Transport and Climate Change Week

#TransportWeek21

EV Policies and Regulations in India

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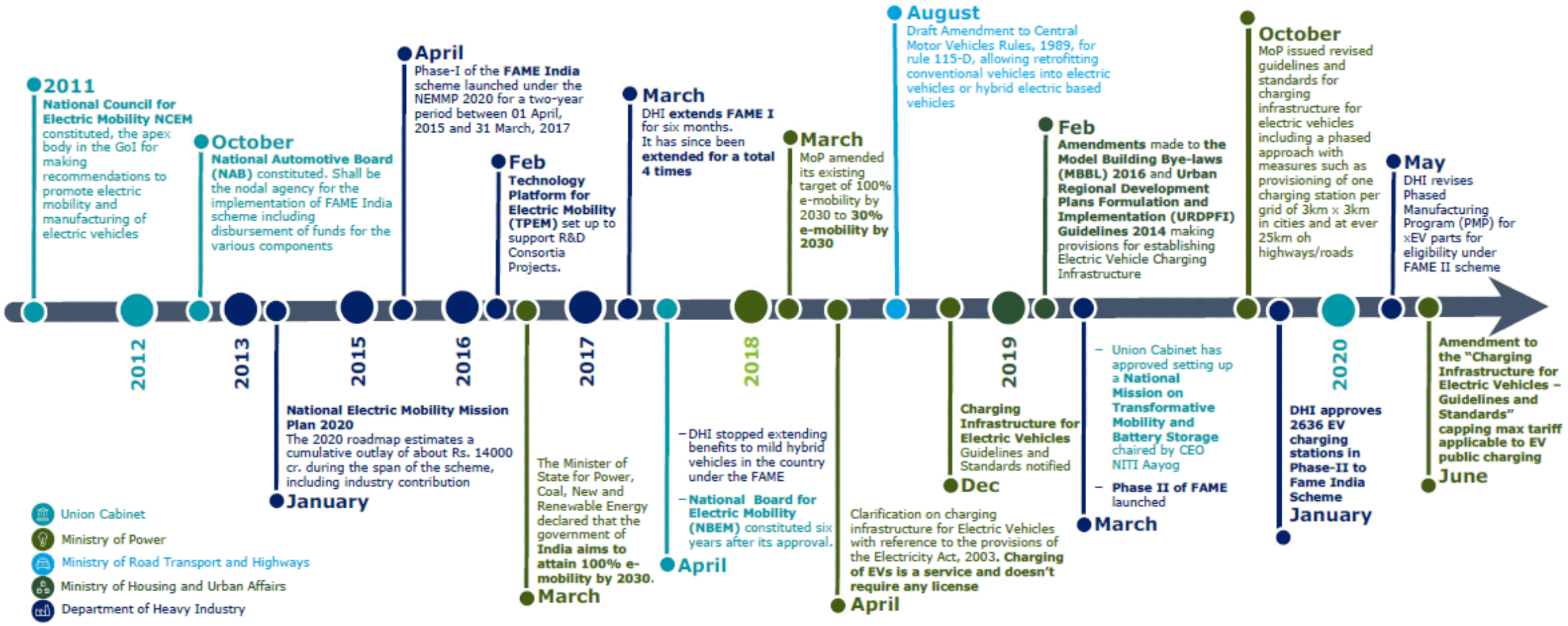
On behalf of: Federal Ministry for the Environment, Nature Conservation and Nuclear Safety of the Federal Republic of Germany

Contents

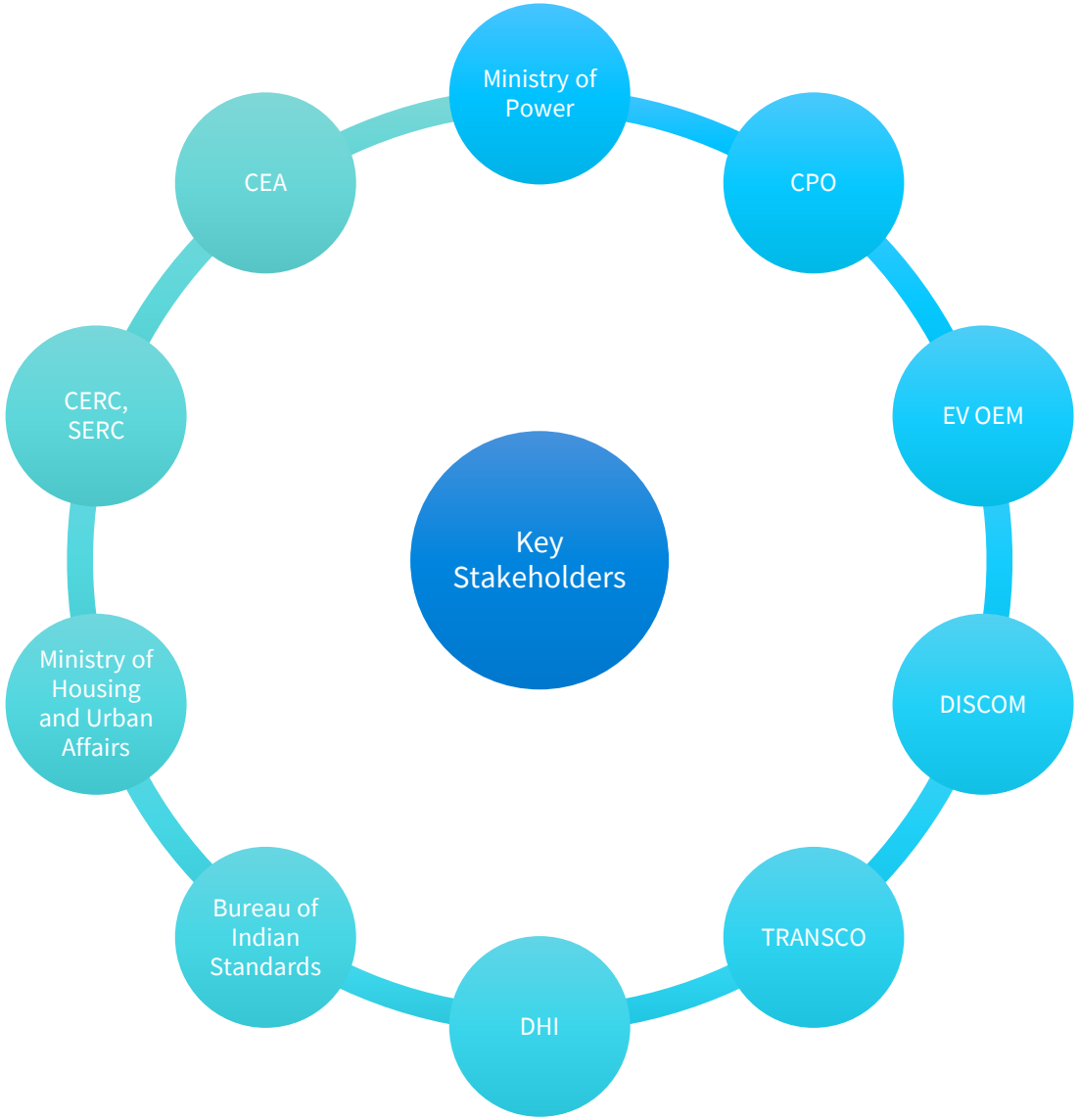
1. Indian EV Journey
2. Key Stakeholders in forming EV Regulations
3. NEMMP 2020
4. FAME
5. EV State Policies
6. EV State Policy – Delhi
7. EV Regulation – Technical Standards and Safety Regulations
8. MoP Guidelines for EV Charging Infrastructure
9. Indian Building Bye-Laws
10. EV Tariff Landscape
11. Key Observations

EV Policy Landscape in India



GIZ, Status Quo Analysis of Various Segments of Electric Mobility and Low Carbon Passenger Road Transport in India, 2021

Key Stakeholders for Forming EV Charging Regulations



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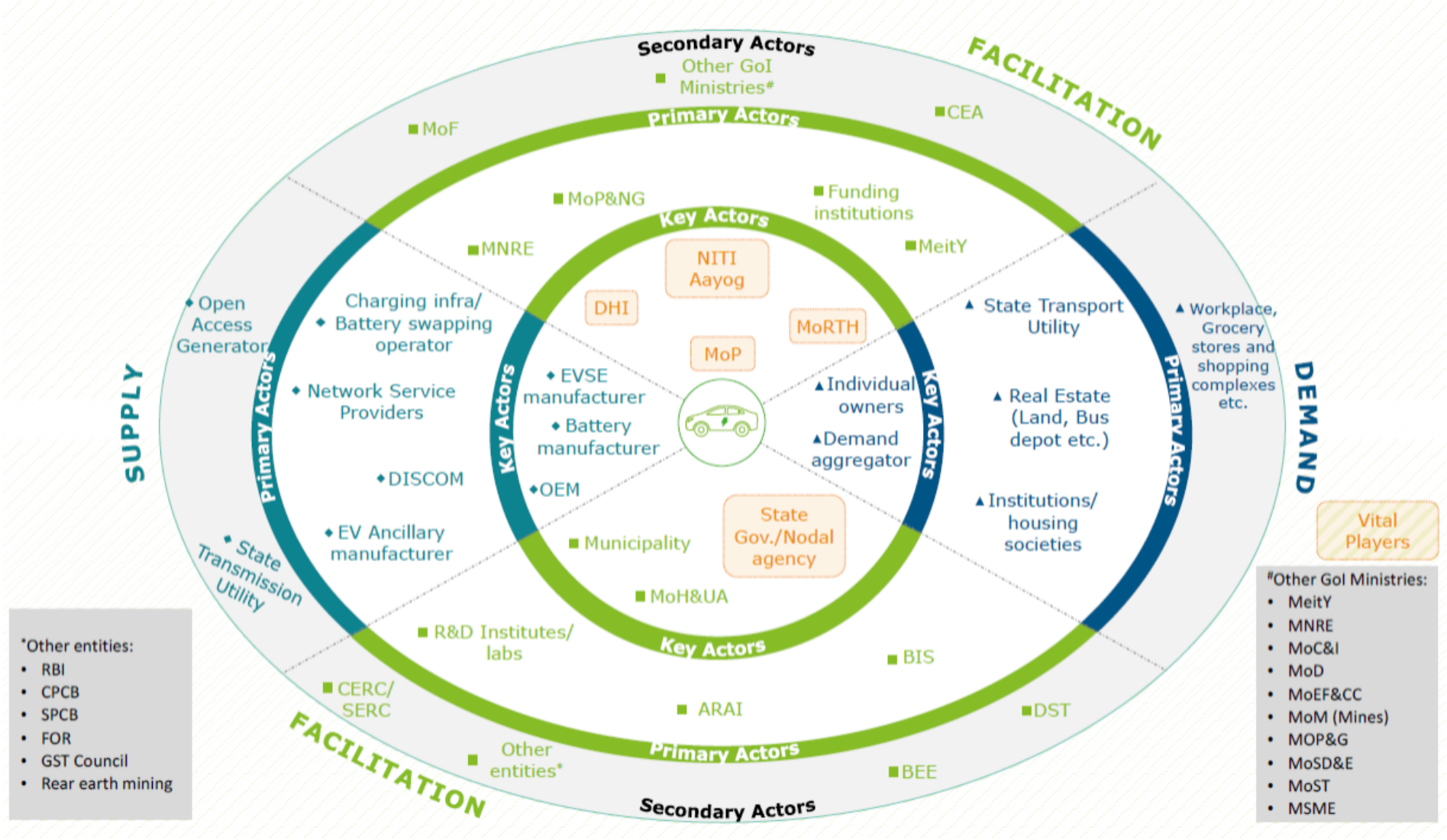
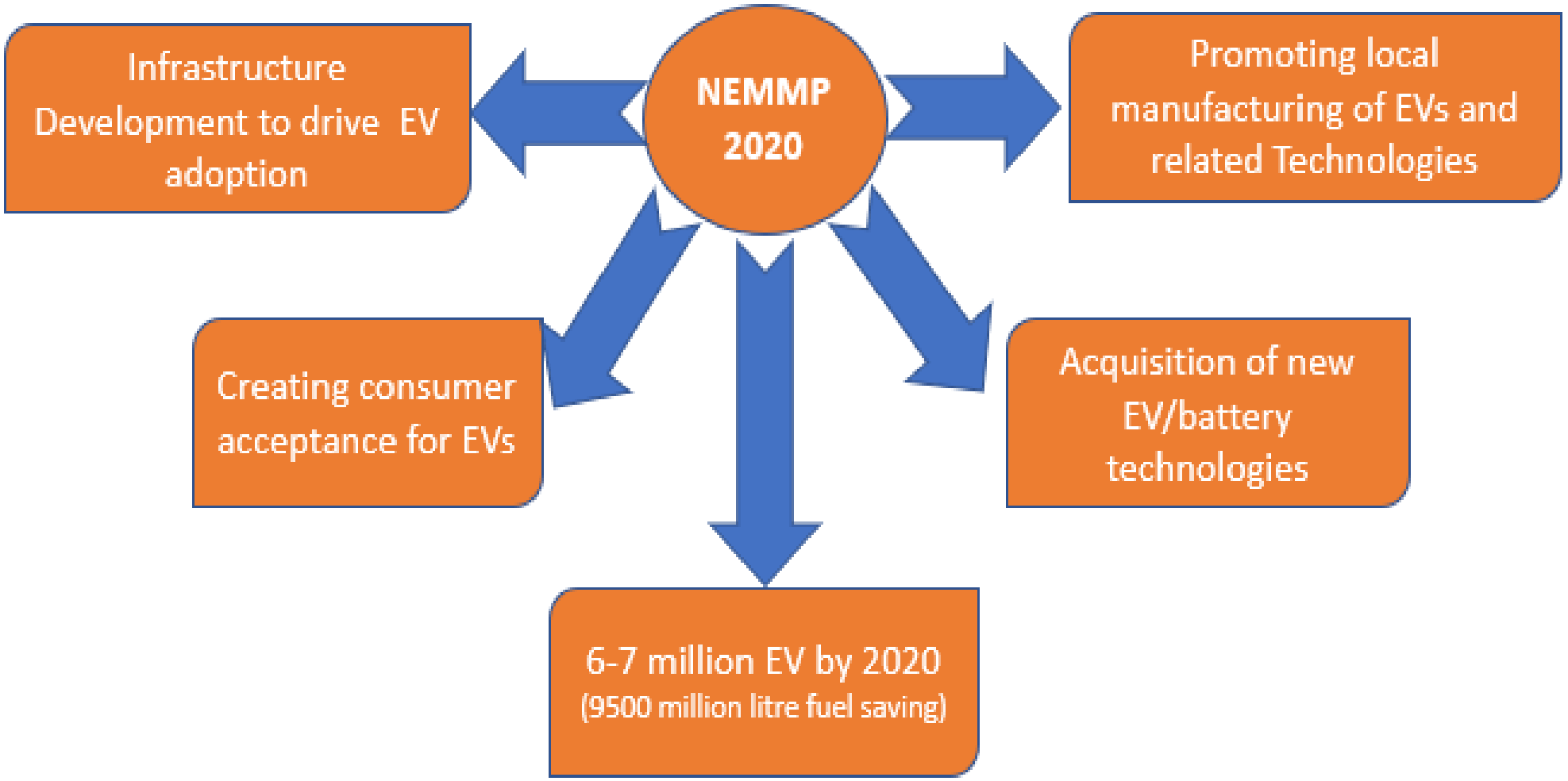
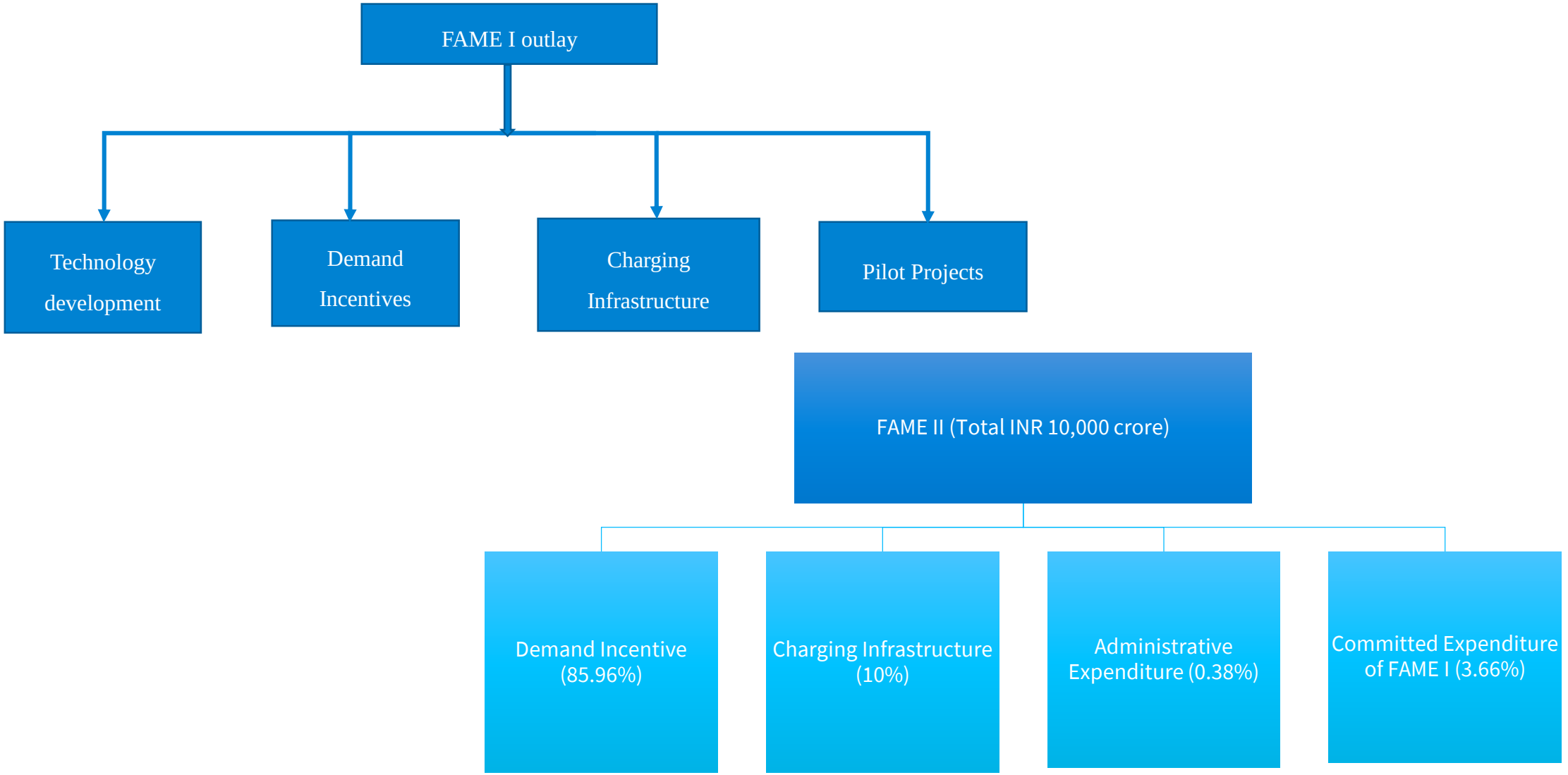


GIZ, Status Quo Analysis of Various Segments of Electric Mobility and Low Carbon Passenger Road Transport in India, 2021

National Electric Mobility Mission Plan (NEMMP) 2020



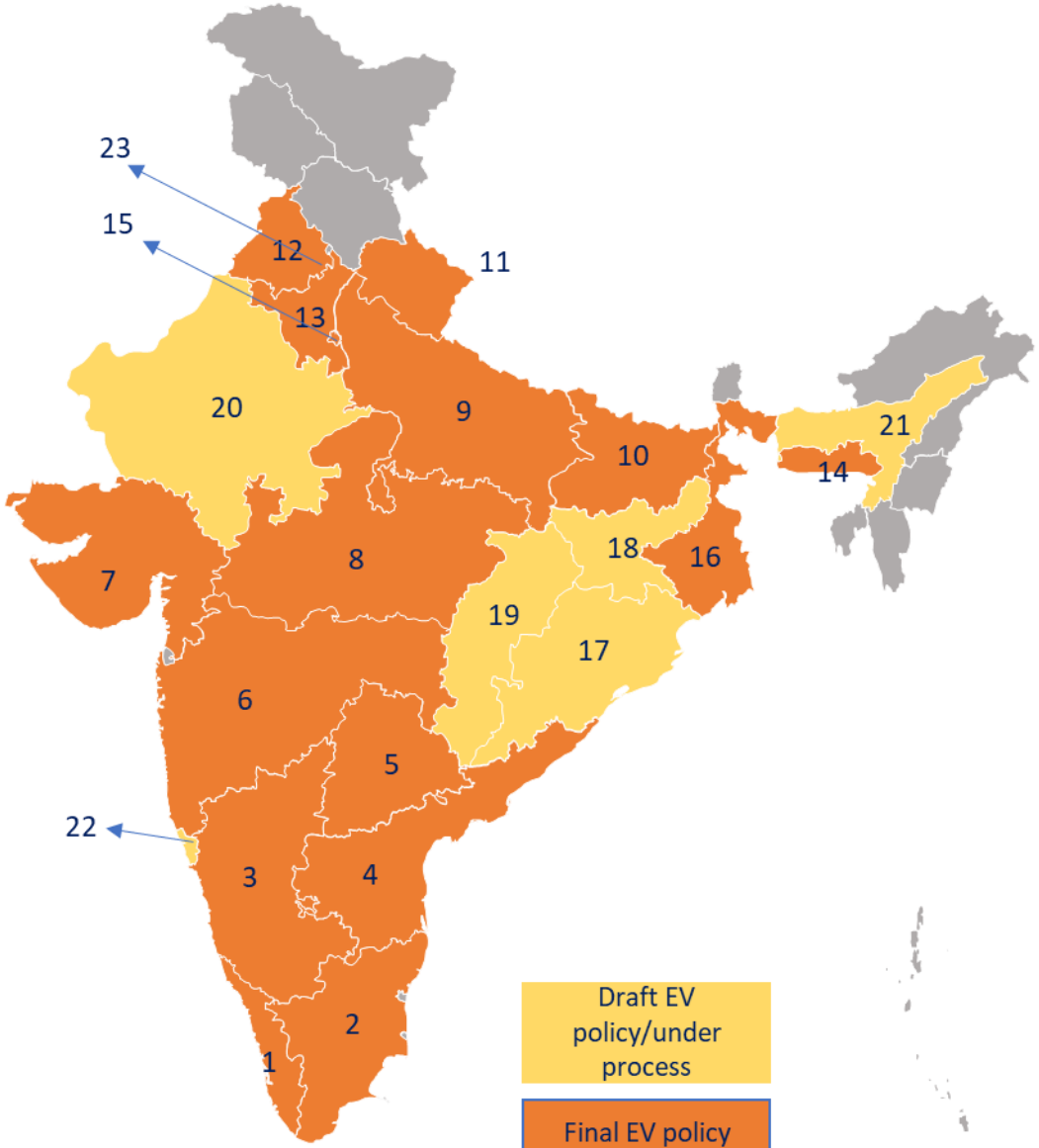
Faster Adoption and Manufacturing of (Hybrid and) Electric vehicles (FAME)



EV State Policies

EV Policy Issued

No	State	Title of Policy issued and year
1	Kerala	**Kerala Electric Vehicle Policy 2019**
2	Tamil Nadu	**Tamil Nadu Electric Vehicle Policy 2019**
3	Karnataka	**Karnataka Electric Vehicle & Energy Storage Policy 2017**
4	Andhra Pradesh	**Andhra Pradesh Electric Mobility Policy 2018-23**
5	Telangana	**Telangana EV ESS Policy 2020-2030**
6	Maharashtra	**Maharashtra's Electric Vehicle Policy 2018**
7	Gujarat	**Gujarat State Electric Vehicle Policy 2021**
8	Madhya Pradesh	**Madhya Pradesh Electric Vehicle Policy 2019**
9	Uttar Pradesh	**Uttar Pradesh Electric Vehicle Policy 2019**
10	Bihar	**Bihar Electric Vehicle Incentive Policy 2019**
11	Uttarakhand	**Uttarakhand Electric Vehicle Policy 2018**
12	Punjab	**Punjab Electric Vehicle Policy 2019**
13	Haryana	**Haryana Electric Vehicle Policy 2017**
14	Meghalaya	**Meghalaya Electric Vehicle Policy 2021**
15	Delhi	**Delhi Electric Vehicle Policy 2019**
16	West Bengal	West Bengal **Electric Vehicle Policy 2021**



EV Policy Drafts

No	State
17	Odisha
18	Jharkhand
19	Chhattisgarh
20	Rajasthan
21	Assam
22	Goa
23	Chandigarh

EV State Policy - Delhi

- Key Driver
  - Improving air quality by reducing emission from transport sector.
- EV Market Support
  - Purchase incentives for 2W, E-autos, 4W.
  - Scrapping incentives for ICE vehicles
  - Purchase incentives to advanced battery goods carriers.
  - Subsidy for e-bus including smaller buses for last mile connectivity.
  - Waiving of road tax and registration fee for BEV during the period of the policy
- Charging Infrastructure
  - Subsidy for Energy Operators to set up charging and battery swapping stations across Delhi.
  - All leased/hired cars used for commute of Government of National Capital Territory of Delhi would be transitioned to EV within 12 months.
  - All new home and workplace parking will need to be ‘EV ready’ with 20% of all parking places required to be EV ready.
  - Providing accessible public charging/battery swapping facilities within 3 km travel from anywhere
- Key Attributes
  - Accept multiple mode of payments including digital payment options
  - Provide real-time information on EV charging details using an open, publicly owned database which includes location, numbers, type of swapping kiosks/chargers, queue lengths/availability, pricing etc

EV Regulation – Technical Standards and Safety Regulations

First Amendment – Feb 2019
(Technical Standards for the Distributed Generation Resources Connectivity Amendment Regulations)

- Applicable for all distributed generating resources seeking connectivity with the grid below 33 kV voltage level.
- EV Charging stations have been recognized as an applicant for Distributed Generation Resource and has to comply with necessary regulation for Distributed Generation resources when acting as a generator.
- The difference between Charging Point and Charging station has been clarified as
  - A charging point is a facility for recharging of EV for private or public noncommercial use and connected to 415/200 V.
  - A charging station has been defined as a facility for recharging of EV for commercial and shall include multiple charging points with the capability of transferring power from electric vehicle to the grid.
- The regulation also mandated to carry out adequacy and stability studies of the network prior to installation.
- The charging station should also have reliable protection system to detect various faults and abnormal conditions and should have means to isolate the faulty equipment automatically.

Second Amendment – June 2019

Measures associated with Safety and Electric Supply Amendment Regulations: laid down several safety provisions for EV charging infrastructure connected with the grid.

MoP Guidelines for EV Charging Infrastructure

GoI published revised guidelines for Charging infrastructure for Electric Vehicles on 1st October 2019

- Oct 2019 - any one or all of the chargers could be installed in a PCS
- June 2020 - battery swapping station was included

Charger Type	Charger Connectors*	Rated Voltage (V)	No. of connector Guns	Charging vehicle type (W-wheeler)
Fast	Combined Charging System (CCS) (min 50kW)	200-750 or higher	1 CG	4-W
	CHArge de Move CHAdeMO (min 50 kW)	200-500 or higher	1 CG	4-W
	Type 2 AC (min 22 kW)	380-415	1 CG	4-W, 3-W, 2-W
Slow/moderate	Bharat DC-001 (15 kW)	48	1 CG	4-W, 3-W, 2-W
	Bharat DC-001 (15 kW)	72 or higher	1 CG	4-W
	Bharat AC-001 (10 kW)	230	3 CG of 3.3 kW each	4-W, 3-W, 2-W

* In addition, any other fast/slow/moderate charger as per approved DST/BIS standards whenever notified.
Note: Type – 2 AC (min 22 kW) is capable of charging e-2W/3W with the provision of an adapter

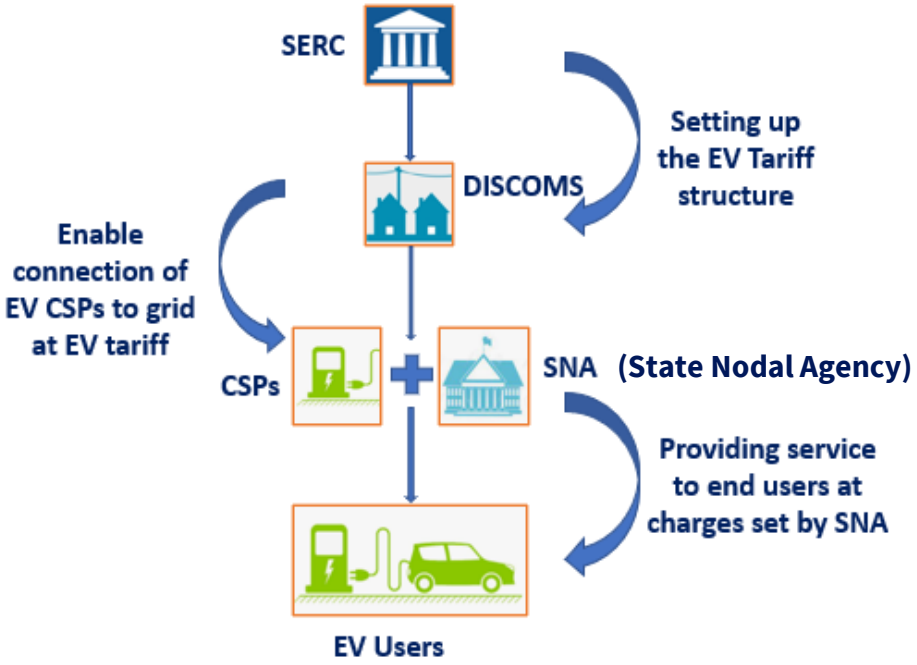
Amendments in Model Building Bye-Laws (MBBL) - 2016

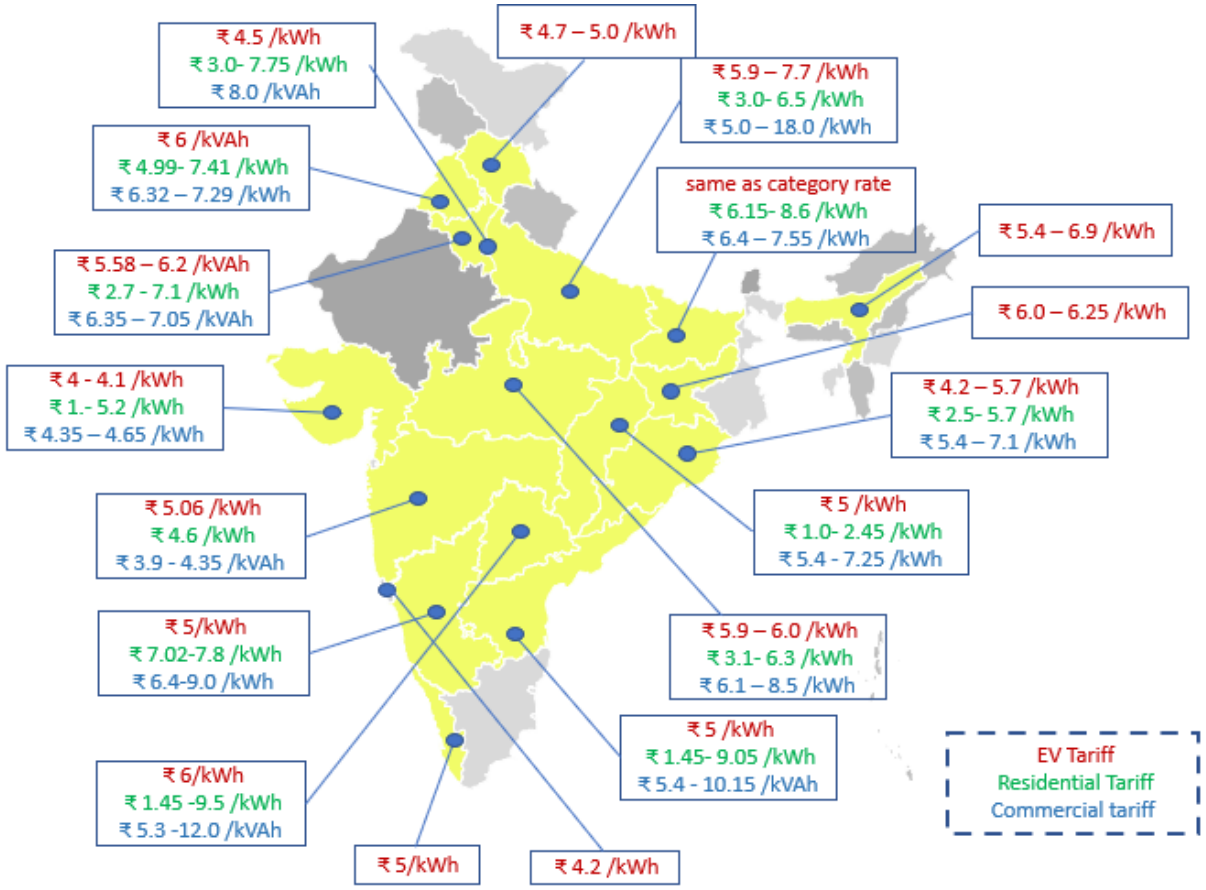
- For residential buildings
  - Provision for minimum one slow charger (2.5 kW)
  - Charger type: AC charger with single gun
  - Domestic Meter
- For other building types including group housing
  - Type of charger: As per MoP guidelines
  - Ownership: Service Provider
  - Connection and Metering: Commercial metering
  - Open metering and on-spot payment needs to be available
  - Currently 20% of total capacity of all vehicle parking space needs to have charging bays
- Buildings need to have an increased contracted demand to account for all EV chargers to be operated simultaneously with a safety factor of 1.25.

Charging infrastructure requirement for PCS in other building types

4Ws	3Ws	2Ws	PV (Buses)
1 slow charger per 3 EV 1 fast charger per 10 EV	1 slow charger per 2 EV	1 slow charger per 2 EV	1 fast charger per 10 EV

EV Tariff Landscape





- EV specific tariffs are found to be higher than corresponding residential rates and lower than the commercial tariffs
- Lack of harmonization between different State EV Tariffs.
- Some states have dual tariff structure, based on Demand Charge and Energy Charge

Key Observations so far …

1. While efforts from Govts have been made to support charging infrastructure, it is currently in infancy stage.
2. Grid upgradation required for charging infrastructure, particularly at HT level is left to the CPO/investor. Need for sustainable and enabling market rule for upgradation.
3. DISCOMS can play more active role in grid upgradation, however, there is need for financial assistance/adequate recovery plan for the investment required for grid upgradation.
4. Support for land availability (through a sustainable business model) to Private players to set up the charging infrastructure.
5. Swapping stations should be brought at par with other charging infrastructure. FAME subsidy and EV tariff should be extended to battery swapping stations. Currently GST rate for swapping battery is 18%, while for the battery with EV is 5%
6. The major focus of EV charging infrastructure has been given to slow chargers so far. However, considering rapid growth of 4 wheelers with high-capacity batteries, fast chargers, particularly in public spaces need to be given a special focus to cater charging needs of the modern 4- wheeler EV segment.
7. Need for dedicated help desk/single window clearance system for charging station developers. Some states have initiated/working on single window clearance