

**Table K1. Industrial sector energy consumption by region and sector, Low Oil Price 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	16.9	17.6	18.1	18.5	18.8	19.5	0.4%
Non-energy-intensive manufacturing	2.9	2.9	3.0	3.1	3.2	3.4	3.5	0.8%
Nonmanufacturing	6.3	6.1	6.0	6.1	6.2	6.4	6.6	0.2%
Unclassified	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	--
<b>Total</b>	<b>26.6</b>	<b>25.7</b>	<b>26.5</b>	<b>27.2</b>	<b>27.8</b>	<b>28.5</b>	<b>29.5</b>	<b>0.4%</b>
<b>Canada</b>								
Energy-intensive manufacturing	2.1	2.2	2.7	3.0	3.4	3.8	4.1	2.5%
Non-energy-intensive manufacturing	1.5	1.6	1.7	1.8	2.0	2.1	2.2	1.4%
Nonmanufacturing	2.4	2.4	2.4	2.5	2.6	2.8	2.9	0.7%
<b>Total</b>	<b>6.0</b>	<b>6.2</b>	<b>6.8</b>	<b>7.3</b>	<b>8.0</b>	<b>8.6</b>	<b>9.3</b>	<b>1.6%</b>
<b>Mexico</b>								
Energy-intensive manufacturing	1.2	1.2	1.3	1.4	1.6	1.7	1.9	1.7%
Non-energy-intensive manufacturing	1.2	1.3	1.4	1.6	1.7	1.7	1.8	1.3%
Nonmanufacturing	0.6	0.7	0.8	0.9	0.9	0.9	0.9	1.4%
<b>Total</b>	<b>3.1</b>	<b>3.2</b>	<b>3.6</b>	<b>3.9</b>	<b>4.1</b>	<b>4.4</b>	<b>4.6</b>	<b>1.5%</b>
<b>Brazil</b>								
Energy-intensive manufacturing	3.6	3.6	3.9	4.2	4.3	4.3	4.3	0.7%
Non-energy-intensive manufacturing	1.7	1.8	2.0	2.2	2.4	2.5	2.6	1.5%
Nonmanufacturing	0.8	0.8	0.9	0.9	0.9	0.9	1.0	0.7%
<b>Total</b>	<b>6.1</b>	<b>6.2</b>	<b>6.8</b>	<b>7.3</b>	<b>7.6</b>	<b>7.7</b>	<b>7.9</b>	<b>0.9%</b>
<b>Other Americas</b>								
Energy-intensive manufacturing	2.3	2.3	2.5	2.8	3.0	3.2	3.5	1.5%
Non-energy-intensive manufacturing	2.2	2.4	2.7	3.0	3.4	3.8	4.3	2.4%
Nonmanufacturing	1.2	1.2	1.3	1.4	1.5	1.6	1.7	1.3%
<b>Total</b>	<b>5.7</b>	<b>5.9</b>	<b>6.5</b>	<b>7.2</b>	<b>7.9</b>	<b>8.7</b>	<b>9.5</b>	<b>1.8%</b>
<b>Europe and Eurasia</b>								
<b>Western Europe</b>								
Energy-intensive manufacturing	16.2	16.2	16.3	16.9	17.6	18.2	19.1	0.6%
Non-energy-intensive manufacturing	7.1	7.0	7.0	6.9	6.9	7.0	7.0	0.0%
Nonmanufacturing	2.9	3.0	3.0	3.0	3.1	3.1	3.1	0.2%
<b>Total</b>	<b>26.3</b>	<b>26.2</b>	<b>26.3</b>	<b>26.8</b>	<b>27.5</b>	<b>28.3</b>	<b>29.3</b>	<b>0.4%</b>
<b>Russia</b>								
Energy-intensive manufacturing	9.5	9.8	10.1	10.5	10.9	11.4	11.9	0.8%
Non-energy-intensive manufacturing	3.7	4.2	4.4	4.7	5.1	5.6	6.2	1.9%
Nonmanufacturing	2.5	1.9	2.0	2.0	2.1	2.1	2.1	-0.6%
<b>Total</b>	<b>15.6</b>	<b>15.9</b>	<b>16.5</b>	<b>17.2</b>	<b>18.0</b>	<b>19.1</b>	<b>20.2</b>	<b>0.9%</b>
<b>Eastern Europe and Eurasia</b>								
Energy-intensive manufacturing	2.1	2.3	2.7	2.9	3.3	3.7	4.2	2.5%
Non-energy-intensive manufacturing	0.8	0.8	0.7	0.7	0.8	0.9	0.9	0.8%
Nonmanufacturing	0.8	0.8	1.0	1.1	1.3	1.4	1.5	2.4%
<b>Total</b>	<b>3.6</b>	<b>3.9</b>	<b>4.4</b>	<b>4.8</b>	<b>5.3</b>	<b>6.0</b>	<b>6.7</b>	<b>2.2%</b>
<b>Asia Pacific</b>								
<b>Japan</b>								
Energy-intensive manufacturing	4.6	4.7	4.4	4.2	4.0	3.8	3.7	-0.8%
Non-energy-intensive manufacturing	1.4	1.5	1.4	1.3	1.3	1.2	1.2	-0.7%
Nonmanufacturing	0.4	0.3	0.3	0.3	0.3	0.3	0.3	-0.4%
<b>Total</b>	<b>6.4</b>	<b>6.5</b>	<b>6.2</b>	<b>5.8</b>	<b>5.6</b>	<b>5.4</b>	<b>5.2</b>	<b>-0.7%</b>
<b>South Korea</b>								
Energy-intensive manufacturing	4.4	4.5	4.7	4.6	4.6	4.6	4.6	0.1%

Non-energy-intensive manufacturing	1.1	1.2	1.3	1.3	1.4	1.4	1.5	1.1%
Nonmanufacturing	0.2	0.2	0.2	0.2	0.2	0.2	0.2	-0.5%
<b>Total</b>	<b>5.7</b>	<b>5.9</b>	<b>6.1</b>	<b>6.1</b>	<b>6.2</b>	<b>6.2</b>	<b>6.2</b>	<b>0.3%</b>
<b>Australia and New Zealand</b>								
Energy-intensive manufacturing	1.1	1.2	1.3	1.3	1.4	1.5	1.5	1.0%
Non-energy-intensive manufacturing	0.5	0.6	0.6	0.6	0.7	0.7	0.7	1.1%
Nonmanufacturing	1.0	1.0	1.0	1.1	1.2	1.3	1.4	1.3%
<b>Total</b>	<b>2.6</b>	<b>2.7</b>	<b>2.9</b>	<b>3.1</b>	<b>3.3</b>	<b>3.4</b>	<b>3.6</b>	<b>1.1%</b>
<b>China</b>								
Energy-intensive manufacturing	56.5	58.4	56.8	54.1	51.1	48.8	46.0	-0.7%
Non-energy-intensive manufacturing	22.4	24.2	25.4	26.2	26.3	26.2	25.4	0.5%
Nonmanufacturing	5.8	5.8	5.9	6.0	6.0	6.0	6.0	0.1%
<b>Total</b>	<b>84.8</b>	<b>88.4</b>	<b>88.1</b>	<b>86.3</b>	<b>83.4</b>	<b>81.0</b>	<b>77.4</b>	<b>-0.3%</b>
<b>India</b>								
Energy-intensive manufacturing	8.6	9.3	12.0	14.6	17.4	20.5	23.8	3.7%
Non-energy-intensive manufacturing	8.2	9.1	12.0	15.1	18.0	20.8	23.5	3.8%
Nonmanufacturing	1.8	2.0	2.4	2.7	2.9	3.2	3.4	2.2%
<b>Total</b>	<b>18.6</b>	<b>20.4</b>	<b>26.4</b>	<b>32.4</b>	<b>38.3</b>	<b>44.4</b>	<b>50.6</b>	<b>3.6%</b>
<b>Other Asia Pacific</b>								
Energy-intensive manufacturing	7.2	8.1	9.6	10.8	12.1	13.2	14.4	2.5%
Non-energy-intensive manufacturing	8.6	9.6	11.5	13.2	14.7	16.0	17.1	2.5%
Nonmanufacturing	1.8	1.8	1.9	2.0	2.1	2.3	2.4	1.0%
<b>Total</b>	<b>17.6</b>	<b>19.5</b>	<b>22.9</b>	<b>26.0</b>	<b>28.9</b>	<b>31.5</b>	<b>33.9</b>	<b>2.4%</b>
<b>Africa and Middle East</b>								
<b>Africa</b>								
Energy-intensive manufacturing	3.2	3.5	3.8	4.3	4.9	5.5	6.3	2.4%
Non-energy-intensive manufacturing	5.7	6.1	7.3	8.6	10.0	11.5	12.9	3.0%
Nonmanufacturing	1.4	1.3	1.4	1.4	1.5	1.6	1.6	0.6%
<b>Total</b>	<b>10.3</b>	<b>10.9</b>	<b>12.5</b>	<b>14.3</b>	<b>16.4</b>	<b>18.6</b>	<b>20.8</b>	<b>2.6%</b>
<b>Middle East</b>								
Energy-intensive manufacturing	7.4	7.5	7.8	8.2	8.6	9.0	9.3	0.8%
Non-energy-intensive manufacturing	7.9	7.8	8.1	8.7	9.3	9.7	9.9	0.8%
Nonmanufacturing	2.7	3.3	4.1	4.5	5.0	5.6	6.2	3.0%
<b>Total</b>	<b>18.0</b>	<b>18.5</b>	<b>19.9</b>	<b>21.4</b>	<b>22.9</b>	<b>24.2</b>	<b>25.4</b>	<b>1.2%</b>
<b>World</b>								
Energy-intensive manufacturing	147.5	151.8	157.4	162.0	166.5	172.2	178.0	0.7%
Non-energy-intensive manufacturing	76.9	81.8	90.4	99.1	107.1	114.5	120.8	1.6%
Nonmanufacturing	32.6	32.6	34.6	36.1	37.7	39.5	41.4	0.9%
Unclassified	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	--
<b>Total</b>	<b>257.0</b>	<b>266.1</b>	<b>282.3</b>	<b>297.1</b>	<b>311.2</b>	<b>326.1</b>	<b>340.1</b>	<b>1.0%</b>

Data source: U.S. Energy Information Administration, World Energy Projection System (2023), run Ip\_230823.090253 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.