

**Table F1. Total world delivered energy consumption by end-use sector and fuel, High Economic Growth case**

quadrillion British thermal units

Sector and fuel	2020	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2020–2050
<b>Residential</b>								
Liquid fuels	9.6	8.9	9.2	9.4	9.6	9.7	9.9	0.1
Natural gas	24.3	24.9	26.0	26.8	27.8	28.5	29.4	0.6
Coal	5.4	5.1	4.9	4.7	4.6	4.5	4.4	-0.7
Electricity	22.6	25.9	29.5	33.6	38.3	43.8	49.2	2.6
Renewables	1.5	1.5	1.6	1.6	1.6	1.6	1.7	0.4
<b>Total</b>	<b>63.5</b>	<b>66.3</b>	<b>71.1</b>	<b>76.1</b>	<b>82.0</b>	<b>88.1</b>	<b>94.7</b>	<b>1.3</b>
<b>Commercial</b>								
Liquid fuels	3.9	3.6	3.7	3.8	3.9	3.9	4.0	0.1
Natural gas	10.1	10.7	11.1	11.4	11.8	12.1	12.4	0.7
Coal	1.7	1.7	1.7	1.7	1.7	1.8	1.8	0.2
Electricity	17.2	19.8	21.9	24.1	26.6	29.4	32.1	2.1
Renewables	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4
<b>Total</b>	<b>33.1</b>	<b>36.1</b>	<b>38.6</b>	<b>41.3</b>	<b>44.3</b>	<b>47.4</b>	<b>50.5</b>	<b>1.4</b>
<b>Industrial</b>								
Liquid fuels	61.8	73.6	83.3	93.3	103.2	113.2	123.3	2.3
Natural gas	58.2	69.4	77.3	85.4	94.7	103.7	112.6	2.2
Coal	64.4	72.0	77.9	84.5	91.6	99.5	108.1	1.7
Electricity	36.1	43.3	47.4	52.2	57.3	62.4	67.3	2.1
Renewables	20.7	25.5	29.5	33.8	38.4	43.3	48.5	2.9
<b>Total</b>	<b>241.0</b>	<b>283.9</b>	<b>315.5</b>	<b>349.2</b>	<b>385.2</b>	<b>422.1</b>	<b>459.8</b>	<b>2.2</b>
<b>Transportation</b>								
Liquid fuels	102.3	122.5	129.1	135.5	142.9	151.1	159.4	1.5
Natural gas	4.1	5.2	6.5	8.1	10.1	12.6	15.4	4.5
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	1.6	2.1	2.8	4.0	5.3	6.7	8.2	5.6
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total</b>	<b>108.0</b>	<b>129.9</b>	<b>138.4</b>	<b>147.5</b>	<b>158.3</b>	<b>170.4</b>	<b>183.0</b>	<b>1.8</b>
<b>All end-use sectors</b>								
Liquid fuels	177.6	208.6	225.3	242.0	259.6	278.0	296.6	1.7
Natural gas	96.6	110.3	120.9	131.8	144.4	156.8	169.8	1.9
Coal	71.6	78.8	84.5	90.9	97.9	105.8	114.3	1.6
Electricity	77.4	91.1	101.6	113.8	127.6	142.2	156.8	2.4
Renewables	22.4	27.3	31.4	35.7	40.3	45.2	50.5	2.7
Delivered energy	445.6	516.1	563.6	614.1	669.8	728.0	788.0	1.9
Electricity-related losses	151.1	168.5	180.5	200.3	221.5	245.0	268.5	1.9
Discrepancy	4.9	4.8	6.3	7.8	9.2	10.8	12.2	3.1
<b>Total</b>	<b>601.6</b>	<b>689.4</b>	<b>750.4</b>	<b>822.2</b>	<b>900.5</b>	<b>983.8</b>	<b>1,068.7</b>	<b>1.9</b>
<b>Electric power</b>								
Liquid fuels	4.9	7.0	3.0	1.5	0.8	0.6	0.4	-7.8
Natural gas	51.9	54.1	59.2	57.1	58.7	60.3	63.1	0.7
Coal	87.1	91.0	86.9	91.8	93.5	96.1	101.5	0.5
Nuclear	26.8	30.0	31.0	32.4	32.9	32.0	32.2	0.6
Renewables	65.1	84.8	109.1	138.5	170.3	205.3	235.0	4.4
<b>Total</b>	<b>235.8</b>	<b>266.9</b>	<b>289.3</b>	<b>321.2</b>	<b>356.2</b>	<b>394.3</b>	<b>432.3</b>	<b>2.0</b>
<b>Total energy consumption</b>								
Liquid fuels	182.4	214.6	227.7	243.3	260.5	279.0	297.8	1.6
Natural gas	147.2	163.2	179.0	187.7	202.1	216.1	232.0	1.5
Coal	155.7	167.3	169.2	180.6	189.6	200.3	214.4	1.1

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quadrillion British thermal units

Sector and fuel	2020	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2020–2050
Nuclear	27.5	30.9	32.0	33.4	33.9	33.0	33.2	0.6
Renewables	88.7	113.5	142.6	177.1	214.3	255.3	291.2	4.0
<b>Total</b>	<b>601.6</b>	<b>689.4</b>	<b>750.4</b>	<b>822.2</b>	<b>900.5</b>	<b>983.8</b>	<b>1,068.7</b>	<b>1.9</b>

Sources: U.S. Energy Information Administration (EIA), World Energy Projection System (2021), run hm\_210719.163753; and EIA, *Annual Energy Outlook 2021*, (February 2021), [www.eia.gov/aeo](http://www.eia.gov/aeo)

Notes:

\* Totals may not equal sum of components due to independent rounding.

\* End-use sector electricity consumption does not include electrical system energy losses incurred in the generation, transmission, and distribution of electricity.

\* End-use sector delivered energy consumption does not include electrical system energy losses incurred in the generation, transmission, and distribution of electricity.

\* Electricity-related losses include energy losses during generation due to thermal efficiency, energy losses during transmission and distribution, and parasitic load.