

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 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Production								
Crude oil and lease condensate	13.7	15.6	22.2	21.5	21.1	19.8	19.9	0.9%
Natural gas plant liquids	3.3	3.6	5.5	5.7	5.7	5.6	5.5	1.7%
Dry natural gas	24.6	25.1	29.6	31.3	33.9	35.1	36.4	1.4%
Coal ¹	20.7	20.0	21.7	22.2	22.5	22.5	22.6	0.5%
Nuclear / uranium ²	8.1	8.3	8.4	8.5	8.5	8.5	8.7	0.2%
Conventional hydroelectric power	2.6	2.5	2.8	2.8	2.8	2.8	2.8	0.4%
Biomass ³	4.0	4.2	4.4	4.6	4.6	4.7	5.0	0.7%
Other renewable energy ⁴	1.9	2.3	3.2	3.4	3.6	4.1	4.6	2.7%
Other ⁵	0.8	1.3	0.9	0.9	0.9	0.9	1.0	-1.0%
Total	79.6	82.7	98.7	100.9	103.7	103.9	106.6	0.9%
Imports								
Crude oil	18.7	17.0	13.6	14.9	15.7	17.7	18.2	0.3%
Petroleum and other liquids ⁶	4.2	4.3	4.6	4.5	4.4	4.3	4.1	-0.2%
Natural gas ⁷	3.2	2.9	1.9	1.7	1.6	1.5	1.7	-1.9%
Other imports ⁸	0.3	0.3	0.1	0.1	0.1	0.1	0.1	-5.2%
Total	26.4	24.5	20.2	21.3	21.7	23.6	24.1	-0.1%
Exports								
Petroleum and other liquids ⁹	6.5	7.3	11.2	12.0	12.6	13.3	13.7	2.4%
Natural gas ¹⁰	1.6	1.6	4.5	5.2	6.4	6.8	7.4	5.9%
Coal	3.1	2.9	2.5	2.9	3.3	3.4	3.5	0.8%
Total	11.2	11.7	18.1	20.1	22.4	23.4	24.6	2.8%
Discrepancy¹¹	0.4	-1.6	-0.1	0.0	0.2	0.3	0.3	--
Consumption								
Petroleum and other liquids ¹²	35.2	35.9	37.1	36.9	36.5	36.3	36.2	0.0%
Natural gas	26.1	26.9	26.8	27.6	28.8	29.6	30.5	0.5%
Coal ¹³	17.3	18.0	19.2	19.3	19.2	19.0	19.0	0.2%
Nuclear / uranium ²	8.1	8.3	8.4	8.5	8.5	8.5	8.7	0.2%
Conventional hydroelectric power	2.6	2.5	2.8	2.8	2.8	2.8	2.8	0.4%
Biomass ¹⁴	2.8	2.9	3.0	3.2	3.2	3.2	3.5	0.7%
Other renewable energy ⁴	1.9	2.3	3.2	3.4	3.6	4.1	4.6	2.7%
Other ¹⁵	0.4	0.4	0.3	0.3	0.3	0.3	0.3	-0.7%
Total	94.4	97.1	100.8	102.0	102.9	103.8	105.7	0.3%
Prices (2013 dollars per unit)								
Crude oil spot prices (dollars per barrel)								
Brent	113	109	79	91	106	122	141	1.0%
West Texas Intermediate	96	98	73	85	99	116	136	1.2%
Natural gas at Henry Hub (dollars per million Btu)								
Coal (dollars per ton)	2.79	3.73	4.88	5.46	5.69	6.60	7.85	2.8%
at the minemouth ¹⁶	40.5	37.2	37.9	40.3	43.7	46.7	49.2	1.0%
Coal (dollars per million Btu)								
at the minemouth ¹⁶	2.01	1.84	1.88	2.02	2.18	2.32	2.44	1.0%
Average end-use ¹⁷	2.63	2.50	2.54	2.71	2.84	2.96	3.09	0.8%
Average electricity (cents per kilowatthour)	10.0	10.1	10.5	11.0	11.1	11.3	11.8	0.6%

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 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Prices (nominal dollars per unit)								
Crude oil spot prices (dollars per barrel)								
Brent	112	109	90	112	142	180	229	2.8%
West Texas Intermediate	94	98	83	105	133	171	220	3.0%
Natural gas at Henry Hub (dollars per million Btu).	2.75	3.73	5.54	6.72	7.63	9.70	12.73	4.7%
Coal (dollars per ton)								
at the minemouth ¹⁶	40.0	37.2	43.0	49.7	58.6	68.6	79.8	2.9%
Coal (dollars per million Btu)								
at the minemouth ¹⁶	1.98	1.84	2.14	2.48	2.92	3.41	3.96	2.9%
Average end-use ¹⁷	2.59	2.50	2.88	3.33	3.81	4.35	5.00	2.6%
Average electricity (cents per kilowatthour)	9.8	10.1	11.9	13.5	14.8	16.6	19.2	2.4%

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 are 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.

¹²Estimated consumption. Includes petroleum-derived fuels and non-petroleum derived fuels, such as ethanol and biodiesel, and coal-based synthetic liquids. Petroleum coke, which is a solid, is included. Also included are hydrocarbon gas 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.

¹⁶Includes reported prices for both open market and captive mines. Prices weighted by production, which differs from average minemouth prices published in EIA data reports where it is weighted by reported sales.

¹⁷Prices weighted by consumption; weighted average excludes 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 2012 and 2013 are model results and may differ from official EIA data reports.

Sources: 2012 natural gas supply values: U.S. Energy Information Administration (EIA), *Natural Gas Annual 2013*, DOE/EIA-0131(2013) (Washington, DC, October 2014). 2013 natural gas supply values: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2014/07) (Washington, DC, July 2014). 2012 and 2013 coal minemouth and delivered coal prices: EIA, *Annual Coal Report 2013*, DOE/EIA-0584(2013) (Washington, DC, January 2015). 2013 petroleum supply values and 2012 crude oil and lease condensate production: EIA, *Petroleum Supply Annual 2013*, DOE/EIA-0340(2013)/1 (Washington, DC, September 2014). Other 2012 petroleum supply values: EIA, *Petroleum Supply Annual 2012*, DOE/EIA-0340(2012)/1 (Washington, DC, September 2013). 2012 and 2013 crude oil spot prices and natural gas spot price at Henry Hub: Thomson Reuters. Other 2012 and 2013 coal values: *Quarterly Coal Report, October-December 2013*, DOE/EIA-0121(2013/4Q) (Washington, DC, March 2014). Other 2012 and 2013 values: EIA, *Monthly Energy Review*, DOE/EIA-0035(2014/11) (Washington, DC, November 2014). **Projections:** EIA, AEO2015 National Energy Modeling System run REF2015.D021915A.

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

Sector and source	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Energy consumption								
Residential								
Propane	0.40	0.43	0.32	0.30	0.28	0.26	0.25	-2.0%
Kerosene	0.01	0.01	0.01	0.01	0.01	0.00	0.00	-3.0%
Distillate fuel oil	0.49	0.50	0.40	0.35	0.31	0.27	0.24	-2.7%
Petroleum and other liquids subtotal	0.90	0.93	0.73	0.66	0.59	0.54	0.49	-2.4%
Natural gas	4.25	5.05	4.63	4.54	4.52	4.43	4.31	-0.6%
Renewable energy ¹	0.44	0.58	0.41	0.39	0.38	0.36	0.35	-1.8%
Electricity	4.69	4.75	4.86	4.92	5.08	5.23	5.42	0.5%
Delivered energy	10.28	11.32	10.63	10.51	10.57	10.56	10.57	-0.3%
Electricity related losses	9.57	9.79	9.75	9.74	9.91	10.10	10.33	0.2%
Total	19.85	21.10	20.38	20.25	20.48	20.66	20.91	0.0%
Commercial								
Propane	0.14	0.15	0.16	0.17	0.17	0.17	0.18	0.7%
Motor gasoline ²	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.8%
Kerosene	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.4%
Distillate fuel oil	0.36	0.37	0.34	0.32	0.30	0.29	0.27	-1.1%
Residual fuel oil	0.03	0.03	0.07	0.07	0.07	0.07	0.06	3.3%
Petroleum and other liquids subtotal	0.57	0.59	0.62	0.61	0.60	0.59	0.58	-0.1%
Natural gas	2.97	3.37	3.30	3.29	3.43	3.57	3.71	0.4%
Coal	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.5%
Renewable energy ³	0.11	0.12	0.12	0.12	0.12	0.12	0.12	0.0%
Electricity	4.53	4.57	4.82	4.99	5.19	5.40	5.66	0.8%
Delivered energy	8.22	8.69	8.90	9.06	9.38	9.73	10.12	0.6%
Electricity related losses	9.24	9.42	9.68	9.88	10.13	10.43	10.80	0.5%
Total	17.46	18.10	18.58	18.94	19.52	20.16	20.92	0.5%
Industrial⁴								
Liquefied petroleum gases and other ⁵	2.42	2.51	3.20	3.56	3.72	3.69	3.67	1.4%
Motor gasoline ²	0.24	0.25	0.26	0.26	0.25	0.25	0.25	0.0%
Distillate fuel oil	1.28	1.31	1.42	1.38	1.36	1.34	1.35	0.1%
Residual fuel oil	0.07	0.06	0.10	0.14	0.13	0.13	0.13	2.9%
Petrochemical feedstocks	0.74	0.74	0.95	1.10	1.14	1.17	1.20	1.8%
Other petroleum ⁶	3.33	3.52	3.67	3.80	3.83	3.89	3.99	0.5%
Petroleum and other liquids subtotal	8.08	8.40	9.61	10.24	10.44	10.47	10.59	0.9%
Natural gas	7.39	7.62	8.33	8.47	8.65	8.76	8.90	0.6%
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 ⁷	1.43	1.52	1.87	1.98	2.10	2.18	2.29	1.5%
Natural gas subtotal	8.82	9.14	10.20	10.44	10.75	10.94	11.19	0.8%
Metallurgical coal	0.59	0.62	0.61	0.59	0.56	0.53	0.51	-0.7%
Other industrial coal	0.87	0.88	0.93	0.95	0.96	0.97	0.99	0.4%
Coal-to-liquids heat and power	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Net coal coke imports	0.00	-0.02	0.00	-0.01	-0.03	-0.05	-0.06	4.5%
Coal subtotal	1.47	1.48	1.54	1.53	1.48	1.44	1.44	-0.1%
Biofuels heat and coproducts	0.73	0.72	0.80	0.80	0.80	0.81	0.86	0.6%
Renewable energy ⁸	1.51	1.48	1.53	1.60	1.59	1.58	1.63	0.4%
Electricity	3.36	3.26	3.74	3.98	4.04	4.05	4.12	0.9%
Delivered energy	23.97	24.48	27.42	28.58	29.10	29.29	29.82	0.7%
Electricity related losses	6.87	6.72	7.51	7.88	7.88	7.83	7.85	0.6%
Total	30.84	31.20	34.93	36.46	36.98	37.12	37.68	0.7%

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

Sector and source	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Transportation								
Propane	0.05	0.05	0.04	0.05	0.05	0.06	0.07	1.3%
Motor gasoline ²	15.82	15.94	15.35	14.22	13.30	12.82	12.55	-0.9%
of which: E85 ⁹	0.01	0.02	0.03	0.12	0.20	0.24	0.28	10.0%
Jet fuel ¹⁰	2.86	2.80	3.01	3.20	3.40	3.54	3.64	1.0%
Distillate fuel oil ¹¹	5.80	6.50	7.35	7.59	7.76	7.94	7.97	0.8%
Residual fuel oil	0.67	0.57	0.35	0.36	0.36	0.36	0.36	-1.6%
Other petroleum ¹²	0.15	0.15	0.16	0.16	0.16	0.16	0.16	0.2%
Petroleum and other liquids subtotal	25.35	26.00	26.27	25.57	25.03	24.88	24.76	-0.2%
Pipeline fuel natural gas	0.75	0.88	0.85	0.90	0.94	0.94	0.96	0.3%
Compressed / liquefied natural gas	0.04	0.05	0.07	0.10	0.17	0.31	0.71	10.3%
Liquid hydrogen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Electricity	0.02	0.02	0.03	0.04	0.04	0.05	0.06	3.4%
Delivered energy	26.16	26.96	27.22	26.60	26.18	26.19	26.49	-0.1%
Electricity related losses	0.05	0.05	0.06	0.07	0.08	0.10	0.12	3.1%
Total	26.20	27.01	27.29	26.67	26.27	26.29	26.61	-0.1%
Unspecified sector ¹³	0.04	-0.27	-0.34	-0.36	-0.37	-0.38	-0.38	--
Delivered energy consumption for all sectors								
Liquefied petroleum gases and other ⁵	3.01	3.14	3.73	4.08	4.23	4.19	4.17	1.1%
Motor gasoline ²	16.10	16.36	15.79	14.65	13.72	13.23	12.96	-0.9%
of which: E85 ⁹	0.01	0.02	0.03	0.12	0.20	0.24	0.28	10.0%
Jet fuel ¹⁰	2.90	2.97	3.20	3.39	3.61	3.76	3.86	1.0%
Kerosene	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-1.0%
Distillate fuel oil	7.92	8.10	8.86	8.97	9.05	9.14	9.13	0.4%
Residual fuel oil	0.77	0.65	0.53	0.56	0.56	0.55	0.56	-0.6%
Petrochemical feedstocks	0.74	0.74	0.95	1.10	1.14	1.17	1.20	1.8%
Other petroleum ¹⁴	3.47	3.67	3.82	3.96	3.98	4.05	4.15	0.5%
Petroleum and other liquids subtotal	34.93	35.65	36.89	36.72	36.30	36.09	36.03	0.0%
Natural gas	14.65	16.10	16.32	16.40	16.76	17.07	17.64	0.3%
Natural-gas-to-liquids heat and power	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Lease and plant fuel ⁷	1.43	1.52	1.87	1.98	2.10	2.18	2.29	1.5%
Pipeline fuel natural gas	0.75	0.88	0.85	0.90	0.94	0.94	0.96	0.3%
Natural gas subtotal	16.82	18.50	19.05	19.28	19.80	20.19	20.88	0.4%
Metallurgical coal	0.59	0.62	0.61	0.59	0.56	0.53	0.51	-0.7%
Other coal	0.91	0.92	0.98	1.00	1.00	1.01	1.04	0.4%
Coal-to-liquids heat and power	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Net coal coke imports	0.00	-0.02	0.00	-0.01	-0.03	-0.05	-0.06	4.5%
Coal subtotal	1.51	1.52	1.59	1.58	1.53	1.49	1.49	-0.1%
Biofuels heat and coproducts	0.73	0.72	0.80	0.80	0.80	0.81	0.86	0.6%
Renewable energy ¹⁵	2.06	2.18	2.06	2.11	2.09	2.06	2.10	-0.1%
Liquid hydrogen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Electricity	12.61	12.60	13.45	13.91	14.35	14.74	15.25	0.7%
Delivered energy	68.66	71.17	73.84	74.39	74.87	75.39	76.62	0.3%
Electricity related losses	25.73	25.97	27.00	27.58	28.01	28.46	29.10	0.4%
Total	94.40	97.14	100.84	101.97	102.87	103.85	105.73	0.3%
Electric power ¹⁶								
Distillate fuel oil	0.05	0.05	0.09	0.09	0.08	0.08	0.08	1.6%
Residual fuel oil	0.17	0.21	0.08	0.09	0.09	0.09	0.09	-3.0%
Petroleum and other liquids subtotal	0.22	0.26	0.17	0.17	0.17	0.17	0.18	-1.5%
Natural gas	9.31	8.36	7.80	8.33	9.03	9.40	9.61	0.5%
Steam coal	15.82	16.49	17.59	17.75	17.63	17.54	17.52	0.2%
Nuclear / uranium ¹⁷	8.06	8.27	8.42	8.46	8.47	8.51	8.73	0.2%
Renewable energy ¹⁸	4.53	4.78	6.13	6.43	6.72	7.26	7.99	1.9%
Non-biogenic municipal waste	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.0%
Electricity imports	0.16	0.18	0.11	0.12	0.10	0.09	0.11	-1.8%
Total	38.34	38.57	40.45	41.49	42.35	43.19	44.36	0.5%

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

Sector and source	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Total energy consumption								
Liquefied petroleum gases and other ⁵	3.01	3.14	3.73	4.08	4.23	4.19	4.17	1.1%
Motor gasoline ²	16.10	16.36	15.79	14.65	13.72	13.23	12.96	-0.9%
of which: E85 ⁹	0.01	0.02	0.03	0.12	0.20	0.24	0.28	10.0%
Jet fuel ¹⁰	2.90	2.97	3.20	3.39	3.61	3.76	3.86	1.0%
Kerosene	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-1.0%
Distillate fuel oil	7.98	8.15	8.95	9.06	9.13	9.22	9.21	0.5%
Residual fuel oil	0.94	0.87	0.61	0.65	0.64	0.64	0.65	-1.1%
Petrochemical feedstocks	0.74	0.74	0.95	1.10	1.14	1.17	1.20	1.8%
Other petroleum ¹⁴	3.47	3.67	3.82	3.96	3.98	4.05	4.15	0.5%
Petroleum and other liquids subtotal	35.16	35.91	37.06	36.89	36.47	36.26	36.21	0.0%
Natural gas	23.96	24.46	24.12	24.73	25.79	26.47	27.25	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 ⁷	1.43	1.52	1.87	1.98	2.10	2.18	2.29	1.5%
Pipeline fuel natural gas	0.75	0.88	0.85	0.90	0.94	0.94	0.96	0.3%
Natural gas subtotal	26.14	26.86	26.85	27.60	28.83	29.59	30.50	0.5%
Metallurgical coal	0.59	0.62	0.61	0.59	0.56	0.53	0.51	-0.7%
Other coal	16.73	17.41	18.57	18.75	18.63	18.55	18.56	0.2%
Coal-to-liquids heat and power	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Net coal coke imports	0.00	-0.02	0.00	-0.01	-0.03	-0.05	-0.06	4.5%
Coal subtotal	17.33	18.01	19.18	19.33	19.16	19.03	19.01	0.2%
Nuclear / uranium ¹⁷	8.06	8.27	8.42	8.46	8.47	8.51	8.73	0.2%
Biofuels heat and coproducts	0.73	0.72	0.80	0.80	0.80	0.81	0.86	0.6%
Renewable energy ¹⁹	6.59	6.96	8.19	8.54	8.81	9.32	10.09	1.4%
Liquid hydrogen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Non-biogenic municipal waste	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.0%
Electricity imports	0.16	0.18	0.11	0.12	0.10	0.09	0.11	-1.8%
Total	94.40	97.14	100.84	101.97	102.87	103.85	105.73	0.3%
Energy use and related statistics								
Delivered energy use	68.66	71.17	73.84	74.39	74.87	75.39	76.62	0.3%
Total energy use	94.40	97.14	100.84	101.97	102.87	103.85	105.73	0.3%
Ethanol consumed in motor gasoline and E85	1.09	1.12	1.12	1.12	1.12	1.16	1.27	0.5%
Population (millions)	315	317	334	347	359	370	380	0.7%
Gross domestic product (billion 2009 dollars)	15,369	15,710	18,801	21,295	23,894	26,659	29,898	2.4%
Carbon dioxide emissions (million metric tons)	5,272	5,405	5,499	5,511	5,514	5,521	5,549	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 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 that have a non-regulatory status, and small on-site generating systems.

⁵Includes ethane, natural gasoline, and refinery olefins.

⁶Includes petroleum coke, asphalt, road oil, lubricants, still gas, and miscellaneous petroleum products.

⁷Represents natural gas used in well, field, and lease operations, in natural gas processing plant machinery, and for liquefaction in export facilities.

⁸Includes consumption of energy produced from hydroelectric, wood and wood waste, municipal waste, and other biomass sources. Excludes ethanol in motor gasoline.

⁹E85 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.

¹⁰Includes only kerosene type.

¹¹Diesel fuel for on- and off- road use.

¹²Includes aviation gasoline and lubricants.

¹³Represents consumption unattributed to the sectors above.

¹⁴Includes aviation gasoline, petroleum coke, asphalt, road oil, lubricants, still gas, and miscellaneous petroleum products.

¹⁵Includes 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.

¹⁶Includes consumption of energy by electricity-only and combined heat and power plants that have a regulatory status.

¹⁷These 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.

¹⁸Includes conventional hydroelectric, geothermal, wood and wood waste, biogenic municipal waste, other biomass, wind, photovoltaic, and solar thermal sources. Excludes net electricity imports.

¹⁹Includes 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: Includes estimated consumption for petroleum and other liquids. Totals may not equal sum of components due to independent rounding. Data for 2012 and 2013 are model results and may differ from official EIA data reports.

Sources: 2012 and 2013 consumption based on: U.S. Energy Information Administration (EIA), *Monthly Energy Review*, DOE/EIA-0035(2014/11) (Washington, DC, November 2014). 2012 and 2013 population and gross domestic product: IHS Economics, Industry and Employment models, November 2014. 2012 and 2013 carbon dioxide emissions and emission factors: EIA, *Monthly Energy Review*, DOE/EIA-0035(2014/11) (Washington, DC, November 2014).

Projections: EIA, AEO2015 National Energy Modeling System run REF2015.D021915A.

Table A3. Energy prices by sector and source
(2013 dollars per million Btu, unless otherwise noted)

Sector and source	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Residential								
Propane.....	24.3	23.3	23.0	23.7	24.4	25.5	26.6	0.5%
Distillate fuel oil.....	27.3	27.2	21.5	23.7	26.3	29.4	32.9	0.7%
Natural gas.....	10.6	10.0	11.6	12.7	12.8	13.7	15.5	1.6%
Electricity.....	35.3	35.6	37.8	39.6	40.0	40.8	42.4	0.6%
Commercial								
Propane.....	21.0	20.0	19.4	20.2	21.1	22.5	23.9	0.7%
Distillate fuel oil.....	26.8	26.7	21.0	23.2	25.8	28.9	32.5	0.7%
Residual fuel oil.....	22.9	22.1	14.2	16.0	18.1	20.6	24.3	0.4%
Natural gas.....	8.2	8.1	9.6	10.5	10.4	11.1	12.6	1.6%
Electricity.....	30.0	29.7	31.1	32.5	32.6	33.1	34.5	0.6%
Industrial¹								
Propane.....	21.3	20.3	19.6	20.5	21.5	22.9	24.5	0.7%
Distillate fuel oil.....	27.4	27.3	21.2	23.5	26.1	29.2	32.7	0.7%
Residual fuel oil.....	20.6	20.0	13.3	15.1	17.2	19.7	23.5	0.6%
Natural gas ²	3.8	4.6	6.2	6.9	6.8	7.5	8.8	2.5%
Metallurgical coal.....	7.3	5.5	5.8	6.2	6.7	6.9	7.2	1.0%
Other industrial coal.....	3.3	3.2	3.3	3.5	3.6	3.7	3.9	0.7%
Coal to liquids.....	--	--	--	--	--	--	--	--
Electricity.....	19.8	20.2	21.3	22.4	22.6	23.3	24.7	0.7%
Transportation								
Propane.....	25.3	24.6	24.0	24.7	25.5	26.5	27.6	0.4%
E85 ³	35.7	33.1	30.4	29.0	31.2	33.2	35.4	0.3%
Motor gasoline ⁴	30.7	29.3	22.5	24.3	26.4	29.1	32.3	0.4%
Jet fuel ⁵	23.0	21.8	16.1	18.3	21.3	24.5	28.3	1.0%
Diesel fuel (distillate fuel oil) ⁶	28.8	28.2	23.1	25.5	28.0	31.1	34.7	0.8%
Residual fuel oil.....	20.0	19.3	11.7	13.3	15.4	17.6	20.3	0.2%
Natural gas ⁷	20.4	17.6	17.8	16.8	15.7	17.1	19.6	0.4%
Electricity.....	27.8	28.5	30.2	32.3	32.9	33.9	36.0	0.9%
Electric power⁸								
Distillate fuel oil.....	24.1	24.0	18.8	20.9	23.6	26.7	30.2	0.9%
Residual fuel oil.....	20.8	18.9	11.5	13.3	15.4	17.8	21.6	0.5%
Natural gas.....	3.5	4.4	5.4	6.3	6.2	7.0	8.3	2.4%
Steam coal.....	2.4	2.3	2.4	2.5	2.7	2.8	2.9	0.8%
Average price to all users⁹								
Propane.....	22.9	21.9	21.1	21.8	22.6	23.8	25.2	0.5%
E85 ³	35.7	33.1	30.4	29.0	31.2	33.2	35.4	0.3%
Motor gasoline ⁴	30.4	29.0	22.5	24.3	26.4	29.1	32.3	0.4%
Jet fuel ⁵	23.0	21.8	16.1	18.3	21.3	24.5	28.3	1.0%
Distillate fuel oil.....	28.3	27.9	22.6	25.0	27.6	30.7	34.2	0.8%
Residual fuel oil.....	20.3	19.4	12.2	14.0	16.0	18.4	21.5	0.4%
Natural gas.....	5.5	6.1	7.5	8.3	8.2	9.0	10.5	2.0%
Metallurgical coal.....	7.3	5.5	5.8	6.2	6.7	6.9	7.2	1.0%
Other coal.....	2.5	2.4	2.4	2.6	2.7	2.8	3.0	0.8%
Coal to liquids.....	--	--	--	--	--	--	--	--
Electricity.....	29.3	29.5	30.8	32.1	32.4	33.2	34.7	0.6%
Non-renewable energy expenditures by sector (billion 2013 dollars)								
Residential.....	234	243	254	268	276	289	311	0.9%
Commercial.....	174	177	194	210	219	234	259	1.4%
Industrial ¹	218	224	264	302	323	349	389	2.1%
Transportation.....	738	719	565	596	638	706	791	0.4%
Total non-renewable expenditures.....	1,364	1,364	1,276	1,376	1,456	1,579	1,751	0.9%
Transportation renewable expenditures.....	0	1	1	4	6	8	10	10.2%
Total expenditures.....	1,365	1,364	1,277	1,379	1,462	1,587	1,761	0.9%

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

Sector and source	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Residential								
Propane	23.9	23.3	26.1	29.1	32.8	37.5	43.1	2.3%
Distillate fuel oil.....	26.9	27.2	24.4	29.1	35.3	43.2	53.3	2.5%
Natural gas	10.4	10.0	13.2	15.7	17.1	20.2	25.1	3.5%
Electricity	34.8	35.6	42.9	48.8	53.6	60.0	68.8	2.5%
Commercial								
Propane	20.7	20.0	22.0	24.9	28.3	33.0	38.8	2.5%
Distillate fuel oil.....	26.4	26.7	23.8	28.6	34.6	42.5	52.6	2.5%
Residual fuel oil	22.6	22.1	16.1	19.7	24.3	30.3	39.4	2.2%
Natural gas	8.0	8.1	10.8	13.0	13.9	16.4	20.5	3.5%
Electricity	29.6	29.7	35.3	40.0	43.7	48.7	56.0	2.4%
Industrial¹								
Propane	21.0	20.3	22.3	25.2	28.8	33.7	39.7	2.5%
Distillate fuel oil.....	27.0	27.3	24.1	29.0	35.0	42.9	53.0	2.5%
Residual fuel oil	20.3	20.0	15.1	18.6	23.1	29.0	38.0	2.4%
Natural gas ²	3.8	4.6	7.0	8.5	9.1	11.1	14.2	4.3%
Metallurgical coal.....	7.2	5.5	6.6	7.7	8.9	10.2	11.6	2.8%
Other industrial coal.....	3.3	3.2	3.8	4.3	4.8	5.5	6.3	2.5%
Coal to liquids	--	--	--	--	--	--	--	--
Electricity	19.5	20.2	24.2	27.5	30.3	34.2	40.0	2.6%
Transportation								
Propane	24.9	24.6	27.2	30.4	34.1	38.9	44.8	2.2%
E85 ³	35.2	33.1	34.4	35.8	41.9	48.8	57.4	2.1%
Motor gasoline ⁴	30.2	29.3	25.5	29.9	35.3	42.8	52.4	2.2%
Jet fuel ⁵	22.6	21.8	18.3	22.6	28.6	36.0	45.8	2.8%
Diesel fuel (distillate fuel oil) ⁶	28.4	28.2	26.2	31.4	37.6	45.7	56.2	2.6%
Residual fuel oil	19.7	19.3	13.2	16.4	20.6	25.9	32.9	2.0%
Natural gas ⁷	20.1	17.6	20.2	20.6	21.0	25.2	31.8	2.2%
Electricity	27.4	28.5	34.3	39.8	44.1	49.9	58.4	2.7%
Electric power⁸								
Distillate fuel oil.....	23.8	24.0	21.3	25.8	31.7	39.3	49.0	2.7%
Residual fuel oil	20.5	18.9	13.0	16.3	20.6	26.2	35.0	2.3%
Natural gas	3.5	4.4	6.1	7.7	8.3	10.3	13.4	4.2%
Steam coal.....	2.4	2.3	2.7	3.1	3.6	4.1	4.7	2.6%

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

Sector and source	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Average price to all users⁹								
Propane	22.6	21.9	23.9	26.8	30.3	35.0	40.9	2.3%
E85 ³	35.2	33.1	34.4	35.8	41.9	48.8	57.4	2.1%
Motor gasoline ⁴	30.0	29.0	25.5	29.9	35.3	42.8	52.4	2.2%
Jet fuel ⁵	22.6	21.8	18.3	22.6	28.6	36.0	45.8	2.8%
Distillate fuel oil	27.9	27.9	25.7	30.8	36.9	45.1	55.5	2.6%
Residual fuel oil	20.0	19.4	13.8	17.2	21.5	27.0	34.8	2.2%
Natural gas	5.4	6.1	8.5	10.2	11.0	13.2	17.0	3.8%
Metallurgical coal	7.2	5.5	6.6	7.7	8.9	10.2	11.6	2.8%
Other coal	2.4	2.4	2.8	3.2	3.7	4.2	4.8	2.6%
Coal to liquids	--	--	--	--	--	--	--	--
Electricity	28.8	29.5	34.9	39.5	43.4	48.7	56.2	2.4%
Non-renewable energy expenditures by sector (billion nominal dollars)								
Residential	231	243	288	330	370	425	504	2.7%
Commercial	172	177	220	259	294	344	420	3.2%
Industrial ¹	215	224	299	372	433	513	631	3.9%
Transportation	727	719	641	734	855	1,038	1,283	2.2%
Total non-renewable expenditures	1,344	1,364	1,448	1,694	1,952	2,320	2,839	2.8%
Transportation renewable expenditures	0	1	1	4	8	12	16	12.2%
Total expenditures	1,345	1,364	1,449	1,698	1,960	2,332	2,855	2.8%

¹Includes energy for combined heat and power plants that have a non-regulatory status, and small on-site generating systems.

²Excludes use for lease and plant fuel.

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.

⁵Kerosene-type jet fuel. Includes Federal and State taxes while excluding county and local taxes.

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

⁷Natural gas used as fuel in motor vehicles, trains, and ships. Includes estimated motor vehicle fuel taxes and estimated dispensing costs or charges.

⁸Includes electricity-only and combined heat and power plants that have a regulatory status.

⁹Weighted 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 2012 and 2013 are model results and may differ from official EIA data reports.

Sources: 2012 and 2013 prices for motor gasoline, distillate fuel oil, and jet fuel are based on prices in the U.S. Energy Information Administration (EIA), *Petroleum Marketing Monthly*, DOE/EIA-0380(2014/08) (Washington, DC, August 2014). 2012 residential, commercial, and industrial natural gas delivered prices: EIA, *Natural Gas Annual 2013*, DOE/EIA-0131(2013) (Washington, DC, October 2014). 2013 residential, commercial, and industrial natural gas delivered prices: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2014/07) (Washington, DC, July 2014). 2012 transportation sector natural gas delivered prices are based on: EIA, *Natural Gas Annual 2013*, DOE/EIA-0131(2013) (Washington, DC, October 2014), EIA, *State Energy Data Report 2012*, DOE/EIA-0214(2012) (Washington, DC, June 2014) and estimated State and Federal motor fuel taxes and dispensing costs or charges. 2013 transportation sector natural gas delivered prices are model results. 2012 and 2013 electric power sector distillate and residual fuel oil prices: EIA, *Monthly Energy Review*, DOE/EIA-0035(2014/11) (Washington, DC, November 2014). 2012 and 2013 electric power sector natural gas prices: EIA, *Electric Power Monthly*, DOE/EIA-0226, April 2013 and April 2014, Table 4.2, and EIA, *State Energy Data Report 2012*, DOE/EIA-0214(2012) (Washington, DC, June 2014). 2012 and 2013 coal prices based on: EIA, *Quarterly Coal Report, October-December 2013*, DOE/EIA-0121(2013/4Q) (Washington, DC, March 2014) and EIA, AEO2015 National Energy Modeling System run REF2015.D021915A. 2012 and 2013 electricity prices: EIA, *Monthly Energy Review*, DOE/EIA-0035(2014/11) (Washington, DC, November 2014). 2012 and 2013 E85 prices derived from monthly prices in the Clean Cities Alternative Fuel Price Report. **Projections:** EIA, AEO2015 National Energy Modeling System run REF2015.D021915A.

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

Key indicators and consumption	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Key indicators								
Households (millions)								
Single-family	79.3	79.7	84.5	88.4	92.1	95.4	98.6	0.8%
Multifamily	28.2	28.4	30.4	32.1	33.9	35.7	37.5	1.0%
Mobile homes	6.4	6.3	5.5	5.3	5.1	4.9	4.8	-1.0%
Total	113.9	114.3	120.5	125.8	131.1	136.0	141.0	0.8%
Average house square footage	1,670	1,678	1,733	1,768	1,800	1,829	1,855	0.4%
Energy intensity								
(million Btu per household)								
Delivered energy consumption	90.2	99.0	88.2	83.5	80.6	77.6	75.0	-1.0%
Total energy consumption	174.3	184.6	169.1	161.0	156.2	151.9	148.3	-0.8%
(thousand Btu per square foot)								
Delivered energy consumption	54.0	59.0	50.9	47.3	44.8	42.5	40.4	-1.4%
Total energy consumption	104.3	110.0	97.6	91.1	86.8	83.1	79.9	-1.2%
Delivered energy consumption by fuel								
Purchased electricity								
Space heating	0.29	0.40	0.35	0.34	0.33	0.32	0.31	-1.0%
Space cooling	0.83	0.66	0.79	0.82	0.88	0.94	1.00	1.5%
Water heating	0.44	0.44	0.46	0.47	0.48	0.48	0.48	0.2%
Refrigeration	0.37	0.36	0.34	0.33	0.33	0.35	0.36	0.0%
Cooking	0.11	0.11	0.11	0.12	0.13	0.14	0.14	1.1%
Clothes dryers	0.20	0.20	0.21	0.22	0.23	0.24	0.25	0.7%
Freezers	0.08	0.08	0.07	0.07	0.07	0.06	0.06	-0.7%
Lighting	0.64	0.59	0.43	0.38	0.34	0.29	0.27	-2.9%
Clothes washers ¹	0.03	0.03	0.02	0.02	0.02	0.02	0.02	-2.0%
Dishwashers ¹	0.10	0.09	0.10	0.10	0.11	0.12	0.12	1.0%
Televisions and related equipment ²	0.33	0.33	0.32	0.32	0.34	0.36	0.37	0.5%
Computers and related equipment ³	0.12	0.12	0.10	0.08	0.07	0.06	0.05	-3.1%
Furnace fans and boiler circulation pumps	0.09	0.13	0.11	0.11	0.10	0.10	0.09	-1.3%
Other uses ⁴	1.06	1.19	1.44	1.53	1.65	1.77	1.89	1.7%
Delivered energy	4.69	4.75	4.86	4.92	5.08	5.23	5.42	0.5%
Natural gas								
Space heating	2.52	3.32	2.90	2.80	2.76	2.69	2.61	-0.9%
Space cooling	0.02	0.02	0.02	0.02	0.02	0.02	0.02	-0.2%
Water heating	1.20	1.20	1.21	1.22	1.24	1.23	1.19	0.0%
Cooking	0.21	0.21	0.21	0.21	0.22	0.22	0.22	0.3%
Clothes dryers	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.5%
Other uses ⁵	0.25	0.25	0.24	0.23	0.23	0.22	0.21	-0.6%
Delivered energy	4.25	5.05	4.63	4.54	4.52	4.43	4.31	-0.6%
Distillate fuel oil								
Space heating	0.43	0.44	0.36	0.32	0.28	0.25	0.22	-2.5%
Water heating	0.05	0.05	0.03	0.03	0.02	0.02	0.01	-4.7%
Other uses ⁶	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-0.5%
Delivered energy	0.49	0.50	0.40	0.35	0.31	0.27	0.24	-2.7%
Propane								
Space heating	0.26	0.30	0.20	0.18	0.17	0.15	0.14	-2.8%
Water heating	0.07	0.06	0.05	0.04	0.04	0.03	0.03	-3.0%
Cooking	0.03	0.03	0.03	0.03	0.02	0.02	0.02	-0.9%
Other uses ⁶	0.04	0.04	0.05	0.05	0.05	0.06	0.06	1.5%
Delivered energy	0.40	0.43	0.32	0.30	0.28	0.26	0.25	-2.0%
Marketed renewables (wood) ⁷	0.44	0.58	0.41	0.39	0.38	0.36	0.35	-1.8%
Kerosene	0.01	0.01	0.01	0.01	0.01	0.00	0.00	-3.0%

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

Key indicators and consumption	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Delivered energy consumption by end use								
Space heating.....	3.95	5.05	4.23	4.04	3.92	3.78	3.63	-1.2%
Space cooling.....	0.86	0.68	0.81	0.84	0.90	0.96	1.02	1.5%
Water heating.....	1.76	1.76	1.75	1.76	1.78	1.75	1.71	-0.1%
Refrigeration.....	0.37	0.36	0.34	0.33	0.33	0.35	0.36	0.0%
Cooking.....	0.35	0.34	0.35	0.36	0.37	0.38	0.39	0.4%
Clothes dryers.....	0.25	0.25	0.26	0.27	0.28	0.29	0.30	0.7%
Freezers.....	0.08	0.08	0.07	0.07	0.07	0.06	0.06	-0.7%
Lighting.....	0.64	0.59	0.43	0.38	0.34	0.29	0.27	-2.9%
Clothes washers ¹	0.03	0.03	0.02	0.02	0.02	0.02	0.02	-2.0%
Dishwashers ¹	0.10	0.09	0.10	0.10	0.11	0.12	0.12	1.0%
Televisions and related equipment ²	0.33	0.33	0.32	0.32	0.34	0.36	0.37	0.5%
Computers and related equipment ³	0.12	0.12	0.10	0.08	0.07	0.06	0.05	-3.1%
Furnace fans and boiler circulation pumps.....	0.09	0.13	0.11	0.11	0.10	0.10	0.09	-1.3%
Other uses ⁸	1.36	1.49	1.73	1.82	1.94	2.05	2.17	1.4%
Delivered energy.....	10.28	11.32	10.63	10.51	10.57	10.56	10.57	-0.3%
Electricity related losses.....	9.57	9.79	9.75	9.74	9.91	10.10	10.33	0.2%
Total energy consumption by end use								
Space heating.....	4.53	5.88	4.93	4.71	4.56	4.39	4.21	-1.2%
Space cooling.....	2.56	2.05	2.38	2.47	2.62	2.79	2.93	1.3%
Water heating.....	2.66	2.68	2.69	2.70	2.72	2.68	2.62	-0.1%
Refrigeration.....	1.12	1.12	1.02	0.99	0.99	1.01	1.06	-0.2%
Cooking.....	0.56	0.56	0.58	0.60	0.62	0.64	0.66	0.6%
Clothes dryers.....	0.66	0.67	0.69	0.70	0.73	0.75	0.78	0.5%
Freezers.....	0.24	0.24	0.22	0.20	0.19	0.19	0.19	-0.9%
Lighting.....	1.94	1.80	1.29	1.13	1.00	0.85	0.77	-3.1%
Clothes washers ¹	0.09	0.09	0.07	0.05	0.05	0.05	0.05	-2.2%
Dishwashers ¹	0.29	0.29	0.29	0.30	0.32	0.34	0.36	0.8%
Televisions and related equipment ²	1.01	1.01	0.97	0.96	1.00	1.05	1.09	0.3%
Computers and related equipment ³	0.38	0.37	0.29	0.24	0.20	0.18	0.15	-3.3%
Furnace fans and boiler circulation pumps.....	0.28	0.40	0.34	0.33	0.31	0.28	0.27	-1.5%
Other uses ⁸	3.52	3.95	4.62	4.86	5.17	5.46	5.78	1.4%
Total.....	19.85	21.10	20.38	20.25	20.48	20.66	20.91	0.0%
Nonmarketed renewables⁹								
Geothermal heat pumps.....	0.01	0.01	0.02	0.02	0.03	0.03	0.03	4.1%
Solar hot water heating.....	0.01	0.01	0.01	0.01	0.01	0.01	0.01	1.8%
Solar photovoltaic.....	0.02	0.04	0.09	0.13	0.18	0.24	0.29	8.0%
Wind.....	0.00	0.00	0.01	0.01	0.01	0.01	0.01	6.9%
Total.....	0.04	0.06	0.13	0.17	0.23	0.28	0.35	7.0%
Heating degree days¹⁰.....	3,772	4,469	4,119	4,042	3,966	3,893	3,820	-0.6%
Cooling degree days¹⁰.....	1,494	1,307	1,467	1,517	1,568	1,618	1,670	0.9%

¹Does not include water heating portion of load.

²Includes televisions, set-top boxes, home theater systems, DVD players, and video game consoles.

³Includes desktop and laptop computers, monitors, and networking equipment.

⁴Includes small electric devices, heating elements, and motors not listed above. Electric vehicles are included in the transportation sector.

⁵Includes such appliances as outdoor grills, exterior lights, pool heaters, spa heaters, and backup electricity generators.

⁶Includes such appliances as pool heaters, spa heaters, and backup electricity generators.

⁷Includes wood used for primary and secondary heating in wood stoves or fireplaces as reported in the *Residential Energy Consumption Survey 2009*.

⁸Includes small electric devices, heating elements, outdoor grills, exterior lights, pool heaters, spa heaters, backup electricity generators, and motors not listed above. Electric vehicles are included in the transportation sector.

⁹Consumption determined by using the fossil fuel equivalent of 9,516 Btu per kilowatt-hour.

¹⁰See 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 2012 and 2013 are model results and may differ from official EIA data reports.

Sources: 2012 and 2013 consumption based on: U.S. Energy Information Administration (EIA), *Monthly Energy Review*, DOE/EIA-0035(2014/11) (Washington, DC, November 2014). 2012 and 2013 degree days based on state-level data from the National Oceanic and Atmospheric Administration's Climatic Data Center and Climate Prediction Center. Projections: EIA, AEO2015 National Energy Modeling System run REF2015.D021915A.

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

Key indicators and consumption	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Key indicators								
Total floorspace (billion square feet)								
Surviving	80.8	81.4	86.9	92.0	96.4	100.9	106.6	1.0%
New additions	1.6	1.5	2.1	2.0	2.0	2.3	2.4	1.9%
Total	82.3	82.8	89.0	94.1	98.4	103.2	109.1	1.0%
Energy consumption intensity (thousand Btu per square foot)								
Delivered energy consumption	99.8	104.9	100.0	96.3	95.4	94.2	92.8	-0.5%
Electricity related losses	112.3	113.7	108.7	105.1	103.0	101.1	99.0	-0.5%
Total energy consumption	212.1	218.6	208.7	201.4	198.4	195.3	191.8	-0.5%
Delivered energy consumption by fuel								
Purchased electricity								
Space heating ¹	0.14	0.16	0.14	0.13	0.12	0.11	0.11	-1.5%
Space cooling ¹	0.57	0.49	0.53	0.53	0.54	0.55	0.56	0.5%
Water heating ¹	0.09	0.09	0.09	0.09	0.08	0.08	0.08	-0.6%
Ventilation	0.51	0.52	0.54	0.55	0.56	0.57	0.58	0.4%
Cooking	0.02	0.02	0.02	0.02	0.02	0.02	0.02	-0.3%
Lighting	0.92	0.91	0.87	0.85	0.84	0.81	0.80	-0.5%
Refrigeration	0.38	0.37	0.33	0.31	0.30	0.31	0.31	-0.7%
Office equipment (PC)	0.12	0.11	0.07	0.05	0.04	0.03	0.02	-5.5%
Office equipment (non-PC)	0.22	0.22	0.24	0.27	0.31	0.34	0.38	2.1%
Other uses ²	1.56	1.68	1.99	2.19	2.38	2.58	2.80	1.9%
Delivered energy	4.53	4.57	4.82	4.99	5.19	5.40	5.66	0.8%
Natural gas								
Space heating ¹	1.51	1.86	1.69	1.62	1.58	1.51	1.41	-1.0%
Space cooling ¹	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.1%
Water heating ¹	0.53	0.54	0.54	0.55	0.57	0.57	0.57	0.2%
Cooking	0.20	0.20	0.21	0.22	0.23	0.24	0.25	0.8%
Other uses ³	0.69	0.74	0.81	0.87	1.01	1.21	1.44	2.5%
Delivered energy	2.97	3.37	3.30	3.29	3.43	3.57	3.71	0.4%
Distillate fuel oil								
Space heating ¹	0.13	0.15	0.14	0.13	0.12	0.11	0.10	-1.7%
Water heating ¹	0.02	0.02	0.02	0.02	0.02	0.02	0.02	-0.1%
Other uses ⁴	0.21	0.20	0.18	0.17	0.17	0.16	0.16	-0.8%
Delivered energy	0.36	0.37	0.34	0.32	0.30	0.29	0.27	-1.1%
Marketed renewables (biomass)	0.11	0.12	0.12	0.12	0.12	0.12	0.12	0.0%
Other fuels ⁵	0.26	0.26	0.33	0.34	0.34	0.35	0.35	1.1%
Delivered energy consumption by end use								
Space heating ¹	1.78	2.17	1.97	1.87	1.82	1.73	1.61	-1.1%
Space cooling ¹	0.62	0.53	0.57	0.57	0.57	0.58	0.59	0.4%
Water heating ¹	0.64	0.65	0.65	0.65	0.67	0.67	0.67	0.1%
Ventilation	0.51	0.52	0.54	0.55	0.56	0.57	0.58	0.4%
Cooking	0.22	0.22	0.24	0.24	0.25	0.26	0.27	0.7%
Lighting	0.92	0.91	0.87	0.85	0.84	0.81	0.80	-0.5%
Refrigeration	0.38	0.37	0.33	0.31	0.30	0.31	0.31	-0.7%
Office equipment (PC)	0.12	0.11	0.07	0.05	0.04	0.03	0.02	-5.5%
Office equipment (non-PC)	0.22	0.22	0.24	0.27	0.31	0.34	0.38	2.1%
Other uses ⁶	2.82	3.00	3.43	3.69	4.02	4.42	4.87	1.8%
Delivered energy	8.22	8.69	8.90	9.06	9.38	9.73	10.12	0.6%

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

Key indicators and consumption	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Electricity related losses	9.24	9.42	9.68	9.88	10.13	10.43	10.80	0.5%
Total energy consumption by end use								
Space heating ¹	2.05	2.50	2.25	2.13	2.05	1.95	1.82	-1.2%
Space cooling ¹	1.78	1.54	1.63	1.62	1.62	1.64	1.66	0.3%
Water heating ¹	0.83	0.84	0.83	0.82	0.83	0.83	0.82	-0.1%
Ventilation.....	1.55	1.58	1.63	1.64	1.66	1.67	1.68	0.2%
Cooking.....	0.27	0.27	0.28	0.28	0.30	0.31	0.31	0.5%
Lighting.....	2.81	2.78	2.62	2.53	2.47	2.38	2.34	-0.6%
Refrigeration.....	1.15	1.14	0.99	0.93	0.90	0.90	0.91	-0.8%
Office equipment (PC).....	0.35	0.33	0.20	0.15	0.11	0.09	0.07	-5.7%
Office equipment (non-PC).....	0.66	0.66	0.72	0.81	0.91	1.01	1.10	1.9%
Other uses ⁶	6.01	6.47	7.43	8.02	8.67	9.40	10.21	1.7%
Total	17.46	18.10	18.58	18.94	19.52	20.16	20.92	0.5%
Nonmarketed renewable fuels⁷								
Solar thermal.....	0.08	0.08	0.09	0.09	0.10	0.10	0.11	1.1%
Solar photovoltaic.....	0.04	0.05	0.08	0.11	0.15	0.20	0.27	6.1%
Wind.....	0.00	0.00	0.00	0.00	0.00	0.01	0.01	9.0%
Total	0.13	0.14	0.17	0.20	0.25	0.32	0.39	3.9%
Heating degree days								
New England.....	5,561	6,424	6,030	5,924	5,818	5,711	5,603	-0.5%
Middle Atlantic.....	4,970	5,836	5,427	5,333	5,239	5,146	5,054	-0.5%
East North Central.....	5,356	6,622	6,016	5,953	5,890	5,827	5,764	-0.5%
West North Central.....	5,515	7,134	6,367	6,322	6,275	6,229	6,181	-0.5%
South Atlantic.....	2,307	2,732	2,595	2,552	2,508	2,466	2,425	-0.4%
East South Central.....	2,876	3,649	3,349	3,325	3,301	3,276	3,251	-0.4%
West South Central.....	1,650	2,328	1,975	1,928	1,882	1,836	1,790	-1.0%
Mountain.....	4,574	5,271	4,874	4,809	4,741	4,669	4,595	-0.5%
Pacific.....	3,412	3,377	3,477	3,463	3,450	3,438	3,426	0.1%
United States	3,772	4,469	4,119	4,042	3,966	3,893	3,820	-0.6%
Cooling degree days								
New England.....	564	541	573	603	634	664	695	0.9%
Middle Atlantic.....	815	688	803	840	877	913	950	1.2%
East North Central.....	974	690	821	841	860	880	900	1.0%
West North Central.....	1,221	893	1,012	1,031	1,051	1,070	1,090	0.7%
South Atlantic.....	2,161	2,002	2,191	2,235	2,280	2,325	2,369	0.6%
East South Central.....	1,762	1,441	1,725	1,756	1,787	1,818	1,849	0.9%
West South Central.....	2,915	2,535	2,848	2,920	2,993	3,065	3,138	0.8%
Mountain.....	1,572	1,464	1,556	1,607	1,660	1,715	1,772	0.7%
Pacific.....	917	889	891	915	940	963	987	0.4%
United States	1,494	1,307	1,467	1,517	1,568	1,618	1,670	0.9%

¹Includes fuel consumption for district services.

²Includes (but is not limited to) miscellaneous uses such as transformers, medical imaging and other medical equipment, elevators, escalators, off-road electric vehicles, laboratory fume hoods, laundry equipment, coffee brewers, and water services.

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, propane, coal, motor gasoline, and kerosene.

⁶Includes (but is not limited to) miscellaneous uses such as transformers, medical imaging and other medical equipment, elevators, escalators, off-road electric vehicles, laboratory fume hoods, laundry equipment, coffee brewers, water services, pumps, emergency generators, combined heat and power in commercial buildings, manufacturing performed in commercial buildings, and cooking (distillate), plus residual fuel oil, propane, coal, motor gasoline, kerosene, and marketed renewable fuels (biomass).

⁷Consumption determined by using the fossil fuel equivalent of 9,516 Btu per kilowatt-hour.

Btu = British thermal unit.

PC = Personal computer.

Note: Totals may not equal sum of components due to independent rounding. Data for 2012 and 2013 are model results and may differ from official EIA data reports.

Sources: 2012 and 2013 consumption based on: U.S. Energy Information Administration (EIA), *Monthly Energy Review*, DOE/EIA-0035(2014/11) (Washington, DC, November 2014). 2012 and 2013 degree days based on state-level data from the National Oceanic and Atmospheric Administration's Climatic Data Center and Climate Prediction Center. Projections: EIA, AEO2015 National Energy Modeling System run REF2015.D021915A.

Table A6. Industrial sector key indicators and consumption

Shipments, prices, and consumption	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Key indicators								
Value of shipments (billion 2009 dollars)								
Manufacturing	5,009	5,146	6,123	6,771	7,330	8,012	8,751	2.0%
Agriculture, mining, and construction	1,813	1,858	2,344	2,441	2,540	2,601	2,712	1.4%
Total	6,822	7,004	8,467	9,212	9,870	10,614	11,463	1.8%
Energy prices								
(2013 dollars per million Btu)								
Propane	21.3	20.3	19.6	20.5	21.5	22.9	24.5	0.7%
Motor gasoline	17.5	17.5	22.5	24.2	26.3	29.1	32.3	2.3%
Distillate fuel oil	27.4	27.3	21.2	23.5	26.1	29.2	32.7	0.7%
Residual fuel oil	20.6	20.0	13.3	15.1	17.2	19.7	23.5	0.6%
Asphalt and road oil	10.1	9.8	8.9	10.3	11.9	13.5	15.7	1.8%
Natural gas heat and power	3.5	4.3	6.0	6.7	6.6	7.4	8.6	2.6%
Natural gas feedstocks	4.2	4.8	6.3	7.0	6.9	7.7	8.9	2.3%
Metallurgical coal	7.3	5.5	5.8	6.2	6.7	6.9	7.2	1.0%
Other industrial coal	3.3	3.2	3.3	3.5	3.6	3.7	3.9	0.7%
Coal to liquids	--	--	--	--	--	--	--	--
Electricity	19.8	20.2	21.3	22.4	22.6	23.3	24.7	0.7%
(nominal dollars per million Btu)								
Propane	21.0	20.3	22.3	25.2	28.8	33.7	39.7	2.5%
Motor gasoline	17.3	17.5	25.5	29.9	35.3	42.7	52.3	4.1%
Distillate fuel oil	27.0	27.3	24.1	29.0	35.0	42.9	53.0	2.5%
Residual fuel oil	20.3	20.0	15.1	18.6	23.1	29.0	38.0	2.4%
Asphalt and road oil	10.0	9.8	10.0	12.7	15.9	19.9	25.5	3.6%
Natural gas heat and power	3.5	4.3	6.8	8.2	8.9	10.8	13.9	4.4%
Natural gas feedstocks	4.1	4.8	7.2	8.6	9.3	11.3	14.5	4.2%
Metallurgical coal	7.2	5.5	6.6	7.7	8.9	10.2	11.6	2.8%
Other industrial coal	3.3	3.2	3.8	4.3	4.8	5.5	6.3	2.5%
Coal to liquids	--	--	--	--	--	--	--	--
Electricity	19.5	20.2	24.2	27.5	30.3	34.2	40.0	2.6%
Energy consumption (quadrillion Btu)¹								
Industrial consumption excluding refining								
Propane heat and power	0.25	0.28	0.32	0.36	0.38	0.38	0.38	1.1%
Liquefied petroleum gas and other feedstocks ² ..	2.16	2.22	2.89	3.21	3.35	3.31	3.30	1.5%
Motor gasoline	0.24	0.25	0.26	0.26	0.25	0.25	0.25	0.0%
Distillate fuel oil	1.28	1.31	1.42	1.38	1.36	1.34	1.35	0.1%
Residual fuel oil	0.07	0.06	0.10	0.14	0.13	0.13	0.13	3.1%
Petrochemical feedstocks	0.74	0.74	0.95	1.10	1.14	1.17	1.20	1.8%
Petroleum coke	0.17	0.11	0.20	0.23	0.22	0.21	0.22	2.5%
Asphalt and road oil	0.83	0.78	1.01	1.09	1.15	1.19	1.25	1.8%
Miscellaneous petroleum ³	0.37	0.61	0.42	0.42	0.44	0.46	0.47	-1.0%
Petroleum and other liquids subtotal	6.11	6.37	7.57	8.18	8.42	8.43	8.55	1.1%
Natural gas heat and power	5.26	5.42	5.86	5.93	6.07	6.13	6.20	0.5%
Natural gas feedstocks	0.58	0.59	0.97	1.05	1.05	1.04	1.03	2.1%
Lease and plant fuel ⁴	1.43	1.52	1.87	1.98	2.10	2.18	2.29	1.5%
Natural gas subtotal	7.27	7.54	8.70	8.96	9.22	9.35	9.53	0.9%
Metallurgical coal and coke ⁵	0.60	0.60	0.61	0.58	0.53	0.48	0.45	-1.0%
Other industrial coal	0.87	0.88	0.93	0.95	0.96	0.97	0.99	0.4%
Coal subtotal	1.47	1.48	1.54	1.53	1.48	1.44	1.44	-0.1%
Renewables ⁶	1.51	1.48	1.53	1.60	1.59	1.58	1.63	0.4%
Purchased electricity	3.16	3.05	3.58	3.83	3.89	3.90	3.95	1.0%
Delivered energy	19.52	19.92	22.92	24.10	24.60	24.70	25.10	0.9%
Electricity related losses	6.46	6.29	7.19	7.59	7.59	7.52	7.54	0.7%
Total	25.98	26.22	30.11	31.69	32.19	32.22	32.64	0.8%

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

Shipments, prices, and consumption	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Refining consumption								
Liquefied petroleum gas heat and power ²	0.01	0.00	0.00	0.00	0.00	0.00	0.00	--
Distillate fuel oil.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Residual fuel oil.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Petroleum coke.....	0.54	0.53	0.39	0.42	0.41	0.42	0.43	-0.8%
Still gas.....	1.41	1.47	1.61	1.63	1.59	1.61	1.60	0.3%
Miscellaneous petroleum ³	0.01	0.01	0.03	0.01	0.02	0.01	0.02	2.1%
Petroleum and other liquids subtotal.....	1.97	2.03	2.04	2.06	2.02	2.03	2.04	0.0%
Natural gas heat and power.....	1.23	1.30	1.19	1.17	1.20	1.25	1.31	0.0%
Natural gas feedstocks.....	0.32	0.31	0.31	0.31	0.32	0.34	0.35	0.5%
Natural-gas-to-liquids heat and power.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Natural gas subtotal.....	1.55	1.60	1.50	1.48	1.52	1.59	1.66	0.1%
Other industrial coal.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Coal-to-liquids heat and power.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Coal subtotal.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Biofuels heat and coproducts.....	0.73	0.72	0.80	0.80	0.80	0.81	0.86	0.6%
Purchased electricity.....	0.20	0.21	0.16	0.15	0.15	0.16	0.16	-0.8%
Delivered energy	4.45	4.56	4.50	4.48	4.49	4.59	4.73	0.1%
Electricity related losses.....	0.41	0.42	0.31	0.29	0.29	0.30	0.31	-1.1%
Total	4.86	4.98	4.81	4.78	4.78	4.90	5.04	0.0%
Total industrial sector consumption								
Liquefied petroleum gas heat and power ²	0.26	0.29	0.32	0.36	0.38	0.38	0.38	1.0%
Liquefied petroleum gas and other feedstocks ² ..	2.16	2.22	2.89	3.21	3.35	3.31	3.30	1.5%
Motor gasoline.....	0.24	0.25	0.26	0.26	0.25	0.25	0.25	0.0%
Distillate fuel oil.....	1.28	1.31	1.42	1.38	1.36	1.34	1.35	0.1%
Residual fuel oil.....	0.07	0.06	0.10	0.14	0.13	0.13	0.13	2.9%
Petrochemical feedstocks.....	0.74	0.74	0.95	1.10	1.14	1.17	1.20	1.8%
Petroleum coke.....	0.70	0.65	0.59	0.65	0.63	0.63	0.65	0.0%
Asphalt and road oil.....	0.83	0.78	1.01	1.09	1.15	1.19	1.25	1.8%
Still gas.....	1.41	1.47	1.61	1.63	1.59	1.61	1.60	0.3%
Miscellaneous petroleum ³	0.38	0.63	0.46	0.43	0.46	0.47	0.49	-0.9%
Petroleum and other liquids subtotal.....	8.08	8.40	9.61	10.24	10.44	10.47	10.59	0.9%
Natural gas heat and power.....	6.50	6.72	7.05	7.11	7.27	7.38	7.51	0.4%
Natural gas feedstocks.....	0.89	0.90	1.28	1.36	1.37	1.38	1.39	1.6%
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 ⁴	1.43	1.52	1.87	1.98	2.10	2.18	2.29	1.5%
Natural gas subtotal.....	8.82	9.14	10.20	10.44	10.75	10.94	11.19	0.8%
Metallurgical coal and coke ⁵	0.60	0.60	0.61	0.58	0.53	0.48	0.45	-1.0%
Other industrial coal.....	0.87	0.88	0.93	0.95	0.96	0.97	0.99	0.4%
Coal-to-liquids heat and power.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Coal subtotal.....	1.47	1.48	1.54	1.53	1.48	1.44	1.44	-0.1%
Biofuels heat and coproducts.....	0.73	0.72	0.80	0.80	0.80	0.81	0.86	0.6%
Renewables ⁶	1.51	1.48	1.53	1.60	1.59	1.58	1.63	0.4%
Purchased electricity.....	3.36	3.26	3.74	3.98	4.04	4.05	4.12	0.9%
Delivered energy	23.97	24.48	27.42	28.58	29.10	29.29	29.82	0.7%
Electricity related losses.....	6.87	6.72	7.51	7.88	7.88	7.83	7.85	0.6%
Total	30.84	31.20	34.93	36.46	36.98	37.12	37.68	0.7%

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

Key indicators and consumption	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Energy consumption per dollar of shipments (thousand Btu per 2009 dollar)								
Petroleum and other liquids	1.18	1.20	1.13	1.11	1.06	0.99	0.92	-1.0%
Natural gas	1.29	1.31	1.21	1.13	1.09	1.03	0.98	-1.1%
Coal	0.21	0.21	0.18	0.17	0.15	0.14	0.13	-1.9%
Renewable fuels ⁵	0.33	0.31	0.28	0.26	0.24	0.23	0.22	-1.4%
Purchased electricity	0.49	0.47	0.44	0.43	0.41	0.38	0.36	-1.0%
Delivered energy	3.51	3.50	3.24	3.10	2.95	2.76	2.60	-1.1%
Industrial combined heat and power¹								
Capacity (gigawatts)	26.9	27.6	30.6	32.8	35.8	38.9	40.7	1.5%
Generation (billion kilowatthours)	144	147	170	181	195	211	221	1.5%

¹Includes combined heat and power plants that have a non-regulatory status, and small on-site generating systems.

²Includes ethane, natural gasoline, and refinery olefins.

³Includes lubricants and miscellaneous petroleum products.

⁴Represents natural gas used in well, field, and lease operations, in natural gas processing plant machinery, and for liquefaction in export facilities.

⁵Includes net coal coke imports.

⁶Includes consumption of energy produced from hydroelectric, wood and wood waste, municipal waste, and other biomass sources.

Btu = British thermal unit.

-- = Not applicable.

Note: Includes estimated consumption for petroleum and other liquids. Totals may not equal sum of components due to independent rounding. Data for 2012 and 2013 are model results and may differ from official EIA data reports.

Sources: 2012 and 2013 prices for motor gasoline and distillate fuel oil are based on: U.S. Energy Information Administration (EIA), *Petroleum Marketing Monthly*, DOE/EIA-0380(2014/08) (Washington, DC, August 2014). 2012 and 2013 petrochemical feedstock and asphalt and road oil prices are based on: EIA, *State Energy Data Report 2012*, DOE/EIA-0214(2012) (Washington, DC, June 2014). 2012 and 2013 coal prices are based on: EIA, *Quarterly Coal Report, October-December 2013*, DOE/EIA-0121(2013/4Q) (Washington, DC, March 2014) and EIA, AEO2015 National Energy Modeling System run REF2015.D021915A. 2012 and 2013 electricity prices: EIA, *Monthly Energy Review*, DOE/EIA-0035(2014/11) (Washington, DC, November 2014). 2012 natural gas prices: EIA, *Natural Gas Annual 2013*, DOE/EIA-0131(2013) (Washington, DC, October 2014). 2013 natural gas prices: *Natural Gas Monthly*, DOE/EIA-0130(2014/07) (Washington, DC, July 2014). 2012 refining consumption values are based on: *Petroleum Supply Annual 2012*, DOE/EIA-0340(2012)/1 (Washington, DC, September 2013). 2013 refining consumption based on: *Petroleum Supply Annual 2013*, DOE/EIA-0340(2013)/1 (Washington, DC, September 2014). Other 2012 and 2013 consumption values are based on: EIA, *Monthly Energy Review*, DOE/EIA-0035(2014/11) (Washington, DC, November 2014). 2012 and 2013 shipments: IHS Economics, Industry model, November 2014. Projections: EIA, AEO2015 National Energy Modeling System run REF2015.D021915A.

Table A7. Transportation sector key indicators and delivered energy consumption

Key indicators and consumption	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Key indicators								
Travel indicators								
(billion vehicle miles traveled)								
Light-duty vehicles less than 8,501 pounds	2,578	2,644	2,917	3,090	3,287	3,458	3,570	1.1%
Commercial light trucks ¹	62	67	79	85	92	98	105	1.7%
Freight trucks greater than 10,000 pounds	242	268	314	337	355	374	397	1.5%
(billion seat miles available)								
Air	1,033	1,047	1,174	1,279	1,391	1,481	1,557	1.5%
(billion ton miles traveled)								
Rail	1,729	1,758	1,828	1,960	1,999	2,013	2,066	0.6%
Domestic shipping	475	480	467	444	424	416	420	-0.5%
Energy efficiency indicators								
(miles per gallon)								
New light-duty vehicle CAFE standard ²	29.4	30.0	36.3	46.0	46.3	46.5	46.8	1.7%
New car ²	33.4	34.1	43.7	54.3	54.3	54.3	54.4	1.7%
New light truck ²	25.7	26.3	30.9	39.5	39.5	39.5	39.5	1.5%
Compliance new light-duty vehicle ³	32.7	32.8	37.9	46.7	47.4	47.9	48.1	1.4%
New car ³	37.0	37.2	44.2	54.6	55.3	55.5	55.5	1.5%
New light truck ³	28.6	28.8	33.1	40.3	40.7	40.9	40.9	1.3%
Tested new light-duty vehicle ⁴	31.7	31.7	37.9	46.6	47.4	47.8	48.1	1.6%
New car ⁴	36.3	36.5	44.1	54.6	55.3	55.4	55.5	1.6%
New light truck ⁴	27.4	27.6	33.1	40.3	40.7	40.9	40.8	1.5%
On-road new light-duty vehicle ⁵	25.6	25.6	30.6	37.7	38.3	38.7	38.9	1.6%
New car ⁵	29.6	29.8	36.1	44.6	45.1	45.3	45.3	1.6%
New light truck ⁵	22.0	22.1	26.5	32.3	32.6	32.7	32.7	1.5%
Light-duty stock ⁵	21.5	21.9	25.0	28.5	32.3	35.1	37.0	2.0%
New commercial light truck ¹	18.1	18.1	20.6	24.2	24.4	24.6	24.6	1.1%
Stock commercial light truck ¹	15.2	15.5	18.0	20.3	22.4	23.8	24.4	1.7%
Freight truck	6.7	6.7	7.2	7.5	7.7	7.8	7.8	0.6%
(seat miles per gallon)								
Aircraft	64.2	65.9	67.4	68.7	70.2	72.0	74.1	0.4%
(ton miles per thousand Btu)								
Rail	3.4	3.5	3.6	3.8	3.9	4.1	4.2	0.7%
Domestic shipping	4.7	4.7	5.0	5.2	5.4	5.6	5.8	0.8%
Energy use by mode								
(quadrillion Btu)								
Light-duty vehicles	15.00	15.13	14.62	13.57	12.74	12.31	12.08	-0.8%
Commercial light trucks ¹	0.51	0.54	0.55	0.53	0.51	0.52	0.54	0.0%
Bus transportation	0.24	0.26	0.27	0.28	0.29	0.30	0.31	0.6%
Freight trucks	4.98	5.51	6.03	6.19	6.34	6.60	6.98	0.9%
Rail, passenger	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.9%
Rail, freight	0.44	0.51	0.50	0.52	0.51	0.50	0.49	-0.1%
Shipping, domestic	0.10	0.10	0.10	0.09	0.08	0.08	0.07	-1.3%
Shipping, international	0.66	0.62	0.63	0.63	0.64	0.64	0.64	0.1%
Recreational boats	0.23	0.24	0.26	0.28	0.29	0.29	0.30	0.8%
Air	2.33	2.30	2.54	2.73	2.91	3.02	3.08	1.1%
Military use	0.71	0.67	0.63	0.64	0.68	0.72	0.77	0.5%
Lubricants	0.12	0.13	0.14	0.14	0.14	0.14	0.14	0.3%
Pipeline fuel	0.75	0.88	0.85	0.90	0.94	0.94	0.96	0.3%
Total	26.11	26.96	27.18	26.54	26.12	26.11	26.41	-0.1%

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

Key indicators and consumption	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Energy use by mode								
(million barrels per day oil equivalent)								
Light-duty vehicles	8.06	8.13	7.85	7.31	6.88	6.67	6.57	-0.8%
Commercial light trucks ¹	0.26	0.28	0.28	0.27	0.26	0.26	0.27	0.0%
Bus transportation	0.11	0.12	0.13	0.14	0.14	0.14	0.15	0.6%
Freight trucks	2.40	2.65	2.90	2.98	3.05	3.18	3.36	0.9%
Rail, passenger	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.9%
Rail, freight	0.21	0.24	0.24	0.25	0.24	0.24	0.23	-0.1%
Shipping, domestic	0.04	0.05	0.05	0.04	0.04	0.04	0.03	-1.3%
Shipping, international	0.29	0.27	0.29	0.29	0.29	0.29	0.29	0.2%
Recreational boats	0.12	0.13	0.14	0.15	0.15	0.16	0.16	0.8%
Air	1.13	1.11	1.23	1.32	1.40	1.46	1.49	1.1%
Military use	0.34	0.32	0.30	0.31	0.33	0.35	0.37	0.5%
Lubricants	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.3%
Pipeline fuel	0.35	0.42	0.40	0.42	0.44	0.44	0.45	0.3%
Total	13.41	13.82	13.90	13.56	13.32	13.32	13.48	-0.1%

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 2012 and 2013 are model results and may differ from official EIA data reports.

Sources: 2012 and 2013: U.S. Energy Information Administration (EIA), *Monthly Energy Review*, DOE/EIA-0035(2014/11) (Washington, DC, November 2014); EIA, *Alternatives to Traditional Transportation Fuels 2009 (Part II - User and Fuel Data)*, April 2011; Federal Highway Administration, *Highway Statistics 2012* (Washington, DC, January 2014); Oak Ridge National Laboratory, *Transportation Energy Data Book: Edition 33* (Oak Ridge, TN, July 2014); National Highway Traffic and Safety Administration, *Summary of Fuel Economy Performance* (Washington, DC, June 2014); U.S. Department of Commerce, Bureau of the Census, "Vehicle Inventory and Use Survey," EC02TV (Washington, DC, December 2004); EIA, U.S. Department of Transportation, Research and Special Programs Administration, *Air Carrier Statistics Monthly, December 2010/2009* (Washington, DC, December 2010); and United States Department of Defense, Defense Fuel Supply Center, *Factbook* (January, 2010). Projections: EIA, AEO2015 National Energy Modeling System run REF2015.D021915A.

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

Supply, disposition, prices, and emissions	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Net generation by fuel type								
Electric power sector¹								
Power only²								
Coal	1,478	1,550	1,670	1,685	1,674	1,665	1,663	0.3%
Petroleum	18	22	14	15	14	14	15	-1.6%
Natural gas ³	1,000	894	867	954	1,073	1,143	1,198	1.1%
Nuclear power.....	769	789	804	808	808	812	833	0.2%
Pumped storage/other ⁴	2	3	3	3	3	3	3	-0.1%
Renewable sources ⁵	458	483	620	648	679	733	805	1.9%
Distributed generation (natural gas).....	0	0	1	1	1	2	2	--
Total	3,726	3,741	3,978	4,113	4,252	4,372	4,518	0.7%
Combined heat and power⁶								
Coal	22	22	26	26	26	26	26	0.5%
Petroleum	2	2	1	1	1	1	1	-4.0%
Natural gas	132	126	133	133	134	134	133	0.2%
Renewable sources	5	5	6	7	7	7	8	1.7%
Total	164	158	166	167	168	168	167	0.2%
Total net electric power sector generation.....	3,890	3,899	4,144	4,280	4,420	4,540	4,686	0.7%
Less direct use.....	13	13	14	14	14	14	14	0.2%
Net available to the grid	3,877	3,886	4,131	4,267	4,406	4,527	4,672	0.7%
End-use sector⁷								
Coal	13	13	13	13	13	13	13	0.0%
Petroleum	3	3	3	3	3	3	3	-0.4%
Natural gas	95	98	116	134	163	199	235	3.3%
Other gaseous fuels ⁸	11	11	19	19	19	19	19	2.1%
Renewable sources ⁹	39	42	53	60	70	82	97	3.1%
Other ¹⁰	3	3	3	3	3	3	3	0.0%
Total end-use sector net generation	164	171	207	233	271	320	370	2.9%
Less direct use.....	126	132	167	190	225	269	313	3.3%
Total sales to the grid.....	38	39	40	43	46	51	56	1.4%
Total net electricity generation by fuel								
Coal	1,514	1,586	1,709	1,724	1,713	1,704	1,702	0.3%
Petroleum	23	27	18	18	18	18	18	-1.6%
Natural gas	1,228	1,118	1,117	1,223	1,371	1,478	1,569	1.3%
Nuclear power.....	769	789	804	808	808	812	833	0.2%
Renewable sources ^{5,9}	501	530	679	716	756	823	909	2.0%
Other ¹¹	19	20	25	25	25	25	25	0.8%
Total net electricity generation.....	4,055	4,070	4,351	4,513	4,691	4,860	5,056	0.8%
Net generation to the grid	3,916	3,925	4,171	4,309	4,453	4,578	4,729	0.7%
Net imports.....	47	52	33	35	30	26	32	-1.8%
Electricity sales by sector								
Residential.....	1,375	1,391	1,423	1,441	1,488	1,533	1,587	0.5%
Commercial.....	1,327	1,338	1,413	1,461	1,522	1,583	1,659	0.8%
Industrial.....	986	955	1,096	1,166	1,183	1,188	1,206	0.9%
Transportation.....	7	7	9	10	12	15	18	3.4%
Total	3,695	3,691	3,941	4,078	4,205	4,319	4,470	0.7%
Direct use	139	145	180	204	239	283	327	3.1%
Total electricity use	3,834	3,836	4,121	4,282	4,444	4,602	4,797	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 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
End-use prices								
(2013 cents per kilowatthour)								
Residential.....	12.1	12.2	12.9	13.5	13.6	13.9	14.5	0.6%
Commercial.....	10.2	10.1	10.6	11.1	11.1	11.3	11.8	0.6%
Industrial.....	6.8	6.9	7.3	7.6	7.7	7.9	8.4	0.7%
Transportation.....	9.5	9.7	10.3	11.0	11.2	11.6	12.3	0.9%
All sectors average.....	10.0	10.1	10.5	11.0	11.1	11.3	11.8	0.6%
(nominal cents per kilowatthour)								
Residential.....	11.9	12.2	14.6	16.6	18.3	20.5	23.5	2.5%
Commercial.....	10.1	10.1	12.0	13.6	14.9	16.6	19.1	2.4%
Industrial.....	6.7	6.9	8.2	9.4	10.3	11.7	13.6	2.6%
Transportation.....	9.3	9.7	11.7	13.6	15.0	17.0	19.9	2.7%
All sectors average.....	9.8	10.1	11.9	13.5	14.8	16.6	19.2	2.4%
Prices by service category								
(2013 cents per kilowatthour)								
Generation.....	6.5	6.6	6.6	7.0	7.0	7.1	7.6	0.5%
Transmission.....	0.9	0.9	1.1	1.2	1.2	1.2	1.3	1.2%
Distribution.....	2.5	2.6	2.8	2.9	2.9	3.0	3.0	0.6%
(nominal cents per kilowatthour)								
Generation.....	6.4	6.6	7.5	8.6	9.3	10.5	12.3	2.3%
Transmission.....	0.9	0.9	1.2	1.4	1.6	1.8	2.1	3.0%
Distribution.....	2.5	2.6	3.2	3.6	3.9	4.4	4.9	2.4%
Electric power sector emissions¹								
Sulfur dioxide (million short tons).....	3.43	3.27	1.42	1.44	1.44	1.47	1.53	-2.8%
Nitrogen oxide (million short tons).....	1.68	1.69	1.57	1.57	1.56	1.57	1.57	-0.3%
Mercury (short tons).....	26.69	27.94	6.58	6.53	6.43	6.40	6.41	-5.3%

¹Includes electricity-only and combined heat and power plants that have a regulatory status.

²Includes plants that only produce electricity and that have a regulatory status.

³Includes electricity generation from fuel cells.

⁴Includes non-biogenic municipal waste. The U.S. Energy Information Administration estimates that in 2013 approximately 7 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 or that have a regulatory status).

⁷Includes combined heat and power plants and electricity-only plants in the commercial and industrial sectors that have a non-regulatory status; 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 2012 and 2013 are model results and may differ from official EIA data reports.

Sources: 2012 and 2013 electric power sector generation; sales to the grid; net imports; electricity sales; and electricity end-use prices: U.S. Energy Information Administration (EIA), *Monthly Energy Review*, DOE/EIA-0035(2014/11) (Washington, DC, November 2014), and supporting databases. 2012 and 2013 emissions: U.S. Environmental Protection Agency, Clean Air Markets Database. 2012 and 2013 electricity prices by service category: EIA, AEO2015 National Energy Modeling System run REF2015.D021915A. Projections: EIA, AEO2015 National Energy Modeling System run REF2015.D021915A.

Table A9. Electricity generating capacity
(gigawatts)

Net summer capacity ¹	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Electric power sector²								
Power only³								
Coal ⁴	300.2	296.1	255.4	252.8	252.8	252.8	252.9	-0.6%
Oil and natural gas steam ^{4,5}	99.2	94.6	87.5	78.3	73.2	69.2	68.2	-1.2%
Combined cycle.....	185.3	188.3	203.2	211.9	233.6	255.1	281.3	1.5%
Combustion turbine/diesel.....	136.4	139.6	140.1	144.2	151.8	160.7	172.6	0.8%
Nuclear power ⁶	102.1	98.9	101.4	101.4	101.6	102.1	104.9	0.2%
Pumped storage.....	22.4	22.4	22.4	22.4	22.4	22.4	22.4	0.0%
Fuel cells.....	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0%
Renewable sources ⁷	148.1	153.3	187.1	190.2	196.6	209.7	229.2	1.5%
Distributed generation (natural gas) ⁸	0.0	0.0	0.7	1.1	1.7	2.4	3.1	--
Total.....	993.7	993.2	997.9	1,002.4	1,033.7	1,074.4	1,134.6	0.5%
Combined heat and power⁹								
Coal.....	4.5	4.3	4.1	4.1	4.1	4.1	4.1	-0.2%
Oil and natural gas steam ⁵	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0%
Combined cycle.....	25.7	25.7	26.0	26.0	26.0	26.0	26.0	0.0%
Combustion turbine/diesel.....	3.1	3.1	3.1	3.1	3.1	3.1	3.1	0.0%
Renewable sources ⁷	1.4	1.4	1.4	1.4	1.4	1.4	1.4	0.1%
Total.....	35.6	35.4	35.6	35.6	35.6	35.6	35.6	0.0%
Cumulative planned additions¹⁰								
Coal.....	--	--	0.7	0.7	0.7	0.7	0.7	--
Oil and natural gas steam ⁵	--	--	0.4	0.4	0.4	0.4	0.4	--
Combined cycle.....	--	--	14.2	14.2	14.2	14.2	14.2	--
Combustion turbine/diesel.....	--	--	1.6	1.6	1.6	1.6	1.6	--
Nuclear power.....	--	--	5.5	5.5	5.5	5.5	5.5	--
Pumped storage.....	--	--	0.0	0.0	0.0	0.0	0.0	--
Fuel cells.....	--	--	0.0	0.0	0.0	0.0	0.0	--
Renewable sources ⁷	--	--	30.5	30.5	30.5	30.5	30.5	--
Distributed generation ⁸	--	--	0.0	0.0	0.0	0.0	0.0	--
Total.....	--	--	52.8	52.8	52.8	52.8	52.8	--
Cumulative unplanned additions¹⁰								
Coal.....	--	--	0.3	0.3	0.3	0.3	0.4	--
Oil and natural gas steam ⁵	--	--	0.0	0.0	0.0	0.0	0.0	--
Combined cycle.....	--	--	7.7	17.3	39.0	60.5	86.9	--
Combustion turbine/diesel.....	--	--	3.8	8.5	16.8	26.1	37.9	--
Nuclear power.....	--	--	0.0	0.0	0.1	0.6	3.5	--
Pumped storage.....	--	--	0.0	0.0	0.0	0.0	0.0	--
Fuel cells.....	--	--	0.0	0.0	0.0	0.0	0.0	--
Renewable sources ⁷	--	--	4.0	7.1	13.4	26.6	46.1	--
Distributed generation ⁸	--	--	0.7	1.1	1.7	2.4	3.1	--
Total.....	--	--	16.5	34.3	71.4	116.5	177.9	--
Cumulative electric power sector additions¹⁰...	--	--	69.3	87.1	124.2	169.4	230.7	--
Cumulative retirements¹¹								
Coal.....	--	--	37.4	40.1	40.1	40.1	40.1	--
Oil and natural gas steam ⁵	--	--	11.8	21.0	26.1	30.1	31.0	--
Combined cycle.....	--	--	7.1	8.0	8.0	8.0	8.3	--
Combustion turbine/diesel.....	--	--	4.9	5.5	6.1	6.5	6.5	--
Nuclear power.....	--	--	3.2	3.2	3.2	3.2	3.2	--
Pumped storage.....	--	--	0.0	0.0	0.0	0.0	0.0	--
Fuel cells.....	--	--	0.0	0.0	0.0	0.0	0.0	--
Renewable sources ⁷	--	--	0.6	0.6	0.6	0.6	0.6	--
Total.....	--	--	65.0	78.3	84.1	88.5	89.7	--
Total electric power sector capacity.....	1,029	1,029	1,033	1,038	1,069	1,110	1,170	0.5%

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

Net summer capacity ¹	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
End-use generators¹²								
Coal	3.4	3.4	3.4	3.4	3.4	3.4	3.4	0.0%
Petroleum	0.9	0.9	0.9	0.9	0.9	0.9	0.9	-0.4%
Natural gas	16.3	16.9	19.5	22.7	27.6	33.6	38.9	3.1%
Other gaseous fuels ¹³	2.1	2.1	2.8	2.8	2.8	2.8	2.8	1.0%
Renewable sources ⁷	10.4	12.1	18.2	22.4	28.6	36.0	44.6	4.9%
Other ¹⁴	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0%
Total	33.6	36.0	45.3	52.8	63.8	77.2	91.1	3.5%
Cumulative capacity additions¹⁰	--	--	10.5	18.0	29.1	42.6	56.5	--

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 that have a regulatory status.

³Includes plants that only produce electricity and that have a regulatory status. Includes capacity increases (uprates) at existing units.

⁴Coal and oil and natural gas steam capacity reflect the impact of 4.1 GW of existing coal capacity converting to gas steam capacity.

⁵Includes oil-, gas-, and dual-fired capacity.

⁶Nuclear capacity includes 0.2 gigawatts of uprates.

⁷Includes 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.

⁸Primarily peak load capacity fueled by natural gas.

⁹Includes 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 or that have a regulatory status).

¹⁰Cumulative additions after December 31, 2013.

¹¹Cumulative retirements after December 31, 2013.

¹²Includes combined heat and power plants and electricity-only plants in the commercial and industrial sectors that have a non-regulatory status; 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.

¹³Includes refinery gas and still gas.

¹⁴Includes 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 2012 and 2013 are model results and may differ from official EIA data reports.

Sources: 2012 and 2013 capacity and projected planned additions: U.S. Energy Information Administration (EIA), Form EIA-860, "Annual Electric Generator Report" (preliminary). Projections: EIA, AEO2015 National Energy Modeling System run REF2015.D021915A.

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

Electricity trade	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Interregional electricity trade								
Gross domestic sales								
Firm power.....	156	157	122	63	28	28	28	-6.2%
Economy.....	184	115	195	214	207	232	268	3.2%
Total	340	272	318	277	235	260	296	0.3%
Gross domestic sales (million 2013 dollars)								
Firm power.....	9,711	9,802	7,622	3,952	1,722	1,722	1,722	-6.2%
Economy.....	6,217	4,772	9,376	11,934	11,963	14,056	18,159	5.1%
Total	15,929	14,574	16,998	15,886	13,685	15,778	19,881	1.2%
International electricity trade								
Imports from Canada and Mexico								
Firm power.....	15.9	15.8	20.4	16.4	14.0	14.0	14.0	-0.5%
Economy.....	43.1	47.9	28.0	34.4	30.6	26.2	32.1	-1.5%
Total	59.0	63.7	48.4	50.7	44.6	40.2	46.1	-1.2%
Exports to Canada and Mexico								
Firm power.....	2.7	2.3	1.5	0.5	0.0	0.0	0.0	--
Economy.....	8.8	9.1	14.0	14.7	14.7	14.4	14.4	1.7%
Total	11.5	11.4	15.4	15.2	14.7	14.4	14.4	0.9%

-- = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 2012 and 2013 are model results and may differ 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: 2012 and 2013 interregional firm electricity trade data: 2013 seasonal reliability assessments from North American Electric Reliability Council regional entities and Independent System Operators. 2012 and 2013 interregional economy electricity trade are model results. 2012 and 2013 Mexican electricity trade data: U.S. Energy Information Administration (EIA), *Electric Power Annual 2012*, DOE/EIA-0348(2012) (Washington, DC, December 2013). 2012 Canadian international electricity trade data: National Energy Board, *Electricity Exports and Imports Statistics, 2012*. 2013 Canadian international electricity trade data: National Energy Board, *Electricity Exports and Imports Statistics, 2013*. Projections: EIA, AEO2015 National Energy Modeling System run REF2015.D021915A.

Table A11. Petroleum and other liquids supply and disposition
(million barrels per day, unless otherwise noted)

Supply and disposition	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Crude oil								
Domestic crude production ¹	6.50	7.44	10.60	10.28	10.04	9.38	9.43	0.9%
Alaska.....	0.53	0.52	0.42	0.32	0.24	0.18	0.34	-1.6%
Lower 48 states.....	5.98	6.92	10.18	9.96	9.80	9.20	9.09	1.0%
Net imports.....	8.46	7.60	5.51	6.09	6.44	7.35	7.58	0.0%
Gross imports.....	8.53	7.73	6.14	6.72	7.07	7.98	8.21	0.2%
Exports.....	0.07	0.13	0.63	0.63	0.63	0.63	0.63	5.9%
Other crude supply ²	0.04	0.27	0.00	0.00	0.00	0.00	0.00	--
Total crude supply.....	15.00	15.30	16.11	16.37	16.48	16.73	17.01	0.4%
Net product imports.....	-1.05	-1.37	-2.80	-3.24	-3.56	-3.94	-4.26	--
Gross refined product imports ³	0.82	0.82	1.21	1.28	1.31	1.31	1.26	1.6%
Unfinished oil imports.....	0.60	0.66	0.60	0.56	0.52	0.49	0.45	-1.4%
Blending component imports.....	0.62	0.60	0.59	0.55	0.49	0.45	0.40	-1.5%
Exports.....	3.08	3.43	5.20	5.63	5.89	6.18	6.36	2.3%
Refinery processing gain ⁴	1.06	1.09	0.98	1.00	0.97	0.99	0.98	-0.4%
Product stock withdrawal.....	-0.07	0.11	0.00	0.00	0.00	0.00	0.00	--
Natural gas plant liquids.....	2.41	2.61	4.04	4.16	4.19	4.13	4.07	1.7%
Supply from renewable sources.....	0.88	0.93	1.01	1.01	1.01	1.04	1.12	0.7%
Ethanol.....	0.82	0.83	0.84	0.84	0.84	0.87	0.95	0.5%
Domestic production.....	0.84	0.85	0.86	0.86	0.86	0.87	0.93	0.4%
Net imports.....	-0.02	-0.02	-0.02	-0.02	-0.02	0.00	0.02	--
Stock withdrawal.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Biodiesel.....	0.06	0.10	0.14	0.11	0.11	0.11	0.11	0.4%
Domestic production.....	0.06	0.09	0.13	0.10	0.10	0.10	0.10	0.3%
Net imports.....	-0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.9%
Stock withdrawal.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Other biomass-derived liquids ⁵	0.00	0.00	0.03	0.06	0.06	0.06	0.06	31.9%
Domestic production.....	0.00	0.00	0.03	0.06	0.06	0.06	0.06	31.9%
Net imports.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Stock withdrawal.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
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	0.00	0.00	0.00	0.00	--
Other ⁶	0.19	0.21	0.28	0.29	0.30	0.31	0.32	1.6%
Total primary supply⁷.....	18.43	18.87	19.62	19.59	19.38	19.26	19.24	0.1%
Product supplied								
by fuel								
Liquefied petroleum gases and other ⁸	2.30	2.50	2.91	3.19	3.30	3.27	3.25	1.0%
Motor gasoline ⁹	8.69	8.85	8.49	7.89	7.41	7.16	7.05	-0.8%
of which: E85 ¹⁰	0.01	0.01	0.02	0.08	0.13	0.16	0.19	9.9%
Jet fuel ¹¹	1.40	1.43	1.55	1.64	1.75	1.82	1.87	1.0%
Distillate fuel oil ¹²	3.74	3.83	4.26	4.31	4.34	4.38	4.38	0.5%
of which: Diesel.....	3.46	3.56	3.94	4.02	4.09	4.15	4.17	0.6%
Residual fuel oil.....	0.37	0.32	0.27	0.28	0.28	0.28	0.28	-0.4%
Other ¹³	1.97	2.04	2.18	2.30	2.33	2.37	2.43	0.7%
by sector								
Residential and commercial.....	0.82	0.86	0.76	0.71	0.67	0.64	0.61	-1.3%
Industrial ¹⁴	4.49	4.69	5.50	5.90	6.04	6.04	6.09	1.0%
Transportation.....	13.04	13.36	13.46	13.08	12.79	12.71	12.66	-0.2%
Electric power ¹⁵	0.10	0.12	0.08	0.08	0.08	0.08	0.08	-1.4%
Unspecified sector ¹⁶	0.02	-0.12	-0.15	-0.16	-0.17	-0.17	-0.17	--
Total product supplied.....	18.47	18.96	19.65	19.61	19.41	19.29	19.27	0.1%
Discrepancy ¹⁷	-0.03	-0.10	-0.03	-0.02	-0.03	-0.03	-0.03	--

Table A11. Petroleum and other liquids supply and disposition (continued)
(million barrels per day, unless otherwise noted)

Supply and disposition	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Domestic refinery distillation capacity ¹⁸	17.4	17.8	18.8	18.8	18.8	18.8	18.8	0.2%
Capacity utilization rate (percent) ¹⁹	88.7	88.3	87.8	89.0	89.4	90.7	92.0	0.2%
Net import share of product supplied (percent).....	40.1	33.0	13.7	14.5	14.8	17.7	17.4	-2.3%
Net expenditures for imported crude oil and petroleum products (billion 2013 dollars)	345	308	167	211	259	339	405	1.0%

¹Includes lease condensate.

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

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, biobutanol, 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, net product imports, refinery processing gain, product stock withdrawal, natural gas plant liquids, supply from renewable sources, liquids from gas, liquids from coal, and other supply.

⁸Includes ethane, natural gasoline, and refinery olefins.

⁹Includes ethanol and ethers blended into gasoline.

¹⁰E85 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.

¹¹Includes only kerosene type.

¹²Includes distillate fuel oil from petroleum and biomass feedstocks.

¹³Includes kerosene, aviation gasoline, petrochemical feedstocks, lubricants, waxes, asphalt, road oil, still gas, special naphthas, petroleum coke, crude oil product supplied, methanol, and miscellaneous petroleum products.

¹⁴Includes energy for combined heat and power plants that have a non-regulatory status, and small on-site generating systems.

¹⁵Includes consumption of energy by electricity-only and combined heat and power plants that have a regulatory status.

¹⁶Represents consumption unattributed to the sectors above.

¹⁷Balancing item. Includes unaccounted for supply, losses, and gains.

¹⁸End-of-year operable capacity.

¹⁹Rate 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 2012 and 2013 are model results and may differ from official EIA data reports.

Sources: 2012 and 2013 product supplied based on: U.S. Energy Information Administration (EIA), *Monthly Energy Review*, DOE/EIA-0035(2014/11) (Washington, DC, November 2014). Other 2012 data: EIA, *Petroleum Supply Annual 2012*, DOE/EIA-0340(2012)/1 (Washington, DC, September 2013). Other 2013 data: EIA, *Petroleum Supply Annual 2013*, DOE/EIA-0340(2013)/1 (Washington, DC, September 2014). Projections: EIA, AEO2015 National Energy Modeling System run REF2015.D021915A.

Table A12. Petroleum and other liquids prices
(2013 dollars per gallon, unless otherwise noted)

Sector and fuel	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Crude oil prices (2013 dollars per barrel)								
Brent spot	113	109	79	91	106	122	141	1.0%
West Texas Intermediate spot	96	98	73	85	99	116	136	1.2%
Average imported refiners acquisition cost ¹	103	98	71	82	96	112	131	1.1%
Brent / West Texas Intermediate spread	17.8	10.7	6.2	6.1	6.2	6.0	5.6	-2.4%
Delivered sector product prices								
Residential								
Propane	2.22	2.13	2.10	2.16	2.23	2.33	2.43	0.5%
Distillate fuel oil	3.79	3.78	2.99	3.28	3.65	4.08	4.56	0.7%
Commercial								
Distillate fuel oil	3.69	3.68	2.89	3.20	3.56	3.99	4.47	0.7%
Residual fuel oil	3.43	3.31	2.12	2.39	2.71	3.08	3.64	0.4%
Residual fuel oil (2013 dollars per barrel)	144	139	89	101	114	129	153	0.4%
Industrial²								
Propane	1.95	1.85	1.79	1.87	1.96	2.09	2.24	0.7%
Distillate fuel oil	3.76	3.75	2.91	3.23	3.58	4.00	4.49	0.7%
Residual fuel oil	3.09	3.00	2.00	2.27	2.58	2.95	3.51	0.6%
Residual fuel oil (2013 dollars per barrel)	130	126	84	95	108	124	147	0.6%
Transportation								
Propane	2.31	2.24	2.19	2.25	2.32	2.42	2.52	0.4%
E85 ³	3.39	3.14	2.90	2.77	2.98	3.16	3.38	0.3%
Ethanol wholesale price	2.58	2.37	2.49	2.47	2.35	2.49	2.64	0.4%
Motor gasoline ⁴	3.72	3.55	2.74	2.95	3.20	3.53	3.90	0.3%
Jet fuel ⁵	3.10	2.94	2.17	2.47	2.88	3.31	3.81	1.0%
Diesel fuel (distillate fuel oil) ⁶	3.94	3.86	3.17	3.49	3.84	4.26	4.75	0.8%
Residual fuel oil	3.00	2.89	1.74	2.00	2.30	2.64	3.03	0.2%
Residual fuel oil (2013 dollars per barrel)	126	122	73	84	97	111	127	0.2%
Electric power⁷								
Distillate fuel oil	3.34	3.33	2.60	2.90	3.28	3.70	4.19	0.9%
Residual fuel oil	3.12	2.83	1.71	1.99	2.30	2.67	3.23	0.5%
Residual fuel oil (2013 dollars per barrel)	131	119	72	83	97	112	136	0.5%
Average prices, all sectors⁸								
Propane	2.09	2.00	1.93	1.99	2.06	2.18	2.30	0.5%
Motor gasoline ⁴	3.70	3.53	2.74	2.95	3.20	3.53	3.90	0.4%
Jet fuel ⁵	3.10	2.94	2.17	2.47	2.88	3.31	3.81	1.0%
Distillate fuel oil	3.89	3.83	3.11	3.43	3.78	4.20	4.69	0.8%
Residual fuel oil	3.04	2.90	1.83	2.10	2.40	2.75	3.22	0.4%
Residual fuel oil (2013 dollars per barrel)	128	122	77	88	101	116	135	0.4%
Average	3.29	3.16	2.46	2.65	2.89	3.23	3.62	0.5%

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

Sector and fuel	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Crude oil prices (nominal dollars per barrel)								
Brent spot	112	109	90	112	142	180	229	2.8%
West Texas Intermediate spot	94	98	83	105	133	171	220	3.0%
Average imported refiners acquisition cost ¹	101	98	80	102	129	165	212	2.9%
Delivered sector product prices								
Residential								
Propane	2.19	2.13	2.38	2.66	2.99	3.42	3.94	2.3%
Distillate fuel oil	3.73	3.78	3.39	4.04	4.90	5.99	7.40	2.5%
Commercial								
Distillate fuel oil	3.63	3.68	3.28	3.94	4.78	5.86	7.25	2.5%
Residual fuel oil	3.38	3.31	2.41	2.95	3.63	4.53	5.90	2.2%
Residual fuel oil (nominal dollars per barrel)	142	139	101	124	153	190	248	2.2%
Industrial²								
Propane	1.92	1.85	2.04	2.30	2.63	3.08	3.62	2.5%
Distillate fuel oil	3.71	3.75	3.30	3.98	4.80	5.89	7.28	2.5%
Residual fuel oil	3.05	3.00	2.26	2.79	3.46	4.34	5.69	2.4%
Residual fuel oil (nominal dollars per barrel)	128	126	95	117	145	182	239	2.4%
Transportation								
Propane	2.28	2.24	2.49	2.78	3.12	3.56	4.09	2.2%
E85 ³	3.34	3.14	3.29	3.41	3.99	4.65	5.48	2.1%
Ethanol wholesale price	2.55	2.37	2.83	3.04	3.15	3.67	4.27	2.2%
Motor gasoline ⁴	3.67	3.55	3.10	3.63	4.29	5.18	6.32	2.2%
Jet fuel ⁵	3.06	2.94	2.47	3.05	3.86	4.87	6.18	2.8%
Diesel fuel (distillate fuel oil) ⁶	3.89	3.86	3.60	4.30	5.15	6.26	7.70	2.6%
Residual fuel oil	2.95	2.89	1.98	2.46	3.08	3.88	4.92	2.0%
Residual fuel oil (nominal dollars per barrel)	124	122	83	103	129	163	207	2.0%
Electric power⁷								
Distillate fuel oil	3.29	3.33	2.95	3.57	4.39	5.45	6.79	2.7%
Residual fuel oil	3.07	2.83	1.94	2.45	3.09	3.93	5.24	2.3%
Residual fuel oil (nominal dollars per barrel)	129	119	82	103	130	165	220	2.3%
Average prices, all sectors⁸								
Propane	2.06	2.00	2.19	2.45	2.77	3.20	3.73	2.3%
Motor gasoline ⁴	3.64	3.53	3.10	3.63	4.29	5.18	6.32	2.2%
Jet fuel ⁵	3.06	2.94	2.47	3.05	3.86	4.87	6.18	2.8%
Distillate fuel oil	3.83	3.83	3.52	4.22	5.07	6.18	7.61	2.6%
Residual fuel oil	2.99	2.90	2.07	2.58	3.22	4.04	5.21	2.2%
Residual fuel oil (nominal dollars per barrel)	126	122	87	108	135	170	219	2.2%
Average	3.24	3.16	2.79	3.26	3.88	4.75	5.86	2.3%

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

²Includes combined heat and power plants that have a non-regulatory status, and small on-site generating systems.

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 that have a regulatory status.

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

Note: Data for 2012 and 2013 are model results and may differ from official EIA data reports.

Sources: 2012 and 2013 Brent and West Texas Intermediate crude oil spot prices: Thomson Reuters. 2012 and 2013 average imported crude oil price: U.S. Energy Information Administration (EIA), *Monthly Energy Review*, DOE/EIA-0035(2014/11) (Washington, DC, November 2014). 2012 and 2013 prices for motor gasoline, distillate fuel oil, and jet fuel are based on: EIA, *Petroleum Marketing Monthly*, DOE/EIA-0380(2014/08) (Washington, DC, August 2014). 2012 and 2013 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." 2012 and 2013 electric power prices based on: EIA, *Monthly Energy Review*, DOE/EIA-0035(2014/11) (Washington, DC, November 2014). 2012 and 2013 E85 prices derived from monthly prices in the Clean Cities Alternative Fuel Price Report. 2012 and 2013 wholesale ethanol prices derived from Bloomberg U.S. average rack price. **Projections:** EIA, AEO2015 National Energy Modeling System run REF2015.D021915A.

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

Supply, disposition, and prices	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Supply								
Dry gas production ¹	24.06	24.40	28.82	30.51	33.01	34.14	35.45	1.4%
Supplemental natural gas ²	0.06	0.05	0.06	0.06	0.06	0.06	0.06	0.6%
Net imports.....	1.52	1.29	-2.55	-3.50	-4.81	-5.19	-5.62	--
Pipeline ³	1.37	1.20	-0.48	-1.01	-1.52	-1.90	-2.33	--
Liquefied natural gas.....	0.15	0.09	-2.08	-2.49	-3.29	-3.29	-3.29	--
Total supply	25.64	25.75	26.33	27.07	28.27	29.01	29.90	0.6%
Consumption by sector								
Residential.....	4.15	4.92	4.50	4.42	4.40	4.31	4.20	-0.6%
Commercial.....	2.90	3.28	3.21	3.20	3.33	3.47	3.61	0.4%
Industrial ⁴	7.21	7.41	8.10	8.24	8.41	8.52	8.66	0.6%
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	9.11	8.16	7.61	8.13	8.81	9.17	9.38	0.5%
Transportation ⁸	0.04	0.05	0.07	0.10	0.17	0.31	0.70	10.3%
Pipeline fuel.....	0.73	0.86	0.83	0.87	0.91	0.92	0.93	0.3%
Lease and plant fuel ⁹	1.40	1.48	1.82	1.92	2.05	2.12	2.23	1.5%
Total consumption	25.53	26.16	26.14	26.88	28.08	28.82	29.70	0.5%
Discrepancy ¹⁰	0.11	-0.41	0.19	0.19	0.19	0.19	0.19	--
Natural gas spot price at Henry Hub								
(2013 dollars per million Btu).....	2.79	3.73	4.88	5.46	5.69	6.60	7.85	2.8%
(nominal dollars per million Btu).....	2.75	3.73	5.54	6.72	7.63	9.70	12.73	4.7%
Delivered prices								
(2013 dollars per thousand cubic feet)								
Residential.....	10.86	10.29	11.92	13.07	13.15	14.13	15.90	1.6%
Commercial.....	8.36	8.35	9.82	10.83	10.69	11.44	12.97	1.6%
Industrial ⁴	3.94	4.68	6.35	7.07	6.99	7.75	9.03	2.5%
Electric power ⁷	3.59	4.51	5.52	6.43	6.38	7.15	8.49	2.4%
Transportation ¹¹	20.93	18.13	18.27	17.23	16.13	17.60	20.18	0.4%
Average ¹²	5.61	6.32	7.66	8.50	8.40	9.22	10.76	2.0%
(nominal dollars per thousand cubic feet)								
Residential.....	10.70	10.29	13.52	16.09	17.62	20.77	25.77	3.5%
Commercial.....	8.24	8.35	11.14	13.34	14.33	16.81	21.03	3.5%
Industrial ⁴	3.88	4.68	7.20	8.71	9.37	11.39	14.64	4.3%
Electric power ⁷	3.54	4.51	6.26	7.92	8.55	10.51	13.76	4.2%
Transportation ¹¹	20.62	18.13	20.73	21.21	21.62	25.87	32.72	2.2%
Average ¹²	5.53	6.32	8.68	10.46	11.27	13.55	17.44	3.8%

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 that have a non-regulatory status, and small on-site generating systems. Excludes use for lease and plant fuel.

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 that have a regulatory status.

⁸Natural gas used as fuel in motor vehicles, trains, and ships.

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

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, 2012 and 2013 values include net storage injections.

¹¹Natural gas used as fuel in motor vehicles, trains, and ships. Price includes estimated motor vehicle fuel taxes and estimated dispensing costs or charges.

¹²Weighted 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 2012 and 2013 are model results and may differ from official EIA data reports.

Sources: 2012 supply values; lease, plant, and pipeline fuel consumption; and residential, commercial, and industrial delivered prices: U.S. Energy Information Administration (EIA), *Natural Gas Annual 2013*, DOE/EIA-0131(2013) (Washington, DC, October 2014). 2013 supply values; lease, plant, and pipeline fuel consumption; and residential, commercial, and industrial delivered prices: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2014/07) (Washington, DC, July 2014). Other 2012 and 2013 consumption based on: EIA, *Monthly Energy Review*, DOE/EIA-0035(2014/11) (Washington, DC, November 2014). 2012 and 2013 natural gas spot price at Henry Hub: Thomson Reuters. 2012 and 2013 electric power prices: EIA, *Electric Power Monthly*, DOE/EIA-0226, April 2013 and April 2014, Table 4.2, and EIA, *State Energy Data Report 2012*, DOE/EIA-0214(2012) (Washington, DC, June 2014). 2012 transportation sector delivered prices are based on: EIA, *Natural Gas Annual 2013*, DOE/EIA-0131(2013) (Washington, DC, October 2014), EIA, *State Energy Data Report 2012*, DOE/EIA-0214(2012) (Washington, DC, June 2014), and estimated State and Federal motor fuel taxes and dispensing costs or charges. 2013 transportation sector delivered prices are model results. Projections: EIA, AEO2015 National Energy Modeling System run REF2015.D021915A.

Table A14. Oil and gas supply

Production and supply	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Crude oil								
Lower 48 average wellhead price¹ (2013 dollars per barrel)	96	97	75	87	101	117	136	1.3%
Production (million barrels per day)²								
United States total	6.50	7.44	10.60	10.28	10.04	9.38	9.43	0.9%
Lower 48 onshore	4.60	5.57	8.03	8.01	7.60	7.07	6.92	0.8%
Tight oil ³	2.19	3.15	5.60	5.31	4.83	4.40	4.29	1.1%
Carbon dioxide enhanced oil recovery	0.28	0.28	0.35	0.47	0.58	0.69	0.83	4.1%
Other	2.12	2.14	2.08	2.23	2.19	1.98	1.80	-0.6%
Lower 48 offshore	1.38	1.36	2.15	1.95	2.21	2.14	2.17	1.7%
State	0.07	0.07	0.05	0.04	0.03	0.03	0.02	-3.8%
Federal	1.31	1.29	2.10	1.92	2.18	2.11	2.14	1.9%
Alaska	0.53	0.52	0.42	0.32	0.24	0.18	0.34	-1.6%
Onshore	0.47	0.45	0.30	0.23	0.18	0.14	0.12	-4.9%
State offshore	0.06	0.06	0.12	0.09	0.06	0.04	0.02	-3.6%
Federal offshore	0.00	0.00	0.00	0.00	0.00	0.00	0.20	15.9%
Lower 48 end of year reserves² (billion barrels)	30.1	29.4	37.4	39.4	42.6	43.4	44.8	1.6%
Natural gas plant liquids production (million barrels per day)								
United States total	2.41	2.61	4.04	4.16	4.20	4.13	4.07	1.7%
Lower 48 onshore	2.18	2.39	3.82	3.94	3.92	3.87	3.79	1.7%
Lower 48 offshore	0.20	0.18	0.19	0.20	0.26	0.25	0.26	1.3%
Alaska	0.03	0.03	0.02	0.02	0.01	0.01	0.02	-1.4%
Natural gas								
Natural gas spot price at Henry Hub (2013 dollars per million Btu)	2.79	3.73	4.88	5.46	5.69	6.60	7.85	2.8%
Dry production (trillion cubic feet)⁴								
United States total	24.06	24.40	28.82	30.51	33.01	34.14	35.45	1.4%
Lower 48 onshore	22.16	22.63	26.52	28.10	29.05	30.26	31.49	1.2%
Tight gas	4.78	4.38	5.21	5.55	5.99	6.40	6.97	1.7%
Shale gas and tight oil plays ³	10.16	11.34	15.44	17.03	17.85	18.85	19.58	2.0%
Coalbed methane	1.64	1.29	1.45	1.32	1.24	1.24	1.25	-0.1%
Other	5.58	5.61	4.42	4.19	3.97	3.77	3.69	-1.5%
Lower 48 offshore	1.57	1.46	2.03	2.16	2.79	2.73	2.81	2.5%
State	0.14	0.11	0.06	0.04	0.03	0.02	0.02	-5.9%
Federal	1.42	1.35	1.98	2.13	2.76	2.70	2.79	2.7%
Alaska	0.33	0.32	0.27	0.25	1.18	1.16	1.15	4.9%
Onshore	0.33	0.32	0.27	0.25	1.18	1.16	1.15	4.9%
State offshore	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Federal offshore	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Lower 48 end of year dry reserves⁴ (trillion cubic feet)	298	293	309	316	329	338	345	0.6%
Supplemental gas supplies (trillion cubic feet)⁵	0.06	0.05	0.06	0.06	0.06	0.06	0.06	0.6%
Total lower 48 wells drilled (thousands)	44.7	44.5	43.4	47.4	52.1	54.0	56.7	0.9%

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.

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

Note: Totals may not equal sum of components due to independent rounding. Data for 2012 and 2013 are model results and may differ from official EIA data reports.

Sources: 2012 and 2013 crude oil lower 48 average wellhead price: U.S. Energy Information Administration (EIA), *Petroleum Marketing Monthly*, DOE/EIA-0380(2014/08) (Washington, DC, August 2014). 2012 and 2013 lower 48 onshore, lower 48 offshore, and Alaska crude oil production: EIA, *Petroleum Supply Annual 2013*, DOE/EIA-0340(2013)/1 (Washington, DC, September 2014). 2012 U.S. crude oil and natural gas reserves: EIA, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves*, DOE/EIA-0216(2012) (Washington, DC, April 2014). 2012 Alaska and total natural gas production, and supplemental gas supplies: EIA, *Natural Gas Annual 2013*, DOE/EIA-0131(2013) (Washington, DC, October 2014). 2012 and 2013 natural gas spot price at Henry Hub: Thomson Reuters. 2013 Alaska and total natural gas production, and supplemental gas supplies: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2014/07) (Washington, DC, July 2014). Other 2012 and 2013 values: EIA, Office of Energy Analysis. Projections: EIA, AEO2015 National Energy Modeling System run REF2015.D021915A.

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

Supply, disposition, and prices	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Production¹								
Appalachia.....	293	272	260	248	243	235	228	-0.6%
Interior.....	180	183	219	235	258	278	300	1.8%
West.....	543	530	592	622	617	597	589	0.4%
East of the Mississippi.....	423	407	428	426	442	453	467	0.5%
West of the Mississippi.....	593	578	643	679	676	658	650	0.4%
Total.....	1,016	985	1,071	1,105	1,118	1,111	1,117	0.5%
Waste coal supplied².....	11	10	11	10	10	10	10	0.0%
Net imports								
Imports ³	8	7	1	1	1	1	1	-6.8%
Exports.....	126	118	95	112	130	131	141	0.7%
Total.....	-118	-110	-94	-110	-129	-130	-140	0.9%
Total supply⁴.....	909	885	987	1,005	999	990	988	0.4%
Consumption by sector								
Commercial and institutional.....	2	2	2	2	2	2	2	0.5%
Coke plants.....	21	21	21	21	20	19	18	-0.7%
Other industrial ⁵	43	43	47	47	48	48	49	0.5%
Coal-to-liquids heat and power.....	0	0	0	0	0	0	0	--
Coal to liquids production.....	0	0	0	0	0	0	0	--
Electric power ⁶	824	858	917	935	930	921	919	0.3%
Total.....	889	925	987	1,005	999	990	988	0.2%
Discrepancy and stock change⁷.....	20	-40	0	0	0	0	0	--
Average minemouth price⁸								
(2013 dollars per short ton).....	40.5	37.2	37.9	40.3	43.7	46.7	49.2	1.0%
(2013 dollars per million Btu).....	2.01	1.84	1.88	2.02	2.18	2.32	2.44	1.0%
Delivered prices⁹								
(2013 dollars per short ton)								
Commercial and institutional.....	92.1	90.5	86.4	89.2	92.0	95.0	99.2	0.3%
Coke plants.....	193.4	157.0	165.8	177.7	189.5	197.3	204.4	1.0%
Other industrial ⁵	71.4	69.3	70.3	73.6	76.5	79.1	82.5	0.6%
Coal to liquids.....	--	--	--	--	--	--	--	--
Electric power ⁶								
(2013 dollars per short ton).....	46.5	45.2	45.7	48.2	50.6	53.1	55.6	0.8%
(2013 dollars per million Btu).....	2.41	2.34	2.38	2.54	2.67	2.79	2.92	0.8%
Average.....	51.5	49.1	49.5	52.2	54.7	57.1	59.7	0.7%
Exports ¹⁰	120.2	95.1	100.9	107.2	112.7	118.9	120.7	0.9%

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

Supply, disposition, and prices	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Average minemouth price⁸								
(nominal dollars per short ton)	40.0	37.2	43.0	49.7	58.6	68.6	79.8	2.9%
(nominal dollars per million Btu).....	1.98	1.84	2.14	2.48	2.92	3.41	3.96	2.9%
Delivered prices⁹								
(nominal dollars per short ton)								
Commercial and institutional.....	90.8	90.5	98.0	109.9	123.4	139.7	160.8	2.2%
Coke plants.....	190.6	157.0	188.0	218.7	254.0	289.9	331.3	2.8%
Other industrial ⁵	70.3	69.3	79.7	90.7	102.5	116.3	133.8	2.5%
Coal to liquids.....	--	--	--	--	--	--	--	--
Electric power ⁶								
(nominal dollars per short ton)	45.8	45.2	51.8	59.4	67.9	78.0	90.1	2.6%
(nominal dollars per million Btu).....	2.37	2.34	2.70	3.13	3.58	4.10	4.73	2.6%
Average.....	50.7	49.1	56.2	64.3	73.3	84.0	96.8	2.6%
Exports ¹⁰	118.4	95.1	114.4	131.9	151.1	174.7	195.6	2.7%

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 that have a non-regulatory status, and small on-site generating systems. Excludes all coal use in the coal-to-liquids process.

⁶Includes all electricity-only and combined heat and power plants that have a regulatory status.

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. Prices weighted by production, which differs from average minemouth prices published in EIA data reports where it is weighted by reported sales.

⁹Prices weighted by consumption; weighted average excludes commercial and institutional prices, and export free-alongside-ship prices.

¹⁰Free-alongside-ship 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 2012 and 2013 are model results and may differ from official EIA data reports.

Sources: 2012 and 2013 data based on: U.S. Energy Information Administration (EIA), *Annual Coal Report 2013*, DOE/EIA-0584(2013) (Washington, DC, January 2015); EIA, *Quarterly Coal Report, October-December 2013*, DOE/EIA-0121(2013/4Q) (Washington, DC, March 2014); and EIA, AEO2015 National Energy Modeling System run REF2015.D021915A. Projections: EIA, AEO2015 National Energy Modeling System run REF2015.D021915A.

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

Net summer capacity and generation	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Electric power sector¹								
Net summer capacity								
Conventional hydroelectric power	78.1	78.3	79.2	79.6	79.7	79.8	80.1	0.1%
Geothermal ²	2.6	2.6	3.8	5.3	7.0	8.2	9.1	4.7%
Municipal waste ³	3.6	3.7	3.8	3.8	3.8	3.8	3.8	0.1%
Wood and other biomass ⁴	2.9	3.3	3.5	3.5	3.6	4.2	5.5	1.8%
Solar thermal	0.5	1.3	1.8	1.8	1.8	1.8	1.8	1.2%
Solar photovoltaic ⁵	2.6	5.2	14.4	14.7	15.7	17.9	22.2	5.5%
Wind	59.2	60.3	82.0	83.0	86.3	95.6	108.2	2.2%
Offshore wind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
Total electric power sector capacity	149.4	154.7	188.6	191.6	198.0	211.2	230.6	1.5%
Generation (billion kilowatthours)								
Conventional hydroelectric power	273.9	265.7	291.0	292.8	293.4	293.8	295.6	0.4%
Geothermal ²	15.6	16.5	26.8	38.5	52.4	62.3	69.6	5.5%
Biogenic municipal waste ⁶	16.9	16.5	20.0	20.3	20.1	20.0	20.2	0.8%
Wood and other biomass	11.1	12.2	24.7	36.2	40.4	47.1	58.8	6.0%
Dedicated plants	9.9	11.1	13.4	15.1	16.7	20.4	30.3	3.8%
Cofiring	1.2	1.1	11.3	21.1	23.7	26.7	28.5	12.7%
Solar thermal	0.9	0.9	3.6	3.6	3.6	3.6	3.6	5.1%
Solar photovoltaic ⁵	3.3	8.0	29.7	30.3	32.6	37.6	47.1	6.8%
Wind	140.7	167.6	230.6	233.8	243.3	276.1	317.1	2.4%
Offshore wind	0.0	0.0	0.1	0.1	0.1	0.1	0.1	--
Total electric power sector generation	462.3	487.4	626.4	655.6	685.9	740.7	812.1	1.9%
End-use sectors⁷								
Net summer capacity								
Conventional hydroelectric power	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.0%
Geothermal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
Municipal waste ⁸	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0%
Biomass	4.9	5.0	5.4	5.4	5.4	5.5	5.6	0.4%
Solar photovoltaic ⁵	4.6	6.2	11.4	15.5	21.5	28.7	36.7	6.8%
Wind	0.2	0.2	0.7	0.7	0.9	1.1	1.5	7.7%
Total end-use sector capacity	10.4	12.1	18.2	22.4	28.6	36.0	44.6	4.9%
Generation (billion kilowatthours)								
Conventional hydroelectric power	1.4	1.4	1.4	1.4	1.4	1.4	1.4	0.0%
Geothermal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--
Municipal waste ⁸	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0%
Biomass	26.5	27.2	29.1	29.3	29.4	29.4	30.5	0.4%
Solar photovoltaic ⁵	7.1	9.6	17.9	24.8	34.7	46.3	59.3	7.0%
Wind	0.2	0.3	0.9	1.0	1.2	1.5	2.1	8.0%
Total end-use sector generation	38.8	42.1	52.9	60.1	70.2	82.3	96.9	3.1%

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

Net summer capacity and generation	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Total, all sectors								
Net summer capacity								
Conventional hydroelectric power.....	78.4	78.5	79.5	79.9	80.0	80.1	80.4	0.1%
Geothermal.....	2.6	2.6	3.8	5.3	7.0	8.2	9.1	4.7%
Municipal waste.....	4.1	4.1	4.3	4.3	4.3	4.3	4.3	0.1%
Wood and other biomass ⁴	7.8	8.3	8.9	8.9	9.1	9.6	11.1	1.1%
Solar ⁵	7.6	12.7	27.6	31.9	39.0	48.3	60.6	6.0%
Wind.....	59.4	60.5	82.7	83.8	87.3	96.7	109.7	2.2%
Total capacity, all sectors.....	159.8	166.8	206.8	214.1	226.6	247.2	275.2	1.9%
Generation (billion kilowatthours)								
Conventional hydroelectric power.....	275.2	267.1	292.3	294.2	294.7	295.2	297.0	0.4%
Geothermal.....	15.6	16.5	26.8	38.5	52.4	62.3	69.6	5.5%
Municipal waste.....	20.6	20.1	23.7	23.9	23.7	23.7	23.8	0.6%
Wood and other biomass.....	37.6	39.4	53.8	65.5	69.8	76.5	89.3	3.1%
Solar ⁵	11.2	18.5	51.3	58.7	70.9	87.5	110.1	6.8%
Wind.....	141.0	167.8	231.5	234.9	244.6	277.8	319.3	2.4%
Total generation, all sectors.....	501.2	529.5	679.4	715.6	756.2	823.0	909.1	2.0%

¹Includes electricity-only and combined heat and power plants that have a regulatory status.

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 2013, EIA estimates that as much as 274 megawatts of remote electricity generation PV applications (i.e., off-grid power systems) were in service in 2013, plus an additional 573 megawatts in communications, transportation, and assorted other non-grid-connected, specialized applications. See U.S. Energy Information Administration, *Annual Energy Review 2011*, DOE/EIA-0384(2011) (Washington, DC, September 2012), Table 10.9 (annual PV shipments, 1989-2010), and Table 12 (U.S. photovoltaic module shipments by end use, sector, and type) in U.S. Energy Information Administration, *Solar Photovoltaic Cell/Module Shipments Report, 2011* (Washington, DC, September 2012) and U.S. Energy Information Administration, *Solar Photovoltaic Cell/Module Shipments Report, 2012* (Washington, DC, December 2013). 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 2013 approximately 7 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 that have a non-regulatory status; 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 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 2012 and 2013 are model results and may differ from official EIA data reports.

Sources: 2012 and 2013 capacity: U.S. Energy Information Administration (EIA), Form EIA-860, "Annual Electric Generator Report" (preliminary). 2012 and 2013 generation: EIA, *Monthly Energy Review*, DOE/EIA-0035(2014/11) (Washington, DC, November 2014). Projections: EIA, AEO2015 National Energy Modeling System run REF2015.D021915A.

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

Sector and source	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Marketed renewable energy¹								
Residential (wood)	0.44	0.58	0.41	0.39	0.38	0.36	0.35	-1.8%
Commercial (biomass)	0.11	0.12	0.12	0.12	0.12	0.12	0.12	0.0%
Industrial²	2.24	2.20	2.33	2.39	2.39	2.39	2.49	0.5%
Conventional hydroelectric power.....	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.0%
Municipal waste ³	0.17	0.19	0.19	0.19	0.19	0.19	0.19	0.2%
Biomass.....	1.32	1.28	1.33	1.39	1.39	1.38	1.42	0.4%
Biofuels heat and coproducts.....	0.73	0.72	0.80	0.80	0.80	0.81	0.86	0.6%
Transportation	1.18	1.26	1.43	1.42	1.42	1.46	1.57	0.8%
Ethanol used in E85 ⁴	0.01	0.01	0.02	0.08	0.13	0.16	0.19	9.9%
Ethanol used in gasoline blending.....	1.05	1.06	1.07	1.00	0.95	0.96	1.05	0.0%
Biodiesel used in distillate blending.....	0.11	0.19	0.27	0.21	0.21	0.21	0.21	0.4%
Biobutanol.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--
Liquids from biomass.....	0.00	0.00	0.01	0.02	0.02	0.02	0.02	22.0%
Renewable diesel and gasoline ⁵	0.00	0.00	0.06	0.11	0.11	0.11	0.11	--
Electric power⁶	4.53	4.78	6.13	6.43	6.72	7.26	7.99	1.9%
Conventional hydroelectric power.....	2.61	2.53	2.77	2.79	2.79	2.80	2.81	0.4%
Geothermal.....	0.15	0.16	0.26	0.37	0.50	0.60	0.67	5.5%
Biogenic municipal waste ⁷	0.23	0.23	0.27	0.27	0.27	0.27	0.27	0.6%
Biomass.....	0.17	0.18	0.32	0.45	0.50	0.58	0.74	5.3%
Dedicated plants.....	0.10	0.12	0.14	0.16	0.18	0.21	0.32	3.8%
Cofiring.....	0.07	0.07	0.18	0.29	0.33	0.37	0.42	7.0%
Solar thermal.....	0.01	0.01	0.03	0.03	0.03	0.03	0.03	5.1%
Solar photovoltaic.....	0.03	0.08	0.28	0.29	0.31	0.36	0.45	6.8%
Wind.....	1.34	1.59	2.19	2.23	2.32	2.63	3.02	2.4%
Total marketed renewable energy	8.50	8.95	10.42	10.76	11.04	11.60	12.52	1.3%
Sources of ethanol								
from corn and other starch.....	1.08	1.09	1.10	1.09	1.10	1.11	1.19	0.3%
from cellulose.....	0.00	0.00	0.01	0.01	0.01	0.01	0.01	--
Net imports.....	-0.02	-0.02	-0.03	-0.02	-0.03	-0.01	0.02	--
Total	1.06	1.07	1.09	1.08	1.08	1.12	1.23	0.5%

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

Sector and source	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Nonmarketed renewable energy⁸								
Selected consumption								
Residential.....	0.04	0.06	0.13	0.17	0.23	0.28	0.35	7.0%
Solar hot water heating	0.01	0.01	0.01	0.01	0.01	0.01	0.01	1.8%
Geothermal heat pumps	0.01	0.01	0.02	0.02	0.03	0.03	0.03	4.1%
Solar photovoltaic	0.02	0.04	0.09	0.13	0.18	0.24	0.29	8.0%
Wind	0.00	0.00	0.01	0.01	0.01	0.01	0.01	6.9%
Commercial	0.13	0.14	0.17	0.20	0.25	0.32	0.39	3.9%
Solar thermal	0.08	0.08	0.09	0.09	0.10	0.10	0.11	1.1%
Solar photovoltaic	0.04	0.05	0.08	0.11	0.15	0.20	0.27	6.1%
Wind	0.00	0.00	0.00	0.00	0.00	0.01	0.01	9.0%

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. Actual heat rates used to determine fuel consumption for all renewable fuels except hydroelectric, geothermal, solar, and wind. Consumption at hydroelectric, geothermal, solar, and wind facilities is determined by using the fossil fuel equivalent of 9,516 Btu per kilowatthour.

²Includes combined heat and power plants that have a non-regulatory status, and small on-site generating systems.

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 that have a regulatory status.

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 2013 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 2012 and 2013 are model results and may differ from official EIA data reports.

Sources: 2012 and 2013 ethanol: U.S. Energy Information Administration (EIA), *Monthly Energy Review*, DOE/EIA-0035(2014/11) (Washington, DC, November 2014). 2012 and 2013 electric power sector: EIA, Form EIA-860, "Annual Electric Generator Report" (preliminary). Other 2012 and 2013 values: EIA, Office of Energy Analysis. Projections: EIA, AEO2015 National Energy Modeling System run REF2015.D021915A.

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

Sector and source	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Residential								
Petroleum	61	64	50	45	41	37	33	-2.4%
Natural gas	225	267	246	241	240	235	229	-0.6%
Electricity ¹	757	773	761	761	770	776	779	0.0%
Total residential	1,044	1,105	1,057	1,047	1,051	1,048	1,042	-0.2%
Commercial								
Petroleum	40	41	44	43	42	41	41	-0.1%
Natural gas	157	178	175	175	182	189	197	0.4%
Coal	4	4	5	5	5	5	4	0.5%
Electricity ¹	731	744	755	772	788	801	814	0.3%
Total commercial	933	968	979	994	1,016	1,037	1,057	0.3%
Industrial²								
Petroleum	345	350	410	425	424	424	429	0.8%
Natural gas ³	447	462	512	523	539	549	563	0.7%
Coal	142	143	150	148	144	139	139	-0.1%
Electricity ¹	543	531	586	615	613	601	592	0.4%
Total industrial	1,476	1,486	1,658	1,711	1,719	1,714	1,723	0.5%
Transportation								
Petroleum ⁴	1,774	1,792	1,752	1,701	1,662	1,647	1,631	-0.3%
Natural gas ⁵	41	49	49	53	59	67	89	2.2%
Electricity ¹	4	4	5	5	6	8	9	2.9%
Total transportation	1,819	1,845	1,806	1,759	1,727	1,722	1,728	-0.2%
Electric power⁶								
Petroleum	19	23	13	13	13	13	13	-2.1%
Natural gas	493	442	412	441	478	497	509	0.5%
Coal	1,511	1,575	1,670	1,687	1,674	1,664	1,661	0.2%
Other ⁷	12	12	12	12	12	12	12	0.0%
Total electric power	2,035	2,053	2,107	2,153	2,177	2,186	2,195	0.2%
Total by fuel								
Petroleum ⁴	2,240	2,272	2,269	2,227	2,182	2,163	2,147	-0.2%
Natural gas	1,363	1,399	1,394	1,432	1,497	1,538	1,586	0.5%
Coal	1,657	1,722	1,824	1,840	1,822	1,808	1,804	0.2%
Other ⁷	12	12	12	12	12	12	12	0.0%
Total	5,272	5,405	5,499	5,511	5,514	5,521	5,549	0.1%
Carbon dioxide emissions								
(tons per person)	16.8	17.1	16.5	15.9	15.4	14.9	14.6	-0.6%

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

²Includes combined heat and power plants that have a non-regulatory status, and small on-site generating systems.

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 2013, international bunker fuels accounted for 90 to 126 million metric tons annually.

⁵Includes pipeline fuel natural gas and natural gas used as fuel in motor vehicles, trains, and ships.

⁶Includes electricity-only and combined heat and power plants that have a regulatory status.

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 Table A19, "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 2012 and 2013 are model results and may differ from official EIA data reports.

Sources: 2012 and 2013 emissions and emission factors: U.S. Energy Information Administration (EIA), *Monthly Energy Review*, DOE/EIA-0035(2014/11) (Washington, DC, November 2014). Projections: EIA, AEO2015 National Energy Modeling System run REF2015.D021915A.

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

Sector and end use	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Residential								
Space heating.....	228	293	248	236	228	218	207	-1.3%
Space cooling.....	136	109	124	128	135	141	145	1.1%
Water heating.....	143	144	142	142	143	139	134	-0.3%
Refrigeration.....	60	59	53	51	51	51	52	-0.5%
Cooking.....	30	30	31	32	32	33	34	0.4%
Clothes dryers.....	35	36	36	37	37	38	39	0.3%
Freezers.....	13	13	11	11	10	10	9	-1.1%
Lighting.....	103	96	67	59	52	43	38	-3.3%
Clothes washers ¹	5	5	4	3	3	2	2	-2.4%
Dishwashers ¹	16	15	15	15	17	17	18	0.5%
Televisions and related equipment ²	54	54	50	50	51	53	54	0.0%
Computers and related equipment ³	20	20	15	12	11	9	7	-3.6%
Furnace fans and boiler circulation pumps.....	15	21	18	17	16	14	13	-1.8%
Other uses ⁴	188	211	242	253	267	278	288	1.2%
Discrepancy ⁵	0	0	0	0	0	0	0	--
Total residential.....	1,044	1,105	1,057	1,047	1,051	1,048	1,042	-0.2%
Commercial								
Space heating ⁶	112	136	122	115	111	105	97	-1.2%
Space cooling ⁶	95	82	85	84	84	83	82	0.0%
Water heating ⁶	44	45	44	44	44	44	43	-0.2%
Ventilation.....	82	84	85	85	85	84	83	0.0%
Cooking.....	14	14	15	15	16	16	16	0.4%
Lighting.....	149	148	137	131	127	120	116	-0.9%
Refrigeration.....	61	61	52	48	46	45	45	-1.1%
Office equipment (PC).....	19	17	11	8	6	4	3	-5.9%
Office equipment (non-PC).....	35	35	38	42	47	51	55	1.6%
Other uses ⁷	321	346	392	422	452	484	516	1.5%
Total commercial.....	933	968	979	994	1,016	1,037	1,057	0.3%
Industrial⁸								
Manufacturing								
Refining.....	261	268	252	251	250	255	260	-0.1%
Food products.....	96	96	104	109	113	116	119	0.8%
Paper products.....	69	69	63	59	54	50	49	-1.2%
Bulk chemicals.....	247	247	293	311	309	298	291	0.6%
Glass.....	15	15	16	16	17	16	16	0.1%
Cement and lime.....	29	30	41	42	45	48	52	2.1%
Iron and steel.....	125	123	135	141	135	129	122	0.0%
Aluminum.....	45	46	54	55	51	43	38	-0.7%
Fabricated metal products.....	38	39	42	43	42	43	43	0.3%
Machinery.....	22	22	24	25	27	28	29	1.1%
Computers and electronics.....	47	48	48	49	51	53	52	0.3%
Transportation equipment.....	44	47	50	52	53	58	63	1.1%
Electrical equipment.....	8	8	9	10	10	11	12	1.4%
Wood products.....	15	17	20	20	20	19	18	0.3%
Plastics.....	39	40	44	46	48	49	49	0.8%
Balance of manufacturing.....	154	156	161	164	165	166	169	0.3%
Total manufacturing.....	1,254	1,270	1,355	1,392	1,389	1,383	1,383	0.3%
Nonmanufacturing								
Agriculture.....	66	66	65	64	62	60	58	-0.4%
Construction.....	62	64	77	80	83	85	87	1.1%
Mining.....	101	102	117	115	113	108	108	0.2%
Total nonmanufacturing.....	230	232	259	259	257	253	253	0.3%
Discrepancy ⁵	-8	-16	44	61	73	79	86	--
Total industrial.....	1,476	1,486	1,658	1,711	1,719	1,714	1,723	0.5%

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

Sector and end use	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Transportation								
Light-duty vehicles	1,035	1,044	967	892	834	801	777	-1.1%
Commercial light trucks ⁹	36	38	37	36	35	35	36	-0.2%
Bus transportation.....	16	18	18	18	19	19	19	0.2%
Freight trucks	356	389	417	429	440	456	477	0.8%
Rail, passenger.....	5	6	6	6	6	6	7	0.6%
Rail, freight.....	31	36	35	36	34	32	31	-0.5%
Shipping, domestic	7	7	7	6	6	5	5	-1.4%
Shipping, international	52	48	47	47	47	48	48	0.0%
Recreational boats.....	16	17	18	18	19	20	20	0.6%
Air	165	163	180	193	206	214	219	1.1%
Military use.....	50	48	45	45	48	51	54	0.5%
Lubricants	5	5	5	5	5	5	5	0.3%
Pipeline fuel.....	40	47	45	48	50	50	51	0.3%
Discrepancy ⁵	5	-21	-21	-21	-21	-21	-20	--
Total transportation.....	1,819	1,845	1,806	1,759	1,727	1,722	1,728	-0.2%
Biogenic energy combustion¹⁰								
Biomass.....	192	203	205	221	224	229	247	0.7%
Electric power sector	16	17	30	42	47	55	69	5.3%
Other sectors	176	186	175	179	177	174	178	-0.2%
Biogenic waste.....	21	21	24	25	24	24	24	0.6%
Biofuels heat and coproducts	69	68	75	75	75	76	81	0.6%
Ethanol	73	73	74	74	74	77	84	0.5%
Biodiesel	8	14	20	16	16	16	16	0.4%
Liquids from biomass.....	0	0	1	1	1	1	1	22.0%
Renewable diesel and gasoline	0	0	4	8	8	8	8	--
Total	362	379	403	419	422	431	461	0.7%

¹Does not include water heating portion of load.

²Includes televisions, set-top boxes, home theater systems, DVD players, and video game consoles.

³Includes desktop and laptop computers, monitors, and networking equipment.

⁴Includes small electric devices, heating elements, outdoor grills, exterior lights, pool heaters, spa heaters, backup electricity generators, and motors not listed above. Electric vehicles are included in the transportation sector.

⁵Represents 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.

⁶Includes emissions related to fuel consumption for district services.

⁷Includes emissions related to (but not limited to) miscellaneous uses such as transformers, medical imaging and other medical equipment, elevators, escalators, off-road electric vehicles, laboratory fume hoods, laundry equipment, coffee brewers, water services, pumps, emergency generators, combined heat and power in commercial buildings, manufacturing performed in commercial buildings, and cooking (distillate), plus residual fuel oil, propane, coal, motor gasoline, kerosene, and marketed renewable fuels (biomass).

⁸Includes combined heat and power plants that have a non-regulatory status, and small on-site generating systems.

⁹Commercial trucks 8,501 to 10,000 pounds gross vehicle weight rating.

¹⁰By 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 2012 and 2013 are model results and may differ from official EIA data reports.

Sources: 2012 and 2013 emissions and emission factors: U.S. Energy Information Administration (EIA), *Monthly Energy Review*, DOE/EIA-0035(2014/11) (Washington, DC, November 2014). Projections: EIA, AEO2015 National Energy Modeling System run REF2015.D021915A.

Table A20. Macroeconomic indicators
(billion 2009 chain-weighted dollars, unless otherwise noted)

Indicators	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Real gross domestic product	15,369	15,710	18,801	21,295	23,894	26,659	29,898	2.4%
Components of real gross domestic product								
Real consumption	10,450	10,700	12,832	14,484	16,275	18,179	20,476	2.4%
Real investment	2,436	2,556	3,531	4,025	4,474	4,984	5,634	3.0%
Real government spending	2,954	2,894	2,985	3,098	3,286	3,469	3,691	0.9%
Real exports	1,960	2,020	2,813	3,807	4,815	6,010	7,338	4.9%
Real imports	2,413	2,440	3,334	4,079	4,888	5,859	7,037	4.0%
Energy intensity (thousand Btu per 2009 dollar of GDP)								
Delivered energy	4.47	4.53	3.93	3.49	3.13	2.83	2.56	-2.1%
Total energy	6.14	6.18	5.36	4.79	4.31	3.90	3.54	-2.0%
Price indices								
GDP chain-type price index (2009=1.000)	1.05	1.07	1.21	1.31	1.43	1.57	1.73	1.8%
Consumer price index (1982-4=1.00)								
All-urban	2.30	2.33	2.63	2.89	3.18	3.54	3.95	2.0%
Energy commodities and services	2.46	2.44	2.55	2.98	3.42	4.03	4.85	2.6%
Wholesale price index (1982=1.00)								
All commodities	2.02	2.03	2.25	2.47	2.71	3.02	3.39	1.9%
Fuel and power	2.12	2.12	2.26	2.67	3.08	3.69	4.56	2.9%
Metals and metal products	2.20	2.14	2.43	2.62	2.85	3.13	3.42	1.8%
Industrial commodities excluding energy	1.94	1.96	2.22	2.40	2.61	2.85	3.12	1.7%
Interest rates (percent, nominal)								
Federal funds rate	0.14	0.11	3.40	3.56	3.69	3.76	4.04	--
10-year treasury note	1.80	2.35	4.12	4.14	4.28	4.41	4.63	--
AA utility bond rate	3.83	4.24	6.15	6.06	6.33	6.47	6.71	--
Value of shipments (billion 2009 dollars)								
Non-industrial and service sectors	23,989	24,398	28,468	32,023	34,968	37,767	40,814	1.9%
Total industrial	6,822	7,004	8,467	9,212	9,870	10,614	11,463	1.8%
Agriculture, mining, and construction	1,813	1,858	2,344	2,441	2,540	2,601	2,712	1.4%
Manufacturing	5,009	5,146	6,123	6,771	7,330	8,012	8,751	2.0%
Energy-intensive	1,675	1,685	1,946	2,084	2,168	2,237	2,317	1.2%
Non-energy-intensive	3,334	3,461	4,177	4,687	5,162	5,776	6,433	2.3%
Total shipments	30,810	31,402	36,935	41,235	44,838	48,380	52,277	1.9%
Population and employment (millions)								
Population, with armed forces overseas	315	317	334	347	359	370	380	0.7%
Population, aged 16 and over	249	251	267	277	288	298	307	0.7%
Population, aged 65 and over	43	45	56	65	73	78	80	2.2%
Employment, nonfarm	134	136	149	154	159	163	169	0.8%
Employment, manufacturing	11.8	11.9	11.8	11.3	10.7	10.3	9.7	-0.7%
Key labor indicators								
Labor force (millions)	155	155	166	170	174	179	185	0.6%
Nonfarm labor productivity (2009=1.00)	1.05	1.05	1.20	1.34	1.48	1.62	1.78	2.0%
Unemployment rate (percent)	8.08	7.35	5.40	4.96	5.03	5.02	4.85	--
Key indicators for energy demand								
Real disposable personal income	11,676	11,651	14,411	16,318	18,487	20,610	22,957	2.5%
Housing starts (millions)	0.84	0.99	1.69	1.70	1.66	1.62	1.62	1.8%
Commercial floorspace (billion square feet)	82.3	82.8	89.0	94.1	98.4	103.2	109.1	1.0%
Unit sales of light-duty vehicles (millions)	14.4	15.5	17.0	17.2	17.5	17.7	18.2	0.6%

GDP = Gross domestic product.
Btu = British thermal unit.

-- = Not applicable.

Sources: 2012 and 2013: IHS Economics, Industry and Employment models, November 2014. **Projections:** U.S. Energy Information Administration, AEO2015 National Energy Modeling System run REF2015.D021915A.

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

Supply, disposition, and prices	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Crude oil spot prices								
(2013 dollars per barrel)								
Brent.....	113	109	79	91	106	122	141	1.0%
West Texas Intermediate.....	96	98	73	85	99	116	136	1.2%
(nominal dollars per barrel)								
Brent.....	112	109	90	112	142	180	229	2.8%
West Texas Intermediate.....	94	98	83	105	133	171	220	3.0%
Petroleum and other liquids consumption¹								
OECD								
United States (50 states).....	18.47	18.96	19.65	19.61	19.41	19.29	19.27	0.1%
United States territories.....	0.29	0.30	0.31	0.32	0.34	0.36	0.38	1.0%
Canada.....	2.29	2.29	2.31	2.25	2.21	2.17	2.14	-0.3%
Mexico and Chile.....	2.50	2.46	2.71	2.78	2.80	2.83	2.92	0.6%
OECD Europe ²	14.07	13.96	14.20	14.15	14.09	14.03	14.12	0.0%
Japan.....	4.73	4.56	4.27	4.18	4.03	3.86	3.65	-0.8%
South Korea.....	2.41	2.43	2.58	2.57	2.53	2.46	2.40	0.0%
Australia and New Zealand.....	1.17	1.16	1.16	1.12	1.11	1.11	1.15	-0.1%
Total OECD consumption.....	45.93	46.14	47.20	46.97	46.52	46.10	46.04	0.0%
Non-OECD								
Russia.....	3.20	3.30	3.31	3.24	3.23	3.17	3.01	-0.3%
Other Europe and Eurasia ³	2.00	2.06	2.22	2.28	2.39	2.50	2.59	0.9%
China.....	10.29	10.67	13.13	14.75	17.03	18.92	20.19	2.4%
India.....	3.63	3.70	4.30	4.89	5.52	6.13	6.79	2.3%
Other Asia ⁴	7.35	7.37	9.08	10.69	12.35	14.20	16.49	3.0%
Middle East.....	7.32	7.61	8.40	8.81	9.56	10.28	11.13	1.4%
Africa.....	3.36	3.42	3.93	4.28	4.78	5.39	6.18	2.2%
Brazil.....	2.93	3.11	3.33	3.44	3.74	4.09	4.50	1.4%
Other Central and South America.....	3.35	3.38	3.49	3.55	3.72	3.90	4.15	0.8%
Total non-OECD consumption.....	43.41	44.60	51.20	55.92	62.31	68.58	75.01	1.9%
Total consumption.....	89.3	90.7	98.4	102.9	108.8	114.7	121.0	1.1%
Petroleum and other liquids production								
OPEC ⁵								
Middle East.....	26.29	26.32	24.56	26.23	29.34	33.12	36.14	1.2%
North Africa.....	3.37	2.90	3.51	3.56	3.67	3.85	4.06	1.3%
West Africa.....	4.40	4.26	5.00	5.16	5.24	5.33	5.43	0.9%
South America.....	2.99	3.01	3.10	3.16	3.27	3.49	3.79	0.9%
Total OPEC production.....	37.05	36.49	36.16	38.10	41.53	45.79	49.42	1.1%
Non-OPEC								
OECD								
United States (50 states).....	11.04	12.64	16.92	16.74	16.52	15.84	15.89	0.8%
Canada.....	4.00	4.15	5.05	5.68	6.26	6.61	6.76	1.8%
Mexico and Chile.....	2.96	2.94	2.93	3.12	3.32	3.52	3.79	0.9%
OECD Europe ²	4.04	3.88	3.35	3.06	2.98	2.97	3.19	-0.7%
Japan and South Korea.....	0.18	0.18	0.17	0.17	0.18	0.18	0.18	0.1%
Australia and New Zealand.....	0.57	0.49	0.60	0.80	0.86	0.91	0.96	2.5%
Total OECD production.....	22.80	24.29	29.03	29.58	30.12	30.03	30.77	0.9%
Non-OECD								
Russia.....	10.52	10.50	10.71	10.78	11.22	11.81	12.16	0.5%
Other Europe and Eurasia ³	3.20	3.27	3.41	4.14	4.42	4.70	5.18	1.7%
China.....	4.39	4.48	5.11	5.46	5.66	5.75	5.84	1.0%
Other Asia ⁴	3.88	3.82	3.85	3.72	3.67	3.71	4.01	0.2%
Middle East.....	1.31	1.20	1.03	0.93	0.85	0.78	0.77	-1.6%
Africa.....	2.31	2.41	2.70	2.86	2.94	3.03	3.33	1.2%
Brazil.....	2.61	2.73	3.70	4.56	5.43	5.90	6.12	3.0%
Other Central and South America.....	2.17	2.21	2.71	2.76	2.97	3.16	3.47	1.7%
Total non-OECD production.....	30.38	30.63	33.21	35.22	37.17	38.85	40.88	1.1%
Total petroleum and other liquids production.....	90.2	91.4	98.4	102.9	108.8	114.7	121.1	1.0%
OPEC market share (percent).....	41.1	39.9	36.7	37.0	38.2	39.9	40.8	--

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

Supply, disposition, and prices	Reference case							Annual growth 2013-2040 (percent)
	2012	2013	2020	2025	2030	2035	2040	
Selected world production subtotals:								
Crude oil and equivalents ⁶	77.35	77.93	82.19	85.20	89.77	94.33	99.09	0.9%
Tight oil	2.63	3.62	7.49	8.31	9.16	9.82	10.15	3.9%
Bitumen ⁷	1.94	2.11	3.00	3.52	3.95	4.21	4.26	2.6%
Refinery processing gain ⁸	2.37	2.40	2.42	2.61	2.74	2.88	2.97	0.8%
Natural gas plant liquids	9.11	9.36	11.28	11.93	12.42	12.93	13.79	1.4%
Liquids from renewable sources ⁹	1.93	2.14	2.56	2.92	3.36	3.78	4.22	2.5%
Liquids from coal ¹⁰	0.21	0.21	0.33	0.51	0.69	0.87	1.05	6.2%
Liquids from natural gas ¹¹	0.14	0.24	0.33	0.43	0.51	0.57	0.61	3.5%
Liquids from kerogen ¹²	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.7%
Crude oil production⁶								
OPEC ⁵								
Middle East	23.24	23.13	21.20	22.66	25.59	29.11	31.79	1.2%
North Africa	2.91	2.43	2.93	2.93	2.92	2.93	2.96	0.7%
West Africa	4.34	4.20	4.89	5.05	5.13	5.21	5.29	0.9%
South America	2.80	2.82	2.86	2.86	2.98	3.20	3.48	0.8%
Total OPEC production	33.30	32.60	31.89	33.51	36.62	40.46	43.52	1.1%
Non-OPEC								
OECD								
United States (50 states)	7.54	8.90	11.58	11.28	11.01	10.37	10.41	0.6%
Canada	3.28	3.42	4.35	4.93	5.48	5.83	5.92	2.0%
Mexico and Chile	2.61	2.59	2.61	2.81	3.00	3.22	3.45	1.1%
OECD Europe ²	2.99	2.82	2.17	1.80	1.66	1.58	1.69	-1.9%
Japan and South Korea	0.01	0.00	0.00	0.00	0.00	0.00	0.00	-1.6%
Australia and New Zealand	0.45	0.37	0.47	0.61	0.67	0.71	0.75	2.7%
Total OECD production	16.87	18.10	21.18	21.44	21.83	21.71	22.23	0.8%
Non-OECD								
Russia	10.04	10.02	10.15	10.11	10.42	10.85	11.10	0.4%
Other Europe and Eurasia ³	2.95	3.05	3.18	3.83	4.03	4.21	4.66	1.6%
China	4.07	4.16	4.54	4.68	4.56	4.36	4.13	0.0%
Other Asia ⁴	3.14	3.04	2.94	2.63	2.45	2.38	2.47	-0.8%
Middle East	1.26	1.16	1.00	0.90	0.82	0.76	0.74	-1.6%
Africa	1.88	1.97	2.18	2.31	2.38	2.45	2.70	1.2%
Brazil	2.06	2.02	2.87	3.50	4.16	4.47	4.60	3.1%
Other Central and South America	1.77	1.81	2.25	2.29	2.49	2.67	2.94	1.8%
Total non-OECD production	27.18	27.24	29.11	30.25	31.32	32.15	33.35	0.8%
Total crude oil production⁶	77.3	77.9	82.2	85.2	89.8	94.3	99.1	0.9%
OPEC market share (percent)	43.1	41.8	38.8	39.3	40.8	42.9	43.9	--

¹Estimated consumption. Includes both OPEC and non-OPEC consumers in the regional breakdown.

²OECD Europe = Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, and the United Kingdom.

³Other Europe and Eurasia = Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Georgia, Kazakhstan, Kosovo, Kyrgyzstan, Latvia, Lithuania, Macedonia, Malta, Moldova, Montenegro, Romania, Serbia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan.

⁴Other Asia = Afghanistan, Bangladesh, Bhutan, Brunei, Cambodia (Kampuchea), Fiji, French Polynesia, Guam, Hong Kong, India (for production), 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.

⁵OPEC = Organization of the Petroleum Exporting Countries = Algeria, Angola, Ecuador, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

⁶Includes crude oil, lease condensate, tight oil (shale oil), extra-heavy oil, and bitumen (oil sands).

⁷Includes diluted and upgraded/synthetic bitumen (syncrude).

⁸The 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.

⁹Includes liquids produced from energy crops.

¹⁰Includes liquids converted from coal via the Fischer-Tropsch coal-to-liquids process.

¹¹Includes liquids converted from natural gas via the Fischer-Tropsch gas-to-liquids process.

¹²Includes liquids produced from kerogen (oil shale, not to be confused with tight oil (shale oil)).

OECD = Organization for Economic Cooperation and Development.

-- = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 2012 and 2013 are model results and may differ from official EIA data reports.

Sources: 2012 and 2013 Brent and West Texas Intermediate crude oil spot prices: Thomson Reuters. 2012 quantities derived from: Energy Information Administration (EIA), International Energy Statistics database as of September 2014. 2013 quantities and projections: EIA, AEO2015 National Energy Modeling System run REF2015.D021915A and EIA, Generate World Oil Balance application.