



INDIA'S EV POLICY LANDSCAPE

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TRANSPORTATION RESEARCH AND INTELLIGENCE NETWORK (TRAIN) STRATEGIC DISCUSSION

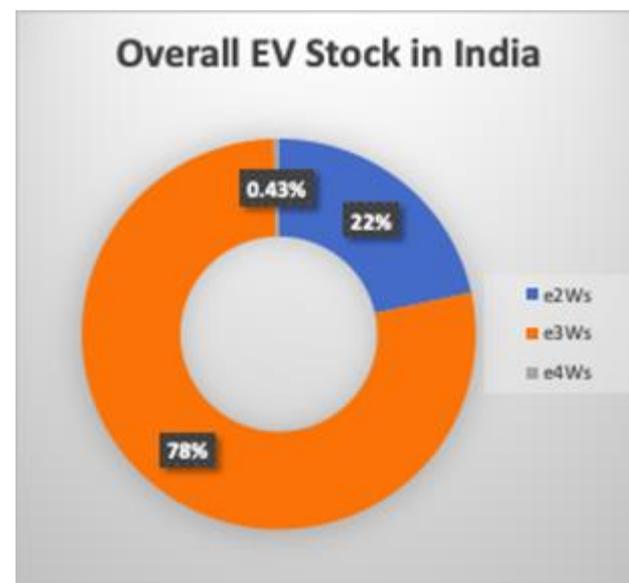
December 3, 2020



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INDIAN EV SCENARIO – WHERE WE ARE TODAY?

- India currently has a stock of nearly 3 million BEVs
 - ~13,000 cars
 - ~2.4 million electric three-wheelers
 - ~0.7 million electric two-wheelers
- EVs – ~1% of new vehicle sales
- China EV stock
 - ~3 million PEVs (Cars, buses and HCV)*
 - ~50 million electric three-wheelers
 - ~250 million electric two-wheelers



Key highlights

- Indian EV stock dominated by electric 3Ws (e-rickshaws) that are primarily used in cities and towns for first and last mile connectivity and short commutes
- Electric two-wheelers stock comprises about 5% high-speed (>25 kmph) scooters
- Penetration of electric cars is insignificant in country's car stock of nearly 35 million

*Cars: 1.2 mn; Buses: 0.4 mn; Rest: Commercial vehicles

POLICIES AT THE CENTRAL AND STATE LEVEL HAVE PROVIDED A STRONG FOUNDATION FOR EV UPTAKE

India established a National Mission on Transformative Mobility and Energy Storage in 2019, which has driven creation of ambitious demand and supply side policies to accelerate EV adoption

Demand focused policies

- Faster Adoption and Manufacturing of Electric Vehicles (FAME II) scheme is incentivizing adoption of EVs (total incentive pool: ~1.4 billion USD over three years for 1.6 million EVs)
- States are playing a leading role with increasingly ambitious policy development and targets (10 states have notified and 6 states are drafting their EV policies)

Supply-focused policies

- Phased Manufacturing Program (PMP) for xEV parts under FAME II aims to promote domestic manufacturing of EV components and local assembly of battery packs
- Cabinet approved the Performance Linked Incentives (PLI) Scheme for 10 sectors in Nov 2020, with an outlay of INR 18,100 crore for the Advanced Chemistry Cell (ACC) battery sector and INR 57,052 crore for the automotive sector.
- Other ministries and departments have introduced complementary fiscal and non-fiscal incentives to encourage EV adoption and manufacturing

CENTRAL MINISTRIES, PARTICULARLY DHI AND MORTH, ARE SPEARHEADING VEHICLE ELECTRIFICATION WITH FOCUSED INCENTIVES



सत्यमेव जयते

Department of Heavy Industry,
Government of India

- Implementing the second phase of (FAME II)
- Sanctioned 6,000 plus electric buses for intra-city and intercity operation
- Sanctioned nearly 3,000 PCSs
- Promoting indigenous manufacturing of EVs (through PMP)
- Will implement PLI Scheme for ACC battery manufacturing



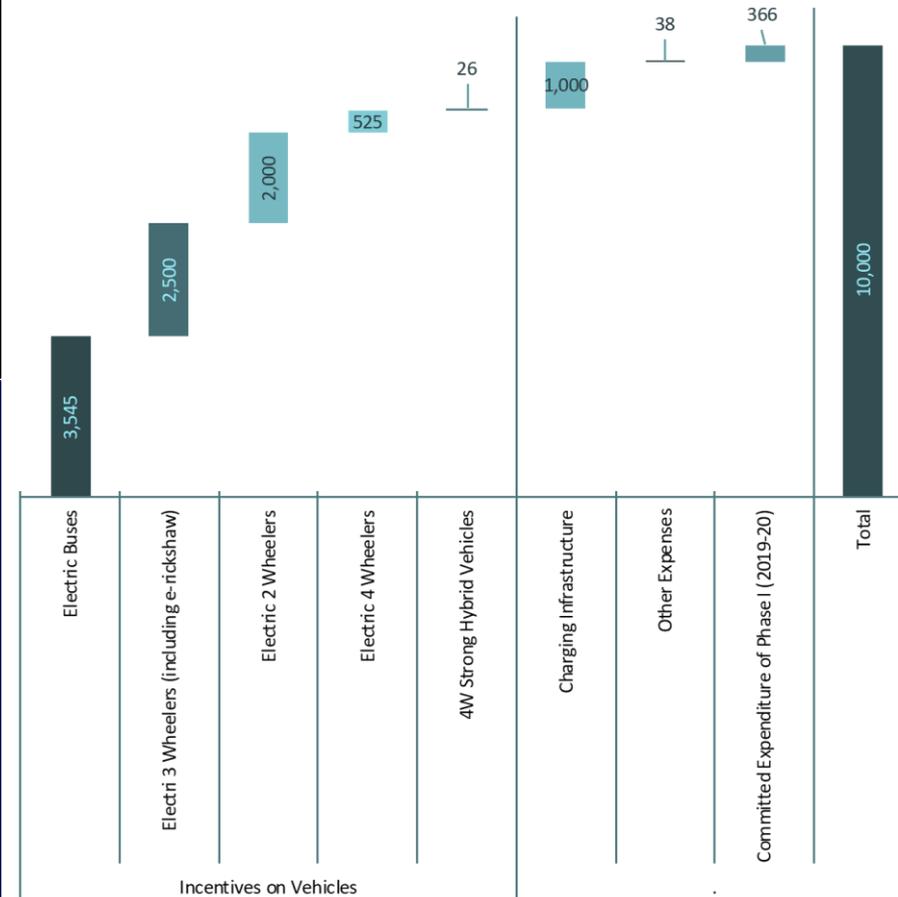
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MORTH
Government of India

- Private and commercial EVs will be given green license plates
- Battery-operated vehicles won't need permits
- Draft notification to exempt battery-operated vehicles from paying registration fees
- States advised to reduce or waive road tax on EVs
- Allowed registration of EVs without batteries

FAME II is at the core of vehicle electrification in India

Incentives under FAME II (2019 - 2022)



Source: FAME II Notification from DHI. Note: Amounts in Crores INR

SEVERAL OTHER MINISTRIES AND DEPARTMENTS ARE INTRODUCING FISCAL AND NON-FISCAL MEASURES TO SUPPORT THE TRANSITION

- Charging EVs to be considered a service and not a sale of electricity
- No license is required to operate EV charging stations
- Notification permitting private charging at residences & offices; tariff not to be more than average cost of supply plus 15%.

- Rationalized customs duty for all categories of vehicles, battery packs and cells.
- Incentives announced under India's Union Budget for financial year 2019-20:
 - Income tax deduction of ₹ 1.5 lakh on the interest paid on the loans taken to purchase EVs
 - Customs duty exemption on import of specific components

- GST on EVs reduced from 12% to 5%
- GST on EV charging stations reduced from 18% to 5%
- Hiring of electric buses (Capacity > 12 passengers) by local authorities will be exempted from GST



- **Model Building Byelaws 2016** amended to establish EV charging stations and infrastructure in private and commercial buildings.

- **Cabinet approved the National Mission on Transformative Mobility and Battery Storage** to support domestic battery manufacturing
- Developed a concessionaire agreement for public private partnership in operation and maintenance of electric buses in cities through the Operating Expenditure (OPEX) model.
- Will implement PLI Scheme for ACC battery manufacturing with DHI

- Grand Challenge for developing Indian Standards for EV Charging Infrastructure
- General requirements for EV charging notified by Bureau of Indian Standards

RESTRICTIVE POLICIES FOR ICE VEHICLES HAVE BEEN LIMITED AND ARE NEEDED TO SUPPORT THE EV TRANSITION

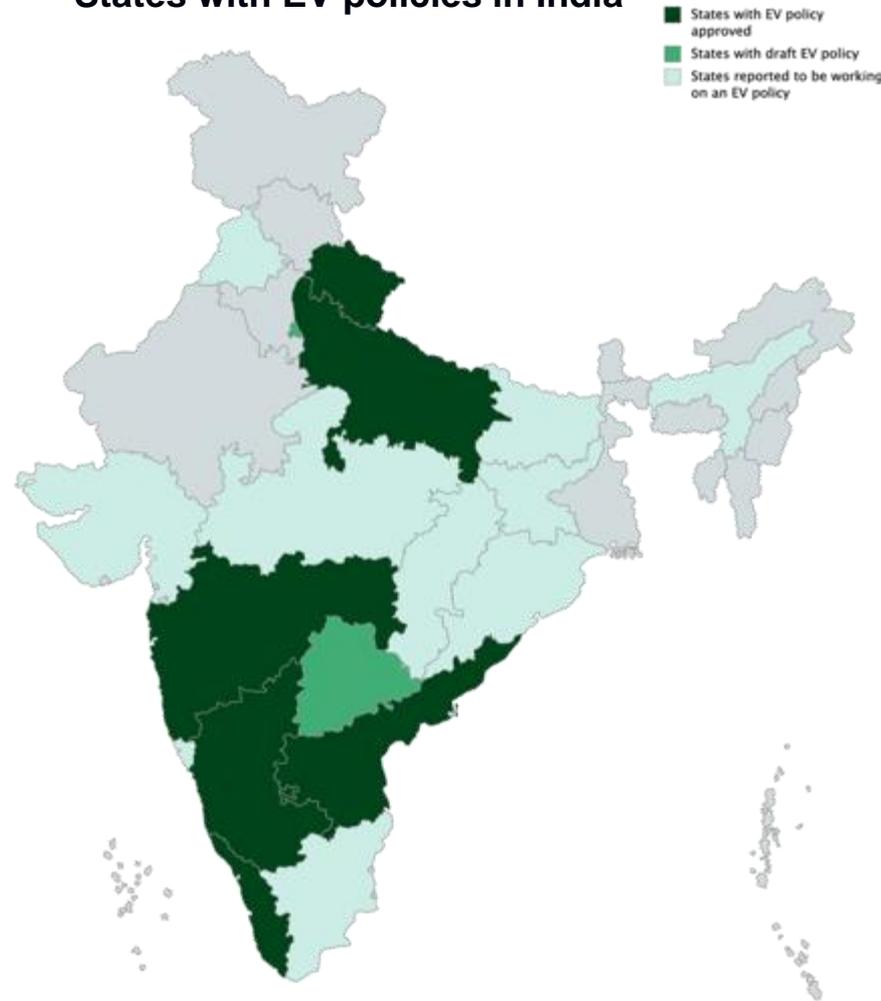


- Recommendation to -
 - Hike registration fees for ICE vehicles
 - Ban ICE three wheelers by 2023 and ICE two wheelers by 2025
 - Mandate a share of commercial cab aggregator and public bus fleet to be electric by 2026
- State governments like Telangana proposing ban of ICE vehicle registrations in a few cities
- Delhi has suggested likelihood of EV mandate on last mile delivery vehicles

THE ROLE OF STATES IS CRITICAL

- Ten states have published EV policies and six states are in the process of finalizing their policies, many other states considering formulation of their EV policies
- Some states are setting targets (E.g., 25% EV registrations by 2024 in Delhi)
- Early focus in state EV policies has been on two and three wheelers and bus electrification
- Few states have also laid out detailed incentives for manufacturing of electric vehicles to enable localization of production within the country
- Incentives include capital subsidy on land, plants and equipment, discounted electricity and water tariff, reimbursement of state goods and services tax (SGST), interest subsidy and road tax and stamp duty exemption etc.
- Some states are also looking at establishing “green zones” to encourage EVs and industrial parks focusing on EV manufacturing

States with EV policies in India



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KEY TAKEAWAYS FROM STATE EV POLICIES

Key observations and trends

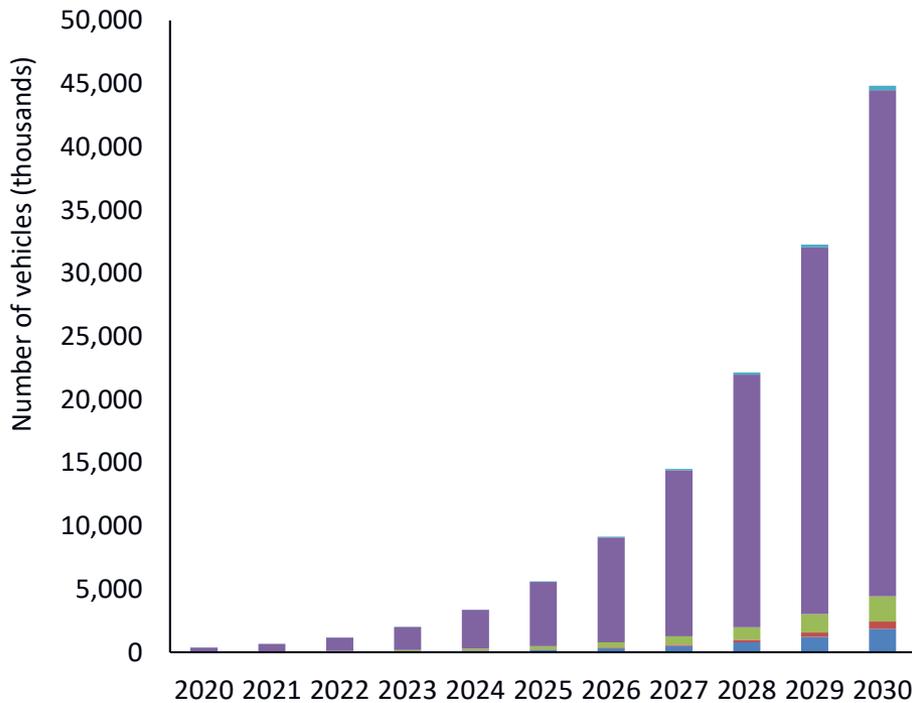
- **Demand vs. supply focus:** Some states focus their policy objectives on demand creation and adoption, while other states place a greater emphasis on manufacturing
- **Variance in fiscal incentives:** Purchase incentives and capital subsidies on charging infrastructure differ across state policies, leading to a geographical variation in the total cost of ownership of EVs
- **Inclusion of other incentives:** Most states are offering road tax and registration fee exemptions
- **Interest in manufacturing:** Many states intend to become hubs for EV manufacturing

Key opportunities

- **From notification to implementation:** Nodal agencies, operational guidelines, and dedicated fund allocation/sources are required to implement state EV policies
- **Coordinating on EV value chain:** Most states emphasize aspirations to be hubs for manufacturing of EVs and components. Greater coordination could avoid duplication and support product differentiation across battery cells and packs, motors, controllers, recycling, etc.
- **Investing in R&D and startup ecosystem:** Policy focus on research and development (R&D) has been limited; funding for research centers and startup accelerators would support domestic technology and business model innovation

FUTURE OF EVS IN INDIA – WHAT A HIGH PENETRATION OF EVS MAY LOOK LIKE?

Passenger EV Stock



- Cars : Private
- Cars : Commercial
- Auto rickshaws : Commercial
- 2 wheelers : Private
- 2 wheelers : Commercial

Increasing annual EV sales could help realize a stock of **50 million EVs by 2030** (20% of total vehicle stock in 2030)

Freight EV stock



- LDV - 2 Wheelers
- LDV - 3 Wheelers
- LDV - 4 Wheelers
- MDV (3.5 - 12 tonne)
- HDV (greater than 12 tonnes)

EV TRANSITION: THE ECONOMIC VALUE

- Oil savings and avoided CO₂ emissions between 2020 and 2030

Oil savings (Mtoe)	Oil savings (thousand crore INR)	Avoided CO ₂ emissions (tailpipe) (Mtons)
35	110	141

- Market size of EVs predicted to be nearly **INR 500 billion** by 2025
- Battery manufacturing opportunity
 - Rs 20 lakh crore market opportunity by 2030 in a scenario with aggressive electrification
- Job creation potential
 - Government of India has drawn a blueprint to create a specialized workforce to support electric mobility mission - expected to generate 10 million jobs

EARLY DEPLOYMENT IS CRITICAL

- Faster Adoption and Manufacturing of Electric Vehicles (FAME II) scheme
 - **Mid-way into Scheme**
 - **30,000 vehicles incentivized (2% of targeted 1.6 million)**
 - **~3% funds allocated for demand incentives utilized**
 - **USD 133 mn budgeted for charging infra deployment yet to be utilized**
- Progress on state EV policies; but implementation challenges exist
 - Early movers like states of Karnataka and Maharashtra – yet to realize significant EV penetration; implementation, consumer awareness and infrastructure bottlenecks exist
 - States like Delhi, Telangana which recently notified EV policies took 2 plus years to move from draft to final policy
- **Opportunity** – Central and state governments stay committed to EVs despite pandemic and economic/auto industry slowdown – Relaxations for EVs under FAME II; New sanctions under FAME II; continued commitment towards a mega battery scheme to localize manufacturing of ACCs; States notifying policies/allocating budget for EVs during pandemic

FROM '000S TO MILLIONS

- EV sales currently – 300,000 (1% of total vehicle sales)
- Penetration of 10% EVs in new sales in 2030 will require – 3-4 million EVs being sold
- This 10x plus increase will require
 - Significant attention to successful deployment of vehicles under FAME II
 - Target sales of at least 1 million EVs over remaining period of Scheme

WAY FORWARD

Policy frameworks

- Comprehensive national-level EV strategy
- Progress on state EV policies and their implementation
- Feebate program or zero emission vehicle (ZEV) credit scheme

Incentives

- Design fiscal incentives to effectively reduce upfront cost and TCO of EVs
- Provide non-fiscal incentives
- Develop policies to support ease of operations of EVs

Charging infrastructure

- Support to cities and discoms to install EV charging infrastructure
- Create charging hotspots

Technology

- Enhance EV model quality and expand model availability
- Scale domestic manufacturing of EVs, batteries, and components
- Test swappable battery technology to prove its viability

Market and awareness

- Execute bulk procurements of EVs to prove the viability of early-mover use-cases
- Make EVs more visible to the public
- Develop business models to support the electrification of public transport
- Create a national learning platform on e-mobility



THANK YOU