

Press release

India's coal pipeline signals potential overcapacity amid record high renewables installation

New Delhi, 23 May 2025 - India's power sector stands at a critical juncture, marked by record-high installed capacity and a rapidly evolving energy mix. A new study from the [Centre for Research on Energy and Clean Air \(CREA\)](#) found that on 30 May 2024, the country met its record highest electricity demand without utilising all of its thermal capacity, thanks largely to solar power. This shows that even India's peak loads can be met without using the full coal fleet as renewables continue to reduce pressure on the country's thermal resources.

CREA's analysis found India has 32.3 GW of thermal capacity under construction and 23.55 GW of stressed capacity. If all these are commissioned, total coal capacity would rise from 215 GW to 271 GW, which is higher than projected installed capacity requirements (251 GW by [CEA](#) and 262 GW by [NEP](#)), indicating that existing and under-construction capacity is sufficient to meet future demand. However, [22.6 GW](#) of new coal capacity was awarded during FY 2024-25, of which 5.6 GW is already under construction.

The study also showed that on 30 May 2024, India recorded its highest-ever electricity demand at 250 GW, during solar hours with 0.1 GW shortage. Only 188.24 GW of thermal capacity was online, with the remainder offline due to maintenance or forced outages. However, peak loads were still met, largely due to strong solar generation, which can contribute over 60 GW during daylight hours.

What's more, on peak demand days, India's share of renewable energy (solar, wind, biomass) in total gross generation increased from 9% in FY 2023-24 to 15% in Fiscal Year 2024-25. The share of coal and lignite, meanwhile, remained mostly steady, declining slightly from 71% to 70%.

In FY 2023-24, 305 out of 366 days saw their daily peak during solar hours. In FY 2024-25, this number was 256 out of 365. Peak demand during non-solar hours remained significantly lower, rising from 210.64 GW to 224.18 GW. During FY 2024-25, power demand crossed 250 GW in only one day. On all remaining days, demand stayed below this threshold, with a significant 232 days recording demand under 220 GW. These levels are well within the capacity of the existing and under-construction thermal, hydro, and other dispatchable sources.



India currently has 234 GW of renewable energy capacity in the pipeline, which will further reduce pressure on thermal resources as solar continues to dominate during peak hours.

'The government's plan to raise the coal-based power capacity target for the next seven years from 80 to 100 GW reflects an intent to meet India's growing electricity demand. However, the country is already undergoing a structural transformation in which existing capacity is sufficient to meet future power demands. Instead of expanding coal-based power generation, India has an opportunity to strengthen its energy future by focusing on accelerating renewable energy development, modernizing the grid, increasing storage capacity, and improving the flexibility of the existing thermal power plants,' said Manoj Kumar, Analyst at CREA.

Based on these findings, CREA recommends:

- **Reconsider new coal investments:** A recent [study](#) shows that India can meet its projected electricity demand by 2030 without adding any new coal capacity, if it achieves a 600 GW non-fossil target (377 GW solar, 148 GW wind, 62 GW hydro, 20 GW nuclear). Even under faster-than-expected demand growth, this high-renewables pathway remains the most cost-effective, reducing power procurement costs while eliminating the need for new coal plants.
- **Invest in energy storage, transmission, and grid technologies:** Another [study](#) finds that if battery storage costs decline by 15% annually, India can cap coal capacity at 260 GW by 2030, as planned in the National Electricity Plan, avoiding new coal entirely. Even with slower (7%) storage cost declines, coal use would plateau, and only limited additional capacity may be needed to manage non-solar peaks. Renewables, even with integration and balancing costs, have already become [cheaper](#) than coal-based generation, reducing reliance on costly thermal plants.

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Notes to editors

- The full *Record renewables capacity in FY24-25 signals India's path beyond coal* report may be found [here](#).

About CREA

The Centre for Research on Energy and Clean Air (CREA) is an independent research organisation focused on revealing the trends, causes, and health impacts, as well as the solutions to air pollution. We use scientific data, research and evidence to support the efforts of governments, companies and campaigning organisations worldwide in their efforts to move towards clean energy and clean air.

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