India's 3-Wheeler Fuel Transition

EVs Overtake CNG in New Auto-Rickshaw Registrations

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In 2011, the International Energy Agency (IEA) had predicted that the coming decade could become the “golden age of natural gas”. That expectation, however, did not fully materialise. Instead, the world is now entering what many describe as the “age of electricity”. The same IEA, on 20th May 2026 observed:

> *Global electricity demand grew more than 2x as fast as overall energy demand in 2025, with electrification and AI expanding strongly.*

China recognized this shift early. With abundant coal reserves and limited petroleum reserves, it chose to aggressively build capabilities in electric mobility. China today controls a major share of rare earth processing and battery supply chains. This strategic push helped it scale up EV manufacturing and adoption rapidly. As a result, China now accounts for 60% of global EV sales, and EVs now represent 25% of global new car registrations.

India’s position is different. India has abundant coal resources but limited rare earth reserves and processing capacity compared to China. Therefore, a pure EV-led strategy does not provide the same level of energy security or industrial self-reliance that China enjoys.

India has therefore adopted a multi-fuel approach. Alongside EVs, the country is also promoting ethanol blending and CNG to gradually move consumers away from conventional petrol and diesel. In many ways, India’s transition strategy is based on diversification rather than dependence on a single fuel pathway.

With this background, I wanted to understand how alternate automotive fuels are actually growing on the ground. For this, I analysed new vehicle registration data available on the VAHAN portal. I started with three-wheelers, and the findings were quite interesting.

Why three-wheelers?

In India, private and public mobility outside buses and trains broadly depends on three categories — two-wheelers such as scooters and motorcycles, three-wheelers such as autos, and four-wheelers such as private cars and taxis.

Among these, two-wheelers dominate by sheer numbers, followed by cars, while three-wheelers form the smallest category. However, three-wheelers are structurally very different from the other two segments. Most three-wheelers are purchased for commercial use rather than personal ownership. Naturally, they operate for much longer daily distances compared to the average two-wheeler or private car.

Most car and two-wheeler owners primarily use their vehicles for office commute and limited personal travel. Their annual running is relatively lower. Commercial three-wheelers, on the other hand, typically clock much higher utilization.

This becomes important while comparing total cost of ownership, especially for EVs. Electric vehicles usually involve higher upfront capital cost but significantly lower running cost. Therefore, vehicle segments with high daily utilisation become economically attractive for faster fuel transition.

Because of this, three-wheelers are often the first category to adopt alternate fuels whenever economics become favourable. Cars and two-wheelers generally take longer, as their lower utilisation makes recovery of higher upfront cost slower. Over time, as technology scales and costs reduce, adoption spreads to larger segments as well. In that sense, three-wheelers often act as an early indicator of how fuel transition may evolve in the future.

Separating Autos from E-Rickshaws

Under the VAHAN classification system, three-wheelers are broadly divided into passenger carriers and goods carriers. However, within these categories, there are significant differences in vehicle type, usage pattern and operating economics.

This analysis primarily focuses on the L5 category three-wheelers – the larger, higher-speed commercial autos that dominate urban passenger and cargo mobility.

For this analysis, I have excluded electric rickshaws (e-rickshaws) and e-carts. These are typically low-speed vehicles (<25kmph) used within residential pockets, narrow streets and crowded commercial areas, often serving as an alternative to traditional cycle-rickshaws.

Their vehicle characteristics, operating pattern, economics and regulatory treatment differ materially. Including them would distort the comparison between EVs, CNG and conventional fuels in the larger commercial three-wheeler segment.

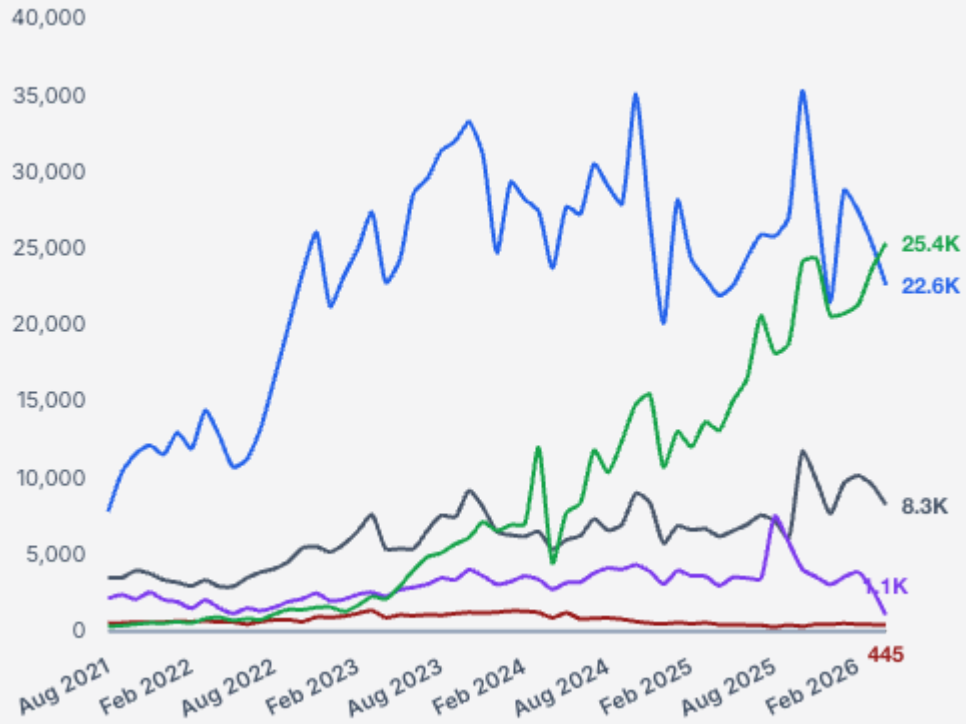
Passenger 3-Wheeler Trends

For more than a decade, CNG dominated passenger three-wheeler sales, especially after CNG infrastructure expanded across metros such as Delhi, Mumbai and Ahmedabad. However, the market is now witnessing a structural shift.

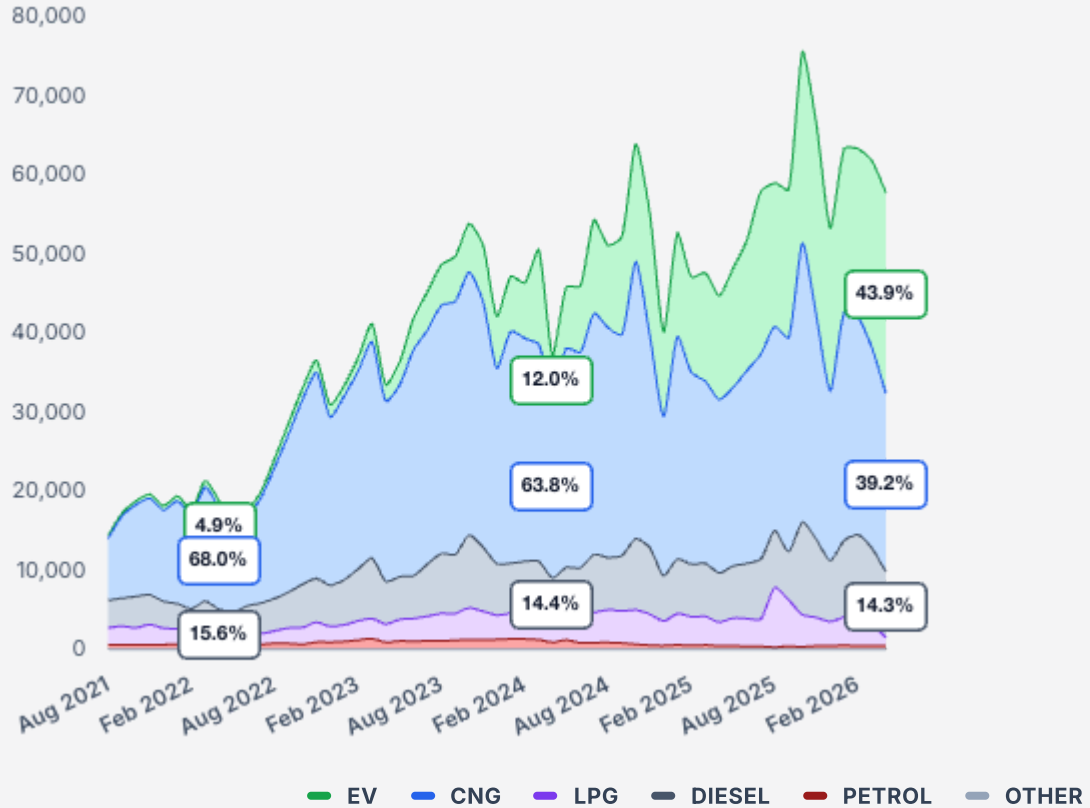
- EV passenger 3-wheeler sales crossed 25,000 units in April 2026 and accounted for around 44% of all new passenger 3-wheeler registrations in the country.
- CNG passenger 3-wheelers, which accounted for nearly 68% share in April 2022, declined to around 39% by April 2026.
- Diesel three-wheeler sales remained relatively stable at around 14–15%.
- LPG maintained a share of around 8% for several years but fell sharply to nearly 2% in April 2026, partly reflecting supply disruptions linked to the Hormuz crisis.

Passenger 3-Wheeler Trends

Monthly Trend (Absolute Volumes)



Fuel Mix Distribution



Note: e-Rickshaws (max 25kmph) are excluded. EV includes both "Electric (BOV)" and "Pure EV".

Source: Vahan Dashboard Data

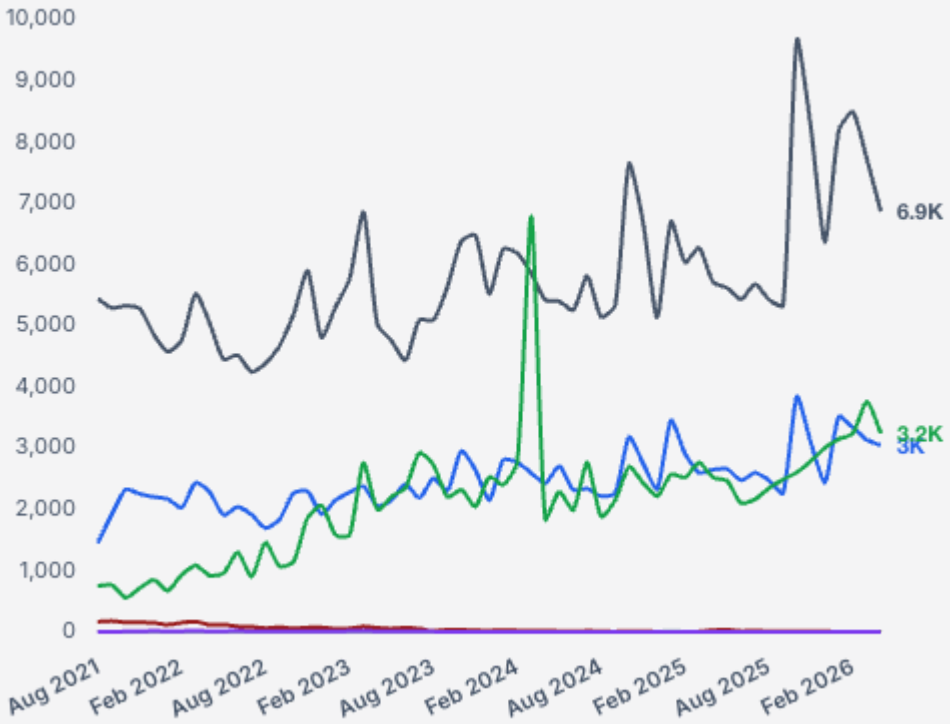
Goods 3-Wheeler Trends

Goods three-wheelers are widely used for intra-city cargo movement, local logistics, vegetable and FMCG transport, and increasingly for e-commerce last-mile delivery.

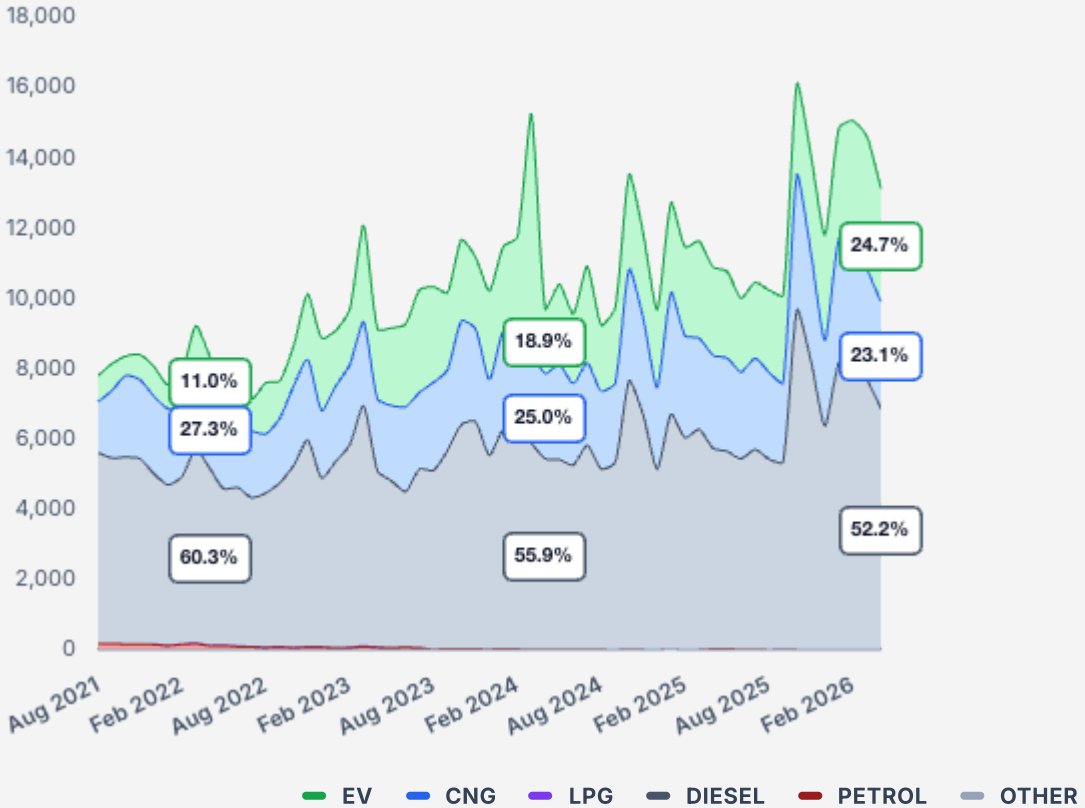
- Diesel three-wheelers still remain the undisputed leader, because the use case is different — longer routes, higher payloads, variable load factors.
- EVs, which had around 11% share earlier, have now overtaken CNG to become the second-largest fuel category with nearly 25% share.
- This growth is being driven by e-commerce and delivery fleet operators, where EVs benefit from lower operating costs, predictable daily routes, depot-based charging and increasing ESG commitments by large companies (e.g., Amazon).
- LPG has virtually no meaningful presence in the goods three-wheeler segment.

Goods 3-Wheeler Trends

Monthly Trend (Absolute Volumes)



Fuel Mix Distribution



Note: e-Carts (max 25kmph) are excluded. EV includes both "Electric (BOV)" and "Pure EV".

Source: Vahan Dashboard Data

October consistently remains one of the strongest sales months for three-wheelers as buyers prefer vehicle purchases during auspicious periods. December, meanwhile, continues to remain a relatively weak month for registrations. This shows when advertising and marketing spends can deliver better returns.

State-wise Trends

India is a vast country with highly diverse geography, urbanisation patterns and infrastructure development levels. Naturally, this diversity is reflected in fuel preferences for new vehicle registrations. In absolute volume terms, Uttar Pradesh remains the largest three-wheeler market, followed by Maharashtra and Gujarat.

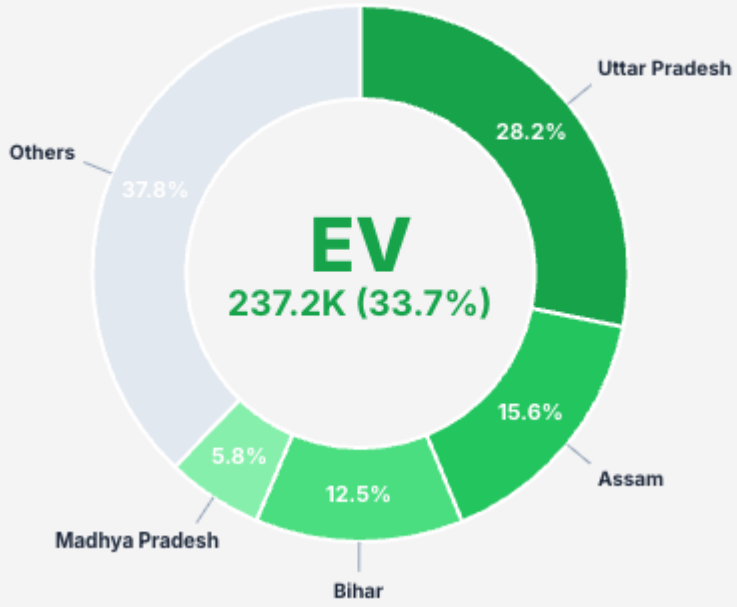
Every state where Mahanagar Gas, Gujarat Gas, or IGL had mature networks by 2019 — Gujarat, Maharashtra, Delhi, Haryana — went heavily CNG in passenger 3Ws and has stayed there.

The "leapfrog" pattern - States that had no CGD infrastructure when the transition started - Assam, J&K, Chhattisgarh, Uttarakhand, Tripura — went almost entirely EV in passenger 3Ws, directly from diesel or petrol-to-EV substitution.

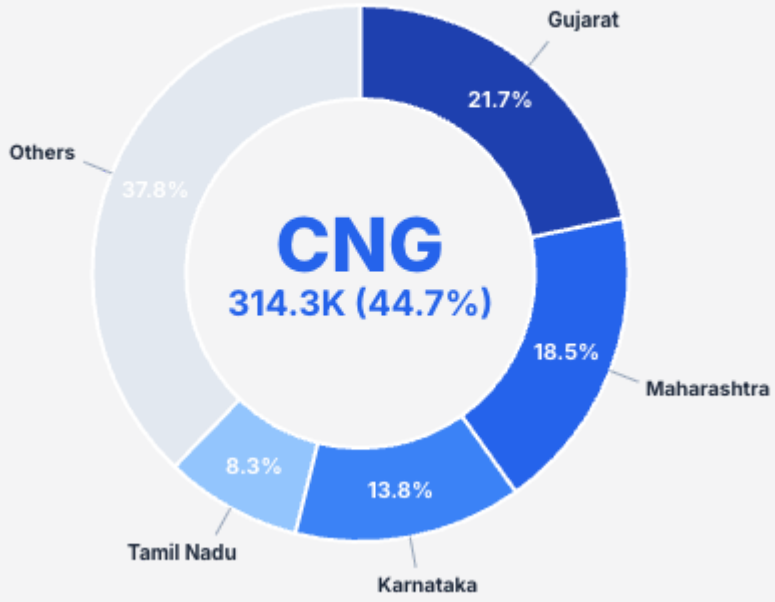
States like U.P., Bihar, EV substitution is also driven by lack of public transport in the form of buses and cap on the issuance of CNG/Diesel three-wheeler permits, government subsidies, etc.

Top States Driving Passenger 3W Sales (FY26)

Top EV Adopters



Top CNG Adopters



Note: Charts display the top 4 states holding the major share of absolute vehicle sales in their respective fuel categories.

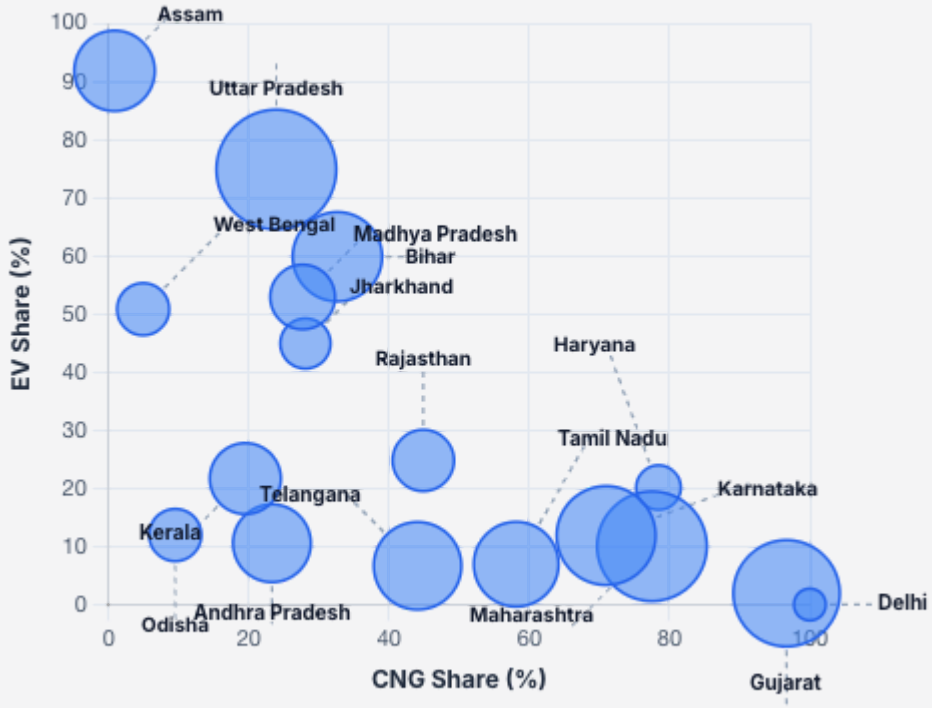
Source: Vahan Dashboard Data

State-wise Contrasts in EV and CNG Adoption

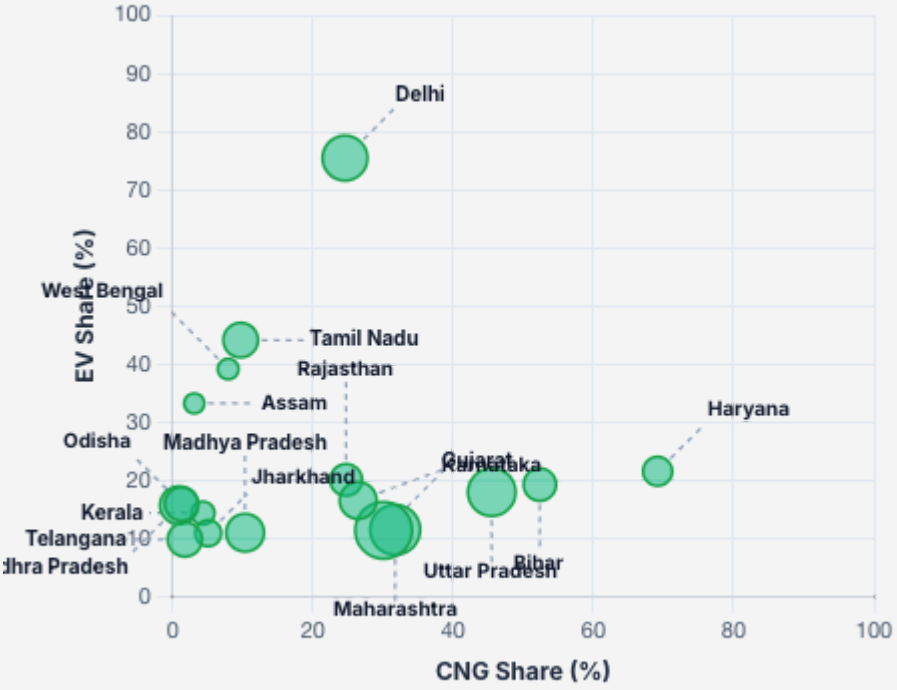
- In Delhi, nearly 100% of passenger 3-wheeler registrations in 2025 were CNG-based. However, the trend is almost the reverse in goods three-wheelers, where EVs account for nearly 70% share. A similar contrast is visible in Uttar Pradesh, although with the fuel preferences reversed between passenger and goods segments.
- CNG peaked at 77% in UP passenger autos in 2022, fell to 42% in 2024, and is now 26% in 2025, while EV crossed 72%. The speed of this reversal – from CNG majority to EV majority in three years – is exceptional.
- While it is not surprising that Maharashtra and Gujarat continue to be heavily CNG-dominated due to strong gas infrastructure availability, it is interesting that CNG also remains dominant in Karnataka and Tamil Nadu despite both states being major EV manufacturing hubs.
- In Assam, Petrol 3Ws was the single largest category not diesel when EV arrived, so EV penetration is stronger because it is a petrol-to-EV substitution.
- Telangana has an almost uniquely fragmented mix for passenger 3Ws - 25% Petrol+CNG, 19.5% pure CNG, 19.2% LPG, 17.4% diesel, and 6.2% EV, reportedly due to multiple court interventions, erratic CNG mandates & strong LPG lobby.
- Kerala, despite being a high-income, environmentally aware state, passenger 3Ws are 57% diesel in 2025 due to Kerala's peculiar geography (narrow roads, hilly terrain) and resistance from auto-rickshaw unions.

FY25-26 Fuel Mix Snapshot

Passenger 3W Matrix



Goods 3W Matrix



Note: Bubble size represents total volume. EV includes both "Electric (BOV)" and "Pure EV". Only states with >15K annual passenger registrations or >5K annual goods registrations are displayed.

Source: Vahan Dashboard Data

Looking Forward: Coexistence Before Consolidation?

India's three-wheeler market is increasingly emerging as the first large-scale battleground for alternate fuel adoption. The economics of high daily utilisation are making EVs commercially viable much faster in this segment than in private vehicles.

Several Indian policy and industry bodies, including NITI Aayog, IEA, FICCI and SIAM, expect commercial mobility segments such as three-wheelers, buses and fleet vehicles to continue leading India's transport electrification journey over the coming decade.

> *The overall market will continue to grow. We expect that by 2030, around 60% of the market will be made up of electric 3-wheelers (L5 category).*
>
> - Rajat Gupta, TVS's Head of Commercial Mobility

The Delhi EV Policy 2.0 is being watched as a precedent-setter. Many experts say that if Delhi bans CNG 3Ws, the repercussions will be felt across the country.

At the same time, the analysis also highlights that fuel transition in India is unlikely to follow a single pathway. CNG continues to remain highly competitive in regions with strong gas infrastructure, while EV adoption is accelerating in states where charging economics and fleet utilisation favour electrification.