

ANNUITY HYBRID EMOBILITY

Instrument commercially prototyped by



REFORM
PERFORM
TRANSFORM



HDFC BANK

THE INR
₹500 \$57 Million
CRORES
VIABILITY GAP FUNDING

B L E N D E D

 **CLIMATE
FINANCING
INSTRUMENT**

Published by:

EoDB Services OPC in association with
National Highways for Electric Vehicles (NHEV) Blended Climate Financing Working Group (WGM) FY 2024-25

ESCROW Operator & Empaneled Private Bank of CF Instrument:

NHEV Greenways Pvt. Limited (Operator) & HDFC Bank Limited (ESCROW Bank) Kasturba Gandhi Marg, HDFC Branch, New Delhi

Contributors:

NHEV Greenways Private Limited, Charge Point Operators Society of India (CPOS of India), Blended Climate Financing Team, Annuity Hybrid E-Mobility Team, pManifold Team, Circular Economy Team of EoDB, 'Viksit Bharat National Masterplan team of \$ 2 trillion USD Climate Finance by 2030' instruments development.

Type of Report: Financing Instrument

Acknowledgement(s)

This report reflects the collective expertise and vision of public and private stakeholders working on India's green mobility transition. We gratefully acknowledge the support of NHEV Knowledge Group Chair and Co Chair from NITI Aayog, Office of the Principal Scientific Advisor to Government of India, Government of Tamil Nadu, participating OEMs, technical consultants, banks and financial partners, NHEV Greenways and technical trial participants including all individual and institutional contributors. Special thanks to the tech-piloting agency Ease of Doing Business and its Program Team for testing the instrument on ground and organising conferences & consultations, leading research, coordination, and documentation, and to the Annuity Hybrid E-mobility (AHM) Master instrument team for their unwavering commitment to build it in Public Private Partnership (PPP) mode.

Technical Trial Overview

This instrument is validated and derived from a technical trial (TTR-III) conducted from September 9 to October 13, 2024, on the Chennai-Trichy corridor—a high-traffic, 332 km stretch in Tamil Nadu. The five-week phased program tested core operational technical, and commercial parameters of electric truck deployment in real-world Indian conditions along with required financial obligations and stakeholders commercial interest.

Technical Trial III Participants: Chennai-Trichy September 2024

The technical trial on the Chennai-Trichy route was a collaborative effort with public and private stakeholders including the Tamil Nadu Electric Vehicle Task Force, FaMe TN, Guidance Tamil Nadu, Startup TN; Ashok Leyland, Greenline, Blue Energy Motors, KIA Motors, TATA Nestin, Aisin Automotive, Elonroad, Relux Electric, IPL Tech, Switch Labs, GreenCell Mobility, NueGo, EV Charge Partners; private fleet operators; banking partners; NHEV project teams; and knowledge partners The Energy and Resources Institute (TERI), Shoonya (A NITI Aayog Initiative), OMI Foundation, pManifold, WRI India and NITI Aayog Initiative e-FAST India, C40 Cities, Smart Freight Centre India.

About NHEV

NHEV is an Ease of Doing Business Electric Mobility pilot project aimed at decarbonizing mobility and building Green & Electric Highways. It has been adopted by the Government of India in 2024 currently under a national rollout on 5,000 km of Bharatmala and Sagarmala routes by 2027 in PPP mode... read more.

Piloting Agency – Ease of Doing Business

EoDB Services is India's premier tech-piloting agency extending advanced level commercial prototyping and emerging tech-piloting services since 2014. EoDB is championing regulatory reform, stakeholder facilitation and privately held to democratise evidence-based policymaking to further the vision of our Prime Minister Shri Narendra Modi, going on ground beyond bureaucratic boundaries to deliver actual ease at grassroots levels through footprint ecosystem pilots for commercialization of emerging technologies like AI, IoT, Blockchain, Electric Mobility, HealthTech, Drones, Cloud Computing, 3D Printing, Robotics, Automation, Machine Learning, Geospatial, Big Data Centres etc.

Copyrights:

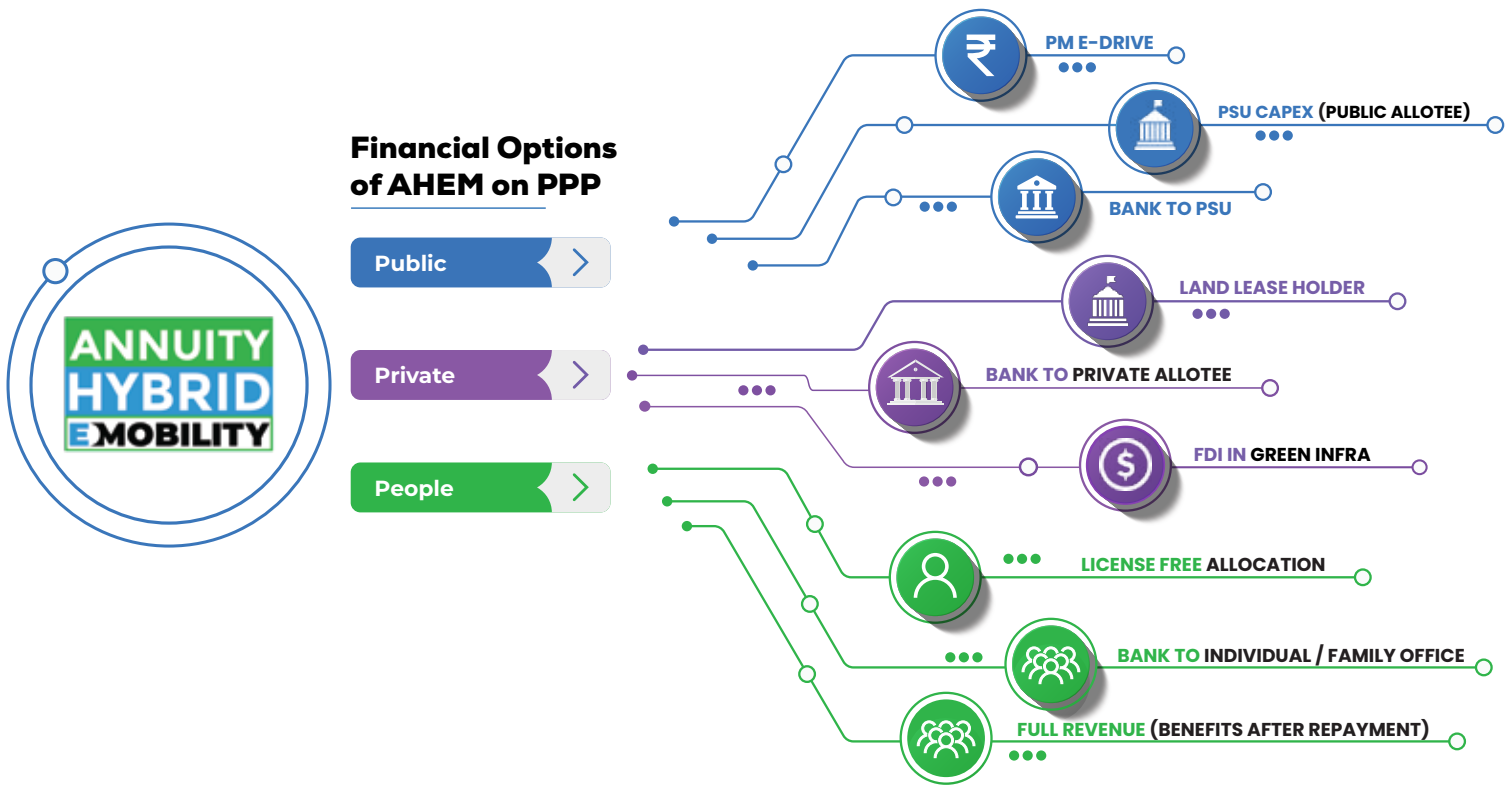
©Ease of Doing Business, August 2025

©Under Creative Common CC licence

Ease of Doing Business Services, 5th Floor, 505 Antariksh Bhawan, 22 KG Marg, Connaught Place, New Delhi – 110001

✉ office@easeofdoingbusiness.in ☎ 01143009699

Blended Climate Financing Instrument



Hybrid Annuity Model (HAM) 2016

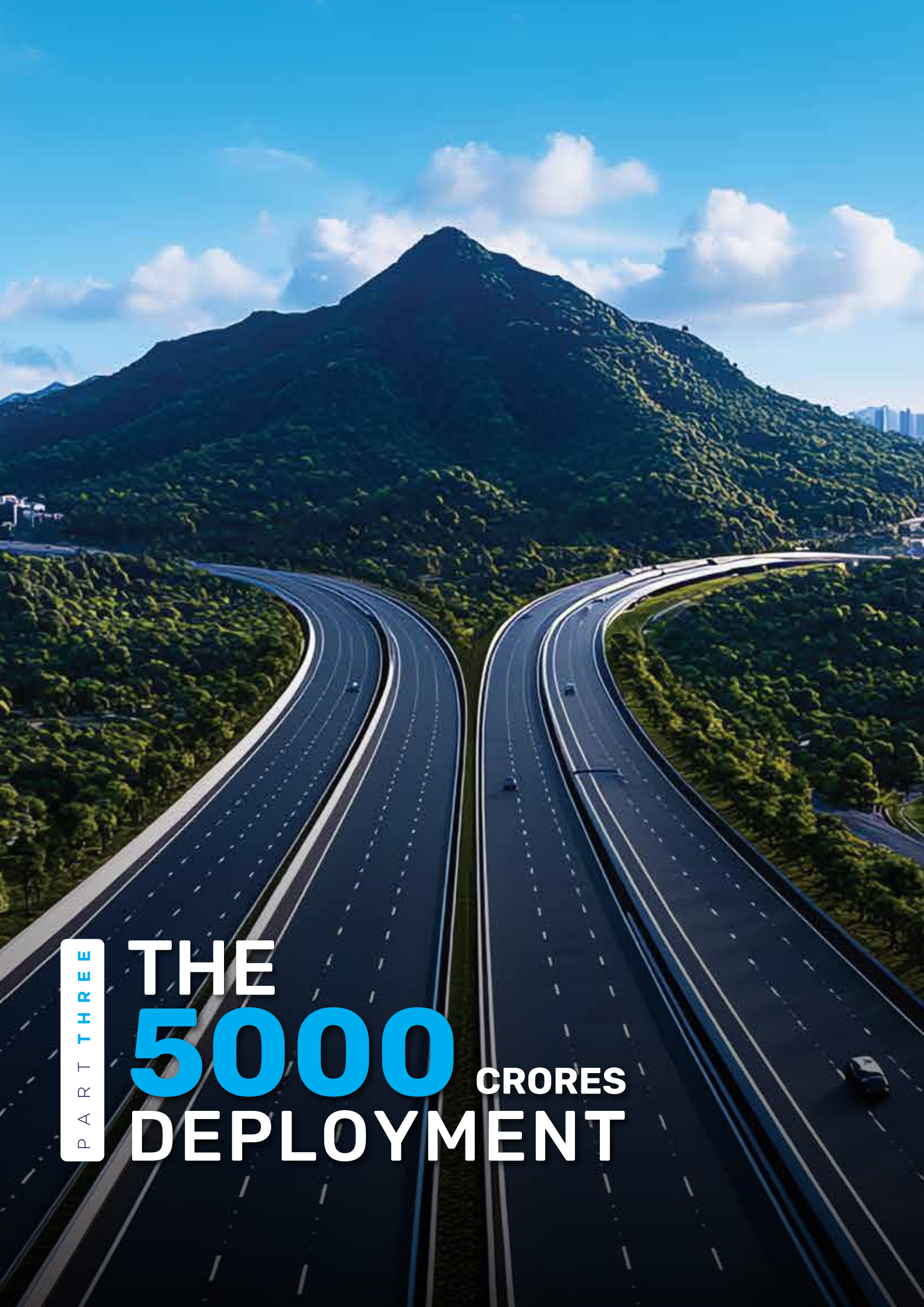
The Hybrid Annuity Model (HAM), introduced in 2016 under the leadership of Transport Minister Nitin Gadkari, was a strategic initiative aimed at revitalizing India's road infrastructure through an innovative approach combining the Engineering, Procurement, and Construction (EPC) and Build, Operate, Transfer (BOT) models. By providing a balanced framework where the government contributes 40% of the project cost upfront, and the private sector covers the remaining 60% through equity and debt, HAM efficiently allocates risks between public and private players. The National Highways Authority of India (NHAI) disburses its share through milestone-based annuities, ensuring performance-linked payments. This model mitigates liquidity risks for developers while accelerating the pace of infrastructure development.

HAM has proven to be highly relevant, particularly post-Budget 2022-23, which prioritized infrastructure growth to fuel India's economic ambitions. By the first half of FY22, 51% of the 1,900 km of highway projects had already been awarded under HAM, underscoring its efficacy in accelerating project completion and addressing funding constraints. With NHAI retaining control over revenue generation, HAM aligns the interests of both public and private stakeholders while delivering crucial national infrastructure.

Annuity Hybrid E-Mobility (AHEM) 2021

Annuity Hybrid E-Mobility (AHEM), modeled after HAM, represents the next evolution of this approach, tailored to meet the specific needs of India's burgeoning electric mobility (e-mobility) sector. The AHEM model is designed to provide capital expenditure (CapEx) relief to suppliers and partners by ensuring fixed annuity-based payments over 12 months, followed by a variable payment scheme based on fleet expansion and operational milestones. This mechanism not only ensures liquidity but also minimizes financial risks for both developers and public sector units (PSUs), supported by insurance-backed guarantees and structured debt options.

AHEM introduces a self-sustaining operational expenditure (OpEx) model for EV charging infrastructure, allowing stations to generate revenue through on-site utilities and services. Surplus revenues are reinvested into infrastructure expansion or utilized to achieve breakeven points, ensuring long-term financial sustainability for stakeholders. This model fosters collaboration between government entities, PSUs, and private partners, all while creating a scalable and commercially viable e-mobility ecosystem.

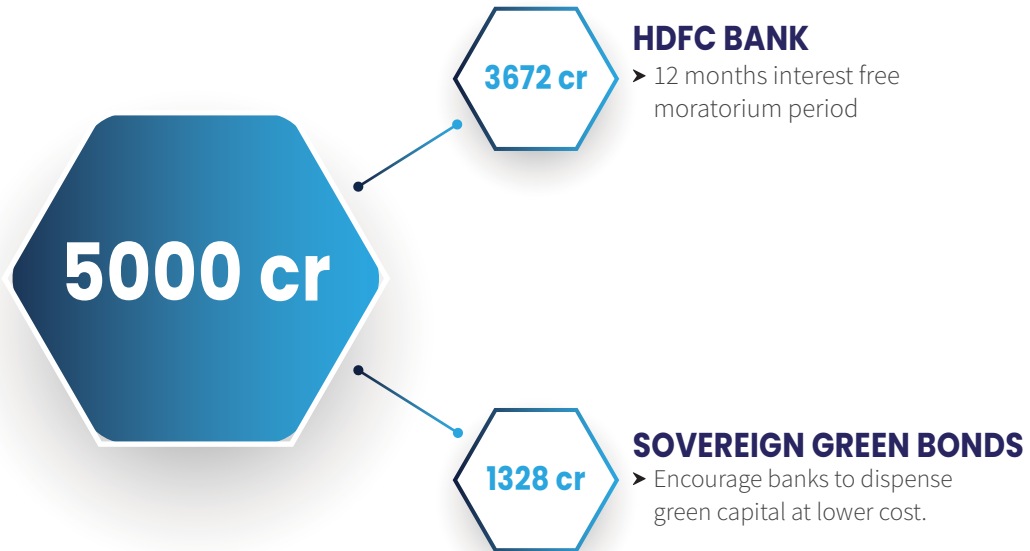


PART THREE

THE **5000** CRORES DEPLOYMENT

Financial Breakdown of 5000 Crores

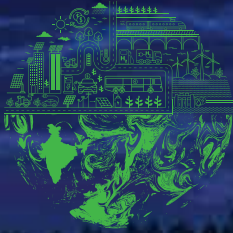
The National Highways for Electric Vehicle (NHEV) is being funded with a total credit outlay of 5000 crore backed by HDFC and Sovereign bonds. Among total funding, 3672 crore for infrastructure by HDFC Bank and ₹1328 crore by sovereign bonds.



Facilitate multiple green funding instruments suitable for businesses to take boardroom decisions to decarbonize their mobility, infrastructure, and power, along with provisions to reduce their interest rate.



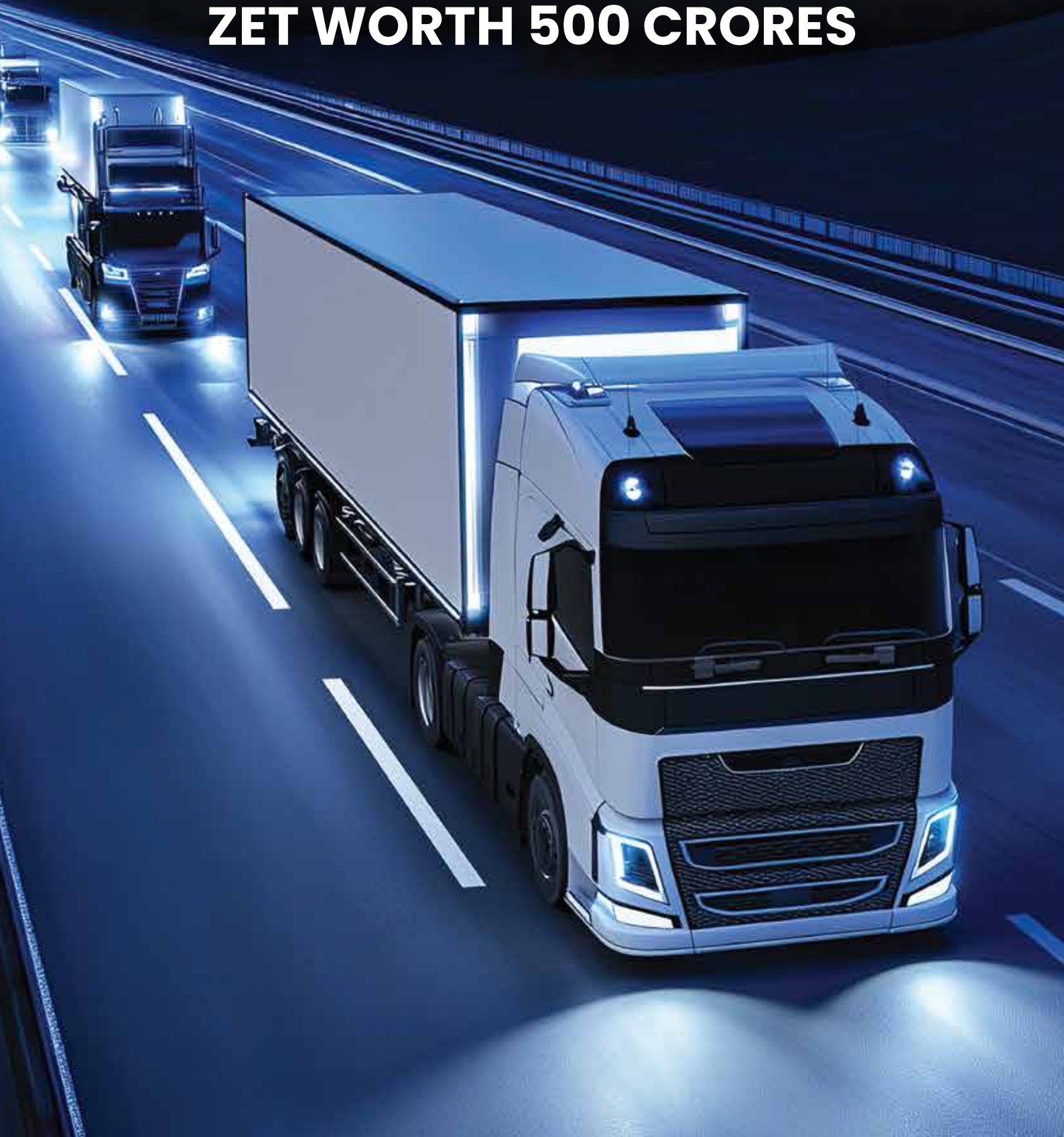
BLENDING INSTRUMENT



\$2 TRILLION CIRCULAR ECONOMY
**CLIMATE
FINANCING**
INSTRUMENTS FOR INDIA AHEAD COP 29

**ANNUITY
HYBRID
EMOBILITY**

FOR ZET WORTH 500 CRORES



This Commercial Pilot is backed by a **Blended Financing** Instrument of Rs 500 Crore from Ease of Doing Business under **Annuity Hybrid E-Mobility** (AHEM) with credit outlay to meet **Viability Gap Funding**.



Identification and estimation of 6 stakeholders commercial interests.

6



Partnering for seamless integration in 10 years mobility solution architecture.

10 Yrs



Packaging 6 E-ways with monetizable assets and fleets for PPP capex allocations.

₹ 500Cr

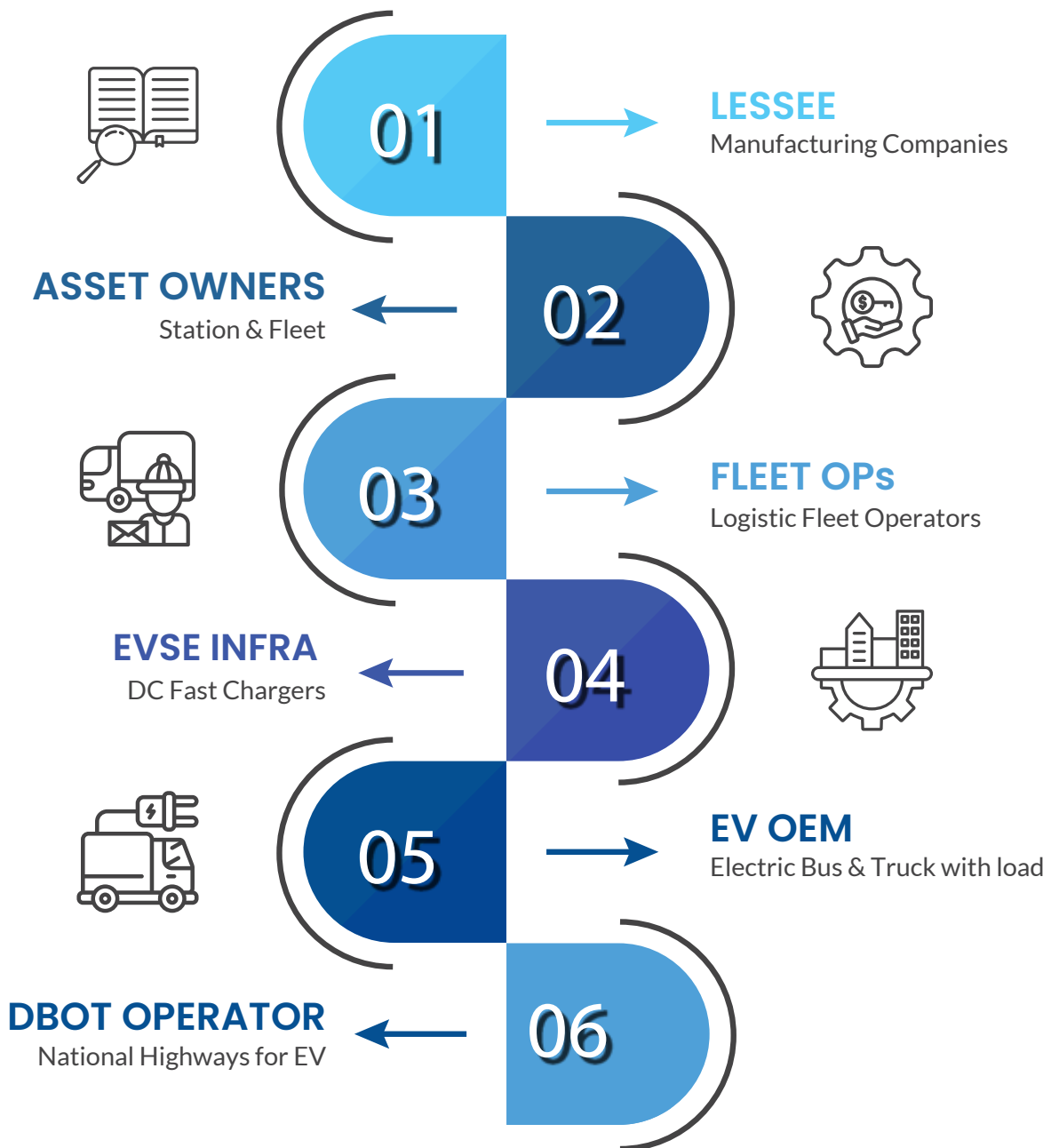


AHEM Issuing Rs. 500 Crore Viability Gap Funding with subvention outlay.

2025

Stakeholders in Technical Trial

This inclusive TechTrial for commercial intake is bringing all stakeholders together to participate in phased-out activities to express their reservations and concerns about deployment to be considered while publishing technical trial results of the commercial prototype. These evidence-based and technically backed results collected from this real-world TechTrial are being considered as legitimated business claims in the Blended Climate Financing instrument to carve out ESCROW and disburse Viability Gap Funding against allocated E-highway assets.



ZERO EMISSION TRUCKING

PROTOTYPING

Phased integration to achieve Zero Defect



Basic Parameters

Catalogue parameters ascertained by OEMs for certification and product launch with internal Test Runs without 3rd party integrations.



Integrated

Integration to Prototype Solution Architect with key dependencies together to build reliable insights for final augmentation and optimal utilization till breakeven.



Augmented

Real world commercial pilot parameters to gain lessee stakeholders confidence on adoption and 10 year long lease decision from EV truck users.



Commercialization

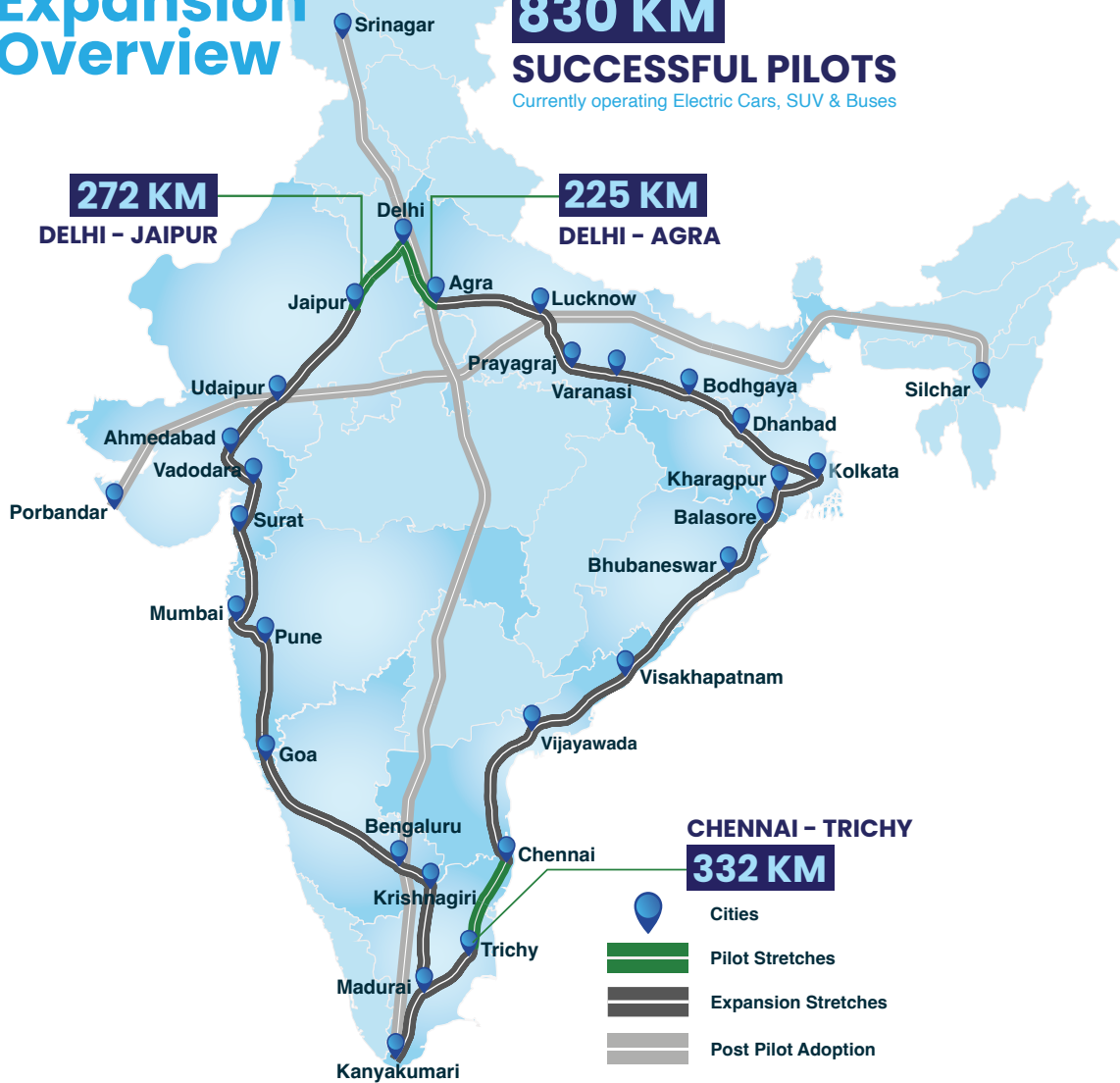
Taking conditional deployment terms, limitations and business models in account to finalize ESCROW terms of disbursement for deployment upon asset allocation.



National Roll Out

13000 KM Expansion Overview

830 KM
SUCCESSFUL PILOTS
Currently operating Electric Cars, SUV & Buses



Highways	<ul style="list-style-type: none"> □ Porbandar - Silchar: 3,300 km □ Srinagar - Kanyakumari: 4,000 km □ Delhi - Kolkata: 1,453 km □ Chennai - Mumbai: 1,290 km □ Kolkata - Chennai: 1,684 km □ Mumbai - Delhi: 1,419 km
States	Jammu and Kashmir, Punjab, Haryana, Delhi, Uttar Pradesh, Madhya Pradesh, Odisha, Maharashtra, Telangana, Andhra Pradesh, Karnataka, Tamil Nadu, Gujarat, Rajasthan, Bihar, West Bengal, and Assam
Depot Hubs	60
Control Rooms	16
Charging Hubs (every 150 km)	87
E-trucks to be deployed	720 - 810

PM e-drive gives INR 500 Crores

Trucks through subsidy, capped at INR 7-9 Lacs → 1200 assets

Chargers' pricing similar to considering the infrastructure required for the installation of chargers.

Assumptions/Data points

1. When operating on corridors, 1 truck requires 3 charges (2 at source & destination, 1 en route for top-up) – pilot exercise
2. 1 charger can be shared by 5 trucks (ensuring good utilization) – pilot exercise

Calculation

1 truck : 3 chargers (on operation)

1 charger : 5 trucks (utilization)

Total assets → 1200

Ratio is 3 chargers : 5 trucks

$1200/8 = 150$

No. of trucks = $150 \times 5 = 750$

No. of chargers = $150 \times 3 = 450$



Ease of Doing Business

REFORM PERFORM TRANSFORM

National Highways for Electric Vehicles (NHEV) is a pilot program adopted by Govt of India; initially supported by the Ministry of Commerce & Industry whereas Tech-Trials were non-commercially supported by the DST Ministry of Science and Technology to upgrade highways into E-Highways. It conducted Tech-Trials on 2 pilot corridors, namely Delhi-Agra (Yamuna Expressway - 2020) and Delhi - Jaipur (NH48 - 2022) out of 12 National Corridors proposed by the Ministry of Power for electrification in its Guidelines and standards dated 14.12.2018 to be converted into E-highway. NHEV is built and funded on a Hybrid PPP Model called Annuity Hybrid E-Mobility (AHM); currently in expansion mode of 5500 km e-highways on Bharatmala & Sagarmala routes from Delhi to Kanyakumari via Mumbai and Kolkata corridors.

CONTACT US

ABHIJEET SINHA

National Program Director-Ease of Doing Business
Project Director-NHEV | DIISHA | Drone Pilot
President-Charge Point Operators Society of India
+91 98213 11899 | [✉ director@easeofdoingbusiness.in](mailto:director@easeofdoingbusiness.in)

ABHISHEK GUPTA

Program Manager
Ease of Doing Business
☎ +91 99102 26499
✉ abhishek.g@easeofdoingbusiness.in

CORPORATE OFFICE

Advance Services for Social and Administrative Reforms
2nd Floor, Innov8, Khadi Gramodyog Bhavan,
44 Regal Building, Connaught Place, New Delhi-110001
011 4300 9699 | [✉ office@assar.in](mailto:office@assar.in) | [🌐 www.nhev.in](http://www.nhev.in)

PROGRAM OFFICE

Ease of Doing Business Services - Board Office 505,
5th Floor, Antariksh Bhawan, LM American Centre, 22
Kasturba Gandhi Marg, New Delhi - 110001
☎ 011 4105 9899 | [🌐 www.easeofdoingbusiness.in](http://www.easeofdoingbusiness.in)