Table 7.1 – Electricity Net Generation

(Billion Kilowatthours)

	1980	1990	2000	2001	2002	2003	2004	2010	2015	2020	2025	2030
Coal [1]	1,162	1,594	1,966	1,904	1,933	1,974	1,976	2,218	2,277	2,505	2,896	3,381
Petroleum [2]	246	127	111	125	95	119	118	105	104	107	108	115
Natural Gas [3]	346	373	601	639	691	650	700	774	1,018	1,102	1,069	990
Other Gases [4]	NA	10	14	9	11	16	15	12	12	12	12	12
Total Fossil Energy	1,754	2,104	2,692	2,677	2,730	2,759	2,809	3,108	3,411	3,725	4,085	4,497
Nuclear	251	577	754	769	780	764	789	809	829	871	871	871
Hydroelectric Pumped Storage[5]	NA	-4	-6	-9	-9	-9	-8	-9	-9	-9	-9	-9
Conventional Hydroelectric [6]	279	293	276	217	264	276	270	301	302	303	303	303
Geothermal	5	15	14	14	14	14	14	18	23	34	47	53
Wood [7]	0	33	38	35	39	38	37	76	79	86	103	103
Waste [8]	0	13	23	22	23	24	23	27	28	29	30	30
Solar Thermal and Photovoltaic	NA	0	0	1	1	1	1	2	3	3	4	6
Wind	NA	3	6	7	10	11	14	51	56	60	63	65
Total Renewable Energy	285	357	356	295	351	363	359	476	491	515	549	559
Generation for Own Use [9]	NA	NA	NA	NA	NA	NA	NA	-177	-192	-214	-252	-278
Other [10]	NA	4	5	5	6	6	6	12	12	12	12	12
Total Electricity Generation	2,290	3,038	3,802	3,737	3,858	3,883	3,953	4,388	4,727	5,108	5,491	5,926

Sources: EIA, *Annual Energy Review 2004*, DOE/EIA-0384(2004) (Washington, D.C., August 2005), Table 8.2a; and EIA, *Annual Energy Outlook 2006*, DOE/EIA-0383(2006) (Washington, D.C., February 2006), Tables A8 and A16.

Notes:

Data include electricity-only and combined-heat-and-power (CHP) plants, whose primary business is to sell electricity – or electricity and heat – to the public. Through 1988, data are for generation at electric utilities only. Beginning in 1989, data also include generation at independent power producers and the commercial and industrial (end-use) sectors.

[1] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and synthetic coal.

[2] Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, and waste oil.

[3] Natural gas, including a small amount of supplemental gaseous fuels. Forecast data include electricity generation from fuel cells.

[4] Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels (including refinery and still gas).

[5] Pumped-storage facility production, minus energy used for pumping. Data for 1980 included in conventional hydroelectric power.

[6] Hydroelectric data through 1988 are for generation at electric utilities and industrial plants only; beginning in 1989, data also include generation at independent power producers and commercial plants.

[7] Wood, black liquor, and other wood waste.

[8] Municipal solid waste, landfill gas, sludge waste, tires, agricultural byproducts, and other biomass.

[9] Includes nonutility and end-use sector generation for own use.

[10] Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies.

NA = not available

Table 7.2 – Net Generation at Electricity-Only Plants

(Billion Kilowatthours)

	1980	1990	2000	2001	2002	2003	2004	2010	2015	2020	2025	2030
Coal [1]	1,162	1,560	1,911	1,852	1,881	1,916	1,916	2,164	2,209	2,405	2,728	3,178
Petroleum [2]	246	118	98	113	83	109	108	90	89	90	93	99
Natural Gas [3]	346	265	399	427	457	421	486	533	743	814	775	691
Other Gases [4]	NA	0	0	0	0	0	0	NA	NA	NA	NA	NA
Total Fossil Energy	1,754	1,942	2,408	2,392	2,422	2,446	2,510	2,787	3,041	3,310	3,596	3,968
Nuclear	251	577	754	769	780	764	789	809	829	871	871	871
Hydroelectric Pumped Storage[5]	NA	-4	-6	-9	-9	-9	-8	-9	-9	-9	-9	-9
Conventional Hydroelectric [6]	276	290	271	214	260	272	264	297	297	298	299	299
Geothermal	5	15	14	14	14	14	14	18	23	34	47	53
Wood [7]	0.3	6	7	7	7	7	7	45	45	49	51	58
Waste [8]	0.2	10	18	17	17	18	18	25	26	27	28	28
Solar Thermal and Photovoltaic	NA	0.4	0.5	0.5	0.6	0.5	0.6	1	1	1	2	2
Wind	NA	3	6	7	10	11	14	51	56	60	63	65
Total Renewable Energy	282	324	316	259	311	323	319	436	448	469	489	504
Other [10]	0	0	0	0	1	1	3	NA	NA	NA	NA	NA
Total Electricity Generation	2,286	2,840	3,473	3,411	3,505	3,525	3,611	4,020	4,306	4,638	4,945	5,332

Sources: EIA, *Annual Energy Review 2004,* DOE/EIA-0384(2004) (Washington, D.C., August 2005),Table 8.2c; and EIA, *Annual Energy Outlook 2006*, DOE/EIA-0383(2006) (Washington, D.C., February 2006), Tables A8 and A16.

Notes:

Data are for electricity-only plants in the electric-power sector whose primary business is to sell electricity to the public. Through 1988, data are for generation at electric utilities only. Beginning in 1989, data also include generation at independent power producers.

[1] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and synthetic coal.

[2] Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, and waste oil.

[3] Natural gas, including a small amount of supplemental gaseous fuels. Forecast data include electricity generation from fuel cells.

[4] Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels (including refinery and still gas).

[5] Pumped-storage facility production, minus energy used for pumping. Data for 1980 included in conventional hydroelectric power.

[6] Hydroelectric data through 1988 are for generation at electric utilities and industrial plants only; beginning in 1989, data also include generation at independent power producers and commercial plants.

[7] Wood, black liquor, and other wood waste.

[8] Municipal solid waste, landfill gas, sludge waste, tires, agricultural byproducts, and other biomass.

[9] Includes nonutility and end-use sector generation for own use.

[10] Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies.

NA = not available

Table 7.3 – Electricity Generation at Combined-Heat-and-Power Plants

(Billion Kilowatthours)

	1980	1990	2000	2001	2002	2003	2004	2010	2015	2020	2025	2030
Coal [1]	NA	34	56	52	52	58	61	53	68	99	168	203
Petroleum [2]	NA	9	13	12	11	11	10	15	15	17	15	16
Natural Gas [3]	NA	108	202	212	234	229	213	241	275	288	294	299
Other Gases [4]	NA	10	14	9	11	15	15	4	4	5	5	5
Total Fossil Energy	NA	161	284	285	309	313	299	313	363	408	482	522
Nuclear	NA	0	0	0	0	0	0	0	0	0	0	0
Hydroelectric Pumped Storage[5]	NA	0	0	0	0	0	0	0	0	0	0	0
Conventional Hydroelectric [6]	NA	3	4	3	4	4	5	4	4	4	4	4
Geothermal	NA	0	0	0	0	0	0	0	0	0	0	0
Wood [7]	NA	27	30	29	31	30	30	32	35	38	51	45
Waste [8]	NA	3	6	5	5	6	5	2	2	2	2	2
Solar Thermal and Photovoltaic	NA	0	0	0	0	0	0	1	1	2	2	4
Wind	NA	0	0	0	0	0	0	0	0	0	0	0
Total Renewable Energy	NA	33	40	36	41	40	40	40	43	46	50	55
Other [9]	NA	4	5	5	4	5	3	12	12	12	12	12
Total Electricity Generation	NA	198	329	326	354	358	342	364	417	466	543	589

Sources: EIA, *Annual Energy Review 2004*, DOE/EIA-0384(2004) (Washington, D.C., August 2005),Table 8.2c and 8.2d; and EIA, *Annual Energy Outlook 2006*, DOE/EIA-0383(2006) (Washington, D.C., February 2006), Tables A8 and A16.

Notes:

Includes combined-heat-and-power (CHP) plants, whose primary business is to sell electricity and heat to the public. Includes electric utility CHP plants. Also includes commercial and industrial CHP and a small number of commercial and industrial (end-use sectors) electricity-only plants.

[1] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and synthetic coal.

[2] Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, and waste oil.

[3] Natural gas, plus a small amount of supplemental gaseous fuels that cannot be identified separately. Forecast data include electricity generation from fuel cells.

[4] Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels (including refinery and still gas).

[5] Pumped-storage facility production, minus energy used for pumping.

[6] Includes CHP plants that use multiple sources of energy, including hydropower.

[7] Wood, black liquor, and other wood waste.

[8] Municipal solid waste, landfill gas, sludge waste, tires, agricultural byproducts, and other biomass.

[9] Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies.

NA = not available

Table 7.4 – Generation and Transmission/Distribution Losses

(Billion kWh)

	1980	1990	2000	2001	2002	2003	2004	2010	2015	2020	2025	2030
Net Generation Delivered	2,290	3,038	3,802	3,737	3,858	3,883	3,953	4,211	4,536	4,893	5,240	5,648
Generation Losses [1]	4,859	6,316	7,809	7,617	7,798	7,756	8,006	8,339	8,764	9,232	9,652	10,094
Transmission and Distribution Losses [2]	NA	219	258	243	266	257	271	251	254	274	294	317

Sources: Calculated from EIA, *Annual Energy Review 2004*, DOE/EIA-0384(2004) (Washington, D.C., August 2005), Tables 8.1, 8.2a, and 8.4a; and EIA, *Annual Energy Outlook 2006*, DOE/EIA-0383(2006) (Washington, D.C., February 2006), Tables A2 and A8.

Notes:

[1] Generation Losses for all years are calculated by calculating a Gross Generation value in billion kWh by multiplying the energy input in trillion Btu by (1000/3412) and subtracting the Net Generation in billion kWh from the Gross Generation estimate.

[2] Transmission and Distribution Losses= Electricity Needed to be Transmitted- Electricity Sales, where Electricity Needed to be Transmitted = Total Generation from Electric Generators + Cogenerators + Net Imports - Generation for Own Use. Represents energy losses that occur between the point of generation and delivery to the customer, and data collection frame differences and nonsampling error.
NA = not available

Table 7.5 – Electricity Trade

(Billion Kilowatthours)

	1980	1990	2000	2001	2002	2003	2004	2010	2015	2020	2025	2030
Interregional Electricity Trade												
Gross Domestic Firm Power Trade	NA	NA	NA	143	139	137	142	105	82	51	38	38
Gross Domestic Economy Trade	NA	NA	NA	182	174	215	233	231	200	168	165	158
Gross Domestic Trade	NA	NA	NA	325	313	352	376	337	283	219	203	196
International Electricity Trade												
Firm Power Imports from Mexico and Canada	NA	NA	NA	12	10	11	12	3	2	1	0	0
Economy Imports from Mexico and Canada	NA	NA	NA	26	27	19	22	40	39	29	27	26
Gross Imports from Mexico and Canada	25	18	49	39	36	30	34	42	41	29	28	27
Firm Power Exports to Mexico and Canada	NA	NA	NA	7	6	5	7	1	1	0	0	0
Economy Exports to Mexico and Canada	NA	NA	NA	10	9	19	16	20	17	15	13	13
Gross Exports to Canada and Mexico	4	16	15	16	14	24	23	21	18	15	13	13

Sources: EIA, *Annual Energy Review 2004*, DOE/EIA-0384(2004) (Washington, D.C., August 2005), Table 8.1; and EIA, *Annual Energy Outlook 2006*, DOE/EIA-0383(2006) (Washington, D.C., February 2006), Table A10.

Notes:
All data are from EIA AEO except Gross Imports and Exports for 1980-2004.
NA = not available