

Reference case

Table A1. Total energy supply, disposition, and price summary
(quadrillion Btu per year, unless otherwise noted)

Supply, disposition, and prices	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Production								
Crude oil and lease condensate	11.35	11.59	13.23	14.40	13.77	13.71	12.89	0.4%
Natural gas plant liquids	2.57	2.78	3.33	3.79	3.93	3.98	3.94	1.4%
Dry natural gas	21.09	22.10	24.22	25.69	26.91	27.58	28.60	1.0%
Coal ¹	21.63	22.06	20.24	20.74	22.25	23.22	24.14	0.4%
Nuclear / uranium ²	8.36	8.44	8.68	9.28	9.60	9.56	9.28	0.4%
Hydropower	2.67	2.51	2.90	2.95	2.99	3.02	3.04	0.8%
Biomass ³	3.72	4.05	4.45	5.26	6.26	7.60	9.07	3.3%
Other renewable energy ⁴	1.11	1.34	1.99	2.04	2.22	2.41	2.81	3.0%
Other ⁵	0.47	0.64	0.60	0.64	0.69	0.79	0.91	1.4%
Total	72.97	75.50	79.64	84.80	88.61	91.87	94.67	0.9%
Imports								
Crude oil	19.70	20.14	18.87	16.00	16.23	16.04	16.90	-0.7%
Liquid fuels and other petroleum ⁶	5.40	5.02	4.32	4.03	4.08	4.04	4.14	-0.8%
Natural gas ⁷	3.85	3.81	3.73	3.49	2.75	3.00	2.84	-1.2%
Other imports ⁸	0.61	0.52	0.44	0.72	1.07	0.78	0.81	1.8%
Total	29.56	29.49	27.37	24.25	24.14	23.86	24.69	-0.7%
Exports								
Liquid fuels and other petroleum ⁹	4.20	4.81	5.00	4.39	4.46	4.67	4.95	0.1%
Natural gas ¹⁰	1.08	1.15	1.93	3.09	3.51	3.86	4.17	5.3%
Coal	1.51	2.10	2.73	2.36	2.82	2.85	3.13	1.6%
Total	6.79	8.06	9.66	9.84	10.79	11.38	12.25	1.7%
Discrepancy¹¹	1.04	-1.23	-0.08	-0.10	-0.03	0.04	0.18	--
Consumption								
Liquid fuels and other petroleum ¹²	36.50	37.25	36.72	36.38	36.58	36.99	37.70	0.0%
Natural gas	23.43	24.71	26.00	26.07	26.14	26.72	27.26	0.4%
Coal ¹³	19.62	20.76	17.80	18.73	20.02	20.59	21.15	0.1%
Nuclear / uranium ²	8.36	8.44	8.68	9.28	9.60	9.56	9.28	0.4%
Hydropower	2.67	2.51	2.90	2.95	2.99	3.02	3.04	0.8%
Biomass ¹⁴	2.72	2.88	3.04	3.58	4.17	4.78	5.44	2.6%
Other renewable energy ⁴	1.11	1.34	1.99	2.04	2.22	2.41	2.81	3.0%
Other ¹⁵	0.32	0.29	0.30	0.29	0.28	0.25	0.24	-0.6%
Total	94.71	98.16	97.43	99.32	101.99	104.32	106.93	0.3%
Prices (2010 dollars per unit)								
Petroleum (dollars per barrel)								
Low sulfur light crude oil	62.37	79.39	116.91	126.68	132.56	138.49	144.98	2.4%
Imported crude oil ¹⁶	59.72	75.87	113.97	115.74	121.21	126.51	132.95	2.3%
Natural gas (dollars per million Btu)								
at Henry hub	4.00	4.39	4.29	4.58	5.63	6.29	7.37	2.1%
at the wellhead ¹⁷	3.75	4.06	3.84	4.10	5.00	5.56	6.48	1.9%
Natural gas (dollars per thousand cubic feet)								
at the wellhead ¹⁷	3.85	4.16	3.94	4.19	5.12	5.69	6.64	1.9%
Coal (dollars per ton)								
at the minemouth ¹⁸	33.62	35.61	42.08	40.96	44.05	47.28	50.52	1.4%
Coal (dollars per million Btu)								
at the minemouth ¹⁸	1.68	1.76	2.08	2.06	2.23	2.39	2.56	1.5%
Average end-use ¹⁹	2.32	2.38	2.56	2.58	2.70	2.81	2.94	0.9%
Average electricity (cents per kilowatthour)	9.9	9.8	9.7	9.6	9.7	9.8	10.1	0.1%

Table A1. Total energy supply, disposition, and price summary (continued)
(quadrillion Btu per year, unless otherwise noted)

Supply, disposition, and prices	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Prices (nominal dollars per unit)								
Petroleum (dollars per barrel)								
Low sulfur light crude oil	61.65	79.39	125.97	148.87	170.09	197.10	229.55	4.3%
Imported crude oil ¹⁶	59.04	75.87	122.81	136.02	155.52	180.06	210.51	4.2%
Natural gas (dollars per million Btu)								
at Henry hub	3.95	4.39	4.62	5.39	7.23	8.95	11.67	4.0%
at the wellhead ¹⁷	3.71	4.06	4.14	4.81	6.42	7.92	10.26	3.8%
Natural gas (dollars per thousand cubic feet)								
at the wellhead ¹⁷	3.80	4.16	4.24	4.93	6.57	8.11	10.51	3.8%
Coal (dollars per ton)								
at the minemouth ¹⁸	33.24	35.61	45.34	48.13	56.52	67.28	80.00	3.3%
Coal (dollars per million Btu)								
at the minemouth ¹⁸	1.66	1.76	2.24	2.42	2.86	3.41	4.05	3.4%
Average end-use ¹⁹	2.30	2.38	2.76	3.03	3.47	4.01	4.66	2.7%
Average electricity (cents per kilowatthour)	9.8	9.8	10.4	11.3	12.5	13.9	16.0	2.0%

¹Includes waste coal.

²These values represent the energy obtained from uranium when it is used in light water reactors. The total energy content of uranium is much larger, but alternative processes are required to take advantage of it.

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

⁴Includes grid-connected electricity from landfill gas; biogenic municipal waste; wind; photovoltaic and solar thermal sources; and non-electric energy from renewable sources, such as active and passive solar systems. Excludes electricity imports using renewable sources and nonmarketed renewable energy. See Table A17 for selected nonmarketed residential and commercial renewable energy data.

⁵Includes non-biogenic municipal waste, liquid hydrogen, methanol, and some domestic inputs to refineries.

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

⁷Includes imports of liquefied natural gas that is later re-exported.

⁸Includes coal, coal coke (net), and electricity (net). Excludes imports of fuel used in nuclear power plants.

⁹Includes crude oil, petroleum products, ethanol, and biodiesel.

¹⁰Includes re-exported liquefied natural gas.

¹¹Balancing item. Includes unaccounted for supply, losses, gains, and net storage withdrawals.

¹²Includes petroleum-derived fuels and non-petroleum derived fuels, such as ethanol and biodiesel, and coal-based synthetic liquids. Petroleum coke, which is a solid, is included. Also included are natural gas plant liquids and crude oil consumed as a fuel. Refer to Table A17 for detailed renewable liquid fuels consumption.

¹³Excludes coal converted to coal-based synthetic liquids and natural gas.

¹⁴Includes 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.

¹⁵Includes non-biogenic municipal waste, liquid hydrogen, and net electricity imports.

¹⁶Weighted average price delivered to U.S. refiners.

¹⁷Represents lower 48 onshore and offshore supplies.

¹⁸Includes reported prices for both open market and captive mines.

¹⁹Prices weighted by consumption; weighted average excludes residential and commercial prices, and export free-alongside-ship (f.a.s.) prices.

Btu = British thermal unit.

-- = Not applicable.

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

Sources: 2009 natural gas supply values: U.S. Energy Information Administration (EIA), *Natural Gas Annual 2009*, DOE/EIA-0131(2009) (Washington, DC, December 2010). 2010 natural gas supply values and natural gas wellhead price: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2011/07) (Washington, DC, July 2011). 2009 natural gas wellhead price: U.S. Department of the Interior, Office of Natural Resources Revenue; and EIA, *Natural Gas Annual 2009*, DOE/EIA-0131(2009) (Washington, DC, December 2010). 2009 and 2010 coal minemouth and delivered coal prices: EIA, *Annual Coal Report 2010*, DOE/EIA-0584(2010) (Washington, DC, November 2011). 2010 petroleum supply values and 2009 crude oil and lease condensate production: EIA, *Petroleum Supply Annual 2010*, DOE/EIA-0340(2010)/1 (Washington, DC, July 2011). Other 2009 petroleum supply values: EIA, *Petroleum Supply Annual 2009*, DOE/EIA-0340(2009)/1 (Washington, DC, July 2010). 2009 and 2010 low sulfur light crude oil price: EIA, Form EIA-856, "Monthly Foreign Crude Oil Acquisition Report." Other 2009 and 2010 coal values: *Quarterly Coal Report, October-December 2010*, DOE/EIA-0121(2010/4Q) (Washington, DC, May 2011). Other 2009 and 2010 values: EIA, *Annual Energy Review 2010*, DOE/EIA-0384(2010) (Washington, DC, October 2011). **Projections:** EIA, AEO2012 National Energy Modeling System run REF2012.D020112C.

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

Sector and source	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Energy consumption								
Residential								
Liquefied petroleum gases	0.51	0.56	0.51	0.50	0.50	0.51	0.51	-0.4%
Kerosene	0.03	0.03	0.02	0.02	0.02	0.02	0.02	-1.7%
Distillate fuel oil	0.60	0.63	0.55	0.48	0.43	0.38	0.35	-2.3%
Liquid fuels and other petroleum subtotal	1.14	1.22	1.08	1.01	0.95	0.91	0.87	-1.3%
Natural gas	4.90	5.06	4.97	4.95	4.88	4.84	4.76	-0.2%
Coal	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-1.1%
Renewable energy ¹	0.43	0.42	0.43	0.43	0.43	0.43	0.43	0.1%
Electricity	4.66	4.95	4.75	4.96	5.23	5.55	5.86	0.7%
Delivered energy	11.13	11.66	11.24	11.36	11.51	11.73	11.93	0.1%
Electricity related losses	9.80	10.39	9.58	10.01	10.52	10.95	11.35	0.4%
Total	20.93	22.05	20.81	21.36	22.02	22.68	23.28	0.2%
Commercial								
Liquefied petroleum gases	0.13	0.14	0.14	0.14	0.15	0.15	0.16	0.3%
Motor gasoline ²	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.4%
Kerosene	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.7%
Distillate fuel oil	0.41	0.43	0.35	0.34	0.33	0.33	0.32	-1.2%
Residual fuel oil	0.08	0.08	0.08	0.08	0.08	0.08	0.08	-0.0%
Liquid fuels and other petroleum subtotal	0.68	0.72	0.62	0.62	0.62	0.62	0.62	-0.5%
Natural gas	3.20	3.28	3.41	3.51	3.53	3.60	3.69	0.5%
Coal	0.07	0.06	0.06	0.06	0.06	0.06	0.06	-0.0%
Renewable energy ³	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.0%
Electricity	4.46	4.54	4.59	4.88	5.16	5.48	5.80	1.0%
Delivered energy	8.51	8.70	8.80	9.18	9.48	9.87	10.28	0.7%
Electricity related losses	9.39	9.52	9.27	9.85	10.38	10.82	11.23	0.7%
Total	17.90	18.22	18.06	19.03	19.86	20.69	21.50	0.7%
Industrial⁴								
Liquefied petroleum gases	2.00	2.00	1.83	2.06	2.17	2.18	2.15	0.3%
Motor gasoline ²	0.24	0.25	0.28	0.30	0.30	0.30	0.30	0.8%
Distillate fuel oil	1.11	1.16	1.25	1.18	1.19	1.17	1.18	0.1%
Residual fuel oil	0.11	0.12	0.09	0.08	0.08	0.08	0.08	-1.3%
Petrochemical feedstocks	0.90	0.94	1.01	1.20	1.29	1.31	1.30	1.3%
Other petroleum ⁵	3.57	3.59	3.44	3.18	3.11	3.09	3.19	-0.5%
Liquid fuels and other petroleum subtotal	7.93	8.05	7.89	7.99	8.13	8.13	8.21	0.1%
Natural gas	6.32	6.76	7.19	7.26	7.32	7.21	7.18	0.2%
Natural-gas-to-liquids heat and power	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Lease and plant fuel ⁶	1.31	1.37	1.43	1.55	1.57	1.59	1.63	0.7%
Natural gas subtotal	7.63	8.14	8.62	8.80	8.89	8.80	8.81	0.3%
Metallurgical coal	0.40	0.55	0.57	0.48	0.49	0.46	0.43	-1.0%
Other industrial coal	0.94	1.01	1.03	1.04	1.08	1.08	1.08	0.3%
Coal-to-liquids heat and power	0.00	0.00	0.00	0.26	0.36	0.48	0.60	-
Net coal coke imports	-0.02	-0.01	-0.01	-0.02	-0.03	-0.04	-0.06	9.3%
Coal subtotal	1.32	1.56	1.59	1.76	1.90	1.98	2.06	1.1%
Biofuels heat and coproducts	0.82	0.84	0.81	0.96	1.27	1.92	2.57	4.6%
Renewable energy ⁷	1.37	1.50	1.61	1.67	1.82	1.87	1.95	1.1%
Electricity	3.13	3.28	3.44	3.46	3.52	3.44	3.33	0.1%
Delivered energy	22.20	23.37	23.96	24.64	25.53	26.14	26.94	0.6%
Electricity related losses	6.59	6.89	6.94	6.97	7.09	6.80	6.46	-0.3%
Total	28.79	30.26	30.90	31.61	32.61	32.93	33.39	0.4%

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

Sector and source	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Transportation								
Liquefied petroleum gases	0.05	0.04	0.04	0.04	0.04	0.05	0.05	0.5%
E85 ⁸	0.00	0.00	0.01	0.13	0.30	0.72	1.22	27.0%
Motor gasoline ²	16.84	16.91	16.13	15.31	14.90	14.69	14.53	-0.6%
Jet fuel ⁹	2.98	3.07	3.03	3.09	3.19	3.27	3.33	0.3%
Distillate fuel oil ¹⁰	5.53	5.77	6.55	6.80	7.03	7.20	7.44	1.0%
Residual fuel oil	0.81	0.90	0.91	0.92	0.93	0.93	0.94	0.2%
Other petroleum ¹¹	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.0%
Liquid fuels and other petroleum subtotal ..	26.36	26.88	26.83	26.46	26.57	27.02	27.67	0.1%
Pipeline fuel natural gas	0.61	0.65	0.68	0.67	0.67	0.68	0.69	0.2%
Compressed / liquefied natural gas	0.04	0.04	0.06	0.09	0.11	0.14	0.16	5.7%
Liquid hydrogen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Electricity	0.02	0.02	0.03	0.03	0.04	0.06	0.07	4.8%
Delivered energy	27.04	27.59	27.60	27.25	27.40	27.90	28.60	0.1%
Electricity related losses	0.05	0.05	0.05	0.06	0.08	0.11	0.14	4.5%
Total	27.09	27.63	27.65	27.32	27.49	28.01	28.75	0.2%
Delivered energy consumption for all sectors								
Liquefied petroleum gases	2.69	2.75	2.51	2.74	2.86	2.88	2.86	0.2%
E85 ⁸	0.00	0.00	0.01	0.13	0.30	0.72	1.22	27.0%
Motor gasoline ²	17.13	17.21	16.46	15.66	15.25	15.04	14.88	-0.6%
Jet fuel ⁹	2.98	3.07	3.03	3.09	3.19	3.27	3.33	0.3%
Kerosene	0.04	0.04	0.03	0.03	0.03	0.03	0.03	-1.2%
Distillate fuel oil	7.65	7.99	8.69	8.81	8.99	9.08	9.29	0.6%
Residual fuel oil	0.99	1.11	1.08	1.08	1.09	1.09	1.11	0.0%
Petrochemical feedstocks	0.90	0.94	1.01	1.20	1.29	1.31	1.30	1.3%
Other petroleum ¹²	3.72	3.76	3.61	3.34	3.27	3.26	3.36	-0.4%
Liquid fuels and other petroleum subtotal ..	36.10	36.87	36.43	36.08	36.28	36.68	37.38	0.1%
Natural gas	14.46	15.15	15.64	15.81	15.85	15.79	15.79	0.2%
Natural-gas-to-liquids heat and power	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Lease and plant fuel ⁶	1.31	1.37	1.43	1.55	1.57	1.59	1.63	0.7%
Pipeline natural gas	0.61	0.65	0.68	0.67	0.67	0.68	0.69	0.2%
Natural gas subtotal	16.38	17.17	17.75	18.03	18.09	18.06	18.11	0.2%
Metallurgical coal	0.40	0.55	0.57	0.48	0.49	0.46	0.43	-1.0%
Other coal	1.01	1.08	1.09	1.10	1.14	1.14	1.15	0.3%
Coal-to-liquids heat and power	0.00	0.00	0.00	0.26	0.36	0.48	0.60	--
Net coal coke imports	-0.02	-0.01	-0.01	-0.02	-0.03	-0.04	-0.06	9.3%
Coal subtotal	1.39	1.62	1.65	1.82	1.96	2.04	2.12	1.1%
Biofuels heat and coproducts	0.82	0.84	0.81	0.96	1.27	1.92	2.57	4.6%
Renewable energy ¹³	1.91	2.03	2.15	2.21	2.36	2.41	2.50	0.8%
Liquid hydrogen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Electricity	12.27	12.79	12.81	13.33	13.96	14.53	15.06	0.7%
Delivered energy	68.87	71.32	71.59	72.43	73.92	75.64	77.75	0.3%
Electricity related losses	25.83	26.84	25.84	26.89	28.07	28.67	29.18	0.3%
Total	94.71	98.16	97.43	99.32	101.99	104.32	106.93	0.3%
Electric power¹⁴								
Distillate fuel oil	0.07	0.08	0.08	0.09	0.09	0.09	0.09	0.5%
Residual fuel oil	0.32	0.30	0.21	0.21	0.22	0.22	0.23	-1.1%
Liquid fuels and other petroleum subtotal ..	0.39	0.38	0.29	0.30	0.31	0.31	0.32	-0.7%
Natural gas	7.04	7.54	8.25	8.05	8.04	8.66	9.16	0.8%
Steam coal	18.23	19.13	16.15	16.91	18.06	18.55	19.03	-0.0%
Nuclear / uranium ¹⁵	8.36	8.44	8.68	9.28	9.60	9.56	9.28	0.4%
Renewable energy ¹⁶	3.77	3.85	4.96	5.40	5.75	5.87	6.22	1.9%
Electricity imports	0.12	0.09	0.10	0.09	0.08	0.05	0.04	-2.9%
Total¹⁷	38.10	39.63	38.64	40.22	42.03	43.20	44.24	0.4%

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

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

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

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

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

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, 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 waste, and other biomass sources. Excludes ethanol blends (15 percent or less) in motor gasoline.

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 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, 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 ethanol and nonmarketed renewable energy consumption for geothermal heat pumps, buildings photovoltaic systems, and solar thermal 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.

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

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

¹⁷Includes non-biogenic municipal waste not included above.

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

Btu = British thermal unit.

-- = Not applicable.

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

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

Table A3. Energy prices by sector and source
(2010 dollars per million Btu, unless otherwise noted)

Sector and source	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Residential								
Liquefied petroleum gases	24.84	27.02	30.70	31.07	32.27	33.29	34.64	1.0%
Distillate fuel oil	18.35	21.21	27.26	28.81	30.15	31.42	32.73	1.8%
Natural gas	11.95	11.08	10.31	10.84	12.03	12.76	13.98	0.9%
Electricity	34.01	33.69	34.59	33.87	34.08	34.06	34.58	0.1%
Commercial								
Liquefied petroleum gases	21.76	23.52	27.42	27.78	28.97	29.96	31.30	1.1%
Distillate fuel oil	16.16	20.77	23.98	25.49	26.86	27.98	29.18	1.4%
Residual fuel oil	13.66	11.07	16.18	17.60	18.24	19.04	18.90	2.2%
Natural gas	9.82	9.10	8.60	8.98	10.02	10.60	11.64	1.0%
Electricity	30.06	29.73	29.03	28.69	29.00	28.68	29.48	-0.0%
Industrial¹								
Liquefied petroleum gases	20.05	21.80	27.43	27.76	29.24	30.48	32.18	1.6%
Distillate fuel oil	16.74	21.32	24.20	25.73	27.22	28.39	29.53	1.3%
Residual fuel oil	12.16	10.92	19.21	20.53	21.23	21.71	21.65	2.8%
Natural gas ²	5.33	5.51	4.88	5.12	6.04	6.57	7.54	1.3%
Metallurgical coal	5.49	5.84	7.22	7.58	8.11	8.61	9.11	1.8%
Other industrial coal	2.99	2.71	3.27	3.30	3.38	3.50	3.64	1.2%
Coal to liquids	--	--	1.26	2.05	2.08	2.22	2.38	--
Electricity	20.05	19.63	18.91	18.95	19.60	19.81	20.78	0.2%
Transportation								
Liquefied petroleum gases ³	25.84	26.88	31.93	32.21	33.38	34.37	35.74	1.1%
E85 ⁴	20.76	25.21	29.03	29.91	28.81	30.75	31.96	1.0%
Motor gasoline ⁵	19.52	22.70	29.26	30.77	32.10	33.03	33.61	1.6%
Jet fuel ⁶	12.75	16.22	23.74	25.26	26.45	27.58	29.13	2.4%
Diesel fuel (distillate fuel oil) ⁷	18.02	21.87	27.56	28.98	30.42	31.38	32.40	1.6%
Residual fuel oil	10.61	10.42	18.32	19.58	20.62	20.76	20.95	2.8%
Natural gas ⁸	14.17	13.20	12.40	12.50	13.29	13.68	14.51	0.4%
Electricity	35.71	32.99	30.50	29.74	31.53	32.54	33.82	0.1%
Electric power⁹								
Distillate fuel oil	14.54	18.73	22.77	24.18	25.35	26.43	27.80	1.6%
Residual fuel oil	8.98	11.89	23.00	24.38	25.40	25.55	25.72	3.1%
Natural gas	4.85	5.14	4.55	4.72	5.60	6.21	7.21	1.4%
Steam coal	2.22	2.26	2.35	2.41	2.54	2.66	2.80	0.9%
Average price to all users¹⁰								
Liquefied petroleum gases	16.13	17.28	22.99	23.06	24.19	25.23	26.63	1.7%
E85 ⁴	20.76	25.21	29.03	29.91	28.81	30.75	31.96	1.0%
Motor gasoline ⁵	19.47	22.59	29.26	30.77	32.10	33.03	33.61	1.6%
Jet fuel	12.75	16.22	23.74	25.26	26.45	27.58	29.13	2.4%
Distillate fuel oil	17.73	21.65	26.87	28.36	29.81	30.87	31.91	1.6%
Residual fuel oil	10.51	10.82	19.01	20.31	21.31	21.53	21.68	2.8%
Natural gas	7.37	7.16	6.45	6.77	7.74	8.30	9.30	1.1%
Metallurgical coal	5.49	5.84	7.22	7.58	8.11	8.61	9.11	1.8%
Other coal	2.26	2.29	2.41	2.47	2.59	2.71	2.85	0.9%
Coal to liquids	--	--	1.26	2.05	2.08	2.22	2.38	--
Electricity	29.02	28.68	28.38	28.09	28.54	28.65	29.56	0.1%
Non-renewable energy expenditures by sector (billion 2010 dollars)								
Residential	240.88	251.69	246.72	251.77	266.75	280.17	298.72	0.7%
Commercial	177.13	179.08	177.92	187.57	201.89	212.88	231.98	1.0%
Industrial	184.40	198.98	223.88	239.75	261.92	268.58	282.31	1.4%
Transportation	479.66	573.78	746.84	770.94	803.52	829.88	856.65	1.6%
Total non-renewable expenditures	1082.08	1203.54	1395.36	1450.04	1534.08	1591.52	1669.66	1.3%
Transportation renewable expenditures	0.07	0.08	0.25	3.77	8.74	22.00	38.86	28.2%
Total expenditures	1082.15	1203.62	1395.61	1453.81	1542.81	1613.52	1708.52	1.4%

Table A3. Energy prices by sector and source (continued)
(nominal dollars per million Btu, unless otherwise noted)

Sector and source	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Residential								
Liquefied petroleum gases	24.55	27.02	33.08	36.51	41.41	47.38	54.86	2.9%
Distillate fuel oil	18.14	21.21	29.38	33.86	38.68	44.72	51.82	3.6%
Natural gas	11.82	11.08	11.11	12.74	15.43	18.16	22.14	2.8%
Electricity	33.62	33.69	37.27	39.80	43.72	48.47	54.76	2.0%
Commercial								
Liquefied petroleum gases	21.51	23.52	29.54	32.65	37.17	42.65	49.56	3.0%
Distillate fuel oil	15.97	20.77	25.83	29.95	34.47	39.82	46.20	3.2%
Residual fuel oil	13.51	11.07	17.43	20.68	23.41	27.10	29.93	4.1%
Natural gas	9.70	9.10	9.27	10.56	12.86	15.08	18.43	2.9%
Electricity	29.71	29.73	31.28	33.71	37.21	40.82	46.67	1.8%
Industrial¹								
Liquefied petroleum gases	19.82	21.80	29.56	32.63	37.51	43.38	50.95	3.5%
Distillate fuel oil	16.55	21.32	26.08	30.24	34.93	40.40	46.76	3.2%
Residual fuel oil	12.02	10.92	20.70	24.13	27.24	30.89	34.28	4.7%
Natural gas ²	5.27	5.51	5.26	6.02	7.75	9.35	11.93	3.1%
Metallurgical coal	5.43	5.84	7.78	8.91	10.40	12.26	14.42	3.7%
Other industrial coal	2.96	2.71	3.52	3.87	4.34	4.98	5.77	3.1%
Coal to liquids	--	--	1.36	2.41	2.67	3.16	3.78	--
Electricity	19.83	19.63	20.38	22.27	25.15	28.20	32.90	2.1%
Transportation								
Liquefied petroleum gases ³	25.55	26.88	34.41	37.85	42.83	48.91	56.59	3.0%
E85 ⁴	20.52	25.21	31.28	35.15	36.97	43.77	50.61	2.8%
Motor gasoline ⁵	19.29	22.70	31.53	36.17	41.19	47.01	53.22	3.5%
Jet fuel ⁶	12.61	16.22	25.58	29.68	33.94	39.25	46.12	4.3%
Diesel fuel (distillate fuel oil) ⁷	17.82	21.87	29.69	34.06	39.03	44.66	51.29	3.5%
Residual fuel oil	10.49	10.42	19.74	23.01	26.45	29.55	33.18	4.7%
Natural gas ⁸	14.01	13.20	13.36	14.69	17.05	19.47	22.97	2.2%
Electricity	35.31	32.99	32.86	34.95	40.46	46.31	53.55	2.0%
Electric power⁹								
Distillate fuel oil	14.37	18.73	24.53	28.42	32.52	37.61	44.02	3.5%
Residual fuel oil	8.88	11.89	24.78	28.66	32.59	36.37	40.73	5.0%
Natural gas	4.80	5.14	4.90	5.55	7.19	8.84	11.42	3.2%
Steam coal	2.19	2.26	2.53	2.83	3.25	3.78	4.43	2.7%

Table A3. Energy prices by sector and source (continued)
(nominal dollars per million Btu, unless otherwise noted)

Sector and source	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Average price to all users¹⁰								
Liquefied petroleum gases	15.94	17.28	24.78	27.10	31.04	35.90	42.17	3.6%
E85 ⁴	20.52	25.21	31.28	35.15	36.97	43.77	50.61	2.8%
Motor gasoline ⁵	19.25	22.59	31.53	36.16	41.19	47.01	53.22	3.5%
Jet fuel	12.61	16.22	25.58	29.68	33.94	39.25	46.12	4.3%
Distillate fuel oil	17.53	21.65	28.96	33.33	38.24	43.94	50.52	3.4%
Residual fuel oil	10.39	10.82	20.48	23.87	27.34	30.64	34.33	4.7%
Natural gas	7.28	7.16	6.95	7.96	9.93	11.81	14.73	2.9%
Metallurgical coal	5.43	5.84	7.78	8.91	10.40	12.26	14.42	3.7%
Other coal	2.23	2.29	2.60	2.90	3.32	3.86	4.51	2.8%
Coal to liquids	--	--	1.36	2.41	2.67	3.16	3.78	--
Electricity	28.68	28.68	30.58	33.01	36.62	40.77	46.80	2.0%
Non-renewable energy expenditures by sector (billion nominal dollars)								
Residential	238.13	251.69	265.85	295.89	342.26	398.75	472.99	2.6%
Commercial	175.11	179.08	191.71	220.43	259.04	302.97	367.31	2.9%
Industrial	182.29	198.98	241.24	281.75	336.06	382.26	447.01	3.3%
Transportation	474.19	573.78	804.75	906.02	1030.98	1181.11	1356.41	3.5%
Total non-renewable expenditures	1069.72	1203.54	1503.55	1704.09	1968.35	2265.08	2643.72	3.2%
Transportation renewable expenditures	0.07	0.08	0.27	4.43	11.21	31.31	61.53	30.6%
Total expenditures	1069.78	1203.62	1503.82	1708.52	1979.56	2296.40	2705.26	3.3%

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 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.

⁸Natural 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.

-- = Not applicable.

Note: Data for 2009 and 2010 are model results and may differ slightly from official EIA data reports.

Sources: 2009 and 2010 prices for motor gasoline, distillate fuel oil, and jet fuel are based on prices in the U.S. Energy Information Administration (EIA), *Petroleum Marketing Annual 2009*, DOE/EIA-0487(2009) (Washington, DC, August 2010). 2009 residential and commercial natural gas delivered prices: EIA, *Natural Gas Annual 2009*, DOE/EIA-0131(2009) (Washington, DC, December 2010). 2010 residential and commercial natural gas delivered prices: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2011/07) (Washington, DC, July 2011). 2009 and 2010 industrial natural gas delivered prices are estimated based on: EIA, *Manufacturing Energy Consumption Survey* and industrial and wellhead prices from the *Natural Gas Annual 2009*, DOE/EIA-0131(2009) (Washington, DC, December 2010) and the *Natural Gas Monthly*, DOE/EIA-0130(2011/07) (Washington, DC, July 2011). 2009 transportation sector natural gas delivered prices are based on: EIA, *Natural Gas Annual 2009*, DOE/EIA-0131(2009) (Washington, DC, December 2010) and estimated State taxes, Federal taxes, and dispensing costs or charges. 2010 transportation sector natural gas delivered prices are model results. 2009 and 2010 electric power sector distillate and residual fuel oil prices: EIA, *Monthly Energy Review*, DOE/EIA-0035(2010/09) (Washington, DC, September 2010). 2009 and 2010 electric power sector natural gas prices: EIA, *Electric Power Monthly*, DOE/EIA-0226, April 2010 and April 2011, Table 4.2, and EIA, *State Energy Data Report 2009*, DOE/EIA-0214(2009) (Washington, DC, June 2011). 2009 and 2010 coal prices based on: EIA, *Quarterly Coal Report, October-December 2010*, DOE/EIA-0121(2010/4Q) (Washington, DC, May 2011) and EIA, AEO2012 National Energy Modeling System run REF2012.D020112C. 2009 and 2010 electricity prices: EIA, *Annual Energy Review 2010*, DOE/EIA-0384(2010) (Washington, DC, October 2011). 2009 and 2010 E85 prices derived from monthly prices in the Clean Cities Alternative Fuel Price Report. **Projections:** EIA, AEO2012 National Energy Modeling System run REF2012.D020112C.

Table A4. Residential sector key indicators and consumption
(quadrillion Btu per year, unless otherwise noted)

Key indicators and consumption	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Key indicators								
Households (millions)								
Single-family	81.73	82.11	85.49	89.94	94.26	98.56	102.54	0.9%
Multifamily	25.41	25.52	26.98	29.31	31.47	33.70	35.96	1.4%
Mobile homes	6.65	6.56	6.25	6.56	6.86	7.04	7.14	0.3%
Total	113.78	114.19	118.73	125.82	132.60	139.30	145.64	1.0%
Average house square footage	1646	1653	1684	1705	1725	1743	1759	0.2%
Energy intensity								
(million Btu per household)								
Delivered energy consumption	97.8	102.1	94.6	90.3	86.8	84.2	81.9	-0.9%
Total energy consumption	184.0	193.1	175.3	169.8	166.1	162.8	159.9	-0.8%
(thousand Btu per square foot)								
Delivered energy consumption	59.4	61.8	56.2	52.9	50.3	48.3	46.6	-1.1%
Total energy consumption	111.8	116.8	104.1	99.6	96.3	93.4	90.9	-1.0%
Delivered energy consumption by fuel								
Electricity								
Space heating	0.28	0.30	0.28	0.30	0.31	0.33	0.34	0.5%
Space cooling	0.81	1.08	1.01	1.06	1.12	1.18	1.24	0.6%
Water heating	0.44	0.45	0.47	0.50	0.52	0.53	0.53	0.7%
Refrigeration	0.38	0.37	0.37	0.38	0.39	0.41	0.43	0.6%
Cooking	0.11	0.11	0.11	0.12	0.13	0.14	0.15	1.4%
Clothes dryers	0.19	0.19	0.19	0.18	0.18	0.17	0.18	-0.3%
Freezers	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.3%
Lighting	0.70	0.69	0.52	0.48	0.46	0.46	0.47	-1.5%
Clothes washers ¹	0.03	0.03	0.03	0.03	0.02	0.02	0.02	-1.2%
Dishwashers ¹	0.10	0.10	0.10	0.10	0.10	0.10	0.11	0.4%
Color televisions and set-top boxes	0.32	0.33	0.32	0.34	0.37	0.40	0.43	1.1%
Personal computers and related equipment ..	0.17	0.17	0.19	0.22	0.24	0.26	0.27	1.8%
Furnace fans and boiler circulation pumps ..	0.14	0.13	0.14	0.14	0.14	0.15	0.15	0.4%
Other uses ²	0.90	0.92	0.92	1.03	1.16	1.31	1.44	1.8%
Delivered energy	4.66	4.95	4.75	4.96	5.23	5.55	5.86	0.7%
Natural gas								
Space heating	3.31	3.50	3.39	3.34	3.27	3.24	3.19	-0.4%
Space cooling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.3%
Water heating	1.32	1.29	1.31	1.33	1.33	1.31	1.27	-0.1%
Cooking	0.22	0.22	0.22	0.22	0.22	0.23	0.23	0.3%
Clothes dryers	0.05	0.06	0.06	0.06	0.06	0.06	0.07	0.7%
Delivered energy	4.90	5.06	4.97	4.95	4.88	4.84	4.76	-0.2%
Distillate fuel oil								
Space heating	0.50	0.53	0.48	0.42	0.38	0.34	0.31	-2.1%
Water heating	0.10	0.10	0.07	0.06	0.05	0.04	0.04	-3.9%
Delivered energy	0.60	0.63	0.55	0.48	0.43	0.38	0.35	-2.3%
Liquefied petroleum gases								
Space heating	0.26	0.30	0.26	0.25	0.24	0.23	0.22	-1.1%
Water heating	0.08	0.07	0.05	0.04	0.04	0.04	0.03	-3.0%
Cooking	0.03	0.03	0.03	0.03	0.03	0.03	0.02	-0.9%
Other uses ³	0.14	0.16	0.17	0.18	0.20	0.21	0.22	1.3%
Delivered energy	0.51	0.56	0.51	0.50	0.50	0.51	0.51	-0.4%
Marketed renewables (wood) ⁴	0.43	0.42	0.43	0.43	0.43	0.43	0.43	0.1%
Other fuels ⁵	0.04	0.04	0.03	0.03	0.03	0.03	0.03	-1.6%

Table A4. Residential sector key indicators and consumption (continued)
(quadrillion Btu per year, unless otherwise noted)

Key indicators and consumption	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Delivered energy consumption by end use								
Space heating	4.81	5.08	4.86	4.78	4.67	4.60	4.52	-0.5%
Space cooling	0.81	1.08	1.01	1.06	1.12	1.18	1.24	0.6%
Water heating	1.94	1.91	1.90	1.92	1.94	1.91	1.88	-0.1%
Refrigeration	0.38	0.37	0.37	0.38	0.39	0.41	0.43	0.6%
Cooking	0.35	0.35	0.36	0.37	0.38	0.39	0.40	0.5%
Clothes dryers	0.25	0.25	0.25	0.25	0.24	0.24	0.25	-0.0%
Freezers	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.3%
Lighting	0.70	0.69	0.52	0.48	0.46	0.46	0.47	-1.5%
Clothes washers ¹	0.03	0.03	0.03	0.03	0.02	0.02	0.02	-1.2%
Dishwashers ¹	0.10	0.10	0.10	0.10	0.10	0.10	0.11	0.4%
Color televisions and set-top boxes	0.32	0.33	0.32	0.34	0.37	0.40	0.43	1.1%
Personal computers and related equipment ..	0.17	0.17	0.19	0.22	0.24	0.26	0.27	1.8%
Furnace fans and boiler circulation pumps ..	0.14	0.13	0.14	0.14	0.14	0.15	0.15	0.4%
Other uses ⁵	1.04	1.08	1.09	1.21	1.36	1.52	1.67	1.8%
Delivered energy	11.13	11.66	11.24	11.36	11.51	11.73	11.93	0.1%
Electricity related losses	9.80	10.39	9.58	10.01	10.52	10.95	11.35	0.4%
Total energy consumption by end use								
Space heating	5.41	5.70	5.42	5.37	5.29	5.24	5.17	-0.4%
Space cooling	2.52	3.34	3.06	3.19	3.36	3.51	3.65	0.4%
Water heating	2.87	2.85	2.85	2.93	2.98	2.96	2.90	0.1%
Refrigeration	1.17	1.15	1.11	1.14	1.18	1.23	1.28	0.4%
Cooking	0.58	0.58	0.59	0.61	0.64	0.67	0.69	0.7%
Clothes dryers	0.65	0.65	0.64	0.62	0.59	0.58	0.60	-0.4%
Freezers	0.26	0.26	0.25	0.26	0.26	0.26	0.26	0.1%
Lighting	2.18	2.13	1.58	1.45	1.39	1.37	1.37	-1.7%
Clothes washers ¹	0.10	0.10	0.10	0.08	0.07	0.07	0.07	-1.4%
Dishwashers ¹	0.31	0.31	0.30	0.30	0.30	0.31	0.33	0.2%
Color televisions and set-top boxes	1.00	1.02	0.98	1.03	1.10	1.18	1.26	0.9%
Personal computers and related equipment ..	0.53	0.53	0.57	0.65	0.72	0.76	0.79	1.6%
Furnace fans and boiler circulation pumps ..	0.42	0.42	0.42	0.43	0.44	0.44	0.44	0.2%
Other uses ⁵	2.94	3.01	2.96	3.29	3.70	4.10	4.47	1.6%
Total	20.93	22.05	20.81	21.36	22.02	22.68	23.28	0.2%
Nonmarketed renewables⁷								
Geothermal heat pumps	0.00	0.01	0.01	0.02	0.02	0.02	0.03	6.4%
Solar hot water heating	0.01	0.01	0.02	0.02	0.02	0.02	0.02	2.4%
Solar photovoltaic	0.00	0.00	0.04	0.05	0.05	0.06	0.06	10.7%
Wind	0.00	0.00	0.01	0.01	0.01	0.01	0.01	9.1%
Total	0.02	0.02	0.08	0.10	0.10	0.11	0.11	6.9%
Heating degree days⁸	4408	4382	4208	4172	4136	4101	4067	-0.3%
Cooling degree days⁸	1279	1498	1392	1409	1426	1443	1459	-0.1%

¹Does not include water heating portion of load.

²Includes small electric devices, heating elements, and motors not listed above. Electric vehicles are included in the transportation sector.

³Includes such appliances as outdoor grills and mosquito traps.

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

⁵Includes kerosene and coal.

⁶Includes all other uses listed above.

⁷Represents delivered energy displaced.

⁸See Table A5 for regional detail.

Btu = British thermal unit.

-- = Not applicable.

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

Sources: 2009 and 2010 consumption based on: U.S. Energy Information Administration (EIA), *Annual Energy Review 2010*, DOE/EIA-0384(2010) (Washington, DC, October 2011). 2009 and 2010 degree days based on state-level data from the National Oceanic and Atmospheric Administration's Climatic Data Center and Climate Prediction Center. Projections: EIA, AEO2012 National Energy Modeling System run REF2012.D020112C.

Table A5. Commercial sector key indicators and consumption
(quadrillion Btu per year, unless otherwise noted)

Key indicators and consumption	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Key indicators								
Total floorspace (billion square feet)								
Surviving	78.0	79.3	82.4	87.0	91.9	96.2	100.7	1.0%
New additions	2.3	1.8	1.7	2.0	2.0	2.0	2.3	1.0%
Total	80.3	81.1	84.1	89.1	93.9	98.2	103.0	1.0%
Energy consumption intensity (thousand Btu per square foot)								
Delivered energy consumption	106.0	107.3	104.6	103.1	101.0	100.6	99.8	-0.3%
Electricity related losses	117.0	117.3	110.2	110.6	110.6	110.2	109.0	-0.3%
Total energy consumption	223.0	224.5	214.8	213.7	211.5	210.7	208.8	-0.3%
Delivered energy consumption by fuel								
Purchased electricity								
Space heating ¹	0.18	0.18	0.16	0.16	0.16	0.16	0.16	-0.6%
Space cooling ¹	0.47	0.56	0.50	0.50	0.51	0.52	0.53	-0.2%
Water heating ¹	0.09	0.09	0.09	0.09	0.09	0.09	0.08	-0.4%
Ventilation	0.50	0.51	0.53	0.56	0.58	0.61	0.63	0.9%
Cooking	0.02	0.02	0.02	0.02	0.02	0.02	0.02	-0.3%
Lighting	1.03	1.01	1.00	1.03	1.06	1.10	1.13	0.4%
Refrigeration	0.40	0.39	0.35	0.34	0.34	0.34	0.35	-0.4%
Office equipment (PC)	0.22	0.21	0.19	0.19	0.20	0.21	0.21	0.0%
Office equipment (non-PC)	0.25	0.26	0.31	0.37	0.40	0.44	0.46	2.3%
Other uses ²	1.29	1.30	1.43	1.62	1.80	2.00	2.22	2.2%
Delivered energy	4.46	4.54	4.59	4.88	5.16	5.48	5.80	1.0%
Natural gas								
Space heating ¹	1.61	1.65	1.69	1.73	1.70	1.68	1.64	-0.0%
Space cooling ¹	0.03	0.04	0.04	0.04	0.03	0.03	0.03	-1.1%
Water heating ¹	0.43	0.44	0.48	0.51	0.52	0.53	0.54	0.8%
Cooking	0.17	0.18	0.19	0.20	0.21	0.22	0.22	0.9%
Other uses ³	0.95	0.98	1.01	1.04	1.07	1.14	1.25	1.0%
Delivered energy	3.20	3.28	3.41	3.51	3.53	3.60	3.69	0.5%
Distillate fuel oil								
Space heating ¹	0.16	0.14	0.12	0.11	0.10	0.10	0.09	-1.7%
Water heating ¹	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.9%
Other uses ⁴	0.22	0.26	0.20	0.20	0.20	0.20	0.19	-1.2%
Delivered energy	0.41	0.43	0.35	0.34	0.33	0.33	0.32	-1.2%
Marketed renewables (biomass)	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.0%
Other fuels ⁵	0.33	0.34	0.33	0.34	0.34	0.35	0.36	0.2%
Delivered energy consumption by end use								
Space heating ¹	1.95	1.97	1.98	2.00	1.96	1.93	1.89	-0.2%
Space cooling ¹	0.50	0.60	0.54	0.54	0.54	0.55	0.57	-0.2%
Water heating ¹	0.55	0.56	0.60	0.63	0.64	0.65	0.66	0.7%
Ventilation	0.50	0.51	0.53	0.56	0.58	0.61	0.63	0.9%
Cooking	0.20	0.20	0.21	0.23	0.23	0.24	0.24	0.8%
Lighting	1.03	1.01	1.00	1.03	1.06	1.10	1.13	0.4%
Refrigeration	0.40	0.39	0.35	0.34	0.34	0.34	0.35	-0.4%
Office equipment (PC)	0.22	0.21	0.19	0.19	0.20	0.21	0.21	0.0%
Office equipment (non-PC)	0.25	0.26	0.31	0.37	0.40	0.44	0.46	2.3%
Other uses ⁶	2.90	2.99	3.09	3.30	3.53	3.80	4.13	1.3%
Delivered energy	8.51	8.70	8.80	9.18	9.48	9.87	10.28	0.7%

Table A5. Commercial sector key indicators and consumption (continued)
(quadrillion Btu per year, unless otherwise noted)

Key indicators and consumption	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Electricity related losses	9.39	9.52	9.27	9.85	10.38	10.82	11.23	0.7%
Total energy consumption by end use								
Space heating ¹	2.34	2.35	2.31	2.33	2.28	2.24	2.19	-0.3%
Space cooling ¹	1.50	1.77	1.54	1.55	1.57	1.58	1.60	-0.4%
Water heating ¹	0.75	0.75	0.78	0.80	0.81	0.82	0.82	0.4%
Ventilation	1.56	1.57	1.60	1.69	1.75	1.81	1.84	0.6%
Cooking	0.25	0.25	0.26	0.27	0.27	0.28	0.29	0.5%
Lighting	3.21	3.14	3.01	3.12	3.21	3.27	3.32	0.2%
Refrigeration	1.24	1.21	1.06	1.02	1.02	1.02	1.04	-0.6%
Office equipment (PC)	0.67	0.66	0.57	0.58	0.59	0.61	0.63	-0.2%
Office equipment (non-PC)	0.77	0.81	0.95	1.10	1.21	1.30	1.36	2.1%
Other uses ⁶	5.62	5.71	5.98	6.56	7.15	7.75	8.42	1.6%
Total	17.90	18.22	18.06	19.03	19.86	20.69	21.50	0.7%
Nonmarketed renewable fuels⁷								
Solar thermal	0.03	0.03	0.03	0.03	0.03	0.04	0.04	1.4%
Solar photovoltaic	0.00	0.01	0.01	0.01	0.01	0.01	0.01	2.8%
Wind	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.3%
Total	0.03	0.03	0.04	0.04	0.04	0.05	0.05	1.7%
Heating Degree Days								
New England	6649	5944	6349	6351	6355	6358	6360	0.3%
Middle Atlantic	5798	5453	5588	5587	5586	5585	5583	0.1%
East North Central	6542	6209	6215	6215	6215	6215	6215	0.0%
West North Central	6837	6585	6456	6461	6463	6466	6468	-0.1%
South Atlantic	2839	3183	2728	2703	2677	2651	2625	-0.8%
East South Central	3599	4003	3474	3480	3485	3491	3496	-0.5%
West South Central	2198	2503	2156	2149	2143	2137	2131	-0.6%
Mountain	4852	4808	4780	4749	4713	4677	4641	-0.1%
Pacific	3188	3202	3130	3135	3138	3140	3143	-0.1%
United States	4408	4382	4208	4172	4136	4101	4067	-0.3%
Cooling Degree Days								
New England	363	655	518	518	517	517	516	-0.9%
Middle Atlantic	587	997	783	783	783	784	784	-1.0%
East North Central	547	978	779	780	780	781	781	-0.9%
West North Central	720	1123	976	975	974	973	973	-0.6%
South Atlantic	2047	2289	2103	2118	2134	2149	2165	-0.2%
East South Central	1491	1999	1668	1665	1662	1658	1655	-0.8%
West South Central	2582	2755	2602	2607	2611	2615	2619	-0.2%
Mountain	1551	1489	1578	1595	1617	1637	1658	0.4%
Pacific	967	746	891	888	887	885	883	0.7%
United States	1279	1498	1392	1409	1426	1443	1459	-0.1%

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 gases, 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 gases, coal, motor gasoline, and kerosene.

⁷Represents delivered energy displaced.

Btu = British thermal unit.

PC = Personal computer.

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

Sources: 2009 and 2010 consumption based on: U.S. Energy Information Administration (EIA), *Annual Energy Review 2010*, DOE/EIA-0384(2010) (Washington, DC, October 2011). 2009 and 2010 degree days based on state-level data from the National Oceanic and Atmospheric Administration's Climatic Data Center and Climate Prediction Center. Projections: EIA, AEO2012 National Energy Modeling System run REF2012.D020112C.

Table A6. Industrial sector key indicators and consumption

Key indicators and consumption	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Key indicators								
Value of shipments (billion 2005 dollars)								
Manufacturing	4052	4260	4857	5260	5745	6023	6285	1.6%
Nonmanufacturing	1615	1578	1873	2103	2228	2305	2407	1.7%
Total	5667	5838	6730	7363	7973	8328	8692	1.6%
Energy prices								
(2010 dollars per million Btu)								
Liquefied petroleum gases	20.05	21.80	27.43	27.76	29.24	30.48	32.18	1.6%
Motor gasoline	16.79	16.77	29.20	30.72	32.06	33.01	33.55	2.8%
Distillate fuel oil	16.74	21.32	24.20	25.73	27.22	28.39	29.53	1.3%
Residual fuel oil	12.16	10.92	19.21	20.53	21.23	21.71	21.65	2.8%
Asphalt and road oil	6.59	5.59	9.30	9.94	10.37	10.45	10.69	2.6%
Natural gas heat and power	4.59	4.78	4.16	4.41	5.33	5.88	6.89	1.5%
Natural gas feedstocks	6.16	6.32	5.68	5.93	6.83	7.36	8.33	1.1%
Metallurgical coal	5.49	5.84	7.22	7.58	8.11	8.61	9.11	1.8%
Other industrial coal	2.99	2.71	3.27	3.30	3.38	3.50	3.64	1.2%
Coal for liquids	--	--	1.26	2.05	2.08	2.22	2.38	--
Electricity	20.05	19.63	18.91	18.95	19.60	19.81	20.78	0.2%
(nominal dollars per million Btu)								
Liquefied petroleum gases	19.82	21.80	29.56	32.63	37.51	43.38	50.95	3.5%
Motor gasoline	16.60	16.77	31.46	36.10	41.14	46.98	53.12	4.7%
Distillate fuel oil	16.55	21.32	26.08	30.24	34.93	40.40	46.76	3.2%
Residual fuel oil	12.02	10.92	20.70	24.13	27.24	30.89	34.28	4.7%
Asphalt and road oil	6.52	5.59	10.02	11.68	13.30	14.87	16.93	4.5%
Natural gas heat and power	4.54	4.78	4.49	5.19	6.84	8.37	10.91	3.4%
Natural gas feedstocks	6.09	6.32	6.12	6.96	8.77	10.48	13.18	3.0%
Metallurgical coal	5.43	5.84	7.78	8.91	10.40	12.26	14.42	3.7%
Other industrial coal	2.96	2.71	3.52	3.87	4.34	4.98	5.77	3.1%
Coal for liquids	--	--	1.36	2.41	2.67	3.16	3.78	--
Electricity	19.83	19.63	20.38	22.27	25.15	28.20	32.90	2.1%
Energy consumption (quadrillion Btu)¹								
Industrial consumption excluding refining								
Liquefied petroleum gases heat and power ..	0.45	0.41	0.36	0.39	0.41	0.41	0.40	-0.0%
Liquefied petroleum gases feedstocks	1.54	1.58	1.45	1.65	1.75	1.76	1.74	0.4%
Motor gasoline	0.24	0.25	0.28	0.30	0.30	0.30	0.30	0.8%
Distillate fuel oil	1.11	1.15	1.25	1.18	1.19	1.17	1.18	0.1%
Residual fuel oil	0.10	0.11	0.09	0.08	0.08	0.08	0.08	-1.1%
Petrochemical feedstocks	0.90	0.94	1.01	1.20	1.29	1.31	1.30	1.3%
Petroleum coke	0.28	0.16	0.20	0.19	0.15	0.12	0.13	-1.1%
Asphalt and road oil	0.87	0.88	1.00	1.00	0.98	0.94	0.94	0.3%
Miscellaneous petroleum ²	0.38	0.52	0.14	0.12	0.12	0.11	0.12	-5.8%
Petroleum subtotal	5.87	6.00	5.78	6.11	6.27	6.20	6.19	0.1%
Natural gas heat and power	4.48	4.84	5.23	5.22	5.27	5.23	5.23	0.3%
Natural gas feedstocks	0.47	0.48	0.48	0.51	0.50	0.47	0.44	-0.3%
Lease and plant fuel ³	1.31	1.37	1.43	1.55	1.57	1.59	1.63	0.7%
Natural gas subtotal	6.25	6.69	7.14	7.27	7.34	7.29	7.31	0.4%
Metallurgical coal and coke ⁴	0.38	0.55	0.56	0.46	0.46	0.42	0.38	-1.5%
Other industrial coal	0.88	0.95	0.97	0.98	1.02	1.02	1.02	0.3%
Coal subtotal	1.26	1.50	1.53	1.44	1.47	1.44	1.40	-0.3%
Renewables ⁵	1.37	1.50	1.61	1.67	1.82	1.87	1.95	1.1%
Purchased electricity	2.94	3.09	3.24	3.26	3.33	3.24	3.12	0.0%
Delivered energy	17.69	18.78	19.30	19.75	20.23	20.04	19.97	0.2%
Electricity related losses	6.19	6.47	6.55	6.58	6.69	6.39	6.04	-0.3%
Total	23.88	25.25	25.84	26.33	26.92	26.44	26.01	0.1%

Table A6. Industrial sector key indicators and consumption (continued)

Key indicators and consumption	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Refining consumption								
Liquefied petroleum gases heat and power . . .	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.4%
Distillate fuel oil	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Residual fuel oil	0.01	0.01	0.00	0.00	0.00	0.00	0.00	--
Petroleum coke	0.52	0.52	0.53	0.49	0.49	0.51	0.53	0.1%
Still gas	1.50	1.50	1.55	1.36	1.34	1.39	1.45	-0.1%
Miscellaneous petroleum ²	0.02	0.02	0.02	0.02	0.02	0.02	0.02	1.2%
Petroleum subtotal	2.05	2.05	2.11	1.89	1.86	1.93	2.02	-0.1%
Natural gas heat and power	1.38	1.44	1.48	1.53	1.55	1.51	1.51	0.2%
Natural-gas-to-liquids heat and power	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Natural gas subtotal	1.38	1.44	1.48	1.53	1.55	1.51	1.51	0.2%
Other industrial coal	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.0%
Coal-to-liquids heat and power	0.00	0.00	0.00	0.26	0.36	0.48	0.60	--
Coal subtotal	0.06	0.06	0.06	0.32	0.42	0.54	0.66	10.0%
Biofuels heat and coproducts	0.82	0.84	0.81	0.96	1.27	1.92	2.57	4.6%
Purchased electricity	0.19	0.20	0.20	0.20	0.19	0.20	0.21	0.3%
Delivered energy	4.51	4.60	4.66	4.89	5.30	6.10	6.97	1.7%
Electricity related losses	0.40	0.41	0.39	0.39	0.39	0.40	0.41	0.0%
Total	4.91	5.01	5.05	5.28	5.69	6.50	7.39	1.6%
Total industrial sector consumption								
Liquefied petroleum gases heat and power . . .	0.46	0.42	0.38	0.41	0.42	0.42	0.41	-0.0%
Liquefied petroleum gases feedstocks	1.54	1.58	1.45	1.65	1.75	1.76	1.74	0.4%
Motor gasoline	0.24	0.25	0.28	0.30	0.30	0.30	0.30	0.8%
Distillate fuel oil	1.11	1.16	1.25	1.18	1.19	1.17	1.18	0.1%
Residual fuel oil	0.11	0.12	0.09	0.08	0.08	0.08	0.08	-1.3%
Petrochemical feedstocks	0.90	0.94	1.01	1.20	1.29	1.31	1.30	1.3%
Petroleum coke	0.80	0.68	0.73	0.68	0.64	0.63	0.66	-0.1%
Asphalt and road oil	0.87	0.88	1.00	1.00	0.98	0.94	0.94	0.3%
Still gas	1.50	1.50	1.55	1.36	1.34	1.39	1.45	-0.1%
Miscellaneous petroleum ²	0.40	0.54	0.17	0.14	0.14	0.13	0.14	-5.3%
Petroleum subtotal	7.93	8.05	7.89	7.99	8.13	8.13	8.21	0.1%
Natural gas heat and power	5.86	6.28	6.71	6.75	6.82	6.74	6.74	0.3%
Natural-gas-to-liquids heat and power	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Natural gas feedstocks	0.47	0.48	0.48	0.51	0.50	0.47	0.44	-0.3%
Lease and plant fuel ³	1.31	1.37	1.43	1.55	1.57	1.59	1.63	0.7%
Natural gas subtotal	7.63	8.14	8.62	8.80	8.89	8.80	8.81	0.3%
Metallurgical coal and coke ⁴	0.38	0.55	0.56	0.46	0.46	0.42	0.38	-1.5%
Other industrial coal	0.94	1.01	1.03	1.04	1.08	1.08	1.08	0.3%
Coal-to-liquids heat and power	0.00	0.00	0.00	0.26	0.36	0.48	0.60	--
Coal subtotal	1.32	1.56	1.59	1.76	1.90	1.98	2.06	1.1%
Biofuels heat and coproducts	0.82	0.84	0.81	0.96	1.27	1.92	2.57	4.6%
Renewables ⁵	1.37	1.50	1.61	1.67	1.82	1.87	1.95	1.1%
Purchased electricity	3.13	3.28	3.44	3.46	3.52	3.44	3.33	0.1%
Delivered energy	22.20	23.37	23.96	24.64	25.53	26.14	26.94	0.6%
Electricity related losses	6.59	6.89	6.94	6.97	7.09	6.80	6.46	-0.3%
Total	28.79	30.26	30.90	31.61	32.61	32.93	33.39	0.4%

Table A6. Industrial sector key indicators and consumption (continued)

Key indicators and consumption	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Energy consumption per dollar of shipments (thousand Btu per 2005 dollar)								
Liquid fuels and other petroleum	1.40	1.38	1.17	1.09	1.02	0.98	0.94	-1.5%
Natural gas	1.35	1.39	1.28	1.20	1.11	1.06	1.01	-1.3%
Coal	0.23	0.27	0.24	0.24	0.24	0.24	0.24	-0.5%
Renewable fuels ⁵	0.39	0.40	0.36	0.36	0.39	0.45	0.52	1.0%
Purchased electricity	0.55	0.56	0.51	0.47	0.44	0.41	0.38	-1.5%
Delivered energy	3.92	4.00	3.56	3.35	3.20	3.14	3.10	-1.0%
Industrial combined heat and power								
Capacity (gigawatts)	25.08	25.64	30.38	35.48	40.71	48.10	55.79	3.2%
Generation (billion kilowatthours)	130.57	141.07	168.00	201.40	235.62	287.62	341.40	3.6%

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 waste, and other biomass sources.

Btu = British thermal unit.

-- = Not applicable.

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

Sources: 2009 and 2010 prices for motor gasoline and distillate fuel oil are based on: U.S. Energy Information Administration (EIA), *Petroleum Marketing Annual 2009*, DOE/EIA-0487(2009) (Washington, DC, August 2010). 2009 and 2010 petrochemical feedstock and asphalt and road oil prices are based on: EIA, *State Energy Data Report 2009*, DOE/EIA-0214(2009) (Washington, DC, June 2011). 2009 and 2010 coal prices are based on: EIA, *Quarterly Coal Report, October-December 2010*, DOE/EIA-0121(2010/4Q) (Washington, DC, May 2011) and EIA, AEO2012 National Energy Modeling System run REF2012.D020112C. 2009 and 2010 electricity prices: EIA, *Annual Energy Review 2010*, DOE/EIA-0384(2010) (Washington, DC, October 2011). 2009 and 2010 natural gas prices are based on: EIA, *Manufacturing Energy Consumption Survey* and industrial and wellhead prices from the *Natural Gas Annual 2009*, DOE/EIA-0131(2009) (Washington, DC, December 2010) and the *Natural Gas Monthly*, DOE/EIA-0130(2011/07) (Washington, DC, July 2011). 2009 refining consumption values are based on: *Petroleum Supply Annual 2009*, DOE/EIA-0340(2009)/1 (Washington, DC, July 2010). 2010 refining consumption based on: *Petroleum Supply Annual 2010*, DOE/EIA-0340(2010)/1 (Washington, DC, July 2011). Other 2009 and 2010 consumption values are based on: EIA, *Annual Energy Review 2010*, DOE/EIA-0384(2010) (Washington, DC, October 2011). 2009 and 2010 shipments: IHS Global Insight, Global Insight industry model, August 2011. **Projections:** EIA, AEO2012 National Energy Modeling System run REF2012.D020112C.

Table A7. Transportation sector key indicators and delivered energy consumption

Key indicators and consumption	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Key indicators								
Travel indicators								
(billion vehicle miles traveled)								
Light-duty vehicles less than 8,501 pounds	2625	2662	2710	2881	3111	3363	3583	1.2%
Commercial light trucks ¹	58	64	70	76	83	88	92	1.5%
Freight trucks greater than 10,000 pounds	240	234	273	297	317	330	345	1.6%
(billion seat miles available)								
Air	964	999	1028	1075	1120	1164	1208	0.8%
(billion ton miles traveled)								
Rail	1532	1559	1503	1662	1782	1826	1871	0.7%
Domestic shipping	477	522	549	587	604	617	627	0.7%
Energy efficiency indicators								
(miles per gallon)								
New light-duty vehicle CAFE standard ²	25.4	25.7	32.4	35.0	35.2	35.3	35.3	1.3%
New car ²	28.2	28.2	37.0	39.9	39.9	39.9	39.9	1.4%
New light truck ²	23.0	23.4	27.9	29.2	29.2	29.2	29.2	0.9%
Compliance new light-duty vehicle ³	29.3	29.2	32.5	35.9	36.8	37.4	37.9	1.0%
New car ³	34.0	33.8	37.4	40.3	41.3	42.2	42.9	1.0%
New light truck ³	25.4	25.5	27.7	30.6	31.0	31.2	31.5	0.8%
Tested new light-duty vehicle ⁴	28.2	28.3	31.5	35.9	36.8	37.4	37.9	1.2%
New car ⁴	33.2	33.3	36.4	40.3	41.2	42.2	42.8	1.0%
New light truck ⁴	24.2	24.3	26.7	30.6	31.0	31.2	31.5	1.0%
On-road new light-duty vehicle ⁵	23.0	22.9	25.6	29.2	30.0	30.5	30.9	1.2%
New car ⁵	27.4	27.3	29.9	33.1	33.9	34.7	35.2	1.0%
New light truck ⁵	19.5	19.6	21.6	24.7	24.9	25.2	25.4	1.0%
Light-duty stock ⁶	20.4	20.4	21.5	23.6	25.6	27.1	28.2	1.3%
New commercial light truck ¹	15.6	15.7	16.7	18.8	18.9	19.0	19.1	0.8%
Stock commercial light truck ¹	14.3	14.4	15.2	16.7	18.0	18.7	19.0	1.1%
Freight truck	6.7	6.7	6.8	7.3	7.7	8.0	8.1	0.8%
(seat miles per gallon)								
Aircraft	62.0	62.3	62.8	63.8	65.2	67.0	69.3	0.4%
(ton miles per thousand Btu)								
Rail	3.4	3.4	3.5	3.5	3.5	3.5	3.5	0.1%
Domestic shipping	2.4	2.4	2.4	2.5	2.5	2.5	2.5	0.2%
Energy use by mode								
(quadrillion Btu)								
Light-duty vehicles	15.89	16.06	15.39	14.84	14.73	15.05	15.46	-0.2%
Commercial light trucks ¹	0.51	0.55	0.58	0.57	0.58	0.59	0.61	0.4%
Bus transportation	0.21	0.25	0.26	0.27	0.29	0.30	0.31	0.9%
Freight trucks	4.95	4.82	5.51	5.57	5.66	5.69	5.84	0.8%
Rail, passenger	0.04	0.05	0.05	0.06	0.06	0.06	0.06	1.2%
Rail, freight	0.36	0.45	0.43	0.48	0.51	0.52	0.53	0.6%
Shipping, domestic	0.17	0.22	0.23	0.24	0.25	0.25	0.25	0.5%
Shipping, international	0.77	0.86	0.87	0.87	0.88	0.88	0.89	0.1%
Recreational boats	0.24	0.25	0.26	0.26	0.27	0.28	0.29	0.5%
Air	2.44	2.52	2.55	2.63	2.71	2.76	2.79	0.4%
Military use	0.71	0.77	0.66	0.64	0.66	0.70	0.74	-0.1%
Lubricants	0.13	0.14	0.13	0.14	0.14	0.14	0.14	0.1%
Pipeline fuel	0.61	0.65	0.68	0.67	0.67	0.68	0.69	0.2%
Total	27.04	27.59	27.60	27.25	27.40	27.90	28.60	0.1%

Table A7. Transportation sector key indicators and delivered energy consumption (continued)

Key indicators and consumption	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Energy use by mode (million barrels per day oil equivalent)								
Light-duty vehicles	8.50	8.63	8.30	8.05	8.05	8.31	8.64	0.0%
Commercial light trucks ¹	0.26	0.28	0.30	0.29	0.30	0.30	0.31	0.4%
Bus transportation	0.10	0.12	0.13	0.13	0.14	0.14	0.15	0.9%
Freight trucks	2.39	2.32	2.65	2.68	2.72	2.74	2.81	0.8%
Rail, passenger	0.02	0.02	0.02	0.03	0.03	0.03	0.03	1.2%
Rail, freight	0.17	0.22	0.21	0.23	0.24	0.25	0.25	0.6%
Shipping, domestic	0.08	0.10	0.11	0.11	0.11	0.11	0.12	0.5%
Shipping, international	0.34	0.38	0.38	0.38	0.38	0.39	0.39	0.1%
Recreational boats	0.13	0.14	0.14	0.14	0.15	0.15	0.16	0.5%
Air	1.18	1.22	1.23	1.27	1.31	1.33	1.35	0.4%
Military use	0.34	0.37	0.32	0.31	0.32	0.34	0.36	-0.1%
Lubricants	0.06	0.07	0.06	0.06	0.07	0.07	0.07	0.1%
Pipeline fuel	0.29	0.31	0.32	0.32	0.32	0.32	0.32	0.2%
Total	13.87	14.17	14.17	14.01	14.14	14.48	14.95	0.2%

¹Commercial trucks 8,501 to 10,000 pounds gross vehicle weight rating.

²CAFE standard based on projected new vehicle sales.

³Includes CAFE credits for alternative fueled vehicle sales and credit banking.

⁴Environmental Protection Agency rated miles per gallon.

⁵Tested new vehicle efficiency revised for on-road performance.

⁶Combined "on-the-road" estimate for all cars and light trucks.

CAFE = Corporate average fuel economy.

Btu = British thermal unit.

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

Sources: 2009 and 2010: U.S. Energy Information Administration (EIA), *Natural Gas Annual 2009*, DOE/EIA-0131(2009) (Washington, DC, December 2010); EIA, *Annual Energy Review 2010*, DOE/EIA-0384(2010) (Washington, DC, October 2011); Federal Highway Administration, *Highway Statistics 2009* (Washington, DC, April 2011); Oak Ridge National Laboratory, *Transportation Energy Data Book: Edition 30 and Annual* (Oak Ridge, TN, 2011); National Highway Traffic and Safety Administration, *Summary of Fuel Economy Performance* (Washington, DC, October 28, 2010); U.S. Department of Commerce, Bureau of the Census, "Vehicle Inventory and Use Survey," EC02TV (Washington, DC, December 2004); EIA, *Alternatives to Traditional Transportation Fuels 2008 (Part II - User and Fuel Data)*, April 2010; EIA, *State Energy Data Report 2009*, DOE/EIA-0214(2009) (Washington, DC, June 2011); U.S. Department of Transportation, Research and Special Programs Administration, *Air Carrier Statistics Monthly, December 2010/2009* (Washington, DC, December 2010); EIA, *Fuel Oil and Kerosene Sales 2009*, DOE/EIA-0535(2009) (Washington, DC, February 2011); and United States Department of Defense, Defense Fuel Supply Center, *Fact Book* (January, 2010). **Projections:** EIA, AEO2012 National Energy Modeling System run REF2012.D020112C.

Table A8. Electricity supply, disposition, prices, and emissions
(billion kilowatthours, unless otherwise noted)

Supply, disposition, prices, and emissions	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Generation by fuel type								
Electric power sector¹								
Power only²								
Coal	1712	1799	1531	1604	1710	1757	1803	0.0%
Petroleum	32	32	25	26	26	27	27	-0.6%
Natural gas ³	723	776	903	874	882	983	1074	1.3%
Nuclear power	799	807	830	887	917	914	887	0.4%
Pumped storage/other ⁴	2	2	2	2	2	2	2	-1.2%
Renewable sources ⁵	384	390	504	544	579	594	630	1.9%
Distributed generation (natural gas)	0	0	0	1	2	3	4	--
Total	3651	3806	3796	3937	4118	4279	4427	0.6%
Combined heat and power⁶								
Coal	29	32	30	30	31	31	31	-0.1%
Petroleum	4	3	1	1	1	1	1	-5.2%
Natural gas	118	122	126	124	124	124	123	0.0%
Renewable sources	5	5	4	5	5	5	4	-0.7%
Total	159	165	160	160	161	160	159	-0.1%
Total electric power sector generation	3810	3971	3956	4097	4279	4439	4586	0.6%
Less direct use	14	16	13	13	13	13	13	-0.7%
Net available to the grid	3796	3955	3942	4084	4265	4426	4572	0.6%
End-use sector⁷								
Coal	15	20	20	38	46	54	63	4.7%
Petroleum	3	3	2	2	2	2	2	-0.7%
Natural gas	80	84	101	113	132	160	198	3.5%
Other gaseous fuels ⁸	10	11	16	16	15	15	15	1.2%
Renewable sources ⁹	31	34	55	65	78	103	125	5.4%
Other ¹⁰	4	4	3	3	3	3	3	-0.8%
Total end-use sector generation	143	155	197	237	277	338	406	3.9%
Less direct use	107	112	149	180	208	243	288	3.8%
Total sales to the grid	36	43	48	57	69	95	118	4.1%
Total electricity generation by fuel								
Coal	1756	1851	1581	1671	1786	1841	1897	0.1%
Petroleum	39	37	28	28	29	29	30	-0.8%
Natural gas	921	982	1130	1113	1140	1270	1398	1.4%
Nuclear power	799	807	830	887	917	914	887	0.4%
Renewable sources ^{5,9}	420	429	562	614	662	702	760	2.3%
Other ¹¹	19	21	21	21	21	21	21	-0.0%
Total electricity generation	3953	4126	4152	4334	4556	4777	4992	0.8%
Net generation to the grid	3832	3998	3990	4141	4335	4521	4691	0.6%
Net imports	34	26	29	26	22	14	12	-2.9%
Electricity sales by sector								
Residential	1364	1451	1392	1454	1533	1626	1718	0.7%
Commercial	1307	1329	1346	1431	1513	1607	1699	1.0%
Industrial	917	962	1008	1013	1032	1009	977	0.1%
Transportation	7	7	8	9	12	16	22	4.8%
Total	3596	3749	3753	3907	4090	4258	4415	0.7%
Direct use	121	128	162	193	221	256	302	3.5%
Total electricity use	3717	3877	3915	4100	4311	4514	4716	0.8%

Table A8. Electricity supply, disposition, prices, and emissions (continued)
(billion kilowatthours, unless otherwise noted)

Supply, disposition, prices, and emissions	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
End-use prices								
(2010 cents per kilowatthour)								
Residential	11.6	11.5	11.8	11.6	11.6	11.6	11.8	0.1%
Commercial	10.3	10.1	9.9	9.8	9.9	9.8	10.1	-0.0%
Industrial	6.8	6.7	6.5	6.5	6.7	6.8	7.1	0.2%
Transportation	12.2	11.3	10.4	10.1	10.8	11.1	11.5	0.1%
All sectors average	9.9	9.8	9.7	9.6	9.7	9.8	10.1	0.1%
(nominal cents per kilowatthour)								
Residential	11.5	11.5	12.7	13.6	14.9	16.5	18.7	2.0%
Commercial	10.1	10.1	10.7	11.5	12.7	13.9	15.9	1.8%
Industrial	6.8	6.7	7.0	7.6	8.6	9.6	11.2	2.1%
Transportation	12.0	11.3	11.2	11.9	13.8	15.8	18.3	2.0%
All sectors average	9.8	9.8	10.4	11.3	12.5	13.9	16.0	2.0%
Prices by service category								
(2010 cents per kilowatthour)								
Generation	6.1	5.9	5.6	5.7	6.0	6.1	6.4	0.3%
Transmission	1.0	1.0	1.1	1.1	1.1	1.1	1.1	0.3%
Distribution	2.9	2.9	3.0	2.8	2.7	2.6	2.6	-0.5%
(nominal cents per kilowatthour)								
Generation	6.0	5.9	6.0	6.7	7.7	8.7	10.2	2.2%
Transmission	1.0	1.0	1.2	1.3	1.4	1.6	1.8	2.2%
Distribution	2.8	2.9	3.3	3.3	3.4	3.7	4.1	1.4%
Electric power sector emissions¹								
Sulfur dioxide (million short tons)	5.72	5.11	1.26	1.31	1.55	1.62	1.71	-4.3%
Nitrogen oxide (million short tons)	1.99	2.06	1.79	1.87	1.92	1.94	1.96	-0.2%
Mercury (short tons)	36.25	34.70	6.44	6.74	7.24	7.51	7.86	-5.8%

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 non-biogenic municipal waste. The U.S. Energy Information Administration estimates that in 2010 approximately 6 billion kilowatthours of electricity were generated from a municipal waste stream containing petroleum-derived plastics and other non-renewable sources. See U.S. Energy Information Administration, *Methodology for Allocating Municipal Solid Waste to Biogenic and Non-Biogenic Energy*, (Washington, DC, May 2007).

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

⁶Includes 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).

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.

⁸Includes refinery gas and still gas.

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

¹⁰Includes batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies.

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

-- = Not applicable.

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

Sources: 2009 and 2010 electric power sector generation; sales to the grid; net imports; electricity sales; and electricity end-use prices: U.S. Energy Information Administration (EIA), *Annual Energy Review 2010*, DOE/EIA-0384(2010) (Washington, DC, October 2011), and supporting databases. 2009 and 2010 emissions: U.S. Environmental Protection Agency, Clean Air Markets Database. 2009 and 2010 electricity prices by service category: EIA, AEO2012 National Energy Modeling System run REF2012.D020112C. Projections: EIA, AEO2012 National Energy Modeling System run REF2012.D020112C.

Table A9. Electricity generating capacity
(gigawatts)

Net summer capacity ¹	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Electric power sector²								
Power only³								
Coal	305.9	308.1	276.7	269.8	269.8	269.9	270.4	-0.5%
Oil and natural gas steam ⁴	109.1	107.4	90.0	89.4	88.9	88.0	87.2	-0.8%
Combined cycle	167.7	171.7	187.4	187.7	197.6	218.3	246.0	1.4%
Combustion turbine/diesel	133.1	134.8	138.7	145.6	152.7	158.6	169.0	0.9%
Nuclear power ⁵	101.1	101.2	103.6	111.2	114.7	114.3	110.9	0.4%
Pumped storage	22.2	22.2	22.2	22.2	22.2	22.2	22.2	0.0%
Fuel cells	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7%
Renewable sources ⁶	120.3	125.2	144.4	145.8	151.2	156.1	169.3	1.2%
Distributed generation ⁷	0.0	0.0	0.2	0.5	0.8	1.3	2.1	--
Total	959.5	970.6	963.2	972.1	997.8	1028.7	1077.0	0.4%
Combined heat and power⁸								
Coal	5.3	5.2	4.8	4.8	4.8	4.8	4.8	-0.3%
Oil and natural gas steam ⁴	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.0%
Combined cycle	25.8	26.3	26.3	26.3	26.3	26.3	26.3	-0.0%
Combustion turbine/diesel	2.8	2.8	2.8	2.8	2.8	2.8	2.8	-0.0%
Renewable sources ⁶	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.2%
Total	35.4	35.9	35.5	35.5	35.5	35.5	35.5	-0.0%
Cumulative planned additions⁹								
Coal	0.0	0.0	9.3	9.3	9.3	9.3	9.3	--
Oil and natural gas steam ⁴	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
Combined cycle	0.0	0.0	14.3	14.3	14.3	14.3	14.3	--
Combustion turbine/diesel	0.0	0.0	5.0	5.0	5.0	5.0	5.0	--
Nuclear power	0.0	0.0	1.1	6.8	6.8	6.8	6.8	--
Pumped storage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
Fuel cells	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
Renewable sources ⁶	0.0	0.0	14.0	14.0	14.0	14.0	14.0	--
Distributed generation ⁷	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
Total	0.0	0.0	43.7	49.3	49.3	49.3	49.3	--
Cumulative unplanned additions⁹								
Coal	0.0	0.0	0.0	0.9	0.9	1.0	1.7	--
Oil and natural gas steam ⁴	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
Combined cycle	0.0	0.0	1.4	1.9	11.8	32.5	60.2	--
Combustion turbine/diesel	0.0	0.0	5.2	12.9	23.2	30.2	41.5	--
Nuclear power	0.0	0.0	0.0	0.0	0.0	0.1	1.8	--
Pumped storage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
Fuel cells	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
Renewable sources ⁶	0.0	0.0	5.7	7.0	12.4	17.4	30.5	--
Distributed generation ⁷	0.0	0.0	0.2	0.5	0.8	1.3	2.1	--
Total	0.0	0.0	12.4	23.2	49.1	82.5	137.8	--
Cumulative electric power sector additions	0.0	0.0	56.1	72.5	98.5	131.8	187.1	--
Cumulative retirements¹⁰								
Coal	0.0	0.0	41.0	48.9	48.9	48.9	49.0	--
Oil and natural gas steam ⁴	0.0	0.0	17.4	18.0	18.5	19.4	20.3	--
Combined cycle	0.0	0.0	0.0	0.2	0.2	0.2	0.2	--
Combustion turbine/diesel	0.0	0.0	6.4	7.2	10.4	11.4	12.4	--
Nuclear power	0.0	0.0	0.0	0.6	0.6	1.1	6.1	--
Pumped storage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
Fuel cells	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
Renewable sources ⁶	0.0	0.0	0.4	0.4	0.4	0.4	0.4	--
Total	0.0	0.0	65.2	75.2	78.9	81.4	88.4	--
Total electric power sector capacity	994.9	1006.5	998.7	1007.6	1033.3	1064.2	1112.5	0.4%

Table A9. Electricity generating capacity (continued)
(gigawatts)

Net summer capacity ¹	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
End-use generators¹¹								
Coal	3.6	4.3	4.2	6.6	7.7	8.8	9.9	3.4%
Petroleum	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.3%
Natural gas	14.7	14.7	17.7	19.8	22.9	27.4	33.2	3.3%
Other gaseous fuels ¹²	1.8	1.7	2.5	2.5	2.5	2.5	2.5	1.5%
Renewable sources ⁶	6.7	7.6	17.6	21.1	23.4	27.1	30.6	5.7%
Other ¹³	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.0%
Total	28.0	29.6	43.3	51.3	57.8	67.1	77.5	3.9%
Cumulative capacity additions⁹	0.0	0.0	13.7	21.7	28.2	37.4	47.9	- -

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 7.3 gigawatts of uprates through 2035.

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

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, 2010.

¹⁰Cumulative retirements after December 31, 2010.

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.

¹²Includes refinery gas and still gas.

¹³Includes batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies.

- - = Not applicable.

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

Sources: 2009 and 2010 capacity and projected planned additions: U.S. Energy Information Administration (EIA), Form EIA-860, "Annual Electric Generator Report" (preliminary). Projections: EIA, AEO2012 National Energy Modeling System run REF2012.D020112C.

Table A10. Electricity trade
(billion kilowatthours, unless otherwise noted)

Electricity trade	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Interregional electricity trade								
Gross domestic sales								
Firm power	232.1	237.5	139.1	104.4	47.1	24.2	24.2	-8.7%
Economy	231.9	137.0	206.3	211.9	235.4	230.1	235.8	2.2%
Total	464.0	374.4	345.3	316.3	282.5	254.3	260.0	-1.4%
Gross domestic sales (million 2010 dollars)								
Firm power	13923.7	14244.9	8341.5	6259.9	2824.5	1450.4	1450.4	-8.7%
Economy	9065.6	6611.0	8320.2	10576.4	14143.6	13529.2	14541.9	3.2%
Total	22989.2	20855.9	16661.8	16836.3	16968.1	14979.5	15992.2	-1.1%
International electricity trade								
Imports from Canada and Mexico								
Firm power	19.3	13.7	24.3	17.1	5.2	0.4	0.4	-13.3%
Economy	33.1	31.4	24.7	27.7	34.7	31.0	28.2	-0.4%
Total	52.4	45.1	49.0	44.8	39.9	31.4	28.6	-1.8%
Exports to Canada and Mexico								
Firm power	3.3	3.7	3.0	2.1	0.6	0.0	0.0	--
Economy	14.7	15.7	16.9	16.7	17.0	17.0	16.5	0.2%
Total	18.1	19.4	19.9	18.8	17.6	17.0	16.5	-0.7%

-- = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 2009 and 2010 are model results and may differ slightly from official EIA data reports. 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: 2009 and 2010 interregional firm electricity trade data: North American Electric Reliability Council (NERC), Electricity Sales and Demand Database 2007; NERC, 2011 Summer Reliability Assessment (May 2011); and NERC, Winter Reliability Assessment 2011/2012 (November 2011). 2009 and 2010 Mexican electricity trade data: U.S. Energy Information Administration (EIA), *Electric Power Annual 2010* DOE/EIA-0348(2010) (Washington, DC, November 2011). 2009 Canadian international electricity trade data: National Energy Board, *Electricity Exports and Imports Statistics, 2009*. 2010 Canadian international electricity trade data: National Energy Board, *Electricity Exports and Imports Statistics, 2010*. Projections: EIA, AEO2012 National Energy Modeling System run REF2012.D020112C.

Table A11. Liquid fuels supply and disposition
(million barrels per day, unless otherwise noted)

Supply and disposition	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Crude oil								
Domestic crude production ¹	5.36	5.47	6.15	6.70	6.40	6.37	5.99	0.4%
Alaska	0.65	0.60	0.46	0.49	0.40	0.44	0.27	-3.2%
Lower 48 states	4.72	4.87	5.69	6.21	6.00	5.94	5.72	0.6%
Net imports	8.97	9.17	8.52	7.15	7.24	7.14	7.52	-0.8%
Gross imports	9.01	9.21	8.56	7.19	7.27	7.17	7.55	-0.8%
Exports	0.04	0.04	0.03	0.04	0.03	0.03	0.03	-1.1%
Other crude supply ²	0.01	0.08	0.00	0.00	0.00	0.00	0.00	--
Total crude supply	14.34	14.72	14.67	13.85	13.64	13.52	13.51	-0.3%
Other petroleum supply								
Natural gas plant liquids	1.91	2.07	2.56	2.91	3.01	3.05	3.01	1.5%
Net product imports	0.75	0.39	-0.25	-0.12	-0.12	-0.25	-0.34	--
Gross refined product imports ³	1.27	1.23	0.78	0.73	0.79	0.78	0.82	-1.6%
Unfinished oil imports	0.68	0.61	0.64	0.54	0.51	0.50	0.50	-0.8%
Blending component imports	0.72	0.74	0.66	0.64	0.65	0.65	0.66	-0.5%
Exports	1.92	2.19	2.32	2.03	2.07	2.17	2.31	0.2%
Refinery processing gain ⁴	0.98	1.07	0.95	0.94	0.91	0.89	0.85	-0.9%
Product stock withdrawal	-0.04	-0.03	0.00	0.00	0.00	0.00	0.00	--
Other non-petroleum supply	0.81	1.00	1.22	1.52	1.86	2.36	2.96	4.4%
Supply from renewable sources	0.75	0.87	1.05	1.22	1.48	1.89	2.37	4.1%
Ethanol	0.73	0.85	0.94	1.04	1.19	1.40	1.65	2.7%
Domestic production	0.72	0.88	0.94	1.04	1.17	1.37	1.59	2.4%
Net imports	0.01	-0.02	0.00	0.00	0.02	0.03	0.06	--
Biodiesel	0.02	0.01	0.09	0.12	0.12	0.13	0.13	9.2%
Domestic production	0.03	0.02	0.09	0.12	0.12	0.13	0.13	7.9%
Net imports	-0.01	-0.01	0.00	0.00	0.00	0.00	-0.00	--
Other biomass-derived liquids ⁵	0.00	0.00	0.03	0.06	0.16	0.36	0.59	23.2%
Liquids from gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Liquids from coal	0.00	0.00	0.00	0.12	0.17	0.22	0.28	--
Other ⁶	0.05	0.13	0.17	0.19	0.21	0.25	0.31	3.6%
Total primary supply⁷	18.74	19.22	19.14	19.10	19.29	19.57	19.99	0.2%
Liquid fuels consumption								
by fuel								
Liquefied petroleum gases	2.13	2.27	1.94	2.11	2.21	2.22	2.21	-0.1%
E85 ⁸	0.00	0.00	0.01	0.09	0.21	0.49	0.83	27.0%
Motor gasoline ⁹	9.00	8.99	8.88	8.48	8.29	8.17	8.09	-0.4%
Jet fuel ¹⁰	1.39	1.43	1.46	1.49	1.54	1.58	1.61	0.5%
Distillate fuel oil ¹¹	3.63	3.80	4.19	4.24	4.33	4.38	4.48	0.7%
Diesel	3.18	3.32	3.71	3.81	3.92	3.99	4.11	0.9%
Residual fuel oil	0.51	0.54	0.56	0.56	0.57	0.57	0.58	0.3%
Other ¹²	2.15	2.14	2.06	2.04	2.06	2.06	2.10	-0.1%
by sector								
Residential and commercial	1.05	1.12	1.00	0.96	0.94	0.92	0.91	-0.9%
Industrial ¹³	4.24	4.31	4.17	4.31	4.41	4.41	4.44	0.1%
Transportation	13.54	13.82	13.80	13.62	13.71	14.00	14.41	0.2%
Electric power ¹⁴	0.17	0.17	0.13	0.13	0.14	0.14	0.14	-0.7%
Total	18.81	19.17	19.10	19.02	19.20	19.47	19.90	0.1%
Discrepancy¹⁵	-0.07	0.05	0.05	0.09	0.10	0.10	0.09	--

Table A11. Liquid fuels supply and disposition (continued)
(million barrels per day, unless otherwise noted)

Supply and disposition	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Domestic refinery distillation capacity ¹⁶	17.7	17.6	17.5	15.8	15.5	15.4	15.2	-0.6%
Capacity utilization rate (percent) ¹⁷	83.0	86.0	85.9	89.8	90.1	89.6	90.8	0.2%
Net import share of product supplied (percent) . . .	51.9	49.6	43.2	36.8	37.0	35.4	36.2	-1.2%
Net expenditures for imported crude oil and petroleum products (billion 2010 dollars)	206.18	243.07	373.00	322.55	344.58	353.03	389.97	1.9%

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.

⁴The volumetric amount by which total output is greater than input due to the processing of crude oil into products which, in total, have a lower specific gravity than the crude oil processed.

⁵Includes pyrolysis oils, biomass-derived Fischer-Tropsch liquids, and renewable feedstocks used for the on-site production of diesel and gasoline.

⁶Includes domestic sources of other blending components, other hydrocarbons, and ethers.

⁷Total crude supply plus other petroleum supply plus other non-petroleum supply.

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 varies seasonally. The annual average ethanol content of 74 percent is used for this forecast.

⁹Includes ethanol and ethers blended into gasoline.

¹⁰Includes only kerosene type.

¹¹Includes distillate fuel oil and kerosene from petroleum and biomass feedstocks.

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

¹³Includes consumption for combined heat and power, which produces electricity and other useful thermal energy.

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.

¹⁵Balancing item. Includes unaccounted for supply, losses, and gains.

¹⁶End-of-year operable capacity.

¹⁷Rate is calculated by dividing the gross annual input to atmospheric crude oil distillation units by their operable refining capacity in barrels per calendar day.

-- = Not applicable.

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

Sources: 2009 and 2010 product supplied based on: U.S. Energy Information Administration (EIA), *Annual Energy Review 2010*, DOE/EIA-0384(2010) (Washington, DC, October 2011). Other 2009 data: EIA, *Petroleum Supply Annual 2009*, DOE/EIA-0340(2009)/1 (Washington, DC, July 2010). Other 2010 data: EIA, *Petroleum Supply Annual 2010*, DOE/EIA-0340(2010)/1 (Washington, DC, July 2011). Projections: EIA, AEO2012 National Energy Modeling System run REF2012.D020112C.

Table A12. Petroleum product prices
(2010 dollars per gallon, unless otherwise noted)

Sector and fuel	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Crude oil prices (2010 dollars per barrel)								
Low sulfur light	62.37	79.39	116.91	126.68	132.56	138.49	144.98	2.4%
Imported crude oil ¹	59.72	75.87	113.97	115.74	121.21	126.51	132.95	2.3%
Delivered sector product prices								
Residential								
Liquefied petroleum gases	2.10	2.29	2.60	2.63	2.73	2.82	2.93	1.0%
Distillate fuel oil	2.54	2.94	3.78	4.00	4.18	4.36	4.54	1.8%
Commercial								
Distillate fuel oil	2.23	2.87	3.30	3.51	3.70	3.85	4.02	1.4%
Residual fuel oil	2.04	1.66	2.42	2.63	2.73	2.85	2.83	2.2%
Residual fuel oil (2010 dollars per barrel) ...	85.89	69.58	101.70	110.65	114.70	119.73	118.85	2.2%
Industrial²								
Liquefied petroleum gases	1.70	1.85	2.32	2.35	2.48	2.58	2.73	1.6%
Distillate fuel oil	2.31	2.93	3.32	3.53	3.74	3.90	4.05	1.3%
Residual fuel oil	1.82	1.63	2.88	3.07	3.18	3.25	3.24	2.8%
Residual fuel oil (2010 dollars per barrel) ...	76.47	68.62	120.80	129.07	133.47	136.47	136.12	2.8%
Transportation								
Liquefied petroleum gases	2.19	2.28	2.70	2.73	2.83	2.91	3.03	1.1%
Ethanol (E85) ³	1.98	2.40	2.77	2.85	2.75	2.93	3.05	1.0%
Ethanol wholesale price	1.59	1.71	2.23	2.54	2.33	2.29	2.16	0.9%
Motor gasoline ⁴	2.38	2.76	3.54	3.71	3.86	3.97	4.03	1.5%
Jet fuel ⁵	1.72	2.19	3.21	3.41	3.57	3.72	3.93	2.4%
Diesel fuel (distillate fuel oil) ⁶	2.47	3.00	3.78	3.97	4.17	4.30	4.44	1.6%
Residual fuel oil	1.59	1.56	2.74	2.93	3.09	3.11	3.14	2.8%
Residual fuel oil (2010 dollars per barrel) ...	66.71	65.53	115.15	123.09	129.62	130.52	131.73	2.8%
Electric power⁷								
Distillate fuel oil	2.02	2.60	3.16	3.35	3.52	3.67	3.86	1.6%
Residual fuel oil	1.34	1.78	3.44	3.65	3.80	3.83	3.85	3.1%
Residual fuel oil (2010 dollars per barrel) ...	56.46	74.77	144.60	153.30	159.70	160.65	161.71	3.1%
Refined petroleum product prices⁸								
Liquefied petroleum gases	1.37	1.46	1.95	1.95	2.05	2.14	2.26	1.7%
Motor gasoline ⁴	2.37	2.74	3.54	3.71	3.85	3.97	4.03	1.6%
Jet fuel ⁵	1.72	2.19	3.21	3.41	3.57	3.72	3.93	2.4%
Distillate fuel oil	2.44	2.97	3.69	3.89	4.09	4.23	4.38	1.6%
Residual fuel oil	1.57	1.62	2.85	3.04	3.19	3.22	3.25	2.8%
Residual fuel oil (2010 dollars per barrel) ...	66.10	68.00	119.50	127.68	133.95	135.33	136.32	2.8%
Average	2.17	2.53	3.32	3.46	3.60	3.72	3.83	1.7%

Table A12. Petroleum product prices (continued)
(nominal dollars per gallon, unless otherwise noted)

Sector and fuel	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Crude oil prices (nominal dollars per barrel)								
Low sulfur light	61.65	79.39	125.97	148.87	170.09	197.10	229.55	4.3%
Imported crude oil ¹	59.04	75.87	122.81	136.02	155.52	180.06	210.51	4.2%
Delivered sector product prices								
Residential								
Liquefied petroleum gases	2.08	2.29	2.80	3.09	3.51	4.01	4.65	2.9%
Distillate fuel oil	2.52	2.94	4.07	4.70	5.36	6.20	7.19	3.6%
Commercial								
Distillate fuel oil	2.20	2.87	3.56	4.12	4.75	5.48	6.36	3.2%
Residual fuel oil	2.02	1.66	2.61	3.10	3.50	4.06	4.48	4.1%
Residual fuel oil (nominal dollars per barrel)	84.91	69.58	109.59	130.04	147.17	170.40	188.19	4.1%
Industrial²								
Liquefied petroleum gases	1.68	1.85	2.50	2.76	3.18	3.67	4.31	3.5%
Distillate fuel oil	2.28	2.93	3.58	4.15	4.80	5.55	6.42	3.2%
Residual fuel oil	1.80	1.63	3.10	3.61	4.08	4.62	5.13	4.7%
Residual fuel oil (nominal dollars per barrel)	75.59	68.62	130.16	151.68	171.25	194.23	215.53	4.7%
Transportation								
Liquefied petroleum gases	2.16	2.28	2.91	3.21	3.63	4.14	4.79	3.0%
Ethanol (E85) ³	1.96	2.40	2.98	3.35	3.52	4.17	4.82	2.8%
Ethanol wholesale price	1.57	1.71	2.40	2.98	2.99	3.25	3.42	2.8%
Motor gasoline ⁴	2.35	2.76	3.81	4.36	4.95	5.64	6.39	3.4%
Jet fuel ⁵	1.70	2.19	3.45	4.01	4.58	5.30	6.23	4.3%
Diesel fuel (distillate fuel oil) ⁶	2.44	3.00	4.07	4.67	5.35	6.12	7.03	3.5%
Residual fuel oil	1.57	1.56	2.95	3.44	3.96	4.42	4.97	4.7%
Residual fuel oil (nominal dollars per barrel)	65.95	65.53	124.07	144.66	166.32	185.76	208.57	4.7%
Electric power⁷								
Distillate fuel oil	1.99	2.60	3.40	3.94	4.51	5.22	6.11	3.5%
Residual fuel oil	1.33	1.78	3.71	4.29	4.88	5.44	6.10	5.0%
Residual fuel oil (nominal dollars per barrel)	55.81	74.77	155.81	180.16	204.91	228.64	256.05	5.0%
Refined petroleum product prices⁸								
Liquefied petroleum gases	1.35	1.46	2.10	2.30	2.63	3.04	3.57	3.6%
Motor gasoline ⁴	2.35	2.74	3.81	4.36	4.95	5.64	6.39	3.4%
Jet fuel ⁵	1.70	2.19	3.45	4.01	4.58	5.30	6.23	4.3%
Distillate fuel oil	2.41	2.97	3.97	4.57	5.25	6.03	6.93	3.4%
Residual fuel oil	1.56	1.62	3.07	3.57	4.09	4.59	5.14	4.7%
Residual fuel oil (nominal dollars per barrel)	65.34	68.00	128.77	150.05	171.87	192.61	215.84	4.7%
Average	2.14	2.53	3.57	4.06	4.62	5.29	6.06	3.6%

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 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.

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

Note: Data for 2009 and 2010 are model results and may differ slightly from official EIA data reports.

Sources: 2009 and 2010 low sulfur light crude oil price: U.S. Energy Information Administration (EIA), Form EIA-856, "Monthly Foreign Crude Oil Acquisition Report." 2009 and 2010 imported crude oil price: EIA, *Annual Energy Review 2010*, DOE/EIA-0384(2010) (Washington, DC, October 2011). 2009 and 2010 prices for motor gasoline, distillate fuel oil, and jet fuel are based on: EIA, *Petroleum Marketing Annual 2009*, DOE/EIA-0487(2009) (Washington, DC, August 2010). 2009 and 2010 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." 2009 and 2010 electric power prices based on: EIA, *Monthly Energy Review*, DOE/EIA-0035(2011/09) (Washington, DC, September 2011). 2009 and 2010 E85 prices derived from monthly prices in the Clean Cities Alternative Fuel Price Report. 2009 and 2010 wholesale ethanol prices derived from Bloomberg U.S. average rack price. Projections: EIA, AEO2012 National Energy Modeling System run REF2012.D020112C.

Table A13. Natural gas supply, disposition, and prices
(trillion cubic feet per year, unless otherwise noted)

Supply, disposition, and prices	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Production								
Dry gas production ¹	20.58	21.58	23.65	25.09	26.28	26.94	27.93	1.0%
Supplemental natural gas ²	0.07	0.07	0.06	0.06	0.06	0.06	0.06	-0.2%
Net imports								
Pipeline ³	2.26	2.21	1.56	1.01	-0.13	-0.27	-0.70	--
Liquefied natural gas	0.42	0.37	0.16	-0.66	-0.66	-0.62	-0.66	--
Total supply	23.32	24.22	25.45	25.50	25.55	26.11	26.63	0.4%
Consumption by sector								
Residential	4.78	4.94	4.85	4.83	4.76	4.72	4.64	-0.2%
Commercial	3.12	3.20	3.33	3.43	3.44	3.52	3.60	0.5%
Industrial ⁴	6.17	6.60	7.01	7.08	7.14	7.03	7.00	0.2%
Natural-gas-to-liquids heat and power ⁵	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Natural gas to liquids production ⁶	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Electric power ⁷	6.87	7.38	8.08	7.87	7.87	8.47	8.96	0.8%
Transportation ⁸	0.04	0.04	0.06	0.08	0.11	0.14	0.16	5.9%
Pipeline fuel	0.60	0.63	0.67	0.66	0.66	0.66	0.67	0.2%
Lease and plant fuel ⁹	1.28	1.34	1.39	1.51	1.53	1.55	1.60	0.7%
Total	22.85	24.13	25.39	25.47	25.53	26.10	26.63	0.4%
Discrepancy ¹⁰	0.47	0.10	0.05	0.04	0.02	0.01	-0.00	--
Natural gas prices								
(2010 dollars per million Btu)								
Henry hub spot price	4.00	4.39	4.29	4.58	5.63	6.29	7.37	2.1%
Average lower 48 wellhead price ¹¹	3.75	4.06	3.84	4.10	5.00	5.56	6.48	1.9%
(2010 dollars per thousand cubic feet)								
Average lower 48 wellhead price ¹¹	3.85	4.16	3.94	4.19	5.12	5.69	6.64	1.9%
Delivered prices								
(2010 dollars per thousand cubic feet)								
Residential	12.25	11.36	10.56	11.11	12.33	13.08	14.33	0.9%
Commercial	10.06	9.32	8.82	9.21	10.27	10.86	11.93	1.0%
Industrial ⁴	5.47	5.65	5.00	5.25	6.19	6.73	7.73	1.3%
Electric power ⁷	4.97	5.25	4.65	4.83	5.73	6.35	7.37	1.4%
Transportation ¹²	14.52	13.53	12.71	12.81	13.62	14.02	14.87	0.4%
Average ¹³	7.55	7.33	6.60	6.93	7.93	8.50	9.52	1.1%

Table A13. Natural gas supply, disposition, and prices (continued)
(trillion cubic feet per year, unless otherwise noted)

Supply, disposition, and prices	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Natural gas prices								
(nominal dollars per million Btu)								
Henry hub spot price	3.95	4.39	4.62	5.39	7.23	8.95	11.67	4.0%
Average lower 48 wellhead price ¹¹	3.71	4.06	4.14	4.81	6.42	7.92	10.26	3.8%
(nominal dollars per thousand cubic feet)								
Average lower 48 wellhead price ¹¹	3.80	4.16	4.24	4.93	6.57	8.11	10.51	3.8%
Delivered prices								
(nominal dollars per thousand cubic feet)								
Residential	12.11	11.36	11.38	13.06	15.82	18.61	22.69	2.8%
Commercial	9.95	9.32	9.50	10.82	13.18	15.46	18.89	2.9%
Industrial ⁴	5.40	5.65	5.39	6.17	7.94	9.58	12.23	3.1%
Electric power ⁷	4.92	5.25	5.01	5.67	7.35	9.03	11.67	3.2%
Transportation ¹²	14.36	13.53	13.70	15.06	17.48	19.95	23.54	2.2%
Average¹³	7.46	7.33	7.11	8.15	10.17	12.10	15.08	2.9%

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, as well as gas from Canada and Mexico.

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 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.

⁸Natural 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, 2009 and 2010 values include net storage injections.

¹¹Represents lower 48 onshore and offshore supplies.

¹²Natural 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.

-- = Not applicable.

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

Sources: 2009 supply values; and lease, plant, and pipeline fuel consumption: U.S. Energy Information Administration (EIA), *Natural Gas Annual 2009*, DOE/EIA-0131(2009) (Washington, DC, December 2010). 2010 supply values; lease, plant, and pipeline fuel consumption; and wellhead price: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2011/07) (Washington, DC, July 2011). Other 2009 and 2010 consumption based on: EIA, *Annual Energy Review 2010*, DOE/EIA-0384(2010) (Washington, DC, October 2011). 2009 wellhead price: U.S. Department of the Interior, Office of Natural Resources Revenue; and EIA, *Natural Gas Annual 2009*, DOE/EIA-0131(2009) (Washington, DC, December 2010). 2009 residential and commercial delivered prices: EIA, *Natural Gas Annual 2009*, DOE/EIA-0131(2009) (Washington, DC, December 2010). 2010 residential and commercial delivered prices: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2011/07) (Washington, DC, July 2011). 2009 and 2010 electric power prices: EIA, *Electric Power Monthly*, DOE/EIA-0226, April 2010 and April 2011, Table 4.2, and EIA, *State Energy Data Report 2009*, DOE/EIA-0214(2009) (Washington, DC, June 2011). 2009 and 2010 industrial delivered prices are estimated based on: EIA, *Manufacturing Energy Consumption Survey* and industrial and wellhead prices from the *Natural Gas Annual 2009*, DOE/EIA-0131(2009) (Washington, DC, December 2010) and the *Natural Gas Monthly*, DOE/EIA-0130(2011/07) (Washington, DC, July 2011). 2009 transportation sector delivered prices are based on: EIA, *Natural Gas Annual 2009*, DOE/EIA-0131(2009) (Washington, DC, December 2010) and estimated state taxes, federal taxes, and dispensing costs or charges. 2010 transportation sector delivered prices are model results. **Projections:** EIA, AEO2012 National Energy Modeling System run REF2012.D020112C.

Table A14. Oil and gas supply

Production and supply	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Crude oil								
Lower 48 average wellhead price¹ (2010 dollars per barrel)	57.46	80.46	117.84	124.44	130.30	130.74	137.55	2.2%
Production (million barrels per day)²								
United States total	5.36	5.47	6.15	6.70	6.40	6.37	5.99	0.4%
Lower 48 onshore	3.04	3.21	4.09	4.38	4.43	4.29	3.99	0.9%
Tight oil ³	0.25	0.37	0.97	1.20	1.29	1.32	1.23	4.9%
Carbon dioxide enhanced oil recovery	0.27	0.28	0.26	0.33	0.49	0.61	0.66	3.5%
Other	2.52	2.55	2.86	2.85	2.66	2.36	2.10	-0.8%
Lower 48 offshore	1.68	1.67	1.60	1.83	1.57	1.65	1.74	0.2%
Alaska	0.65	0.60	0.46	0.49	0.40	0.44	0.27	-3.2%
Lower 48 end of year reserves² (billion barrels)	18.75	18.33	20.55	23.02	23.64	24.34	24.23	1.1%
Natural gas								
Lower 48 average wellhead price¹ (2010 dollars per million Btu)								
Henry hub spot price	4.00	4.39	4.29	4.58	5.63	6.29	7.37	2.1%
Average lower 48 wellhead price ¹	3.75	4.06	3.84	4.10	5.00	5.56	6.48	1.9%
(2010 dollars per thousand cubic feet)								
Average lower 48 wellhead price ¹	3.85	4.16	3.94	4.19	5.12	5.69	6.64	1.9%
Dry production (trillion cubic feet)⁴								
United States total	20.58	21.58	23.65	25.09	26.28	26.94	27.93	1.0%
Lower 48 onshore	17.50	18.66	21.48	22.48	23.64	24.11	24.97	1.2%
Associated-dissolved ⁵	1.40	1.40	1.52	1.54	1.41	1.18	1.00	-1.3%
Non-associated	16.10	17.26	19.96	20.94	22.23	22.93	23.97	1.3%
Tight gas	6.40	5.68	6.08	6.06	6.17	6.07	6.14	0.3%
Shale gas	2.91	4.99	8.24	9.69	11.26	12.42	13.63	4.1%
Coalbed methane	1.99	1.99	1.83	1.79	1.77	1.74	1.76	-0.5%
Other	4.80	4.59	3.82	3.40	3.03	2.70	2.44	-2.5%
Lower 48 offshore	2.70	2.56	1.88	2.34	2.38	2.58	2.72	0.3%
Associated-dissolved ⁵	0.70	0.71	0.55	0.75	0.67	0.70	0.73	0.1%
Non-associated	2.00	1.85	1.33	1.59	1.71	1.88	2.00	0.3%
Alaska	0.37	0.36	0.29	0.27	0.25	0.25	0.23	-1.8%
Lower 48 end of year dry reserves⁴ (trillion cubic feet)	263.40	260.50	274.79	290.32	299.77	307.17	311.58	0.7%
Supplemental gas supplies (trillion cubic feet)⁶	0.07	0.07	0.06	0.06	0.06	0.06	0.06	-0.2%
Total lower 48 wells drilled (thousands)	34.31	43.19	49.79	53.80	59.42	60.21	65.59	1.7%

¹Represents lower 48 onshore and offshore supplies.

²Includes lease condensate.

³Tight oil represents resources in low-permeability reservoirs, including shale and chalk formations. The specific plays included in the tight oil category are Bakken/Three Forks/Sanish, Eagle Ford, Woodford, Austin Chalk, Spraberry, Niobrara, Avalon/Bone Springs, and Monterey.

⁴Marketed production (wet) minus extraction losses.

⁵Gas which occurs in crude oil reservoirs either as free gas (associated) or as gas in solution with crude oil (dissolved).

⁶Synthetic 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 2009 and 2010 are model results and may differ slightly from official EIA data reports.

Sources: 2009 and 2010 crude oil lower 48 average wellhead price: U.S. Energy Information Administration (EIA), *Petroleum Marketing Annual 2009*, DOE/EIA-0487(2009) (Washington, DC, August 2010). 2009 and 2010 lower 48 onshore, lower 48 offshore, and Alaska crude oil production: EIA, *Petroleum Supply Annual 2010*, DOE/EIA-0340(2010)/1 (Washington, DC, July 2011). 2009 U.S. crude oil and natural gas reserves: EIA, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves*, DOE/EIA-0216(2009) (Washington, DC, November 2010). 2009 Alaska and total natural gas production, and supplemental gas supplies: EIA, *Natural Gas Annual 2009*, DOE/EIA-0131(2009) (Washington, DC, December 2010). 2009 natural gas lower 48 average wellhead price: U.S. Department of the Interior, Office of Natural Resources Revenue, and EIA, *Natural Gas Annual 2009*, DOE/EIA-0131(2009) (Washington, DC, December 2010). 2010 natural gas lower 48 average wellhead price, Alaska and total natural gas production, and supplemental gas supplies: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2011/07) (Washington, DC, July 2011). Other 2009 and 2010 values: EIA, Office of Energy Analysis. Projections: EIA, AEO2012 National Energy Modeling System run REF2012.D020112C.

Table A15. Coal supply, disposition, and prices
(million short tons per year, unless otherwise noted)

Supply, disposition, and prices	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Production¹								
Appalachia	343	336	300	262	271	282	291	-0.6%
Interior	147	156	151	159	163	181	198	1.0%
West	585	592	542	613	684	703	722	0.8%
East of the Mississippi	450	446	407	377	383	409	431	-0.1%
West of the Mississippi	625	638	586	657	735	757	781	0.8%
Total	1075	1084	993	1034	1118	1166	1212	0.4%
Waste coal supplied²	14	14	15	15	16	17	19	1.4%
Net imports								
Imports ³	21	18	15	28	44	33	36	2.8%
Exports	59	82	110	95	115	117	129	1.8%
Total	-38	-64	-95	-67	-71	-83	-94	--
Total supply⁴	1050	1034	914	982	1064	1100	1138	0.4%
Consumption by sector								
Residential and commercial	3	3	3	3	3	3	3	-0.3%
Coke plants	15	21	22	18	19	18	17	-1.0%
Other industrial ⁵	45	52	50	51	52	52	53	0.0%
Coal-to-liquids heat and power	0	0	0	13	19	26	34	--
Coal to liquids production	0	0	0	12	18	25	32	--
Electric power ⁶	934	975	839	885	952	975	998	0.1%
Total	997	1051	914	982	1063	1099	1137	0.3%
Discrepancy and stock change⁷	53	-17	-0	-0	1	0	0	--
Average minemouth price⁸								
(2010 dollars per short ton)	33.62	35.61	42.08	40.96	44.05	47.28	50.52	1.4%
(2010 dollars per million Btu)	1.68	1.76	2.08	2.06	2.23	2.39	2.56	1.5%
Delivered prices (2010 dollars per short ton)⁹								
Coke plants	144.66	153.59	189.11	198.45	212.18	225.36	238.32	1.8%
Other industrial ⁵	65.62	59.28	70.14	70.89	72.77	75.43	78.53	1.1%
Coal to liquids	--	--	18.65	40.67	39.03	40.20	41.54	--
Electric power								
(2010 dollars per short ton)	43.83	44.27	45.17	45.98	48.13	50.56	53.31	0.7%
(2010 dollars per million Btu)	2.22	2.26	2.35	2.41	2.54	2.66	2.80	0.9%
Average	46.41	47.17	49.95	49.99	51.90	54.09	56.48	0.7%
Exports ¹⁰	102.61	120.41	140.89	155.03	163.43	172.39	177.66	1.6%

Table A15. Coal supply, disposition, and prices (continued)
(million short tons per year, unless otherwise noted)

Supply, disposition, and prices	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Average minemouth price⁸								
(nominal dollars per short ton)	33.24	35.61	45.34	48.13	56.52	67.28	80.00	3.3%
(nominal dollars per million Btu)	1.66	1.76	2.24	2.42	2.86	3.41	4.05	3.4%
Delivered prices (nominal dollars per short ton)⁹								
Coke plants	143.01	153.59	203.77	233.22	272.25	320.74	377.36	3.7%
Other industrial ⁵	64.87	59.28	75.58	83.31	93.37	107.35	124.34	3.0%
Coal to liquids	--	--	20.09	47.80	50.08	57.22	65.77	--
Electric power								
(nominal dollars per short ton)	43.33	44.27	48.68	54.03	61.76	71.96	84.40	2.6%
(nominal dollars per million Btu)	2.19	2.26	2.53	2.83	3.25	3.78	4.43	2.7%
Average	45.88	47.17	53.83	58.74	66.60	76.98	89.43	2.6%
Exports ¹⁰	101.44	120.41	151.81	182.19	209.70	245.35	281.30	3.5%

¹Includes anthracite, bituminous coal, subbituminous 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.

-- = Not applicable.

Btu = British thermal unit.

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

Sources: 2009 and 2010 data based on: U.S. Energy Information Administration (EIA), *Annual Coal Report 2010*, DOE/EIA-0584(2010) (Washington, DC, November 2011); EIA, *Quarterly Coal Report, October-December 2010*, DOE/EIA-0121(2010/4Q) (Washington, DC, May 2011); and EIA, AEO2012 National Energy Modeling System run REF2012.D020112C. Projections: EIA, AEO2012 National Energy Modeling System run REF2012.D020112C.

Table A16. Renewable energy generating capacity and generation
(gigawatts, unless otherwise noted)

Net summer capacity and generation	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Electric power sector¹								
Net summer capacity								
Conventional hydropower	78.01	78.03	78.55	79.13	80.14	80.66	81.25	0.2%
Geothermal ²	2.37	2.37	2.86	3.57	4.45	5.48	6.30	4.0%
Municipal waste ³	3.20	3.30	3.36	3.36	3.36	3.36	3.36	0.1%
Wood and other biomass ⁴	2.43	2.45	2.72	2.72	2.72	2.72	2.89	0.7%
Solar thermal	0.47	0.47	1.36	1.36	1.36	1.36	1.36	4.3%
Solar photovoltaic ⁵	0.15	0.38	2.02	2.03	2.30	2.97	8.18	13.0%
Wind	34.52	39.05	54.26	54.31	57.57	60.29	66.65	2.2%
Offshore wind	0.00	0.00	0.20	0.20	0.20	0.20	0.20	--
Total electric power sector capacity . . .	121.16	126.06	145.34	146.68	152.10	157.05	170.19	1.2%
Generation (billion kilowatthours)								
Conventional hydropower	271.50	255.32	295.43	300.54	305.00	307.40	310.08	0.8%
Geothermal ²	15.01	15.67	18.68	24.41	31.53	39.89	46.54	4.5%
Biogenic municipal waste ⁶	16.10	16.56	14.66	14.67	14.67	14.67	14.67	-0.5%
Wood and other biomass	10.74	11.51	21.28	51.60	63.90	57.08	49.28	6.0%
Dedicated plants	9.68	10.15	10.13	13.16	13.30	11.81	10.37	0.1%
Cofiring	1.06	1.36	11.15	38.44	50.60	45.27	38.92	14.4%
Solar thermal	0.74	0.82	2.86	2.86	2.86	2.86	2.86	5.1%
Solar photovoltaic ⁵	0.16	0.46	3.61	3.62	4.37	6.16	20.19	16.4%
Wind	73.88	94.49	150.22	150.34	160.73	169.64	189.92	2.8%
Offshore wind	0.00	0.00	0.75	0.75	0.75	0.75	0.75	--
Total electric power sector generation .	388.11	394.82	507.49	548.78	583.81	598.46	634.30	1.9%
End-use sectors⁷								
Net summer capacity								
Conventional hydropower ⁸	0.34	0.33	0.33	0.33	0.33	0.33	0.33	0.0%
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Municipal waste ⁹	0.36	0.35	0.35	0.35	0.35	0.35	0.35	0.0%
Biomass	4.56	4.56	5.73	6.68	8.44	11.31	13.81	4.5%
Solar photovoltaic ⁵	1.22	2.05	8.98	11.19	11.69	12.41	13.33	7.8%
Wind	0.18	0.36	2.25	2.57	2.60	2.65	2.74	8.5%
Total end-use sector capacity	6.66	7.65	17.64	21.12	23.41	27.05	30.57	5.7%
Generation (billion kilowatthours)								
Conventional hydropower ⁸	1.94	1.76	1.75	1.75	1.75	1.75	1.75	-0.0%
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Municipal waste ⁹	2.07	2.02	2.79	2.79	2.79	2.79	2.79	1.3%
Biomass	25.31	26.10	33.30	39.53	52.34	76.03	96.17	5.4%
Solar photovoltaic ⁵	1.93	3.21	13.88	17.40	18.22	19.40	20.91	7.8%
Wind	0.24	0.47	2.88	3.31	3.36	3.44	3.56	8.5%
Total end-use sector generation	31.48	33.56	54.59	64.77	78.45	103.40	125.17	5.4%

Table A16. Renewable energy generating capacity and generation (continued)
(gigawatts, unless otherwise noted)

Net summer capacity and generation	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Total, all sectors								
Net summer capacity								
Conventional hydropower	78.35	78.36	78.88	79.46	80.47	80.99	81.58	0.2%
Geothermal	2.37	2.37	2.86	3.57	4.45	5.48	6.30	4.0%
Municipal waste	3.57	3.65	3.71	3.71	3.71	3.71	3.71	0.1%
Wood and other biomass ⁴	6.99	7.00	8.45	9.40	11.16	14.03	16.71	3.5%
Solar ⁵	1.85	2.90	12.37	14.58	15.35	16.74	22.87	8.6%
Wind	34.70	39.41	56.72	57.07	60.37	63.15	69.59	2.3%
Total capacity, all sectors	127.83	133.70	162.98	167.80	175.51	184.10	200.76	1.6%
Generation (billion kilowatthours)								
Conventional hydropower	273.44	257.08	297.18	302.28	306.75	309.15	311.83	0.8%
Geothermal	15.01	15.67	18.68	24.41	31.53	39.89	46.54	4.5%
Municipal waste	18.16	18.59	17.45	17.46	17.46	17.46	17.46	-0.3%
Wood and other biomass	36.05	37.61	54.58	91.13	116.24	133.11	145.45	5.6%
Solar ⁵	2.82	4.48	20.35	23.87	25.44	28.42	43.96	9.6%
Wind	74.12	94.95	153.85	154.40	164.84	173.83	194.23	2.9%
Total generation, all sectors	419.59	428.38	562.08	613.55	662.25	701.85	759.46	2.3%

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

²Includes both hydrothermal resources (hot water and steam) and near-field enhanced geothermal systems (EGS). Near-field EGS potential occurs on known hydrothermal sites, however this potential requires the addition of external fluids for electricity generation and is only available after 2025.

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

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

⁵Does not include off-grid photovoltaics (PV). Based on annual PV shipments from 1989 through 2009, EIA estimates that as much as 245 megawatts of remote electricity generation PV applications (i.e., off-grid power systems) were in service in 2009, plus an additional 558 megawatts in communications, transportation, and assorted other non-grid-connected, specialized applications. See U.S. Energy Information Administration, *Annual Energy Review 2010*, DOE/EIA-0384(2010) (Washington, DC, October 2011), Table 10.9 (annual PV shipments, 1989-2009). 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.

⁶Includes biogenic municipal waste, landfill gas, and municipal sewage sludge. Incremental growth is assumed to be for landfill gas facilities. Only biogenic municipal waste is included. The U.S. Energy Information Administration estimates that in 2010 approximately 6 billion kilowatthours of electricity were generated from a municipal waste stream containing petroleum-derived plastics and other non-renewable sources. See U.S. Energy Information Administration, *Methodology for Allocating Municipal Solid Waste to Biogenic and Non-Biogenic Energy* (Washington, DC, May 2007).

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

-- = Not applicable.

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

Sources: 2009 and 2010 capacity: U.S. Energy Information Administration (EIA), Form EIA-860, "Annual Electric Generator Report" (preliminary). 2009 and 2010 generation: EIA, *Annual Energy Review 2010*, DOE/EIA-0384(2010) (Washington, DC, October 2011). Projections: EIA, AEO2012 National Energy Modeling System run REF2012.D020112C.

Table A17. Renewable energy consumption by sector and source
(quadrillion Btu per year)

Sector and source	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Marketed renewable energy¹								
Residential (wood)	0.43	0.42	0.43	0.43	0.43	0.43	0.43	0.1%
Commercial (biomass)	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.0%
Industrial²	2.19	2.34	2.42	2.63	3.09	3.79	4.52	2.7%
Conventional hydroelectric	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.0%
Municipal waste ³	0.16	0.17	0.18	0.18	0.18	0.18	0.18	0.1%
Biomass	1.19	1.31	1.42	1.48	1.62	1.68	1.76	1.2%
Biofuels heat and coproducts	0.82	0.84	0.81	0.96	1.27	1.92	2.57	4.6%
Transportation	0.99	1.14	1.45	1.72	2.16	2.88	3.75	4.9%
Ethanol used in E85 ⁴	0.00	0.00	0.01	0.08	0.20	0.47	0.80	27.0%
Ethanol used in gasoline blending	0.95	1.10	1.21	1.27	1.35	1.35	1.34	0.8%
Biodiesel used in distillate blending	0.04	0.03	0.18	0.23	0.24	0.25	0.26	9.2%
Liquids from biomass	0.00	0.00	0.03	0.11	0.33	0.78	1.31	--
Renewable diesel and gasoline ⁵	0.00	0.01	0.03	0.03	0.03	0.03	0.03	6.2%
Electric power⁶	3.77	3.85	4.96	5.40	5.75	5.87	6.22	1.9%
Conventional hydroelectric	2.65	2.49	2.88	2.93	2.98	3.00	3.03	0.8%
Geothermal	0.15	0.15	0.18	0.24	0.31	0.39	0.45	4.5%
Biogenic municipal waste ⁷	0.07	0.08	0.09	0.09	0.09	0.09	0.09	0.6%
Biomass	0.17	0.19	0.27	0.60	0.73	0.64	0.56	4.4%
Dedicated plants	0.16	0.17	0.16	0.21	0.22	0.18	0.16	-0.1%
Cofiring	0.01	0.02	0.11	0.39	0.52	0.46	0.40	11.8%
Solar thermal	0.01	0.01	0.03	0.03	0.03	0.03	0.03	5.1%
Solar photovoltaic	0.00	0.00	0.04	0.04	0.04	0.06	0.20	16.4%
Wind	0.72	0.92	1.47	1.47	1.58	1.66	1.86	2.8%
Total marketed renewable energy	7.49	7.87	9.37	10.29	11.54	13.09	15.03	2.6%
Sources of ethanol								
from corn and other starch	0.94	1.14	1.20	1.32	1.39	1.39	1.46	1.0%
from cellulose	0.00	0.00	0.01	0.03	0.13	0.40	0.61	56.6%
Net imports	0.02	-0.03	0.00	0.00	0.03	0.04	0.08	--
Total	0.95	1.11	1.22	1.35	1.55	1.82	2.15	2.7%

Table A17. Renewable energy consumption by sector and source (continued)
(quadrillion Btu per year)

Sector and source	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Nonmarketed renewable energy⁸								
Selected consumption								
Residential	0.02	0.02	0.08	0.10	0.10	0.11	0.11	6.9%
Solar hot water heating	0.01	0.01	0.02	0.02	0.02	0.02	0.02	2.4%
Geothermal heat pumps	0.00	0.01	0.01	0.02	0.02	0.02	0.03	6.4%
Solar photovoltaic	0.00	0.00	0.04	0.05	0.05	0.06	0.06	10.7%
Wind	0.00	0.00	0.01	0.01	0.01	0.01	0.01	9.1%
Commercial	0.03	0.03	0.04	0.04	0.04	0.05	0.05	1.7%
Solar thermal	0.03	0.03	0.03	0.03	0.03	0.04	0.04	1.4%
Solar photovoltaic	0.00	0.01	0.01	0.01	0.01	0.01	0.01	2.8%
Wind	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.3%

¹Includes 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.

²Includes all electricity production by industrial and other combined heat and power for the grid and for own use.

³Includes municipal waste, landfill gas, and municipal sewage sludge. All municipal waste is included, although a portion of the municipal waste stream contains petroleum-derived plastics and other non-renewable sources.

⁴Excludes motor gasoline component of E85.

⁵Renewable feedstocks for the on-site production of diesel and gasoline.

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. Actual heat rates used to determine fuel consumption for all renewable fuels except hydropower, geothermal, solar, and wind. Consumption at hydroelectric, geothermal, solar, and wind facilities determined by using the fossil fuel equivalent of 9,760 Btu per kilowatthour.

⁷Includes biogenic municipal waste, landfill gas, and municipal sewage sludge. Incremental growth is assumed to be for landfill gas facilities. Only biogenic municipal waste is included. The U.S. Energy Information Administration estimates that in 2010 approximately 0.3 quadrillion Btus were consumed from a municipal waste stream containing petroleum-derived plastics and other non-renewable sources. See U.S. Energy Information Administration, *Methodology for Allocating Municipal Solid Waste to Biogenic and Non-Biogenic Energy* (Washington, DC, May 2007).

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

-- = Not applicable.

Btu = British thermal unit.

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

Sources: 2009 and 2010 ethanol: U.S. Energy Information Administration (EIA), *Annual Energy Review 2010*, DOE/EIA-0384(2010) (Washington, DC, October 2011). 2009 and 2010 electric power sector: EIA, Form EIA-860, "Annual Electric Generator Report" (preliminary). Other 2009 and 2010 values: EIA, Office of Energy Analysis. Projections: EIA, AEO2012 National Energy Modeling System run REF2012.D020112C.

Table A18. Energy-related carbon dioxide emissions by sector and source
(million metric tons, unless otherwise noted)

Sector and source	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Residential								
Petroleum	81	85	74	69	65	61	59	-1.5%
Natural gas	259	267	264	263	259	257	252	-0.2%
Coal	1	1	1	1	1	1	1	-1.3%
Electricity ¹	819	879	746	769	816	862	907	0.1%
Total residential	1159	1232	1084	1101	1141	1181	1218	-0.0%
Commercial								
Petroleum	49	51	44	44	44	44	44	-0.6%
Natural gas	169	173	181	186	187	191	196	0.5%
Coal	6	6	6	6	6	6	6	0.0%
Electricity ¹	785	805	721	757	806	852	897	0.4%
Total commercial	1009	1035	952	993	1043	1093	1142	0.4%
Industrial²								
Petroleum	339	344	364	350	351	351	358	0.2%
Natural gas ³	383	408	445	454	459	455	456	0.4%
Coal	128	157	154	170	183	190	197	0.9%
Electricity ¹	551	583	540	536	550	535	516	-0.5%
Total industrial	1401	1492	1503	1509	1542	1531	1527	0.1%
Transportation								
Petroleum ⁴	1818	1836	1825	1785	1778	1791	1814	-0.0%
Natural gas ⁵	34	36	39	40	42	44	45	0.9%
Electricity ¹	4	4	4	5	7	9	12	4.2%
Total transportation	1856	1876	1868	1831	1827	1843	1871	-0.0%
Electric power⁶								
Petroleum	34	33	23	23	24	24	25	-1.1%
Natural gas	373	399	438	427	427	459	485	0.8%
Coal	1741	1828	1539	1606	1717	1763	1809	-0.0%
Other ⁷	12	12	12	12	12	12	12	0.0%
Total electric power	2159	2271	2011	2067	2179	2258	2330	0.1%
Total by fuel								
Petroleum ³	2320	2349	2329	2271	2261	2271	2300	-0.1%
Natural gas	1218	1283	1367	1370	1374	1405	1435	0.4%
Coal	1876	1990	1699	1781	1906	1959	2012	0.0%
Other ⁷	12	12	12	12	12	12	12	0.0%
Total	5425	5634	5407	5434	5552	5647	5758	0.1%
Carbon dioxide emissions								
(tons per person)	17.6	18.1	16.6	15.9	15.5	15.1	14.8	-0.8%

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

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

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 2009, international bunker fuels accounted for 90 to 126 million metric tons annually.

⁵Includes pipeline fuel natural gas and 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 waste.

Note: By convention, the direct emissions from biogenic energy sources are excluded from energy-related carbon dioxide emissions. The release of carbon from these sources is assumed to be balanced by the uptake of carbon when the feedstock is grown, resulting in zero net emissions over some period of time. If, however, increased use of biomass energy results in a decline in terrestrial carbon stocks, a net positive release of carbon may occur. See "Energy-Related Carbon Dioxide Emissions by End Use" for the emissions from biogenic energy sources as an indication of the potential net release of carbon dioxide in the absence of offsetting sequestration. Totals may not equal sum of components due to independent rounding. Data for 2009 and 2010 are model results and may differ slightly from official EIA data reports.

Sources: 2009 and 2010 emissions and emission factors: U.S. Energy Information Administration (EIA), *Monthly Energy Review*, October 2011 DOE/EIA-0035(2011/10) (Washington, DC, October 2011). Projections: EIA, AEO2012 National Energy Modeling System run REF2012.D020112C.

Table A19. Energy-related carbon dioxide emissions by end use
(million metric tons)

Sector and end use	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Residential								
Space heating	280.90	298.51	277.05	272.48	267.41	264.17	259.97	-0.6%
Space cooling	142.72	191.18	159.32	164.10	174.13	183.61	192.21	0.0%
Water heating	160.15	159.68	151.53	154.46	157.58	156.73	154.55	-0.1%
Refrigeration	66.17	66.06	57.91	58.63	61.36	64.38	67.24	0.1%
Cooking	32.01	32.25	30.98	32.26	33.88	35.40	36.82	0.5%
Clothes dryers	36.78	37.23	33.43	31.76	30.86	30.58	31.50	-0.7%
Freezers	14.50	14.62	13.14	13.17	13.46	13.61	13.81	-0.2%
Lighting	123.36	122.27	81.97	74.77	72.02	71.52	72.33	-2.1%
Clothes washers ¹	5.87	5.79	4.96	4.18	3.86	3.64	3.74	-1.7%
Dishwashers ¹	17.70	17.75	15.48	15.32	15.33	16.16	17.28	-0.1%
Color televisions and set-top boxes	56.62	58.20	50.98	53.06	57.14	61.62	66.45	0.5%
Personal computers and related equipment	29.75	30.47	29.70	33.59	37.07	39.80	41.67	1.3%
Furnace fans and boiler circulation pumps	23.80	23.93	21.88	22.19	22.63	22.80	23.00	-0.2%
Other uses	167.37	173.46	155.66	171.03	194.05	216.69	237.60	1.3%
Discrepancy ²	1.73	0.16	0.00	-0.00	0.00	0.00	0.00	--
Total residential	1159.44	1231.57	1083.99	1101.00	1140.80	1180.73	1218.17	-0.0%
Commercial								
Space heating ³	129.16	129.68	124.70	124.97	122.24	120.61	118.00	-0.4%
Space cooling ³	84.66	101.34	80.33	79.94	81.20	82.60	84.17	-0.7%
Water heating ³	41.32	41.44	41.47	42.83	43.45	44.00	44.04	0.2%
Ventilation	88.64	90.04	83.19	86.87	90.94	94.43	97.04	0.3%
Cooking	13.27	13.58	13.68	14.20	14.47	14.84	15.13	0.4%
Lighting	181.96	180.09	156.69	160.17	166.24	171.06	174.62	-0.1%
Refrigeration	70.13	69.16	55.15	52.64	52.71	53.53	54.79	-0.9%
Office equipment (PC)	38.00	37.69	29.68	29.85	30.75	32.11	33.19	-0.5%
Office equipment (non-PC)	43.86	46.44	49.41	56.62	62.87	67.77	71.49	1.7%
Other uses ⁴	317.61	325.18	317.95	345.09	378.20	411.92	449.71	1.3%
Total commercial	1008.62	1034.63	952.26	993.16	1043.07	1092.87	1142.18	0.4%
Industrial								
Manufacturing								
Refining	261.44	265.88	268.04	278.94	288.94	303.58	322.94	0.8%
Food products	100.97	105.04	98.92	104.00	108.26	111.71	113.98	0.3%
Paper products	77.15	76.70	71.83	71.82	73.13	71.21	69.81	-0.4%
Bulk chemicals	221.74	234.55	213.65	229.11	233.13	225.47	215.77	-0.3%
Glass	18.92	18.59	19.05	20.00	21.33	21.21	20.50	0.4%
Cement manufacturing	25.91	25.67	33.19	35.70	37.08	36.48	37.41	1.5%
Iron and steel	91.87	116.74	117.01	110.23	114.88	107.91	99.25	-0.6%
Aluminum	27.63	30.89	28.68	27.66	26.37	24.89	23.14	-1.1%
Fabricated metal products	36.69	36.14	36.43	36.81	37.90	35.62	33.25	-0.3%
Machinery	22.80	23.76	24.75	24.32	26.46	25.49	23.73	-0.0%
Computers and electronics	30.67	33.07	32.16	33.69	36.48	36.57	36.74	0.4%
Transportation equipment	43.77	45.62	56.18	54.82	54.85	57.23	58.87	1.0%
Electrical equipment	7.86	8.17	8.23	8.25	9.10	8.85	8.55	0.2%
Wood products	16.74	16.90	19.68	19.99	20.46	19.14	18.50	0.4%
Plastics	37.47	38.26	34.96	35.35	34.86	34.29	33.32	-0.6%
Balance of manufacturing	142.01	142.62	133.94	136.85	138.25	133.50	129.25	-0.4%
Total manufacturing	1163.64	1218.60	1196.68	1227.54	1261.49	1253.14	1245.00	0.1%
Nonmanufacturing								
Agriculture	73.84	73.82	69.73	68.13	68.31	67.95	68.29	-0.3%
Construction	76.16	69.67	83.15	91.08	92.27	91.23	91.95	1.1%
Mining	43.45	46.03	44.37	44.16	43.79	43.23	42.83	-0.3%
Total nonmanufacturing	193.45	189.52	197.25	203.37	204.37	202.41	203.08	0.3%
Discrepancy ²	43.83	83.41	108.76	78.58	76.09	74.99	78.94	-0.2%
Total industrial	1400.92	1491.53	1502.69	1509.48	1541.94	1530.55	1527.02	0.1%

Table A19. Energy-related carbon dioxide emissions by end use (continued)
(million metric tons)

Sector and end use	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Transportation								
Light-duty vehicles	1068.20	1060.96	1014.74	966.95	945.91	950.30	957.76	-0.4%
Commercial light trucks ⁵	35.27	38.02	39.58	38.75	38.76	39.51	40.97	0.3%
Bus transportation	14.85	17.67	17.32	17.17	17.13	17.18	17.32	-0.1%
Freight trucks	356.16	348.09	389.50	391.24	396.52	398.85	409.21	0.6%
Rail, passenger	5.41	5.84	5.76	6.02	6.39	6.70	6.98	0.7%
Rail, freight	26.27	32.99	30.95	33.83	36.05	36.73	37.43	0.5%
Shipping, domestic	13.03	16.31	16.75	17.65	17.97	18.15	18.27	0.5%
Shipping, international	60.55	67.51	67.87	68.23	68.70	69.13	69.55	0.1%
Recreational boats	16.45	17.12	17.27	17.53	17.90	18.42	18.94	0.4%
Air	172.79	178.28	180.48	186.23	192.08	195.53	197.54	0.4%
Military use	50.94	54.70	47.05	45.77	47.13	49.65	52.56	-0.2%
Lubricants	4.71	5.19	5.00	5.10	5.19	5.24	5.28	0.1%
Pipeline fuel	32.53	34.34	36.23	35.81	35.79	35.99	36.36	0.2%
Discrepancy ²	-1.34	-1.15	-0.21	0.45	1.14	1.81	2.39	--
Total transportation	1855.81	1875.88	1868.28	1830.73	1826.65	1843.20	1870.57	-0.0%
Biogenic energy combustion⁶								
Biomass	178.16	190.68	208.91	245.80	271.80	268.87	268.81	1.4%
Electric power sector	15.83	18.00	25.42	56.39	68.61	60.49	52.72	4.4%
Other sectors	162.33	172.68	183.49	189.41	203.18	208.37	216.10	0.9%
Biogenic waste	6.56	7.10	8.20	8.21	8.21	8.21	8.21	0.6%
Biofuels heat and coproducts	77.06	79.11	75.91	89.81	119.14	179.75	241.23	4.6%
Ethanol	65.18	75.71	83.37	92.41	106.14	124.29	146.78	2.7%
Biodiesel	3.07	2.11	12.76	16.51	17.69	18.42	19.18	9.2%
Liquids from biomass	0.00	0.00	2.01	7.99	24.22	57.28	95.80	--
Renewable diesel and gasoline	0.00	0.50	2.23	2.23	2.23	2.23	2.21	6.2%
Total	330.03	355.21	393.39	462.96	549.43	659.05	782.23	3.2%

¹Does not include water heating portion of load.

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

³Includes emissions related to fuel consumption for district services.

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

⁵Commercial trucks 8,501 to 10,000 pounds gross vehicle weight rating.

⁶By convention, the direct emissions from biogenic energy sources are excluded from energy-related carbon dioxide emissions. The release of carbon from these sources is assumed to be balanced by the uptake of carbon when the feedstock is grown, resulting in zero net emissions over some period of time. If, however, increased use of biomass energy results in a decline in terrestrial carbon stocks, a net positive release of carbon may occur. Accordingly, the emissions from biogenic energy sources are reported here as an indication of the potential net release of carbon dioxide in the absence of offsetting sequestration.

-- = Not applicable.

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

Sources: 2009 and 2010 emissions and emission factors: U.S. Energy Information Administration (EIA), *Monthly Energy Review, October 2011* DOE/EIA-0035(2011/10) (Washington, DC, October 2011). Projections: EIA, AEO2012 National Energy Modeling System run REF2012.D020112C.

Table A20. Macroeconomic indicators
(billion 2005 chain-weighted dollars, unless otherwise noted)

Indicators	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Real gross domestic product	12703	13088	14803	16740	19185	21725	24539	2.5%
Components of real gross domestic product								
Real consumption	9037	9221	10218	11250	12697	14359	16220	2.3%
Real investment	1454	1715	2457	2888	3472	4063	4836	4.2%
Real government spending	2540	2557	2355	2407	2525	2667	2818	0.4%
Real exports	1494	1663	2289	3096	4235	5484	6953	5.9%
Real imports	1853	2085	2463	2800	3516	4461	5690	4.1%
Energy intensity (thousand Btu per 2005 dollar of GDP)								
Delivered energy	5.42	5.45	4.84	4.33	3.85	3.48	3.17	-2.1%
Total energy	7.46	7.50	6.58	5.93	5.32	4.80	4.36	-2.1%
Price indices								
GDP chain-type price index (2005=1.00)	1.097	1.110	1.196	1.304	1.424	1.580	1.758	1.9%
Consumer price index (1982-4=1.00)								
All-urban	2.15	2.18	2.42	2.67	2.95	3.30	3.72	2.2%
Energy commodities and services	1.93	2.12	2.62	2.94	3.36	3.86	4.37	2.9%
Wholesale price index (1982=1.00)								
All commodities	1.73	1.85	2.10	2.23	2.39	2.58	2.81	1.7%
Fuel and power	1.59	1.86	2.29	2.57	3.01	3.50	4.12	3.2%
Metals and metal products	1.87	2.08	2.43	2.50	2.57	2.61	2.64	1.0%
Industrial commodities excluding energy	1.76	1.83	2.04	2.13	2.22	2.32	2.43	1.1%
Interest rates (percent, nominal)								
Federal funds rate	0.16	0.18	3.26	4.07	4.29	4.52	4.30	--
10-year treasury note	3.26	3.21	4.67	5.10	5.06	5.26	5.18	--
AA utility bond rate	5.75	5.24	6.74	7.41	7.17	7.48	7.56	--
Value of shipments (billion 2005 dollars)								
Service sectors	19996	20602	22469	24967	28029	30911	33430	2.0%
Total industrial	5667	5838	6730	7363	7973	8328	8692	1.6%
Nonmanufacturing	1615	1578	1873	2103	2228	2305	2407	1.7%
Manufacturing	4052	4260	4857	5260	5745	6023	6285	1.6%
Energy-intensive	1509	1595	1664	1786	1901	1973	2034	1.0%
Non-energy-intensive	2543	2664	3194	3474	3844	4050	4251	1.9%
Total shipments	25664	26440	29199	32329	36002	39239	42122	1.9%
Population and employment (millions)								
Population, with armed forces overseas	307.8	310.8	326.2	342.0	358.1	374.1	390.1	0.9%
Population, aged 16 and over	241.8	244.3	256.5	269.4	282.6	296.2	309.6	1.0%
Population, over age 65	39.7	40.4	47.1	55.1	64.2	72.3	77.7	2.6%
Employment, nonfarm	130.7	129.8	139.4	147.3	154.2	162.0	166.8	1.0%
Employment, manufacturing	11.8	11.5	12.1	11.9	11.4	10.3	9.2	-0.9%
Key labor indicators								
Labor force (millions)	154.2	153.9	158.0	163.6	168.6	174.5	181.7	0.7%
Nonfarm labor productivity (1992=1.00)	1.06	1.10	1.16	1.26	1.42	1.57	1.75	1.9%
Unemployment rate (percent)	9.28	9.63	7.51	6.47	5.54	5.40	5.54	--
Key indicators for energy demand								
Real disposable personal income	9883	10062	11035	12472	14286	16268	18217	2.4%
Housing starts (millions)	0.60	0.63	1.75	1.92	1.96	1.90	1.89	4.5%
Commercial floorspace (billion square feet) ...	80.3	81.1	84.1	89.1	93.9	98.2	103.0	1.0%
Unit sales of light-duty vehicles (millions)	10.40	11.55	16.16	16.40	17.79	18.11	18.64	1.9%

GDP = Gross domestic product.

Btu = British thermal unit.

-- = Not applicable.

Sources: 2009 and 2010: IHS Global Insight, Global Insight Industry and Employment models, August 2011. Projections: U.S. Energy Information Administration, AEO2012 National Energy Modeling System run REF2012.D020112C.

Table A21. International liquids supply and disposition summary
(million barrels per day, unless otherwise noted)

Supply and disposition	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Crude oil prices (2010 dollars per barrel)								
Low sulfur light	62.37	79.39	116.91	126.68	132.56	138.49	144.98	2.4%
Imported crude oil ¹	59.72	75.87	113.97	115.74	121.21	126.51	132.95	2.3%
Crude oil prices (nominal dollars per barrel)								
Low sulfur light	61.65	79.39	125.97	148.87	170.09	197.10	229.55	4.3%
Imported crude oil ¹	59.04	75.87	122.81	136.02	155.52	180.06	210.51	4.2%
Petroleum liquids production²								
OPEC ³								
Middle East	22.30	23.43	25.46	27.16	29.77	32.07	33.94	1.5%
North Africa	3.92	3.89	3.62	3.42	3.37	3.31	3.27	-0.7%
West Africa	4.16	4.45	5.09	5.35	5.40	5.31	5.26	0.7%
South America	2.43	2.29	2.13	1.97	1.92	1.79	1.72	-1.1%
Total OPEC petroleum production	32.80	34.05	36.30	37.91	40.46	42.48	44.19	1.0%
Non-OPEC								
OECD								
United States (50 states)	8.27	8.79	9.82	10.73	10.53	10.57	10.15	0.6%
Canada	1.96	1.91	1.79	1.82	1.82	1.81	1.78	-0.3%
Mexico and Chile	3.00	2.98	2.65	1.97	1.58	1.65	1.68	-2.3%
OECD Europe ⁴	4.70	4.36	3.70	3.33	3.15	3.00	2.83	-1.7%
Japan	0.13	0.13	0.14	0.15	0.15	0.15	0.16	0.7%
Australia and New Zealand	0.65	0.62	0.55	0.54	0.54	0.53	0.53	-0.6%
Total OECD petroleum production	18.71	18.80	18.65	18.54	17.78	17.72	17.14	-0.4%
Non-OECD								
Russia	9.93	10.14	10.04	10.54	11.06	11.62	12.16	0.7%
Other Europe and Eurasia ⁵	3.12	3.22	3.67	4.01	4.37	4.52	4.54	1.4%
China	3.99	4.27	4.29	4.46	4.79	4.93	4.70	0.4%
Other Asia ⁶	3.67	3.77	3.79	3.55	3.38	3.17	3.00	-0.9%
Middle East	1.56	1.58	1.43	1.31	1.18	1.06	0.97	-1.9%
Africa	2.44	2.41	2.40	2.54	2.68	2.70	2.68	0.4%
Brazil	2.08	2.19	2.72	3.34	3.87	4.21	4.45	2.9%
Other Central and South America	1.90	2.01	2.29	2.32	2.47	2.67	2.65	1.1%
Total non-OECD petroleum production	28.69	29.59	30.63	32.07	33.80	34.88	35.15	0.7%
Total petroleum liquids production	80.21	82.44	85.58	88.52	92.04	95.08	96.47	0.6%
Other liquids production⁷								
United States (50 states)	0.75	0.90	1.05	1.34	1.62	2.08	2.59	4.3%
Other North America	1.69	1.93	2.51	3.08	3.75	4.46	5.16	4.0%
OECD Europe ⁴	0.22	0.22	0.23	0.24	0.26	0.27	0.28	1.0%
Middle East	0.01	0.01	0.17	0.21	0.24	0.24	0.24	14.5%
Africa	0.21	0.21	0.28	0.37	0.38	0.39	0.40	2.6%
Central and South America	1.14	1.20	1.78	2.31	2.61	2.90	3.17	3.9%
Other	0.12	0.13	0.16	0.28	0.61	0.92	1.18	9.1%
Total other liquids production	4.14	4.61	6.18	7.82	9.47	11.27	13.02	4.2%
Total production	84.35	87.05	91.76	96.33	101.51	106.34	109.50	0.9%

Table A21. International liquids supply and disposition summary (continued)
(million barrels per day, unless otherwise noted)

Supply and disposition	Reference case							Annual growth 2010-2035 (percent)
	2009	2010	2015	2020	2025	2030	2035	
Liquids consumption⁸								
OECD								
United States (50 states)	18.81	19.17	19.10	19.02	19.20	19.47	19.90	0.1%
United States territories	0.27	0.28	0.31	0.32	0.34	0.36	0.36	1.0%
Canada	2.16	2.21	2.15	2.21	2.25	2.29	2.35	0.2%
Mexico and Chile	2.35	2.34	2.39	2.43	2.50	2.60	2.68	0.5%
OECD Europe ⁴	14.66	14.58	14.14	14.43	14.65	14.76	14.74	0.0%
Japan	4.39	4.45	4.51	4.60	4.62	4.51	4.42	-0.0%
South Korea	2.15	2.24	2.25	2.35	2.46	2.53	2.56	0.5%
Australia and New Zealand	1.16	1.13	1.11	1.14	1.17	1.21	1.23	0.3%
Total OECD consumption	45.94	46.40	45.95	46.50	47.19	47.72	48.24	0.2%
Non-OECD								
Russia	2.73	2.93	3.02	2.94	2.91	2.94	2.97	0.1%
Other Europe and Eurasia ⁵	2.15	2.08	2.30	2.35	2.45	2.55	2.63	0.9%
China	8.33	9.19	12.10	14.36	16.03	17.65	18.50	2.8%
India	3.11	3.18	3.70	4.58	5.40	5.79	5.80	2.4%
Other non-OECD Asia ⁶	6.43	6.73	7.28	7.95	8.85	9.40	9.89	1.5%
Middle East	6.84	7.35	7.78	7.69	8.16	8.98	9.49	1.0%
Africa	3.23	3.34	3.30	3.37	3.57	3.80	4.09	0.8%
Brazil	2.52	2.65	2.84	2.94	3.15	3.47	3.80	1.5%
Other Central and South America	3.07	3.19	3.49	3.66	3.81	4.05	4.09	1.0%
Total non-OECD consumption	38.41	40.65	45.82	49.83	54.32	58.62	61.26	1.7%
Total liquids consumption	84.35	87.05	91.76	96.33	101.51	106.35	109.50	0.9%
OPEC production ⁹	33.34	34.58	37.30	39.23	41.91	44.05	45.89	1.1%
Non-OPEC production ⁹	51.01	52.47	54.46	57.10	59.60	62.30	63.61	0.8%
Net Eurasia exports	10.25	10.53	11.11	12.60	13.94	14.85	15.54	1.6%
OPEC market share (percent)	39.5	39.7	40.7	40.7	41.3	41.4	41.9	--

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

²Includes production of crude oil (including lease condensate and shale oil/tight oil), natural gas plant liquids, other hydrogen and hydrocarbons for refinery feedstocks, and refinery gains.

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

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, Slovenia, Spain, Sweden, Switzerland, Turkey, and the United Kingdom.

⁵Other Europe and Eurasia = Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Macedonia, Malta, Moldova, Montenegro, Romania, Serbia, 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.

⁷Includes liquids produced from energy crops, natural gas, coal, extra-heavy oil, bitumen (oil sands), and kerogen (oil shale, not to be confused with shale oil/tight oil). Includes both OPEC and non-OPEC producers in the regional breakdown.

⁸Includes both OPEC and non-OPEC consumers in the regional breakdown.

⁹Includes both petroleum and other liquids production.

-- = Not applicable.

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

Sources: 2009 and 2010 low sulfur light crude oil price: U.S. Energy Information Administration (EIA), Form EIA-856, "Monthly Foreign Crude Oil Acquisition Report." 2009 and 2010 imported crude oil price: EIA, *Annual Energy Review 2010*, DOE/EIA-0384(2010) (Washington, DC, October 2011). 2009 quantities derived from: EIA, International Energy Statistics database as of November 2009. **2010 quantities and projections:** EIA, AEO2012 National Energy Modeling System run REF2012.D020112C and EIA, Generate World Oil Balance Model.