

**Table K1. Industrial sector energy consumption by region and sector, Low Economic Growth case**

quadrillion British thermal units

Region and sector	2022	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2022–2050
<b>Americas</b>								
<b>United States</b>								
Energy-intensive manufacturing	17.5	16.8	17.4	17.6	17.9	18.3	18.8	0.3%
Non-energy-intensive manufacturing	2.9	2.8	2.8	2.8	2.9	3.0	3.1	0.3%
Nonmanufacturing	6.3	6.1	6.2	6.2	6.3	6.4	6.5	0.1%
Unclassified	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	--
<b>Total</b>	<b>26.6</b>	<b>25.6</b>	<b>26.2</b>	<b>26.5</b>	<b>27.0</b>	<b>27.6</b>	<b>28.3</b>	<b>0.2%</b>
<b>Canada</b>								
Energy-intensive manufacturing	2.1	2.2	2.6	2.8	3.2	3.5	3.8	2.2%
Non-energy-intensive manufacturing	1.5	1.5	1.6	1.7	1.8	1.9	2.0	1.0%
Nonmanufacturing	2.4	2.4	2.4	2.4	2.4	2.4	2.4	0.1%
<b>Total</b>	<b>6.0</b>	<b>6.1</b>	<b>6.6</b>	<b>6.9</b>	<b>7.4</b>	<b>7.8</b>	<b>8.2</b>	<b>1.1%</b>
<b>Mexico</b>								
Energy-intensive manufacturing	1.2	1.2	1.2	1.3	1.3	1.4	1.5	0.9%
Non-energy-intensive manufacturing	1.2	1.3	1.3	1.4	1.4	1.4	1.4	0.3%
Nonmanufacturing	0.6	0.7	0.7	0.7	0.8	0.9	0.9	1.3%
<b>Total</b>	<b>3.1</b>	<b>3.1</b>	<b>3.3</b>	<b>3.4</b>	<b>3.6</b>	<b>3.7</b>	<b>3.8</b>	<b>0.8%</b>
<b>Brazil</b>								
Energy-intensive manufacturing	3.6	3.5	3.7	3.7	3.8	3.8	3.7	0.1%
Non-energy-intensive manufacturing	1.7	1.8	1.9	2.0	2.1	2.1	2.2	0.9%
Nonmanufacturing	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.3%
<b>Total</b>	<b>6.1</b>	<b>6.1</b>	<b>6.4</b>	<b>6.6</b>	<b>6.7</b>	<b>6.8</b>	<b>6.7</b>	<b>0.4%</b>
<b>Other Americas</b>								
Energy-intensive manufacturing	2.3	2.3	2.4	2.5	2.6	2.7	2.9	0.8%
Non-energy-intensive manufacturing	2.2	2.3	2.5	2.8	3.0	3.2	3.4	1.5%
Nonmanufacturing	1.2	1.2	1.2	1.3	1.4	1.4	1.5	0.7%
<b>Total</b>	<b>5.7</b>	<b>5.8</b>	<b>6.2</b>	<b>6.6</b>	<b>6.9</b>	<b>7.3</b>	<b>7.7</b>	<b>1.1%</b>
<b>Europe and Eurasia</b>								
<b>Western Europe</b>								
Energy-intensive manufacturing	16.2	15.9	15.5	15.6	15.8	16.0	16.3	0.0%
Non-energy-intensive manufacturing	7.1	6.9	6.6	6.4	6.2	6.1	5.9	-0.6%
Nonmanufacturing	2.9	2.9	2.9	2.8	2.8	2.7	2.6	-0.4%
<b>Total</b>	<b>26.3</b>	<b>25.7</b>	<b>24.9</b>	<b>24.8</b>	<b>24.8</b>	<b>24.8</b>	<b>24.8</b>	<b>-0.2%</b>
<b>Russia</b>								
Energy-intensive manufacturing	9.5	9.7	9.5	9.4	9.5	9.7	9.8	0.1%
Non-energy-intensive manufacturing	3.7	4.0	3.9	3.9	4.0	4.1	4.2	0.4%
Nonmanufacturing	2.5	1.9	1.9	1.9	1.9	1.8	1.8	-1.1%
<b>Total</b>	<b>15.7</b>	<b>15.6</b>	<b>15.3</b>	<b>15.2</b>	<b>15.3</b>	<b>15.6</b>	<b>15.8</b>	<b>0.0%</b>
<b>Eastern Europe and Eurasia</b>								
Energy-intensive manufacturing	2.1	2.3	2.5	2.6	2.9	3.1	3.4	1.8%
Non-energy-intensive manufacturing	0.8	0.7	0.7	0.6	0.6	0.7	0.7	-0.2%
Nonmanufacturing	0.8	0.8	0.9	1.0	1.1	1.2	1.2	1.7%
<b>Total</b>	<b>3.6</b>	<b>3.9</b>	<b>4.1</b>	<b>4.3</b>	<b>4.6</b>	<b>5.0</b>	<b>5.4</b>	<b>1.4%</b>
<b>Asia Pacific</b>								
<b>Japan</b>								
Energy-intensive manufacturing	4.6	4.6	4.2	3.9	3.6	3.4	3.2	-1.3%
Non-energy-intensive manufacturing	1.4	1.4	1.4	1.3	1.2	1.1	1.0	-1.2%
Nonmanufacturing	0.4	0.3	0.3	0.3	0.3	0.3	0.3	-0.8%
<b>Total</b>	<b>6.4</b>	<b>6.4</b>	<b>5.9</b>	<b>5.4</b>	<b>5.1</b>	<b>4.8</b>	<b>4.5</b>	<b>-1.2%</b>
<b>South Korea</b>								
Energy-intensive manufacturing	4.4	4.4	4.4	4.3	4.2	4.1	4.0	-0.4%

Non-energy-intensive manufacturing	1.1	1.1	1.2	1.2	1.3	1.3	1.3	0.6%
Nonmanufacturing	0.2	0.2	0.2	0.2	0.2	0.2	0.1	-0.9%
<b>Total</b>	<b>5.7</b>	<b>5.7</b>	<b>5.7</b>	<b>5.7</b>	<b>5.6</b>	<b>5.5</b>	<b>5.4</b>	<b>-0.2%</b>
<b>Australia and New Zealand</b>								
Energy-intensive manufacturing	1.1	1.2	1.2	1.2	1.2	1.2	1.2	0.3%
Non-energy-intensive manufacturing	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.4%
Nonmanufacturing	1.0	1.0	1.0	1.1	1.1	1.2	1.3	0.9%
<b>Total</b>	<b>2.6</b>	<b>2.7</b>	<b>2.8</b>	<b>2.9</b>	<b>2.9</b>	<b>3.0</b>	<b>3.1</b>	<b>0.6%</b>
<b>China</b>								
Energy-intensive manufacturing	56.5	57.0	52.9	48.5	43.9	40.1	36.3	-1.6%
Non-energy-intensive manufacturing	22.4	23.4	23.2	22.7	21.6	20.4	18.7	-0.6%
Nonmanufacturing	5.8	5.8	5.6	5.4	5.1	4.9	4.7	-0.8%
<b>Total</b>	<b>84.8</b>	<b>86.2</b>	<b>81.6</b>	<b>76.6</b>	<b>70.6</b>	<b>65.4</b>	<b>59.7</b>	<b>-1.2%</b>
<b>India</b>								
Energy-intensive manufacturing	8.6	9.2	11.4	13.6	15.7	18.1	20.0	3.1%
Non-energy-intensive manufacturing	8.2	8.8	10.9	13.1	14.9	16.4	17.6	2.8%
Nonmanufacturing	1.8	2.0	2.2	2.4	2.5	2.6	2.6	1.3%
<b>Total</b>	<b>18.6</b>	<b>20.0</b>	<b>24.6</b>	<b>29.1</b>	<b>33.0</b>	<b>37.1</b>	<b>40.3</b>	<b>2.8%</b>
<b>Other Asia Pacific</b>								
Energy-intensive manufacturing	7.2	7.8	8.8	9.3	9.7	10.2	10.6	1.4%
Non-energy-intensive manufacturing	8.6	9.3	10.5	11.5	12.3	12.8	13.0	1.5%
Nonmanufacturing	1.8	1.8	1.8	1.9	2.0	2.0	2.1	0.5%
<b>Total</b>	<b>17.6</b>	<b>18.9</b>	<b>21.2</b>	<b>22.7</b>	<b>24.0</b>	<b>25.0</b>	<b>25.7</b>	<b>1.4%</b>
<b>Africa and Middle East</b>								
<b>Africa</b>								
Energy-intensive manufacturing	3.2	3.4	3.7	4.1	4.5	5.0	5.6	2.0%
Non-energy-intensive manufacturing	5.7	6.2	7.1	8.1	9.2	10.3	11.3	2.5%
Nonmanufacturing	1.4	1.3	1.3	1.2	1.2	1.2	1.2	-0.4%
<b>Total</b>	<b>10.3</b>	<b>10.9</b>	<b>12.1</b>	<b>13.4</b>	<b>14.9</b>	<b>16.5</b>	<b>18.1</b>	<b>2.0%</b>
<b>Middle East</b>								
Energy-intensive manufacturing	7.4	7.6	7.8	8.2	8.6	8.8	8.9	0.7%
Non-energy-intensive manufacturing	7.9	7.8	7.9	8.3	8.8	8.9	9.1	0.5%
Nonmanufacturing	2.7	3.3	3.8	3.9	4.2	4.7	5.1	2.3%
<b>Total</b>	<b>18.1</b>	<b>18.7</b>	<b>19.6</b>	<b>20.5</b>	<b>21.5</b>	<b>22.4</b>	<b>23.1</b>	<b>0.9%</b>
<b>World</b>								
Energy-intensive manufacturing	147.5	149.0	149.1	148.7	148.4	149.5	150.0	0.1%
Non-energy-intensive manufacturing	77.0	79.9	84.1	88.4	91.6	94.1	95.4	0.8%
Nonmanufacturing	32.6	32.4	33.4	33.6	34.1	34.8	35.3	0.3%
Unclassified	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	--
<b>Total</b>	<b>257.0</b>	<b>261.2</b>	<b>266.5</b>	<b>270.5</b>	<b>274.0</b>	<b>278.3</b>	<b>280.6</b>	<b>0.3%</b>

Data source: U.S. Energy Information Administration, World Energy Projection System (2023), run Im\_230821.151939 and Annual Energy Outlook 2023 (March 2023), [www.eia.gov/aeo](http://www.eia.gov/aeo)

Note: Totals may not equal sum of components due to independent rounding. Nonmanufacturing includes agriculture, construction, and mining; energy-intensive manufacturing includes food, pulp and paper, basic chemicals, refining, iron and steel, nonferrous metals, and nonmetallic minerals; non-energy-intensive manufacturing includes all other manufacturing industries.