

UP, Rajasthan and AP lead in EV, green hydrogen adoption: Study

FRONT RUNNERS. States' Electricity Transition report analysed 21 States representing 95% of power demand

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To increase the adoption of electric vehicles (EVs) and green hydrogen fuel, States such as Uttar Pradesh, Andhra Pradesh and Rajasthan undertook regulatory steps including green tariffs, green open access mechanism, and made progress on solar-hour-aligned time-of-day (ToD) tariffs.

The States' Electricity Transition (SET) report, a joint study by the Institute for Energy Economics and Financial Analysis (IEEFA) and Ember, analysed 21 States, which represent 95 per cent of India's power demand.

Karnataka, Himachal Pradesh and Kerala have also progressed well in decarbonising their electricity systems with higher renewable energy (RE) share in their procurement mix and lower



NORTHERN STARS. Delhi and Haryana remain ahead in terms of power ecosystem readiness and performance REUTERS

power sector emissions intensity.

Similarly, Delhi and Haryana remain ahead in terms of power ecosystem readiness and performance, supported by robust distributed solar adoption, reliable power supply, and relatively sound discom performance.

AHEAD OF THE PACK
Uttar Pradesh demonstrated

strong momentum in EV deployment, the study noted, with an adoption rate of 10 per cent in FY25. It has a RE policy, which targets 22 GW of solar capacity installed by FY27.

The State's green tariff premium for FY26, at \$0.0041 per kWh (₹0.34/kWh), reflects a reduction compared to the previous year. Uttar Pradesh is also

advancing in green hydrogen uptake and has a target of 1 million tonnes by 2028. It has also introduced a solar-hour-aligned ToD tariff mechanism. The State could benefit from accelerating its efforts to install storage capacity to facilitate reliability of RE sources.

AP & SMART METERS

On the other hand, Andhra Pradesh's performance is driven by its integrated RE policy released in October 2024 and advancements in green hydrogen uptake.

With the deployment of smart meters, Andhra Pradesh is actively moving towards implementing the solar-hour-aligned ToD tariff mechanism. It has adopted the Green Energy Open Access Rules, 2022, with limited waivers on open access charges such as cross subsidy surcharge, State distribution and transmission charges.

Andhra Pradesh's latest

green tariff premium stands at \$0.0083 per kWh (₹0.75 per kWh). The State has 1,440 MW of pumped hydro storage capacity operational or under construction. It performed moderately in EV ecosystem development with a 6.2 per cent adoption rate in FY25 across all vehicle categories.

Building on its RE leadership, Rajasthan continued to excel with a well-established RE policy landscape and with the lowest green tariff premium of \$0.0006 per kWh (₹0.05/kWh).

It performed moderately in transport sector decarbonisation, with an EV adoption rate of 6.6 per cent in FY25. However, despite advancing in ToD tariff mechanism adoption, Rajasthan fell behind in the deployment of smart meters.

The State only has 25 MW of storage capacity, indicating significant scope to expand its storage capacity.