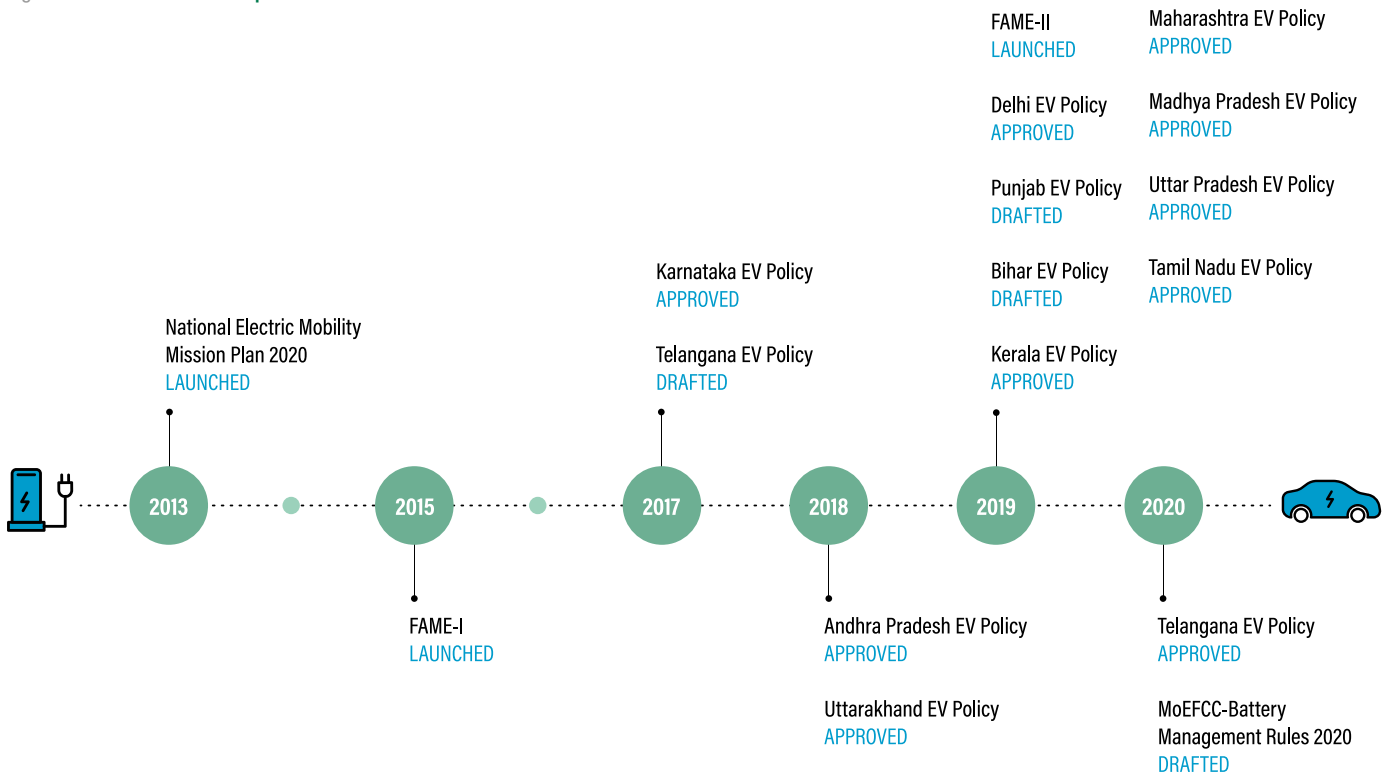


Figure 1: Timeline of state EV policies



Starting with the notification of the Karnataka Electric Vehicle and Energy Storage Policy in 2017, a total of 14 states have notified or draft EV policies as of January 2021. Other than Karnataka, states with notified EV policies include Delhi, Kerala, Maharashtra, Uttarakhand, Tamil Nadu, Andhra Pradesh, Madhya Pradesh, Uttar Pradesh and Telangana. Besides, Bihar, Chandigarh, Punjab, Haryana, Gujarat, Assam and Himachal Pradesh have draft EV policies awaiting state cabinet approvals. Figure 1 shows the timeline of state EV policies’ development, highlighting the accelerated state activity on electric mobility in the past couple of years.

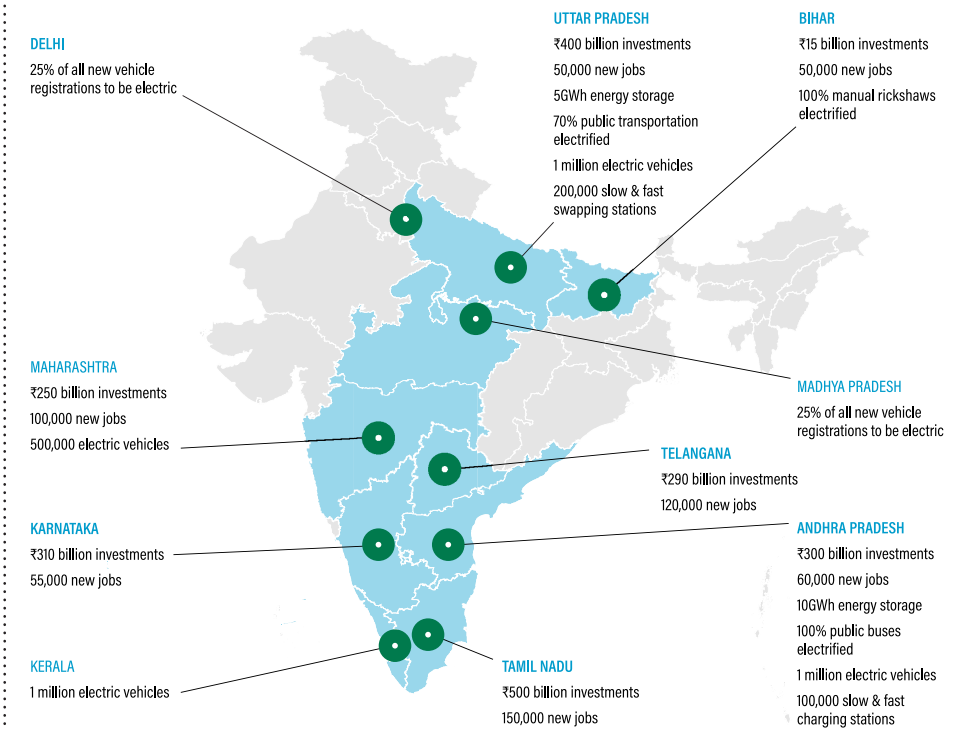
State EV policies vary widely in their scope and scale, with most policies having a validity period of five years from the date of notification. Tamil Nadu and Telangana have 10-year policies, while Delhi’s EV policy is valid for only three years. The policies are spearheaded by different departments in different states. The department of industries is a common nodal agency responsible for the formulation and implementation of the EV policy in several states. In Kerala, Punjab and Delhi, the transport department has taken the lead. In Madhya Pradesh, the nodal agency is the urban development and housing department.

Accordingly, state EV policies’ objectives and targets also vary, with a few common themes emerging among them. As the policy’s objectives are important for understanding the potential efficacy of its incentives, it is worthwhile to examine these different motivations here briefly.

In implementing EV policies, states aim to become e-mobility hubs within the country, a vision that is translated into two broad sets of objectives. One set focuses on making states preferred destinations for the manufacture of EVs and components. This includes measures such as fiscal support for setting up industries, promoting innovation as well as research and development (R&D), and skilling the workforce to improve the industrial outlook. The second set of objectives aims to increase the uptake of electric vehicles within the states, for benefits such as reducing pollution and a transition to sustainable mobility. Figure 2 highlights targets defined by state EV policies.

1.1 VISION AND OBJECTIVES OF STATE EV POLICIES

Figure 2: State EV policy targets



To attain these targets, state EV policies have defined a range of supporting incentives and suggested regulatory and governance frameworks. Effective incentive design and efficiency of implementation will be critical for states to achieve their EV targets.

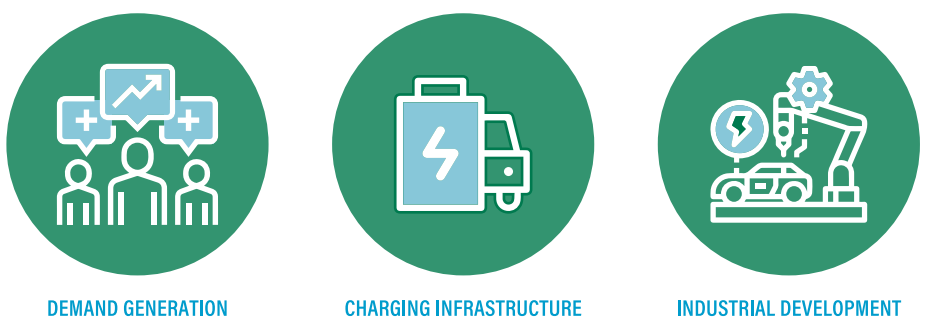
1.2

SCOPE AND STRUCTURE OF THE REPORT

This report reviews EV policies of 12 Indian states with notified or draft policies in place. It is targeted at state- and city-level policymakers concerned with the design and execution of policy measures to support the EV ecosystem.

As more states aim to frame EV policies, and states with existing EV policies seek to refine them, this report seeks to provide a comprehensive overview of the range and types of incentives being offered in different regions and to facilitate policy transfer through peer-to-peer learning. The report also highlights some recommended actions to fill gaps in the current policy frameworks, strengthen existing incentives and improve the efficacy of public investment in the sector.

Figure 3: Types of incentives for EV ecosystem



The report divides policy incentives and measures into three categories – consumer demand incentives, charging infrastructure incentives, and industry incentives – as shown in Figure 3. Each of these categories is treated in separate chapters, starting with an analysis of the different incentives and policy instruments being deployed, followed by recommendations for consideration. The report’s concluding chapter emphasizes the need for effective implementation and governance of state EV policies for impactful results.

The report does not cover on-ground implementation towards the achievement of the state EV policies, since some policies have recently been notified or are still under consideration. Further, state EV policy implementation has been delayed or fragmented in many cases, a gap that must be remedied but is not within the scope of this report. Unless otherwise mentioned, **all discussions of the different EV policy incentives offered by states refer to the policy documents and not to the state of implementation today.**



CONSUMER DEMAND INCENTIVES

2.

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Demand incentives support the early market development of electric vehicles, given the nascent status of the EV market in the country. Central and state governments provide consumer incentives to enable EVs to be more competitive with conventional internal combustion engine (ICE) vehicles. Until the EV industry matures and becomes more mainstream, consumer incentives are meant to overcome barriers to adoption and to promote the purchase and use of EVs.

Consumer barriers to EV adoption are relatively well-known; they include higher purchase costs, a limited driving range, and the lack of EV charging infrastructure. A less-acknowledged barrier is low EV awareness, with many consumers lacking adequate familiarity with the emerging technology to make an informed decision.

⁵ <https://www.teriin.org/blog/what-would-make-indians-buy-evs-our-survey-has-some-answers>

Supplementing the GoI’s FAME-II incentives, state-level consumer demand incentives may be categorized as purchase incentives and operational incentives, with the former aiming to reduce the higher purchase costs of EVs and the latter encouraging on-road EV usage. Demand incentives primarily fall within the mandate of transport authorities and urban development authorities for execution and enforcement at the city and state levels.

Table 1 provides a comparative snapshot of demand incentives offered by state EV policies. Incentives are further defined and analyzed in the section below.

Table 1: Matrix of EV 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

Financial purchase incentives

Financial purchase incentives help defray the higher upfront costs of EVs, a key barrier to adoption. Globally, the most common purchase incentives in use are purchase subsidies and tax reductions. Besides, a couple of Indian states utilize favorable terms of financing and scrapping incentives to encourage EV adoption. Scrapping incentives are primarily targeted at commercial vehicle segments, in which vehicle owners may need additional financial assistance to switch to EVs.

While widely used, the practical design of financial incentives is necessary to ensure their impact. To maximize impact, incentives should be offered upfront at the time of purchase, not afterward. Incentives on low-end vehicles are more impactful in influencing consumer purchase decisions than those on high-end vehicles. And importantly, incentives should be designed with an extended timeframe in mind, and should not be prematurely withdrawn before the market has adequately developed.

Purchase subsidy

Purchase subsidies are a widely used policy measure, enabling EVs to be more competitively priced against ICE vehicles. Subsidies may be offered as income tax credits, purchase rebates, or upfront purchase price reductions, depending on how they are structured and delivered to the buyer.

ANALYSIS OF DEMAND INCENTIVES

⁶ Hardman, Scott et al. 2017. The effectiveness of financial purchase incentives for battery electric vehicles – A review of the evidence. Renewable and Sustainable Energy Reviews. Vol 80, pp.1100-1111.