International Energy Outlook 2023

Release date: October 2023

Table F8. Delivered energy consumption in Europe and Eurasia by end-use sector and fuel, Reference case

quadrillion British thermal units

Sector and fuel	2022	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2022–2050
Residential								
Liquid fuels	2.4	2.4	2.4	2.3	2.3	2.3	2.2	-0.2%
Natural gas	10.3	10.6	10.9	11.1	11.4	11.7	12.0	0.5%
Coal	1.0	1.0	1.0	1.0	1.0	0.9	0.9	-0.3%
Electricity	4.7	4.8	5.1	5.4	5.7	6.0	6.3	1.0%
Renewables	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.8%
Total	**18.6**	**19.0**	**19.4**	**19.9**	**20.5**	**21.0**	**21.6**	**0.5%**
Commercial								
Liquid fuels	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.2%
Natural gas	3.1	3.2	3.4	3.5	3.6	3.8	4.0	0.9%
Coal	0.4	0.4	0.4	0.4	0.4	0.4	0.4	-0.3%
Electricity	4.2	4.4	4.7	5.0	5.3	5.6	5.9	1.2%
Renewables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8%
Total	**8.5**	**8.8**	**9.2**	**9.7**	**10.1**	**10.6**	**11.1**	**0.9%**
Industrial								
Liquid fuels	11.8	12.1	12.2	12.7	13.3	14.1	14.9	0.8%
Natural gas	16.5	16.5	16.7	17.0	17.6	18.3	19.1	0.5%
Coal	6.2	6.2	6.3	6.6	6.9	7.2	7.6	0.7%
Electricity	7.0	7.1	7.4	7.8	8.3	8.7	9.3	1.0%
Renewables	3.1	3.1	3.1	3.2	3.3	3.4	3.5	0.5%
Total	**44.5**	**45.0**	**45.8**	**47.3**	**49.4**	**51.7**	**54.4**	**0.7%**
Transportation								
Liquid fuels	22.6	22.6	21.3	20.5	20.0	20.0	20.1	-0.4%
Natural gas	0.5	0.8	0.9	1.0	1.0	1.1	1.2	2.9%
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
Electricity	0.8	0.8	0.9	1.2	1.4	1.7	1.8	3.1%
Total	**23.9**	**24.2**	**23.1**	**22.6**	**22.5**	**22.7**	**23.1**	**-0.1%**
Components of energy use								
End-use consumption								
Liquid fuels	37.5	37.8	36.7	36.3	36.5	37.1	38.0	0.0%
Natural gas	30.4	31.2	31.8	32.6	33.7	34.9	36.3	0.6%
Coal	7.6	7.7	7.8	8.0	8.3	8.6	8.9	0.6%
Electricity	16.8	17.1	18.0	19.3	20.7	21.9	23.3	1.2%
Renewables	3.2	3.2	3.3	3.3	3.4	3.5	3.7	0.5%
Total end-use consumption	**95.5**	**97.0**	**97.6**	**99.5**	**102.6**	**106.0**	**110.2**	**0.5%**
Electricity-related losses	34.9	36.4	37.3	39.2	41.0	42.8	44.8	0.9%
Discrepancy	-0.4	-0.5	-0.5	-0.5	-0.6	-0.6	-0.6	--
Total	**130.1**	**132.9**	**134.3**	**138.1**	**143.1**	**148.3**	**154.4**	**0.6%**
Electric power								
Liquid fuels	0.8	1.1	1.1	0.7	0.6	0.5	0.5	-1.4%
Natural gas	13.2	13.3	14.1	14.5	15.4	16.4	17.3	1.0%
Coal	8.9	8.6	7.0	6.8	6.6	7.2	7.5	-0.6%
Nuclear	10.4	10.6	11.1	11.3	11.2	11.0	11.1	0.2%
Renewables	18.2	19.8	21.8	24.8	27.7	29.3	31.4	2.0%
Total	**51.5**	**53.3**	**55.1**	**58.2**	**61.5**	**64.5**	**67.8**	**1.0%**
Total energy consumption								
Liquid fuels	38.1	38.5	37.4	36.7	36.7	37.3	38.2	0.0%
Natural gas	43.7	44.5	46.0	47.2	49.1	51.2	53.7	0.7%
Coal	16.5	16.2	14.7	14.8	14.9	15.8	16.4	0.0%
Nuclear	10.4	10.6	11.1	11.3	11.2	11.0	11.1	0.2%
Renewables	21.4	23.0	25.1	28.2	31.1	32.9	35.1	1.8%

Total	**130.1**	**132.9**	**134.3**	**138.1**	**143.1**	**148.3**	**154.4**	**0.6%**

Data source: U.S. Energy Information Administration, World Energy Projection System (2023), run r_230822.081459 and Annual Energy Outlook 2023 (March 2023), www.eia.gov/aeo

Note: Totals may not equal sum of components due to independent rounding. End-use sector electricity consumption and end-use sector delivered energy consumption do 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. In all regions except the United States, fuel consumed to produce district heat is allocated to the residential, commercial, and industrial end-use sectors according to their respective share of heat demand. We converted electricity generation from renewable sources such as hydroelectric, wind, or solar to British thermal units at a rate of 8,124 British thermal units per kilowatthour, which reflects the average projected conversion efficiency of the U.S. fossil-fueled generating fleet in the Annual Energy Outlook 2021 over the projection period (2022–2050).