

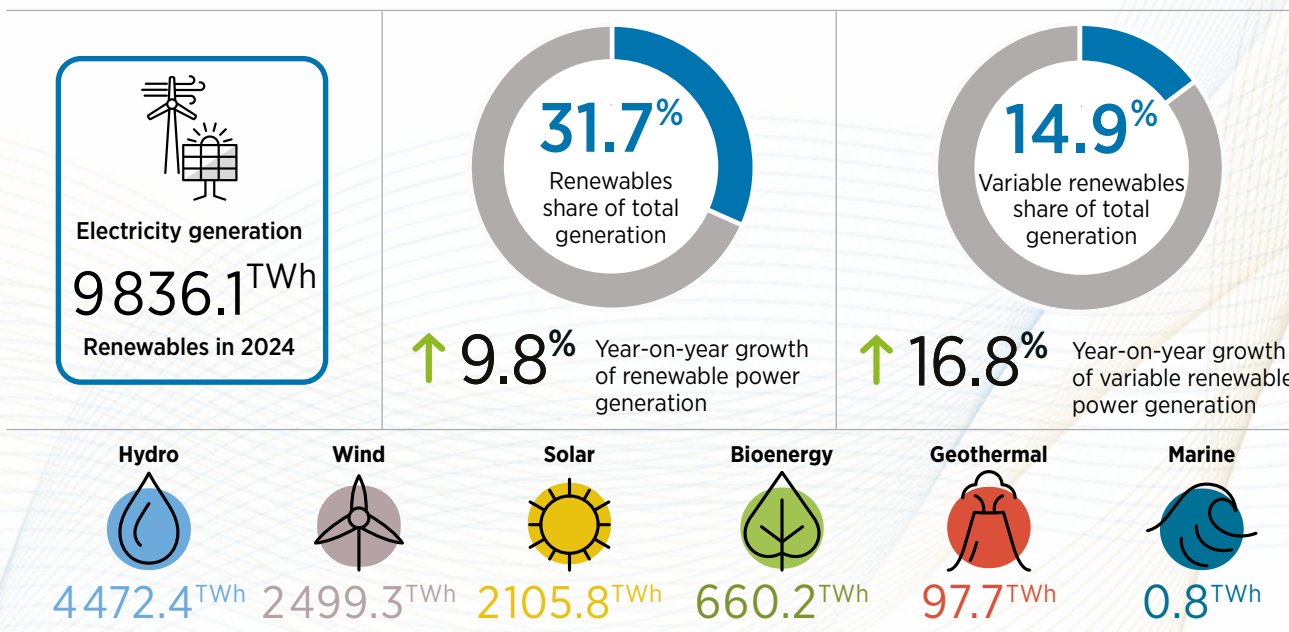
Renewable energy highlights

from *Renewable energy statistics 2026*

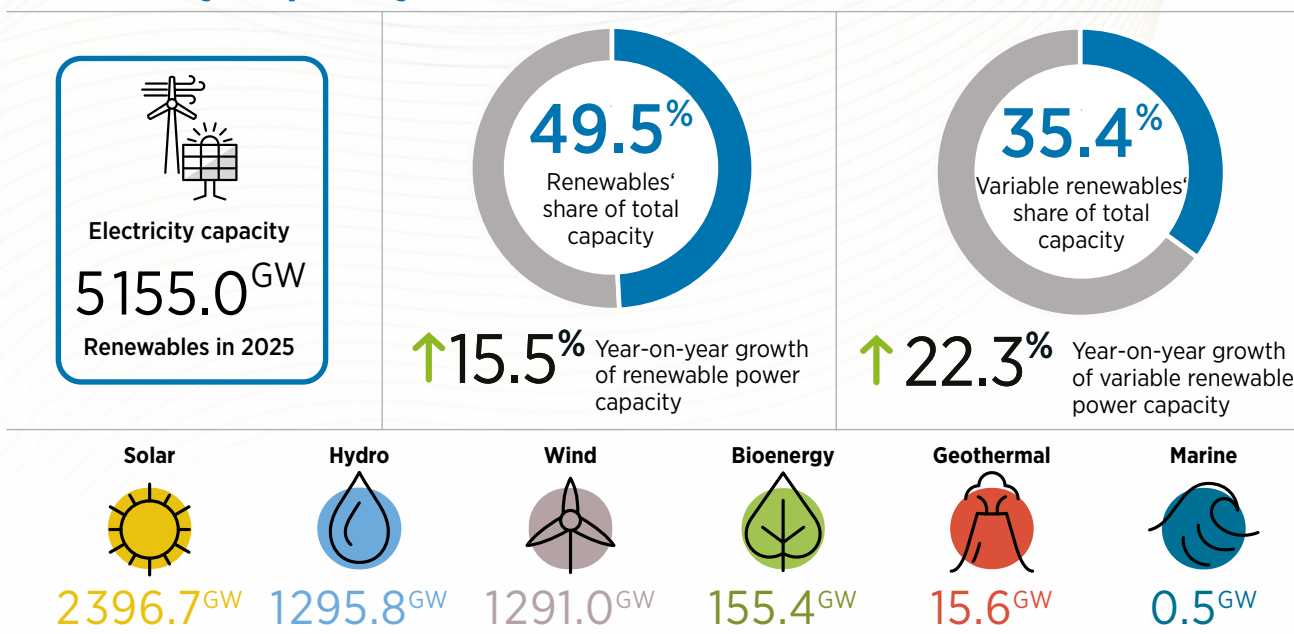
14 July 2026

Headline figures*

Electricity generation in 2024



Electricity capacity in 2025



2030 target
11.17 TW

1.78 TW

since 2022

6.02 TW

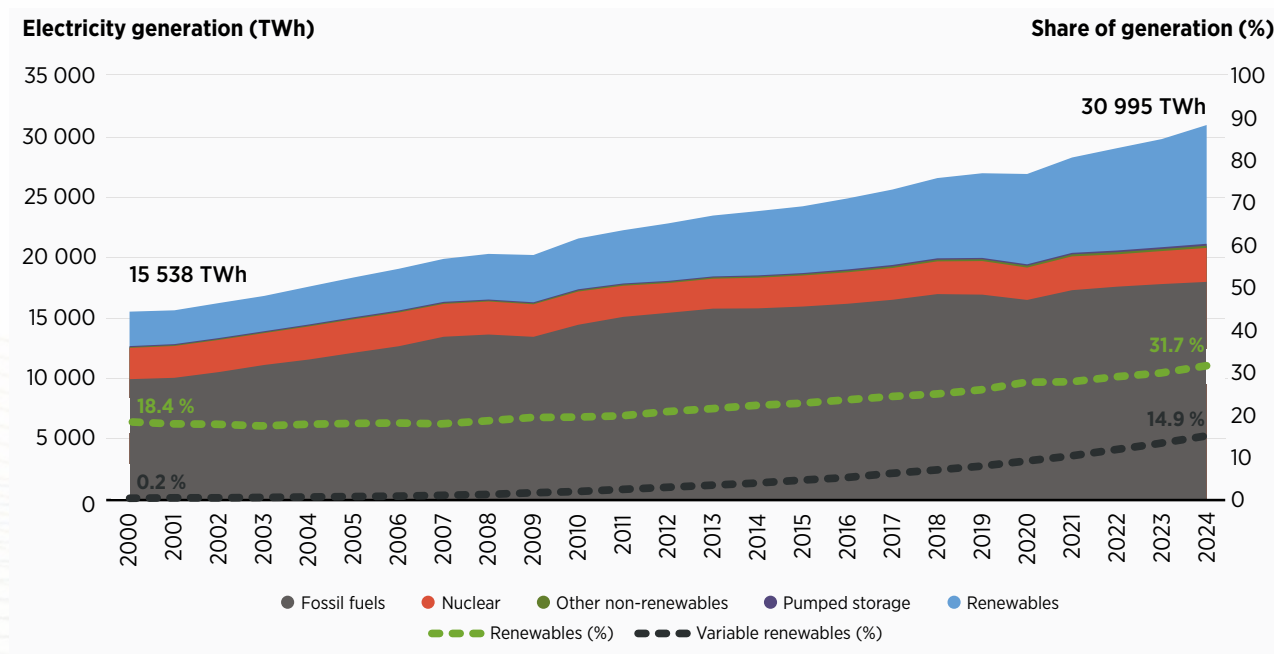
to meet target

Progress Remaining

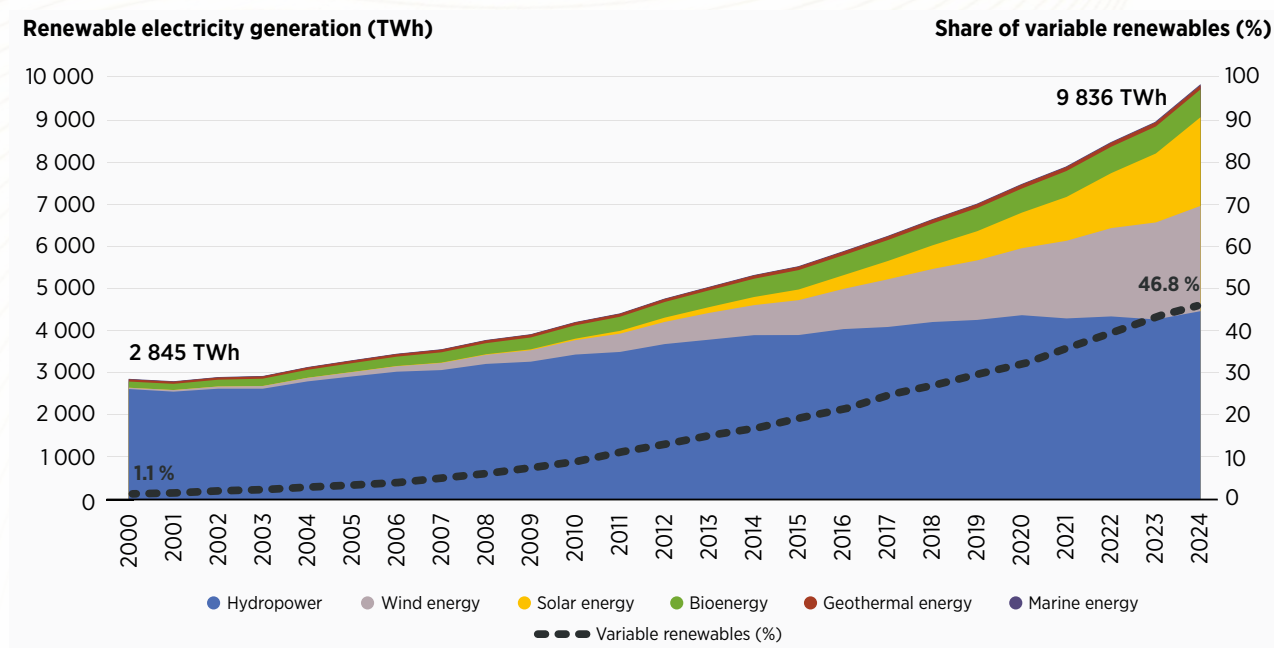
* Data collection for stationary electric batteries is still at an early stage, so this is excluded from the data presented in these highlights.

ELECTRICITY GENERATION BY ENERGY SOURCE

Renewable energy sources accounted for 31.7% of electricity generation globally in 2024, totalling 9 836 terawatt hours (TWh). The remaining 68.3% (21 159 TWh) corresponded to fossil fuels, nuclear energy, pumped storage and other non-renewables, bringing global electricity generation from all sources to 30 995 TWh in 2024.



Total electricity generation increased by an average of 2.6% per year between 2014 and 2024 (compound annual growth rate; CAGR). During the same period, renewable electricity expanded at a CAGR of 6.3%, significantly outpacing non-renewable sources, which recorded a CAGR of just 1.3%. In 2024, renewable electricity generation grew by 9.8% over 2023, while non-renewables grew by 1.4% over the same period. Since 2010, the largest growth in renewable electricity has been for solar and wind energy (variable renewables) which, combined, represented 14.9% of the global electricity mix in 2024, having risen by 16.8% compared to 2023, and comprising more than half of the total generation increase.



RENEWABLE ELECTRICITY GENERATION BY ENERGY SOURCE

Over the past 25 years, the profile of renewable energy sources has significantly diversified. While renewable hydropower (which excludes pumped storage) continues to provide the bulk of renewable electricity generation, variable renewables have steadily increased their share in the mix, growing from 1.1% of renewable generation in 2000 to 46.8% in 2024.

In 2024, renewable hydropower remained the largest source of renewable electricity, generating 4 472 TWh, an increase of 197 TWh (4.6%) from 2023 levels. Although not considered a renewable energy source, electricity from hydropower pumped storage increased by 13 TWh (9.0%) in 2024.¹

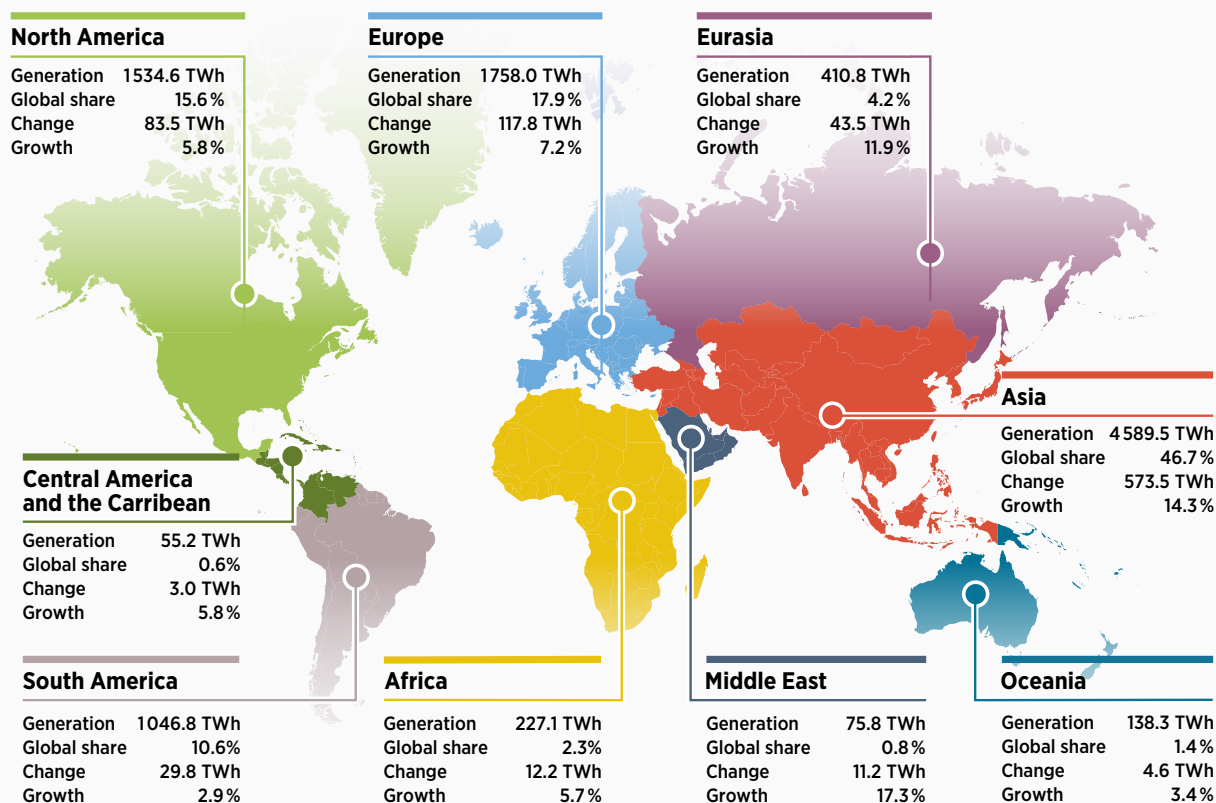
Wind energy follows, producing 2 499 TWh and marking an 8.5% increase, a lower increase than the 9.9% growth rate reported in 2023. Solar energy, the fastest-growing renewable energy source in recent years, generated 2 106 TWh – a year-on-year increase of 28.6%, and the largest annual growth rate since 2018. Bioenergy produced 660 TWh, growing by 2.9%, while geothermal energy contributed 98 TWh and marine energy almost 1 TWh.

RENEWABLE ELECTRICITY GENERATION BY REGION

In absolute terms, Asia led the world in renewable electricity generation in 2024, producing 4 589 TWh, representing a 14.3% increase driven by all technologies except marine energy – which shows a decrease both in share and generation – with growth being particularly strong across solar and wind.

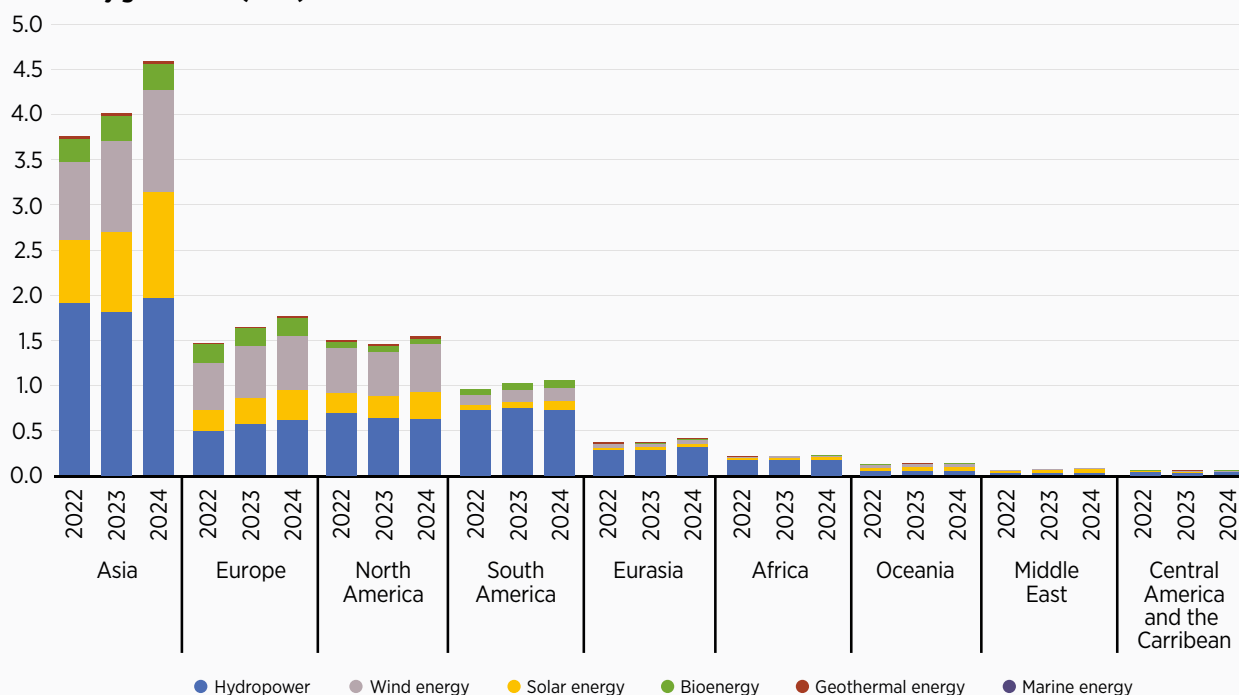
Europe produced 1 758 TWh, up by 7.2% and driven by increases in solar and hydropower. North America generated 1 535 TWh – a 5.8% increase from 2023 – and South America generated 1 047 TWh, representing a 2.9% increase from 2023 and reflecting increases across all technologies.

Eurasia produced 411 TWh, up 11.9% year-on-year, with hydropower generation growing by 10.7% after three consecutive years of decline. Africa generated 227 TWh, showing an increase of 5.7% across all sources except for geothermal energy. Oceania generated 138 TWh – a 3.4% increase. The Middle East followed with 76 TWh, representing the highest regional growth rate of 17.3%. Lastly, Central America and the Caribbean generated 55 TWh – an increase of 5.8%.



¹ Renewable hydropower installed capacity and electricity generation exclude pure pumped storage hydropower, which is classified as energy storage rather than renewable energy.

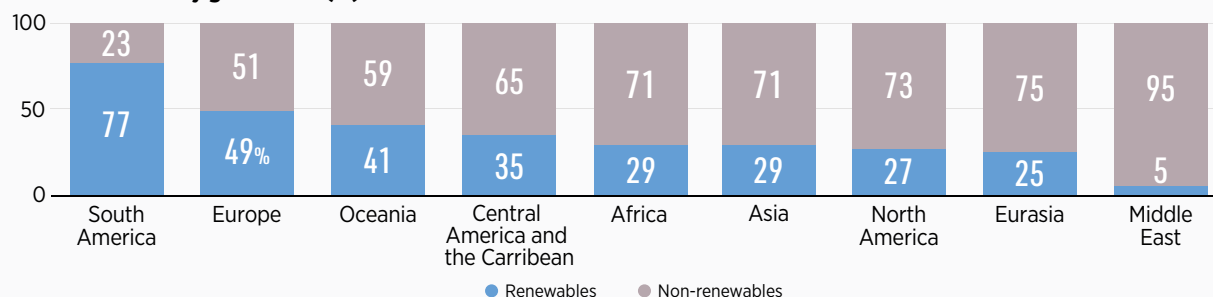
Electricity generation (PWh)



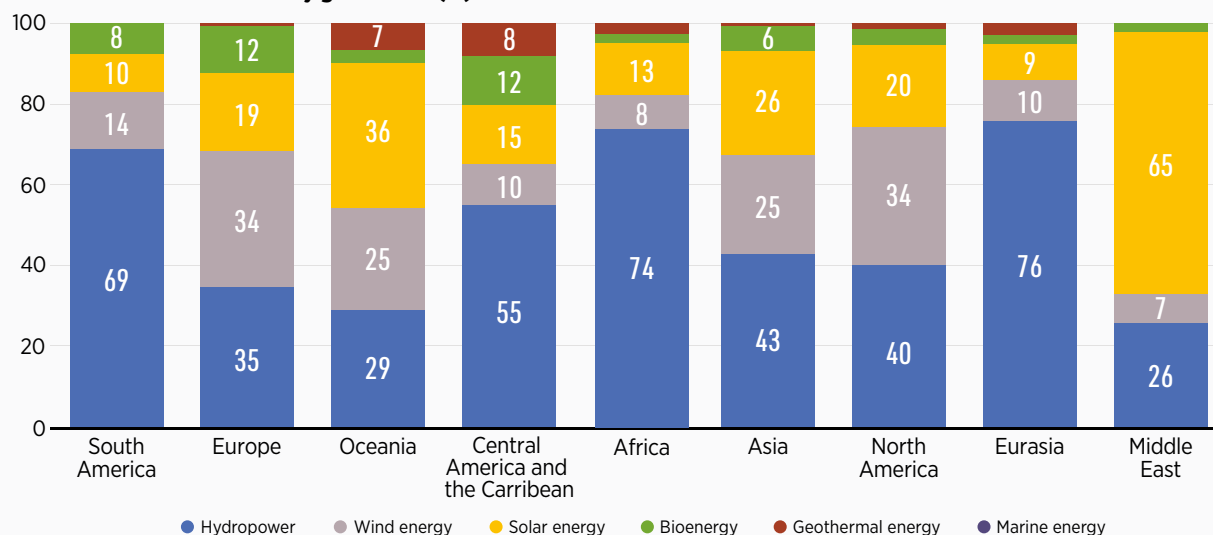
Note: PWh= petawatt hour (or 1000 TWh).

In terms of the electricity mix by region, South America leads the way with 77.2% of its electricity coming from renewable sources (predominantly hydropower, which accounts for more than two-thirds of this). Europe follows with 48.8% of electricity being generated from renewables, but is characterised by a more varied mix: 34.5% hydropower; 33.8% wind energy; 19.4% solar; 11.6% bioenergy; and 0.7% geothermal. Oceania has the third highest renewable energy share at 41.3%, with solar contributing 36.0%; hydropower, 28.8%; wind, 25.3%; geothermal, 6.8%; and bioenergy, 3.1%.

Share of electricity generation (%)



Share of renewable electricity generation (%)



Central America and the Caribbean, contributed 35.0% of renewables to the electricity mix, followed by Africa generating 29.0%, closely followed by Asia with 28.6%, then North America (27.4%), and Eurasia (25.3%). Lastly, the Middle East lags significantly behind, with just 5.1% of its electricity generated from renewables.

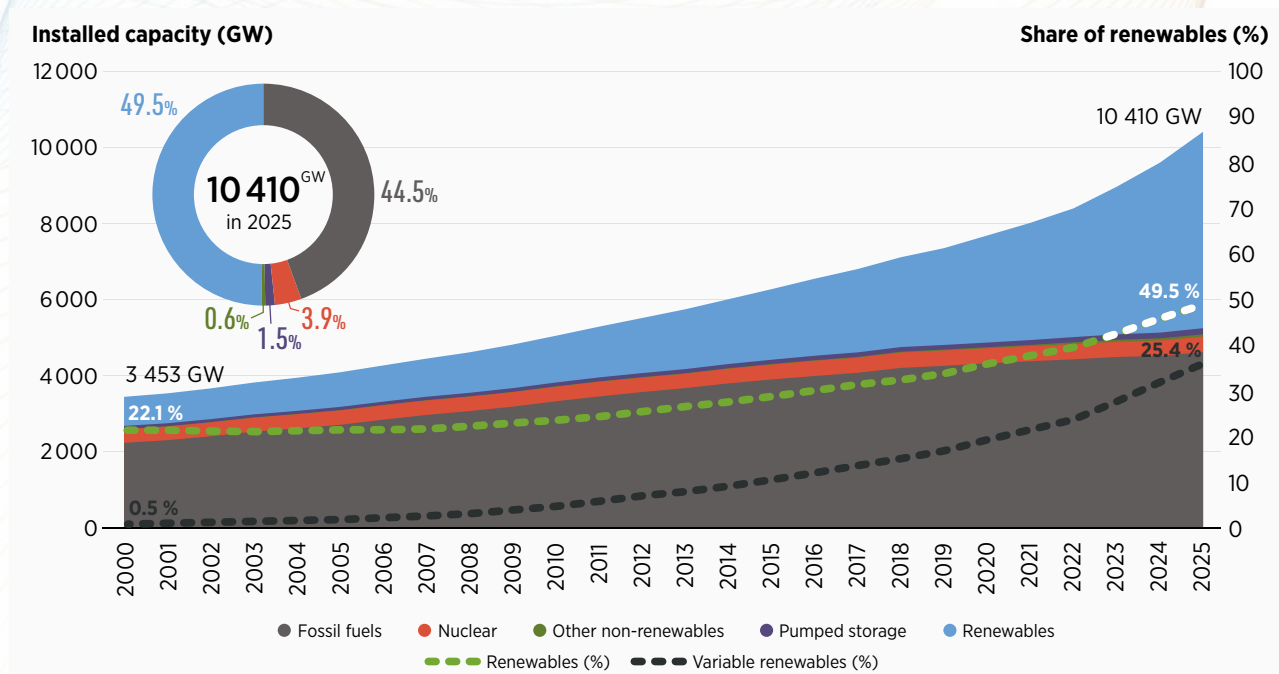
Both the Group of Seven (G7) countries (excluding the European Union²) and the Group of Twenty (G20) countries (excluding the European Union and African Union³) continued to generate more electricity from non-renewables than from renewables in 2024. Both groupings generated 30.7% of their electricity from renewable sources. Of all the renewable electricity generated in 2024 in the G20 countries, 41.6% was from hydropower, 27.8% from wind energy, 23.1% from solar energy, and 6.7% from bioenergy and a small proportion of geothermal energy. For G7 countries, the breakdown was: 33.9% hydropower; 33.5% wind energy; 22.1% solar energy; 9.3% bioenergy; and 1.2% geothermal energy.

REVISIONS TO RENEWABLE GENERATION CAPACITY

IRENA's latest statistics include revisions to the 2025 and historical renewable generation capacities reported in March 2026. Total renewable generation capacity in 2025 has been revised upwards by 6 gigawatts (GW) to 5 155 GW. This increase was driven by upward revisions to solar and bioenergy power plants.

The revised figures show that at the end of 2025, renewable capacity accounted for 5.2 TW, or 49.5% of the 10.4 TW of global total capacity, including non-renewables. It indicates an unprecedented 15.1% increase from 2024, significantly higher than the 11.9% compound annual growth rate over the preceding five years (from 2019 to 2024). Within renewables, variable renewable capacity grew by 22.3% over 2024 to reach 35.4% of total renewable capacity.

The remaining installed capacity amounts to 5.3 TW (50.5%) of non-renewable power, comprising 4.6 TW (44.5%) of fossil fuels; 407 GW (3.9%) of nuclear energy; 160 GW (1.5%) of pumped storage; and 58.7 GW (0.6%) of other non-renewables. The recent trend confirms renewables as the fastest growing capacity source; and illustrates a slowdown in non-renewables and even some significant decommissioning of fossil fuel plants in several countries.



Note: GW = gigawatt.

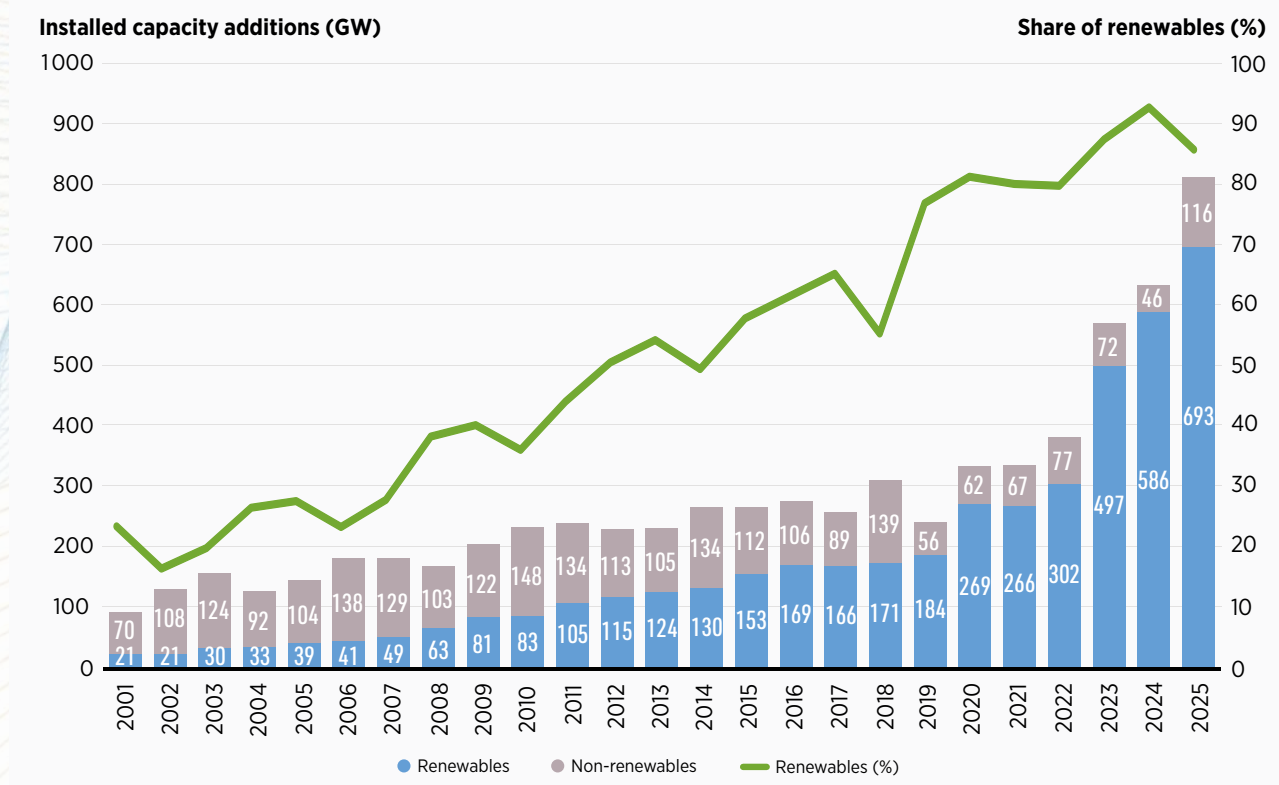
² Only individual G7 Members from the European Union are included (France, Germany, Italy).

³ Only individual G20 Members from the European Union and African Union are included (France, Germany, Italy; South Africa).

In 2025, solar energy was the largest source of renewable capacity at 46.5% or 2 397 GW, followed by 25.1% for hydropower (1 296 GW), 25.0% for wind energy (1 291 GW), 3.0% for bioenergy (155 GW) and 0.3% for geothermal (16 GW), with a small amount of marine energy. The share of variable renewables (wind and solar) increased to 71.5% of renewable capacity, indicating the continued shift towards more intermittent energy sources. Solar and wind energy continued to dominate renewable capacity expansion, jointly accounting for 96.9% of all net renewable additions in 2025, with solar increasing by 514 GW and wind by 158 GW. Annual renewable capacity additions have increased notably over the past 25 years, reaching an unprecedented peak of 693 GW in 2025.

The share of renewables in total capacity expansion in 2025 was 85.7%, down from 92.7% in 2024. However the renewables share of total installed power capacity rose by three percentage points from 46.5% in 2024 to 49.5% in 2025.

Despite a decrease in the share of renewables in total capacity expansion, the overall positive trend in installed capacity confirms that renewable deployment continues to outpace non-renewable growth. However, at the global level, 2025 also saw a sharp rebound in non-renewable additions, which more than doubled compared to 2024. This increase was driven primarily by China, which added 83 GW coal. Against this backdrop, significant acceleration will be required to meet the goal adopted at COP28 to triple installed renewable power capacity to more than 11 TW by 2030.



Note: GW = gigawatt.

Even though 2025 marks the largest increase in renewable energy capacity to date, significant disparities exist among countries and regions. Asia accounted for the majority of new capacity in 2025 (74.1%), increasing its renewable capacity by 514.1GW, whilst Europe and North America increased their capacities by 77.4 GW and 42.0 GW, respectively. Other regions saw much smaller increases: South America by 19.7 GW, the Middle East by 12.8 GW, Africa by 11.3 GW, Eurasia by 8.4 GW, Oceania by 6.1GW, and Central America and the Caribbean by 1.8 GW.

HEAT GENERATION

Commercial heat is used for various purposes, and in energy statistics we account for this heat in terms of joules of sold heat. Among electricity capacity, electricity generation and heat generation, the latter typically lags considerably in terms of renewable energy penetration. In 2024, only 6.2% of global heat generation came from renewable sources, totaling 933 petajoules (PJ). The remaining 93.8% (14 073 PJ) was generated from fossil fuels, with traces of nuclear and other non-renewable sources. Heat generation is produced in both heat-only (HO) plants, and in combined heat and power (CHP) plants, with nearly two-thirds coming from HO plants. The amount of renewable heat generated during 2024 was marginally higher in CHP plants (51.2%) than in HO plants (48.8%).

The share of renewable heat generation has increased from 2.5% in the year 2000, albeit at a significantly slower growth rate than electricity. Bioenergy holds the largest share, contributing 90.1% of renewable heat in 2024, with similar historical rates. Other significant sources include geothermal and solar thermal energy. Europe leads the way in renewable heat generation, accounting for 89.8% of the global total and with a renewable share of 30.5% of the 2 746 petajoules (PJ) of heat generated in the region. Asia generated 6 640 PJ of heat in 2024, but just 0.5% came from renewable sources. Eurasia generated 5 182 PJ of heat in 2024, also with 0.5% coming from renewable sources. Finally, North America produced 436 PJ of heat in 2024, with 8.4% from renewable sources.

For any inquiries, please contact us at statistics@irena.org.