



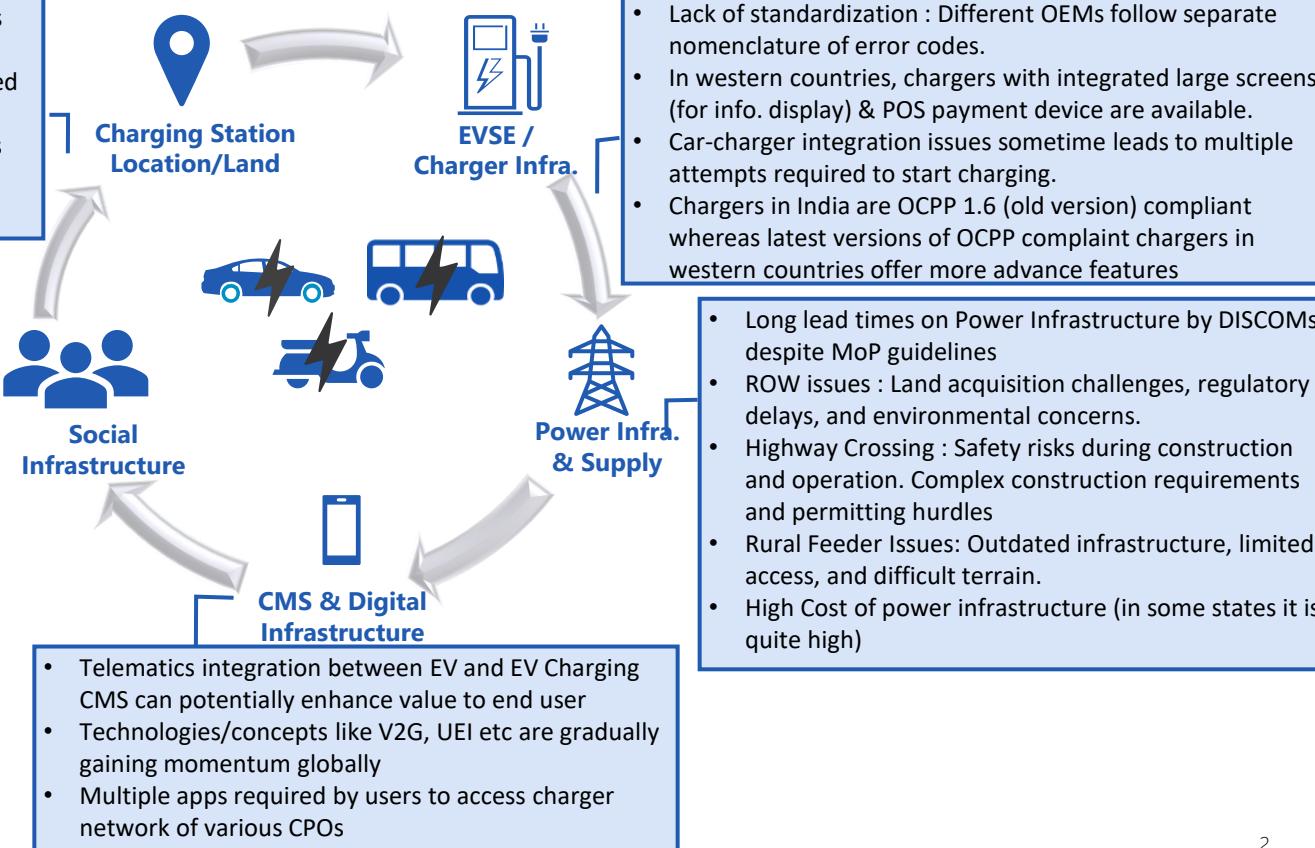
Way forward to achieve \$200 billion opportunity in E-Mobility in India and DISCOMs Role in Making This a Reality

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EV Charging Ecosystem in India - Challenges/Opportunities



- High upfront capex in setting up charging stations
- Limited locations in proximity to power supply source leading to high Power infrastructure related costs
- Unrealistic rental expectations of location owners
- Unavailability of locations in densely populated / metropolitan areas





1 Land and Location of Charging Stations

Item

- Integrate **EV Charging Station planning into the early design phase** of major highways and expressways, strategically selecting locations to minimize grid infrastructure costs, while also incorporating dedicated roadside charging bays in high-density or space-limited urban corridors to ensure accessibility and coverage.

Timelines / Priority

Q4 FY26 / High

- Government may **earmark land for big charging hubs** (with cafeterias and restrooms) along key highways.

Immediate / High

- Reduction in GST** for Charging Services to 5% (from current 18%).

Q4 FY26 / High

- Mandate 30% of parking slots** in new building projects to be EV-ready with **3.3 to 10 kW** power supply provisions. Also make provisions for dedicated EV parking space for older residential properties. The above may be reviewed after every 3 years.

Q2 FY27 / Medium

Implementation Authority

Ministry of Road Transport & Highways (MoRTH) / National Highways Authority of India (NHAI) for National Highways

Public Works Department (PWD) at State Level for State Highways
Unified Urban Metropolitan Authorities

GST Council, Central/State Governments

Ministry of Housing and Urban Affairs (MoHUA) for Model Building bye-laws / URDPFI guidelines

State Govt. for State level Laws & Regulations; **Development Authorities/Municipal Corporations**



2

EVSE / Charger Infrastructure

Item

- Mandate all future Public charger installations (for e4w) to be **60 kW or higher** (for e4w) and ensure phased upgradation of existing low-power chargers to meet evolving demand and vehicle compatibility. PM e-drive mandates 50 kW or higher
 - Modular chargers** with improved efficiency and better charger uptime.
 - Incorporate **multilingual audio assistance and visual cues** (LED status indicators) to make chargers accessible to all user groups, including those with disabilities or limited literacy.
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- Standardize error codes, display screen, features across all chargers** to ensure uniform diagnostics, streamlined maintenance, and enhanced operational control.
 - Encourage full-fledge **compatibility testing & certificates** from various Auto-OEMs before a new charger model is launched. This will ensure that EV-Charger compatibility issues do not arise.

Timelines / Priority

Q4 FY26 / High

Q4 FY26 / High

Q2 FY27 / Medium

Q2 FY27 / High

Q4 FY26 / High

Implementation Authority

Ministry of Power for Guidelines and Standards for Charging Infrastructure

Ministry of Heavy Industries

Bureau of Indian Standards (BIS)

Ministry of Heavy Industries & Automotive Research Association of India (ARAI)

3

Bus & Truck specific recommendations



Implementation Authority

Item

- Fast-track HT power connections** (11 kV & above) for depots/logistics hubs, with strict timelines and penalties for delays by DISCOMS.
- Mandate ≥180 kW (buses) and ≥350 kW (trucks) chargers** at depots, logistics hubs, and along highways, with phased upgradation of existing medium-capacity chargers. Currently PM e-drive scheme mandates ≥ 120 kW (buses & trucks)
- Promote renewable + BESS-powered depots/hubs** (solar carports for buses, solar/wind hybrids for truck hubs) to reduce OPEX and ensure 24x7 reliability.
- Mandate **OEM certification** for chargers to avoid compatibility issues across different heavy-duty EV models.
- Integrate charging planning into transport infra projects** (bus terminals, freight corridors, logistics parks, highways) at the design stage.
- Earmark land** near bus depots, truck terminals, ports, and freight corridors for **dedicated heavy-duty charging hubs** with driver amenities (restrooms, cafeterias, rest zones).

Timelines/Priority

Immediate / High

FY27 / High

FY27 / Medium

Immediate / High

Q4 FY26 / High

FY 27 / High

Ministry of Power and CEA for Policy/Guidelines.**State Electricity Regulatory Commissions for enforcement of Policies & Guidelines****Ministry of Heavy Industries & Automotive Research Association of India (ARAI) for interoperability & OEM Certification****Public Works Department (PWD) at State Level for State Highways**
Unified Urban Metropolitan Authorities**Ministry of Road Transport & Highways (MoRTH) / National Highways Authority of India (NHAI) for National Highways**



4 2 Wheelers Specific Recommendations

Item

Timelines / Priority

Implementation Authority

<ul style="list-style-type: none"> Standardized connectors for e2w with BIS-certified protocols. 	Immediate / High	BIS for standardized connectors
<ul style="list-style-type: none"> Mandate 50% EV-ready parking slots in residential societies, malls, colleges, and metro stations with 3.3 kW – 10 kW power supply provisions for 2W charging. Municipal bodies to earmark micro-land parcels (50–100 sq.m.) for 2W swap/charge kiosks in high-density zones. 	Q4 FY26 / High	Ministry of Housing and Urban Affairs (MoHUA) for Model Building bye-laws / URDPFI guidelines State Govt. for State level Laws & Regulations; Development Authorities/Municipal Corp./ Unified Urban Metropolitan Authorities
<ul style="list-style-type: none"> Encourage integration with renewables (solar rooftops + small BESS) at battery-swap kiosks to reduce grid dependency. 	Q4 FY26 / Medium	Ministry of Power and CEA for Policy/Guidelines State Electricity Regulatory Commissions for enforcement of Policies & Guidelines
<ul style="list-style-type: none"> Digital literacy & awareness drives for riders (especially rural/elderly) on safe charging, battery handling, and use of CPO apps. 	Immediate / Medium	Ministry of Heavy Industries / BEE



5

Power Infrastructure & Supply

Item

Power Supply Connections for EV Charging Stations

- All SERCs to ensure that new **power connection timelines** adherence to be made mandatory and penalties are levied for delay in Power supply connections in alignment with “Guidelines for Installation & Operations for EV Charging Infrastructure – 2024”
- Overall **Project Monitoring Units (PMUs)** to be established at Central & state levels respectively and should be aligned with each-other.

Timelines / Priority

Immediate / High

Q4 FY26 / High

Immediate / High

Q4 FY26 / High

FY27 / Medium

Implementation Authority

Ministry of Power and CEA for Policy / Guidelines;

State Electricity Regulatory Commissions for enforcement of Policies & Guidelines

Revamped Distribution Sector Scheme (RDSS)

- RDSS may be leveraged to fund last mile Power Distribution infrastructure for ensuring readiness in line with anticipated EV Charging load spikes in coming years.

Integration with Renewable Energy Sources:

- SERC to ensure **Implementation of ToD pricing** for RE integration (in line with MoP guidelines for solar & Non-solar hrs).
- Integrate RE-powered charging stations—solar in urban areas, wind in rural/coastal zones, and Battery Energy Storage Systems (BESS) across high-demand locations—to reduce grid dependency and improve reliability, while addressing associated capex and O&M challenges.

Uninterrupted Power

- Strengthen the infrastructure and implement policies to ensure 24x7 power supply for Charging Stations on Highways

Immediate / High

MoP/CEA to specify guidelines;

State Electricity Regulatory Commissions to enforce across respective states

EV Tariff Description

- Total EV tariff should be clearly published by DISCOMs along with its all components for better Public awareness

Q4 FY26 / Medium



6

CMS & Digital Infrastructure



Item

- Telematics integration with EV OEMs** for customized offerings to the end user. Laws governing telematics data privacy (in Auto sector) to support such integrations.
- Deploy AI-driven analytics for predictive maintenance and load forecasting** at high-traffic hubs
- Standardized Information:** A common data format using defined set of fields for AC and DC chargers respectively will ensure consistent information (across all EV charging stations) to be viewed by customers on CPO Apps.
- Enable **API access for city dashboards** to allow third parties (startups, logistics companies) to build services on top of charging infrastructure data.
- V2X** : Enablement of bidirectional energy flows (V2X), allowing EVs to act as energy sources may be supported through Regulations.
- OCPP 2.1 compliant next generation chargers** can be proactively launched in India. This will lead to added features and enhanced offerings to customers as well as improved customer experience.
- Promote new technologies:** Government may push for development/adoption of new technologies such as UPI based payments systems (with pre-auth/security reserve), PoS payment devices, Appless/Card less payments & UEI.

Timelines/Priority

Immediate / High

Immediate / High

March 2026 / High

March 2026 / Medium

FY27-28 / Medium

FY28 / Medium

FY27-28 / Medium

Implementation Authority

Ministry of Power & BIS for Charging Infrastructure Guidelines related to OCPP / V2X / UEI /AI driven Load Forecasting

Ministry of Heavy Industries / ARAI / BIS for OCPP compliance, Standardized information, telematics



7

Social Infrastructure

Timelines

Item

- Set up **certified training centers** under NSDC to skill youth in EV charger installation, maintenance, and troubleshooting—especially in Tier-2/3 cities.
- Upgrade **ITIs for skill development** in Charging Infrastructure services/maintenance in alignment with recently launched PM-SETU scheme.
- Conduct digital literacy drives** teaching rural and elderly EV users how to locate, book, and pay for chargers using CPO apps.
- Launch **region-specific campaigns** on Social Media, TV, Radio and OTT platforms promoting EV charging know-how and **busting myths** (charging time, cost, battery safety).
- Set up **mobile demonstration vans or kiosks** at weekly haats and mandis to showcase EVs, charging operations, and benefits, supported by rural DISCOMs and OEMs.

Timelines/Priority

Immediate / High

Immediate / High

FY27 / High

FY27 / High

FY27 / Medium

Implementation Authority

Ministry of Skill Development & Entrepreneurship / NSDC

Directorate General of Training (DGT) at Central level

Directorate of Vocational Education & Training (DVET) at State levels

Ministry of Heavy Industries (MHI)
/ Ministry of Road Transport & Highways (MoRTH) / BEE



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R&D Funding

Item	Timelines / Priority	Implementation Authority
Focus Areas		
<ul style="list-style-type: none"> Long-range & heavy-duty batteries, thermal management, V2G/grid integration. Modular, low-cost fast-charging solutions, smart BMS, second-life batteries. 		
Government Support		
<ul style="list-style-type: none"> Allocate ₹2,500–3,000 Cr annually for EV R&D across segments. Buses & Trucks: Fund megawatt charging pilots, heavy-duty battery & drivetrain tech. R&D in Battery technologies other than Li-ion batteries to reduce dependence of rare earth material imports. 2W/3W: Support lightweight, swappable, recyclable battery R&D. Provide subsidized test-beds & validation labs for safety & performance. Special MSME/startup grants for urban charging & battery innovation. 	FY27 / High	Ministry of Heavy Industries (MHI) for EV technology R&D
Industry Participation		
<ul style="list-style-type: none"> Establish joint industry R&D pools for common infra & battery platforms. PPP model for bus depots, logistics hubs & city charging pilots. Buses/Trucks OEMs & fleets: Invest 3–6% of annual revenue in R&D. 2W/3W OEMs: Allocate 3–5% of turnover for R&D. 	FY27 / High FY27 / High FY27 / High	Ministry of Power (MoP) / CEA/ SERCs for Power Infra. / Demand & Supply Management R&D

THANK YOU