

Table E1.gen. Electricity generation: World, Reference case

billion kilowatthours

Fuel	2022	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2022–2050
Liquid fuels	733	737	378	203	107	69	56	-8.8%
Natural gas	6,699	6,664	6,638	6,726	7,187	7,750	8,266	0.8%
Coal	9,696	9,339	9,165	9,412	9,378	9,475	9,612	0.0%
Nuclear	2,666	2,786	3,020	3,160	3,181	3,216	3,297	0.8%
Renewables	8,444	10,059	12,538	14,690	16,891	19,075	21,067	3.3%
Hydro	4,320	4,715	4,966	5,247	5,331	5,457	5,583	0.9%
Wind	1,967	2,357	3,249	4,012	4,995	5,569	5,805	3.9%
Geothermal	67	110	191	213	238	248	254	4.9%
Solar	1,421	2,241	3,457	4,531	5,639	6,984	8,521	6.6%
Other	669	636	674	687	688	817	903	1.1%
Net generation to grid	28,239	29,584	31,739	34,191	36,744	39,587	42,298	1.5%

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. Net generation to grid represents gross generation minus losses from thermal efficiency and parasitic load.