

## Energy security concerns and new policies lead to largest ever upward revision of IEA's renewable power forecast

The first truly global energy crisis, triggered by Russia's invasion of Ukraine, has sparked unprecedented momentum for renewables. Fossil fuel supply disruptions have underlined the energy security benefits of domestically generated renewable electricity, leading many countries to strengthen policies supporting renewables. Meanwhile, higher fossil fuel prices worldwide have improved the competitiveness of solar PV and wind generation against other fuels.

Renewable capacity expansion in the next five years will be much faster than what was expected just a year ago. Over 2022-2027, renewables are seen growing by almost 2400 GW in our main forecast, equal to the entire installed power capacity of China today. That is an 85% acceleration from the previous five years, and almost 30% higher than what was forecast in last year's report, making it our largest ever upward revision. Renewables are set to account for over 90% of global electricity capacity expansion over the forecast period. The upward revision is mainly driven by China, the European Union, the United States and India, which are all implementing existing policies and regulatory and market reforms, while also introducing new ones more quickly than expected in reaction to the energy crisis. China's 14th Five-Year Plan and market reforms, the REPowerEU plan and the US Inflation Reduction Act are the main drivers of the revised forecasts.

Renewables will transform the global power mix through 2027, becoming the largest source of electricity. Renewables become the largest source of global electricity generation by early 2025, surpassing coal. Their share of the power mix is forecast to increase by 10 percentage points over the forecast period, reaching 38% in 2027. Renewables are the only electricity generation source whose share is expected to grow, with declining shares for coal, natural gas, nuclear and oil generation. Electricity from wind and solar PV more than doubles in the next five years, providing almost 20% of global power generation in 2027. These variable technologies account for 80% of global renewable generation increase over the forecast period, which will require additional sources of power system flexibility. Meanwhile, the growth of dispatchable renewables including hydropower, bioenergy, geothermal and concentrated solar power remains limited despite their critical role in integrating wind and solar PV into global electricity systems.

Solar PV's installed power capacity is poised to surpass that of coal by 2027, becoming the largest in the world. Cumulative solar PV capacity almost triples in our

forecast, growing by almost 1 500 GW over the period, exceeding natural gas by 2026 and coal by 2027. Annual solar PV capacity additions increase every year for the next five years. Despite current higher investment costs due to elevated commodity prices, utility-scale solar PV is the least costly option for new electricity generation in a significant majority of countries worldwide. Distributed solar PV, such as rooftop solar on buildings, is also set for faster growth as a result of higher retail electricity prices and growing policy support to help consumers save money on their energy bills.

Global wind capacity almost doubles, with offshore projects accounting for one-fifth of the growth. Over 570 GW of new onshore wind capacity are forecast to become operational over the 2022-27 period. However, onshore wind additions will only break their annual record, set in 2020, by the end of the forecast period because of lengthy permitting procedures and lack of improvements to grid infrastructure. Offshore wind growth accelerates globally, while Europe's share of installed offshore capacity declines from 50% in 2021 to 30% in 2027 as China's provincial policies support faster expansion and the United States becomes a sizeable market at the end of the forecast period.

Improved policies can narrow the gap to net zero by 2050 Our accelerated case shows global renewable capacity can expand by an additional 25% compared with the main forecast if countries address policy, regulatory, permitting and financing challenges. Most advanced economies face challenges to implementation, especially related to permitting and grid infrastructure expansion. In emerging economies, policy and regulatory uncertainties still remain major barriers to faster renewable energy expansion. Finally, in developing economies, weak grid infrastructure and a lack of access to affordable financing hamper the timely commissioning of projects in our main forecast. Should countries address those challenges, global renewable capacity could expand by almost 3 000 GW. This faster increase would significantly narrow the gap on the amount of renewable electricity growth that is needed in a pathway to net zero emissions by 2050.