

Annual Energy Outlook 2006 with Projections to 2030

Release Date: December 2005

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Table 8. Electricity Supply, Disposition, Prices, and Emissions
(billion kilowatthours, unless otherwise noted)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Net Generation by Fuel Type														
Electric Power Sector 1/ Power Only 2/														
Coal	1916	1916	1986	1999	2037	2080	2137	2164	2174	2199	2198	2204	2209	2235
Petroleum	111	110	107	102	86	87	88	90	89	91	92	92	89	88
Natural Gas 3/	439	486	527	497	503	523	514	533	565	619	668	702	743	769
Nuclear Power	764	789	774	787	806	807	808	809	810	811	811	818	829	843
Pumped Storage/Other	-9	-8	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
Renewable Sources 4/	322	319	337	378	409	412	417	432	431	428	433	438	445	452
Distributed Generation (Natural Gas)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3543	3612	3723	3754	3831	3900	3956	4020	4061	4140	4193	4246	4306	4378
Combined Heat and Power 5/														
Coal	37	38	32	32	31	31	31	30	30	31	31	30	30	30
Petroleum	5	5	2	2	2	2	2	2	2	2	2	2	2	2
Natural Gas	129	132	139	138	130	137	139	140	144	149	153	157	159	161
Renewable Sources	4	4	4	4	4	4	3	4	4	4	4	4	4	4
Total	177	182	177	176	167	174	175	176	180	186	190	194	195	196
Total Net Generation	3720	3794	3901	3930	3998	4074	4131	4196	4241	4326	4383	4440	4501	4574
Less Direct Use	27	26	28	28	28	28	28	28	28	28	28	28	28	28
Net Available to the Grid	3694	3768	3873	3902	3970	4046	4103	4168	4212	4298	4355	4412	4473	4546
Commercial and Industrial Generation 6/														
Coal	21	23	23	23	23	23	23	23	27	31	35	36	38	40
Petroleum	5	5	6	6	11	11	12	12	13	14	12	13	13	13
Natural Gas	83	83	85	87	93	95	98	101	104	107	109	112	116	120
Other Gaseous Fuels 7/	7	5	5	5	4	4	4	4	4	4	4	4	4	4
Renewable Sources 4/	35	35	35	36	37	38	39	40	41	41	42	42	43	43
Other 8/	11	12	12	12	12	12	12	12	12	12	12	12	12	12
Total	162	161	165	168	179	182	187	192	200	208	214	220	226	232
Less Direct Use	137	135	138	139	143	145	147	149	152	155	158	161	163	166
Total Sales to the Grid	24	26	27	29	37	38	41	43	48	53	55	59	62	66
Total Electricity Generation	3882	3955	4066	4098	4178	4256	4318	4388	4440	4534	4596	4660	4727	4807
Total Net Generation to the Grid	3718	3793	3900	3931	4007	4083	4143	4211	4260	4350	4410	4471	4536	4612
Net Imports	6	11	22	16	9	17	20	22	23	23	21	22	23	21
Electricity Sales by Sector														
Residential	1273	1293	1343	1353	1377	1411	1436	1461	1485	1511	1529	1552	1576	1602
Commercial	1200	1229	1280	1286	1322	1362	1397	1430	1464	1498	1529	1560	1592	1626
Industrial	1008	1021	1028	1036	1042	1049	1052	1060	1072	1080	1087	1095	1103	1113
Transportation	25	25	25	25	25	26	26	26	27	27	27	27	28	28
Total	3505	3567	3675	3700	3767	3847	3911	3978	4047	4116	4173	4234	4300	4370
Direct Use	164	161	166	167	171	173	175	177	180	183	186	189	192	194
Total Consumption	3669	3729	3840	3867	3937	4020	4085	4155	4227	4299	4359	4423	4491	4564
End-Use Prices (2004 cents per kilowatthour)														
Residential	8.9	8.9	9.8	9.5	8.9	8.6	8.5	8.5	8.4	8.3	8.4	8.4	8.3	8.3
Commercial	8.2	8.0	8.7	8.6	8.2	7.9	7.8	7.6	7.5	7.4	7.5	7.5	7.4	7.4
Industrial	5.3	5.3	6.0	6.0	5.9	5.7	5.5	5.3	5.2	5.1	5.2	5.2	5.1	5.1
Transportation	7.4	7.4	7.8	8.0	7.5	7.2	7.1	7.1	7.0	7.0	7.0	7.0	6.9	6.9
All Sectors Average	7.6	7.6	8.3	8.2	7.8	7.6	7.4	7.3	7.2	7.1	7.2	7.2	7.1	7.1
Prices by Service Category (2004 cents per kilowatthour)														
Generation	5.0	5.0	5.8	5.6	5.3	5.0	4.9	4.7	4.6	4.6	4.7	4.7	4.6	4.6
Transmission	0.6	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Distribution	2.1	2.1	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9
Electric Power Sector Emissions 1/ (million tons)														
Sulfur Dioxide	10.60	10.89	10.74	10.32	9.29	8.01	6.55	5.91	5.54	5.25	4.96	4.80	4.63	4.45
Nitrogen Oxide	4.12	3.74	3.90	3.75	3.79	3.90	2.37	2.34	2.36	2.38	2.39	2.33	2.10	2.09
Mercury	50.70	53.31	53.64	52.70	52.60	50.95	48.90	37.73	37.68	36.99	32.81	30.65	24.04	22.25

Table 8. Electricity Supply, Disposition, Prices, and Emissions
(billion kilowatthours, unless otherwise noted)

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2004-2030
Net Generation by Fuel Type															
Electric Power Sector 1/ Power Only 2/															
Coal	2269	2312	2354	2405	2454	2517	2583	2658	2728	2805	2897	3000	3100	3178	2.0%
Petroleum	88	88	91	90	92	92	91	92	93	96	98	99	99	99	-0.4%
Natural Gas 3/	784	802	815	814	813	800	794	785	775	761	740	720	693	691	1.4%
Nuclear Power	857	866	870	871	871	871	871	871	871	871	871	871	871	871	0.4%
Pumped Storage/Other	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	0.3%
Renewable Sources 4/	456	456	460	465	468	475	478	484	486	491	493	496	497	500	1.7%
Distributed Generation (Natural Gas)	0	0	1	1	1	1	1	1	1	1	2	2	2	2	N/A
Total	4445	4516	4582	4638	4690	4745	4808	4881	4945	5016	5092	5178	5252	5332	1.5%
Combined Heat and Power 5/															
Coal	30	30	30	30	30	30	30	30	29	29	29	28	28	27	-1.3%
Petroleum	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-2.8%
Natural Gas	159	156	157	153	152	149	145	143	141	141	139	135	133	131	-0.1%
Renewable Sources	4	4	4	4	4	4	4	4	4	4	4	4	4	4	-0.3%
Total	195	192	194	189	188	185	181	179	177	176	174	169	167	164	-0.4%
Total Net Generation	4640	4708	4775	4827	4877	4931	4989	5060	5121	5193	5266	5347	5419	5497	1.4%
Less Direct Use	28	28	28	28	28	28	28	28	28	28	28	28	28	28	0.3%
Net Available to the Grid	4612	4680	4747	4799	4849	4903	4961	5032	5093	5165	5238	5319	5391	5469	1.4%
Commercial and Industrial Generation 6/															
Coal	43	47	50	70	89	106	118	130	139	151	159	166	175	175	8.2%
Petroleum	13	13	13	14	13	13	13	13	13	13	13	13	13	13	3.9%
Natural Gas	123	127	130	134	138	142	145	149	152	156	159	162	165	169	2.8%
Other Gaseous Fuels 7/	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0.3%
Renewable Sources 4/	44	45	45	46	47	47	48	49	50	51	52	53	54	55	1.8%
Other 8/	12	12	12	12	12	12	12	12	12	12	12	12	12	12	0.0%
Total	240	247	255	280	302	324	340	357	370	387	399	411	424	429	3.8%
Less Direct Use	170	173	177	186	196	205	211	218	224	231	236	241	247	250	2.4%
Total Sales to the Grid	70	74	78	94	106	120	129	138	146	156	163	170	177	179	7.7%
Total Electricity Generation	4880	4955	5030	5108	5180	5255	5329	5417	5491	5579	5665	5758	5843	5926	1.6%
Total Net Generation to the Grid	4682	4754	4825	4893	4956	5022	5090	5171	5240	5321	5401	5489	5569	5648	1.5%
Net Imports	18	18	13	14	14	14	16	14	15	14	14	14	14	14	0.9%
Electricity Sales by Sector															
Residential	1621	1643	1665	1691	1706	1726	1746	1770	1787	1808	1830	1857	1875	1897	1.5%
Commercial	1660	1694	1728	1762	1796	1832	1870	1907	1944	1984	2023	2066	2109	2151	2.2%
Industrial	1123	1135	1143	1147	1156	1164	1172	1184	1195	1209	1224	1238	1251	1262	0.8%
Transportation	28	28	29	29	29	29	30	30	30	30	31	31	31	31	0.9%
Total	4433	4501	4564	4629	4688	4751	4817	4891	4956	5032	5108	5191	5266	5341	1.6%
Direct Use	198	201	205	214	224	233	239	246	252	259	264	269	275	278	2.1%
Total Consumption	4630	4702	4768	4844	4912	4984	5056	5137	5208	5291	5372	5460	5541	5619	1.6%
End-Use Prices (2004 cents per kilowatthour)															
Residential	8.3	8.3	8.4	8.3	8.4	8.4	8.4	8.4	8.4	8.4	8.5	8.4	8.5	8.5	-0.2%
Commercial	7.4	7.4	7.5	7.5	7.6	7.6	7.6	7.6	7.7	7.7	7.7	7.7	7.7	7.8	-0.1%
Industrial	5.1	5.2	5.2	5.2	5.3	5.3	5.3	5.3	5.4	5.4	5.4	5.4	5.4	5.4	0.1%
Transportation	6.9	7.0	7.0	7.0	7.1	7.1	7.0	7.1	7.1	7.1	7.1	7.1	7.1	7.2	-0.1%
All Sectors Average	7.1	7.2	7.3	7.2	7.3	7.3	7.3	7.3	7.4	7.4	7.4	7.4	7.4	7.5	0.0%
Prices by Service Category (2004 cents per kilowatthour)															
Generation	4.6	4.7	4.8	4.8	4.8	4.8	4.8	4.9	5.0	5.0	5.0	5.0	5.0	5.1	0.1%
Transmission	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.9%
Distribution	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	-0.6%
Electric Power Sector Emissions 1/															
Sulfur Dioxide (million tons)	4.31	4.19	4.11	4.04	3.94	3.91	3.86	3.82	3.80	3.78	3.75	3.75	3.73	3.72	-4.0%
Nitrogen Oxide (million tons)	2.10	2.11	2.12	2.13	2.13	2.13	2.14	2.15	2.16	2.16	2.18	2.19	2.17	2.17	-2.1%
Mercury (tons)	21.76	20.76	19.68	18.74	18.61	18.28	17.60	17.06	16.59	16.41	15.88	15.40	15.24	15.31	-4.7%

**Table 8. Electricity Supply, Disposition, Prices, and Emissions
(billion kilowatthours, unless otherwise noted)**

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

2/ Includes plants that only produce electricity.

3/ Includes electricity generation from fuel cells.

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

5/ Includes combined heat and power plants whose primary business is to sell electricity and heat to the public (i.e., those that report NAICS code 22).

6/ Includes combined heat and power plants and electricity-only plants in the commercial and industrial sectors; and small on-site generating systems in the residential, commercial, and industrial sectors used primarily for own-use generation, but which may also sell some power to the grid.

7/ Other gaseous fuels include refinery and still gas.

8/ Other includes batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies.

Note: Totals may not equal sum of components due to independent rounding. Data for 2003 and 2004 are model results and may differ slightly from official EIA data reports.

Sources: 2003 and 2004 power only and combined heat and power generation, sales to utilities, net imports, residential, industrial, and total electricity sales, and emissions: Energy Information Administration (EIA), Annual Energy Review 2004, DOE/EIA-0384(2004) (Washington, DC, August 2005) and supporting databases. 2003 and 2004 commercial and transportation electricity sales based on: EIA, Annual Energy Review 2004, DOE/EIA-0384(2004) (Washington, DC, August 2005) and Oak Ridge National Laboratory, Transportation Energy Data Book 24 (Oak Ridge, TN, December 2004). 2003 and 2004 prices: EIA, AEO2006 National Energy Modeling System run aeo2006.d111905a. Projections: EIA, AEO2006 National Energy Modeling System run aeo2006.d111905a.