



ACMA

4th Automotive Raw Materials Conclave

**Exploring the Future: Innovations and Sustainability
in Non-Ferrous Raw Materials**

3rd July 2024 | New Delhi

Compendium



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Automotive Component Manufacturers Association of India
The Capital Court, 6th Floor, Olof Palme Marg.

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ABOUT ACMA



Automotive Component Manufacturers Association of India

The Automotive Component Manufacturers Association of India (ACMA) is an apex body representing India's Component Industry. It boasts a membership exceeding 900 manufacturers, contributing to more than 85% of the auto component industry's total turnover. **ACMA proudly holds ISO 9001:2015 certification.**

ACMA's primary mission revolves around stimulating growth, job creation, and economic prosperity. Through its relentless dedication to research & development initiatives, ACMA ensures that India maintains a leading position in global automotive component manufacturing.

With its continually expanding network, ACMA empowers businesses by providing invaluable resources, industry insights, and opportunities for collaborative endeavours. The organization plays an indispensable role in shaping policies and regulations that nurture an environment conducive to sustainable growth.

India's automotive industry is a vital sector, contributing 49% to the country's manufacturing GDP, 7.5% to the overall GDP, and supporting approximately 38 million jobs. Despite challenges like chip shortages, overbooking, fuel price-induced inflation, and rising commodity prices, the overall industry is valued at \$150 billion.

In the fiscal year **2022-23**, on the back of strong vehicle sales, a robust aftermarket, and growing exports, the auto component industry achieved unprecedented success. It reached a size of USD 69.7 billion (Rs. 5.60 lakh crore), recording a remarkable growth of 32.8%, surpassing the previous high turnover of USD 56.5 billion (Rs. 4.20 lakh crore) in FY21-22. Exports increased by 5.2% to USD 20.1 billion (Rs. 1.61 lakh crore), while imports grew by 10.9% to USD 20.3 billion (Rs. 1.63 lakh crore). The Aftermarket, estimated at USD 10.6 billion (Rs. 85,333 crores), also saw steady growth, registering a 15% increase. Auto component sales to OEMs in the domestic market surged by 39.5% to Rs. 4.76 lakh crore.

This growth in domestic auto component sales to OEMs, reaching **USD 59.3 billion** (Rs. 4.76 lakh crores), reflects a 39.5% increase compared to the previous year. The demand for higher-value components and a shift towards larger, more powerful vehicles contributed to this growth.

In 2022-23, exports of auto components grew by **5.2% to USD 20.1 billion (Rs. 1.61 lakh crore)** compared to **USD 19.0 billion (Rs. 1.41 lakh crore)** in 2021-22. North America accounted for 32% of exports, with an 8% growth, while Europe (31%) and Asia (26%) saw 3% and 4% growth, respectively. Key export items included drive transmission and steering, engine components, body/chassis, suspension, and braking systems.

Domestic market traction also led to an increase in component imports into India, growing by **10.9% in 2022-23 to USD 20.3 billion (Rs. 1.63 lakh crore)** from **USD 18.3 billion (Rs. 1.36 lakh crore)** in 2021-22. **Asia represented 66% of imports, followed by Europe (26%) and North America (6%), with growth rates of 12%, 6%, and 23%, respectively.**

Post-pandemic, increased vehicle movement and demand for used vehicles boosted the aftermarket across all segments. The aftermarket turnover in FY 2022-23 reached USD 10.6 billion (Rs. 85,333 crore), compared to USD 10.0 billion (Rs. 74,203 crore) in the previous year.

ACMA plays a crucial role in the industry's development in India, actively engaging in trade promotion, technology enhancement, quality improvement, and information dissemination. It participates in international trade fairs, sends trade delegations overseas, and publishes materials on various automotive industry-related subjects.

ACMA also contributes to manufacturing advancements by offering skills training and mentoring through cluster programs & special projects such as 'Asset Turnover Improvement,' 'Uptime Improvement,' 'Zero Defect Quality,' and 'Sustainable Manufacturing,' among others. Additionally, ACMA is well-represented on various government panels, committees, and councils, helping shape policies and regulations for the Indian automotive industry.

For information exchange & cooperation in trade matters, ACMA has signed Memoranda of Understanding (MoUs) with counterparts in multiple countries, including Argentina, Australia, Brazil, Canada, Egypt, France, Germany, Hungary, Iran, Japan, Kazakhstan, Malaysia, Mexico, Nigeria, Poland, Russia, South Africa, South Korea, Spain, Sri Lanka, Sweden, Taiwan, Thailand, Tunisia, Turkey, the UK, the USA, & Uzbekistan.

You can find more information & data about the Indian automotive industry on the ACMA Website: www.acma.in

Disclaimer

This Publication, is compiled entirely from submissions made by the listed companies. While every effort has been taken to ensure that the contents of the directory are accurate and current, ACMA cannot be held responsible for any omission or error and is not liable for any loss or dispute arising from the use of the information provided.



SPEAKER PROFILE



Deepak Thukral

Executive Officer, Supply Chain
Maruti Suzuki India Limited (MSIL)

Graduate Engineer in Mechanical Engineering from NIT Warangal

Post Graduate MBA from FMS Delhi

Over 30 years of rich work experience with Maruti Suzuki among various areas like Vendor Development, Incoming Quality, Parts, Accessories, Warehouse & Logistics at MSIL.

He has also held various positions as Chairman, ITI Chandigarh, Vice President- INVEST, worked with Steel ministry for project on coated steel localization, etc.

Awarded as Supply Chain Person of the year at 9th India Supply Chain Thought Leadership Summit and Awards by Institute of Supply Chain Management

Awarded as India's Impactful Supply Chain Leaders 2024 by ET Now

Currently, he is heading the Team of Supply Chain at Maruti Suzuki India Limited.



Shradha Suri Marwah

Chairperson & Managing Director, Subros Ltd.

President ACMA (Automotive Component Manufacturers Association of India)

Member CII (Confederation of Indian Industry) National Council

Shradha Suri Marwah is the Chairperson & Managing Director of Subros Ltd. Established in 1985, Subros Ltd is a joint venture between the Indian Promoters, Suzuki Motor Corporation, Japan and DENSO Corporation, Japan. The Company is recognized as a market leader in Thermal products and technologies and is in technical collaboration with DENSO Corporation Japan. Recently, Subros forayed into residential and commercial thermal solutions. Shradha joined the company in 2001, became Managing Director in 2008, and Chairperson & Managing Director in 2021.

Shradha is the elected President (2023-25) of Automotive Components Manufacturers Association (ACMA). She is also the Chairperson of Pillar 2 (Government Affairs & Strategic Affairs) and Pillar 5 (Media, Image building and PR Comm) at the association. Prior to this, she was the Vice President (2021-23), Chairperson of Northern Region (2020-21) and Co-chair of Northern Region (2018-20). Shradha has also held various portfolios at ACMA, such as Chairperson of Raw Material Committee, Chairperson of MSME Committee, and Chairperson of HR & IR Sub pillar since 2013. Shradha is part of the National Council of Confederation of Indian Industry (CII) for the term 2024-25 and holds various other key positions within the Confederation of Indian Industry (CII) including membership in the CII Northern Regional Council. Moreover, Shradha is an active member of the Executive Committee of the Maruti Suzuki Supplier Welfare Association (MSSWA).

Shradha has a Bachelor's degree in Economics from the University of Delhi. She also went on to earn two post-graduate degrees, a Masters in Management and a Masters in Economics & Information Systems from The London School of Economics and Political Science (LSE), University of London.



Santosh Subramaniam

Partner – Supply Chain Transformations, PWC

Santosh is a partner with Supply Chain Transformation with two decades of strategy and management consulting experience. He works on large-scale cross-functional supply chain and cost transformation programs. He has worked across industries but primary focuses on Auto and Consumer industries. His consulting work leverages digital, technology, and analytics to maximize client value

**Aneesh Ajayan**

EY Parthenon

Director Strategy & Transformation, Automotive & Mobility Sector

Aneesh Ajayan is one of the highly accomplished executives who has been engaging with Automotive C suite for over a decade. Aneesh is a strategic and innovative thought leader focussed on driving client impact and value with varied experience across the automotive value chain

Areas of Expertise

- Future of Mobility (Electric, Alternate Fuels, Connected, Autonomous)
- Automotive Growth and Vision strategy
- Market Entry Strategy
- Business Diversification
- Automotive Component Business Strategy
- Mobility services
- Network transformation

Personal Areas of Interest

Aneesh is a sports enthusiast with interests in football, table tennis and badminton. In addition, Aneesh is an ardent reader of fiction and admires the works of Ayn Rand and Paul Auster. Over the past 5 years, he engages in his passion for art by dabbling in Tattoo art



Vijay Murthy

CMO, Hindustan Zinc Ltd, Vedanta Group

Vijay Murthy is a seasoned Marketing & Commercial professional with nineteen years' experience in manufacturing, specializing in global commodity business, strategic marketing, product campaigns, logistics, supply chain, risk management, and operational finance. His career began at Sterlite/Vedanta Group in 2004, progressing from Management Trainee to Procurement Head for Copper Concentrate globally by 2009.

He then served as Vice-President Procurement at HOLCIM India (ACC & Ambuja Cement) and later as Head of Marketing & Commercial at Vedanta Zinc International in South Africa. Returning to India in 2016, Vijay led as Chief Marketing Officer at Hindustan Zinc Limited, successfully navigating economic challenges like demonetisation and GST implementation.

In 2020, he joined Diversey India as Marketing Director, contributing to Swacch Bharat Abhiyan and Covid-19 initiatives, before rejoining Hindustan Zinc Ltd in 2022 as Chief Sales & Marketing Officer and CEO of the Minor Metals business. Vijay holds a Commerce degree, CFA qualification, MBA in Finance & Marketing from IBS Hyderabad, and a PG Diploma in Mining Engineering from University of Witwatersrand, Johannesburg, South Africa.



Akshay Agarwal

Executive Director of the CMR Group

Mr. Akshay Agarwal, Executive Director of the CMR Group has been associated with the company for 10 years, since 2014. He holds a bachelor's degree in mechanical engineering from BITS, Pilani, Goa, and has completed his MBA from Indian School of Business, Hyderabad. In this tenure, he has worked in various departments in the company, like engineering, operations, logistics and marketing, and has a good understanding of the aluminium recycling industry.

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Contact No - 9999006780



Jayant Jain

Mg Director, G R Metalloys Pvt. Ltd

Shri Jayant Jain, Started his Carrer in Metal Business in 2005. He Started with the Imports and Trading of Various types of Non-Ferrous Metals Scrap. In 2006, he entered into Manufacturing of Aluminium Secondary Ingots and Deox. After getting Success in same, He diversified in to the Manufacturing of Aluminium Alloys Ingots in 2010.

He is leading the Metal Business of G R Group. He is Managing Director of Guru Rajendra Metalloys India Pvt Ltd and G.R. Metalloys Pvt Ltd. G R Metalloys is one of the Largest Manufacturers of Aluminium Alloys in India supplying to various OEMS and Tier 1 Suppliers of OEMS. Current they have capacity of 60000 MT Per Annum which they are going to enhance by 36000 MT by 2025 end so to achieve total capacity of 96000 MT Per Annum

He had been elected as Hon Secretary of All India Non-Ferrous Metal Association in July 2017. Also, he is Director in Material Recycling Association of India – MRAI which is Apex body of all Recycling Associations.

He alongwith his team is actively representing various issues in GST Law and Custom Laws to the Ministries and Officials and others issues related to trade.



Mohit Jauhari

Head SCM- Shriram Pistons & Rings Ltd.

An IT Savvy Purchase & Supply Chain professional with a penchant for transforming Supply Chains using the power of Technology. Mohit Jauhari is a Metallurgical Engineer from NIT Rourkela and an MBA in SCM from S. P. Jain Institute Mumbai with more than 28 Years of Industrial experience.

He has worked with reputed companies like Tata Motors, Honda, Airtel, Krishna Maruti, Rockman - and is now the SCM Head at Shriram Pistons & Rings Ltd.

He was among the Toppers in his B.E., was adjudged the Best Graduate Engineer in Tata Motors, 2nd Topper in S P Jain, Runner up at AIMA Young Manager's National Competition.

He has been a Quiz Master, News Reader, Panel Moderator, Antakshari Host, Master of Ceremonies in major events like Republic & Independence Day Parades etc.

He is a regular faculty at various Management Institutes like IGNOU & his YouTube videos on 'IT Enabled Procurement', 'E-Procurement', 'Digital Procurement' etc. have regular viewers. He is also a regular contributor to the ALUCAST Magazine - and his article on 'Material Management in Die Casting' was very well received.

He is an E-Procurement Expert - and had been featured in an article on the CFO India Magazine – as well as the website of SAP/Ariba. He has done path breaking work in the field of IT Enablement of the Procurement Function. He has recently been conferred with the following awards:

- Celerity / Quantic Top Procurement Leaders Award 2020
- Inflection Most Innovative Supply Chain Leader of the Year – Auto Parts – 2021
- Richland Warehouse & Logistics Excellence Award for Best-in-Class use of Technology in Procurement – 2021
- Richland Warehouse & Logistics Excellence Award for Best Procurement Innovation – 2021
- Alden & NASSCOM Most Innovative Supply Chain Leader of the Year – Auto Parts – 2022
- Krypton Supply Chain Leader of the Year 2022
- Celerity Supply Chain Tribe Top CSCO Award 2023
- World Logistics & Supply Chain Topmost Leaders in Logistics & Supply Chain Industry 2023
- GMA Award for Achieving Excellence in Supply Chain Management 2023
- Transformance: The Great Indian Supply Chain Leader 2024



Sunil Arora

Managing Director, Abilities India Pistons & Rings Ltd.,

Mr. Sunil Arora, Managing Director, Abilities India Pistons & Rings Ltd., is a Mechanical Engineer from BITS Pilani. He holds onto his credit a wide industry experience of nearly four decades. Under his dynamic leadership, his company has received several national level & customer awards. Further he has steered the company from a domestic aftermarket player to an 80% export OEM supplier in a period of 5 years.

Currently, Mr. Arora is the Co-Chairman, ACMA Pillar 3, Technology & Industrial Competitiveness. Prior to that he was Chairman, Northern Zone & Chairman, MSME Committee of ACMA. He is also on the Executive Committee of AIMO (UP State Board).



Mohan Agarwal

Managing Director of CMR Green Technologies Limited

Mr. Mohan Agarwal is the Managing Director of CMR Green Technologies Limited with over 35+ years of experience in the Recycling Industry. Since its inception in 2006, CMR Green has grown to become India's largest manufacturer of aluminium & Zinc alloys and processor of various ferrous and nonferrous metals, operating from 13 plants which also includes multiple joint ventures with large foreign companies.

Mr. Agarwal plays a pivotal role in development of the top leadership talent at the Group and is credited with creating a culture of business excellence and delivering superior benchmark performance through application of advanced technology and best practices. He has led CMR Green's evolution to the highest standards of corporate governance and enhanced engagement with key stakeholders.

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Contact No - 9810033663



COMPANY PRESENTATIONS





CMR GREEN TECHNOLOGIES LIMITED



CMR

For a better tomorrow

CMR CMR Nikkei CMR Toyotsu CMR Green  CMR
CMR Aluminium CMR KATARIA 

PRIMARY METAL

SECONDARY METAL



Recycled Quality



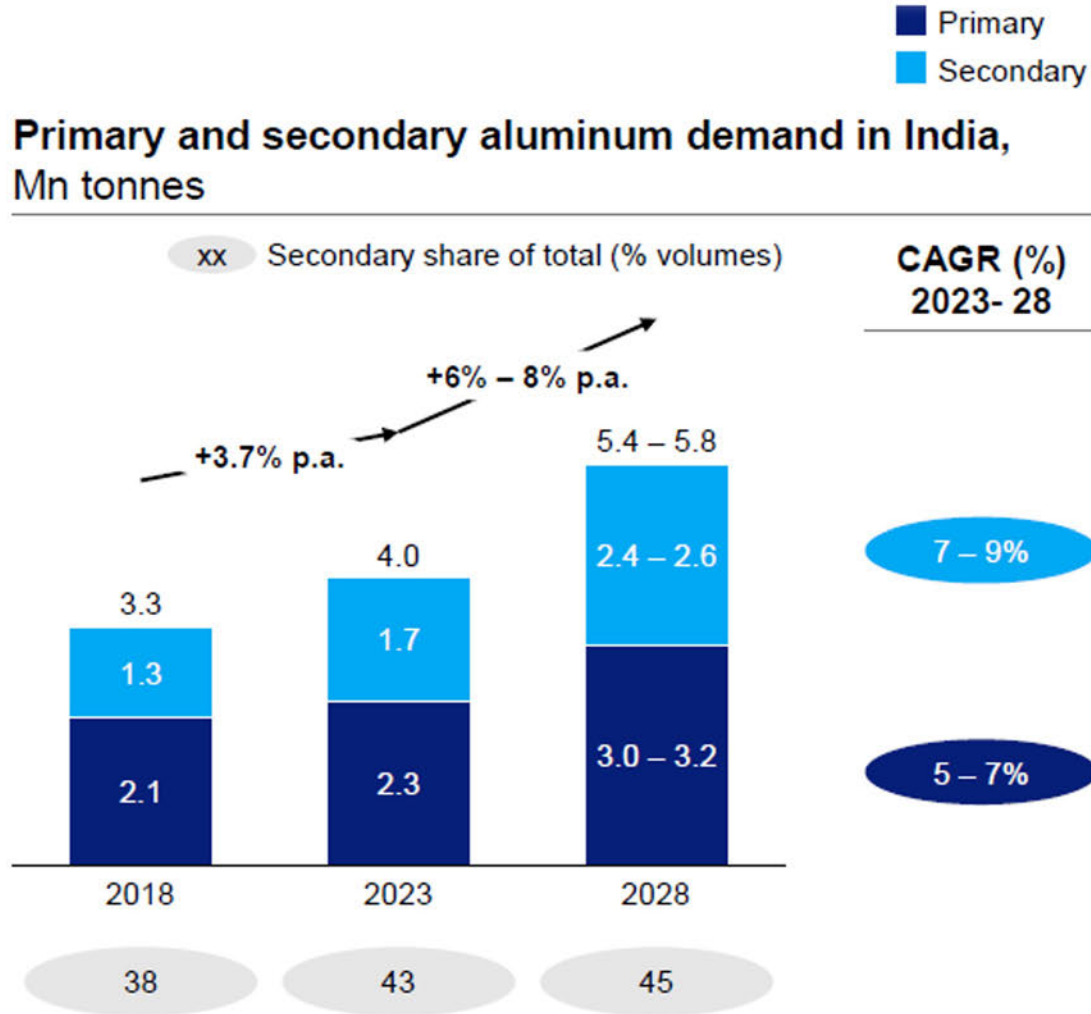
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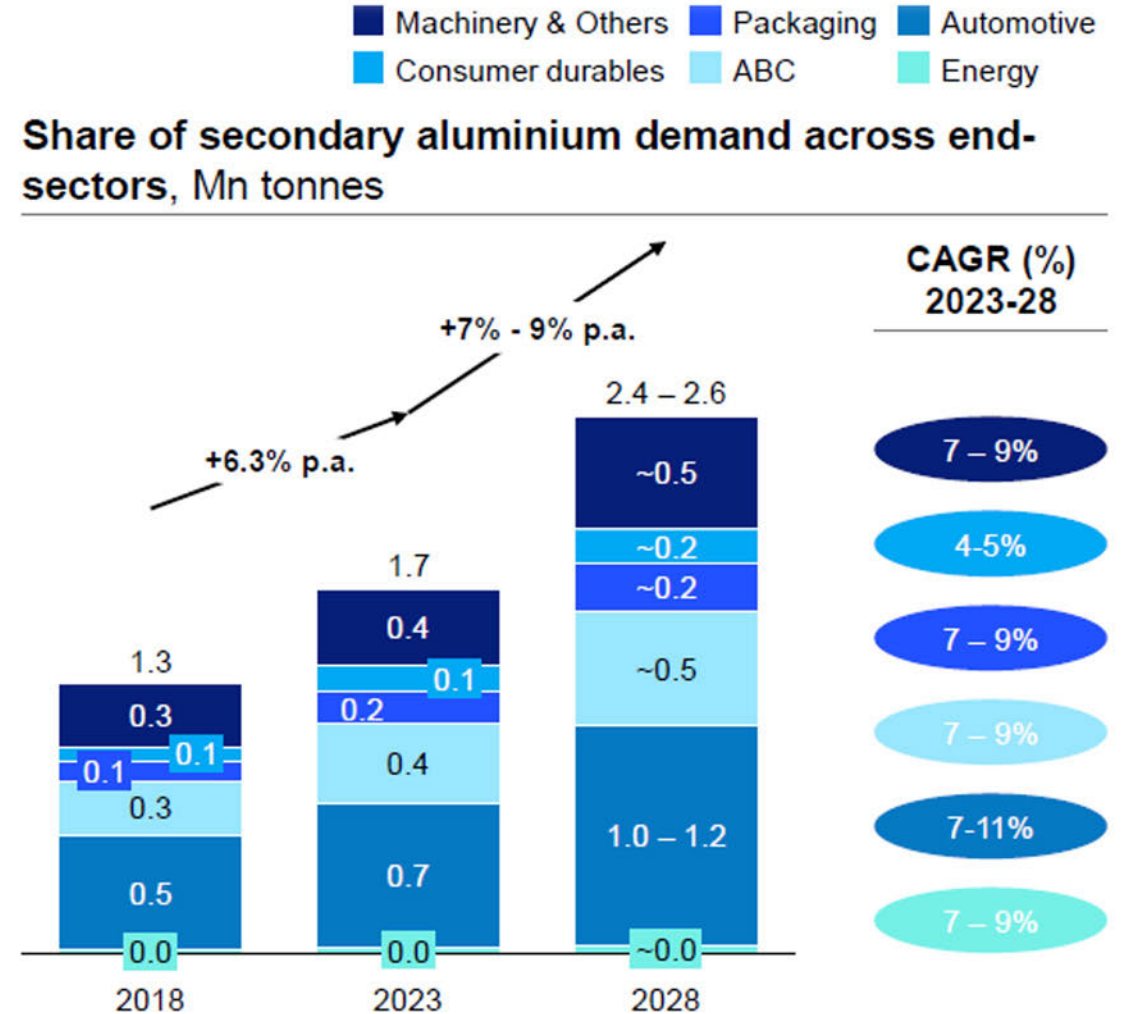


Secondary Aluminium to account for ~45% of total aluminum demand by 2028 driven mainly by automotive sector

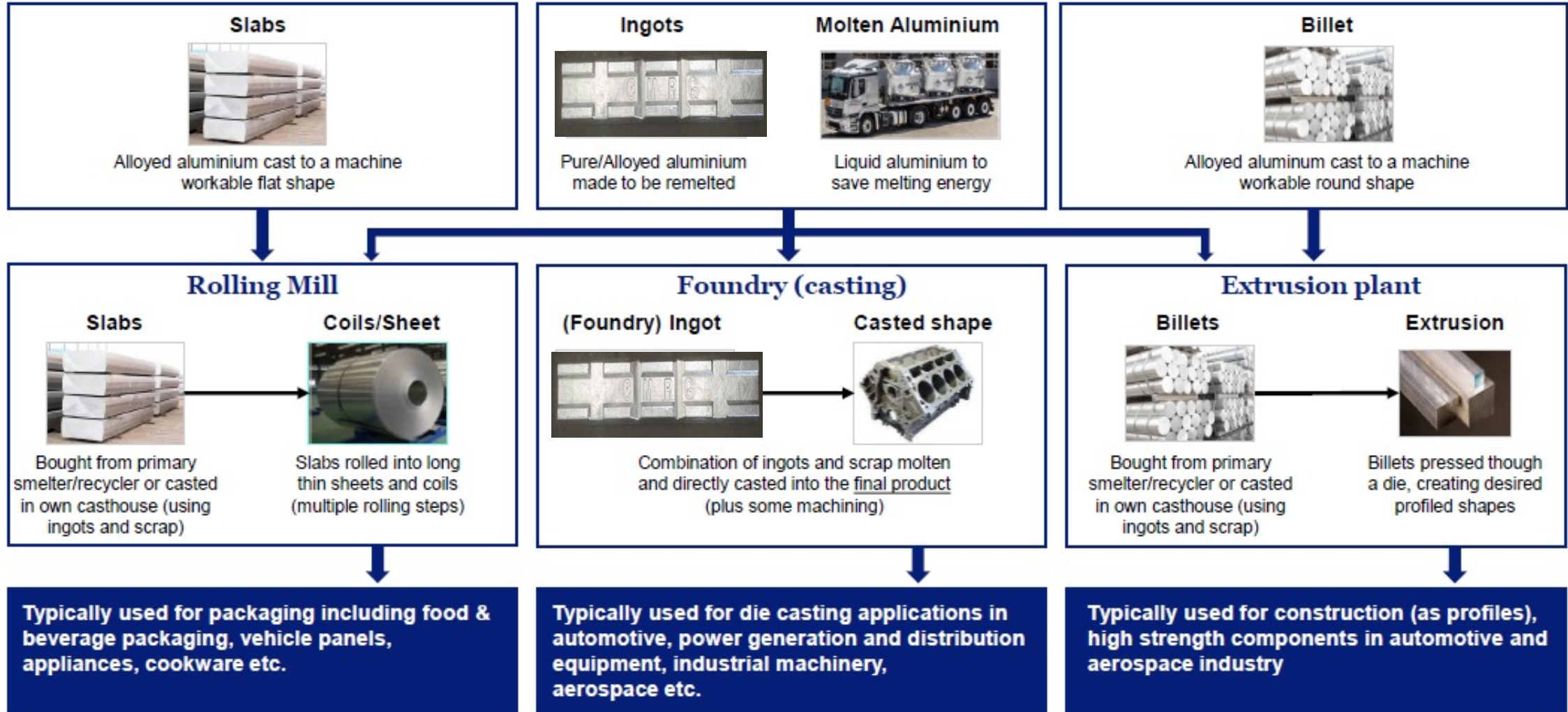
Primary and secondary aluminum demand in India, Mn tonnes



Share of secondary aluminium demand across end-sectors, Mn tonnes



Secondary Aluminium comes in many forms, undergoing multiple conversion steps depending on end application



Aluminium in Automobile

- In India, average quantity of secondary Al used per vehicle is approx. **55-60 kg per vehicle** which significantly lower compared to the global avg.
- Globally, the usage of Al in cars has been constantly increasing. From **35 kg** per car in the 1970s, it has risen to an average of **210 kg** today.
- Study predicts this trend is set to continue, with the average Al content projected to increase from **210 kg** in 2022 to **237 kg** by 2026 (+15.6%) and **256 kg** per vehicle by 2030 (+24.9%).

Engine
Engine Block
Heads
Pistons
Mounts
Anti-Vibration
Other Engines

Chassis & Suspension
Suspension arms
Knuckles
Subframes

Trim & Interior
Sunroofs
Roof Rail
Glass Surrounds

Heat Transfer
Heat Exchangers
Heat Sinks
Heat Shields

Body Structure
Complete Body Structure
Shock Towers
Rails
Radiator Support
Structural Members
IP-Structures
Floor Group
Body Side Panels
Other



Body Closures
Hoods
fenders
Boots
Front Doors
Rear Doors
Window Frames
Door Intrusion Beams
Roofs

Steering
Steering Rack

Wheels & Brakes
Wheels
Brakes
Other

Driveline
Transmission Case
Transfer Case
Other Transmission

Crash Management Systems
Crash Boxes
Bumpers

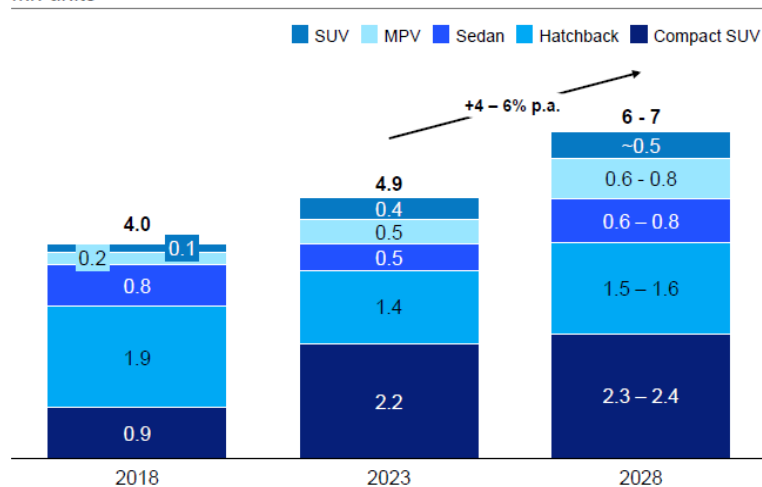


Indian PV market is shifting towards premiumization as share of SUVs is expected to increase and sedans convert to premium ones

Typical secondary aluminium content across car segments, Kg Al per car, 2023

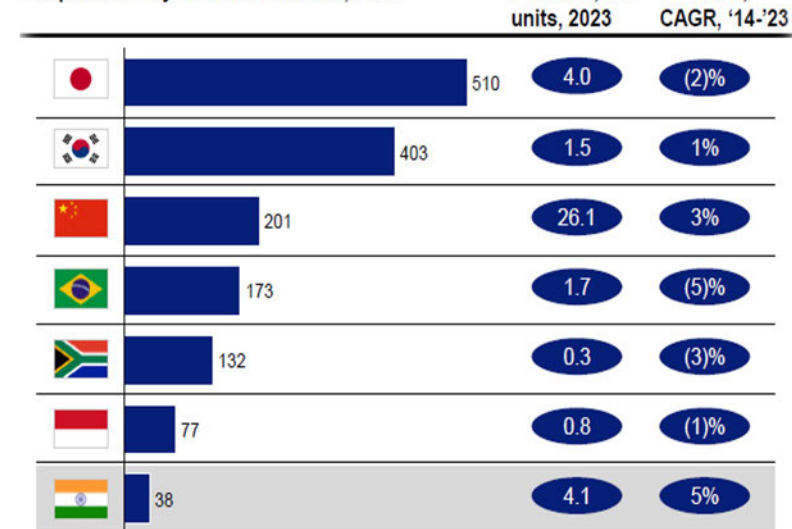


New passenger vehicle sales in India by segment¹, Mn units



1. Does not include luxury cars segment

Car parc density¹ in select markets, FY24

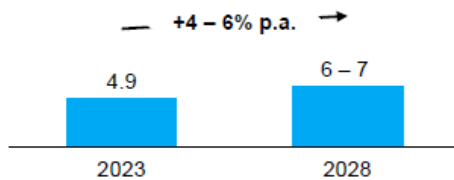


EV penetration in new vehicles is expected to grow significantly in India along with broader growth in volumes

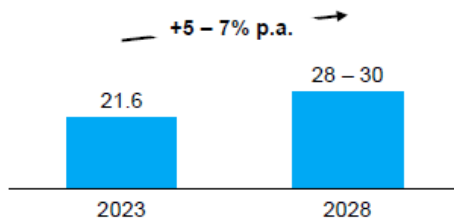
Overall, secondary Al consumption is expected to grow at 7-11% against overall Auto industry growth of 6-8%

India specific data

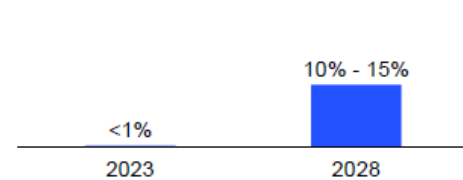
Passenger vehicle sales¹, Units sold, Million



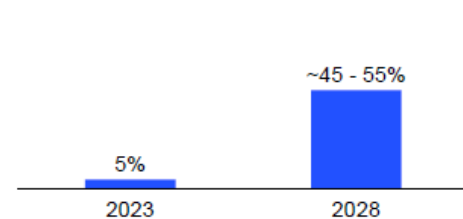
2W sales¹, Units sold, Million



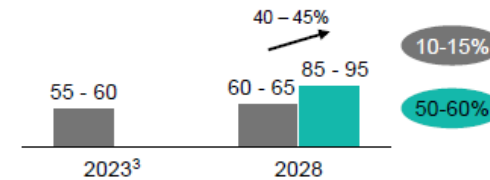
EV penetration² in new vehicle sales, Penetration in sales; %



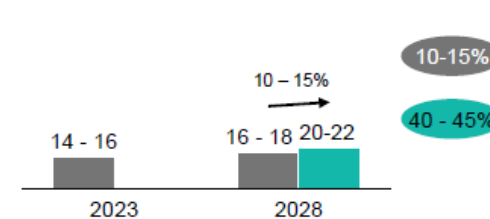
EV penetration² in new vehicle sales, Penetration in sales; %



Typical secondary aluminium intensity⁴, Kg Al / per 4W



Typical secondary aluminium intensity, Kg Al / per 2W

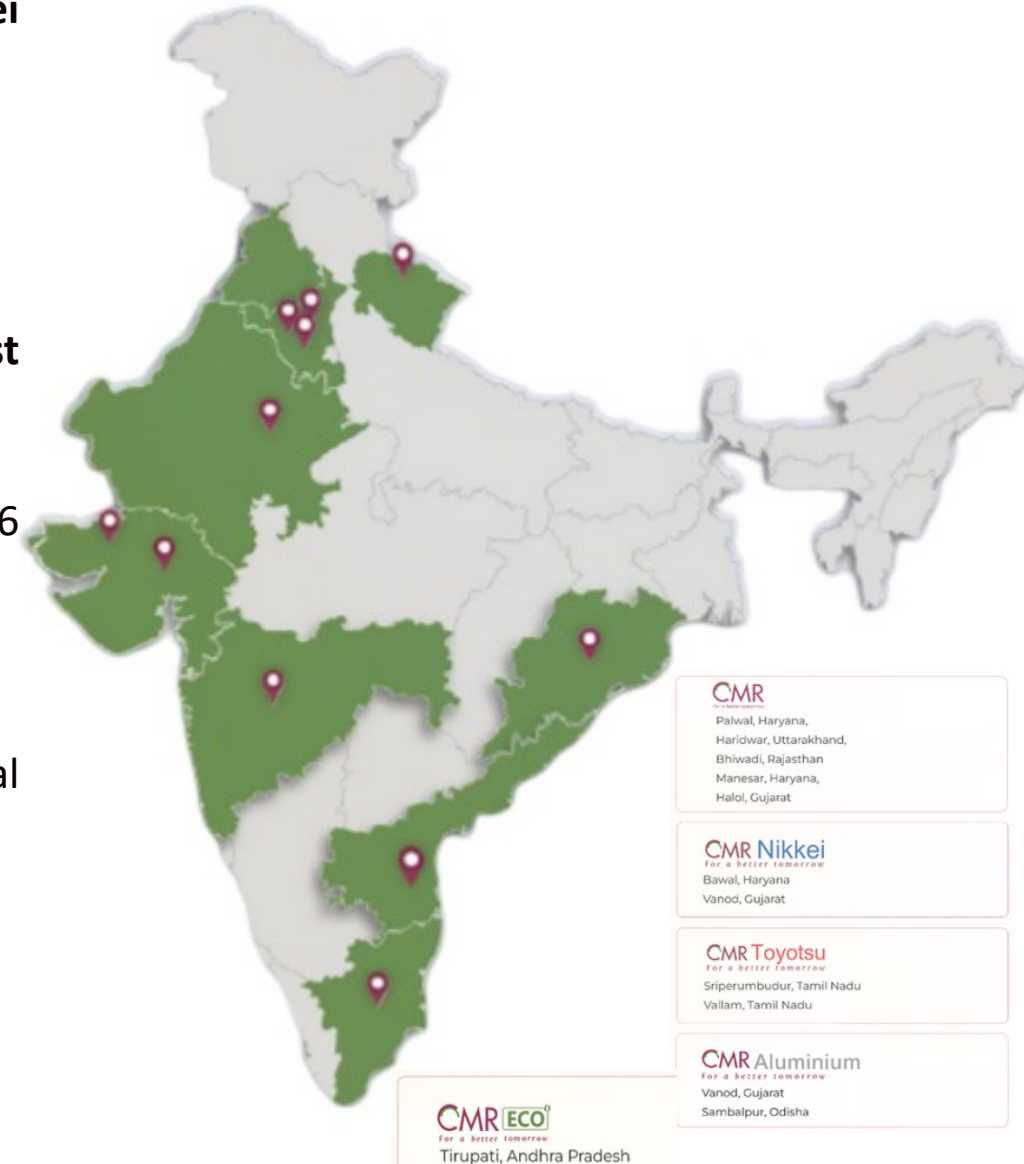


xx Increase in aluminium intensity compared to 2023 ICE, %
 ■ ICE ■ EV

About Us

India's Largest Metal Recycler and amongst the Largest in the World

- 12 plants across India including successful **JVs with Toyota Tsusho, Nikkei MC**, with an overall **capacity of ~ 400,000 T/annum**
- Introduced liquid Aluminium in 2008 and has **>80% market share**.
- **4300+ employees** spread across various plant locations.
- Market share of **~50% in north India; >25% and growing in South and West India**. Overall, 33% market share in India
- Source scrap from **200+ suppliers in >25 countries** spanning across the 6 continents.
- **Office in USA** for maintaining supplier relations.
- Recognized as in-house R&D Unit by Department of Scientific and Industrial Research (DSIR).
- Identified by **Hindalco as Recycler Partner**.
- First company to **introduce Green wrought alloy ingots & Billets**.
- **CRISIL A+ rated** – all profits invested back in core biz.



Manufacturing Process

Scrap Sourcing

❖ Appx 85-90% scrap is imported



- Scrap Sourcing:
Europe, US, Middle East etc.
- Silicon sourcing:
China

❖ Major Scrap



Scrap Inspection

❖ Sample Lot Inspection



• Types of scrap & Identification of Aluminium %

❖ Material Unloading



• Material unloading done after OK inspection report

➤ Quality Check

Scrap Segregation

❖ Scrap Sizing



❖ Manual Sorting >50mm



❖ Heavy Media for <50mm



❖ Color Sorter



• Sorting of different types of scrap efficiently to attain better recovery and recycling value

➤ Quality Check

Scrap Processing

❖ Batch Preparation as per Customer's Spec

Cast Scrap



Wrought Scrap



❖ Melting



❖ Ladle Pouring



❖ Casting



➤ Quality Check

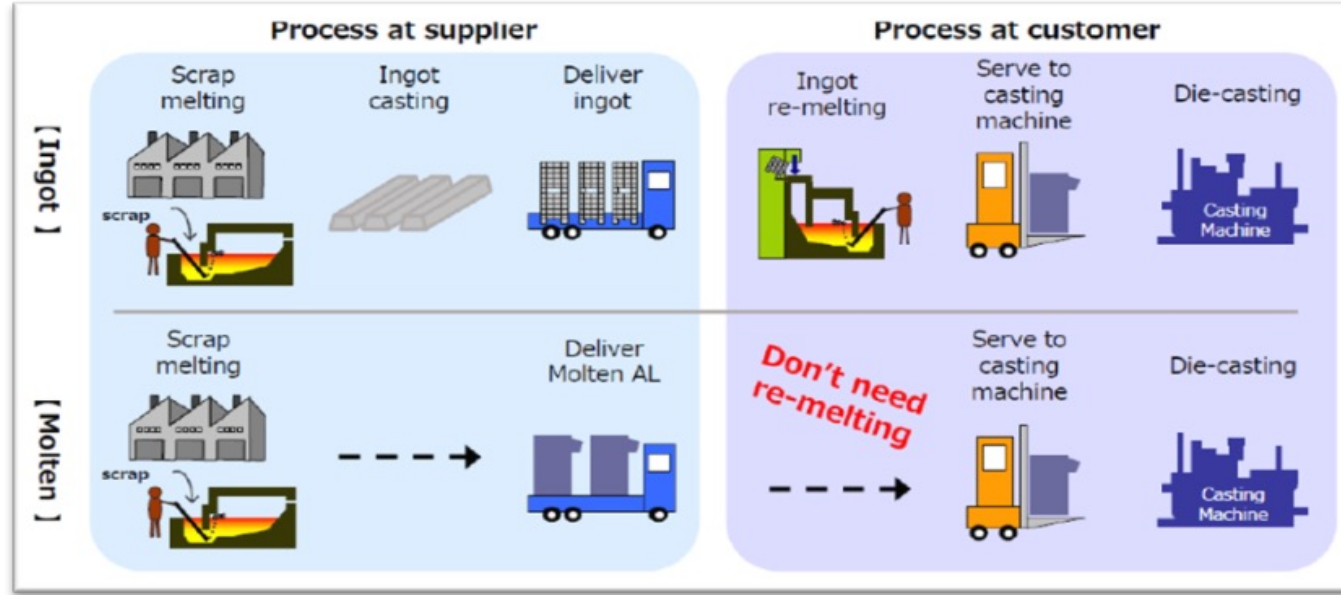
Final Inspection & Despatch



Molten Metal

Benefit of Molten Metal

- Through **1,20,000 MT LM** which we supply, we save around **64,800 MT of CO2 annually**, which is equivalent to around **32,40,000 matured trees CO2 offset ratio in atmosphere.**
- **8,200 matured trees per day** or **342 matured trees per hour.**
- **We are UNFCCC certified to earn carbon credits**



Benefits to Customers

- *Reduces processing cost since it eliminates the need of remelting process at customer end – **Cost Saving of 5-7%***
- *Reduces carbon footprint due to energy savings from remelting process - **540 Kgs/MT of Carbon Emission Savings.***







By not melting 1MT ingot, fuel is saved to avoid 260 Kgs. CO₂

By not melting 1MT ingot, melt loss of Aluminium is saved to avoid 280Kgs. CO₂

Beyond Planting Trees, We're Cultivating Forests
 A Green Footprint that Echoes the Commitment of Nation



Six key trends are impacting Aluminium demand in Indian automotive sector

Industry trends	Description	Implications for Aluminium
1  Market growth	India automotive production is expected to grow at ~ 5–7 % annually through 2028 , driven by macroeconomic growth, rapid urbanization and rising incomes	Growth in automotive market will drive demand for primary & secondary aluminium
2  EV revolution	EV penetration is expected to increase from <1% to ~10–15% by 2028, in a 5 – 6 Mn passenger vehicles car market. Two-wheeler could drive the adoption with ~50% penetration (~5% currently)	Compared to ICE ¹ cars, EVs are expected to have ~50–60% higher aluminium intensity and significantly different aluminium product mix
3  Premiumization	Indian passenger vehicles market is seeing a shift from entry level segments (hatchbacks) to premium segments (SUVs) , which holds ~45% share in overall retail sales	Premium cars have higher aluminium content (~120 Kg Al/car) compared to entry level cars (~40Kg Al/car)
4  Lightweighting	Emissions regulations leading to light weighting of cars in line with global trends (e.g., CAFÉ norms which limit car manufacturers to limit the total emission produced by its entire fleet in a year)	~10-15% increase potential in aluminium intensity across all segments for passenger vehicles
 Localization of auto components	Increased production cost in China coupled with regulatory support resulting in nearshoring of automobile supply chains to India	Primary Al demand to increase due to lower import of wheel alloys from China
 Focus on sustainability	Extended push by the government to reduce emissions and improve the share of circularity through use of recycled materials e.g., EPR rules likely to be extended to automotives	Demand for secondary Al to increase due to increased use of recycling content

7-11% CAGR of secondary Al demand from automotive sector from 2023 to 2028

1. ICE - Internal combustion engines

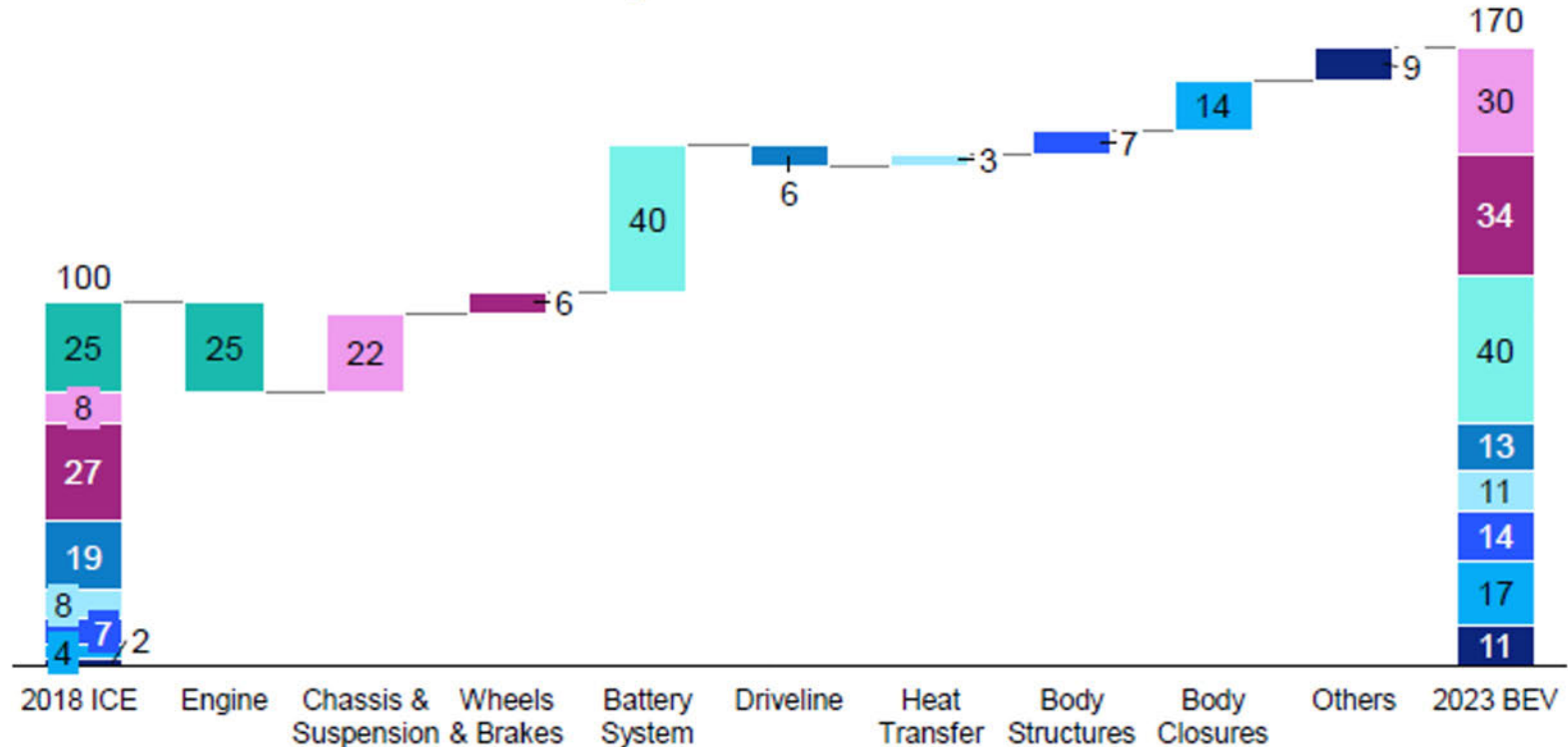
China Case Study: Aluminium content in EV significantly higher compared to ICE vehicles driven by battery systems and light-weighting measures

High Level view



Bridge of aluminium usage in 4W ICE (2018) vs 4W EV¹ (2023)³

Indexed to total aluminium usage in 2018 ICE



Key takeaways

- Overall aluminium content in EV (2023) increases by ~70% compared to aluminium content in ICE (2018) in 5 years
- Reduction in engine and driveline aluminium content (~31% of overall 2018 aluminium content) is offset by increase in aluminium content in battery systems (~40% of overall 2018 aluminium content)
- Other lightweighting measure in Chassis & suspension (22%) and Body closures & structures (21%) further increase overall aluminium intensity in EV (2023) vs ICE (2018)

1. EV - Battery electric vehicles; ICE - Internal combustion engine vehicles

2. Includes crash management systems and other minor components

3. Based on weighted average of typical ICE and EV vehicle models in China; 2018-23 view taken as reference to indicate India potential based on historical performance of a more mature market

China Case Study: China case study: EV Aluminium content in China indicates reduction in casting share vs internal combustion engine vehicles

High Level view

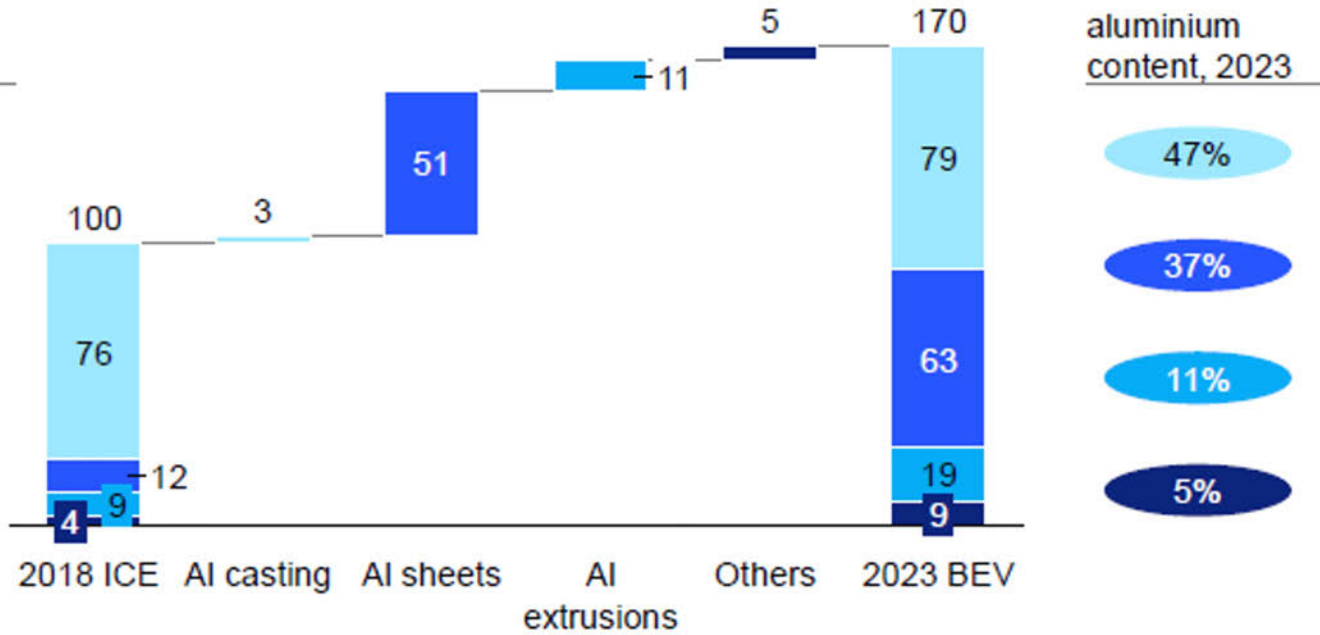
Al casting Al sheets Al Extrusion Others³

Bridge of aluminium usage in 4W ICE (2018) vs 4W EV¹ (2023)⁴

Indexed to total aluminium usage in 2018 ICE

Share of total aluminium content, 2018

- 76%
- 12%
- 8.5%
- 3.5%



Share of total aluminium content, 2023

- 47%
- 37%
- 11%
- 5%

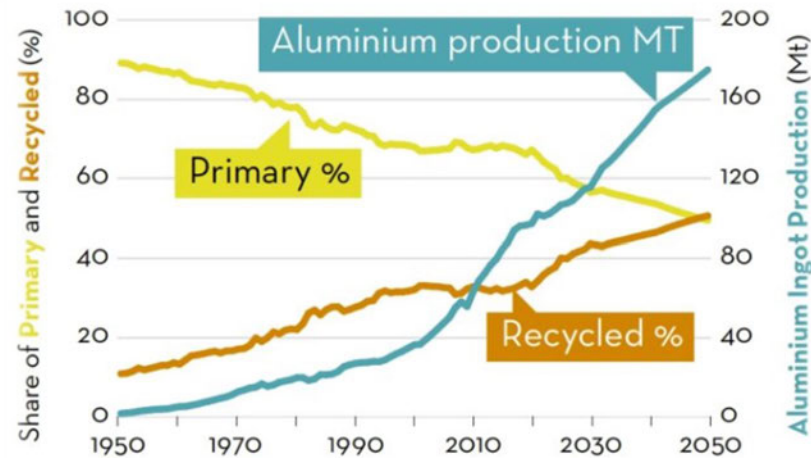
- **Share of casting in overall aluminium content is lower in EVs compared to ICE in the China market (~76% for ICE vs 47% for EV)** mainly driven by elimination of internal combustion engine parts (typically 80-90% casting)
- **Overall casting content remains broadly similar** due to higher overall aluminium intensity in EVs in 2023²
- **Major increase in EV aluminium intensity driven by aluminium sheets** majorly used for body in white (BIW) components for light weighting and battery system casings; Sheet share increased from ~12% in 2018 ICE vs ~37% in 2023 EV
- **Share of consumption of extrusions and others remain broadly similar** with consumption increasing due to overall higher aluminium intensity

1. EV - Battery electric vehicles; ICE - Internal combustion engine vehicles
 2. ICE aluminium intensity numbers are also likely to be higher than 2018 numbers indicating net reduction in cast aluminium usage
 3. Could include aluminium forging
 4. Based on weighted average of typical ICE and EV vehicle models in China; 2018-23 view taken as reference to indicate India potential based on historical performance of a more mature market

Recycled Aluminium v/s Primary Aluminium

Recycled Aluminium

- Produces **360 kg of CO2 emissions** and almost **negligible landfill**.
- **More cost effective**
- Uses **95% less energy** than primary and reduced **97% of the greenhouse gas emission** Extracted from Scrap
- **Environmental Benefits** – Carbon footprint reduction and Decarbonization - Net Zero emissions, waste management, and zero liquid discharge 100% recyclable
- **Greener replacement** to Primary Aluminum.



Primary Aluminium

- Generates **14 MT CO2 emissions** and **8 MT of hazardous/ non-hazardous landfill waste**.
- Process is **energy intensive and costly**
- Significant **environmental impact** as large amount of CO2 are released
- Uses **more water** in extraction & production of primary materials when compared to secondary Aluminium.

“Importing Aluminum scrap is like importing free electricity into the Country”

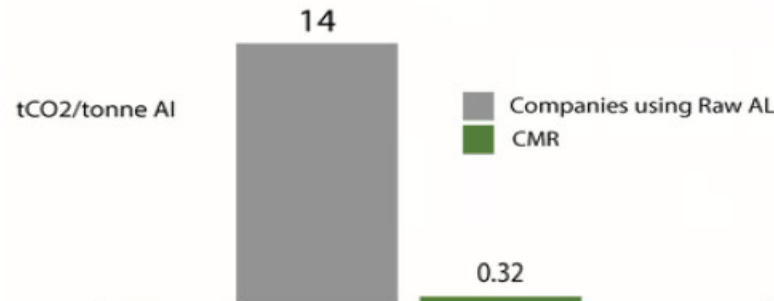
Upcoming Facility: CMR Eco Aluminium for Recycled Wrought Alloys

CMR, being proficient in Aluminium recycling, has endeavoured into wrought Aluminium Alloy recycling by setting up a state-of-the-art plant at Tirupati, Andhra Pradesh, India.

- Traditionally, wrought aluminium has been serviced by primary players but due to advancements in scrap sorting technology and demand for lower CO₂ footprint, recycled Al is gaining popularity globally
- CMR Eco is India's first such recycled wrought Al producer
- CMR Eco employs state-of-the-art tech like LIBS, XRT, IDEX Decoater, Wagstaff billet caster, etc..
- With a capacity of 36kT/annum, this plant shall offer ultra-low carbon footprint wrought alloys for Auto applications like car body, forged parts etc..



At CMR, the CO₂e is less than 0.5 MT/MT of Aluminium produced.



Wrought Alloy Billets



Sheets made from wrought alloys are typically used for:

- ✚ Exterior panels such as hoods
- ✚ Heat insulators
- ✚ Body structures and closures

Extrusions are used for:

- ✚ Bumper beams
- ✚ Frame members
- ✚ Drivetrain components
- ✚ Seatbelt anchors

State-Of-The-Art "Air-Slip" technology by Wagstaff

- . Defects free Surface viz;
- . Drags, Scratch marks, Cold Shuts etc.
- . In-Line Degassing & Ceramic Foam Filter ensures Internal defects free: Inclusions, Cracks, Blowholes, Porosity etc.
- . Fine Grains with crack free product.
- . Clean-cut surface by sophisticated saw machine.
- . Identification marking in each piece to back traceability.
- . Latest technologically Homogenize, with electrically heated,
- . Automatically controlled furnace environment to get a tight tolerance . of temperature, resulting
 1. Better extrudability
 2. Better mechanical properties of the extruded products

Sustainability

CMR embarked on a purposeful journey of setting up a long-term sustainability strategy with robust Environmental, Social & Governance (ESG) systems and processes.



Partnered with



CMR saves approximately 2.8 Million MW energy per annum which is equivalent to more than 50 villages' energy consumption.

First Sustainability Report

Second Sustainability Report



Our Sustainable Development Goals (SDGs) :

Material stewardship	Energy	Emissions and Climate Change	Environmental Compliance	Labour management	Occupational health and safety	Local Communities	Sustainable Supply chain	Innovation	Customer Management	Economic Performance	Ethics and Corporate Governance
12 RESPONSIBLE CONSUMPTION AND PRODUCTION	7 AFFORDABLE AND CLEAN ENERGY	13 CLIMATE ACTION	16 PEACE, JUSTICE AND STRONG INSTITUTIONS	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	3 GOOD HEALTH AND WELL-BEING	11 SUSTAINABLE CITIES AND COMMUNITIES	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	8 DECENT WORK AND ECONOMIC GROWTH	16 PEACE, JUSTICE AND STRONG INSTITUTIONS

thank you

CMR GREEN TECHNOLOGIES PRIVATE LIMITED

7TH FLOOR, TOWER 2, L&T BUSINESS PARK,
12/4 DELHI MATHURA ROAD,
FARIDABAD- 121003,
HARYANA

+91 129 4223050

century@cmr.co.in

www.cmr.co.in



G R METALLOYS PVT. LTD.



G. R. METALLOYS

GURU RAJENDRA METALLOYS G R

METAL RECYCLING LLP



Welcome to G R Metalloys

We are a professionally managed company engaged in the manufacturing of Aluminium Alloy Ingots and Deox. . We supply worldwide with a comprehensive range of Aluminium Alloys Ingots and Deox etc. to the International Specifications.

Our Journey and Milestones



2005

Started International Trading of Non Ferrous Metal Scrap



2007

Set up our first Plant with Capacity of 400 MT for Production of Aluminium Deox

Our Journey and Milestones



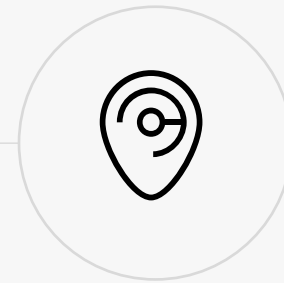
2010

Diversified in to Manufacturing of Aluminium Alloys Ingots with Capacity 300 MT



2012

Capacity Expansion Aluminium Alloy to 700 MT



2014

Set up New State of Art Facility for Aluminium Alloy in the name of **G R Metalloys Pvt Ltd** with Capacity of 800 Per Month, Total Capacity – 1500 MT



2017

Capacity Expansion, Total Capacity – 2500 MT.

Our Journey and Milestones



2019

Capacity Expansion to 4500 MT



2024

Capacity Expansion to 6000 MT



Our Onward Journey

Started Setting of **3rd Plant** for Aluminium Alloy under Company name **G R Metal Recycling LLP** with Capacity of 3000 MT Per Month



Awards & Recognition

2018



2019

GR Metalloys Pvt Ltd

2018 – Awarded as Top 100 Best Performing SMES in 2018 (among 33,102 nominations) by Ministry of MSME, Axis Bank and SME Forum.

Guru Rajendra Metalloys India Pvt Ltd

2019 – Awarded as Top 100 Best Performing SMES in 2019 (among 34,011 nominations) by Ministry of SME, Axis Bank and SME Forum.



Certificate of Registration

This is to certify that the Management System of:

G. R. Metalloys Pvt. Ltd.

Office:

201, G.R. House, 8, Gautam Vihar Society, Aroma School Road, Usmanpura, Off. Ashram Road, Ahmedabad - 380 013, Gujarat, India

Works:

Survey No. 401, Opposite Apollo, Near Hitachi Home Appliance Ltd., P.O Indrad, Taluka Kadi- 382 715, Gujarat, India

has been approved by Alcumus ISOQAR and is compliant with the requirements of:

ISO 9001:2015



Certificate Number: 13865-Q15-001
Initial Registration Date: 23 September 2015
Previous Expiry Date: 22 September 2021
Recertification Date: 04-05 August 2021
Re-issue Date: 08 October 2021
Current Expiry Date: 22 September 2024

Scope of Registration:

Manufacturing of Aluminium Alloy Ingots

Signed:
Steve Stubbley, Technical Director
(on behalf of Alcumus ISOQAR)

This certificate will remain current subject to the company maintaining its system to the required standard. This will be monitored regularly by Alcumus ISOQAR. Further clarification regarding the scope of this certificate and the applicability of the relevant standards' requirement may be obtained by consulting Alcumus ISOQAR.



Certificate of Registration

This is to certify that the Management System of:

GR Metalloys Private Limited

Office:

201, G.R. House, 8, Gautam Vihar Society, Aroma School Road, Usmanpura, Off. Ashram Road, Ahmedabad-380 013, Gujarat, India

Works:

Survey No. 401, Opposite Apollo, Near Hitachi Home Appliance Ltd., P.O Indrad, Taluka Kadi, Gujarat, India

has been approved by Alcumus ISOQAR and is compliant with the requirements of:

ISO 45001:2018



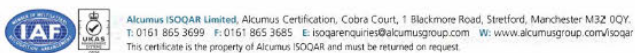
Certificate Number: 13865-OHS-001
Initial Registration Date: 19 November 2019
Previous Expiry Date: 19 November 2022
Recertification Date: 07 - 09 August 2022
Re-issue Date: 26 October 2022
Current Expiry Date: 19 November 2025

Scope of Registration:

Manufacturing of Aluminium Alloy Ingots

Signed:
Alyn Franklin, Chief Executive Officer
(on behalf of Alcumus ISOQAR)

This certificate will remain current subject to the company maintaining its system to the required standard. This will be monitored regularly by Alcumus ISOQAR. Further clarification regarding the scope of this certificate and the applicability of the relevant standards' requirement may be obtained by consulting Alcumus ISOQAR.



Certificate of Registration

This is to certify that the Management System of:

GR Metalloys Private Limited

Office:

201, G.R. House, 8, Gautam Vihar Society, Aroma School Road, Usmanpura, Off. Ashram Road, Ahmedabad-380 013, Gujarat, India

Works:

Survey No. 401, Opposite Apollo, Near Hitachi Home Appliance Ltd., P.O Indrad, Taluka Kadi, Gujarat, India

has been approved by Alcumus ISOQAR and is compliant with the requirements of:

ISO 14001:2015



Certificate Number: 13865-E15-001
Initial Registration Date: 19 November 2019
Previous Expiry Date: 19 November 2022
Recertification Date: 07 - 09 August 2022
Re-issue Date: 26 October 2022
Current Expiry Date: 19 November 2025

Scope of Registration:

Manufacturing of Aluminium Alloy Ingots

Signed:
Alyn Franklin, Chief Executive Officer
(on behalf of Alcumus ISOQAR)

This certificate will remain current subject to the company maintaining its system to the required standard. This will be monitored regularly by Alcumus ISOQAR. Further clarification regarding the scope of this certificate and the applicability of the relevant standards' requirement may be obtained by consulting Alcumus ISOQAR.



Other Certifications

ISO Certifications

- ISO QMS 2015, Quality Management System
- ISO OHSAS 45001:2018 , Occupational Health & Safety Management System.
- ISO EMS 14001:2015 , Environment Management System.
(Accredited By UKAS & ISO QAR)



Customer Awards



Main Raw Material

Aluminium scrap is a major raw material in our manufacturing processes



Other Raw Materials



Silicon Metal



Copper Scrap



Manganese Metal



Magnesium Metal



Nickel Scrap



Aluminium Primary Ingots

Manufacturing Low Carbon Aluminium Alloy Ingots with core competency

We make all Aluminum Alloy Ingots as per standard as well as customers specifications. Few of the grades are: ADC12, AC4C, ALSI9CU3,, AlSi9MnMg, HS1H, AC4B, AC2A, AC2B, AlSi10MnMg, ENAC44300, LM 13, LM 6, LM 25, , LM 24, ADC6, etc.

All our Heats are processed through all process control parameter and thoroughly checked for Porosity, Grain Structure and Chemical Composition before Start Pouring.

We also ensures that the inclusions level in the ingots is to the lowest possible level by K-Mould Inspections.

Our Ingots bundle are uniquely shaped to offer greater convenience during packaging & storage, and it can be stacked in a relatively smaller space, reducing transportation cost.



Low Carbon Piston alloys

01. Low Carbon Piston Alloys

We are the one of the Largest Manufacturers of Piston Alloys in India.

02. Low Carbon Alloy

We are making Pistons Alloy using 90% Scrap making our Alloy Low Carbon Alloy.

03. Alloys Manufactured

KS 1275, LM 13, AC8A, AC8H, S2N , LM 28, M 142, S2N and many more.

04. Throughout All Sectors – 2 W, 3 W, 4 W & CV

Our Piston Alloys are used in manufacturing of Pistons for 2 Wheelers, 4 Wheelers, Commercial Vehicles, and others.



Low Carbon Low Fe Alloys

01. Low Carbon Low Fe Alloys

We are the one of the Largest Manufacturers of Low Fe (Low Carbon) Alloys in India.

02. Low Carbon Alloy

We are making Low Fe Alloy using 95% Scrap making our Alloy Low Carbon Alloy.

03. Alloys Manufactured

A356, AlSi7Mg, AlSi10Mg, ENAC44300, AC4CH, AC2AH, A365 and many more

04. Throughout All Sectors – 2 W, 3 W, 4 W & CV

Our Low Fe Alloys are used in manufacturing of Wheel, Cylinder and Safety Critical Parts.



Our Esteemed Domestic Clientele

We are absolutely delighted to serve our clients in India



Royal Enfield



Tata Steel



BAXY



Sandhar




TVS



Rockman




Rico




Sundaram Clayton Limited

Sundaram Clayton




Spark Minda



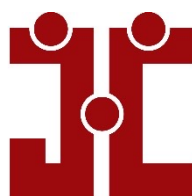
Lucas TVS

Our Esteemed Domestic Clientele


We are absolutely delighted to serve our clients in India



AutoLek



Jaya Hind



Caparo




Sunbeam




Menon Group



C G Power and Industrial Solutions



Godrej



Signify



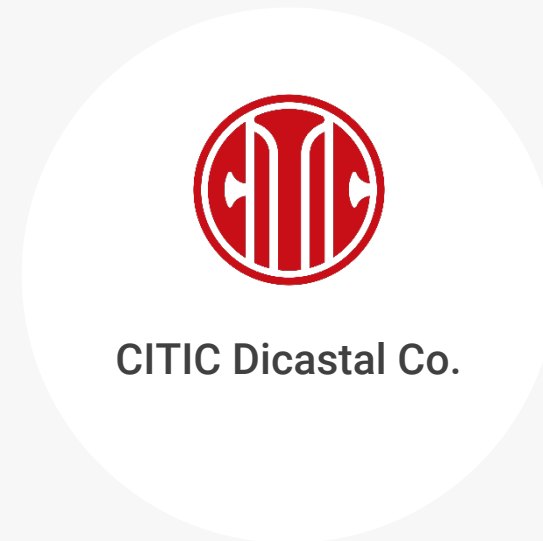
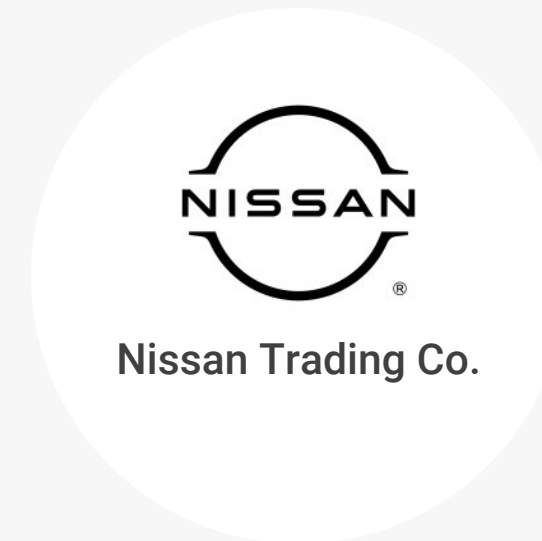
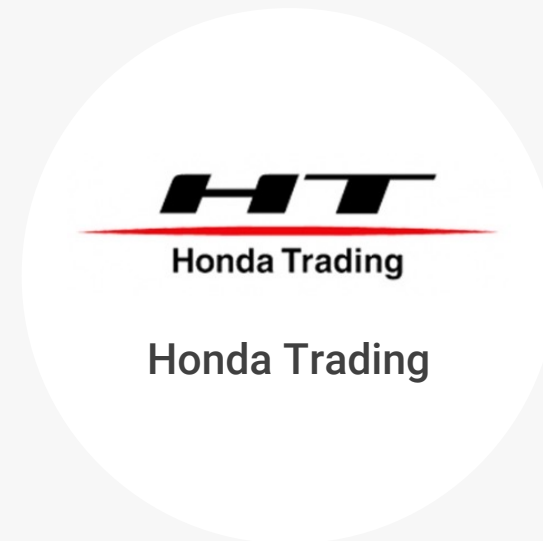
PSA Avtec



Alicon

Our Esteemed Export Clientele

We are absolutely delighted to serve our clients internationally



Infra- structure

Our modern infrastructural facility sprawls over a wide area of land and is systematically departmentalized into variegated units that comprises packaging, warehousing, manufacturing, quality control, etc.



Guru Rajendra Pvt. Ltd.
Chhatral

Area: 81,000 sq. ft.

Capacity: 24,000 MT / Annum



G R Metalloys Pvt. Ltd.
Kadi

Area: 2,43,000 Sq. Ft.

Capacity: 48,000 MT / Annum

Plan: Setting up third plant with capacity of 3,000 MT Per Month. This Plant will be operational by 1st January 2026.
We're also venturing into supply of Molten Metal by 1st January 2026.

Melting Unit #1

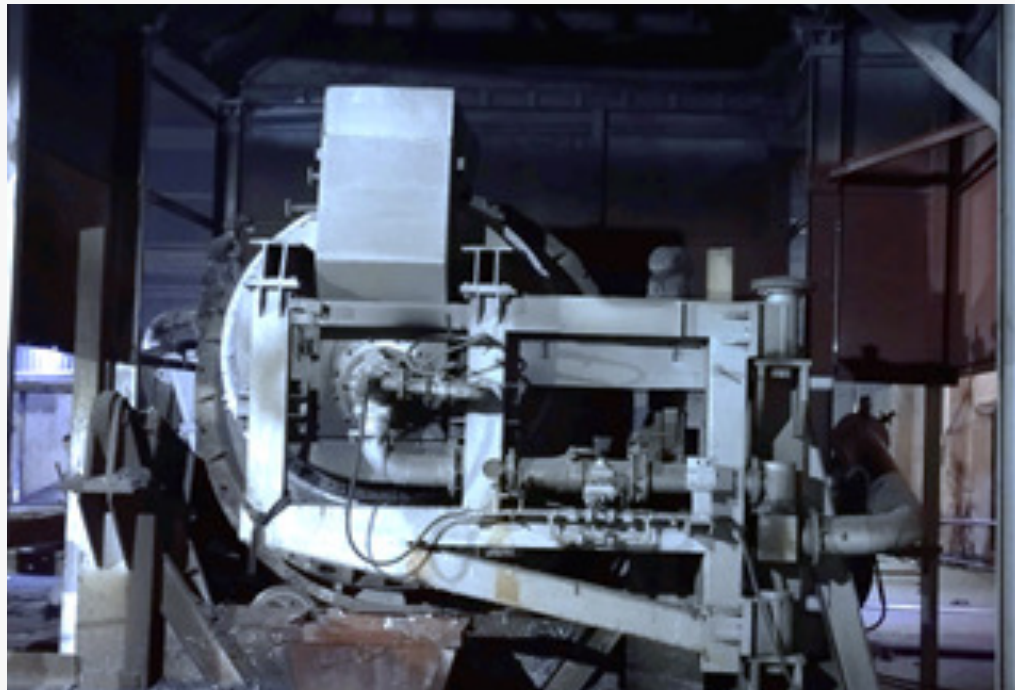


Skelner Furnace



Rotary Furnace

Melting Unit #2



TRF Furnace



Rotary Furnace



Skelner Furnace



Casting Area



Ultra high purity n2 gas for degassing from inhouse liquid N2 gas plant



Inline Degassing Setup

Packaging as per International Standards





Quality Assurance equipment with state of the art analytical equipment facilities

Ametek Spectrometer – 3 Nos.

Metalab Metallurgical Microscope – 1 Nos.

Density Index Machine – 1 Nos.

K Mould – 2 Nos.

Vacuum Sampling Machine – 2 Nos.

Sample Turning Machine (Lathe) - 2 Nos

Sample Polishing Machine – 1 Nos.

Muffle Furnace – 2 Nos.

Quality Control Instruments



Spectrometer



Density Index Machine



Vacuum Sampling Machine



Metallurgical Microscope



Muffle Furnace



Flow Control Pin



Ceramic Foam Filter

K-mould Inspection to measure and control inclusions in molten



We use Ceramic Foam filters while pouring to get clean and inclusions free molten metal.

Control Pin to adjust the flow of molten metal during pouring to get uniform shape and size ingots.

Thank you

From Team GR Metalloys



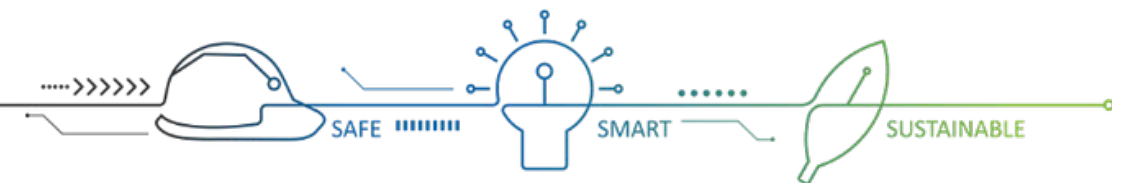


HINDUSTAN ZINC LIMITED



HINDUSTAN ZINC
Zinc & Silver of India

Welcome to the AmaZinc realm of Hindustan Zinc Limited



58 Years of Unmatched Excellence

Strengthening the
future of mobility
with the power of **Zinc!**



HINDUSTAN ZINC LIMITED

A Vedanta Group Company

Turnover of USD 3.46 Billion

World 2nd Zinc
Producer

World's 3rd Largest
Silver Producer

World's Most
Sustainable Metal
and Mining Company*

1 million ton+ metal
produced in FY24

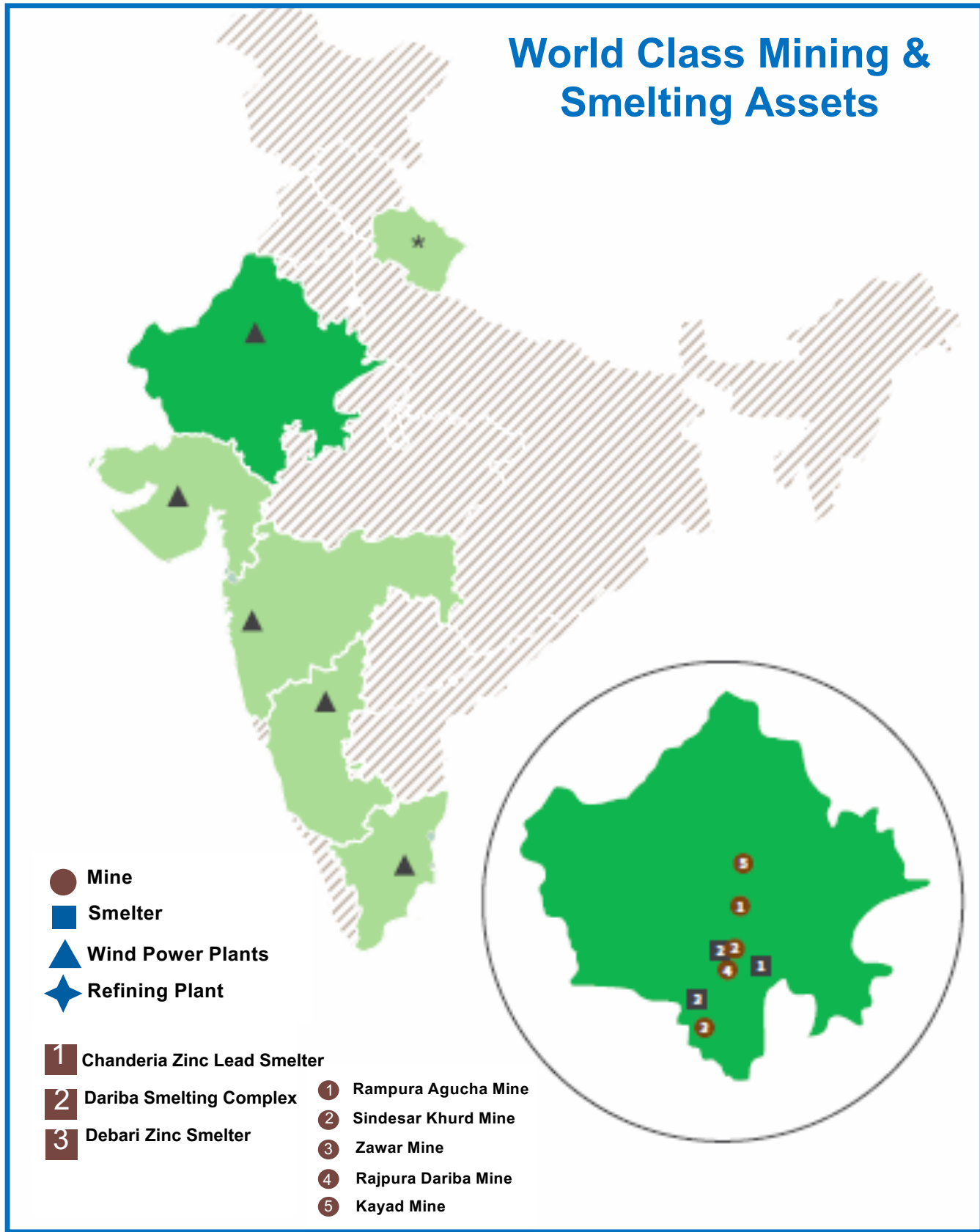
World's largest
integrated Zinc-
Lead smelter at
Chanderiya

World's largest
underground mining
operations at
Rampura Agucha

*S&P Global Corporate Assessment 2023

Exceptional Operations & Certifications

Best in Class Certifications



BIS Certified Bureau of Indian Standards (BIS)
Zinc & Lead product meets BIS Quality Compliance for assured quality and reliability



ISO (Information Security Management Systems)
Strives to meet top standards in Cyber Security, IT Risk, Continuity, and Privacy



REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals)
Cetrification allows exports in Europe



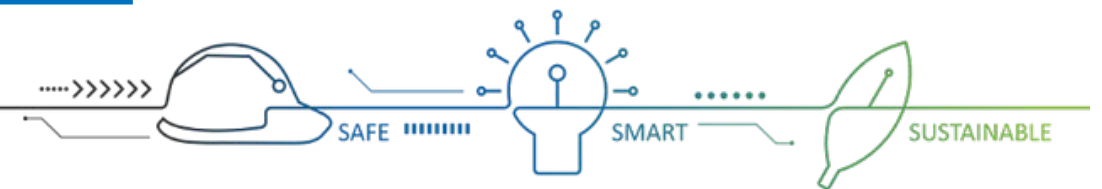
Environmental Product Declaration
A document providing transparent, comparable data on products' environmental impact



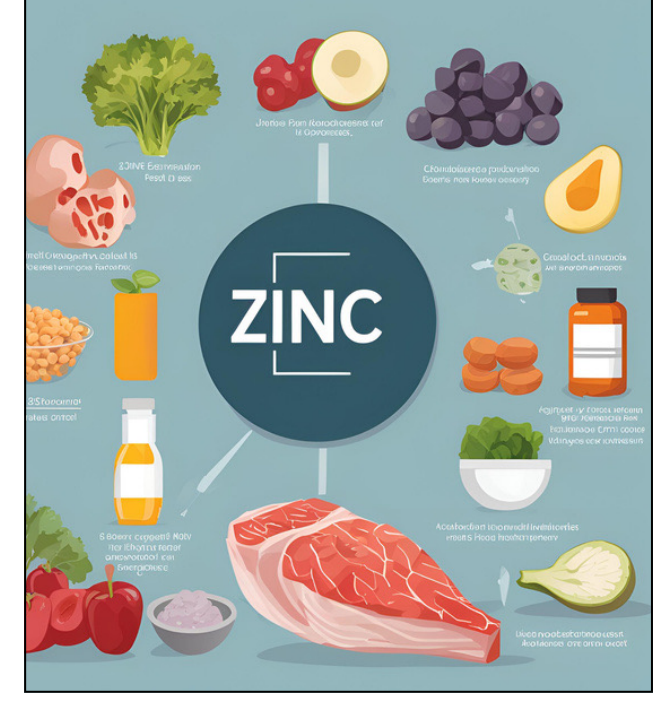
London Bullion Market Association (LBMA)
Refinery's adherence to international quality standards, marked by LBMA certification of 99.99% pure silver



LME (London Metal Exchange) Certification
London Metal Exchange certified & registered products ensuring highest purity



Zinc in Our Everyday Lives & its Super Powers



Strength

Zinc's strength allows for creating durable components through processes like pressing, machining, and stamping

Corrosion Resistance

Zinc's corrosion resistance benefits coatings & galvanization by protecting metals from rust and extending product life in tough environments

Low Melting point

Zinc's low melting point enables energy-efficient casting, manufacturing, and creation of intricate shapes

Durability

Zinc is durable, suitable for various applications like construction and automotive components, ensuring long-lasting performance

Nutrition

Zinc is crucial for immune function, wound healing, and metabolism.

ZINC 4th most widely consumed metal &
2nd most abundant trace metal in humans



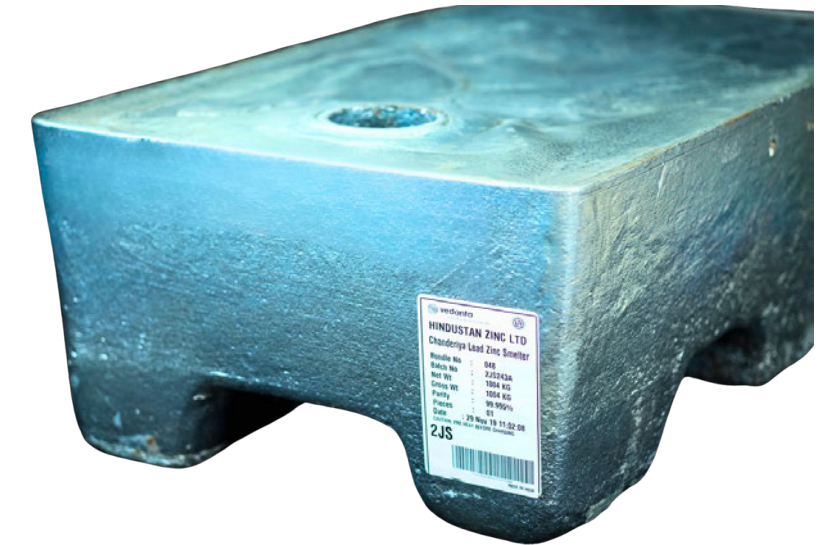
Our Diverse Product Portfolio



Continuous Galvanising
Grade Jumbo



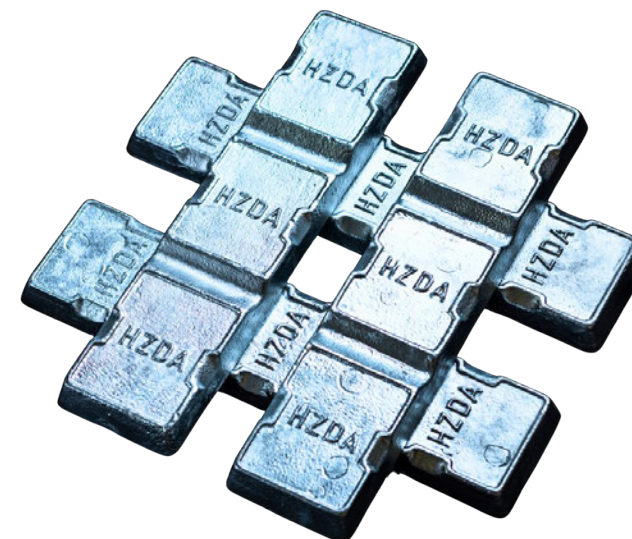
SHG (Special High Grade)



Special High Grade Jumbo



PW (Prime Western)



High Zinc Die Casting alloy 3



High Zinc Die Casting alloy 5

Our Diverse Product Portfolio



Lead



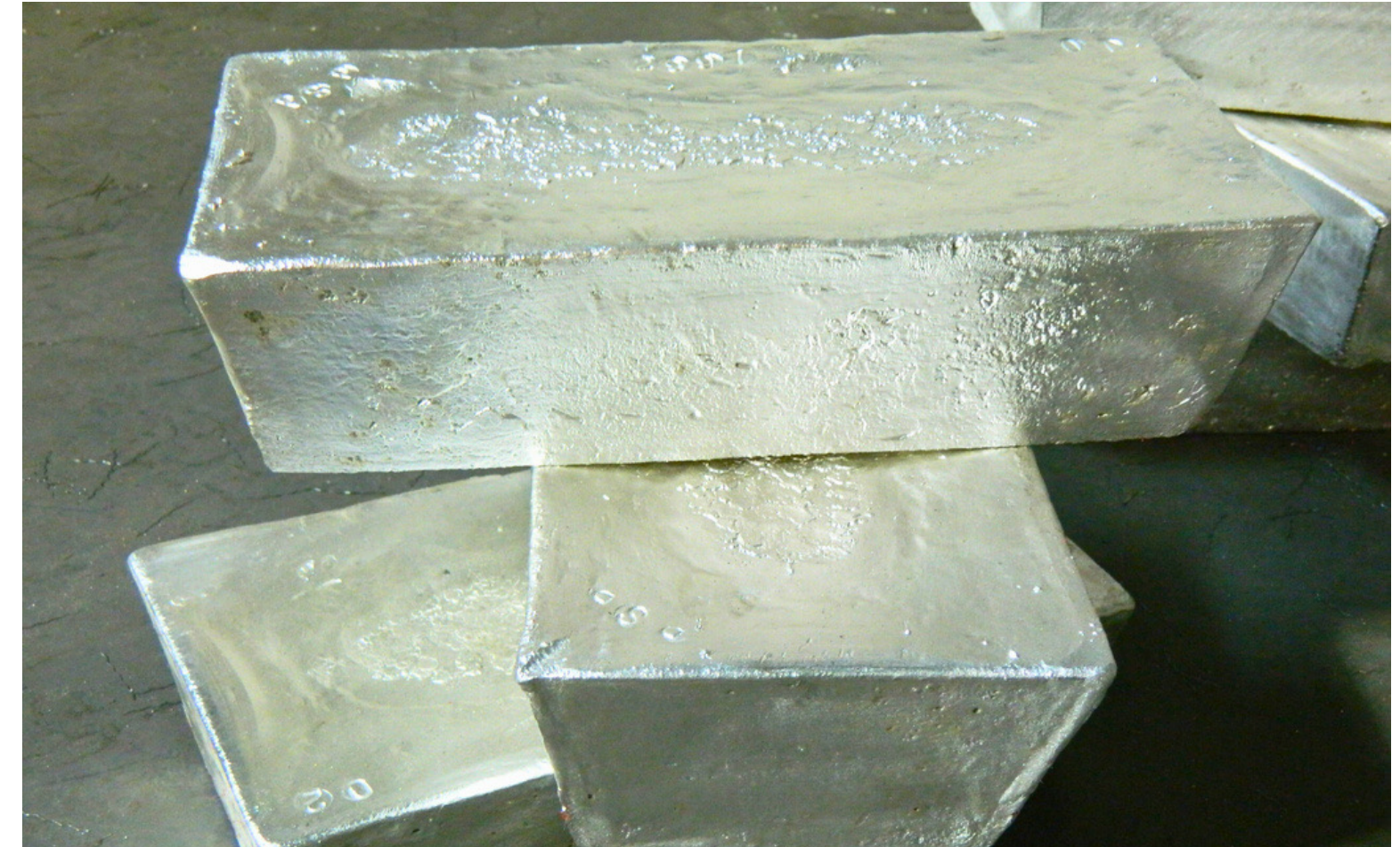
Features

Versatile metal with high Malleability, Resistant to corrosion



Applications

Automotive batteries, Pigments, Cable sheathing



Silver



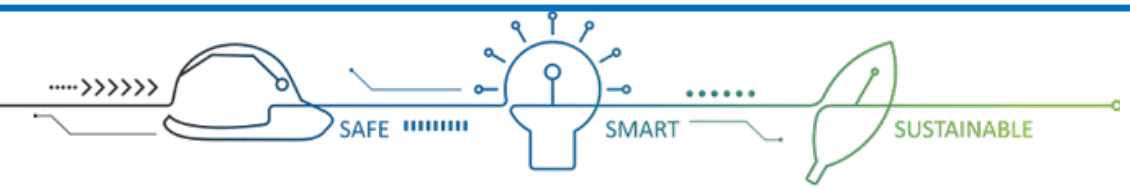
Features

Highest thermal conductivity & lowest contact resistance



Applications

Silverware, Coins, Solar Panels



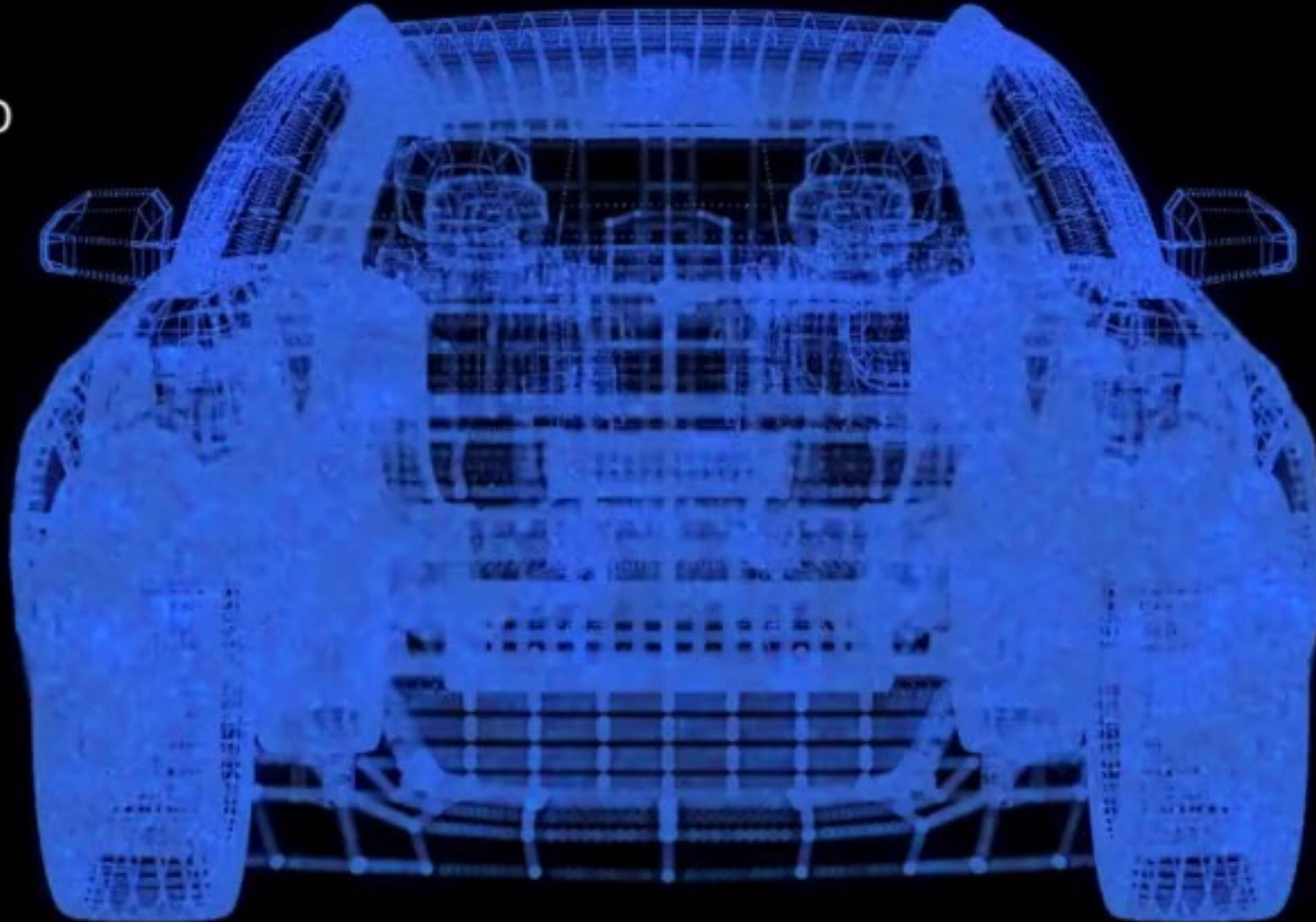
Hindustan Zinc Limited

LEAD

LEAD-ACID
BATTERY

ZINC

- FUEL CONTROL VALVE
 - CLUTCH
 - BREAK WIRE
 - LOCK SET
 - KEY SET
- CAR BODY GALVANIZATION
- FUEL CAP

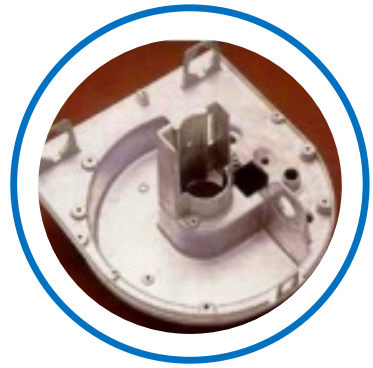


SILVER

- ENGINE ECU
- INSTRUMENT CLUSTER
- BODY ECU
- DATA LINK
- TELEMATICS BOX
- DRIVER DOOR CONTROL
- HEAD UNIT
- REAR VIEW CAMERA
- TPMS ECU

Diverse metals for diverse auto applications

One Metal, Diverse Applications



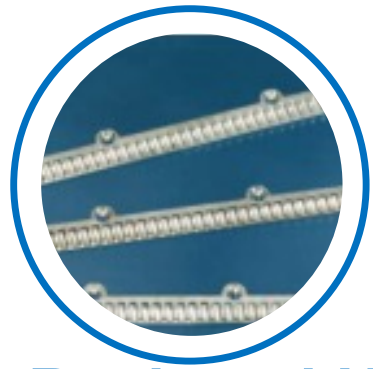
Motor Chassis



Door Handles



Steering body



Gear Rack and Housing



Gear Housing



Foot Pedal Level



Sliding door Lever



Lever

Zinc Galvanised
Cars

Normal
Cars

Corrosion Resistance

Automotive parts made with zinc are corrosion-resistant, enhancing durability and safety in challenging conditions

Energy Efficiency

Zinc alloys offer improved energy efficiency compared to other die-casting metals, resulting in lower emissions and fostering a more sustainable manufacturing process

Safety and Security

Zinc strengthens safety by reinforcing structural components like roll bars, airbags, and seat belts to reduce impacts during collisions



4 Wheelers



Applications

Door panels, bonnet, petrol tank and assembly, dashboard panels, Chassis, Wind shield/seat belt brackets



2 Wheelers



Applications

Chassis, mud guard, brake drum, floorboard, wheel rim, petrol tank and assembly





GALVANISED STEEL IN INDIAN CAR MANUFACTURING Global vs Indian Scenarios

Global Scenario:

- **Global Standard:** Galvanized steel widely used in Europe, North America, Japan & Korea for BIW
- **Export Focus:** Over 80% of export models utilize galvanized steel, reflecting higher durability standards

Indian Scenario:

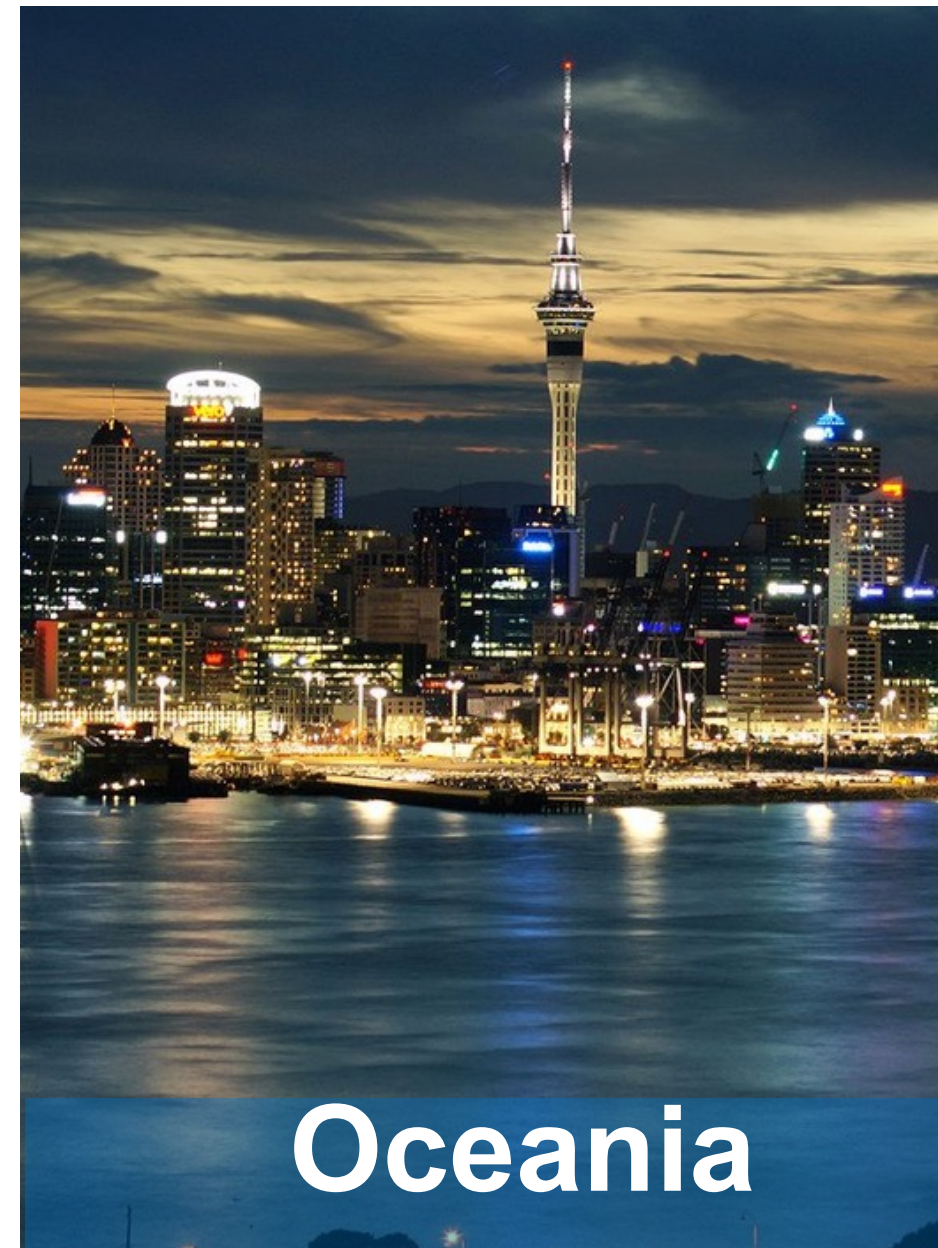
- **Current Practice:** Indian cars predominantly use coated steels for aesthetics, lacking anti-perforation warranties.
- **Approx. 40%** of domestic cars use galvanized steel.

Impact and Future Directions:

Shift towards aligning domestic practices with global standards for enhanced longevity and customer satisfaction

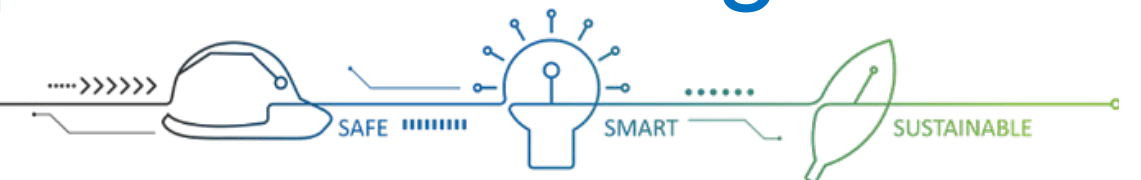


Global reach - Supplying to 40+ Countries



REACH Certified

Over 30,000 MT of Zinc supplied to Europe and counting...



Customer Technical Services & Centre of Excellence



Strong Customer Technical Services cell



Customized value-added products



Access to cutting edge R&D



Best practices at our Centre of Excellence



A revolutionary buying experience through
MetalBazaar

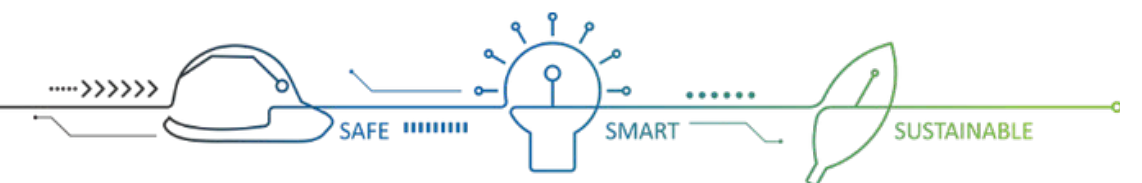


Our customers have access to 360-degree holistic solutions

Our Varied Clients



KEC INTERNATIONAL LIMITED



Contact Us

For queries email at:
CustomerserviceHZL@vedanta.co.in

Check product offerings on:
<https://vedantametalbazaar.com/>



Protecting & Preserving for an 'AatmaNirbhar Bharat'

Catch us on Social Media



<https://www.hzlindia.com/home/>



<https://www.linkedin.com/company/hindustanzinc/>



<https://www.facebook.com/HindustanZinc/>



https://www.instagram.com/hindustan_zinc/



https://twitter.com/Hindustan_Zinc



https://www.youtube.com/channel/UCf_BrqkAnOnpUSTnuR1ck3Q



THANK YOU



COMPANY PROFILES



Company Name: **CMR Green Technologies Limited**
Address: 7th Floor, Tower 2, L & T Business Park,
12/4 Delhi Mathura Road,
Faridabad- 121003, Haryana
Key Turnover (in Mn USD): Approx. 717 Mn USD

In Charge Name: **Mr. Mohan Agarwal**
Designation: Managing Director
Email ID: mohan.a@cmr.co.in
Contact Number: 9810033663

In Charge Name: **Mr. Akshay Agarwal**
Designation: Executive Director
Email ID: akshay.a@cmr.co.in
Contact Number: 9999006780

Brief Product Description: Cast Aluminium Alloy Ingot
Liquid Aluminium Alloy
Zinc Alloy Ingots
Aluminium Eco Billets
Stainless Steel Scrap
Wrought Alloy Ingot
Brass Scrap
Copper Scrap

Industries We Serve

We serve a wide range of industries, including aerospace, automotive, construction, chemical, electrical, marine, oil, and petroleum.



GR Metalloys

Excellence through Innovation

Company Name: GR Metalloys Pvt Ltd
Address: Ahmedabad, Gujarat
Key Turnover (in Mn USD): 185

In Charge Name: Mr. Jayant Jain
Designation: Director
Email ID: jayant@grmetal.in
Contact Number: 9979511222

Brief Product Description:
Leading Aluminium Alloy Ingot manufacturer



HINDUSTAN ZINC
Zinc & Silver of India

Company Name: Hindustan Zinc Limited
Address: Yashad Bhawan
Udaipur – 313 004 Rajasthan, INDIA
Key Turnover (in Mn USD): 3.46 billion (INR 28,932 crores)

In Charge Name: Anshika Agarwal
Designation: Market Development Lead
Email ID: Anshika.Agarwal@vedanta.co.in
Contact Number: +91 11 24365421

ACMA

Automotive Component Manufacturers Association of India

HEAD OFFICE

6th Floor, The Capital Court, Olof Palme Marg, Munirka
New Delhi - 110 067, India
Tel: +91-11-43520361-64
E-mail : acma@acma.in Website : www.acma.in

REGIONAL OFFICES

Eastern Region

Room No. 4, Centre for Excellence, Jubilee Road
Jamshedpur - 831 001, Jharkhand, India
Tel: +91-657-2230035 E-mail : acmer@acma.in

Southern Region

1-B, "Crystal Lawn"
20, Haddows Road, First Street
Chennai - 600 006, Tamil Nadu, India
Tel: +91-44-2833 0968, 2833 0949
Fax: +91-44-2833 0590 E-mail: acmasr@acma.in

Western Region

Office No. C, 10th Floor, Godrej Eternia "C", B Wing
Old Mumbai - Pune Highway
Wakdewadi, Shivaji Nagar
Pune - 411 005, Maharashtra, India
Tel: +91-20-6606 1219 E-mail: acmawr@acma.in

ZONAL OFFICES

Southern Region - Karnataka & Hosur

Shop No. 1, Commercial Complex
National Games Village
Koramangala, Bangalore - 560 047, Karnataka, India
Tel: +91-80-2570 2855, Fax: +91-80-4093 9689
E-mail: acmakh@acma.in

Western Region - Mumbai

80, Dr. Annie Besant Road, Worli,
Mumbai - 400 018, Maharashtra, India
Tel: +91-22-2493 3507 E-mail: acmawr@acma.in

Western Region - Gujarat

801, 'Matrix' Near Vodafone House
B/H Divya Bhaskar Corporate Road
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