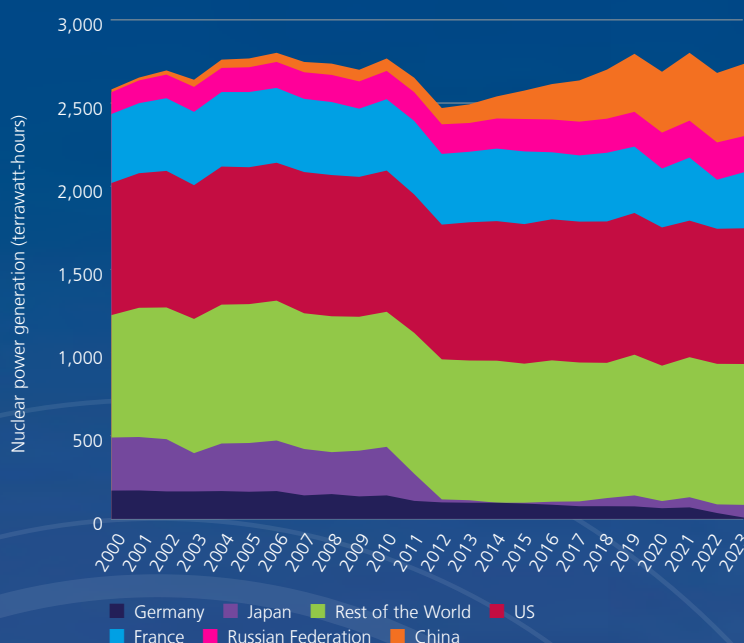


Nuclear energy

Despite a small drop in total installed capacity, electricity generation from nuclear power plant increased in 2023 by 2%. However, it was still 58 terawatt-hours below its 2019 pre-COVID level and 2% below its peak output in 2006. Output from nuclear in Europe fell by 1% with the recovery of France's nuclear fleet from prolonged outages in 2022 offset by Germany's closure of its last three remaining units early in the year. China continues to lead the way in building new capacity. Since 2000 it has built around 60% of all new nuclear capacity additions.

In late 2023, commercial operations began at China's onshore small modular reactor (SMR) demonstration project, a world-first featuring the latest Generation IV technology and incorporating inherent safety systems. Following events in Fukushima in 2011, Japan has gradually returned units to service and, in 2023 output increased by 50%. Whilst output from nuclear in the US remained relatively flat, it was still equal to the combined outputs of China and France, operators of the second and third-largest fleets.

Before Fukushima in 2011, nuclear met 25% of Japan's electricity demand and 23% of Germany's. In 2023, it met only around 8% in Japan and just 2% in Germany



China commissioned the world's first onshore demonstration of a small modular reactor (SMR)



Terawatt-hours												Growth rate per annum		Share
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023	2013–23	2023
Canada	102.7	106.5	101.1	100.7	100.6	100.0	100.5	97.5	92.0	86.6	89.0	2.8%	-1.4%	3.3%
Mexico	11.8	9.7	11.6	10.6	10.9	13.6	11.2	11.2	11.9	10.8	12.4	14.2%	0.5%	0.5%
US	830.5	839.1	839.1	848.1	847.3	849.6	852.0	831.5	820.7	812.1	816.2	0.5%	-0.2%	29.8%
Total North America	945.1	955.3	951.8	959.4	958.8	963.1	963.7	940.1	924.6	909.6	917.6	0.9%	-0.3%	33.5%
Argentina	6.2	5.5	7.0	8.3	6.1	6.9	8.4	10.0	10.2	7.5	9.0	20.0%	3.7%	0.3%
Brazil	15.4	15.4	14.7	15.9	15.7	15.7	16.1	14.1	14.7	14.6	14.5	-0.3%	-0.6%	0.5%
Chile	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Colombia	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Ecuador	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Peru	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Trinidad & Tobago	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Venezuela	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Central America	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Other Caribbean	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Other South America	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Total S. & Cent. America	21.7	20.9	21.8	24.1	21.8	22.5	24.6	24.1	24.9	22.0	23.5	6.6%	0.8%	0.9%
Austria	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Belgium	42.6	33.7	26.1	43.5	42.2	28.6	43.5	34.4	50.3	43.9	32.9	-25.0%	-2.6%	1.2%
Bulgaria	14.2	15.9	15.4	15.8	15.5	16.1	16.6	16.6	16.5	16.5	16.2	-1.7%	1.3%	0.6%
Croatia	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Cyprus	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Czech Republic	30.7	30.3	26.8	24.1	28.3	29.9	30.2	30.0	30.7	31.0	30.4	-2.0%	-0.1%	1.1%
Denmark	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Estonia	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Finland	23.6	23.6	23.2	23.2	22.5	22.8	23.9	23.3	23.6	25.3	34.2	35.2%	3.8%	1.3%
France	423.7	436.5	437.4	403.2	398.4	412.9	399.0	353.8	379.4	294.7	338.2	14.7%	-2.2%	12.4%
Germany	97.3	97.1	91.8	84.6	76.3	76.0	75.1	64.4	69.1	34.7	7.2	-79.2%	-22.9%	0.3%
Greece	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Hungary	15.4	15.6	15.8	16.1	16.1	15.7	16.3	16.1	16.0	15.8	15.9	0.7%	0.4%	0.6%
Iceland	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Ireland	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Italy	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Latvia	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Lithuania	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Luxembourg	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Netherlands	2.9	4.1	4.1	4.0	3.4	3.5	3.9	4.1	3.8	4.2	4.0	-4.1%	3.3%	0.1%
North Macedonia	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Norway	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Poland	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Portugal	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Romania	11.6	11.7	11.6	11.3	11.5	11.4	11.3	11.5	11.3	11.1	11.2	0.9%	-0.4%	0.4%
Slovakia	15.7	15.5	15.1	14.8	15.1	14.8	15.3	15.4	15.7	15.9	18.3	15.2%	1.6%	0.7%
Slovenia	5.3	6.4	5.6	5.7	6.3	5.8	5.8	6.4	5.7	5.6	5.6	–	0.6%	0.2%
Spain	56.7	57.3	57.3	58.6	58.1	55.8	58.3	58.3	56.6	58.6	56.8	-3.0%	–	2.1%
Sweden	66.5	64.9	56.3	63.1	65.7	68.5	66.1	49.2	53.0	51.9	48.4	-6.8%	-3.1%	1.8%
Switzerland	26.2	27.8	23.3	21.3	20.5	24.4	25.3	23.0	18.5	23.1	23.3	1.0%	-1.1%	0.9%
Türkiye	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Ukraine	83.2	88.4	87.6	81.0	85.6	84.4	83.0	76.2	86.2	62.1	52.4	-15.6%	-4.5%	1.9%
United Kingdom	70.6	63.7	70.3	71.7	70.3	65.1	56.2	50.3	45.9	47.7	40.7	-14.6%	-5.3%	1.5%
Other Europe	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Total Europe	986.2	992.4	968.0	941.9	935.9	935.8	929.7	833.0	882.3	742.2	735.9	-0.8%	-2.9%	26.9%
Azerbaijan	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Belarus	–	–	–	–	–	–	–	0.3	5.8	4.7	11.7	150.5%	–	0.4%
Kazakhstan	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Russian Federation	172.5	180.8	195.5	196.6	203.1	204.6	209.0	215.9	222.4	223.7	217.4	-2.8%	2.3%	7.9%
Turkmenistan	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Uzbekistan	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Other CIS	2.4	2.5	2.8	2.4	2.6	2.1	2.2	2.8	2.0	2.8	2.7	-4.8%	1.4%	0.1%
Total CIS	174.9	183.2	198.3	199.0	205.8	206.7	211.2	219.0	230.2	231.2	231.8	0.3%	2.9%	8.5%
Iran	4.3	4.1	3.5	6.5	7.0	6.9	6.4	6.3	3.5	6.6	6.6	1.1%	4.5%	0.2%
Iraq	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Israel	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Kuwait	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Oman	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Qatar	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Saudi Arabia	–	–	–	–	–	–	–	–	–	–	–	–	–	–
United Arab Emirates	–	–	–	–	–	–	–	1.6	10.5	20.1	32.3	60.5%	–	1.2%
Other Middle East	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Total Middle East	4.3	4.1	3.5	6.5	7.0	6.9	6.4	8.0	14.1	26.7	38.9	45.9%	24.8%	1.4%
Algeria	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Egypt	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Morocco	–	–	–	–	–	–	–	–	–	–	–	–	–	–
South Africa	14.1	13.8	12.2	15.0	14.2	11.6	13.3	9.9	12.4	10.1	8.9	-11.9%	-4.5%	0.3%
Eastern Africa	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Middle Africa	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Western Africa	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Other Northern Africa	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Other Southern Africa	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Total Africa	14.1	13.8	12.2	15.0	14.2	11.6	13.3	9.9	12.4	10.1	8.9	-11.9%	-4.5%	0.3%
Australia	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Bangladesh	–	–	–	–	–	–	–	–	–	–	–	–	–	–
China	111.5	133.2	171.4	213.2	248.1	295.0	348.7	366.2	407.5	417.8	434.7	4.1%	14.6%	15.9%
China Hong Kong SAR	–	–	–	–	–	–	–	–	–	–	–	–	–	–
India	33.3	34.7	38.3	37.9	37.4	39.1	45.2	44.6	43.9	46.2	48.2	4.4%	3.8%	1.8%
Indonesia	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Japan	14.6	–	4.5	17.7	29.1	49.1	65.6	43.0	61.2	51.8	77.5	49.6%	18.2%	2.8%
Malaysia	–	–	–	–	–	–	–	–	–	–	–	–	–	–
New Zealand	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Pakistan	4.3	4.7	4.3	5.3	8.1	9.2	9.2	9.5	15.7	22.2	22.4	0.6%	18.0%	0.8%
Philippines	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Singapore	–	–	–	–	–	–	–	–	–	–	–	–	–	–
South Korea	138.8	156.4	164.8	162.0	148.4	133.5	145.9	160.2	158.0	176.1	180.5	2.5%	2.7%	6.6%
Sri Lanka	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Taiwan	41.6	42.4	36.5	31.7	22.4	27.7	32.3	31.4	27.8	23.8	17.8	-25.1%	-8.1%	0.7%
Thailand	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Vietnam	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Other Asia Pacific	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Total Asia Pacific	344.1	371.4	419.7	467.7	493.6	553.6	646.9	655.0	714.1	737.8	781.1	5.9%	8.5%	28.5%
Total World	2490.3	2541.1	2575.3	2613.7	2637.0	2700.2	2795.8	2689.0	2802.5	2679.6	2737.7	2.2%	1.0%	100.0%
of which: OECD	1975.7	1988.3	1974.5	1973.0	1959.6	1969.7	1994.1	1872.0	1912.2	1790.0	1831.7	2.3%	-0.8%	66.9%
Non-OECD	514.6	552.9	600.9	640.7	677.4	730.5	801.6	817.0	890.4	889.6	906.0			