Building Nation with Exceptional Engineering

MTAR Technologies Limited

Please click here for corporate video

Investor Presentation – February 2023

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A leader in critical and differentiated engineered products

- Strong Order Book Position
- Q3 & YTD FY23 Financial Performance
- Certifications under Progress
- Expanding Product Portfolio & Capabilities
- Exiting Customers & Customers in Pipeline
- Well Balanced Portfolio
- Experienced Board of Directors & Well Qualified Management Team

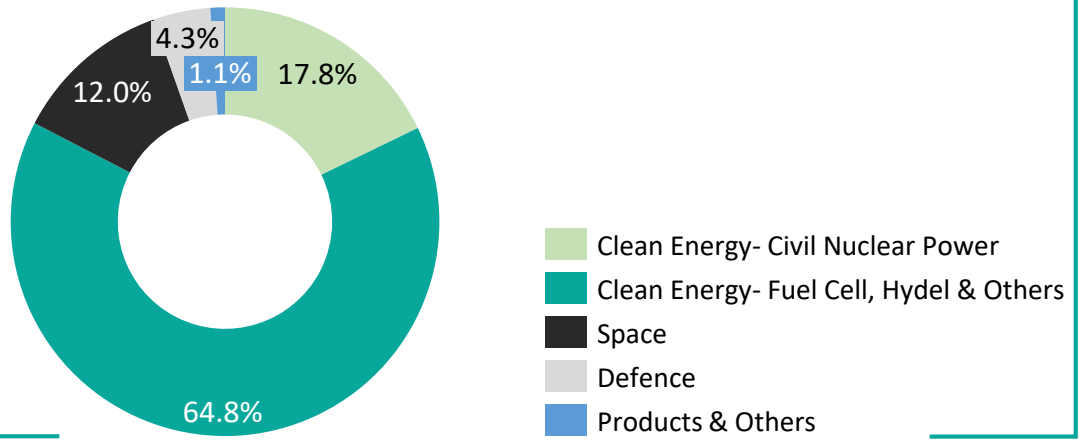
Strong Orderbook Position

Receipt of Major New Orders

Existing Business

Received Rs. 893.1 Cr of orders in YTD FY 23 in various sectors including Clean Energy – Civil Nuclear Power, Fuel cells and Hydel. In addition, the company has received Rs. 140.0 Cr of orders in Q4 as on Feb 7 2023.

Diversified Order Book of Rs. 1,183 crs as on 31st Dec 2022

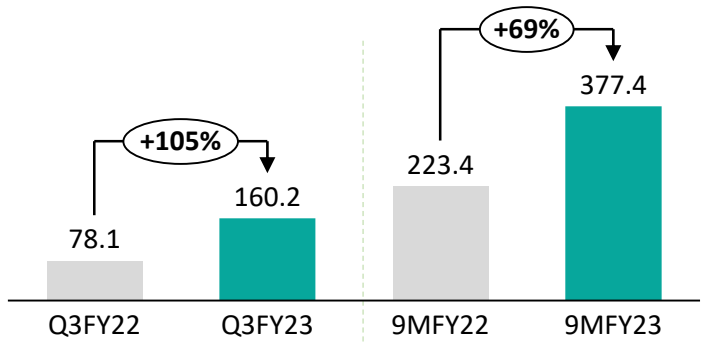


Order book Build-Up (Rs. in Crs)

* Sales restated at order book excluding forex fluctuations, price escalations and scrap sales

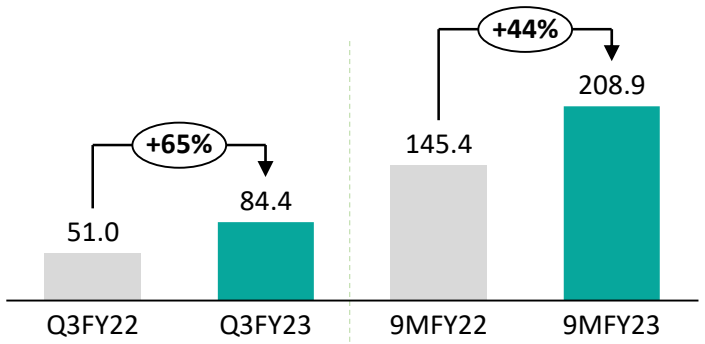
Q3 & 9M FY23 Financial Performance

Revenues (Rs. Crs)



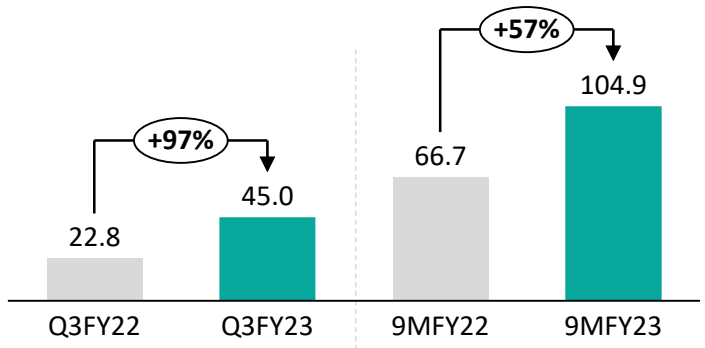
Gross Profit (Rs. Crs)

65.3% 52.7% 65.1% 55.4%



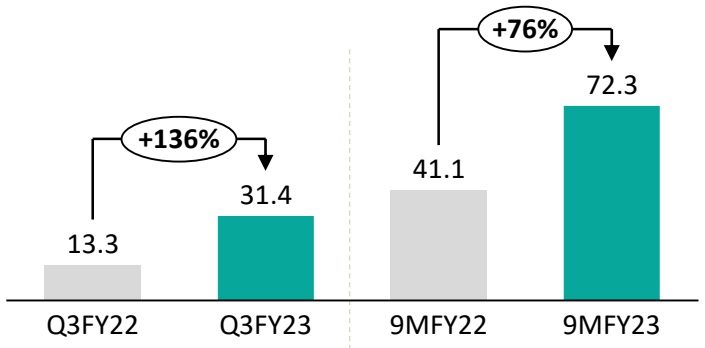
EBIDTA (Rs. Crs)

29.2% 28.1% 29.9% 27.8%



PAT (Rs. Crs)

17.0% 19.6% 18.4% 19.2%

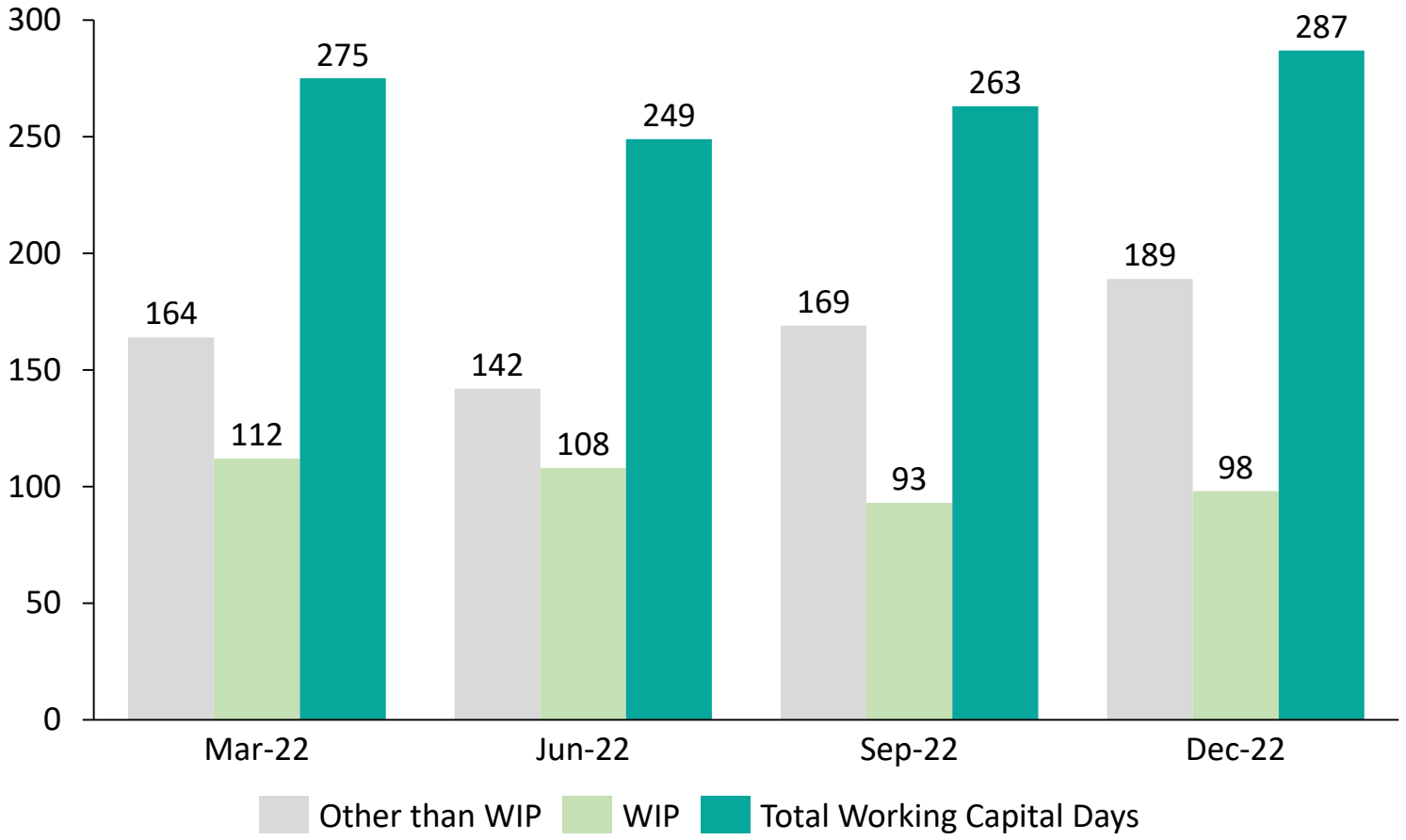


- Revenue for Q3 FY23 stood at Rs. 160.2 crs as compared to Rs. 78.1 Crs in Q3 FY22, a growth of 105% YoY and 9MFY23 growth of 69% YoY
- EBIDTA for Q3 FY 23 stood at Rs. 45.0 Crs, as compared to Rs. 22.8 Crs in Q3 FY22 with a growth of 97% and 9MFY23 growth of 57% YoY basis
- EBIDTA margins for Q3FY23 stood at 28.1%
- PAT for the quarter stood at Rs. 31.4 Crs as compared to Rs. 13.3 Crs in Q3 FY22 up by 136% YoY and 9MFY23 growth of 76% compared with 9MFY22
- PAT margins for Q3 FY23 stood at 19.6%

Margins

Working Capital Management

Net Working Capital (in Days)



- Rs 38 Crs was received from Bloom Energy on 7th Jan'23 on account of Christmas holidays. This resulted in 39 days increase in WC days; the working capital days would have been 248 Days had the amount been received in Dec'22.
- Out of Rs. 241 Crs of receivables, Rs. 195 Crs of receivables are not overdue
- Inventory RM higher by Rs 96 Crs for higher sale projected in Q4, which includes Rs. 52 Crs worth of material in transit
- Inventory WIP is higher by Rs 37 Crs due to long lead projects

Q3 & 9M FY23 Consolidated Profit & Loss Statement

Particulars (Rs. Crs)	Q3 FY23	Q3 FY22	Y-o-Y (%)	Q2 FY23	Q-o-Q	9M FY23	9M FY22	Y-o-Y (%)
Revenue from Operations	**160.2**	**78.1**	***105.1%***	**126.2**	***26.9%***	**377.4**	**223.4**	***68.9%***
Cost of Materials Consumed	100.1	40.4		61.1		205.1	103.4	
Changes in Inventories	-24.4	-13.3		(3.1)		-36.6	-25.4	
Gross Profit	**84.4**	**51.0**	***65.6%***	**68.2**	***23.8%***	**208.9**	**145.4**	***43.6%***
GP %	**52.7%**	**65.3%**		**54.1%**		**55.4%**	**65.1%**	
Employee Benefits Expense	22.7	17.2		21.0		62.4	49.8	
Other Expenses	16.7	11.0		12.3		41.6	28.9	
EBITDA	**45.0**	**22.8**	***97.4%***	**34.9**	***29.0%***	**104.9**	**66.7**	***57.2%***
EBITDA %	**28.1%**	**29.2%**		**27.7%**		**27.8%**	**29.9%**	
Other Income	5.7	1.1		5.4		14.9	6.3	
Depreciation and Amortisation Expense	4.9	3.7		4.6		13.6	10.6	
EBIT	**45.9**	**20.3**		**35.7**		**106.2**	**62.5**	
Finance Costs	3.9	1.5		2.7		9.0	4.1	
PBT	**42.0**	**18.7**	***124.3%***	**33.0**	***27.4%***	**97.3**	**58.4**	***66.5%***
Total Tax Expense	10.6	5.4		8.3		24.9	17.3	
Profit for the year	**31.4**	**13.3**	***136.2%***	**24.7**	***27.4%***	**72.3**	**41.1**	***76.1%***
PAT %	**19.6%**	**17.0%**		**19.6%**		**19.2%**	**18.4%**	

Certifications for Adibatla Plant

Certification	Expected Timeline to get Certified
ISO 9001:2015 – Quality Management Systems	**Received**
AS9100: Quality Systems - Aerospace	**Received**
ISO 14001:2015 Environmental Management Systems	**Received**
ISO 45001:2018 Occupational Health & Safety	**Received**

Certification	Expected Timeline to get Certified
ISO 27001:2013 Information Security Management Systems	**Received**

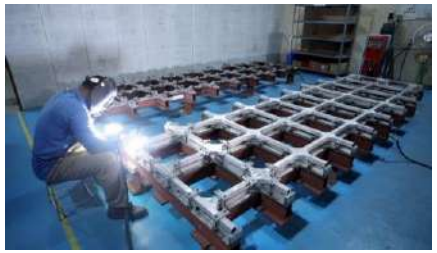
Certifications are expected to enhance our customer base specifically in Aerospace and Specialized fabrication in a significant way

Expanding Product Portfolio & Establishment of New Capabilities

Roller Screws

Electro-Mechanical Actuators

Electro-Mechanical Actuators



High End Fabrication

High Precision Sheet Metal

Expanding Product Portfolio

- ✓ Executed the FAI orders of **Roller Screws**
- ✓ The company has also **initiated the development of Electro-mechanical actuators**, which find application in Space and Defense sectors. In FY 22 we have received orders worth Rs. 7.6 crs from Defense; the company shall be executing all the orders by FY 24.
- ✓ The company has commenced the production of **ASP Assemblies** in Q4 FY23
- ✓ The company has initiated the development process of **ceramic assemblies** , which are currently being imported

Establishment of sheet metal and specialized fabrication facilities

Specialized fabrication

- ✓ Specialized fabrication facility to be functional in a full-fledged way by Mar '23

Sheet Metal

- ✓ MTAR has got qualified for 67 sheet metal assemblies and enclosures during Q1 in Clean Energy segment
- ✓ Commenced shipments to South Korea and USA; supplied **Rs. 24.6 Crs** worth of sheet metal orders for Clean Energy sector during YTD 31 Dec 2022
- ✓ The new capabilities are expected to bring in lot more customers

Key Products under Development

Defence		• **Valves:** The company has started working on the design of valves, which has an immense market potential in Defence. Received orders for First Articles.
Space		• **Semicryo Engine:** MTAR is in the process of developing Semi Cryo Engine, the next generation liquid propulsion engines that enhances the payload carrying capacity of GSLV Mark III from 4 tons to 6 tons. First engine is expected to be rolled out by FY 24.
Clean Energy	Bloomenergy	• **Bellows (Import Substitutes):** Indigenizing bellows for fuel cells that were being imported to achieve better realizations. The company has got qualified for bellows and production has commenced • **Heaters(Import Substitutes):** The company has initiated the development process, which are currently being imported

Establishment of New Capabilities – Electronics Control Systems

- ✓ The company has got the in-principle approval from the board to establish electronics manufacturing in-house
- ✓ The company has initiated work on cable harnessing assemblies
- ✓ MTAR shall take up more projects related to electronic systems going forward

Entered into MoU Framework for SSLV Project

- **MTAR has signed an MoU (memorandum of understanding)** with Indian National Space Promotion and Authorization Centre (IN-SPACe) for design and development of a two-stage to low-earth orbit all-liquid small satellite launch vehicle powered by semi cryogenic technology with a payload capacity of 500 kilogram

- As per the MOU framework the company has sought support from ISRO for various requirements including avionics, sub systems testing, facilitation of launch etc. and any other requirements that might emerge during the course of design, development and launch phase.

- The MoU shall remain in force for three years.

Existing Customers

Defence & Aerospace

DRDO

GTRE

RCI - DRDO

ASL

HAL

DRDL

BHARAT DYNAMICS LTD.
(A Govt. of India Enterprise)

ARDE Pune

ARDE Pune

RAFAEL
ADVANCED DEFENSE SYSTEMS LTD.

THALES

Elbit Systems

Collins Aerospace

Nuclear Power

DAE

BARC

IGCAR

NPCIL

भाविनि
BHAVINI

NFC

Government of India
Department of Atomic Energy
NUCLEAR FUEL COMPLEX

Space

इसरो isro

LPSC

Vikram Sarabhai Space Centre
Indian Space Research Organisation

Clean Energy

Bloomenergy

ANDRITZ

VOITH HYDRO
POWER GENERATION

Hitz
Hitachi Zosen

Marine, Oil & Energy

KONGSBERG

TechnipFMC

Others

WOM
WORLDWIDE OILFIELD MACHINE

Balaji
AMINES LTD.

Customers in Pipeline

Defence & Aerospace

IAI

ELTA

BlueBird Aero Systems

GKN AEROSPACE

MTAR is currently in discussions with a significant number of new customers from various sectors

Clean Energy

REGEN power

ENERCON ENERGY FOR THE WORLD

SIEMENS Gamesa RENEWABLE ENERGY

FLUENCE A Siemens and AES Company

ENERVENUE

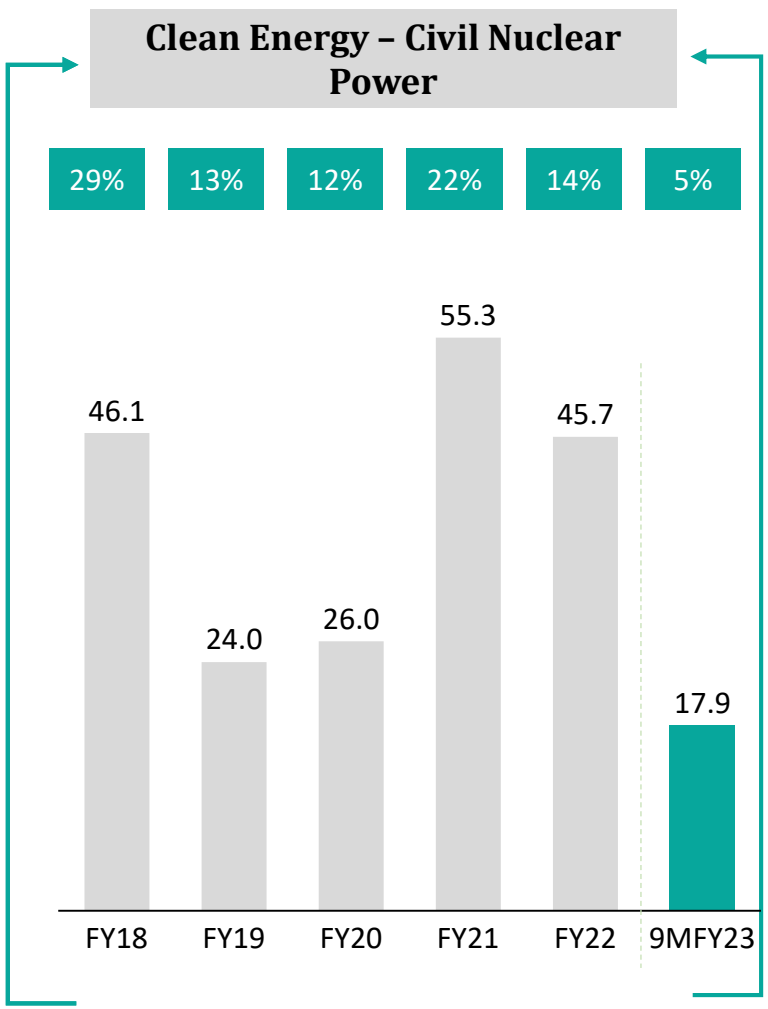
NORCAN HYDRAULIC TURBINE INC.

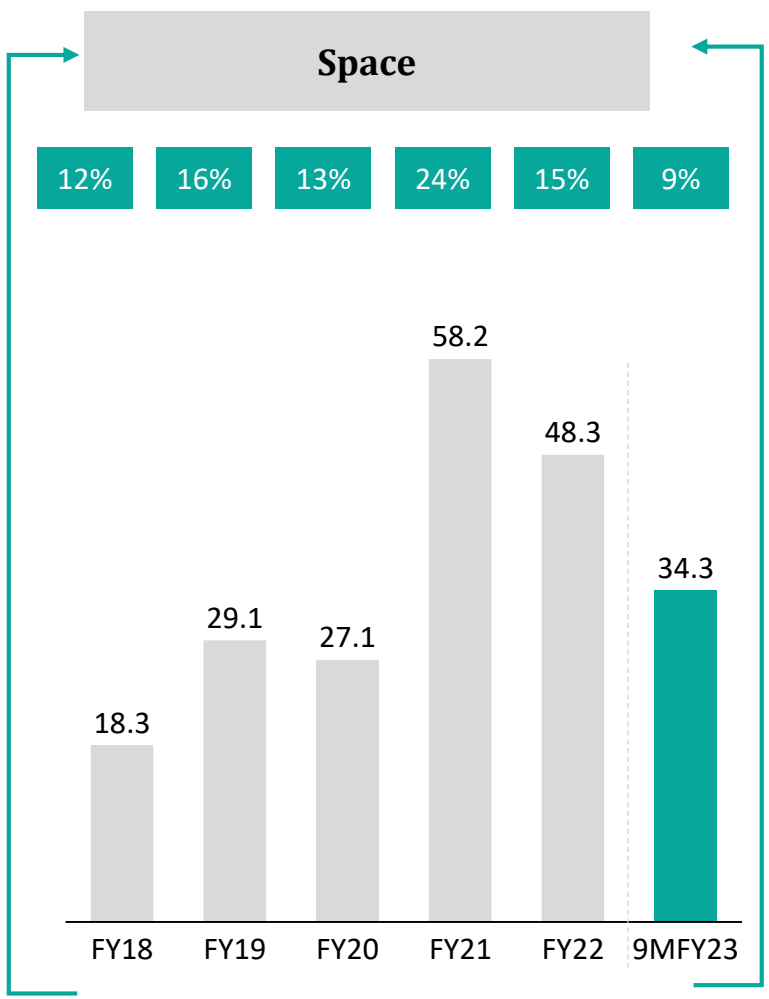
Others

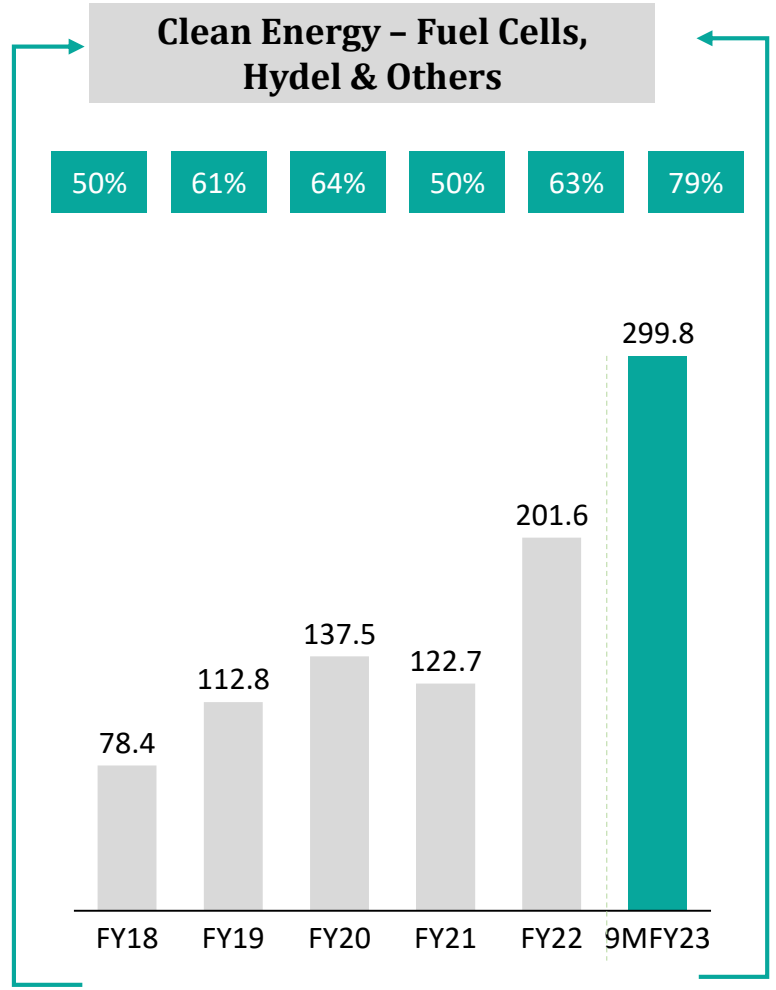
NIPPON STEEL ENGINEERING

Well-balanced Portfolio (1/2)

Revenue in Rs. Crs

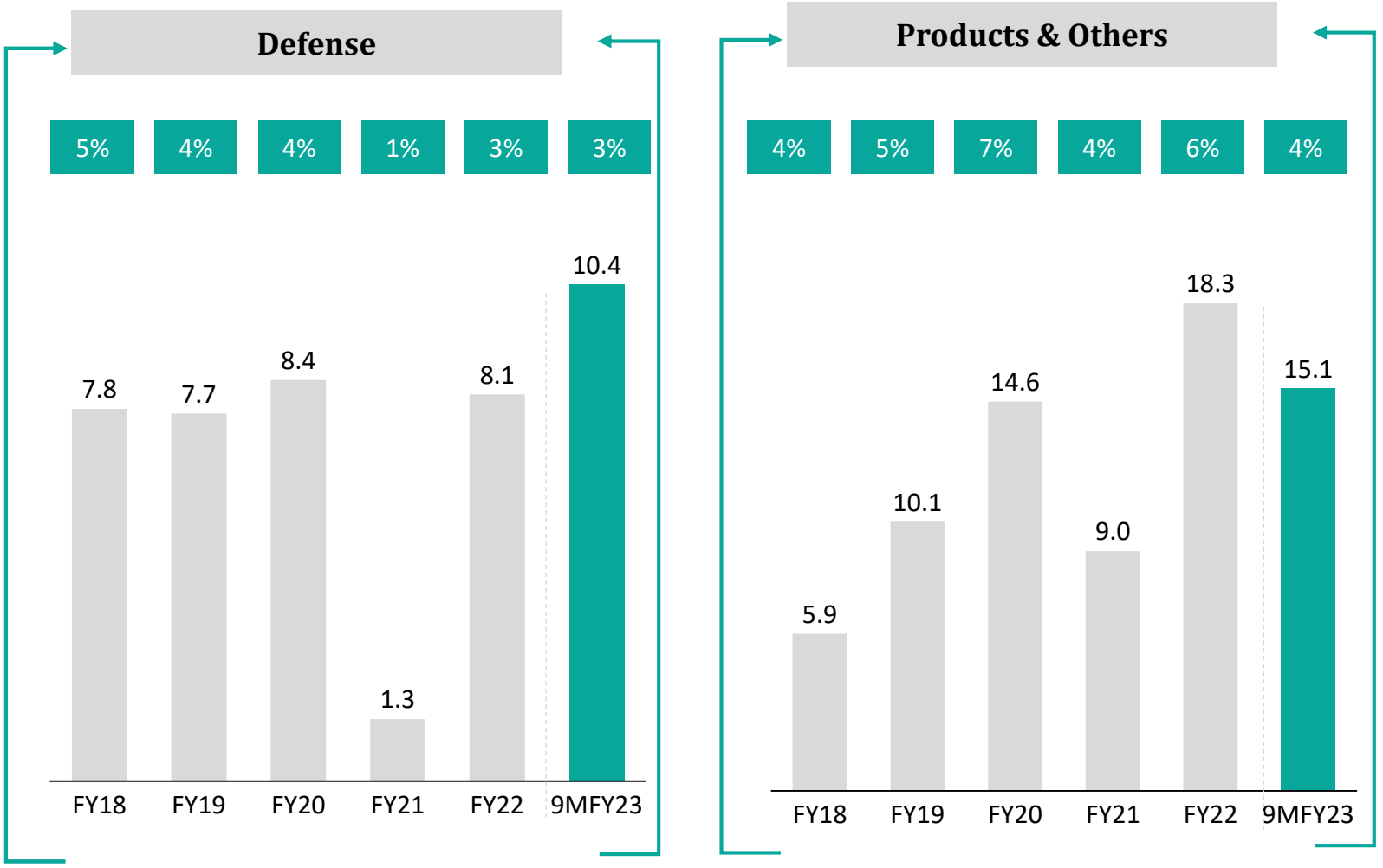






Well-balanced Portfolio (2/2)

Revenue in Rs. Crs



Supported by an Experienced Board of Directors

Parvat Srinivas Reddy
Managing Director and Promoter
- 30+ years of rich work experience in Manufacturing and Construction industries
- Master's degree in science, specializing in industrial engineering from Louisiana Tech University

Subbu Venkata Rama Behara
Chairman and Independent Director
- Director - Sona BLW Precision Forgings and KPIT Technologies Limited
- Alumnus of IIFT

Praveen Kumar Reddy Akepati
Executive Director
- Has worked with the company for 20+ years
- Bachelor's degree in engineering from the Faculty of Engineering, Andhra University

Venkatasatishkumar Reddy Gangapatnam
Non-Executive Director
- Director - Rasun Ace Infra Pvt Ltd, Acecorp Group Pvt Ltd and Magnatar Aero Systems Pvt Ltd
- Alumnus of Bradley University

Anushman Reddy
Executive Director
- Nearly eight years of experience in manufacturing
- Holds Master's degree in global supply chain management from Marshall School of Business (University of Southern California), and Executive post graduate diploma from Narsee Moinjee Institute of Management.

Krishna Kumar Aravamudan
Independent Director
- Previously served as MD, State Bank of India
- Ex-director - CDSL, REC Ltd, TVS Wealth Pvt Ltd and SBI Payment Services Pvt Ltd

Ameeta Chatterjee
Independent Director
- Director - Nippon Life Asset Management Ltd and JSW Infrastructure Ltd
- Alumnus of IIM, Bangalore

Gnana Sekaran Venkatasamy
Independent Director
- Previously worked at DRDO
- Master's degree in engineering from the Indian Institute of Science, Bengaluru

Udaymitra Chandrakant Muktibodh
Independent Director
- Served NPCIL at various capacities including technical director
- Had been awarded NPCIL Excellence Award

Experienced and Qualified Management Team

Parvat Srinivas Reddy - *Managing Director and Promoter*

- Entrusted with the overall responsibility of management
- 30+ years of rich work experience in Manufacturing and Construction industries
- Master's degree in science, specializing in industrial engineering from Louisiana Tech University

Raja Sheker Bollampally , *Chief Operating Officer*

- Responsible for leading the day to day operations in the company (w.e.f Apr 23)
- 23 years of experience in operations including engineering concept design, manufacturing process development, program management, and strategic vendor development in Clean Energy & Automotive sectors.
- Worked in reputed Companies – Bloom Energy, Ohmium, Ford Motors etc

Gunneswara Rao Pusarla – *Chief Financial Officer*

- Responsible for leading the financial operations in the company
- 23 years of experience across finance spectrum in strategic planning, P&L management, fund raising, financial accounting, and setting up green field projects.
- previously associated with Tata Sikorsky Aerospace Ltd for a span of 11 years

Pusparaj Satpathy, *Vice President, Human Resources*

- Responsible for the HR development
- 24+ yrs. Of experience in human resources
- Previous organisations - Century Enka Ltd., Hindustan Zinc Ltd. and Hindalco Industries Ltd.
- Alumnus of Jaipuria Institute of Management, Lucknow

Praveen Kumar Reddy - *Executive Director*

- Responsible for heading business development in the organization
- Has worked with the company for 20+ years in various functions including operations, supply chain and business development
- Bachelor's degree in engineering from the Faculty of Engineering, Andhra University

Tata Madhusudhan, *Head SCM*

- Worked in reputed global organizations including BOF Steel Melt Shop, Bhilai Steel Plant, Global Steel Holdings Ltd, Adhunik Metallics Limited, Arya Iron & Steel Company Pvt Ltd, Jindal Shadeed Iron and Steel Llc, Al Arkan Holdings Company Llc, Moon Iron and Steel Company
- Responsible for handling supply chain function in MTAR

Anushman Reddy - *Executive Director*

- Responsible for heading exports division in MTAR
- Nearly eight years of experience in manufacturing
- Holds Master's degree in global supply chain management from Marshall School of Business (University of Southern California), and Executive post graduate diploma from Narsee Moinjee Institute of Management.

Shubham Sunil Bagadia, *CS and Compliance Officer*

- Responsible for ensuring compliance with statutory and regulatory requirements
- Member -Institute of Company Secretaries of India

A leader in critical and differentiated engineered products

- Historical Profit & Loss
- Consolidated Balance Sheet
- Abridged Cash Flow Statement
- Performance in Charts
- Capital Disciplined Approach

Historical Consolidated Profit & Loss Statement

Particulars (Rs. Crs)	FY22	FY21	FY20	FY19	FY18
Revenue from Operations	**322.0**	**246.4**	**213.8**	**183.7**	**156.6**
Cost of Materials Consumed	157.4	101.8	87.3	65.5	66.0
Changes in Inventories of Finished Goods and Work in Progress	(41.2)	(21.6)	(15.1)	(3.0)	(9.0)
Gross Profit	**205.8**	**166.3**	**141.6**	**121.1**	**99.7**
GP %	**63.9%**	**67.5%**	**66.2%**	**65.9%**	**63.7%**
Employee Benefits Expense	70.8	53.0	51.6	43.5	44.6
Other Expenses	40.5	30.2	32.0	23.9	23.2
EBITDA	**94.4**	**83.1**	**58.0**	**53.7**	**31.9**
EBITDA %	**29.3%**	**33.7%**	**27.1%**	**29.2%**	**20.4%**
Other Income	8.8	1.3	4.4	2.2	0.9
Depreciation and Amortisation Expense	14.3	12.6	12.0	11.2	11.2
EBIT	**88.9**	**71.8**	**50.3**	**44.7**	**21.6**
Finance Costs	6.6	7.0	4.8	4.5	4.5
PBT	**82.2**	**64.8**	**45.5**	**41.6**	**17.2**
Total Tax Expense	21.3	18.8	14.2	2.4	11.7
Profit for the year	**60.9**	**46.1**	**31.3**	**39.2**	**5.4**
PAT %	**18.9%**	**18.7%**	**14.7%**	**21.3%**	**3.5%**

Historical Balance Sheet – Equity & Liabilities

EQUITY & LIABILITIES (Rs. Crs)	Mar-22	Mar-21	Mar-20	Mar-19	Mar-18
Equity Share Capital	30.8	30.8	26.8	28.2	28.2
Other Equity	489.0	446.0	198.3	206.8	177.3
Total Equity	**519.7**	**476.7**	**225.1**	**235.0**	**205.5**
Financial Liabilities					
Borrowings	25.9	7.1	0.0	0.0	0.0
Provisions	0.4	0.4	2.4	0.6	3.0
Deferred Tax Liabilities (Net)	16.3	12.7	5.3	0.0	8.8
Total Non-Current Liabilities	**42.7**	**20.2**	**7.7**	**0.6**	**11.8**
Financial Liabilities					
(i) Borrowings	69.9	4.9	29.1	28.7	19.8
(ii) Trade payables	57.0	34.7	30.6	6.0	13.6
(iii) Other Financial Liabilities	2.4	7.6	0.2	0.0	0.0
Provisions	3.0	2.5	3.4	0.8	1.3
Current Tax Liabilities (Net)	0.3	0.3	0.9	1.2	0.0
Other Current Liabilities	32.6	39.4	49.2	32.9	29.0
Total Current Liabilities	**165.4**	**89.4**	**113.5**	**69.6**	**63.7**
TOTAL EQUITY & LIABILITIES	**727.7**	**586.3**	**346.3**	**305.2**	**281.0**

Historical Balance Sheet - Assets

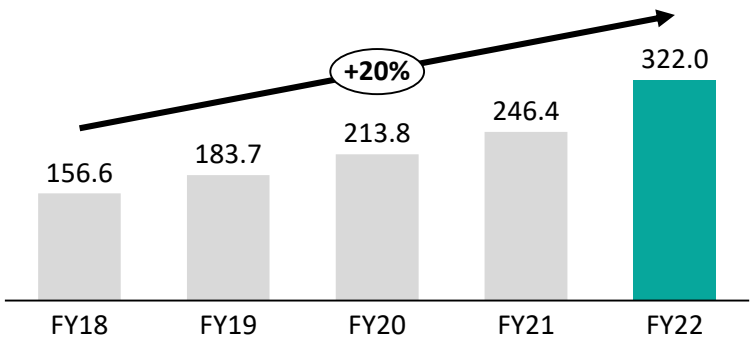
ASSETS (Rs. Crs)	Mar-22	Mar-21	Mar-20	Mar-19	Mar-18
Property, Plant and Equipment	195.4	166.1	155.0	162.0	152.2
Capital Work-in-progress	43.8	10.5	11.7	5.6	1.8
Investment in Subsidiary		0.0	0.0	0.0	0.0
Intangibles Assets	1.0	0.9	0.1	0.1	0.0
Financial Assets					
(i) Investments	0.0	0.0	0.0	0.0	0.0
(iii) Other Financial Assets	2.2	2.1	3.3	22.7	11.3
Non-Current Tax Assets (Net)	0.5	0.5	0.6	1.6	2.3
Other Non Current Assets	21.6	7.5	4.0	4.1	3.8
Total Non-Current Assets	**264.5**	**187.8**	**174.8**	**196.2**	**171.5**
Inventories	170.3	102.5	75.5	41.1	41.9
Financial Assets					
(i) Investments					
(ii) Trade Receivable	136.0	77.3	61.6	50.4	49.0
(iii) Cash and Cash Equivalents	59.6	180.3	13.5	10.8	9.1
(iv) Other Bank Balances (other than Note 13 above)	7.4	10.6	9.7	0.0	0.0
(vi) Other Current Financial Assets	6.7	12.7	1.7	2.4	4.7
(v) Investment in units of mutual fund	62.3	0	0	0	0
Other Current Assets	20.9	15.2	9.5	4.3	4.8
Total Current Assets	463.2	**398.5**	**171.5**	**109.0**	**109.5**
TOTAL ASSETS	**727.7**	**586.3**	**346.3**	**305.2**	**281.0**

Abridged Consolidated Cash Flow Statement

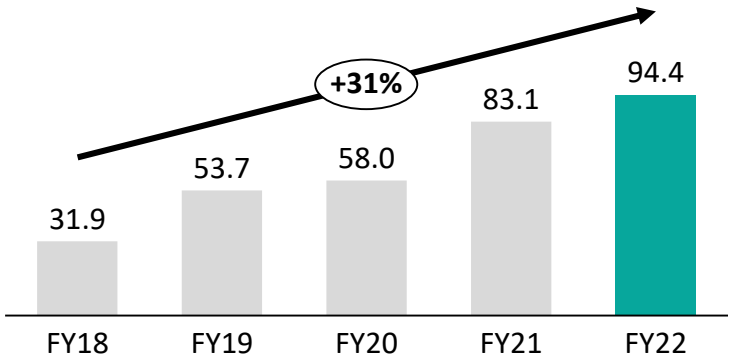
Particulars (Rs in Cr)	31-Mar-22	31-Mar-21	31-Mar-20	31-Mar-19	31-Mar-18
Operating profit before working capital changes	96.1	82.0	60.9	57.3	33
Changes in working capital	(108)	(61.7)	2.5	(5.7)	(16)
Cash generated from operations	(11.8)	**20.3**	**63.4**	**51.6**	**16.9**
Direct taxes paid (net of refund)	(18.0)	(11.7)	(7.2)	(9.5)	(2.6)
Net Cash from Operating Activities (A)	**(29.8)**	**8.6**	**56.2**	**42.1**	**14.4**
Net Cash from Investing Activities (B)	**(145.0)**	**(22.2)**	**(12.1)**	**(32.8)**	**(1.3)**
Net Cash from Financing Activities (C)	**54.1**	**180.1**	**(41.3)**	**(7.5)**	**(13.8)**
Net Change in cash and cash equivalents	**(120.7)**	**166.6**	**2.8**	**1.9**	**(0.7)**

Performance in Charts

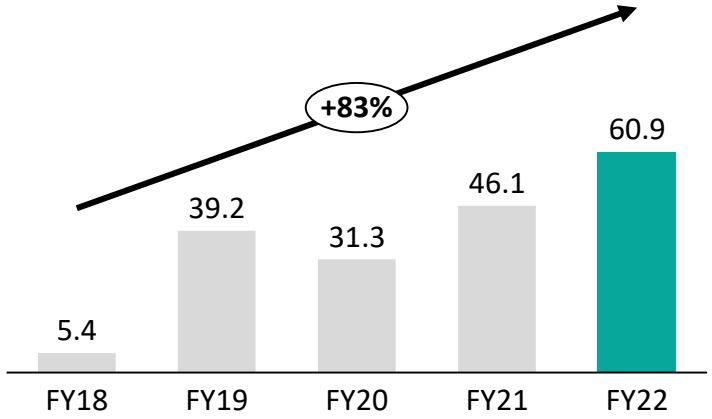
Revenues (Rs. Crs)



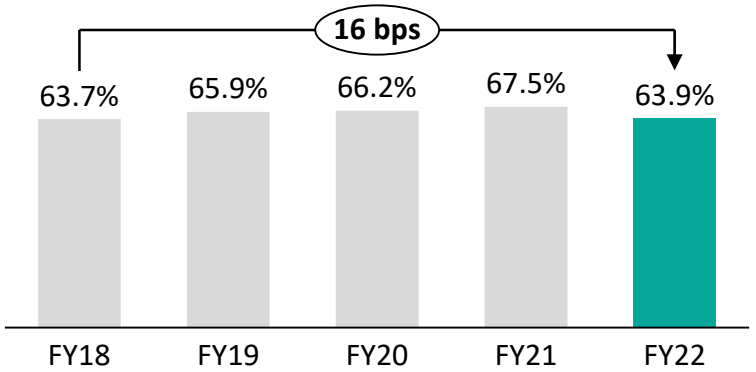
EBITDA (Rs. Crs)



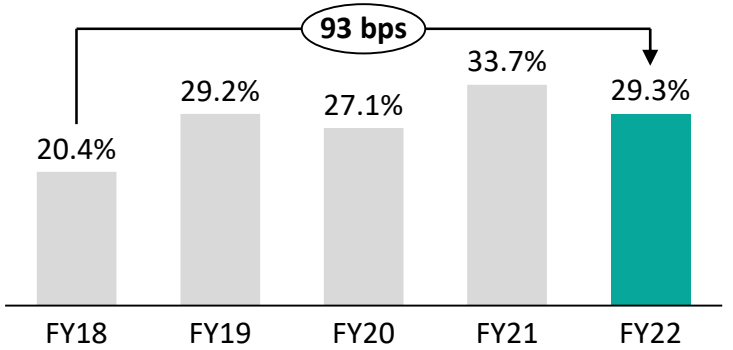
PAT (Rs. Crs)



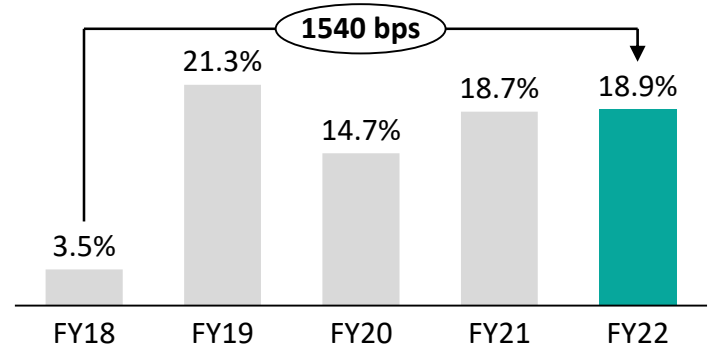
Gross Profit Margins (%)



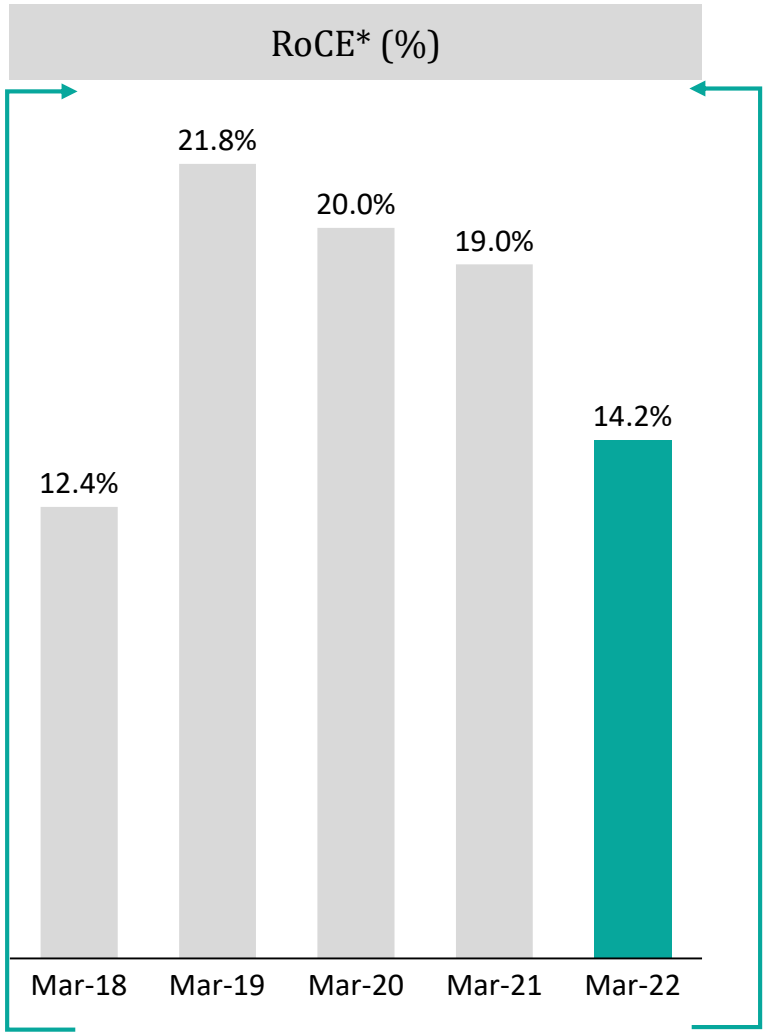
EBITDA Margins (%)

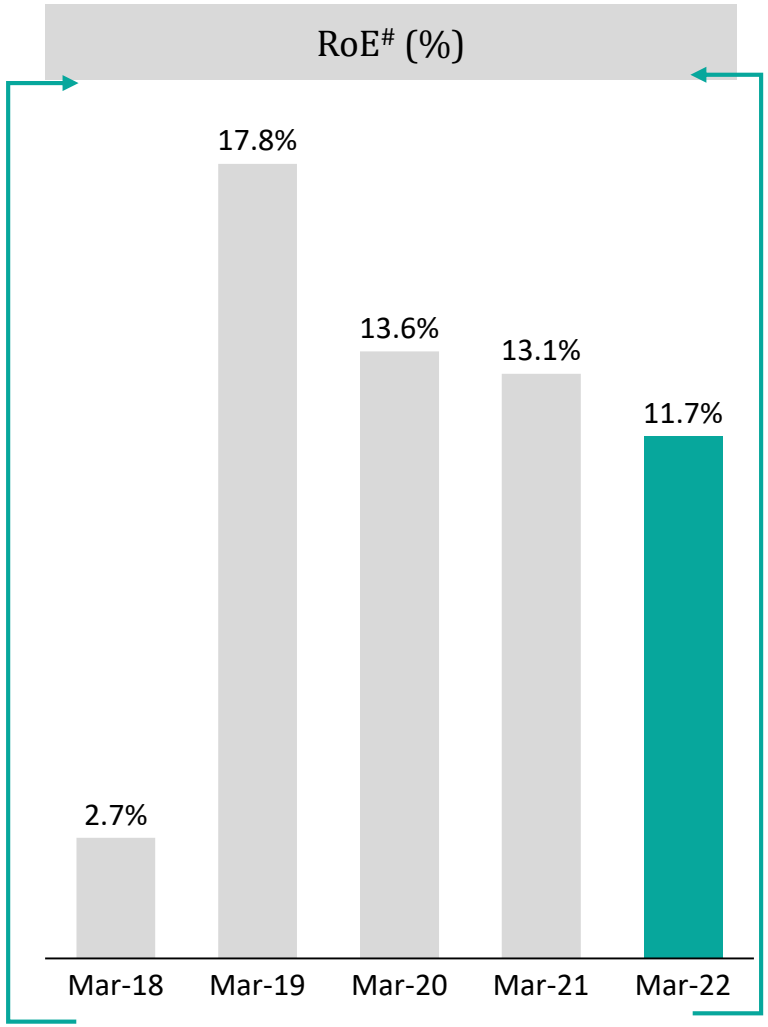


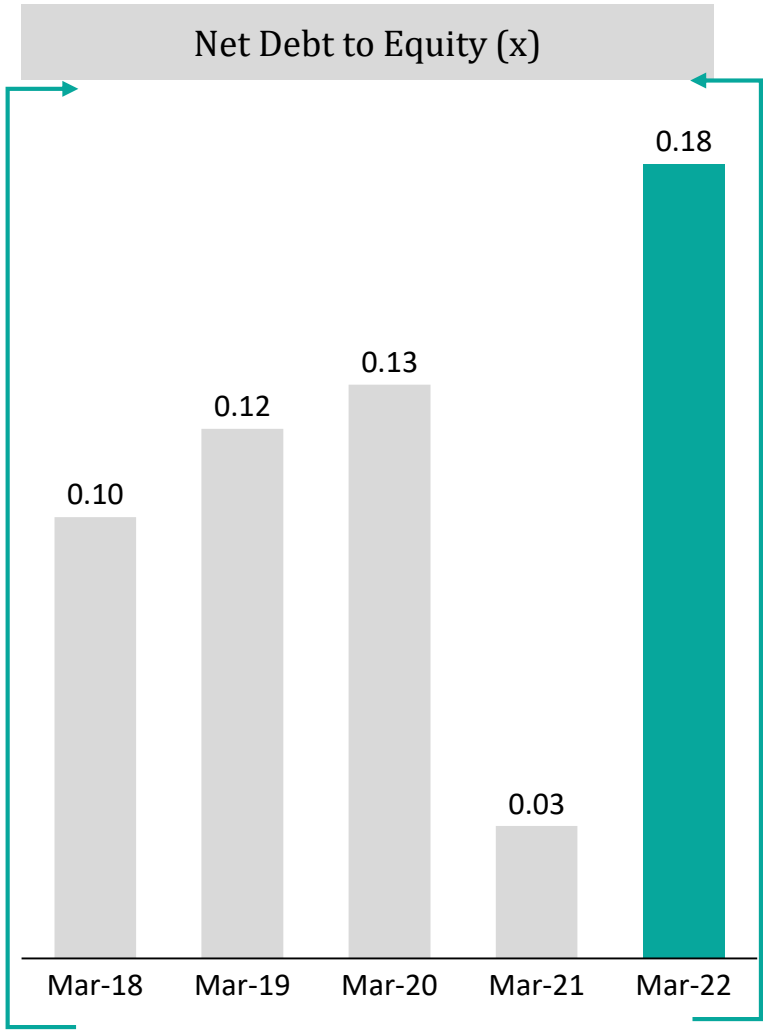
PAT Margins (%)



Capital Disciplined Growth







*RoCE = EBIT/Avg. Capital Employed
Capital Employed = Total Assets – Current Liabilities

#RoE = Net Profit/Avg. Total Equity

A leader in critical and differentiated engineered products

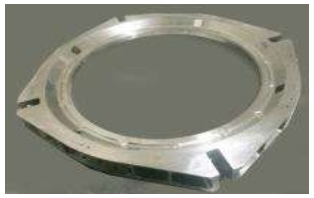
- Wide Portfolio of Products
- Serving Multiple Sectors + Segments
- Multiple Companies entrust MTAR
- Diversity in Supplier Base

Wide Product Portfolio

Rocket engines

Healthy mix of developmental versus volume-based products

Hot boxes



Rotor Mast Bearing Housing - Titanium

Mix of regular (less complex) products versus highly complex assemblies

Control Plug for Reactor

Precision machined components

Manufactures small products to large products (few gms to tons)

Bridge & Column

Roller screws

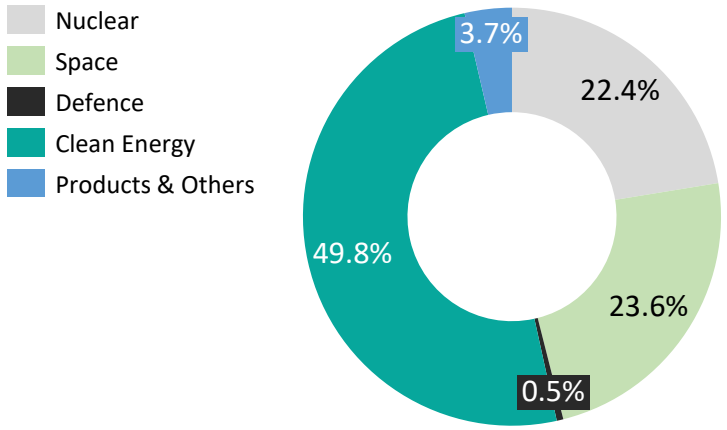
Manufactures import substitute products which have application across industries

Ball Screws

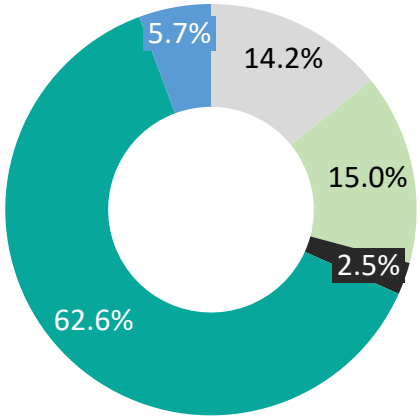
Wide portfolio of critical and differentiated engineered products with a healthy mix of developmental and volume-based production, customized to meet the specific requirements of its customers

Serving Multiple Sectors + Segments

FY21 Sectorwise Break-up



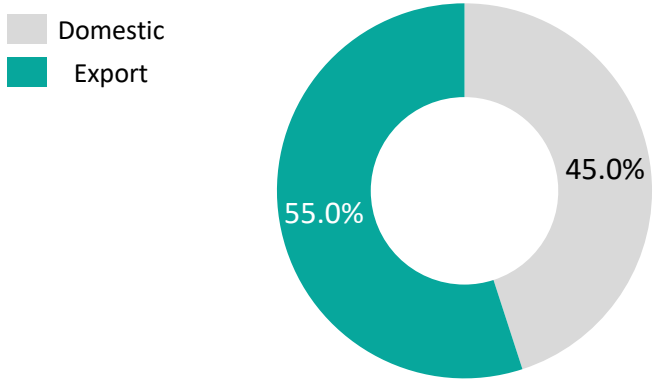
FY22 Sectorwise Break-up



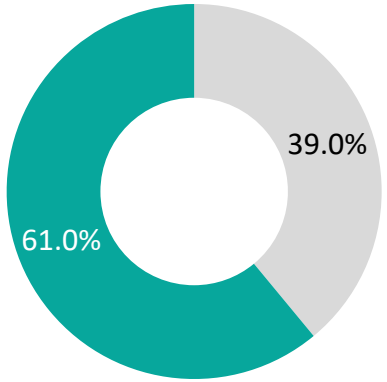
Has developed **wide product portfolio** catering to diverse sectors

Export contributor >60% of FY22 revenue has been derived from orders by customers located outside India

FY21 Geographical Break-up



FY22 Geographical Break-up



Multiple Companies entrust MTAR

Large MNCs

Bloomenergy

Elbit

Andritz Hydropower

Kongsberg

Rafael

Government Departments

ISRO

Defence Research and Development Organisation

Indira Gandhi Centre for Atomic Research

Aeronautical Development Agency

Liquid Propulsion Systems Centre

Indian Companies

NPCIL

Nuclear Power Corporation of India Limited

HAL

BHEL

TASL

Bharat Dynamics

Long standing relationship with large MNC's, Government Departments and Large Indian Public and Private sector companies

16+ years NPCIL

30+ years ISRO

40+ years DRDO

9+ years Bloom

Long term relationships

- Strong relationship with a multitude of global defence, space and clean energy players- both state-owned and private
- Strong repeat business due to MTAR's engineering capability

High customer dependence

- Ability to provide exceptional quality products as per customer specifications
- Consistent customer servicing standards
- Continuous learning adopted to reduce cost to customer over time ex. Bloom energy

Customer understanding

- Strive to understand our customers' business requirements and provide products that maximize their returns
- Develop leadership in key product segments

Source – Crisil Report

Diversity in Supplier Base

Established long term supplier relationship

- Ensures quality raw material within prescribed timelines.
- No long term contracts yet managing consistent supply of materials due to long standing relationships
- Enables better insight on the raw material markets, which helps in managing the supply chain, resulting in greater predictability of supply and, consequently, a greater ability to meet production schedules

Large & diversified supplier base

- Maintains robust database of suppliers with constant engagement to ensure material availability options
- Created a global supplier base over the years and procures materials from US, Brazil, Europe among others
- Low supplier dependency on account of the diversified supplier base, which also enables negotiation of favorable terms
- Global network provides the option to take advantage of better pricing as available in a particular market

Ability to source specialized materials

- Developed a robust supply chain for sourcing of wide variety of specialized raw materials . Select Eg. Include:
- Specialized steels (17-4 PH, SS 410, 13-8 MO PH) for the nuclear sector; Alloy steels and aluminum including bearing and seals for space and defence clients, Inconel sheets of various grades for clean energy clients
- Select clients (mostly Space & Defence) directly procure & supply raw materials given the sensitivity of the end projects

Stringent quality checks

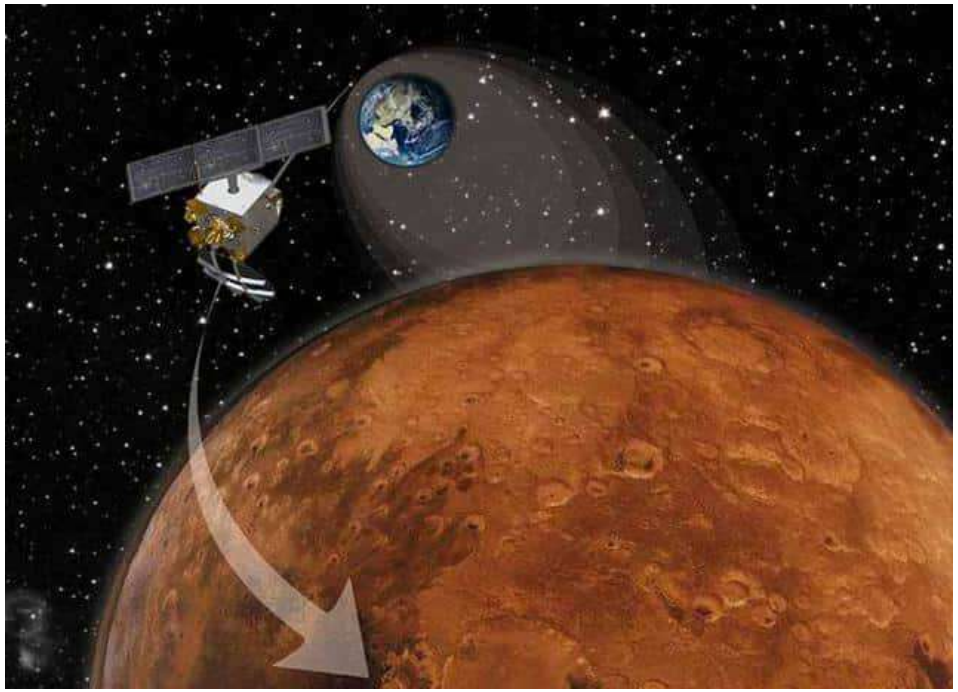
- Company performs extensive evaluation on their ability to provide quality products in a timely manner
- Stringent vendor qualification process, which enables to keep a periodic check on suppliers with regard to the quality of materials supplied and corresponding prices
- In place stringent inspection of raw materials to check their tensile strength, surface finish, resistivity, among others given the criticality of the products

A leader in critical and differentiated engineered products

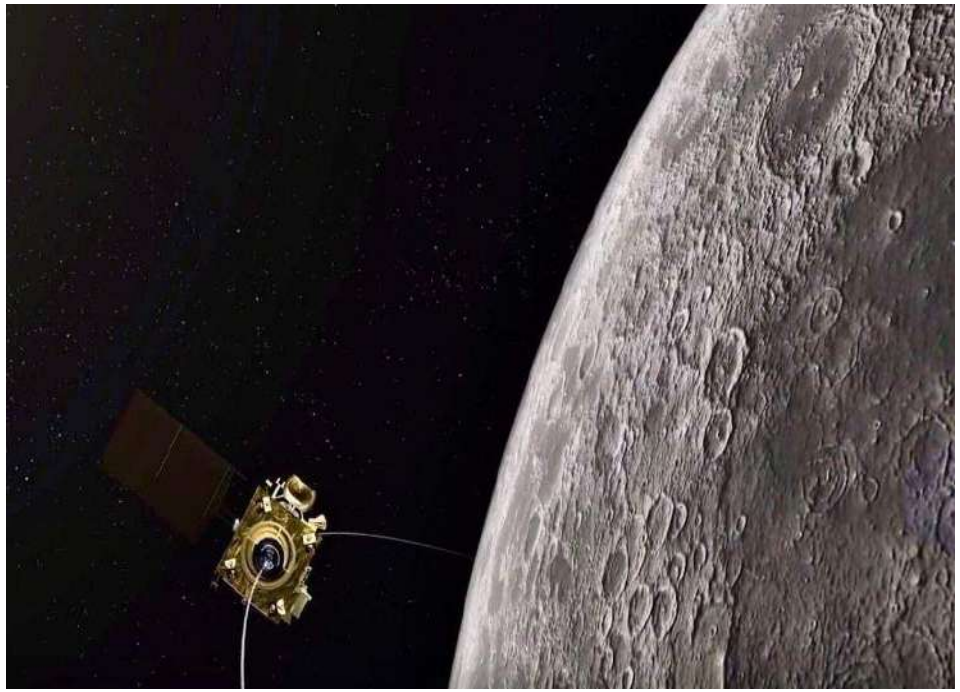
- Projects of Pride, Glory & Prestige
- Advanced Manufacturing Capabilities
- Technology & Innovation Capabilities
- State-of-the-Art Manufacturing Facilities
- End to End Manufacturing Capabilities

Projects of Pride, Glory & Prestige

Manufactures hi-precision indigenous components, subsystems, assemblies for projects of National Importance



Supplied engine for the PSLV-C25, which launched the Mars Orbiter Mission Spacecraft



Integral for the GSLV Mark III engine for the Chandrayaan II mission

Advanced Manufacturing Capabilities

Legacy

Legacy of over **50 years of manufacturing** a wide range of mission critical precision components and assemblies with currently over **145 engineers on roll**

Engineering

Ability to manufacture within **5-10 micron tolerance** product through precision machining, assembly, specialised fabrication, heat treatment, surface treatment and others

Manufacturing

State of the art manufacturing facilities with over 400 machines capable of micron level adherence to specifications across products

R&D

Extensive R&D for **cycle time reduction**, development of manufacturing processes & design specifications to achieve accuracy irrespective of size

Quality Control

Extensive & stringent testing & quality control mechanism undertaken at each stage through high precision quality inspection equipment

Case Study #1 — Precision Engineering Solutions

- ✓ Product example: Liquid Propulsion Engine
- ✓ End use: Space Vehicles

- Used in space launch vehicles for various space missions such as **Chandrayaan-II and Mangalyaan**
- Engine is used in the **GSLV** launch vehicle

Case Study #2 — Complex Product Manufacturing

- ✓ Product example: Fuel Machining Head Assembly
- ✓ End use: Nuclear Reactor

- Manufacture and assembly of **600 components**
- FM Head is used for handling fuel bundles in nuclear reactors

High Entry Barriers

+

Increased customer dependency on MTAR

+

Long standing Client relationship

Technology & Innovation Capabilities

Manufacturing Capabilities

- 400+ Total machines
- 100+ Conventional / CNC Turning machines
- 60+ Milling / CNC milling machines

Manufacturing Units

- 7 manufacturing units including an EOU

Advanced Machinery

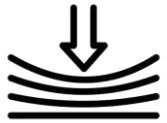
- High end machines like 7 axis mill-turns, 5 axis VMC, 3D CNC CMM etc.

Quality Manpower

- 448 staff, 772 workmen and 427 third party contractors
- Experienced business heads with in-depth technical & industry knowledge
- Average tenor of 15 yrs with low attrition rate

Strategically located

- Plants located in proximity to major defense organizations
- Provides R&D, high volume projects access
- Ease of coordination

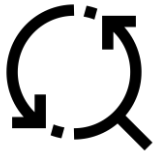


Flexibility

- No dedicated production lines for products
- Flexibility to allow maximum utilization
- Wide range of products manufactured from few kgs to several tons

Engineering capability

- In house development of special purpose machines
- SPM 99, Gantry SPM machines manufactured in house instead of importing similar machinery at higher cost



End to end capabilities

- End to end In house capabilities of developing customized high quality complex products for customers

State of Art Manufacturing Facilities

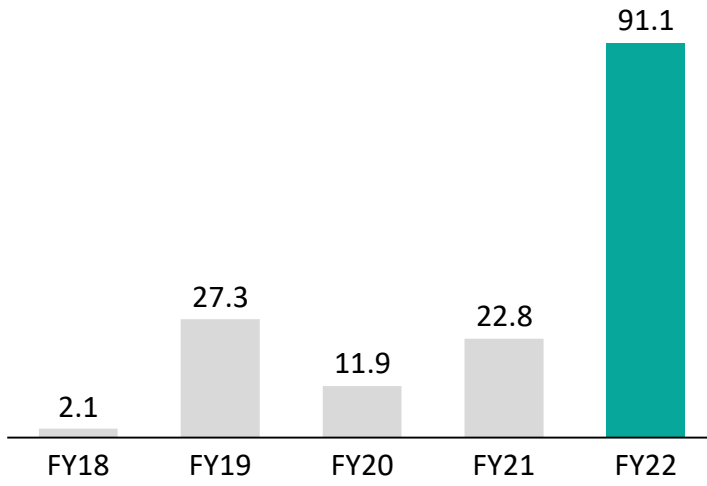
Units	Products manufactured	Sectors catered	Facilities offered
Unit 1	Complex nuclear assemblies & high end defence products such as base shroud assembly for Agni missiles	Nuclear, defence and aerospace	Advanced computerized numerical control, machining & QC
Unit 2	Liquid propulsion engines, cryogenic engines, semi cryo engines and electro pneumatic modules used in PSLV and GSLV and satellite valves	Space	Advanced CNC machining, assembly, specialized fabrication, QC and testing
Unit 3	High volume nuclear assemblies such as coolant channel assemblies including end fittings, liner tubes, sealing and shield plug; products such as ball screws and WLBs and other nuclear site orders	Nuclear, defence and aerospace	Advanced CNC machining and quality control
Unit 4	Supporting unit which undertakes rough machining	-	Rough machining
Unit 5	Supporting unit which undertakes surface treatment such as nitriding, anodization and heat treatment such as gas carbonizing	-	Surface treatment, heat treatment and special processes
Unit 6	Supporting unit with fabrication facility and large clean rooms	-	Assembly
EOU	Power units for supply to Bloom Energy and high end defence components to be supplied to an Israeli defense technology company	Clean energy and export defence	Advanced CNC machining, Brazing, assembly, special processes such as painting, and QC

Accreditations

ISO 9001:2015

AS9100D

Capex (Rs. Crs.)

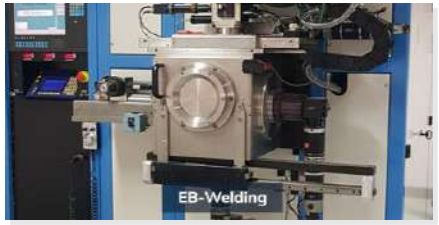


Manufacturing Facilities

High End Machinery

Assembly, Testing and Clean rooms

Specialized Fabrication facilities



Surface treatment, heat treatment, Painting

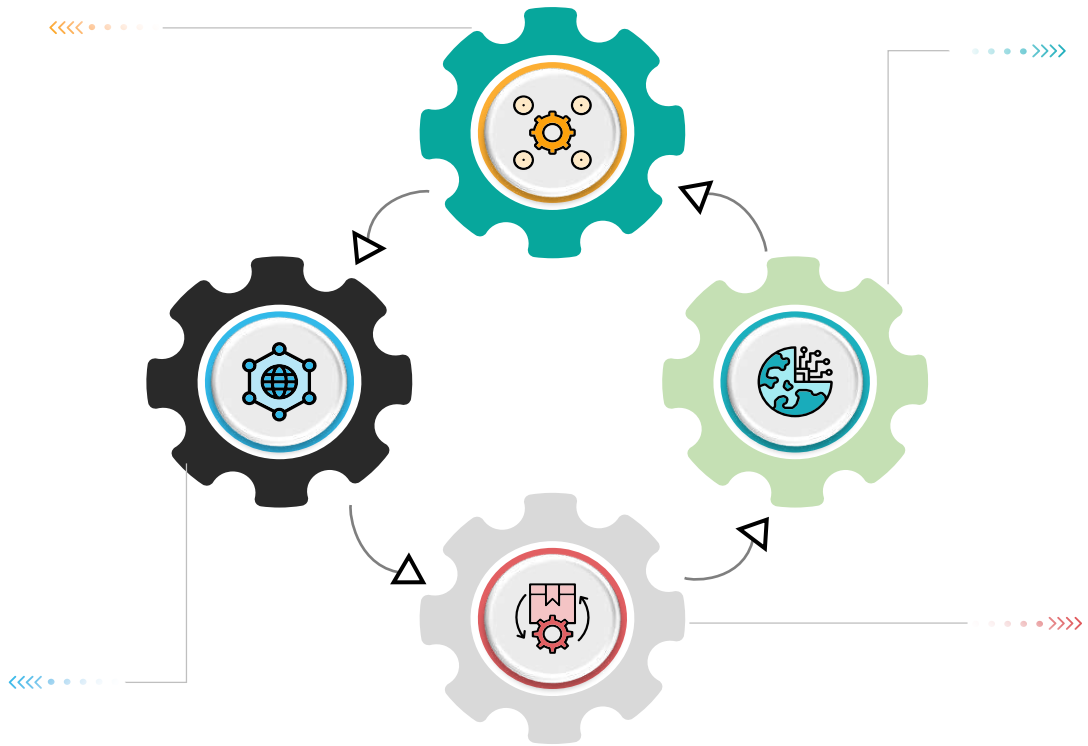
End to End Manufacturing Capabilities

Machining

- Manufacturing of precision components with close tolerances to the extent of 5-10 microns supported by
  - ✓ series of high-end machines such as 7 axis Mill-turns, 5 axis vertical machining centers (“VMCs”), 4.5 axis machining centres
  - ✓ milling centres, turning centres, grinding centres
  - ✓ tool room machines, deep hole boring and honing machines, among others;

Assembly and Testing

- Assembly and testing capabilities are supported by
  - ✓ 10,000 class clean rooms and 100 class laminar table with facilities for high as well as low temperatures
  - ✓ undertaking vibration, flow and helium leak tests



Surface & Heat Treatment

- Surface treatment activities such as - nitriding, anodization, hard chrome plating, nickel plating, induction hardening, electro polishing, pickling, passivation, zinc plating and painting, among others
- Heat treatment such as - gas carbonizing, through their various furnaces
- Special processes facilities such as - painting and plating are also available in-house

Specialized fabrication unit

- Equipment to undertake
  - ✓ automatic tungsten inert gas (“TIG”) welding, metal inert gas (“MIG”) welding, submerged arc welding, welding head manipulator
  - ✓ job manipulator / positioner, electron-beam (“EB”) welding, orbital welding
- Specialized fabrication jobs - May be taken up by Vacuum brazing furnace and rotary vacuum brazing furnace

A leader in critical and differentiated engineered products

- Three Decades in Precision Engineering
- Product Offerings – Nuclear Power
- Product Offerings - Space & Defense
- Product Offerings - Clean Energy

Three Decades in Precision Engineering

1970 — Constituted in July, 1970 as a partnership firm 'M/s Machine Tools Aids and Reconditioning' between K. Satyanarayana Reddy & P. Ravindra Reddy

1999 — Conversion from a partnership firm to a pvt ltd company, commencement of manufacture of base shroud & fin assembly for use in flight systems (segment - Space and defence)

2002 — 'Award for Excellence in Aerospace Indigenization' by the Society of Indian Aerospace Technologies and Industries for indigenization of machining of critical components for 'Kaveri' engines

2003 — Manufacture of control and safety red drive mechanism and diverse safety rod drive mechanism for IGCAR (segment – Nuclear Power)

2004 — 'INS Industrial Excellence Award' by the Indian Nuclear Society for the contributions made in the nuclear field

2005 — Awarded the 'Defence Technology Absorption Award' by the DRDO, in recognition of the outstanding contribution made in technology absorption in the area of Agni missiles

2012 — Manufacture of power units for Bloom Energy (segment - Clean energy)

2018 — Commencement of defence exports. 'Best Quality Supplier Award' by the helicopter division of HAL, at the Business Partners Quality Meet, 2018

2019 — Incorporated a subsidiary - , Magnatar Aero Systems Private Limited to enter into defence offset partnership with certain global OEMs (segment - Space and defence)

2020 — Currently manufactures 14 kinds of products in the Nuclear Power sector, 6 in the Space and Defence sectors, and 3 in the Clean Energy sector along with import substitute products such as Ball Screws and WLBs

2021-22 — Establishment of Sheet Metal and Specialised fabrication units at Adibatla

Awards & Certifications – FY22

ISO 14001 & ISO 45001 Certification

Received ISO 14001 & ISO 45001 certification for its **100% Export Orient Unit (EOU) and Unit 2** for a period of 3 years, valid until March 2024, for **manufacturing of precision engineering components & assemblies** for Aero Space, Energy & Defence Applications

NADCAP Certification

Received NADCAP certification for its **100% Export Orient Unit (EOU) and Unit 5** for a period of 12 months, valid until November 2022

National Level Champion Award

Received National Level Champion Award from **Society of Indian Defence Manufacturers (SIDM)** under **Import substitution** for Mission Critical Parts/Systems/Sub-systems medium category for Ball Screws

Ball Screws are the highly complex import substitutes that are used in various mission critical assemblies including nuclear island assemblies, motion control actuation systems in Missiles and Launch Vehicles in Civil Nuclear Power, Space & Defence sectors

Product Offerings – Nuclear Power Segment

Nuclear Sector Products

Fuel Machining Head

Comprises of 600 components; Used in loading & unloading of fuel bundles in nuclear reactor

Grid Plate

Used for resting the fuel sub-assemblies in prototype fast breeder reactor

Bridge & Column

Moves fuel machining head in sideways and vertical directions to allow loading and unloading of various fuel bundles in the nuclear reactor

Shield Plug

Liner Tube

Sealing Plug

Coolant Channel assemblies - Sealing Plug, Shielding Plug, End Fittings

Used in the core of civilian reactor

Drive Mechanisms

Critical equipment used for regulating purpose and shutdown of nuclear reactors under normal and undesirable operating conditions

Top hatch cover beams and deck plate assembly

Requires high positional and dimensional accuracies

High criticality of products given safety requirements

35+ years of serving customers in Nuclear sector

14 kinds of products for a wide range of applications

Partnered with NPCIL which controls all operational, under construction and planned reactors in the country given India does not allow private participation

Product Offerings – Space and Defence

Space & Defence Sectors

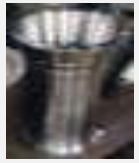
Base shroud assembly and air frames

Used in Agni missiles such as A1, A2 A3, A4, A5, A1 P.

Components for Aircraft

Main Gear Box – Magnesium

Titanium Center Piece



Sukhoi – HPC Shaft Nickel Alloy

Control Manifold HAL Tejas

Ball Screws

Ball screws and Water Lubricated Bearings

Import substitutes used in actuators of nuclear reactors, space launch vehicles, missiles etc.

Roller Screws (under development) - Used in various assemblies in missiles, space launch vehicles and nuclear reactors

Components for Geosynchronous Satellite Launch Vehicle (GSLV)

Cryogenic Engine - Turbo Pump, Injector Head, Gas Generator, Booster Pumps, Interfaces And Start Up Systems

Stage 3

Stage 4 – Inside Satellite

Stage 2 - 4 Nos.

Stage 1 - 4 Nos.

Modules used in Stage 1 & 2

POGO Command Module

Liquid Propulsion Rocket Engine (Vikas Engine)

High precise, reliable & complex product requirements

30+ years of serving customers in Space & Defence sector

6 kinds of products for a wide range of applications

Existing relationship with ISRO procurement & assembly of satellites and launch vehicles and **with DRDO** which is the R&D organization focused on military technology

Product Offerings – Clean Energy

Clean Energy Sector

Existing Product Supplies

- **Fuel Cell Products**
- SOFC Hot boxes - Use methane to generate power

Under Development and manufacturing

- **MTAR is developing the following products in collaboration with Bloom to expand its product portfolio in clean energy sector:**
  - Hydrogen boxes- Use Hydrogen to generate power
  - Electrolyzers - generate green hydrogen from water that shall be used in power units to generate power with zero carbon emissions
- Establishment of sheet metal vertical at Adibatla unit to cater to Bloom Energy and other customers

9+ years of strong partnership with Bloom

Existing product in high demand, **new products** under development for the Clean Energy sector

Only supplier to Bloom from India as of FY22. Bloom is one of the largest and the fastest growing player globally in the stationary hydrogen fuel cell segment and has 70% of its revenues coming from products segment and balance from services

A leader in critical and differentiated engineered products

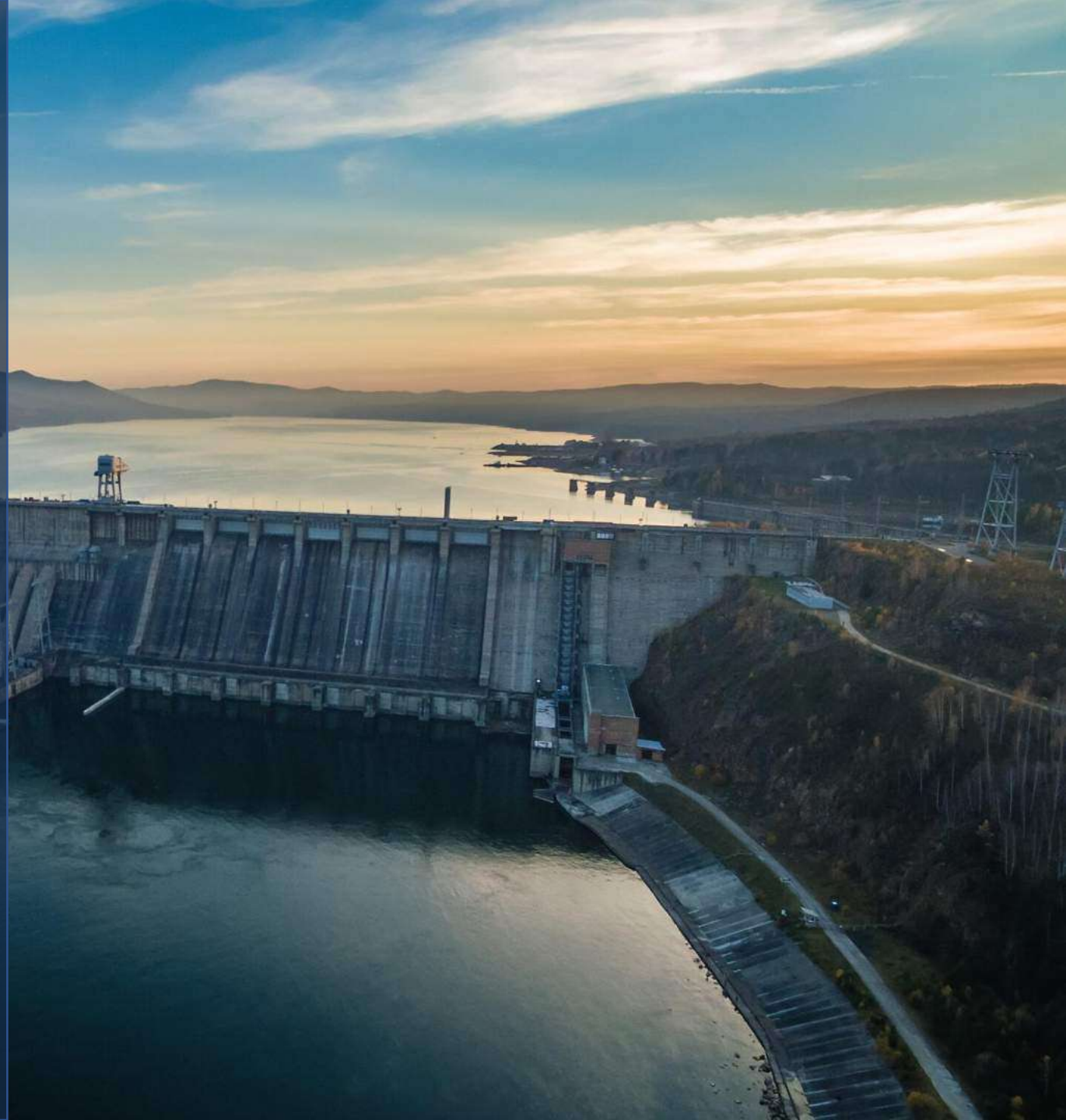
Looking Ahead

Industry Opportunity – Nuclear Power

Industry Opportunity - Space & Defense

Industry Opportunity - Clean Energy

Strategic Roadmap for Sustained Growth



Looking Ahead

- Power demand in India to grow at a **CAGR of 3-4% over the next 5 years**
- India plans to nearly **double its nuclear capacity from 6.26 GWe to 11.5 GWe**
- Further plans to augment India's nuclear capacity by **10.5 GWe in the medium to long term**
- GoI has **sanctioned 14 fleet reactors, with a combined generation capacity of 7,000 MW**
- Under **Govt's 'Atmanirbhar Bharat' initiative**, a policy to construct a fleet of reactors with a single timeframe which will increase opportunities for domestic suppliers like MTAR
- **Large** refurbishment and maintenance market which is expected to increase by 1.6x

- **ISRO Plans for next 2 years :** 31 satellite missions/ 32 launch missions
- Future missions include- Chandrayaan-3, Gaganyaan (human spaceflight mission), Aditya-L1 (proposed mission to study the Sun), and a new port in Tamil Nadu for SSLVs
- Over the next five years, the **private sector will receive the mandate for ~70%** of all the upcoming space missions

- **Defence FDI Policy 2020** – FDI limit increased from 49% to 74% under automatic route for items with 50% indigenous production
- **DAP 2020** - 101 banned Defence import items for which only Indian Companies shall be eligible for bidding
- **Indigenization of 108 systems and sub-systems** that include mini and micro UAVs, ROVs, uncooled NV-IR sights for weapons (short-range), mountain footbridge, floating bridge (both metallic), mines laying and marking equipment

- **Government targets for clean energy**, budgets allocations, and incentives are the strongest driver for fuel cell market
- **Hydrogen is emerging as a clean solution** that can help curb carbon emissions globally and many countries are taking an active approach by implementing hydrogen-focused strategies and investments
- **Europe, USA. South Korea and Japan** are regions with the strongest government support in the field of fuel cells
- In India, **Bloom Energy signed an MoU with GAIL** to deploy fuel cell technology by using natural gas as fuel
- **Demand of Fuel Cell EVs** to increase given Fuel Cells can be refueled, which is considerably faster than recharging.
- Fuel cell system are highly reliable in emergency situation and can be used effectively for **power backup technology**
- Application in niche sectors such as **marine and aviation**

Nuclear Segment

Space and Defence

Clean Energy

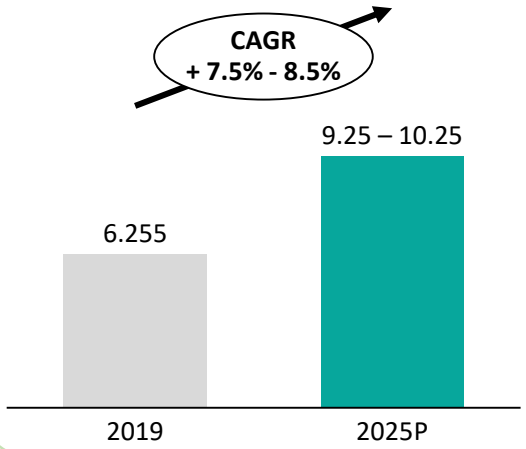
Source – Crisil Report
** Pertains to CAGR of 2017 - 2019*

Industry Opportunity – Nuclear Power

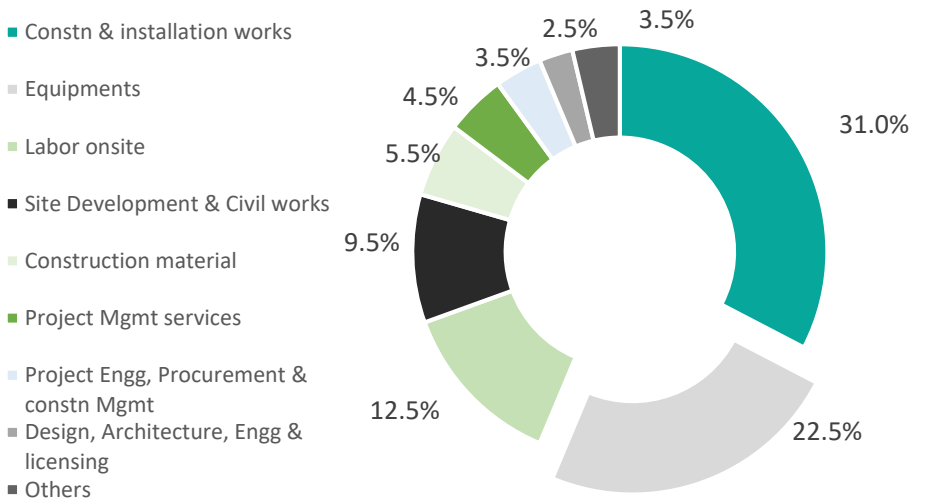
Net nuclear power capacity target of 26.2 GWe by 2031	# 22 Operational Reactors – Capacity of 6.3 GWe	Additional # 7 Reactors to be operational in next 5 years	# 14 New reactors planned and tenders to be released	NPCIL is the key entity managing all nuclear reactors in India	Government is also taking steps for development of Small Modular Reactors (SMR) with up to 300 MW capacity to fulfill its commitment to Clean Energy transition

In India, NPCIL controls all the operational, under construction and planned reactors in the country and MTAR has a relationship of 16+ years with NPCIL which has created entry barriers for other players

India's Nuclear Capacity (Gwe)

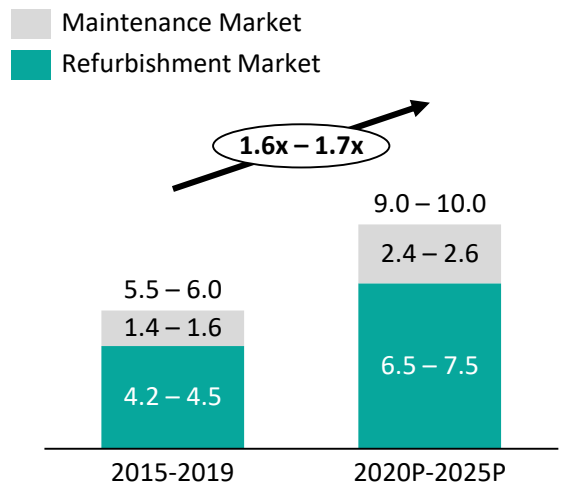


Reactor Capital Cost break-up (%)



Equipment cost forms a significant part of the overall cost where MTAR is focused on. ~ Rs 22-28bn is the equipment cost in 1 reactor

Refurbishment & Maintenance Opportunity (Rs. Bn)



Source – Crisil Report

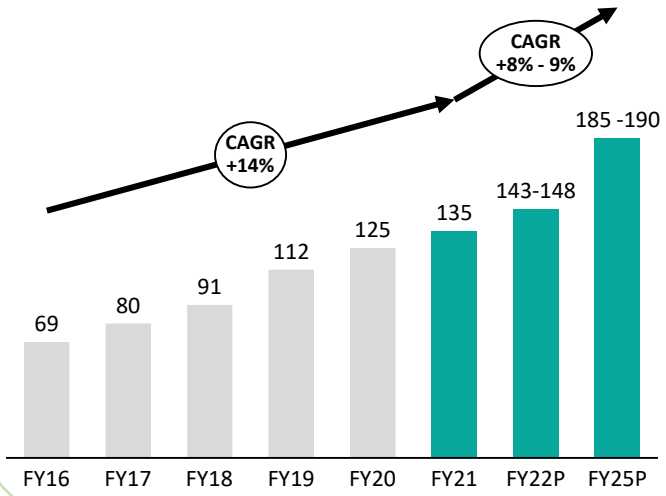
SMR- Small Modular Reactors

Industry Opportunity - Space and Defence

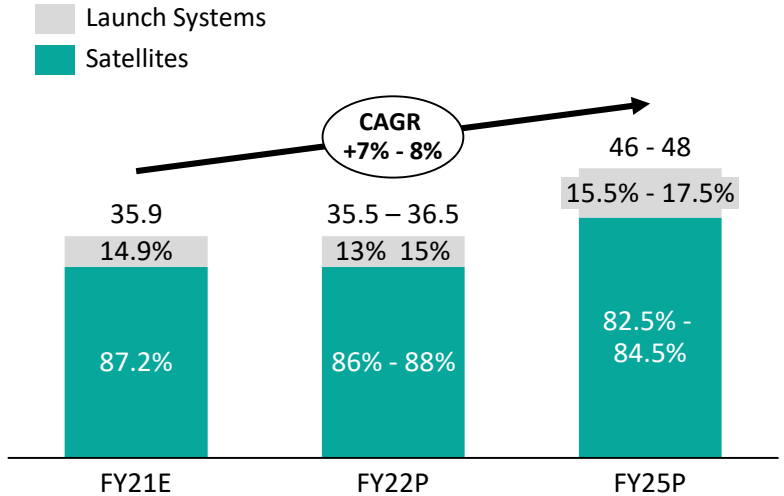
ISRO Successfully completed 118 spacecraft missions and 78 launch missions	ISRO Conducted 14 missions in FY19 and more than 11 missions in FY20	ISRO is the key entity spearheading India's space programme	Armed forces likely to spend Rs. 4,000 Bn over next 5 – 7 years	Defence exports grew at 82% CAGR to Rs. 91 Bn over the past 3 – 4 years	Satellites launches by ISRO are expected to increase in Mar'23 and beyond

MTAR will benefit from the strong expected growth in India's space and defence budgets along with its 30+ years strong relationship with ISRO and 40+ years strong relationship with DRDO

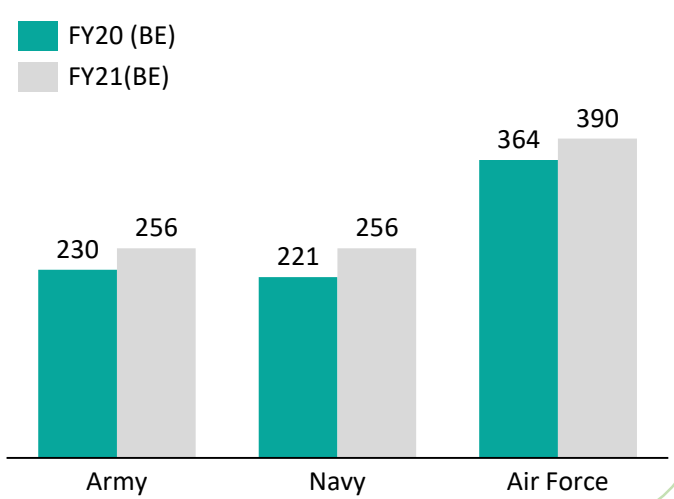
Dept. of Space, India – Budget (Rs. Bn)



Indian Space Equipment Market (Rs. Bn)



Modernization Budget of Indian Armed Forces (Rs. Bn)



Source – Crisil Report

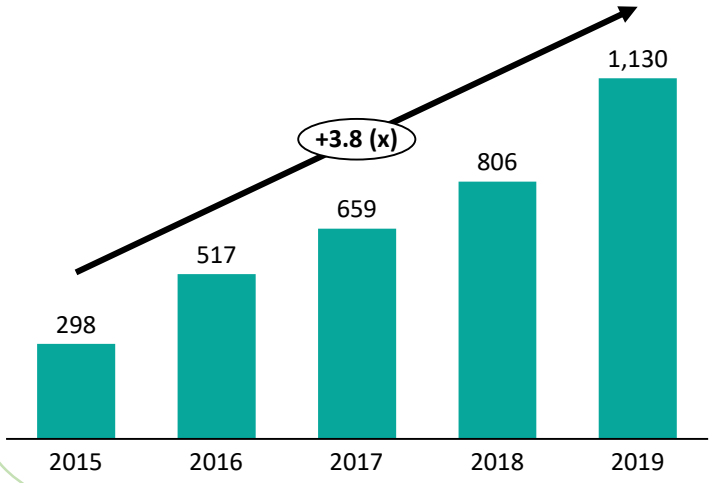
SDSC- Satish Dhawan Space Centre in Sriharikota.

Industry Opportunity - Clean Energy

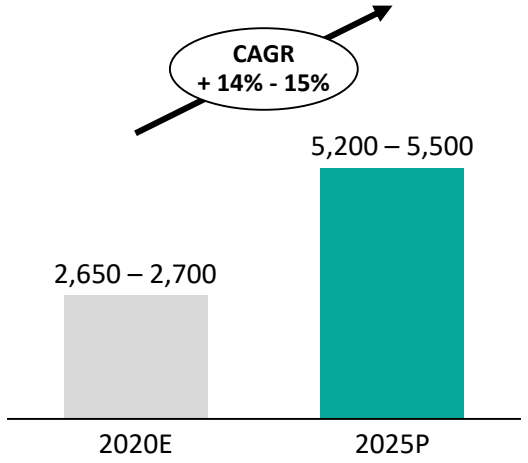
Renewable accounts for 26% of global electricity generation	Fuel cell market growing at 15% CAGR with increased R&D	Fuel cells are able to produce electricity with near zero greenhouse emissions	Bloom is a key player globally in the fuel cell technology	45% CAGR in Bloom's operating revenues from 2017 to 2019	Subsidies have been announced by developed Nations for production of Green Hydrogen to support the hydrogen economy

Bloom is one of the largest and amongst the fastest growing players globally in the fuel cell segment. MTAR has a 11+ years of strong relationship with Bloom & will start manufacturing more products for them like Hydrogen boxes and electrolyzers

Energy installations for fuel cell (MW)



Global fuel cell industry size (USD Mn)



Growing Bloom business augurs well for MTAR

Company ($ mn)	Product revenue (2019)	Product revenue share	Product Revenue CAGR *
Bloom Energy	557	71%	29%
Ballard Power	50	47%	53%
Fuel Cell Energy	-	1%	99%
Plug Power	150	65%	35%
SFC Energy	65.5	100%	-

Source – Crisil Report
** Pertains to CAGR of 2017 - 2019*

Strategic Roadmap for Sustained Growth (1/2)

Product

Strengthen existing product portfolio and diversify into products with attractive growth and profitability prospects

- Enhance capabilities and grow value chains to supply critical and differentiated engineered products
- Establishment of new capabilities such as electronic systems manufacturing

Industry

Capitalize on upward trend of nuclear sector in India, increasing indigenization and policy initiatives in the defence sector, and commercialization of Indian space sector

- **Nuclear** –Capitalize on the large opportunity in terms of upcoming Nuclear reactors being one of the few companies capable of handling the product complexities and manufacturing capacities
- **Defence** – take advantage of Govt. focus on indigenization of various defence technologies and import substitution and contribute to the 'Atma-Nirbhar Bharat' initiative by the Government of India
- **Space** - Exponential growth expected for Indian players in Space sector given ISRO's plan to commercialise the Indian space sector and offer its products and services to other countries

Customer

Focus on deepening and strengthening relationships with our existing customers as well as catering to new Customers

- The Company believes that it shall be one of the preferred suppliers for any potential defence offset transaction that any current international customers may be a part of
- Develop new relationships with customers, both in India and abroad, in order to capture lucrative opportunities in the nuclear, space and defence, and clean energy sectors
- Continue to participate in seminars & international expos to build & develop network with leading foreign multi-national companies

Strategic Roadmap for Sustained Growth (2/2)

Exports

Expand international presence including through increase in exports

- Continue to expand international operations to enhance global presence in the sectors we currently cater
- Growth in support for Hydrogen based clean energy solution along with expansion plans of Bloom Energy outside of US in South Korea, provides a significant opportunity
- Looking to enter into defence offset partnership with certain global OEMs and have incorporated a Subsidiary, Magnatar Aero Systems Private Limited in this regard
- Acquire more international customers in Clean Energy segment

Engineering Capabilities

Grow our manufacturing capacity and increase market share through organic and inorganic routes

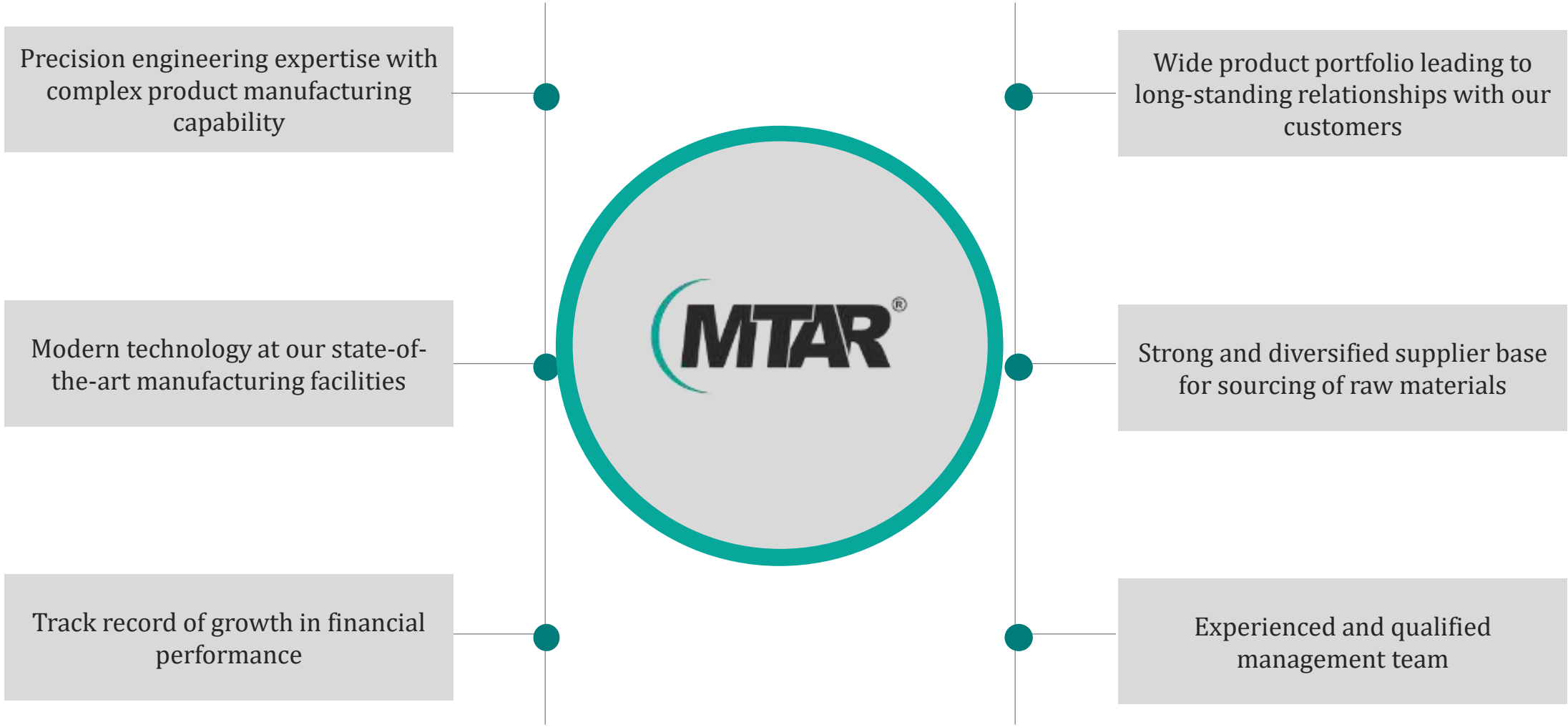
- Upgrade existing facilities by implementing new technology and releasing release bottlenecks in production capacity
- Selectively look at inorganic opportunities to enhance engineering competence, increase market share, achieve operating leverage in key markets and strengthen cost competitiveness in the market

Operational Efficiencies

Continue to strive for operational efficiencies, supply chain rationalization and effective planning

- Continue to maintain or improve upon benchmarks for cost structure through economies of scale, employment of earnings acquired in manufacturing end components, and a robust supply chain for sourcing of raw materials
- Cycle time reduction by adopting advanced technologies, thereby increasing capacity to undertake more number of projects
- Leverage technology for effective utilization of machinery through digital solutions

Key Meeting Takeaways



Thank You

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