

Renewables 2023 Global Status Report collection

Renewables in Energy Supply

Asia Factsheet

Key Headlines in 2022

- Renewable energy developments in Asia have geopolitical implications. As countries in the region invest in renewable energy infrastructure and reduce their dependence on fossil fuel imports, they gain more energy independence and reduce vulnerability to global energy market fluctuations. This enhances their geopolitical influence and strengthens their economic and strategic position in the region.
- Renewable energy developments in Asia present significant economic opportunities and job creation potential. The transition to renewables can contribute to job creation and economic diversification, particularly in manufacturing, construction, and services sectors.
- **China's** overall investment in renewables increased sharply in 2022, rising 56.2% to reach USD 274.4 billion, or 55% of the global total.
- In **Asia-Oceania** (excluding China and India), investment in renewables fell 7.7% to USD 53.7 billion, representing 10.8% of the global total.
- In **India**, new investment in renewables increased 4.4% to USD 11.5 billion.
- The share of renewables in Asia's electricity mix grew 10% in the decade from 2012 to 2022, from 17% to 27%, due mainly to an increase in solar and wind power.
- Solar and wind power supplied only 1.7% of Asia's electricity in 2012, but 11% by 2022.

Key drivers

- The global energy crisis and the volatility of fossil fuel markets have motivated Asian countries to enhance their energy security.
- Asia faces severe air pollution issues, particularly in densely populated urban areas. Renewable energy developments offer a solution to reduce air pollution and improve public health.
- Coherence regional

Key challenges

- Access to affordable financing and attracting private investments are critical challenges.
- Integrating large-scale renewable energy projects into existing grids and developing new transmission infrastructure pose challenges.

Technologies

Bioenergy:

- Asia invested heavily in biofuels in 2022, with investments more than doubling from the previous year (up 239.6%) to USD 0.18 billion
- This increase was triggered largely by financial incentives in **Indonesia** and **Malaysia** that sought to boost local production of palm oil.
- **Asia topped the list of countries that installed biopower capacity globally in 2022, with China** leading at 34 gigawatts (GW) and India in fourth place at 10 GW.
- Asia increased its electricity production from biomass in 2022, led by **Japan** with 19% growth, the **Republic of Korea** with 24% growth and **India** with 3%.

Geothermal:

- Although geothermal additions were weak globally, Asia was one of the few regions where capacity additions increased.
- In **Indonesia**, geothermal capacity additions grew nearly 30% over the period 2017 to 2022. **The Philippines** ranked third globally for total installed geothermal power capacity in 2022 at 1.9 GW.

Hydrogen:

- **China** was the world's largest producer of hydrogen in 2022, at around 25 million tonnes.

Hydropower:

- Asia (excluding China) added 2.8 GW of installed hydropower capacity in 2022 to reach 269.6 GW, generating 940 terawatt-hours of electricity.
- In June 2022, **Pakistan** started operating the 720 megawatt (MW) Karot hydropower plant – developed by China under the China-Pakistan Economic Corridor – bringing Pakistan's total hydropower capacity to 10.6 GW.
- **India's** 600 MW Kameng plant came online in November 2022 as part of the country's plan to install 30 GW of hydropower by 2030.

Solar Photovoltaics (PV):

- **China** dominated regionally and globally in new solar PV installations, contributing 64% of the global added capacity in 2022.
- **India** was again the second largest market in Asia for new solar PV capacity, and ranked third globally with 18.1 GW of additions.
- **Japan** had the world's largest number of agrivoltaic plants (solar PV plants combined with agriculture) In 2022, adding 100 MW during the year.

Concentrating Solar Thermal Power (CSP):

- **China** developed 30 CSP projects in 2022, of which 14 projects (totalling 1.4 GW of capacity) were expected to be completed in 2023.

Solar Thermal Heating:

- Sales of solar thermal heating units fell 9.3% globally in 2022, including in **China** (down 12.3%) and India (down 21%).

Wind:

- Investment in wind power in **Asia-Oceania** fell 15.9% in 2022 to USD 12.1 billion, due to difficulties with grid connection.
- Asia (mostly **China**) was home to nearly 53% of global offshore wind power capacity, overtaking Europe's long-time lead.
- Asia added nearly 8.8 GW of offshore wind capacity in 2022, led by **China** with 5.1 GW and followed by **Chinese Taipei** with 1.2 GW and **Japan** with 84 MW.
- In December 2022, **Japan's** first large-scale offshore wind farm began operation in Akita prefecture in the Tohoku region.