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Wind and solar generate over a third of Brazil's electricity for the first month on record

The record comes as hydro output hits a four-year low, with wind and solar mitigating drought impacts and avoiding a spike in fossil generation.

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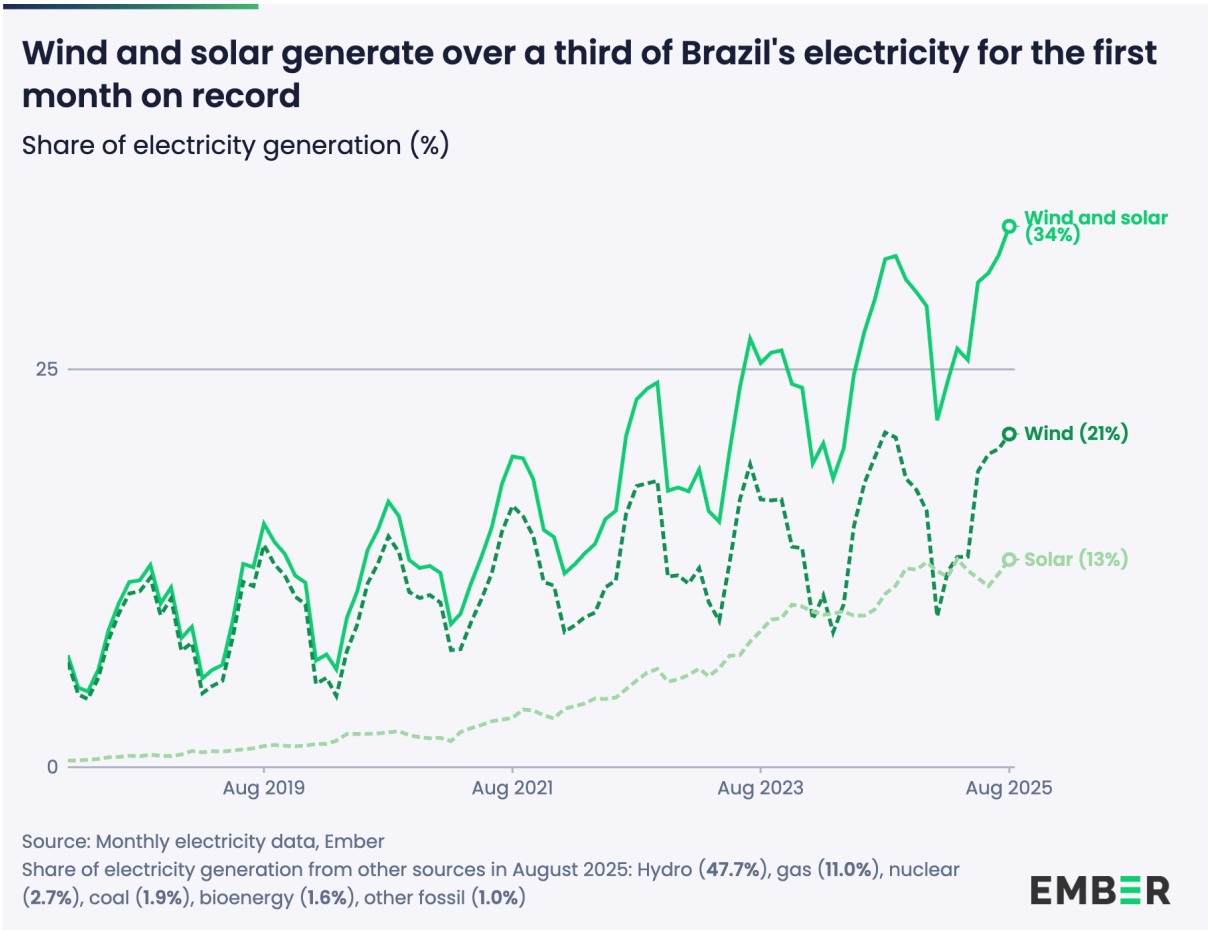
Wind and solar produced more than a third of Brazil's electricity for the first month on record, reaching a share of 34% in August 2025. The combined output in August of 19.0 TWh surpassed the previous record of 18.6 TWh set in September 2024.



Wind and solar have seen impressive growth in Brazil in recent years with solar in particular rising sharply. The share of solar power has grown sixfold in five years,

from 2.2% in August 2020 to 13% in August 2025. Wind also saw a substantial increase from 15% in August 2020 to 21% in August 2025.

While August 2025 stands out as a record month, wind and solar are playing a growing role in Brazil's electricity mix across the entire year. In 2024, wind and solar generated 24% of Brazil's electricity, more than doubling their share in five years from 9.9% in 2019. Solar has grown particularly rapidly from 1.1% in 2019 to 9.6% in 2024, while wind has almost doubled its share from 8.8% in 2019 to 15% in 2024.

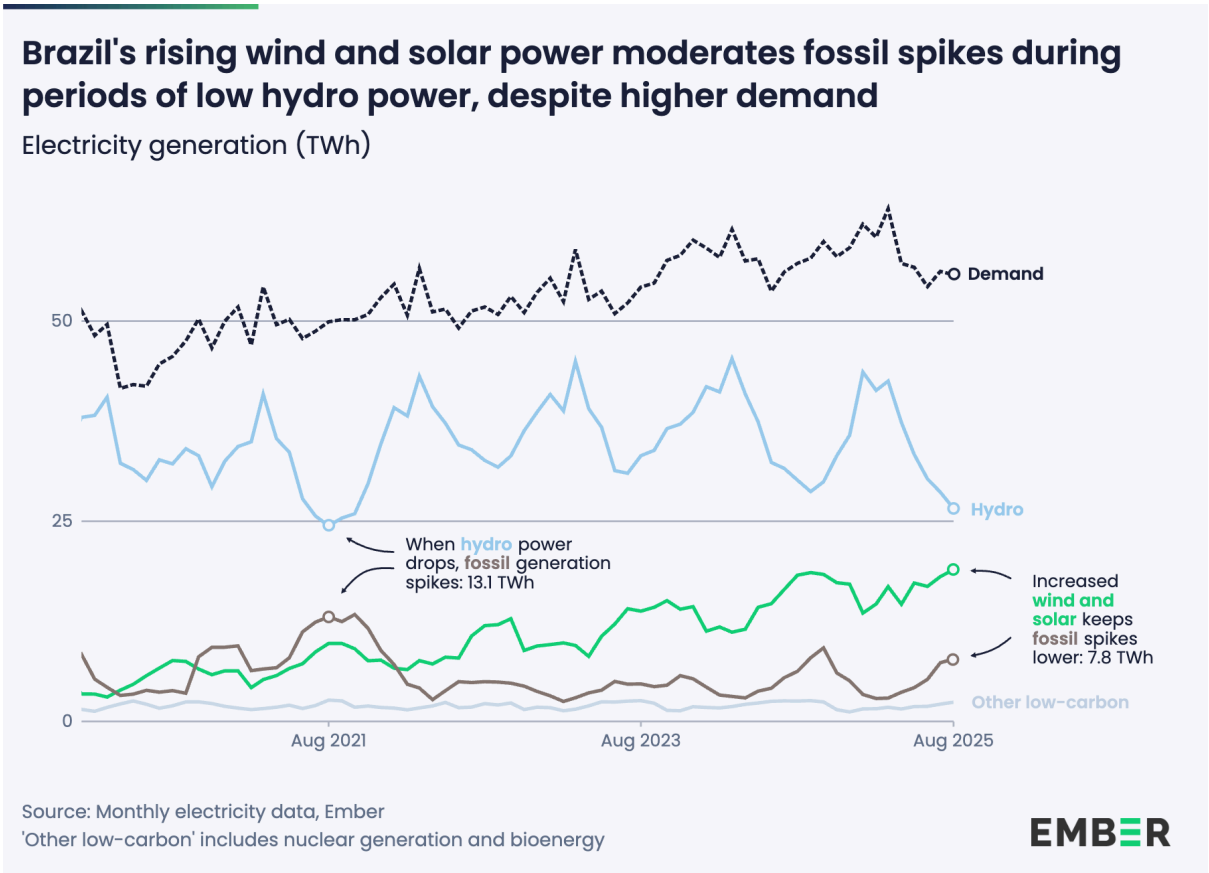
While hydro power remained Brazil's single largest source of electricity generation, at 48% in August, it was only the second month on record where hydro made up less than half of Brazil's electricity. Total hydro generation fell to 27 TWh – the lowest value since August 2021 – as reduced rainfall worsened Brazil's already low dry-season output.

Hydro's changing role

Growing demand and stagnating hydro capacity and output have led to a decline in hydro share in Brazil in the last decade. Moreover, hydro's role in the mix also has changed. A former load base provider, dispatchable generation from reservoir hydro power stations complements the variable output of wind and solar, allowing more of these sources to be integrated into the system. Equally, higher wind and solar output means hydro power plants can reduce their output during drought conditions and preserve water, enhancing system resilience.

Wind and solar growth avoids larger spikes in fossil generation

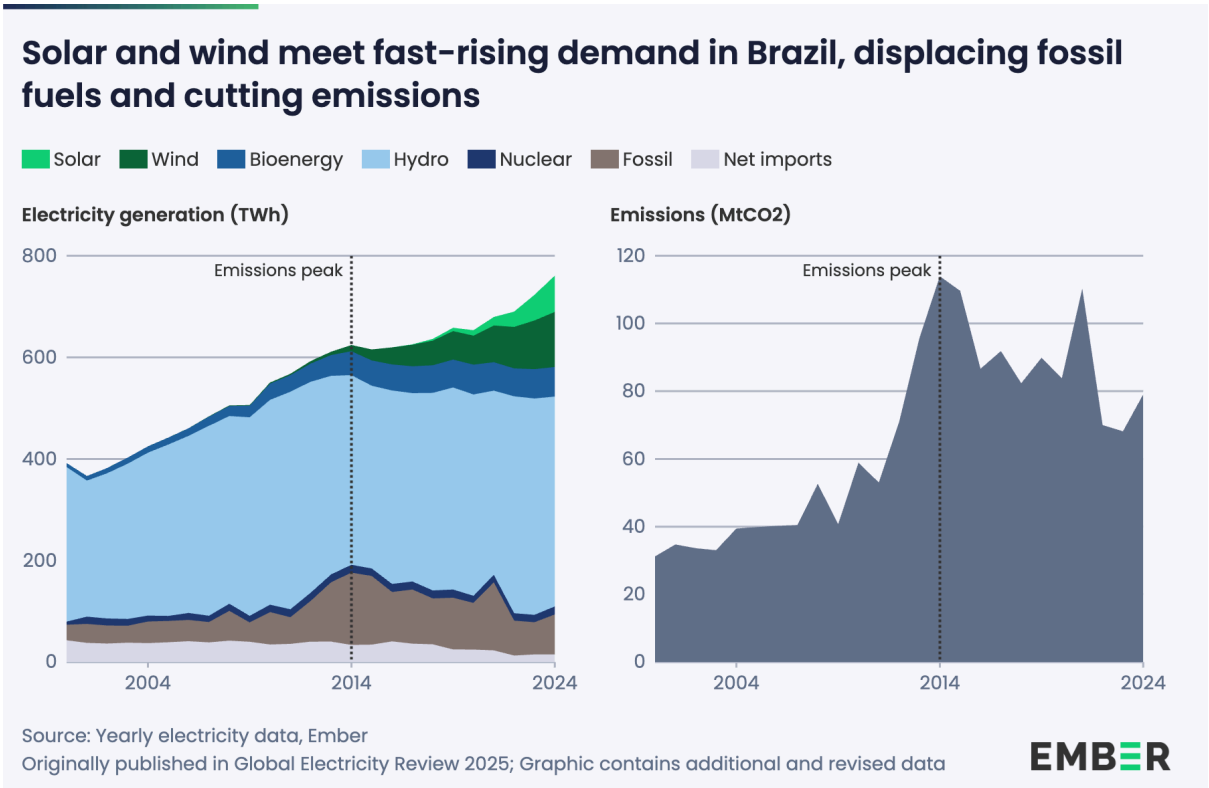
Despite weak hydro output, fossil generation provided just 14% of Brazil's electricity (7.8 TWh) in August 2025. In previous drought years, such as 2021, fossil generation spiked to 26% (13 TWh) in August. Brazil's successful diversification of its electricity mix in recent years means that wind and solar power are now able to compensate for the shortfall in hydro power without risking costly fossil fuel spikes.



Clean power meets fast-rising demand in Brazil

Brazil's build-out of wind and solar power has been fast enough to meet and exceed growth in electricity demand over the last decade. This has reduced the need for additional fossil generation and prevented an increase in power sector emissions.

As reported in Ember's Global Electricity Review 2025 earlier this year, Brazil's emissions from electricity generation peaked in 2014 at 114 million tonnes of CO2 (MtCO2). Between 2014 and 2024, wind and solar increased fifteenfold, adding 168 TWh – enough to exceed demand growth. As a result, despite demand growing by 137 TWh (+22%) over the same period, fossil generation fell by 64 TWh (-45%). Consequently, power sector emissions declined by 31% to reach 79 MtCO2 in 2024.



Sustained clean power build-out can meet future demand

Brazil's fast-rising demand presents both an opportunity and a challenge: the opportunity, meet this with cheap, clean sources like solar and wind; the challenge – ensure that policy and investment are aligned to support this.

Brazil's demand growth has been above-average in the last two years, with 4.8% and 5.3% in 2023 and 2024 respectively, compared to an average of 2.0% in the previous decade. Demand growth is expected to continue in the coming years, with some estimates showing growth of 3.4% per year until 2030.

The continued build-out of clean power at pace can help avoid a rise in costly imports of coal and gas to meet rising power demand. However, solar capacity additions slowed in the first half of 2025 with 7.1 GW installed compared to 9.9 GW in the first half of 2024, as issues such as grid-connection queues and congestion, regulatory uncertainty and reduced incentives put downward pressure on the Brazilian solar market. Planned auctions for transmission lines and new rules on solar compensation aim at reducing the complexity and barriers for wind and solar deployment and could once more accelerate their build-out.

"Brazil has established itself as a global clean power leader. Diversifying its electricity mix has made Brazil more resilient against droughts while meeting the fast-rising power demand of a growing economy without deepening its dependence on costly fossil fuel imports."

Dr Raul Miranda
Global programme director, Ember

Supporting information

Methodology

Generation data in this report is from Ember's monthly and yearly electricity datasets. Brazil's monthly generation data is sourced from the Operador Nacional do Sistema Elétrico (ONS).

All of Ember's generation data can also be accessed through Ember's Electricity Data Explorer.

Data on solar capacity additions is from Ember's Monthly Wind and Solar Capacity Data.