Appendix B

High Economic Growth case projections

- *World energy consumption*
- *Gross domestic product*

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Table B1. World total primary energy consumption by region, High Economic Growth case, 2009-2040
(quadrillion Btu)

Region	History 2009	History 2010	Projections 2015	2020	2025	2030	2035	2040	Average annual percent change, 2010-2040
OECD									
OECD Americas	**117.0**	**120.2**	**122.0**	**129.8**	**134.8**	**139.5**	**146.0**	**155.6**	**0.9**
United States[a]	94.9	97.9	97.9	104.2	106.8	108.7	112.5	118.9	0.6
Canada	13.7	13.5	14.2	14.7	15.6	16.5	17.2	18.2	1.0
Mexico/Chile	8.4	8.8	9.8	10.9	12.4	14.3	16.3	18.6	2.5
OECD Europe	**80.0**	**82.5**	**82.2**	**85.7**	**88.9**	**91.3**	**93.4**	**95.4**	**0.5**
OECD Asia	**37.7**	**39.6**	**40.0**	**42.1**	**43.5**	**44.8**	**45.9**	**46.8**	**0.6**
Japan	21.0	22.1	21.3	21.9	22.3	22.5	22.6	22.4	0.0
South Korea	10.1	10.8	11.8	12.9	13.8	14.8	15.6	16.6	1.4
Australia/NewZealand	6.7	6.7	6.9	7.3	7.4	7.6	7.7	7.9	0.6
Total OECD	**234.7**	**242.3**	**244.2**	**257.6**	**267.2**	**275.6**	**285.4**	**297.9**	**0.7**
Non-OECD									
Non-OECD Europe and Eurasia	**43.7**	**47.2**	**49.8**	**53.2**	**56.8**	**61.0**	**65.3**	**68.6**	**1.3**
Russia	27.0	29.6	30.9	33.2	35.6	38.0	40.2	41.5	1.1
Other	16.7	17.6	18.9	20.0	21.2	23.1	25.1	27.2	1.5
Non-OECD Asia	**148.1**	**159.0**	**195.1**	**238.0**	**283.5**	**333.6**	**389.5**	**440.2**	**3.5**
China	93.1	101.2	132.7	165.3	199.2	235.3	274.1	305.0	3.7
India	23.1	24.4	27.8	33.3	40.1	48.1	58.1	69.6	3.6
Other	31.8	33.4	34.6	39.4	44.2	50.1	57.3	65.6	2.3
Middle East	**26.6**	**27.8**	**34.9**	**39.3**	**43.2**	**47.5**	**52.1**	**57.3**	**2.4**
Africa	**18.4**	**18.9**	**19.6**	**21.9**	**24.5**	**27.6**	**31.2**	**35.3**	**2.1**
Central and South America	**26.9**	**28.7**	**31.0**	**33.2**	**35.6**	**39.0**	**42.8**	**47.1**	**1.7**
Brazil	12.7	13.7	14.9	16.5	18.0	20.0	22.6	25.8	2.1
Other	14.3	15.0	16.1	16.7	17.6	19.0	20.2	21.3	1.2
Total Non-OECD	**263.7**	**281.7**	**330.4**	**385.7**	**443.6**	**508.7**	**580.9**	**648.5**	**2.8**
Total World	**498.4**	**523.9**	**574.6**	**643.2**	**710.7**	**784.3**	**866.2**	**946.4**	**2.0**

[a]Includes 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:** U.S. Energy Information Administration (EIA), International Energy Statistics database (as of November 2012), www.eia.gov/ies; and International Energy Agency, "Balances of OECD and Non-OECD Statistics" (2012), www.iea.org (subscription site). **Projections:** EIA, *Annual Energy Outlook 2013*, DOE/EIA-0383(2013) (Washington, DC: April 2013); AEO2013 National Energy Modeling System, run HIGHMACRO.D110912A, www.eia.gov/aeo; and World Energy Projection System Plus (2013).

Table B2. World total energy consumption by region and fuel, High Economic Growth case, 2009-2040
(quadrillion Btu)

Region	History 2009	History 2010	Projections 2015	2020	2025	2030	2035	2040	Average annual percent change, 2010-2040
OECD									
OECD Americas									
Liquids	45.5	46.4	46.3	47.9	48.2	48.4	49.4	51.1	0.3
Natural gas	28.9	29.9	32.1	34.8	37.2	39.5	42.0	44.1	1.3
Coal	21.3	22.5	19.7	21.5	22.4	22.7	23.2	23.9	0.2
Nuclear	9.4	9.5	9.8	10.3	10.9	11.2	11.6	13.2	1.1
Other	11.9	11.9	14.0	15.3	16.2	17.7	19.9	23.3	2.3
Total	**117.0**	**120.2**	**122.0**	**129.8**	**134.8**	**139.5**	**146.0**	**155.6**	**0.9**
OECD Europe									
Liquids	30.8	30.6	28.0	28.5	28.6	28.8	29.2	29.5	-0.1
Natural gas	19.3	20.4	20.3	21.1	21.5	22.8	24.0	25.4	0.7
Coal	11.9	12.2	12.2	11.9	11.6	11.4	11.1	10.8	-0.4
Nuclear	8.6	8.9	9.2	9.6	10.8	11.0	11.1	11.1	0.7
Other	9.4	10.4	12.6	14.7	16.4	17.3	18.0	18.7	2.0
Total	**80.0**	**82.5**	**82.2**	**85.7**	**88.9**	**91.3**	**93.4**	**95.4**	**0.5**
OECD Asia									
Liquids	15.5	15.8	16.6	16.2	16.2	16.3	16.4	16.4	0.1
Natural gas	6.6	7.2	7.6	8.1	8.8	9.4	10.0	10.5	1.3
Coal	9.4	10.1	10.1	9.9	9.9	9.8	9.9	10.0	0.0
Nuclear	4.1	4.2	3.0	4.5	5.0	5.6	5.7	5.9	1.1
Other	2.1	2.3	2.8	3.4	3.6	3.7	3.9	4.0	1.8
Total	**37.7**	**39.6**	**40.0**	**42.1**	**43.5**	**44.8**	**45.9**	**46.8**	**0.6**
Total OECD									
Liquids	91.8	92.8	90.8	92.6	92.9	93.6	95.0	97.0	0.1
Natural gas	54.8	57.5	60.0	63.9	67.5	71.7	76.1	80.0	1.1
Coal	42.5	44.8	42.0	43.3	43.9	43.8	44.2	44.7	0.0
Nuclear	22.1	22.6	22.0	24.4	26.6	27.8	28.3	30.2	1.0
Other	23.4	24.6	29.4	33.4	36.3	38.7	41.8	46.0	2.1
Total	**234.7**	**242.3**	**244.2**	**257.6**	**267.2**	**275.6**	**285.4**	**297.9**	**0.7**
Non-OECD									
Non-OECD Europe and Eurasia									
Liquids	9.7	9.7	11.8	11.9	12.2	13.0	13.6	14.2	1.3
Natural gas	20.2	22.3	21.9	23.5	25.4	27.4	29.4	31.0	1.1
Coal	7.7	8.9	9.0	9.6	10.2	10.6	11.1	11.5	0.8
Nuclear	3.0	3.0	3.7	4.5	5.1	5.7	6.3	6.7	2.7
Other	3.1	3.2	3.5	3.8	4.0	4.3	4.8	5.2	1.6
Total	**43.7**	**47.2**	**49.8**	**53.2**	**56.8**	**61.0**	**65.3**	**68.6**	**1.3**
Non-OECD Asia									
Liquids	37.9	40.6	46.5	54.7	63.4	72.7	84.1	97.1	2.9
Natural gas	12.6	14.2	16.4	20.1	24.9	30.8	37.3	43.0	3.8
Coal	83.7	88.4	108.3	127.8	152.8	180.1	209.0	231.6	3.3
Nuclear	1.3	1.4	4.2	8.1	10.9	13.8	16.6	19.4	9.2
Other	12.6	14.4	19.8	27.3	31.5	36.2	42.5	49.1	4.2
Total	**148.1**	**159.0**	**195.1**	**238.0**	**283.5**	**333.6**	**389.5**	**440.2**	**3.5**

See notes at end ot table.

(continued on page 199)

Table B2. World total energy consumption by region and fuel, High Economic Growth case, 2009-2040 (continued)
(quadrillion Btu)

Region	History 2009	History 2010	Projections 2015	2020	2025	2030	2035	2040	Average annual percent change, 2010-2040
Middle East									
Liquids	13.4	13.8	16.6	17.8	18.7	20.1	21.7	23.7	1.8
Natural gas	12.9	13.7	17.8	20.5	23.1	25.7	28.2	31.4	2.8
Coal	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.3
Nuclear	0.0	0.0	0.1	0.4	0.7	1.0	1.2	1.2	0.0
Other	0.1	0.2	0.3	0.5	0.6	0.7	0.9	1.0	5.7
Total	**26.6**	**27.8**	**34.9**	**39.3**	**43.2**	**47.5**	**52.1**	**57.3**	**2.4**
Africa									
Liquids	6.6	6.9	7.2	7.4	7.8	8.2	8.8	9.3	1.0
Natural gas	3.6	3.7	3.9	4.4	5.2	6.1	7.4	9.0	3.0
Coal	4.4	4.4	4.6	5.3	5.9	6.5	7.1	7.8	2.0
Nuclear	0.1	0.1	0.2	0.2	0.4	0.7	0.9	0.9	6.8
Other	3.7	3.9	3.8	4.7	5.2	6.0	7.0	8.2	2.5
Total	**18.4**	**18.9**	**19.6**	**21.9**	**24.5**	**27.6**	**31.2**	**35.3**	**2.1**
Central and South America									
Liquids	11.8	12.3	13.3	13.6	14.1	15.1	16.0	17.1	1.1
Natural gas	4.6	5.3	5.7	6.3	7.1	7.9	8.7	9.6	2.0
Coal	0.7	0.9	1.0	1.1	1.2	1.3	1.4	1.6	1.9
Nuclear	0.2	0.2	0.3	0.4	0.5	0.7	0.8	0.8	4.4
Other	9.7	10.0	10.7	11.8	12.6	14.1	15.8	18.0	2.0
Total	**26.9**	**28.7**	**31.0**	**33.2**	**35.6**	**39.0**	**42.8**	**47.1**	**1.7**
Total Non-OECD									
Liquids	79.5	83.3	95.3	105.4	116.2	129.1	144.2	161.5	2.2
Natural gas	53.9	59.3	65.7	74.8	85.6	97.9	111.1	124.0	2.5
Coal	96.6	102.6	122.9	143.8	170.2	198.6	228.7	252.5	3.0
Nuclear	4.6	4.7	8.4	13.5	17.7	21.8	25.9	29.0	6.2
Other	29.2	31.7	38.1	48.1	53.9	61.3	71.0	81.5	3.2
Total	**263.7**	**281.7**	**330.4**	**385.7**	**443.6**	**508.7**	**580.9**	**648.5**	**2.8**
Total World									
Liquids	171.3	176.1	186.1	198.0	209.2	222.6	239.2	258.5	1.3
Natural gas	108.7	116.8	125.7	138.7	153.1	169.6	187.1	204.0	1.9
Coal	139.1	147.4	164.9	187.1	214.1	242.5	272.9	297.3	2.4
Nuclear	26.7	27.3	30.4	37.9	44.3	49.6	54.2	59.2	2.6
Other	52.6	56.2	67.5	81.5	90.1	99.9	112.8	127.4	2.8
Total	**498.4**	**523.9**	**574.6**	**643.2**	**710.7**	**784.3**	**866.2**	**946.4**	**2.0**

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:** U.S. Energy Information Administration (EIA), International Energy Statistics database (as of November 2012), www.eia.gov/ies; and International Energy Agency, "Balances of OECD and Non-OECD Statistics" (2012), www.iea.org (subscription site). **Projections:** EIA, *Annual Energy Outlook 2013*, DOE/EIA-0383(2013) (Washington, DC: April 2013); AEO2013 National Energy Modeling System, run HIGHMACRO.D110912A, www.eia.gov/aeo; and World Energy Projection System Plus (2013).

Table B3. World gross domestic product (GDP) by region expressed in purchasing power parity, High Economic Growth case, 2009-2040
(billion 2005 dollars)

Region	History 2009	History 2010	Projections 2015	2020	2025	2030	2035	2040	Average annual percent change, 2010-2040
OECD									
OECD Americas	**15,498**	**15,929**	**18,217**	**21,735**	**25,023**	**28,578**	**32,822**	**37,787**	**2.9**
United States[a]	12,758	13,063	14,815	17,754	20,397	23,232	26,609	30,552	2.9
Canada	1,165	1,202	1,349	1,519	1,685	1,854	2,061	2,300	2.2
Mexico/Chile	1,575	1,664	2,052	2,462	2,940	3,492	4,152	4,935	3.7
OECD Europe	**14,262**	**14,618**	**15,609**	**17,427**	**19,378**	**21,243**	**23,287**	**25,560**	**1.9**
OECD Asia	**5,791**	**6,062**	**6,727**	**7,399**	**8,056**	**8,626**	**9,227**	**9,830**	**1.6**
Japan	3,776	3,948	4,218	4,434	4,634	4,729	4,799	4,801	0.7
South Korea	1,244	1,323	1,599	1,952	2,303	2,657	3,049	3,496	3.3
Australia/NewZealand	771	790	910	1,013	1,120	1,239	1,378	1,534	2.2
Total OECD	**35,551**	**36,609**	**40,553**	**46,560**	**52,457**	**58,447**	**65,336**	**73,178**	**2.3**
Non-OECD									
Non-OECD Europe and Eurasia	**4,346**	**4,502**	**5,468**	**6,872**	**8,397**	**10,048**	**11,951**	**13,994**	**3.9**
Russia	1,938	2,022	2,436	2,989	3,533	4,018	4,505	4,872	3.0
Other	2,408	2,480	3,033	3,884	4,864	6,030	7,445	9,122	4.4
Non-OECD Asia	**16,628**	**18,206**	**25,766**	**35,753**	**48,418**	**64,691**	**84,284**	**105,934**	**6.0**
China	8,299	9,167	13,795	19,659	27,277	37,123	48,462	59,583	6.4
India	3,364	3,661	5,155	7,510	10,483	14,300	19,135	25,184	6.6
Other	4,965	5,379	6,816	8,584	10,658	13,268	16,687	21,167	4.7
Middle East	**2,263**	**2,292**	**2,783**	**3,346**	**3,747**	**4,139**	**4,534**	**4,896**	**2.6**
Africa	**3,780**	**3,963**	**4,872**	**6,196**	**7,820**	**9,908**	**12,563**	**15,934**	**4.7**
Central and South America	**4,623**	**4,927**	**6,021**	**7,228**	**8,489**	**9,895**	**11,524**	**13,461**	**3.4**
Brazil	1,833	1,971	2,367	2,881	3,381	3,989	4,755	5,709	3.6
Other	2,790	2,955	3,654	4,348	5,108	5,905	6,769	7,752	3.3
Total Non-OECD	**31,640**	**33,889**	**44,911**	**59,395**	**76,871**	**98,681**	**124,856**	**154,219**	**5.2**
Total World	**67,192**	**70,498**	**85,464**	**105,955**	**129,327**	**157,127**	**190,191**	**227,397**	**4.0**

[a]Includes the 50 States and the District of Columbia.
Notes: Totals may not equal sum of components due to independent rounding. GDP growth rates for non-OECD Europe and Eurasia (excluding Russia), China, India, Africa, and Central and South America (excluding Brazil) were adjusted based on the analyst's judgment.
Sources: Derived from Oxford Economic Model (October 2012), www.oxfordeconomics.com (subscription site); and U.S. Energy Information Administration (EIA), *Annual Energy Outlook 2013*, DOE/EIA-0383(2013) (Washington, DC: April 2013); and AEO2013 National Energy Modeling System, run HIGHMACRO.D110912A, www.eia.gov/aeo.