# POWERup

## Update on India's electricity capacity, generation and investment

Institute for Energy Economics and Financial Analysis

1Q 2026

## 1. Installed capacity

### First quarter (1Q) 2026 update:

**Record capacity additions of 19,010MW in 1Q 2026 drove India's total installed capacity to 532.7GW, with non-fossil fuels accounting for 53.2% of the cumulative capacity.**

India's total cumulative power generation capacity reached 532.7 gigawatts (GW) at the end of March 2026. Of this, non-fossil fuels accounted for 283.5GW, making up 53.2% of the current total generation capacity. The country currently ranks third globally in renewable energy installed capacity and must sustain this momentum as it scales toward its 500GW non-fossil capacity target.

In 1Q 2026 (January-March), India added a total power-generating capacity of 19,010 megawatts (MW), with non-fossil fuel-based capacity accounting for 87.7% of the additions (Table 1).

Solar continued to dominate capacity additions with a 76% share, followed by coal (12.3%) and wind (8.3%). This trend is consistent with long-term capacity growth, with solar capacity increasing more than 53 times from 2.82GW in March 2014 to a milestone 150.26GW in March 2026, compared with 2.7 times increase in wind capacity from 21.04GW to 56.09GW over the same period.

The following were the notable additions from energy sources other than solar and wind:

- Thermal power capacity additions included the commissioning of Unit 5 of the Sagardighi Thermal Power Project in West Bengal (660MW), Unit 4 of the Yadadri Thermal Power Station in Telangana (800MW), and Unit 6 of the North Chennai Thermal Power Station in Tamil Nadu (800MW).
- Large hydro power capacity additions included Unit 1 & 3 of NHPC's Subansiri Lower Hydroelectric Project (250MW each) at the Arunachal Pradesh-Assam border, which added 500MW of capacity in 1Q 2026.

**Table 1: Installed power generation capacity (MW), by source, 1Q 2026**

| Energy source | As of 31 December 2025 | As of 31 March 2026 | Net new capacity added | % of new capacity added |
|---|---|---|---|---|
| Wind power | 54,511 | 56,095 | 1,584 | 8.33% |
| Solar power* | 1,35,810 | 1,50,261 | 14,451 | 76.02% |
| Small hydro | 5,159 | 5,171 | 12 | 0.07% |
| Biomass | 10,757 | 10,869 | 112 | 0.59% |
| Waste to energy* | 857 | 877 | 20 | 0.11% |
| Large hydro | 50,915 | 51,415 | 500 | 2.63% |
| Nuclear | 8,780 | 8,780 | 0 | 0.00% |
| Coal (+ lignite) | 2,26,230 | 2,28,560 | 2,330 | 12.26% |
| Gas | 20,122 | 20,122 | 0 | 0.00% |
| Diesel | 589 | 589 | 0 | 0.00% |
| **Total** | **5,13,729** | **5,32,739** | **19,010** | |

*Includes grid and off-grid capacities

*Source: Central Electricity Authority, GoI; IEEFA*

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## Capacity additions trend:

**Capacity additions in 1Q 2026 touched a record high of 19GW, with major contribution in solar power.**

Capacity additions rebounded from 4Q 2025, with a 48.4% increase quarter-on-quarter (QoQ) bringing the total to 19GW in 1Q 2026 (Table 2). This represents the highest capacity addition in the last five quarters, with a 43.9% rise year-on-year (YoY) from 13.2GW in 1Q 2025. The increase in capacity was primarily driven by solar power, which reached 150GW in 1Q 2026, highest in the past 16 quarters. This growth was bolstered by an increase in rooftop solar installations under the PM Surya Ghar Muft Bijli Yojana which has added nearly 10GW capacity between 1Q 2024 and 1Q 2026.

Wind capacity additions have averaged about 1,590MW per quarter since 1Q 2025. This represents a 50% increase compared to the previous year, when additions averaged around 1,000MW per quarter.

The recent momentum reflects a sustained build-out. These achievements signal improving project execution, supported by the growing pipeline of wind-solar hybrid projects and the progressive roll-out of green energy open access. However, the rapid pace of renewable capacity additions is beginning to test grid integration capabilities.

**Table 2: Net power capacity additions by energy source (MW), last five quarters**

| Energy Source | 1Q 2025 | 2Q 2025 | 3Q 2025 | 4Q 2025 | 1Q 2026 |
|---|---|---|---|---|---|
| Wind power | 1,875 | 1,637 | 1,449 | 1,387 | 1,584 |
| Solar power* | 7,782 | 10,602 | 11,084 | 8,478 | 14,451 |
| Small hydro | - | 1 | 32 | 25 | 12 |
| Biomass | 15 | 0 | 14 | - | 112 |
| Waste to energy* | 220 | 13 | 1 | 2 | 20 |
| Large hydro | 760 | 1,650 | 730 | 807 | 500 |
| Nuclear | 0 | 600 | 0 | - | 0 |
| Coal (+ lignite) | 2,843 | -495 | 2,760 | 2,152 | 2,330 |
| Gas | -285 | -4,401 | 0 | -10 | 0 |
| Diesel | 0 | 0 | 0 | - | 0 |
| **Total** | **13,210** | **9,607** | **16,070** | **12,841** | **19,010** |

*Includes grid and off-grid capacities

*Source: Central Electricity Authority, GoI; IEEFA*

## Capacity additions among large states:

**Gujarat, Rajasthan and Tamil Nadu continue to lead in renewables capacity installations in 1Q 2026.**

Among large states (with installed renewable power generation capacity of 10GW or more), Gujarat and Rajasthan led renewable energy capacity additions in 1Q 2026, adding 4,635MW and 4,512MW, respectively (Table 3).

Other notable additions were recorded in Tamil Nadu (1,995MW), Maharashtra (1,714MW), and Andhra Pradesh (1,145MW), while Karnataka (739MW) and Madhya Pradesh (329MW) saw lower capacity additions during the quarter.

Renewable energy capacity additions in India remain concentrated in Rajasthan and Gujarat, together accounting for over 40% of national capacity (excluding large hydro) and leading quarterly additions. Rajasthan has also recently introduced demand flexibility rules, including demand flexibility regulations, to better align electricity consumption with renewable generation and manage rising curtailment and grid integration challenges. These have come into effect as of 1 April 2026.

**Table 3: Renewable energy capacity installations (MW), large states***

| | 1Q 2025 | 2Q 2025 | 3Q 2025 | 4Q 2025 | 1Q 2026 |
|---|---|---|---|---|---|
| Rajasthan | 1,973 | 3,735 | 2,613 | 2,161 | 4,512 |
| Gujarat | 1,910 | 4,148 | 2,571 | 2,630 | 4,635 |
| Madhya Pradesh | 516 | 452 | 365 | 249 | 329 |
| Maharashtra | 1,780 | 1,911 | 3,362 | 2,661 | 1,714 |
| Andhra Pradesh | 940 | 1,358 | 504 | 859 | 1,145 |
| Karnataka | 1,316 | 613 | 970 | 484 | 739 |
| Tamil Nadu | 967 | 507 | 840 | 524 | 1,995 |

*States with an installed renewables capacity of close to 10GW or more.
*Source: Central Electricity Authority, MNRE, IEEFA*

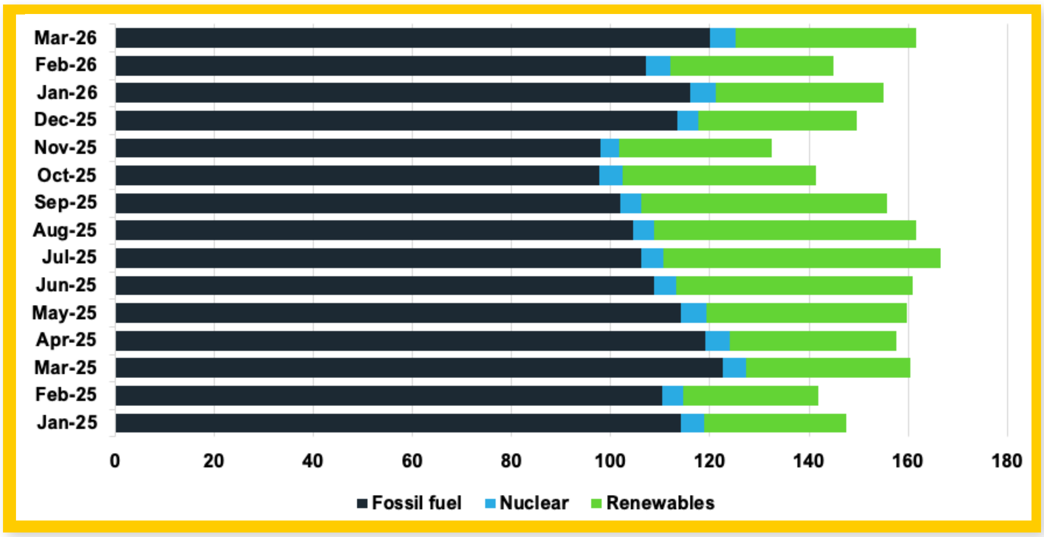
# 2. Generation

**Renewable generation increased 16.3% in 1Q 2026 from 1Q 2025, despite rising curtailment and grid constraints.**

Total electricity generation from all sources increased marginally by 2.7% from 449.7 billion units (BUs) in 1Q 2025 to 461.7BUs in 1Q 2026 (January–March). Total renewable generation grew 16.3% from 88.9BUs in 1Q 2025 to 103.4BUs in 1Q2026.

Solar and wind power generation significantly increased by 22.5% from 57.4BUs in 1Q2025 to 70.3BUs in 1Q2026. In the same period, fossil fuel based thermal power generation decreased by 1.1% from 347BUs in 1Q 2025 to 343BUs in 1Q 2026. Nuclear power generation also grew by 10.1% from 13.6BUs in 1Q 2025 to 15BUs in 1Q 2026.

**Figure 1: Power generation by source (BU), monthly, 2025-26**




*Source: Central Electricity Authority, MNRE, JMK Research, IEEFA*

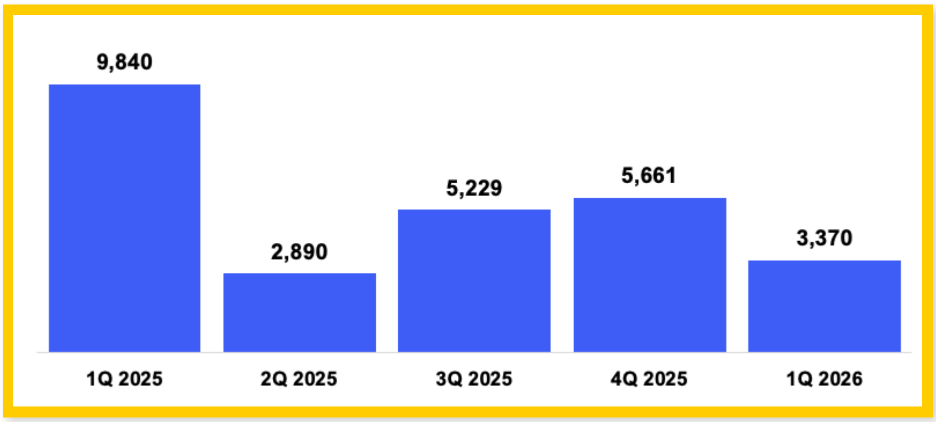
Despite strong growth in renewable capacity and generation, growth is increasingly constrained by grid integration challenges. India curtailed an estimated 2.3 terrawatt hours (TWh) of solar generation in 2025 due to grid security concerns, with curtailment rising as renewable penetration increased. System operators have increasingly had to reduce solar output as other generation sources reached their operational limits, highlighting insufficient grid flexibility and transmission capacity.

# 3. Investments

Investments in the renewable energy sector fell by 65.8% YoY, from about USD9,840 million (INR92,889 crore) in 1Q 2025 to approximately USD3,370 million (INR31,812 crore) in 1Q 2026, and were down 40.5% QoQ from USD5,661 million (INR53,461 crore) in 4Q 2025 (Figure 2). The sharp YoY decline partly reflects exceptionally high investments in 1Q 2025 driven by large acquisitions and debt financing.

**Renewable energy investments fell to USD3.37 billion in 1Q 2026, reflecting emerging project bottlenecks, though global investments in energy transition are expected to remain robust.**

**Figure 2: Investments in India's renewable energy sector (USD million)**




*Source: JMK Research, news reports*

This decline is likely a reflection of increasing caution amid grid integration challenges, curtailment risks, and transmission constraints. India's renewable energy expansion is increasingly facing structural bottlenecks, with rapid capacity additions outpacing transmission and grid integration infrastructure. While the decline suggests a slowdown, global investments in the energy transition remained robust, reaching USD2.3 trillion (INR 216.3 lakh crore) in 2025, and are expected to grow further over the coming years.

This trend is consistent with capacity addition patterns, where leading states such as Rajasthan and Gujarat continued to record strong installations in 1Q 2026, suggesting that project execution remains resilient despite some volatility in investment flows.

## Some significant investments and deals announced during the quarter include:

| | |
|---|---|
| **Tata Power and Websol Energy System** | The Government of Andhra Pradesh has approved renewable energy investments worth INR15,800 crore (USD1.6 billion) to expand the state's clean energy capacity. The plan includes major solar manufacturing projects by Tata Power and Websol Energy System, alongside additional investments in solar and pumped hydro. |
| **Premier Energies** | Premier Energies will invest INR11,000 crore (USD1.17 billion) to add 7.4GW solar cell manufacturing capacity in Andhra Pradesh and 6GW solar module manufacturing capacity in Telangana. |
| **LNK Energy** | LNK Energy plans to invest INR10,000 crore (USD1.06 billion) over five years across solar manufacturing, green fuels, and renewable energy. The plan centres on a 6GW solar manufacturing project in Maharashtra. |
| **Small Industries Development Bank of India** | The Government of India has approved an equity infusion of INR5,000 crore (USD531 million) into the Small Industries Development Bank of India (SIDBI), to be disbursed in tranches from FY2026–FY2028. This funding could expand SIDBI's solar project funding. |
| **Vikram Solar Ltd** | Vikram Solar Ltd has secured up to INR3,200 crore (USD340 million) in working capital facilities through a consortium loan led by Indian Bank. The financing will expand solar module manufacturing and initiate solar cell manufacturing. |
| **Inox Clean Energy Limited** | Inox Clean Energy Limited has raised about INR3,100 crore (USD329 million) in equity alongside its subsidiary Inox Solar. The funding will be used to expand its Independent Power Producer (IPP) portfolio and scale solar manufacturing capacity. |
| **Waaree Renewable Technologies Limited** | Waaree Renewable Technologies Limited (WRTL) will acquire a 55% stake in Associated Power Structures Limited (ASPL) for about INR1,225 crore (USD130 million), through a mix of primary and secondary investment. The deal is aimed at accelerating WRTL's growth strategy and strengthening its renewable energy capabilities. |
| **GREW Solar** | GREW Solar has raised INR1,050 crore (USD111 million) in a funding round led by Bay Capital Investment. The capital will support expanding solar cell manufacturing, increasing total cell manufacturing capacity to 8GW. |
| **Mahindra Susten** | Mahindra Susten has secured INR1,025 crore (USD109 million) in financing from HDFC Bank for a 300MW solar renewable energy project in Rajasthan. |
| **KPI Green Energy** | KPI Green Energy has secured INR979 crore (USD104 million) in funding from Canara Bank to finance a 150MW wind project in Gujarat. |
| **Radiance Renewables** | Radiance Renewables has raised INR940 crore (USD100 million) in equity from Impact Fund Denmark and FMO. The funding will support expansion of its renewable energy portfolio in India, including solar, hybrid, and commercial- and industrial-focused projects. |

# About IEEFA

The Institute for Energy Economics and Financial Analysis (IEEFA) examines issues related to energy markets, trends and policies. The Institute's mission is to accelerate the transition to a diverse, sustainable and profitable energy economy.
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