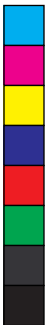
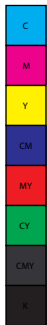
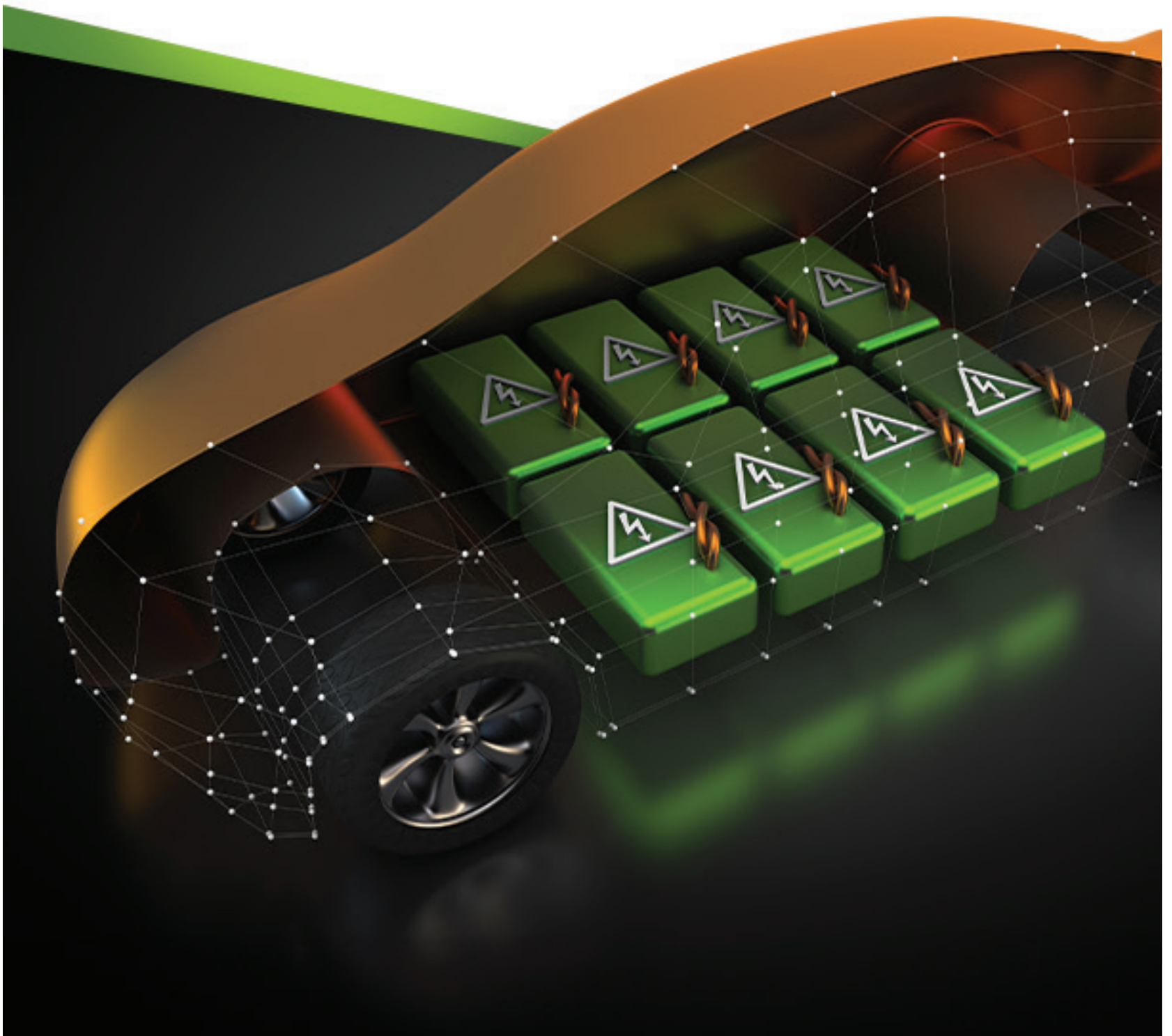




Solutions for EV Battery

HINDALCO BATTERY FOILS



About Hindalco

The metal flagship company of the Aditya Birla Group, Hindalco Industries Limited, is the world's largest rolling and recycling company.




Strong Fundamentals

USD 28 Billion Revenue
USD 3.2 Billion EBITDA
52 Manufacturing Sites
* FY23


Sustainability

61% of Recycled Aluminium Content (incl Novelis)
88% of Manufactured waste reused


Intellectual Capital

USD 100Mn R&D Spend
592 Patents filed & 427 Patents granted


Industries We Serve




Electrical




Automobile




Construction



Packaging



EV Batteries & Components



Aerospace

Wide Range of Alloys

Series	Alloying Element(s)	Alloys (Hindalco)	Product Range/Market
1xxx	99.00wt% min. Al	1070, 1060, 1050, 1350, 1235, 1100	Foil, Packaging, Electrical, Application, Printing
2xxx	Cu	2014, 2024, 2219, 2017	Hard Alloys, Defense, Aerospace
3xxx	Mn	3003, 3103, 3104, 3105	Consumer Ware, Building & Construction
4xxx	Si	4045, 4343	Brazing Sheets
5xxx	Mg	5005, 5052, 5251, 5754, 5182, 5083, 5086	Hard Alloy, Automotive, Marine, Pressure Vessels
6xxx	Mg + Si	6063, 6061, 6082, 6351	Structural Application, Buildings, Automotive
7xxx	Zn	7072, 7039, 7075, 7079	Aircrafts, Military Installations
8xxx	Other eg, Fe, Li	8011, 8079, 8021, 8006, 8090	Foils & Packaging, General Engineering

Hindalco - World Class Battery Cathode Foils

Electric Vehicle (EV) and Energy Storage System (ESS) are strategic growth areas for Hindalco. Aluminium metal has a wide variety of applications in EV and ESS, and hence our current portfolio includes Battery Grade Aluminum Foil (Battery Foil), Structural components of prismatic cell, Bus Bars, Battery Enclosure, and Specialty Alumina for Separators.

2019 – Validated Battery Foil for Defence and Space Applications

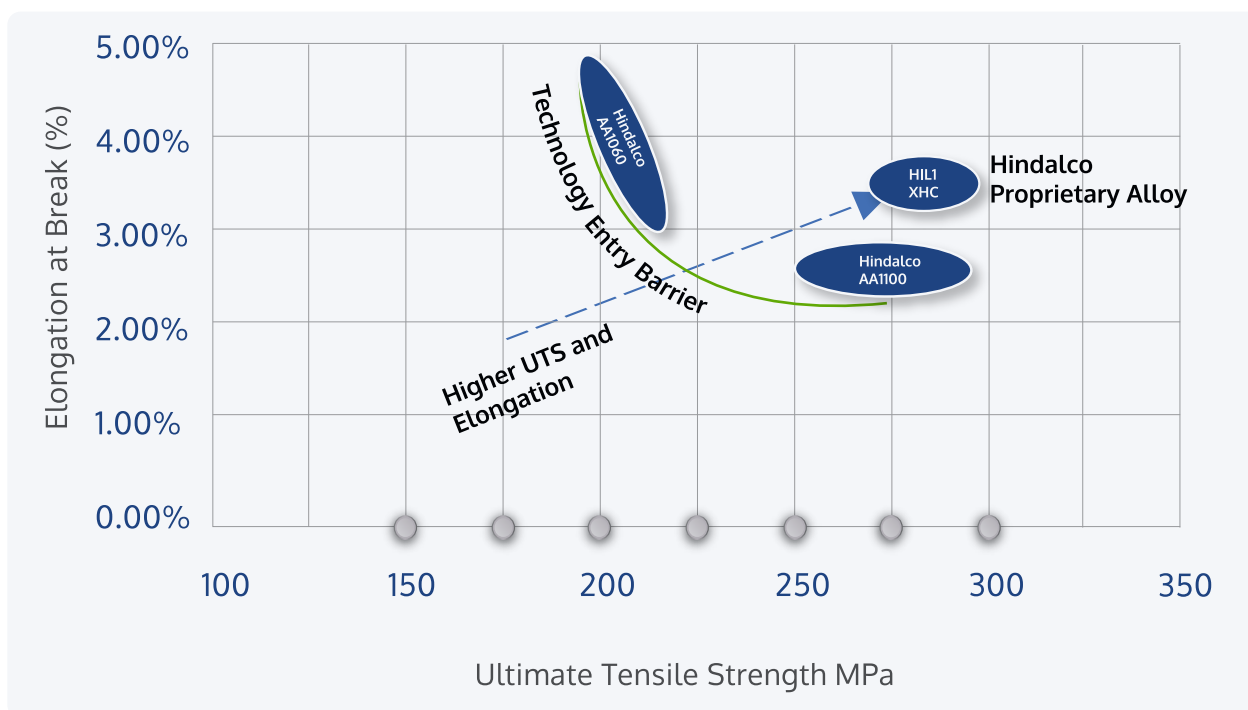
2023 – Developed high UTS and high Elongation Battery Foils for EV and ESS customers in US, Europe, India, and Japan.

2025 – New and dedicated Battery Foil plant to be commissioned.



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
- ⚡ Handle high calendaring pressures
- ⚡ Achieve higher energy density

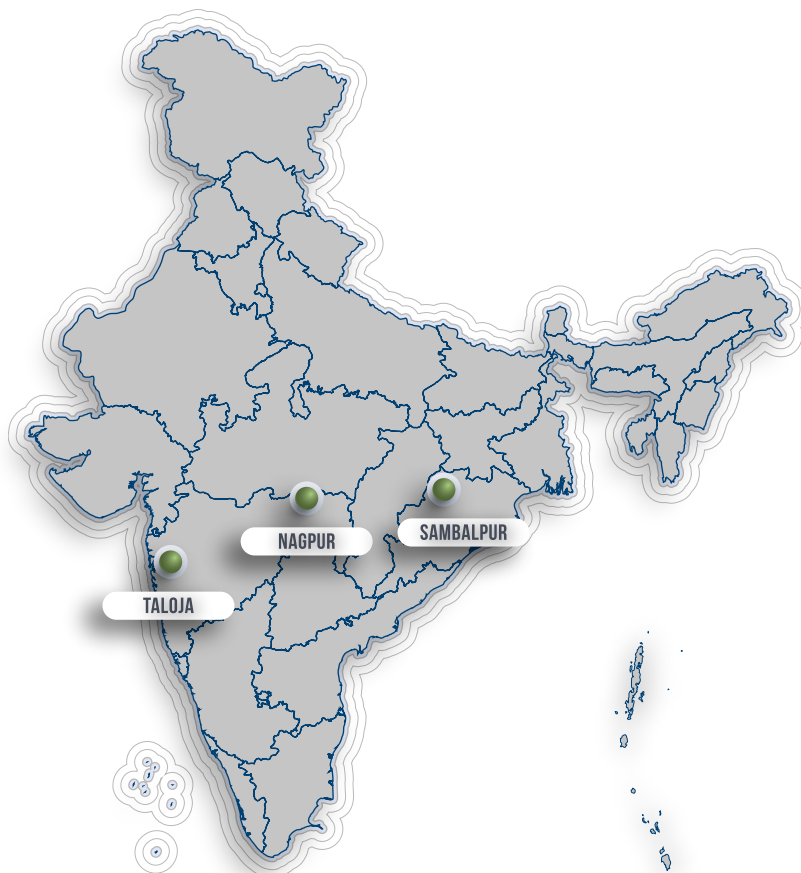


Battery Foil - Product Specifications

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	AA1100	AA1060	AA1050	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
- ⚡ Light Emission Spectrometer
- ⚡ Scanning Electron Microscope
- ⚡ Viscometer
- ⚡ Confocal Microscope
- ⚡ Colour Photo Spectrometer
- ⚡ In-line Pin Hole Detector
- ⚡ PoDFA
- ⚡ In-line Flatness Measurement System
- ⚡ Alscan Hydrogen Analyzer



Taloja R&D

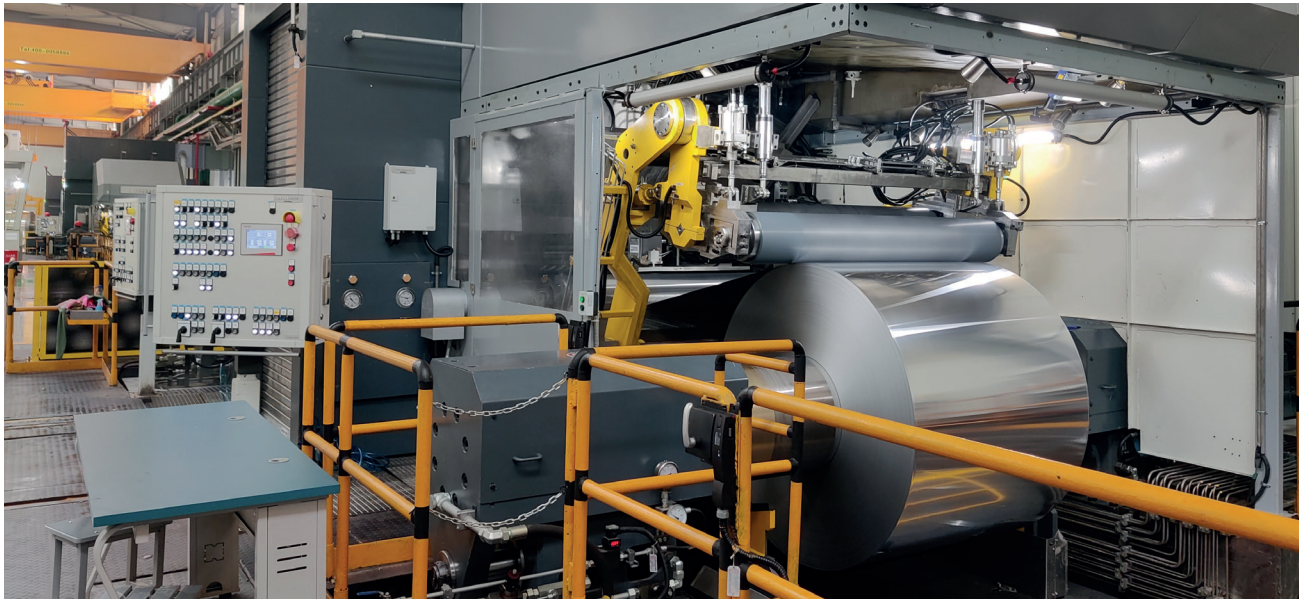
Hindalco Innovation Centre and Aditya Birla R&D centre. Facility for R&D.

Nagpur / Mouda

A section of existing foil plant is modified for production of Battery Foil for customer qualification and product development. Capacity available 2400 tons per annum for battery foil.

Sambalpur / Lapanga

Dedicated new Battery Foil plant coming up with state of the art equipment. Commissioning in July 2025. Capacity of 25000 tons per annum.



Capacity Expansion Roadmap

Hindalco investing USD 100Mn in Battery Foil Rolling and USD 350Mn in Sheet manufacturing and Alloying

Sheet + Alloying

1 Qualifying Battery Foilstock with global Battery Foil Manufacturers

2 Significant Capacity Expansion in Sheet - USD 350Mn investment - 170000 tons per annum

Battery Foil Rolling

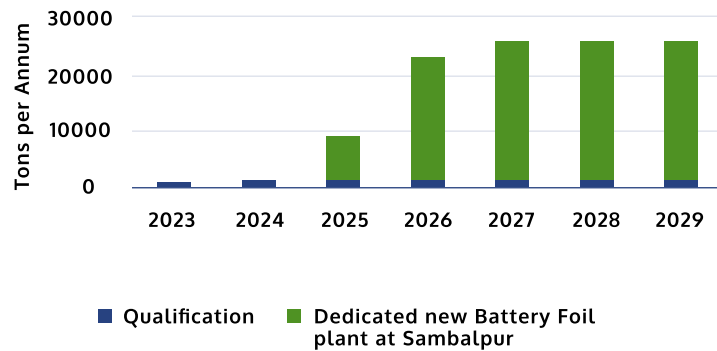
1 Ultra High Strength Foils developed and being qualified in India, US and Europe

2 Dedicated Battery Grade Foil Plant - USD 100Mn investment - 25000 tons per annum

The Dedicated Battery Foil Plant is co-designed with Achenbach GmbH. Key Features of plant -

- ⚡ Fully automated Rolling mills. (3 Nos.)
- ⚡ DVC system for all three rolling mills.
- ⚡ Roll Mark Detector for all three rolling mills.
- ⚡ Hot Edge System for all three rolling mills.
- ⚡ Top and Bottom Backup Roll Cleaning system
- ⚡ Condition monitoring package
- ⚡ Dry air blow-off system
- ⚡ Pin Hole detector for two separators

Capacity Expansion Plan - Battery Foil



Customer Service with...



Customized Products



Customized Packing



On Time in Full (OTIF) Delivery



Wide Distribution Network

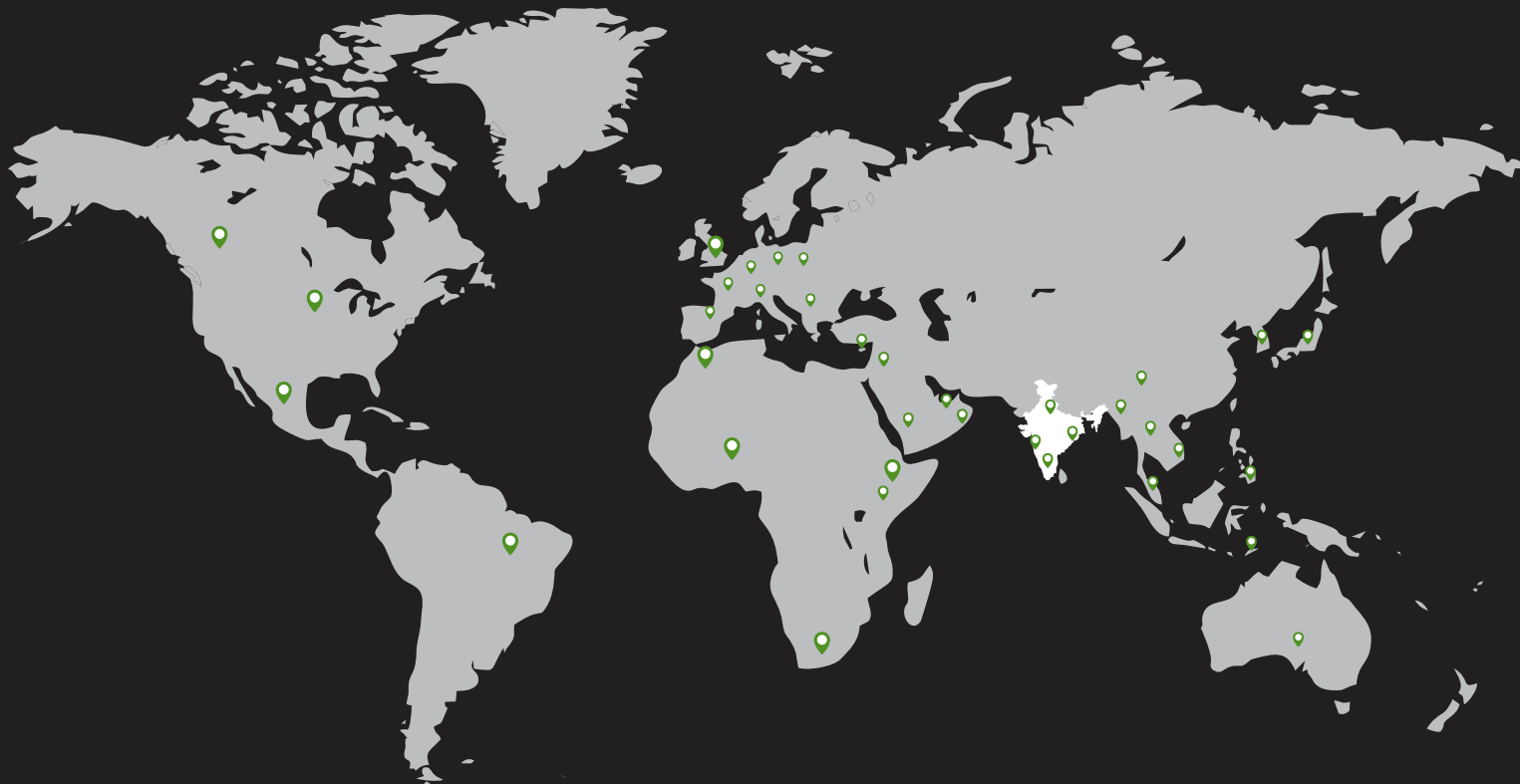


Application Support

Creating a circular economy to build a **#GreenerStrongerSmarter** and a sustainable future!



Our Global Reach



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