

# Trust Reliability Quality

INVESTOR PRESENTATION

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# Journey and Transformation

1960 2005 Growth in magnets business for energy meters and automobile applications

- Change in the energy meters technology led to a downturn in the magnets business
- Recession & global financial crisis of 2007-09 also had a serious impact on the Company's business

2005 2015

2015 2023

- Magnets business stabilised in last couple of years
- Further to drive growth, categories such as Hi-perm were scaled
- Revenue mix shifted from Magnets to Shunts & Hi-perm

**KEY MILESTONES** 

2000 Commenced magnetic assemblies export 2005
Hi-perm division started:
Soft Magnetic Parts

2007
Shunts division started:

**2016**ZAMAK die-casting capabilities added

2017
CT-Division started:
Nano Crystalline and
Amorphous Components

2018
Plastic moulding

Plastic moulding capabilities added

Copper Manganese
Shunt Assemblies



### PML at a glance

Permanent Magnets is a leading solution provider of electrical components and assemblies based on certain core technologies such as current & speed sensing, magnetic shielding, and magnetic assemblies. These components and assemblies find applications in automobiles, energy & gas meters, and many other industries.

60+

YEARS OF EXPERTISE INTO MAGNETS, MAGNETIC ASSEMBLIES, AND SHUNTS 467

COMMITTED TEAM
MEMBERS INCLUDING
72 ENGINEERS

3

MANUFACTURING FACILITIES 350+

ACTIVELY MANUFACTURED SKU'S

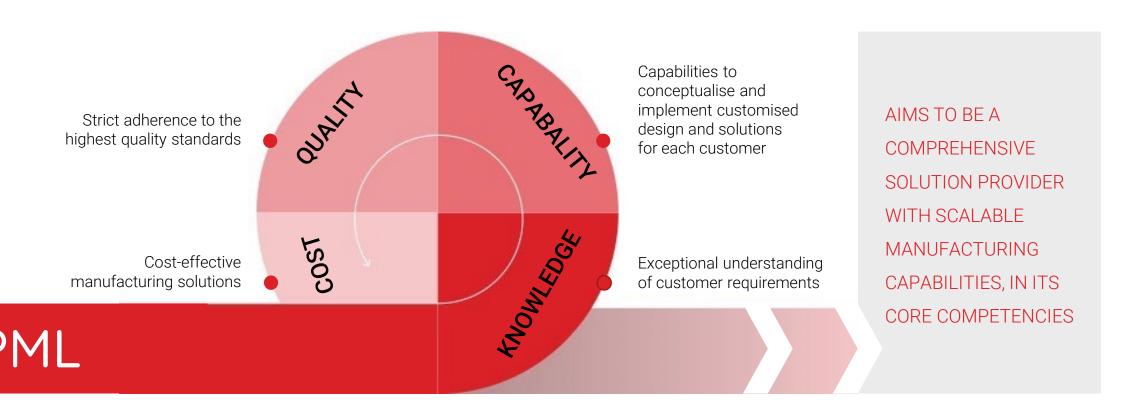
### **Market Trends**

AT THE CENTER OF EMERGING TECHNOLOGICAL TRENDS SUCH AS ELECTRIC VEHICLES, SMART METERS, SMART GRIDS 5

EXPERTISE IN 5 CORE
TECHNOLOGIES & PRODUCT
PLATFORMS WITH N-NUMBER
OF PRODUCT POSSIBILITIES

# PML's value proposition

PML is a solution provider with expertise in design, prototype and production of components and assemblies related to Automobile, Metering and other sectors



# **Robust Capabilities**

PML has exceptional expertise in the fields of metallurgy, mechanical engineering, electrical engineering and electronics, enabling it to offer comprehensive solutions to its clients

UNDERSTANDING OF QUALITY & CLIENT REQUIREMENTS

- Experts in metallurgy, mechanical, electrical and electronics
- AEC-Q200 lab for qualifications & type tests
- Measurement equipment's such as Koerzimat, BH Loop Plotter

**METALS & METALLURGY** 

- Melting & casting
- Heat treatments
- Copper winding

**DESIGNING & SIMULATION** 

- Designing components & modules
- System optimization & simulation
- Customer-specific prototyping

MANUFACTURING TECHNOLOGIES

- Assembly processes
- Finishing processes
- Hot chamber die-casting
- Plastic moulding

### Product **Platforms**

Focus on building technologies and capabilities over specific products

Ability to design & deliver n-number of customer-specific solutions within its core technologies

### MAGNETIC SENSING

Technologies focused on:

- Speed sensing
- Torque sensing
- Angular sensing

### **CURRENT SENSING**

Technologies focused on:

- Shunt current sensors
- Hall effect sensors
- CT sensors

### MAGNETIC ASSEMBLIES

Magnetic assemblies focused on performing functions such as:

- Holding
- Lifting
- Separation

### **Application Industries**



### **Application Industries**



Aerospace & Defence











**Application Industries** 







### **ALLOYS**

Metallurgical expertise

- · Alloys: Nickel-Iron, Cobalt, Manganese, Nickel-based alloys
- · Other casting based technologies

### ZAMAK DIE CASTING

Automobile, Energy Meter, Renewable Energy,

A die-casting technology using ZAMAK (Zinc-Aluminium-Manganese-Copper) alloys, especially suitable for volume manufacturing of small parts. Key advantages include:

- Faster production rates
- Versatility, easy-machining & finishing
- Complex and articulated shapes

### **Application Industries**





Automobile, Energy Meter

# **Key Products**

MAGNETIC SENSING



Shielding C Shape



Shielding-MuMETAL Zero Gauss Chambers

CURRENT SENSING



Module



Current Sensing Module



Shunt



Current Sensing Module



Stator Rotor Lamination (Medical Motors)





Magnetic Lifter



Iron Filing Removal Machine

ALLOYS 4



Alloy Ingot



Ingot

ZAMAK DIE CASTING



ZAMAK Valve



ZAMAK Insert

# **Critical Product Applications**









1 Permanent Magnets





2 Rotor Laminations

Battery Current Sensor







4 Flux Concentrator

Battery Monitoring Sensor







5 HSM 800

5 Smart Battery Clamp





6 Toroidal Cut Core



# Critical Product Applications

### **ELECTRICITY METER**









4 Diaphragm Assembly

### GAS METER



### **Established Clientele**

Automobiles & Electricity Meters are PML's key application industries



### ~50% of Tier-I

PML is a preferred supplier of electrical components and assemblies to 50% of the tier-1 auto companies globally

In both traditional ICE vehicles and emerging technologies like EV



### >> ELECTRICITY METERS

# Top 3

PML is a supplier to the top 3 electricity meter companies globally

The Company holds a strong position in electricity meters segment with long-standing client relationships

PML is the only supplier for many products and amongst the top 2 or 3 **suppliers** for most of the other products

# Seasoned Management Team

PML's management team is well-balanced, comprising seasoned business executives and a young, dynamic team of around 15 second-level managers, in the average age group of 35 years



MR. SHARAD TAPARIA Managing Director

Overall strategy and management of the Company

- 26 year of work experience
- 24 years with PML



MR. PRABHAKAR KAMATH President

Shunt Division, Copper and Brass Parts, Magnets and Magnetic Assembly CT Division, Gas Meter Parts

- 35 year of work experience
- 19 years with PML



MR. SUKHMAL JAIN Senior Vice President, CFO

Heads Finance Department

- 41 year of work experience
- 34 years with PML



MR. GIRISH MAHAJAN Vice President

New Products, Software, Systems, Metallurgy

- 31 year of work experience
- 29 years with PML

Responsibilities

Career

### **Strong Corporate Governance**

Board is headed by a Non-Executive Chairman and has a balanced composition of Independent, Executive and Non-Executive Directors





Over 26 years of experience in functions such as management, finance, accounting and Taxation. His qualifications include B.Com, CA, Grad CWA, CISA (USA), DIFA (ICA).



MR. SHARAD TAPARIA Managing Director

Over 26 years of experience in magnet manufacturing industry. His qualifications include BE and MBA in Finance.



MR. KAMAL BINANI Independent Non Executive Director

Over 40 years of experience in functions such as finance, accounting and taxation. His qualification include B.Com and CA.



MR. MUKUL TAPARIA Non Executive Director

Over 25 years of experience in functions such as international marketing and finance. His qualification include Bachelors in Computer Science from University of Texas, Austin and Diploma in Business Engineering from Warwick University, UK.



MS. SUNAINA TAPARIA Non Executive Director

Her qualifications include Bachelors in Fine Arts.



MR. GIRISH DESAI Non Executive Director

Over 50 years of experience in functions such as management, finance, taxation, corporate and security laws, HR and industrial relations. His qualifications include M.Com, Grad-CWA, ACA, PGDSM, PGDSL.

# **Key Technical Partnerships**

PML has, on multiple occasions, established significant technical & commercial alliances in order to keep abreast with the most recent technological developments, and explore uncharted markets

# LEGACY COLLABORATIONS

Centro Magneti Permanenti *Italy /* 1973

Technical collaboration for commencing production of Permanent Magnets

Dowa Mining
Japan/ 1983
Technology upgradation

Sumitomo *Japan | 1983* 

Upgrading of its cast magnet plant and modernisation of ferrite plant



# RECENT PARTNERSHIPS

magLab AG, Switzerland (Acquired by CTS Corporation)

Technical collaboration to develop and market products and solutions.

Combined expertise in simulations, product-testing, magnetic designs, and sensors

# Quality Control Systems

- PML adheres to the quality standards of the industry
- The production facilities and QMS are certified by IATF, AS, EMS and OSHAS
- PML is regularly audited by customers
- PML has renowned measurement equipment such as Koerzimat, BH Loop Plotter for magnetic performance
- PML has developed in-house application specific testing facility
- The AEC-Q200 lab is equipped for various qualification and type tests

### SCOPE OF CERTIFICATIONS

Design, manufacture and supply of Magnetic Systems

General requirements for the competence of testing and calibration laboratories

Manufacture of Soft Magnetic Alloy components

### **KEY CERTIFICATIONS**

ISO 14001:2015

ISO 17025:2017

AS9100D:2016







ISO 9001:2015

OHSMS 45001:2018 JATE 16949:2016





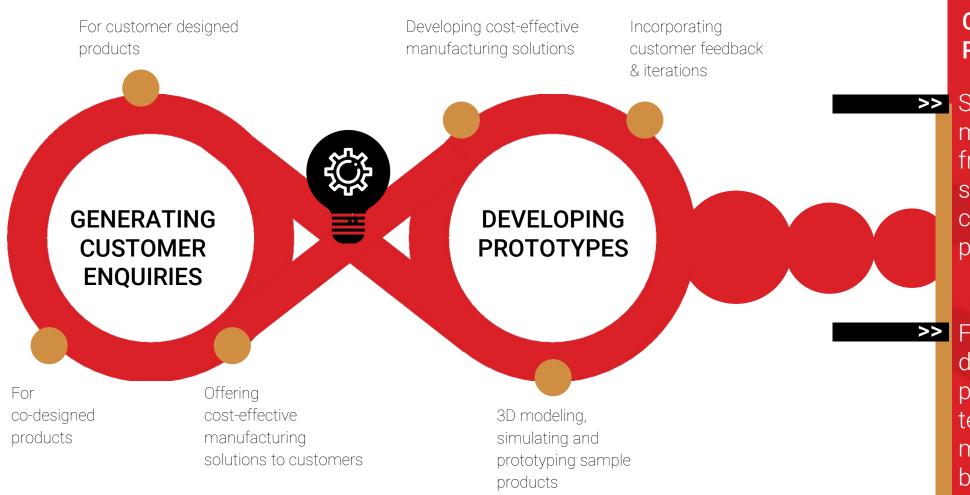


Business Overview

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# New Product Development



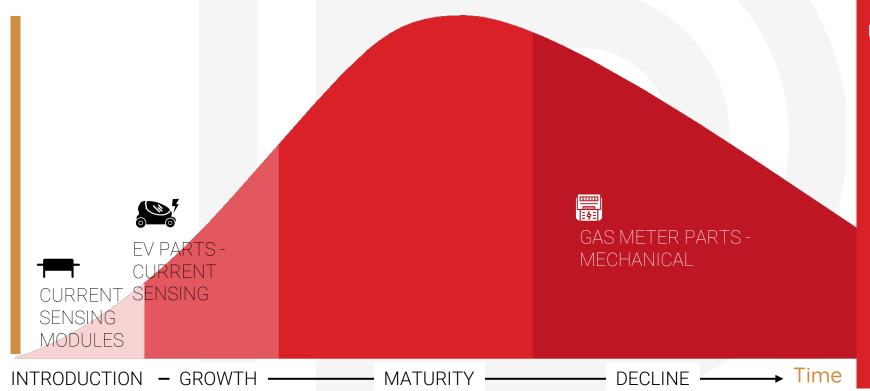
# COMMERCIALISING PRODUCTS

>> Successfully moving products from prototyping stage to commercial production

>>> For newly developed product platforms & technologies, this marks the beginning of product life cycle

# **Product Lifecycle**

- Continuous product additions to compensate sales of maturing products
- Focus on technologies & capabilities rather than specific-products
- Rate of new product introductions will be higher than rate of maturity



AVERAGE AGE OF PRODUCT LIFE CYCLES

8-10YR

**Electricity Meter Components** 

10-20YR

Automobile (Non Current-Sensing Platform)

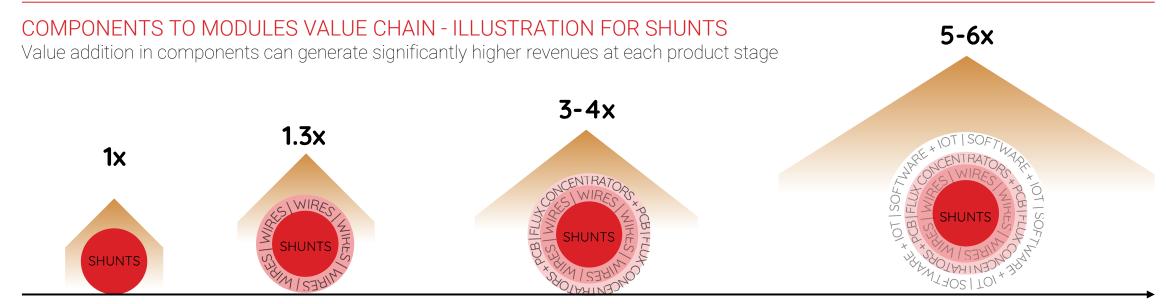
**SHORT** 

Automobile (Current-Sensing Platform) An emerging category thus shorter lifecycles expected

# **Components to Modules**

A STRATEGIC MOVE TO ADD COMPETENCIES IN MODULES SHIFTING BUSINESS FROM COMPONENTS TO MODULES TO CAPTURE MORE VALUE

PRODUCT CATEGORIES SUCH AS SHUNTS AND SOFT MAGNETIC MATERIAL COMPONENTS TARGETED IN INITIAL PROJECTS



Product Stage 1 Product Stage 2 Product Stage 3 Product Stage 4

Value/Potential-Revenue of product at each stage

# **Broad-basing Customer Base**

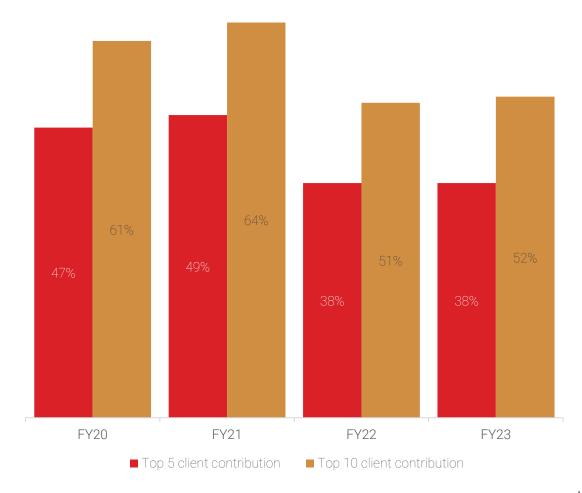
PML is actively diversifying & strengthening its revenue stream through:

ACTIVELY COMMERCIALISING NEW PRODUCTS

SIGNIFICANT NEW
CLIENT ADDITION
(DIRECT & IN-DIRECT)
IN LAST 3 YEARS

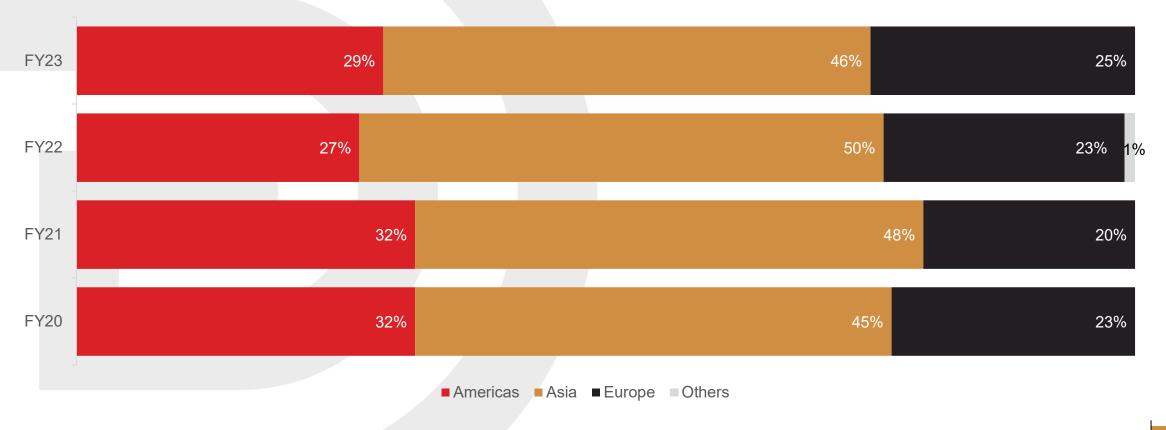
Further, PML is looking to actively add new PRODUCT PIPELINE, application industries to further diversify its revenue stream.

### TOP 5 & 10 CLIENT SALES CONTRIBUTION



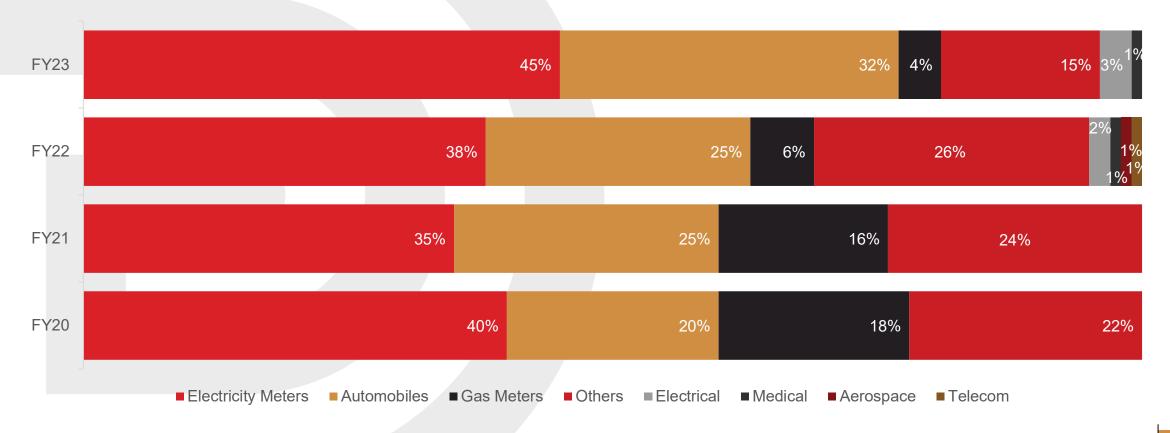
# Geography-Wise Sales Trend

- Rising share of export sales
- Asia continues to be the flagship market
- New market additions such as China and France

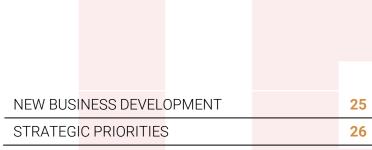


# **Application-Wise Sales Trend**

- Electricity Meters continues to be the flagship application industry
- Gas Meters product category approaching end of life cycle
- New application categories include Electrical, Medical, Aerospace, Engineering and Computers



Strategic Review





# New Business Development

TECHNOLOGIES & CAPABILITIES

PML is working on adding newer competencies

Introducing newer modules and components New projects in casting space New application of **ZAMAK die-casting High-volume sheet** metal forming Wire winding Plastic moulding capabilities

### **Strategic Priorities**

MOVING TOWARDS NEW ALLOYS AND MATERIALS

BUSINESS GROWTH IN THE ADDITIONAL CAPABILITIES

+5 YEAR

ADDING MORE PROCESSES
AND CAPABILITIES LIKE ALLOY
MAKING, HEAT TREATMENT
AND SMART MODULES

COMMENCING SHIFT FROM COMPONENTS TO ASSEMBLIES

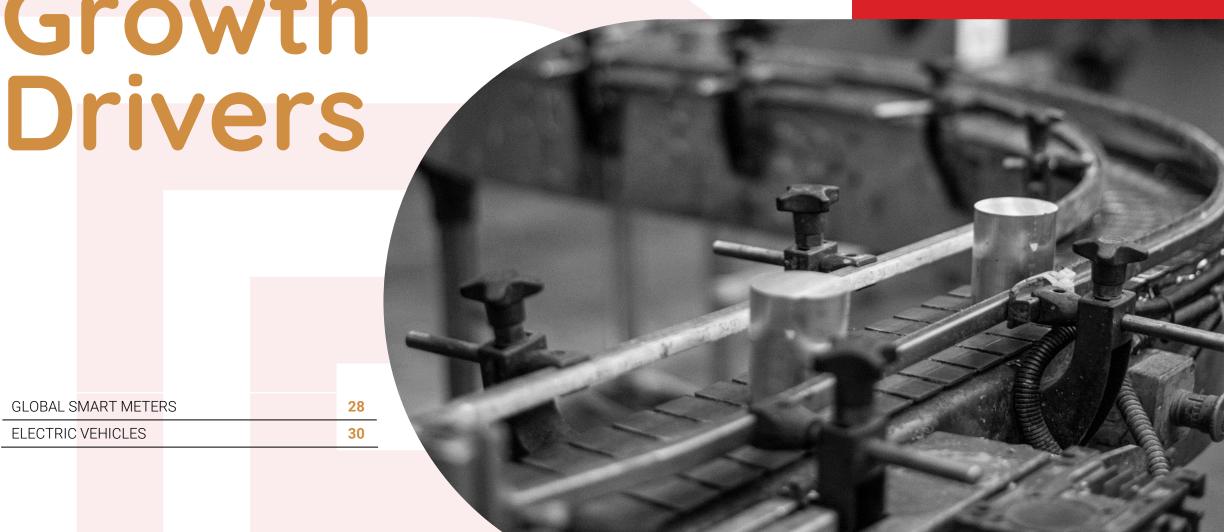
INTEGRATING MANUFACTURING FACILITIES

< 2 YEAR

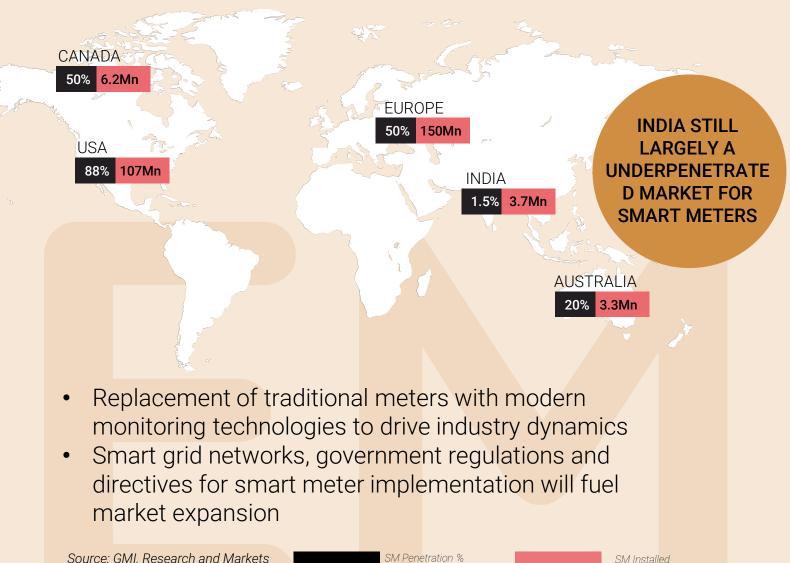
< 3 YEAR

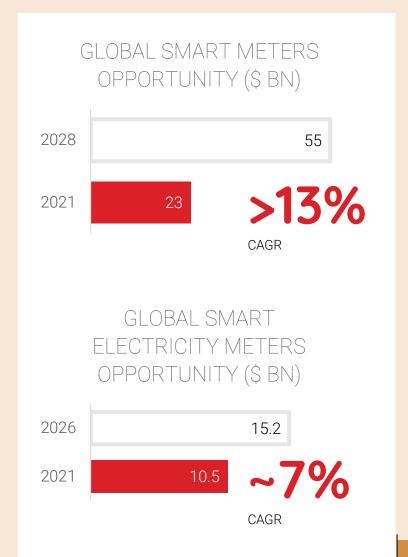
Industry Growth

**GLOBAL SMART METERS ELECTRIC VEHICLES** 



### Global Smart Meters: Market Trends





### **Smart Electricity Meters: Growth Drivers**

On the one hand, the smart meter infrastructure is to empower customers by allowing them to choose their power suppliers, and on the other hand, it is expected to help distribution companies prevent power theft by reducing human interference in metering, invoicing, and dues collection.



Need for increasing energy efficiency and minimising power loss & theft during transmission



Benefits to customers such as detecting failures early, accommodating faster service, accuracy of billing





Operational advantages such as grid resiliency and accuracy of meter readings



Integrating distributed energy resources (DERs), energy storage technologies, and EV charging in the residential sector

Cost savings by eliminating on-site meter readings, reducing equipment & maintenance costs, enabling faster restoration during outages

### **EV Market: Market Trends**

- Over 26 million electric cars were on the road in 2022, up 60% relative to 2021
- Electric car sales increased even despite total car sales decreasing by 3% in 2022 relative to 2021
- Electric car sales exceeded 10 million in 2022, up 55% relative to 2021. Sales in China increased by 80% and accounted for 60% of global growth. Growth in Europe remained high (up 15%) and accelerated in the United States (up 55%).
- Electric cars stock has grown 5 fold since 2018
- Almost half of the world's electric cars are in China, with a share of 13.8 mn units out of 32.9

Global spending on electric cars exceeded USD 425 billion in 2022, up 50% relative to 2021

GLOBAL ELECTRIC VEHICLE STOCK BY REGION (UNITS IN MN)



### **EV: Key Industry Trends**



### Electric car sales break new records with momentum expected to continue through 2023

 Over 2.3 million electric cars were sold in the first quarter, about 25% more than in the same period last year



### Landmark EV policies are driving the outlook for EVs closer to climate ambitions

 The EU and the US have passed legislation to match their electrification ambitions



market

# As spending and competition increase, a growing number of more affordable models come to

- A growing number of new entrants, primarily from China but also from other emerging markets are offering more affordable models
- The number of available electric car models reached 500 in 2022, more than double the options available in 2018



### EV supply chains and batteries gain greater prominence in policymaking

 EV supply chains are increasingly at the forefront of EVrelated policymaking to build resilience through diversification Promising signs for emerging electric vehicle (EV) markets, albeit from a small base



2022 was a growth year in India, Thailand and Indonesia. Collectively, sales of electric cars in these countries more than tripled compared to 2021.



# **Profit & Loss Statement Summary**

PARTICULARS	FY19	FY20	FY21	FY22	FY23
Total Revenue	121.83	109.26	117.57	133.26	188.19
Total Operating Expenses	98.16	86.01	91.43	102.78	141.47
EBITDA (Excluding OI)	22.68	20.55	25.25	26.73	41.27
EBITDA (Excluding OI) %	19%	19%	22%	21%	23%
Interest Cost	1.31	1.33	1.02	0.86	1.27
Depreciation & Ammortisation	1.56	2.99	3.29	4.06	5.49
Profit Before Taxes	20.8	18.93	21.82	25.57	39.96
Profit After Taxes	14.8	14.32	16.14	19.04	29.75
Earnings Per Share (₹)	17.22	16.61	18.79	22.16	34.61

# **Balance Sheet Statement Summary**

PARTICULARS	FY19	FY20	FY21	FY22	FY23
Shareholders Fund	33.25	47.87	64.03	82.22	110.95
Non Current Liabilities	2.95	5.73	4.44	3.91	4.69
Current Liabilities	30.71	19.50	25.52	29.84	35.63
- Trade Payables	19.62	14.98	22.15	24.60	29.35
Total	66.91	73.11	93.99	115.97	151.27
Non Current Assets	7.38	12.03	11.36	18.55	29.97
Current Assets	59.52	61.08	82.63	97.42	121.30
- Inventories	17.55	19.25	21.01	37.29	53.39
- Trade Receivables	31.83	27.30	32.87	35.45	50.95
Total	66.91	73.11	93.99	115.97	151.27

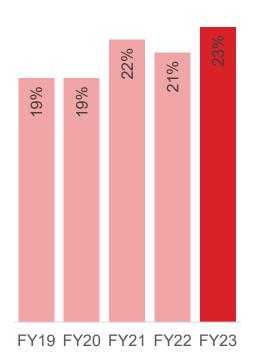
# Cash Flow Statement Summary

PARTICULARS	FY19	FY20	FY21	FY22	FY23
Cash from Operating Activities	9.92	11.50	6.36	3.66	11.47
Cash from Investing Activities	-1.99	-1.54	-2.06	-3.80	-9.52
Cash from Financing Activities	-7.18	-8.78	-2.86	-2.63	-1.23
Net Cash Flow	0.75	1.18	1.45	-2.76	0.73
Net Cash at Beginning of Year	0.05	0.81	1.98	3.43	0.67
Net Cash at End of Year	0.81	1.98	3.43	0.67	1.40

# **Key Performance Indicators**

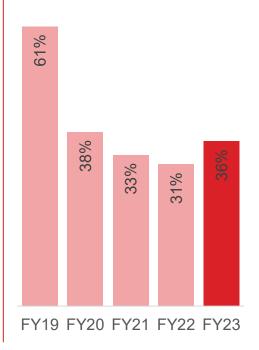
EBITDA Margin %

23%



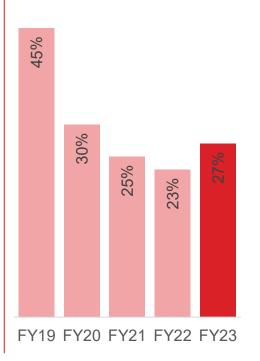
**ROCE %** 

36%



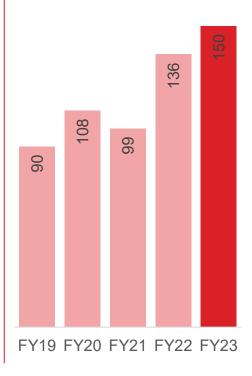
ROE %

27%



Working Capital Days

150 days





# Q4 & FY23 Profit & Loss Summary

PARTICULARS	Q4FY22	Q3FY23	Q4FY23	YoY %	FY22	FY23	YoY %
Total Income	39.89	54.29	50.67	27%	133.26	188.19	41%
Total Operating Expenses	30.38	40.52	36.20	19%	102.78	141.47	38%
EBITDA (Excluding OI)	8.47	12.30	13.18	56%	26.73	41.27	54%
EBITDA (Excluding OI) %	22%	23%	27%	-4.91%	21%	23%	2%
Interest Cost	0.20	0.43	0.38	90%	0.86	1.27	48%
Depreciation & Ammortisation	1.19	1.45	1.91	61%	4.06	5.49	35%
Profit Before Taxes	8.12	11.89	12.18	50%	25.57	39.96	56%
Profit After Taxes	6.05	9.09	8.80	45%	19.04	29.75	56%
Earnings Per Share (₹)	7.05	10.58	10.24	45%	22.16	34.61	56%

### Management Commentary

"FY23 witnessed a comeback post a relatively softer FY22. **Electricity Meter &** Automobile applications continue to be the bedrock of our performance, we are garnering higher wallet share, adding new customer accounts, while scaling the existing ones."

We are pleased to report that the Company had a successful FY23, with robust top-line growth and profitability after a relatively softer FY22. The growth was mainly witnessed on two fronts - Electricity Meters and Automobile product applications.

On the Electricity Meter front, we secured a higher wallet share in one of the decent-sized product categories from an existing customer, by being more competitive and better product quality.

On the Automobiles front, we added a couple of new customers on the EV platform, while demand from existing customers scaled up. Growth in FY23 has largely been from the scale up of existing customer accounts. Gas Meter product continues to approach the end of its life cycle, and we expect its demand to gradually phase out in a few years, as of FY23 it stood at 4% of the top line.

We are exploring new product lines and diversification opportunities to ensure the Company's long-term growth remains intact, despite short term product life cycle trends. We will continue to work towards adding more customers on both Electricity Meters and Automobiles front by adding new technological & manufacturing capabilities and remain competitive and meet our customers' evolving needs.

Our customer engagements in new markets such as China have progressed well, and while business hasn't scaled up materially yet, we remain optimistic about the potential in these markets. For now, the majority of our growth continues to come from American and European customers.

We are working on forward integration or product stage scale-up in some categories, such as scaling up from magnets to assemblies in motors which find application in Automobiles (Non Current-Sensing Platform). Such initiatives will help us drive growth and become prominent to our customers in the long run.

While the work on the upcoming manufacturing facility was stalled due to certain delays in land acquisition, we expect the land acquisition process to be completed in a few months. We are confident that the new manufacturing facility will help us service the growing demand from our customers. In the meantime, we have invested in new Plant & Machineries at the current site, which will ultimately be transferred to the centralized upcoming manufacturing plant.

MR. SHARAD TAPARIA



# NdFeB: The Opportunity

### Overview

- Neodymium magents is a category of rare earth (RE) permanent magnets

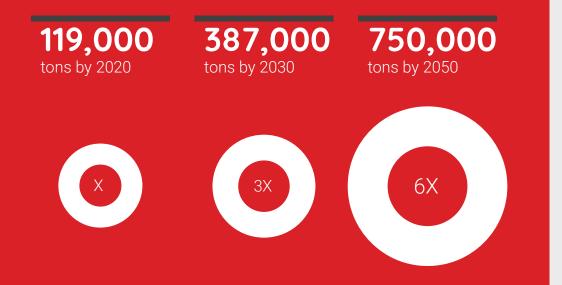
   specifically, neodymium-iron-boron (NdFeB)
- One of the strongest magnets commercially available, and has versatile applications
- One of the most widely used RE magnet

### **Trends**

- Modern vehicles can use 140+ electric motors, many of which use NdFeB magnets
- EV, HEV vehicles use even a greater number of electric motors than ICE vehicles
- Traction motors & generators (used in EV, HEV) preferentially use NdFeb magnets
- Clean energy initiatives like wind to further drive demand for NdFeb magnets

### **Global Demand**

- Global demand for NdFeB magnets was estimated at about 119,000 tons in 2020 (93% sintered magnets & 7% bonded magnets)
- EV's and offshore wind turbines will drive this growth and are projected to account for almost 30 percent and about 36 percent of NdFeB magnet demand, respectively, by 2030 as a result of the world's evolving clean energy goals.
- Global demand is estimated to go upto:



Source: U.S. Department of Commerce, Neo Performance Mateirals, UBS Electric Vehicle Teardown Analysis, 2017

# **Applications: NdFeb Magnets**

### **Key Uses of NdFeb Magnets:**

- Whitegoods & consumer appliances
- ICE / EV / HEV
- Wind turbines

volumes of application units

Small amounts of magnet, very large volumes (units)



Medium amounts of magnet (1-2 kg per EV drive train), sizable volumes (units)



Large amounts of magnet, relatively small volumes (units)

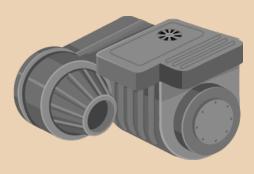


X – Amount of magnets (kg)

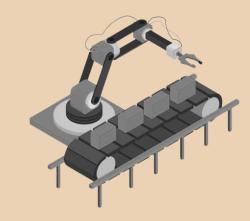
### Source: U.S. Department of Commerce

### Other applications:

Pumps & motors



### Industrial automation



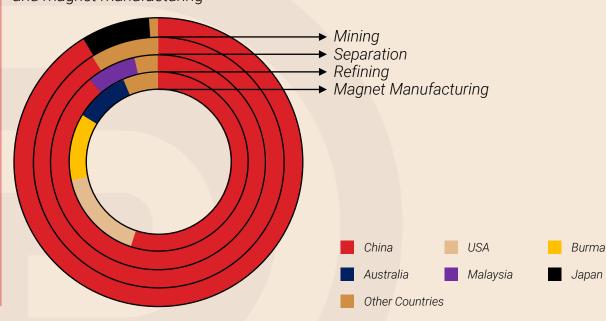
# Need for an alternate supply chain

### Over-reliance on China begets alternate supply chain sources

- China dominates mining, processing and manufacturing parts of the global NdFeb magents supply chain
- Global buyers are looking to reduce the dependence by the way of alternate supply chain sources, but being pricecompetitive is equally important
- Chinese concentration increases further at every downstream stage, rising from a 58% share of annual global rare earth mining in 2020 to a 92% share of annual global magnet production, the stage with the highest added value
- Strategic partnerships by the way of technical know-how + manufacturing partnership can create alternate assets in countries like India

### Geographical concentration of supply chain stages for sintered NdFeB magnets

From center: rare earth mining, oxide separation, metal refining and magnet manufacturing



### NdFeb Magnets Value Chain

Mining

Processing of carbonates/ separation of oxides /

Metallization / alloying

Magnet production

Recycling

Source: U.S. Department of Energy

# MoU with Quadrant International

A Non-Binding Memorandum of Understanding (MOU) executed between Permanent Magnets Limited and Quadrant International (QI) for Manufacturing of Neodymium Magnets and Assemblies in India and to explore the possibility of forming Joint Venture Company.

The acceptance of the MOU does not create any legal binding or enforceable obligations on either party.



7 decades of experience manufacturing permanent magnets

### **QUADRANT**

3 decades of experience magnetic industry and technological prowess

### Safe Harbour

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**GFT IN TOUCH** 



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