

PRESS RELEASE

India's Vehicles to Double by 2050; Electric Two- and Three-Wheelers Already Cheaper Than Petrol: CEEW

- *Two-wheelers to make up 70 per cent of all vehicles by 2050*
- *Uttar Pradesh, Bihar, Maharashtra, Madhya Pradesh, and Gujarat to see fastest growth in vehicle stock*
- *EVs are already cost-competitive across key segments—especially two- and three-wheelers*

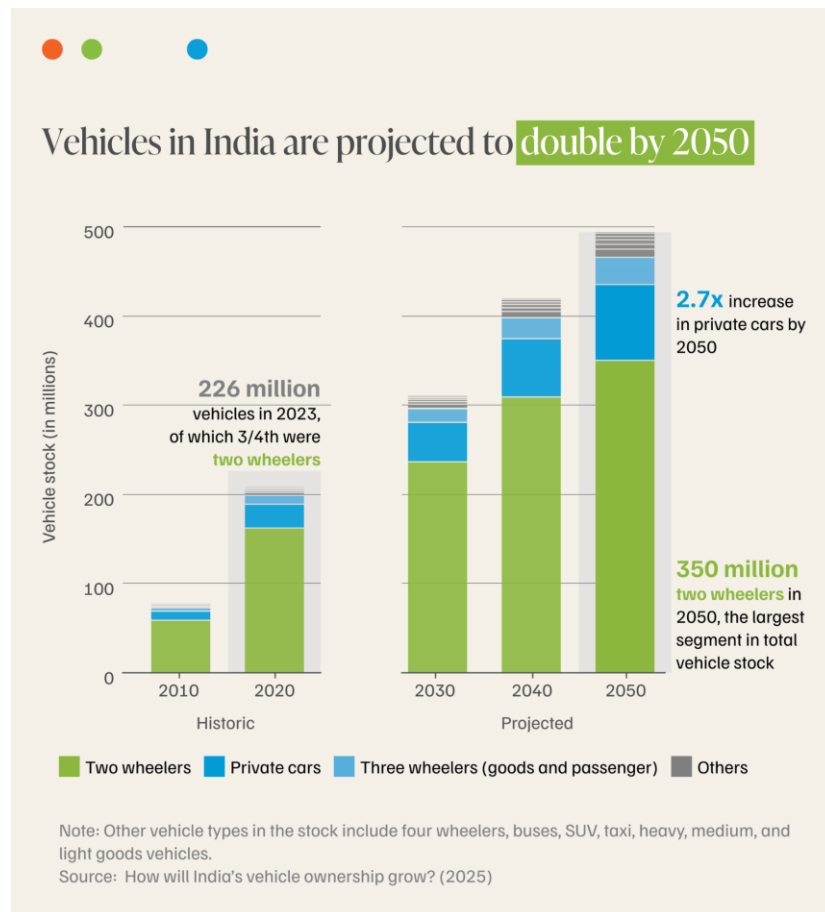
New Delhi, 17 June 2025: India's vehicle ownership is set to more than double—from 226 million in 2023 to nearly 500 million by 2050—according to a new, independent series of studies by the Council on Energy, Environment and Water (CEEW). Two-wheelers will continue to hold the lion's share, accounting for nearly 70 per cent of all vehicles—over 350 million—according to a business-as-usual projection built on expected GDP and population growth till 2050. Private car ownership is projected to almost triple, reaching 90 million by mid-century.

The CEEW studies are a first-of-its-kind district-level projection of India's vehicle stock, total cost of ownership, and transport fuel demand. Most of India's vehicle stock growth will be concentrated in northern and western states. Uttar Pradesh alone will house over 90 million vehicles. Bihar, Maharashtra, Madhya Pradesh, and Gujarat are also poised for significant growth, while southern states will see a plateauing effect due to slowing population levels. At the district level, urban and peri-urban centres such as Delhi, Bengaluru, Thane, Pune, and Ahmedabad will dominate, accounting for 10 per cent of India's total projected vehicle stock in 2050.

Further, the studies find that electric vehicles (EVs) are already cost-competitive across key segments—especially two- and three-wheelers, taxis, and private cars in states with supportive EV policies. Electric two-wheelers already offer the lowest total cost of ownership (TCO), at INR 1.48/km versus INR 2.46/km for petrol models. EVs also lead in the three-wheeler segment—three-wheeler EVs cost INR 1.28/km versus INR 3.21/km for petrol. Further, EVs deliver major savings for commercial taxis, where daily operating costs matter most. For private cars, competitiveness varies by state—driven by differences in EV subsidies, charging tariffs, and upfront prices.

In contrast, for medium and heavy goods vehicles, EVs currently remain more expensive than diesel, CNG, or LNG in 2024, according to the CEEW studies. LNG is expected to remain the cheapest option for buses and trucks until 2040. Therefore, for heavy goods vehicles, large-scale adoption of EVs and green fuels like green hydrogen will require targeted R&D, supporting infrastructure, and cost reductions.

Hemant Mallya, Fellow, CEEW, said, “India's road transport system is entering a decisive phase. Transition decisions made in the transport sector directly impact fuel suppliers and auto manufacturers. A district-level lens, coupled with total cost analysis and fuel demand projections, gives policymakers and industry leaders insights to plan the transition towards cleaner fuels, more efficient infrastructure, faster electrification and sustainable transport. Avoiding capacity expansion of crude oil refineries is as important as increasing the penetration of EVs in the transport sector. In this regard, natural gas could play a bridge role with strategic planning to utilise existing gas infrastructure. A clear-eyed understanding of how vehicles grow, what fuels them, and what it costs to own them is essential for managing this transition and building sustainable mobility systems.”



Without urgent progress on electrification, infrastructure and green fuels, diesel will continue to dominate India’s road transport energy demand well into the 2040s. In a business-as-usual scenario—where bottlenecks to clean alternatives persist, especially for trucks and buses—diesel demand would peak only by 2047, the CEEW projections find. Petrol demand could peak earlier, around 2032. To bend the emissions curve and accelerate the transition, India must prioritise the rapid adoption of electric and LNG vehicles in the bus and truck segments—where nearly 70 per cent of transport emissions in 2050 would otherwise originate. Policy and infrastructure development, therefore, need to focus on LNG refuelling stations and high-capacity EV charging stations for trucks and buses along high-traffic corridors, along with domestic R&D investments for battery manufacturing to reduce costs.

Dr Himani Jain, Senior Programme Lead, CEEW, said, “India’s transport sector is grappling with a trifecta—energy security, congestion, and emissions. As population grows and consumption patterns evolve, demand for passenger and freight movement will only rise. The CEEW studies show that under a business-as-usual scenario, India faces unsustainable growth in vehicle stock, fuel use, and emissions. We need to rethink how we design and move through our cities. Congestion doesn’t just impact citizens; it hampers business productivity and deters investment. We need walkable, efficient, low-carbon urban transport systems. Our modelling opens up a new research agenda—from local low-carbon transport planning and alternate fuels to pricing transport right.”

The CEEW studies recommend a series of targeted actions to shape India’s road transport future and make it more sustainable. To accelerate the transition to cleaner transport, India must strengthen disaggregated vehicle stock data—particularly through the VAHAN portal—and bridge district-level information gaps. Improving EV affordability is key, with battery financing models like EMIs or rentals via public banks and NBFCs. With fuel tax revenues set to decline beyond the 2040s, states must explore alternatives such as distance-based taxation. Policymakers should also prioritise understanding vehicle ownership trends in fast-growing rural and peri-urban areas. Mapping parking access—especially private and residential facilities—

can help identify households more likely to adopt EVs, since they can install slow chargers and charge affordably overnight. Complementing this, slow-charging points in public or workplace parking areas can support EV users without private access, while managing grid loads more efficiently.

Finally, comparative public trials across fuel types and vehicle segments are essential to generate reliable data on real-world performance, costs, and emissions. Building sustainable, future-ready Indian cities will require integrating transport and energy planning into broader urban design—ensuring that infrastructure, mobility, and climate goals evolve in tandem. CEEW's Transportation Fuel Forecasting Model (TFFM) is India's first tool enabling district-level projections of vehicle stock and energy demand. It offers actionable insights for OEMs, fuel providers, financiers, and policymakers to align technology, investment, and policy with a low-carbon transport future.

Read the full studies:

- **'How will India's Vehicle Ownership Grow? A District-level Outlook to 2050'** by Dharshan Siddarth Mohan, Sabarish Elango, Hemant Mallya, and Himani Jain.
- **'What Drives Vehicle Ownership Costs in India? A Segment-wise Analysis for India's Road Transport'** by Sabarish Elango, Dharshan Siddarth Mohan, Himani Jain, Hemant Mallya, Virendra Ade.
- **'What is Fueling India's Road Transport Sector? Projecting District-level Energy Demand'** by Dharshan Siddarth Mohan, Sabarish Elango, Hemant Mallya, and Himani Jain.

Limitations: The studies used GDP and population projections at the district level where available; some analysis was done at the state level. The accuracy of these projections is limited by the delay in the decadal census exercise. Growth of EV charging and CNG/LNG refuelling stations was assumed, as existing policies and public data do not provide long-term targets. The choice of fuel technology was based on TCOs and partially based on expected consumer preferences generated through an expert survey. These could change with technical breakthroughs and rapid cost declines that cannot be predicted.

For media queries and interviews, contact:
Tulshe Agnihotri – tulshe.agnihotri@ceew.in

About CEEW

The Council on Energy, Environment and Water (CEEW) — a homegrown institution with headquarters in New Delhi — is among the **world's leading climate think tanks**. The Council is also often ranked among the **world's best-managed and independent think tanks**. It uses data, integrated analysis, and strategic outreach to explain — and change — the use, reuse, and misuse of resources. It prides itself on the independence of its high-quality research and strives to **impact sustainable development at scale** in India and the Global South. In over 14 years of operation, CEEW has impacted over 400 million lives and engaged with over 20 state governments. Follow us on X (formerly Twitter) [@CEEWIndia](https://twitter.com/CEEWIndia) or on LinkedIn for the latest updates.