

quadrillion British thermal units

								Average annual percentage change, 2020–2050
Region and fuel	2020	2025	2030	2035	2040	2045	2050	
World								
Motor gasoline and E85	44.5	50.1	51.8	53.0	54.6	55.9	56.6	0.8
Distillate fuel oil and biodiesel	40.3	45.2	45.2	44.7	44.7	45.5	46.6	0.5
Residual fuel oil	8.1	8.8	8.8	8.9	8.7	8.5	7.9	-0.1
Liquefied petroleum gas	0.5	0.6	0.5	0.5	0.4	0.3	0.3	-2.0
Jet fuel	8.3	14.4	16.3	18.2	20.0	21.9	24.0	3.6
Other liquid fuels	0.5	0.5	0.5	0.5	0.5	0.5	0.5	-0.1
Natural gas	4.1	5.1	6.0	7.2	8.8	10.5	12.5	3.8
Electricity	1.6	2.0	2.7	3.8	5.0	6.3	7.6	5.4
Total	107.8	126.7	131.9	136.9	142.7	149.5	155.9	1.2
Total OECD								
Motor gasoline and E85	23.3	25.0	24.2	23.6	23.2	23.0	22.8	-0.1
Distillate fuel oil and biodiesel	19.4	21.0	19.7	18.5	17.7	17.6	17.7	-0.3
Residual fuel oil	2.6	2.9	2.9	2.9	2.8	2.8	2.6	0.0
Liquefied petroleum gas	0.3	0.4	0.3	0.3	0.3	0.3	0.2	-1.5
Jet fuel	4.6	8.3	8.9	9.6	10.2	11.0	11.8	3.2
Other liquid fuels	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.0
Natural gas	1.1	1.2	1.3	1.5	1.8	2.1	2.6	2.7
Electricity	0.4	0.7	1.0	1.6	2.2	2.9	3.5	7.1
Total	52.0	59.7	58.7	58.3	58.6	59.9	61.5	0.6
United States								
Motor gasoline and E85	14.8	15.3	14.8	14.5	14.3	14.4	14.6	-0.1
Distillate fuel oil and biodiesel	6.1	6.4	6.2	6.1	6.0	6.1	6.2	0.0
Residual fuel oil	0.4	0.6	0.6	0.6	0.5	0.5	0.5	0.3
Liquefied petroleum gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5
Jet fuel	2.2	3.5	3.6	3.9	4.1	4.3	4.5	2.4
Other liquid fuels	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
Natural gas	0.8	0.8	0.8	0.8	0.9	1.0	1.2	1.3
Electricity	0.0	0.1	0.1	0.2	0.2	0.3	0.4	8.5
Total	24.6	26.9	26.3	26.1	26.3	26.9	27.5	0.4
Canada								
Motor gasoline and E85	1.5	1.5	1.4	1.3	1.2	1.1	1.1	-1.0
Distillate fuel oil and biodiesel	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.7
Residual fuel oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.9
Liquefied petroleum gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.8
Jet fuel	0.1	0.3	0.3	0.3	0.4	0.4	0.4	3.8
Other liquid fuels	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.9
Natural gas	0.1	0.2	0.2	0.2	0.2	0.3	0.3	2.4
Electricity	0.0	0.0	0.0	0.0	0.1	0.1	0.1	13.1
Total	2.6	2.8	2.8	2.8	2.8	2.8	2.9	0.4
Mexico and other OECD Americas								
Motor gasoline and E85	1.6	1.9	1.9	2.1	2.2	2.4	2.6	1.6
Distillate fuel oil and biodiesel	0.8	1.0	1.0	1.0	1.0	1.1	1.1	1.0
Residual fuel oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Liquefied petroleum gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-13.5
Jet fuel	0.1	0.3	0.4	0.4	0.5	0.5	0.6	5.2
Other liquid fuels	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Natural gas	0.0	0.0	0.0	0.0	0.0	0.1	0.1	13.3
Electricity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.3

Total	2.6	3.2	3.3	3.5	3.8	4.1	4.4	1.8
OECD Europe								
Motor gasoline and E85	3.0	3.7	3.7	3.5	3.3	3.0	2.6	-0.4
Distillate fuel oil and biodiesel	9.1	10.0	9.0	8.1	7.5	7.2	7.2	-0.8
Residual fuel oil	1.5	1.6	1.5	1.6	1.5	1.5	1.4	0.0
Liquefied petroleum gas	0.1	0.2	0.2	0.2	0.2	0.2	0.1	-0.1
Jet fuel	1.4	3.0	3.3	3.6	3.9	4.3	4.8	4.1
Other liquid fuels	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Natural gas	0.1	0.2	0.3	0.3	0.4	0.5	0.7	5.6
Electricity	0.3	0.4	0.7	1.1	1.6	2.1	2.6	8.1
Total	15.6	19.2	18.8	18.6	18.7	19.0	19.6	0.8
Japan								
Motor gasoline and E85	1.4	1.5	1.3	1.1	1.0	0.9	0.8	-1.6
Distillate fuel oil and biodiesel	0.9	1.0	0.9	0.8	0.8	0.8	0.8	-0.5
Residual fuel oil	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.0
Liquefied petroleum gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-11.1
Jet fuel	0.3	0.5	0.5	0.5	0.5	0.5	0.5	1.7
Other liquid fuels	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural gas	0.0	0.0	0.0	0.0	0.0	0.0	0.1	13.8
Electricity	0.1	0.1	0.1	0.1	0.1	0.2	0.2	2.5
Total	2.9	3.3	3.1	2.9	2.7	2.6	2.6	-0.4
South Korea								
Motor gasoline and E85	0.4	0.4	0.4	0.4	0.4	0.4	0.3	-1.0
Distillate fuel oil and biodiesel	0.9	0.9	0.8	0.8	0.7	0.7	0.6	-1.2
Residual fuel oil	0.4	0.4	0.4	0.4	0.4	0.4	0.4	-0.1
Liquefied petroleum gas	0.2	0.1	0.1	0.1	0.1	0.1	0.1	-3.8
Jet fuel	0.2	0.3	0.3	0.3	0.3	0.3	0.3	1.8
Other liquid fuels	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-4.8
Natural gas	0.0	0.1	0.1	0.1	0.1	0.1	0.1	4.4
Electricity	0.0	0.0	0.0	0.1	0.1	0.1	0.1	2.0
Total	2.1	2.3	2.2	2.1	2.0	1.9	1.9	-0.4
Australia and New Zealand								
Motor gasoline and E85	0.6	0.7	0.7	0.7	0.8	0.8	0.8	0.8
Distillate fuel oil and biodiesel	0.7	0.8	0.9	0.9	0.9	0.9	0.9	0.6
Residual fuel oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Liquefied petroleum gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-1.0
Jet fuel	0.2	0.4	0.5	0.5	0.6	0.6	0.7	4.6
Other liquid fuels	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.4
Natural gas	0.0	0.0	0.0	0.0	0.1	0.1	0.1	4.9
Electricity	0.0	0.0	0.1	0.1	0.1	0.1	0.1	3.9
Total	1.7	2.0	2.2	2.3	2.4	2.5	2.6	1.5
Total Non-OECD								
Motor gasoline and E85	21.2	25.1	27.6	29.4	31.4	32.9	33.8	1.6
Distillate fuel oil and biodiesel	20.9	24.2	25.5	26.3	26.9	27.9	28.9	1.1
Residual fuel oil	5.5	5.9	5.9	6.0	5.9	5.7	5.3	-0.1
Liquefied petroleum gas	0.2	0.2	0.2	0.1	0.1	0.1	0.1	-3.2
Jet fuel	3.7	6.2	7.4	8.7	9.8	11.0	12.2	4.1
Other liquid fuels	0.2	0.2	0.2	0.2	0.2	0.2	0.2	-0.2
Natural gas	2.9	3.8	4.7	5.7	6.9	8.3	9.9	4.1
Electricity	1.1	1.4	1.7	2.2	2.8	3.5	4.2	4.4
Total	55.7	67.0	73.2	78.6	84.0	89.6	94.4	1.8
Russia								
Motor gasoline and E85	1.4	1.4	1.4	1.4	1.4	1.3	1.2	-0.3
Distillate fuel oil and biodiesel	1.1	1.2	1.2	1.2	1.1	1.1	1.0	-0.2
Residual fuel oil	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-0.2
Liquefied petroleum gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Jet fuel	0.4	0.5	0.5	0.5	0.6	0.6	0.7	2.0

Other liquid fuels	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2
Natural gas	1.5	1.7	1.8	1.9	2.0	2.2	2.3	1.5
Electricity	0.2	0.3	0.3	0.2	0.2	0.2	0.2	-0.4
Total	4.7	5.1	5.2	5.3	5.4	5.5	5.5	0.6
Other Europe and Eurasia								
Motor gasoline and E85	0.7	0.8	0.9	0.9	1.0	1.1	1.2	1.6
Distillate fuel oil and biodiesel	1.1	1.3	1.3	1.3	1.3	1.4	1.4	0.7
Residual fuel oil	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Liquefied petroleum gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.4
Jet fuel	0.1	0.2	0.2	0.2	0.2	0.2	0.3	2.6
Other liquid fuels	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Natural gas	0.2	0.3	0.3	0.3	0.4	0.4	0.5	2.2
Electricity	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Total	2.6	2.9	3.0	3.2	3.4	3.5	3.7	1.2
China								
Motor gasoline and E85	6.4	8.0	8.5	8.1	7.5	6.8	6.1	-0.2
Distillate fuel oil and biodiesel	5.6	6.0	5.7	5.3	4.8	4.4	4.0	-1.2
Residual fuel oil	0.7	0.8	0.8	0.8	0.8	0.7	0.6	-0.3
Liquefied petroleum gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-6.7
Jet fuel	1.2	1.6	1.9	2.2	2.4	2.7	2.9	2.9
Other liquid fuels	0.1	0.2	0.2	0.2	0.1	0.1	0.1	-0.5
Natural gas	0.7	1.0	1.5	1.9	2.4	3.0	3.4	5.6
Electricity	0.7	0.9	1.1	1.5	1.8	2.2	2.4	4.4
Total	15.5	18.3	19.6	20.0	19.9	19.8	19.6	0.8
India								
Motor gasoline and E85	1.1	1.6	2.2	2.9	3.6	4.1	4.1	4.4
Distillate fuel oil and biodiesel	2.5	3.7	4.6	5.4	6.2	6.9	7.5	3.7
Residual fuel oil	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.8
Liquefied petroleum gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-2.7
Jet fuel	0.2	0.4	0.5	0.7	0.8	0.9	1.1	6.2
Other liquid fuels	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural gas	0.3	0.4	0.5	0.7	0.9	1.2	1.4	5.8
Electricity	0.1	0.1	0.2	0.3	0.5	0.8	1.2	8.8
Total	4.3	6.4	8.2	10.2	12.2	14.0	15.4	4.3
Other Asia								
Motor gasoline and E85	3.6	4.3	5.0	5.8	6.7	7.6	8.5	2.9
Distillate fuel oil and biodiesel	3.4	3.9	4.0	4.1	4.2	4.3	4.6	1.0
Residual fuel oil	2.5	2.7	2.7	2.7	2.6	2.5	2.2	-0.4
Liquefied petroleum gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-2.5
Jet fuel	0.9	1.7	2.2	2.5	2.9	3.1	3.4	4.6
Other liquid fuels	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.4
Natural gas	0.1	0.2	0.2	0.3	0.6	0.8	1.2	8.7
Electricity	0.0	0.0	0.0	0.0	0.0	0.1	0.1	8.4
Total	10.5	12.8	14.1	15.5	17.0	18.5	19.9	2.2
Middle East								
Motor gasoline and E85	3.1	3.1	2.9	2.9	3.1	3.2	3.3	0.1
Distillate fuel oil and biodiesel	2.0	2.3	2.3	2.3	2.4	2.4	2.4	0.6
Residual fuel oil	1.2	1.3	1.3	1.3	1.3	1.2	1.2	0.0
Liquefied petroleum gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2
Jet fuel	0.4	0.8	1.0	1.1	1.3	1.4	1.6	4.3
Other liquid fuels	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural gas	0.1	0.1	0.2	0.3	0.4	0.5	0.6	6.4
Electricity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-2.9
Total	6.9	7.6	7.7	7.9	8.3	8.7	9.0	0.9
Africa								
Motor gasoline and E85	1.9	2.5	3.0	3.4	3.9	4.4	4.9	3.2
Distillate fuel oil and biodiesel	2.5	2.8	3.1	3.3	3.6	4.0	4.4	2.0

Residual fuel oil	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.4
Liquefied petroleum gas	0.1	0.1	0.0	0.0	0.0	0.0	0.0	-17.3
Jet fuel	0.2	0.5	0.6	0.7	0.8	0.9	1.1	5.5
Other liquid fuels	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Natural gas	0.0	0.1	0.1	0.1	0.1	0.2	0.2	6.0
Electricity	0.0	0.0	0.0	0.0	0.0	0.1	0.1	2.4
Total	4.9	6.1	6.9	7.7	8.6	9.7	10.9	2.7

Brazil

Motor gasoline and E85	1.9	2.1	2.1	2.2	2.3	2.3	2.4	0.8
Distillate fuel oil and biodiesel	1.6	1.8	1.9	1.9	1.9	1.9	1.9	0.7
Residual fuel oil	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.5
Liquefied petroleum gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Jet fuel	0.1	0.3	0.3	0.4	0.4	0.5	0.6	5.2
Other liquid fuels	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Natural gas	0.0	0.1	0.1	0.1	0.1	0.1	0.2	4.1
Electricity	0.0	0.0	0.0	0.0	0.0	0.1	0.1	2.9
Total	3.8	4.4	4.6	4.7	4.9	5.1	5.3	1.1

Other Non-OECD Americas

Motor gasoline and E85	1.0	1.4	1.6	1.7	1.8	2.0	2.2	2.5
Distillate fuel oil and biodiesel	1.0	1.3	1.4	1.4	1.5	1.6	1.7	1.6
Residual fuel oil	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5
Liquefied petroleum gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Jet fuel	0.1	0.3	0.4	0.4	0.5	0.6	0.7	5.2
Other liquid fuels	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Natural gas	0.0	0.0	0.1	0.1	0.1	0.1	0.2	5.2
Electricity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-3.5
Total	2.6	3.5	3.8	4.1	4.4	4.7	5.1	2.2

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.

* Quantities for the United States, OECD, and world include energy used for U.S. military transportation and the energy content of lubricants.

Table L2. Transportation sector passenger transport energy consumption by region and mode, Reference case

quadrillion British thermal units

Region and mode	2020	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2020–2050
								2020–2050
OECD								
Light-duty vehicles	24.6	26.8	25.4	24.4	23.8	23.7	23.6	-0.1
Air	3.5	7.1	7.7	8.3	9.0	9.7	10.5	3.8
Buses	1.0	1.4	1.5	1.5	1.5	1.5	1.5	1.2
Two- and three- wheeled vehicles	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.0
Rail	0.3	0.4	0.4	0.4	0.4	0.3	0.3	0.6
Total	29.5	35.9	35.1	34.7	34.8	35.4	36.1	0.7
Non-OECD								
Light-duty vehicles	16.5	20.4	22.8	24.9	27.1	29.1	30.6	2.1
Air	2.9	5.3	6.4	7.6	8.7	9.8	11.0	4.6
Buses	4.5	6.2	7.0	7.6	7.9	8.2	8.5	2.1
Two- and three- wheeled vehicles	3.2	3.5	3.7	3.8	3.9	4.0	4.0	0.8
Rail	0.2	0.3	0.3	0.3	0.3	0.3	0.3	1.3
Total	27.4	35.6	40.2	44.1	48.0	51.5	54.5	2.3
World								
Light-duty vehicles	41.1	47.2	48.1	49.2	51.0	52.8	54.2	0.9
Air	6.4	12.4	14.1	15.9	17.6	19.5	21.5	4.1
Buses	5.5	7.6	8.5	9.0	9.4	9.7	10.0	2.0
Two- and three- wheeled vehicles	3.4	3.7	3.9	4.0	4.1	4.2	4.2	0.7
Rail	0.5	0.6	0.7	0.7	0.7	0.7	0.7	1.0
Total	56.9	71.5	75.3	78.8	82.8	86.8	90.7	1.6

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.

Table L3. Transportation sector freight transport energy consumption by region and mode, Reference case

quadrillion British thermal units

Region and mode	2020	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2020–2050
								2020–2050
OECD								
Heavy-duty trucks	15.0	15.8	15.5	15.3	15.5	16.1	16.8	0.4
Rail	1.0	1.1	1.1	1.2	1.2	1.2	1.2	0.7
Marine vessels	4.0	4.4	4.4	4.5	4.5	4.6	4.6	0.4
Natural gas pipeline	1.0	0.9	0.9	0.9	0.9	1.0	1.0	0.1
Air freighter	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.5
Total	21.7	22.9	22.7	22.7	22.9	23.6	24.4	0.4
Non-OECD								
Heavy-duty trucks	16.7	18.7	19.8	20.7	21.9	23.6	25.3	1.4
Rail	1.3	1.5	1.6	1.6	1.6	1.6	1.6	0.7
Marine vessels	7.7	8.4	8.6	8.9	9.0	9.1	9.1	0.5
Natural gas pipeline	1.8	2.0	2.1	2.2	2.4	2.5	2.6	1.3
Air freighter	0.8	0.9	1.0	1.1	1.1	1.2	1.2	1.4
Total	28.4	31.4	33.0	34.5	36.0	38.1	39.9	1.1
World								
Heavy-duty trucks	31.7	34.5	35.3	36.0	37.4	39.7	42.1	1.0
Rail	2.3	2.5	2.7	2.8	2.8	2.8	2.8	0.7
Marine vessels	11.8	12.7	13.0	13.4	13.5	13.7	13.7	0.5
Natural gas pipeline	2.7	2.9	3.0	3.1	3.3	3.5	3.6	0.9
Air freighter	1.5	1.6	1.8	1.9	1.9	2.0	2.0	1.0
Total	50.0	54.3	55.7	57.2	59.0	61.7	64.3	0.8

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.

Table L4. Aircraft efficiency, Reference case

seat miles per gallon

Aircraft type and vintage	2020	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2020–2050
Narrow body aircraft								
New	77.0	79.9	83.6	87.4	91.5	95.9	100.5	0.9
Stock	73.3	71.8	74.9	78.8	82.8	86.9	90.8	0.7
Wide body aircraft								
New	100.0	104.2	109.7	115.5	121.7	128.2	135.1	1.0
Stock	95.5	94.3	97.5	102.1	108.8	116.2	122.6	0.8
Regional jets								
New	59.3	61.9	65.3	68.8	72.5	76.3	80.3	1.0
Stock	53.9	52.2	54.2	57.8	61.8	66.1	70.3	0.9
Average aircraft								
New	79.6	85.0	89.1	93.5	98.0	102.8	107.9	1.0
Stock	75.3	76.1	79.2	83.4	88.0	93.0	97.5	0.9

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.

Table L5. Passenger air travel demand, Reference case

billion revenue-passenger-miles

Region and type	2020-2050							Average annual percentage change, 2020-2050
	2020	2025	2030	2035	2040	2045	2050	
United States								
Domestic	370	766	834	929	1,016	1,126	1,235	4.1
International	66	395	440	498	555	626	699	8.2
Total	435	1,161	1,274	1,427	1,571	1,752	1,934	5.1
Canada								
Domestic	15	39	44	50	56	63	70	5.3
International	23	87	101	116	134	155	178	7.1
Total	38	126	144	166	190	218	248	6.5
Central America								
Domestic	11	38	44	49	56	63	70	6.3
International	28	106	128	155	187	224	267	7.8
Total	39	144	172	205	242	287	337	7.5
South America								
Domestic	50	122	165	218	284	368	473	7.7
International	20	76	96	119	146	178	216	8.2
Total	70	199	261	337	430	546	689	7.9
Europe								
Domestic	221	675	796	933	1,095	1,287	1,515	6.6
International	150	574	687	819	977	1,165	1,390	7.7
Total	371	1,249	1,483	1,753	2,072	2,452	2,906	7.1
Africa								
Domestic	13	49	65	85	111	144	187	9.2
International	26	81	102	128	159	197	242	7.8
Total	39	130	167	213	270	341	429	8.3
Mideast								
Domestic	30	82	102	125	151	181	215	6.8
International	76	257	329	416	524	654	811	8.2
Total	106	339	431	541	675	835	1,026	7.9
Commonwealth of Independent States								
Domestic	95	131	146	164	184	205	227	2.9
International	19	73	87	104	124	147	174	7.6
Total	114	204	233	269	308	352	401	4.3
China								
Domestic	365	582	758	947	1,142	1,354	1,559	5.0
International	54	205	265	334	412	502	601	8.4
Total	419	787	1,023	1,282	1,554	1,855	2,160	5.6
Northeast Asia								
Domestic	35	76	81	84	87	90	94	3.3
International	46	176	193	203	211	222	235	5.6
Total	81	252	274	287	299	313	328	4.8
Southeast Asia								
Domestic	71	195	262	338	425	523	628	7.6
International	50	272	345	412	476	534	579	8.5
Total	121	468	607	750	900	1,057	1,207	8.0
Southwest Asia								
Domestic	37	98	147	205	269	341	416	8.4
International	14	74	106	141	180	223	269	10.4
Total	51	172	253	346	449	564	684	9.0
Oceania								

Domestic	26	69	82	97	112	128	146	5.9
International	16	85	102	121	142	166	194	8.7
Total	42	154	184	218	254	294	339	7.2
World								
Domestic	1,340	2,922	3,525	4,225	4,988	5,872	6,835	5.6
International	587	2,462	2,981	3,568	4,227	4,994	5,855	8.0
Total	1,927	5,384	6,506	7,793	9,215	10,866	12,690	6.5

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.

Table L6. Freight air transport, Reference case

billion revenue-ton-miles

Region	2020	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2020–2050
United States	44.0	51.7	57.2	63.9	70.6	78.6	87.0	2.3
Canada	2.5	2.8	3.0	3.2	3.4	3.7	4.0	1.5
Central America	0.8	1.0	1.1	1.3	1.4	1.6	1.8	2.9
South America	3.6	4.4	5.0	5.5	6.0	6.5	7.0	2.3
Europe	33.1	38.6	41.3	43.9	46.8	49.8	53.1	1.6
Africa	2.9	3.5	4.0	4.6	5.2	5.9	6.7	2.8
Mideast	21.0	24.7	28.2	31.7	35.3	38.9	42.5	2.4
Commonwealth of Independent States	6.3	8.0	9.5	11.4	13.4	15.5	17.7	3.5
China	23.0	30.2	36.0	41.2	45.9	50.3	54.1	2.9
Northeast Asia	17.2	22.1	24.3	25.4	26.1	26.9	27.8	1.6
Southeast Asia	10.3	12.7	14.9	17.1	19.2	21.2	23.2	2.7
Southwest Asia	2.9	3.9	4.9	6.0	7.0	8.0	8.9	3.8
Oceania	3.0	3.8	4.7	5.6	6.5	7.5	8.5	3.6
World	170.4	207.3	234.1	260.8	286.9	314.5	342.2	2.4

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.

Table L7. Passenger aircraft capacity, Reference case

billion seat miles

Region	2020	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2020–2050
United States	739	1,383	1,512	1,690	1,859	2,070	2,282	3.8
Canada	63	148	170	196	224	256	292	5.3
Central America	66	174	207	247	292	345	405	6.3
South America	123	240	315	405	516	655	825	6.5
Europe	620	1,457	1,724	2,034	2,401	2,839	3,360	5.8
Africa	74	176	226	287	363	458	576	7.1
Mideast	195	449	570	714	890	1,101	1,351	6.7
Commonwealth of Independent States	197	242	275	317	363	415	472	3.0
China	725	934	1,209	1,511	1,829	2,181	2,535	4.3
Northeast Asia	146	316	342	358	373	390	409	3.5
Southeast Asia	206	559	724	893	1,069	1,252	1,428	6.7
Southwest Asia	84	195	286	391	506	635	769	7.7
Oceania	72	184	219	259	302	349	403	5.9
World	3,309	6,457	7,780	9,302	10,988	12,945	15,108	5.2

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.

Table L8. Total commercial jet fuel use, Reference case

quadrillion British thermal units

Region	2020	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2020–2050
United States	1.8	3.1	3.2	3.4	3.6	3.9	4.1	2.7
Canada	0.1	0.3	0.3	0.3	0.4	0.4	0.4	3.8
Central America	0.1	0.3	0.4	0.4	0.5	0.5	0.6	5.2
South America	0.3	0.5	0.7	0.8	0.9	1.1	1.3	5.2
Europe	1.4	3.0	3.3	3.6	3.9	4.3	4.8	4.1
Africa	0.2	0.4	0.5	0.6	0.7	0.8	1.0	5.6
Mideast	0.5	0.9	1.1	1.2	1.4	1.6	1.8	4.3
Commonwealth of Independent States	0.5	0.6	0.6	0.7	0.7	0.8	0.8	2.0
China	1.5	1.9	2.3	2.6	2.9	3.2	3.5	2.9
Northeast Asia	0.4	0.8	0.8	0.8	0.8	0.7	0.7	1.7
Southeast Asia	0.6	1.3	1.6	1.9	2.1	2.3	2.5	5.0
Southwest Asia	0.2	0.5	0.6	0.8	1.0	1.2	1.4	6.2
Oceania	0.2	0.4	0.5	0.6	0.6	0.6	0.7	4.6
World	7.9	14.0	15.9	17.8	19.6	21.5	23.5	3.7

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.

* Quantities for the United States, OECD, and world do *not* include energy used for U.S. military transportation and the energy content of lubricants.