Institute for Energy Economics and Financial Analysis

Fact sheet

Indian States' Electricity Transition (SET) 2026

Evaluating preparedness of 21 Indian states towards the electricity transition pathway

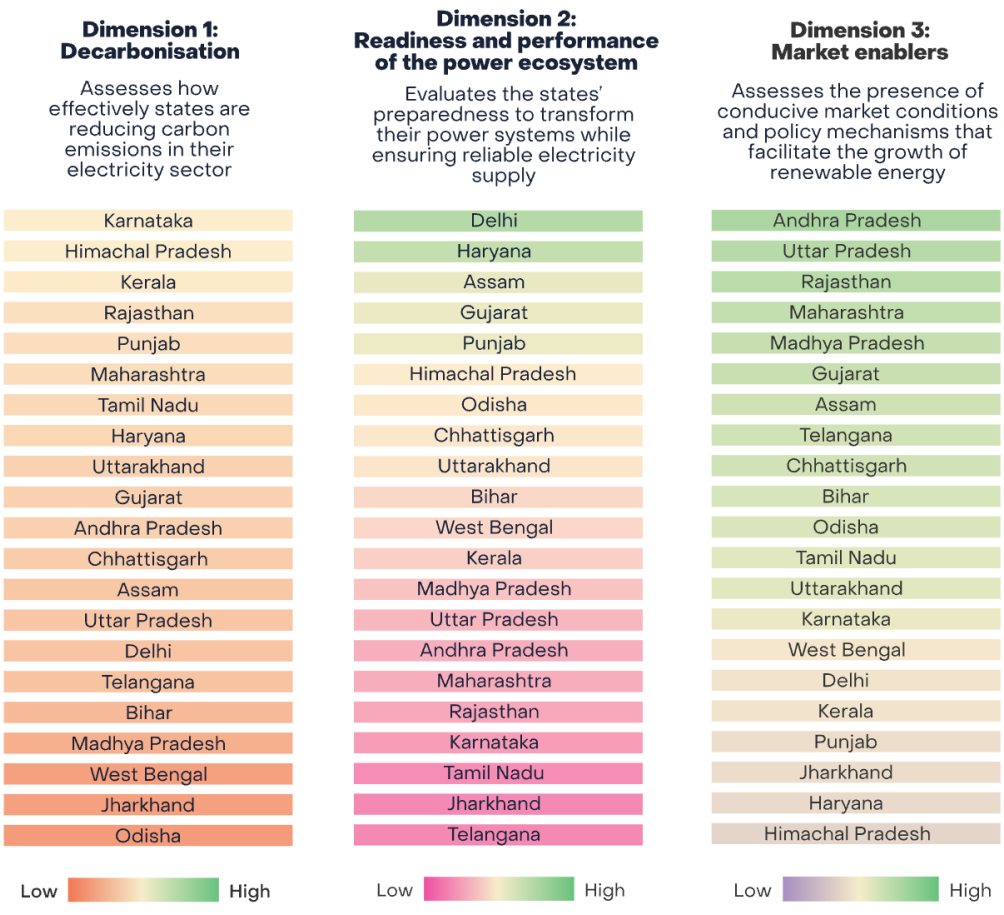
Electricity is at the centre of economic growth and the global clean energy transition, with rising use across transport, industry, and households. Globally, electricity accounted for 21% of total final energy consumption in 2024, highlighting its growing role in the energy system.

In the broader Global South context, the electricity transition is particularly critical as emerging economies balance rapid development with decarbonisation requirements, making the pace and scale of clean power expansion a defining factor for global climate outcomes. Within this, India plays a pivotal role given the scale of its power system and rapid demand growth. India's electricity demand (fulfilled) rose 34% between financial year (FY) 2021 and FY2026 to reach 1,707 billion units. India's renewable capacity reached 274 gigawatts (GW) (including large hydro), with over 150GW coming from solar as of March 2026. The country has also achieved 50% installed power capacity from non-fossil fuel sources, meeting its 2030 cumulative non-fossil fuel electric power capacity target five years early. India has the third-largest installed capacity globally and accounts for a major share of South Asia's electricity system. As a result, its transition will significantly influence regional energy system development and contribute to global decarbonisation pathways.

However, the pace and effectiveness of the electricity transition will ultimately be shaped at the subnational level, where policy implementation, infrastructure development, and demand-side realities intersect. In India, progress has been uneven across states, making state-level performance central to effective policymaking. A cross-dimensional analysis highlights that progress in one area does not always translate into a system-wide transition, with the pace and depth of progress varying significantly across all the 21 states assessed.

Overview

Dimension-level performance of 21 states



Karnataka, Himachal Pradesh, and Kerala showcased consistent leadership in the decarbonisation dimension of the SET 2026 and SET 2024 analyses.

Delhi and Haryana continued to perform strongly on power ecosystem readiness and functioning.

Andhra Pradesh, Uttar Pradesh, and Rajasthan did well under market enablers, reflecting regulatory initiatives that accelerated renewable energy adoption.

For details on the methodology adopted for the SET 2026 analysis, and further insights, refer to IEEFA and Ember's Indian States' Electricity Transition (SET) 2026 report.

Macro performance of 21 states across electricity transition dimensions

Maharashtra, Rajasthan, Gujarat, Assam, Punjab, and Himachal Pradesh emerged as leaders in India's electricity transition story, performing strongly in two of the three dimensions.

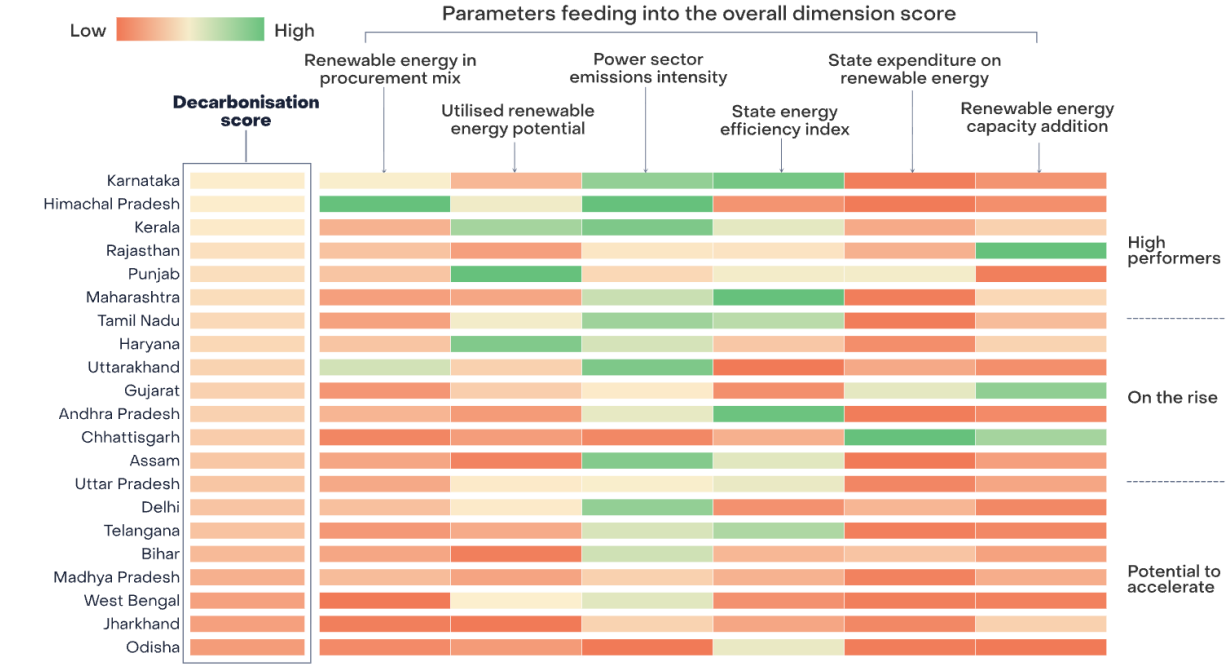
Karnataka, Tamil Nadu, Kerala, Delhi, Uttar Pradesh, and Andhra Pradesh, among others, showed progress in a single dimension.

Chhattisgarh, Uttarakhand, and Bihar were among the states that exhibited moderate performance across dimensions.

West Bengal, Telangana, and Jharkhand remained in the early stages of transitioning.

Detailed evaluation

Dimension 1: Decarbonisation



Karnataka stands out as a top performer in decarbonisation due to a ~37% renewable energy share in its power procurement mix, strong State Energy Efficiency Index (SEEI) 2024 performance, and moderate utilisation of its renewable potential (with ~88% still untapped).

Himachal Pradesh is a hydropower-dominated leader in this dimension, with the highest share of renewable energy in the procurement mix (~65%) and the lowest power sector emission intensity among the states assessed.

Kerala comes in third due to low emission intensity and 31% renewable potential utilisation supported by renewable capacity growth of 11% (annual average over the last five financial years).

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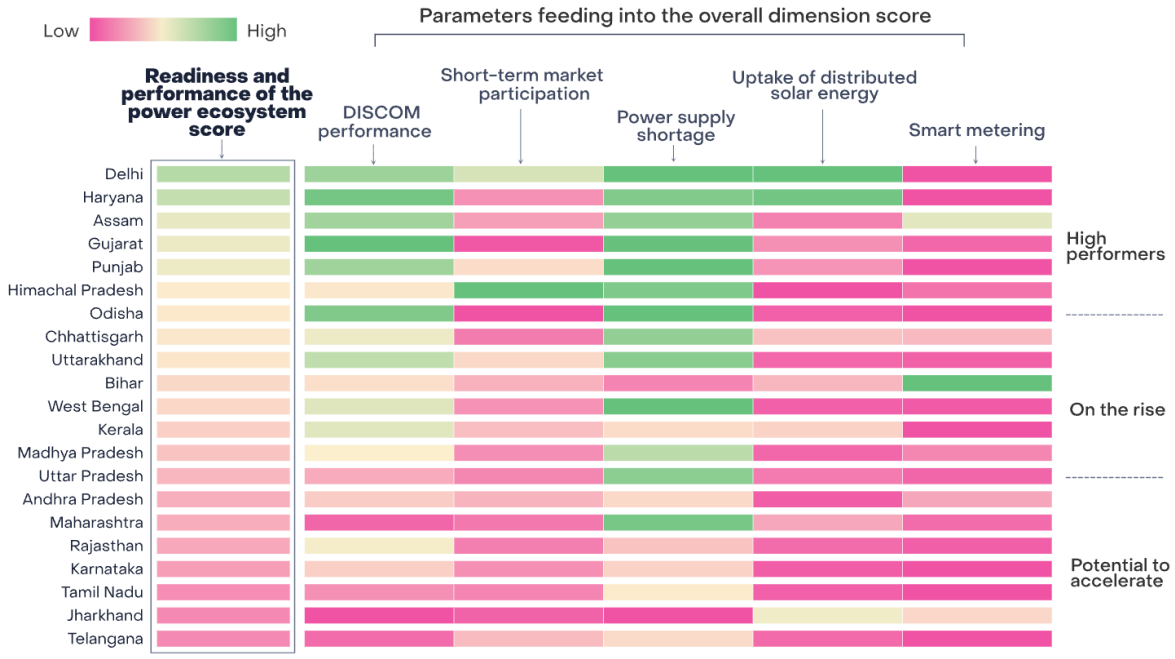
Dimension 2: Readiness and performance of the power ecosystem

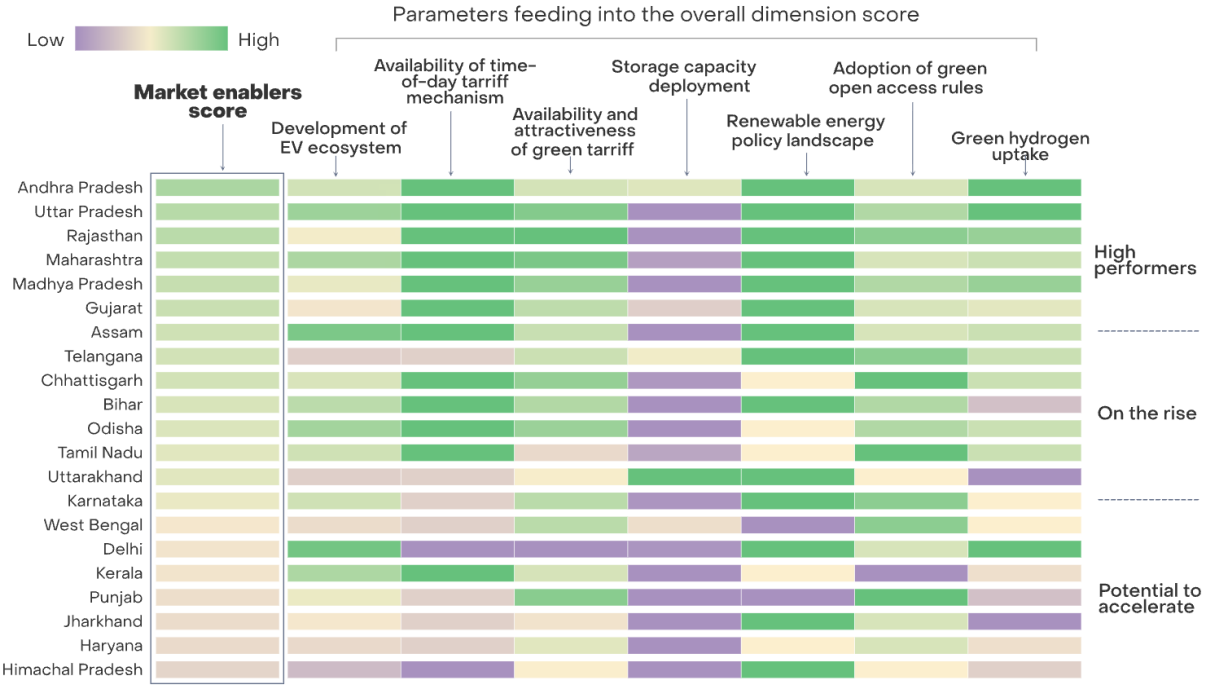


Delhi stands out as a top performer under this dimension due to zero power shortages, robust performance by distribution companies (DISCOMs), and high rooftop solar adoption (76% of total renewable capacity).

Haryana has achieved strong distributed solar penetration [1,798 megawatts (MW), ~87% of solar capacity], A+ rated DISCOMs, and adequate power supply.

Assam has minimal power shortages and relatively advanced smart meter installation (46% of sanctioned smart meters) under the Revamped Distribution Sector Scheme (RDSS).

Dimension 3: Market enablers



Andhra Pradesh emerges as the top performer, supported by an updated renewable energy policy, 6.2% electric vehicle (EV) adoption in FY2025, progress in green hydrogen and storage, and solar-hour-aligned time-of-day (ToD) tariffs.

Uttar Pradesh shows strong performance with a 10% EV adoption rate, ambitious solar and green hydrogen targets, and adoption of solar-hour-aligned ToD and green tariff frameworks.

Rajasthan is notable for its mature policy ecosystem and the lowest green tariff premium (USD0.0006/kWh or INR0.05/kWh).

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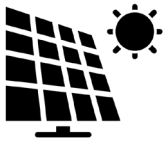
Accelerating India's subnational electricity transition will require states to move beyond a sole focus on adding renewable energy capacity. They would also need to focus on ensuring effective renewables' integration, absorption, and utilisation within the power system through:



Building predictable demand for clean power

Policymakers need to ensure timely policy updates, align procurement with Renewable Consumption Obligation (RCO) targets, and strengthen compliance to build predictable demand for clean power. They must also prepare for rising electricity demand from data centres, EVs, and green hydrogen, ensuring that this growth is met through clean energy sources.

Strengthening DISCOM performance

Regulators and DISCOMs need to address financial and operational stress through cost-reflective tariffs, improved billing and collection systems, and greater digitalisation to strengthen DISCOM performance. Direct benefit transfers for electricity subsidies, along with continued performance-linked financial support, will be essential.

Modernising power markets and procurement

Regulators need to modernise power markets and procurement by adopting market-based economic dispatch, developing capacity markets, and enabling peer-to-peer trading to improve efficiency, flexibility, and competition.

Enabling a smarter power system

State energy departments need to enable a smarter power system by scaling smart meters, implementing solar-hour-aligned ToD tariffs, and using AI-enabled demand response to shift loads and balance renewable variability.

Fast-tracking transmission and grid flexibility

The central government, state planning agencies, and transmission utilities need to align transmission planning with renewable energy rollout, while ancillary services should be expanded to enhance grid flexibility and strengthen overall system resilience.

Scaling storage and decentralised renewables

To scale renewables, it is important to accelerate storage deployment, adopt Round-the-Clock (RTC)/Firm and Dispatchable Renewable Energy (FDRE) procurement mechanisms, and unlock decentralised renewable solutions to reduce losses and improve resilience.

Together, these represent a set of enabling actions to support a faster, more resilient, and inclusive electricity transition across Indian states.

For details on the methodology adopted for the SET 2026 analysis, and further insights, refer to IEEFA and Ember's Indian States' Electricity Transition (SET) 2026 report.

Source for all figures: IEEFA and Ember analysis

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