

**Table A6. World natural gas consumption by region, Reference case, 2011–40**  
(trillion cubic feet)

| Region                      | History      |              | Projections  |              |              |              |              | Average annual percent change, 2012–40 |
|-----------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--|
|                             | 2011         | 2012         | 2020         | 2025         | 2030         | 2035         | 2040         |  |
| <b>OECD</b>                 |              |              |              |              |              |              |              |  |
| OECD Americas               | <b>30.8</b>  | <b>31.8</b>  | <b>32.8</b>  | <b>34.3</b>  | <b>36.5</b>  | <b>38.2</b>  | <b>40.1</b>  | <b>0.8</b>                             |
| United States <sup>a</sup>  | 24.5         | 25.5         | 26.1         | 26.9         | 28.1         | 28.8         | 29.7         | 0.5                                    |
| Canada                      | 3.7          | 3.7          | 3.9          | 4.2          | 4.7          | 5.2          | 5.6          | 1.5                                    |
| Mexico and Chile            | 2.6          | 2.6          | 2.8          | 3.2          | 3.6          | 4.2          | 4.8          | 2.2                                    |
| OECD Europe                 | <b>18.6</b>  | <b>17.8</b>  | <b>19.2</b>  | <b>20.6</b>  | <b>22.3</b>  | <b>23.7</b>  | <b>25.3</b>  | <b>1.3</b>                             |
| OECD Asia                   | <b>7.6</b>   | <b>7.9</b>   | <b>8.9</b>   | <b>9.8</b>   | <b>10.4</b>  | <b>11.3</b>  | <b>12.2</b>  | <b>1.6</b>                             |
| Japan                       | 4.5          | 4.7          | 5.1          | 5.6          | 5.7          | 5.9          | 6.0          | 0.9                                    |
| South Korea                 | 1.6          | 1.8          | 2.1          | 2.2          | 2.4          | 2.7          | 3.0          | 1.9                                    |
| Australia and New Zealand   | 1.4          | 1.5          | 1.7          | 2.0          | 2.3          | 2.7          | 3.2          | 2.9                                    |
| <b>Total OECD</b>           | <b>56.9</b>  | <b>57.5</b>  | <b>60.9</b>  | <b>64.7</b>  | <b>69.2</b>  | <b>73.2</b>  | <b>77.6</b>  | <b>1.1</b>                             |
| <b>Non-OECD</b>             |              |              |              |              |              |              |              |  |
| Non-OECD Europe and Eurasia | <b>22.8</b>  | <b>23.0</b>  | <b>22.5</b>  | <b>23.9</b>  | <b>25.0</b>  | <b>26.0</b>  | <b>26.0</b>  | <b>0.4</b>                             |
| Russia                      | 15.3         | 15.7         | 15.3         | 15.8         | 16.2         | 16.5         | 16.0         | 0.1                                    |
| Other                       | 7.5          | 7.3          | 7.2          | 8.1          | 8.9          | 9.5          | 10.0         | 1.1                                    |
| Non-OECD Asia               | <b>14.6</b>  | <b>15.1</b>  | <b>20.8</b>  | <b>27.2</b>  | <b>34.0</b>  | <b>42.5</b>  | <b>50.8</b>  | <b>4.4</b>                             |
| China                       | 4.6          | 5.1          | 9.1          | 13.5         | 17.6         | 22.7         | 27.5         | 6.2                                    |
| India                       | 2.3          | 2.1          | 2.3          | 2.9          | 3.8          | 4.9          | 6.0          | 3.9                                    |
| Other                       | 7.7          | 7.9          | 9.4          | 10.8         | 12.7         | 14.9         | 17.2         | 2.8                                    |
| Middle East                 | <b>13.9</b>  | <b>14.7</b>  | <b>17.7</b>  | <b>20.5</b>  | <b>23.5</b>  | <b>26.1</b>  | <b>28.9</b>  | <b>2.5</b>                             |
| Africa                      | <b>3.9</b>   | <b>4.5</b>   | <b>5.5</b>   | <b>6.2</b>   | <b>7.7</b>   | <b>9.4</b>   | <b>11.1</b>  | <b>3.3</b>                             |
| Non-OECD Americas           | <b>5.0</b>   | <b>5.1</b>   | <b>5.8</b>   | <b>6.5</b>   | <b>7.2</b>   | <b>8.0</b>   | <b>8.9</b>   | <b>2.0</b>                             |
| Brazil                      | 0.9          | 1.1          | 1.4          | 1.5          | 1.7          | 1.9          | 2.2          | 2.6                                    |
| Other                       | 4.1          | 4.0          | 4.4          | 5.0          | 5.5          | 6.2          | 6.8          | 1.9                                    |
| <b>Total Non-OECD</b>       | <b>60.3</b>  | <b>62.3</b>  | <b>72.3</b>  | <b>84.4</b>  | <b>97.5</b>  | <b>112.0</b> | <b>125.7</b> | <b>2.5</b>                             |
| <b>Total World</b>          | <b>117.1</b> | <b>119.8</b> | <b>133.2</b> | <b>149.1</b> | <b>166.6</b> | <b>185.2</b> | <b>203.3</b> | <b>1.9</b>                             |

<sup>a</sup>Includes the 50 States and the District of Columbia.

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

Sources: History: U.S. Energy Information Administration (EIA), International Energy Statistics database (as of May 2015), [www.eia.gov/ies](http://www.eia.gov/ies).

Projections: EIA, *Annual Energy Outlook 2015*, DOE/EIA-0383(2015) (Washington, DC: April 2015); AEO2015 National Energy Modeling System, run REF2015.D021915A, [www.eia.gov/aeo](http://www.eia.gov/aeo); and World Energy Projection System Plus (2016), run IEO2016-reference\_final\_2016.02.19\_115008.

**Table A7. World coal consumption by region, Reference case, 2011–40**  
(quadrillion Btu)

| Region                      | History      |              | Projections  |              |              |              |              | Average annual percent change, 2012–40 |
|-----------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--|
|                             | 2011         | 2012         | 2020         | 2025         | 2030         | 2035         | 2040         |  |
| <b>OECD</b>                 |              |              |              |              |              |              |              |  |
| OECD Americas               | <b>21.0</b>  | <b>18.7</b>  | <b>20.3</b>  | <b>20.5</b>  | <b>20.1</b>  | <b>20.0</b>  | <b>20.0</b>  | <b>0.2</b>                             |
| United States <sup>a</sup>  | 19.6         | 17.3         | 19.2         | 19.3         | 19.2         | 19.0         | 19.0         | 0.3                                    |
| Canada                      | 0.7          | 0.7          | 0.6          | 0.6          | 0.4          | 0.4          | 0.4          | -2.5                                   |
| Mexico and Chile            | 0.6          | 0.6          | 0.6          | 0.6          | 0.6          | 0.6          | 0.6          | 0.3                                    |
| OECD Europe                 | <b>12.9</b>  | <b>13.4</b>  | <b>13.2</b>  | <b>13.3</b>  | <b>13.1</b>  | <b>12.8</b>  | <b>12.6</b>  | <b>-0.2</b>                            |
| OECD Asia                   | <b>9.7</b>   | <b>9.7</b>   | <b>10.2</b>  | <b>10.1</b>  | <b>10.1</b>  | <b>10.1</b>  | <b>10.1</b>  | <b>0.1</b>                             |
| Japan                       | 4.3          | 4.6          | 4.5          | 4.4          | 4.3          | 4.2          | 4.0          | -0.5                                   |
| South Korea                 | 3.2          | 3.0          | 3.7          | 3.8          | 3.8          | 4.0          | 4.3          | 1.2                                    |
| Australia and New Zealand   | 2.1          | 2.1          | 2.0          | 1.9          | 1.9          | 1.9          | 1.9          | -0.4                                   |
| <b>Total OECD</b>           | <b>43.6</b>  | <b>41.8</b>  | <b>43.7</b>  | <b>44.0</b>  | <b>43.3</b>  | <b>42.9</b>  | <b>42.7</b>  | <b>0.1</b>                             |
| <b>Non-OECD</b>             |              |              |              |              |              |              |              |  |
| Non-OECD Europe and Eurasia | <b>9.6</b>   | <b>10.2</b>  | <b>9.4</b>   | <b>9.4</b>   | <b>9.6</b>   | <b>9.8</b>   | <b>9.6</b>   | <b>-0.2</b>                            |
| Russia                      | 4.7          | 5.4          | 5.3          | 5.3          | 5.5          | 5.7          | 5.5          | 0.1                                    |
| Other                       | 5.0          | 4.8          | 4.1          | 4.1          | 4.1          | 4.1          | 4.1          | -0.6                                   |
| Non-OECD Asia               | <b>93.3</b>  | <b>95.5</b>  | <b>109.2</b> | <b>112.9</b> | <b>114.4</b> | <b>116.6</b> | <b>119.5</b> | <b>0.8</b>                             |
| China                       | 75.4         | 76.5         | 86.6         | 88.0         | 87.0         | 85.4         | 83.3         | 0.3                                    |
| India                       | 11.9         | 13.0         | 15.3         | 16.7         | 18.3         | 21.1         | 24.8         | 2.3                                    |
| Other                       | 5.9          | 6.1          | 7.4          | 8.3          | 9.1          | 10.1         | 11.5         | 2.3                                    |
| Middle East                 | <b>0.1</b>   | <b>0.1</b>   | <b>0.1</b>   | <b>0.1</b>   | <b>0.2</b>   | <b>0.2</b>   | <b>0.2</b>   | <b>3.2</b>                             |
| Africa                      | <b>4.6</b>   | <b>4.8</b>   | <b>5.4</b>   | <b>5.8</b>   | <b>6.0</b>   | <b>6.4</b>   | <b>7.0</b>   | <b>1.4</b>                             |
| Non-OECD Americas           | <b>0.9</b>   | <b>0.9</b>   | <b>0.9</b>   | <b>0.9</b>   | <b>1.0</b>   | <b>1.1</b>   | <b>1.1</b>   | <b>1.0</b>                             |
| Brazil                      | 0.5          | 0.6          | 0.5          | 0.6          | 0.6          | 0.7          | 0.7          | 0.8                                    |
| Other                       | 0.3          | 0.3          | 0.3          | 0.3          | 0.4          | 0.4          | 0.4          | 1.3                                    |
| <b>Total Non-OECD</b>       | <b>108.4</b> | <b>111.5</b> | <b>124.9</b> | <b>129.2</b> | <b>131.2</b> | <b>134.0</b> | <b>137.5</b> | <b>0.8</b>                             |
| <b>Total World</b>          | <b>152.0</b> | <b>153.3</b> | <b>168.6</b> | <b>173.2</b> | <b>174.4</b> | <b>176.9</b> | <b>180.2</b> | <b>0.6</b>                             |

<sup>a</sup>Includes the 50 States and the District of Columbia.

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

Sources: History: U.S. Energy Information Administration (EIA), International Energy Statistics database (as of May 2015), [www.eia.gov/ies](http://www.eia.gov/ies).

Projections: EIA, *Annual Energy Outlook 2015*, DOE/EIA-0383(2015) (Washington, DC: April 2015); AEO2015 National Energy Modeling System, run REF2015.D021915A, [www.eia.gov/aeo](http://www.eia.gov/aeo); and World Energy Projection System Plus (2016), run IEO2016-reference\_final\_2016.02.19\_115008.

**Table A8. World nuclear energy consumption by region, Reference case, 2011–40**  
(billion kilowatthours)

| Region                      | History      |              | Projections  |              |              |              |              | Average annual percent change, 2012–40 |
|-----------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--|
|                             | 2011         | 2012         | 2020         | 2025         | 2030         | 2035         | 2040         |  |
| <b>OECD</b>                 |              |              |              |              |              |              |              |  |
| OECD Americas               | <b>888</b>   | <b>867</b>   | <b>902</b>   | <b>891</b>   | <b>901</b>   | <b>900</b>   | <b>924</b>   | <b>0.2</b>                             |
| United States <sup>a</sup>  | 790          | 769          | 804          | 808          | 808          | 812          | 833          | 0.3                                    |
| Canada                      | 88           | 89           | 86           | 72           | 72           | 67           | 62           | -1.3                                   |
| Mexico and Chile            | 9            | 8            | 12           | 12           | 20           | 20           | 29           | 4.5                                    |
| OECD Europe                 | <b>861</b>   | <b>837</b>   | <b>845</b>   | <b>879</b>   | <b>930</b>   | <b>948</b>   | <b>896</b>   | <b>0.2</b>                             |
| OECD Asia                   | <b>304</b>   | <b>161</b>   | <b>381</b>   | <b>437</b>   | <b>457</b>   | <b>450</b>   | <b>427</b>   | <b>3.5</b>                             |
| Japan                       | 156          | 17           | 167          | 180          | 175          | 169          | 146          | 7.9                                    |
| South Korea                 | 148          | 144          | 214          | 258          | 281          | 281          | 281          | 2.4                                    |
| Australia and New Zealand   | 0            | 0            | 0            | 0            | 0            | 0            | 0            | —                                      |
| <b>Total OECD</b>           | <b>2,053</b> | <b>1,865</b> | <b>2,128</b> | <b>2,208</b> | <b>2,287</b> | <b>2,298</b> | <b>2,246</b> | <b>0.7</b>                             |
| <b>Non-OECD</b>             |              |              |              |              |              |              |              |  |
| Non-OECD Europe and Eurasia | <b>275</b>   | <b>279</b>   | <b>376</b>   | <b>415</b>   | <b>411</b>   | <b>412</b>   | <b>413</b>   | <b>1.4</b>                             |
| Russia                      | 162          | 166          | 234          | 267          | 239          | 228          | 223          | 1.0                                    |
| Other                       | 113          | 112          | 141          | 148          | 171          | 183          | 190          | 1.9                                    |
| Non-OECD Asia               | <b>156</b>   | <b>166</b>   | <b>459</b>   | <b>662</b>   | <b>1,051</b> | <b>1,297</b> | <b>1,559</b> | <b>8.3</b>                             |
| China                       | 83           | 93           | 329          | 452          | 754          | 983          | 1,212        | 9.6                                    |
| India                       | 29           | 30           | 67           | 117          | 206          | 222          | 248          | 7.9                                    |
| Other                       | 44           | 44           | 63           | 93           | 92           | 92           | 98           | 2.9                                    |
| Middle East                 | <b>0</b>     | <b>1</b>     | <b>40</b>    | <b>63</b>    | <b>95</b>    | <b>128</b>   | <b>152</b>   | <b>18.4</b>                            |
| Africa                      | <b>13</b>    | <b>12</b>    | <b>14</b>    | <b>21</b>    | <b>28</b>    | <b>35</b>    | <b>42</b>    | <b>4.5</b>                             |
| Non-OECD Americas           | <b>21</b>    | <b>21</b>    | <b>35</b>    | <b>35</b>    | <b>74</b>    | <b>81</b>    | <b>89</b>    | <b>5.3</b>                             |
| Brazil                      | 15           | 15           | 23           | 23           | 54           | 54           | 54           | 4.7                                    |
| Other                       | 6            | 6            | 12           | 12           | 20           | 27           | 34           | 6.5                                    |
| <b>Total Non-OECD</b>       | <b>465</b>   | <b>480</b>   | <b>924</b>   | <b>1,196</b> | <b>1,659</b> | <b>1,953</b> | <b>2,255</b> | <b>5.7</b>                             |
| <b>Total World</b>          | <b>2,518</b> | <b>2,345</b> | <b>3,051</b> | <b>3,404</b> | <b>3,946</b> | <b>4,251</b> | <b>4,501</b> | <b>2.4</b>                             |

<sup>a</sup>Includes the 50 States and the District of Columbia.

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

Sources: History: U.S. Energy Information Administration (EIA), International Energy Statistics database (as of May 2015), [www.eia.gov/ies](http://www.eia.gov/ies).

Projections: EIA, *Annual Energy Outlook 2015*, DOE/EIA-0383(2015) (Washington, DC: April 2015); AEO2015 National Energy Modeling System, run REF2015.D021915A, [www.eia.gov/aeo](http://www.eia.gov/aeo); and World Energy Projection System Plus (2016), run IEO2016-reference\_final\_2016.02.19\_115008.

**Table A9. World consumption of hydroelectricity and other renewable energy by region, Reference case, 2011–40 (quadrillion Btu)**

| Region                      | History     |             | Projections |             |              |              |              | Average annual percent change, 2012–40 |
|-----------------------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--|
|                             | 2011        | 2012        | 2020        | 2025        | 2030         | 2035         | 2040         |  |
| <b>OECD</b>                 |             |             |             |             |              |              |              |  |
| OECD Americas               | <b>13.1</b> | <b>12.9</b> | <b>15.6</b> | <b>16.6</b> | <b>17.5</b>  | <b>18.6</b>  | <b>20.3</b>  | <b>1.6</b>                             |
| United States <sup>a</sup>  | 7.9         | 7.7         | 9.3         | 9.7         | 9.9          | 10.4         | 11.3         | 1.4                                    |
| Canada                      | 4.3         | 4.2         | 4.8         | 5.1         | 5.5          | 5.8          | 6.3          | 1.4                                    |
| Mexico and Chile            | 0.9         | 1.0         | 1.5         | 1.8         | 2.1          | 2.4          | 2.7          | 3.7                                    |
| OECD Europe                 | <b>10.7</b> | <b>11.5</b> | <b>15.7</b> | <b>16.7</b> | <b>17.3</b>  | <b>18.5</b>  | <b>19.6</b>  | <b>1.9</b>                             |
| OECD Asia                   | <b>2.5</b>  | <b>2.5</b>  | <b>4.1</b>  | <b>4.6</b>  | <b>5.1</b>   | <b>5.4</b>   | <b>5.7</b>   | <b>3.0</b>                             |
| Japan                       | 1.6         | 1.6         | 2.3         | 2.5         | 2.7          | 2.8          | 2.7          | 2.0                                    |
| South Korea                 | 0.2         | 0.2         | 0.7         | 0.8         | 1.0          | 1.1          | 1.2          | 7.1                                    |
| Australia and New Zealand   | 0.7         | 0.7         | 1.2         | 1.2         | 1.4          | 1.5          | 1.8          | 3.2                                    |
| <b>Total OECD</b>           | <b>26.3</b> | <b>27.0</b> | <b>35.5</b> | <b>37.9</b> | <b>39.8</b>  | <b>42.5</b>  | <b>45.5</b>  | <b>1.9</b>                             |
| <b>Non-OECD</b>             |             |             |             |             |              |              |              |  |
| Non-OECD Europe and Eurasia | <b>3.0</b>  | <b>3.0</b>  | <b>3.4</b>  | <b>3.8</b>  | <b>4.0</b>   | <b>4.3</b>   | <b>4.4</b>   | <b>1.4</b>                             |
| Russia                      | 1.7         | 1.7         | 1.8         | 2.2         | 2.4          | 2.5          | 2.5          | 1.3                                    |
| Other                       | 1.3         | 1.3         | 1.6         | 1.6         | 1.6          | 1.8          | 1.9          | 1.5                                    |
| Non-OECD Asia               | <b>16.1</b> | <b>18.8</b> | <b>31.5</b> | <b>37.1</b> | <b>42.1</b>  | <b>47.2</b>  | <b>52.6</b>  | <b>3.7</b>                             |
| China                       | 8.9         | 11.4        | 21.0        | 23.7        | 26.2         | 28.8         | 31.3         | 3.7                                    |
| India                       | 3.3         | 3.3         | 4.7         | 6.4         | 7.7          | 9.1          | 10.8         | 4.3                                    |
| Other                       | 3.9         | 4.1         | 5.8         | 7.1         | 8.2          | 9.3          | 10.5         | 3.4                                    |
| Middle East                 | <b>0.2</b>  | <b>0.2</b>  | <b>0.8</b>  | <b>1.4</b>  | <b>1.6</b>   | <b>2.3</b>   | <b>2.6</b>   | <b>9.0</b>                             |
| Africa                      | <b>4.3</b>  | <b>4.5</b>  | <b>5.4</b>  | <b>6.8</b>  | <b>7.8</b>   | <b>9.0</b>   | <b>10.3</b>  | <b>3.0</b>                             |
| Non-OECD Americas           | <b>10.4</b> | <b>10.3</b> | <b>10.5</b> | <b>11.9</b> | <b>12.8</b>  | <b>14.3</b>  | <b>15.9</b>  | <b>1.6</b>                             |
| Brazil                      | 7.0         | 6.8         | 7.0         | 8.0         | 8.6          | 9.8          | 11.1         | 1.7                                    |
| Other                       | 3.5         | 3.4         | 3.5         | 3.9         | 4.2          | 4.5          | 4.9          | 1.2                                    |
| <b>Total Non-OECD</b>       | <b>34.1</b> | <b>36.8</b> | <b>51.5</b> | <b>60.9</b> | <b>68.3</b>  | <b>77.0</b>  | <b>85.8</b>  | <b>3.1</b>                             |
| <b>Total World</b>          | <b>60.4</b> | <b>63.8</b> | <b>87.0</b> | <b>98.8</b> | <b>108.1</b> | <b>119.5</b> | <b>131.4</b> | <b>2.6</b>                             |

<sup>a</sup>Includes 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. Other renewable energy includes wind, geothermal, solar, biomass, waste, and tide/wave/ocean.

Sources: History: U.S. Energy Information Administration (EIA), International Energy Statistics database (as of May 2015), [www.eia.gov/ies](http://www.eia.gov/ies); and International Energy Agency, "Balances of OECD and Non-OECD Statistics" (2014), [www.iea.org](http://www.iea.org) (subscription site). Projections: EIA, *Annual Energy Outlook 2015*, DOE/EIA-0383(2015) (Washington, DC: April 2015); AEO2015 National Energy Modeling System, run REF2015.D021915A, [www.eia.gov/aeo](http://www.eia.gov/aeo); and World Energy Projection System Plus (2016), run IEO2016-reference\_final\_2016.02.19\_115008.

**Table A10. World carbon dioxide emissions by region, Reference case, 2011–40**  
(million metric tons carbon dioxide)

| Region                      | History       |               | Projections   |               |               |               |               | Average annual percent change, 2012–40 |
|-----------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--|
|                             | 2011          | 2012          | 2020          | 2025          | 2030          | 2035          | 2040          |  |
| <b>OECD</b>                 |               |               |               |               |               |               |               |  |
| OECD Americas               | <b>6,558</b>  | <b>6,343</b>  | <b>6,569</b>  | <b>6,620</b>  | <b>6,675</b>  | <b>6,769</b>  | <b>6,887</b>  | <b>0.3</b>                             |
| United States <sup>a</sup>  | 5,483         | 5,272         | 5,499         | 5,511         | 5,514         | 5,521         | 5,549         | 0.2                                    |
| Canada                      | 562           | 563           | 557           | 577           | 587           | 621           | 647           | 0.5                                    |
| Mexico and Chile            | 513           | 508           | 513           | 533           | 573           | 628           | 690           | 1.1                                    |
| OECD Europe                 | <b>4,193</b>  | <b>4,124</b>  | <b>4,096</b>  | <b>4,170</b>  | <b>4,252</b>  | <b>4,317</b>  | <b>4,415</b>  | <b>0.2</b>                             |
| OECD Asia                   | <b>2,270</b>  | <b>2,322</b>  | <b>2,361</b>  | <b>2,388</b>  | <b>2,407</b>  | <b>2,460</b>  | <b>2,513</b>  | <b>0.3</b>                             |
| Japan                       | 1,185         | 1,247         | 1,176         | 1,175         | 1,159         | 1,144         | 1,111         | -0.4                                   |
| South Korea                 | 642           | 639           | 734           | 742           | 761           | 803           | 850           | 1.0                                    |
| Australia and New Zealand   | 442           | 436           | 451           | 470           | 487           | 513           | 552           | 0.8                                    |
| <b>Total OECD</b>           | <b>13,021</b> | <b>12,790</b> | <b>13,026</b> | <b>13,178</b> | <b>13,334</b> | <b>13,547</b> | <b>13,815</b> | <b>0.3</b>                             |
| <b>Non-OECD</b>             |               |               |               |               |               |               |               |  |
| Non-OECD Europe and Eurasia | <b>2,845</b>  | <b>2,938</b>  | <b>2,914</b>  | <b>3,038</b>  | <b>3,128</b>  | <b>3,198</b>  | <b>3,170</b>  | <b>0.3</b>                             |
| Russia                      | 1,695         | 1,795         | 1,814         | 1,862         | 1,897         | 1,924         | 1,864         | 0.1                                    |
| Other                       | 1,150         | 1,143         | 1,100         | 1,176         | 1,231         | 1,275         | 1,306         | 0.5                                    |
| Non-OECD Asia               | <b>11,785</b> | <b>12,195</b> | <b>14,456</b> | <b>15,505</b> | <b>16,386</b> | <b>17,482</b> | <b>18,682</b> | <b>1.5</b>                             |
| China                       | 8,119         | 8,378         | 9,861         | 10,371        | 10,636        | 10,878        | 11,051        | 1.0                                    |
| India                       | 1,663         | 1,778         | 2,143         | 2,394         | 2,693         | 3,161         | 3,732         | 2.7                                    |
| Other                       | 2,003         | 2,038         | 2,452         | 2,740         | 3,057         | 3,443         | 3,898         | 2.3                                    |
| Middle East                 | <b>1,828</b>  | <b>1,894</b>  | <b>2,399</b>  | <b>2,608</b>  | <b>2,887</b>  | <b>3,171</b>  | <b>3,446</b>  | <b>2.2</b>                             |
| Africa                      | <b>1,120</b>  | <b>1,184</b>  | <b>1,438</b>  | <b>1,594</b>  | <b>1,760</b>  | <b>1,973</b>  | <b>2,239</b>  | <b>2.3</b>                             |
| Non-OECD Americas           | <b>1,242</b>  | <b>1,271</b>  | <b>1,398</b>  | <b>1,509</b>  | <b>1,608</b>  | <b>1,725</b>  | <b>1,865</b>  | <b>1.4</b>                             |
| Brazil                      | 475           | 501           | 549           | 599           | 650           | 704           | 764           | 1.5                                    |
| Other                       | 767           | 769           | 849           | 910           | 958           | 1,021         | 1,101         | 1.3                                    |
| <b>Total Non-OECD</b>       | <b>18,818</b> | <b>19,481</b> | <b>22,605</b> | <b>24,254</b> | <b>25,769</b> | <b>27,549</b> | <b>29,402</b> | <b>1.5</b>                             |
| <b>Total World</b>          | <b>31,839</b> | <b>32,271</b> | <b>35,631</b> | <b>37,432</b> | <b>39,103</b> | <b>41,096</b> | <b>43,217</b> | <b>1.0</b>                             |

<sup>a</sup>Includes the 50 States and the District of Columbia.

Notes: Totals may not equal sum of components due to independent rounding. The U.S. numbers include carbon dioxide emissions from electricity generation using nonbiogenic municipal solid waste and geothermal energy.

Sources: History: U.S. Energy Information Administration (EIA), International Energy Statistics database (as of May 2015), [www.eia.gov/ies](http://www.eia.gov/ies).

Projections: EIA, *Annual Energy Outlook 2015*, DOE/EIA-0383(2015) (Washington, DC: April 2015); AEO2015 National Energy Modeling System, run REF2015.D021915A, [www.eia.gov/aeo](http://www.eia.gov/aeo); and World Energy Projection System Plus (2016), run IEO2016-reference\_final\_2016.02.19\_115008.

**Table A11. World carbon dioxide emissions from liquids use by region, Reference case, 2011–40**  
(million metric tons carbon dioxide)

| Region                      | History       |               | Projections   |               |               |               |               | Average annual percent change, 2012–40 |
|-----------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--|
|                             | 2011          | 2012          | 2020          | 2025          | 2030          | 2035          | 2040          |  |
| <b>OECD</b>                 |               |               |               |               |               |               |               |  |
| OECD Americas               | <b>2,881</b>  | <b>2,838</b>  | <b>2,861</b>  | <b>2,812</b>  | <b>2,785</b>  | <b>2,794</b>  | <b>2,812</b>  | <b>0.0</b>                             |
| United States <sup>a</sup>  | 2,291         | 2,240         | 2,269         | 2,227         | 2,182         | 2,163         | 2,147         | -0.2                                   |
| Canada                      | 289           | 291           | 291           | 289           | 290           | 295           | 304           | 0.2                                    |
| Mexico and Chile            | 301           | 307           | 301           | 296           | 313           | 335           | 361           | 0.6                                    |
| OECD Europe                 | <b>1,969</b>  | <b>1,903</b>  | <b>1,823</b>  | <b>1,804</b>  | <b>1,815</b>  | <b>1,832</b>  | <b>1,854</b>  | <b>-0.1</b>                            |
| OECD Asia                   | <b>942</b>    | <b>980</b>    | <b>912</b>    | <b>897</b>    | <b>892</b>    | <b>892</b>    | <b>891</b>    | <b>-0.3</b>                            |
| Japan                       | 537           | 568           | 473           | 452           | 442           | 430           | 411           | -1.1                                   |
| South Korea                 | 248           | 253           | 263           | 264           | 267           | 272           | 280           | 0.4                                    |
| Australia and New Zealand   | 157           | 160           | 176           | 181           | 184           | 189           | 199           | 0.8                                    |
| <b>Total OECD</b>           | <b>5,792</b>  | <b>5,721</b>  | <b>5,595</b>  | <b>5,513</b>  | <b>5,492</b>  | <b>5,517</b>  | <b>5,557</b>  | <b>-0.1</b>                            |
| <b>Non-OECD</b>             |               |               |               |               |               |               |               |  |
| Non-OECD Europe and Eurasia | <b>698</b>    | <b>723</b>    | <b>807</b>    | <b>852</b>    | <b>860</b>    | <b>865</b>    | <b>855</b>    | <b>0.6</b>                             |
| Russia                      | 425           | 436           | 485           | 506           | 501           | 498           | 481           | 0.3                                    |
| Other                       | 273           | 286           | 322           | 346           | 358           | 366           | 374           | 1.0                                    |
| Non-OECD Asia               | <b>2,706</b>  | <b>2,786</b>  | <b>3,501</b>  | <b>3,854</b>  | <b>4,219</b>  | <b>4,632</b>  | <b>5,090</b>  | <b>2.2</b>                             |
| China                       | 1,257         | 1,306         | 1,665         | 1,806         | 1,932         | 2,038         | 2,124         | 1.8                                    |
| India                       | 414           | 435           | 573           | 657           | 756           | 889           | 1,055         | 3.2                                    |
| Other                       | 1,035         | 1,045         | 1,263         | 1,391         | 1,531         | 1,705         | 1,910         | 2.2                                    |
| Middle East                 | <b>1,050</b>  | <b>1,068</b>  | <b>1,401</b>  | <b>1,452</b>  | <b>1,560</b>  | <b>1,696</b>  | <b>1,814</b>  | <b>1.9</b>                             |
| Africa                      | <b>481</b>    | <b>495</b>    | <b>639</b>    | <b>714</b>    | <b>776</b>    | <b>858</b>    | <b>977</b>    | <b>2.5</b>                             |
| Non-OECD Americas           | <b>878</b>    | <b>902</b>    | <b>990</b>    | <b>1,052</b>  | <b>1,106</b>  | <b>1,170</b>  | <b>1,251</b>  | <b>1.2</b>                             |
| Brazil                      | 376           | 390           | 424           | 463           | 500           | 538           | 578           | 1.4                                    |
| Other                       | 502           | 512           | 566           | 589           | 606           | 632           | 672           | 1.0                                    |
| <b>Total Non-OECD</b>       | <b>5,812</b>  | <b>5,974</b>  | <b>7,339</b>  | <b>7,925</b>  | <b>8,521</b>  | <b>9,220</b>  | <b>9,987</b>  | <b>1.9</b>                             |
| <b>Total World</b>          | <b>11,604</b> | <b>11,695</b> | <b>12,934</b> | <b>13,439</b> | <b>14,013</b> | <b>14,737</b> | <b>15,543</b> | <b>1.0</b>                             |

<sup>a</sup>Includes the 50 States and the District of Columbia.

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

Sources: History: U.S. Energy Information Administration (EIA), International Energy Statistics database (as of May 2015), [www.eia.gov/ies](http://www.eia.gov/ies).

Projections: EIA, *Annual Energy Outlook 2015*, DOE/EIA-0383(2015) (Washington, DC: April 2015); AEO2015 National Energy Modeling System, run REF2015.D021915A, [www.eia.gov/aeo](http://www.eia.gov/aeo); and World Energy Projection System Plus (2016), run IEO2016-reference\_final\_2016.02.19\_115008.

**Table A12. World carbon dioxide emissions from natural gas use by region, Reference case, 2011–40**  
(million metric tons carbon dioxide)

| Region                      | History      |              | Projections  |              |              |               |               | Average annual percent change, 2012–40 |
|-----------------------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|--|
|                             | 2011         | 2012         | 2020         | 2025         | 2030         | 2035          | 2040          |  |
| <b>OECD</b>                 |              |              |              |              |              |               |               |  |
| OECD Americas               | <b>1,666</b> | <b>1,715</b> | <b>1,766</b> | <b>1,849</b> | <b>1,965</b> | <b>2,063</b>  | <b>2,167</b>  | <b>0.8</b>                             |
| United States <sup>a</sup>  | 1,305        | 1,363        | 1,394        | 1,432        | 1,497        | 1,538         | 1,586         | 0.5                                    |
| Canada                      | 205          | 205          | 213          | 234          | 261          | 287           | 310           | 1.5                                    |
| Mexico and Chile            | 156          | 147          | 158          | 184          | 207          | 238           | 271           | 2.2                                    |
| OECD Europe                 | <b>1,016</b> | <b>970</b>   | <b>1,046</b> | <b>1,122</b> | <b>1,218</b> | <b>1,291</b>  | <b>1,383</b>  | <b>1.3</b>                             |
| OECD Asia                   | <b>435</b>   | <b>446</b>   | <b>506</b>   | <b>556</b>   | <b>588</b>   | <b>641</b>    | <b>691</b>    | <b>1.6</b>                             |
| Japan                       | 251          | 260          | 288          | 316          | 321          | 332           | 337           | 0.9                                    |
| South Korea                 | 98           | 105          | 126          | 131          | 140          | 160           | 177           | 1.9                                    |
| Australia and New Zealand   | 86           | 80           | 92           | 109          | 127          | 149           | 177           | 2.9                                    |
| <b>Total OECD</b>           | <b>3,117</b> | <b>3,131</b> | <b>3,317</b> | <b>3,527</b> | <b>3,771</b> | <b>3,995</b>  | <b>4,241</b>  | <b>1.1</b>                             |
| <b>Non-OECD</b>             |              |              |              |              |              |               |               |  |
| Non-OECD Europe and Eurasia | <b>1,240</b> | <b>1,255</b> | <b>1,227</b> | <b>1,301</b> | <b>1,364</b> | <b>1,416</b>  | <b>1,415</b>  | <b>0.4</b>                             |
| Russia                      | 834          | 855          | 835          | 860          | 881          | 897           | 871           | 0.1                                    |
| Other                       | 405          | 400          | 392          | 441          | 484          | 519           | 544           | 1.1                                    |
| Non-OECD Asia               | <b>797</b>   | <b>825</b>   | <b>1,139</b> | <b>1,492</b> | <b>1,867</b> | <b>2,333</b>  | <b>2,788</b>  | <b>4.4</b>                             |
| China                       | 257          | 281          | 506          | 750          | 973          | 1,256         | 1,527         | 6.2                                    |
| India                       | 125          | 117          | 130          | 162          | 212          | 277           | 339           | 3.9                                    |
| Other                       | 415          | 426          | 504          | 580          | 682          | 800           | 923           | 2.8                                    |
| Middle East                 | <b>771</b>   | <b>817</b>   | <b>987</b>   | <b>1,142</b> | <b>1,310</b> | <b>1,456</b>  | <b>1,609</b>  | <b>2.5</b>                             |
| Africa                      | <b>219</b>   | <b>251</b>   | <b>306</b>   | <b>349</b>   | <b>429</b>   | <b>524</b>    | <b>621</b>    | <b>3.3</b>                             |
| Non-OECD Americas           | <b>285</b>   | <b>289</b>   | <b>329</b>   | <b>372</b>   | <b>411</b>   | <b>458</b>    | <b>509</b>    | <b>2.0</b>                             |
| Brazil                      | 50           | 60           | 76           | 84           | 94           | 106           | 122           | 2.6                                    |
| Other                       | 235          | 229          | 254          | 288          | 318          | 352           | 387           | 1.9                                    |
| <b>Total Non-OECD</b>       | <b>3,312</b> | <b>3,436</b> | <b>3,989</b> | <b>4,656</b> | <b>5,382</b> | <b>6,188</b>  | <b>6,943</b>  | <b>2.5</b>                             |
| <b>Total World</b>          | <b>6,429</b> | <b>6,566</b> | <b>7,306</b> | <b>8,183</b> | <b>9,153</b> | <b>10,183</b> | <b>11,184</b> | <b>1.9</b>                             |

<sup>a</sup>Includes the 50 States and the District of Columbia.

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

Sources: History: U.S. Energy Information Administration (EIA), International Energy Statistics database (as of May 2015), [www.eia.gov/ies](http://www.eia.gov/ies).

Projections: EIA, *Annual Energy Outlook 2015*, DOE/EIA-0383(2015) (Washington, DC: April 2015); AEO2015 National Energy Modeling System, run REF2015.D021915A, [www.eia.gov/aeo](http://www.eia.gov/aeo); and World Energy Projection System Plus (2016), run IEO2016-reference\_final\_2016.02.19\_115008.

**Table A13. World carbon dioxide emissions from coal use by region, Reference case, 2011–40**  
(million metric tons carbon dioxide)

| Region                      | History       |               | Projections   |               |               |               |               | Average annual percent change, 2012–40 |
|-----------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--|
|                             | 2011          | 2012          | 2020          | 2025          | 2030          | 2035          | 2040          |  |
| <b>OECD</b>                 |               |               |               |               |               |               |               |  |
| OECD Americas               | <b>2,000</b>  | <b>1,779</b>  | <b>1,931</b>  | <b>1,947</b>  | <b>1,912</b>  | <b>1,901</b>  | <b>1,896</b>  | <b>0.2</b>                             |
| United States <sup>a</sup>  | 1,876         | 1,657         | 1,824         | 1,840         | 1,822         | 1,808         | 1,804         | 0.3                                    |
| Canada                      | 68            | 68            | 53            | 54            | 36            | 38            | 33            | -2.5                                   |
| Mexico and Chile            | 56            | 54            | 53            | 53            | 54            | 55            | 58            | 0.3                                    |
| OECD Europe                 | <b>1,208</b>  | <b>1,251</b>  | <b>1,228</b>  | <b>1,244</b>  | <b>1,219</b>  | <b>1,195</b>  | <b>1,178</b>  | <b>-0.2</b>                            |
| OECD Asia                   | <b>892</b>    | <b>896</b>    | <b>943</b>    | <b>935</b>    | <b>927</b>    | <b>927</b>    | <b>932</b>    | <b>0.1</b>                             |
| Japan                       | 397           | 419           | 415           | 407           | 396           | 382           | 363           | -0.5                                   |
| South Korea                 | 296           | 281           | 345           | 347           | 355           | 371           | 394           | 1.2                                    |
| Australia and New Zealand   | 199           | 196           | 183           | 180           | 177           | 174           | 176           | -0.4                                   |
| <b>Total OECD</b>           | <b>4,100</b>  | <b>3,926</b>  | <b>4,102</b>  | <b>4,126</b>  | <b>4,058</b>  | <b>4,023</b>  | <b>4,005</b>  | <b>0.1</b>                             |
| <b>Non-OECD</b>             |               |               |               |               |               |               |               |  |
| Non-OECD Europe and Eurasia | <b>907</b>    | <b>961</b>    | <b>880</b>    | <b>885</b>    | <b>904</b>    | <b>917</b>    | <b>900</b>    | <b>-0.2</b>                            |
| Russia                      | 435           | 504           | 494           | 496           | 515           | 528           | 512           | 0.1                                    |
| Other                       | 472           | 457           | 386           | 389           | 389           | 389           | 388           | -0.6                                   |
| Non-OECD Asia               | <b>8,282</b>  | <b>8,584</b>  | <b>9,816</b>  | <b>10,159</b> | <b>10,300</b> | <b>10,518</b> | <b>10,804</b> | <b>0.8</b>                             |
| China                       | 6,605         | 6,791         | 7,690         | 7,815         | 7,731         | 7,585         | 7,400         | 0.3                                    |
| India                       | 1,124         | 1,226         | 1,441         | 1,574         | 1,726         | 1,995         | 2,338         | 2.3                                    |
| Other                       | 553           | 567           | 685           | 770           | 844           | 938           | 1,066         | 2.3                                    |
| Middle East                 | <b>7</b>      | <b>9</b>      | <b>11</b>     | <b>14</b>     | <b>17</b>     | <b>19</b>     | <b>22</b>     | <b>3.2</b>                             |
| Africa                      | <b>420</b>    | <b>438</b>    | <b>493</b>    | <b>531</b>    | <b>555</b>    | <b>590</b>    | <b>641</b>    | <b>1.4</b>                             |
| Non-OECD Americas           | <b>79</b>     | <b>80</b>     | <b>78</b>     | <b>84</b>     | <b>90</b>     | <b>97</b>     | <b>105</b>    | <b>1.0</b>                             |
| Brazil                      | 49            | 51            | 48            | 52            | 56            | 60            | 64            | 0.8                                    |
| Other                       | 30            | 29            | 30            | 32            | 34            | 37            | 41            | 1.3                                    |
| <b>Total Non-OECD</b>       | <b>9,695</b>  | <b>10,072</b> | <b>11,278</b> | <b>11,673</b> | <b>11,866</b> | <b>12,142</b> | <b>12,472</b> | <b>0.8</b>                             |
| <b>Total World</b>          | <b>13,795</b> | <b>13,998</b> | <b>15,379</b> | <b>15,799</b> | <b>15,924</b> | <b>16,165</b> | <b>16,478</b> | <b>0.6</b>                             |

<sup>a</sup>Includes the 50 States and the District of Columbia.

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

Sources: History: U.S. Energy Information Administration (EIA), International Energy Statistics database (as of May 2015), [www.eia.gov/ies](http://www.eia.gov/ies).

Projections: EIA, *Annual Energy Outlook 2015*, DOE/EIA-0383(2015) (Washington, DC: April 2015); AEO2015 National Energy Modeling System, run REF2015.D021915A, [www.eia.gov/aeo](http://www.eia.gov/aeo); and World Energy Projection System Plus (2016), run IEO2016-reference\_final\_2016.02.19\_115008.



**Table A14. World population by region, Reference case, 2011–40**  
(millions)

| Region                      | History      |              | Projections  |              |              |              |              | Average annual percent change, 2012–40 |
|-----------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--|
|                             | 2011         | 2012         | 2020         | 2025         | 2030         | 2035         | 2040         |  |
| <b>OECD</b>                 |              |              |              |              |              |              |              |  |
| OECD Americas               | <b>484</b>   | <b>489</b>   | <b>523</b>   | <b>544</b>   | <b>564</b>   | <b>581</b>   | <b>597</b>   | <b>0.7</b>                             |
| United States <sup>a</sup>  | 312          | 315          | 334          | 347          | 359          | 370          | 380          | 0.7                                    |
| Canada                      | 34           | 35           | 38           | 39           | 41           | 43           | 44           | 0.8                                    |
| Mexico and Chile            | 137          | 139          | 151          | 158          | 164          | 169          | 173          | 0.8                                    |
| OECD Europe                 | <b>548</b>   | <b>550</b>   | <b>565</b>   | <b>571</b>   | <b>576</b>   | <b>579</b>   | <b>581</b>   | <b>0.2</b>                             |
| OECD Asia                   | <b>203</b>   | <b>204</b>   | <b>207</b>   | <b>208</b>   | <b>208</b>   | <b>207</b>   | <b>206</b>   | <b>0.0</b>                             |
| Japan                       | 127          | 127          | 125          | 123          | 120          | 117          | 114          | -0.4                                   |
| South Korea                 | 49           | 49           | 51           | 52           | 52           | 52           | 52           | 0.2                                    |
| Australia and New Zealand   | 27           | 27           | 31           | 33           | 36           | 38           | 40           | 1.3                                    |
| <b>Total OECD</b>           | <b>1,235</b> | <b>1,243</b> | <b>1,295</b> | <b>1,323</b> | <b>1,348</b> | <b>1,368</b> | <b>1,384</b> | <b>0.4</b>                             |
| <b>Non-OECD</b>             |              |              |              |              |              |              |              |  |
| Non-OECD Europe and Eurasia | <b>343</b>   | <b>343</b>   | <b>343</b>   | <b>341</b>   | <b>337</b>   | <b>333</b>   | <b>329</b>   | <b>-0.1</b>                            |
| Russia                      | 143          | 143          | 140          | 137          | 133          | 130          | 127          | -0.4                                   |
| Other                       | 199          | 200          | 203          | 204          | 204          | 203          | 203          | 0.1                                    |
| Non-OECD Asia               | <b>3,691</b> | <b>3,730</b> | <b>4,013</b> | <b>4,159</b> | <b>4,278</b> | <b>4,373</b> | <b>4,443</b> | <b>0.6</b>                             |
| China                       | 1,373        | 1,381        | 1,435        | 1,450        | 1,453        | 1,448        | 1,434        | 0.1                                    |
| India                       | 1,229        | 1,244        | 1,360        | 1,425        | 1,482        | 1,530        | 1,569        | 0.8                                    |
| Other                       | 1,089        | 1,104        | 1,218        | 1,284        | 1,343        | 1,396        | 1,441        | 1.0                                    |
| Middle East                 | <b>210</b>   | <b>214</b>   | <b>249</b>   | <b>271</b>   | <b>293</b>   | <b>316</b>   | <b>340</b>   | <b>1.7</b>                             |
| Africa                      | <b>1,045</b> | <b>1,070</b> | <b>1,284</b> | <b>1,429</b> | <b>1,583</b> | <b>1,745</b> | <b>1,916</b> | <b>2.1</b>                             |
| Non-OECD Americas           | <b>467</b>   | <b>473</b>   | <b>515</b>   | <b>540</b>   | <b>562</b>   | <b>583</b>   | <b>601</b>   | <b>0.9</b>                             |
| Brazil                      | 198          | 200          | 212          | 218          | 223          | 227          | 230          | 0.5                                    |
| Other                       | 270          | 273          | 304          | 322          | 339          | 356          | 372          | 1.1                                    |
| <b>Total Non-OECD</b>       | <b>5,756</b> | <b>5,830</b> | <b>6,404</b> | <b>6,739</b> | <b>7,054</b> | <b>7,351</b> | <b>7,630</b> | <b>1.0</b>                             |
| <b>Total World</b>          | <b>6,991</b> | <b>7,073</b> | <b>7,699</b> | <b>8,063</b> | <b>8,402</b> | <b>8,719</b> | <b>9,014</b> | <b>0.9</b>                             |

<sup>a</sup>Includes the 50 States and the District of Columbia.

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

Sources: Oxford Economic Model (June 2015), [www.oxfordeconomics.com](http://www.oxfordeconomics.com) (subscription site); and EIA, *Annual Energy Outlook 2015*, DOE/EIA-0383(2015) (Washington, DC: April 2015); AEO2013 National Energy Modeling System, run REF2015.D021915A, [www.eia.gov/aeo](http://www.eia.gov/aeo).