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Fall in Japan's power demand sees India as third largest producer of solar power in 2023

Solar power while making up 18% of India's total installed electricity made up only 6.66% of the power actually produced

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Global solar generation in 2023 was more than six times larger than in 2015, while in India it was 17 times higher. File | Photo Credit: AFP

In 2023, India overtook Japan to become the world's third-highest producer of solar power, said a report by international energy analytics agency Ember on Wednesday. India generated 113 billion units (BU) of solar power in 2023 compared to Japan's 110 BU.

In terms of installed power capacity, which includes sources of renewable and non-renewable energy, India at 73 gigawatt (1 GW is one billion watts) ranks fifth in the world while Japan is at third place (83 GW), according to data computed by Ember.

While reflective of the rising share of solar power in India's energy mix, the power produced per year can vary due to fluctuations in a country's power demand and local circumstances which lead to a gap between the installed capacity and actual power produced.

Data from government think-tank, Niti Ayog suggest that as of May 2024, solar power while making up 18% of India's total installed electricity of 442 GW, made up only 6.66% of the power actually produced – reflecting the gap between potential and actuals.

Power demand in Japan decreased by 2% (2 BU) in 2023 after rising in 2021 and 2022, thus allowing India to overtake Japan. While it is unclear if this trend will sustain next year, as surpassing the next country – the United States which is in the second spot – will require India to more than double its current solar production and exceed 228 BU.

The leading producer of solar power in the world is China which produced 584 BU of solar power in 2024 – more than the next four countries combined (the United States, Japan, Germany and India).

Globally however, renewable sources of energy made up 30% of global electricity produced. Renewables have expanded from 19% of global electricity in 2000, driven by an increase in solar and wind power, to 30% in 2023. China was the main contributor in 2023, accounting for 51% of the additional global solar generation and 60% of new global wind generation. Combined with nuclear, the world generated almost 40% of its electricity from low-carbon sources in 2023.

Ember forecasts fossil fuel generation to drop in 2024 and the trend to continue in other years, suggesting that 2023 might be the year when the fossil fuel production may have “peaked” globally.

“The renewables future has arrived,” said Dave Jones, Ember's director of global insights. “Solar in particular is accelerating faster than anyone thought possible.”

Global solar generation in 2023 was more than six times larger than in 2015, while in India it was 17 times higher. Share of solar generation increased from 0.5% of India's electricity in 2015 to 5.8% in 2023.

“Increasing clean electricity isn’t just for reducing carbon emissions in the power sector,” said Aditya Lolla, Ember’s Asia Programme Director, “It’s also needed to meet the rising electricity demand in an increasingly electrified economy and decoupling economic growth from emissions, which is crucial for tackling climate change.”