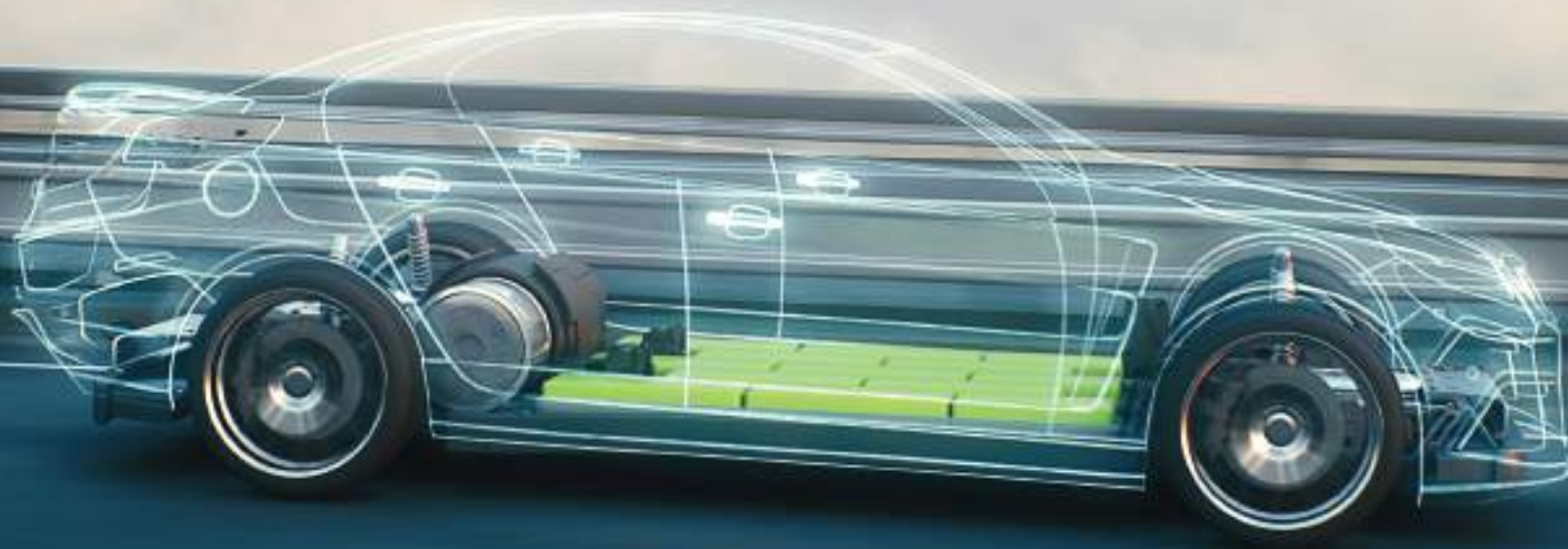




ADVANCE SOLUTIONS FOR BATTERY FOIL

CHARGING INNOVATION FOR THE FUTURE



About Aditya Birla Group

Aditya Birla Group (ABG), a global conglomerate with a turnover of \$63 Billion, is in the league of Fortune 500 companies. Headquartered in India, the Group is present across 14 industry sectors. It has achieved global and national market leadership in several sectors like metals, pulp and fibre, chemicals, textiles, carbon black, cement, financial services, and fashion retail.

About Hindalco

Hindalco Industries Limited is the metals flagship company of the Aditya Birla Group and a global leader in Aluminium, Copper, and Specialty Alumina. It is India's largest fully integrated aluminium manufacturer and one of Asia's top primary aluminium producers. Its subsidiary, Novelis Inc., is the world's largest aluminium rolling company and recycler.

Hindalco also operates a major copper smelter and fertiliser plant, and is the third-largest copper cathode rod manufacturer outside China.

Our specialty alumina (Chemicals) business is at the forefront of the industry in India and is recognised as a prominent global player in specialty alumina and hydrates.



Our Commitment to Sustainability

Carbon Footprint

Currently, 80% of waste is re-used, including 2.3 M tons of red mud and over 100% of fly ash.



Environmental Effects

Hindalco aims to reduce net water intensity by 30% by FY'25 compared to 2019, saving over 18 MCM of water annually.



Recycling of Waste

During the fiscal year 2022, Hindalco processed and recycled 2.2 MM tons of aluminium scrap.



Impact on Biodiversity

Hindalco contributes to environmental conservation with 190 HA of greenbelt and 450,000 trees planted each year.



HINDALCO INDUSTRIES

TOP 1%

S&P Global (DJSI) ESG Score 2024

87 / 100

as of February 7, 2024.

Position and Score are industry specific and reflect exclusion screening criteria. Learn more at spglobal.com/esg/yearbook

ESG Targets

- Zero net carbon & net loss of biodiversity by 2050.
- 100% of electricity requirement from renewable energy by 2050.
- Zero waste to landfill by 2050.
- Zero harm to occupational health & safety.

At Hindalco, our unwavering commitment to enriching lives is intricately woven into our sustainability efforts. We firmly believe in creating a greener future, and to achieve this, we are committed to attaining our environmental goals. Our ESG commitment is deeply ingrained in our strategic priorities, which drive positive change and make a lasting impact on the planet. Awarded "Most Sustainable Aluminium Company" in Dow Jones sustainable indices five years in a row from 2020-2024.

Our Innovation Capabilities

Hindalco Industries is investing \$100 million to establish a 25,000 TPA Battery Cathode Foil facility in Sambalpur, Odisha, slated for commissioning in October 2025. This advanced plant will support 100 GWh of lithium-ion cell production annually.

We've developed four specialized battery-grade aluminum alloys, including AA1100, AA1060, and a proprietary high-performance Hindalco Alloy, tailored for next-gen battery applications.

Our qualification line near Nagpur (2,400 TPA) is already operational, supplying global customers across Europe, the USA, Asia, and India. Backed by strong R&D and rolling expertise, we deliver foils with high elongation, tensile strength, and conductivity, driving innovation in energy storage.

Key Highlights

529

Patents Filed

427

Patents Granted

62

New Products
Developed



Aluminium foil for Li-ion battery current collectors



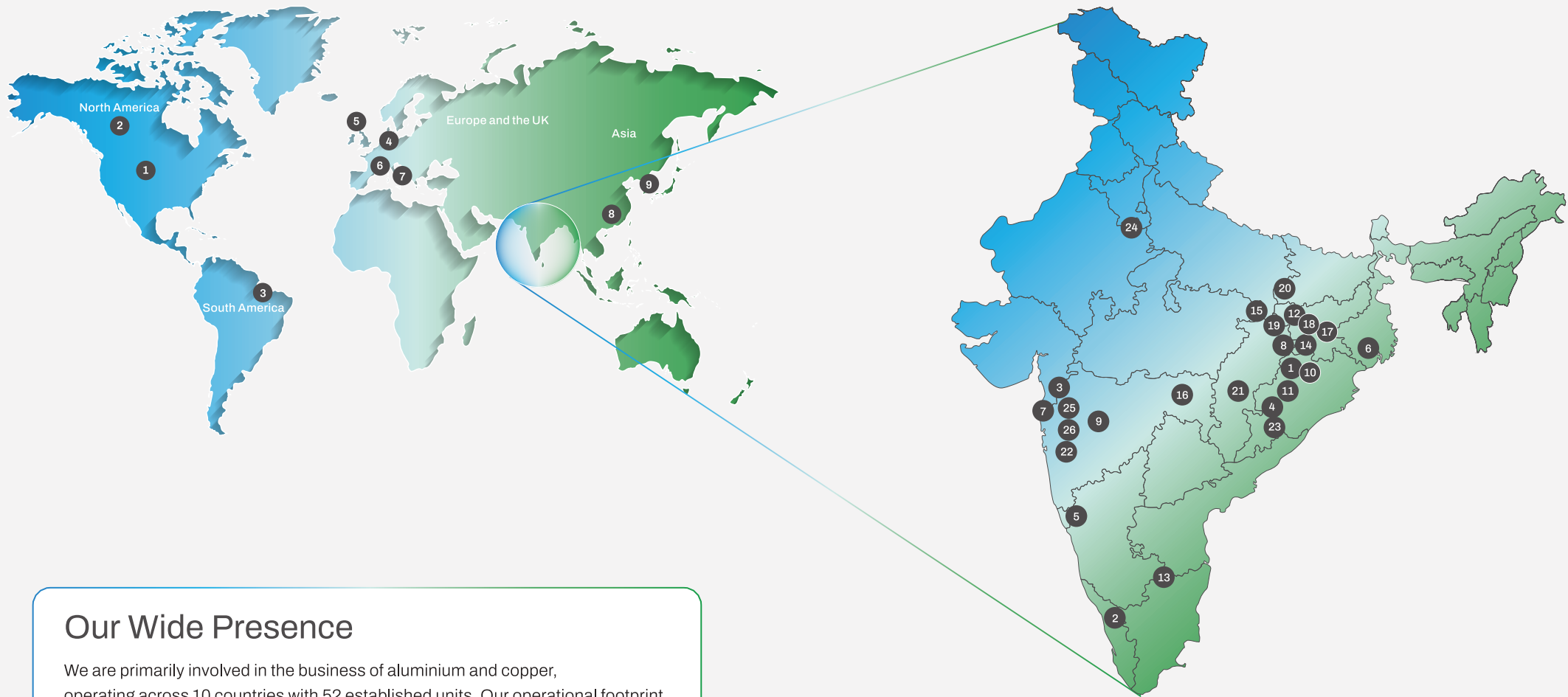
Proprietary Alloy



Battery Enclosure for Personal Mobility EVs



Cargo Solutions for Commercial Vehicles



Our Wide Presence

We are primarily involved in the business of aluminium and copper, operating across 10 countries with 52 established units. Our operational footprint across India has been indicated on the map.

Novelis' Global Operations

North America and South America

Novelis Inc.

- 1. US
- 2. Canada
- 3. Brazil

Europe and the UK

- 4. Germany
- 5. UK
- 6. Switzerland
- 7. Italy

Asia

- 8. China
- 9. South Korea

Domestic Operations

- | | | | |
|---------------------|------------------------------|-----------------------------|-------------------|
| 1. Aditya Aluminium | 8. Gare Palma (IV/IV) | 15. Mahan | 22. Taloja |
| 2. Alupuram | 9. HAAL | 16. Mouda | 23. Utkal Alumina |
| 3. Asoj | 10. Hirakud FRP | 17. Muri | 24. Bhiwadi |
| 4. Baphlimali | 11. Hirakud S&P | 18. Netarhat (4 mine sites) | 25. Silvassa |
| 5. Belagavi | 12. Kathautia | 19. Renukoot | 26. Pune |
| 6. Belur works | 13. Kuppam | 20. Renusagar | |
| 7. Dahej | 14. Lohardaga (4 mine sites) | 21. Samri | |

■ CPP ■ Refinery ■ Smelter ■ Extrusion/FRP/Foil ■ Bauxite ■ Coal ■ Copper ■ Personal Mobility Solutions

One Hindalco Many Solutions

At Hindalco, we offer materials, products and solutions engineered to suit the needs of various applications across sectors.

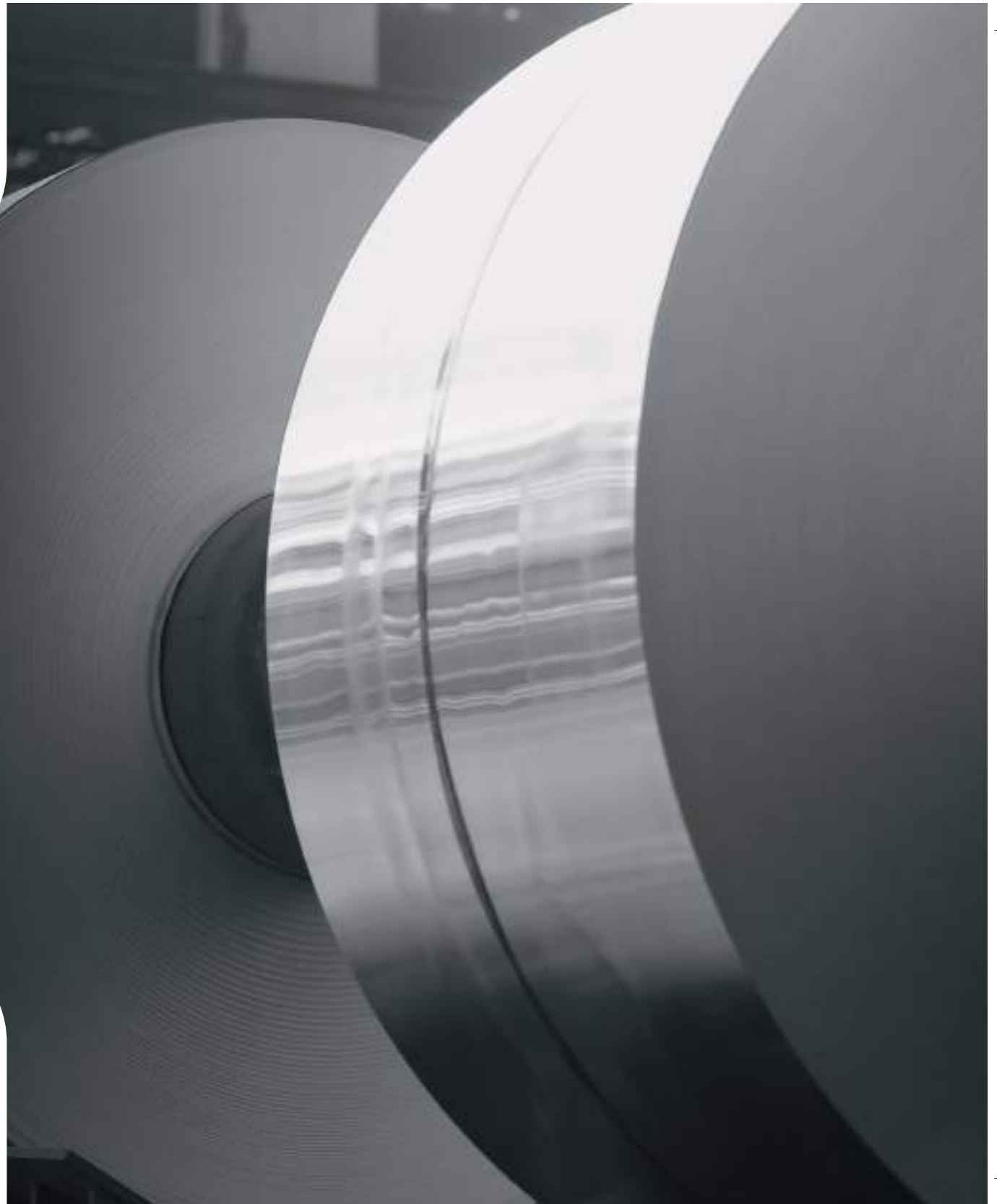


Our 5 Range Brands Offers Unique Benefits Across Sectors:

	Products/solutions that are circular in nature and hold recreation or recycling at their core.	Ingots from Recycled Aluminium, Aluminium Circles for Cookware, Aluminium Foil for Food Packaging, Copper Rods.
	Products/solutions that are zero or low carbon, use alternate sources of energy, and are ultimately greener, smarter, and better.	Primary Ingots made using Renewable Energy, Ultra light Gauge Aluminium Foil for Packaging.
	Products/solutions which promise use of superior technology to deliver precision and meeting exacting standards for high-tech applications.	Precision Extrusions for Transport, Aerospace, Defence and Electricals & Electronics, AluAlu foil for Pharmaceutical Packaging, Aluminium Rolled Stock for Closure, Clad, Litho, Detonators, Fin, Foil and Battery Foil, Copper Oxygen-Free Rods, Copper-Magnesium & Copper-Silver Rods for Railway Electrification, Copper Inner Groove Tubes for Air Conditioning and Refrigeration, Speciality Alumina Solutions for Refractory, Ceramics, Polishing, and Battery applications, EV Battery Frame Solutions, E-Cycle Components, Battery Foil Solutions and Crash Components.
	Products/solutions that offer the promise of durability and toughness.	Roofing and Façade Solutions for B&C, Bus Body Solutions.
	Product/ solutions that offer safety as their core value proposition.	Flame Retardant Solutions for Electrical Transmission, Building and Construction, Automotive, Railways and many more.

Introduction to Battery Foils

As we progress towards a greener future, the demand for Electric Vehicle (EV) & Energy Storage System (ESS) increases. We provide a wide range of applications in EV and ESS, and hence our current portfolio includes Battery Grade Aluminium Foil (Battery Foil), Structural components of Prismatic Cell, Bus Bars, Battery Enclosure, and Specialty Alumina for Separators.



Our Manufacturing Capabilities



Taloja R&D

Hindalco Innovation Centre and Aditya Birla R&D Centre. Facility for R&D.



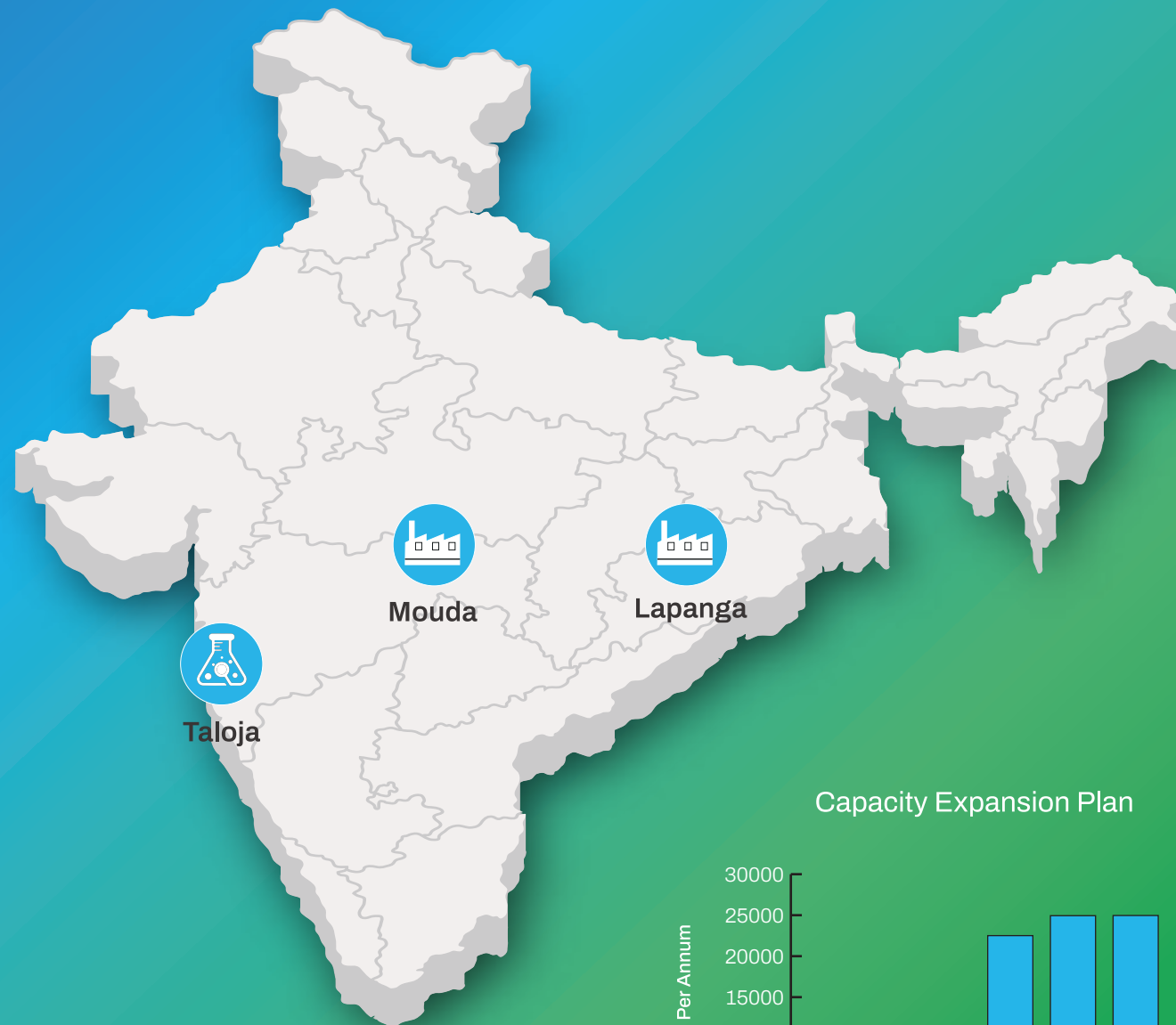
Nagpur/Mouda

A section of an existing foil plant is modified for production of Battery Foil for customer qualification and product development. The capacity available for Battery Foil is 2400 tonnes per annum.

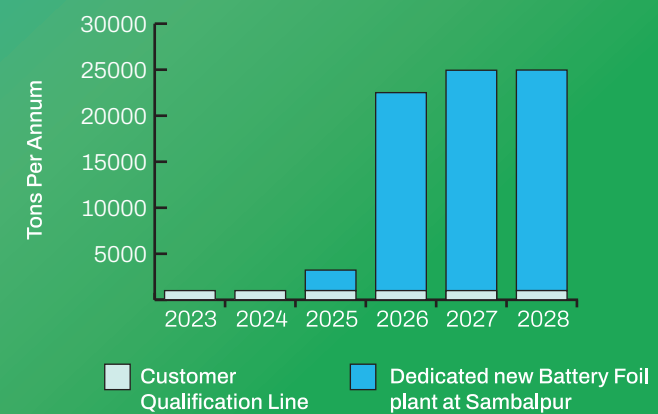


Sambalpur/Lapanga

A dedicated new Battery Foil plant is also coming up with state-of-the-art equipment, and capacity of 25,000 tonnes per annum commissioning in October 2025.



Capacity Expansion Plan



Battery Cathode Foils

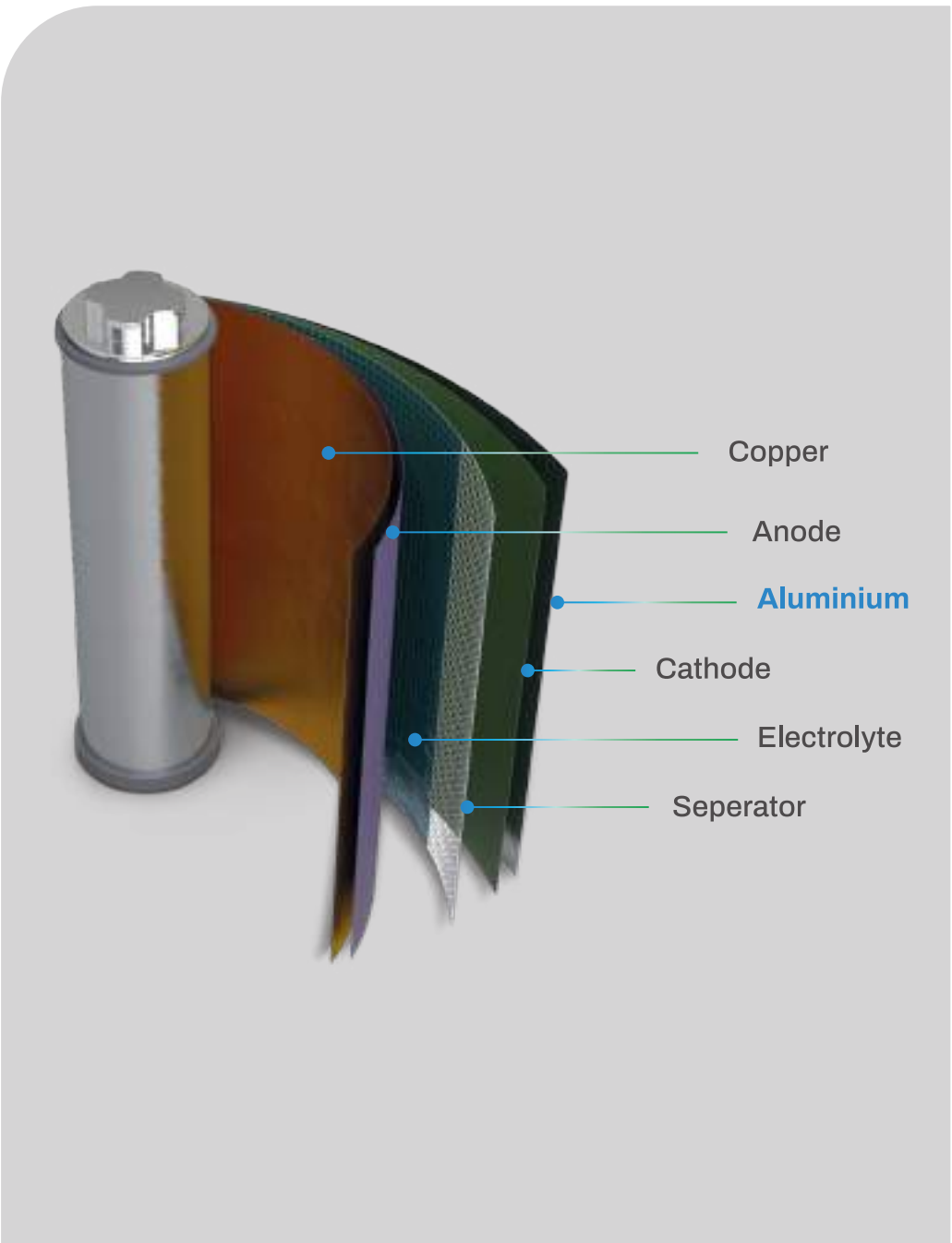
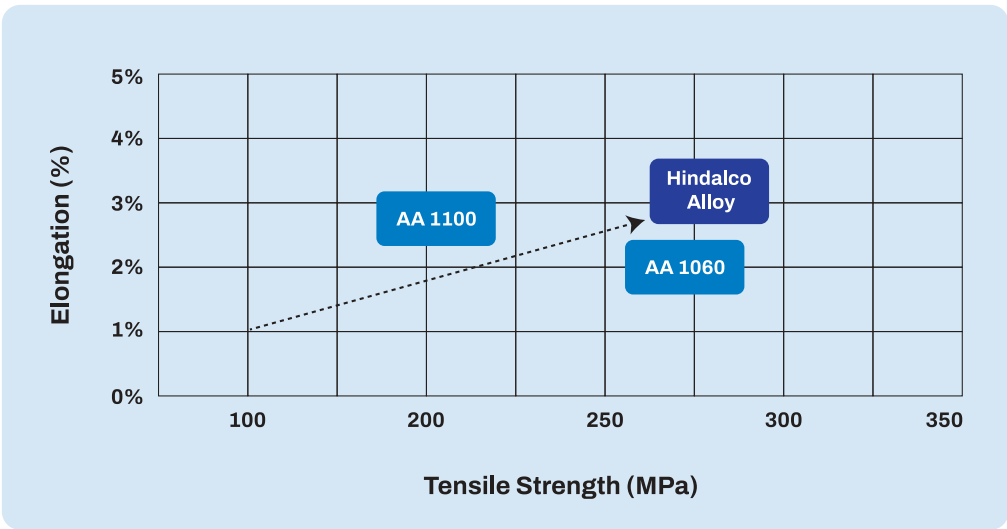
Our Battery Cathode Foil is engineered to enhance the performance and reliability of lithium-ion batteries. Its thin design increases energy density by enabling greater electrode material loading, while ensuring a smooth, break-resistant production process. With high Ultimate Tensile Strength (UTS) and elongation, it improves stability, prevents swelling, and supports efficient electrode manufacturing. As demand rises, our foil meets the growing need for higher strength and energy density, delivering optimal performance even under high calendaring pressures.

Need for both higher strength and higher elongation shall keep increasing as the combination of both of these properties is critical for LiB batteries for

Better production efficiency

Handling high calendaring pressures

Achieving higher energy density



Battery Foil



Our Battery Foil, crafted from a range of advanced alloys, sets a high standard in lithium-ion battery performance. Its ultra-thin design boosts energy density, while ensuring a smooth, break-resistant production process.

Battery Foil - Product Specifications

Parameter	AA1100 Battery Foil	AA1060 Battery Foil	AA1050 Battery Foil	Hindalco Propriety Alloy
Thickness	10 to 15 micron	10 to 15 micron	10 to 15 micron	10 to 15 micron
Alloy	M1100	M1060	M1050	Modified
Aluminium Content	>99.0%	>99.6%	>99.5%	>99.4%
Temper	H18	H18	H18	H18
Ultimate Tensile Strength (MPa)	250MPa to 285MPa	190MPa to 210MPa	200MPa to 220MPa	270MPa to 290MPa
Elongation at Break(%)	>2.7%	>3.5%	>3.0%	>3.2%
Wettability	>34 Dyne/cm	>34 Dyne/cm	>34 Dyne/cm	>34 Dyne/cm

We have state-of-the-art Quality Control & Testing facility

Universal Testing Machine	Scanning Electron Microscope	Confocal Microscope	In-line Pin Hole Detector
In-line Flatness Measurement System	Colour Photo Spectrometer	Light Emission Spectrometer	Viscometer
PoDFA	Alscan Hydrogen Analyser		



ADITYA BIRLA
METALS

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