

Table F1. Total world delivered energy consumption by end-use sector and fuel, Low Oil Price 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	9.7	9.9	10.1	10.2	10.2	10.2	0.2
Natural gas	24.3	24.6	25.2	25.4	25.8	25.9	26.1	0.2
Coal	5.4	5.2	5.1	5.1	5.0	4.9	4.9	-0.4
Electricity	22.6	24.9	27.2	29.6	32.4	35.7	38.6	1.8
Renewables	1.5	1.5	1.5	1.5	1.5	1.6	1.6	0.2
Total	63.5	65.9	69.0	71.6	74.9	78.3	81.4	0.8
Commercial								
Liquid fuels	3.9	3.9	4.1	4.1	4.2	4.2	4.2	0.3
Natural gas	10.1	10.6	10.8	11.0	11.2	11.3	11.3	0.4
Coal	1.7	1.7	1.7	1.7	1.7	1.8	1.8	0.1
Electricity	17.2	19.0	20.3	21.3	22.5	24.0	25.1	1.3
Renewables	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4
Total	33.1	35.5	37.1	38.4	39.9	41.5	42.8	0.9
Industrial								
Liquid fuels	61.7	69.6	73.6	76.8	79.1	80.7	81.8	0.9
Natural gas	58.2	63.3	65.5	67.8	69.8	71.0	71.9	0.7
Coal	64.4	65.9	65.6	65.3	65.0	64.8	64.4	0.0
Electricity	36.1	40.3	41.2	42.4	43.3	43.9	44.0	0.7
Renewables	20.7	23.4	25.0	26.2	27.3	28.2	29.0	1.1
Total	241.0	262.5	270.9	278.5	284.4	288.6	291.2	0.6
Transportation								
Liquid fuels	102.1	118.4	120.1	121.1	122.7	125.1	127.5	0.7
Natural gas	4.1	4.7	5.2	5.6	6.0	6.0	6.1	1.4
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	1.6	1.9	2.4	3.0	3.7	4.4	4.9	3.9
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	107.8	125.0	127.7	129.7	132.4	135.4	138.5	0.8
All end-use sectors								
Liquid fuels	177.4	201.7	207.7	212.1	216.1	220.2	223.7	0.8
Natural gas	96.6	103.1	106.8	109.8	112.7	114.2	115.4	0.6
Coal	71.6	72.9	72.4	72.1	71.7	71.5	71.1	0.0
Electricity	77.4	86.2	91.1	96.2	101.9	107.9	112.7	1.3
Renewables	22.4	25.2	26.7	28.0	29.1	30.0	30.9	1.1
Delivered energy	445.4	489.0	504.7	518.2	531.5	543.8	553.8	0.7
Electricity-related losses	151.1	160.2	162.4	169.3	177.6	187.2	193.4	0.8
Discrepancy	5.0	4.6	5.7	6.6	7.3	8.1	8.8	1.9
Total	601.5	653.8	672.9	694.1	716.4	739.1	756.1	0.8
Electric power								
Liquid fuels	4.9	7.1	3.4	2.3	1.9	1.7	1.4	-4.1
Natural gas	51.9	49.5	49.6	48.1	46.1	45.3	45.6	-0.4
Coal	87.1	83.2	78.5	78.9	80.1	82.9	80.6	-0.3
Nuclear	26.8	30.0	31.0	32.4	32.7	31.7	31.6	0.6
Renewables	65.1	83.9	98.4	111.1	125.8	140.6	153.8	2.9
Total	235.8	253.6	260.8	272.7	286.6	302.2	313.0	0.9
Total energy consumption								
Liquid fuels	182.4	207.8	210.6	214.2	218.1	222.3	225.9	0.7
Natural gas	147.2	151.3	155.0	156.4	157.3	157.9	159.5	0.3
Coal	155.7	153.4	148.5	148.7	149.7	152.5	149.8	-0.1

Nuclear	27.5	30.9	32.0	33.4	33.7	32.7	32.6	0.6
Renewables	88.7	110.5	126.9	141.3	157.6	173.8	188.2	2.5
Total	601.5	653.8	672.9	694.1	716.4	739.1	756.1	0.8

Sources: U.S. Energy Information Administration (EIA), World Energy Projection System (2021), run lp_210720.081941; 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.

Table F2. Total OECD delivered energy consumption by end-use sector and fuel, Low Oil Price case

quadrillion British thermal units

Sector and fuel	2020	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2020–2050
Residential								
Liquid fuels	3.4	3.2	3.1	3.0	3.0	2.9	2.8	-0.7
Natural gas	12.2	12.0	11.9	11.8	11.7	11.7	11.7	-0.2
Coal	0.6	0.6	0.6	0.5	0.5	0.5	0.5	-0.8
Electricity	10.9	11.0	11.4	11.6	11.9	12.3	12.6	0.5
Renewables	0.6	0.6	0.5	0.5	0.5	0.5	0.5	-0.9
Total	27.8	27.4	27.5	27.5	27.6	27.8	28.0	0.0
Commercial								
Liquid fuels	2.2	2.2	2.2	2.2	2.2	2.2	2.2	-0.1
Natural gas	6.9	7.3	7.3	7.3	7.3	7.4	7.4	0.2
Coal	0.2	0.2	0.2	0.2	0.2	0.2	0.2	-0.9
Electricity	10.4	11.3	11.6	11.9	12.2	12.7	13.1	0.8
Renewables	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1
Total	19.9	21.1	21.5	21.8	22.1	22.6	23.0	0.5
Industrial								
Liquid fuels	25.7	28.3	29.2	30.0	30.6	31.1	31.8	0.7
Natural gas	23.5	24.6	25.1	25.9	26.8	27.6	28.5	0.6
Coal	7.2	7.9	7.7	7.7	7.7	7.8	7.8	0.3
Electricity	10.6	11.7	11.9	12.2	12.4	12.7	12.9	0.7
Renewables	6.4	6.7	6.8	6.8	6.9	6.9	7.0	0.3
Total	73.4	79.2	80.8	82.6	84.4	86.1	88.0	0.6
Transportation								
Liquid fuels	50.4	57.9	56.3	55.2	54.9	55.3	56.0	0.4
Natural gas	1.1	1.2	1.2	1.3	1.4	1.6	1.8	1.5
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	0.4	0.6	0.8	1.2	1.5	1.9	2.2	5.5
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	52.0	59.7	58.3	57.6	57.8	58.7	60.0	0.5
All end-use sectors								
Liquid fuels	81.8	91.6	90.8	90.4	90.6	91.5	92.8	0.4
Natural gas	43.9	45.0	45.5	46.3	47.3	48.3	49.3	0.4
Coal	8.0	8.6	8.5	8.4	8.4	8.4	8.5	0.2
Electricity	32.4	34.6	35.8	36.9	38.1	39.5	40.8	0.8
Renewables	7.1	7.5	7.5	7.5	7.5	7.5	7.6	0.2
Delivered energy	173.1	187.3	188.0	189.6	191.9	195.2	199.0	0.5
Electricity-related losses	58.7	59.7	60.0	61.6	62.5	64.0	65.2	0.4
Discrepancy	1.1	-0.8	-0.6	-0.5	-0.4	-0.4	-0.4	0.0
Total	232.9	246.2	247.5	250.6	254.0	258.9	263.9	0.4
Electric power								
Liquid fuels	1.0	1.9	1.0	0.6	0.5	0.4	0.4	-2.7
Natural gas	23.9	22.4	22.1	21.3	21.3	21.3	21.9	-0.3
Coal	18.5	15.1	13.8	13.6	13.4	14.4	13.0	-1.2
Nuclear	18.9	20.0	18.9	18.5	17.1	14.8	13.4	-1.1
Renewables	29.3	35.4	40.6	44.9	48.9	53.1	57.7	2.3
Total	91.6	94.8	96.3	99.0	101.2	104.0	106.6	0.5
Total energy consumption								
Liquid fuels	82.3	91.0	89.4	88.7	88.8	89.6	90.9	0.3
Natural gas	67.9	67.6	67.8	67.8	68.8	69.7	71.4	0.2
Coal	26.8	24.0	22.5	22.3	22.1	23.1	21.8	-0.7

Nuclear	19.3	20.5	19.4	19.0	17.5	15.1	13.7	-1.1
Renewables	36.7	43.0	48.4	52.8	56.9	61.3	66.1	2.0
Total	232.9	246.2	247.5	250.6	254.0	258.9	263.9	0.4

Sources: U.S. Energy Information Administration (EIA), World Energy Projection System (2021), run lp_210720.081941; 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.

Table F3. Delivered energy consumption in the United States by end-use sector and fuel, Low Oil Price case

quadrillion British thermal units

Sector and fuel	2020	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2020–2050
Residential								
Liquid fuels	0.9	0.9	0.9	0.8	0.8	0.8	0.7	-0.6
Natural gas	5.0	4.9	4.9	4.9	4.8	4.8	4.8	-0.1
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	5.1	5.1	5.3	5.4	5.7	5.9	6.2	0.7
Renewables	0.5	0.4	0.4	0.3	0.3	0.3	0.3	-1.7
Total	11.4	11.4	11.4	11.5	11.6	11.8	12.0	0.2
Commercial								
Liquid fuels	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.5
Natural gas	3.3	3.6	3.6	3.6	3.7	3.7	3.7	0.4
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.7
Electricity	4.3	4.7	4.8	4.9	5.0	5.3	5.6	0.9
Renewables	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Total	8.6	9.4	9.4	9.6	9.8	10.1	10.4	0.6
Industrial								
Liquid fuels	8.3	9.6	10.2	10.9	11.3	11.7	12.1	1.3
Natural gas	10.7	10.7	11.1	11.4	12.0	12.5	13.0	0.7
Coal	0.9	0.9	0.8	0.8	0.8	0.9	0.9	-0.2
Electricity	3.1	3.3	3.5	3.6	3.8	3.9	4.0	0.9
Renewables	2.4	2.5	2.5	2.6	2.7	2.8	2.9	0.6
Total	25.5	27.1	28.2	29.3	30.6	31.6	32.9	0.9
Transportation								
Liquid fuels	23.8	26.3	25.9	26.0	26.4	27.0	27.7	0.5
Natural gas	0.8	0.7	0.7	0.7	0.7	0.7	0.7	-0.4
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	0.0	0.1	0.1	0.1	0.2	0.3	0.4	8.0
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	24.6	27.1	26.7	26.8	27.2	27.9	28.7	0.5
All end-use sectors								
Liquid fuels	33.8	37.8	37.9	38.6	39.4	40.3	41.5	0.7
Natural gas	19.8	20.0	20.2	20.6	21.1	21.7	22.2	0.4
Coal	1.0	0.9	0.8	0.8	0.8	0.9	0.9	-0.2
Electricity	12.5	13.2	13.6	14.1	14.7	15.4	16.2	0.9
Renewables	3.0	3.0	3.0	3.1	3.1	3.2	3.3	0.3
Delivered energy	70.1	74.9	75.7	77.2	79.3	81.4	84.1	0.6
Electricity-related losses	23.3	23.4	23.0	23.3	23.7	24.2	25.0	0.2
Discrepancy	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	--
Total	92.9	97.9	98.2	100.0	102.5	105.2	108.7	0.5
Electric power								
Liquid fuels	0.2	0.1	0.1	0.1	0.1	0.1	0.1	-2.9
Natural gas	12.0	10.1	9.8	10.0	10.8	11.6	12.4	0.1
Coal	8.1	7.2	6.8	6.5	6.2	6.0	5.9	-1.1
Nuclear	8.2	7.8	6.8	6.6	6.5	6.3	6.1	-1.0
Renewables	7.3	11.4	12.9	14.2	14.9	15.7	16.7	2.8
Total	35.8	36.6	36.6	37.4	38.4	39.6	41.2	0.5
Total energy consumption								
Liquid fuels	33.6	37.5	37.6	38.3	39.1	40.0	41.1	0.7
Natural gas	31.8	30.1	30.1	30.5	31.9	33.3	34.7	0.3
Coal	9.1	8.1	7.7	7.3	7.0	6.9	6.8	-1.0

Nuclear	8.2	7.8	6.8	6.6	6.5	6.3	6.1	-1.0
Renewables	10.3	14.4	16.0	17.3	18.0	18.9	20.0	2.2
Total	92.9	97.9	98.2	100.0	102.5	105.2	108.7	0.5

Sources: U.S. Energy Information Administration (EIA), World Energy Projection System (2021), run Ip_210720.081941; 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.

Table F4. Delivered energy consumption in Canada by end-use sector and fuel, Low Oil Price case

quadrillion British thermal units

Sector and fuel	2020	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2020–2050
Residential								
Liquid fuels	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-0.7
Natural gas	0.8	0.7	0.7	0.7	0.7	0.7	0.7	-0.5
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-1.9
Electricity	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.2
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	1.5	1.4	1.4	1.4	1.4	1.4	1.4	-0.2
Commercial								
Liquid fuels	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.4
Natural gas	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.0
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	0.5	0.6	0.6	0.7	0.7	0.7	0.8	1.2
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	1.1	1.2	1.3	1.3	1.3	1.3	1.4	0.6
Industrial								
Liquid fuels	2.1	2.4	2.5	2.6	2.7	2.8	2.8	0.9
Natural gas	2.5	2.7	2.8	3.0	3.1	3.2	3.3	0.9
Coal	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.9
Electricity	0.6	0.7	0.7	0.7	0.8	0.8	0.8	1.0
Renewables	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.6
Total	5.8	6.4	6.6	6.9	7.2	7.4	7.5	0.9
Transportation								
Liquid fuels	2.4	2.7	2.6	2.5	2.5	2.5	2.5	0.1
Natural gas	0.1	0.2	0.2	0.2	0.2	0.2	0.2	1.3
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	0.0	0.0	0.0	0.0	0.0	0.1	0.1	11.2
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	2.6	2.8	2.8	2.8	2.7	2.7	2.8	0.2
All end-use sectors								
Liquid fuels	4.7	5.1	5.2	5.2	5.2	5.3	5.4	0.5
Natural gas	4.0	4.2	4.3	4.5	4.6	4.7	4.7	0.5
Coal	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.9
Electricity	1.8	2.0	2.0	2.1	2.2	2.3	2.4	0.9
Renewables	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.6
Delivered energy	11.0	11.9	12.1	12.3	12.6	12.9	13.1	0.6
Electricity-related losses	3.8	3.6	3.7	3.8	3.9	4.0	4.1	0.3
Discrepancy	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	--
Total	14.6	15.3	15.6	16.0	16.4	16.7	17.0	0.5
Electric power								
Liquid fuels	0.0	0.1	0.0	0.0	0.0	0.0	0.0	-16.4
Natural gas	0.4	0.5	0.5	0.6	0.7	0.8	0.8	2.0
Coal	0.3	0.3	0.1	0.0	0.0	0.0	0.0	-100.0
Nuclear	1.0	0.8	0.8	0.8	0.5	0.4	0.3	-3.9
Renewables	3.9	4.0	4.3	4.6	4.9	5.2	5.4	1.1
Total	5.7	5.6	5.7	5.9	6.1	6.4	6.5	0.5
Total energy consumption								
Liquid fuels	4.3	4.8	4.8	4.8	4.8	4.9	5.0	0.5
Natural gas	4.5	4.7	4.8	5.0	5.3	5.5	5.5	0.7
Coal	0.5	0.5	0.3	0.2	0.2	0.2	0.2	-3.0

Nuclear	1.0	0.8	0.9	0.8	0.6	0.4	0.3	-3.9
Renewables	4.4	4.5	4.9	5.2	5.5	5.8	6.1	1.1
Total	14.6	15.3	15.6	16.0	16.4	16.7	17.0	0.5

Sources: U.S. Energy Information Administration (EIA), World Energy Projection System (2021), run Ip_210720.081941; and EIA, *Annual Energy Outlook 2021*, (February 2021), www.eia.gov/aeo

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

Table F5. Delivered energy consumption in Mexico and Other OECD Americas by end-use sector and fuel, Low Oil Price case

quadrillion British thermal units

Sector and fuel	2020	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2020–2050
Residential								
Liquid fuels	0.3	0.2	0.2	0.2	0.2	0.2	0.2	-0.7
Natural gas	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-5.1
Electricity	0.4	0.5	0.5	0.5	0.6	0.6	0.7	1.5
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Total	0.8	0.8	0.8	0.9	0.9	0.9	1.0	0.8
Commercial								
Liquid fuels	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.4
Natural gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	0.2	0.2	0.3	0.3	0.3	0.3	0.4	2.2
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Total	0.3	0.3	0.4	0.4	0.4	0.5	0.5	1.6
Industrial								
Liquid fuels	1.2	1.3	1.4	1.5	1.6	1.7	1.9	1.5
Natural gas	1.5	1.8	2.0	2.3	2.4	2.6	2.7	1.9
Coal	0.2	0.2	0.3	0.3	0.3	0.3	0.3	1.6
Electricity	0.7	0.8	0.9	0.9	1.0	1.0	1.1	1.4
Renewables	0.4	0.5	0.5	0.6	0.6	0.6	0.6	1.7
Total	4.0	4.7	5.1	5.5	5.9	6.3	6.6	1.7
Transportation								
Liquid fuels	2.6	3.1	3.2	3.3	3.4	3.6	3.9	1.4
Natural gas	0.0	0.0	0.0	0.0	0.0	0.0	0.1	12.0
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.6
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	2.6	3.1	3.2	3.3	3.5	3.7	3.9	1.5
All end-use sectors								
Liquid fuels	4.1	4.8	5.0	5.2	5.4	5.7	6.0	1.3
Natural gas	1.6	1.9	2.1	2.4	2.6	2.7	2.8	1.9
Coal	0.2	0.2	0.3	0.3	0.3	0.3	0.3	1.6
Electricity	1.3	1.5	1.6	1.8	1.9	2.0	2.1	1.6
Renewables	0.4	0.5	0.5	0.6	0.6	0.6	0.7	1.7
Delivered energy	7.7	9.0	9.5	10.1	10.8	11.4	12.0	1.5
Electricity-related losses	2.7	2.9	2.8	3.0	3.0	3.2	3.3	0.7
Discrepancy	0.2	0.2	0.2	0.2	0.2	0.2	0.2	-0.4
Total	10.6	12.1	12.5	13.3	14.0	14.8	15.5	1.3
Electric power								
Liquid fuels	0.4	0.4	0.2	0.1	0.1	0.1	0.1	-4.3
Natural gas	1.7	2.1	2.1	2.2	2.0	1.8	1.7	0.1
Coal	0.5	0.3	0.3	0.3	0.3	0.5	0.3	-1.3
Nuclear	0.1	0.1	0.2	0.3	0.2	0.2	0.2	1.0
Renewables	1.4	1.5	1.7	1.9	2.2	2.7	3.1	2.7
Total	4.0	4.4	4.5	4.8	4.9	5.2	5.4	1.0
Total energy consumption								
Liquid fuels	4.6	5.3	5.2	5.3	5.5	5.8	6.1	1.0
Natural gas	3.4	4.1	4.3	4.6	4.7	4.6	4.6	1.1
Coal	0.7	0.5	0.6	0.6	0.6	0.9	0.7	-0.1
Nuclear	0.1	0.1	0.2	0.3	0.3	0.2	0.2	1.0
Renewables	1.8	2.0	2.2	2.6	2.9	3.4	3.9	2.5
Total	10.6	12.1	12.5	13.3	14.0	14.8	15.5	1.3

Sources: U.S. Energy Information Administration (EIA), World Energy Projection System (2021), run Ip_210720.081941; and EIA, *Annual Energy Outlook 2021*, (February 2021), www.eia.gov/aeo

Notes:

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.

Table F6. Delivered energy consumption in OECD Europe by end-use sector and fuel, Low Oil Price case

quadrillion British thermal units

Sector and fuel	2020	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2020–2050
Residential								
Liquid fuels	1.5	1.3	1.3	1.3	1.3	1.2	1.2	-0.7
Natural gas	5.4	5.2	5.3	5.2	5.1	5.1	5.1	-0.2
Coal	0.6	0.6	0.5	0.5	0.5	0.5	0.5	-0.8
Electricity	3.3	3.3	3.4	3.4	3.4	3.5	3.5	0.2
Renewables	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.8
Total	10.9	10.6	10.7	10.6	10.5	10.5	10.4	-0.2
Commercial								
Liquid fuels	0.7	0.6	0.6	0.6	0.6	0.6	0.6	-0.5
Natural gas	2.3	2.3	2.4	2.4	2.4	2.4	2.4	0.0
Coal	0.2	0.2	0.2	0.2	0.2	0.1	0.1	-1.0
Electricity	3.3	3.5	3.8	3.9	3.9	4.1	4.1	0.7
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Total	6.5	6.7	6.9	7.0	7.1	7.2	7.2	0.3
Industrial								
Liquid fuels	7.8	8.4	8.5	8.6	8.8	9.0	9.1	0.5
Natural gas	6.7	7.2	7.1	7.1	7.1	7.3	7.5	0.4
Coal	2.8	3.1	3.0	3.1	3.1	3.2	3.2	0.5
Electricity	4.0	4.4	4.4	4.5	4.5	4.6	4.7	0.5
Renewables	2.4	2.5	2.6	2.5	2.4	2.4	2.4	0.0
Total	23.7	25.6	25.6	25.7	26.0	26.4	26.9	0.4
Transportation								
Liquid fuels	15.2	18.4	17.5	16.7	16.2	16.0	16.0	0.2
Natural gas	0.1	0.2	0.2	0.3	0.4	0.4	0.6	4.9
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	0.3	0.3	0.5	0.8	1.1	1.3	1.5	6.2
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	15.6	19.0	18.3	17.7	17.6	17.8	18.1	0.5
All end-use sectors								
Liquid fuels	25.2	28.8	28.0	27.2	26.8	26.8	27.0	0.2
Natural gas	14.6	14.9	14.9	14.9	15.0	15.2	15.5	0.2
Coal	3.6	3.8	3.8	3.8	3.8	3.8	3.8	0.2
Electricity	10.8	11.6	12.1	12.5	12.9	13.4	13.7	0.8
Renewables	2.5	2.7	2.7	2.6	2.6	2.6	2.5	0.1
Delivered energy	56.7	61.9	61.4	61.1	61.1	61.8	62.7	0.3
Electricity-related losses	19.5	19.4	20.1	20.9	21.4	22.1	22.3	0.4
Discrepancy	1.3	0.1	0.2	0.3	0.2	0.3	0.3	-5.0
Total	77.6	81.4	81.7	82.2	82.8	84.1	85.2	0.3
Electric power								
Liquid fuels	0.2	0.6	0.4	0.3	0.2	0.2	0.2	0.0
Natural gas	5.0	5.4	5.4	5.1	4.7	4.5	4.5	-0.4
Coal	4.5	2.8	2.3	2.2	2.2	3.5	2.9	-1.5
Nuclear	7.5	7.8	7.2	7.0	6.5	4.9	3.9	-2.2
Renewables	13.6	14.9	17.5	19.3	21.2	22.9	25.1	2.1
Total	30.9	31.5	32.8	33.9	34.9	36.0	36.6	0.6
Total energy consumption								
Liquid fuels	26.0	28.7	27.7	26.8	26.4	26.4	26.5	0.1
Natural gas	19.5	20.3	20.3	19.9	19.7	19.6	19.9	0.1
Coal	8.1	6.7	6.1	6.1	6.1	7.4	6.8	-0.6

Nuclear	7.9	8.1	7.5	7.3	6.7	5.1	4.0	-2.2
Renewables	16.1	17.6	20.2	22.0	23.9	25.6	27.9	1.9
Total	77.6	81.4	81.7	82.2	82.8	84.1	85.2	0.3

Sources: U.S. Energy Information Administration (EIA), World Energy Projection System (2021), run lp_210720.081941; 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.

Table F7. Delivered energy consumption in Japan by end-use sector and fuel, Low Oil Price case

quadrillion British thermal units

Sector and fuel	2020	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2020–2050
Residential								
Liquid fuels	0.5	0.5	0.5	0.5	0.4	0.4	0.4	-0.7
Natural gas	0.4	0.4	0.4	0.4	0.4	0.4	0.4	-0.3
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Total	1.9	1.9	1.8	1.8	1.8	1.8	1.8	-0.3
Commercial								
Liquid fuels	0.5	0.4	0.4	0.4	0.4	0.4	0.4	-0.5
Natural gas	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.2
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Electricity	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.0
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Total	2.1	2.1	2.1	2.1	2.1	2.1	2.1	-0.1
Industrial								
Liquid fuels	2.8	2.8	2.6	2.4	2.2	2.1	1.9	-1.3
Natural gas	0.6	0.6	0.6	0.6	0.5	0.5	0.5	-0.9
Coal	1.8	2.0	1.9	1.8	1.7	1.6	1.6	-0.4
Electricity	0.8	0.9	0.9	0.9	0.8	0.8	0.8	-0.1
Renewables	0.5	0.5	0.4	0.4	0.4	0.3	0.3	-1.5
Total	6.5	6.8	6.5	6.1	5.7	5.3	5.0	-0.8
Transportation								
Liquid fuels	2.8	3.2	2.9	2.7	2.5	2.3	2.2	-0.9
Natural gas	0.0	0.0	0.0	0.0	0.0	0.0	0.1	12.3
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.9
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	2.9	3.3	3.0	2.8	2.6	2.4	2.3	-0.7
All end-use sectors								
Liquid fuels	6.6	6.9	6.4	6.0	5.5	5.2	4.9	-1.0
Natural gas	1.4	1.5	1.4	1.4	1.3	1.3	1.3	-0.3
Coal	1.8	2.0	1.9	1.8	1.7	1.6	1.6	-0.4
Electricity	3.1	3.3	3.2	3.2	3.2	3.1	3.1	0.0
Renewables	0.5	0.5	0.4	0.4	0.4	0.3	0.3	-1.4
Delivered energy	13.4	14.1	13.5	12.8	12.1	11.6	11.2	-0.6
Electricity-related losses	4.9	5.1	5.0	5.0	4.9	4.8	4.8	-0.1
Discrepancy	0.0	-0.6	-0.5	-0.5	-0.4	-0.4	-0.3	0.0
Total	18.3	18.6	18.0	17.3	16.7	16.1	15.6	-0.5
Electric power								
Liquid fuels	0.2	0.4	0.2	0.1	0.1	0.0	0.0	-4.2
Natural gas	2.9	2.5	2.5	2.2	1.9	1.7	1.5	-2.2
Coal	2.3	2.4	2.2	2.4	2.4	2.1	1.8	-0.9
Nuclear	0.6	1.2	1.4	1.4	1.3	1.1	1.1	2.0
Renewables	2.1	1.8	1.9	2.1	2.4	3.0	3.5	1.8
Total	8.0	8.3	8.3	8.2	8.1	7.9	7.8	-0.1
Total energy consumption								
Liquid fuels	6.6	6.6	6.0	5.4	5.0	4.6	4.4	-1.4
Natural gas	4.4	4.0	4.0	3.6	3.3	3.0	2.8	-1.4
Coal	4.2	4.5	4.2	4.3	4.2	3.9	3.4	-0.7

Nuclear	0.6	1.3	1.5	1.5	1.3	1.1	1.1	2.0
Renewables	2.5	2.3	2.3	2.5	2.8	3.4	3.9	1.4
Total	18.3	18.6	18.0	17.3	16.7	16.1	15.6	-0.5

Sources: U.S. Energy Information Administration (EIA), World Energy Projection System (2021), run Ip_210720.081941; and EIA, *Annual Energy Outlook 2021*, (February 2021), www.eia.gov/aeo

Notes:

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- * 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.

Table F8. Delivered energy consumption in South Korea by end-use sector and fuel, Low Oil Price case

quadrillion British thermal units

Sector and fuel	2020	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2020–2050
Residential								
Liquid fuels	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.0
Natural gas	0.4	0.4	0.4	0.4	0.4	0.4	0.4	-0.1
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.5
Electricity	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.5
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6
Total	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.1
Commercial								
Liquid fuels	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-0.8
Natural gas	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.0
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.3
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4
Total	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.2
Industrial								
Liquid fuels	2.7	2.9	3.1	3.0	3.0	3.0	2.9	0.3
Natural gas	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.7
Coal	1.1	1.3	1.3	1.3	1.3	1.4	1.4	0.8
Electricity	1.0	1.1	1.1	1.1	1.1	1.1	1.1	0.3
Renewables	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-0.1
Total	5.4	5.9	6.1	6.1	6.1	6.1	6.1	0.4
Transportation								
Liquid fuels	2.0	2.2	2.1	2.0	1.8	1.7	1.6	-0.7
Natural gas	0.0	0.1	0.1	0.1	0.1	0.1	0.1	4.0
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	0.0	0.0	0.0	0.0	0.1	0.1	0.1	1.2
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	2.1	2.3	2.2	2.1	2.0	1.9	1.8	-0.5
All end-use sectors								
Liquid fuels	5.0	5.3	5.4	5.2	5.1	4.9	4.8	-0.1
Natural gas	1.1	1.1	1.1	1.2	1.2	1.2	1.2	0.5
Coal	1.1	1.3	1.3	1.3	1.4	1.4	1.4	0.7
Electricity	1.8	2.0	2.1	2.1	2.1	2.1	2.0	0.4
Renewables	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Delivered energy	9.2	9.9	10.0	9.9	9.8	9.7	9.6	0.2
Electricity-related losses	2.8	3.5	3.6	3.6	3.6	3.6	3.6	0.9
Discrepancy	0.1	0.0	0.0	0.0	0.0	0.0	0.0	-2.9
Total	12.0	13.4	13.6	13.6	13.4	13.3	13.2	0.3
Electric power								
Liquid fuels	0.1	0.1	0.0	0.0	0.0	0.0	0.0	-11.7
Natural gas	1.3	1.2	1.2	1.0	0.9	0.8	0.8	-1.7
Coal	1.5	1.4	1.5	1.5	1.6	1.6	1.6	0.1
Nuclear	1.4	2.4	2.4	2.4	2.1	2.0	1.9	1.0
Renewables	0.2	0.3	0.5	0.8	1.1	1.3	1.3	5.8
Total	4.6	5.5	5.6	5.7	5.6	5.6	5.6	0.7
Total energy consumption								
Liquid fuels	4.9	5.3	5.2	5.0	4.9	4.8	4.6	-0.2
Natural gas	2.4	2.4	2.4	2.2	2.1	2.1	2.1	-0.6
Coal	2.7	2.7	2.9	2.9	3.0	3.0	3.1	0.4

Nuclear	1.5	2.5	2.5	2.5	2.1	2.0	2.0	1.0
Renewables	0.4	0.5	0.6	0.9	1.3	1.4	1.5	4.7
Total	12.0	13.4	13.6	13.6	13.4	13.3	13.2	0.3

Sources: U.S. Energy Information Administration (EIA), World Energy Projection System (2021), run lp_210720.081941; and EIA, *Annual Energy Outlook 2021*, (February 2021), www.eia.gov/aeo

Notes:

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- * 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.

Table F9. Delivered energy consumption in Australia and New Zealand by end-use sector and fuel, Low Oil Price case

quadrillion British thermal units

Sector and fuel	2020	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2020–2050
Residential								
Liquid fuels	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.7
Natural gas	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.7
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-5.2
Electricity	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.1
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Total	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.3
Commercial								
Liquid fuels	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural gas	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.7
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-1.2
Electricity	0.3	0.3	0.3	0.4	0.4	0.4	0.4	1.4
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Total	0.4	0.4	0.5	0.5	0.5	0.6	0.6	1.1
Industrial								
Liquid fuels	0.7	0.8	0.9	0.9	1.0	1.0	1.0	1.1
Natural gas	1.1	1.1	1.1	1.2	1.2	1.1	1.1	0.2
Coal	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Electricity	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.8
Renewables	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4
Total	2.6	2.7	2.8	2.9	3.0	3.0	3.0	0.6
Transportation								
Liquid fuels	1.6	2.0	2.0	2.1	2.1	2.1	2.1	1.0
Natural gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	0.0	0.0	0.0	0.1	0.1	0.1	0.1	2.6
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	1.7	2.0	2.1	2.2	2.2	2.2	2.3	1.0
All end-use sectors								
Liquid fuels	2.4	2.8	3.0	3.1	3.1	3.2	3.2	1.0
Natural gas	1.3	1.4	1.4	1.5	1.5	1.5	1.5	0.3
Coal	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Electricity	1.0	1.0	1.1	1.1	1.2	1.2	1.3	0.9
Renewables	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4
Delivered energy	5.1	5.6	5.9	6.1	6.3	6.3	6.4	0.7
Electricity-related losses	1.7	1.9	1.9	2.0	2.0	2.1	2.1	0.8
Discrepancy	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-0.5
Total	6.9	7.6	7.8	8.2	8.4	8.5	8.6	0.8
Electric power								
Liquid fuels	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-4.6
Natural gas	0.5	0.5	0.5	0.4	0.3	0.2	0.2	-2.7
Coal	1.3	0.8	0.6	0.7	0.7	0.7	0.7	-2.2
Nuclear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Renewables	0.8	1.5	1.8	2.0	2.2	2.4	2.5	3.7
Total	2.6	2.9	2.9	3.1	3.2	3.3	3.4	0.8
Total energy consumption								
Liquid fuels	2.4	2.8	2.9	3.0	3.1	3.1	3.2	0.9
Natural gas	1.9	1.9	1.9	1.9	1.8	1.7	1.7	-0.3
Coal	1.6	1.0	0.9	0.9	1.0	0.9	0.9	-1.8

Nuclear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Renewables	1.1	1.8	2.1	2.3	2.5	2.7	2.8	3.3
Total	6.9	7.6	7.8	8.2	8.4	8.5	8.6	0.8

Sources: U.S. Energy Information Administration (EIA), World Energy Projection System (2021), run lp_210720.081941; 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.

Table F10. Total Non-OECD delivered energy consumption by end-use sector and fuel, Low Oil Price case

quadrillion British thermal units

Sector and fuel	2020	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2020–2050
Residential								
Liquid fuels	6.3	6.5	6.8	7.0	7.2	7.3	7.4	0.6
Natural gas	12.1	12.6	13.3	13.6	14.1	14.2	14.4	0.6
Coal	4.8	4.6	4.6	4.5	4.5	4.4	4.4	-0.3
Electricity	11.7	13.8	15.9	17.9	20.5	23.5	26.0	2.7
Renewables	0.9	0.9	1.0	1.0	1.0	1.1	1.1	0.8
Total	35.8	38.5	41.5	44.1	47.3	50.5	53.4	1.3
Commercial								
Liquid fuels	1.7	1.7	1.8	1.9	2.0	2.0	2.1	0.6
Natural gas	3.1	3.3	3.5	3.7	3.8	3.9	3.9	0.8
Coal	1.5	1.5	1.5	1.5	1.6	1.6	1.6	0.2
Electricity	6.7	7.8	8.6	9.4	10.3	11.3	12.0	1.9
Renewables	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.8
Total	13.2	14.5	15.7	16.6	17.8	18.9	19.7	1.4
Industrial								
Liquid fuels	36.0	41.3	44.4	46.8	48.4	49.6	50.0	1.1
Natural gas	34.6	38.6	40.4	41.9	43.0	43.4	43.4	0.8
Coal	57.2	58.1	57.9	57.6	57.2	57.0	56.6	0.0
Electricity	25.5	28.6	29.3	30.2	30.8	31.2	31.1	0.7
Renewables	14.3	16.7	18.2	19.4	20.4	21.3	22.0	1.4
Total	167.6	183.3	190.1	195.9	200.0	202.5	203.1	0.6
Transportation								
Liquid fuels	51.7	60.5	63.8	66.0	67.8	69.8	71.4	1.1
Natural gas	2.9	3.5	4.0	4.3	4.6	4.4	4.3	1.3
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	1.1	1.3	1.5	1.8	2.2	2.5	2.8	3.0
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	55.7	65.4	69.4	72.1	74.5	76.7	78.5	1.1
All end-use sectors								
Liquid fuels	95.6	110.1	116.9	121.7	125.4	128.7	130.9	1.1
Natural gas	52.7	58.1	61.2	63.5	65.4	65.9	66.1	0.8
Coal	63.6	64.2	64.0	63.7	63.3	63.1	62.7	0.0
Electricity	45.1	51.6	55.4	59.3	63.8	68.4	71.8	1.6
Renewables	15.3	17.7	19.2	20.5	21.6	22.5	23.2	1.4
Delivered energy	272.3	301.7	316.7	328.7	339.6	348.6	354.8	0.9
Electricity-related losses	92.4	100.5	102.4	107.8	115.0	123.2	128.2	1.1
Discrepancy	3.9	5.4	6.3	7.0	7.8	8.5	9.2	2.9
Total	368.6	407.6	425.4	443.5	462.4	480.3	492.1	1.0
Electric power								
Liquid fuels	3.9	5.2	2.4	1.7	1.4	1.2	0.9	-4.6
Natural gas	28.0	27.1	27.5	26.7	24.8	23.9	23.6	-0.6
Coal	68.6	68.1	64.7	65.3	66.7	68.5	67.6	-0.1
Nuclear	7.9	9.9	12.1	13.9	15.6	16.9	18.2	2.8
Renewables	35.8	48.5	57.8	66.2	76.9	87.5	96.1	3.3
Total	144.2	158.8	164.5	173.7	185.4	198.1	206.4	1.2
Total energy consumption								
Liquid fuels	100.1	116.8	121.2	125.6	129.3	132.7	135.0	1.0
Natural gas	79.3	83.7	87.2	88.6	88.6	88.1	88.1	0.3
Coal	128.9	129.4	125.9	126.4	127.6	129.3	128.0	0.0

Nuclear	8.2	10.3	12.5	14.4	16.2	17.6	18.9	2.8
Renewables	52.1	67.5	78.5	88.5	100.7	112.5	122.1	2.9
Total	368.6	407.6	425.4	443.5	462.4	480.3	492.1	1.0

Sources: U.S. Energy Information Administration (EIA), World Energy Projection System (2021), run Ip_210720.081941; 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.

Table F11. Delivered energy consumption in Russia by end-use sector and fuel, Low Oil Price case

quadrillion British thermal units

Sector and fuel	2020	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2020–2050
Residential								
Liquid fuels	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.2
Natural gas	4.8	5.0	5.2	5.4	5.6	5.7	5.8	0.7
Coal	0.5	0.5	0.4	0.4	0.4	0.4	0.4	-0.9
Electricity	0.6	0.6	0.7	0.7	0.7	0.8	0.8	1.0
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	6.5	6.7	7.0	7.2	7.4	7.5	7.7	0.5
Commercial								
Liquid fuels	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-0.4
Natural gas	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.2
Coal	0.2	0.2	0.1	0.1	0.1	0.1	0.1	-1.1
Electricity	0.5	0.6	0.5	0.5	0.5	0.5	0.5	-0.1
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	1.6	1.6	1.6	1.6	1.5	1.5	1.5	-0.1
Industrial								
Liquid fuels	3.2	3.4	3.4	3.4	3.5	3.4	3.4	0.3
Natural gas	6.8	7.7	7.7	7.7	7.7	7.6	7.4	0.3
Coal	2.6	2.9	2.9	2.9	2.9	2.8	2.8	0.2
Electricity	1.8	2.0	2.0	2.0	2.0	1.9	1.9	0.2
Renewables	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.7
Total	14.5	16.1	16.2	16.3	16.2	16.0	15.7	0.3
Transportation								
Liquid fuels	3.0	3.0	2.9	2.8	2.7	2.6	2.5	-0.6
Natural gas	1.5	1.6	1.7	1.7	1.7	1.7	1.7	0.5
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	0.2	0.2	0.2	0.2	0.2	0.2	0.2	-1.0
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	4.7	4.9	4.8	4.7	4.6	4.5	4.4	-0.2
All end-use sectors								
Liquid fuels	6.9	7.2	7.1	7.0	6.9	6.8	6.8	-0.1
Natural gas	13.8	15.0	15.3	15.6	15.7	15.8	15.7	0.4
Coal	3.3	3.5	3.4	3.4	3.4	3.4	3.3	0.0
Electricity	3.1	3.4	3.4	3.5	3.4	3.4	3.3	0.2
Renewables	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.7
Delivered energy	27.3	29.4	29.5	29.7	29.7	29.6	29.3	0.2
Electricity-related losses	6.3	4.7	4.6	4.6	4.5	4.3	4.1	-1.4
Discrepancy	0.9	1.1	1.1	1.1	1.1	1.1	1.1	0.8
Total	34.4	35.1	35.2	35.4	35.3	35.0	34.6	0.0
Electric power								
Liquid fuels	0.0	0.1	0.1	0.1	0.1	0.1	0.1	1.6
Natural gas	5.9	4.5	4.5	4.2	4.1	4.0	3.8	-1.4
Coal	2.2	2.0	2.0	2.2	2.2	2.1	2.0	-0.2
Nuclear	2.1	2.4	2.5	2.5	2.5	2.5	2.4	0.5
Renewables	1.8	1.6	1.6	1.6	1.6	1.7	1.7	-0.2
Total	11.9	10.7	10.6	10.6	10.5	10.3	10.0	-0.6
Total energy consumption								
Liquid fuels	7.2	7.8	7.6	7.6	7.5	7.4	7.4	0.1
Natural gas	18.0	17.7	18.0	18.0	18.0	17.9	17.7	-0.1
Coal	5.1	5.2	5.2	5.4	5.3	5.2	5.1	0.0

Nuclear	2.1	2.5	2.6	2.6	2.6	2.6	2.5	0.5
Renewables	2.0	1.9	1.8	1.9	1.9	2.0	2.0	-0.1
Total	34.4	35.1	35.2	35.4	35.3	35.0	34.6	0.0

Sources: U.S. Energy Information Administration (EIA), World Energy Projection System (2021), run Ip_210720.081941; 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.

Table F12. Delivered energy consumption in Other Non-OECD Europe and Eurasia by end-use sector and fuel, Low Oil Price case

quadrillion British thermal units

Sector and fuel	2020	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2020–2050
Residential								
Liquid fuels	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.7
Natural gas	1.7	1.7	1.7	1.6	1.6	1.5	1.5	-0.3
Coal	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.7
Electricity	0.6	0.6	0.7	0.7	0.8	0.8	0.9	1.5
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Total	2.8	2.9	3.0	3.1	3.1	3.1	3.1	0.4
Commercial								
Liquid fuels	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Natural gas	0.9	1.0	1.1	1.1	1.1	1.2	1.2	1.1
Coal	0.1	0.1	0.1	0.1	0.1	0.2	0.2	2.0
Electricity	0.3	0.4	0.4	0.4	0.4	0.4	0.5	1.1
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Total	1.4	1.5	1.6	1.8	1.8	1.9	1.9	1.1
Industrial								
Liquid fuels	1.1	1.0	1.1	1.1	1.1	1.1	1.1	0.3
Natural gas	2.2	2.4	2.3	2.4	2.4	2.4	2.4	0.3
Coal	1.3	1.4	1.5	1.6	1.7	1.8	2.0	1.3
Electricity	0.9	1.0	1.0	1.0	1.0	1.1	1.1	0.7
Renewables	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-0.5
Total	5.6	6.0	5.9	6.1	6.3	6.5	6.7	0.6
Transportation								
Liquid fuels	2.3	2.5	2.5	2.6	2.7	2.7	2.8	0.7
Natural gas	0.2	0.3	0.3	0.3	0.3	0.3	0.3	1.0
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	0.1	0.1	0.1	0.0	0.0	0.0	0.0	-0.6
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	2.6	2.8	2.8	2.9	3.0	3.1	3.1	0.7
All end-use sectors								
Liquid fuels	3.6	3.8	3.9	4.0	4.1	4.2	4.3	0.5
Natural gas	5.0	5.3	5.3	5.4	5.4	5.4	5.5	0.3
Coal	1.8	2.0	2.0	2.2	2.3	2.5	2.6	1.2
Electricity	1.8	2.0	2.1	2.2	2.3	2.4	2.5	1.0
Renewables	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-0.4
Delivered energy	12.4	13.3	13.4	13.8	14.2	14.6	14.9	0.6
Electricity-related losses	5.2	4.2	4.2	4.3	4.4	4.4	4.5	-0.5
Discrepancy	0.5	0.6	0.7	0.7	0.7	0.7	0.7	1.0
Total	18.2	18.1	18.3	18.8	19.3	19.8	20.2	0.3
Electric power								
Liquid fuels	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3
Natural gas	2.3	2.2	2.1	2.0	1.8	1.7	1.6	-1.1
Coal	2.7	1.8	1.6	1.6	1.7	1.7	1.8	-1.3
Nuclear	1.3	1.3	1.5	1.5	1.5	1.5	1.7	0.9
Renewables	1.3	1.4	1.5	1.7	2.0	2.2	2.4	1.9
Total	7.6	6.8	6.8	7.0	7.2	7.3	7.5	0.0
Total energy consumption								
Liquid fuels	3.9	4.2	4.3	4.4	4.5	4.6	4.7	0.6
Natural gas	7.0	7.2	7.2	7.2	7.1	7.1	7.0	0.0
Coal	4.5	3.8	3.6	3.8	3.9	4.1	4.3	-0.2
Nuclear	1.3	1.4	1.5	1.6	1.6	1.6	1.7	0.9
Renewables	1.5	1.5	1.7	1.9	2.2	2.4	2.5	1.8
Total	18.2	18.1	18.3	18.8	19.3	19.8	20.2	0.3

Sources: U.S. Energy Information Administration (EIA), World Energy Projection System (2021), run Ip_210720.081941; and EIA, *Annual Energy Outlook 2021*, (February 2021), www.eia.gov/aeo

Notes:

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.

Table F13. Delivered energy consumption in China by end-use sector and fuel, Low Oil Price case

quadrillion British thermal units

Sector and fuel	2020	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2020–2050
Residential								
Liquid fuels	2.0	2.2	2.3	2.4	2.4	2.5	2.5	0.8
Natural gas	2.4	2.8	3.1	3.1	3.3	3.3	3.4	1.2
Coal	3.5	3.3	3.3	3.2	3.2	3.1	3.1	-0.5
Electricity	4.0	4.9	5.6	6.3	7.3	8.4	9.1	2.8
Renewables	0.8	0.9	0.9	0.9	1.0	1.0	1.1	0.8
Total	12.7	14.0	15.1	15.9	17.2	18.2	19.1	1.4
Commercial								
Liquid fuels	0.8	0.8	0.9	0.9	1.0	1.0	1.0	0.7
Natural gas	0.7	0.8	0.9	1.0	1.0	1.0	1.1	1.3
Coal	0.9	0.9	0.9	0.8	0.8	0.8	0.8	-0.5
Electricity	1.7	2.1	2.4	2.7	3.2	3.7	3.9	2.8
Renewables	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.8
Total	4.3	4.8	5.2	5.6	6.1	6.6	6.9	1.6
Industrial								
Liquid fuels	12.0	13.6	14.1	14.2	13.9	13.5	13.0	0.3
Natural gas	5.6	6.1	6.2	6.1	6.0	5.9	5.7	0.0
Coal	41.0	38.7	35.9	33.2	30.6	28.5	26.6	-1.4
Electricity	15.9	17.2	16.9	16.7	16.5	16.1	15.4	-0.1
Renewables	2.6	3.1	3.0	2.9	2.7	2.6	2.4	-0.3
Total	77.1	78.7	76.0	73.1	69.8	66.5	63.0	-0.7
Transportation								
Liquid fuels	14.2	16.2	16.5	15.9	15.1	14.6	14.1	0.0
Natural gas	0.7	0.9	1.2	1.3	1.3	1.1	0.8	0.5
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	0.7	0.8	1.0	1.3	1.5	1.7	1.8	3.3
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	15.5	17.9	18.7	18.5	18.0	17.3	16.6	0.2
All end-use sectors								
Liquid fuels	28.9	32.7	33.7	33.4	32.4	31.5	30.5	0.2
Natural gas	9.4	10.6	11.3	11.5	11.7	11.2	10.9	0.5
Coal	45.5	42.9	40.0	37.2	34.6	32.4	30.4	-1.3
Electricity	22.3	25.1	26.0	27.0	28.5	29.8	30.2	1.0
Renewables	3.5	4.0	4.0	4.0	3.8	3.7	3.6	0.0
Delivered energy	109.6	115.4	115.0	113.1	111.1	108.7	105.6	-0.1
Electricity-related losses	47.0	48.9	48.7	49.3	51.9	54.6	55.4	0.5
Discrepancy	-0.2	0.5	0.7	0.9	1.0	1.1	1.2	--
Total	156.4	164.8	164.4	163.2	164.0	164.4	162.2	0.1
Electric power								
Liquid fuels	0.0	0.1	0.1	0.0	0.0	0.0	0.0	-6.7
Natural gas	2.5	2.2	3.1	4.2	4.2	4.2	4.2	1.6
Coal	48.8	46.6	41.6	38.3	38.1	38.7	38.2	-0.8
Nuclear	3.3	4.4	5.7	7.1	8.3	9.5	10.5	3.9
Renewables	18.2	24.3	27.8	30.4	33.4	35.6	36.2	2.3
Total	72.9	77.7	78.3	79.9	84.0	87.9	89.0	0.7
Total energy consumption								
Liquid fuels	28.6	33.0	33.9	33.5	32.6	31.7	30.7	0.2
Natural gas	11.5	12.3	14.0	15.2	15.4	14.9	14.6	0.8
Coal	90.7	86.2	78.4	72.3	69.5	68.0	65.5	-1.1

Nuclear	3.5	4.6	5.9	7.4	8.7	9.9	10.9	3.9
Renewables	22.1	28.7	32.2	34.8	37.8	39.9	40.4	2.0
Total	156.4	164.8	164.4	163.2	164.0	164.4	162.2	0.1

Sources: U.S. Energy Information Administration (EIA), World Energy Projection System (2021), run lp_210720.081941; 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.

Table F15. Delivered energy consumption in Other Non-OECD Asia by end-use sector and fuel, Low Oil Price case

quadrillion British thermal units

Sector and fuel	2020	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2020–2050
Residential								
Liquid fuels	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.2
Natural gas	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0
Coal	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3
Electricity	1.8	2.1	2.3	2.5	2.7	3.0	3.2	2.0
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Total	3.0	3.3	3.5	3.8	4.0	4.3	4.6	1.4
Commercial								
Liquid fuels	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.7
Natural gas	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.8
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
Electricity	1.3	1.5	1.7	1.8	2.0	2.1	2.3	1.9
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Total	1.7	1.9	2.1	2.3	2.5	2.7	2.8	1.6
Industrial								
Liquid fuels	5.2	6.0	6.6	7.1	7.6	7.9	8.1	1.5
Natural gas	4.6	5.2	5.6	5.9	6.3	6.6	6.7	1.2
Coal	3.7	4.1	4.4	4.8	5.0	5.3	5.4	1.3
Electricity	2.0	2.4	2.6	2.8	3.1	3.2	3.4	1.7
Renewables	3.0	3.5	3.9	4.2	4.5	4.7	4.8	1.6
Total	18.6	21.3	23.1	24.9	26.5	27.6	28.4	1.4
Transportation								
Liquid fuels	10.4	12.4	13.5	14.5	15.4	16.1	16.6	1.6
Natural gas	0.1	0.1	0.2	0.2	0.3	0.4	0.5	5.3
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.6
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	10.5	12.6	13.7	14.7	15.7	16.5	17.1	1.6
All end-use sectors								
Liquid fuels	16.6	19.5	21.1	22.7	24.1	25.1	25.8	1.5
Natural gas	5.3	5.9	6.4	6.7	7.2	7.6	7.8	1.3
Coal	3.8	4.2	4.6	4.9	5.2	5.4	5.5	1.3
Electricity	5.1	5.9	6.6	7.2	7.8	8.4	8.9	1.9
Renewables	3.0	3.5	3.9	4.2	4.5	4.7	4.8	1.6
Delivered energy	33.9	39.1	42.4	45.8	48.7	51.1	52.8	1.5
Electricity-related losses	8.5	9.8	11.0	12.5	13.5	14.5	15.1	1.9
Discrepancy	0.2	0.9	1.0	1.1	1.2	1.3	1.3	7.1
Total	42.5	49.8	54.4	59.4	63.4	66.8	69.2	1.6
Electric power								
Liquid fuels	0.8	0.9	0.4	0.2	0.1	0.0	0.0	-17.9
Natural gas	4.6	4.5	4.5	4.0	3.5	3.1	3.0	-1.4
Coal	4.9	6.2	7.5	9.5	9.7	9.9	10.2	2.5
Nuclear	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Renewables	3.0	3.8	4.7	5.7	7.5	9.5	10.4	4.2
Total	13.6	15.8	17.5	19.7	21.3	22.9	24.0	1.9
Total energy consumption								
Liquid fuels	16.9	20.5	21.8	23.2	24.4	25.3	26.0	1.5
Natural gas	10.2	10.8	11.2	11.0	11.1	11.0	11.1	0.3
Coal	8.9	10.7	12.4	14.7	15.3	15.6	16.1	2.0

Nuclear	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Renewables	6.2	7.4	8.7	10.1	12.3	14.5	15.6	3.1
Total	42.5	49.8	54.4	59.4	63.4	66.8	69.2	1.6

Sources: U.S. Energy Information Administration (EIA), World Energy Projection System (2021), run Ip_210720.081941; 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.

Table F14. Delivered energy consumption in India by end-use sector and fuel, Low Oil Price case

quadrillion British thermal units

Sector and fuel	2020	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2020–2050
Residential								
Liquid fuels	1.2	1.3	1.4	1.5	1.5	1.5	1.6	1.0
Natural gas	0.0	0.1	0.1	0.1	0.1	0.1	0.1	1.9
Coal	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5
Electricity	1.3	1.8	2.5	3.3	4.1	5.2	6.2	5.4
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Total	2.6	3.2	4.0	5.0	5.8	6.9	8.0	3.8
Commercial								
Liquid fuels	0.1	0.1	0.2	0.2	0.2	0.2	0.2	2.0
Natural gas	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.5
Coal	0.2	0.2	0.3	0.3	0.3	0.3	0.4	2.2
Electricity	0.5	0.6	0.8	1.0	1.1	1.3	1.5	3.9
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Total	0.9	1.0	1.3	1.5	1.7	2.0	2.2	3.1
Industrial								
Liquid fuels	3.4	4.8	6.1	7.2	8.2	9.1	9.7	3.5
Natural gas	1.4	2.0	2.6	3.1	3.5	4.0	4.3	3.8
Coal	6.3	8.4	10.4	12.3	13.9	15.4	16.5	3.3
Electricity	2.3	3.2	4.0	4.6	5.2	5.6	5.9	3.2
Renewables	2.1	3.0	3.8	4.3	4.8	5.1	5.4	3.2
Total	15.5	21.4	26.8	31.6	35.6	39.2	41.8	3.4
Transportation								
Liquid fuels	4.0	5.7	7.1	8.5	9.7	10.8	11.8	3.7
Natural gas	0.3	0.3	0.4	0.4	0.5	0.5	0.6	2.6
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	0.1	0.1	0.2	0.2	0.3	0.4	0.6	6.0
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	4.3	6.1	7.6	9.1	10.5	11.8	12.9	3.7
All end-use sectors								
Liquid fuels	8.7	11.9	14.7	17.3	19.6	21.7	23.3	3.3
Natural gas	1.8	2.4	3.1	3.7	4.2	4.7	5.0	3.6
Coal	6.6	8.7	10.8	12.7	14.4	15.8	17.0	3.2
Electricity	4.2	5.7	7.4	9.1	10.7	12.5	14.1	4.2
Renewables	2.1	3.1	3.8	4.4	4.8	5.2	5.4	3.2
Delivered energy	23.3	31.8	39.8	47.2	53.7	59.8	64.8	3.5
Electricity-related losses	7.9	12.4	14.6	17.2	19.9	23.4	26.1	4.1
Discrepancy	0.3	0.7	0.9	1.1	1.3	1.5	1.8	6.3
Total	31.5	44.8	55.3	65.5	74.9	84.7	92.7	3.7
Electric power								
Liquid fuels	0.0	0.1	0.0	0.0	0.0	0.0	0.0	-10.3
Natural gas	0.5	0.5	0.5	0.4	0.4	0.3	0.3	-1.7
Coal	8.1	9.5	9.8	11.6	12.7	13.9	13.1	1.6
Nuclear	0.4	0.5	0.7	0.8	1.1	1.3	1.6	4.4
Renewables	3.0	7.4	10.9	13.4	16.4	20.3	25.2	7.4
Total	12.0	18.1	22.0	26.2	30.5	35.8	40.1	4.1
Total energy consumption								
Liquid fuels	8.7	12.2	15.0	17.7	20.0	22.1	23.8	3.4
Natural gas	2.1	2.7	3.4	3.8	4.2	4.6	4.9	2.9
Coal	15.0	18.7	21.1	24.9	27.7	30.4	30.8	2.4

Nuclear	0.4	0.6	0.8	0.8	1.1	1.4	1.6	4.4
Renewables	5.2	10.7	15.0	18.3	21.8	26.2	31.5	6.2
Total	31.5	44.8	55.3	65.5	74.9	84.7	92.7	3.7

Sources: U.S. Energy Information Administration (EIA), World Energy Projection System (2021), run Ip_210720.081941; 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.

Table F17. Delivered energy consumption in Africa by end-use sector and fuel, Low Oil Price case

quadrillion British thermal units

Sector and fuel	2020	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2020–2050
Residential								
Liquid fuels	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.5
Natural gas	0.5	0.5	0.6	0.7	0.7	0.7	0.8	1.5
Coal	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.5
Electricity	0.8	1.0	1.2	1.4	1.6	1.9	2.2	3.3
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Total	2.2	2.4	2.7	3.0	3.3	3.6	4.0	2.0
Commercial								
Liquid fuels	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Natural gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
Coal	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.1
Electricity	0.4	0.5	0.5	0.6	0.6	0.6	0.7	1.3
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Total	0.6	0.7	0.7	0.8	0.8	0.9	0.9	1.2
Industrial								
Liquid fuels	1.4	1.6	1.7	1.9	2.0	2.2	2.3	1.7
Natural gas	2.1	2.2	2.3	2.5	2.8	2.9	3.1	1.4
Coal	1.6	1.8	1.9	2.1	2.2	2.4	2.6	1.6
Electricity	1.0	1.0	1.1	1.2	1.3	1.4	1.5	1.5
Renewables	3.3	3.5	3.7	4.0	4.3	4.7	5.0	1.3
Total	9.4	10.1	10.8	11.7	12.7	13.6	14.5	1.5
Transportation								
Liquid fuels	4.8	5.9	6.5	7.0	7.6	8.2	8.8	2.0
Natural gas	0.0	0.0	0.1	0.1	0.1	0.1	0.1	2.8
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.9
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	4.9	6.0	6.6	7.1	7.7	8.3	8.9	2.0
All end-use sectors								
Liquid fuels	6.9	8.1	9.0	9.6	10.4	11.2	12.0	1.8
Natural gas	2.6	2.8	3.0	3.3	3.6	3.8	4.0	1.4
Coal	1.9	2.1	2.3	2.4	2.6	2.8	3.0	1.4
Electricity	2.3	2.6	2.8	3.2	3.6	4.0	4.4	2.2
Renewables	3.3	3.5	3.7	4.0	4.3	4.7	5.0	1.3
Delivered energy	17.1	19.1	20.8	22.6	24.5	26.4	28.3	1.7
Electricity-related losses	5.0	5.6	6.0	6.6	6.9	7.5	8.0	1.6
Discrepancy	0.8	1.0	1.1	1.2	1.3	1.5	1.7	2.6
Total	22.9	25.7	27.9	30.3	32.7	35.4	38.0	1.7
Electric power								
Liquid fuels	0.7	0.7	0.2	0.2	0.2	0.2	0.2	-4.7
Natural gas	3.1	3.3	3.3	3.5	3.2	3.2	3.3	0.2
Coal	1.9	1.7	1.9	2.0	2.0	2.0	1.6	-0.5
Nuclear	0.1	0.1	0.3	0.4	0.5	0.5	0.5	5.4
Renewables	1.4	2.3	3.1	3.7	4.5	5.6	6.8	5.3
Total	7.2	8.1	8.8	9.7	10.5	11.4	12.4	1.8
Total energy consumption								
Liquid fuels	8.4	9.8	10.2	10.9	11.7	12.7	13.6	1.6
Natural gas	5.7	5.9	6.2	6.7	6.8	6.9	7.2	0.8
Coal	3.9	3.9	4.3	4.5	4.7	4.8	4.7	0.6

Nuclear	0.1	0.1	0.3	0.5	0.6	0.6	0.6	5.4
Renewables	4.8	5.9	7.0	7.8	9.0	10.4	12.0	3.1
Total	22.9	25.7	27.9	30.3	32.7	35.4	38.0	1.7

Sources: U.S. Energy Information Administration (EIA), World Energy Projection System (2021), run lp_210720.081941; 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.

Table F16. Delivered energy consumption in the Middle East by end-use sector and fuel, Low Oil Price case

quadrillion British thermal units

Sector and fuel	2020	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2020–2050
Residential								
Liquid fuels	0.4	0.3	0.3	0.3	0.3	0.3	0.3	-0.6
Natural gas	1.8	1.7	1.8	1.8	1.9	1.9	1.9	0.2
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2
Electricity	1.7	1.8	1.9	1.9	2.0	2.2	2.3	1.0
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Total	3.8	3.8	4.0	4.0	4.2	4.4	4.5	0.5
Commercial								
Liquid fuels	0.1	0.0	0.0	0.0	0.0	0.0	0.0	-0.5
Natural gas	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.1
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	1.1	1.2	1.3	1.3	1.3	1.4	1.5	1.0
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Total	1.7	1.8	1.9	1.9	1.9	2.0	2.0	0.7
Industrial								
Liquid fuels	6.5	7.4	7.7	8.0	8.0	7.9	7.5	0.5
Natural gas	9.0	10.0	10.5	10.7	10.8	10.4	9.9	0.3
Coal	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-0.3
Electricity	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Total	16.1	18.1	18.9	19.3	19.5	18.9	18.0	0.4
Transportation								
Liquid fuels	6.8	7.2	7.0	6.7	6.6	6.5	6.4	-0.2
Natural gas	0.1	0.1	0.2	0.2	0.2	0.2	0.2	3.6
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-1.5
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	6.9	7.4	7.1	6.9	6.8	6.7	6.7	-0.1
All end-use sectors								
Liquid fuels	13.7	15.0	15.1	15.0	15.0	14.7	14.3	0.1
Natural gas	11.3	12.3	13.0	13.2	13.4	13.1	12.5	0.3
Coal	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-0.3
Electricity	3.3	3.5	3.8	3.7	3.9	4.1	4.2	0.9
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
Delivered energy	28.5	31.0	32.0	32.1	32.4	32.0	31.2	0.3
Electricity-related losses	6.2	8.6	7.1	6.9	7.3	7.6	7.8	0.7
Discrepancy	0.5	-0.4	-0.2	-0.1	0.0	0.0	0.1	-7.3
Total	35.2	39.2	38.9	38.9	39.6	39.6	39.0	0.3
Electric power								
Liquid fuels	1.9	2.9	1.4	1.1	0.9	0.8	0.6	-3.8
Natural gas	7.3	8.3	8.1	7.2	6.5	6.5	6.4	-0.4
Coal	0.0	0.0	0.0	0.0	0.1	0.0	0.4	--
Nuclear	0.1	0.4	0.6	0.8	0.9	0.9	0.9	9.0
Renewables	0.2	0.5	0.8	1.5	2.8	3.5	3.8	10.4
Total	9.5	12.1	10.8	10.6	11.1	11.6	12.0	0.8
Total energy consumption								
Liquid fuels	15.5	16.8	15.6	15.3	15.1	14.8	14.2	-0.3
Natural gas	19.2	21.2	21.7	21.1	20.5	20.1	19.5	0.1
Coal	0.1	0.1	0.1	0.1	0.3	0.1	0.5	4.3

Nuclear	0.1	0.4	0.6	0.8	0.9	0.9	0.9	9.0
Renewables	0.2	0.6	0.8	1.6	2.9	3.7	3.9	10.1
Total	35.2	39.2	38.9	38.9	39.6	39.6	39.0	0.3

Sources: U.S. Energy Information Administration (EIA), World Energy Projection System (2021), run Ip_210720.081941; 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.

Nuclear	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.6
Renewables	7.2	7.4	7.7	8.1	8.5	8.9	9.2	0.9
Total	14.9	16.3	16.7	16.8	17.0	17.3	17.6	0.6

Sources: U.S. Energy Information Administration (EIA), World Energy Projection System (2021), run Ip_210720.081941; 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.
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- * Electricity-related losses include energy losses during generation due to thermal efficiency, energy losses during transmission and distribution, and parasitic load.

Table F19. Delivered energy consumption in Other Non-OECD Americas by end-use sector and fuel, Low Oil Price case

quadrillion British thermal units

Sector and fuel	2020	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2020–2050
Residential								
Liquid fuels	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4
Natural gas	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.3
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.7
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Total	1.1	1.2	1.2	1.2	1.2	1.3	1.3	0.5
Commercial								
Liquid fuels	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
Natural gas	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	0.3	0.4	0.4	0.4	0.5	0.5	0.6	1.9
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Total	0.5	0.5	0.6	0.6	0.7	0.7	0.8	1.4
Industrial								
Liquid fuels	1.6	1.7	1.8	2.0	2.2	2.5	2.8	1.9
Natural gas	2.2	2.3	2.4	2.5	2.7	2.9	3.1	1.1
Coal	0.1	0.1	0.1	0.1	0.1	0.1	0.2	2.2
Electricity	0.4	0.5	0.5	0.5	0.6	0.6	0.7	1.6
Renewables	0.5	0.6	0.6	0.7	0.8	0.9	1.1	2.5
Total	4.8	5.1	5.5	5.9	6.4	7.0	7.9	1.6
Transportation								
Liquid fuels	2.6	3.3	3.6	3.7	3.9	4.2	4.5	1.9
Natural gas	0.0	0.0	0.0	0.0	0.1	0.1	0.1	2.7
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-2.6
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	2.6	3.4	3.6	3.8	4.0	4.3	4.6	1.9
All end-use sectors								
Liquid fuels	4.5	5.3	5.8	6.1	6.5	7.1	7.7	1.8
Natural gas	2.8	2.9	3.0	3.1	3.3	3.5	3.8	1.0
Coal	0.1	0.1	0.1	0.1	0.1	0.1	0.2	2.2
Electricity	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.4
Renewables	0.5	0.6	0.6	0.7	0.8	0.9	1.1	2.5
Delivered energy	9.1	10.2	10.9	11.5	12.3	13.3	14.5	1.6
Electricity-related losses	3.0	2.9	2.7	2.8	2.9	3.1	3.2	0.2
Discrepancy	0.6	0.7	0.8	0.8	0.9	0.9	1.0	1.6
Total	12.7	13.8	14.3	15.1	16.1	17.3	18.8	1.3
Electric power								
Liquid fuels	0.3	0.2	0.0	0.0	0.0	0.0	0.0	-15.9
Natural gas	1.4	1.1	1.0	0.8	0.8	0.8	0.8	-1.7
Coal	0.1	0.2	0.1	0.0	0.2	0.3	0.3	4.8
Nuclear	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.7
Renewables	2.3	2.6	2.8	3.2	3.3	3.4	3.7	1.6
Total	4.3	4.2	4.1	4.2	4.5	4.8	5.1	0.6
Total energy consumption								
Liquid fuels	5.1	6.0	6.2	6.5	7.0	7.6	8.3	1.6
Natural gas	4.4	4.2	4.2	4.2	4.4	4.6	4.9	0.3
Coal	0.2	0.3	0.2	0.1	0.3	0.5	0.5	3.7
Nuclear	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.7
Renewables	2.9	3.3	3.5	4.1	4.2	4.5	5.0	1.8

Total	12.7	13.8	14.3	15.1	16.1	17.3	18.8	1.3
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Sources: U.S. Energy Information Administration (EIA), World Energy Projection System (2021), run Ip_210720.081941; and EIA, *Annual Energy Outlook 2021*, (February 2021), www.eia.gov/aeo

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