Electric Mobility In India: Economy

NEWS: Wheels of Change: India's Electric Leap for Green Mobility

India is rapidly adopting electric vehicles, crossing 56 lakh registrations, with a goal of 30% EV penetration by 2030. This push, supported by schemes like FAME II and PLI, faces challenges like high costs and a lack of charging infrastructure, prompting NITI Aayog to suggest a shift from incentives to mandates

The Current Landscape of Electric Mobility in India

India is witnessing a significant shift towards clean mobility, with the number of registered electric vehicles (EVs) reaching 56.75 lakh by February 2025. This growth is a key component of the nation's broader climate action strategy.

Market Growth

The electric two-wheeler (e-2W) segment, which forms the bulk of the market, saw sales hit 11.49 lakh units, a 21% increase from the previous year.

National Vision

The Government of India has set an ambitious target to achieve 30% EV penetration by 2030, which aligns with the global EV30@30 initiative.

Climate Commitments

This push for electric mobility is integral to India's larger climate goals, which include:

1. Slashing projected carbon emissions by 1 billion tonnes by 2030.
2. Cutting the economy's carbon intensity to below 45% by 2030.
3. Transforming into a net-zero nation by 2070.

What are Electric Vehicles (EVs)?

An electric vehicle (EV) is an automobile that operates on an electric motor powered by a rechargeable battery pack, instead of a traditional internal-combustion engine (ICE) that burns fossil fuels. EVs are considered a crucial replacement for current-generation vehicles to address pressing global issues like air pollution, global warming, and the depletion of natural resources.

Key Challenges in EV Adoption in India

Despite the positive momentum, several challenges hinder the widespread adoption of EVs in the country

High Initial Cost

The upfront cost of purchasing an EV in India remains significantly higher than that of a comparable ICE vehicle, largely due to the high cost of batteries.

Limited Charging Infrastructure

The lack of a dense and reliable network of public and private charging stations is a major barrier for potential buyers.

Range Anxiety

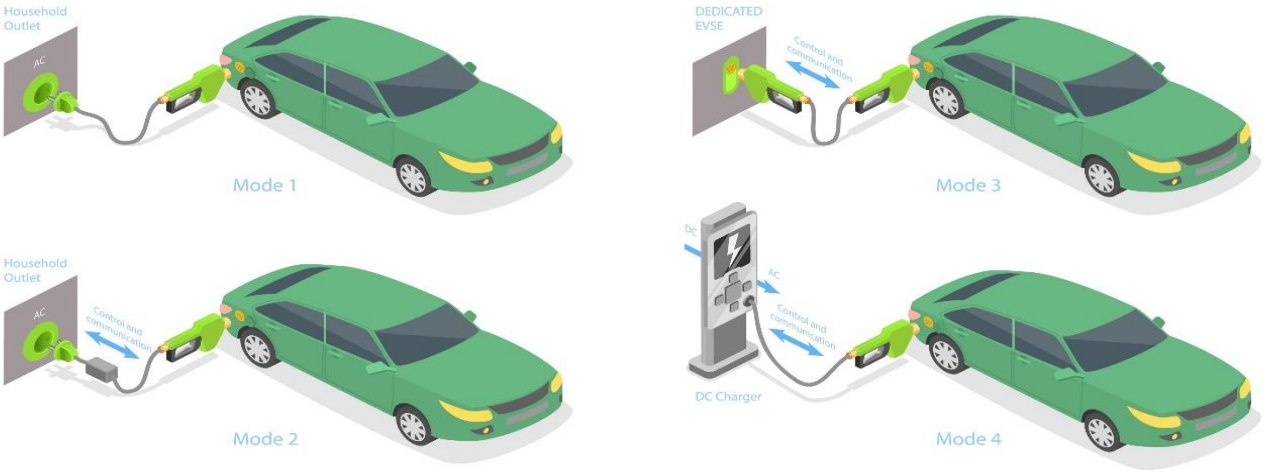
This is the fear that a vehicle's battery will run out of charge before reaching a destination or a charging point, a prevalent concern among Indian consumers.

Battery Technology and Supply Chain

India has a heavy reliance on imported lithium-ion batteries and cells, which not only increases costs but also makes the EV sector vulnerable to global supply chain disruptions.

Consumer Awareness and Education

There is a general lack of awareness among consumers regarding the benefits, technology, maintenance, and available models of electric vehicles.



Government Initiatives Driving the EV Transition

The Government of India has rolled out a multi-pronged strategy with several policies and schemes to foster the EV ecosystem

National Electric Mobility Mission Plan (NEMMP) and FAME-I (2015-2019)

These were the foundational policies aimed at accelerating the adoption and manufacturing of electric and hybrid vehicles in the country.

FAME II (Faster Adoption and Manufacturing of Electric Vehicles) — Phase II

Launched in 2019, this scheme focuses on providing demand incentives, expanding the public transport fleet with e-buses, and strengthening the charging infrastructure.

Production Linked Incentive (PLI) Scheme for Auto

Launched in 2021, this scheme aims to boost the domestic manufacturing of Advanced Automotive Technologies (AAT), including EV components. It mandates that companies must ensure at least 50% domestic value addition (DVA) to qualify for incentives.

PM E-Drive (2024-2028)

This scheme provides upfront incentives for EV purchases and encourages the development of charging infrastructure to speed up the transition.

Scheme for Promotion of Manufacturing of Electric Passenger Cars in India (SPMEPCI) 2024

To attract global automakers, this scheme allows the import of premium Completely Built-in Units (CBUs) of electric cars (with a minimum CIF value of USD 35,000) at a reduced customs duty of 15% for five years.

India Electric Mobility Index (IEMI) 2025

Unveiled by NITI Aayog, this index tracks and ranks States and Union Territories on their progress in electric mobility. Delhi, Maharashtra, and Chandigarh are the current leading 'Frontrunners'.

Suggestions by NITI Aayog to Accelerate EV Adoption

To overcome existing challenges and fast-track the transition, NITI Aayog has proposed the following strategic interventions

Moving from Incentives to Mandates

Announce a clear policy with target timelines for Zero Emission Vehicle (ZEV) adoption. This includes designing a progressively stricter plan for mandating the production and sale of EVs while disincentivizing ICE vehicles.

Saturation Instead of Thin Distribution

Focus resources by launching a saturation program in 5 cities over 5 years. Once a robust ecosystem is established, scale this model up to 20 cities and then to 100 cities.

Enable Financing for e-Buses and e-Trucks

Create a pooled fund with contributions from public budgets and multilateral institutions to provide accessible financing for the electrification of commercial vehicle fleets.

Scale up Research for New Battery Technologies

Establish an academia-industry-government partnership to accelerate research and development of new battery chemistries beyond lithium-ion, aiming for self-reliance and lower costs.

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