels and Other Petroleum Subtotal	1.55	1.54	1.53	1.55	1.53	1.49	1.46	-0.2%
Natural Gas	5.02	4.98	5.18	5.35	5.43	5.45	5.47	0.4%
Coal	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-1.2%
Renewable Energy ¹	0.40	0.41	0.43	0.41	0.40	0.40	0.39	-0.2%
Electricity	4.41	4.66	5.06	5.43	5.80	6.13	6.47	1.3%
Delivered Energy	11.39	11.60	12.21	12.74	13.17	13.48	13.80	0.7%
Electricity Related Losses	9.75	10.15	10.90	11.44	12.08	12.50	12.89	1.0%
Total	21.15	21.75	23.11	24.18	25.26	25.98	26.70	0.8%
Commercial								
Liquefied Petroleum Gases	0.10	0.09	0.09	0.09	0.10	0.10	0.10	0.4%
Motor Gasoline ²	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.6%
Kerosene	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.4%
Distillate Fuel Oil	0.47	0.48	0.45	0.48	0.48	0.48	0.49	0.1%
Residual Fuel Oil	0.12	0.14	0.14	0.14	0.14	0.14	0.14	0.2%
Liquid Fuels and Other Petroleum Subtotal	0.76	0.77	0.75	0.79	0.80	0.81	0.81	0.2%
Natural Gas	3.23	3.15	3.31	3.64	3.86	4.10	4.36	1.3%
Coal	0.10	0.10	0.10	0.10	0.10	0.10	0.10	-0.1%
Renewable Energy ³	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.0%
Electricity	4.19	4.32	4.77	5.28	5.78	6.36	7.03	2.0%
Delivered Energy	8.40	8.46	9.05	9.93	10.66	11.48	12.43	1.6%
Electricity Related Losses	9.27	9.42	10.27	11.13	12.03	12.97	14.01	1.6%
Total	17.67	17.88	19.33	21.06	22.69	24.45	26.44	1.6%
Industrial⁴								
Liquefied Petroleum Gases	2.27	2.13	2.26	2.24	2.26	2.31	2.40	0.5%
Motor Gasoline ²	0.32	0.32	0.32	0.32	0.33	0.35	0.36	0.4%
Distillate Fuel Oil	1.21	1.23	1.18	1.19	1.22	1.23	1.26	0.1%
Residual Fuel Oil	0.22	0.23	0.18	0.18	0.17	0.18	0.18	-0.9%
Petrochemical Feedstocks	1.54	1.38	1.48	1.49	1.50	1.52	1.57	0.5%
Other Petroleum ⁵	4.53	4.45	4.05	4.26	4.34	4.48	4.78	0.3%
Liquid Fuels and Other Petroleum Subtotal	10.09	9.73	9.47	9.68	9.82	10.07	10.55	0.3%
Natural Gas	7.45	6.84	7.86	7.90	8.26	8.68	8.90	1.1%
Natural-Gas-to-Liquids Heat and Power	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
Lease and Plant Fuel ⁶	1.13	1.10	1.10	1.10	1.21	1.17	1.15	0.2%
Natural Gas Subtotal	8.58	7.94	8.95	9.00	9.46	9.85	10.05	0.9%
Metallurgical Coal	0.65	0.62	0.60	0.59	0.57	0.57	0.57	-0.3%
Other Industrial Coal	1.40	1.35	1.37	1.35	1.34	1.35	1.36	0.0%
Coal-to-Liquids Heat and Power	0.00	0.00	0.00	0.12	0.21	0.67	0.93	N/A
Net Coal Coke Imports	0.14	0.04	0.02	0.02	0.02	0.02	0.02	-3.4%
Coal Subtotal	2.18	2.01	2.00	2.07	2.14	2.61	2.89	1.5%
Biofuels Heat and Coproducts	0.21	0.24	0.69	0.74	0.78	0.83	0.88	5.2%
Renewable Energy ⁷	1.70	1.44	1.60	1.71	1.81	1.93	2.05	1.4%
Electricity	3.48	3.48	3.63	3.76	3.83	3.94	4.09	0.6%
Delivered Energy	26.24	24.85	26.33	26.97	27.84	29.23	30.51	0.8%
Electricity Related Losses	7.68	7.60	7.81	7.93	7.98	8.03	8.15	0.3%
Total	33.92	32.45	34.14	34.89	35.82	37.26	38.66	0.7%

Reference Case

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

Sector and Source	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Transportation								
Liquefied Petroleum Gases	0.03	0.04	0.05	0.05	0.06	0.07	0.08	2.8%
E85 ⁸	0.00	0.00	0.00	0.00	0.01	0.02	0.02	11.8%
Motor Gasoline ²	17.01	17.00	17.37	18.57	19.95	21.38	22.89	1.2%
Jet Fuel ⁹	3.38	3.37	4.04	4.34	4.54	4.59	4.70	1.3%
Distillate Fuel Oil ¹⁰	5.93	6.02	6.64	7.28	7.81	8.59	9.58	1.9%
Residual Fuel Oil	0.74	0.81	0.82	0.84	0.85	0.86	0.87	0.3%
Liquid Hydrogen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.1%
Other Petroleum ¹¹	0.15	0.18	0.18	0.19	0.19	0.19	0.19	0.2%
Liquid Fuels and Other Petroleum Subtotal	27.25	27.42	29.11	31.26	33.41	35.69	38.34	1.3%
Pipeline Fuel Natural Gas	0.59	0.58	0.66	0.70	0.79	0.79	0.79	1.3%
Compressed Natural Gas	0.03	0.03	0.06	0.08	0.09	0.11	0.12	5.5%
Electricity	0.02	0.02	0.03	0.03	0.03	0.04	0.04	1.8%
Delivered Energy	27.89	28.05	29.86	32.07	34.33	36.63	39.29	1.4%
Electricity Related Losses	0.05	0.05	0.06	0.07	0.07	0.07	0.08	1.5%
Total	27.94	28.11	29.92	32.14	34.40	36.71	39.37	1.4%
Delivered Energy Consumption for All Sectors								
Liquefied Petroleum Gases	2.93	2.77	2.93	2.95	2.99	3.07	3.19	0.6%
E85 ⁸	0.00	0.00	0.00	0.00	0.01	0.02	0.02	11.8%
Motor Gasoline ²	17.38	17.37	17.74	18.94	20.34	21.78	23.30	1.2%
Jet Fuel ⁹	3.38	3.37	4.04	4.34	4.54	4.59	4.70	1.3%
Kerosene	0.13	0.14	0.14	0.15	0.14	0.14	0.14	-0.2%
Distillate Fuel Oil	8.54	8.65	9.17	9.84	10.36	11.11	12.09	1.3%
Residual Fuel Oil	1.08	1.17	1.13	1.15	1.16	1.18	1.19	0.1%
Petrochemical Feedstocks	1.54	1.38	1.48	1.49	1.50	1.52	1.57	0.5%
Liquid Hydrogen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.1%
Other Petroleum ¹²	4.66	4.61	4.22	4.42	4.51	4.65	4.96	0.3%
Liquid Fuels and Other Petroleum Subtotal	39.65	39.46	40.86	43.29	45.55	48.06	51.17	1.0%
Natural Gas	15.71	15.01	16.41	16.96	17.65	18.33	18.86	0.9%
Natural-Gas-to-Liquids Heat and Power	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
Lease and Plant Fuel ⁶	1.13	1.10	1.10	1.10	1.21	1.17	1.15	0.2%
Pipeline Natural Gas	0.59	0.58	0.66	0.70	0.79	0.79	0.79	1.3%
Natural Gas Subtotal	17.44	16.68	18.17	18.76	19.64	20.30	20.80	0.9%
Metallurgical Coal	0.65	0.62	0.60	0.59	0.57	0.57	0.57	-0.3%
Other Coal	1.51	1.46	1.48	1.46	1.45	1.46	1.47	0.0%
Coal-to-Liquids Heat and Power	0.00	0.00	0.00	0.12	0.21	0.67	0.93	N/A
Net Coal Coke Imports	0.14	0.04	0.02	0.02	0.02	0.02	0.02	-3.4%
Coal Subtotal	2.30	2.12	2.11	2.18	2.24	2.71	2.99	1.4%
Biofuels Heat and Coproducts	0.21	0.24	0.69	0.74	0.78	0.83	0.88	5.2%
Renewable Energy ¹³	2.21	1.97	2.14	2.24	2.34	2.44	2.56	1.1%
Electricity	12.11	12.49	13.49	14.51	15.45	16.47	17.63	1.4%
Delivered Energy	73.92	72.97	77.46	81.71	86.00	90.82	96.03	1.1%
Electricity Related Losses	26.75	27.23	29.04	30.56	32.17	33.57	35.13	1.0%
Total	100.67	100.19	106.50	112.28	118.16	124.39	131.16	1.1%
Electric Power¹⁴								
Distillate Fuel Oil	0.15	0.19	0.24	0.24	0.25	0.28	0.28	1.5%
Residual Fuel Oil	0.99	0.96	0.67	0.74	0.72	0.71	0.72	-1.1%
Liquid Fuels and Other Petroleum Subtotal	1.14	1.16	0.90	0.97	0.97	0.99	1.01	-0.6%
Natural Gas	5.61	5.95	6.56	7.31	7.40	6.78	6.09	0.1%
Steam Coal	20.30	20.75	22.13	23.45	25.05	27.90	31.14	1.6%
Nuclear Power	8.22	8.13	8.23	8.47	9.23	9.23	9.33	0.6%
Renewable Energy ¹⁵	3.55	3.64	4.67	4.83	4.93	5.09	5.15	1.4%
Electricity Imports	0.04	0.08	0.04	0.03	0.04	0.04	0.04	-2.6%
Total	38.86	39.71	42.53	45.07	47.62	50.04	52.77	1.1%

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

Sector and Source	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Total Energy Consumption								
Liquefied Petroleum Gases	2.93	2.77	2.93	2.95	2.99	3.07	3.19	0.6%
E85 ⁸	0.00	0.00	0.00	0.00	0.01	0.02	0.02	11.8%
Motor Gasoline ²	17.38	17.37	17.74	18.94	20.34	21.78	23.30	1.2%
Jet Fuel ⁹	3.38	3.37	4.04	4.34	4.54	4.59	4.70	1.3%
Kerosene	0.13	0.14	0.14	0.15	0.14	0.14	0.14	-0.2%
Distillate Fuel Oil	8.69	8.84	9.40	10.08	10.61	11.38	12.37	1.4%
Residual Fuel Oil	2.07	2.14	1.80	1.89	1.88	1.89	1.91	-0.4%
Petrochemical Feedstocks	1.54	1.38	1.48	1.49	1.50	1.52	1.57	0.5%
Liquid Hydrogen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.1%
Other Petroleum ¹²	4.66	4.61	4.22	4.42	4.51	4.65	4.96	0.3%
Liquid Fuels and Other Petroleum Subtotal	40.79	40.61	41.76	44.26	46.52	49.05	52.17	1.0%
Natural Gas	21.33	20.96	22.97	24.27	25.05	25.11	24.95	0.7%
Natural-Gas-to-Liquids Heat and Power	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
Lease and Plant Fuel ⁶	1.13	1.10	1.10	1.10	1.21	1.17	1.15	0.2%
Pipeline Natural Gas	0.59	0.58	0.66	0.70	0.79	0.79	0.79	1.3%
Natural Gas Subtotal	23.05	22.63	24.73	26.07	27.04	27.08	26.89	0.7%
Metallurgical Coal	0.65	0.62	0.60	0.59	0.57	0.57	0.57	-0.3%
Other Coal	21.81	22.21	23.61	24.91	26.50	29.36	32.61	1.5%
Coal-to-Liquids Heat and Power	0.00	0.00	0.00	0.12	0.21	0.67	0.93	N/A
Net Coal Coke Imports	0.14	0.04	0.02	0.02	0.02	0.02	0.02	-3.4%
Coal Subtotal	22.60	22.87	24.24	25.64	27.29	30.62	34.14	1.6%
Nuclear Power	8.22	8.13	8.23	8.47	9.23	9.23	9.33	0.6%
Biofuels Heat and Coproducts	0.21	0.24	0.69	0.74	0.78	0.83	0.88	5.2%
Renewable Energy ¹⁶	5.76	5.61	6.81	7.07	7.27	7.54	7.71	1.3%
Electricity Imports	0.04	0.08	0.04	0.03	0.04	0.04	0.04	-2.6%
Total	100.67	100.19	106.50	112.28	118.16	124.39	131.16	1.1%
Energy Use and Related Statistics								
Delivered Energy Use	73.92	72.97	77.46	81.71	86.00	90.82	96.03	1.1%
Total Energy Use	100.67	100.19	106.50	112.28	118.16	124.39	131.16	1.1%
Ethanol Consumed in Motor Gasoline and E85	0.29	0.33	0.91	0.98	1.06	1.15	1.22	5.3%
Population (millions)	294.23	296.94	310.26	323.70	337.13	350.78	364.94	0.8%
Gross Domestic Product (billion 2000 dollars)	10704	11049	12790	14698	17077	19666	22494	2.9%
Carbon Dioxide Emissions (million metric tons)	5923.1	5945.3	6214.0	6588.9	6944.5	7424.6	7950.2	1.2%

¹Includes 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.

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

³Includes commercial sector consumption of wood and wood waste, landfill gas, municipal solid waste, and other biomass for combined heat and power. See Table A5 and/or Table A17 for estimates of nonmarketed renewable energy consumption for solar thermal hot water heating and solar photovoltaic electricity generation.

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

⁵Includes petroleum coke, asphalt, road oil, lubricants, still gas, tire-derived fuel, and miscellaneous petroleum products.

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

⁷Includes consumption of energy produced from hydroelectric, wood and wood waste, municipal solid waste, and other biomass sources.

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

⁹Includes only kerosene type.

¹⁰Diesel fuel for on- and off- road use.

¹¹Includes aviation gasoline and lubricants.

¹²Includes unfinished oils, natural gasoline, motor gasoline blending components, aviation gasoline, lubricants, still gas, asphalt, road oil, petroleum coke, tire-derived fuel, and miscellaneous petroleum products.

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

¹⁴Includes 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.

¹⁵Includes conventional hydroelectric, geothermal, wood and wood waste, municipal solid waste, other biomass, petroleum coke, wind, photovoltaic and solar thermal sources. Excludes net electricity imports.

¹⁶Includes hydroelectric, geothermal, wood and wood waste, municipal solid waste, other biomass, wind, photovoltaic and solar thermal sources. Includes ethanol components of E85; excludes ethanol blends (10 percent or less) in motor gasoline. Excludes net electricity imports and nonmarketed renewable energy consumption for geothermal heat pumps, buildings photovoltaic systems, and solar thermal hot water heaters.

Btu = British thermal unit.

N/A = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 2004 and 2005 are model results and may differ slightly from official EIA data reports. Consumption values of 0.00 are values that round to 0.00, because they are less than 0.005.

Sources: 2004 and 2005 consumption based on: Energy Information Administration (EIA), *Annual Energy Review 2005*, DOE/EIA-0384(2005) (Washington, DC, July 2006). 2004 and 2005 population and gross domestic product: Global Insight macroeconomic model CTL0806. 2004 and 2005 carbon dioxide emissions: EIA, *Emissions of Greenhouse Gases in the United States 2005*, DOE/EIA-0573(2005) (Washington, DC, November 2006). Projections: EIA, AEO2007 National Energy Modeling System run AEO2007.D112106A.

Reference Case

Table A3. Energy Prices by Sector and Source
(2005 Dollars per Million Btu, Unless Otherwise Noted)

Sector and Source	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Residential								
Liquefied Petroleum Gases	18.21	19.29	23.67	22.88	23.18	23.53	23.91	0.9%
Distillate Fuel Oil	12.89	14.73	14.87	12.60	13.15	13.56	14.13	-0.2%
Natural Gas	10.72	12.43	10.98	10.24	10.54	10.97	11.43	-0.3%
Electricity	27.10	27.59	26.91	25.99	26.37	26.61	26.76	-0.1%
Commercial								
Distillate Fuel Oil	10.48	12.68	12.72	10.73	11.35	11.85	12.45	-0.1%
Residual Fuel Oil	6.25	8.41	7.54	6.49	7.07	7.17	7.31	-0.6%
Natural Gas	9.40	11.20	9.34	8.48	8.67	8.96	9.30	-0.7%
Electricity	24.59	25.25	24.50	23.33	23.95	24.23	24.27	-0.2%
Industrial¹								
Liquefied Petroleum Gases	11.18	16.96	16.42	15.57	15.91	16.22	16.55	-0.1%
Distillate Fuel Oil	10.99	13.08	12.95	11.40	12.04	12.62	13.25	0.1%
Residual Fuel Oil	5.77	7.77	9.50	8.21	8.91	9.26	9.58	0.8%
Natural Gas ²	6.47	8.16	6.43	5.65	5.90	6.21	6.56	-0.9%
Metallurgical Coal	2.31	3.06	3.09	2.72	2.71	2.70	2.75	-0.4%
Other Industrial Coal	1.80	2.15	2.26	2.20	2.18	2.23	2.29	0.2%
Coal to Liquids	0.00	0.00	0.00	0.89	0.97	1.23	1.33	N/A
Electricity	15.88	16.69	18.01	16.46	17.07	17.35	17.43	0.2%
Transportation								
Liquefied Petroleum Gases ³	19.68	23.92	24.34	23.49	23.66	23.95	24.29	0.1%
E85 ⁴	20.91	23.10	21.29	20.09	20.61	21.26	21.50	-0.3%
Motor Gasoline ⁵	15.72	18.64	17.90	16.06	16.63	17.32	17.76	-0.2%
Jet Fuel ⁶	9.22	13.14	10.91	9.89	10.51	11.10	11.75	-0.4%
Distillate Fuel Oil ⁷	13.58	17.52	16.81	14.86	15.42	15.91	16.47	-0.2%
Residual Fuel Oil	4.85	5.51	8.05	7.04	7.36	7.90	8.27	1.6%
Natural Gas ⁸	11.91	14.76	13.97	12.86	12.98	13.22	13.45	-0.4%
Electricity	26.10	25.22	24.86	23.81	24.22	24.47	24.46	-0.1%
Electric Power⁹								
Distillate Fuel Oil	9.52	11.38	11.71	9.26	9.84	10.25	10.79	-0.2%
Residual Fuel Oil	4.99	6.96	6.58	5.60	6.08	6.58	6.85	-0.1%
Natural Gas	6.11	8.18	6.22	5.50	5.76	6.05	6.33	-1.0%
Steam Coal	1.40	1.53	1.71	1.60	1.58	1.63	1.69	0.4%
Average Price to All Users¹⁰								
Liquefied Petroleum Gases	12.69	17.48	18.02	17.24	17.62	17.96	18.30	0.2%
E85 ⁴	20.91	23.10	21.29	20.09	20.61	21.26	21.50	-0.3%
Motor Gasoline ⁵	15.71	18.60	17.90	16.06	16.63	17.32	17.75	-0.2%
Jet Fuel	9.22	13.14	10.91	9.89	10.51	11.10	11.75	-0.4%
Distillate Fuel Oil	12.91	16.22	15.70	13.92	14.53	15.08	15.70	-0.1%
Residual Fuel Oil	5.10	6.59	7.61	6.55	7.00	7.47	7.79	0.7%
Natural Gas	7.83	9.65	7.83	7.06	7.32	7.68	8.09	-0.7%
Metallurgical Coal	2.31	3.06	3.09	2.72	2.71	2.70	2.75	-0.4%
Other Coal	1.43	1.57	1.74	1.63	1.61	1.66	1.72	0.4%
Coal to Liquids	N/A	N/A	N/A	0.89	0.97	1.23	1.33	N/A
Electricity	23.01	23.73	23.66	22.55	23.15	23.47	23.60	-0.0%

Table A3. Energy Prices by Sector and Source (Continued)
(2005 Dollars per Million Btu, Unless Otherwise Noted)

Sector and Source	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Non-Renewable Energy Expenditures by Sector (billion 2005 dollars)								
Residential	195.99	215.13	220.44	221.00	236.03	248.99	262.21	0.8%
Commercial	141.78	154.38	157.97	163.37	181.74	201.11	222.08	1.5%
Industrial	184.23	196.07	200.48	184.11	194.88	206.98	222.08	0.5%
Transportation	385.00	474.66	476.38	459.42	511.07	570.28	632.79	1.2%
Total Non-Renewable Expenditures	907.00	1040.25	1055.27	1027.91	1123.73	1227.35	1339.16	1.0%
Transportation Renewable Expenditures	0.02	0.03	0.06	0.09	0.15	0.32	0.51	11.5%
Total Expenditures	907.02	1040.29	1055.33	1028.00	1123.89	1227.67	1339.68	1.0%

¹Includes energy for combined heat and power plants, except those whose primary business is to sell electricity, or electricity and heat, to the public.

²Excludes use for lease and plant fuel.

³Includes Federal and State taxes while excluding county and local taxes.

⁴E85 refers to a blend of 85 percent ethanol (renewable) and 15 percent motor gasoline (nonrenewable). To address cold starting issues, the percentage of ethanol actually varies seasonally. The annual average ethanol content of 74 percent is used for this forecast.

⁵Sales weighted-average price for all grades. Includes Federal, State and local taxes.

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

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

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

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

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

Btu = British thermal unit.

N/A = Not applicable.

Note: Data for 2004 and 2005 are model results and may differ slightly from official EIA data reports.

Sources: 2004 and 2005 prices for motor gasoline, distillate fuel oil, and jet fuel are based on prices in the Energy Information Administration (EIA), *Petroleum Marketing Annual 2005*, DOE/EIA-0487(2005) (Washington, DC, August 2006). 2004 residential and commercial natural gas delivered prices: EIA, *Natural Gas Annual 2004*, DOE/EIA-0131(2004) (Washington, DC, December 2005). 2005 residential and commercial natural gas delivered prices: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2006/04) (Washington, DC, April 2006). 2004 and 2005 industrial natural gas delivered prices are estimated based on: EIA, *Manufacturing Energy Consumption Survey 1994* and industrial and wellhead prices from the *Natural Gas Annual 2004*, DOE/EIA-0131(2004) (Washington, DC, December 2005) and the *Natural Gas Monthly*, DOE/EIA-0130(2006/04) (Washington, DC, April 2006). 2004 transportation sector natural gas delivered prices are based on: EIA, *Natural Gas Annual 2004*, DOE/EIA-0131(2004) (Washington, DC, December 2005) and estimated state taxes, federal taxes, and dispensing costs or charges. 2005 transportation sector natural gas delivered prices are model results. 2004 and 2005 electric power sector natural gas prices: EIA, *Electric Power Monthly*, DOE/EIA-0226, May 2003 through April 2004, Table 4.11.A. 2004 and 2005 coal prices based on: EIA, *Quarterly Coal Report, October-December 2005*, DOE/EIA-0121(2005/4Q) (Washington, DC, March 2006) and EIA, AEO2007 National Energy Modeling System run AEO2007.D112106A. 2004 and 2005 electricity prices: EIA, *Annual Energy Review 2005*, DOE/EIA-0384(2005) (Washington, DC, July 2006). 2004 and 2005 ethanol prices derived from weekly spot prices in the Oxy Fuel News. **Projections:** EIA, AEO2007 National Energy Modeling System run AEO2007.D112106A.

Reference Case

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

Key Indicators and Consumption	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Key Indicators								
Households (millions)								
Single-Family	77.46	78.95	84.84	90.34	95.57	100.32	104.76	1.1%
Multifamily	27.37	27.67	29.10	30.39	31.81	33.31	34.88	0.9%
Mobile Homes	6.72	6.70	6.77	7.03	7.32	7.59	7.85	0.6%
Total	111.56	113.32	120.71	127.75	134.70	141.21	147.49	1.1%
Average House Square Footage	1755	1770	1830	1883	1929	1969	2004	0.5%
Energy Intensity								
(million Btu per household)								
Delivered Energy Consumption	102.1	102.3	101.1	99.7	97.8	95.4	93.6	-0.4%
Total Energy Consumption	189.6	191.9	191.4	189.3	187.5	184.0	181.0	-0.2%
(thousand Btu per square foot)								
Delivered Energy Consumption	58.2	57.8	55.3	53.0	50.7	48.5	46.7	-0.9%
Total Energy Consumption	108.0	108.4	104.6	100.5	97.2	93.4	90.3	-0.7%
Delivered Energy Consumption by Fuel								
Electricity								
Space Heating	0.39	0.40	0.44	0.47	0.49	0.50	0.51	1.0%
Space Cooling	0.65	0.74	0.73	0.76	0.80	0.85	0.90	0.8%
Water Heating	0.37	0.37	0.39	0.40	0.41	0.41	0.42	0.4%
Refrigeration	0.40	0.39	0.36	0.35	0.35	0.36	0.38	-0.1%
Cooking	0.10	0.11	0.12	0.12	0.13	0.14	0.15	1.3%
Clothes Dryers	0.24	0.25	0.26	0.27	0.29	0.30	0.32	1.0%
Freezers	0.13	0.12	0.12	0.12	0.12	0.13	0.13	0.2%
Lighting	0.72	0.73	0.79	0.87	0.94	0.99	1.03	1.3%
Clothes Washers ¹	0.03	0.03	0.03	0.03	0.03	0.03	0.03	-0.8%
Dishwashers ¹	0.02	0.02	0.03	0.03	0.03	0.03	0.03	1.2%
Color Televisions and Set-Top Boxes	0.30	0.30	0.38	0.39	0.40	0.45	0.50	2.0%
Personal Computers	0.07	0.08	0.12	0.14	0.17	0.20	0.21	4.1%
Furnace Fans	0.08	0.08	0.10	0.11	0.11	0.12	0.13	1.6%
Other Uses ²	0.89	1.01	1.21	1.36	1.53	1.63	1.74	2.2%
Delivered Energy	4.41	4.66	5.06	5.43	5.80	6.13	6.47	1.3%
Natural Gas								
Space Heating	3.53	3.52	3.69	3.82	3.88	3.89	3.89	0.4%
Space Cooling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.8%
Water Heating	1.16	1.14	1.15	1.17	1.18	1.18	1.20	0.2%
Cooking	0.21	0.22	0.23	0.23	0.24	0.25	0.26	0.7%
Clothes Dryers	0.07	0.07	0.07	0.08	0.08	0.09	0.09	1.0%
Other Uses ³	0.04	0.04	0.04	0.04	0.04	0.04	0.04	-0.3%
Delivered Energy	5.02	4.98	5.18	5.35	5.43	5.45	5.47	0.4%
Distillate Fuel Oil								
Space Heating	0.81	0.82	0.79	0.79	0.76	0.72	0.68	-0.7%
Water Heating	0.12	0.12	0.11	0.10	0.09	0.08	0.08	-1.6%
Other Uses ⁴	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.5%
Delivered Energy	0.93	0.93	0.90	0.89	0.85	0.80	0.76	-0.8%
Liquefied Petroleum Gases								
Space Heating	0.29	0.26	0.27	0.27	0.27	0.27	0.27	0.1%
Water Heating	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2%
Cooking	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.7%
Other Uses ³	0.17	0.17	0.18	0.21	0.23	0.25	0.27	1.8%
Delivered Energy	0.54	0.51	0.53	0.56	0.58	0.60	0.62	0.8%
Marketed Renewables (wood) ⁵	0.40	0.41	0.43	0.41	0.40	0.40	0.39	-0.2%
Other Fuels ⁶	0.10	0.11	0.11	0.11	0.11	0.10	0.10	-0.4%

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

Key Indicators and Consumption	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Delivered Energy Consumption by End Use								
Space Heating	5.52	5.51	5.73	5.87	5.91	5.87	5.83	0.2%
Space Cooling	0.65	0.74	0.73	0.76	0.80	0.85	0.90	0.8%
Water Heating	1.70	1.68	1.69	1.72	1.73	1.73	1.74	0.2%
Refrigeration	0.40	0.39	0.36	0.35	0.35	0.36	0.38	-0.1%
Cooking	0.35	0.35	0.37	0.39	0.41	0.42	0.44	0.9%
Clothes Dryers	0.31	0.32	0.34	0.35	0.37	0.39	0.41	1.0%
Freezers	0.13	0.12	0.12	0.12	0.12	0.13	0.13	0.2%
Lighting	0.72	0.73	0.79	0.87	0.94	0.99	1.03	1.3%
Clothes Washers	0.03	0.03	0.03	0.03	0.03	0.03	0.03	-0.8%
Dishwashers	0.02	0.02	0.03	0.03	0.03	0.03	0.03	1.2%
Color Televisions and Set-Top Boxes	0.30	0.30	0.38	0.39	0.40	0.45	0.50	2.0%
Personal Computers	0.07	0.08	0.12	0.14	0.17	0.20	0.21	4.1%
Furnace Fans	0.08	0.08	0.10	0.11	0.11	0.12	0.13	1.6%
Other Uses ⁷	1.11	1.22	1.43	1.61	1.80	1.92	2.05	2.1%
Delivered Energy	11.39	11.60	12.21	12.74	13.17	13.48	13.80	0.7%
Electricity Related Losses	9.75	10.15	10.90	11.44	12.08	12.50	12.89	1.0%
Total Energy Consumption by End Use								
Space Heating	6.39	6.40	6.67	6.85	6.92	6.89	6.86	0.3%
Space Cooling	2.08	2.36	2.30	2.37	2.47	2.57	2.70	0.5%
Water Heating	2.52	2.49	2.53	2.57	2.59	2.57	2.57	0.1%
Refrigeration	1.28	1.24	1.15	1.09	1.09	1.10	1.13	-0.4%
Cooking	0.58	0.58	0.62	0.65	0.68	0.71	0.73	0.9%
Clothes Dryers	0.86	0.86	0.90	0.93	0.97	1.01	1.05	0.8%
Freezers	0.41	0.40	0.37	0.37	0.38	0.39	0.39	-0.1%
Lighting	2.33	2.34	2.48	2.69	2.89	3.00	3.07	1.1%
Clothes Washers	0.11	0.11	0.10	0.09	0.08	0.08	0.08	-1.0%
Dishwashers	0.08	0.08	0.08	0.09	0.09	0.10	0.10	1.0%
Color Televisions and Set-Top Boxes	0.95	0.96	1.20	1.21	1.24	1.35	1.49	1.8%
Personal Computers	0.24	0.25	0.37	0.45	0.52	0.60	0.63	3.9%
Furnace Fans	0.27	0.27	0.30	0.33	0.35	0.36	0.38	1.3%
Other Uses ⁷	3.07	3.42	4.03	4.49	4.98	5.24	5.51	1.9%
Total	21.15	21.75	23.11	24.18	25.26	25.98	26.70	0.8%
Nonmarketed Renewables⁸								
Geothermal Heat Pumps	0.00	0.00	0.01	0.01	0.01	0.01	0.02	6.8%
Solar Hot Water Heating	0.03	0.03	0.03	0.04	0.05	0.06	0.06	3.5%
Solar Photovoltaic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.1%
Total	0.03	0.03	0.04	0.05	0.06	0.07	0.08	4.0%

¹Does not include water heating portion of load.

²Includes small electric devices, heating elements, and motors not listed above.

³Includes such appliances as swimming pool heaters, outdoor grills, and outdoor lighting (natural gas).

⁴Includes such appliances as swimming pool and spa heaters.

⁵Includes wood used for primary and secondary heating in wood stoves or fireplaces as reported in the *Residential Energy Consumption Survey 2001*.

⁶Includes kerosene and coal.

⁷Includes all other uses listed above.

⁸Represents primary energy displaced.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2004 and 2005 are model results and may differ slightly from official EIA data reports.

Sources: 2004 and 2005 based on: Energy Information Administration (EIA), *Annual Energy Review 2005*, DOE/EIA-0384(2005) (Washington, DC, July 2006).
Projections: EIA, AEO2007 National Energy Modeling System run AEO2007.D112106A.

Reference Case

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

Key Indicators and Consumption	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Key Indicators								
Total Floorspace (billion square feet)								
Surviving	71.1	72.4	78.5	84.6	90.8	97.8	105.5	1.5%
New Additions	1.9	1.9	1.8	1.9	2.1	2.3	2.5	1.1%
Total	73.0	74.3	80.4	86.5	92.9	100.1	108.0	1.5%
Energy Consumption Intensity (thousand Btu per square foot)								
Delivered Energy Consumption	115.1	113.9	112.6	114.8	114.7	114.7	115.1	0.0%
Electricity Related Losses	127.0	126.8	127.8	128.6	129.6	129.5	129.7	0.1%
Total Energy Consumption	242.1	240.8	240.4	243.4	244.3	244.2	244.8	0.1%
Delivered Energy Consumption by Fuel								
Purchased Electricity								
Space Heating ¹	0.17	0.17	0.17	0.18	0.18	0.18	0.19	0.4%
Space Cooling ¹	0.46	0.55	0.50	0.52	0.54	0.57	0.61	0.4%
Water Heating ¹	0.18	0.18	0.18	0.18	0.19	0.19	0.20	0.5%
Ventilation	0.19	0.19	0.19	0.21	0.22	0.23	0.25	1.1%
Cooking	0.04	0.04	0.04	0.04	0.04	0.04	0.04	-0.2%
Lighting	1.19	1.18	1.19	1.26	1.33	1.41	1.51	1.0%
Refrigeration	0.23	0.23	0.24	0.25	0.26	0.28	0.30	1.0%
Office Equipment (PC)	0.14	0.18	0.30	0.35	0.38	0.39	0.40	3.2%
Office Equipment (non-PC)	0.32	0.35	0.48	0.57	0.67	0.78	0.92	3.9%
Other Uses ²	1.28	1.25	1.48	1.72	1.98	2.28	2.62	3.0%
Delivered Energy	4.19	4.32	4.77	5.28	5.78	6.36	7.03	2.0%
Natural Gas								
Space Heating ¹	1.38	1.35	1.45	1.57	1.64	1.71	1.78	1.1%
Space Cooling ¹	0.02	0.02	0.02	0.03	0.03	0.04	0.04	2.3%
Water Heating ¹	0.59	0.57	0.56	0.64	0.69	0.75	0.82	1.5%
Cooking	0.24	0.23	0.26	0.29	0.31	0.34	0.36	1.8%
Other Uses ³	1.00	0.97	1.02	1.12	1.19	1.26	1.36	1.3%
Delivered Energy	3.23	3.15	3.31	3.64	3.86	4.10	4.36	1.3%
Distillate Fuel Oil								
Space Heating ¹	0.20	0.20	0.20	0.22	0.22	0.22	0.23	0.6%
Water Heating ¹	0.07	0.07	0.06	0.07	0.07	0.07	0.07	-0.0%
Other Uses ⁴	0.20	0.21	0.18	0.19	0.19	0.19	0.19	-0.4%
Delivered Energy	0.47	0.48	0.45	0.48	0.48	0.48	0.49	0.1%
Marketed Renewables (biomass)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.0%
Other Fuels ⁵	0.39	0.40	0.40	0.41	0.41	0.42	0.42	0.2%
Delivered Energy Consumption by End Use								
Space Heating ¹	1.75	1.71	1.83	1.96	2.04	2.12	2.20	1.0%
Space Cooling ¹	0.48	0.57	0.53	0.55	0.57	0.61	0.65	0.5%
Water Heating ¹	0.84	0.82	0.80	0.89	0.95	1.02	1.09	1.2%
Ventilation	0.19	0.19	0.19	0.21	0.22	0.23	0.25	1.1%
Cooking	0.27	0.27	0.29	0.33	0.35	0.37	0.40	1.6%
Lighting	1.19	1.18	1.19	1.26	1.33	1.41	1.51	1.0%
Refrigeration	0.23	0.23	0.24	0.25	0.26	0.28	0.30	1.0%
Office Equipment (PC)	0.14	0.18	0.30	0.35	0.38	0.39	0.40	3.2%
Office Equipment (non-PC)	0.32	0.35	0.48	0.57	0.67	0.78	0.92	3.9%
Other Uses ⁶	2.98	2.95	3.21	3.57	3.90	4.28	4.71	1.9%
Delivered Energy	8.40	8.46	9.05	9.93	10.66	11.48	12.43	1.6%

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

Key Indicators and Consumption	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Electricity Related Losses	9.27	9.42	10.27	11.13	12.03	12.97	14.01	1.6%
Total Energy Consumption by End Use								
Space Heating ¹	2.12	2.08	2.20	2.34	2.41	2.49	2.57	0.9%
Space Cooling ¹	1.50	1.77	1.61	1.64	1.69	1.76	1.86	0.2%
Water Heating ¹	1.22	1.20	1.18	1.27	1.34	1.41	1.49	0.9%
Ventilation	0.60	0.60	0.61	0.64	0.67	0.70	0.74	0.8%
Cooking	0.36	0.35	0.37	0.40	0.43	0.45	0.47	1.2%
Lighting	3.82	3.76	3.74	3.92	4.09	4.29	4.53	0.7%
Refrigeration	0.74	0.74	0.76	0.78	0.81	0.85	0.90	0.8%
Office Equipment (PC)	0.46	0.58	0.96	1.08	1.18	1.20	1.21	3.0%
Office Equipment (non-PC)	1.03	1.12	1.50	1.78	2.05	2.37	2.74	3.6%
Other Uses ⁶	5.81	5.68	6.40	7.20	8.03	8.93	9.93	2.3%
Total	17.67	17.88	19.33	21.06	22.69	24.45	26.44	1.6%
Nonmarketed Renewable Fuels⁷								
Solar Thermal	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.6%
Solar Photovoltaic	0.00	0.00	0.00	0.00	0.00	0.01	0.01	11.3%
Total	0.02	0.03	0.03	0.03	0.03	0.03	0.04	2.1%

¹Includes fuel consumption for district services.

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

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

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

⁵Includes residual fuel oil, liquefied petroleum gas, coal, motor gasoline, and kerosene.

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

⁷Represents primary energy displaced by solar thermal space heating and water heating, and electricity generation by solar photovoltaic systems.

Btu = British thermal unit.

PC = Personal computer.

Note: Totals may not equal sum of components due to independent rounding. Data for 2004 and 2005 are model results and may differ slightly from official EIA data reports.

Sources: 2004 and 2005 based on: Energy Information Administration (EIA), *Annual Energy Review 2005*, DOE/EIA-0384(2005) (Washington, DC, July 2006).
Projections: EIA, AEO2007 National Energy Modeling System run AEO2007.D112106A.

Reference Case

Table A6. Industrial Sector Key Indicators and Consumption

Key Indicators and Consumption	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Key Indicators								
Value of Shipments (billion 2000 dollars)								
Manufacturing	4157	4225	4702	5332	5933	6645	7478	2.3%
Nonmanufacturing	1494	1538	1596	1701	1846	1940	2023	1.1%
Total	5651	5763	6298	7033	7779	8585	9502	2.0%
Energy Prices (2005 dollars per million Btu)								
Liquefied Petroleum Gases	11.18	16.96	16.42	15.57	15.91	16.22	16.55	-0.1%
Motor Gasoline	14.98	16.63	17.83	16.00	16.56	17.25	17.68	0.2%
Distillate Fuel Oil	10.99	13.08	12.95	11.40	12.04	12.62	13.25	0.1%
Residual Fuel Oil	5.77	7.77	9.50	8.21	8.91	9.26	9.58	0.8%
Petrochemical Feedstocks	13.75	8.30	8.67	7.67	8.44	8.40	9.13	0.4%
Asphalt and Road Oil	10.05	6.06	8.24	7.14	7.40	7.82	8.28	1.3%
Natural Gas Heat and Power	5.42	7.17	5.52	4.73	5.04	5.38	5.72	-0.9%
Natural Gas Feedstocks	7.16	8.81	7.13	6.34	6.59	6.90	7.24	-0.8%
Metallurgical Coal	2.31	3.06	3.09	2.72	2.71	2.70	2.75	-0.4%
Other Industrial Coal	1.80	2.15	2.26	2.20	2.18	2.23	2.29	0.2%
Coal to Liquids	N/A	N/A	N/A	0.89	0.97	1.23	1.33	N/A
Electricity	15.88	16.69	18.01	16.46	17.07	17.35	17.43	0.2%
Energy Consumption (quadrillion Btu)¹								
Industrial Consumption Excluding Refining								
Liquefied Petroleum Gases Heat and Power	0.13	0.13	0.08	0.08	0.08	0.08	0.08	-1.8%
Liquefied Petroleum Gases Feedstocks	2.13	1.98	2.17	2.16	2.18	2.21	2.29	0.6%
Motor Gasoline	0.32	0.32	0.32	0.32	0.33	0.35	0.36	0.4%
Distillate Fuel Oil	1.21	1.22	1.18	1.19	1.22	1.23	1.26	0.1%
Residual Fuel Oil	0.20	0.22	0.14	0.14	0.14	0.14	0.14	-1.6%
Petrochemical Feedstocks	1.54	1.38	1.48	1.49	1.50	1.52	1.57	0.5%
Petroleum Coke	0.36	0.33	0.31	0.31	0.31	0.32	0.34	0.1%
Asphalt and Road Oil	1.27	1.31	1.24	1.24	1.29	1.33	1.37	0.2%
Miscellaneous Petroleum ²	0.55	0.59	0.45	0.40	0.38	0.38	0.38	-1.7%
Petroleum Subtotal	7.72	7.48	7.48	7.34	7.43	7.58	7.79	0.2%
Natural Gas Heat and Power	5.80	5.30	5.83	6.00	6.22	6.57	6.97	1.1%
Natural Gas Feedstocks	0.60	0.57	0.58	0.57	0.57	0.57	0.58	0.0%
Lease and Plant Fuel ³	1.13	1.10	1.10	1.10	1.21	1.17	1.15	0.2%
Natural Gas Subtotal	7.54	6.97	7.51	7.68	7.99	8.31	8.70	0.9%
Metallurgical Coal and Coke ⁴	0.79	0.66	0.63	0.60	0.59	0.59	0.59	-0.5%
Other Industrial Coal	1.30	1.23	1.26	1.23	1.23	1.24	1.25	0.1%
Coal Subtotal	2.08	1.89	1.88	1.84	1.81	1.82	1.84	-0.1%
Renewables ⁵	1.70	1.44	1.60	1.71	1.81	1.93	2.05	1.4%
Purchased Electricity	3.34	3.35	3.44	3.56	3.63	3.73	3.87	0.6%
Delivered Energy	22.38	21.14	21.81	22.13	22.67	23.36	24.24	0.5%
Electricity Related Losses	7.39	7.31	7.41	7.51	7.56	7.60	7.70	0.2%
Total	29.77	28.45	29.22	29.64	30.23	30.96	31.94	0.5%
Refining Consumption								
Liquefied Petroleum Gases Heat and Power	0.01	0.02	0.00	0.00	0.00	0.01	0.03	2.5%
Distillate Fuel Oil	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
Residual Fuel Oil	0.01	0.01	0.03	0.03	0.03	0.04	0.04	4.0%
Petroleum Coke	0.57	0.56	0.60	0.67	0.77	0.84	0.87	1.8%
Still Gas	1.74	1.62	1.44	1.62	1.56	1.57	1.78	0.4%
Miscellaneous Petroleum ²	0.03	0.03	0.02	0.02	0.03	0.03	0.04	1.0%
Petroleum Subtotal	2.37	2.25	2.09	2.35	2.39	2.49	2.76	0.8%
Natural Gas Heat and Power	1.04	0.97	1.45	1.32	1.47	1.54	1.36	1.4%
Natural-Gas-to-Liquids Heat and Power	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
Natural Gas Subtotal	1.04	0.97	1.45	1.32	1.47	1.54	1.36	1.4%
Other Industrial Coal	0.10	0.12	0.11	0.11	0.11	0.11	0.11	-0.0%
Coal-to-Liquids Heat and Power	0.00	0.00	0.00	0.12	0.21	0.67	0.93	N/A
Coal Subtotal	0.10	0.12	0.11	0.24	0.32	0.78	1.05	9.2%
Biofuels Heat and Coproducts	0.21	0.24	0.69	0.74	0.78	0.83	0.88	5.2%
Purchased Electricity	0.13	0.13	0.19	0.20	0.20	0.22	0.22	2.1%
Delivered Energy	3.86	3.72	4.52	4.83	5.17	5.86	6.26	2.1%
Electricity Related Losses	0.29	0.29	0.40	0.42	0.42	0.44	0.45	1.8%
Total	4.15	4.01	4.92	5.25	5.59	6.30	6.71	2.1%

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

Key Indicators and Consumption	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Total Industrial Sector Consumption								
Liquefied Petroleum Gases Heat and Power	0.14	0.15	0.08	0.08	0.08	0.10	0.11	-1.1%
Liquefied Petroleum Gases Feedstocks	2.13	1.98	2.17	2.16	2.18	2.21	2.29	0.6%
Motor Gasoline	0.32	0.32	0.32	0.32	0.33	0.35	0.36	0.4%
Distillate Fuel Oil	1.21	1.23	1.18	1.19	1.22	1.23	1.26	0.1%
Residual Fuel Oil	0.22	0.23	0.18	0.18	0.17	0.18	0.18	-0.9%
Petrochemical Feedstocks	1.54	1.38	1.48	1.49	1.50	1.52	1.57	0.5%
Petroleum Coke	0.93	0.89	0.91	0.98	1.08	1.16	1.21	1.2%
Asphalt and Road Oil	1.27	1.31	1.24	1.24	1.29	1.33	1.37	0.2%
Still Gas	1.74	1.62	1.44	1.62	1.56	1.57	1.78	0.4%
Miscellaneous Petroleum ²	0.59	0.62	0.47	0.42	0.41	0.42	0.42	-1.5%
Petroleum Subtotal	10.09	9.73	9.47	9.68	9.82	10.07	10.55	0.3%
Natural Gas Heat and Power	6.85	6.27	7.28	7.32	7.69	8.11	8.33	1.1%
Natural-Gas-to-Liquids Heat and Power	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
Natural Gas Feedstocks	0.60	0.57	0.58	0.57	0.57	0.57	0.58	0.0%
Lease and Plant Fuel ³	1.13	1.10	1.10	1.10	1.21	1.17	1.15	0.2%
Natural Gas Subtotal	8.58	7.94	8.95	9.00	9.46	9.85	10.05	0.9%
Metallurgical Coal and Coke ⁴	0.79	0.66	0.63	0.60	0.59	0.59	0.59	-0.5%
Other Industrial Coal	1.40	1.35	1.37	1.35	1.34	1.35	1.36	0.0%
Coal-to-Liquids Heat and Power	0.00	0.00	0.00	0.12	0.21	0.67	0.93	N/A
Coal Subtotal	2.18	2.01	2.00	2.07	2.14	2.61	2.89	1.5%
Biofuels Heat and Coproducts	0.21	0.24	0.69	0.74	0.78	0.83	0.88	5.2%
Renewables ⁵	1.70	1.44	1.60	1.71	1.81	1.93	2.05	1.4%
Purchased Electricity	3.48	3.48	3.63	3.76	3.83	3.94	4.09	0.6%
Delivered Energy	26.24	24.85	26.33	26.97	27.84	29.23	30.51	0.8%
Electricity Related Losses	7.68	7.60	7.81	7.93	7.98	8.03	8.15	0.3%
Total	33.92	32.45	34.14	34.89	35.82	37.26	38.66	0.7%
Energy Consumption per dollar of Shipment (thousand Btu per 2000 dollars)								
Liquefied Petroleum Gases Heat and Power	0.02	0.03	0.01	0.01	0.01	0.01	0.01	-3.0%
Liquefied Petroleum Gases Feedstocks	0.38	0.34	0.34	0.31	0.28	0.26	0.24	-1.4%
Motor Gasoline	0.06	0.06	0.05	0.05	0.04	0.04	0.04	-1.5%
Distillate Fuel Oil	0.21	0.21	0.19	0.17	0.16	0.14	0.13	-1.9%
Residual Fuel Oil	0.04	0.04	0.03	0.02	0.02	0.02	0.02	-2.9%
Petrochemical Feedstocks	0.27	0.24	0.24	0.21	0.19	0.18	0.17	-1.5%
Petroleum Coke	0.17	0.15	0.14	0.14	0.14	0.14	0.13	-0.8%
Asphalt and Road Oil	0.23	0.23	0.20	0.18	0.17	0.16	0.14	-1.8%
Still Gas	0.31	0.28	0.23	0.23	0.20	0.18	0.19	-1.6%
Miscellaneous Petroleum ²	0.10	0.11	0.07	0.06	0.05	0.05	0.04	-3.5%
Petroleum Subtotal	1.79	1.69	1.50	1.38	1.26	1.17	1.11	-1.7%
Natural Gas Heat and Power	1.21	1.09	1.16	1.04	0.99	0.94	0.88	-0.9%
Natural-Gas-to-Liquids Heat and Power	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
Natural Gas Feedstocks	0.11	0.10	0.09	0.08	0.07	0.07	0.06	-2.0%
Lease and Plant Fuel ³	0.20	0.19	0.17	0.16	0.16	0.14	0.12	-1.8%
Natural Gas Subtotal	1.52	1.38	1.42	1.28	1.22	1.15	1.06	-1.1%
Metallurgical Coal and Coke ⁴	0.14	0.11	0.10	0.09	0.08	0.07	0.06	-2.4%
Other Industrial Coal	0.25	0.23	0.22	0.19	0.17	0.16	0.14	-1.9%
Coal-to-Liquids Heat and Power	0.00	0.00	0.00	0.02	0.03	0.08	0.10	N/A
Coal Subtotal	0.39	0.35	0.32	0.29	0.27	0.30	0.30	-0.5%
Biofuels Heat and Coproducts	0.04	0.04	0.11	0.10	0.10	0.10	0.09	3.1%
Renewables ⁵	0.30	0.25	0.25	0.24	0.23	0.22	0.22	-0.6%
Purchased Electricity	0.61	0.60	0.58	0.54	0.49	0.46	0.43	-1.4%
Delivered Energy	4.64	4.31	4.18	3.83	3.58	3.40	3.21	-1.2%
Electricity Related Losses	1.36	1.32	1.24	1.13	1.03	0.94	0.86	-1.7%
Total	6.00	5.63	5.42	4.96	4.60	4.34	4.07	-1.3%

Reference Case

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

Key Indicators and Consumption	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Industrial Combined Heat and Power								
Capacity (gigawatts)	26.31	25.53	29.28	34.19	39.05	48.82	56.54	3.2%
Generation (billion kilowatthours)	153.21	143.13	169.93	206.73	243.02	317.63	375.86	3.9%

¹Includes energy for combined heat and power plants, except those whose primary business is to sell electricity, or electricity and heat, to the public.

²Includes lubricants and miscellaneous petroleum products.

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

⁴Includes net coal coke imports.

⁵Includes consumption of energy produced from hydroelectric, wood and wood waste, municipal solid waste, and other biomass sources.

Btu = British thermal unit.

N/A = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 2004 and 2005 are model results and may differ slightly from official EIA data reports.

Sources: 2004 and 2005 prices for motor gasoline and distillate fuel oil are based on: Energy Information Administration (EIA), *Petroleum Marketing Annual 2005*, DOE/EIA-0487(2005) (Washington, DC, August 2006). 2004 and 2005 coal prices are based on: EIA, *Quarterly Coal Report, October-December 2005*, DOE/EIA-0121(2005/4Q) (Washington, DC, March 2006) and EIA, AEO2007 National Energy Modeling System run AEO2007.D112106A. 2004 and 2005 electricity prices: EIA, *Annual Energy Review 2005*, DOE/EIA-0384(2005) (Washington, DC, July 2006). 2004 and 2005 natural gas prices are based on: EIA, *Manufacturing Energy Consumption Survey 1994* and industrial and wellhead prices from the *Natural Gas Annual 2004*, DOE/EIA-0131(2004) (Washington, DC, December 2005) and the *Natural Gas Monthly*, DOE/EIA-0130(2006/04) (Washington, DC, April 2006). 2004 refining consumption based on: *Petroleum Supply Annual 2004*, DOE/EIA-0340(2004)/1 (Washington, DC, June 2005). 2005 refining consumption based on: *Petroleum Supply Annual 2005*, DOE/EIA-0340(2005)/1 (Washington, DC, October 2006). Other 2004 and 2005 consumption values are based on: EIA, *Annual Energy Review 2005*, DOE/EIA-0384(2005) (Washington, DC, July 2006). 2004 and 2005 shipments: Global Insight industry model, July 2006. **Projections:** EIA, AEO2007 National Energy Modeling System run AEO2007.D112106A.

Table A7. Transportation Sector Key Indicators and Delivered Energy Consumption

Key Indicators and Consumption	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Key Indicators								
Travel Indicators								
(billion vehicle miles traveled)								
Light-Duty Vehicles less than 8,500 pounds	2652	2655	2799	3125	3474	3839	4226	1.9%
Commercial Light Trucks ¹	66	67	72	81	89	99	110	2.0%
Freight Trucks greater than 10,000 pounds	226	230	255	287	318	355	397	2.2%
(billion seat miles available)								
Air	992	1027	1172	1302	1410	1478	1544	1.6%
(billion ton miles traveled)								
Rail	1590	1590	1714	1864	2000	2223	2445	1.7%
Domestic Shipping	618	613	661	699	730	751	775	0.9%
Energy Efficiency Indicators								
(miles per gallon)								
New Light-Duty Vehicle ²	24.6	25.2	27.3	27.9	28.2	28.9	29.2	0.6%
New Car ²	29.1	30.0	31.7	32.4	32.8	33.4	33.7	0.5%
New Light Truck ²	21.5	21.8	23.7	24.7	25.3	26.1	26.5	0.8%
Light-Duty Stock ³	19.6	19.6	19.8	20.6	21.2	21.8	22.2	0.5%
New Commercial Light Truck ¹	14.5	14.6	15.8	16.4	16.7	17.2	17.4	0.7%
Stock Commercial Light Truck ¹	14.0	14.1	14.7	15.5	16.2	16.7	17.0	0.8%
Freight Truck	6.0	6.0	6.0	6.2	6.4	6.6	6.7	0.4%
(seat miles per gallon)								
Aircraft	55.5	55.7	58.2	61.9	66.4	71.6	75.6	1.2%
(ton miles per thousand Btu)								
Rail	2.9	2.9	2.9	2.9	3.0	3.0	3.0	0.1%
Domestic Shipping	2.4	2.4	2.4	2.4	2.4	2.5	2.5	0.1%
Energy Use by Mode								
(quadrillion Btu)								
Light-Duty Vehicles	16.34	16.36	16.76	17.99	19.44	20.98	22.66	1.3%
Commercial Light Trucks ¹	0.59	0.59	0.61	0.65	0.69	0.75	0.81	1.3%
Bus Transportation	0.26	0.26	0.27	0.28	0.28	0.29	0.30	0.5%
Freight Trucks	4.70	4.77	5.29	5.80	6.18	6.71	7.40	1.8%
Rail, Passenger	0.04	0.04	0.05	0.05	0.05	0.05	0.06	1.1%
Rail, Freight	0.55	0.55	0.59	0.63	0.68	0.75	0.82	1.6%
Shipping, Domestic	0.26	0.26	0.27	0.29	0.30	0.31	0.32	0.9%
Shipping, International	0.69	0.76	0.77	0.78	0.79	0.80	0.80	0.2%
Recreational Boats	0.19	0.18	0.20	0.23	0.24	0.25	0.27	1.5%
Air	2.85	2.84	3.50	3.79	3.97	4.00	4.11	1.5%
Military Use	0.71	0.71	0.73	0.75	0.77	0.79	0.80	0.5%
Lubricants	0.15	0.15	0.15	0.15	0.16	0.16	0.16	0.4%
Pipeline Fuel	0.59	0.58	0.66	0.70	0.79	0.79	0.79	1.3%
Total	27.92	28.05	29.86	32.07	34.33	36.63	39.29	1.4%

Reference Case

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

Key Indicators and Consumption	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Energy Use by Mode (million barrels per day oil equivalent)								
Light-Duty Vehicles	8.57	8.58	9.00	9.66	10.43	11.25	12.15	1.4%
Commercial Light Trucks ¹	0.31	0.31	0.33	0.35	0.37	0.40	0.44	1.4%
Bus Transportation	0.13	0.13	0.13	0.13	0.14	0.14	0.14	0.6%
Freight Trucks	2.24	2.27	2.53	2.78	2.96	3.21	3.54	1.8%
Rail, Passenger	0.02	0.02	0.02	0.02	0.02	0.03	0.03	1.1%
Rail, Freight	0.26	0.26	0.28	0.30	0.32	0.36	0.39	1.7%
Shipping, Domestic	0.12	0.12	0.13	0.13	0.14	0.14	0.15	0.9%
Shipping, International	0.30	0.33	0.34	0.34	0.35	0.35	0.35	0.2%
Recreational Boats	0.10	0.10	0.11	0.12	0.13	0.14	0.15	1.6%
Air	1.38	1.37	1.69	1.83	1.92	1.94	1.99	1.5%
Military Use	0.34	0.34	0.35	0.36	0.37	0.38	0.38	0.5%
Lubricants	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.4%
Pipeline Fuel	0.30	0.29	0.33	0.35	0.40	0.40	0.40	1.3%
Total	14.14	14.19	15.31	16.45	17.62	18.81	20.18	1.4%

¹Commercial trucks 8,500 to 10,000 pounds.

²Environmental Protection Agency rated miles per gallon.

³Combined car and light truck "on-the-road" estimate.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2004 and 2005 are model results and may differ slightly from official EIA data reports.

Sources: 2004 and 2005: Energy Information Administration (EIA), *Natural Gas Annual 2004*, DOE/EIA-0131(2004) (Washington, DC, December 2005); EIA, *Annual Energy Review 2005*, DOE/EIA-0384(2005) (Washington, DC, July 2006); Federal Highway Administration, *Highway Statistics 2004* (Washington, DC, October 2005); Oak Ridge National Laboratory, *Transportation Energy Data Book: Edition 25 and Annual* (Oak Ridge, TN, 2005); National Highway Traffic and Safety Administration, *Summary of Fuel Economy Performance* (Washington, DC, March 2004); U.S. Department of Commerce, Bureau of the Census, "Vehicle Inventory and Use Survey," EC97TV (Washington, DC, October 1999); EIA, *State Energy Data Report 2002*, DOE/EIA-0214(2002) (Washington, DC, December 2005); EIA, *Estimated Number of Alternative-Fueled Vehicles*, http://www.eia.doe.gov/cneaf/alternate/page/datatables/aft1-13_03.html; U.S. Department of Transportation, Research and Special Programs Administration, *Air Carrier Statistics Monthly, December 2005/2004* (Washington, DC, 2005); EIA, *Fuel Oil and Kerosene Sales 2004*, DOE/EIA-0535(2004) (Washington, DC, November 2005); and United States Department of Defense, Defense Fuel Supply Center.

Projections: EIA, AEO2007 National Energy Modeling System run AEO2007.D112106A.

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

Supply, Disposition, and Prices	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Generation by Fuel Type								
Electric Power Sector¹								
Power Only²								
Coal	1921	1956	2090	2233	2418	2766	3191	2.0%
Petroleum	111	111	82	89	89	91	92	-0.7%
Natural Gas ³	491	546	658	756	776	702	609	0.4%
Nuclear Power	789	780	789	812	885	886	896	0.6%
Pumped Storage/Other	-8	-7	-9	-9	-9	-9	-9	1.1%
Renewable Sources ⁴	321	319	426	440	445	458	461	1.5%
Distributed Generation (Natural Gas)	0	0	0	0	1	2	5	N/A
Total	3624	3705	4037	4322	4605	4897	5245	1.4%
Combined Heat and Power⁵								
Coal	36	37	31	29	29	29	29	-1.0%
Petroleum	5	5	1	1	1	1	1	-5.3%
Natural Gas	137	129	137	145	142	132	123	-0.2%
Renewable Sources	4	4	4	3	3	3	4	0.1%
Total	185	178	172	179	176	166	157	-0.5%
Total Net Generation	3808	3883	4209	4501	4781	5063	5402	1.3%
Less Direct Use	35	35	34	34	34	34	34	-0.1%
Net Available to the Grid	3773	3849	4175	4467	4747	5029	5368	1.3%
End-Use Generation⁶								
Coal	22	22	22	33	41	85	110	6.6%
Petroleum	6	6	11	13	13	13	14	3.4%
Natural Gas	82	77	97	117	142	169	200	3.9%
Other Gaseous Fuels ⁷	6	5	4	5	5	5	6	0.8%
Renewable Sources ⁴	37	34	37	40	44	48	54	1.9%
Other ⁸	14	12	11	11	11	11	11	-0.0%
Total	167	155	183	220	256	332	395	3.8%
Less Direct Use	136	126	144	168	194	236	276	3.2%
Total Sales to the Grid	31	29	39	51	62	96	119	5.9%
Total Electricity Generation	3975	4038	4392	4721	5037	5395	5797	1.5%
Total Net Generation to the Grid	3804	3877	4214	4519	4810	5125	5487	1.4%
Net Imports	11	25	11	8	11	13	13	-2.6%
Electricity Sales by Sector								
Residential	1294	1365	1483	1591	1701	1797	1896	1.3%
Commercial	1229	1267	1398	1548	1694	1864	2062	2.0%
Industrial	1018	1021	1063	1103	1123	1155	1199	0.6%
Transportation	7	7	8	9	10	11	12	1.8%
Total	3548	3660	3953	4251	4528	4827	5168	1.4%
Direct Use	171	161	178	202	228	270	310	2.6%
Total Electricity Use	3719	3821	4132	4453	4756	5097	5478	1.5%
End-Use Prices								
(2005 cents per kilowatthour)								
Residential	9.2	9.4	9.2	8.9	9.0	9.1	9.1	-0.1%
Commercial	8.4	8.6	8.4	8.0	8.2	8.3	8.3	-0.2%
Industrial	5.4	5.7	6.1	5.6	5.8	5.9	5.9	0.2%
Transportation	8.9	8.6	8.5	8.1	8.3	8.3	8.3	-0.1%
All Sectors Average	7.9	8.1	8.1	7.7	7.9	8.0	8.1	-0.0%
Prices by Service Category								
(2005 cents per kilowatthour)								
Generation	5.2	5.4	5.4	5.0	5.2	5.4	5.4	0.0%
Transmission	0.6	0.6	0.6	0.7	0.7	0.7	0.7	1.0%
Distribution	2.1	2.1	2.1	2.1	2.0	2.0	1.9	-0.3%

Reference Case

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

Supply, Disposition, and Prices	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Electric Power Sector Emissions¹								
Sulfur Dioxide (million tons)	10.26	10.21	6.56	4.46	3.90	3.68	3.63	-4.1%
Nitrogen Oxide (million tons)	3.75	3.60	2.41	2.20	2.22	2.25	2.28	-1.8%
Mercury (tons)	47.15	51.25	37.21	24.64	19.24	16.86	15.48	-4.7%

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

²Includes plants that only produce electricity.

³Includes electricity generation from fuel cells.

⁴Includes conventional hydroelectric, geothermal, wood, wood waste, municipal solid waste, landfill gas, other biomass, solar, and wind power.

⁵Includes combined heat and power plants whose primary business is to sell electricity and heat to the public (i.e., those that report North American Industry Classification System code 22).

⁶Includes 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.

⁷Includes refinery gas and still gas.

⁸Includes batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies.

N/A = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 2004 and 2005 are model results and may differ slightly from official EIA data reports.

Sources: 2004 and 2005 electric power sector generation; sales to utilities; net imports; electricity sales; and emissions: Energy Information Administration (EIA), *Annual Energy Review 2005*, DOE/EIA-0384(2005) (Washington, DC, July 2006), and supporting databases. 2004 and 2005 prices: EIA, AEO2007 National Energy Modeling System run AEO2007.D112106A. Projections: EIA, AEO2007 National Energy Modeling System run AEO2007.D112106A.

Table A9. Electricity Generating Capacity
(Gigawatts)

Net Summer Capacity ¹	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Electric Power Sector²								
Power Only³								
Coal Steam	306.3	306.0	316.2	318.9	343.0	389.5	445.8	1.5%
Other Fossil Steam ⁴	123.3	120.8	119.0	89.3	88.8	88.4	87.0	-1.3%
Combined Cycle	133.0	144.2	160.9	163.2	171.4	178.4	179.2	0.9%
Combustion Turbine/Diesel	128.1	130.3	134.2	118.0	124.3	133.0	152.3	0.6%
Nuclear Power ⁵	99.6	100.0	100.5	102.5	111.7	111.7	112.6	0.5%
Pumped Storage	20.8	20.8	20.8	20.8	20.8	20.8	20.8	0.0%
Fuel Cells	0.0	0.0	0.0	0.0	0.0	0.0	0.0	N/A
Renewable Sources ⁶	94.4	97.2	105.3	106.6	107.3	108.2	109.6	0.5%
Distributed Generation ⁷	0.0	0.0	0.2	0.6	2.1	5.5	11.4	N/A
Total	905.3	919.2	956.9	919.7	969.6	1035.4	1118.6	0.8%
Combined Heat and Power⁸								
Coal Steam	4.7	4.7	4.7	4.2	4.2	4.2	4.2	-0.5%
Other Fossil Steam ⁴	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0%
Combined Cycle	32.5	32.5	32.4	32.4	32.4	32.4	32.4	-0.0%
Combustion Turbine/Diesel	2.9	2.9	2.9	2.9	2.9	2.9	2.9	-0.0%
Renewable Sources ⁶	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.2%
Total	40.9	40.9	40.9	40.3	40.3	40.3	40.3	-0.1%
Cumulative Planned Additions⁹								
Coal Steam	0.0	0.0	8.5	9.9	9.9	9.9	9.9	N/A
Other Fossil Steam ⁴	0.0	0.0	0.0	0.0	0.0	0.0	0.0	N/A
Combined Cycle	0.0	0.0	16.7	17.6	17.6	17.6	17.6	N/A
Combustion Turbine/Diesel	0.0	0.0	3.7	3.7	3.7	3.7	3.7	N/A
Nuclear Power	0.0	0.0	0.0	0.0	0.0	0.0	0.0	N/A
Pumped Storage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	N/A
Fuel Cells	0.0	0.0	0.0	0.0	0.0	0.0	0.0	N/A
Renewable Sources ⁶	0.0	0.0	8.1	8.9	9.0	9.1	9.2	N/A
Distributed Generation ⁷	0.0	0.0	0.0	0.0	0.0	0.0	0.0	N/A
Total	0.0	0.0	37.0	40.1	40.2	40.4	40.5	N/A
Cumulative Unplanned Additions⁹								
Coal Steam	0.0	0.0	3.0	8.1	32.4	78.8	135.1	N/A
Other Fossil Steam ⁴	0.0	0.0	0.0	0.0	0.0	0.0	0.0	N/A
Combined Cycle	0.0	0.0	0.0	1.4	9.7	16.6	17.5	N/A
Combustion Turbine/Diesel	0.0	0.0	0.7	3.8	10.1	18.8	38.0	N/A
Nuclear Power	0.0	0.0	0.0	0.5	9.0	9.0	12.5	N/A
Pumped Storage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	N/A
Fuel Cells	0.0	0.0	0.0	0.0	0.0	0.0	0.0	N/A
Renewable Sources ⁶	0.0	0.0	0.0	0.4	1.1	1.9	3.2	N/A
Distributed Generation ⁷	0.0	0.0	0.2	0.6	2.1	5.5	11.4	N/A
Total	0.0	0.0	3.9	14.8	64.4	130.6	217.7	N/A
Cumulative Electric Power Sector Additions	0.0	0.0	40.9	55.0	104.7	171.0	258.2	N/A
Cumulative Retirements¹⁰								
Coal Steam	0.0	0.0	1.2	5.6	5.7	5.7	5.7	N/A
Other Fossil Steam ⁴	0.0	0.0	1.8	31.5	32.0	32.4	33.8	N/A
Combined Cycle	0.0	0.0	0.1	0.1	0.1	0.1	0.1	N/A
Combustion Turbine/Diesel	0.0	0.0	0.6	19.8	19.8	19.8	19.8	N/A
Nuclear Power	0.0	0.0	0.0	0.0	0.0	0.0	2.6	N/A
Pumped Storage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	N/A
Fuel Cells	0.0	0.0	0.0	0.0	0.0	0.0	0.0	N/A
Renewable Sources ⁶	0.0	0.0	0.0	0.0	0.0	0.0	0.0	N/A
Total	0.0	0.0	3.7	57.0	57.6	58.1	62.0	N/A
Total Electric Power Sector Capacity	946.3	960.1	997.8	960.0	1010.0	1075.8	1159.0	0.8%

Reference Case

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

Net Summer Capacity ¹	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
End-Use Generators¹¹								
Coal	4.1	4.2	4.1	5.6	6.6	12.2	15.4	5.4%
Petroleum	1.6	1.6	1.6	1.8	1.8	1.9	1.9	0.7%
Natural Gas	13.9	13.5	16.9	19.5	22.8	26.4	30.4	3.3%
Other Gaseous Fuels	1.8	1.8	1.9	1.9	1.9	2.0	2.0	0.4%
Renewable Sources ⁶	5.8	5.6	6.4	7.0	7.7	8.7	10.7	2.6%
Other	1.1	0.8	0.8	0.8	0.8	0.8	0.8	0.0%
Total	28.2	27.5	31.7	36.7	41.7	52.0	61.3	3.3%
Cumulative Capacity Additions⁹	0.0	0.0	4.2	9.2	14.2	24.5	33.8	N/A

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

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

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

⁴Includes oil-, gas-, and dual-fired capacity.

⁵Nuclear capacity includes 2.7 gigawatts of uprates through 2030.

⁶Includes 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.

⁷Primarily peak load capacity fueled by natural gas.

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

⁹Cumulative additions after December 31, 2005.

¹⁰Cumulative retirements after December 31, 2005.

¹¹Includes 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.

N/A = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 2004 and 2005 are model results and may differ slightly from official EIA data reports.

Sources: 2004 and 2005 capacity and projected planned additions: Energy Information Administration (EIA), Form EIA-860, "Annual Electric Generator Report" (preliminary). Projections: EIA, AEO2007 National Energy Modeling System run AEO2007.D112106A.

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

Electricity Trade	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Interregional Electricity Trade								
Gross Domestic Sales								
Firm Power	142.4	127.0	105.5	82.4	50.6	37.9	37.9	-4.7%
Economy	118.3	180.5	178.6	181.7	167.6	164.1	149.9	-0.7%
Total	260.7	307.5	284.0	264.1	218.2	201.9	187.7	-2.0%
Gross Domestic Sales (million 2005 dollars)								
Firm Power	7675.9	6845.3	5684.4	4441.8	2727.5	2041.8	2041.8	-4.7%
Economy	7058.7	11082.0	8729.7	7772.8	7568.7	7572.2	7117.4	-1.8%
Total	14734.6	17927.2	14414.1	12214.6	10296.2	9613.9	9159.2	-2.7%
International Electricity Trade								
Imports from Canada and Mexico								
Firm Power	12.5	13.1	2.5	1.9	0.8	0.4	0.4	-13.2%
Economy	21.7	31.4	26.7	23.9	25.9	26.0	26.1	-0.7%
Total	34.2	44.5	29.2	25.7	26.7	26.4	26.5	-2.1%
Exports to Canada and Mexico								
Firm Power	7.4	2.9	1.0	0.7	0.2	0.0	0.0	N/A
Economy	15.5	16.9	17.1	16.6	15.6	13.7	13.7	-0.8%
Total	22.9	19.8	18.1	17.2	15.8	13.7	13.7	-1.5%

N/A = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 2004 and 2005 are model results and may differ slightly from official EIA data reports. Firm Power Sales are capacity sales, meaning the delivery of the power is scheduled as part of the normal operating conditions of the affected electric systems. Economy Sales are subject to curtailment or cessation of delivery by the supplier in accordance with prior agreements or under specified conditions.

Sources: 2004 and 2005 interregional firm electricity trade data: North American Electric Reliability Council (NERC), Electricity Sales and Demand Database 2004. 2004 and 2005 Mexican electricity trade data: Energy Information Administration (EIA), *Electric Power Annual 2004* DOE/EIA-0348(2004) (Washington, DC, November 2005). 2004 Canadian international electricity trade data: National Energy Board, *Annual Report 2003*. 2005 Canadian electricity trade data: National Energy Board, *Annual Report 2004*. Projections: EIA, AEO2007 National Energy Modeling System run AEO2007.D112106A.

Reference Case

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

Supply and Disposition	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Crude Oil								
Domestic Crude Production ¹	5.47	5.18	5.67	5.91	5.89	5.58	5.39	0.2%
Alaska	0.91	0.86	0.69	0.65	0.74	0.47	0.27	-4.6%
Lower 48 States	4.56	4.31	4.98	5.26	5.15	5.12	5.12	0.7%
Net Imports	10.06	10.09	9.99	10.49	11.29	12.20	13.09	1.0%
Gross Imports	10.09	10.12	10.03	10.52	11.33	12.24	13.12	1.0%
Exports	0.03	0.03	0.04	0.04	0.04	0.04	0.03	0.2%
Other Crude Supply ²	-0.00	-0.06	0.00	0.00	0.00	0.00	0.00	N/A
Total Crude Supply	15.52	15.22	15.66	16.40	17.19	17.78	18.47	0.8%
Other Supply								
Natural Gas Plant Liquids	1.81	1.72	1.80	1.82	1.76	1.72	1.72	-0.0%
Net Product Imports	2.06	2.48	1.80	2.03	2.27	2.67	3.28	1.1%
Gross Refined Product Imports ³	2.07	2.45	1.78	1.84	1.98	2.17	2.52	0.1%
Unfinished Oil Imports	0.49	0.58	0.41	0.46	0.51	0.60	0.67	0.6%
Ethanol Imports	0.01	0.01	0.02	0.03	0.04	0.05	0.05	8.4%
Blending Component Imports	0.49	0.54	0.82	0.96	1.03	1.15	1.36	3.8%
Exports	0.96	1.07	1.23	1.25	1.29	1.30	1.33	0.9%
Refinery Processing Gain ⁴	1.05	0.99	1.21	1.27	1.41	1.45	1.49	1.7%
Other Inputs	0.34	0.39	1.02	1.25	1.31	1.60	1.88	6.5%
Ethanol	0.22	0.26	0.69	0.74	0.79	0.85	0.90	5.2%
Liquids from Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
Liquids from Coal	0.00	0.00	0.00	0.06	0.10	0.32	0.44	N/A
Other ⁵	0.12	0.13	0.33	0.46	0.43	0.43	0.53	5.7%
Total Primary Supply⁶	20.79	20.79	21.49	22.78	23.94	25.22	26.84	1.0%
Liquid Fuels Consumption								
by Fuel								
Liquefied Petroleum Gases	2.13	2.03	2.22	2.23	2.26	2.33	2.42	0.7%
E85 ⁷	0.00	0.00	0.00	0.00	0.01	0.01	0.02	11.9%
Motor Gasoline ⁸	9.10	9.16	9.53	10.18	10.93	11.71	12.53	1.3%
Jet Fuel ⁹	1.63	1.68	1.95	2.10	2.19	2.22	2.27	1.2%
Distillate Fuel Oil ¹⁰	4.06	4.12	4.53	4.86	5.11	5.48	5.95	1.5%
Residual Fuel Oil	0.87	0.92	0.79	0.82	0.82	0.82	0.83	-0.4%
Other ¹¹	2.97	2.84	2.57	2.66	2.70	2.78	2.93	0.1%
by Sector								
Residential and Commercial	1.27	1.26	1.25	1.29	1.29	1.28	1.28	0.1%
Industrial ¹²	5.28	5.07	5.01	5.10	5.16	5.29	5.53	0.3%
Transportation	13.80	13.87	14.93	16.04	17.15	18.33	19.69	1.4%
Electric Power ¹³	0.50	0.51	0.40	0.43	0.43	0.44	0.45	-0.5%
Total	20.76	20.75	21.59	22.86	24.03	25.34	26.95	1.1%
Discrepancy¹⁴	0.03	0.04	-0.10	-0.08	-0.09	-0.12	-0.11	N/A

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

Supply and Disposition	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Domestic Refinery Distillation Capacity ¹⁵	16.9	17.1	17.8	18.0	18.7	19.4	20.0	0.6%
Capacity Utilization Rate (percent) ¹⁶	93.0	91.0	89.1	92.2	93.4	93.1	93.5	0.1%
Net Import Share of Product Supplied (percent) . . .	58.3	60.5	54.9	55.0	56.6	59.0	61.0	0.0%
Net Expenditures for Imported Crude Oil and Petroleum Products (billion 2005 dollars)	179.47	236.65	222.76	203.97	229.80	264.31	300.51	1.0%

¹Includes lease condensate.

²Strategic petroleum reserve stock additions plus unaccounted for crude oil and crude stock withdrawals minus crude product supplied.

³Includes other hydrocarbons and alcohols.

⁴Represents volumetric gain in refinery distillation and cracking processes.

⁵Includes petroleum product stock withdrawals, domestic sources of blending components, other hydrocarbons, ethers, and renewable fuels such as biodiesel.

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

⁷E85 refers to a blend of 85 percent ethanol (renewable) and 15 percent motor gasoline (nonrenewable). To address cold starting issues, the percentage of ethanol actually varies seasonally. The annual average ethanol content of 74 percent is used for this forecast.

⁸Includes ethanol and ethers blended into gasoline.

⁹Includes only kerosene type.

¹⁰Includes distillate fuel oil and kerosene from petroleum and biomass feedstocks.

¹¹Includes aviation gasoline, petrochemical feedstocks, lubricants, waxes, asphalt, road oil, still gas, special naphthas, petroleum coke, crude oil product supplied, tire-derived fuel, methanol, liquid hydrogen, and miscellaneous petroleum products.

¹²Includes consumption for combined heat and power, which produces electricity and other useful thermal energy.

¹³Includes 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.

¹⁴Balancing item. Includes unaccounted for supply, losses, and gains.

¹⁵End-of-year operable capacity.

¹⁶Rate is calculated by dividing the gross annual input to atmospheric crude oil distillation units by their operable refining capacity in barrels per calendar day.

N/A = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 2004 and 2005 are model results and may differ slightly from official EIA data reports.

Sources: 2004 and 2005 imported crude oil price and petroleum product supplied based on: Energy Information Administration (EIA), *Annual Energy Review 2005*, DOE/EIA-0384(2005) (Washington, DC, July 2006). 2004 and 2005 imported low sulfur light crude oil price: EIA, Form EIA-856, "Monthly Foreign Crude Oil Acquisition Report." Other 2004 data: EIA, *Petroleum Supply Annual 2004*, DOE/EIA-0340(2004)/1 (Washington, DC, June 2005). Other 2005 data: EIA, *Petroleum Supply Annual 2005*, DOE/EIA-0340(2005)/1 (Washington, DC, October 2006). Projections: EIA, AEO2007 National Energy Modeling System run AEO2007.D112106A.

Reference Case

Table A12. Petroleum Product Prices
(2005 Cents per Gallon, Unless Otherwise Noted)

Sector and Fuel	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Crude Oil Prices (2005 dollars per barrel)								
Imported Low Sulfur Light Crude Oil ¹	42.87	56.76	57.47	49.87	52.04	56.37	59.12	0.2%
Imported Crude Oil ¹	37.09	49.19	51.20	44.61	46.47	49.57	51.63	0.2%
Delivered Sector Product Prices								
Residential								
Liquefied Petroleum Gases	156.9	166.3	204.0	197.2	199.8	202.8	206.1	0.9%
Distillate Fuel Oil	178.8	204.3	206.3	174.7	182.3	188.1	195.9	-0.2%
Commercial								
Distillate Fuel Oil	145.0	175.4	175.5	147.9	156.5	163.4	171.7	-0.1%
Residual Fuel Oil	93.5	126.0	112.8	97.2	105.8	107.3	109.4	-0.6%
Residual Fuel Oil (2005 dollars per barrel) . .	39.29	52.90	47.39	40.83	44.44	45.08	45.97	-0.6%
Industrial²								
Liquefied Petroleum Gases	96.3	146.2	141.5	134.1	137.1	139.8	142.6	-0.1%
Distillate Fuel Oil	152.2	181.1	178.1	156.5	165.3	173.2	181.8	0.0%
Residual Fuel Oil	86.4	116.3	142.2	122.9	133.4	138.6	143.5	0.8%
Residual Fuel Oil (2005 dollars per barrel) . .	36.30	48.86	59.74	51.64	56.04	58.21	60.25	0.8%
Transportation								
Liquefied Petroleum Gases	169.5	206.1	209.8	202.4	203.9	206.4	209.3	0.1%
Ethanol (E85) ³	196.5	217.1	198.5	187.3	192.1	198.2	200.4	-0.3%
Ethanol Wholesale Price	177.2	180.4	181.4	166.0	168.2	171.1	170.2	-0.2%
Motor Gasoline ⁴	195.2	231.6	217.3	194.9	201.9	210.2	215.4	-0.3%
Jet Fuel ⁵	124.4	177.4	147.2	133.5	141.8	149.8	158.6	-0.4%
Diesel Fuel (distillate fuel oil) ⁶	187.1	241.3	230.4	203.6	211.2	218.1	225.7	-0.3%
Residual Fuel Oil	72.7	82.4	120.5	105.4	110.2	118.2	123.8	1.6%
Residual Fuel Oil (2005 dollars per barrel) . .	30.51	34.62	50.60	44.27	46.27	49.65	52.02	1.6%
Electric Power⁷								
Distillate Fuel Oil	132.0	157.9	162.3	128.4	136.5	142.2	149.6	-0.2%
Residual Fuel Oil	74.7	104.2	98.5	83.8	91.0	98.5	102.5	-0.1%
Residual Fuel Oil (2005 dollars per barrel) . .	31.38	43.76	41.37	35.20	38.24	41.37	43.05	-0.1%
Refined Petroleum Product Prices⁸								
Liquefied Petroleum Gases	109.3	150.7	155.3	148.6	151.9	154.8	157.7	0.2%
Motor Gasoline ⁴	195.0	231.1	217.3	194.9	201.8	210.2	215.4	-0.3%
Jet Fuel ⁵	124.4	177.4	147.2	133.5	141.8	149.8	158.6	-0.4%
Distillate Fuel Oil	178.3	223.9	215.9	191.0	199.4	207.0	215.5	-0.2%
Residual Fuel Oil	76.3	98.6	113.9	98.0	104.7	111.9	116.6	0.7%
Residual Fuel Oil (2005 dollars per barrel) . .	32.05	41.42	47.84	41.16	43.98	46.99	48.96	0.7%
Average	168.6	204.5	195.0	175.7	183.4	191.3	198.1	-0.1%

¹Weighted average price delivered to U.S. refiners.

²Includes energy for combined heat and power plants, except those whose primary business is to sell electricity, or electricity and heat, to the public.

³E85 refers to a blend of 85 percent ethanol (renewable) and 15 percent motor gasoline (nonrenewable). To address cold starting issues, the percentage of ethanol actually varies seasonally. The annual average ethanol content of 74 percent is used for this forecast.

⁴Sales weighted-average price for all grades. Includes Federal, State and local taxes.

⁵Includes only kerosene type.

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

⁷Includes 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.

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

Note: Data for 2004 and 2005 are model results and may differ slightly from official EIA data reports.

Sources: 2004 and 2005 imported low sulfur light crude oil price: Energy Information Administration (EIA), Form EIA-856, "Monthly Foreign Crude Oil Acquisition Report." 2004 and 2005 imported crude oil price: EIA, *Annual Energy Review 2005*, DOE/EIA-0384(2005) (Washington, DC, July 2006). 2004 and 2005 prices for motor gasoline, distillate fuel oil, and jet fuel are based on: EIA, *Petroleum Marketing Annual 2005*, DOE/EIA-0487(2005) (Washington, DC, August 2006). 2004 and 2005 residential, commercial, industrial, and transportation sector petroleum product prices are derived from: EIA, Form EIA-782A, "Refiners'/Gas Plant Operators' Monthly Petroleum Product Sales Report." 2004 and 2005 electric power prices based on: Federal Energy Regulatory Commission, FERC Form 423, "Monthly Report of Cost and Quality of Fuels for Electric Plants." 2004 and 2005 ethanol prices derived from weekly spot prices in the Oxy Fuel News. 2004 and 2005 wholesale ethanol prices derived from Bloomberg U.S. average rack price. **Projections:** EIA, AEO2007 National Energy Modeling System run AEO2007.D112106A.

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

Supply, Disposition, and Prices	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Production								
Dry Gas Production ¹	18.76	18.23	19.35	19.60	20.79	20.59	20.53	0.5%
Supplemental Natural Gas ²	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.1%
Net Imports								
Pipeline ³	3.40	3.57	4.55	5.62	5.35	5.58	5.45	1.7%
Liquefied Natural Gas	2.81	3.01	2.74	2.63	1.65	1.20	0.92	-4.6%
	0.59	0.57	1.81	2.99	3.69	4.38	4.53	8.7%
Total Supply	22.22	21.87	23.97	25.29	26.21	26.24	26.06	0.7%
Consumption by Sector								
Residential	4.87	4.84	5.03	5.19	5.27	5.29	5.31	0.4%
Commercial	3.13	3.05	3.22	3.53	3.75	3.98	4.24	1.3%
Industrial ⁴	7.22	6.64	7.63	7.67	8.02	8.42	8.65	1.1%
Natural-Gas-to-Liquids Heat and Power ⁵	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
Natural Gas to Liquids Production ⁶	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
Electric Power ⁷	5.48	5.78	6.38	7.11	7.19	6.59	5.92	0.1%
Transportation ⁸	0.03	0.03	0.06	0.08	0.09	0.11	0.12	5.7%
Pipeline Fuel	0.57	0.56	0.64	0.68	0.76	0.77	0.77	1.3%
Lease and Plant Fuel ⁹	1.10	1.07	1.07	1.07	1.17	1.14	1.12	0.2%
Total	22.39	21.98	24.02	25.32	26.26	26.30	26.12	0.7%
Discrepancy ¹⁰	-0.17	-0.11	-0.05	-0.03	-0.05	-0.06	-0.06	N/A
Natural Gas Prices								
(2005 dollars per million Btu)								
Henry Hub Spot Price	6.08	8.60	6.28	5.46	5.71	6.14	6.52	-1.1%
Average Lower 48 Wellhead Price ¹¹	5.63	7.29	5.59	4.84	5.07	5.46	5.80	-0.9%
(2005 dollars per thousand cubic feet)								
Average Lower 48 Wellhead Price ¹¹	5.80	7.51	5.76	4.99	5.22	5.62	5.98	-0.9%
Delivered Prices								
Residential	11.05	12.80	11.31	10.55	10.86	11.30	11.77	-0.3%
Commercial	9.69	11.54	9.62	8.73	8.93	9.23	9.58	-0.7%
Industrial ⁴	6.67	8.41	6.62	5.82	6.08	6.40	6.76	-0.9%
Electric Power ⁷	6.27	8.42	6.40	5.66	5.93	6.22	6.51	-1.0%
Transportation ¹²	12.28	15.20	14.38	13.25	13.36	13.62	13.86	-0.4%
Average ¹³	8.06	9.94	8.07	7.28	7.54	7.91	8.33	-0.7%

¹Marketed production (wet) minus extraction losses.

²Synthetic 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.

³Includes any natural gas regasified in the Bahamas and transported via pipeline to Florida.

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

⁵Includes any natural gas used in the process of converting natural gas to liquid fuel that is not actually converted.

⁶Includes any natural gas that is converted into liquid fuel.

⁷Includes 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.

⁸Compressed natural gas used as vehicle fuel.

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

¹⁰Balancing 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, 2004 and 2005 values include net storage injections.

¹¹Represents lower 48 onshore and offshore supplies.

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

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

N/A = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 2004 and 2005 are model results and may differ slightly from official EIA data reports.

Sources: 2004 supply values; and lease, plant, and pipeline fuel consumption: Energy Information Administration (EIA), *Natural Gas Annual 2004*, DOE/EIA-0131(2004) (Washington, DC, December 2005). 2005 supply values; and lease, plant, and pipeline fuel consumption; and wellhead price: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2006/04) (Washington, DC, April 2006). Other 2004 and 2005 consumption based on: EIA, *Annual Energy Review 2005*, DOE/EIA-0384(2005) (Washington, DC, July 2006). 2004 wellhead price: Minerals Management Service and EIA, *Natural Gas Annual 2004*, DOE/EIA-0131(2004) (Washington, DC, December 2005). 2004 residential and commercial delivered prices: EIA, *Natural Gas Annual 2004*, DOE/EIA-0131(2004) (Washington, DC, December 2005). 2005 residential and commercial delivered prices: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2006/04) (Washington, DC, April 2006). 2004 and 2005 electric power prices: EIA, *Electric Power Monthly*, DOE/EIA-0226, May 2005 through April 2006, Table 4.11.A. 2004 and 2005 industrial delivered prices are estimated based on: EIA, *Manufacturing Energy Consumption Survey 1994* and industrial and wellhead prices from the *Natural Gas Annual 2004*, DOE/EIA-0131(2004) (Washington, DC, December 2005) and the *Natural Gas Monthly*, DOE/EIA-0130(2006/04) (Washington, DC, April 2006). 2004 transportation sector delivered prices are based on: EIA, *Natural Gas Annual 2004*, DOE/EIA-0131(2004) (Washington, DC, December 2005) and estimated state taxes, federal taxes, and dispensing costs or charges. 2005 transportation sector delivered prices are model results. **Projections:** EIA, AEO2007 National Energy Modeling System run AEO2007.D112106A.

Reference Case

Table A14. Oil and Gas Supply

Production and Supply	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Crude Oil								
Lower 48 Average Wellhead Price¹ (2005 dollars per barrel)	38.69	50.76	48.54	41.71	44.88	48.37	51.25	0.0%
Production (million barrels per day)²								
United States Total	5.45	5.18	5.67	5.91	5.89	5.58	5.39	0.2%
Lower 48 Onshore	2.94	2.89	2.93	2.91	2.94	2.95	2.92	0.0%
Lower 48 Offshore	1.61	1.42	2.05	2.35	2.21	2.16	2.20	1.8%
Alaska	0.91	0.86	0.69	0.65	0.74	0.47	0.27	-4.6%
Lower 48 End of Year Reserves² (billion barrels)	18.27	16.98	19.53	20.46	19.98	19.47	17.94	0.2%
Natural Gas								
Lower 48 Average Wellhead Price¹ (2005 dollars per million Btu)								
Henry Hub Spot Price	6.08	8.60	6.28	5.46	5.71	6.14	6.52	-1.1%
Average Lower 48 Wellhead Price ¹	5.63	7.29	5.59	4.84	5.07	5.46	5.80	-0.9%
(2005 dollars per thousand cubic feet)								
Average Lower 48 Wellhead Price ¹	5.80	7.51	5.76	4.99	5.22	5.62	5.98	-0.9%
Dry Production (trillion cubic feet)³								
United States Total	18.76	18.23	19.35	19.60	20.79	20.59	20.53	0.5%
Lower 48 Onshore	14.10	14.36	15.22	14.79	14.66	14.84	15.13	0.2%
Associated-Dissolved ⁴	1.40	1.43	1.39	1.32	1.28	1.23	1.19	-0.8%
Non-Associated	12.69	12.93	13.83	13.46	13.38	13.61	13.94	0.3%
Conventional	5.19	4.94	5.27	4.71	4.30	3.98	3.75	-1.1%
Unconventional	7.50	7.99	8.56	8.75	9.09	9.63	10.19	1.0%
Lower 48 Offshore	4.23	3.41	3.88	4.56	4.09	3.55	3.25	-0.2%
Associated-Dissolved ⁴	0.88	0.71	0.92	1.13	1.05	0.94	0.85	0.7%
Non-Associated	3.35	2.69	2.96	3.43	3.04	2.61	2.40	-0.5%
Alaska	0.44	0.45	0.25	0.25	2.05	2.20	2.16	6.4%
Lower 48 End of Year Dry Reserves³ (trillion cubic feet)	184.11	189.91	205.23	210.31	208.32	208.61	210.60	0.4%
Supplemental Gas Supplies (trillion cubic feet)⁵	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.1%
Total Lower 48 Wells Drilled (thousands)	32.67	41.66	37.17	32.01	31.84	32.78	30.65	-1.2%

¹Represents lower 48 onshore and offshore supplies.

²Includes lease condensate.

³Marketed production (wet) minus extraction losses.

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

⁵Synthetic natural gas, propane air, coke oven gas, refinery gas, biomass gas, air injected for Btu stabilization, and manufactured gas commingled and distributed with natural gas.

Note: Totals may not equal sum of components due to independent rounding. Data for 2004 and 2005 are model results and may differ slightly from official EIA data reports.

Sources: 2004 and 2005 crude oil lower 48 average wellhead price: Energy Information Administration (EIA), *Petroleum Marketing Annual 2005*, DOE/EIA-0487(2005) (Washington, DC, August 2006). 2004 and 2005 lower 48 onshore, lower 48 offshore, and Alaska crude oil production: EIA, *Petroleum Supply Annual 2005*, DOE/EIA-0340(2005)/1 (Washington, DC, October 2006). 2004 U.S. crude oil and natural gas reserves: EIA, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves*, DOE/EIA-0216(2004) (Washington, DC, November 2005). 2004 Alaska and total natural gas production, and supplemental gas supplies: EIA, *Natural Gas Annual 2004*, DOE/EIA-0131(2004) (Washington, DC, December 2005). 2004 natural gas lower 48 average wellhead price: Minerals Management Service and EIA, *Natural Gas Annual 2004*, DOE/EIA-0131(2004) (Washington, DC, December 2005). 2005 natural gas lower 48 average wellhead price, Alaska and total natural gas production, and supplemental gas supplies: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2006/04) (Washington, DC, April 2006). Other 2004 and 2005 values: EIA, Office of Integrated Analysis and Forecasting. Projections: EIA, AEO2007 National Energy Modeling System run AEO2007.D112106A.

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

Supply, Disposition, and Prices	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Production¹								
Appalachia	391	397	381	371	348	351	373	-0.3%
Interior	146	149	171	199	203	215	247	2.0%
West	575	585	637	697	772	951	1072	2.5%
East of the Mississippi	485	494	498	507	487	499	545	0.4%
West of the Mississippi	627	638	691	759	837	1018	1146	2.4%
Total	1112	1131	1189	1266	1323	1517	1691	1.6%
Waste Coal Supplied²	11	13	13	13	13	13	13	-0.0%
Net Imports								
Imports ³	26	29	37	42	72	79	95	4.9%
Exports	48	50	44	37	31	27	27	-2.4%
Total	-22	-21	-7	5	41	52	68	N/A
Total Supply⁴	1101	1124	1195	1284	1377	1582	1772	1.8%
Consumption by Sector								
Residential and Commercial	5	5	5	5	5	5	5	-0.3%
Coke Plants	24	23	22	21	21	21	21	-0.5%
Other Industrial ⁵	62	61	64	62	63	63	64	0.2%
Coal-to-Liquids Heat and Power	0	0	0	8	13	42	57	N/A
Coal to Liquids Production	0	0	0	8	13	40	55	N/A
Electric Power ⁶	1016	1039	1104	1178	1262	1411	1570	1.7%
Total	1107	1128	1195	1282	1377	1582	1772	1.8%
Discrepancy and Stock Change⁷	-6	-5	0	1	0	0	0	N/A
Average Minemouth Price⁸								
(2005 dollars per short ton)	20.68	23.34	24.20	22.41	21.58	21.55	22.60	-0.1%
(2005 dollars per million Btu)	1.01	1.15	1.18	1.11	1.08	1.09	1.15	-0.0%
Delivered Prices (2005 dollars per short ton)⁹								
Coke Plants	63.36	83.79	84.86	74.51	74.25	73.93	75.55	-0.4%
Other Industrial ⁵	40.49	47.63	48.86	47.45	46.55	47.60	48.54	0.1%
Coal to Liquids	N/A	N/A	N/A	13.79	15.05	19.82	21.89	N/A
Electric Power								
(2005 dollars per short ton)	28.12	30.83	34.17	31.84	31.39	32.20	33.52	0.3%
(2005 dollars per million Btu)	1.40	1.53	1.71	1.60	1.58	1.63	1.69	0.4%
Average	29.58	32.82	35.89	33.10	32.42	32.72	33.82	0.1%
Exports ¹⁰	55.75	67.10	69.35	64.51	64.49	61.66	63.81	-0.2%

¹Includes anthracite, bituminous coal, and lignite.

²Includes 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.

³Excludes imports to Puerto Rico and the U.S. Virgin Islands.

⁴Production plus waste coal supplied plus net imports.

⁵Includes 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.

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

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

⁸Includes reported prices for both open market and captive mines.

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

¹⁰F.a.s. price at U.S. port of exit.

N/A = Not applicable.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2004 and 2005 are model results and may differ slightly from official EIA data reports.

Sources: 2004 and 2005 data based on: Energy Information Administration (EIA), *Annual Coal Report 2005*, DOE/EIA-0584(2005) (Washington, DC, October 2006); EIA, *Quarterly Coal Report, October-December 2005*, DOE/EIA-0121(2005/4Q) (Washington, DC, March 2006); and EIA, AEO2007 National Energy Modeling System run AEO2007.D112106A. Projections: EIA, AEO2007 National Energy Modeling System run AEO2007.D112106A.

Reference Case

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

Capacity and Generation	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Electric Power Sector¹								
Net Summer Capacity								
Conventional Hydropower	79.96	79.97	79.99	79.99	80.12	80.18	80.18	0.0%
Geothermal ²	2.17	2.28	2.46	2.54	2.79	2.95	3.15	1.3%
Municipal Waste ³	3.19	3.23	3.43	3.79	3.80	3.80	3.87	0.7%
Wood and Other Biomass ^{4,5}	2.04	2.06	2.22	2.22	2.37	2.89	3.80	2.5%
Solar Thermal	0.40	0.40	0.54	0.56	0.58	0.60	0.63	1.8%
Solar Photovoltaic ⁶	0.03	0.03	0.07	0.14	0.22	0.31	0.39	10.6%
Wind	6.97	9.62	16.97	17.70	17.85	17.89	17.98	2.5%
Total	94.75	97.59	105.69	106.94	107.72	108.62	110.00	0.5%
Generation (billion kilowatthours)								
Conventional Hydropower	265.06	261.89	297.50	302.83	303.85	304.36	304.51	0.6%
Geothermal ²	14.81	15.12	17.34	17.73	19.79	21.05	22.66	1.6%
Municipal Waste ³	19.86	20.56	21.56	24.38	24.42	24.43	24.95	0.8%
Wood and Other Biomass ⁵	9.73	9.92	43.29	46.22	47.47	58.01	58.21	7.3%
Dedicated Plants	8.54	5.38	11.11	10.49	11.61	16.07	23.80	6.1%
Cofiring	1.19	4.53	32.18	35.74	35.86	41.93	34.41	8.4%
Solar Thermal	0.57	0.54	1.16	1.22	1.28	1.36	1.43	4.0%
Solar Photovoltaic ⁶	0.01	0.01	0.18	0.34	0.54	0.76	0.98	22.6%
Wind	14.14	14.60	48.26	50.85	51.35	51.52	51.85	5.2%
Total	324.19	322.64	429.28	443.57	448.71	461.47	464.59	1.5%
End-Use Generators⁷								
Net Summer Capacity								
Conventional Hydropower ⁸	0.65	0.63	0.63	0.63	0.63	0.63	0.63	0.0%
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
Municipal Waste ⁹	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.0%
Biomass	4.66	4.49	4.79	5.38	5.90	6.50	7.19	1.9%
Solar Photovoltaic ⁶	0.12	0.18	0.63	0.69	0.80	1.22	2.52	11.2%
Total	5.76	5.63	6.39	7.04	7.66	8.69	10.68	2.6%
Generation (billion kilowatthours)								
Conventional Hydropower ⁸	4.99	3.18	3.18	3.18	3.18	3.18	3.18	0.0%
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
Municipal Waste ⁹	2.64	2.75	2.75	2.75	2.75	2.75	2.75	0.0%
Biomass	28.90	27.91	29.69	33.15	36.17	39.67	43.70	1.8%
Solar Photovoltaic ⁶	0.23	0.33	1.21	1.33	1.53	2.32	4.78	11.2%
Total	36.77	34.18	36.84	40.42	43.63	47.92	54.41	1.9%

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

²Includes hydrothermal resources only (hot water and steam).

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

⁴Facilities co-firing biomass and coal are classified as coal.

⁵Includes projections for energy crops after 2010.

⁶Does not include off-grid photovoltaics (PV). Based on annual PV shipments from 1989 through 2004, EIA estimates that as much as 167 megawatts of remote electricity generation PV applications (i.e., off-grid power systems) were in service in 2004, plus an additional 447 megawatts in communications, transportation, and assorted other non-grid-connected, specialized applications. See Energy Information Administration, *Annual Energy Review 2005*, DOE/EIA-0384(2005) (Washington, DC, July 2006), Table 10.6 (annual PV shipments, 1989-2004). The approach used to develop the estimate, based on shipment data, provides an upper estimate of the size of the PV stock, including both grid-based and off-grid PV. It will overestimate the size of the stock, because shipments include a substantial number of units that are exported, and each year some of the PV units installed earlier will be retired from service or abandoned.

⁷Includes 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.

⁸Represents own-use industrial hydroelectric power.

⁹Includes municipal solid waste, landfill gas, and municipal sewage sludge. All municipal solid waste is included, although a portion of the municipal solid waste stream contains petroleum-derived plastics and other non-renewable sources.

N/A = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 2004 and 2005 are model results and may differ slightly from official EIA data reports.

Sources: 2004 and 2005 capacity: Energy Information Administration (EIA), Form EIA-860, "Annual Electric Generator Report" (preliminary). 2004 and 2005 generation: EIA, *Annual Energy Review 2005*, DOE/EIA-0384(2005) (Washington, DC, July 2006). Projections: EIA, AEO2007 National Energy Modeling System run AEO2007.D112106A.

Table A17. Renewable Energy, Consumption by Sector and Source¹
(Quadrillion Btu per Year)

Sector and Source	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Marketed Renewable Energy²								
Residential (wood)	0.40	0.41	0.43	0.41	0.40	0.40	0.39	-0.2%
Commercial (biomass)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.0%
Industrial³	1.91	1.69	2.28	2.45	2.59	2.76	2.93	2.2%
Conventional Hydroelectric	0.05	0.03	0.03	0.03	0.03	0.03	0.03	N/A
Municipal Waste ⁴	0.01	0.01	0.01	0.01	0.01	0.01	0.01	N/A
Biomass	1.64	1.40	1.55	1.67	1.77	1.88	2.01	1.4%
Biofuels Heat and Coproducts	0.21	0.24	0.69	0.74	0.78	0.83	0.88	5.2%
Transportation	0.30	0.34	0.95	1.01	1.10	1.19	1.27	5.5%
Ethanol used in E85 ⁵	0.00	0.00	0.00	0.00	0.00	0.01	0.02	11.8%
Ethanol used in Gasoline Blending	0.29	0.33	0.91	0.98	1.05	1.14	1.20	5.3%
Biodiesel used in Distillate Blending	0.00	0.00	0.04	0.03	0.04	0.05	0.05	N/A
Electric Power⁶	3.55	3.64	4.67	4.83	4.93	5.09	5.15	1.4%
Conventional Hydroelectric	2.66	2.68	2.99	3.04	3.05	3.06	3.06	0.5%
Geothermal	0.31	0.32	0.36	0.37	0.44	0.48	0.53	2.1%
Municipal Waste ⁷	0.27	0.28	0.29	0.33	0.33	0.33	0.34	0.8%
Biomass	0.16	0.21	0.51	0.55	0.56	0.68	0.67	4.8%
Dedicated Plants	0.14	0.09	0.11	0.11	0.12	0.17	0.26	4.1%
Cofiring	0.02	0.11	0.40	0.44	0.44	0.50	0.41	5.2%
Solar Thermal	0.01	0.01	0.01	0.02	0.02	0.02	0.02	6.2%
Solar Photovoltaic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
Wind	0.14	0.15	0.50	0.52	0.53	0.53	0.53	5.2%
Total Marketed Renewable Energy	6.27	6.19	8.45	8.82	9.15	9.56	9.86	1.9%
Sources of Ethanol								
From Corn	0.28	0.33	0.87	0.93	0.99	1.07	1.13	5.1%
From Cellulose	0.00	0.00	0.01	0.02	0.02	0.02	0.02	N/A
Imports	0.01	0.01	0.02	0.03	0.05	0.06	0.07	8.4%
Total	0.29	0.33	0.91	0.98	1.06	1.15	1.22	5.3%
Nonmarketed Renewable Energy⁸								
Selected Consumption								
Residential	0.03	0.03	0.04	0.05	0.06	0.07	0.08	4.0%
Solar Hot Water Heating	0.03	0.03	0.03	0.04	0.05	0.06	0.06	3.5%
Geothermal Heat Pumps	0.00	0.00	0.01	0.01	0.01	0.01	0.02	6.8%
Solar Photovoltaic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.1%
Commercial	0.02	0.03	0.03	0.03	0.03	0.03	0.04	2.1%
Solar Thermal	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.6%
Solar Photovoltaic	0.00	0.00	0.00	0.00	0.00	0.01	0.01	11.3%

¹Actual heat rates used to determine fuel consumption for all renewable fuels except hydropower, solar, and wind. Consumption at hydroelectric, solar, and wind facilities determined by using the fossil fuel equivalent of 10,280 Btu per kilowatthour.

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

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

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

⁵Excludes motor gasoline component of E85.

⁶Includes 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.

⁷Includes municipal solid waste, landfill gas, and municipal sewage sludge. Incremental growth is assumed to be for landfill gas facilities. All municipal solid waste is included, although a portion of the municipal solid waste stream contains petroleum-derived plastics and other non-renewable sources.

⁸Includes selected renewable energy consumption data for which the energy is not bought or sold, either directly or indirectly as an input to marketed energy.

The Energy Information Administration does not estimate or project total consumption of nonmarketed renewable energy.

N/A = Not applicable.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2004 and 2005 are model results and may differ slightly from official EIA data reports.

Sources: 2004 and 2005 ethanol: Energy Information Administration (EIA), *Annual Energy Review 2005*, DOE/EIA-0384(2005) (Washington, DC, July 2006). 2004 and 2005 electric power sector: EIA, Form EIA-860, "Annual Electric Generator Report" (preliminary). Other 2004 and 2005 values: EIA, Office of Integrated Analysis and Forecasting. Projections: EIA, AEO2007 National Energy Modeling System run AEO2007.D112106A.

Reference Case

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

Sector and Source	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Residential								
Petroleum	106	105	105	107	105	102	100	-0.2%
Natural Gas	265	262	274	282	287	288	289	0.4%
Coal	1	1	1	1	1	1	1	-0.2%
Electricity ¹	842	886	940	1002	1064	1143	1225	1.3%
Total	1214	1254	1320	1392	1456	1534	1614	1.0%
Commercial								
Petroleum	54	55	54	57	57	58	59	0.2%
Natural Gas	170	166	175	192	204	216	230	1.3%
Coal	10	8	9	9	9	9	9	0.6%
Electricity ¹	800	822	886	975	1059	1185	1332	1.9%
Total	1034	1051	1124	1233	1330	1469	1630	1.8%
Industrial²								
Petroleum	437	431	406	419	423	433	457	0.2%
Natural Gas ³	435	400	466	468	493	513	524	1.1%
Coal	201	189	186	194	199	243	269	1.4%
Electricity ¹	663	663	674	694	702	734	774	0.6%
Total	1736	1682	1732	1775	1817	1924	2024	0.7%
Transportation								
Petroleum ⁴	1902	1922	1994	2142	2288	2443	2626	1.3%
Natural Gas ⁵	32	32	38	41	47	48	48	1.7%
Electricity ¹	5	5	5	6	6	7	7	1.8%
Total	1939	1958	2037	2189	2341	2498	2682	1.3%
Electric Power⁶								
Petroleum	98	100	69	75	74	76	77	-1.1%
Natural Gas	296	319	346	385	390	357	321	0.0%
Coal	1904	1944	2078	2203	2354	2623	2927	1.6%
Other ⁷	11	12	12	14	14	14	14	0.8%
Total	2309	2375	2505	2677	2832	3070	3338	1.4%
Total by Fuel								
Petroleum ³	2598	2614	2629	2799	2947	3112	3318	1.0%
Natural Gas	1198	1178	1298	1369	1420	1422	1412	0.7%
Coal	2115	2142	2275	2407	2563	2877	3206	1.6%
Other ⁷	11	12	12	14	14	14	14	0.8%
Total	5923	5945	6214	6589	6944	7425	7950	1.2%
Carbon Dioxide Emissions								
(tons per person)	20.1	20.0	20.0	20.4	20.6	21.2	21.8	0.3%

¹Emissions from the electric power sector are distributed to the end-use sectors.

²Fuel consumption includes energy for combined heat and power plants (CHP), except those plants whose primary business is to sell electricity, or electricity and heat, to the public.

³Includes lease and plant fuel.

⁴This includes carbon dioxide from international bunker fuels, both civilian and military, which are excluded from the accounting of carbon dioxide emissions under the United Nations convention. From 1990 through 2004, international bunker fuels accounted for 83 to 115 million metric tons annually.

⁵Includes pipeline fuel natural gas and compressed natural gas used as vehicle fuel.

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

⁷Includes emissions from geothermal power and nonbiogenic emissions from municipal solid waste.

Note: Totals may not equal sum of components due to independent rounding. Data for 2004 and 2005 are model results and may differ slightly from official EIA data reports.

Sources: 2004 and 2005 emissions and emission factors: Energy Information Administration (EIA), *Emissions of Greenhouse Gases in the United States 2005*, DOE/EIA-0573(2005) (Washington, DC, November 2006). Projections: EIA, AEO2007 National Energy Modeling System run AEO2007.D112106A.

Table A19. Macroeconomic Indicators
(Billion 2000 Chain-Weighted Dollars, Unless Otherwise Noted)

Indicators	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Real Gross Domestic Product	10704	11049	12790	14698	17077	19666	22494	2.9%
Components of Real Gross Domestic Product								
Real Consumption	7577	7841	9111	10423	12006	13731	15590	2.8%
Real Investment	1771	1866	2139	2478	3030	3773	4735	3.8%
Real Government Spending	1941	1958	2117	2242	2396	2541	2709	1.3%
Real Exports	1120	1196	1767	2543	3584	4894	6581	7.1%
Real Imports	1711	1815	2321	2911	3761	4963	6649	5.3%
Energy Intensity (thousand Btu per 2000 dollar of GDP)								
Delivered Energy	6.91	6.60	6.06	5.56	5.04	4.62	4.27	-1.7%
Total Energy	9.41	9.07	8.33	7.64	6.92	6.33	5.83	-1.8%
Price Indices								
GDP Chain-type Price Index (2000=1.00) ...	1.094	1.127	1.253	1.366	1.495	1.648	1.815	1.9%
Consumer Price Index (1982-4=1.00)								
All-urban	1.89	1.95	2.16	2.36	2.61	2.90	3.23	2.0%
Energy Commodities and Services	1.51	1.77	1.93	1.94	2.19	2.48	2.80	1.8%
Wholesale Price Index (1982=1.00)								
All Commodities	1.47	1.57	1.68	1.72	1.82	1.94	2.06	1.1%
Fuel and Power	1.27	1.57	1.64	1.62	1.84	2.11	2.39	1.7%
Interest Rates (percent, nominal)								
Federal Funds Rate	1.35	3.21	4.71	4.93	5.11	5.07	5.14	N/A
10-Year Treasury Note	4.27	4.29	5.52	5.66	5.75	5.78	5.80	N/A
AA Utility Bond Rate	6.04	5.44	7.36	7.64	7.72	7.78	7.77	N/A
Value of Shipments (billion 2000 dollars)								
Total Industrial	5651	5763	6298	7033	7779	8585	9502	2.0%
Nonmanufacturing	1494	1538	1596	1701	1846	1940	2023	1.1%
Manufacturing	4157	4225	4702	5332	5933	6645	7478	2.3%
Energy-Intensive	1161	1160	1262	1347	1426	1522	1631	1.4%
Non-energy Intensive	2996	3065	3440	3985	4507	5123	5848	2.6%
Population and Employment (millions)								
Population, with Armed Forces Overseas	294.2	296.9	310.3	323.7	337.1	350.8	364.9	0.8%
Population, aged 16 and over	229.2	231.8	244.2	254.7	265.4	276.7	288.6	0.9%
Population, over age 65	36.4	36.8	40.4	47.0	54.9	63.8	71.6	2.7%
Employment, Nonfarm	131.4	133.4	141.9	147.0	154.6	162.3	169.2	1.0%
Employment, Manufacturing	14.3	14.2	13.8	13.7	13.4	13.0	12.5	-0.5%
Key Labor Indicators								
Labor Force (millions)	147.4	149.3	157.5	162.2	167.0	172.7	180.4	0.8%
Nonfarm Labor Productivity (1992=1.00)	1.32	1.36	1.50	1.69	1.90	2.15	2.42	2.3%
Unemployment Rate (percent)	5.52	5.06	4.83	4.98	4.46	4.55	4.71	N/A
Key Indicators for Energy Demand								
Real Disposable Personal Income	8011	8105	9568	11077	13000	15172	17535	3.1%
Housing Starts (millions)	2.08	2.22	1.94	1.91	1.90	1.85	1.80	-0.8%
Commercial Floorspace (billion square feet) ...	73.0	74.3	80.4	86.5	92.9	100.1	108.0	1.5%
Unit Sales of Light-Duty Vehicles (millions) ...	16.87	16.95	17.14	18.05	19.04	20.01	21.10	0.9%

GDP = Gross domestic product.

Btu = British thermal unit.

N/A = Not applicable.

Sources: 2004 and 2005: Global Insight macroeconomic model CTL0806 and Global Insight industry model, July 2005. Projections: Energy Information Administration, AEO2007 National Energy Modeling System run AEO2007.D112106A.

Reference Case

Table A20. International Petroleum Supply and Disposition Summary
(Million Barrels per Day, Unless Otherwise Noted)

Supply and Disposition	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Crude Oil Prices (2005 dollars per barrel)¹								
Imported Low Sulfur Light Crude Oil	42.87	56.76	57.47	49.87	52.04	56.37	59.12	0.2%
Imported Crude Oil	37.09	49.19	51.20	44.61	46.47	49.57	51.63	0.2%
Conventional Production (Conventional)²								
OPEC ³								
Asia	1.18	1.17	1.11	1.10	1.09	1.08	1.10	-0.2%
Middle East	22.60	22.96	22.23	24.03	26.60	29.72	33.20	1.5%
North Africa	3.55	3.78	4.29	4.51	4.24	4.07	3.93	0.2%
West Africa	2.47	2.78	3.07	3.81	4.10	4.32	4.48	1.9%
South America	2.75	2.71	2.59	2.42	2.30	2.24	2.24	-0.8%
Total OPEC	32.55	33.41	33.30	35.87	38.33	41.44	44.95	1.2%
Non-OPEC								
OECD								
United States (50 states)	8.46	8.03	8.98	9.45	9.48	9.18	9.12	0.5%
Canada	2.12	2.12	1.93	2.01	1.89	1.76	1.62	-1.1%
Mexico	3.85	3.78	3.15	3.01	3.18	3.35	3.52	-0.3%
OECD Europe ⁴	6.39	5.96	5.73	4.91	4.22	3.64	3.16	-2.5%
Japan	0.12	0.10	0.10	0.10	0.10	0.10	0.10	0.0%
Australia and New Zealand	0.58	0.60	0.56	0.51	0.51	0.55	0.60	-0.0%
Total OECD	21.53	20.59	20.45	20.00	19.39	18.57	18.12	-0.5%
Non-OECD								
Russia	9.27	9.51	9.98	10.30	10.79	11.23	11.54	0.8%
Other Eurasia ⁵	2.21	2.48	3.98	4.91	5.41	5.99	6.55	4.0%
China	3.64	3.74	3.53	3.20	3.30	3.30	3.20	-0.6%
Other Asia ⁶	2.80	2.53	2.29	2.50	2.60	2.60	2.50	-0.1%
Middle East ⁷	1.68	1.67	2.00	2.20	2.40	2.70	2.90	2.2%
Africa	3.40	3.59	5.19	6.45	7.38	8.51	9.83	4.1%
Brazil	1.58	1.76	2.39	2.90	3.20	3.50	3.90	3.2%
Other Central and South America	2.35	2.31	2.32	2.54	2.66	2.75	2.90	0.9%
Total Non-OECD	26.94	27.59	31.67	35.00	37.75	40.59	43.32	1.8%
Total Conventional Production	81.01	81.59	85.42	90.86	95.47	100.59	106.40	1.1%
Unconventional Production⁸								
United States (50 states)	0.22	0.25	0.71	0.81	0.91	1.20	1.37	7.0%
Other North America	1.09	1.09	1.91	2.32	2.74	3.25	3.66	5.0%
OECD Europe ³	0.04	0.08	0.15	0.18	0.19	0.23	0.27	5.1%
Middle East ⁷	0.08	0.02	0.57	0.64	0.75	0.89	1.11	16.8%
Africa	0.16	0.16	0.32	0.42	0.52	0.62	0.73	6.3%
Central and South America	0.83	0.93	1.35	1.59	1.81	2.18	2.40	3.9%
Other	0.02	0.28	0.62	0.81	0.90	1.05	1.41	6.7%
Total Unconventional Production	2.44	2.80	5.63	6.78	7.83	9.42	10.93	5.6%
Total Production	83.45	84.39	91.05	97.64	103.29	110.01	117.33	1.3%

Table A20. International Petroleum Supply and Disposition Summary (Continued)
(Million Barrels per Day, Unless Otherwise Noted)

Supply and Disposition	Reference Case							Annual Growth 2005-2030 (percent)
	2004	2005	2010	2015	2020	2025	2030	
Consumption⁹								
OECD								
United States (50 states)	20.76	20.75	21.59	22.85	24.02	25.33	26.93	1.0%
United States Territories	0.37	0.38	0.43	0.47	0.51	0.54	0.59	1.8%
Canada	2.32	2.28	2.42	2.54	2.49	2.56	2.59	0.5%
Mexico	2.00	2.09	2.22	2.47	2.68	2.93	3.19	1.7%
OECD Europe ³	15.86	15.73	15.82	15.89	15.76	16.00	16.26	0.1%
Japan	5.43	5.58	5.42	5.48	5.43	5.46	5.45	-0.1%
South Korea	2.18	2.30	2.58	2.85	3.04	3.24	3.45	1.6%
Australia and New Zealand	1.04	1.05	1.08	1.10	1.13	1.17	1.22	0.6%
Total OECD	49.95	50.16	51.54	53.65	55.05	57.25	59.69	0.7%
Non-OECD								
Russia	2.81	2.75	2.85	3.05	3.11	3.28	3.39	0.8%
Other Non-OECD Eurasia ⁵	2.03	2.33	2.63	2.95	3.18	3.46	3.75	1.9%
China	6.49	6.86	8.70	9.99	11.66	13.24	15.05	3.2%
India	2.48	2.52	2.94	3.32	3.66	4.07	4.45	2.3%
Other Non-OECD Asia	6.03	6.02	6.89	7.70	8.51	9.36	10.29	2.2%
Middle East ⁷	5.74	5.56	6.06	6.60	7.00	7.43	7.81	1.4%
Africa	2.83	3.01	3.70	4.05	4.30	4.54	4.93	2.0%
Brazil	2.17	2.20	2.39	2.63	2.82	3.09	3.29	1.6%
Other Central and South America	2.94	2.99	3.36	3.71	4.00	4.29	4.68	1.8%
Total Non-OECD	33.50	34.23	39.52	44.00	48.23	52.76	57.64	2.1%
Total Consumption	83.45	84.39	91.05	97.64	103.29	110.01	117.33	1.3%
OPEC Production ¹⁰	33.20	34.04	34.72	37.47	40.19	43.71	47.65	1.4%
Non-OPEC Production ¹⁰	50.25	50.35	56.34	60.18	63.10	66.30	69.68	1.3%
Net Eurasia Exports	8.24	8.67	10.87	12.10	13.12	13.98	14.85	2.2%
OPEC Market Share	39.8	40.3	38.1	38.4	38.9	39.7	40.6	0.0%

¹Weighted average price delivered to U.S. refiners.

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

³OPEC = Organization of Petroleum Exporting Countries - Algeria, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela. Does not include Angola, which was admitted as a full member to OPEC on December 14, 2006.

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

⁵Eurasia consists of Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan.

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

⁷Non-OPEC Middle East includes Turkey.

⁸Includes liquids produced from energy crops, natural gas, coal, oil sands, and shale. Includes both OPEC and non-OPEC producers in the regional breakdown.

⁹Includes both OPEC and non-OPEC consumers in the regional breakdown.

¹⁰Includes both conventional and nonconventional liquids production.

Note: Totals may not equal sum of components due to independent rounding. Data for 2004 and 2005 are model results and may differ slightly from official EIA data reports.

Sources: 2004 and 2005 low sulfur light crude oil price: Energy Information Administration (EIA), Form EIA-856, "Monthly Foreign Crude Oil Acquisition Report." 2004 and 2005 imported crude oil price: EIA, *Annual Energy Review 2005*, DOE/EIA-0384(2005) (Washington, DC, July 2006). 2004 quantities derived from: EIA, *International Energy Annual 2004*, DOE/EIA-0219(2004) (Washington, DC, May-July 2006). 2005 quantities and projections: EIA, AEO2007 National Energy Modeling System run AEO2007.D112106A.

