

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

Supply, disposition, prices, and emissions	Reference case							Annual growth 2012-2040 (percent)
	2011	2012	2020	2025	2030	2035	2040	
Generation by fuel type								
Electric power sector¹								
Power only²								
Coal	1,692	1,478	1,606	1,650	1,652	1,640	1,635	0.4%
Petroleum	26	18	15	16	15	15	16	-0.5%
Natural gas ³	804	1,000	1,020	1,135	1,256	1,374	1,471	1.4%
Nuclear power.....	790	769	779	779	782	786	811	0.2%
Pumped storage/other ⁴	1	3	3	3	3	3	3	0.2%
Renewable sources ⁵	476	459	600	634	660	686	735	1.7%
Distributed generation (natural gas).....	0	0	1	2	2	3	4	--
Total	3,790	3,727	4,025	4,217	4,370	4,508	4,675	0.8%
Combined heat and power⁶								
Coal	26	20	26	26	26	26	26	0.9%
Petroleum	2	2	1	1	1	1	1	-3.6%
Natural gas	121	133	134	135	135	134	134	0.0%
Renewable sources	5	5	8	8	8	8	8	1.9%
Total	157	163	168	169	170	169	169	0.1%
Total electric power sector generation	3,946	3,890	4,193	4,387	4,540	4,677	4,844	0.8%
Less direct use.....	12	13	14	14	14	14	14	0.3%
Net available to the grid	3,935	3,877	4,179	4,373	4,526	4,663	4,830	0.8%
End-use sector⁷								
Coal	15	13	13	13	13	13	13	0.0%
Petroleum	2	3	3	3	3	3	3	-0.4%
Natural gas	88	95	112	130	159	197	231	3.2%
Other gaseous fuels ⁸	11	11	18	18	18	18	18	1.8%
Renewable sources ⁹	36	39	60	69	80	93	108	3.7%
Other ¹⁰	4	3	3	3	3	3	3	0.0%
Total end-use sector generation	156	165	209	236	276	327	375	3.0%
Less direct use.....	115	127	169	193	228	274	317	3.3%
Total sales to the grid.....	41	38	41	43	47	53	58	1.5%
Total electricity generation by fuel								
Coal	1,733	1,512	1,646	1,689	1,692	1,679	1,675	0.4%
Petroleum	30	23	18	19	19	19	19	-0.7%
Natural gas	1,014	1,228	1,268	1,401	1,552	1,708	1,839	1.5%
Nuclear power.....	790	769	779	779	782	786	811	0.2%
Renewable sources ^{5,9}	517	502	667	711	748	787	851	1.9%
Other ¹¹	19	19	24	24	24	24	24	0.7%
Total electricity generation	4,103	4,054	4,402	4,622	4,815	5,004	5,219	0.9%
Net generation to the grid.....	3,976	3,915	4,220	4,416	4,573	4,716	4,888	0.8%
Net imports.....	37	47	33	35	35	31	35	-1.1%
Electricity sales by sector								
Residential.....	1,423	1,375	1,418	1,467	1,526	1,585	1,657	0.7%
Commercial.....	1,328	1,324	1,374	1,448	1,517	1,588	1,675	0.8%
Industrial	991	981	1,184	1,253	1,270	1,265	1,273	0.9%
Transportation.....	7	7	9	10	13	15	18	3.6%
Total	3,749	3,686	3,986	4,178	4,327	4,454	4,623	0.8%
Direct use	127	139	182	206	242	288	331	3.1%
Total electricity use	3,875	3,826	4,168	4,385	4,569	4,742	4,954	0.9%

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

Supply, disposition, prices, and emissions	Reference case							Annual growth 2012-2040 (percent)
	2011	2012	2020	2025	2030	2035	2040	
End-use prices								
(2012 cents per kilowatthour)								
Residential.....	11.9	11.9	12.3	12.3	12.6	12.9	13.3	0.4%
Commercial.....	10.4	10.1	10.5	10.4	10.7	10.9	11.3	0.4%
Industrial.....	6.9	6.7	7.1	7.2	7.5	7.8	8.2	0.8%
Transportation.....	11.6	10.7	10.2	10.3	10.8	11.1	11.7	0.3%
All sectors average.....	10.1	9.8	10.1	10.1	10.4	10.7	11.1	0.4%
(nominal cents per kilowatthour)								
Residential.....	11.7	11.9	14.0	15.2	17.0	19.2	22.0	2.2%
Commercial.....	10.2	10.1	11.9	12.8	14.4	16.3	18.7	2.2%
Industrial.....	6.8	6.7	8.0	8.9	10.1	11.6	13.6	2.6%
Transportation.....	11.4	10.7	11.5	12.6	14.6	16.6	19.3	2.1%
All sectors average.....	9.9	9.8	11.5	12.5	14.0	16.0	18.5	2.3%
Prices by service category								
(2012 cents per kilowatthour)								
Generation.....	5.9	5.7	6.4	6.5	6.8	7.1	7.5	1.0%
Transmission.....	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.2%
Distribution.....	3.1	3.1	2.7	2.6	2.6	2.6	2.6	-0.6%
(nominal cents per kilowatthour)								
Generation.....	5.8	5.7	7.2	8.0	9.2	10.6	12.4	2.8%
Transmission.....	1.0	1.1	1.2	1.3	1.5	1.6	1.8	2.0%
Distribution.....	3.1	3.1	3.1	3.2	3.5	3.8	4.3	1.2%
Electric power sector emissions¹								
Sulfur dioxide (million short tons).....	4.57	3.34	1.38	1.54	1.58	1.59	1.61	-2.6%
Nitrogen oxide (million short tons).....	1.94	1.68	1.48	1.56	1.59	1.60	1.60	-0.2%
Mercury (short tons).....	30.75	26.35	6.51	6.60	6.69	6.72	6.81	-4.7%

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 2012 approximately 6 billion kilowatthours of electricity were generated from a municipal waste stream containing petroleum-derived plastics and other non-renewable sources. See U.S. Energy Information Administration, *Methodology for Allocating Municipal Solid Waste to Biogenic and Non-Biogenic Energy*, (Washington, DC, May 2007).

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

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

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Note: Totals may not equal sum of components due to independent rounding. Data for 2011 and 2012 are model results and may differ from official EIA data reports.

Sources: 2011 and 2012 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(2013/09) (Washington, DC, September 2013), and supporting databases. 2011 and 2012 emissions: U.S. Environmental Protection Agency, Clean Air Markets Database. 2011 and 2012 electricity prices by service category: EIA, AEO2014 National Energy Modeling System run REF2014.D102413A. Projections: EIA, AEO2014 National Energy Modeling System run REF2014.D102413A.