

Appendix B

High Economic Growth Case Projections:

- World Energy Consumption
 - Gross Domestic Product
 - Carbon Dioxide Emissions

Table B1. World Total Primary Energy Consumption by Region, High Economic Growth Case, 1990-2030
 (Quadrillion Btu)

Region/Country	History			Projections					Average Annual Percent Change, 2004-2030
	1990	2003	2004	2010	2015	2020	2025	2030	
OECD									
OECD North America	100.8	118.3	120.9	132.4	142.0	152.4	164.5	177.7	1.5
United States ^a	84.7	98.3	100.7	108.2	116.2	124.1	133.9	144.4	1.4
Canada	11.1	13.5	13.6	15.7	16.3	17.4	18.6	19.9	1.5
Mexico	5.0	6.5	6.6	8.5	9.5	10.8	12.0	13.4	2.7
OECD Europe	69.9	79.5	81.1	85.1	88.1	89.9	93.0	96.7	0.7
OECD Asia	26.6	36.9	37.8	40.5	43.4	46.1	48.6	51.7	1.2
Japan	18.4	22.2	22.6	23.8	24.8	25.7	26.6	27.6	0.8
South Korea	3.8	8.7	9.0	9.8	11.2	12.5	13.5	14.9	2.0
Australia/New Zealand	4.4	6.0	6.2	6.9	7.4	7.9	8.5	9.1	1.5
Total OECD	197.4	234.7	239.8	257.9	273.5	288.4	306.2	326.0	1.2
Non-OECD									
Non-OECD Europe and Eurasia	67.2	47.9	49.7	55.6	61.6	68.3	74.6	79.6	1.8
Russia	39.0	28.8	30.1	33.4	36.7	39.9	43.5	46.3	1.7
Other	28.3	19.2	19.6	22.2	25.0	28.4	31.0	33.3	2.1
Non-OECD Asia	47.5	88.2	99.9	133.1	160.3	189.3	219.1	252.0	3.6
China	27.0	49.7	59.6	83.9	100.7	119.5	138.8	160.9	3.9
India	8.0	14.4	15.4	18.4	22.4	26.5	30.9	35.3	3.2
Other Non-OECD Asia	12.5	24.0	24.9	30.8	37.2	43.3	49.4	55.7	3.2
Middle East	11.3	19.9	21.1	26.7	30.5	34.6	38.4	42.3	2.7
Africa	9.5	13.3	13.7	17.1	19.8	22.4	25.0	27.6	2.7
Central and South America	14.5	21.7	22.5	28.1	32.6	36.8	41.2	45.8	2.8
Brazil	5.8	8.7	9.1	11.4	13.2	14.9	16.8	19.0	2.9
Other Central and South America	8.8	13.0	13.5	16.7	19.5	21.9	24.4	26.8	2.7
Total Non-OECD	150.0	191.0	206.9	260.7	304.9	351.4	398.2	447.2	3.0
Total World	347.3	425.7	446.7	518.6	578.4	639.8	704.4	773.3	2.1

^aIncludes the 50 States and the District of Columbia.

Notes: Energy totals include net imports of coal coke and electricity generated from biomass in the United States. Totals may not equal sum of components due to independent rounding. The electricity portion of the national fuel consumption values consists of generation for domestic use plus an adjustment for electricity trade based on a fuel's share of total generation in the exporting country.

Sources: **History:** Energy Information Administration (EIA), *International Energy Annual 2004* (May-July 2006), web site www.eia.doe.gov/iea. **Projections:** EIA, *Annual Energy Outlook 2007*, DOE/EIA-0383(2007) (Washington, DC, February 2007), AEO2007 National Energy Modeling System, run HM2007.D112106A, web site www.eia.doe.gov/oiaf/aeo; and System for the Analysis of Global Energy Markets (2007).

Appendix B

Table B2. World Total Energy Consumption by Region and Fuel, High Economic Growth Case, 1990-2030
 (Quadrillion Btu)

Region/Country	History			Projections					Average Annual Percent Change, 2004-2030	
	1990	2003	2004	2010	2015	2020	2025	2030		
OECD										
OECD North America										
Liquids	40.5	47.2	49.2	51.8	55.6	59.7	64.3	69.5	1.3	
Natural Gas	23.2	28.5	28.5	32.1	34.8	36.8	37.9	40.2	1.3	
Coal	20.7	24.1	24.1	26.6	28.6	31.5	36.2	40.4	2.0	
Nuclear.....	6.9	8.9	9.3	9.7	10.2	10.8	11.5	12.1	1.0	
Other	9.5	9.8	9.9	12.3	12.9	13.6	14.6	15.4	1.7	
Total.	100.8	118.3	120.9	132.4	142.0	152.4	164.5	177.7	1.5	
OECD Europe										
Liquids	28.4	31.9	32.4	32.4	33.2	34.0	34.8	35.7	0.4	
Natural Gas	11.2	18.6	19.3	22.1	24.3	26.0	28.2	30.3	1.7	
Coal	17.6	13.2	13.1	13.4	13.2	12.9	12.6	12.7	-0.1	
Nuclear.....	7.9	9.8	9.9	10.2	10.0	9.3	9.3	9.4	-0.2	
Other	4.8	5.9	6.3	7.0	7.4	7.7	8.1	8.5	1.2	
Total.	69.9	79.5	81.1	85.1	88.1	89.9	93.0	96.7	0.7	
OECD Asia										
Liquids	14.5	17.7	17.4	17.6	18.5	19.3	20.1	21.1	0.7	
Natural Gas	2.9	5.3	5.3	6.4	7.1	7.7	8.2	8.9	2.0	
Coal	5.2	8.6	9.3	9.9	10.4	10.9	11.6	12.3	1.1	
Nuclear.....	2.5	3.5	4.0	4.6	5.3	6.0	6.3	6.9	2.1	
Other	1.6	1.8	1.7	1.9	2.1	2.2	2.3	2.5	1.5	
Total.	26.6	36.9	37.8	40.5	43.4	46.1	48.6	51.7	1.2	
Total OECD										
Liquids	83.4	96.7	98.9	101.7	107.2	113.0	119.3	126.3	0.9	
Natural Gas	37.2	52.4	53.1	60.5	66.2	70.6	74.4	79.4	1.6	
Coal	43.5	45.9	46.6	49.9	52.2	55.3	60.4	65.4	1.3	
Nuclear.....	17.3	22.2	23.2	24.5	25.6	26.1	27.1	28.5	0.8	
Other	15.9	17.5	17.9	21.3	22.4	23.5	25.0	26.5	1.5	
Total.	197.4	234.7	239.8	257.9	273.5	288.4	306.2	326.0	1.2	
Non-OECD										
Non-OECD Europe and Eurasia										
Liquids	19.5	9.4	9.9	10.8	11.7	12.7	13.6	14.5	1.5	
Natural Gas	27.5	24.2	25.1	28.1	31.1	34.4	37.7	41.2	1.9	
Coal	15.1	8.7	9.0	9.9	10.9	12.1	12.8	13.1	1.5	
Nuclear.....	2.5	2.9	2.9	3.2	3.7	4.7	5.5	5.5	2.5	
Other	2.8	2.8	2.9	3.6	4.2	4.5	4.9	5.2	2.3	
Total.	67.2	47.9	49.7	55.6	61.6	68.3	74.6	79.6	1.8	
Non-OECD Asia										
Liquids	13.9	28.1	30.6	39.4	45.8	52.4	60.0	68.9	3.2	
Natural Gas	3.0	8.1	8.9	13.5	17.5	21.8	26.8	32.6	5.1	
Coal	27.2	45.8	53.6	71.5	85.9	101.4	116.1	132.1	3.5	
Nuclear.....	0.4	1.0	1.1	1.6	3.0	4.3	5.5	6.2	7.0	
Other	3.0	5.2	5.7	7.1	8.1	9.4	10.7	12.1	2.9	
Total.	47.5	88.2	99.9	133.1	160.3	189.3	219.1	252.0	3.6	

See notes at end of table.

Table B2. World Total Energy Consumption by Region and Fuel, High Economic Growth Case, 1990-2030
(Continued)
(Quadrillion Btu)

Region/Country	History			Projections					Average Annual Percent Change, 2004-2030	
	1990	2003	2004	2010	2015	2020	2025	2030		
Non-OECD (Continued)										
Middle East										
Liquids	7.3	11.0	11.6	14.8	16.5	18.3	20.4	22.4	2.6	
Natural Gas	3.8	8.4	9.0	11.2	13.2	15.4	17.0	18.9	2.9	
Coal	0.1	0.4	0.4	0.5	0.5	0.6	0.6	0.6	2.0	
Nuclear.....	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	—	
Other	0.1	0.2	0.1	0.2	0.2	0.2	0.3	0.3	2.9	
Total.....	11.3	19.9	21.1	26.7	30.5	34.6	38.4	42.3	2.7	
Africa										
Liquids	4.3	5.6	5.7	7.0	8.2	9.4	10.2	11.2	2.6	
Natural Gas	1.5	2.7	2.8	3.6	4.5	5.3	6.3	7.4	3.8	
Coal	3.0	4.0	4.1	5.3	5.9	6.3	7.0	7.4	2.3	
Nuclear.....	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	1.7	
Other	0.6	0.9	0.9	1.1	1.1	1.2	1.3	1.4	1.7	
Total.....	9.5	13.3	13.7	17.1	19.8	22.4	25.0	27.6	2.7	
Central and South America										
Liquids	7.8	11.1	11.5	13.6	15.8	17.8	20.1	22.2	2.6	
Natural Gas	2.2	4.0	4.4	5.6	6.7	7.6	8.5	9.6	3.1	
Coal	0.6	0.8	0.8	1.2	1.4	1.6	1.7	1.9	3.3	
Nuclear.....	0.1	0.2	0.2	0.2	0.3	0.4	0.4	0.4	2.3	
Other	3.9	5.6	5.6	7.5	8.4	9.4	10.5	11.7	2.9	
Total.....	14.5	21.7	22.5	28.1	32.6	36.8	41.2	45.8	2.8	
Total Non-OECD										
Liquids	52.7	65.2	69.3	85.6	97.9	110.6	124.3	139.2	2.7	
Natural Gas	38.0	47.4	50.3	62.0	73.0	84.4	96.4	109.7	3.0	
Coal	45.9	59.7	67.9	88.3	104.6	121.9	138.1	155.2	3.2	
Nuclear.....	3.1	4.2	4.3	5.3	7.2	9.6	11.7	12.4	4.2	
Other	10.3	14.5	15.3	19.5	22.1	24.8	27.7	30.7	2.7	
Total.....	150.0	191.1	206.9	260.7	304.9	351.4	398.2	447.2	3.0	
Total World										
Liquids	136.2	161.9	168.2	187.3	205.2	223.5	243.5	265.5	1.8	
Natural Gas	75.2	99.8	103.4	122.5	139.1	155.0	170.8	189.0	2.3	
Coal	89.4	105.6	114.5	138.2	156.8	177.2	198.5	220.6	2.6	
Nuclear.....	20.4	26.4	27.5	29.8	32.8	35.7	38.8	40.9	1.5	
Other	26.2	32.1	33.2	40.8	44.5	48.3	52.8	57.2	2.1	
Total.....	347.3	425.7	446.7	518.6	578.4	639.8	704.4	773.3	2.1	

Notes: Energy totals include net imports of coal coke and electricity generated from biomass in the United States. Totals may not equal sum of components due to independent rounding. The electricity portion of the national fuel consumption values consists of generation for domestic use plus an adjustment for electricity trade based on a fuel's share of total generation in the exporting country.

Sources: **History:** Energy Information Administration (EIA), *International Energy Annual 2004* (May-July 2006), web site www.eia.doe.gov/iea. **Projections:** EIA, *Annual Energy Outlook 2007*, DOE/EIA-0383(2007) (Washington, DC, February 2007), AEO2007 National Energy Modeling System, run HM2007.D112106A, web site www.eia.doe.gov/oiaf/aeo; and System for the Analysis of Global Energy Markets (2007).

Appendix B

**Table B3. World Gross Domestic Product (GDP) by Region Expressed in Purchasing Power Parity,
High Economic Growth Case, 1990-2030
(Billion 2000 Dollars)**

Region/Country	History			Projections					Average Annual Percent Change, 2004-2030
	1990	2003	2004	2010	2015	2020	2025	2030	
OECD									
OECD North America	8,477	12,250	12,725	15,722	18,597	22,014	26,133	30,687	3.4
United States ^a	7,113	10,301	10,704	13,219	15,619	18,490	21,965	25,757	3.4
Canada	684	973	1,005	1,213	1,403	1,596	1,812	2,057	2.8
Mexico.....	680	975	1,016	1,291	1,575	1,928	2,356	2,874	4.1
OECD Europe	8,067	10,850	11,132	13,143	15,074	17,246	19,641	22,386	2.7
OECD Asia.....	3,621	4,630	4,761	5,660	6,419	7,115	7,825	8,625	2.3
Japan	2,862	3,289	3,363	3,864	4,225	4,511	4,766	5,036	1.6
South Korea	331	683	715	982	1,227	1,455	1,699	1,980	4.0
Australia/New Zealand	429	658	682	815	967	1,149	1,360	1,609	3.4
Total OECD	20,165	27,730	28,619	34,526	40,091	46,375	53,599	61,698	3.0
Non-OECD									
Non-OECD Europe and Eurasia...	3,601	3,081	3,332	4,860	6,133	7,527	9,152	11,086	4.7
Russia.....	2,241	1,780	1,907	2,675	3,287	3,935	4,691	5,561	4.2
Other	1,360	1,301	1,425	2,185	2,847	3,592	4,461	5,525	5.4
Non-OECD Asia.....	5,995	14,573	15,841	25,157	34,366	45,975	60,049	77,793	6.3
China.....	2,002	7,013	7,722	13,235	18,676	25,600	33,910	44,319	7.0
India	1,703	3,434	3,727	5,756	7,782	10,304	13,441	17,484	6.1
Other Non-OECD Asia	2,291	4,125	4,393	6,166	7,907	10,072	12,698	15,989	5.1
Middle East	820	1,364	1,453	1,989	2,513	3,122	3,852	4,745	4.7
Africa	1,450	2,056	2,161	2,998	3,912	5,052	6,483	8,304	5.3
Central and South America	2,191	3,110	3,297	4,363	5,396	6,638	8,136	9,953	4.3
Brazil	1,022	1,378	1,446	1,813	2,199	2,658	3,202	3,850	3.8
Other Central and South America..	1,169	1,733	1,852	2,551	3,196	3,980	4,934	6,103	4.7
Total Non-OECD	14,057	24,184	26,085	39,367	52,320	68,314	87,671	111,881	5.8
Total World	34,222	51,914	54,704	73,893	92,410	114,689	141,270	173,579	4.5

^aIncludes the 50 States and the District of Columbia.

Notes: Totals may not equal sum of components due to independent rounding. GDP growth rates for China and India were adjusted, based on the analyst's judgment.

Sources: **History:** Global Insight, Inc., *World Overview* (Lexington, MA, various issues). **Projections:** Global Insight, Inc., *World Overview*, Fourth Quarter 2006 (Lexington, MA, January 2007); and Energy Information Administration, *Annual Energy Outlook 2007*, DOE/EIA-0383(2007) (Washington DC, February 2007), Table B4.

Table B4. World Liquids Consumption by Region, High Economic Growth Case, 1990-2030
 (Million Barrels Oil Equivalent per Day)

Region/Country	History			Projections					Average Annual Percent Change, 2004-2030
	1990	2003	2004	2010	2015	2020	2025	2030	
OECD									
OECD North America	20.5	24.2	25.0	26.4	28.4	30.5	32.9	35.5	1.4
United States ^a	17.0	20.0	20.7	21.9	23.5	25.3	27.4	29.7	1.4
Canada	1.7	2.2	2.3	2.4	2.4	2.5	2.5	2.6	0.5
Mexico	1.8	1.9	2.0	2.2	2.4	2.7	3.0	3.3	2.0
OECD Europe	13.7	15.4	15.6	15.7	16.0	16.4	16.8	17.3	0.4
OECD Asia	7.1	8.7	8.5	8.6	9.1	9.5	9.9	10.3	0.7
Japan	5.2	5.5	5.4	5.2	5.4	5.5	5.6	5.8	0.3
South Korea	1.0	2.2	2.1	2.3	2.6	2.7	2.9	3.2	1.5
Australia/New Zealand	0.8	1.0	1.0	1.1	1.2	1.2	1.3	1.4	1.2
Total OECD	41.3	48.3	49.1	50.7	53.5	56.4	59.6	63.1	1.0
Non-OECD									
Non-OECD Europe and Eurasia	9.3	4.6	4.8	5.2	5.7	6.2	6.6	7.1	1.5
Russia	5.4	2.7	2.8	2.9	3.1	3.3	3.6	3.7	1.2
Other	3.9	1.9	2.0	2.3	2.5	2.8	3.0	3.3	1.9
Non-OECD Asia	6.6	13.6	14.8	19.1	22.2	25.4	29.1	33.4	3.2
China	2.3	5.6	6.4	9.6	10.9	12.7	14.8	17.5	4.0
India	1.2	2.3	2.5	2.7	3.4	3.8	4.4	4.9	2.7
Other Non-OECD Asia	3.1	5.7	6.0	6.8	7.9	8.8	9.9	11.0	2.4
Middle East	3.5	5.4	5.7	7.2	8.0	8.9	9.9	10.9	2.6
Africa	2.1	2.7	2.8	3.4	4.0	4.6	5.0	5.4	2.6
Central and South America	3.8	5.2	5.4	6.6	7.7	8.7	9.8	10.8	2.7
Brazil	1.5	2.1	2.1	2.6	3.0	3.3	3.7	4.1	2.6
Other Central and South America	2.3	3.2	3.3	4.0	4.7	5.4	6.1	6.7	2.8
Total Non-OECD	25.3	31.5	33.4	41.6	47.6	53.8	60.4	67.7	2.7
Total World	66.5	79.8	82.5	92.3	101.1	110.1	120.0	130.8	1.8

^aIncludes the 50 States and the District of Columbia.

Note: Totals may not equal sum of components due to independent rounding.

Sources: **History:** Energy Information Administration (EIA), *International Energy Annual 2004* (May-July 2006), web site www.eia.doe.gov/iea. **Projections:** EIA, *Annual Energy Outlook 2007*, DOE/EIA-0383(2007) (Washington, DC, February 2007), AEO2007 National Energy Modeling System, run HM2007.D112106A, web site www.eia.doe.gov/oiaf/aeo; and System for the Analysis of Global Energy Markets (2007).

Appendix B

Table B5. World Natural Gas Consumption by Region, High Economic Growth Case, 1990-2030
 (Trillion Cubic Feet)

Region/Country	History			Projections					Average Annual Percent Change, 2004-2030
	1990	2003	2004	2010	2015	2020	2025	2030	
OECD									
OECD North America	22.5	27.4	27.6	31.0	33.6	35.6	36.7	38.8	1.3
United States ^a	19.2	22.3	22.4	24.5	26.4	27.3	27.4	28.4	0.9
Canada	2.4	3.4	3.4	4.0	4.3	4.8	5.2	5.7	2.0
Mexico.	0.9	1.7	1.8	2.5	3.0	3.5	4.0	4.7	3.8
OECD Europe	11.6	18.2	18.8	21.5	23.6	25.3	27.5	29.5	1.7
OECD Asia.	2.8	5.0	5.0	6.0	6.7	7.3	7.7	8.4	2.0
Japan	1.9	3.0	3.0	3.6	4.0	4.3	4.5	4.8	1.9
South Korea	0.1	0.9	1.0	1.1	1.2	1.4	1.5	1.7	2.1
Australia/New Zealand	0.8	1.1	1.1	1.3	1.4	1.6	1.7	1.9	2.1
Total OECD	36.8	50.5	51.4	58.5	64.0	68.2	71.9	76.6	1.5
Non-OECD									
Non-OECD Europe and Eurasia...	26.7	23.6	24.4	27.3	30.3	33.4	36.7	40.0	1.9
Russia.	17.3	15.3	16.0	17.7	19.5	21.1	22.7	24.4	1.6
Other.	9.5	8.3	8.4	9.6	10.8	12.4	14.0	15.6	2.4
Non-OECD Asia.	2.9	7.7	8.5	12.6	16.4	20.4	25.0	30.5	5.1
China.	0.5	1.1	1.4	2.9	3.8	4.8	6.1	7.6	6.9
India	0.4	1.0	1.1	1.8	2.2	2.8	3.5	4.3	5.5
Other Non-OECD Asia	2.0	5.6	6.0	8.0	10.4	12.8	15.4	18.5	4.4
Middle East	3.6	8.0	8.6	10.6	12.6	14.7	16.3	18.0	2.9
Africa	1.4	2.5	2.6	3.4	4.2	5.0	5.9	6.9	3.8
Central and South America	2.0	3.7	4.1	5.2	6.3	7.1	8.0	8.9	3.1
Brazil.	0.1	0.5	0.6	0.9	1.0	1.2	1.4	1.7	4.0
Other Central and South America.. .	1.9	3.2	3.5	4.4	5.2	5.9	6.6	7.2	2.9
Total Non-OECD	36.5	45.5	48.2	59.2	69.7	80.5	91.8	104.4	3.0
Total World	73.4	96.0	99.6	117.7	133.6	148.8	163.7	181.0	2.3

^aIncludes the 50 States and the District of Columbia.

Note: Totals may not equal sum of components due to independent rounding.

Sources: **History:** Energy Information Administration (EIA), *International Energy Annual 2004* (May-July 2006), web site www.eia.doe.gov/iea. **Projections:** EIA, *Annual Energy Outlook 2007*, DOE/EIA-0383(2007) (Washington, DC, February 2007), AEO2007 National Energy Modeling System, run HM2007.D112106A, web site www.eia.doe.gov/oiaf/aeo; and System for the Analysis of Global Energy Markets (2007).

Table B6. World Coal Consumption by Region, High Economic Growth Case, 1990-2030
 (Quadrillion Btu)

Region/Country	History			Projections					Average Annual Percent Change, 2004-2030
	1990	2003	2004	2010	2015	2020	2025	2030	
OECD									
OECD North America	20.7	24.1	24.1	26.6	28.6	31.5	36.2	40.4	2.0
United States ^a	19.2	22.3	22.6	24.4	26.3	29.0	33.3	37.3	1.9
Canada	1.3	1.4	1.2	1.5	1.6	1.7	1.9	2.1	2.2
Mexico.	0.2	0.4	0.3	0.7	0.8	0.8	0.9	1.0	4.2
OECD Europe	17.6	13.2	13.1	13.4	13.2	12.9	12.6	12.7	-0.1
OECD Asia.	5.2	8.6	9.3	9.9	10.4	10.9	11.6	12.3	1.1
Japan	2.7	4.3	4.8	4.8	4.9	4.9	5.0	5.0	0.2
South Korea	0.9	1.9	2.1	2.3	2.6	2.9	3.2	3.6	2.1
Australia/New Zealand	1.5	2.3	2.4	2.8	2.9	3.1	3.4	3.6	1.5
Total OECD	43.5	45.9	46.6	49.9	52.2	55.3	60.4	65.4	1.3
Non-OECD									
Non-OECD Europe and Eurasia...	15.1	8.7	9.0	9.9	10.9	12.1	12.8	13.1	1.5
Russia.	6.8	4.5	4.8	5.2	5.5	6.1	6.6	6.9	1.4
Other.	8.3	4.2	4.2	4.6	5.4	6.0	6.2	6.2	1.6
Non-OECD Asia.	27.2	45.8	53.6	71.5	85.9	101.4	116.1	132.1	3.5
China.	20.3	33.7	41.1	56.2	67.7	80.1	92.1	105.6	3.7
India	4.3	7.5	8.1	9.4	11.1	12.9	14.8	16.8	2.8
Other Non-OECD Asia	2.6	4.6	4.3	5.9	7.2	8.4	9.2	9.7	3.2
Middle East	0.1	0.4	0.4	0.5	0.5	0.6	0.6	0.6	2.0
Africa	3.0	4.0	4.1	5.3	5.9	6.3	7.0	7.4	2.3
Central and South America	0.6	0.8	0.8	1.2	1.4	1.6	1.7	1.9	3.3
Brazil.	0.4	0.5	0.5	0.7	0.8	1.0	1.0	1.3	4.0
Other Central and South America.. .	0.2	0.4	0.4	0.5	0.5	0.6	0.6	0.7	2.4
Total Non-OECD	45.9	59.7	67.9	88.3	104.6	121.9	138.1	155.2	3.2
Total World	89.4	105.6	114.5	138.2	156.8	177.2	198.5	220.6	2.6

^aIncludes the 50 States and the District of Columbia.

Notes: Totals may not equal sum of components due to independent rounding.

Sources: **History:** Energy Information Administration (EIA), *International Energy Annual 2004* (May-July 2006), web site www.eia.doe.gov/iea. **Projections:** EIA, *Annual Energy Outlook 2007*, DOE/EIA-0383(2007) (Washington, DC, February 2007), AEO2007 National Energy Modeling System, run HM2007.D112106A, web site www.eia.doe.gov/oiaf/aeo; and System for the Analysis of Global Energy Markets (2007).

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Table B7. World Nuclear Energy Consumption by Region, High Economic Growth Case, 1990-2030
 (Billion Kilowatthours)

Region/Country	History			Projections					Average Annual Percent Change, 2004-2030
	1990	2003	2004	2010	2015	2020	2025	2030	
OECD									
OECD North America	649	845	883	910	961	1,017	1,087	1,147	1.0
United States ^a	577	764	789	789	837	890	958	1,010	1.0
Canada	69	71	86	110	113	116	118	126	1.5
Mexico.	3	10	9	11	11	11	11	11	0.9
OECD Europe	743	931	941	914	902	835	831	847	-0.4
OECD Asia.	242	351	396	433	497	559	592	646	1.9
Japan	192	228	272	299	325	352	370	394	1.4
South Korea	50	123	124	134	172	207	222	252	2.8
Australia/New Zealand	0	0	0	0	0	0	0	0	—
Total OECD	1,635	2,128	2,220	2,257	2,360	2,411	2,510	2,640	0.7
Non-OECD									
Non-OECD Europe and Eurasia...	219	260	263	278	323	405	479	476	2.3
Russia.	115	141	137	149	190	236	299	315	3.2
Other.	104	119	125	129	133	169	180	161	1.0
Non-OECD Asia.	38	97	103	148	265	389	495	557	6.7
China.	0	42	48	64	135	217	283	329	7.7
India	6	16	15	37	66	97	124	144	9.1
Other Non-OECD Asia	32	39	40	47	64	75	88	84	2.9
Middle East	0	0	0	5	6	6	6	6	—
Africa	8	13	14	14	15	15	21	21	1.5
Central and South America	9	20	19	20	28	34	33	33	2.2
Brazil.	2	13	12	13	18	22	22	22	2.5
Other Central and South America..	7	7	7	7	10	12	11	11	1.6
Total Non-OECD	274	390	399	465	637	849	1,034	1,093	4.0
Total World	1,909	2,518	2,619	2,722	2,997	3,260	3,544	3,733	1.4

^aIncludes the 50 States and the District of Columbia.

Note: Totals may not equal sum of components due to independent rounding.

Sources: **History:** Energy Information Administration (EIA), *International Energy Annual 2004* (May-July 2006), web site www.eia.doe.gov/iea. **Projections:** EIA, *Annual Energy Outlook 2007*, DOE/EIA-0383(2007) (Washington, DC, February 2007), AEO2007 National Energy Modeling System, run HM2007.D112106A, web site www.eia.doe.gov/oiaf/aeo; and System for the Analysis of Global Energy Markets (2007).

**Table B8. World Consumption of Hydroelectricity and Other Renewable Energy by Region,
High Economic Growth Case, 1990-2030**
(Quadrillion Btu)

Region/Country	History			Projections					Average Annual Percent Change, 2004-2030
	1990	2003	2004	2010	2015	2020	2025	2030	
OECD									
OECD North America	9.5	9.8	9.9	12.3	12.9	13.6	14.6	15.4	1.7
United States ^a	6.1	6.0	6.0	7.6	8.0	8.4	8.9	9.3	1.7
Canada	3.1	3.5	3.5	4.1	4.2	4.5	4.9	5.3	1.7
Mexico.....	0.3	0.4	0.4	0.6	0.7	0.7	0.7	0.8	2.6
OECD Europe	4.8	5.9	6.3	7.0	7.4	7.7	8.1	8.5	1.2
OECD Asia.....	1.6	1.8	1.7	1.9	2.1	2.2	2.3	2.5	1.5
Japan	1.1	1.2	1.1	1.3	1.3	1.4	1.5	1.6	1.3
South Korea	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	3.5
Australia/New Zealand	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.8	1.6
Total OECD	15.9	17.5	17.9	21.3	22.4	23.5	25.0	26.5	1.5
Non-OECD									
Non-OECD Europe and Eurasia...	2.8	2.8	2.9	3.6	4.2	4.5	4.9	5.2	2.3
Russia.....	1.8	1.6	1.7	2.2	2.5	2.6	2.9	3.0	2.3
Other	1.0	1.2	1.2	1.5	1.7	1.9	2.0	2.2	2.2
Non-OECD Asia.....	3.0	5.2	5.7	7.1	8.1	9.4	10.7	12.1	2.9
China.....	1.3	2.9	3.3	4.0	4.7	5.5	6.2	7.0	2.9
India	0.7	0.8	0.9	1.0	1.2	1.4	1.6	1.9	2.8
Other Non-OECD Asia	0.9	1.5	1.5	2.1	2.2	2.6	2.9	3.2	3.0
Middle East	0.1	0.2	0.1	0.2	0.2	0.2	0.3	0.3	2.9
Africa	0.6	0.9	0.9	1.1	1.1	1.2	1.3	1.4	1.7
Central and South America	3.9	5.6	5.6	7.5	8.4	9.4	10.5	11.7	2.9
Brazil.....	2.2	3.0	3.1	4.3	5.0	5.6	6.4	7.3	3.3
Other Central and South America..	1.7	2.5	2.5	3.2	3.5	3.8	4.1	4.4	2.2
Total Non-OECD	10.3	14.5	15.3	19.5	22.1	24.8	27.7	30.7	2.7
Total World	26.2	32.1	33.2	40.8	44.5	48.3	52.8	57.2	2.1

^aIncludes the 50 States and the District of Columbia.

Notes: Totals may not equal sum of components due to independent rounding. U.S. totals include net electricity imports, methanol, and liquid hydrogen.

Sources: **History:** Energy Information Administration (EIA), *International Energy Annual 2004* (May-July 2006), web site www.eia.doe.gov/iea. **Projections:** EIA, *Annual Energy Outlook 2007*, DOE/EIA-0383(2007) (Washington, DC, February 2007), AEO2007 National Energy Modeling System, run HM2007.D112106A, web site www.eia.doe.gov/oiaf/aeo; and System for the Analysis of Global Energy Markets (2007).

Appendix B

Table B9. World Carbon Dioxide Emissions by Region, High Economic Growth Case, 1990-2030
 (Million Metric Tons Carbon Dioxide)

Region/Country	History			Projections					Average Annual Percent Change, 2004-2030
	1990	2003	2004	2010	2015	2020	2025	2030	
OECD									
OECD North America	5,763	6,775	6,893	7,450	8,034	8,683	9,477	10,322	1.6
United States ^a	4,989	5,800	5,923	6,304	6,801	7,322	7,997	8,711	1.5
Canada	474	589	584	657	680	732	781	833	1.4
Mexico	300	385	385	489	553	628	700	778	2.7
OECD Europe	4,092	4,321	4,381	4,553	4,703	4,814	4,958	5,138	0.6
OECD Asia	1,543	2,129	2,183	2,302	2,435	2,564	2,704	2,858	1.0
Japan	1,015	1,244	1,262	1,292	1,332	1,363	1,398	1,440	0.5
South Korea	238	475	497	533	599	660	719	793	1.8
Australia/New Zealand	291	410	424	478	504	540	587	625	1.5
Total OECD	11,399	13,225	13,457	14,305	15,172	16,060	17,139	18,318	1.2
Non-OECD									
Non-OECD Europe and Eurasia	4,193	2,717	2,819	3,121	3,437	3,784	4,087	4,365	1.7
Russia	2,334	1,602	1,685	1,841	1,988	2,154	2,319	2,462	1.5
Other	1,859	1,115	1,134	1,280	1,449	1,629	1,768	1,903	2.0
Non-OECD Asia	3,627	6,479	7,411	9,878	11,843	13,925	16,037	18,401	3.6
China	2,241	3,898	4,707	6,615	7,908	9,344	10,810	12,500	3.8
India	578	1,040	1,111	1,302	1,560	1,821	2,105	2,403	3.0
Other Non-OECD Asia	807	1,542	1,593	1,961	2,375	2,760	3,122	3,499	3.1
Middle East	705	1,211	1,289	1,627	1,852	2,093	2,322	2,559	2.7
Africa	649	895	919	1,158	1,337	1,505	1,670	1,834	2.7
Central and South America	673	981	1,027	1,256	1,470	1,665	1,868	2,081	2.8
Brazil	220	317	334	411	474	536	601	682	2.8
Other Central and South America	453	664	693	845	996	1,128	1,267	1,398	2.7
Total Non-OECD	9,847	12,283	13,465	17,040	19,940	22,971	25,984	29,240	3.0
Total World	21,246	25,508	26,922	31,346	35,112	39,031	43,123	47,558	2.2

^aIncludes the 50 States and the District of Columbia.

Note: The U.S. numbers include carbon dioxide emissions attributable to renewable energy sources.

Sources: **History:** Energy Information Administration (EIA), *International Energy Annual 2004* (May-July 2006), web site www.eia.doe.gov/iea. **Projections:** EIA, *Annual Energy Outlook 2007*, DOE/EIA-0383(2007) (Washington, DC, February 2007), AEO2007 National Energy Modeling System, run HM2007.D112106A, web site www.eia.doe.gov/oiaf/aeo; and System for the Analysis of Global Energy Markets (2007).

Table B10. World Carbon Dioxide Emissions from Liquids Use by Region, High Economic Growth Case, 1990-2030
 (Million Metric Tons Carbon Dioxide)

Region/Country	History			Projections					Average Annual Percent Change, 2004-2030
	1990	2003	2004	2010	2015	2020	2025	2030	
OECD									
OECD North America	2,633	3,029	3,140	3,264	3,513	3,778	4,073	4,409	1.3
United States ^a	2,178	2,500	2,598	2,682	2,896	3,112	3,371	3,659	1.3
Canada	224	279	290	297	304	312	321	331	0.5
Mexico.....	231	250	253	285	313	353	380	419	2.0
OECD Europe	1,867	2,099	2,125	2,127	2,179	2,231	2,287	2,346	0.4
OECD Asia.....	921	1,068	1,048	1,058	1,113	1,160	1,211	1,265	0.7
Japan	667	683	665	651	665	680	697	716	0.3
South Korea	144	248	245	261	292	312	335	361	1.5
Australia/New Zealand	110	137	138	146	156	168	179	188	1.2
Total OECD	5,420	6,196	6,314	6,449	6,804	7,168	7,571	8,020	0.9
Non-OECD									
Non-OECD Europe and Eurasia...	1,350	636	663	725	785	853	916	980	1.5
Russia.....	782	364	376	399	428	455	485	509	1.2
Other	568	271	287	326	357	398	432	470	1.9
Non-OECD Asia.....	950	1,822	1,983	2,540	2,955	3,375	3,864	4,433	3.1
China.....	325	711	816	1,223	1,395	1,619	1,892	2,236	4.0
India	160	293	306	339	419	479	547	611	2.7
Other Non-OECD Asia	464	818	861	978	1,142	1,277	1,424	1,587	2.4
Middle East	493	735	778	994	1,106	1,229	1,367	1,502	2.6
Africa	298	387	395	482	567	649	706	772	2.6
Central and South America	503	696	720	853	990	1,120	1,261	1,395	2.6
Brazil	180	248	258	299	340	382	426	471	2.3
Other Central and South America..	323	449	462	554	650	738	835	924	2.7
Total Non-OECD	3,594	4,276	4,538	5,595	6,403	7,226	8,113	9,081	2.7
Total World	9,014	10,472	10,852	12,044	13,207	14,395	15,684	17,101	1.8

^aIncludes the 50 States and the District of Columbia.

Sources: **History:** Energy Information Administration (EIA), *International Energy Annual 2004* (May-July 2006), web site www.eia.doe.gov/iea. **Projections:** EIA, *Annual Energy Outlook 2007*, DOE/EIA-0383(2007) (Washington, DC, February 2007), AEO2007 National Energy Modeling System, run HM2007.D112106A, web site www.eia.doe.gov/oiaf/aeo; and System for the Analysis of Global Energy Markets (2007).

Appendix B

Table B11. World Carbon Dioxide Emissions from Natural Gas Use by Region, High Economic Growth Case, 1990-2030
 (Million Metric Tons Carbon Dioxide)

Region/Country	History			Projections					Average Annual Percent Change, 2004-2030
	1990	2003	2004	2010	2015	2020	2025	2030	
OECD									
OECD North America	1,207	1,477	1,483	1,685	1,829	1,937	1,995	2,113	1.4
United States ^a	1,026	1,197	1,198	1,324	1,425	1,475	1,480	1,537	1.0
Canada	127	183	183	218	233	260	282	305	2.0
Mexico.....	54	98	102	143	171	202	233	271	3.8
OECD Europe	590	984	1,021	1,166	1,281	1,374	1,490	1,597	1.7
OECD Asia.....	152	279	282	336	375	407	433	470	2.0
Japan	102	168	163	201	221	237	250	266	1.9
South Korea	6	50	58	65	73	82	90	100	2.1
Australia/New Zealand	44	61	61	70	81	88	93	104	2.1
Total OECD	1,949	2,740	2,786	3,187	3,485	3,718	3,918	4,180	1.6
Non-OECD									
Non-OECD Europe and Eurasia...	1,450	1,280	1,328	1,483	1,643	1,817	1,993	2,174	1.9
Russia.....	928	828	868	961	1,055	1,140	1,230	1,320	1.6
Other	521	452	460	522	588	676	763	854	2.4
Non-OECD Asia.....	160	428	471	712	922	1,149	1,413	1,722	5.1
China.....	30	70	83	177	233	296	373	469	6.9
India	24	56	64	105	128	162	207	254	5.5
Other Non-OECD Asia	106	301	325	431	561	691	833	999	4.4
Middle East	199	442	476	589	697	811	899	998	2.9
Africa	80	144	148	190	236	281	331	391	3.8
Central and South America	116	209	231	296	354	400	451	506	3.1
Brazil.....	6	27	34	47	56	66	78	94	4.0
Other Central and South America..	110	181	197	249	298	334	373	412	2.9
Total Non-OECD	2,005	2,502	2,655	3,271	3,853	4,458	5,088	5,791	3.0
Total World	3,954	5,242	5,441	6,458	7,338	8,176	9,006	9,971	2.4

^aIncludes the 50 States and the District of Columbia.

Sources: **History:** Energy Information Administration (EIA), *International Energy Annual 2004* (May-July 2006), web site www.eia.doe.gov/iea. **Projections:** EIA, *Annual Energy Outlook 2007*, DOE/EIA-0383(2007) (Washington, DC, February 2007), AEO2007 National Energy Modeling System, run HM2007.D112106A, web site www.eia.doe.gov/oiaf/aeo; and System for the Analysis of Global Energy Markets (2007).

Table B12. World Carbon Dioxide Emissions from Coal Use by Region, High Economic Growth Case, 1990-2030
 (Million Metric Tons Carbon Dioxide)

Region/Country	History			Projections					Average Annual Percent Change, 2004-2030
	1990	2003	2004	2010	2015	2020	2025	2030	
OECD									
OECD North America	1,923	2,258	2,258	2,489	2,679	2,955	3,396	3,786	2.0
United States ^a	1,784	2,093	2,115	2,286	2,466	2,721	3,132	3,501	2.0
Canada	123	128	112	142	144	160	177	197	2.2
Mexico	15	37	30	61	69	74	86	88	4.2
OECD Europe	1,635	1,237	1,235	1,260	1,243	1,209	1,181	1,195	-0.1
OECD Asia	471	782	853	908	947	997	1,059	1,123	1.1
Japan	245	393	434	439	446	447	450	459	0.2
South Korea	88	177	194	207	235	266	295	332	2.1
Australia/New Zealand	137	212	225	262	267	284	315	332	1.5
Total OECD	4,028	4,277	4,345	4,657	4,869	5,160	5,637	6,104	1.3
Non-OECD									
Non-OECD Europe and Eurasia	1,393	801	828	912	1,009	1,114	1,178	1,212	1.5
Russia	624	410	441	480	505	559	604	633	1.4
Other	770	392	387	432	504	554	574	579	1.6
Non-OECD Asia	2,517	4,229	4,957	6,626	7,966	9,401	10,760	12,246	3.5
China	1,886	3,117	3,809	5,215	6,280	7,428	8,544	9,795	3.7
India	394	690	741	858	1,013	1,180	1,351	1,538	2.8
Other Non-OECD Asia	237	422	407	552	673	792	865	913	3.2
Middle East	14	34	35	44	49	53	56	59	2.0
Africa	271	364	376	485	534	574	633	672	2.3
Central and South America	54	76	77	107	126	144	156	180	3.3
Brazil	34	42	43	65	78	89	97	117	4.0
Other Central and South America	20	34	34	42	48	56	59	62	2.4
Total Non-OECD	4,248	5,505	6,272	8,174	9,684	11,286	12,783	14,368	3.2
Total World	8,277	9,782	10,617	12,831	14,553	16,446	18,419	20,472	2.6

^aIncludes the 50 States and the District of Columbia.

Sources: **History:** Energy Information Administration (EIA), *International Energy Annual 2004* (May-July 2006), web site www.eia.doe.gov/iea. **Projections:** EIA, *Annual Energy Outlook 2007*, DOE/EIA-0383(2007) (Washington, DC, February 2007), AEO2007 National Energy Modeling System, run HM2007.D112106A, web site www.eia.doe.gov/oiaf/aeo; and System for the Analysis of Global Energy Markets (2007).

