

INVESTOR PRESENTATION

December '2019

MAKING MATERIALS MATTER



murugappa



CONTENTS

1 MURUGAPPA GROUP & CUMI - OVERVIEW

2 BUSINESS SEGMENTS

3 FINANCIALS, STRATEGY & CLOSING REMARKS



CONTENTS

1 MURUGAPPA GROUP & CUMI - OVERVIEW

2 BUSINESS SEGMENTS

3 FINANCIALS, STRATEGY & CLOSING REMARKS



US **\$ 5.2 Bn sales**

28 Businesses

50000+ employees



Agri &
Farm inputs



Engineering &
Materials Sciences



Consumer
durables



Financial
Services



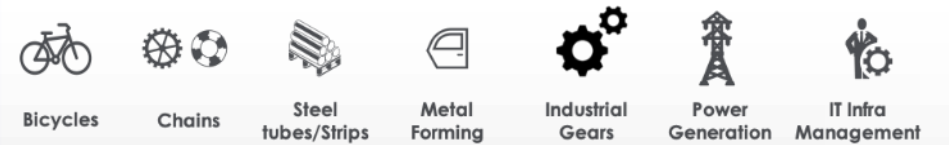
MURUGAPPA GROUP : BUSINESS PORTFOLIO



Agriculture



Engineering



Finance



Diversified





MURUGAPPA GROUP : GLOBAL PRESENCE



Marketing & Distribution Bases in
Argentina, Australia, Brazil, Netherlands, Philippines, South Africa, Thailand, UK, USA



The five lights

The Spirit of the Murugappa Group

These **five lights** guide us
as we navigate through professional
and personal decisions.

The light of
INTEGRITY
that gives us the courage to
always do the right thing

The light of
RESPONSIBILITY
that gives us the humility to
think about the world around us

The light of
PAS2ION
that provides us with
the desire to win

The light of
RESPECT
that inspires people
around us to perform

The light of
QUALITY
which makes us
dream of excellence



Business activity - manufacture of Coated Abrasives, Bonded Abrasive, Super- Refractories, Electro-Minerals, Industrial Ceramics, and Ceramic Fibers

Exports its products to **43 countries**

Over 20000 varieties of Products

28 manufacturing locations across India, South Africa, Russia, Australia & China

All the manufacturing facilities of Carborundum Universal are **ISO 9001:2000** and **ISO 14001 Certified**

Incorporated on **April 21, 1954**



CARBORUNDUM UNIVERSAL LIMITED : 65 Years of Industry Leadership



ABRASIVES



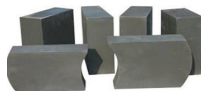
INDUSTRIAL CERAMICS



ELECTRO MINERALS



REFRACTORIES



28
Locations

20,000 +
Varieties

5000+
Employees

INR 26.6 Bn Revenue

USD 380 Mn

FY 19 : 14% growth YOY

INR 3.6 Bn PBIT

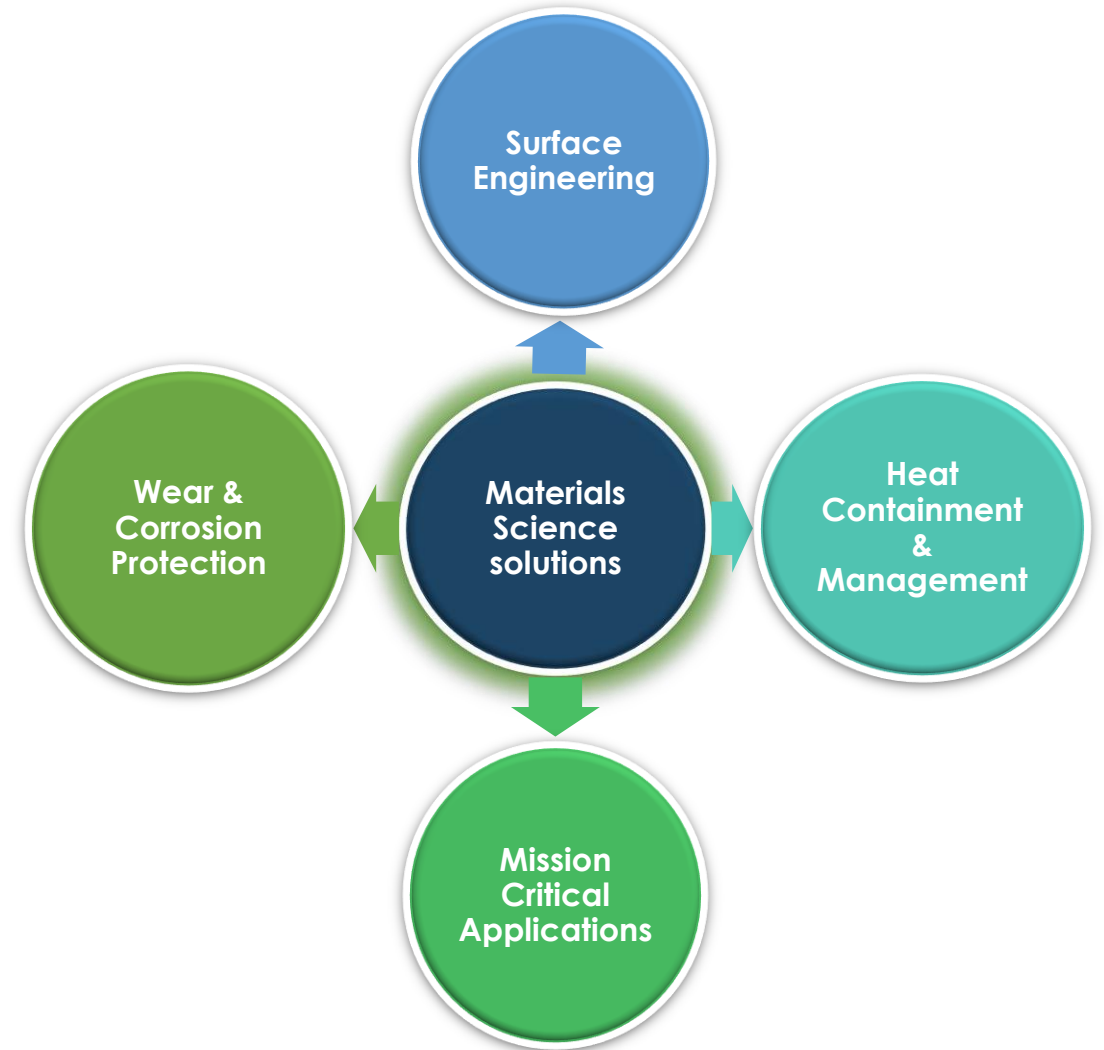
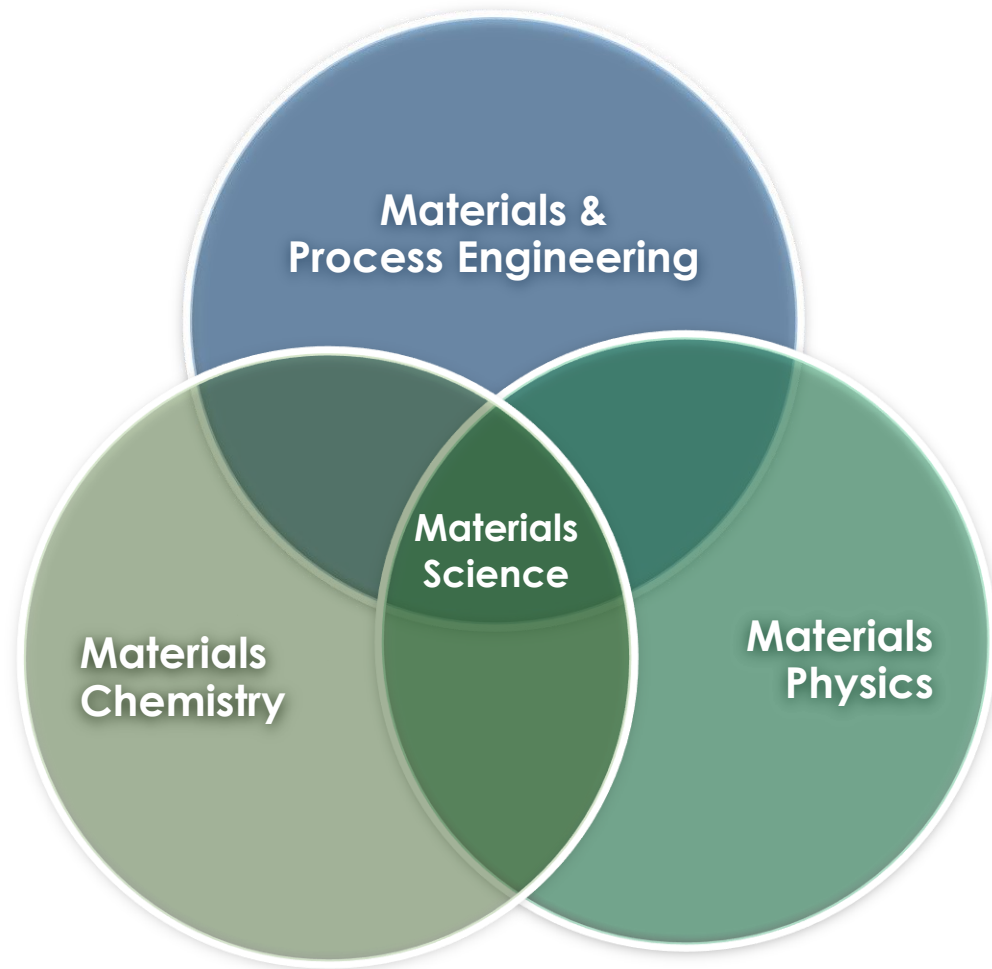
USD 52 Mn

FY 19: 10% growth YOY

INR 60.9 Bn Market Cap

USD 870 Mn

As on 27 Nov 19



Materials science - an interdisciplinary field involving **properties of matter** and **applications** to various areas of **science** and **engineering**. Includes elements of applied physics and chemistry, as well as chemical, mechanical, civil and electrical engineering.



WE ENGINEER MATERIALS SCIENCE SOLUTIONS FOR AN ENDURING PLANET



Abrasives



Electro minerals



Ceramics & Refractories



Composites





CUMI – HISTORY

Milestones

1954 - 63

- Tripartite agreement between **Carborundum Company, USA, Universal Grinding Wheel Company, UK and the Murugappa Group, India.**
- Acquired a **Coated Abrasives facility from Ajax Products Pvt. Ltd.**
- Bonded Abrasives facility set up at Chennai, India.
- Bauxite mining at Bhatia, Gujarat, India.



Coated Abrasives facility from Ajax Products Pvt. Ltd.



Bauxite Mining at Bhatia

1964 - 73

- **Manufacture of Super Refractories at Chennai, India.**
- Brown Aluminium Oxide grains plant at Edappally, India.
- Calcination facility at Okha, Gujarat, India.



Super Refractories at Chennai



Brown Aluminium Oxide grains plant at Edappally, India.

1974 - 83

- **Acquisition of Eastern Abrasives Ltd**, a Coated Abrasives manufacturer in Kolkata, India.
- **Second Bonded Abrasives plant at Hosur**, near Bengaluru, India.
- **Established for ceramic fibres.**



Eastern Abrasives Ltd, Kolkatta, India



Bonded Abrasives at Hosur



MMTCL, Ranipet, India



1984 - 93

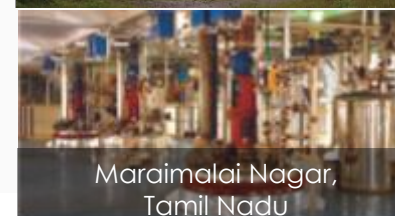
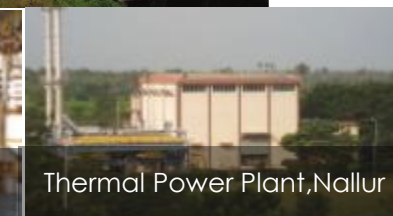
- Expansion of Bonded Abrasives plant at Hosur, India with a modern facility for vitrified grinding wheels.
- Silicon Carbide plant at Koratty, India & Refractories plant at Ranipet, India.
- Industrial Ceramics plant at Hosur, India.
- Acquisition of 40% interest in Wendt (India) Ltd., a company manufacturing Super Abrasives.

1994 - 03

- 12 MW Hydel project at Maniyar, Kerala, India for manufacture of Brown Aluminium Oxide grains.
- Acquired a controlling interest in Sterling Abrasives Limited, Ahmedabad, India.
- Acquired a controlling interest in Cufast Abrasive Tools Limited and Cufast Polymers Limited and subsequent mergers.
- Established CUMI America Inc., USA & CUMI (Australia) Pty Ltd.
- Established a 5.5 MW natural gas based thermal power plant in Nallur, Tamil Nadu, India, through SEDCO.
- Acquired Prodorite Anti-Corrosives Ltd.,
- Cloth processing facility at Maraimalainagar, Tamil Nadu.



Hydel Project at Maniyar

Maraimalai Nagar,
Tamil Nadu

Thermal Power Plant, Nallur

Sterling Abrasives Limited,
Ahmedabad

CUMI (Australia) Pty Ltd.



CUMI – HISTORY



Thin Wheels at Uttarkhand, India



Volzhsky Abrasives Works, Russia



Refractory facility in Jabalpur, India.

2004 - 13

- Monolithic Refractory facility in Jabalpur, India.
- **Volzhsky Abrasives Works, Russia.**
- Manufacturing facility in China
- **Foskor Zirconia (Pty) Ltd, South Africa.**
- **Thukela Refractories Isithebe Pty Ltd, South Africa**
- Super Refractories plant II at Serkadu, India.
- Thin Wheels at Uttarkhand, India.
- Coated Abrasives plant at Chennai, India.
- Silicon Carbide micro grit plant in Koratty, India.
- Establishment of CUMI Middle East.

2014 - 19

- **Toll manufacturing model operations** commenced in China.
- **Amalgamation of Cellaris Refractories with CUMI.**
- **Centre of Excellence for Research in Technical Ceramics**
- Commissioned **three fusion plants at its Electro-mineral Complex at Cochin, India.**
- **5 of CUMI's Plants were awarded with JIPM Award for Excellence in TPM Consistency / TPM Excellence, Category 'A'**





Our Leadership Team



M M Murugappan
Chairman



N Ananthaseshan
Managing Director



Ninad Gadgil
Abrasives



Rajesh Khanna
Ceramics



Sergey Kostrov
VAW



V G Rajendran
Refractories



Jayan P S
Electro Minerals



Arul Rajkumar
Human Resources



KEY SUBSIDIARIES & JOINT VENTURES



Volzhsky
Abrasive
Works



Subsidiary
Minerals, Abrasives
& Refractories



CUMI Australia



Subsidiary
Industrial Ceramics



Sterling
Abrasives



Subsidiary
Bonded Non Std
Speciality



Foskor Zirconia



Subsidiary
Minerals



Murugappa
Morgan
Thermal
Ceramics



Joint Venture
Thermal Ceramics



Wendt
India



Associate
Super Abrasives
Range

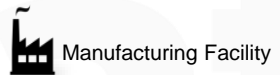


Southern Energy
Development Corpn Ltd





GLOBAL FOOTPRINT



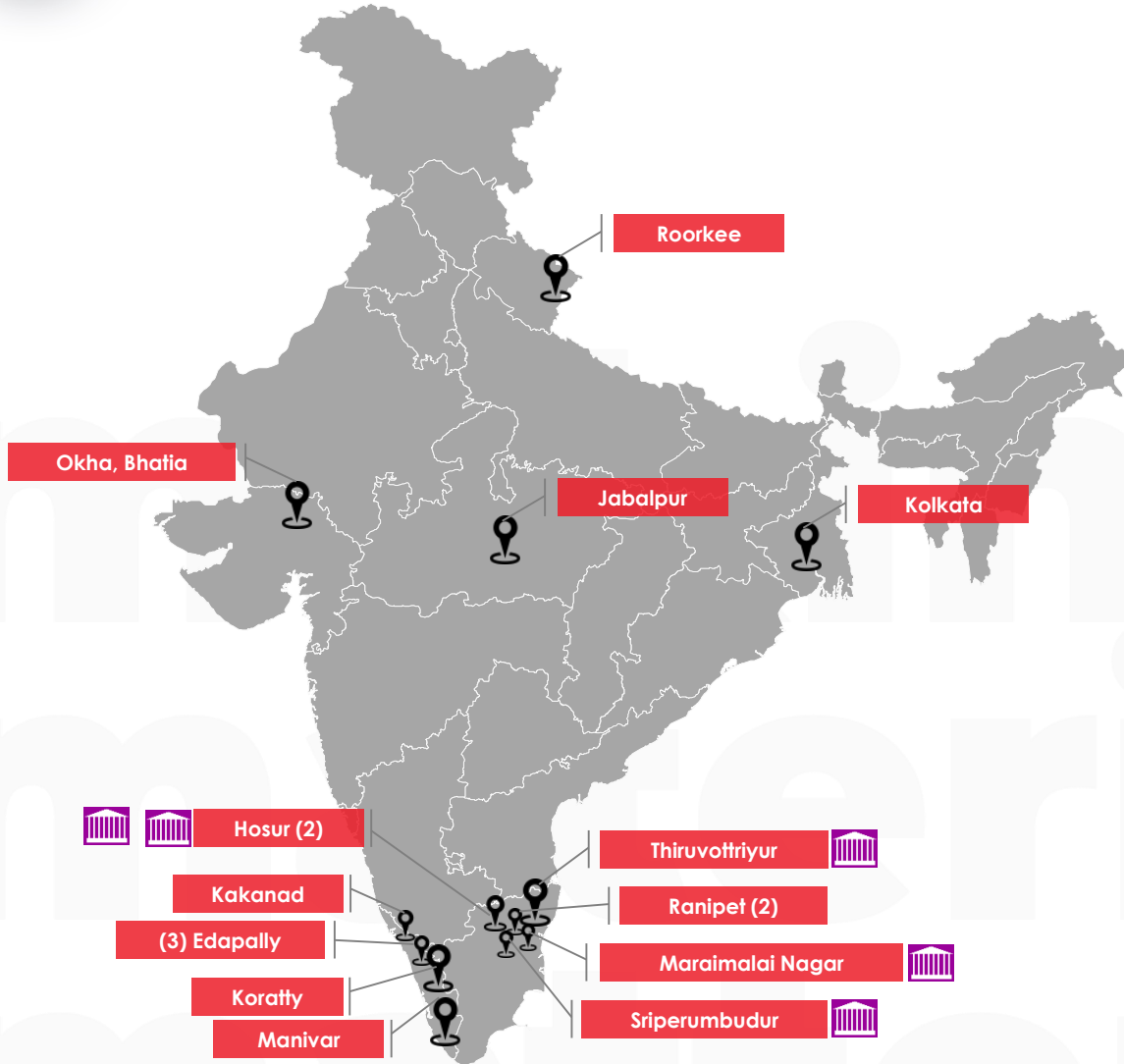
Manufacturing Facility



Marketing Office



DOMESTIC PRESENCE



JIPM – TPM awarded



TVT BONDED



SPR COATED



HSR BONDED



UTK BONDED



EAL - COATED



WENDT BONDED



STERLING BONDED



MMN RESIN



EMD - KOCHI



HOSUR



RANIPET



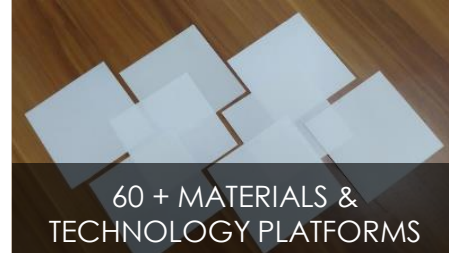
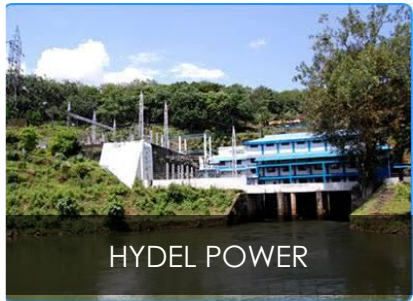
JABALPUR



- TPM Consistency Award – SPR Plant
- TPM Consistency Award – MMN Plant
- TPM Excellence Award – HSR IC
- TPM Excellence Award – HSR ABR
- TPM Excellence Award – TVT Plant



A RESILIENT ORGANISATION BUILT ON STRONG FUNDAMENTALS



STRONG BACKWARD INTEGRATION

DIVERSITY IN SEGMENTS; GEOGRAPHY & CUSTOMERS

STRONG PEOPLE CAPABILITIES DRIVING INNOVATION

STRENGTHENING THE CORE: BUILDING MATERIALS FOR THE FUTURE

ACCOMPLISHMENTS



Largest Abrasives Player in India



Largest SiC Producer in Europe



Second largest Metallized Cylinders Producers in the World



Second largest player in Wear Protection for Coal Washeries in Australia

CORE STRENGTHS

10,000+ Retail Touch Points

5 Plants with JIPM Certification

7 DSIR Labs

260 Patents

5 Overseas Marketing Bases

45% Revenues from Overseas locations



BUSINESS PORTFOLIO

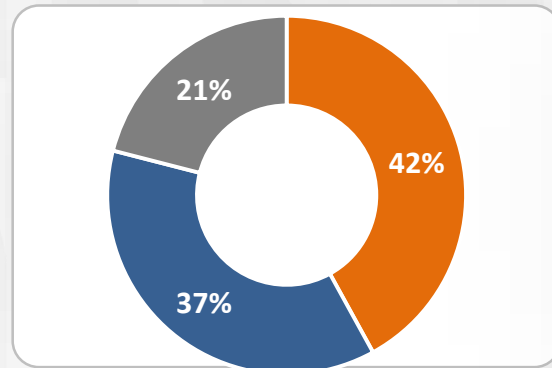
CUMI FY -19 Financials	Revenue	:	INR 26.5 bn
	EBIT	:	INR 3.8 bn
	Capital Employed	:	INR 18.1 bn

Abrasives			
Revenue	:	INR 11.2 bn	
EBIT	:	INR 1.4 bn	
Capital Employed:		INR 5.18 bn	

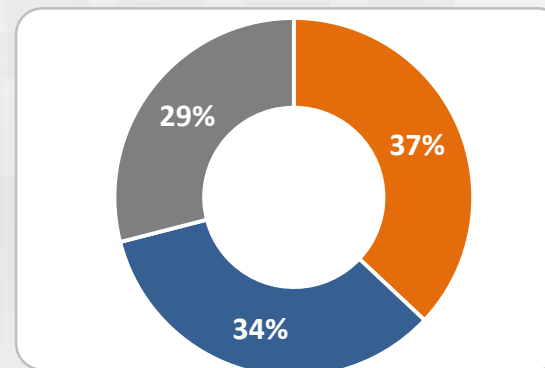
Electrominerals			
Revenue	:	INR 10.2 bn	
EBIT	:	INR 1.3 bn	
Capital Employed:		INR 6.06 bn	

Ceramics & Refractories			
Revenue	:	INR 6.0 bn	
EBIT	:	INR 1.1 bn	
Capital Employed:		INR 4.05 bn	

Revenue

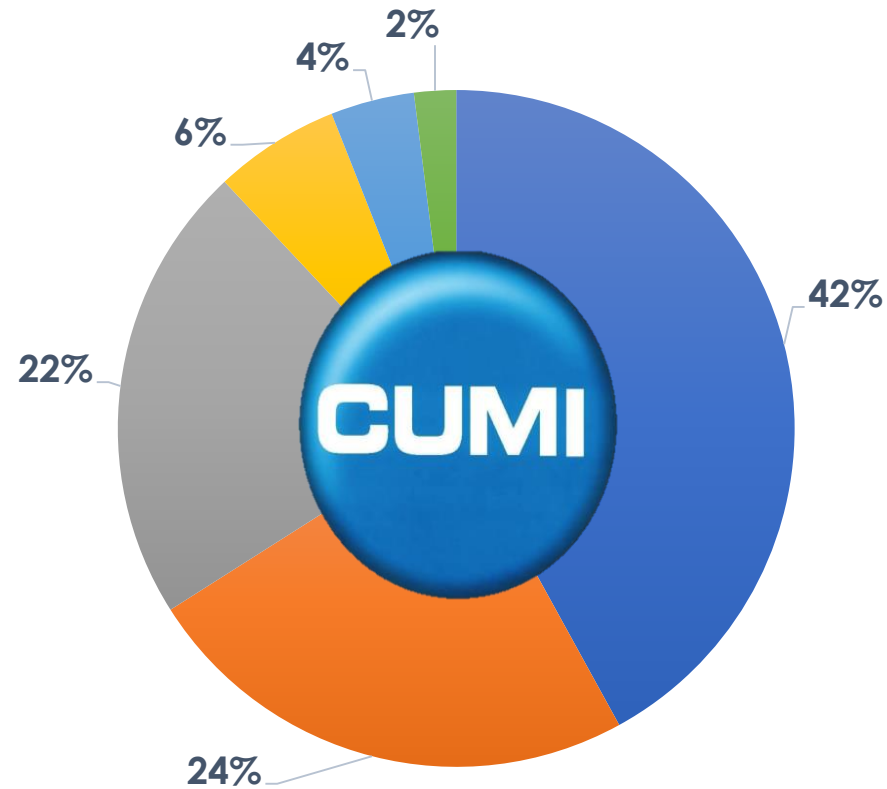


EBIT





CUMI – SHAREHOLDING PATTERN



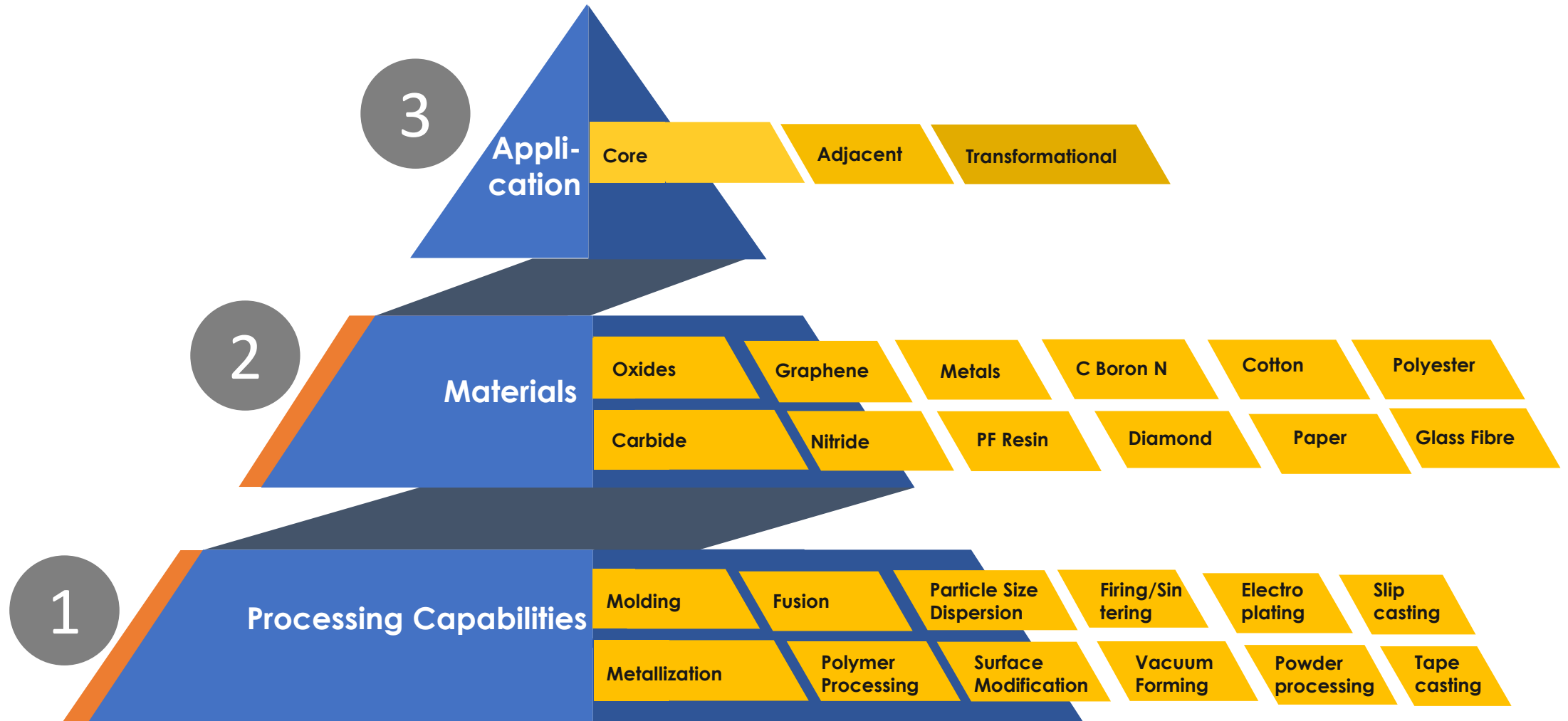
- Promoters
- Financial Institutional Investors
- Mutual Funds
- FII
- Body Corporates
- Insurance Companies

Equity Share Capital INR189.3 Mn
As on Oct 2019



SOLUTION DEVELOPMENT – ACROSS 60+ TECHNOLOGY PLATFORMS

Materials for the Future





BUILDING THE FUTURE

1

Core

Strong growth potential in Core Industries. Focus is to increase market share, and expand product offerings



Auto & Component



Construction



Bearings



General Engineering



Heavy Engineering



Power Gen, T&D



Material Handling



Glass



Steel



Carbon Black

Adjacencies

2

Leverage resources & capabilities to increase presence in Adjacencies



Defence



Aerospace



Medical Ceramics



Semiconductors

STRENGTHENING THE CORE ; BUILDING THE FUTURE

3

Transformative

New materials & products driven by emerging trends- renewable and clean energy, light weighting, fuel economy, emission control



Battery



SOFC



Wind



Solar



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Abrasives: Engineering Surfaces

Abrasives: An indispensable part of Core Industries

Coated



Sheets & Rolls



Power Tool Accessories

Bonded & Super Abrasives



Mass Market



Precision Abrasives



Metal, CBN & Diamond Wheels

Adjacencies



Machines



Power Tools



Coolants



Auto-after



Auto & Component



Construction



Bearings



General Eng



Heavy Eng



Steel



Aerospace



MARKET LEADER IN INDIA, Ready to tap momentum in Global Markets

Abrasives

Stand Alone Operations

JVs / Subs

3 Plants in Chennai; Hosur. Uttarakhand, Kolkatta

US, ME, China

VAW

Wendt

Sterling

- Cost Leadership through strategic backward integration
- Depth and Width of reach : 1800+ Dealers & Distributors
- 10,000 + Retail touch points
- Diversified Customer Base across segments
- Strong Brands : Suite of CUMI products; Volzshky
- Capacity Expansion underway in Coated Abrasives
- 20% Revenues from outside India : Strong opportunities to expand inorganically

India ~\$ 0.5 Bn
9%-10% CAGR

N.America ~\$4.5 Bn
3%-4% CAGR

ME ~\$0.3 Bn
5%-6% CAGR

ROW \$5 Bn
3%-4% CAGR



Mfg. Marketing



TVT BONDED



SPR COATED



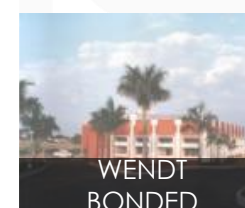
HSR BONDED



UTK BONDED



VAW BONDED



WENDT BONDED



STERLING BONDED



MMN RESIN

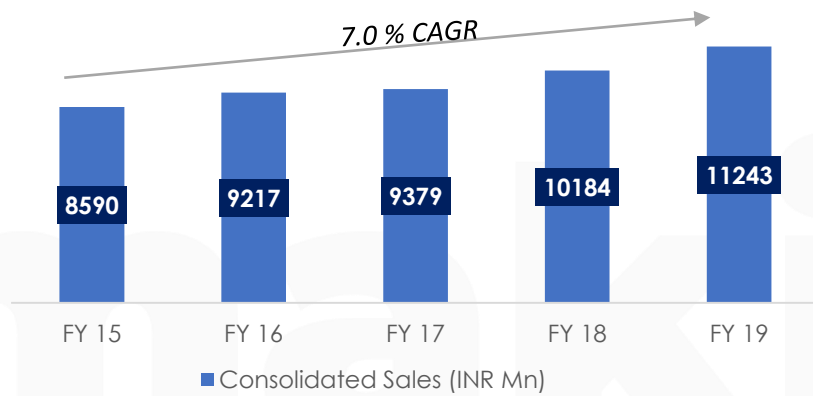


EAL - COATED

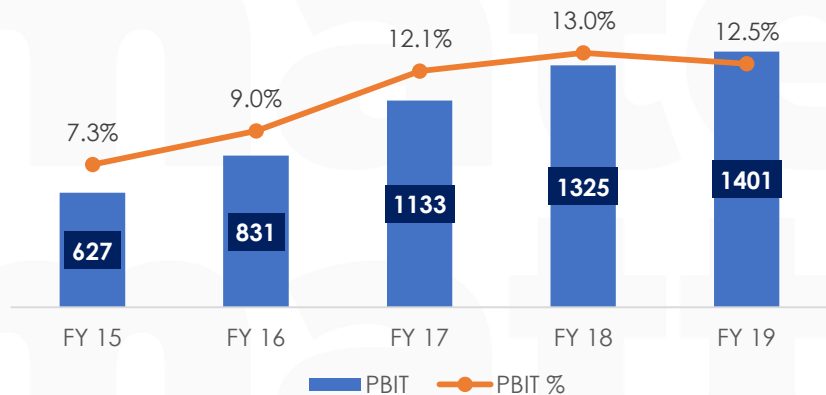


Dominant Player in India Market; Ready to increase share in Global markets

Abrasives - Consolidated Sales (INR Mn.)



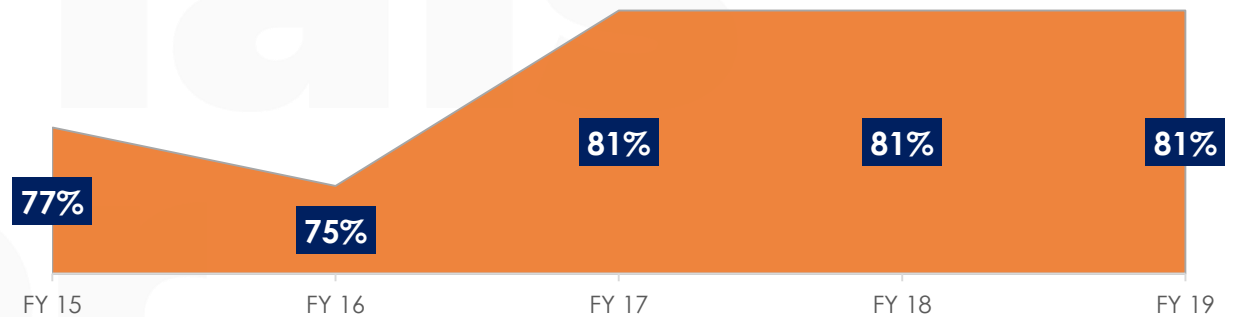
Abrasives - Consolidated PBIT (INR Mn.)



Strong Fundamental Drivers:

- Automotive & Construction (Private Consumption driven)
- Infrastructure & Heavy Industries (Govt. fiscal policy & Private Investments driven)
- Proven Operational Excellence : Steady growth in margins
- Focus on increasing revenues from geographies outside India through Inorganic route
- Focus on leveraging distribution networks, and brands to enter adjacencies in Core markets

Share of Sales in India



Core & Adjacencies backed by Strong Economic Fundamentals; Transformational Products driven by Emerging trends



- Inorganic opportunities in new geographies
- Leverage domestic cost-position for global play
- Leverage distribution networks to grow in Adjacencies

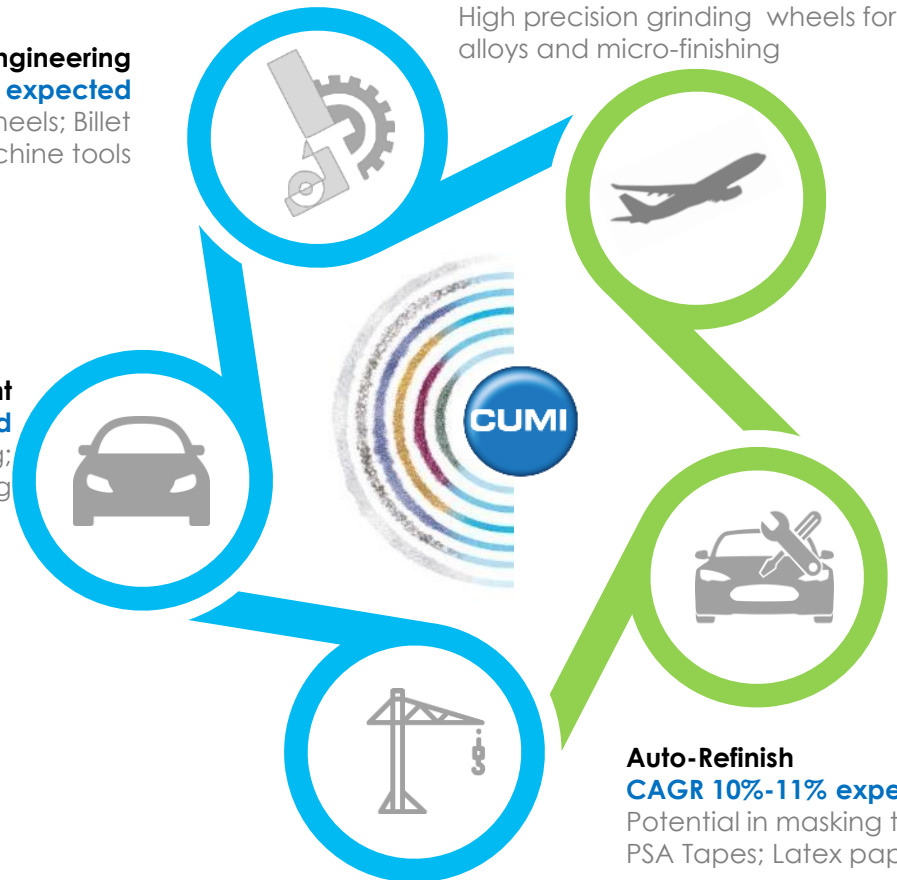
General & Heavy Engineering
CAGR 7%-8% expected
 Potential in Snagging wheels; Billet grinding wheels; machine tools



Automotive & Component
CAGR 9-10% expected
 Potential in Ball grinding; lapping; Track & IG grinding

Construction
CAGR 7%-8% expected
 Potential in Construction Chemicals, Paints Adhesives; sealants; waterproofing

Aerospace; Railways
CAGR >15% expected
 Fused Alumina & Azure S based High precision grinding wheels for super alloys and micro-finishing

Auto-Refinish
CAGR 10%-11% expected
 Potential in masking tapes PSA Tapes; Latex paper sheets



-  Core
-  Adjacencies / Transformational



ABRASIVES

1

Core

Sheets & Rolls; Discs (Fibre, cloth, PSA, Velcro, Flap); Flaps, Mops & Belts; Non Woven Pads; Dressing Rolls (Electroplated); Precision Bonded wheels; Thin wheels; Power Tools



Snagging Wheels



Roll Grinding Wheels



Resinoid taper cut wheels



F Type



Super Abrasives



Gear Grinding



Internal Grinding



Powertool accessories



Thin Wheels



Sheets



Belts



Spindles, Bores, mops



Machines



Pattern Coated discs



Technical Textiles



Paints & Coatings



Construction Chemicals

Adjacencies

2

Non woven abrasives; Metal working fluids; Masking Tapes; Carbide Cutting Tools; Vit. CbN ; Film Backed Coated



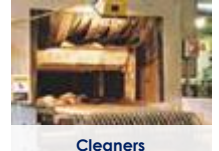
Non wovens



Non woven wheels



Metal Working Fluids



Cleaners



Carbide Cutting Tools



Masking Tapes



Wood Working Tools



Tile cutting Tools



Drilling Tools



Film backed Coated

1) GROW IN ADJACENCIES
2) LEVERAGE COST POSITION FOR GLOBAL PLAY

3

Transformative

Construction Chemicals; Adhesives; Paints & Coatings; Pattern Coated Discs; Smart Wheels; Technical Textiles; 3D Printed Abrasives



**Electro
Mineral
Division**



Workhorse Minerals for the industry and Performance materials for the future

Brown Fused Alumina



White Fused Alumina



Silicon Carbide



Alumina Zirconia



Bubble Zirconia



CUMI Blue



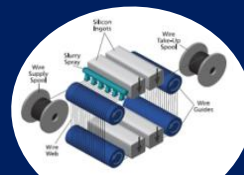
Floor Laminates



Refractory & Ceramic



Diesel Particulate Filter



Silicon wafer slicing



Investment casting



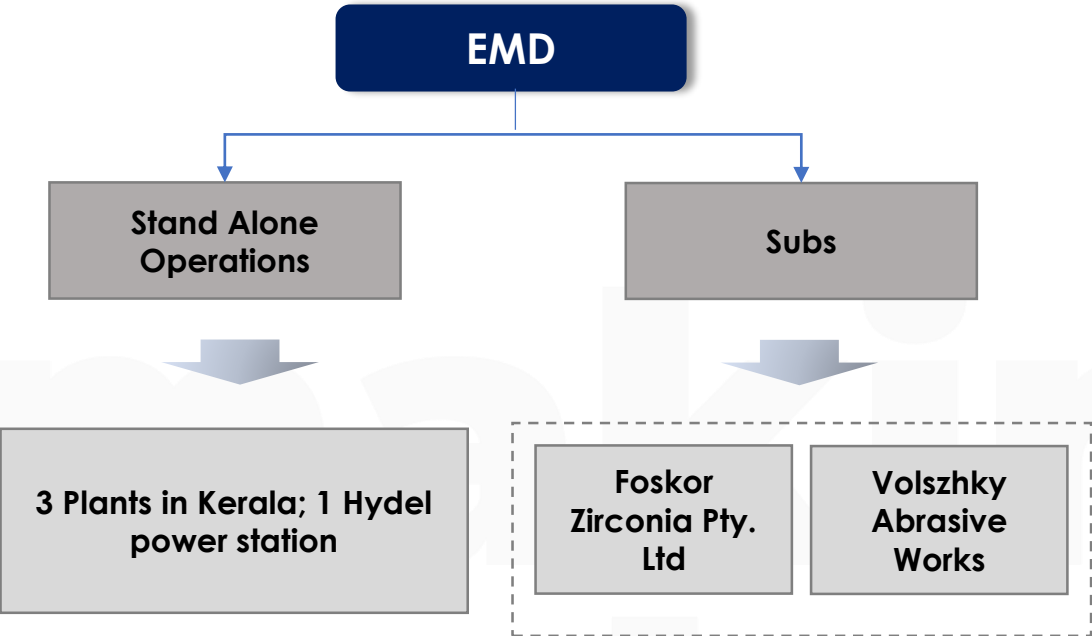
Bonded Abrasives



Coated Abrasives



Global Leadership in Silicon Carbide; Domestic Leader in Fused Alumina Products; Significant growth potential in 'Minerals of the Future'



- 90,000 TPA + Fusion Capacity in Russia
- 5000 TPA + Fusion Capacity at South Africa
- Major supplier to European markets
- Strong backward integration – own mines and own power generation (thermal & hydel)
- Sweat existing assets to increase share in global markets
- Focus on 'value-added' minerals for super / micro finishing for light weighting
- Develop resources and capabilities to address 'materials of the future'- Battery parts, Graphene, nano particles

Indian Market Size:

White Fused Alumina

~40,000 TPA

Brown Fused Alumina

~60,000 TPA

Global Market Size:

Silicon Carbide

~1 Million TPA



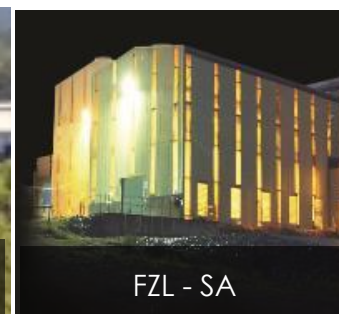
Mfg.



VAW - RUSSIA



EMD - KOCHI

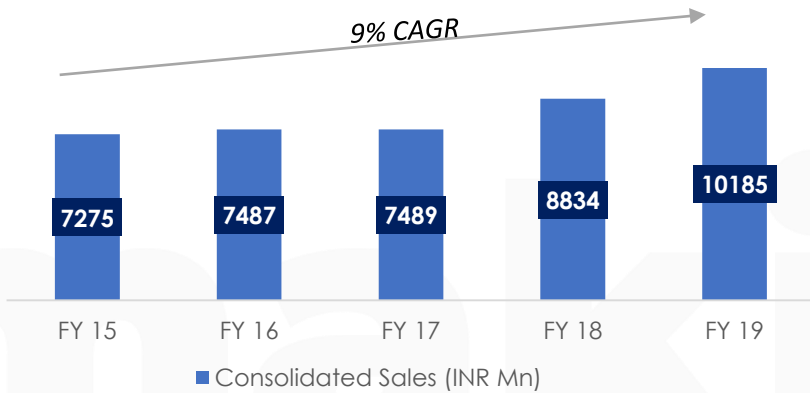


FZL - SA

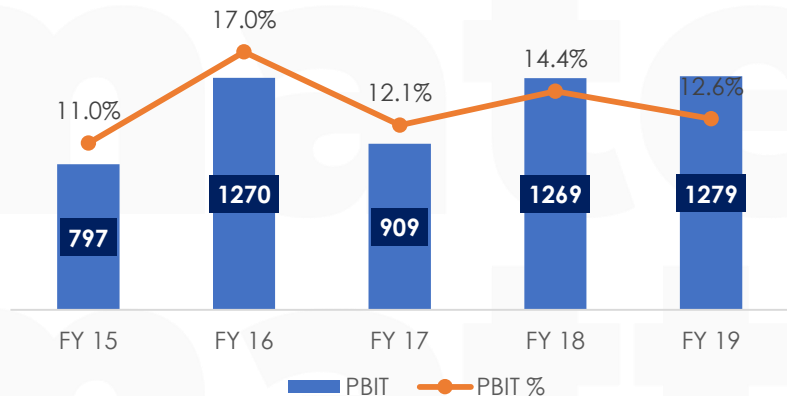


Sweat existing assets in Fused Alumina to gain global market share; Tap growth potential in 'Minerals of the Future'

EMD- Consolidated Sales (INR Mn.)

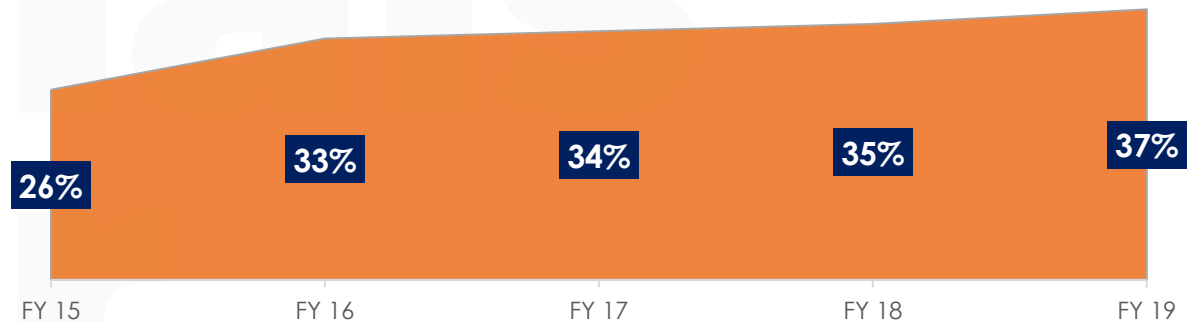


EMD- Consolidated PBIT (INR Mn.)



- **Steady growth** driven by Silicon Carbide, and Fused Alumina products
- **Strong domestic demand** from Abrasives, and Refractories, driven by growth in core industries
- Fairly range-bound margins despite volatile commodity markets
- **Future focus areas** to leverage capabilities in material processing technologies to deliver 'new-age materials'

Share of Sales in India



Sweat existing assets; Increase Value-Added materials; Build capabilities in 'New-Age' Minerals



India: 7%-8% GDP; strong performance in Core Industries will drive demand for Abrasives, Refractories, Ceramics



Minerals for Water Purification



Renewable & Clean Energy; Energy Storage devices; Fuel Efficiency



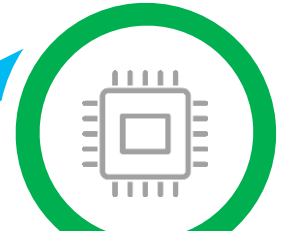
Nano materials; Additive Mfg.



Light- weighting Grains for super alloys and decreasing grinding tolerances

- Drive capacity utilization to increase global share
- Increase scale in 'value added minerals' and establish applications for light weighting metals, and high precision abrasives
- Increase offerings to technical ceramics and semi conductors
- Minerals for waste incineration, fuel efficient refractories, Energy storage etc.

Electronics
CAGR 3% expected (global)
 Potential in Back & Green SiC
 High purity minerals



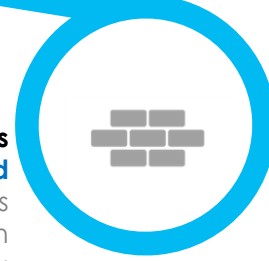
Aerospace
CAGR >15% expected
 Potential in Plasma spray powders & Investment Casting



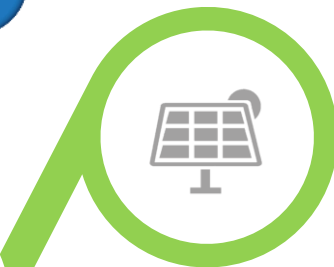
Abrasives
CAGR 9%-10% expected
 Potential in solgel; Synthetic Brown Fused Alumina; Alumina Zirconia



Refractories & Ceramics
CAGR 7%-8% expected
 Potential in thermal sprays with wear and corrosion resistance properties; thermal insulation through next gen cellular products (Nebulox)



Renewable & Clean Energy; Energy Storage
CAGR >15% expected
 Opportunities in SiC Micros for wafer slicing; Graphene; nano particles; Li-ion graphite anode



- Core
- Adjacencies / Transformational



NEW PRODUCTS: INNOVATION PYRAMID AS GROWTH DRIVER

1

Core

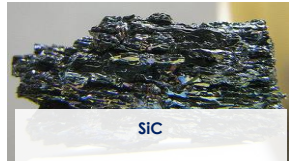
Fused Alumina (Brown, White); Silicon Carbide Macros & Micros; alumina Zirconia, Zirconia Bubbles, Azure S



Brown Fused Alumina



White Fused Alumina



SiC



Aluminium Zirconia



SiC Micros



Bauxites

Adjacencies

2

HPA; ABV+, Semi-Friables, Surface Treated Grains; Solgel grains; Monoclinic Zirconia; Yittria Stabilized Zirconia; Mg Stabilized Zirconia; Foam Glass; Fused Mg;



CUMI Blue



Semi Friables



Foam Glass inputs



Synthetic Brown Fused Alumina

1. SWEAT CORE
2. SCALE SPECIALITY
3. INVEST IN 'FUTURE MINERALS'

3

Transformative

Ceramic Oxide Nanos; Carbon nano tubes; Ultralight powders; Synthetic Graphite; Synthetic SiN, Boron Carbide; RTP Powders; UF Powders



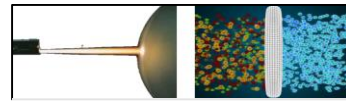
Foam Glass Insulators



Synthetic Graphite



RTP powders



Thermal Sprays for Water Filtration



Carbon Nanotubes



Yittria Stabilized Zr



Industrial Ceramics & Super Refractories

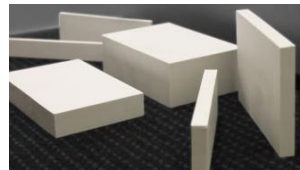


Co-Created Materials : Wear, Corrosion & Mission Critical

Wear Ceramics



Grinding Media



Wear Resistant Liners



Lined Equipment

Technical Ceramics



Engineered Ceramics



Metallized Ceramics



Mining & Metals



Power Generation



Power Distribution



SOFC



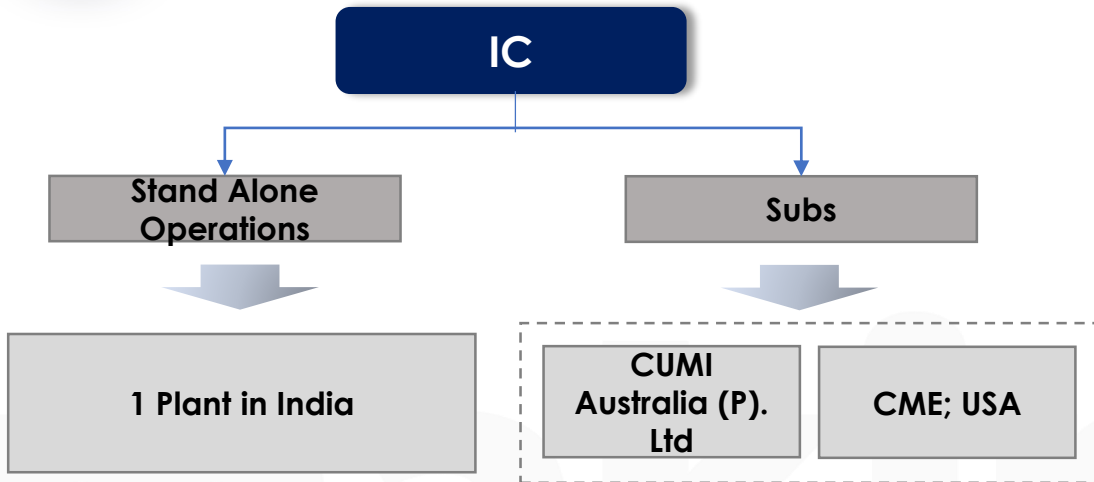
Automotive



Medical Ceramics



Industrial Ceramics



- Second largest Metallized Cylinders Producer In the World
- ~70% Revenues from Overseas Markets
- Preferred supplier to global players in Power Generation, Distribution and Transmission
- Strong capabilities in co-creating solutions for mission critical applications
- Capacity Expansion in Lined Equipment underway
- Break-out growth in non oxide ceramics
- Consolidate share further in Metallized Cylinders (potential inorganic growth); develop product for smaller grids
- Future investments in new processes : Injection Moulding; Tape Casting, injection moulding
- Address wear and corrosion applications by expanding into other materials – composites



 Mfg.  Marketing





NEW PRODUCTS & MATERIALS : GROWTH DRIVERS

1

Core

Alumina Tiles and liners; Rubber Backed Ceramics; Metallized Cylinders for Vacuum Interrupters; SOFC Structural parts; Spark plug



Standard Tiles



Lined Equipment



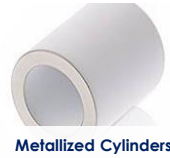
Grinding Media



Engineered Ceramics



Rubber backed files



Metallized Cylinders



Solid Oxide Fuel Cells - Structural



Spark Plugs



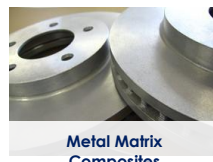
Laser tube components



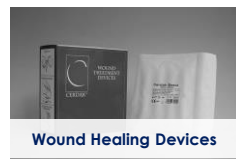
Textile components



Non Oxide Ceramics



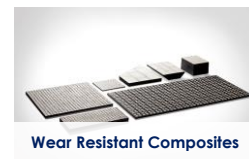
Metal Matrix Composites



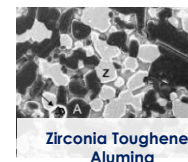
Wound Healing Devices



Medical Implants



Wear Resistant Composites



Zirconia Toughened Alumina

Transformative

Non oxides; MMC; sensor-embedded lined equipment for wear detection; Oxygen sensors, Functional SOFC parts;; EV Battery insulators; Wafer handling and Brazed Assemblies for semi conductors

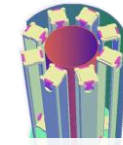
1. GAIN WALLET SHARE IN CORE
2. ENTER NON-OXIDE CERAMICS
3. BREAKOUT GROWTH IN ELECTRONICS

3

Adjacencies

2

Basalt & Wear Plates; Castables; Composites (FRP Ceramics) Welding pins; night vision rings; armours; Metallized Devices for X rays



Functional SOFC products



Zirconia/ thermal products



Injection Moulding



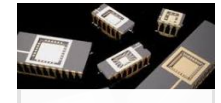
Mini media



Welding pins



Spark plugs



Aesthetic Ceramics for Seals



Tape Casting



Armour



Image intensifiers for Night Vision Devices

Increase wallet share in Core industries; Break out growth in clearly identified areas



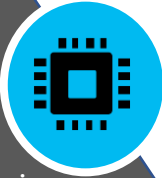
Regulations on SF6 breakers
Smart grids & Small scale electricity generation



Renewable & Clean Energy Focus
Emission norms in Automobiles



Smart products to reduce
downtime in core
industries (Predictive
maintenance)



Internet of Things –
demand for
semiconductors &
electronics



Advances in medical transplants

- Increase wallet share in Core
- Consolidate share further in Metallized Cylinders
- Leverage cost position and design capabilities
- Break out growth in mission
- Break-out growth in non oxides and mission critical applications
- Expand into other wear and corrosion materials

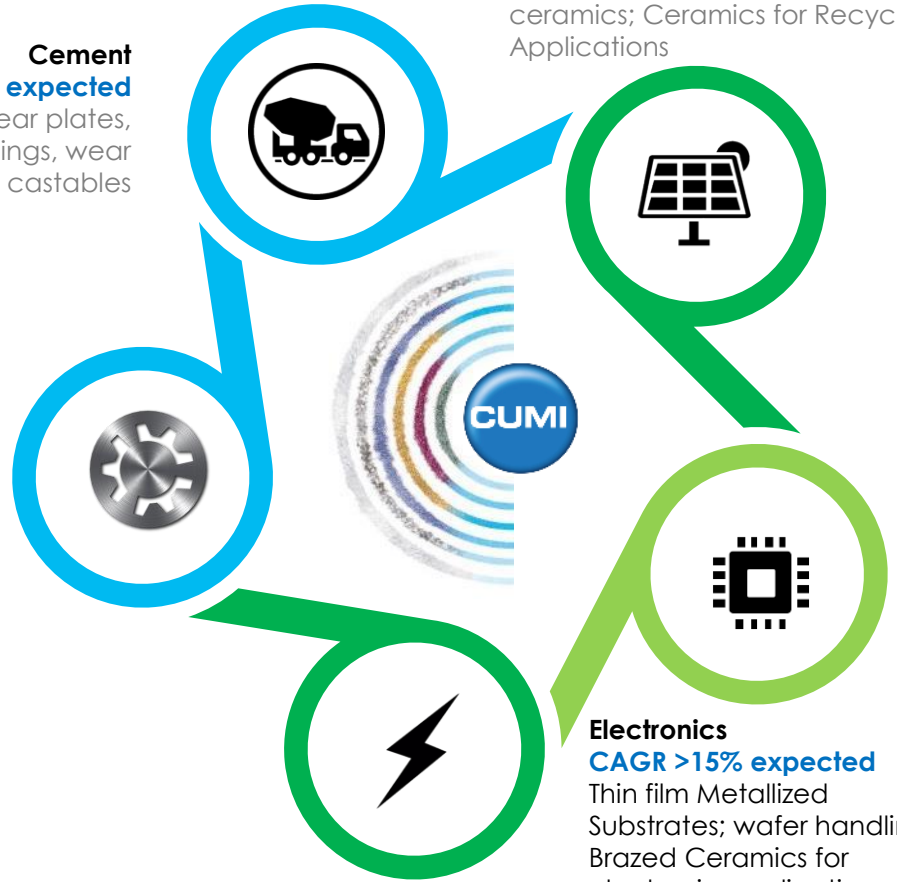
Cement
CAGR 8%-9% expected
Potential in Basalt, Wear plates,
SiC products, composites, coatings, wear
resistant castables

Iron & Steel
CAGR 7%-8% expected
Potential in Basalt & Wear
Plates; Castables; Composites
Ref: flow control products and
refractory management
services

Power generation & Distribution
CAGR 7%-8% expected
Potential in smaller metallized cylinders for
smart grids; composites and castables for
generation

Clean & Renewable Energy; BSVI
>10% CAGR expected
Potential in oxygen sensors; Solid Oxide
Fuel Cells – structural & functional
ceramics; Ceramics for Recycling
Applications

Electronics
CAGR >15% expected
Thin film Metallized
Substrates; wafer handling;
Brazen Ceramics for
electronic applications



- Core
- Adjacencies / Transformational

Heat Containment, Wear and Corrosion Resistance

Fired Products



Monolithic Products



Precast Shapes



Composites



Ceramic Industries



Cement Industry



Glass Industry



Steel Industry



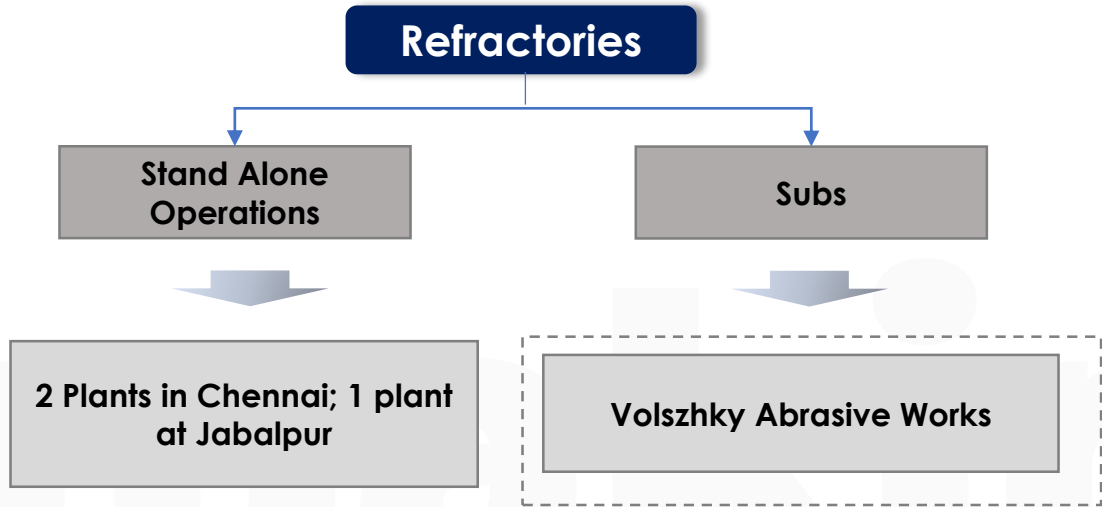
Gas Industry



Power Generation



Expand product basket in Core Industries; Leverage design capabilities to expand global play; Develop capabilities & capacities in Composites



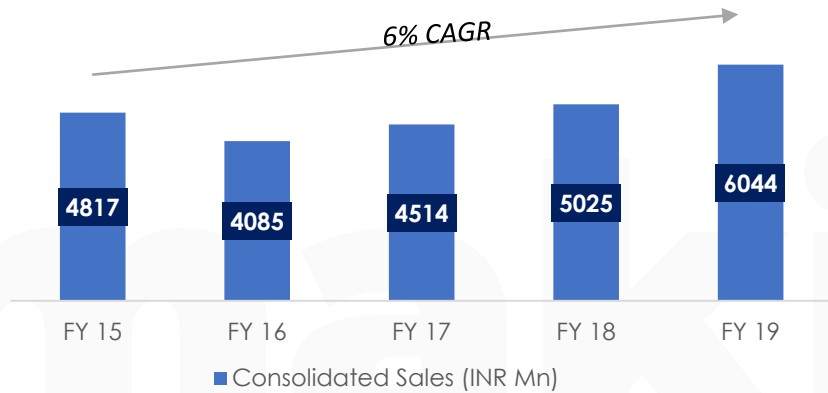
- Strong design capabilities
- Preferred suppliers in glass, Carbon black
- Potential to increase basket to Steel, by entering Magnesia Refractories
- Significant upside potential in global play, by leveraging operations in Russia
- Develop capabilities and investments in Composites





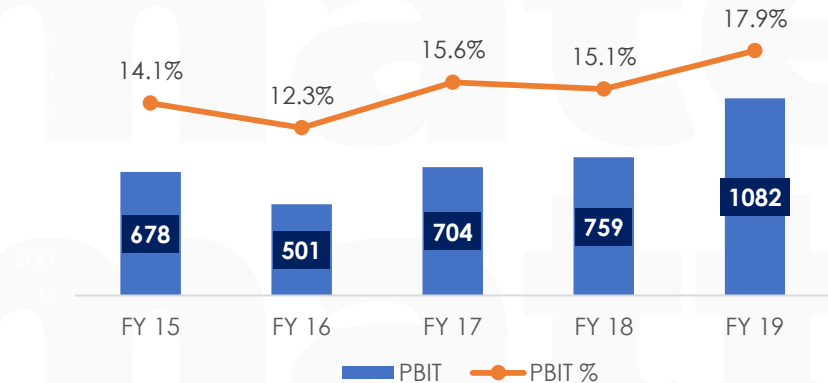
Ceramics & Composites : Future Growth Areas

Consolidated Sales (INR Mn.)

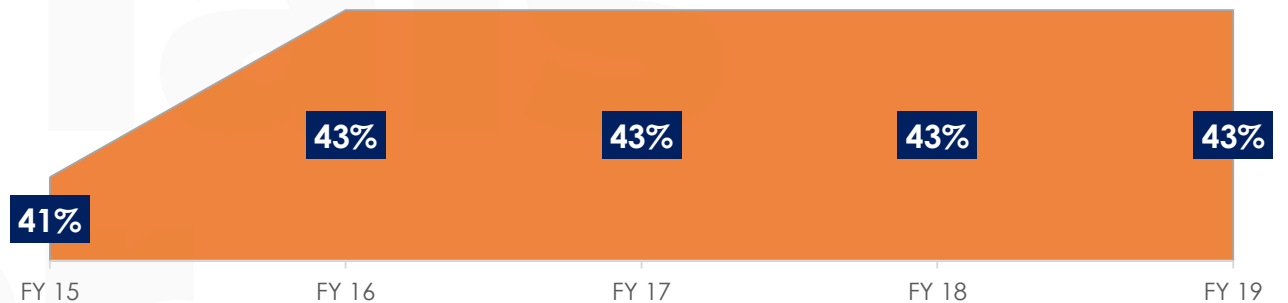


- **Ceramics (double digit) growth rates** to be focus area for CUMI in future
- **High margin Business with potential for scale** in global markets
- **Next wave of growth from Composites** – Growth in segment through organic and inorganic route, strategic alliances

Consolidated PBIT (INR Mn.)



Share of Sales in India



Increase Offering to Core; Focus on Composites as a key growth driver for the future



India: 7%-8% GDP; strong performance in Core Industries



India: Second largest steel producer



Light-weighting & Fuel efficiency
Composites for car, bus, rail bodies



Emission norms: potential for global
Play in flue gas desulphurization

Core: Cement; Glass, Carbon Black, Petrochemicals, Fertilizers
CAGR 6%-8% expected
Potential in Glass (contact area)

Core: Iron & Steel
CAGR 6%-8% expected
Potential in Mg products
Flow control products;
Refractory Management Services

Flue Gas Desulphurization
CAGR 7% expected
Potential in spray, nozzle headers, FRP chimneys.
Expand global play

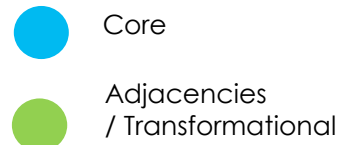
Composites
CAGR 8%-10% expected
Potential in windmills; railways; FRP body for Electric Vehicles; TMT bars



Waste Incineration
CAGR 5%-6% expected
Opportunities in Incinerator NbSiC; Composites for recycling, waste and effluent treatment industries



- Increase product basket to Core industries
- Leverage presence in Russia to scale play in Europe
- Increase play in non-ferrous applications
- Composites to be a key investment area and growth driver in the medium to long term





NEW PRODUCTS & DESIGN SOLUTIONS; COMPOSITES – THE GROWTH DRIVERS

1

Core

High Alumina; Mullite; SiC; Zirmul; Insulation bricks, Monolithics, Complex Shapes, Acid Resistance bricks, Poly Concrete Cells, FRP gratings,



SiC Fired Bricks



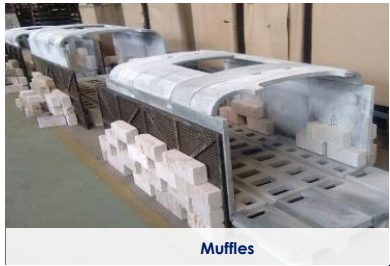
Insulation Bricks



Castables



Complex A



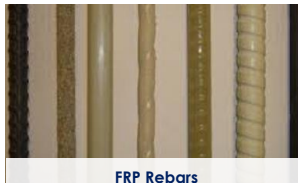
Muffles



FRP Tanks



Railways



FRP Rebars



Concrete admintzures



Flooring compounds

Adjacencies

2

Magnesia bricks Bricks; Flow Control products (slide gate); Tap hole Clay; Trough Mass; Refractory Management Services Sintered Silimanites; Chrome Alumina for Carbon Black;



Blades



Nacelle covers



Side gate



Tundish Nozzles



Spray Headers for Flue Gas desulphurization



Pour boxes, fundishes



Kiln furniture for Ceramics

1. INCREASE OFFERINGS IN CORE
2. BREAKOUT GROWTH IN COMPOSITES

3

Transformative

Composites for Railways
Aerospace, bus body, car trims, Carbon Fibre; Concrete admixtures; flooring compounds



**Key User
Industries
Customer
Base**



Automobile

Latex paper for Sanding

Fine & Super finishing films for surface finishing

Masking tapes for auto-after

Non woven rolls for sanding & deburring

Grinding Wheels for Bearings

Metalized Ceramics for semi conductors

Paper & Cloth belts for glass beveling

F Type Wheels for roughing finishing and lapping

Resinoid taper cup wheels for welding joints

Refractories for Carbon Black

SiC microgrit for Diesel Particulate Filters

Ceramic oxygen sensors

Titanium Oxide for Sensors

SiC & monoclinic Zirconia for Brake Linings

Metal bond wheels for glass grinding

Metal Working Fluids for machining

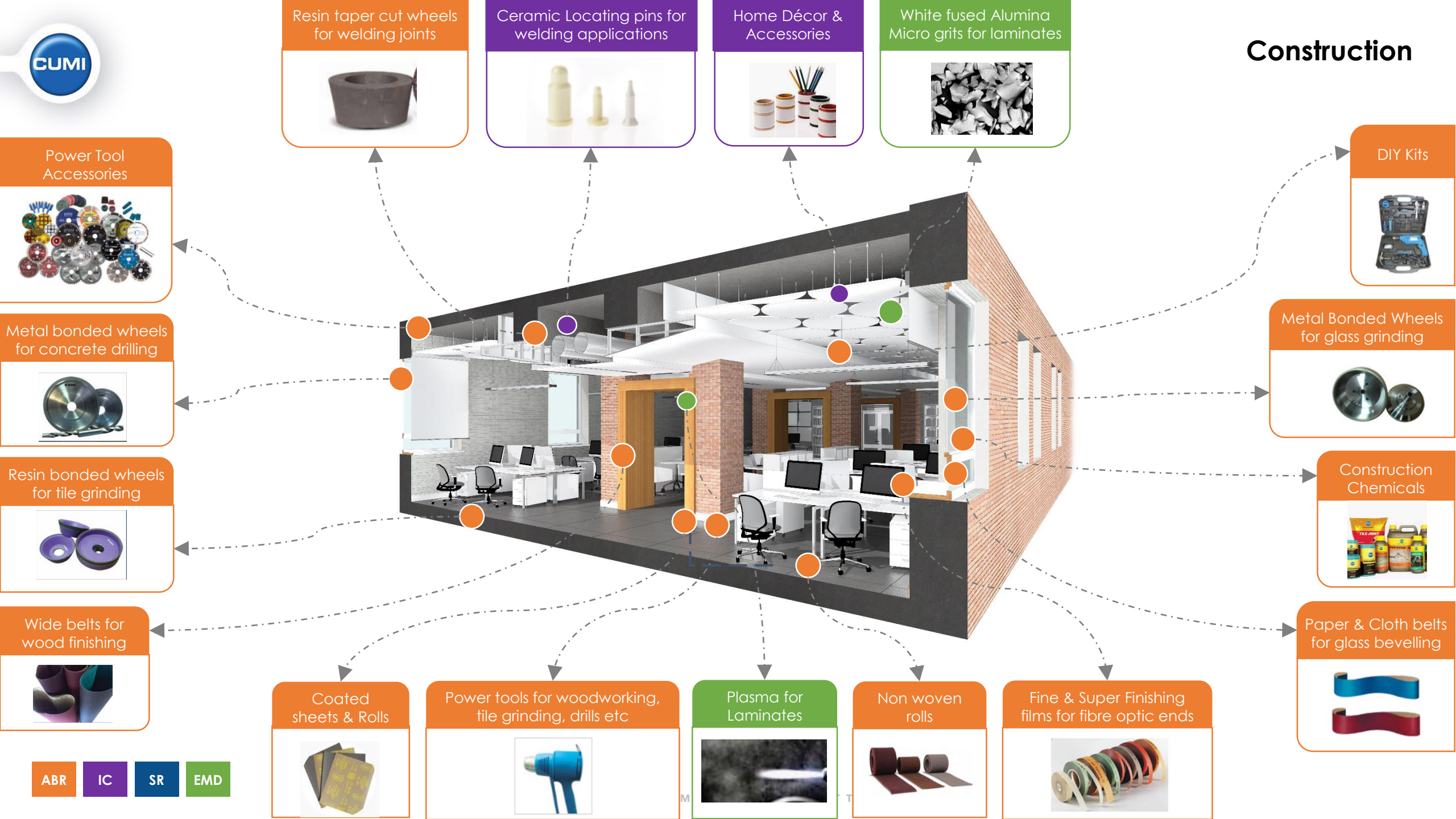
Resin bonded wheels for creep feed grinding

Ceramic spark plugs

Flap discs for weld removal

ABR IC SR EMD

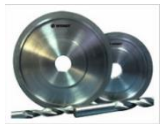




Power Tool Accessories



Metal bonded wheels for concrete drilling



Resin bonded wheels for tile grinding



Wide belts for wood finishing



Coated sheets & Rolls



Power tools for woodworking, tile grinding, drills etc



Plasma for Laminates



Non woven rolls



Fine & Super Finishing films for fibre optic ends



ABR

IC

SR

EMD

Resin taper cut wheels for welding joints



Ceramic Locating pins for welding applications



Home Décor & Accessories



White fused Alumina Micro grits for laminates



DIY Kits



Metal Bonded Wheels for glass grinding

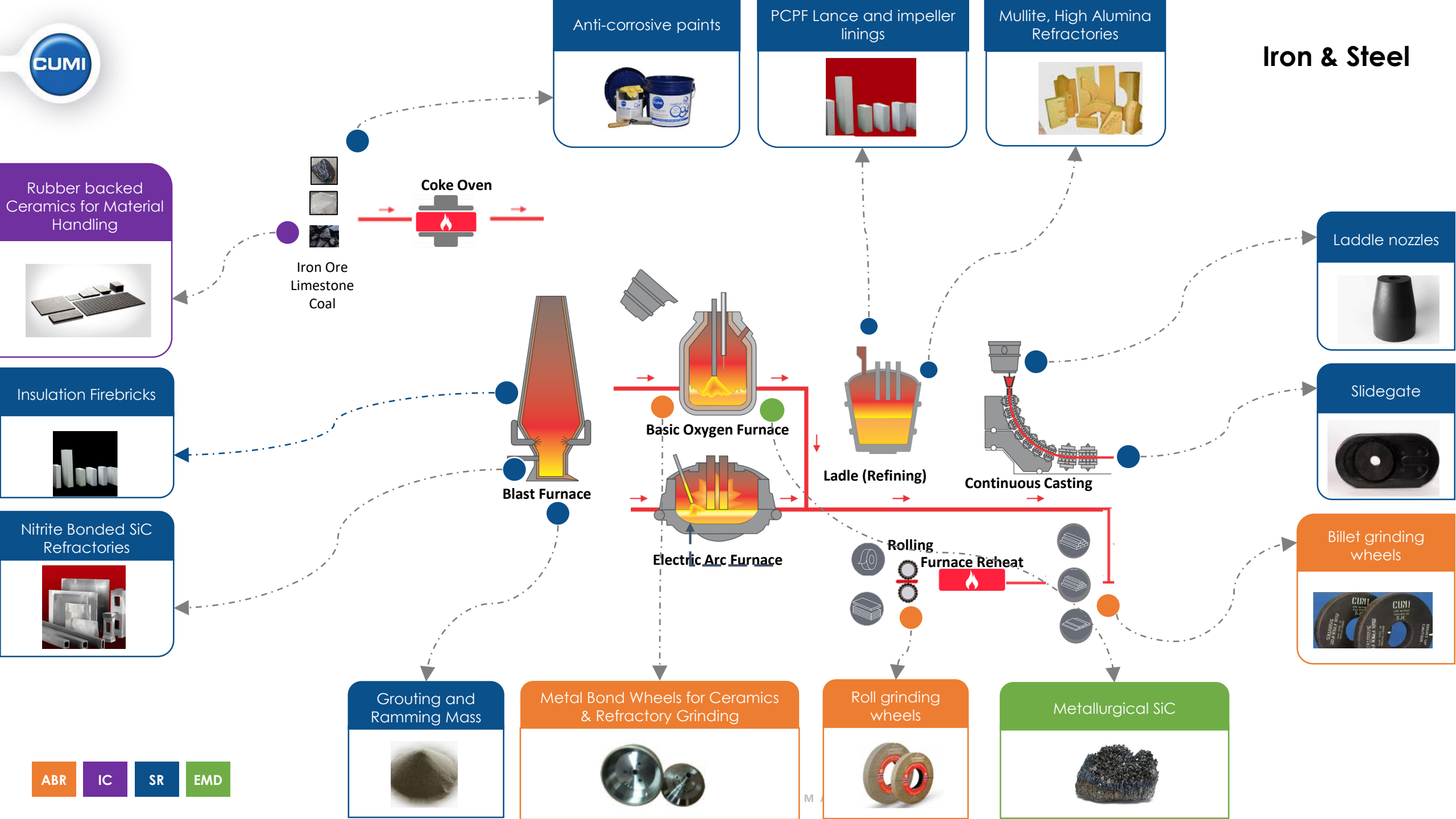


Construction Chemicals



Paper & Cloth belts for glass bevelling





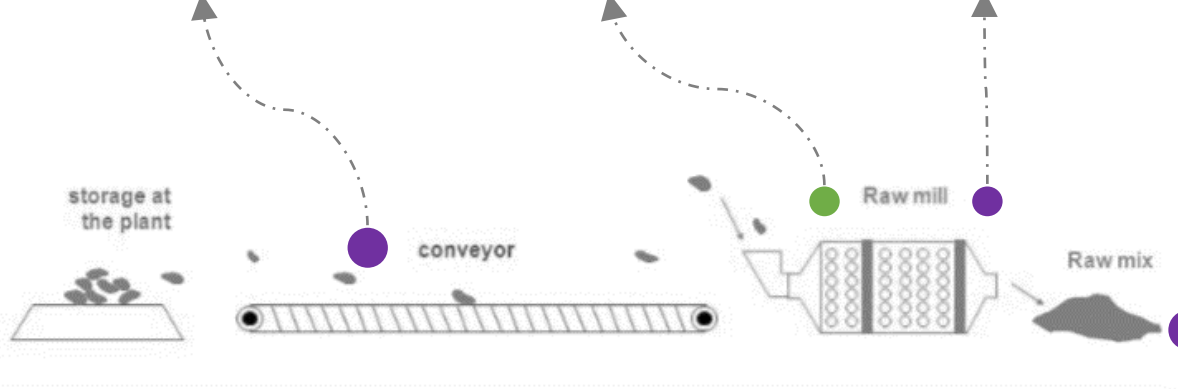


Cement

Rubber backed Ceramics for Material Handling

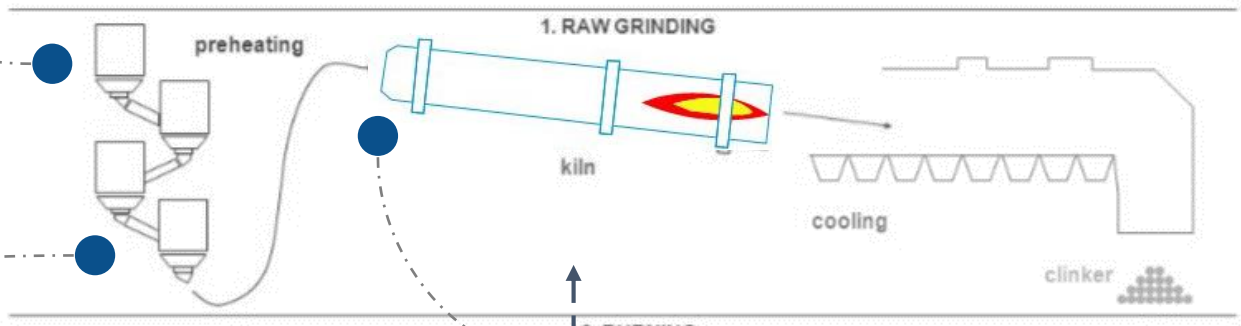
Alumina Zirconia for Metal Matrix Composites

Iceramic Grinding Media



Castables for walls/ roofs/ linings/ ducts

Insulation materials



Ceramic Lined Equipment

Low cement castables for kiln hoods & Nose rings



Ceramic GM for particle size reduction



Ceramic LE for Material Handling



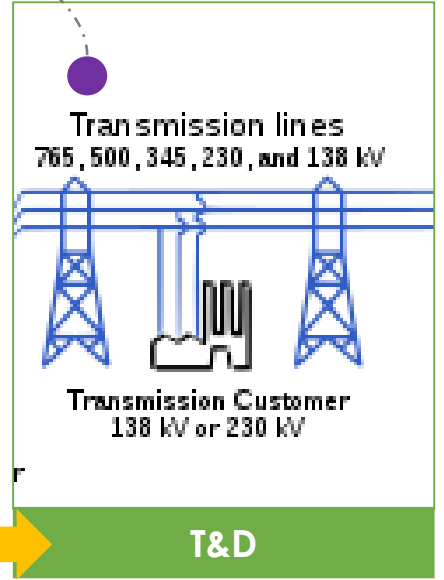
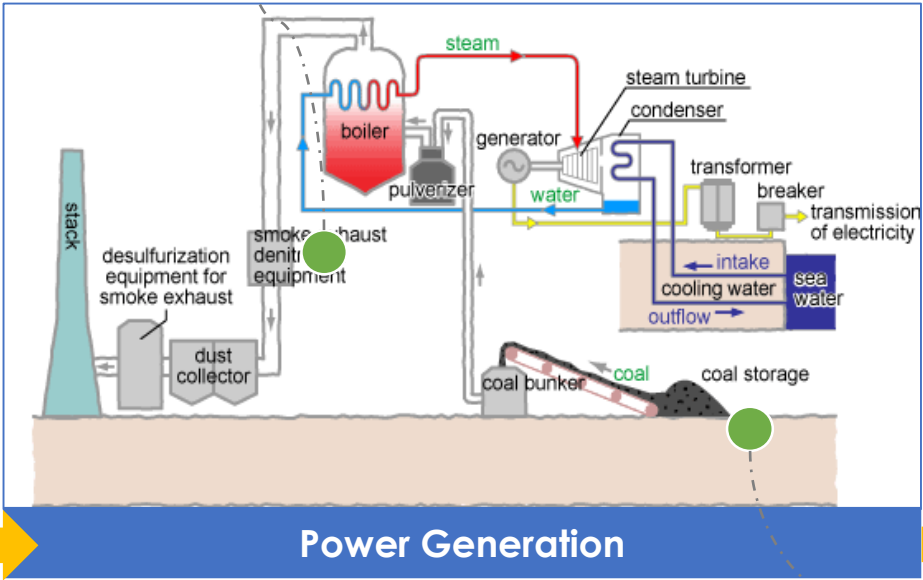
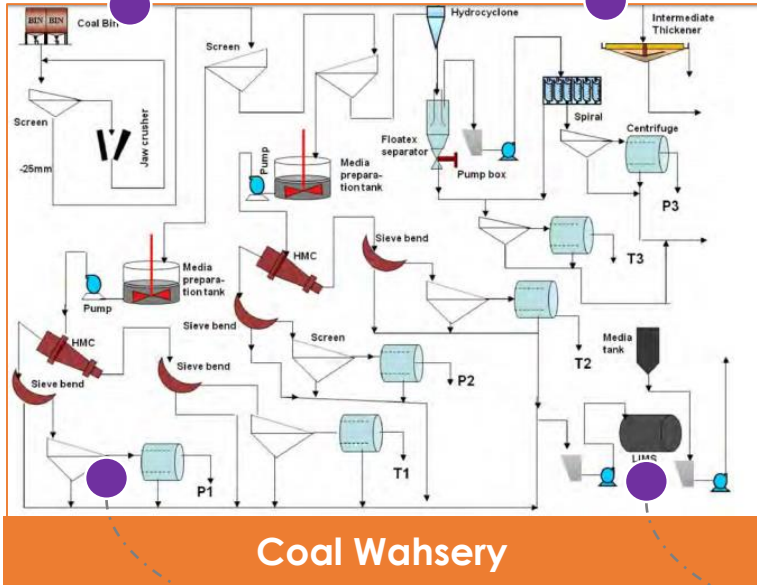
FRP Components for Flue Gas Desulpherization



High Alumina Metallized Ceramics for Vacuum Interrupters, transmission tubes, and HV Relays



Coal Washeries & Power Generation



Ceramic GM for particle size reduction



RbSiC products for extreme wear resistance

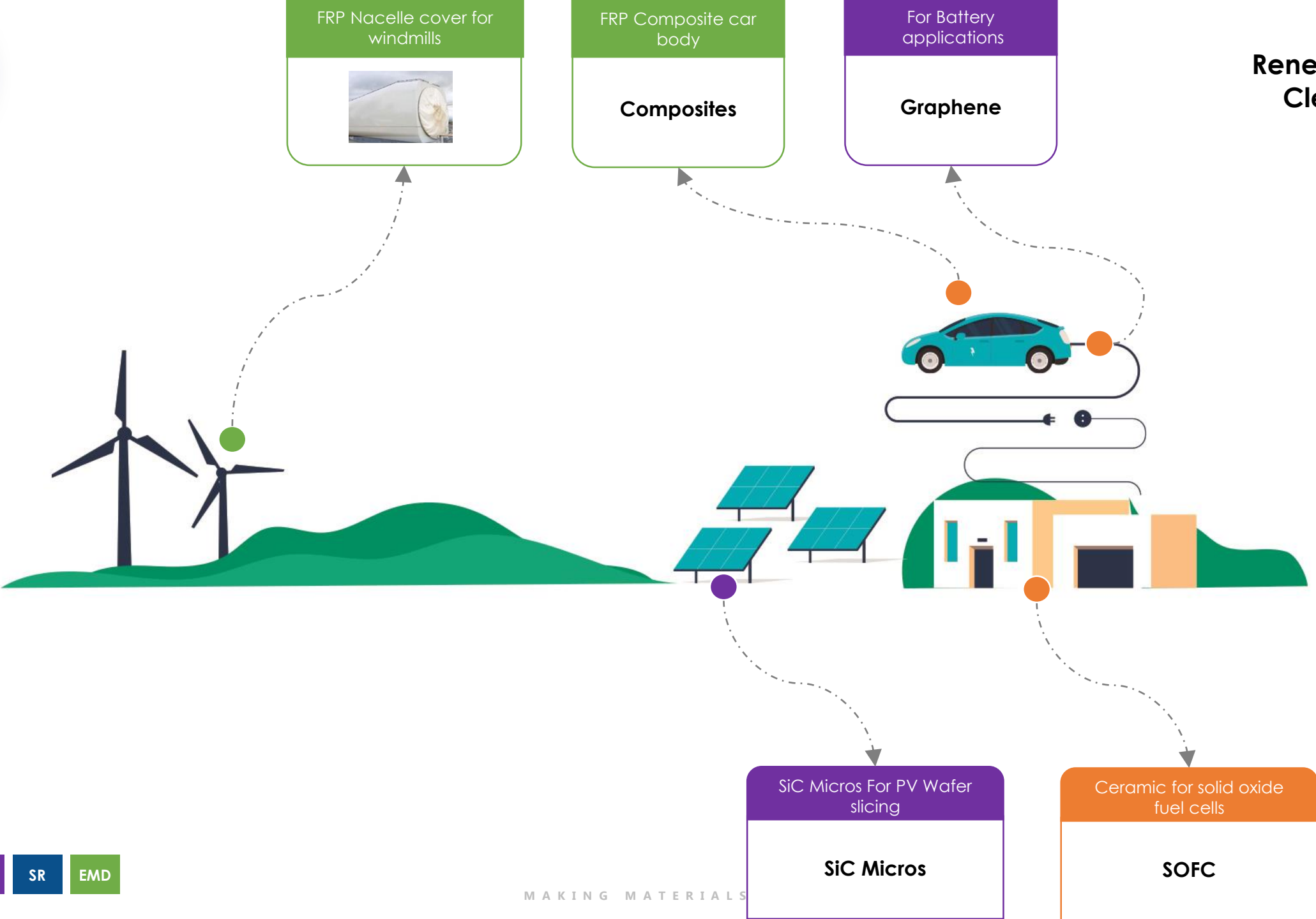


Storage tanks, scrubbers, pipes & fittings etc.





Renewable and Clean Energy





Aerospace



Porus wheels for creep-feed grinding

White Fused Alumina for Microblasting

Silicon Carbide micros for Semiconductors

Plasma powder coating for turbine blades

Thermal spray powders for turbine hot section components

CNC cutters for Precision components

Hybrid Wheels for precision components



CONTENTS

1 MURUGAPPA GROUP & CUMI - OVERVIEW

2 BUSINESS SEGMENTS

3 FINANCIALS, STRATEGY & CLOSING REMARKS

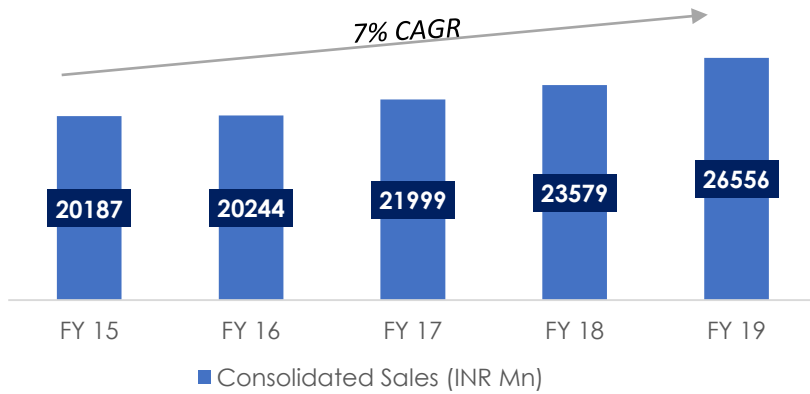


Financials

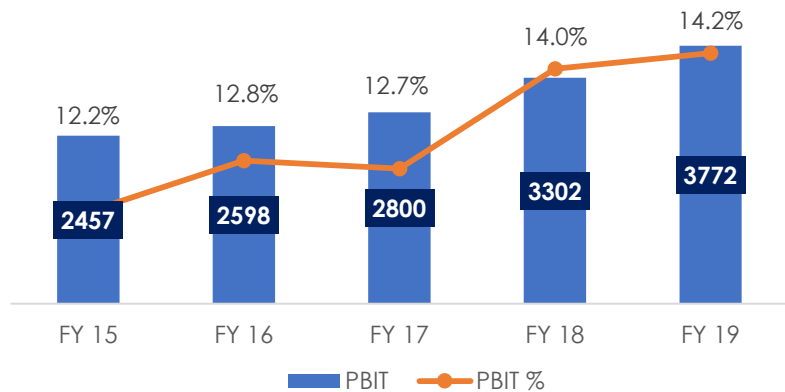


Proven Track Record in Financials

Consolidated Sales (INR Mn.)

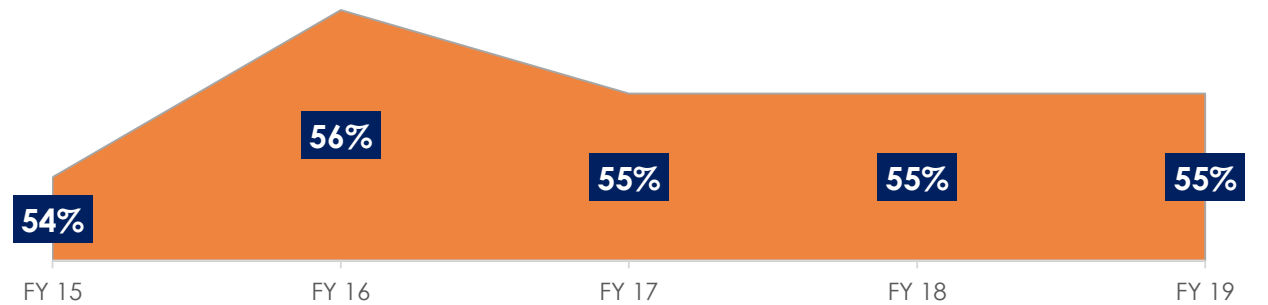


Consolidated PBIT (INR Mn.)

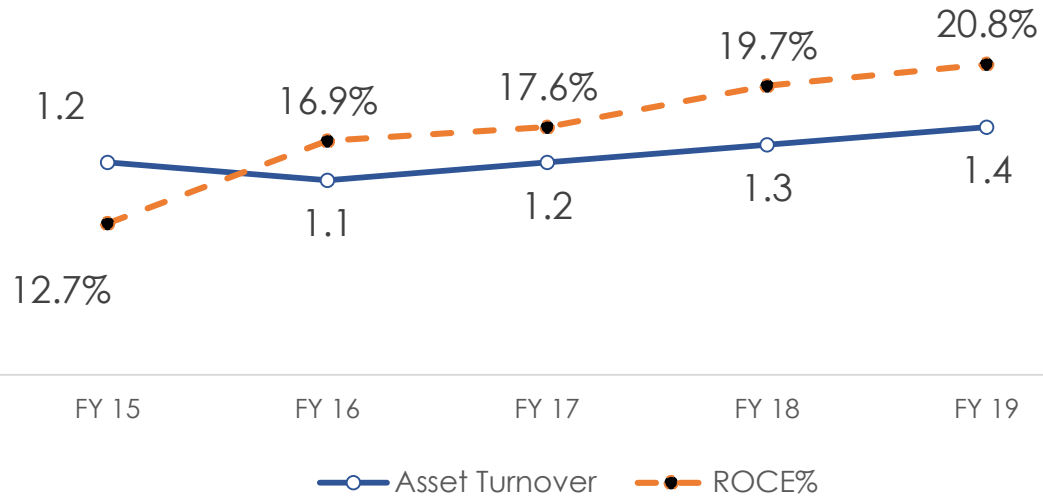


- **Steady growth, Consistent margins**
- **Growth driven by Core industries** in fastest growing Economy of the World
- **Diversity in customer base & geographies**

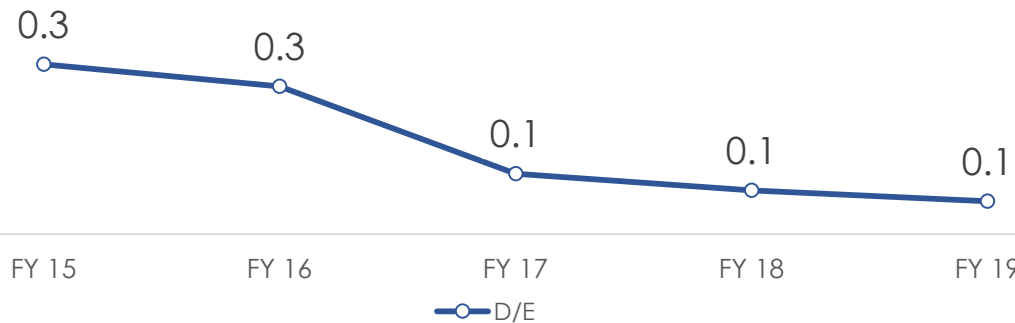
Share of Sales in India



Return Ratios



Debt/Equity Ratio



Financial Strength

- 65 years of **unbroken dividend payout**
- Strong and **consistent returns** on capital
- Steady **increase in Asset turnover**
- **Strong Balance Sheet** – Major expansion plans on internal accruals
- Potential for **inorganic growth** in clearly identified growth areas
- **Zero Net Debt**



Innovation



Digital Offerings - 'Smart Products' for Customers; IoT implementation underway in manufacturing Locations

Sensor embedded Lined Equipment

- 'Smart products' under development
- Predictive maintenance
- Reduced downtime
- Customer lock-in



Smart Grinding Wheels

- Sensor embedded grinding wheels
- Study stress points
- Predictive maintenance



Industry 4.0 in Factories

- Ecosystem of connected devices
- Apps, and remote monitoring systems to increase productivity across the value chain





Contribution to India's Space Mission



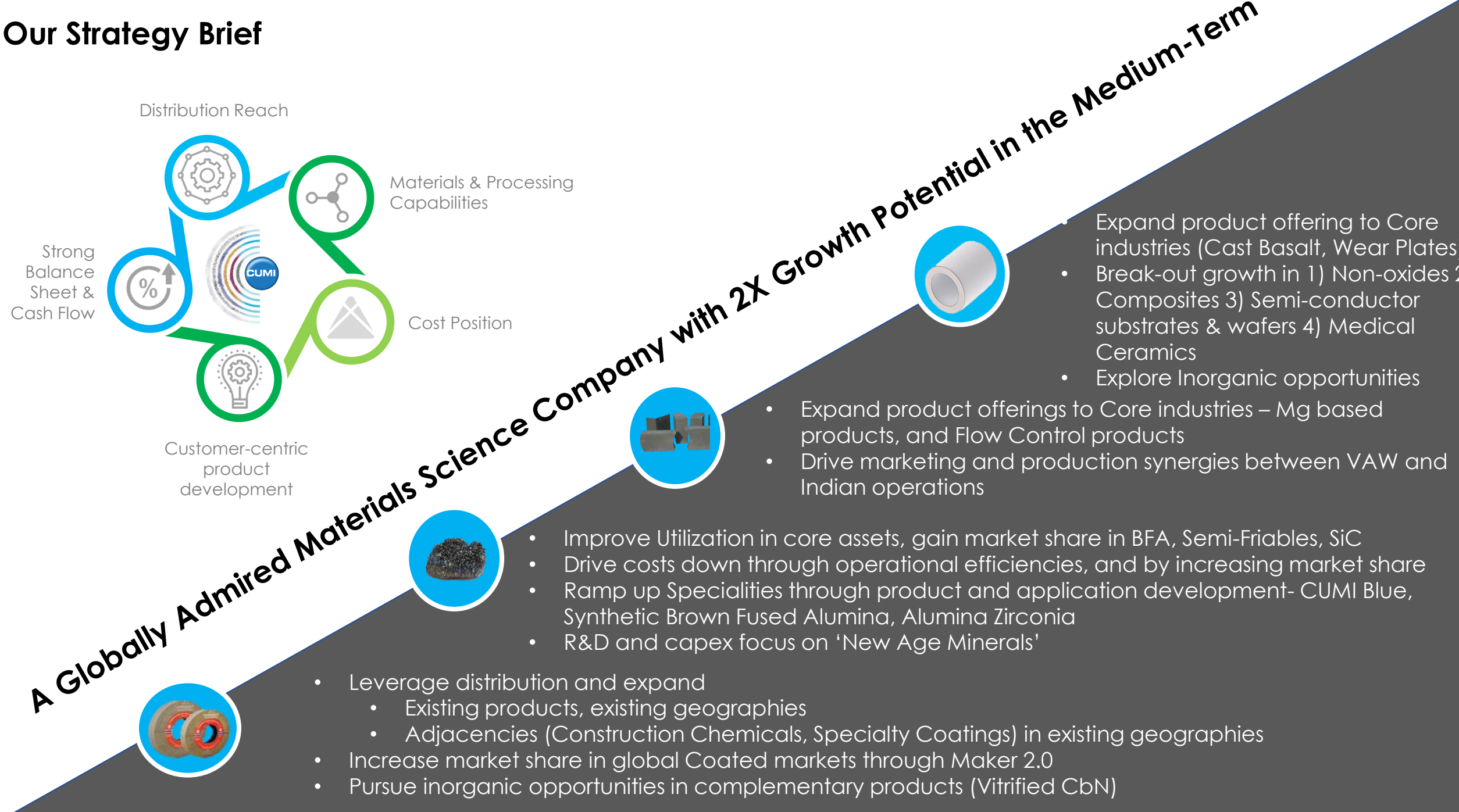
CUMI's Contribution to India's Space Mission

Since 2004 CUMI Super Refractories has been providing the lining for the flame deflector tunnel at ISRO's launchpad at Sriharikota. This is critical to deflect the extreme heat during launch of a spacecraft. The lining has provided the base for successful Mangalayan & Chandrayan launches recently.

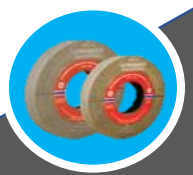


Closing Remarks on Strategy

Our Strategy Brief



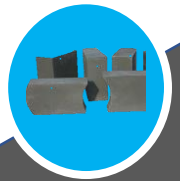
A Globally Admired Materials Science Company with 2X Growth Potential in the Medium-Term



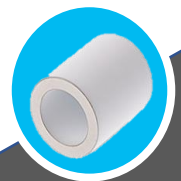
- Leverage distribution and expand
 - Existing products, existing geographies
 - Adjacencies (Construction Chemicals, Specialty Coatings) in existing geographies
- Increase market share in global Coated markets through Maker 2.0
- Pursue inorganic opportunities in complementary products (Vitrified CbN)



- Improve Utilization in core assets, gain market share in BFA, Semi-Friables, SiC
- Drive costs down through operational efficiencies, and by increasing market share
- Ramp up Specialities through product and application development- CUMI Blue, Synthetic Brown Fused Alumina, Alumina Zirconia
- R&D and capex focus on 'New Age Minerals'



- Expand product offerings to Core industries – Mg based products, and Flow Control products
- Drive marketing and production synergies between VAW and Indian operations



- Expand product offering to Core industries (Cast Basalt, Wear Plates)
 - Break-out growth in 1) Non-oxides 2) Composites 3) Semi-conductor substrates & wafers 4) Medical Ceramics
 - Explore Inorganic opportunities



**Making
Society
Matter**



CORPORATE SOCIAL RESPONSIBILITY : HEALTH, EDUCATION & INFRASTRUCTURE



Education

CUMI supports Vellayan Chettiar School, Chennai and Murugappa Polytechnic, Chennai through AMM Foundation. Educates and trains approximately 8000 students



Community

Developing appropriate technologies through the Murugappa Chettiar Research Center, Chennai



Medical Infrastructure

Provide Mobile Health check facilities in association with Wockhardt Foundation in North India



Health

Blood donation camps and health camps across location as part of Employee engagement. Support Ivan Stetford Hospital, Chennai through the AMM Foundation





MAKING YOUTH MATTER : CUMI CENTER FOR SKILL DEVELOPMENT



Total No. of Students till date : 346
Total No. of pass-outs : 150
Ongoing batch : 196



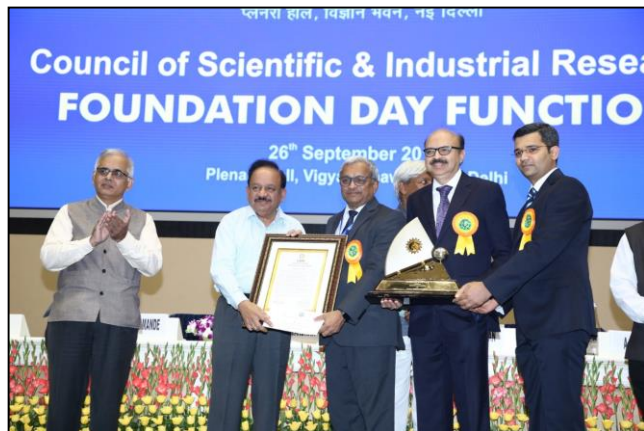
193



153



CCSD Hosur, declared as
“Best Establishment of the Region” by Directorate
 General of Training, MSDE, **Govt. of India** -
 October 2019



Recognition

- CSIR Diamond Jubilee Technology Award
- Golden Peacock award for Innovation (2019)/ Corporate Governance (2017)/corporate Ethics (2016)/CSR (2016)
- 'Most Diversified Exporter' Award by ECGC (Runners up)
- ICAI /SAFA – awards for Annual Report
- CII – Strong Commitment to HR Excellence

