



Status of Electric Vehicles Charging Infrastructure policies in India

SAARC Training workshop on Electric Vehicle and
Charging Infrastructure
27th to 29th August 2026
Islamabad

Presented by
Sameer Pandita , Director , BEE



India's Climate Ambition & Transport Transition

Background and policy context for accelerated adoption of electric mobility

Enhanced Climate Commitments

- India has strengthened its climate ambition under the Paris Agreement framework.
- **2035 NDC targets:** Achieving a 47% reduction in emissions intensity of GDP from 2005 levels.
- **Non-fossil capacity:** 60% of cumulative installed electric power capacity targeted from non-fossil sources by 2035.

Why Transport Matters

- **High Energy Consumption:** Transport accounts for approximately **23.68%** of India's Total Final Energy Consumption (TFEC) in 2024–25.
- **Fossil Fuel Dependence:** The sector remains critically dependent on imported petroleum products.
- **Strategic Imperative:** Sustainable and energy-efficient transport is vital to cutting emissions and securing energy independence.

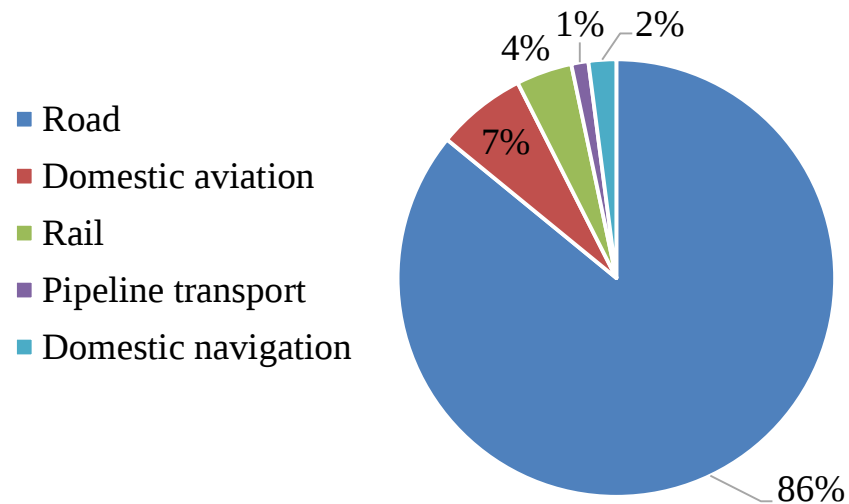


Energy consumption in Indian Transport Sector

Energy Consumption

The transport sector accounted for **23.68%** of the total energy consumption in FY 2024-2025. (144.141 Million ToE)

Energy consumption distribution - Transport sector (%)

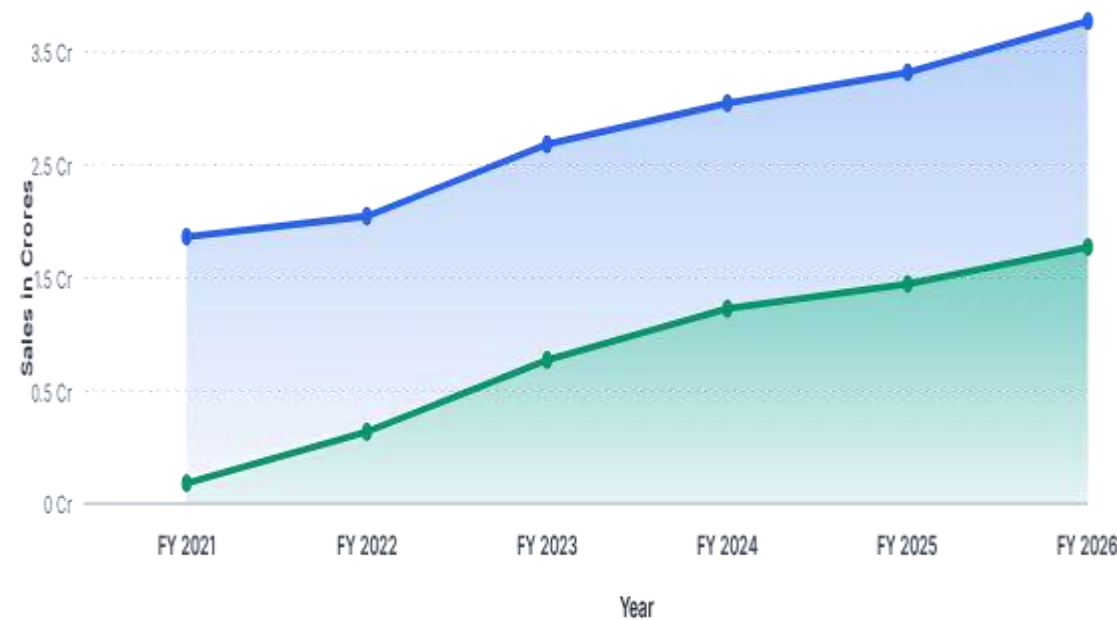


S. No.	Sectors	Oil Products	Natural Gas	Electricity	Total
1	Road Sector	109,911	13,922	0	123,834
2	Domestic aviation	9,572	0	0	9,572
3	Rail transport	2,996	0	2,967	5,963
4	Pipeline transport	0	1,821	0	1,821
5	Domestic navigation	2,951	0	0	2,951
	Total consumption	125,430	15,743	2,967	144,141

Source: Energy Statistics India 2026



Graphical Representation: ICE vs EV Growth Trends & CAGR



*Note: Y-axis represents total vehicle sales in Crores. Separate trends illustrate rapid EV adoption alongside overall market growth

ICE Vehicles Trend (CAGR: ~11.95%)

Electric Vehicles Trend (CAGR: 76.32%)

Vehicle Segment & Type	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
Total Vehicles (ICE & EV Combined)	17,522,566	18,444,055	22,330,903	24,639,752	26,251,862	30,841,533
Electric Vehicle Breakdown						
E-2W	44,803	252,632	728,019	948,498	1,150,757	1,401,861
E-3W	90,926	183,485	402,103	632,783	698,970	830,819
E-4W (Pvt. & Comm.) & E-Bus	6,520	22,773	52,123	95,920	117,747	219,367
Total Electric Vehicles	142,349	458,890	1,183,133	1,681,202	1,967,474	2,452,047
EV Penetration Share (%)	0.81%	2.49%	5.30%	6.82%	7.49%	7.95%



Grid Impact – Electric vehicles by FY 2032

By FY 2031-32, India could have 4.91 crore BEVs on road, requiring 27 BU of electricity

5 GW

Peak Demand

4.91 crore

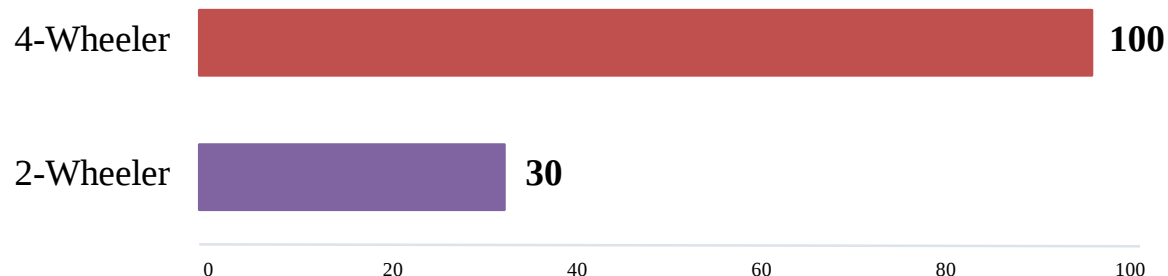
Total BEVs on road

14%

Share of all vehicles

Four-wheelers have nearly 3× the energy intensity of two-wheelers

Vehicle efficiency assumption (Wh/km)



Energy requirement = vehicles on road × efficiency × average annual travel

Key modelling parameters

Parameter	2-Wheeler	4-Wheeler
Efficiency (Wh/km)	30	100
Average travel (km/year)	12,800	12,000
Charging time (hours)	4	8
Share charged at night	0.3	0.7

SCENARIO ASSUMPTIONS

30% BEV sales by 2030 | 100% by 2042

GROWTH & INFRASTRUCTURE

Electric Mobility Momentum

EV adoption is accelerating rapidly, creating parallel demand for charging networks.

**24.52
Lakh**

EV Registrations
(FY 2025–26)

77%

CAGR Growth
(FY21–FY26)

25%

YoY Growth
Over Prior Year

Charging Infrastructure as a Key Enabler

- Widespread, reliable charging networks are expanding across urban centers and highways.
- Ministry of Power (MoP) guidelines actively support commercial and public station rollout.



E-Mobility : Roles of Entities



Roles of the Ministries

NITI Aayog

Facilitates policy formulation and evaluation of sustained and holistic development of the E-Mobility Sector.

MHI

Promoting sales, Manufacturing and awareness on E-mobility, testing standards

MoP

Guidelines for Charging Infrastructure/ Battery swapping, Awareness

MoPNG

Public EV charging stations at Retail Outlets

MoRTH

Waiver fees, Green plate for EVs

MoHUA

Building By-Laws & urban transport

DST

Development of appropriate standards and promoting R&D in EV battery, motors and power electronics

GST council : 5% GST on EVs and EV chargers in place of 18% on ICE Vehicles

Initiatives Taken by the Government to promote EVs



- **FAME India Phase-II:** Implemented from April 1, 2019, to March 31, 2024, with an Rs. 11,500 crore budget to provide demand incentives for EVs and grants for public charging stations.
- **PM E-DRIVE Scheme:** Implemented from April 1, 2024, to March 31, 2026, with a Rs. 10,900 crore outlay to support various EVs, charging stations, and testing agencies.
- **PLI Scheme for Advanced Chemistry Cell (ACC):** Approved on May 12, 2021, with an Rs. 18,100 crore outlay to build a domestic manufacturing ecosystem for 50 GWh of ACC batteries.
- **PLI Scheme for Automobile and Auto Component Industry (PLI-Auto):** Approved on September 23, 2021, with a Rs. 25,938 crore outlay to boost domestic manufacturing of Advanced Automotive Technology products with a minimum 50% Domestic Value Addition.
- **Scheme for Promotion of Manufacturing of Electric Passenger Cars in India (SPMEPCI):** Notified on March 15, 2024, requiring a minimum investment of Rs. 4,150 crore and target Domestic Value Additions of 25% by year three and 50% by year five.
- **PM e-Bus Sewa-Payment Security Mechanism (PSM) Scheme:** Notified on October 28, 2024, with a Rs. 3,435.33 crore outlay to support over 38,000 electric buses by providing payment security to operators against Public Transport Authority defaults

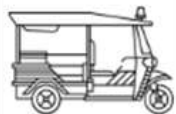


PM E-Drive (Demand Incentives)

Demand incentive for electric vehicles



E-2w: ₹1,772 cr. for 24.79 lakh vehicles



E-Rickshaw: ₹192 cr. for 1.1 lakh vehicles



E-bus: ₹4,391 cr. for 0.14 lakh vehicles



E-ambulance: ₹500 cr.

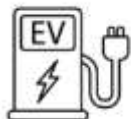


E-3w: ₹715 cr. for 2.05 lakh vehicles



E-trucks: ₹500 cr.

Grants for charging infrastructure



EVSE: ₹2,000 cr. for 72,300 chargers

Subsidy of e-2w: ₹ 2,500/kWh capped at ₹ 5,000/vehicle

Subsidy of e-3w: ₹ 2,500/kWh, capped at ₹12,500 per vehicle

Subsidy of e-ambulance:
₹30,000/kWh capped at 35% ex-factory cost

Subsidy of e-truck: ₹5,000/kWh capped at 10% ex-factory cost

Subsidy of e-bus: ₹ 10,000/kWh, capped at 20L(8m), 25L(10m) & 35L(12m)

Subsidy on Charging Infra & upstream Infra

Category	A (State / Central Govt. Premises)	B (Locations in cities and along highways)	C(location except A & B)	D (BSS)
Upstream Infra	100%	80%	80%	80%
Charging Infra	100%	70%	-	-



Actions by Ministry of Power

Role : Charging Infrastructure for Electric Vehicles

Clarification Issued

- **Clarification – 13.04.2018**
Charging is not a sale of electricity; No license required

CEA Regulations

- **(1) Technical Regulations & (2) Safety Regulations – 2023**

Charging Guidelines and Standards

- **Charging Infrastructure for Electric Vehicles – Guidelines and Standards**
 - ✓ First Guidelines issued by MoP on **14.12.2018**.
 - ✓ Several amendments issued to include EV tariff, Service Charge, Open Access, Charging Standards.
 - ✓ Latest revised guidelines issued with amendments on **10.01.2025 that includes Battery Swapping & Battery Charging**

Battery Swapping Guidelines

- **Guidelines for Installation and Operation of Battery Swapping and Charging Stations**
 - ✓ Guidelines issued by MoP on **10.01.2025**



Actions by Ministry of Power

Role : Charging Infrastructure for Electric Vehicles

Go Electric Campaign

- Launched on 19th February 2021 to increase awareness

Star Labeling

- BEE Star labeling for DC Electric Vehicle Supply Equipment released in FY 2025

Benchmarking Price of Chargers and Upstream Infrastructure

- To arrive at a typical demand incentive amount to support growth of EVCI

Initiatives to Establish a EV charging Infrastructure in India



Guidelines for Installation and Operation of Electric Vehicle Charging Infrastructure

- **Connection charges**: SERCs to pre-specify charges up to 150 kW; DISCOMs to provide connections up to 150 kW.
- **Demand mapping**: SNAs/Municipal Commissioners to map EV charging demand annually.
- **Single-window clearance**: DISCOMs to provide online single-window electricity connections for PCS

Initiatives to Establish a EV charging Infrastructure in India



➤ Revenue Sharing Model for Land for PCS (Govt. land)

Government land for PCS installation: ₹1/kWh revenue share for public entities; private entities through bidding with a ₹1/kWh floor price.

➤ Tariff for supply of electricity to Public EV charging stations

- **EVCS tariff**: Single-part tariff capped at ACoS till 31st March 2028.
- **Time-based tariff**: 30% discount during solar hours and 30% surcharge during non-solar hours.



Initiatives to Establish a EV charging Infrastructure in India

EV Charging Infrastructure: Tariffs & Spacing Norms

Regulatory framework for charging fees, geographic density, and metered connections

₹ Charging Service Fees & Tariffs

- **AC Charging:** Max service fee of Rs 3.0/unit (solar hours: 9 am–4 pm) and Rs 4.0/unit (non-solar hours).
- **DC Charging:** Max service fee of Rs 11.0/unit (solar hours) and Rs 13.0/unit (non-solar hours).
- **Connections:** RWA, GHS, office/building owners can request separate metered connections with dedicated EV tariffs, or use existing connections.

📍 Infrastructure Spacing Norms

- **Urban Areas:** At least one charging station within every 1 km x 1 km grid.
- **Highways & Expressways:** Stations at every 20 km on both sides of major roads and highways.
- **Heavy-Duty / Long-Range EVs:** Fast-charging stations (minimum 240 kW capacity each) at every 100 km.



Technology Standards, Interoperability & E-Bus Depots

Adoption of open protocols, Renewable energy integration, and Heavy-duty bus charging

Interoperability & Smart Grids

- **Open Protocols:** Encourages OCPP, OCPI, and UEL for seamless interoperability across charging networks.
- **Renewable Integration:** Promotes solar energy usage and smart grid technologies for EV charging.
- **Grid Integration:** Establishes official provisions to implement Vehicle-to-Grid (V2G) systems.

E-Bus Depots & High-Power Charging

- **Open Access:** Permit e-bus depots to source electricity directly through open access frameworks.
- **High-Power Chargers:** E-bus depots must install chargers with a minimum capacity of 240 kW (Power Level 3 or 4).
- **Green Fleets:** State Transport Undertakings encouraged to integrate solar energy directly into bus depots.



Indian standards for EV Charging Standards

Power Level	Type of EV Charger	EV Charger Capacity	Charging Device /Protocol	EV – EVSE Communication	Charge Point Plug / Socket	Vehicle Inlet / Connector
Power Level 1	Light EV AC Charge Point (for 2W, 3W and 4W – M1 Category)	Up to 7 kW	IS-17017-22-1	Bluetooth Low Energy	IS-60309	IS-17017-2-7, IS-17017-2-2
	Light EV DC Charge Point (for 2W, 3W Category)	Up to 12 kW	IS-17017-25 [CAN]		IS-17017-2-6	IS-17017-2-6
	Light EV AC/DC Combo (for 2W, 3W)	Up to 7 kW (AC) or up to 12 kW (DC)	IS-17017-31		IS-17017-2-7	IS-17017-2-7
Power Level 2	Parkbay AC Charge Point (for 3W and 4W – M1 Category)	Normal Power ~11kW/ 22 kW	IS-17017-1	IS-15118 [PLC]	IS-17017-2-2	IS-17017-2-2
Power Level 3	DC Charging Protocol (for 4W (M1 Category), Buses and Trucks (M3 Category))	DC 50 kW to 250 kW	IS-17017-23	IS-17017-24[CAN] IS-15118 [PLC]	IS-17017-2-3	IS-17017-2-3
Power Level 4	DC High Power for e-Bus and Trucks Charging Station (M3 Category)	DC High Power (250 kW --> 500 kW)	IS-17017-23	IS-17017-24[CAN] IS-15118 [PLC]	IS-17017-2-3	IS-17017-2-3



Thank You