International Federation of Electric Vehicle Association

IFEVA Green Energy Foundation

BHARAT MAHA EV RALLY 2025

100 Days Across India: Experience, Evidence and the Road Ahead for Electric Mobility

IMPACT AND POLICY REPORT

KNOWLEDGE PARTNER **PROLOGUE.**
STRATEGY & GROWTH ADVISORY

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Bharat Maha EV Rally 2025

100 Days Across India: Experience, Evidence and the Road Ahead for Electric Mobility

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DISCLAIMER

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Message

From Shri Nitin Gadkari, Union Minister for Road Transport and Highways, Government of India.



नितीन गडकरी
NITIN GADKARI

सत्यमेव जयते

मंत्री
सड़क परिवहन एवं राजमा
भारत सरकार
Minister
Road Transport and Highw
Government of India

जा.क. 725/व्हीआयपी/परि/२०२३
दिनांक 11 JAN 2026

Message

I extend my heartiest congratulations to the IFEVA Green Energy Foundation for the successful completion of the Bharat Maha EV Rally—a remarkable journey of 23,000 kilometers across 28 States, 8 Union Territories, and neighboring nations. This inspiring initiative is a powerful step towards creating awareness about electric mobility and reinforcing India's commitment to sustainable and green transportation. Such efforts play a vital role in encouraging citizens, industry, and governments to adopt clean energy solutions, reduce carbon emissions, and build a greener future. The vision of connecting diverse regions and communities through electric vehicles truly reflects the spirit of Atmanirbhar Bharat and Green Growth.

My best wishes for your continued success in driving India towards a cleaner, greener, and more electric future.

Yours

(Nitin Gadkari)

Dr. Shailendra Saroj

Room No. 501, Transport Bhawan, 1, Sansad Marg, New Delhi – 110 001, Tel.: 011-23710121, 23711252 (O), 2371902
E-mail: nitin.gadkari@nic.in; website-www.morth.nic.in
Camp Office Nagpur : Gadkari Wada, Upadhye Road, Mahal, Nagpur - 440032(M.S.)

Message reproduced from the communication provided by IFEVA.

About IFEVA

Advancing electric mobility through industry engagement, awareness and field-led initiatives.

The International Federation of Electric Vehicle Association (IFEVA) is an association for development and policy advocacy in electric mobility. It brings together EV manufacturers, MSMEs, charge-point operators, testing and certification specialists, service providers, academia and policymakers. IFEVA operates through a network of national, state and international representatives, supported by governing and advisory structures that span industry, testing, technology and mobility.

IFEVA was initially established as a trust under the name International Federation of Electric Vehicle Association. As its activities expanded, IFEVA Green Energy Foundation was incorporated on 27 May 2025 as a Section 8 not-for-profit company under the Companies Act, 2013, to support the platform's wider programmes and institutional initiatives. IFEVA remains the established identity through which the network engages with industry, government and the electric-mobility ecosystem, and the Bharat Maha EV Rally 2025 was undertaken by IFEVA through the IFEVA Green Energy Foundation.

IFEVA's aims are to promote electric vehicles and renewable energy, support India's net-zero goals, and reduce pollution through eco-friendly energy and mobility solutions. Its activities span conferences, industry engagement, policy dialogue, institutional partnerships and public awareness.

Selected Institutional Milestones

Area	Milestone
Policy dialogue	Regular engagement with MoRTH, MHI and the Ministry of MSME on EV policy, advocacy and industry issues
Research and testing	Conferences with CRRI, IIT Delhi and other government institutions; TERMINATOR 5.0 technical conference series on EV testing and standards, with TIICCI
Industry platforms	Co-organiser of EV India Expo editions, including at HITEX Hyderabad, Futurex, Pune, Chennai and Delhi
Partnerships	MoUs with DRIIV (Office of the Principal Scientific Adviser), Gujarat Electricity Board members and five-plus engineering institutions, including KIET, Manav Rachna and Sharda University
International	MoUs and delegations with partners in Korea, Israel, Dubai and South Africa

IFEVA at a Glance

14 states with IFEVA state leadership	**4** international representations	**5.0** TERMINATOR industry series	**100** day flagship national rally

Leadership and Report Stewardship

The people who shaped the initiative and guided the development of this publication.

FOUNDING AND INSTITUTIONAL LEADERSHIP



Dr Shailendra Saroj

FOUNDER, IFEVA

Dr Shailendra Saroj is the Founder of IFEVA. He established the association to bring India's electric vehicle industry, its partners and policymakers onto a common platform for the transition to clean mobility, and has built it into a national network with state leadership, international representation and governing and advisory bodies drawn from industry, testing and public service.

He brings more than 25 years of experience in automotive testing. Under his leadership IFEVA has developed the TERMINATOR technical conference series on EV testing, standards and safety, partnerships with industry and institutions, and the engagement with government from which the Bharat Maha EV Rally was conceived.

IFEVA LEADERSHIP



Dr Rajeev Mishra

PRESIDENT, IFEVA

President of IFEVA, Dr Rajeev Mishra led the Bharat Maha EV Rally 2025 across 24 States and 6 Union Territories, engaging ministers, officials, universities, industry and citizens. He brings more than 25 years of experience in automotive testing and green mobility.



Srinivas Kumar Yerrapothu

GLOBAL VICE PRESIDENT, IFEVA

Global Vice President of IFEVA and Director of IFEVA Green Energy Foundation, Srinivas Kumar Yerrapothu took part in a substantial part of the 100-day journey, supporting programme execution and stakeholder engagement across multiple stages.

KNOWLEDGE PARTNER



Vikas Yadav

PRINCIPAL – ADVISORY, PROLOGUE.

More than 20 years of strategy, M&A and advisory experience across industrials, mobility and the energy transition. Led PROLOGUE.'s Knowledge Partner work on this report, including the analytical architecture, sector analysis and proposed National EV Observatory.

IFEVA's wider leadership and network are listed on the IFEVA Leadership and Network page.

Foreword

From IFEVA Leadership

India's electric-mobility transition has entered a new phase. The central question is no longer whether electric vehicles can meet everyday needs, but whether users can rely on them with confidence across cities, highways and regions.

IFEVA conceived the Bharat Maha EV Rally 2025 as a national demonstration and engagement programme with a field-learning component. Over 100 programme days, the initiative covered 24 States and 6 Union Territories of India, together with engagements in Bhutan and Nepal, while bringing together government, industry, academic institutions, technical bodies and EV users.

The journey provided practical experience across varied routes and operating conditions. The more persistent challenges concerned charging: availability, compatibility, payment and the distance to the next reliable option. These challenges are addressable, and the pace at which they are addressed will shape the next phase of passenger-vehicle electrification in India.

This report brings together programme information with the wider market and policy context, and sets out the priorities we believe should follow. We thank the institutions, public offices, partners and volunteers who supported the Rally, and PROLOGUE. for its role as Knowledge Partner in preparing this report.

IFEVA intends to develop future editions of the Rally into a more structured platform for field learning and comparable measurement of India's charging network.

Dr Shailendra Saroj
Founder, IFEVA

Dr Rajeev Mishra
President, IFEVA

A Note from the Knowledge Partner

Charging reliability and ecosystem readiness in the next phase of EV adoption.

PROLOGUE. served as Knowledge Partner to IFEVA for this report, structuring programme information supplied by IFEVA, setting the Rally within India's policy and market context, analysing official charging and adoption data, and framing considerations for government, industry and future editions of the Rally.

The Rally took place as India's EV ecosystem was moving from early growth towards greater scale. Official data point to a charging network that is expanding, but remains uneven in its geographic distribution and charging mix. Five states account for 56% of public charging stations, while the eight North-Eastern states together represent about 2.2% of the national total. Around 70% of public stations are slow chargers, which are generally better suited to urban and destination use than to long-distance travel. At the same time, charger availability, reliability and compatibility are not yet measured consistently at national level.

Together, these suggest that the next phase of progress will be measured less by the number of chargers installed and more by the confidence users can place in them. The frameworks, considerations and proposed National EV Observatory set out in this report are intended to support that shift.

We thank Dr Shailendra Saroj, Dr Rajeev Mishra and the IFEVA team for the opportunity and for their support throughout. The opportunity ahead is to build on this foundation through stronger measurement, comparable data and continued engagement across India's electric-mobility ecosystem.

Vikas Yadav
Principal – Advisory, PROLOGUE.

Executive Summary

The Bharat Maha EV Rally 2025 provides a national perspective on the conditions shaping long-distance electric mobility across 24 States and 6 Union Territories. For passenger cars, the journey suggests that the next phase of adoption will depend increasingly on the quality of the charging network: its availability, reliability, interoperability, route coverage and user experience.

100	23,000+	24 + 6	2
programme days	km travelled	States and Union Territories	neighbouring countries: Bhutan, Nepal

The Programme

The Bharat Maha EV Rally 2025 was undertaken by the International Federation of Electric Vehicle Association (IFEVA) through the IFEVA Green Energy Foundation. It was flagged off from India Gate, New Delhi on World EV Day, 9 September 2025, marked its 100th day at the International Centre for Automotive Technology (ICAT), Manesar on 17 December, and concluded in Delhi on 18 December. It combined long-distance electric passenger-car travel with structured engagement: campus sessions at IITs, IIMs, NITs and universities, meetings with public offices, industry displays and roadside public events.

Key Findings

1. **Charging readiness is becoming central to long-distance EV confidence.** The journey highlights recurring considerations around availability, reliability, route planning and charging experience.
2. **Public charging is geographically concentrated.** Five states account for 56% of public charging stations, while thirteen states and UTs have fewer than 100 each.
3. **Installed capacity does not automatically translate into inter-city readiness.** Around 70% of public stations are slow chargers, while long-distance passenger-car use depends more heavily on fast charging.
4. **State highways and secondary corridors remain an important gap.** Rally observations indicate that charging availability is generally stronger on major national corridors and weaker on state highways and district roads.
5. **Network reliability is not yet visible in national datasets.** Official statistics report installations, but not whether listed chargers are operational, available or usable when drivers arrive.
6. **EV adoption varies by vehicle mix and use case.** High-penetration states are not necessarily those with the largest public charging networks, reinforcing the need for segment-specific planning.
7. **Direct engagement remains relevant to adoption.** Campus sessions, demonstrations and public interactions provided prospective users with practical exposure to EV use, charging and ownership.

Priority Recommendations

Priority	Focus	Associated Stakeholders
1	Charger uptime and live-status visibility	Ministry of Power, BEE
2	Fast charging on state highways and strategic corridors	MHI, states
3	Integrated national EV and charging data	NITI Aayog, BEE, MoRTH
4	Interoperable roaming, payment and connector information	Ministry of Power, operators
5	Recurring field assessment through future Rally editions	IFEVA, BEE, ICAT
6	Campus EV engagement and awareness	IFEVA, AICTE, institutions

Stakeholders shown are indicative and do not imply institutional commitment.

India's EV and Charging Landscape at a Glance

Indicator	Value
EV registrations, calendar 2025	2.34 million
Electric passenger cars as share of 2025 EV registrations	5.64%
Public charging stations	29,151
Fast chargers as share of public stations	30%
Share of stations in the five largest states	56%
Share of stations in the eight North-Eastern states	2.2%
PM E-DRIVE charging allocation	Rs 2,000 crore for about 72,000 stations
Highway charging norm	One station every 20 km, both sides

Sources: Government of India publications (Ministry of Heavy Industries, PIB, Ministry of Power), Vahan-based registration analysis and PROLOGUE. analysis. Detailed sources and definitions in Annexures A and B.

> **India now has a rapidly expanding EV market, a supportive policy framework and significant charging investment. The next phase will require further network expansion alongside improvements in fast-charging availability, corridor coverage, reliability, interoperability and user experience.**

CHAPTER 01

The Rally: Concept, Objectives and Design

A long-distance journey combining demonstration, public engagement and field learning.

1.1 Organiser

The Rally was conceived by the International Federation of Electric Vehicle Association (IFEVA) and undertaken through the IFEVA Green Energy Foundation. IFEVA brings together EV manufacturers, MSMEs, charge-point operators, dealers, service providers and policymakers. The Rally's leadership includes Dr Shailendra Saroj (Founder), Dr Rajeev Mishra (President), Sunil Bhatnagar (National President, Zero Emissions) and Srinivas Kumar Yerrapothu (Global Vice President).

1.2 Objectives

Objective	Programme Approach
Build public confidence	Demonstrate long-distance EV use across diverse operating conditions
Address common user concerns	Provide practical exposure to EV use, charging and ownership
Observe charging as drivers encounter it	Identify recurring charging experiences and gaps along the route
Engage stakeholders	Connect public institutions, academia, industry, EV users and ecosystem participants
Capture field observations	Capture practical observations that can inform future discussion and more structured measurement
Link mobility to clean energy	Promote the connection between electric mobility, renewable energy and sustainability

1.3 Programme Design

- **Drivers new to EVs.** The core team comprised drivers without prior EV experience, providing practical exposure to EV use across diverse routes.
- **Broad geographic coverage.** Rather than a single showcase corridor, the route took in 24 States and 6 Union Territories, including the North-East, the Himalayan region and remote areas where charging is sparse.
- **Institutional anchoring.** Stops were planned around universities, technical institutes, public offices and industry bodies: 15 of the 19 engagements in IFEVA's route plan were at universities and technical institutes.

1.4 Rally Profile

Parameter	Detail
Dates	Curtain raiser 5 July 2025 (Hansraj College); flag-off 9 September 2025, India Gate; concluded 18 December 2025
Distance	23,000+ km
Coverage	24 States and 6 Union Territories, with Bhutan and Nepal
Participation	500+ EVs across Rally legs and local engagements

Rally profile based on programme information supplied by IFEVA.

CHAPTER 02

The Journey

A clockwise journey across western, southern, eastern, North-Eastern and northern India.

FROM PLAN TO JOURNEY

IFEVA's pre-rally route plan set out a 100-day programme covering 21,206 km, including 84 driving days across multiple regions of India. The plan identified around 50 charging-support locations and 19 institutional and public engagements along the route.

The completed Rally covered 23,000+ km across 24 States and 6 Union Territories, with engagements extending to Bhutan and Nepal. The journey combined long-distance electric mobility with institutional outreach, public engagement and practical exposure to charging conditions across diverse routes and geographies.

2.1 Route Stages

Stage 1: Delhi to Agra and Jaipur

The Rally left India Gate on World EV Day and ran down the Yamuna Expressway corridor to Agra, then west to Jaipur, along some of India's best-served charging corridors. This provided an early reference point for later stretches.

Stage 2: Rajasthan

The Jaipur, Bikaner and Udaipur leg introduced long distances between towns, high daytime temperatures and sparse charging off the national highways, which increased dependence on charging availability in trip planning.

Stage 3: Gujarat

The Rally reached Gujarat Technological University's Chandkheda campus on 16 September 2025, where an EV awareness session and flag-off engaged more than 120 students. Gujarat has a sizeable charging network (1,205 stations) but among the lowest EV penetration of any large state (3.63%), a contrast that recurs through this report.

Stage 4: Madhya Pradesh

The central leg through Bhopal combined national highways with long stretches of state road through agricultural districts, where public chargers become intermittent. In Bhopal the Rally was received at two technical institutions: Maulana Azad National Institute of Technology (MANIT), where faculty and students joined a session and flag-off, and Rajiv Gandhi Proudyogiki Vishwavidyalaya (RGPV), the state technical university.

Stage 5: Maharashtra

Nagpur, Shirdi, Mumbai, Pune and the Khandala ghat offered dense urban charging in the two largest cities and a steep climb that provided experience across gradients and regenerative braking on descents.

Stage 6: Goa, Karnataka and Southern India

The Rally ran down the Konkan coast to Goa and Mangaluru, then to Bengaluru and Mysuru, where its passage was covered by The Hindu as a promotion of green mobility. The southern loop continued

through Kerala, Tamil Nadu and Puducherry, one of India's best-served charging regions by station count.

Stage 7: Andhra Pradesh and Telangana

The Rally reached Hyderabad having covered about 10,000 km. A press briefing at HITEX set out progress, the terrain covered and the infrastructure gap on state highways.

Stage 8: East and North-East

The route crossed Chhattisgarh, Jharkhand, Odisha and West Bengal into the North-Eastern region, with stretches in Bhutan and Nepal. This stage had relatively sparse charging coverage: several North-Eastern states have fewer than 60 public stations in total.

Stage 9: The Gangetic plain and the Himalayan North

Returning west through Bihar and Uttar Pradesh, the team reached Graphic Era Hill University in Dehradun on Day 85, then continued through Himachal Pradesh, Jammu and Kashmir and Punjab. On Day 98 the Rally was flagged off from Chandigarh towards Haryana by Shri Gulab Chand Kataria, Governor of Punjab and Administrator of the UT of Chandigarh.

Stage 10: Haryana and return to Delhi

The Rally marked its 100th day at ICAT Manesar on 17 December 2025 with ICAT leadership, linking the public journey to India's vehicle testing and certification ecosystem, and returned to Delhi on 18 December.



Rally car entering Ahmedabad, Gujarat.



Rally car at the administrative block of Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal.



Flag-off of the Rally car at an institutional stop on the route.



IFEVA team members with the Rally car.

2.2 Selected Milestone Log

Date	Day	Location	Milestone
9 Sep 2025	1	India Gate, New Delhi	Flag-off on World EV Day
16 Sep 2025	8	GTU, Chandkheda, Gujarat	Awareness session and flag-off with 120+ students
Sep to Oct 2025		Maharashtra, Goa, Karnataka, Kerala, Tamil Nadu	Western and southern loop, including Mysuru
Oct 2025	c. 45	HITEX, Hyderabad	10,000 km completed; press briefing
Nov 2025		East, North-East, Bhutan, Nepal	Relatively sparse charging coverage
Early Dec 2025	85	Graphic Era Hill University, Dehradun	Campus reception and onward flag-off
Mid Dec 2025	98	Chandigarh	Flagged towards Haryana by the Governor of Punjab
17 Dec 2025	100	ICAT, Manesar	100th-day milestone
18 Dec 2025		Delhi	Completion

THE JOURNEY AT A GLANCE

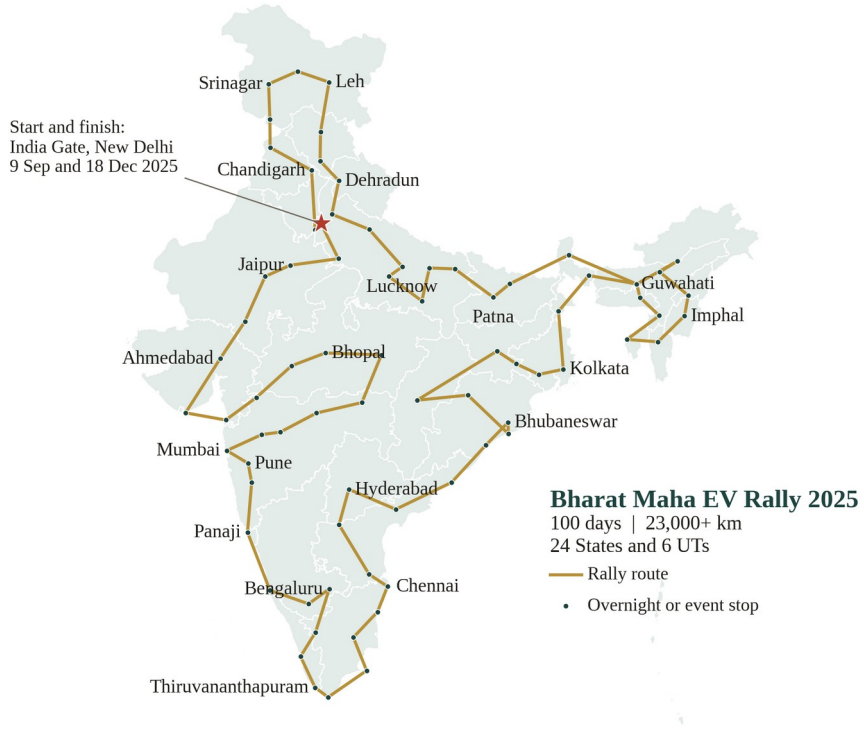
The 100-Day Journey at a Glance

A national journey across diverse operating conditions.

The Rally was designed around geographic diversity rather than a single showcase corridor. It connected metropolitan regions, industrial centres, state highways, desert stretches, coastal roads, ghats, the Himalayan region and the North-East. That diversity matters because the practical requirements of electric mobility change with terrain, climate, traffic, charging availability and the distance between reliable charging points.

EXHIBIT 1 **Bharat Maha EV Rally 2025 Route**

Route across India covered during the 100-day programme



Source: IFEVA route-planning workbook; completed journey 23,000+ km across 24 States and 6 Union Territories, with engagements extending to Bhutan and Nepal. Bhutan and Nepal stretches are not shown on this map. Map outline: @svg-maps/india, CC BY 4.0.

The journey highlights the importance of charging density, reliability, redundancy and user experience in shaping long-distance EV confidence across regions.

CHAPTER 03

A Travelling Stakeholder Platform

Engagement with government, academia, industry and the public was a central part of the programme.

3.1 Government and Public Institutions

The programme included engagements involving Chief Ministers, Governors, and Union and State Ministers. At the national level IFEVA engaged with NITI Aayog around the flag-off, and IFEVA leadership briefed Union Ministers and senior officials before and after the journey. The Day 98 flag-off at Chandigarh by the Governor of Punjab and the closing milestone at ICAT Manesar, a national automotive testing and homologation institution, connected the Rally to the institutions that set and certify vehicle standards.

For public institutions, the Rally provided an avenue for engagement on e-mobility priorities, contact with industry and citizens in the states visited, and a field perspective on charging that complements official datasets.



Shri Nitin Gadkari, Union Minister of Road Transport and Highways, with the IFEVA delegation led by Dr Shailendra Saroj, Founder, and Dr Rajeev Mishra, President, New Delhi.



IFEVA leadership briefing senior officials on Rally outcomes and the proposed next edition.

Engagement with Central Ministries and Institutions

Ahead of and during the Rally, an IFEVA delegation led by Dr Shailendra Saroj, Founder, engaged with central ministries, agencies and institutions on the programme and its objectives.



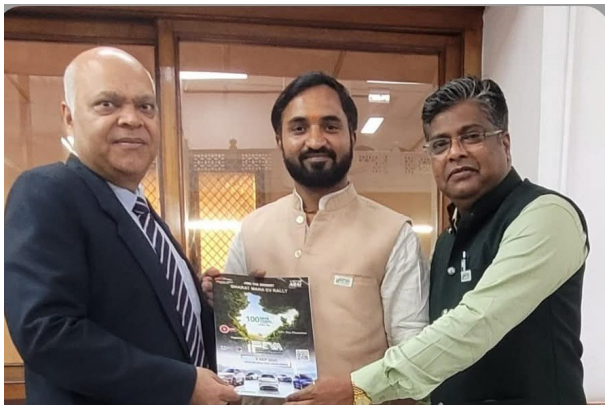
Dr Shailendra Saroj, Founder, IFEVA, with Dr Hanif Qureshi, IPS, Additional Secretary, Ministry of Heavy Industries.



Dr Shailendra Saroj with Shri Sudhendu Jyoti Sinha, then Adviser (Infrastructure Connectivity and Electric Mobility), NITI Aayog.



IFEVA delegation with Ms Mercy Epao, Joint Secretary, Ministry of MSME.



IFEVA delegation with Shri Saurabh Dalela, Director, ICAT.



IFEVA delegation at the National Skill Development Corporation (NSDC), New Delhi.



IFEVA delegation at the Ministry of Tourism, New Delhi.

3.2 Academia

Academic and technical institutions formed an important part of the Rally's engagement programme. Stops included IITs, IIMs, NITs, universities and other technical institutions, where interactions

typically combined discussions on EV technology and policy with student engagement, vehicle displays and practical exposure to charging and mobility issues.

Gujarat Technological University's own publication records the Rally at its Chandkheda campus on 16 September 2025, with more than 120 students taking part in the session and flag-off. At Graphic Era Hill University in Dehradun, Vice Chancellor Dr Amit R. Bhatt described EVs as the meeting point of "electric vehicle technology, environmental protection, and economic growth". Such engagements connect students with the technical, research, entrepreneurship and career dimensions of electric mobility.



Flag-off at Maulana Azad National Institute of Technology (MANIT), Bhopal.



Session with faculty and students during the Bhopal stop.

3.3 Industry

The Rally provided a common platform for manufacturers, MSMEs, charge-point operators, dealers and service providers across the electric-mobility ecosystem. Local engagements included displays of electric passenger cars, two-wheelers, three-wheelers and charging equipment, alongside interaction with users, institutions and other ecosystem participants.

For participating businesses, the programme created opportunities for visibility, stakeholder engagement and direct interaction across multiple regional markets.

3.4 Citizens and EV Users

Roadside displays, local EV-owner participation and media coverage extended public engagement beyond institutional stops.

3.5 Engagement Summary

Stakeholder Group	Engagement Approach	Strategic Relevance
Central government and agencies	Flag-off, ministerial briefings, ICAT milestone	Engagement on policy priorities; field perspective on charging
State governments	Gubernatorial and ministerial flag-offs, local events	Engagement on state EV priorities and local infrastructure conditions
Academic institutions	Talks, Q&A, test drives at IITs, IIMs, NITs, universities	Hands-on exposure for students and faculty
Manufacturers and MSMEs	Displays, participation, sponsorship	Visibility and practical demonstration of products
Charge-point operators	Use of their networks along the route	Operational exposure and interaction with EV users
Citizens and EV owners	Roadside events, local participation, media	Direct experience of EV use and charging

CHAPTER 04

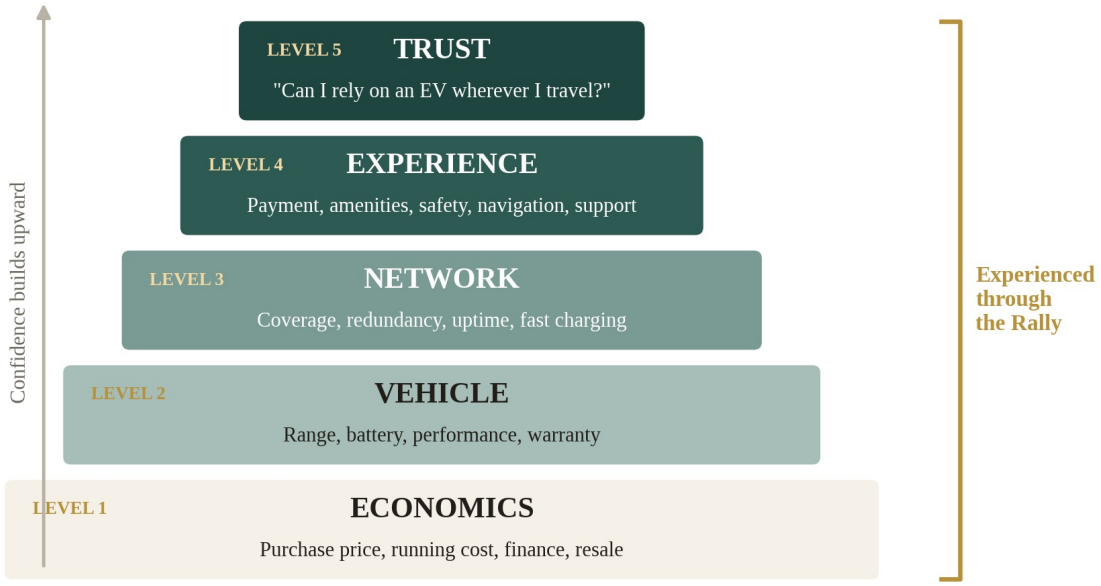
India's EV Transition: Policy, Market and Industry

The Rally took place in a policy environment increasingly focused on charging infrastructure, domestic manufacturing and ecosystem development, at a point when electric two- and three-wheelers had reached greater scale, while passenger-car electrification remained at an earlier stage.

India has committed to net-zero emissions by 2070, and electrifying road transport serves three national objectives at once: lower oil import dependence, cleaner urban air, and a domestic manufacturing base in batteries, motors and power electronics. Central policy has moved in stages from demand subsidies towards charging infrastructure and domestic manufacturing.

EXHIBIT 2 **The EV Confidence Stack**

Five layers of confidence that shape the decision to choose an electric vehicle



Source: PROLOGUE. framework.

For long-distance passenger-car travel, the Rally indicates that vehicle capability was generally less prominent as a source of friction than charging-network reliability and the overall charging experience. These factors are therefore increasingly relevant to policy, infrastructure planning and industry strategy.

4.1 The Policy Architecture

Instrument	Focus	Strategic Significance
FAME I (2015) and FAME II (2019)	Purchase incentives for EVs and e-buses; early charging stations	Helped establish early EV demand and the first public charging networks in cities and on highways
PM E-DRIVE (2024; outlay Rs 10,900 crore)	Demand incentives across segments, plus charging	Shifts emphasis towards scaled charging deployment: Rs 2,000 crore for about 72,000 public stations and a unified national charging app, with BHEL as nodal agency
PLI for Advanced Chemistry Cells (Rs 18,100 crore)	Domestic battery cell manufacturing	Supports battery localisation; 40 GWh of the 50 GWh target awarded, with bids for the remaining 10 GWh invited in July 2026
PLI for Automobiles and Components (Rs 25,938 crore)	Advanced automotive technology	Builds domestic manufacturing depth; Rs 44,326 crore invested and 67,820 jobs by March 2026
EV Charging Guidelines, Ministry of Power (2024)	Density norms, tariffs, land and connection rules	Sets the national framework for charging density, tariffs, interoperability and access
EV Yatra (BEE)	National database and locator for public chargers	Provides the basis for an integrated national view of public charging infrastructure
State EV policies	Tax and registration waivers; local targets	Shape much of the variation in EV adoption between states

The Rally offers a field perspective on how these instruments come together for users on long-distance routes.

4.2 The 2024 Charging Guidelines

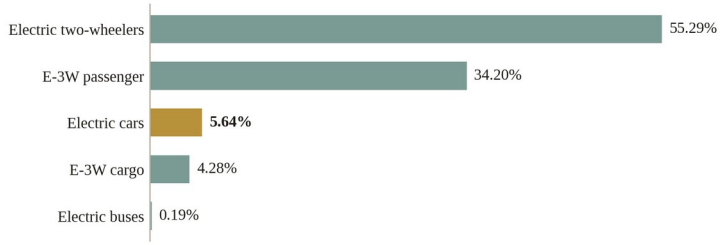
The 2024 Ministry of Power guidelines set spatial targets: a public charging station every 20 km on both sides of highways, expressways and major roads; heavy-duty fast charging every 100 km on designated corridors; and, in urban areas, at least one station in every 1 km by 1 km grid by 2030. They cap service charges for AC and DC charging until March 2028, encourage time-of-day tariffs that make solar-hour charging cheaper, and require listing in a national database with open APIs. These norms provide an important reference framework for the analysis in Chapters 5 and 7; international comparisons are set out in Section 10.3.

4.3 EV Registrations in 2025

India recorded 2,339,501 EV registrations in calendar 2025, taking cumulative registered EV sales to 7,976,184. The registration mix illustrates the different stages of adoption across vehicle segments.

EXHIBIT 3 **EV Registrations by Segment, 2025**

Share of EV registrations by vehicle segment, calendar year 2025, %



Source: JMK Research, Annual India EV Report Card CY2025 (Vahan data).

Two-wheelers and passenger three-wheelers account for nearly 90% of EV registrations. Electric passenger cars, the segment the Rally represented, remain a small share. For passenger cars, long-distance adoption is therefore closely linked to the availability and reliability of public fast charging.

> **Passenger cars remain a smaller share of EV registrations and rely more heavily on public fast charging for inter-city use. Passenger-car adoption is therefore likely to depend more closely on corridor reliability than other segments.**

4.4 Market Variation by Segment and State

India's EV adoption pattern differs materially by vehicle segment and use case. Two- and three-wheelers are the mass-market entry point because their energy needs are small and home, depot or low-power charging serves daily use. Passenger cars create a different requirement: dependable public fast charging matters far more, because purchase decisions are shaped by occasional long journeys, not only the daily commute. Charging policy is likely to be most effective when aligned to vehicle type and use case rather than a single national ratio.

4.5 Value Chain Localisation

Public confidence ultimately rests on an industrial system that can manufacture, maintain and recover EV technology at scale. Government programmes show that system expanding but still maturing: by 31 March 2026 the PLI scheme for automobiles and components had attracted Rs 44,326 crore of investment and generated 67,820 jobs across 225 units, while under the Advanced Chemistry Cell programme 40 GWh of the targeted 50 GWh had been awarded, with bids invited in July 2026 for the remaining 10 GWh and installed cell capacity still at an early stage. The Battery Waste Management Rules, 2022 add extended producer responsibility for recycling and refurbishment.

4.6 Charging Economics

Installing charging infrastructure is only the first step; sustained value depends on reliable operation and viable utilisation. A commercially sustainable public charging network requires appropriate locations, adequate grid capacity, maintenance support, efficient payment systems and sufficient demand.

Urban charging hubs can achieve utilisation relatively quickly because of higher vehicle density and repeat demand. Highway and remote charging locations present a different challenge: they may be strategically important for network continuity and user confidence even when early utilisation remains low.

This creates a structural gap between strategic importance and commercial attractiveness. Addressing that gap may require demand aggregation, co-location with complementary services, viability support and additional revenue streams.

INDUSTRY PERSPECTIVE

The EV Ecosystem Behind the Journey

Electric mobility involves a transition across an entire ecosystem, not the vehicle alone.

An electric vehicle reaches the road through an ecosystem far broader than the vehicle manufacturer. Performance depends on cells, battery management, motors, power electronics and software. Ownership confidence depends on charging, electricity supply, digital discovery and payment, finance, insurance, service networks and, eventually, battery recycling.

The Rally therefore offers a useful lens on India's shift from an EV product market to an electric mobility ecosystem. A weakness at any point in the chain can undermine consumer confidence even when the vehicle itself performs reliably.

EXHIBIT 4 **The EV Mobility Confidence System**

Six domains that together shape user confidence



Gold: the domains the Rally experienced most directly

Source: PROLOGUE. framework.

> **The driver's experience is the end result of this entire ecosystem. A vehicle may be fully capable, yet the journey can still be disrupted by a charger fault, a weak grid connection, an incompatible payment interface, an inaccessible site, thin service coverage or the absence of a reliable fallback charger.**

Ecosystem Roles and Considerations

EXHIBIT 5 **EV Ecosystem Participants and User Confidence**

Roles across the electric-mobility ecosystem and their implications for adoption

Stakeholder	Role in the EV Ecosystem	Key Considerations
Vehicle OEMs	Product, range, warranty and customer confidence	Real-world range, route planning, after-sales reach
Battery and component industry	Cost, performance, safety and localisation	Battery performance across terrain and climate
Charge-point operators	Public charging availability	Uptime, power delivery, maintenance and utilisation
DISCOMs and the power system	Connection and supply reliability	Connection capacity, demand charges, remote-grid constraints
Site hosts, fuel outlets, highways	Physical charging locations	Visibility, access, parking, amenities and safety
Digital platforms	Discovery and transaction layer	Live status, roaming, navigation, payment interoperability
Finance and insurance	Ownership affordability	Upfront price, financing, battery risk, residual value
Dealers and service providers	Ownership confidence beyond metros	Maintenance availability and customer education
Academia and skilling	Future workforce and innovation	EV engineering, service skills, research, entrepreneurship
Recycling and circular economy	Lifecycle sustainability	Battery traceability, second life, materials recovery

Public agencies, regulators, and testing and certification bodies act as cross-cutting enablers through policy, standards, safety, interoperability and data governance.

The next phase of EV adoption will depend increasingly on coordination across this ecosystem rather than on optimising individual components in isolation.

> **The first phase of India's EV transition was largely about bringing vehicles to market. The emerging phase is about ensuring that an owner can buy, finance, charge, operate, maintain, travel and eventually resell or recycle the vehicle with confidence.**

CHAPTER 05

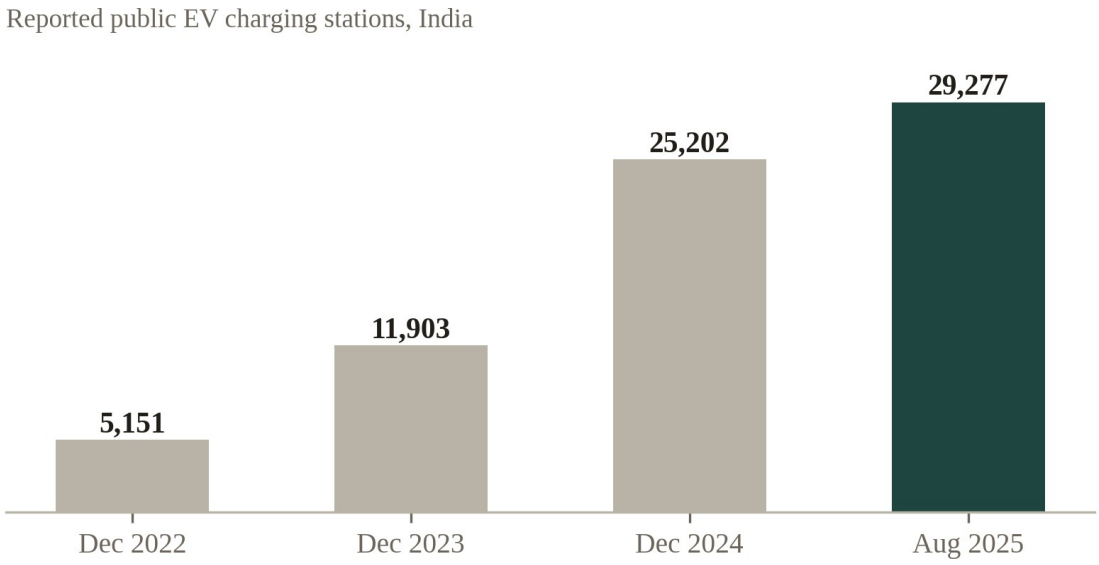
Charging Infrastructure: Baseline and Geography

India's public charging network has grown nearly sixfold in under three years, but it is concentrated in a few states, weighted towards slow chargers, and its reliability is not yet measured consistently.

5.1 Growth in Public Charging

EXHIBIT 6 **Growth in Public EV Charging Stations, 2022 to 2025**

Reported public EV charging stations, India, number



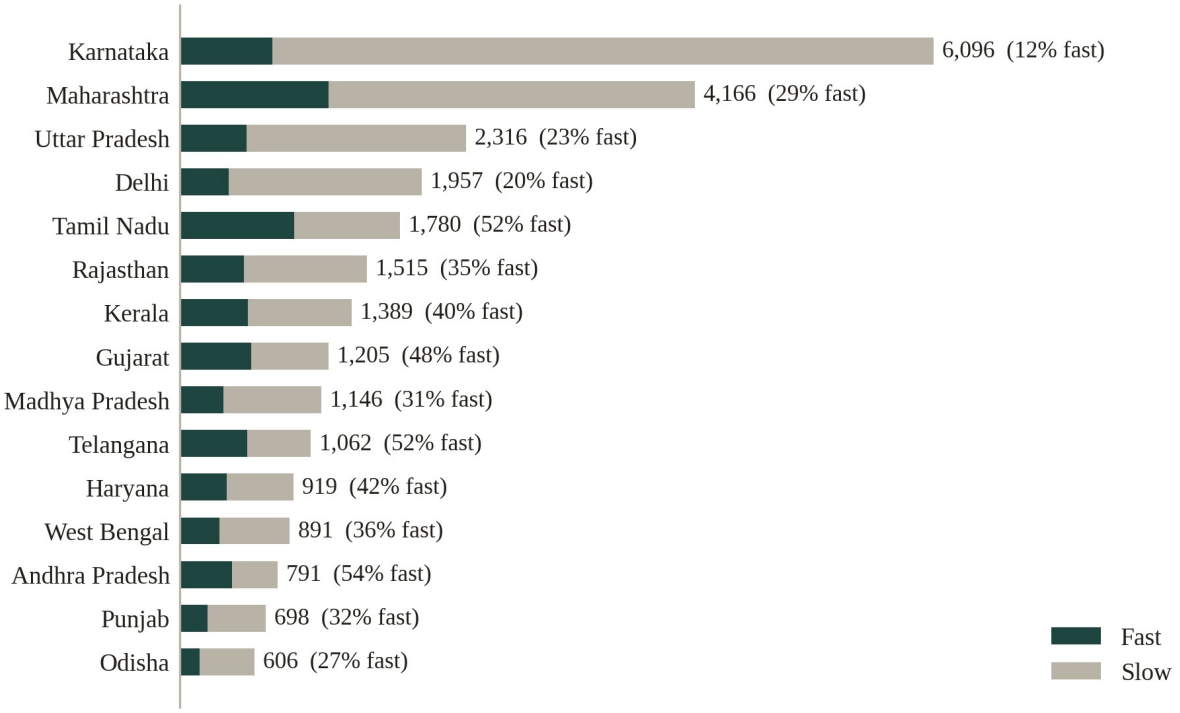
Source: CareEdge Ratings compilation (2022, 2023); Ministry of Heavy Industries statements to Parliament (December 2024, August 2025).

A later Ministry of Heavy Industries release dated 16 December 2025 reported 29,151 stations installed over the preceding five years, of which 8,805 were fast (30%) and 20,346 slow (70%). The two releases use different reporting bases, so the small difference should not be read as a decline. This report uses the December 2025 release as the end-of-rally snapshot for state analysis.

5.2 Concentration by State

EXHIBIT 7 **Public Charging Stations by State**

Fast and slow charging, 15 largest state networks, 16 December 2025



Source: Ministry of Heavy Industries / PIB, 16 December 2025. Full table in Annexure A.

Five states (Karnataka, Maharashtra, Uttar Pradesh, Delhi and Tamil Nadu) hold 16,315 stations, or 56% of the national total; the fifteen largest networks account for over 90%. Thirteen states and union territories have fewer than 100 public stations each.

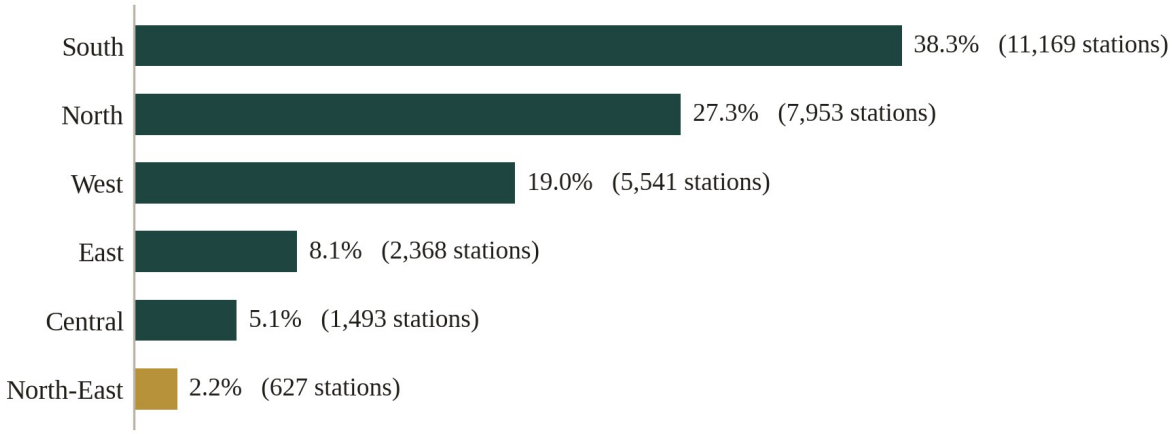
5.3 Fast and Slow Charging

Fast chargers are 30% of stations nationally, but the share ranges from 12% in Karnataka and 20% in Delhi to over 50% in Tamil Nadu, Telangana and Andhra Pradesh. Slow AC chargers suit homes, offices and overnight parking; inter-city travel depends on DC fast chargers that add meaningful range in 20 to 40 minutes. A state with a large slow-charging base may therefore still offer limited readiness for long-distance passenger-car travel.

5.4 Regional Geography

EXHIBIT 8 **Regional Distribution of Public Charging Stations**

Share of national public charging stations by region, 16 December 2025, %



Source: PROLOGUE. analysis of MHI / PIB state data, 16 December 2025. Regional groupings defined in Annexure B.

Region	Profile
South	The largest regional charging base, led by Karnataka (6,096). Tamil Nadu, Telangana and Andhra Pradesh have the most fast-charger-heavy networks; Kerala combines high penetration (11.34%) with a high passenger-car share among EVs.
North	Delhi leads large urban markets (13.89% penetration). Uttar Pradesh has the third-largest network, dominated by e-rickshaw demand. Public charging coverage remains relatively limited across the Himalayan states and UTs: Himachal Pradesh 133, J&K 180, Uttarakhand 221, Ladakh 1.
West	Maharashtra has the second-largest network (4,166). Gujarat combines 1,205 stations (48% fast) with low adoption (3.63%). Goa has high penetration for its size.
East and Central	West Bengal, Odisha, Bihar and Jharkhand hold 8% of stations; Bihar's market is overwhelmingly e-rickshaw led. Madhya Pradesh and Chhattisgarh form a central belt where Rally observations indicate gaps in state-highway charging coverage.
North-East	Tripura (18.38%) and Assam (14.30%) lead national penetration, yet the eight states have 627 stations, only 23% of them fast. Hill terrain and remote-grid conditions increase charging requirements.
Island territories	Andaman and Nicobar (4) and Lakshadweep (1) rely largely on diesel power; greater renewable generation would improve the emissions profile of EV use in these territories.

5.5 Comparison with the 2024 Norms

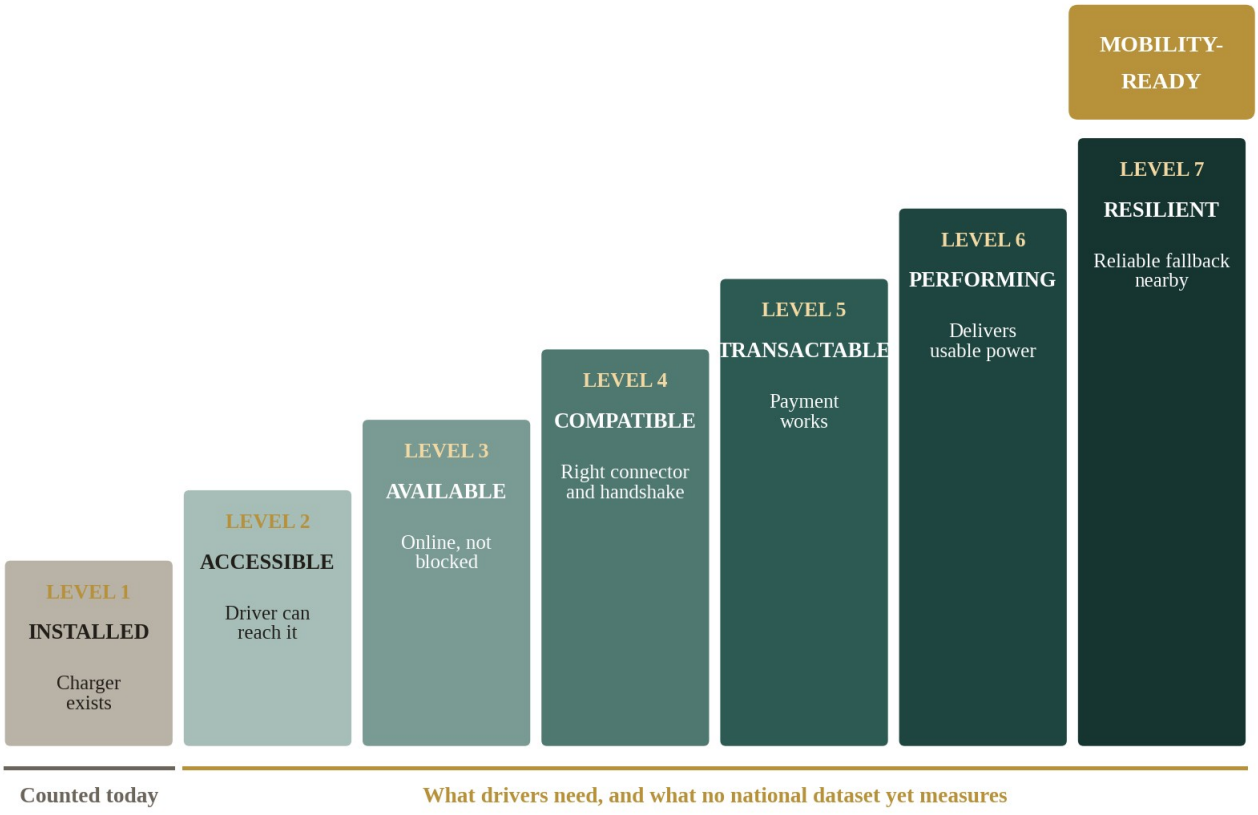
The guidelines call for a station every 20 km on both sides of highways. India's national highway network alone runs to about 1.46 lakh km, implying, as a simplified illustration, on the order of 14,600 highway stations before counting state highways, expressways or cities; actual requirements depend on corridor configuration and existing sites. With fewer than 9,000 fast chargers nationally, many of them urban, the comparison indicates substantial additional corridor coverage requirements. Rally observations also point to gaps on state highways.

5.6 Mobility-Ready Charging

Official data counts chargers at the first level only. Usable charging depends on performance across all seven dimensions. The gap between the two is the central measurement issue this report identifies, and the basis for the assessment model proposed in Chapter 11.

EXHIBIT 9 **The Mobility-Ready Charging Framework**

Dimensions that determine whether charging infrastructure is usable in practice



Source: PROLOGUE. framework.

> **Station counts measure assets, not service. For inter-city mobility the relevant unit is dependable fast charging at practical intervals along the route, with redundancy when the preferred charger is unavailable.**

CHARGING ECONOMICS

Charging Economics and Strategic Coverage

Strategic importance and commercial viability of charging locations do not always align.

Building on Section 4.6, this section sets out the factors that determine the viability of a charging site and where public support may be most relevant.

EXHIBIT 10 **Charging Economics and Site Viability**

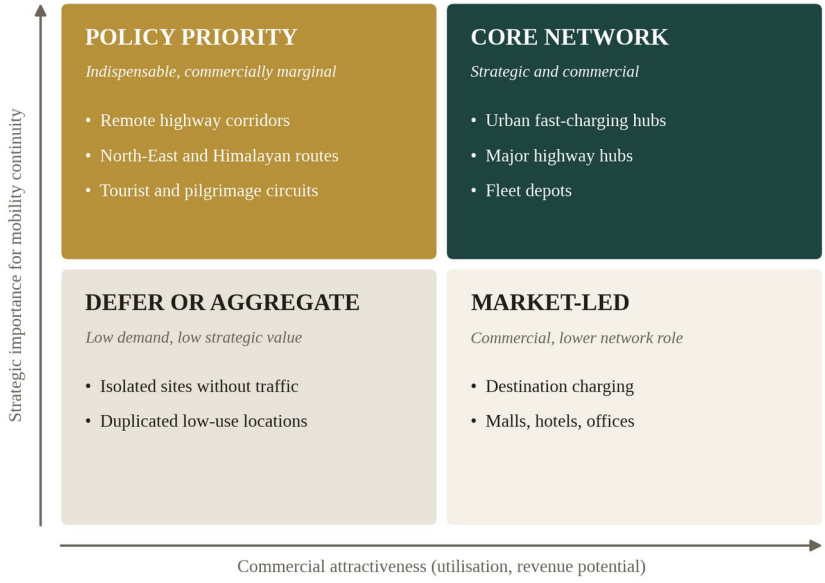
Factors influencing the commercial sustainability of public charging locations

REVENUE	LESS: COST TO SERVE
Utilisation x charging tariff	Electricity and demand charges
Retail, food and parking revenue	Site lease or revenue share
Advertising and partnerships	Charger capex and grid connection
Fleet and subscription contracts	Maintenance, software and network costs

= A sustainable charging operation

EXHIBIT 11 **Strategic Importance and Commercial Attractiveness of Charging Locations**

Charging locations by network role and expected utilisation



Source: PROLOGUE. framework.

Public support is likely to be most effective where a charger is strategically important but commercially marginal: highway corridors, the North-East, hill states and pilgrimage or tourist routes. Elsewhere, transparent standards and faster grid connections can enable private investment to lead.

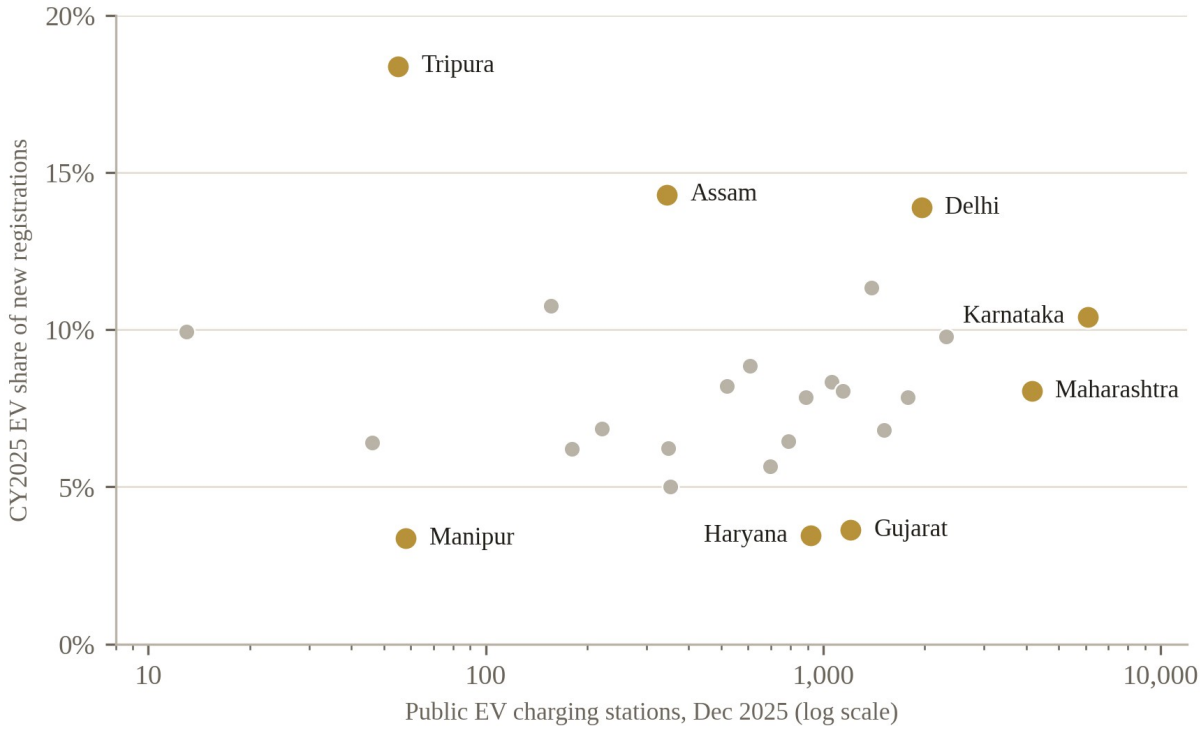
CHAPTER 06

Adoption and Charging: Beyond Aggregate Counts

State EV penetration varies widely and does not show a simple relationship with public charging-station counts; vehicle mix, policy and use patterns provide important context.

EXHIBIT 12 **State EV Adoption and Charging Infrastructure**

Relationship between EV penetration, vehicle mix and public charging availability, CY2025



Source: JMK Research CY2025; MHI / PIB, 16 December 2025. 26 states and UTs with published penetration.

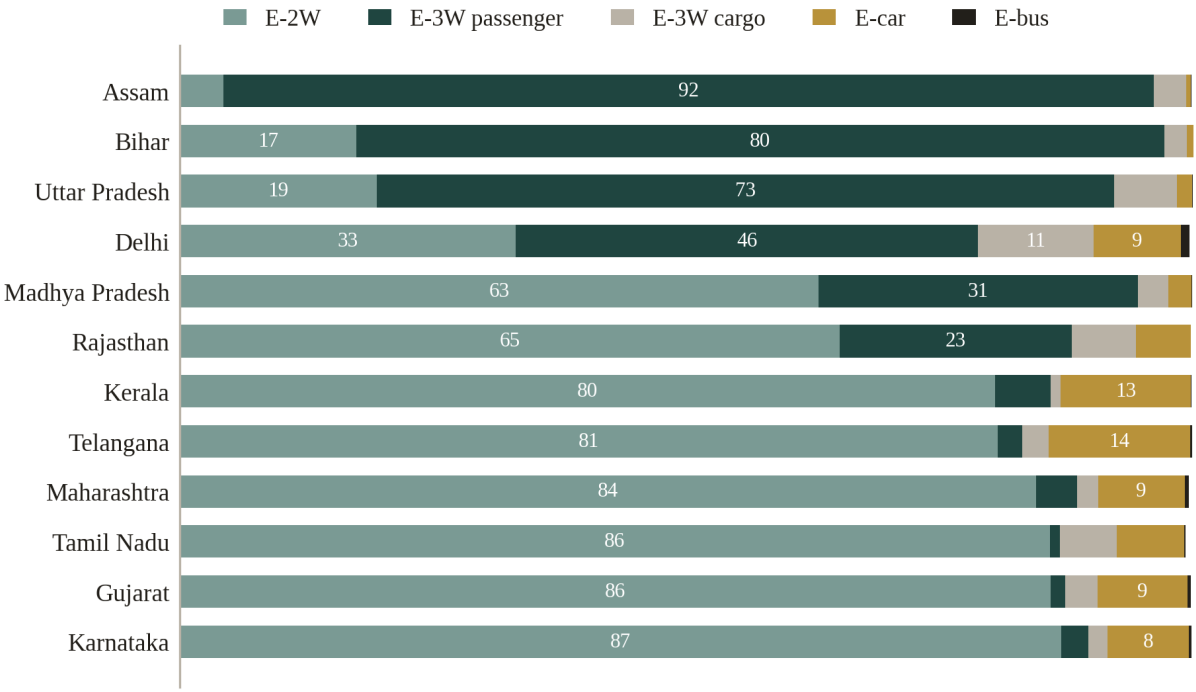
The leaders in EV penetration, Tripura and Assam, have small public networks; in Assam over 90% of EVs registered are passenger three-wheelers. Gujarat and Haryana have sizeable networks but low uptake.

6.1 Adoption Models

Adoption Model	Example States	Typical EV Mix	Charging Need
Three-wheeler led	Assam, Bihar, Uttar Pradesh	73% to 92% passenger e-3W, mostly e-rickshaws	Depot, battery-swap and safe metered low-power charging
Two-wheeler led	Karnataka, Tamil Nadu, Gujarat, Maharashtra	84% to 87% e-2W	Home and workplace charging; urban swapping
Passenger-car inclusive	Kerala, Telangana, Delhi	9% to 14% electric passenger cars	Dense urban AC plus highway DC fast charging

EXHIBIT 13 **EV Registration Mix by State**

Composition of CY2025 EV registrations within each state, %



Source: JMK Research, Annual India EV Report Card CY2025.

A single national charger-density ratio may not reflect regional needs. State-level planning aligned to the vehicle mix each state serves is likely to be more effective.

6.2 Implications

- Public charging should be planned against the vehicle mix it serves, not a uniform per-capita target.
- In e-rickshaw-led states, the priority is safe, metered and affordable charging and battery swapping, which also reduces informal and unsafe charging.
- Where charging infrastructure is relatively extensive but adoption remains lower, as in Gujarat and Haryana, factors such as awareness, finance, incentives and model choice warrant further examination. These markets may benefit from targeted awareness and consumer education.
- For electric passenger cars, a reliable fast-charging corridor network, particularly on state highways, remains an important factor.

CHAPTER 07

Field Observations and Charging Experience

A 100-day journey does not replace controlled testing, but it offers practical observations on how electric passenger cars, charging networks and users interact on the road.

7.1 Common User Concerns in Practice

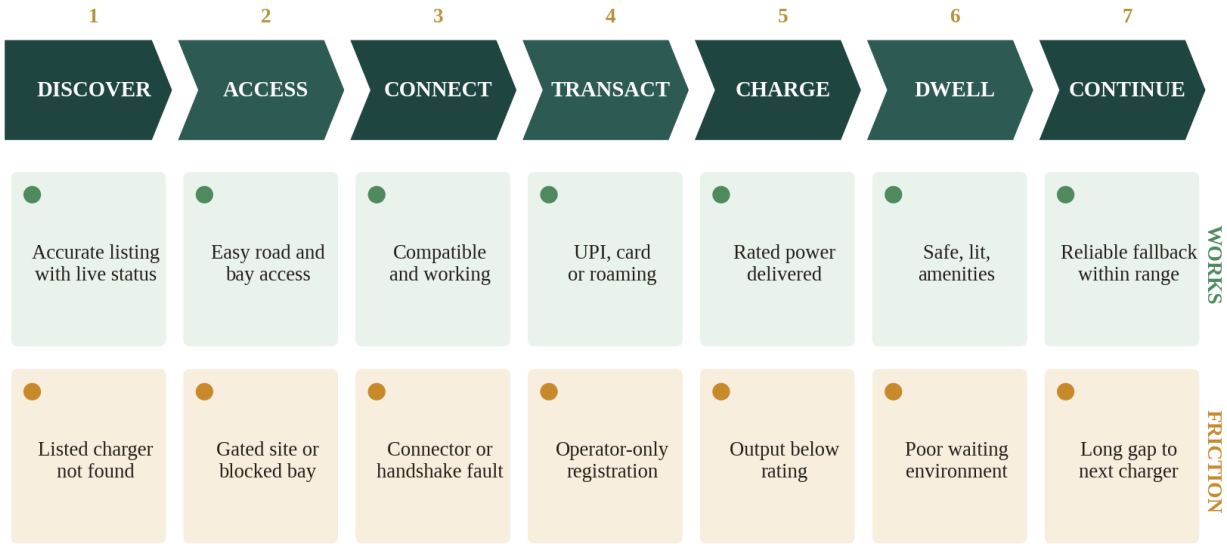
User Consideration	Field Observation
Long-distance travel	23,000+ km covered across 24 States and 6 Union Territories in 100 programme days
Gradients and hill routes	Ghat sections in Maharashtra and Himalayan routes completed; regenerative braking recovers energy on descents
Climate and road conditions	Routes included desert heat, coastal humidity, and flood-affected and marshy roads
Driver familiarity with EVs	The core team had no prior EV experience
Charging availability	Metros and national corridors are increasingly served; state highways and the North-East still require careful planning

7.2 Charging as an End-to-End User Experience

For a driver, charging is a sequence of steps rather than a single piece of equipment. Charging usability depends on successful completion of each stage, from discovery and access through payment and energy delivery.

EXHIBIT 14 **The EV Charging Journey**

Stages of a charging stop and points of user friction



Source: PROLOGUE. framework drawing on Rally observations.

7.3 Field Lessons

1. Vehicle capability and charging confidence are related but distinct: capable vehicles also need dependable networks.
2. Public charger counts are a necessary baseline, not a measure of corridor readiness.
3. Reliability, redundancy and accurate live status become increasingly important as adoption scales.
4. Inter-city travel is more closely related to fast-charger placement than to total state inventory.
5. App and payment fragmentation can add friction for occasional and cross-network users.
6. Route planning becomes more difficult where drivers cannot identify the next reliable option.
7. Charging stops are part of the mobility experience: amenities, lighting and safety can materially affect the charging experience, particularly on longer journeys.
8. A structured field protocol could enable future editions to generate comparable national data.

7.4 Implications for Industry

Stakeholder	Implication
OEMs	Long-distance confidence is linked to the ecosystem around the vehicle, including navigation, charging partnerships, route planning and customer education
Charge-point operators	Uptime, visibility, service response, payment simplicity and sustainable utilisation are important alongside growth in installed capacity
Battery and component makers	Operating conditions across temperature, terrain and road quality create varied requirements for thermal management, durability and power electronics
Energy companies and DISCOMs	EV charging is a new distributed load with implications for connection timelines, demand management and integration with renewable generation
Financiers and insurers	Battery-health data, warranties, residual-value benchmarks and certified used-EV programmes can reduce perceived ownership risk
Universities and skilling institutions	Skill requirements span mechanical, electrical, electronics, software, energy systems, service, battery management and recycling

CHAPTER 08

Stakeholder Relevance and Journey Economics

The Rally engaged multiple stakeholder groups and provides a practical basis for examining selected economic and ecosystem implications of electric mobility.

8.1 Relevance by Stakeholder

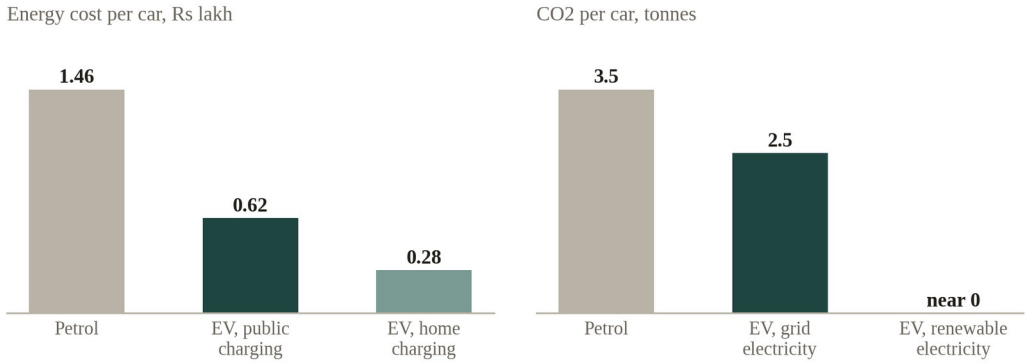
Stakeholder	Engagement Outcome and Relevance
Citizens and buyers	Direct exposure to EV use, charging, ownership considerations and trip planning; practical information on range, terrain, costs and connectors
Students and institutions	Exposure to EV and charging technology; awareness of careers in design, manufacturing, service and energy; scope for research, incubation and campus charging
Industry	A national platform for visibility and engagement; practical demonstration of products; interaction with buyers and partners in tier-2 and tier-3 cities; user feedback for charge-point operators
Government	A field perspective on charging to complement official data; engagement on national and state EV policy; field observations relevant to state planning and the allocation of public charging support
Society	Engagement in under-served regions; community participation; clean mobility presented as a shared responsibility

8.2 Journey Economics

The Rally's distance provides an indicative view of potential operating-cost and emissions differences, comparing one petrol passenger car and one electric passenger car, each driving 23,000 km.

EXHIBIT 15 **Operating Cost and Emissions Comparison**

Comparison for one electric and one petrol passenger car over 23,000 km, using stated assumptions



Source: PROLOGUE. analysis. Assumptions: petrol car 15 km/litre at Rs 95/litre, 2.31 kg CO2/litre; EV 15 kWh/100 km; public charging Rs 18/kWh, home Rs 8/kWh; grid 0.72 kg CO2/kWh.

Results vary with charging mix, electricity source and vehicle efficiency.

8.3 Characteristics of Different Engagement Models

Approach	Public Reach	Observation Basis	Stakeholder Access	Coverage
Rally, 2025 edition	Broad, 24 States and 6 UTs	Direct observations across the journey	Wide, across government, academia and industry	Broad
Rally, future assessment model	Broad, national	Structured, where each stop follows a common protocol	Wide	Broad
Desk study	Limited	Based on reported data	Selective	Data-dependent
Charger app data	App users	Self-reported by users and operators	Limited	Where reported
Auto expo	Concentrated, one city	Not applicable	Strong for industry	Single location
Advertising campaign	Broad	Not applicable	Limited	Broad, limited depth

The Rally model has five features relevant to future editions:

- **Relatable participants.** Drivers new to EVs can provide a perspective relevant to first-time buyers.
- **Broad geography.** Coverage of 24 States and 6 Union Territories can highlight regional differences that national averages may not show.
- **Stakeholder convening.** Officials, academics, manufacturers and citizens can engage through a common programme across multiple stops.
- **Sustained engagement.** A 100-day programme maintains public engagement over an extended period.
- **Repeatability.** Recurring editions could track change against previous editions and build a time series of charging quality.

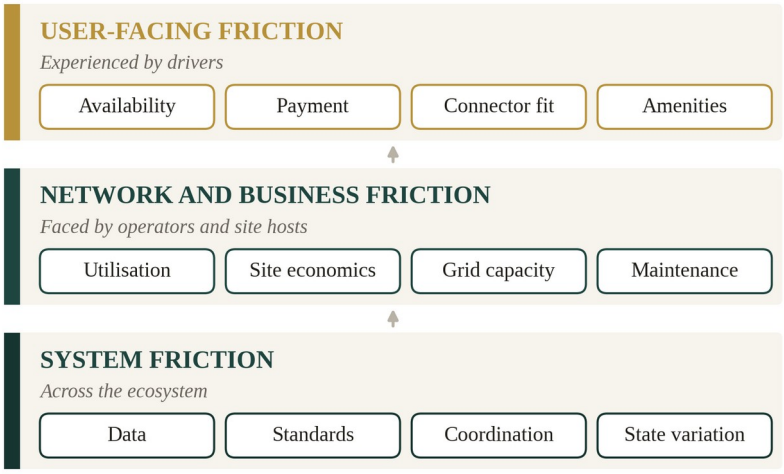
CHAPTER 09

Key Constraints and Remaining Gaps

The principal constraints identified in this report relate to network reliability, economics, user experience and coordination.

EXHIBIT 16 **Barrier Architecture for EV Adoption**

User, network and system-level constraints affecting electric mobility



Source: PROLOGUE. framework drawing on Rally observations and official data.

9.1 Constraints by Area

Area	Key Issues
Corridor coverage	Reported charging gaps were more prominent on state highways and district roads; 56% of stations in five states; 13 states and UTs under 100 each; 70% of stations are slow chargers; highway fast charging far from the 20 km norm
Reliability and experience	No official data on whether listed stations are operational; several operator apps needed to find, start and pay; connector mismatch and power below rating; few amenities or security at highway sites
Grid and power	Delays in distribution company connections; grid constraints can affect high-power charging in rural and hill regions; fossil-heavy electricity in many states; diesel in island territories; demand charges can affect economics at low-utilisation sites
Terrain and climate	Extreme heat and cold affect batteries and charging speed; steep climbs raise consumption; floods and landslides disrupt roads and power
Consumer and market	Higher upfront price than comparable petrol models; low awareness outside metros; resale and battery-life concerns; availability of models, dealers and service varies outside major cities
Charging business viability	Low early utilisation on highways; front-loaded land, grid and equipment costs; investment tends to concentrate in cities, leaving corridors under-served
Data and governance	No single national view of working chargers; district data published for selected states only; EV Yatra, Vahan, state portals and apps lack common IDs; penetration often misread as share of people using EVs

> **Commercial viability is an important factor in corridor coverage, particularly where strategic need develops ahead of utilisation. Targeted support may therefore be relevant in selected locations.**

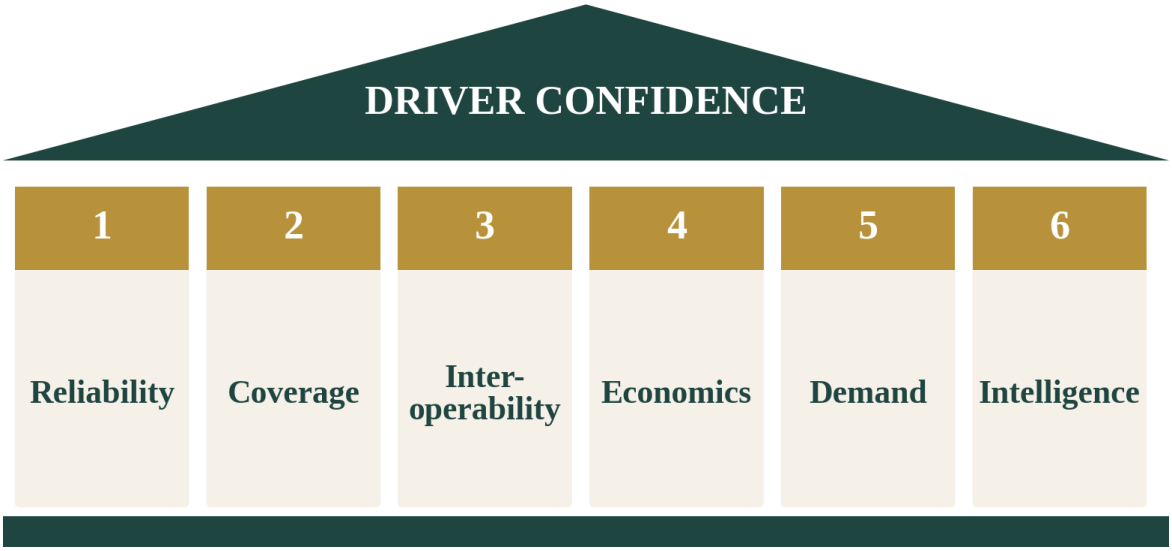
CHAPTER 10

Recommendations and Priority Actions

Twenty recommendations in six themes, consistent with the direction of the Ministry of Power guidelines and PM E-DRIVE, and focused on service quality and real-world reliability.

EXHIBIT 17 **Recommendation Architecture**

Six levers for a mobility-ready EV ecosystem



Source: PROLOGUE. framework.

Reliability and transparency

1. **National charger uptime standard:** minimum availability for highway fast chargers and regular operator reporting.
2. **Live public dashboard:** each station's location, power, connectors, tariff, status and last-verified time, building on EV Yatra and the PM E-DRIVE unified app.
3. **Downtime and repair reporting:** escalation where faults persist.
4. **Independent verification:** periodic field assessments and user reports.

Corridor coverage

5. **Targeted state-highway fast-charging support:** a defined share of PM E-DRIVE charging funds for state highways, pilgrimage and tourist circuits.
6. **North-East and Himalayan package:** closer-spaced fast chargers with backup storage.
7. **Corridor gap mapping:** stretches where reliable fast chargers are more than 50 km apart.
8. **Fuel station and toll plaza roll-out:** oil company outlets and NHAI wayside amenities.

Interoperability and experience

9. **Interoperable roaming:** access across operators through a single app.
10. **Universal payment:** UPI and card without mandatory sign-up.

11. **Connector standardisation:** CCS2 and Type 2 for passenger cars, with consistent connector labelling.
12. **Amenity standards:** highway charging hubs, with attention to women travellers.

Grid and viability

13. **Time-bound grid connection timelines:** public charging sites.
14. **Viability support:** low-utilisation corridor stations in early years.
15. **Solar-plus-storage charging:** remote areas and island territories.

Demand and awareness

16. **Targeted awareness:** states where infrastructure exceeds adoption.
17. **Campus EV ambassador programme:** institutions the Rally reached.
18. **Finance and resale confidence:** priority lending, battery warranties and certified used-EV schemes.

Data and governance

19. **Integrated EV data platform:** EV Yatra, Vahan and state portals linked through unique IDs and open APIs.
20. **State charging benchmarks:** vehicle mix, traffic, corridor length and tourism demand.

10.1 Stakeholder Roles

Stakeholder	Relevant Role	Areas for Consideration
Ministry of Power and BEE	Charging rules and national database	Uptime standard, roaming, open data, connection timelines
Ministry of Heavy Industries	PM E-DRIVE and manufacturing schemes	State-highway and North-East allocation; viability support
MoRTH and NHAI	National highways and Vahan	Wayside charging hubs; data integration
NITI Aayog	Strategy and coordination	Integrated EV data platform; state benchmarks
State nodal agencies and DISCOMs	Local roll-out and grid	District data, connections, demand-led siting
Charge-point operators	Network operation	Uptime, live status, payment, amenities
OEMs and dealers	Vehicles and customer support	Connector compatibility, in-car routing, buyer education
IFEVA	Awareness and field observations	Annual field-assessment edition, open data, campus programme

10.2 Priority Matrix

Priority Area	Institutional Context	Associated Stakeholders	Horizon
Charger uptime standard	Ministry of Power / BEE framework	MHI, CEA, operators	0 to 6 months
Live public dashboard	BEE (EV Yatra) / PM E-DRIVE unified app	BHEL, operators	6 to 12 months
State-highway fast charging	PM E-DRIVE / state deployment	MoRTH, states	6 to 24 months
Single-app roaming	Ministry of Power charging guidelines	BEE, operators, NPCI	6 to 18 months
Integrated data platform	NITI Aayog data initiatives	MoRTH, BEE, states	12 to 24 months
North-East and Himalayan package	MHI / MDoNER programmes	States	12 to 36 months
Corridor viability support	PM E-DRIVE / Ministry of Power	States, oil companies	12 to 24 months
Campus ambassador programme	IFEVA programmes	AICTE, institutions	0 to 12 months
Annual field-assessment edition	IFEVA Rally	BEE, ICAT, states	Annual

Stakeholders shown are indicative and do not imply institutional commitment.

10.3 International Reference Points

Selected charging frameworks abroad are moving from counting chargers to regulating service quality. India's context differs in vehicle mix, geography and grid, so these are reference points rather than templates.

Framework	Key Provisions	Relevance for India
EU Alternative Fuels Infrastructure Regulation (2023/1804)	Charging pools every 60 km on the core TEN-T network, with minimum total power rising through 2025 and 2027; ad hoc card payment; price transparency	Corridor spacing tied to minimum power, not station count
UK Public Charge Point Regulations 2023	99% reliability for the rapid network; contactless payment; open data; 24/7 helpline; pence-per-kWh pricing	Reliability and open data as legal obligations
India, Ministry of Power Guidelines 2024	20 km highway spacing; 1 km urban grid by 2030; national database with open APIs	Strong spacing norms; reliability and roaming are the next step

DESIGN FRAMEWORK

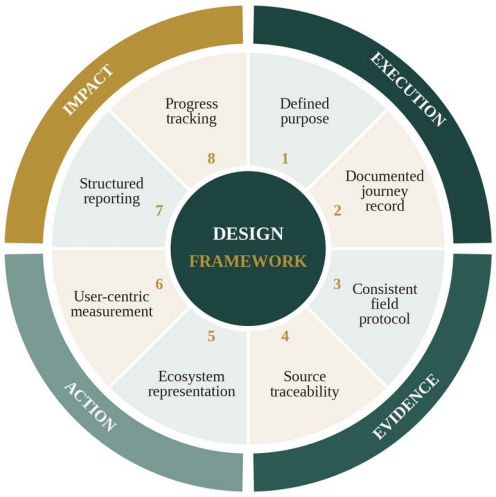
Design Framework for National EV Field Initiatives

Considerations for consistent and comparable field initiatives across future editions.

National field initiatives can generate greater long-term value when programme scale is complemented by consistent measurement, traceable sources and progress tracking across editions. The framework below sets out eight considerations that can support comparability and continued learning over time.

EXHIBIT 18 **Eight Design Considerations**

Eight considerations that can support consistency and comparability across future editions



Source: PROLOGUE. framework.

	Dimension	Design Consideration
1	Defined Purpose	What the programme intends to demonstrate, measure, communicate and influence, set out at the outset
2	Documented Journey Record	Route record, daily itinerary, vehicle register and consolidated distance
3	Consistent Field Protocol	A common charger test, data fields and classifications across locations
4	Source Traceability	Material observations linked to a timestamp, location, image, receipt or documented interaction
5	Ecosystem Representation	Government, OEMs, CPOs, utilities, academia, finance, service providers and users, not only manufacturers
6	User-Centric Measurement	The whole charging journey: discovery, access, connection, payment, charging, amenities and onward travel
7	Structured Reporting	Official statistics, programme information and interpretation presented separately
8	Progress Tracking	Gaps resolved, stations repaired, institutions engaged and recommendations taken up

A national field initiative can create lasting value when its journey is supported by traceable evidence, stakeholder engagement and measurable progress across editions.

CHAPTER 11

National EV Observatory: Proposed Operating Model

The 2025 edition provides a foundation for a more structured field-learning approach. Future editions could incorporate consistent measurement and assessment protocols.

11.1 The Observatory Concept

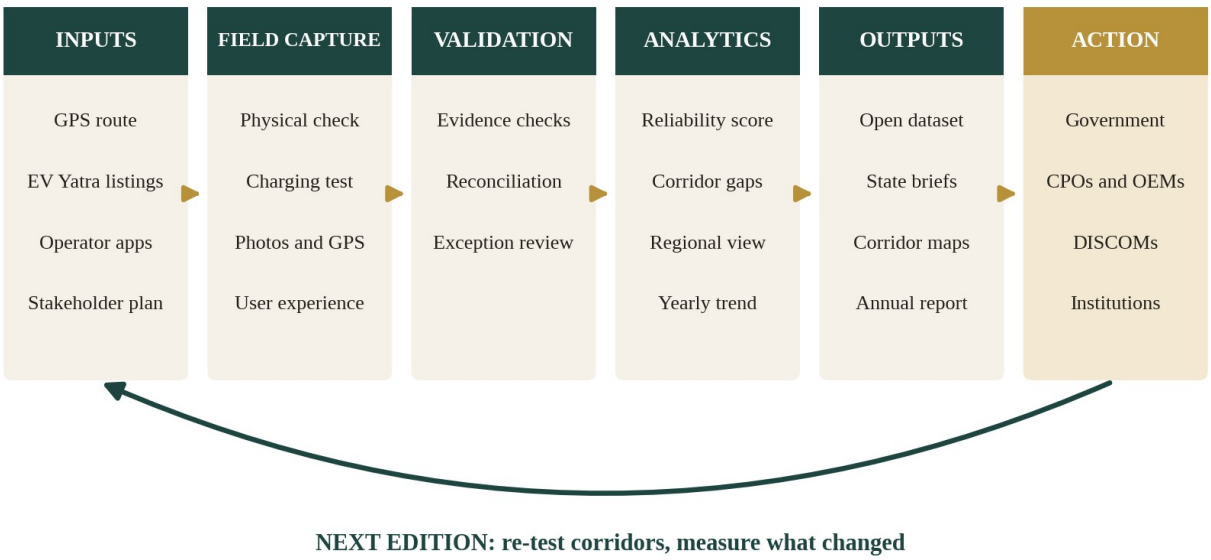
A potential next step is to institutionalise the Rally's field-learning function. Future editions could retain their public engagement and demonstration character while applying a common assessment protocol at each charging stop. Over successive years, IFEVA could build comparable data on corridors, regions and networks, published as open data and reconciled with EV Yatra.

11.2 The Observatory Operating Model

An observatory differs from a repeated rally in that each edition feeds a continuous cycle, from field capture through validation and analysis to published outputs, and back to the next edition to measure what changed.

EXHIBIT 19 **National EV Observatory Operating Model**

Proposed process for field capture, validation, analysis and reporting



Source: PROLOGUE. framework.

In the field, the loop runs as eight steps: route mapping, station discovery, physical verification, a charging test, reliability scoring, reconciliation with EV Yatra and state records, corridor gap analysis, and state-by-state recommendations.

11.3 Proposed Station Reliability Score

Component	Points	Measured as
Availability on arrival	30	Charger free and online
Successful charge	30	Session started and energy delivered
Delivered power	15	Peak kW as a share of rating
Payment ease	10	UPI or card without app sign-up
Connector compatibility	10	Standard connector, connector type identified
Amenities	5	Shade, toilets, lighting, security

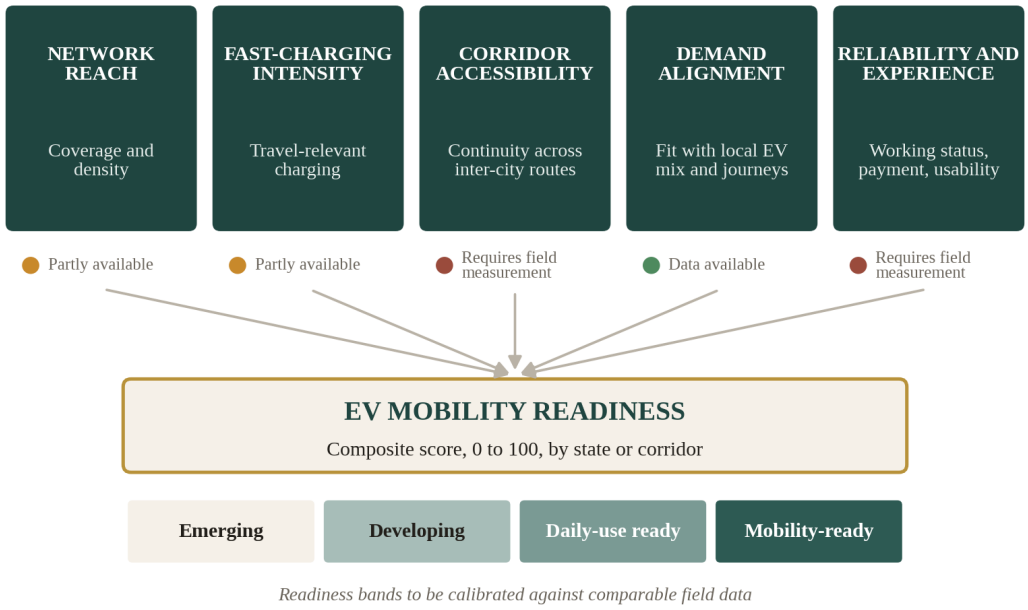
The score is proposed for use in future IFEVA field-assessment programmes and should be piloted before any public ranking of operators, states or corridors. Each station may also be classified as verified operational, temporarily unavailable, decommissioned or not verified.

11.4 Proposed EV Mobility Readiness Index

A station-level reliability score addresses whether a charger works. Policy and investment decisions also benefit from a view of whether a state or corridor, taken as a whole, can support dependable electric mobility. PROLOGUE. proposes an EV Mobility Readiness Index for that purpose. It combines five dimensions into a composite score from 0 to 100, so that readiness is assessed on reach, travel-relevance, continuity, fit with demand and reliability rather than on installed charger counts.

EXHIBIT 20 **Proposed EV Mobility Readiness Index**

Index architecture and indicator groups



Source: PROLOGUE. framework. Data availability reflects sources available at the date of this report.

Dimension	Assessment Focus	Indicative Measures	Current Data Availability
Network reach	Geographic availability	Public stations per lakh population and per 1,000 sq km; share of districts covered	Partly available: state counts published; district geocoding incomplete
Fast-charging intensity	Fast-charging capability	DC fast-charging share; fast chargers per 100 km of national highway	Partly available: national split published; state detail limited
Corridor accessibility	Inter-city continuity	Share of priority corridors with a working fast charger at least every 50 km	Requires field measurement
Demand alignment	Demand alignment	Chargers relative to EV stock and segment mix; passenger-car-relevant capacity	Available from Vahan and official station data (Annexure A)
Reliability and experience	Operational usability	Average station reliability score (Section 11.3); payment and connector compliance	Requires field measurement

MEASUREMENT BASIS

Corridor accessibility and reliability require field measurement beyond currently published datasets. This edition therefore presents the Index architecture and measurement logic; scored results may be developed after a future Observatory edition generates comparable field data.

11.5 Indicative Roadmap for Future Editions

Phase	Timing	Key Outputs
Consolidate and institutionalise	Q4 2026 to Q1 2027	Consolidated programme record; institutional engagement with BEE, ICAT and relevant state agencies, subject to agreement
Design 2027 edition	Q1 to Q2 2027	Priority corridors identified, partners engaged, crew trained in the assessment protocol
Run 2027 edition	Q3 to Q4 2027	Station data at every stop, weekly dashboards, state roundtables
Report and follow up	Q1 2028	Open dataset, comparative report, tracking of gaps closed within 12 months

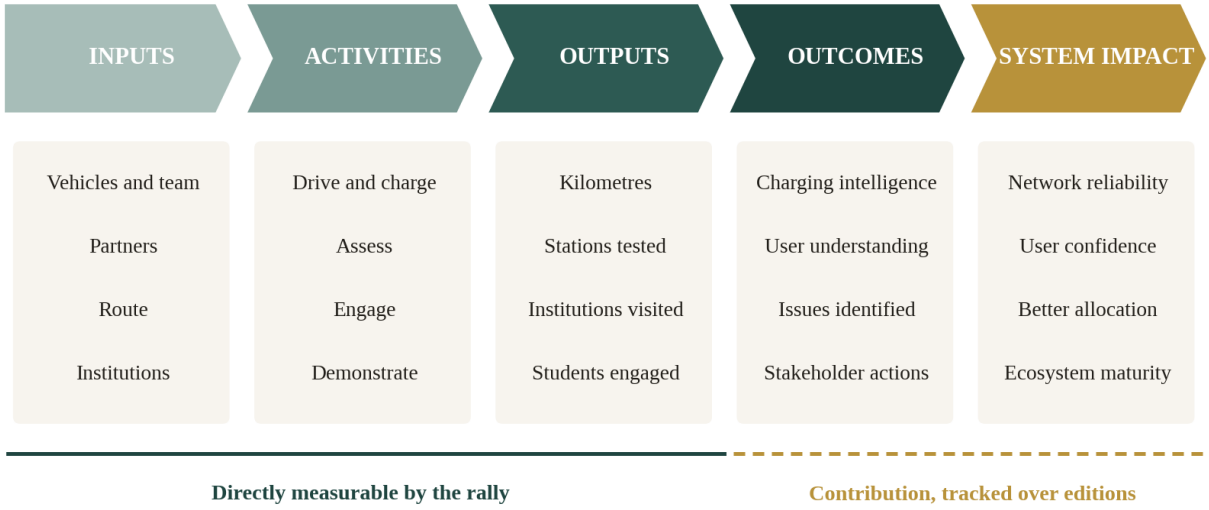
Indicative timeline.

11.6 Impact Measures for the Next Edition

Distance travelled reflects programme execution; impact is better assessed through outcomes over successive editions. The logic model below separates what the Rally can measure directly from the wider change it can contribute to.

EXHIBIT 21 **Impact Logic Model**

From programme activities to outputs, outcomes and impact



Source: PROLOGUE. framework.

Level	Indicator	Target, Next Edition
Outputs	States and UTs covered; consolidated distance	As planned for the edition; single published figure
Outputs	Public stations physically verified	At least 1,500
Outputs	Institutions visited; students reached	At least 300; at least 1 lakh
Outcomes	Share of verified stations with a successful test charge	Published by state
Outcomes	Corridor gaps over 50 km mapped	Published nationally
Outcomes	State roundtables with officials and operators	At least 50
Progress tracking	Reported gaps closed within 12 months	Tracked and published

Targets will be reviewed against the consolidated 2025 baseline during programme design.

CHAPTER 12

Conclusion and Outlook

The Bharat Maha EV Rally 2025 completed a 100-day electric-mobility programme across 24 States and 6 Union Territories of India, with engagements extending to Bhutan and Nepal. The journey provides a national perspective on the conditions surrounding long-distance passenger-car mobility and the wider ecosystem required to support it.

India's public charging network has expanded substantially, supported by an increasingly developed policy framework and significant public and private investment. At the same time, charging availability remains uneven across regions and corridor types, fast-charging capacity represents a minority of the installed base, and nationally comparable measures of reliability and user experience are still developing.

The areas warranting continued attention therefore extend beyond additional infrastructure. They include corridor coverage, charging reliability, interoperability, live-status visibility, user experience and alignment between charging investment and the vehicle mix and journeys it is intended to serve.

Future editions of the Rally could build on the 2025 experience through more consistent field measurement, comparable data and continued engagement across government, industry, academia and the wider electric-mobility ecosystem. In this form, the programme could contribute an additional field perspective to the data, policy and industry initiatives already shaping India's transition to electric mobility.



A Rally car on the road in Ahmedabad, Gujarat.

IFEVA Leadership and Network

Leadership, office-bearers and representatives across IFEVA's national, regional and international network.

IFEVA Leadership

Dr Shailendra Saroj	Founder	**Dr Kalyan S. Hatti**	Chairman
Dr Rajeev Mishra	President	**Srinivas Kumar Yerrapothu**	Global Vice President
Dr Deepak Wadhwa	Vice President, International	**Neelam Choudary**	Treasurer
Pradeep Gupta	Strategic Advisor	**Sudhendu J. Sinha**	Principal Advisor

International

Dr Samuel Varghese	President, Battery International		

National

Sunil Bhatnagar	National President, Zero Emissions	**Amir Siddique**	National Vice President, Rally Project
Pradeep Jaiswal	National Coordinator, Bharat Maha EV Rally	**Sudanshu Chandra**	Head, PR and Media
Sudhir Singh Pundir	National President, Recycle (HR)	**Dr G.N. Gupta**	President, Delhi (2W)
Dr Narendra Jha	Vice President, G.B. Nagar	**Amit Gupta**	President, Uttarakhand
Shishir Agrawal	Vice President, North India		

South India

Ram Vemireddy	President, Telangana and Andhra Pradesh	**Dr A.T. Kishore**	President, Bangalore
Saffuruddin	President, Tamil Nadu	**Suresh Lakkaraju**	Rally Coordinator, South India
Premsagar Venkatraman	Vice President, Media, South India		

West India

Dr Harindu Vyas	President, Gujarat	**Baba Kamble**	President, Auto Driver Association
Abhishek Khanna	Secretary, Pune		

Annexure A: State and UT Charging and Adoption Data

State / UT	Stations	Fast	Slow	Fast share	CY2025 EV penetration
Karnataka	6,096	751	5,345	12%	10.41%
Maharashtra	4,166	1,205	2,961	29%	8.05%
Uttar Pradesh	2,316	540	1,776	23%	9.78%
Delhi	1,957	399	1,558	20%	13.89%
Tamil Nadu	1,780	926	854	52%	7.85%
Rajasthan	1,515	523	992	35%	6.80%
Kerala	1,389	553	836	40%	11.34%
Gujarat	1,205	578	627	48%	3.63%
Madhya Pradesh	1,146	353	793	31%	8.05%
Telangana	1,062	548	514	52%	8.33%
Haryana	919	384	535	42%	3.46%
West Bengal	891	321	570	36%	7.85%
Andhra Pradesh	791	424	367	54%	6.46%
Punjab	698	225	473	32%	5.65%
Odisha	606	165	441	27%	8.86%
Bihar	518	172	346	33%	8.20%
Jharkhand	353	129	224	37%	5.00%
Chhattisgarh	347	124	223	36%	6.24%
Assam	345	96	249	28%	14.30%
Uttarakhand	221	84	137	38%	6.85%
Jammu & Kashmir	180	61	119	34%	6.20%
Goa	156	94	62	60%	10.76%
Himachal Pradesh	133	52	81	39%	n.p.
Meghalaya	62	21	41	34%	n.p.
Manipur	58	9	49	16%	3.36%
Tripura	55	4	51	7%	18.38%
Puducherry	46	28	18	61%	6.40%
Arunachal Pradesh	45	4	41	9%	n.p.
Nagaland	37	6	31	16%	n.p.
DNH and Daman & Diu	14	11	3	79%	n.p.
Chandigarh	13	11	2	85%	9.94%
Mizoram	13	0	13	0%	n.p.
Sikkim	12	3	9	25%	n.p.
Andaman & Nicobar	4	1	3	25%	n.p.
Ladakh	1	0	1	0%	n.p.
Lakshadweep	1	0	1	0%	n.p.
India	**29,151**	**8,805**	**20,346**	**30%**	

Sources: Ministry of Heavy Industries / PIB, 16 December 2025 (stations); JMK Research, Annual India EV Report Card CY2025 (penetration of new registrations). n.p. = not published in the source extract.

Annexure B: Methodology and References

Definitions

Station-status definitions (working, non-working, not verified) apply to the proposed future field-assessment framework set out in Chapter 11.

Term	Definition
Public EV charging station	As used in Ministry of Heavy Industries and Ministry of Power releases
Fast / slow	As classified in the MHI release of 16 December 2025
EV penetration	EV registrations as a share of all new vehicle registrations in the period; not the share of people using EVs
Working charger	A compatible vehicle successfully initiated a session and received energy during a verified test
Non-working charger	The station failed to initiate or deliver energy
Not verified	Not physically or digitally tested

Source Framework

Source Type	Examples	Treatment in the Report
Official data	Ministry of Heavy Industries, Ministry of Power, BEE and PIB releases on charging stations, schemes and guidelines; Vahan-based registration analysis	Reproduced as published, with release dates; separate releases are not merged into one series
Institutional and published sources	Institutional records (for example, Gujarat Technological University) and media coverage of Rally milestones	Used to support dates, places and events
Programme information	IFEVA programme documentation, pre-rally route plan, route information, photographs and campaign material	Relied upon as supplied by IFEVA; planning material distinguished from the completed journey
Contextual research	Industry, manufacturing and international policy material current to September 2026	Kept separate from Rally observations

Data Conventions

- Charging figures from different releases are not combined into one series unless the source does so.
- Regional aggregates are PROLOGUE. analysis of the 16 December 2025 state table.
- Industry and international material is contextual research to September 2026, kept separate from Rally observations.
- Interactions with public offices are described factually and do not imply endorsement beyond what the source records.

Regional Groupings

Region	States and union territories
South	Karnataka, Kerala, Tamil Nadu, Andhra Pradesh, Telangana, Puducherry, Lakshadweep, Andaman and Nicobar
North	Delhi, Haryana, Punjab, Chandigarh, Himachal Pradesh, Jammu and Kashmir, Ladakh, Uttarakhand, Uttar Pradesh, Rajasthan
West	Maharashtra, Gujarat, Goa, Dadra and Nagar Haveli and Daman and Diu
East	West Bengal, Odisha, Bihar, Jharkhand
Central	Madhya Pradesh, Chhattisgarh
North-East	Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura

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For this report, PROLOGUE. served as Knowledge Partner to IFEVA, structuring programme information supplied by IFEVA, analysing official charging and adoption data, and developing the analytical frameworks, recommendations and proposed Observatory model.

CONTACT

Plot No. 4, 2nd Floor, Minarch Tower, Sector 44, Gurugram, Haryana 122003, India

business@prologuet.com | +91 79828 38879 | prologuet.com

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Publication and Contacts

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IFEVA Green Energy Foundation

3rd Floor, MB-1, Master Block, Nirman Vihar, Delhi 110092

www.fevaev.com | info@fevaev.com

KNOWLEDGE PARTNER

PROLOGUE. Strategy & Growth Advisory

Prologue Technologies Private Limited, Gurugram

business@prologuet.com | +91 79828 38879 | prologuet.com

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OBTAINING THE REPORT

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ENQUIRIES

Enquiries about the Rally, IFEVA and future editions: info@fevaev.com. Enquiries about the analysis, frameworks and recommendations in this report: business@prologuet.com.

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Impact and Policy Report

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