

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

Supply, disposition, prices, and emissions	Reference case							Annual growth 2011-2040 (percent)
	2010	2011	2020	2025	2030	2035	2040	
Generation by fuel type								
Electric power sector¹								
Power only²								
Coal	1,797	1,688	1,613	1,680	1,718	1,756	1,776	0.2%
Petroleum	32	24	15	15	15	15	16	-1.5%
Natural gas ³	779	809	948	996	1,093	1,193	1,224	1.4%
Nuclear power.....	807	790	885	912	908	875	903	0.5%
Pumped storage/other ⁴	2	1	2	2	3	3	3	2.2%
Renewable sources ⁵	392	484	555	582	598	644	750	1.5%
Distributed generation (natural gas).....	0	0	3	6	10	12	13	--
Total	3,809	3,797	4,021	4,194	4,345	4,497	4,684	0.7%
Combined heat and power⁶								
Coal	31	27	27	27	27	28	28	0.2%
Petroleum	2	2	1	1	1	1	1	-4.1%
Natural gas	123	121	130	131	128	127	125	0.1%
Renewable sources	5	4	4	4	4	4	4	-0.2%
Total	163	157	161	162	161	160	158	0.0%
Total electric power sector generation	3,972	3,954	4,182	4,356	4,506	4,658	4,842	0.7%
Less direct use.....	17	12	13	13	13	13	13	0.0%
Net available to the grid	3,956	3,942	4,169	4,343	4,493	4,645	4,830	0.7%
End-use sector⁷								
Coal	20	15	16	20	21	23	25	1.7%
Petroleum	2	2	2	2	2	2	2	0.2%
Natural gas	69	70	104	120	148	187	221	4.0%
Other gaseous fuels ⁸	10	11	14	14	14	14	14	0.9%
Renewable sources ⁹	33	37	68	75	82	92	104	3.6%
Other ¹⁰	4	4	4	4	4	4	4	-0.3%
Total end-use sector generation	138	140	208	235	271	322	370	3.4%
Less direct use.....	100	103	169	192	225	269	310	3.9%
Total sales to the grid.....	39	37	39	43	47	53	60	1.7%
Total electricity generation by fuel								
Coal	1,847	1,730	1,656	1,727	1,766	1,807	1,829	0.2%
Petroleum	37	28	17	18	18	18	18	-1.5%
Natural gas	970	1,000	1,184	1,252	1,379	1,519	1,582	1.6%
Nuclear power.....	807	790	885	912	908	875	903	0.5%
Renewable sources ^{5,9}	430	526	627	661	685	740	858	1.7%
Other ¹¹	19	20	20	20	20	21	21	0.1%
Total electricity generation	4,111	4,095	4,389	4,591	4,777	4,979	5,212	0.8%
Net generation to the grid.....	3,994	3,979	4,208	4,386	4,540	4,698	4,890	0.7%
Net imports.....	26	37	24	22	14	10	18	-2.4%
Electricity sales by sector								
Residential.....	1,446	1,424	1,419	1,488	1,572	1,661	1,767	0.7%
Commercial.....	1,330	1,319	1,384	1,455	1,531	1,602	1,677	0.8%
Industrial	971	976	1,158	1,186	1,161	1,142	1,145	0.6%
Transportation.....	6	6	9	11	13	16	19	3.9%
Total	3,753	3,725	3,969	4,140	4,276	4,421	4,608	0.7%
Direct use	116	116	181	204	237	281	322	3.6%
Total electricity use	3,870	3,841	4,151	4,344	4,513	4,702	4,930	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 2011-2040 (percent)
	2010	2011	2020	2025	2030	2035	2040	
End-use prices								
(2011 cents per kilowatthour)								
Residential.....	11.8	11.7	11.5	11.6	11.8	12.1	12.7	0.3%
Commercial.....	10.4	10.2	9.7	9.7	9.8	10.1	10.8	0.2%
Industrial.....	6.9	6.8	6.4	6.5	6.7	7.1	7.8	0.4%
Transportation.....	11.6	11.2	10.1	10.4	10.8	11.2	12.0	0.2%
All sectors average.....	10.0	9.9	9.4	9.5	9.7	10.1	10.8	0.3%
(nominal cents per kilowatthour)								
Residential.....	11.5	11.7	13.2	14.6	16.3	18.3	20.9	2.0%
Commercial.....	10.2	10.2	11.2	12.2	13.5	15.3	17.9	1.9%
Industrial.....	6.8	6.8	7.4	8.2	9.3	10.7	12.8	2.2%
Transportation.....	11.3	11.2	11.6	13.1	14.8	16.9	19.7	2.0%
All sectors average.....	9.8	9.9	10.8	12.0	13.4	15.2	17.8	2.0%
Prices by service category								
(2011 cents per kilowatthour)								
Generation.....	6.0	5.8	5.6	5.8	6.0	6.4	7.1	0.7%
Transmission.....	1.0	1.1	1.1	1.1	1.1	1.1	1.1	0.3%
Distribution.....	3.0	3.1	2.8	2.6	2.6	2.6	2.6	-0.5%
(nominal cents per kilowatthour)								
Generation.....	5.9	5.8	6.4	7.3	8.3	9.6	11.6	2.5%
Transmission.....	1.0	1.1	1.2	1.4	1.5	1.7	1.9	2.0%
Distribution.....	2.9	3.1	3.2	3.3	3.6	4.0	4.3	1.2%
Electric power sector emissions¹								
Sulfur dioxide (million short tons).....	5.00	4.42	1.35	1.43	1.50	1.60	1.66	-3.3%
Nitrogen oxide (million short tons).....	2.07	1.94	1.72	1.80	1.82	1.85	1.87	-0.1%
Mercury (short tons).....	33.14	31.49	6.84	7.19	7.33	7.55	7.75	-4.7%

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

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

³Includes electricity generation from fuel cells.

⁴Includes non-biogenic municipal waste. The U.S. Energy Information Administration estimates that in 2011 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 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 2010 and 2011 are model results and may differ slightly from official EIA data reports.

Sources: 2010 and 2011 electric power sector generation; sales to the grid; net imports; electricity sales; and electricity end-use prices: U.S. Energy Information Administration (EIA), *Annual Energy Review 2011*, DOE/EIA-0384(2011) (Washington, DC, September 2012), and supporting databases. 2010 and 2011 emissions: U.S. Environmental Protection Agency, Clean Air Markets Database. 2010 and 2011 electricity prices by service category: EIA, AEO2013 National Energy Modeling System run REF2013.D102312A. Projections: EIA, AEO2013 National Energy Modeling System run REF2013.D102312A.