



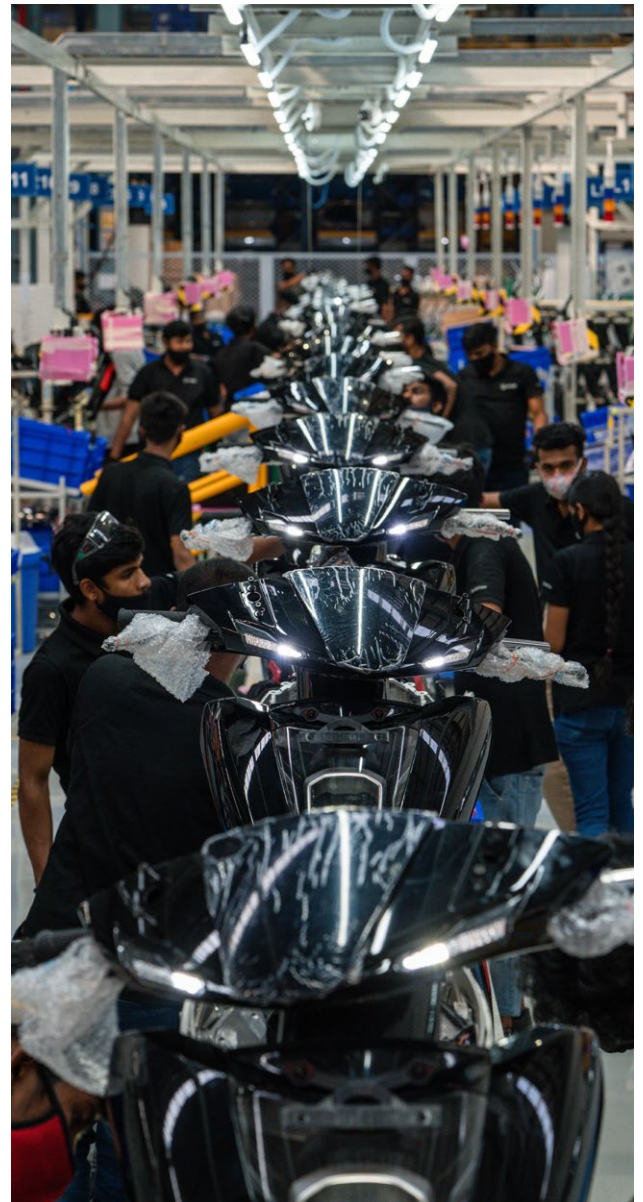
A REVIEW OF STATE GOVERNMENT POLICIES FOR ELECTRIC MOBILITY

An Executive Summary

CHAITANYA KANURI, ROHAN RAO, PAWAN MULUKUTLA

STATE-LEVEL INCENTIVES FOR SUPPORTING THE EV ECOSYSTEM

Between 2017 and 2020, 15 Indian states have either notified or drafted state EV policies. The vision of state EV policies may be broadly translated into two objectives. The first objective aims to make states preferred destinations for EV and component manufacturing, while the second is to increase EV adoption within states. To attain these objectives, state EV policies have defined a range of supporting incentives, which can be divided into three categories.





DEMAND GENERATION

Consumer demand incentives

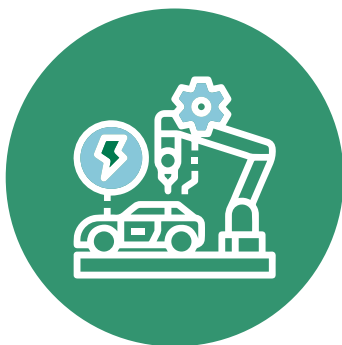
Demand incentives support the early market development of electric vehicles, given the nascent status of the EV market in the country. They may be purchase or operational incentives, with the former defraying the higher upfront costs of EVs and the latter encouraging on-road EV usage



CHARGING INFRASTRUCTURE

Charging infrastructure incentives

A robust network of EV charging infrastructure reassures consumers of charging availability, which reduces range anxiety associated with electric vehicles. State incentives for EV charging include a mix of financial incentives, spatial planning, and regulatory frameworks to support the deployment and integration of EV charging



INDUSTRIAL DEVELOPMENT

Industry incentives

Industry incentives are aimed at vehicle manufacturers, battery producers, and ancillary companies, to encourage the production of electric vehicles and component parts of the EV value chain. Incentives are provided as capital and infrastructure subsidies, as well as human resource and research development



States with existing EV policies are now beginning the process of revising and implementing them. At the same time, more states aim to draft and notify their own EV policies. This policy review seeks to provide an overview of state incentives to facilitate peer-to-peer learning, and to recommend state actions for effective implementation.



CONSUMER DEMAND INCENTIVES

States	PURCHASE INCENTIVES				OPERATIONAL INCENTIVES			
	Purchase Subsidy	Tax Exemptions	Access to Financing	Scrapping and Retrofit incentives	Priority or Free Permits	Green zones	Parking Incentives	Toll fee waivers
Andhra Pradesh	●	●	●	●	●	●	●	●
Bihar	●	●	●	●	●	●	●	●
Delhi	●	●	●	●	●	●	●	●
Karnataka	●	●	●	●	●	●	●	●
Kerala	●	●	●	●	●	●	●	●
Madhya Pradesh	●	●	●	●	●	●	●	●
Maharashtra	●	●	●	●	●	●	●	●
Punjab	●	●	●	●	●	●	●	●
Tamil Nadu	●	●	●	●	●	●	●	●
Telangana	●	●	●	●	●	●	●	●
Uttar Pradesh	●	●	●	●	●	●	●	●
Uttarakhand	●	●	●	●	●	●	●	●

● Not addressed in the policy ● Addressed in the policy

Purchase subsidies may be delivered in the form of income tax credits, purchase rebates or upfront purchase price reductions, depending on how they are structured. Delhi and Maharashtra offer purchase subsidies across e-2W, e-3W and e-4Ws, while Kerala subsidises only e-3Ws.

Access to financing is a major barrier for EVs due to uncertainty of residual value and lack of historical data for these vehicles. Mechanisms such as down payment subsidies, interest subventions, low interest loans, or longer repayment periods make EVs more affordable.

Priority or free permits are required for autorickshaws, trucks, taxis, and bus fleets to operate. EV penetration among commercial vehicles can be greatly incentivized by prioritizing permits for EVs. State incentives focus on priority permits for passenger and cargo e-3Ws.

Parking incentives include the waiver of parking charges and/or the provision of reserved parking spots, often equipped with EV charging points. These incentives are particularly effective in dense urban areas with well-regulated parking.

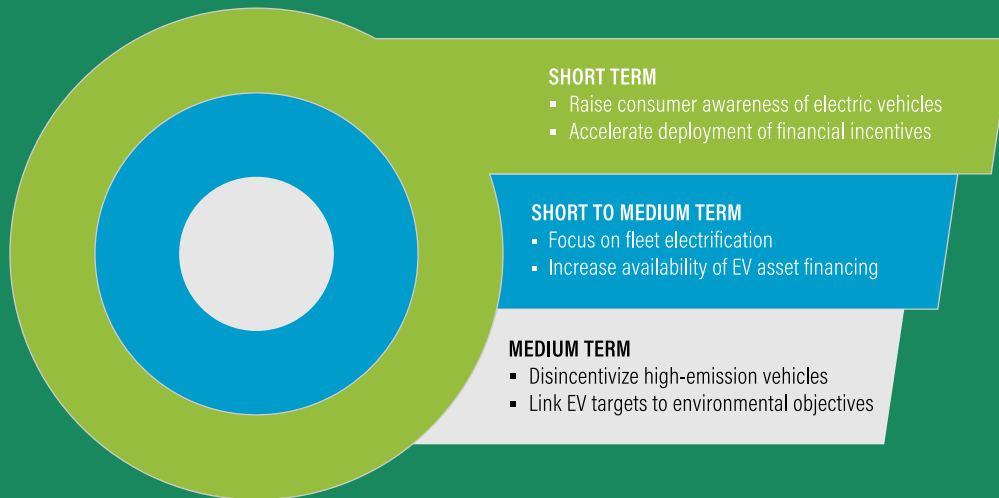
Tax exemptions are offered on the motor vehicle tax (MV tax), a state tax that varies between 4% and 20% of a vehicle's value. Most states recommend a 100% tax exemption, albeit for different durations. Longer tax exemption periods can benefit commercial vehicles, which typically pay a recurring MV tax.

Scrapping and retrofit incentives aim to remove high-polluting, older ICE vehicles from roads and replace them with EVs. Delhi offers a scrapping incentive for 2Ws and 3Ws, while Telangana provides a retrofit incentive for autorickshaws.

Green zones are equivalent to low-emission or zero-emission zones in which the movement of polluting vehicles is restricted or penalized with an emission charge. Andhra Pradesh and Punjab aim to institute green zones in target e-mobility cities, while Kerala encourages EV zones in environmentally vulnerable regions.

Toll fee waivers exempt EV users from payment of standard toll fees. With toll fees on national highways in India exceeding INR 1 per km, this amounts to significant savings on longer-distance trips. This incentive will be optimally effective when adopted on both national and contiguous state highways.

Recommendations for promoting EV adoption



1

Raise consumer awareness:

Initiatives like informational websites, e-mobility days, e-mobility zones, and other public campaigns can help consumers gain increased knowledge and acceptance of EV technology.

Accelerate the deployment of incentives: MV tax exemptions and priority permits for commercial EVs can significantly impact EV adoption. Early implementation and clarity on redeeming incentives will go a long way in reassuring potential buyers.

2

3

Focus on fleet electrification:

Fleet conversion mandates, service tax exemptions and permit waivers can boost EV adoption in commercial segments. Governments also deploy numerous vehicles for institutional use, the electrification of which they can mandate as a strong signal of political will.

Increase EV asset financing: States can help fill the financing gap through state financial corporations and state infrastructure funds, and by supporting the development of green financing instruments in partnership with development banks or other relevant stakeholders.

4

5

Disincentivize high-emission vehicles: Mechanisms such as fuel cess, congestion pricing, and emission charges can levy appropriate costs on the purchase and use of high-emission vehicles. Charges should be linked to performance and not to a specific technology like EVs.

Link EV targets to environmental objectives: By linking EV adoption targets to reductions in air pollution and transport emissions, states can allocate additional budgets and design incentives more effectively through a time-bound and impact-driven approach.

6



CHARGING INFRASTRUCTURE INCENTIVES

States	Capital subsidies on EVSE	Concessional land provision	Concessional EV tariffs	Use of renewable energy sources	Amendments to DCRs	EVSE network integration and management	Promotion of alternative clean fuel technologies
Andhra Pradesh	●	●	●	●	●	●	●
Bihar	●	●	●	●	●	●	●
Delhi	●	●	●	●	●	●	●
Karnataka	●	●	●	●	●	●	●
Kerala	●	●	●	●	●	●	●
Madhya Pradesh	●	●	●	●	●	●	●
Maharashtra	●	●	●	●	●	●	●
Punjab	●	●	●	●	●	●	●
Tamil Nadu	●	●	●	●	●	●	●
Telangana	●	●	●	●	●	●	●
Uttar Pradesh	●	●	●	●	●	●	●
Uttarakhand	●	●	●	●	●	●	●

● Not addressed in the policy ● Addressed in the policy

Capital subsidies for EVSE (electric vehicle supply equipment) support the cost of setting up public charging facilities. With the utilization of public charging expected to remain low until a critical threshold of EV adoption is reached, subsidies are critical to setting up a base network. Delhi is the only state to offer financial incentives for private charging equipment.

Concessional tariffs for EV charging reduce the cost of electricity for EV charging and thus help lower operating costs for CSOs and charging costs for consumers. Several states have instituted concessional tariffs, and some states also mention time-of-day metering for lower tariffs during off-peak hours.

Amendments to development control regulations can facilitate integration of EV charging in the built environment. The government of India has provided guidelines for a minimum provision of charging facilities in private buildings and for public charging, but it is up to states to make necessary amendments. Only Delhi's policy provides specific targets for EV charging in buildings.

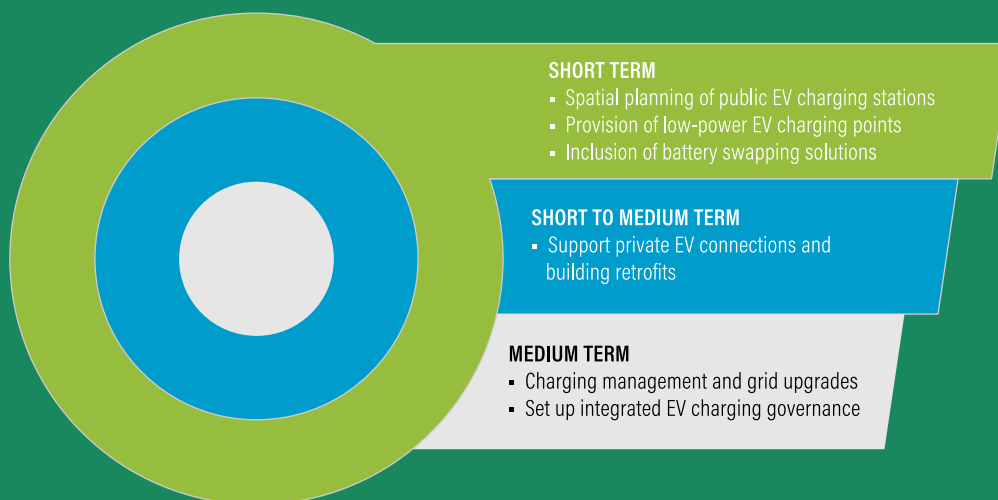
Concessional land provision aims to reduce the high cost of land acquisition for EV charging through concessional rental charges and long-term leases. States may also allow charging service operators (CSOs) to operate other revenue-generating activities on allocated land.

Use of renewable energy sources is essential for truly decarbonized transportation. Many states have encouraged captive renewable energy generation, net metering facilities, and open access power to increase the renewables mix in EV charging.

EVSE network integration and management can be enabled through digital payments and metering, and data sharing by CSOs to build an open database of charging facilities. This provides ease of access to EV charging for consumers through an integrated interface.

Alternative clean fuel technologies such as hydrogen fuel cells show promise and are being developed alongside the EV ecosystem globally. Only a couple of state EV policies currently promote hydrogen technology

Recommendations for charging infrastructure provision



1

Spatial planning for public charging stations:

Public charging stations supported by FAME-II and state subsidies will provide a skeletal charging network to spur the nascent EV ecosystem. A planned approach is necessary for siting these public charging stations to maximize accessibility and utilization for all inhabitants.

Provision of low-power EV charging points: Low-power EV charge points are scalable and adequate for most charging requirements. They can be sited at public parking locations and can largely be accommodated within the existing grid infrastructure. This allows for a distributed charging network, which can be set up with lower capital costs.

2

3

Inclusion of battery swapping solutions: Battery swapping has a distinct role to play in the early development of e-2W and e-3W segments, particularly among commercial fleets. Fiscal and non-fiscal support to battery swapping services can boost EV penetration in these target segments.

Support for private EV charging connections and building retrofits: States should create enabling rules and standard operating procedures to streamline access to EV charging for private EV users. Individual connections and community charging hubs in buildings should be facilitated by electricity providers.

4

5

Charging management and grid upgrades: Managed EV charging with metered charging connections and smart chargers helps distribute charging loads on the electrical grid and reduce the need for grid augmentation. Where grid upgrades are necessary, states may consider offering partial subsidies for ancillary infrastructure costs to CSOs.

Integrated EV charging governance: EV charging will be provided by multiple public and private CSOs, and integrated governance will be necessary to manage the ecosystem. For consumers, inter-operability should be permitted between different CSOs. In the back end, public charging facilities must allow for centralized load management.

6



INDUSTRY INCENTIVES

States	Capital subsidies	Tax exemptions and interest subsidies	Land development incentives	Infrastructure concessions and subsidies	Battery recycling initiatives	Employment incentives	Skill development	R&D initiatives
Andhra Pradesh	●	●	●	●	●	●	●	●
Bihar	●	●	●	●	●	●	●	●
Delhi	●	●	●	●	●	●	●	●
Karnataka	●	●	●	●	●	●	●	●
Kerala	●	●	●	●	●	●	●	●
Madhya Pradesh	●	●	●	●	●	●	●	●
Maharashtra	●	●	●	●	●	●	●	●
Punjab	●	●	●	●	●	●	●	●
Tamil Nadu	●	●	●	●	●	●	●	●
Telangana	●	●	●	●	●	●	●	●
Uttar Pradesh	●	●	●	●	●	●	●	●
Uttarakhand	●	●	●	●	●	●	●	●

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Capital subsidies for industrial development

promote local investment and offset high upfront development costs. States offer tiered incentives for industries of different sizes. States may also offer higher subsidies for specific industries, such as EV battery manufacturing.

Land development incentives include land subsidies, conversion fee waivers, and stamp duty and registration charge exemptions on land purchase. Some states promote underdeveloped regions by offering higher land development incentives. Other states are creating EV industrial parks, with speedy land allocation, developed infrastructure and shared facilities.

Battery recycling initiatives for EV battery packs promote second-life applications and rare mineral mining, in collaboration with battery and EV manufacturers, and energy operators. Uttar Pradesh also offers an interest subsidy on loans for battery recycling equipment.

Skill development initiatives include training and reskilling allowances for workers, and vocational programs for workforce development. These act in complement with local employment requirements, by providing a well-trained local workforce for industries.

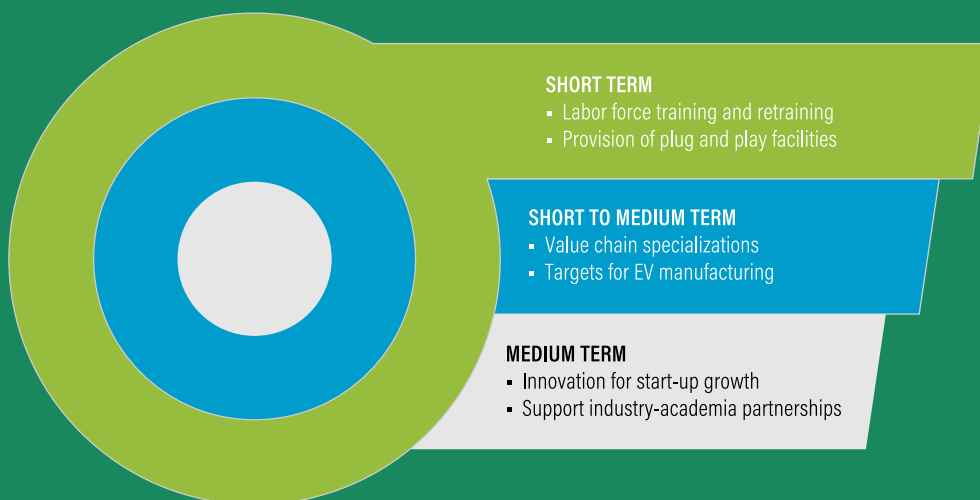
SGST tax exemptions are another type of industry promotion subsidy offered by states. Uttar Pradesh, Uttarakhand and Maharashtra, in addition to SGST exemptions, also offer interest subsidies on loans to industries.

Infrastructure concessions and subsidies reduce operational costs, with most states offering electricity duty exemptions and power tariff subsidies. A couple of states offer additional subsidies for overall infrastructure development.

Employment incentives for EV jobs are linked to formal employment schemes such as employee provident funds (EPFs) to help generate quality formal-economy jobs. Industries are usually required to have a certain number of local employees to be eligible for these incentives.

R&D initiatives enable high-value industrial growth, with state initiatives ranging from the creation of centers of excellence to industry-academia partnerships for technology development and incubators for promoting innovation

Recommendations for supporting industrial growth



1

Labor force training and retraining: The automotive industry contributes to more than a fifth of India's manufacturing GDP. The transition to EVs will see the decline of traditional jobs and the creation of new ones, and states must work proactively to ensure an equitable and resilient socio-economic transition.

Provision of plug-and-play facilities: The ready availability of industrial land parcels and shared infrastructure facilities can reduce set-up costs for industries. Shared facility requirements specific to EV industries can be better allocated through designated EV clusters or parks.

2

3

Value chain specializations: Rather than compete for the same set of manufacturers, states should focus on strategic development of specific EV value chain components. Such a stratified approach can help states develop key roles in the EV manufacturing ecosystem.

Targets for EV manufacturing: Regions such as China and California require vehicle manufacturers to have a percentage of their annual production or sales be EVs. Adopting targets for EV manufacturing provides a supply-side push, which in turn will lead to faster development of the sector.

4

5

Innovation and start-up growth: States without traditional automotive clusters can foster start-up and innovation growth for the new players entering the market. Dedicated electric mobility incubators, shared prototyping and manufacturing facilities, and R&D programs can help states reap the still-nascent EV industry's benefits.

Industry-academia partnerships: Fostering partnerships between industry and academia can support the development of competitive industrial clusters for higher-order manufacturing.

6

MOVING FROM POLICY TO IMPLEMENTATION

The formulation and notification of an EV policy is only one piece of a large puzzle. Decisive and urgent action will be needed to achieve the target of 30% electric vehicles by 2030 in India. Below are five takeaways for states to keep in mind for effective execution of EV policies.

- **Have clear objectives and targets** to be achieved, which are in turn linked with policy incentives.
- **Create an execution roadmap** with interim targets, steps to deployment, review mechanisms for adaptive on-ground action.
- **Allocate fiscal resources to fund incentives** with specific revenue streams or predictable budget allocations.
- **Ensure that policies are limited and specific** to the regional context, with defined means of implementation.
- **Establish governance structures for implementation**, with sufficient interdepartmental coordination at the state level and devolution of responsibilities to the local level.



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We are inspired by and associated with World Resources Institute (WRI), a global research organization. Currently over 150 researchers are working with WRI India in our offices in Delhi, Mumbai and Bengaluru.



For more information on WRI India's EV work, contact:
pawan.mulukutla@wri.org