

Table F1. Total world delivered energy consumption by end-use sector and fuel, Reference case

quadrillion British thermal units

Sector and fuel	2020	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2020–2050
Residential								
Liquid fuels	9.6	8.8	9.0	9.2	9.3	9.4	9.5	-0.1
Natural gas	24.3	24.7	25.6	26.1	26.7	27.0	27.6	0.4
Coal	5.4	5.1	5.0	4.9	4.8	4.7	4.7	-0.5
Electricity	22.6	25.2	28.1	31.4	35.1	39.2	43.1	2.2
Renewables	1.5	1.5	1.6	1.6	1.6	1.6	1.7	0.3
Total	63.5	65.5	69.3	73.1	77.5	81.9	86.5	1.0
Commercial								
Liquid fuels	3.9	3.5	3.6	3.7	3.8	3.8	3.8	-0.1
Natural gas	10.1	10.7	11.0	11.2	11.5	11.6	11.8	0.5
Coal	1.7	1.7	1.7	1.7	1.7	1.8	1.8	0.1
Electricity	17.2	19.4	21.0	22.6	24.4	26.3	28.1	1.7
Renewables	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4
Total	33.1	35.6	37.6	39.5	41.7	43.8	45.8	1.1
Industrial								
Liquid fuels	61.7	70.8	77.3	83.3	88.7	93.8	98.3	1.6
Natural gas	58.2	66.5	71.1	76.0	80.9	85.3	89.3	1.4
Coal	64.4	68.6	71.0	73.8	76.7	80.1	83.3	0.9
Electricity	36.1	41.6	43.9	46.6	49.2	51.6	53.6	1.3
Renewables	20.7	24.3	26.9	29.5	32.0	34.5	36.9	2.0
Total	241.0	271.8	290.4	309.3	327.4	345.1	361.3	1.4
Transportation								
Liquid fuels	102.1	119.6	123.1	125.9	128.9	132.7	135.8	1.0
Natural gas	4.1	5.1	6.0	7.2	8.8	10.5	12.5	3.8
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	1.6	2.0	2.7	3.8	5.0	6.3	7.6	5.4
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	107.8	126.7	131.9	136.9	142.7	149.5	155.9	1.2
All end-use sectors								
Liquid fuels	177.4	202.8	213.1	222.2	230.7	239.6	247.4	1.1
Natural gas	96.6	107.0	113.7	120.5	127.8	134.4	141.1	1.3
Coal	71.6	75.4	77.8	80.4	83.2	86.6	89.8	0.8
Electricity	77.4	88.3	95.8	104.4	113.7	123.4	132.3	1.8
Renewables	22.4	26.1	28.8	31.4	33.9	36.4	38.8	1.9
Delivered energy	445.4	499.7	529.2	558.8	589.2	620.3	649.5	1.3
Electricity-related losses	151.1	163.1	170.0	183.4	197.9	213.1	226.5	1.4
Discrepancy	5.0	4.7	6.0	7.2	8.3	9.4	10.4	2.4
Total	601.5	667.5	705.2	749.5	795.4	842.8	886.3	1.3
Electric power								
Liquid fuels	4.9	7.0	3.0	1.4	0.7	0.4	0.3	-9.0
Natural gas	52.0	52.7	54.0	52.1	51.7	52.0	53.4	0.1
Coal	87.0	84.9	80.5	84.1	87.1	89.8	88.8	0.1
Nuclear	26.8	30.0	30.7	32.1	32.4	31.7	31.7	0.6
Renewables	65.1	84.2	104.8	125.2	146.8	169.8	191.7	3.7
Total	235.8	258.7	273.0	295.0	318.8	343.6	365.9	1.5
Total energy consumption								
Liquid fuels	182.4	208.8	215.6	223.4	231.6	240.5	248.5	1.0
Natural gas	147.3	158.4	166.5	171.4	178.1	185.1	193.2	0.9
Coal	155.6	157.8	155.8	162.3	168.3	174.4	176.7	0.4
Nuclear	27.5	30.9	31.7	33.2	33.5	32.7	32.7	0.6
Renewables	88.7	111.7	135.6	159.3	183.9	210.1	235.2	3.3

Total	601.5	667.5	705.2	749.5	795.4	842.8	886.3	1.3
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Sources: U.S. Energy Information Administration (EIA), World Energy Projection System (2021), run r_210719.163829; and EIA, *Annual Energy Outlook 2021* , (February 2021), 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.