# Electric mobility transition in India: mapping out policies at sub-national levels.

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## 1. Introduction

The persistent rise in global transport emissions underscores the critical importance of transitioning to Electric Vehicles (EVs) for a low-carbon, fossil-fuel independent future. Government policies play a pivotal role in transforming mobility systems. Policies should perform two roles. In one role, policy instruments must aim to destabilize and then phase-out systems based on Internal Combustion Engine Vehicles (ICEVs). In the other role, policy instruments must aim to support a regime and accelerate emerging systems based on EVs. This dual process of innovation has been termed “creative destruction” (Dijk et al., 2020; Kivimaa and Kern, 2016). Despite the important need for policies to perform this dual function, the existing literature focuses mainly on the adoption and creation of new technologies. Filling this gap, the study explores the policies to accelerate- the diffusion of EVs and phase-out of ICEVs.
We consider India, a signatory of Paris agreement with high targets of EV diffusion contrasted with its rapid growth in ICEVs market and increased local air pollution. The sub-national governments are the key actors for enabling adaptation in the federal system of India. This study examines how sub-national levels foster adaptation through policies, how their approaches vary, and which patterns emerge.

## 2. Methodology and Data

This study adopts a policy mapping methodology to capture the specifics in transport decarbonization policies and examine the elements in the top-down policy mix of India. Subsequently an analysis framework involving a coding scheme to evaluate the diverse policies developed by sub-national jurisdictions is developed. The study relied on secondary data, sourced online from official government websites. Policy documents developed by the 29 out of 36 sub-national jurisdictions across India were reviewed. The policies range over the period of 2016 to 2023.

A policy categorization framework was developed consistent with – (1) adoption, i.e. policies pushing towards consumer demand, (2) production, which covers local manufacturing of EV and

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components, (3) supporting infrastructure for EV and, (4) phase-out of ICEVs.

## 3. Results

Overall, we find that regional variations exist in the policies devised by the sub-national jurisdictions (Fig 1.). The role of sub-national policies is critical in pushing consumer demand through targeted policy support.

While there are policies for production and supporting infrastructure, we find few destabilizing policies. A wide range of policies are devised for economic support, target setting to guide the system transition and capacity building. However, very few policies exist that regulate or set mandates guiding the shift.

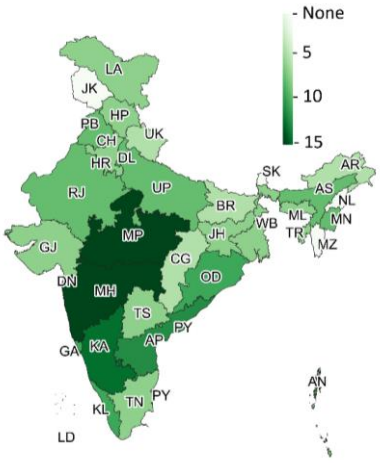


Fig 1. Number of policies developed by each sub-national government

## 4. Conclusion

In this study, we examine the sub-national policy approaches and the determinants of EV diffusion and phase-out of ICEVs. This study presents implications for policy makers aiming at accelerating the transition towards a fossil-fuel independent private transport, where increased EV share along with increased efforts to phase-out ICEVs are the highlighted solutions.

Our findings point to a need for a clear trajectory of the phase-out plan for an organized and accelerated transition. The uneven policy efforts create regional imbalances that slow down the transition. Although, the sub-national level is the key actor in this transition, collaborations between governments can accelerate and fill the gaps in the planned policy actions.

## References

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