



**Commercial Vehicle Solutions**

Department	Finance
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Date	May 26, 2025

ZF Group · ZF Commercial Vehicle Control Systems India Limited, Chennai 600058

The Manager  
Listing Department  
BSE Limited, Phiroze Jeejeebhoy Towers  
Dalal Street, Mumbai 400 001

**Scrip code: 533023**

Listing Department  
National Stock Exchange of India Ltd  
Exchange Plaza, C-1, Block G  
Bandra - Kurla Complex  
Bandra (E), Mumbai 400 051

**Trading Symbol: ZFCVINDIA**

**ISIN : INE342J01019**

Dear Sir(s),

**Sub: Announcement under Regulation 30 of the SEBI (Listing Obligations and Disclosure Requirements) Regulations, 2015 - Investor Meet Presentation attached**

**Ref: Prior intimation dated May 23, 2025, on Analyst / Institutional Investor Meetings to be held on May 26, 2025, and from May 28, 2025 to May 30, 2025.**

Pursuant to regulation 30 of the Securities and Exchange Board of India (Listing Obligations and Disclosure Requirements) Regulations, 2015 and in continuation of our earlier letter dated May 23, 2025, intimating schedule of Analyst / Institutional Investor meetings, please find attached the presentation to be made thereat.

Request you to take the above information on record.

Thanking you,

Yours sincerely,  
For ZF Commercial Vehicle Control Systems India Limited

Muthulakshmi M  
Company Secretary

Encl.: as above

**ZF Group**

# **ZF Commercial Vehicle Control Systems India Limited**

May 2025



# 01

## About ZF Group



# ZF: A Global Technology Company & Solutions Provider

ZF is among the leading global technology groups and supplies advanced mobility products & systems for passenger cars, commercial vehicles and industrial technology. The company is a frontrunner in contributing to reducing emissions, protecting the climate as well as enhancing safe mobility.



# ZF's leading presence globally enables to provide a dense network of highly qualified contacts close to customers

## Key Highlights 2024A



73%

Cars and light commercial vehicles <6t



19%

Commercial vehicles >6t



8%

Construction and agricultural machinery, rail drives, marine craft and wind power



€41.4bn

Sales



€1.5bn

Adj. EBIT



€3.6bn

R&D Expenditure



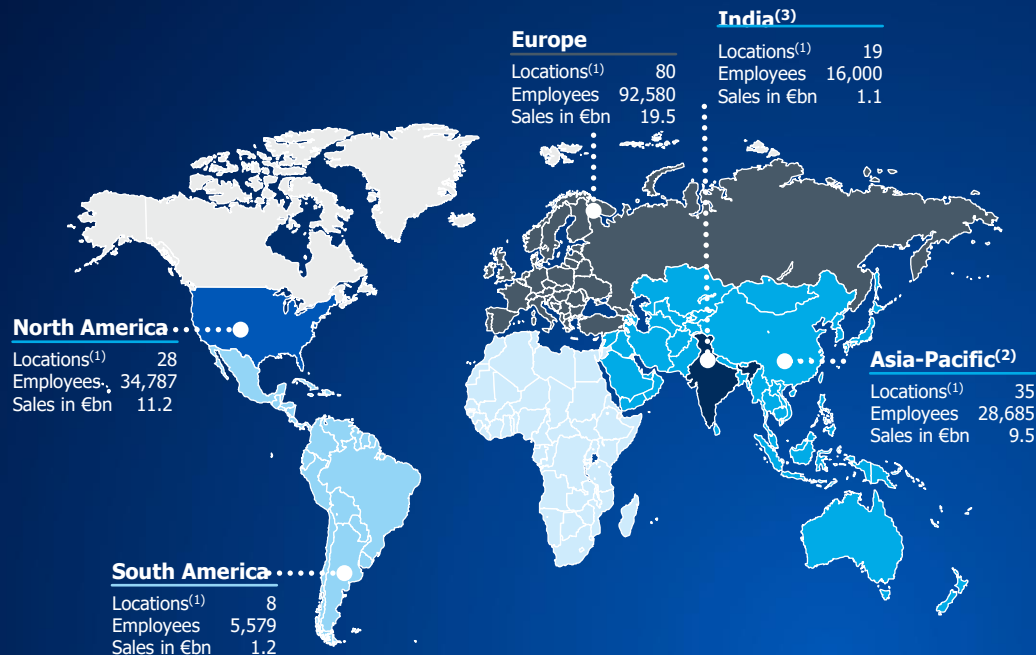
161,631

Employees



161

Production Facilities



# ZF CVS Division is the CV Industry's One-Stop-Shop

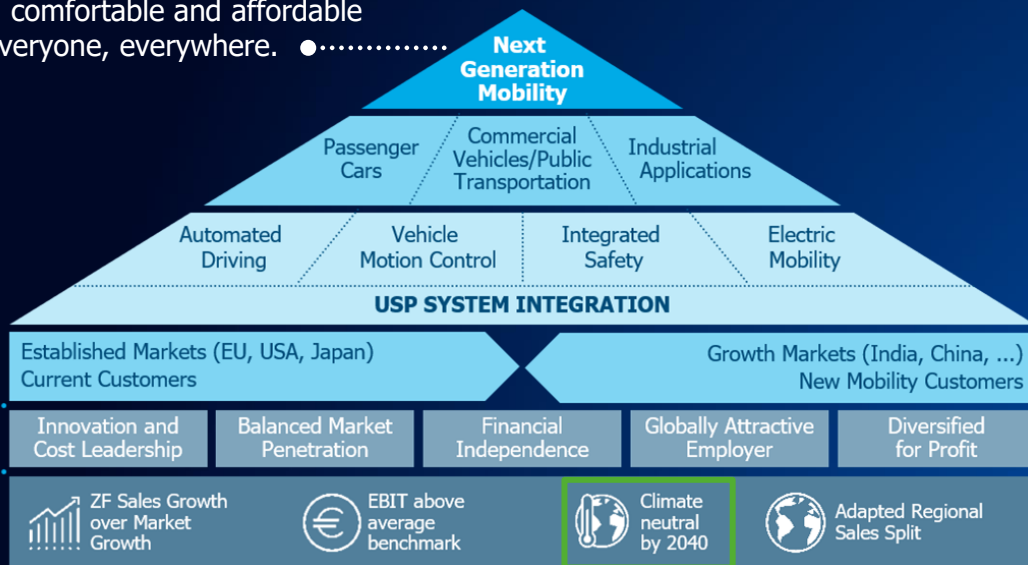


**Addresses diverse commercial transportation applications**  
**A powerful advantage for customers world-wide**

# ZF's Next Generation Mobility Strategy: Climate Neutrality

A clean, safe, comfortable and affordable mobility for everyone, everywhere. ●.....

## Our Mission and Strategy



## Climate Neutrality:

- **Reduce CO<sub>2</sub> emissions by 80%** (compared to 2019) by using green energy until 2030 (Scope 1 and 2)
- **Reduce CO<sub>2</sub> emissions of upstream value chain & product use** until 2040 (Scope 3)

**ZF's ambitious climate strategy: Climate neutrality across all emission categories by 2040**



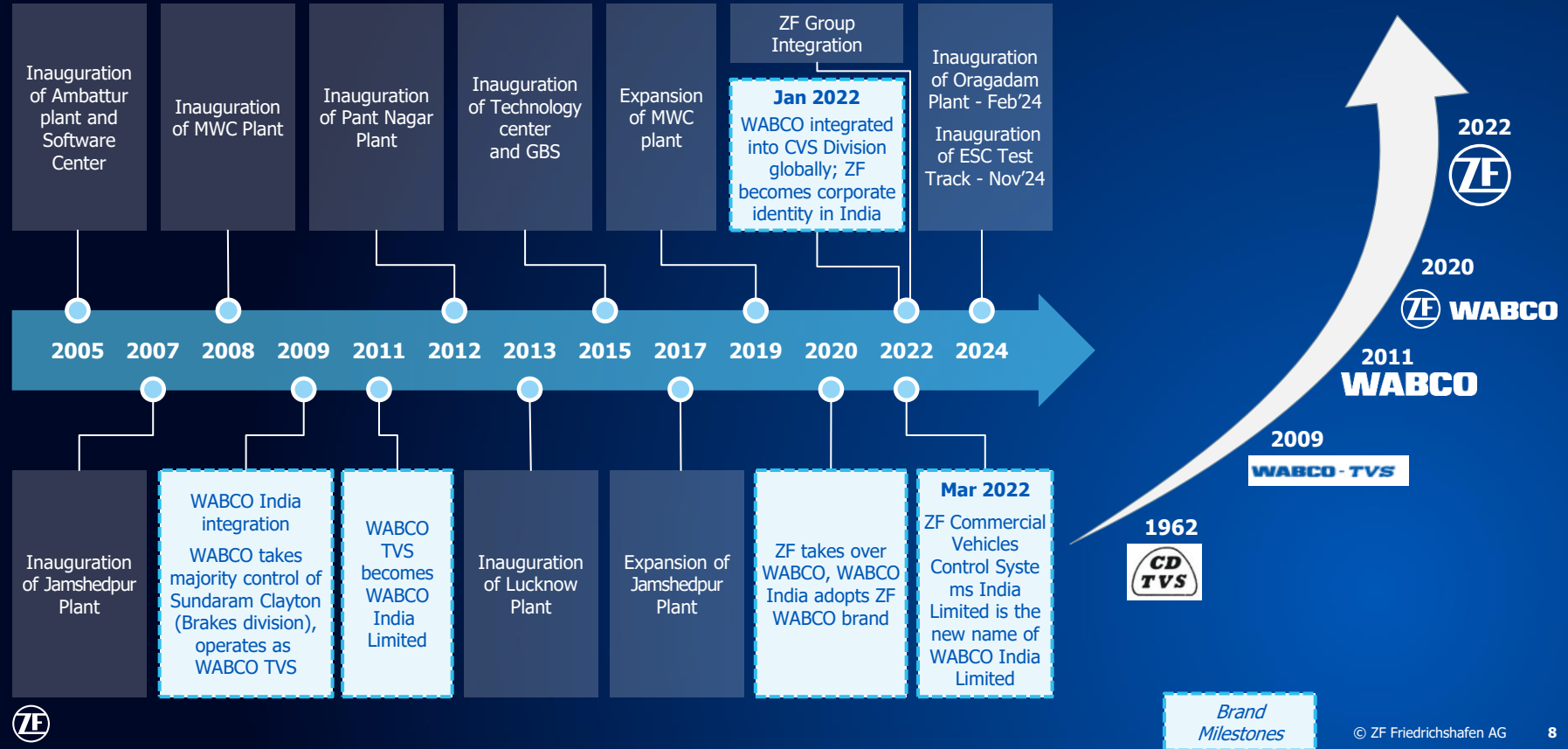
# 02

## **ZF Commercial Vehicle Control Systems India Limited ("ZF CVCS"): Introduction & Strategy**





# ZF CVCS: Building on a Strong Heritage



# ZF CVCS: At a Glance

## Over 6 Decades as a Market Leader

**6**

Manufacturing Plants

**4**

Global Engineering &  
Technology Centers

**~270**

Authorised Service  
Partners

**1**

Test Track

**~ 550**

Aftermarket Dealers/  
Distributors

**> 1,000**

Engineers, Global center  
for Digitalization and  
Software development

**Over 4,600<sup>#</sup>**  
Employees



# ZF CVCS - a leading supplier of technologies and services to the Indian CV Industry



# Sustained Focus on Value Creation for Shareholders...

## New Innovation Pipeline



Electrified

Global  
Capability



Connected

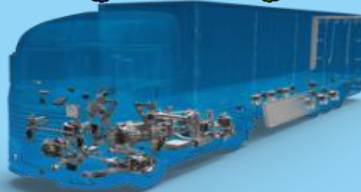
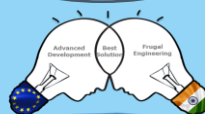
Excellence in Execution



Autonomous

Innovation &  
Technology  
Leadership

## Extensive Technology Reservoir



- Frugal engineering
- Cost competitiveness
- Strong AM network
- Global capabilities

## Value creation

Partner of Choice for  
India's OEMs



Partners for fleet



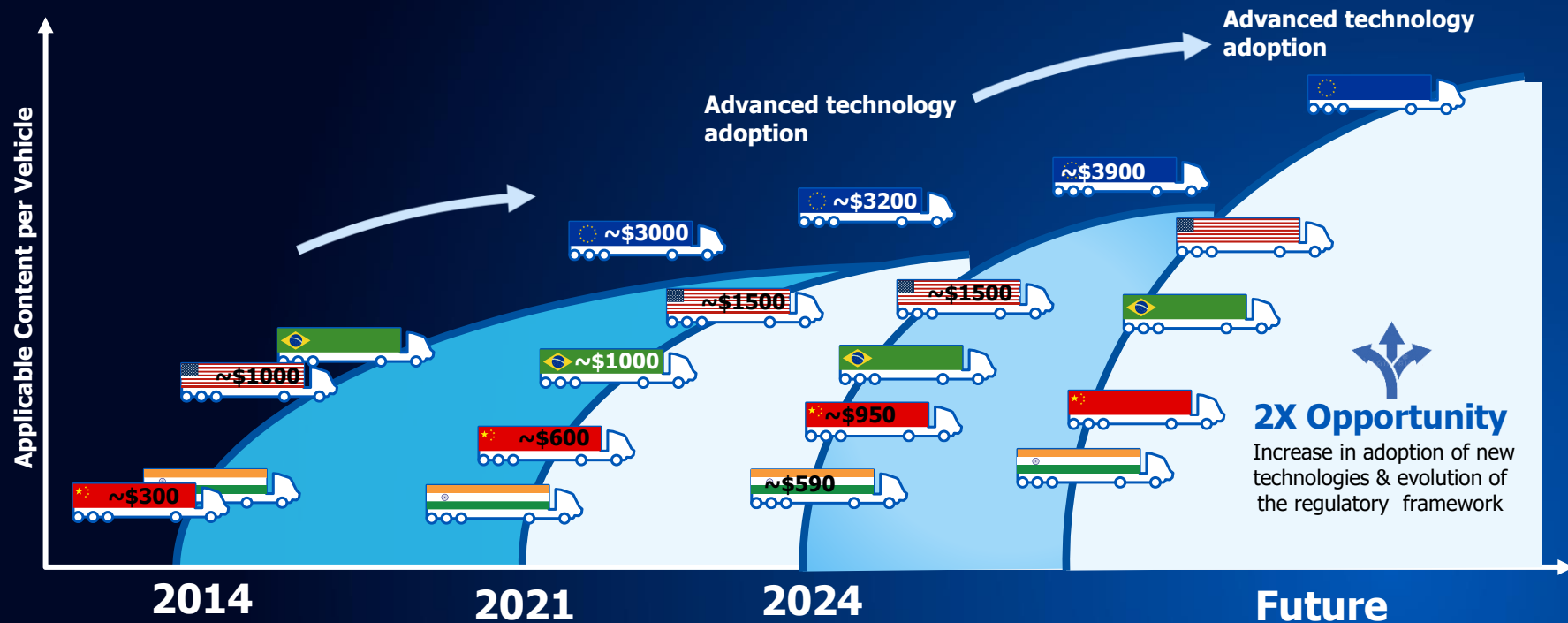
CoE for export  
manufacturing and  
services



Readiness for  
service business



# ... by (1) Riding on India's Growth & Increasing Penetration of Advanced Technologies



\* At constant FX

# (2A) Evolving CV Industry, with Key Catalysts in Motion..

## Key Trends



- **IAL: 17% to 25%** based on Axle configuration (2018)
- **GST: ~20%** reduction in turnaround time (2018)



Shift from conventional mechanical to Electronic architectures (2020)



- Financial Incentive Schemes (**FAME/PM E drive/ PLI**)
- Infrastructure development & Policy



- **Road Infrastructure:** Over past decade, **+60%** NH, High speed corridors
- **E Commerce:** India's \$67B (2021) → **25%** CAGR by 2030



- ESC mandate for M3 buses excluding Type I
- ESC regulation of Trucks → 2026
- ADAS regulation → 2027

## Impact

- CV growth trajectory shifted down with increased freight capacity & improved turnaround time
- To continue with **tech adoption/ improving logistics efficiency**

- The shift to electronic engines under BS-VI catalyzed technology adoption in the CV industry

- Progress towards sustainable transportation in CV industry (6% of EV penetration in buses by 2024)

- Infrastructure improvements and e-commerce's need for rapid turnaround fueling the adoption of high HP (>320 HP) engines in CV

- Government regulations & growing customer demand for safety to drive the adoption of safety technologies

## Key Factors Underpinning the CV Industry Growth

	2014	Now	2030
<b>GDP</b>	\$2Tn	\$3.8Tn	\$5.5Tn
<b>Infrastructure</b>	\$22Bn	\$0.9Tn (2017-2023)	\$1.7Tn (2023-2030)
<b>Manufacturing</b> (% of GDP )	17%	14%	>20%
<b>Logistic cost</b> (% of GDP)	14%	12%	6-7%
<b>National Highways- Km</b>	91k	146k	200k
<b>Avg Annual Distance – Trucks</b>	~80k	100k	>150k
<b>eCommerce</b>	\$2.3Bn	\$123Bn	\$325Bn



**IAL:** Increased Axle Load  
**NH:** National Highways

# (2B) ..with Technological Evolution in Buses & Trailers

## Key Trends in Buses



### Infra Boost

- **Infrastructure:** Focus on BRTS, smart Mobility solutions
- **Urbanization:** Increase in demand for City buses/Coaches
- **Comfort:** Fully Air suspension, low floor buses



### Business Model & EV

- STUs migrating from CAPEX model to PPP & GCC Models (18% as on 2023)
- 6% of penetration in 2024 expected to reach 30% by 2030



### Regulation Driven

- **ESC:** 100% implementation for M3 category excluding Type I
- **STUs** tenders demanding for Low floor with Kneeling Options
- **ADAS:** Regulation expected for M3
- Focus on Scrappage Policy

## Key Trends in Trailer



### Penetration

**2X**  
Trailer penetration from **8% to 16%** in a decade and expected to increase



### Industry Shift

- Transitioning from **unorganized to organized**
- Surge in Specialized Trailer types, incl. refrigerated units



### Advanced Safety

**28%**  
With higher safety awareness, increasing penetration of TABS/EBS



### ITP

Increase in penetration of intelligent trailer program especially Lift Axle, Traction control, Tail Guard, Trailer pulse TPMS



### Road Train

**INR 300k** VpV  
With Govt. allowing for vehicles upto 25 m along with improved infra, Road Train expected to increase



### eTrailer

Requirements from Fleets with Specialized trailer like (Reefers, e-commerce) considering the operational efficiency



# (3) Pioneering Customer & Market-oriented, Cost-optimized Solutions

## Solving the industry's key challenges

### Focused on efficiency

Product and system solutions for the reduction of operational costs (**TCO**) as well as lower **CO2 emissions**



- Automated Manual Transmission (AMT)
- Electronic Braking System (EBS)
- OPR Compressor
- Electronically Controlled Air Processing (ECAPU)

### Focused on safety

Assistance systems (**ADAS**) for the protection of road users, driver comfort and cargo integrity



- Electronic Stability control (ESC)
- Collision Mitigation system (CMS)
- Advanced Emergency Braking system (AEBS)
- Lane Departure Warning System (LDWS)
- BSIS/MOIS

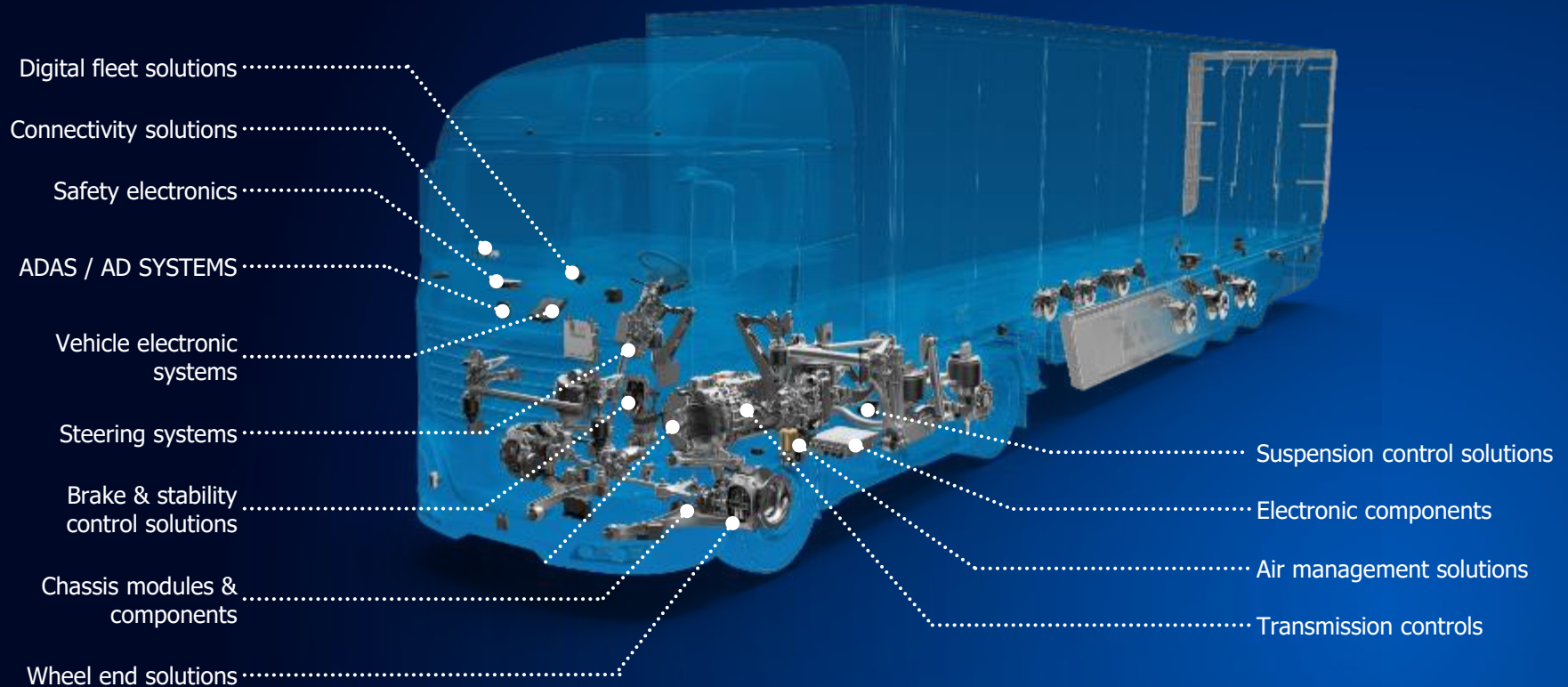
### Focused on digitalization

Connectivity & SW **solutions** for efficient processes (fleet mgmt. predictive maintenance, digital applications)



- SCALAR- HW/SW
- Trailer Pulse

## (4) Preferred Technology and Systems Solutions Partner to CV OEMs and Fleets



# (4A) Leading the Path to ACE

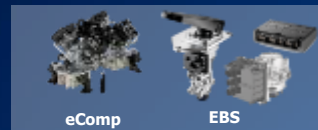
Solutions for each technology path in place



Increase of vehicle automation to higher safety and regulatory levels



Extend intelligent control system towards improving efficiency of the system



Transform braking, air Management technology from ICE to eMobility



Extend Digital products & Solution offerings

Leading player in ACE technologies and solutions

**Today**  
Technology leader in conventional products



**Safety & Autonomous**



**Efficiency & Comfort**



**Electric**

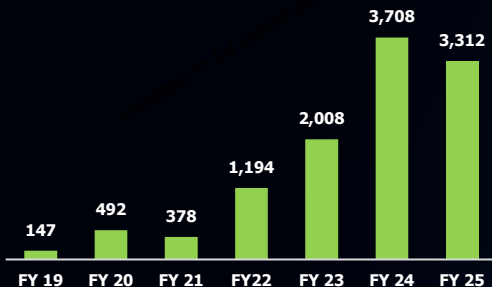


**Connected**

Offering solutions across diverse customer needs

# (4B) EV Market Poised for Exponential Growth

## EV Bus Sales India



## Factors Influencing the EV Penetration



Government  
Initiatives



Urbanization &  
Infrastructure  
development



Climate Concern &  
initiatives of OEMs



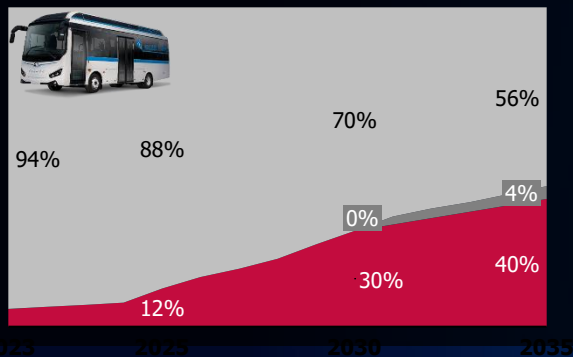
15 to 20%  
lower TCO



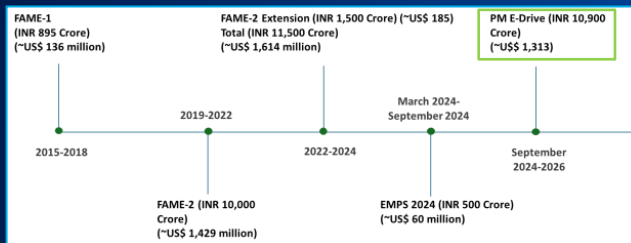
Gross Cost Contract  
Model

EV Penetration in Buses expected to reach **>30%** by 2030

## Electrification Scenario Outlook-



## Key Government Initiatives to boost the EV Penetration



### PM E-drive



€ 487 Mn  
E Bus



€ 55 Mn  
E Trucks

The latest PM E-Drive (replaces FAME III) initiative represents a more targeted approach to India's EV ambition, balancing the need for public transport, charging infrastructure, and transparent subsidy mechanisms

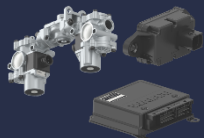
# (4B) Technology Solutions Ready for EV Migration



## Conventional ICE



Engine Driven compressor



ABS Based ESC System



Conventional Air Processing



Conventional Air Suspension



## Electrified



eCompressor



EBS based ESC



EC APU



ECAS

Electric compressor solution dedicated to electric & hybrid CV applications

EBS based ESC with improved regen efficiency & range

Electronic controlled air processing for better efficiency & intelligent air management

Electronic control air suspension with intelligent control & efficiency



# (4C) Future ready active safety technologies to stay ahead of regulation

## G.S.R. 159 (E): ESC Mandate for all Buses | 22+| Excluding Type 1



- Updated regulation mandates ESC for all buses with 22+ seats, excluding Type 1 Buses (City bus application).
- Volumes expected to ramp up from Sep 2025 – Ready for SOP across all applicable platforms.

## G.S.R. 184 (E) : Draft ESC and ADAS regulation



**"One Stop Shop"** for ADAS solutions incl. MOIS, ISA, DDAW, BSIS, REIS and TPMS to comply with the regulations

- With successful Launch in 2018 with a large CV OEM; successful market launch by TML in 2022 for trucks , obtained LON for buses working for release across applicable platforms
- Obtained RFQ from all the Key OEMs including independent bus manufacturers and working with them for calibration

Overview of Draft regulation mandating **AEB, LDWS, MOIS, BSIS, DDAW** for M2, M3, N2 and N3 vehicle categories.



AIS162	AEB	Automatically detects potential frontal collisions and applies the brakes to avoid or mitigate impact
AIS188	LDW	Warns the driver of unintentional lane drifting
AIS184	DDAW	Analyzes vehicle data to assess driver alertness and provides warnings when necessary
AIS186	BSIS	Warn the driver of a potential collision with a bicycle/Pedestrian on the vehicle's near side
AIS187	MOIS	Detects pedestrians and cyclists in the forward blind spot, alerts the driver, and can warn of potential collisions based on manufacturer settings

**BUSINESS  
NOMINATIONS**



**ADAS**

ADAS Nomination for a 12m EV Coach from a leading CV OEM



**Automatic  
Traction Control**

Nomination from a leading CV OEM



# (4D) SCALAR: Digital Fleet Orchestration Solution





# (4E) Digital Fleet Connectivity Solutions

## SCALAR Connectivity

**Telematic solutions to  
Maximize Fleet Intelligence**



## SCALAR SaaS

**SaaS portal that enables  
actionable insights to end users**



## SCALAR Services

**Services that support and serve  
the entire supply chain ecosystem**

## ZF Video Management Solutions

### AI Based Video Telematics Solution

- Real-time insights, reduce accidents, and optimize operations.
- Identify any abnormal situation or behavior
- Advanced monitoring platform and safety dashboard

## SCALAR EVO Pulse

### Trailer Telematics and diagnostics solution.

- Supplies real-time location & rich EBS data
- Integrated truck/trailer data at home base
- Directly connect to ZF tire sensors

## SCALAR for Trucks

### Truck Telematics and Fleet management solution.

- Permanent and secure gateway for truck & driver information
- One stop solution across multi-brand vehicles
- Compatible with ZF's back-office platform

# Investor Visit to Oragadam Plant - March 2025

- ~40 investors and shareholders visited the Oragadam facility to gain insights into our operations and technologies
- Investors interacted with the MD, CFO, and ROO to discuss, CVCS India's performance, technologies etc
- Conventional and advanced technologies were displayed across all plants and product lines
- Guided tour featured manufacturing processes, sustainability efforts, lean practices, and frugal engineering among others
- Visit received very positive feedback from the investor community



# Investor Visit to Oragadam Plant - March 2025



# 03

## ZFCVCS: Key Moats





# Trusted Innovation Partner for India's OEMs

- First to bring advanced technology tailored for Indian CV market
  - **ABS, AMT, ESC, ADAS, ECAS, Intelligent Trailer Program**
- Advancing trailer safety and efficiency in India
- Development partner with deep local knowledge
- Serving industry through localized supply chain and country-wide service network
- Gateway to global operations to support Indian OEMs' export ambitions
- Proven technology ready to support advancing legislation

## Technology & Applied Platforms

ECAS



Ultra Low Entry Platforms  
(ICE & EV Buses)

ESC



All Type II, III and IV  
Fully Built Buses

AMT



Mining Trucks & Buses

eComp



EV Buses

2024

- Launch of Electronically Controlled Air Suspension (ECAS) for Ultra Low Floor Entry buses (ULE) in ICE and EV buses

2023

- Launch of Pneumatic & Hydraulic ESC for Buses
- Launch of e-comp Gen 2

2022

- Launch of Digital Fleet Solutions and eLac

2020

- Launch of Reverse Parking Assistance System
- Launch of AMT for BS6

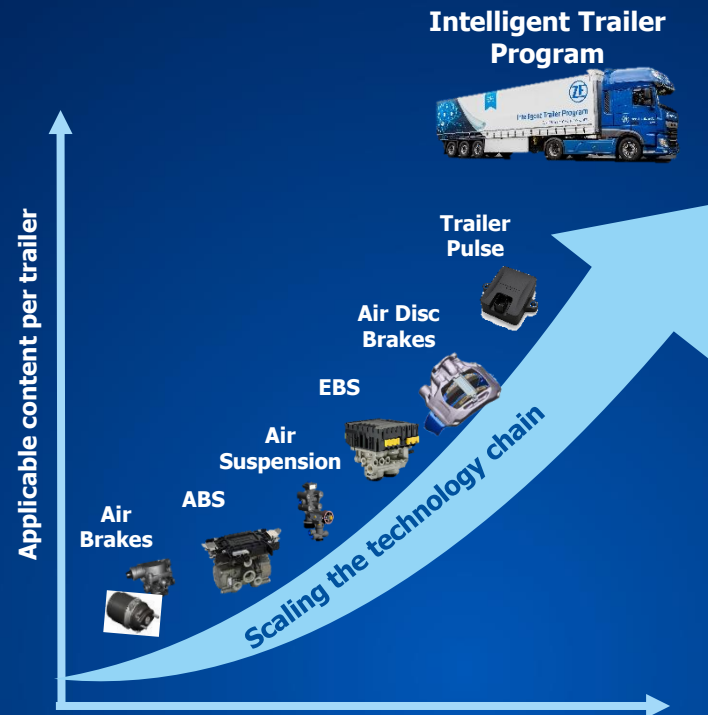
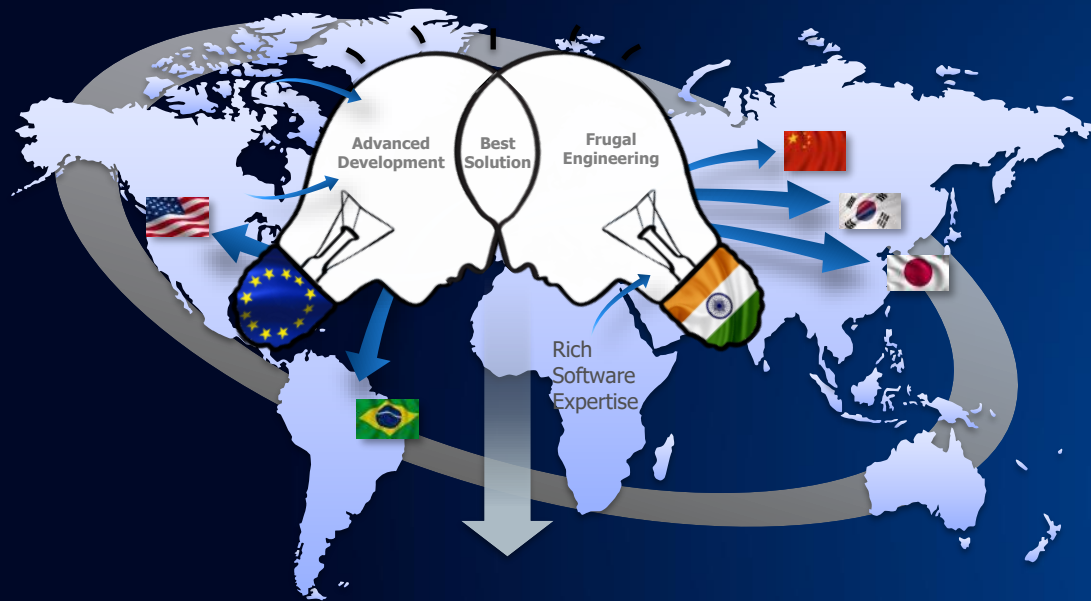
2018

- Launch of ADAS with TATA Motors
- Launch of Intelligent Trailer Program

# Excellent positioned to deliver advanced technologies at best cost

**Frugal engineering expertise** with an ability to redesign advanced technologies and mature products for price sensitive markets

**Skilled application engineers** provide excellent customer connectivity and support for adapting and homologating new technologies



# EBS and ESC for EV applications

Applicated across all OEMs thus improving safety and regen efficiency



- Optimal grip under tough environmental conditions
- Ensures driving stability & steerability
- Maintain control of vehicle even on slippery surface



- Increased road safety
- Control vehicle under slippery conditions
- Improved vehicle stability



- Optimized regeneration and range improvement
- Lower insurance cost



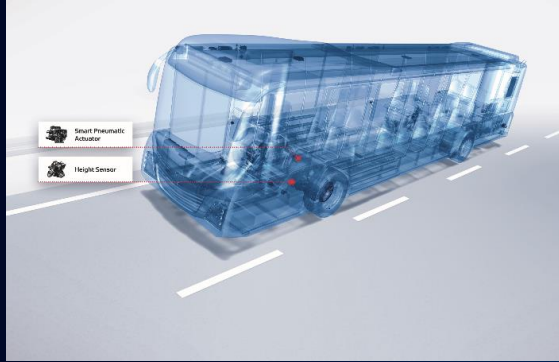
**3,800+**  
EV Buses  
with EBS + ESC



**25k+**  
ICE Buses  
with ESC



# ECAS - Electronically Controlled Air Suspension Applied in ICE and EV buses with Ultra low Floor Entry



- Modular and Scalable ECAS system
- Maintains Constant below pressure while motions
- Offers Outstanding suspension Quality



- Intelligent Kneeling
- Automatically returns to drive height when driver closes the doors based on intelligent system interaction with door control
- Increased Passenger Safety



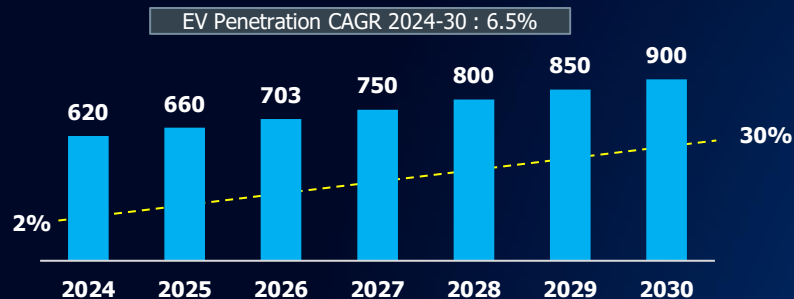
- Reduced Air Consumption
- Improved reliability of Air Suspension system



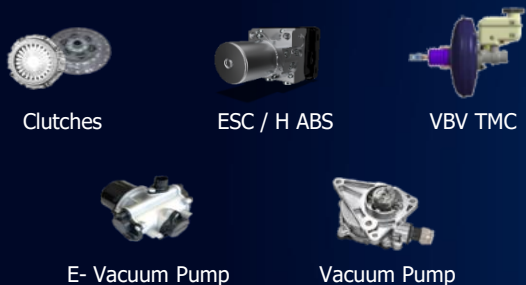
**1900+**  
Buses fitted with ECAS

# Strategic Focus - ZF CVCS's Entry into Light Duty CV Segment

## Vehicle Production Forecast (1000)



### Short Term (2024-2026)



### Long Term (2027-2030)



209, 21%
198, 20%
594, 59%

➤ HCV



➤ MCV



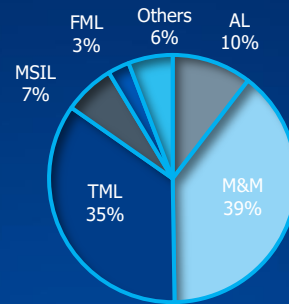
➤ LCV



GWV 1.7 to 6.5T

Total CV Volume 1 Million  
LCV is 59% and dominated by HCV OEMS (SIAM 2023-24)

## LCV Market Share<sup>(1)</sup>



**€90 Mn**  
Annual Sales

**Double-digit Profit**

# LCV Technology Drivers

1

## ESC GSR 159

- M3 Bus < 22 Seats. Except Type-I
- Applicable from Oct 2025

2

## EV

- Electric Vacuum pump
- Regen Enhancement

3

## ADAS GSR 184 – N2 M2 M3

- AEB – Advanced Emergency Braking system
- LDW – Lane departure warning system
- DDAW – Driver Drowsiness and Attention Warning
- BSIS – Blind Spot Information System
- MOIS - Moving Off Information System for the Detection of Pedestrians and Cyclists

## Opportunities

ESC

~ 30,000 Buses



Expand penetration on more platforms

EV

~ 30% penetration by 2030

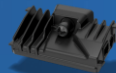


Best in class efficiency

Higher Range by ESC Regen

ADAS

~ 100,000 Vehicles



Camera Radar Solutions

# ZF Aftermarket: Empowering Fleets with Intelligent Future-Ready Solutions

## End-to-end solutions and services

### Digital Services

Over **188k connected vehicles** on ZF's SCALAR platform; **1000+ trailers** on SCALAR Evo Pulse



### Pan India Sales & Service Network

**12k** retail outlets, **200+** authorized service centers; a ZF touch point every **100 km**



### Workshop Solutions

**Maximizing vehicle uptime** through diagnostics and predictive maintenance to improve fleet Utilization



**Delivering a complete range of product and service offerings**

## Spare parts along the lifetime of the vehicle

### Genuine Spare Parts

**Certified premium quality parts** across 12k retail outlets



### Retrofit Solutions

State-of-the-art technology upgrades incl **Door control system, Trailer ABS / EBS, Passive ADAS system**



### Professional Training and Consulting

**Skill enhancement programs** for fleets, OEM dealers and mechanics;

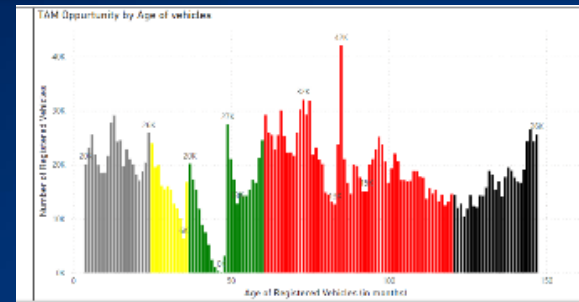


## Leveraging Digitalization & Data Analytics to Unlock Growth Opportunities in Aftermarket

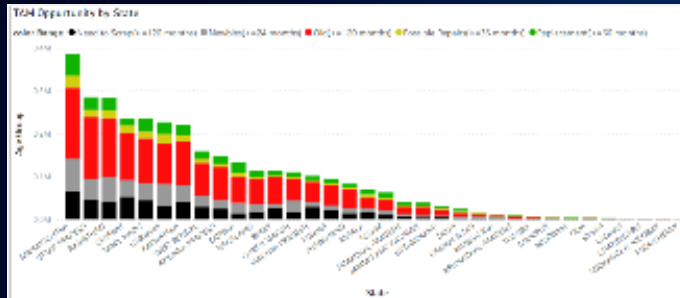
## Analysis of Vaahan Registration State Wise and Category Wise



## Insights from Vehicle Age Data Analytics



## State Level Analysis of Opportunities

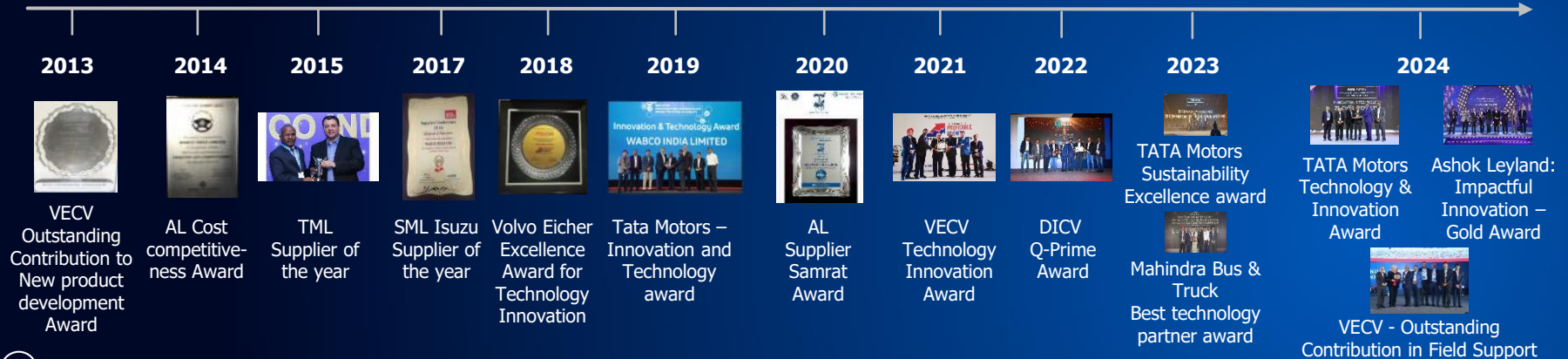


## Sales Analytics

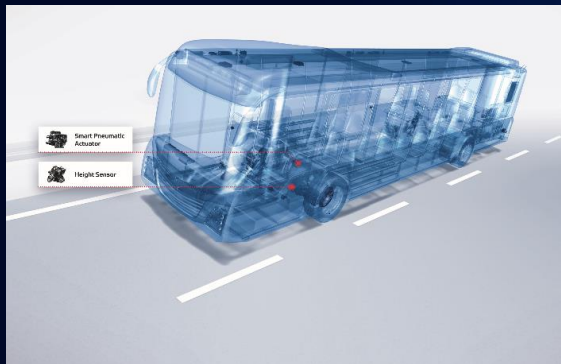


# Recognition for Excellence in Execution

- Strong relationship with customers for over six decades
- Recognized by leading customers for innovation, technology partnership, cost competitiveness, quality and excellence
- Recipient of **30+ customer awards** over the last decade+
  - **10 awards from Ashok Leyland** supplier samrat; overall quality excellence
  - **9 awards from TATA Motors** supplier of the year; innovation and technology award
  - **9 awards from VECV** best quality supplier; outstanding contribution in technology innovation
  - **3 awards from Daimler** – Q Prime, best supplier for innovation, partners for Asia
  - **1 award from Mahindra** – Best technology partner



# ECAS – Electronically Controlled Air Suspension Applied in ICE and EV buses with Ultra low Floor Entry



- Modular and Scalable ECAS system
- Maintains Constant below pressure while motions
- Offers Outstanding suspension Quality



- Intelligent Kneeling
- Automatically returns to drive height when driver closes the doors based on intelligent system interaction with door control
- Increased Passenger Safety



- Reduced Air Consumption
- Improved reliability of Air Suspension system



**1000+**  
Buses fitted with ECAS



# ESG Focused Business Model

E



## Driving Decarbonization for a Greener World

- Implementing technologies to improve vehicle efficiency and reduce carbon footprint – **eComp, AMT, EBS, E-CAPU**
- Re-manufacturing solutions to avoid scrappage & to extend product life

S



## Focusing on Road Safety

- **17,000+ drivers** upskilled in partnership with RTOs and STUs
- **Launching ADAS** technologies with active braking to significantly reduce accidents

G



## Building Success Through Governance

- Robust & effective corporate governance is the cornerstone of our business practices
- **4** highly qualified, well-acclaimed independent directors<sup>(1)</sup>

# Sustainability at ZF CVCS India

## Be ahead of Carbon emission Targets in all Scope

- Reduction of CO<sub>2</sub> emissions to 90% by 2030; all ZF CVCS plants to be driven by 100% renewable energy.
- All 6 manufacturing plant locations will be driven by 100% renewable energy sources by end of year.
- Group captive wind and solar long-term Purchasing Power Agreement (PPA) signed to support supply of > 90% renewable energy
- Installed roof solar of 500KWP at Jamshedpur to support 25% renewable energy
- Won CII EHS Excellence award – highest award GOLD category at Ambattur plant
- Won CII EHS Excellence award special category – Carbon footprint reduction award and EHS in CSR
- As part of downstream emission reduction, CNG vehicle introduced from Chennai to Hosur road



**LEED Gold certification**  
Received by Oragadam site



**Won CII Special award – EHS in CSR**



**Won CII EHS Excellence award – GOLD award**



**Won Sustainability Excellence Award from TATA Motors**

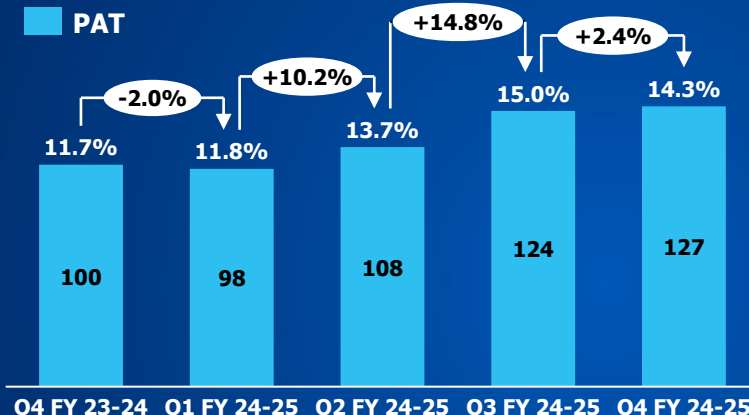
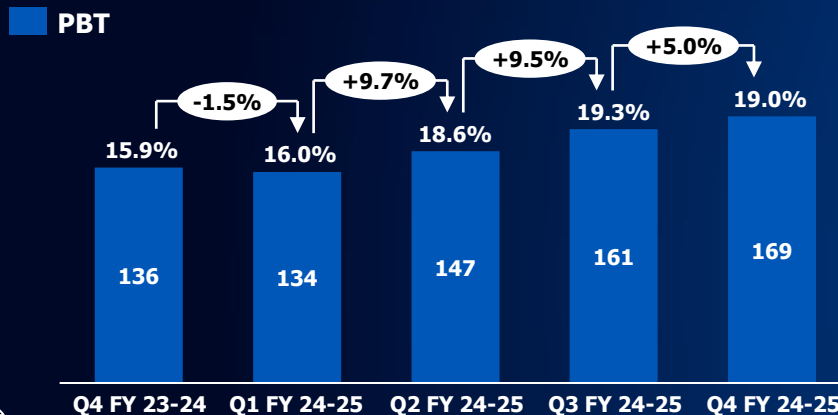
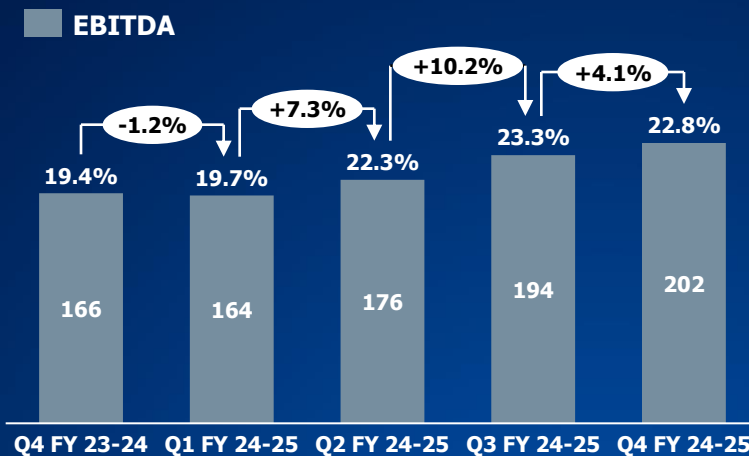
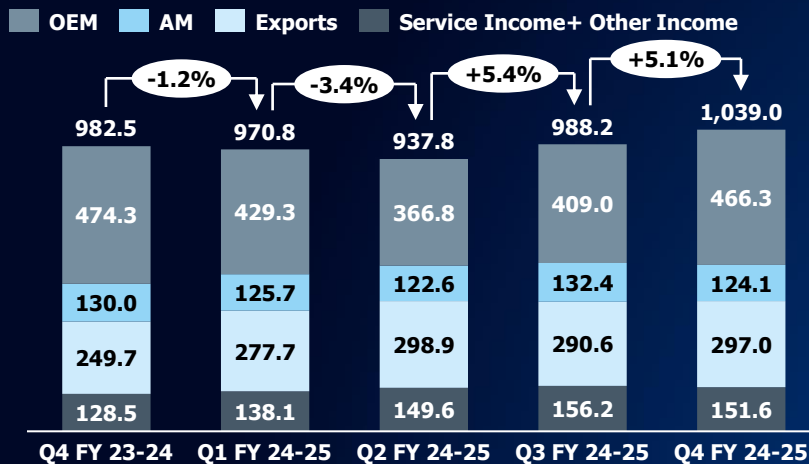
# 04

## ZFCVCS: Q4 FY25 & FY25



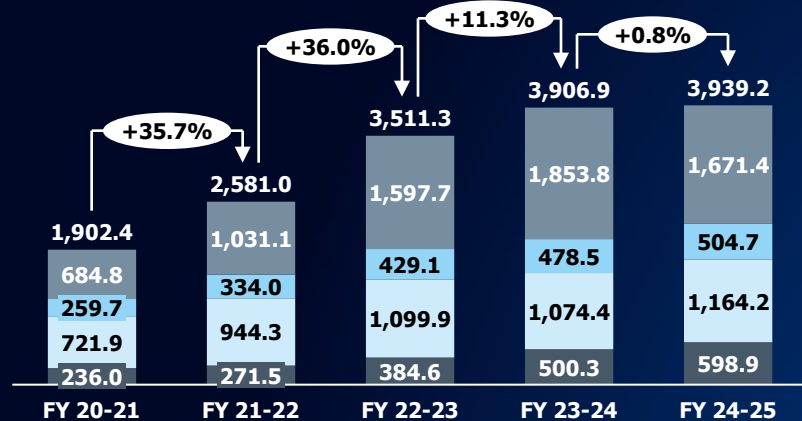
# ZF CVCS India Quarter Performance

INR Cr

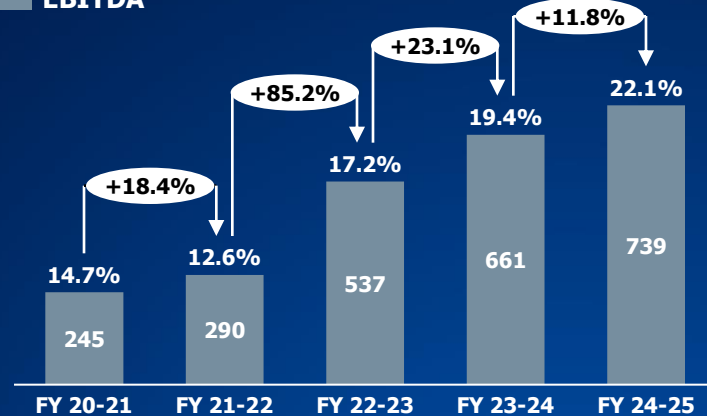


# ZF CVCS India Annual Performance

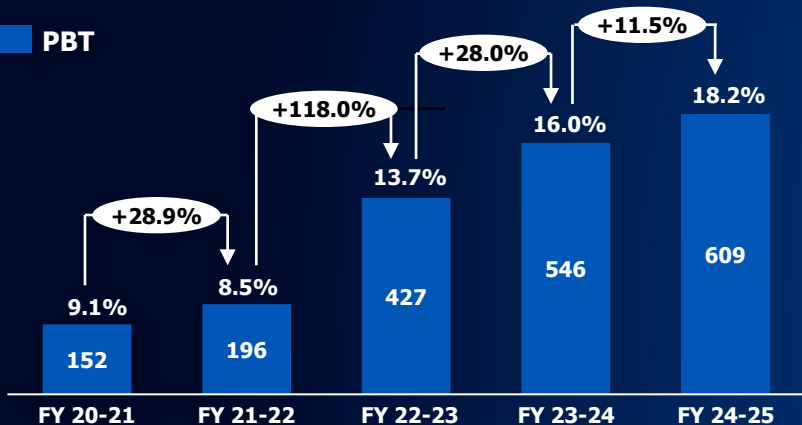
■ OEM ■ AM ■ Exports ■ Revenue from Service+Other Inc



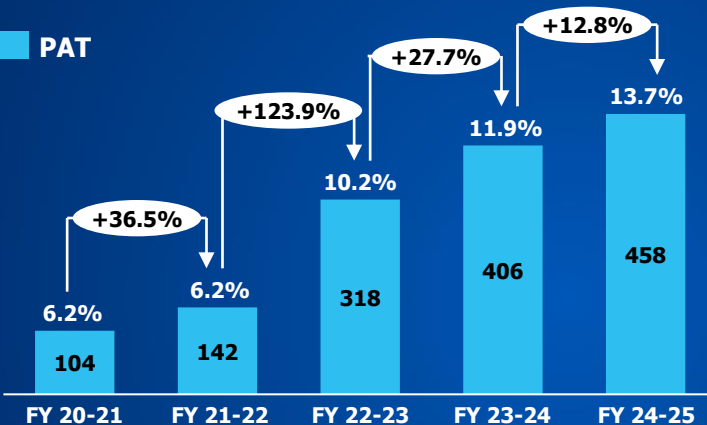
■ EBITDA



■ PBT



■ PAT



Thank you.

Welcome your questions and  
feedback.

