



February 13, 2024

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

BSE Limited  
Phiroze Jeejeebhoy Towers  
Dalal Street  
Mumbai - 400 001

SCRIP CODE: 500477

SCRIP CODE: ASHOKLEY

Dear Sir/Madam,

**Sub:** Presentation

Please find attached herewith the Nuvama Investor Conference - Key Note Address presentation.

We request you to take the above on record.

Thanking you,

Yours faithfully,  
**for ASHOK LEYLAND LIMITED**

**N Ramanathan**  
**Company Secretary**

Encl.: a/a

**Registered Office:** Ashok Leyland Limited, No. 1, Sardar Patel Road, Guindy, Chennai - 600032, **Tel.:** 91 44 2220 6000

**E-mail:** reachus@ashokleyland.com | **Website:** www.ashokleyland.com

CIN: L34101TN1948PLC000105



**HINDUJA GROUP**



ASHOK LEYLAND

Koi Manzil Door Nahin

# India 2025 – Now More Than Ever Towards Sustainable Growth



Shenu Agarwal | Ashok Leyland



HINDUJA GROUP

# India – Ready for Global Leadership

## Why Now

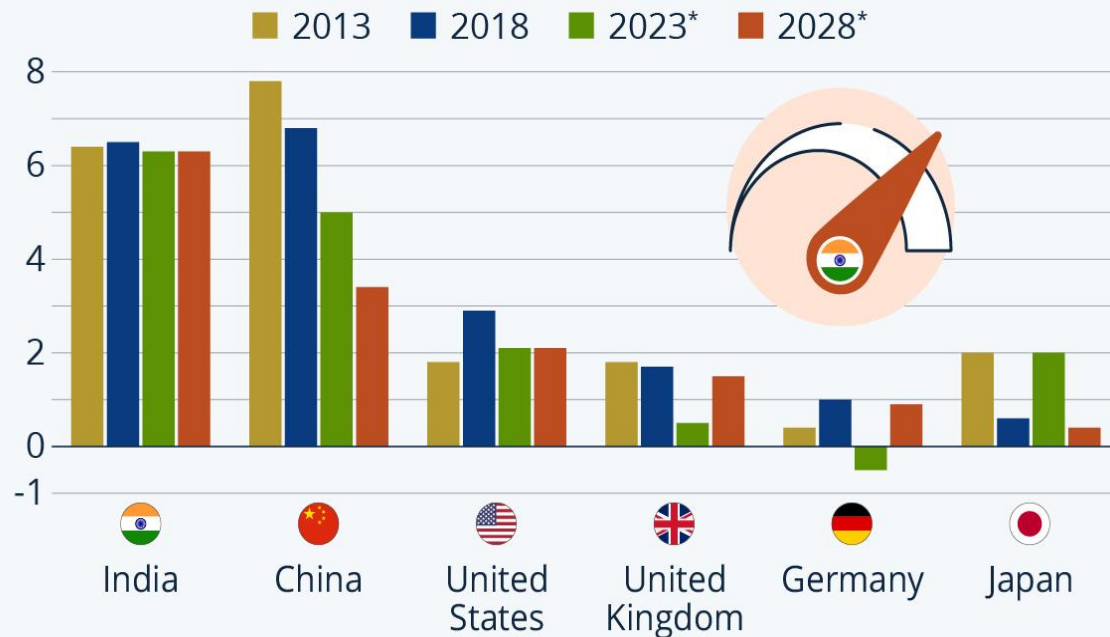
- Advantage India & Challenges
- Sustainability in Growth – Responsibility & Opportunity
- Alternate Energy in Mobility
- Ashok Leyland is changing itself to Lead the Change

# Advantage India

The Projections are Positive & with Right Reasons

## India Set to Cement Role as New GDP Growth Champion

Estimated real GDP growth of the world's largest economies in selected years (in percent)



Projections for 2023 and 2028 as of Oct 2023; Source: IMF World Economic Outlook, Statista

3<sup>rd</sup> Biggest Economy

Ahead of Japan & Germany

5 trillion economy by 2026

GDP growth projected above 6% for next 5 years in a row

# Favourable Policies & Demographics

## Large Young Workforce and Consumer Base



### Friendly India

- Favorable, neutral Policies
- A trusted partner of key nations
- Lead position in South Asia

### Young India

- Age Group 18 – 35 years, Now 600 million
- 65% under 35 years
- Advantage will remain till 2056
- 1.5 million workforce added every year

### Entrepreneurial India

- 90k startups in 2022, from 100 in 2016

# Capital Deepening ► Increase Productivity

## Technology Infusion, Connectivity

### PROJECT MAP



MAP FOR INDICATIVE PURPOSE ONLY

### Capital Infusion

10<sup>th</sup> largest FDI destination  
Government & Private Capex



### Technology Infusion

BIFS, Healthcare, e-Commerce, Retail, Mfg  
IoT, Industry 4.0, Cloud, Digital Supply Chain



### Connectivity

Bharat Mala (Road)  
Dedicated Freight corridor (Rail)



### Energy Security

Renewable energy investments

# Challenges – Recognition by Indian Government

Productive Resources, Reskilling for AI, Improve Green

## Reskill for AI



## Employability as Productive Resources



## Geo-political Developments



## Sustainable Growth - Energy Security



# Sustainability in Growth



## India's 5 Commitments



500GW Non-Fossil Energy Capacity by 2030

50% Renewable Energy by 2030

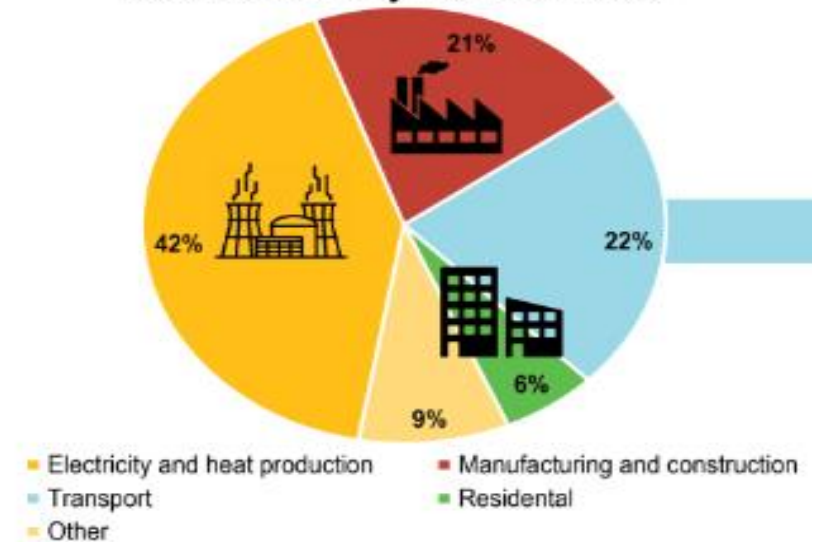
Carbon Reduction of 1 billion ton by 2030

Carbon Intensity Reduction by 45% by 2030

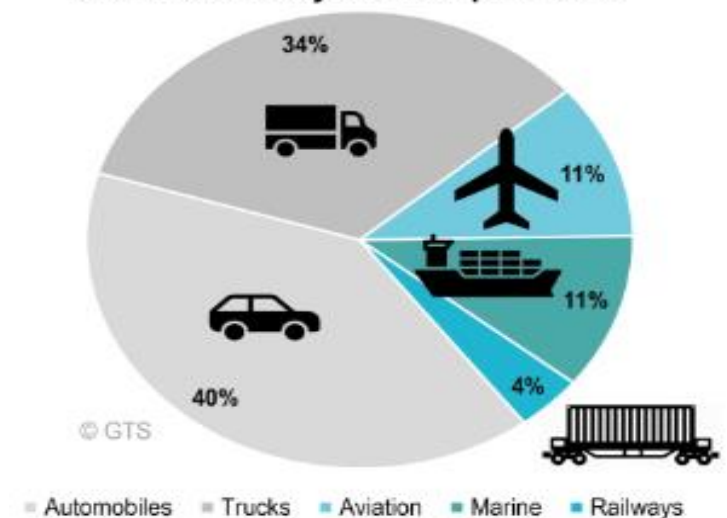
Net Zero Emissions by 2070

**Mobility sector to play a big role here**

CO2 Emissions by Economic Sector



CO2 Emissions by the Transport Sector

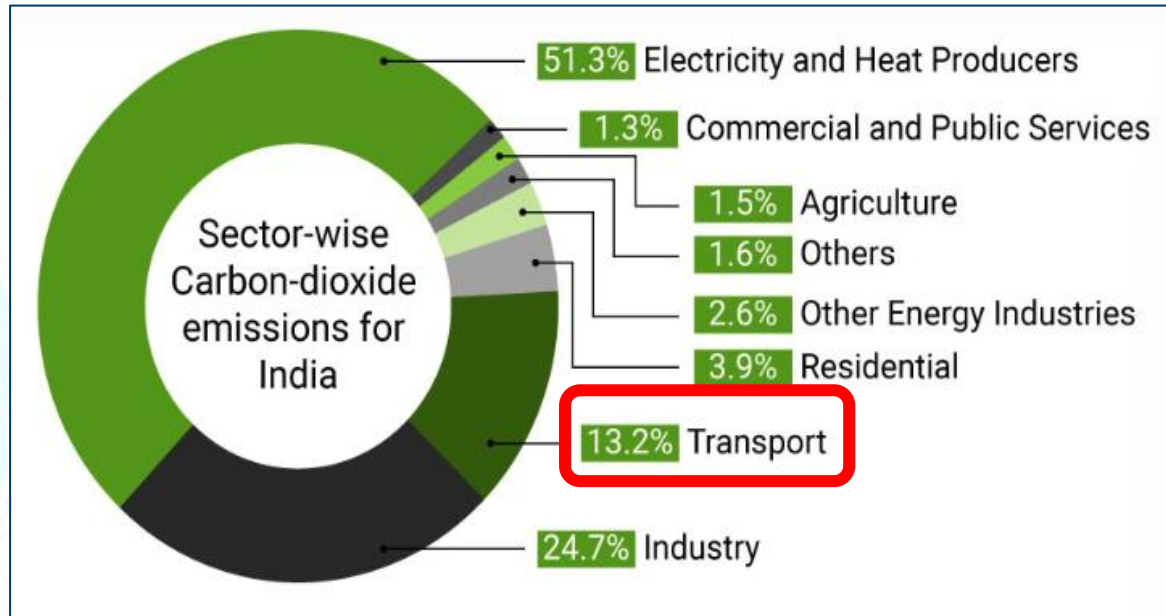




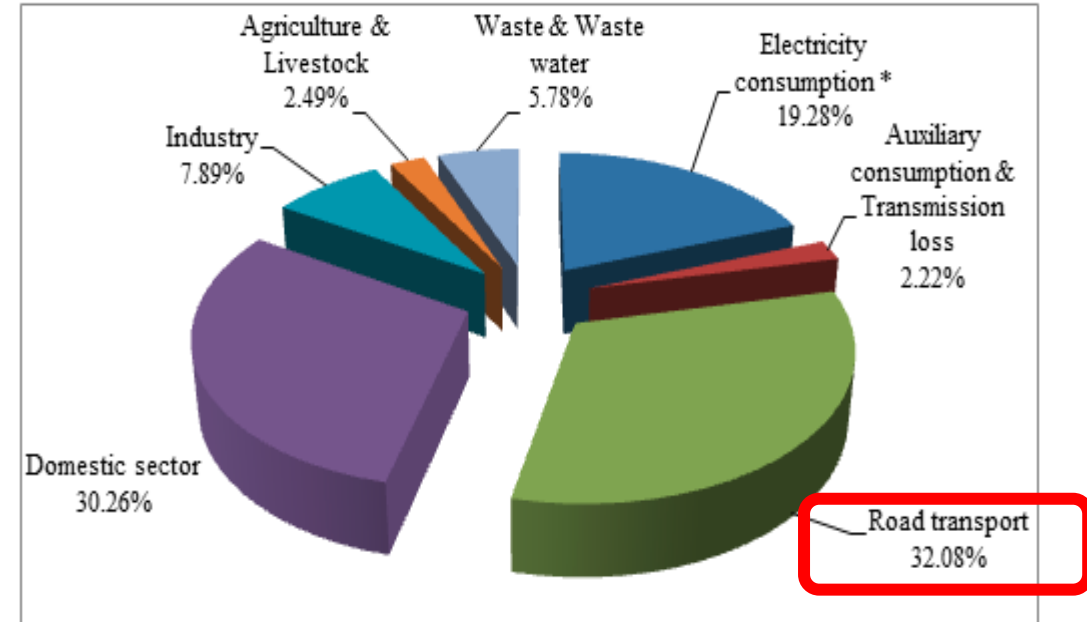
# Pollution Contribution from Mobility

3rd Overall; Much More Significant in Cities like Delhi, Bangalore, Pune

## India



## Delhi

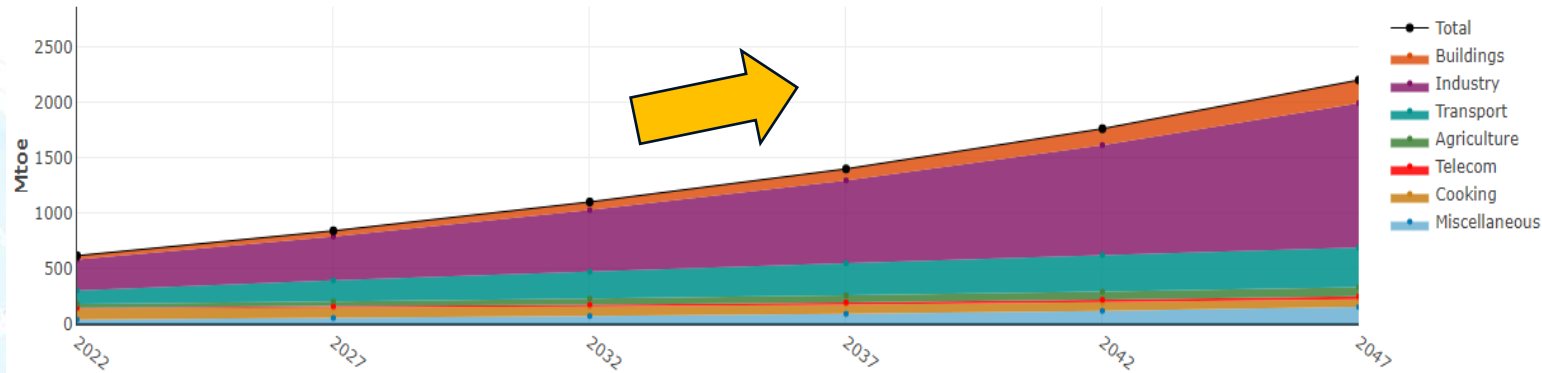


Move Fast to Alternate Powertrain Solutions

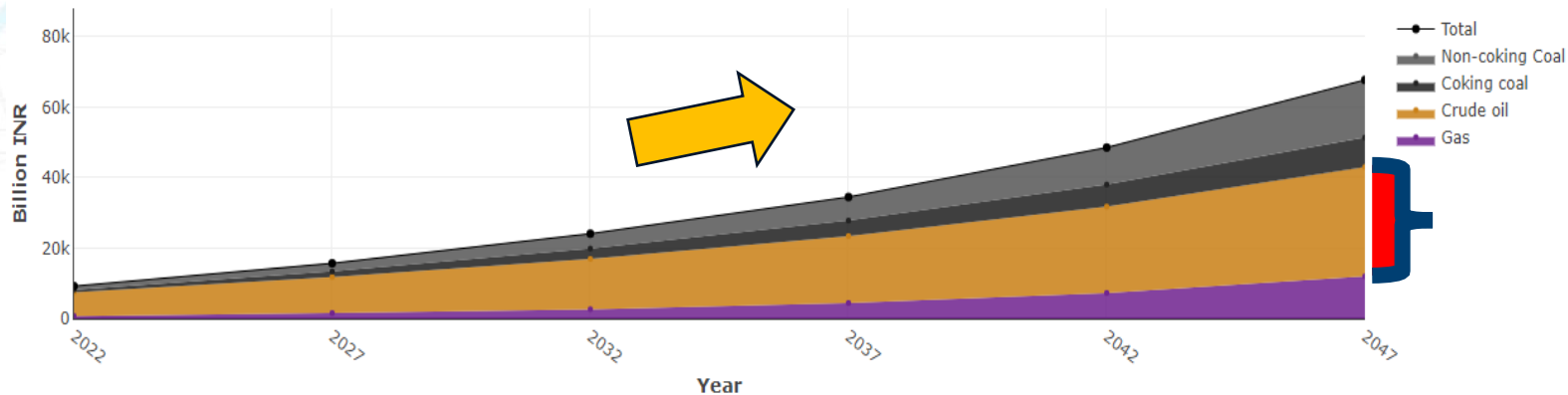
# Another Trigger – India’s Energy Security

## High Import Bill – Huge Opportunity for Reduction

Energy Demand



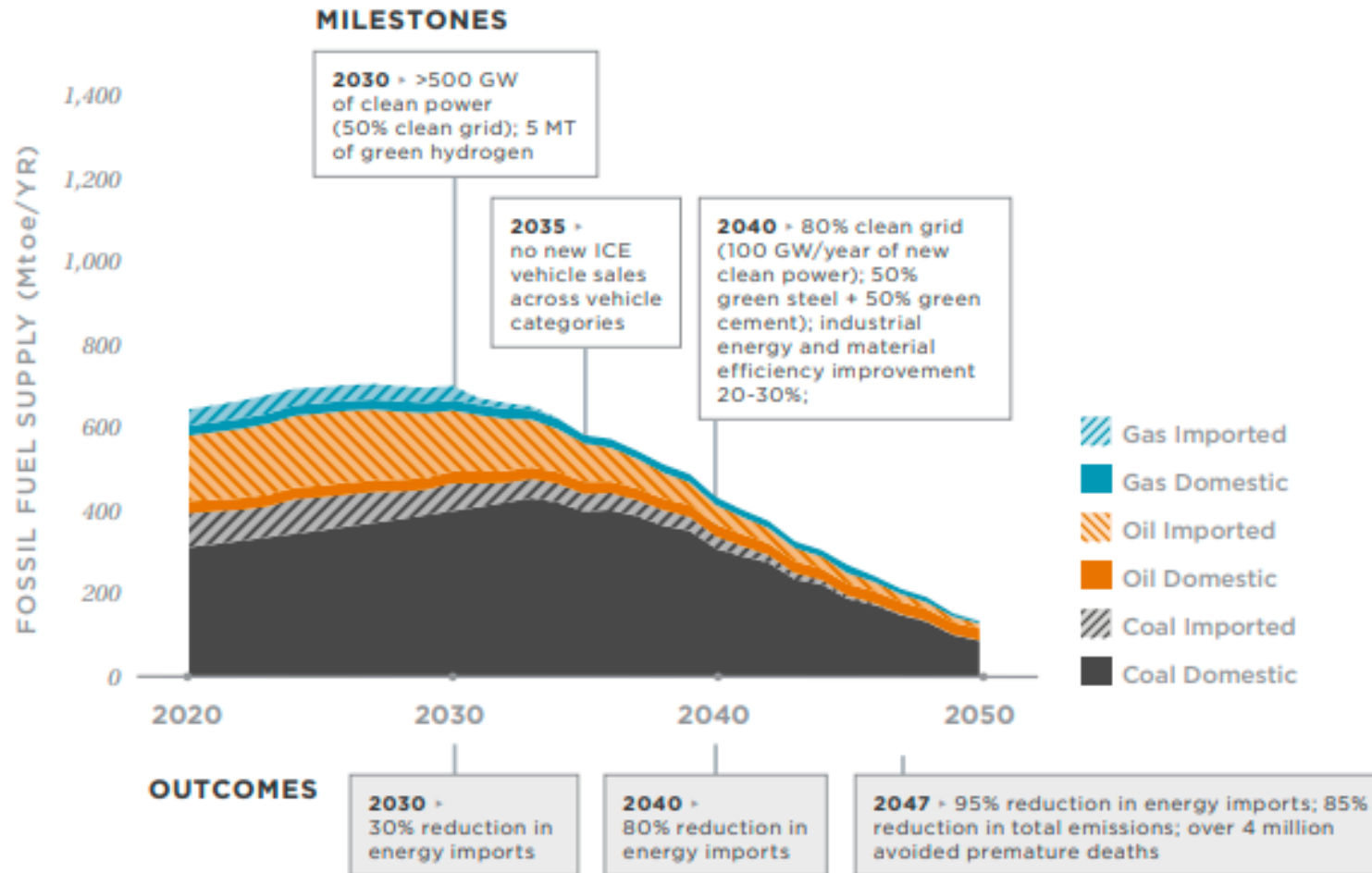
Annual Import Costs (Nominal)



Move To  
Renewable  
Energy Sources

# Two Challenges ► Two Solutions

Pollution & Energy Security ► Renewables & Alternate Powertrains



## India 2050 Goals

### Renewables

(95% Reduction in Energy Imports)

+

### New Powertrains

(85% reduction in Total Emissions)

For Sustainability in Growth

# Huge Opportunities - Avenues for Investment

## Complete Value Chain yet to be Established in India

### Wind Energy



### Green Hydrogen



### Lithium Deposits



### Solar Energy



### Charging Infra



### Scrappage



# The Hinduja Group – Positioned for Sustainable Growth

## A Centenary of Entrepreneurship



Auto OEM & Components



Oil & Specialty Chemicals



Banking & Finance



Information Technology



Energy



Cyber Security



Media & Distribution



Real Estate



Healthcare



Project Development



Trading

FOUNDED **1914**

VERTICALS **11**

PEOPLE **200000+**

COUNTRIES **38**



# Ashok Leyland – Hinduja Group Automotive Flagship

75 years of Mobility



World 2<sup>nd</sup> Largest Bus  
Manufacturer;  
India's 2<sup>nd</sup> Largest  
MHCV Manufacturer;  
Largest Mobility  
Solution supplier to  
Indian Defence

- 1948 Established
- 1987 Acquired by Hinduja / IVECO
- 2007 Self Reliance and Indigenisation Achieved (*60<sup>th</sup> Year*)
- 2011 Extended Product range with introduction of LCV
- 2020 Modular Platform of Trucks
- *2023 Alternate Powertrains Launched (75<sup>th</sup> Year)*
- *2030 Carbon Neutral Operations*
- *2048 Net Zero @ 100 (100<sup>th</sup> Year)*



**ASHOK LEYLAND**

*Koi Manzil Door Nahin*

## OUR PURPOSE

Transforming Lives and Businesses through Leadership in Mobility



## OUR VISION

### To be a Top 10 Global CV Player

creating reliable and differentiated products and solutions, while delivering outstanding stakeholder value

## OUR VALUES

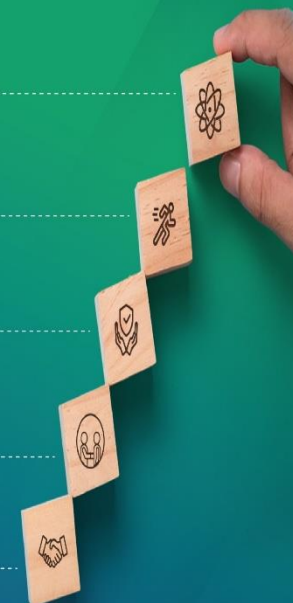
INNOVATION

AGILITY

TRUST

CUSTOMER CENTRICITY

PARTNERSHIP



# Ashok Leyland: Key Differentiation – People



## Homegrown Leadership

- More than 80% of Leadership Team is Homegrown
- More than 90% of senior management are Career employees



## Engineering Competence

- More than 75% of population are Engineers
- Focussed Groups on Innovation & Future Technologies – Multiple Ips
- Employer of Choice for Engineering Graduates - Strong ecosystem
- Experienced Yet young – Average age 34 years



## Agile Workforce

- Focus on Diversity – Gender (48% fresh intake are women), Geography (10% international GETs), All women-line at Hosur







# Ashok Leyland: Key Differentiation – Technology

Reliance on Partnerships to Complete Self Reliance (60-70 years)

Multiple Alternative Power Trains - Back to Age of Partnerships

2008



In-house Engines up to 8 Litre Capacity

2013



World-class Driver Cabins

2020



Modular AVTR Truck International Emission Norms



2022



EV Double Decker Bus



Homologated LNG Truck

2023



H<sub>2</sub> ICE Trucks



H<sub>2</sub> FC EV Truck



MD15 Methanol Buses



M100 Methanol Truck

# Ashok Leyland: Key Differentiation – Ecosystem Creation

## Opportunity Enhancement into Allied Avenues

### SWITCH

Electrification Technologies



Mobility as a Service



HINDUJA  
HOUSING FINANCE




Digitization in Mobility



HINDUJA LEYLAND FINANCE

Changing Business Models

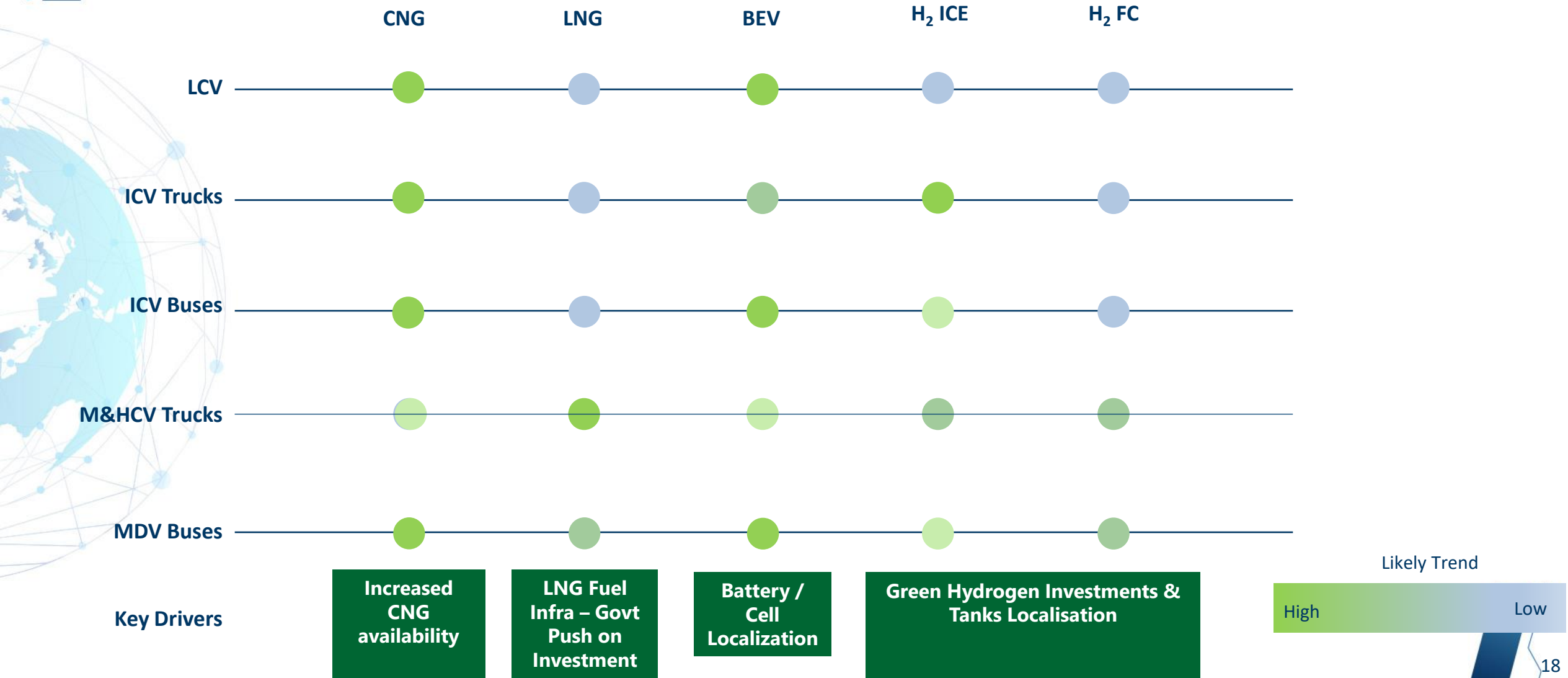


Centers of Engineering Excellence

# Complexity & Huge Investments: Multiple Technologies for De-Carbonization



## Alternate Fuel / Powertrains Trend (Next 10 Years)



# 1 Key Implications: Collaborations & Partnerships

## Ensuring Readiness & Speed to Market

### Partners for Technology Readiness



### Partners for Market Deployment



IIT Madras



adani



# Key Implications: Re-Skilling / Skill Enhancement

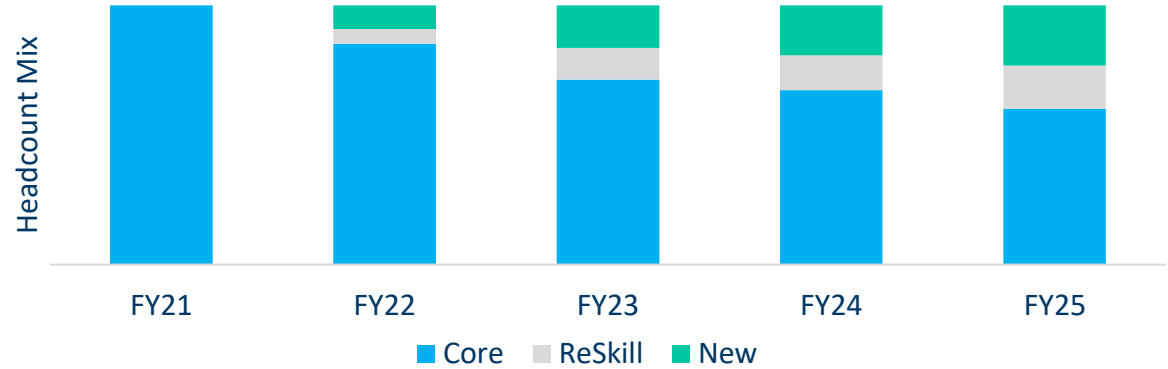
## Gearing up the Workforce for the Future Needs



### Key Skills Targeted

	<b>Engine Calibration</b>	Performance, FE, & Emissions Compliance
	<b>Vehicle Controls</b>	BMS, FC, Motor Controls
	<b>Embedded Systems</b>	Software development
	<b>Advanced Simulation</b>	Thermal, FE, Multi-physics simulation for New Energy options.
	<b>Materials</b>	Light Weighting
	<b>Connected Vehicles</b>	Telematics, Prognostics, V2X, ADAS. OTA, Digital Ecosystem

### Reskilling & New Recruitment



### Institutional Collaboration



- Research Funding
- Joint Development
- Sharing of Test Facilities
- Customised Courses to Reskill



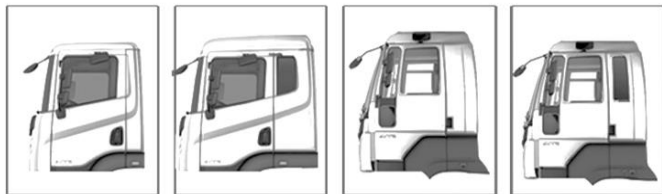
# 3

# Key Implications: Modular Architecture for Multiple Technologies

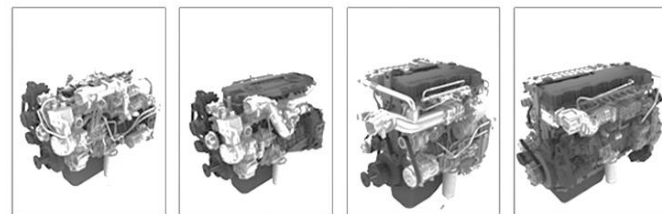
Only OEM in India; started work in 2016



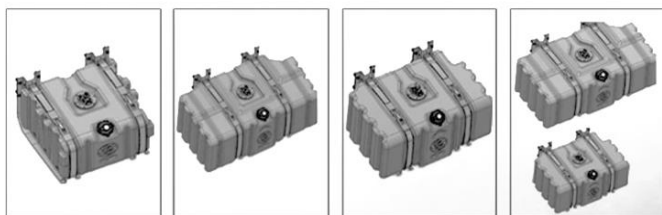
## CABIN MODULES VARIANTS



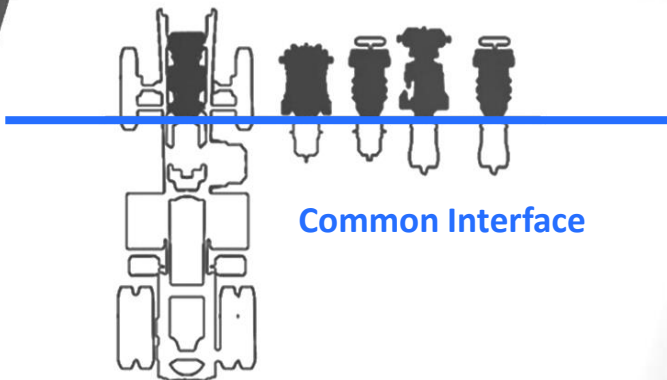
## ENGINE MODULES VARIANTS



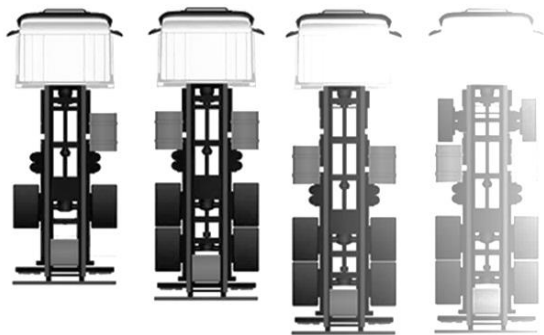
## FUEL TANK MODULES VARIANTS



Multiple Modules



Common Interface



One Platform – Over 6 Lakh Variants



Configurable Vehicles

# 3 Key Implications: Modularity – A Unique Advantage

Fastens our transition to Alternate Energy Propulsion

















# Ashok Leyland – New Energy Portfolio

Will be ready in next 1.5 years – across fuel types, across segments



● Available

● In Progress

										
					Diesel	CNG	LNG	H <sub>2</sub> ICE	H <sub>2</sub> FC	BEV
<b>M&amp;HCV Trucks</b>		AVTR		OTHER MODELS	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	
<b>Long Haul Trucks</b>		AVTR		OTHER MODELS	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	
<b>ICV Truck</b>		E-Comet		BOSS	<span style="color: green;">●</span>	<span style="color: green;">●</span>		<span style="color: blue;">●</span>		<span style="color: green;">●</span>
<b>LCV Goods</b>		Dost		Bada Dost	<span style="color: green;">●</span>	<span style="color: green;">●</span>				<span style="color: green;">●</span>
				Partner						
<b>MCV Bus</b>		Viking		ULE / Eiv12	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: green;">●</span>
				Eiv22						
<b>Long Haul Coach</b>		13.5 m		15 m	<span style="color: green;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	
<b>ICV Bus</b>		Oyster		Sunshine	<span style="color: green;">●</span>	<span style="color: green;">●</span>		<span style="color: blue;">●</span>	<span style="color: blue;">●</span>	<span style="color: blue;">●</span>
<b>LCV Passenger</b>		Mitr		Eiv7	<span style="color: green;">●</span>					<span style="color: blue;">●</span>
										<span style="color: blue;">●</span>



# Stepping Further

## Other Technology Advancements – For India & the World



### Alternate Powertrains

#### Flywheel Hybrid



- ✓ Energy recuperation and Powertrain downsizing. POC in progress

#### Linear Powertrain



- ✓ Complementing battery electrification within hybrid powertrains

### Data Analytics

#### Predictive Maintenance



- ✓ Actionable Insights using vehicle data to enhance vehicle uptime

#### Edge Computing



- ✓ Real-time data processing & handling voluminous vehicle data

### Autonomy

#### Advanced Driver Assistance Systems



- ✓ Exploration in progress – AEBS, LDWS, DDAS

#### Autonomous Vehicles



- ✓ Vehicles tailored to meet the needs, particularly in the ports, mines and logistics sector

### Generative AI

#### Accelerated Development



- ✓ Faster, Optimized Designs to meet weight challenges in alternate propulsions

#### Faster Learning



- ✓ Generate virtual environments and simulate real-world scenarios, allowing AVs to adapt to regional terrains

# Showcasing the Future – Auto Expo 2023

CNG, LNG, H2 ICE, H2 FC, BEV Trucks



Not concepts assembled  
at Expo Grounds, But  
Fully Operational  
Future Range

# Promise Delivered – Bharat Mobility Global Expo, Feb 2024

## First BOSS 14T EV ICV Delivered to our First Customer



# TCO Challenge for Faster Adoption

## Battery Electric Vehicles



### Major Customer Engagements

AVTR 55T 4x2  
Electric TT



#### Major Applications

- Port
- Steel/Cement
- Coal

#### TCO Comparison vs Diesel

Capex : 3X

(Battery 300kWh for 180kms range)

Opex per km: 0.5X

(Diesel @95/- and Electricity @9/-)

BOSS 14T  
Electric ICV



#### Major Applications

- Parcel/ecommerce
- Intra city
- Cement

#### TCO Comparison vs Diesel

Capex : 4X

(Battery 200kWh for 230kms range)

Opex per km: 0.56X

(Diesel @95/- and Electricity @9/-)



# TCO Challenge for Faster Adoption

## Vehicles with Gaseous Fuels



### Interventions required for Faster ROI

- Cell & Pack localization / Import duty waivers
- LNG / H2 Scale Production & Distribution
- Push for investments in H2/LNG Tanks
- Preferential lending norms, leasing models
- Battery financing solutions
- Road tax / Toll charge / Charging cost / Interest rate concessions
- Additional GVW to offset payload loss

# Summary

## Towards a Transformed India

- India's potential to grow more than any country in the world
- Strong focus required on improving employability of the young abundant work force
- With growth India has also committed to reduce pollution – towards Net Zero by 2070
- In transportation, Energy security & Pollution are complementary and can be solved by using Renewable energy and Alternate Powertrains
- OEMs like Ashok Leyland especially are in advanced stages of development and will manage the complexity, with support from other conglomerates
- A Lot needs to be done for Faster Adoption



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