



Building Nation with Exceptional Engineering

MTAR Technologies Limited



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Investor Presentation – November 2022

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A leader in critical and differentiated engineered products

Strong Order Book Position

Q2 & H1 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



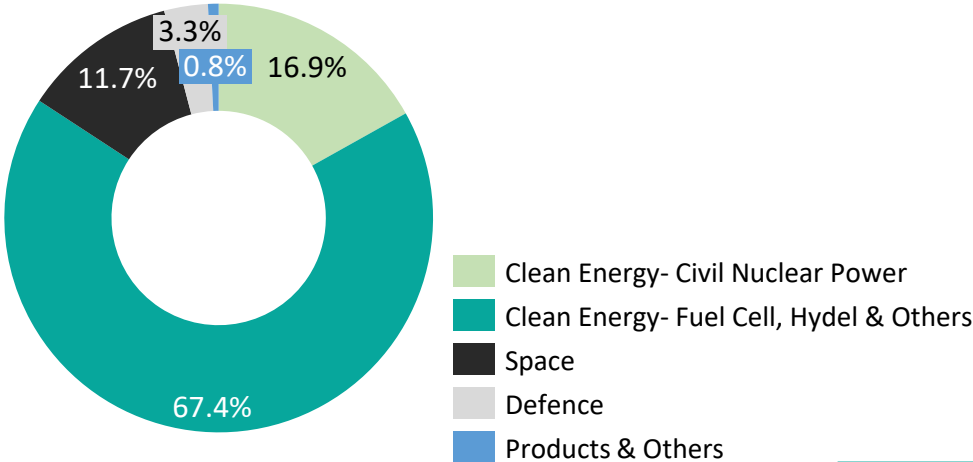
Strong Orderbook Position

Receipt of Major New Orders

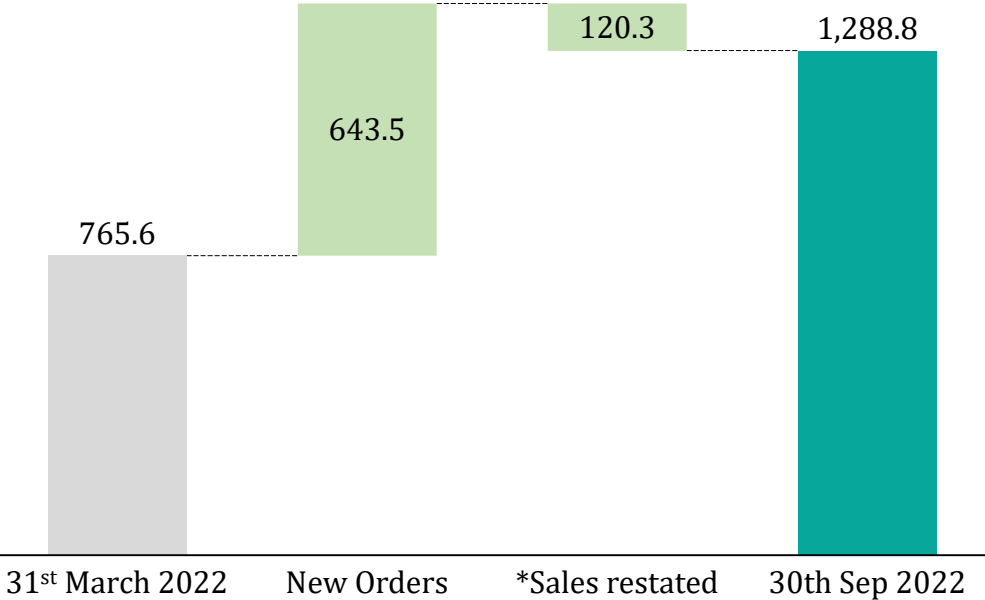
Existing Business

Received Rs. 643.5 Cr of orders in various sectors including Clean Energy – Civil Nuclear Power, Fuel cells and Hydel.

Diversified Order Book of Rs. 1,288.5 crs as on 30th Sept 2022



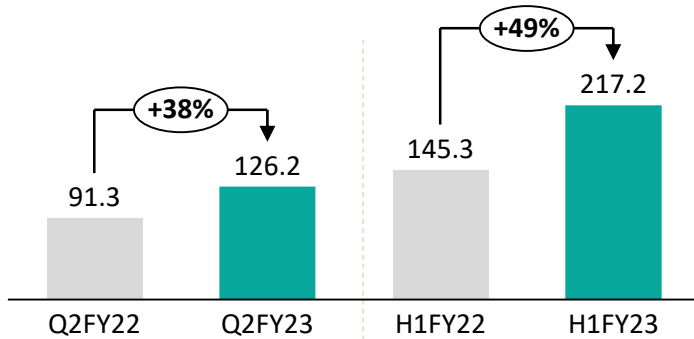
Order book Build-Up (Rs. in Crs)



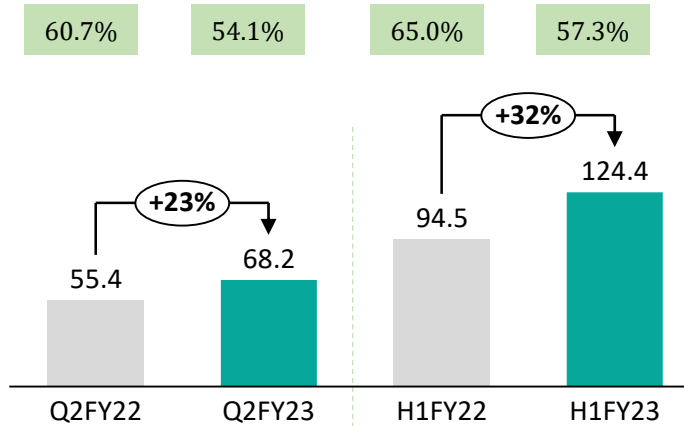
* Sales restated at order book excluding forex fluctuations, price escalations and scrap sales

Q2 & H1 FY23 Financial Performance

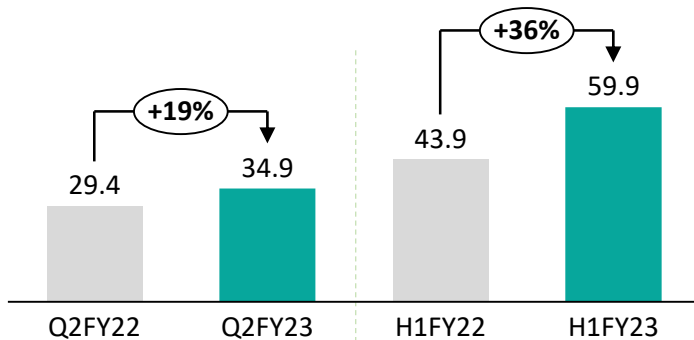
Revenues (Rs. Crs)



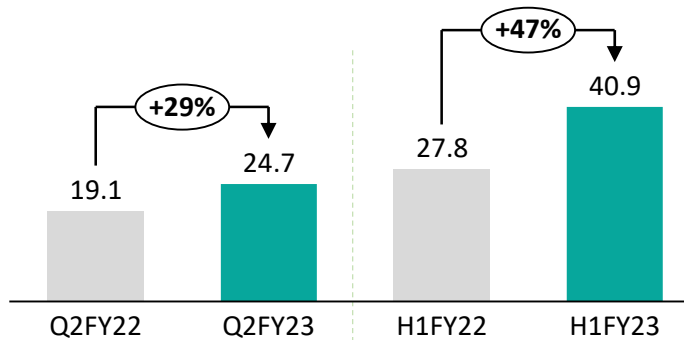
Gross Profit (Rs. Crs)



EBIDTA (Rs. Crs)

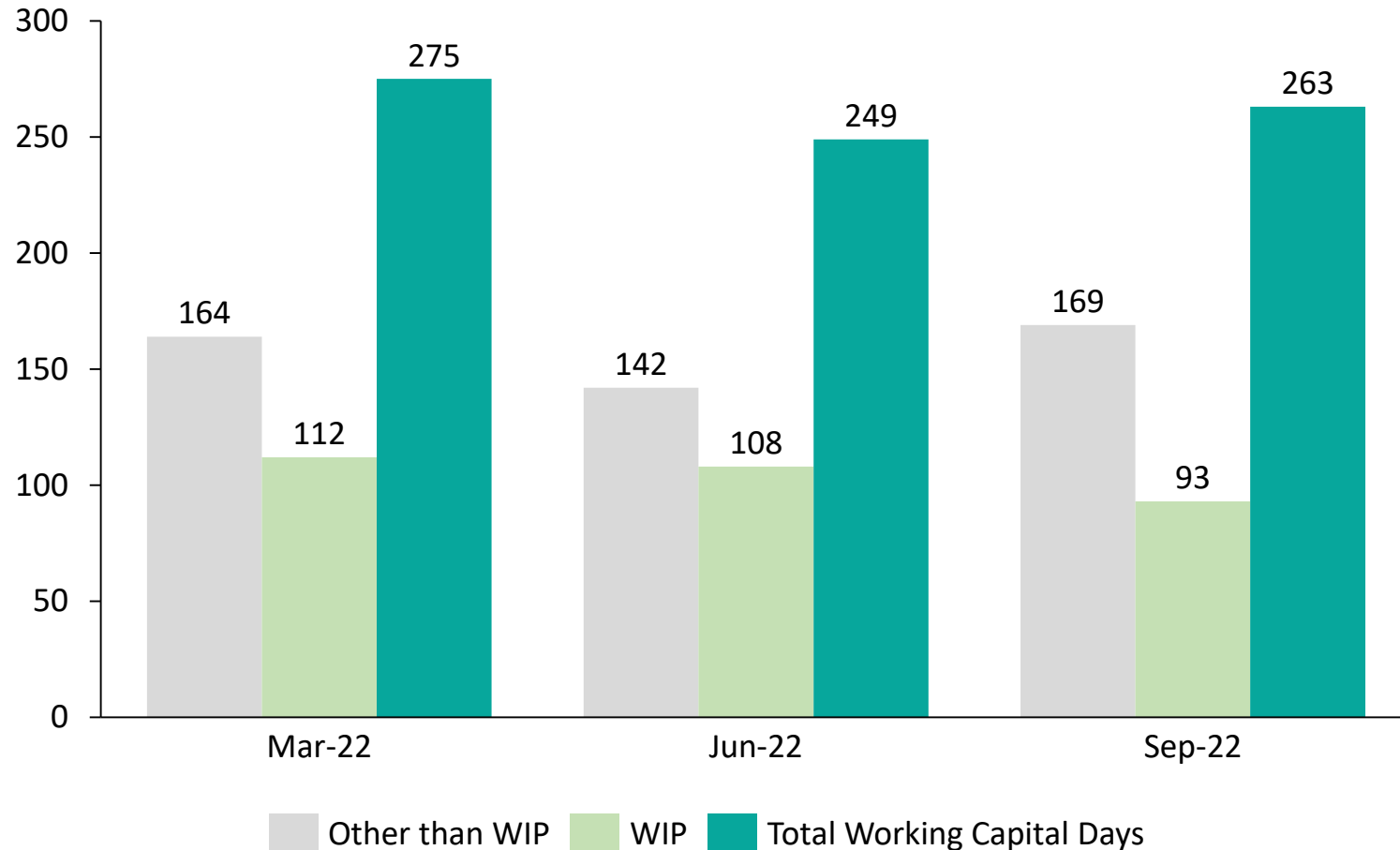


PAT (Rs. Crs)



- Revenue for Q2 FY23 stood at Rs. 126.2 crs as compared to Rs. 91.3 Crs in Q2 FY22, a growth of 38% YoY and H1FY23 growth of 49% YoY
- EBIDTA for Q2 FY 23 stood at Rs. 34.9 Crs, as compared to Rs. 29.4 Crs in Q2 FY22 with a growth of 19% and H1FY23 growth of 36% YoY basis
- EBIDTA margins for Q2FY23 stood at 27.7%
- PAT for the quarter stood at Rs. 24.7Crs as compared to Rs. 19.1 Crs in Q2 FY22 up by 30% YoY and H1FY23 growth of 47% compared with H1FY22
- PAT margins for Q2 FY23 stood at 19.6%

Net Working Capital (in Days)



- Working Capital days is calculated based on proportionate sale in H2 also - i.e., Rs 435 Crs
- H2 revenue will be higher than the H1 Revenue i.e., Rs 298 Crs (H2) Vs Rs 217 Crs (H1) - Annual guidance given is 55% to 60% growth in revenues , hence, total revenue at end of FY 23 is expected to be around Rs 515 Crs
- The Company is required to maintain inventories depending on the lead time of specific projects
- The targeted working capital by end of this Financial year would be around 200 days

Q2 & H1 FY23 Consolidated Profit & Loss Statement

Particulars (Rs. Crs)	Q2 FY23	Q2 FY22	Y-o-Y (%)	Q1 FY23	Q-o-Q	H1 FY23	H1 FY22	Y-o-Y (%)
Revenue from Operations	126.2	91.3	38.2%	91.0	38.6%	217.2	145.3	49.4%
Cost of Materials Consumed	61.1	30.1		43.9		104.9	63.0	
Changes in Inventories	(3.1)	5.8		(9.1)		(12.2)	(12.1)	
Gross Profit	68.2	55.4	23.1%	56.2	21.3%	124.4	94.5	31.8%
GP %	54.1%	60.7%		61.8%		57.3%	65.0%	
Employee Benefits Expense	21.0	16.8		18.7		39.7	32.7	
Other Expenses	12.3	9.2		12.6		24.9	17.9	
EBITDA	34.9	29.4	18.6%	25.0	40.0%	59.9	43.9	36.4%
EBITDA %	27.7%	32.2%		27.4%		27.6%	30.2%	
Other Income	5.4	2.6		3.8		9.2	5.2	
Depreciation and Amortisation Expense	4.6	3.5		4.2		8.8	6.9	
EBIT	35.7	28.5	25.2%	24.6	45.0%	60.3	42.2	42.8%
Finance Costs	2.7	1.4		2.4		5.1	2.6	
PBT	33.0	27.1	21.7%	22.2	48.5%	55.2	39.7	39.2%
Total Tax Expense	8.3	8.1		6.0		14.3	11.9	
Profit for the year	24.7	19.1	29.6%	16.2	52.2%	40.9	27.8	47.3%
PAT %	19.6%	20.9%		17.8%		18.8%	19.1%	

Consolidated Balance Sheet

EQUITY & LIABILITIES (Rs. Crs)	Sep-22	Mar-22
Equity Share Capital	30.8	30.8
Other Equity	530.2	489.0
Total Equity	560.9	519.7
Financial Liabilities		
Borrowings	60.7	25.9
Provisions	0.1	0.4
Deferred Tax Liabilities (Net)	18.5	16.3
Total Non-Current Liabilities	79.2	42.7
Financial Liabilities		
(i) Borrowings	73.6	69.9
(ii) Trade payables	94.2	57.0
(iii) Other Financial Liabilities	0.5	2.4
Provisions	1.1	3.0
Current Tax Liabilities (Net)	-	0.3
Other Current Liabilities	43.5	32.6
Total Current Liabilities	212.9	165.4
TOTAL EQUITY & LIABILITIES	853.1	727.7




ASSETS (Rs. Crs)	Sep-22	Mar-22
Property, Plant and Equipment	245.2	195.4
Capital Work-in-progress	38.0	43.8
Investment in Subsidiary	-	-
Intangibles Assets	1.58	1.0
Financial Assets		
(i) Investments	0.0	0.0
(iii) Other Financial Assets	2.1	2.2
Non-Current Tax Assets (Net)	0.5	0.5
Other Non Current Assets	27.0	21.6
Total Non-Current Assets	314.4	264.5
Inventories	243.3	170.3
Financial Assets		
(i) Investments	-	-
(ii) Trade Receivable	173.4	136.0
(iii) Cash and Cash Equivalentts	23.0	59.6
(iv) Other Bank Balances (other than Note 13 above)	17.0	7.4
(vi) Other Current Financial Assets	1.8	6.7
(v) Investment in units of mutual fund	47.8	62.3
Current tax assets (net)	0.1	-
Other Current Assets	31.5	20.9
Total Current Assets	538.7	463.2
TOTAL ASSETS	853.1	727.7

Abridged Consolidated Cash Flow Statement

Particulars (Rs. Crs)	Sep-22	Mar-22
Profit before Tax	55.2	82.2
Adjustment for non-operating items	-8.3	-13.9
Operating profit before working capital changes	63.5	96.1
Changes in working capital	68.0	107.9
Cash generated from operations	-4.5	-11.8
Direct taxes paid (net of refund)	-13.8	-18.0
Net Cash from Operating Activities (A)	-18.3	-29.8
Net Cash from Investing Activities (B)	-50.6	-145.0
Net Cash from Financing Activities (C)	32.1	54.1
Net Change in cash and cash equivalents	-36.8	-120.7

Certifications Under Progress for Adibatla Plant

Certification	Expected Timeline to get Certified
 <p>ISO 9001:2015 – Quality Management Systems</p>	Received
 <p>AS9100: Quality Systems - Aerospace</p>	Received
 <p>ISO 14001:2015 Environmental Management Systems</p>	Nov '22
 <p>ISO 45001:2018 Occupational Health & Safety</p>	Nov '22

Certification	Expected Timeline to get Certified
 <p>ISO 27001:2013 Information Security Management Systems</p>	Received
 <p>ASME U Stamp - Boiling and Pressure Welding Certification</p>	June'23
 <p>ISO 3834-1:2021 – Quality Requirements for Fusion Welding</p>	Sept'23

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



High End Fabrication



High Precision Sheet Metal

Expanding Product Portfolio

Indigenizing the Roller Screws.

- ✓ Executed the FAI orders
- ✓ 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 7.6 crs from Defense; the company shall be executing all the orders by FY 23.

Establishment of sheet metal and specialized fabrication facilities

Specialized fabrication

- ✓ Specialized fabrication facility to be functional in a full-fledged way by Dec '22

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. 11.8 Crs** worth of sheet metal orders for Clean Energy sector in Q2 FY 23
- ✓ The new capabilities are expected to bring in lot more customers

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 started working on establishing a full-fledged EMS (Electronic Manufacturing System) facility



Key Products under Development

Defence



- **Valves:** The company has started working on the design of valves, which has an immense market potential in Defence

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 Q4 FY 23
- **Small Satellite launch Vehicle:** Board has given in-principle approval to explore the possibility of concept design and development of Small Satellite Launch Vehicle (SSLV) amidst the privitisation of Space initiative through IN-SPACE by Government of India

Clean Energy



- **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
- **ASP Assemblies (Import Substitutes):** The company has manufactured prototypes; completed qualification process. Production shall commence from Q3 FY 23.
- **Ceramic Assemblies (Import Substitutes):** The company has initiated the development process, which are currently being imported
- **Heaters(Import Substitutes):** The company has initiated the development process, which are currently being imported

Existing Customers

Defence & Aerospace



DRDL



ARDE Pune

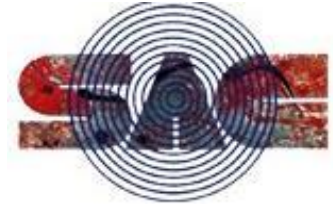


Nuclear Power



Government of India
Department of Atomic Energy
NUCLEAR FUEL COMPLEX

Space



Clean Energy



Marine, Oil & Energy



KONGSBERG



TechnipFMC

Others



WORLDWIDE OILFIELD MACHINE



Customers in Pipeline

Defence & Aerospace



DMDE



THALES



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



Clean Energy

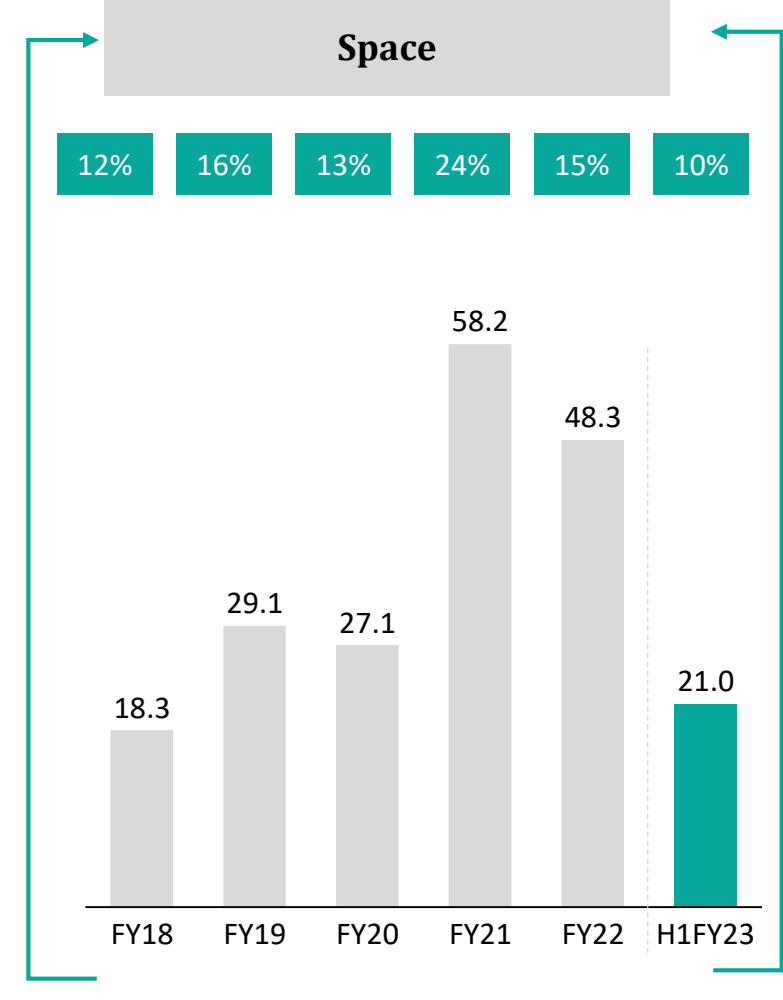
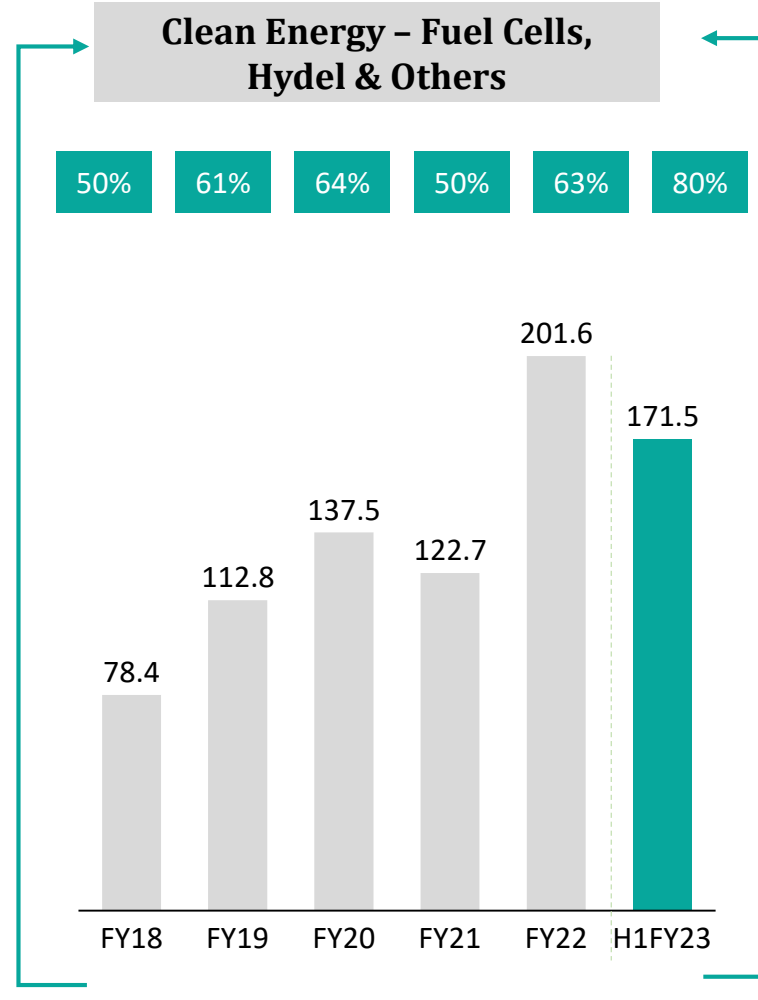
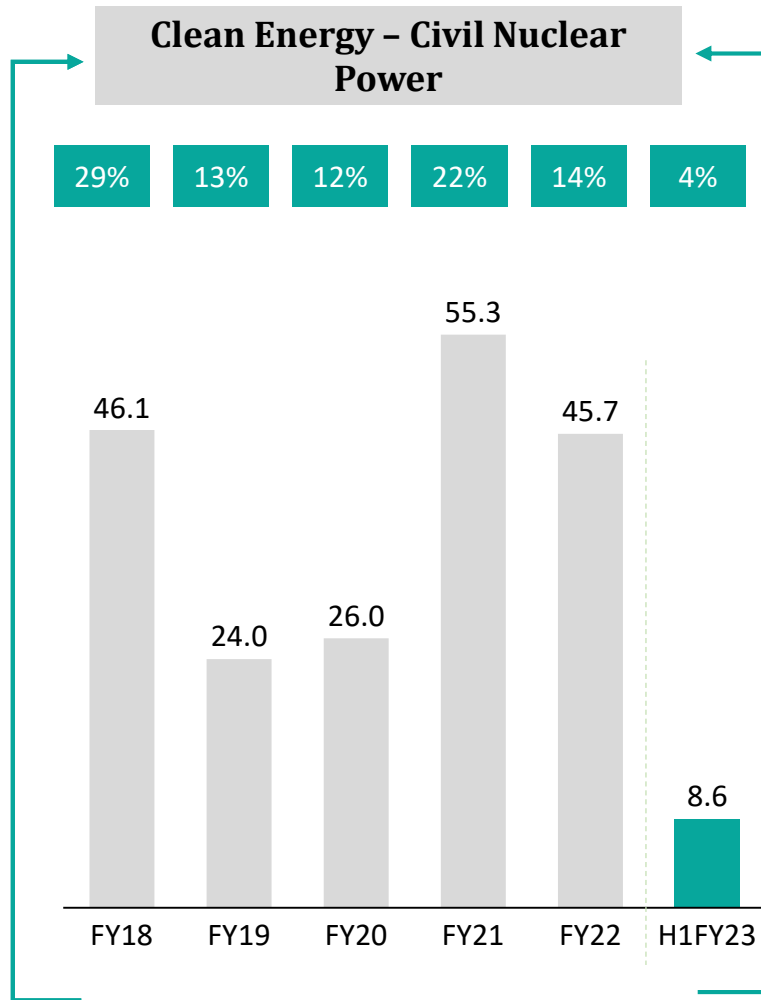


Others



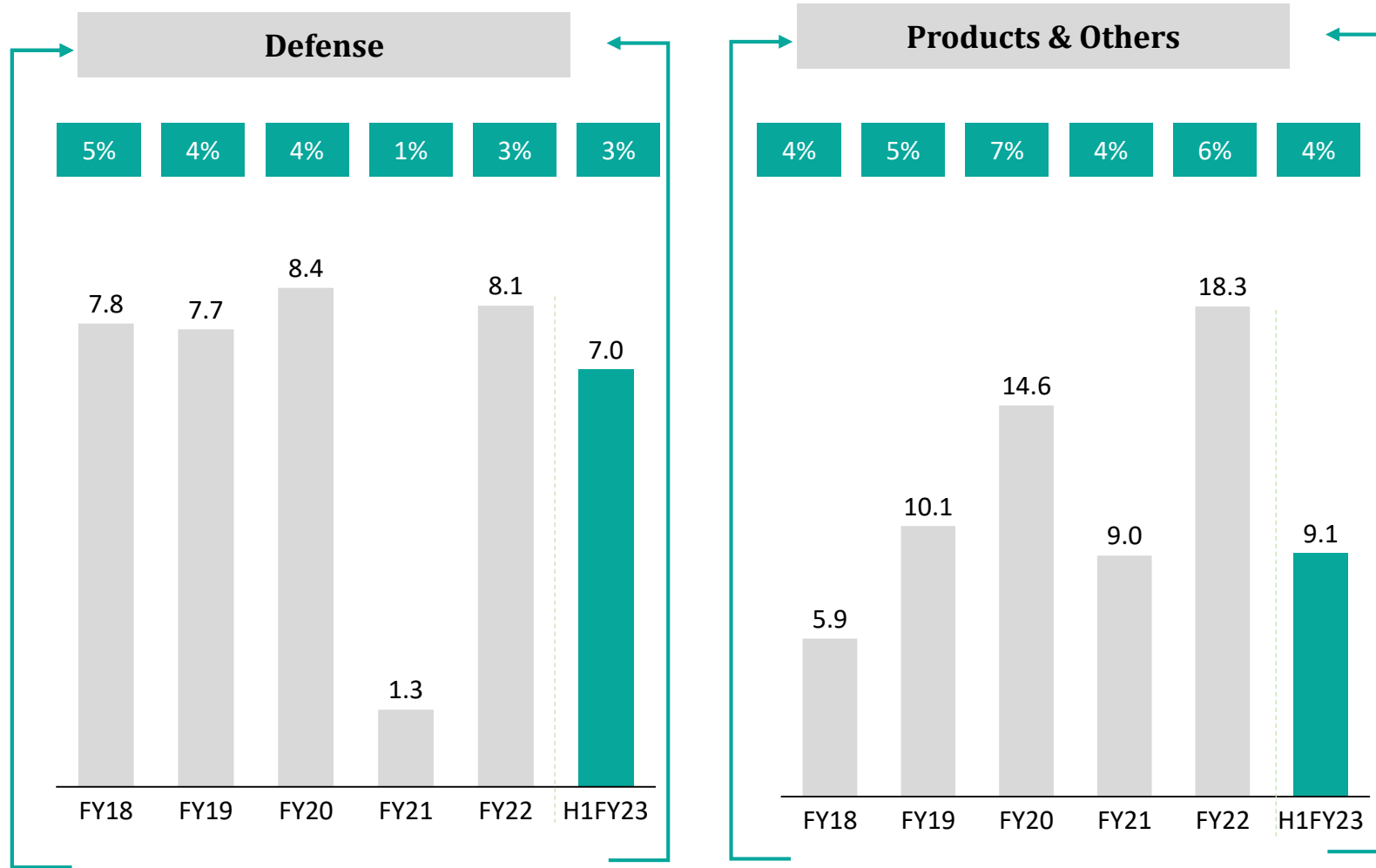
Well-balanced Portfolio (1/2)

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.



Vedachalam Nagarajan

Independent Director

- 35+yrs of experience at ISRO
- Padma Shri awardee
- Former member of various govt. committees



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



Devesh Dhar Dwivedi, *Chief Operating Officer*

- Responsible for leading the day to day operations
- More than 15 yrs. of experience in sectors including defence, manufacturing, IT, engineering
- Previous organisations - High Radius Technologies Pvt. Ltd., Bharat Forge Ltd., DRDO. Alumnus of NIT, Allahabad and ISB, Hyderabad



Mr. Gunneswara Rao Pusalra – *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

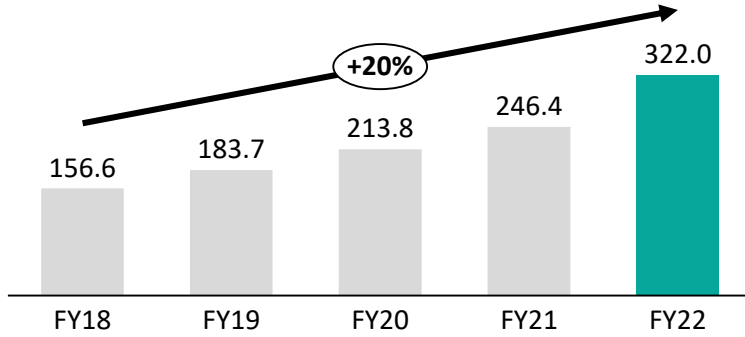
ASSETS (Rs. Crs)	Mar-22	Mar-21	Mar-20	Mar-19	Mar-18
Property, Plant and Equipment	195.4	166.1	155.0	162.0	152.2
Capital Work-in-progress	43.8	10.5	11.7	5.6	1.8
Investment in Subsidiary		0.0	0.0	0.0	0.0
Intangibles Assets	1.0	0.9	0.1	0.1	0.0
Financial Assets					
(i) Investments	0.0	0.0	0.0	0.0	0.0
(iii) 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

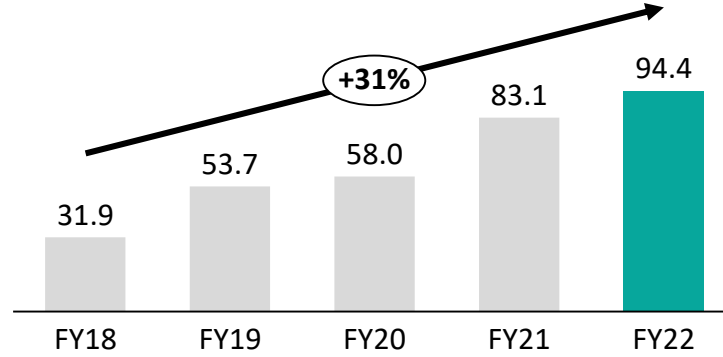
Particulars (Rs in Cr)	31-Mar-22	31-Mar-21	31-Mar-20	31-Mar-19	31-Mar-18
Operating profit before working capital changes	96.1	82.0	60.9	57.3	33
Changes in working capital	(108)	(61.7)	2.5	(5.7)	(16)
Cash generated from operations	(11.8)	20.3	63.4	51.6	16.9
Direct taxes paid (net of refund)	(18.0)	(11.7)	(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

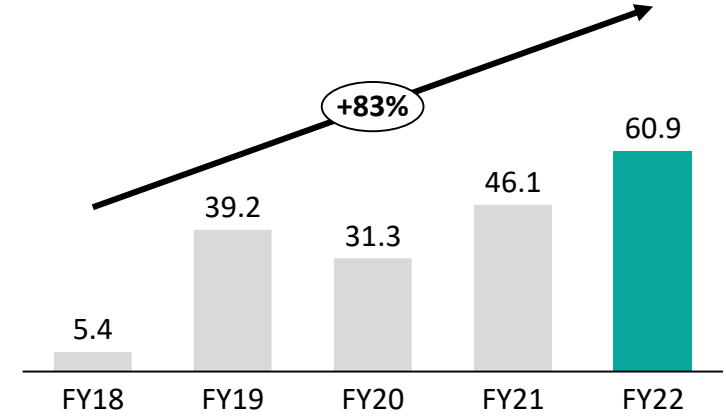
Revenues (Rs. Crs)



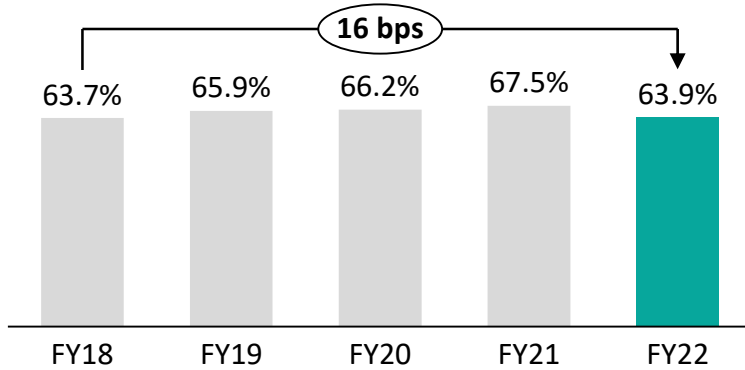
EBITDA (Rs. Crs)



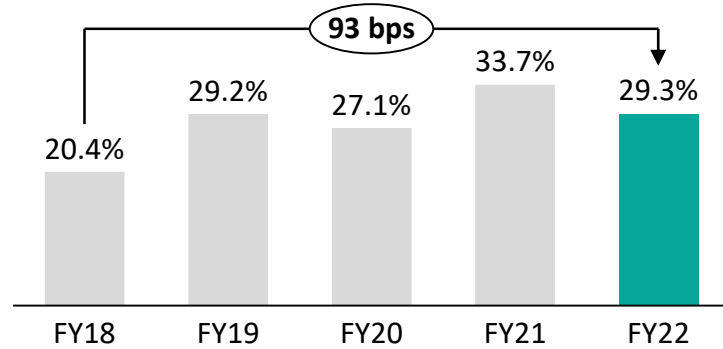
PAT (Rs. Crs)



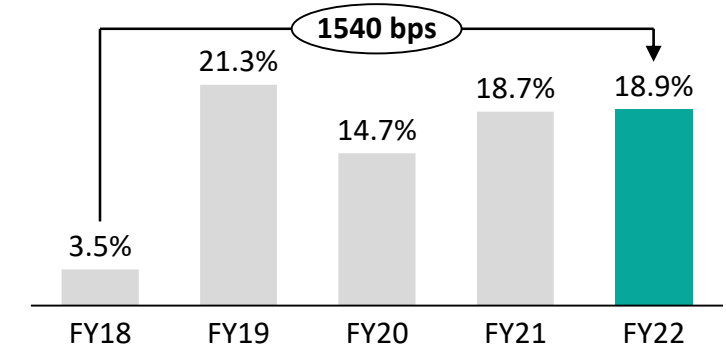
Gross Profit Margins (%)



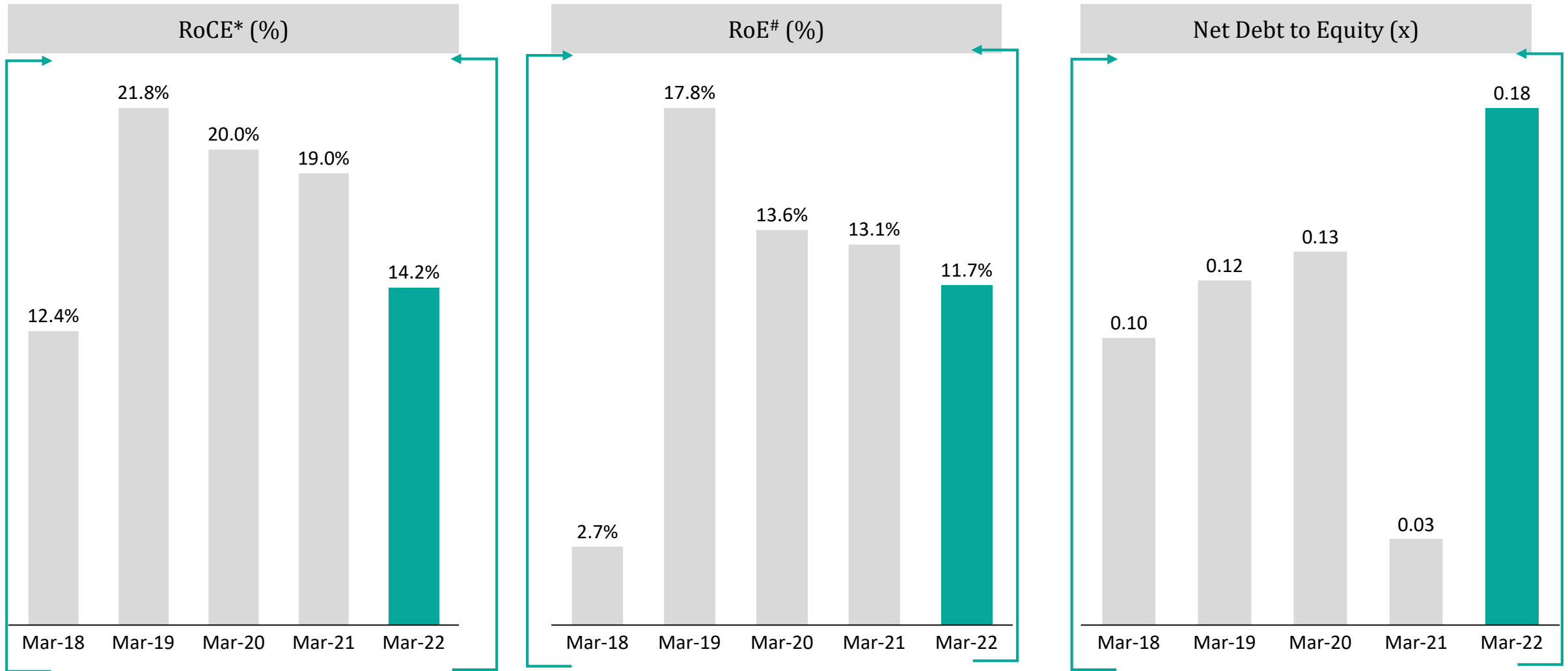
EBITDA Margins (%)



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

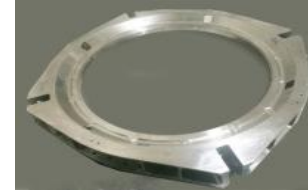


Rocket engines

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

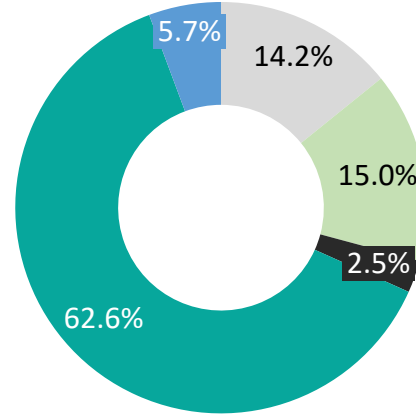
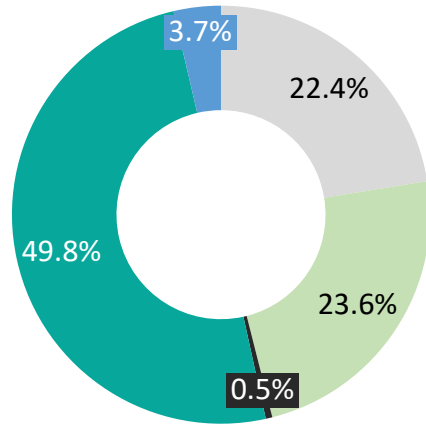
FY21

Sectorwise Break-up

FY22

Sectorwise Break-up

- Nuclear
- Space
- Defence
- Clean Energy
- Products & Others



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

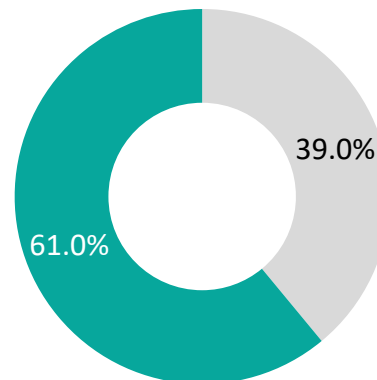
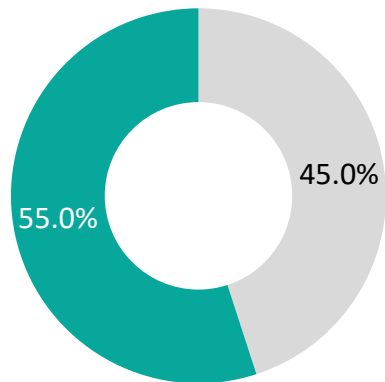
FY21

Geographical Break-up

FY22

Geographical Break-up

- Domestic
- Export



Multiple Companies entrust MTAR

Large MNCs

Bloomenergy

Elbit Andritz Hydropower Kongsberg

Rafael

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



- 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

Long term relationships

Government Departments

ISRO Defence Research and Development Organisation

Indira Gandhi Centre for Atomic Research

Aeronautical Development Agency Liquid Propulsion Systems Centre

16+ years NPCIL

30+ years ISRO

- 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

High customer dependence

Indian Companies

NPCIL HAL

Nuclear Power Corporation of India Limited

BHEL TASL Bharat Dynamics

40+ years DRDO

9+ years Bloom

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

Customer understanding

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

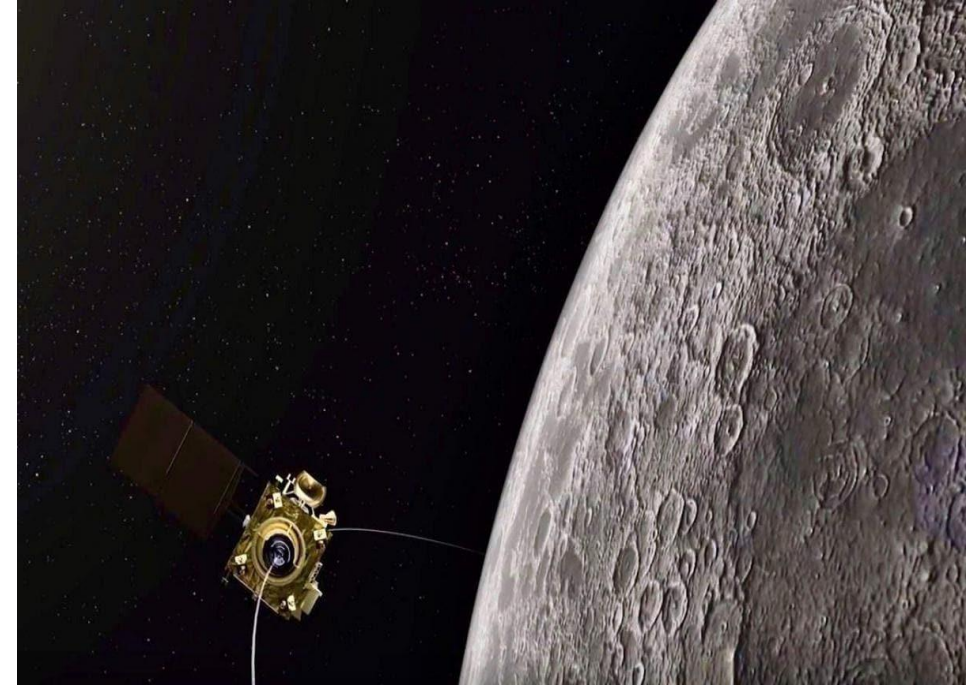


Projects of Pride, Glory & Prestige

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

	<h3>Manufacturing Capabilities</h3>	<ul style="list-style-type: none">• 400+ Total machines• 100+ Conventional / CNC Turning machines• 60+ Milling / CNC milling machines		<h3>Manufacturing Units</h3>	<ul style="list-style-type: none">• 7 manufacturing units including an EOU
	<h3>Advanced Machinery</h3>	<ul style="list-style-type: none">• High end machines like 7 axis mill-turns, 5 axis VMC, 3D CNC CMM etc.		<h3>Quality Manpower</h3>	<ul style="list-style-type: none">• 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
	<h3>Strategically located</h3>	<ul style="list-style-type: none">• Plants located in proximity to major defense organizations• Provides R&D, high volume projects access• Ease of coordination		<h3>Flexibility</h3>	<ul style="list-style-type: none">• No dedicated production lines for products• Flexibility to allow maximum utilization• Wide range of products manufactured from few kgs to several tons
	<h3>Engineering capability</h3>	<ul style="list-style-type: none">• In house development of special purpose machines• SPM 99, Gantry SPM machines manufactured in house instead of importing similar machinery at higher cost		<h3>End to end capabilities</h3>	<ul style="list-style-type: none">• 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

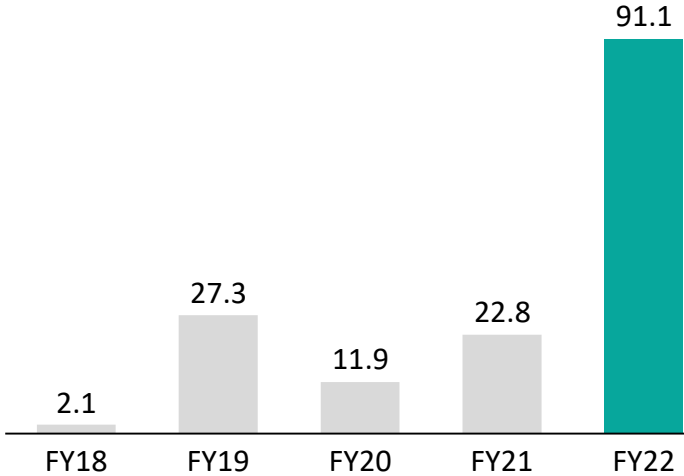


ISO 9001:2015



AS9100D

Capex (Rs. Crs.)



Manufacturing Facilities

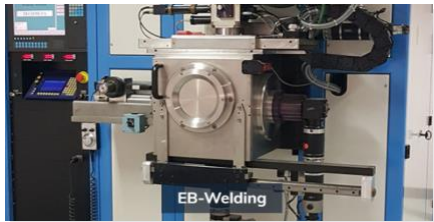
High End Machinery



Assembly, Testing and Clean rooms



Specialized Fabrication facilities



Surface treatment, heat treatment, Painting



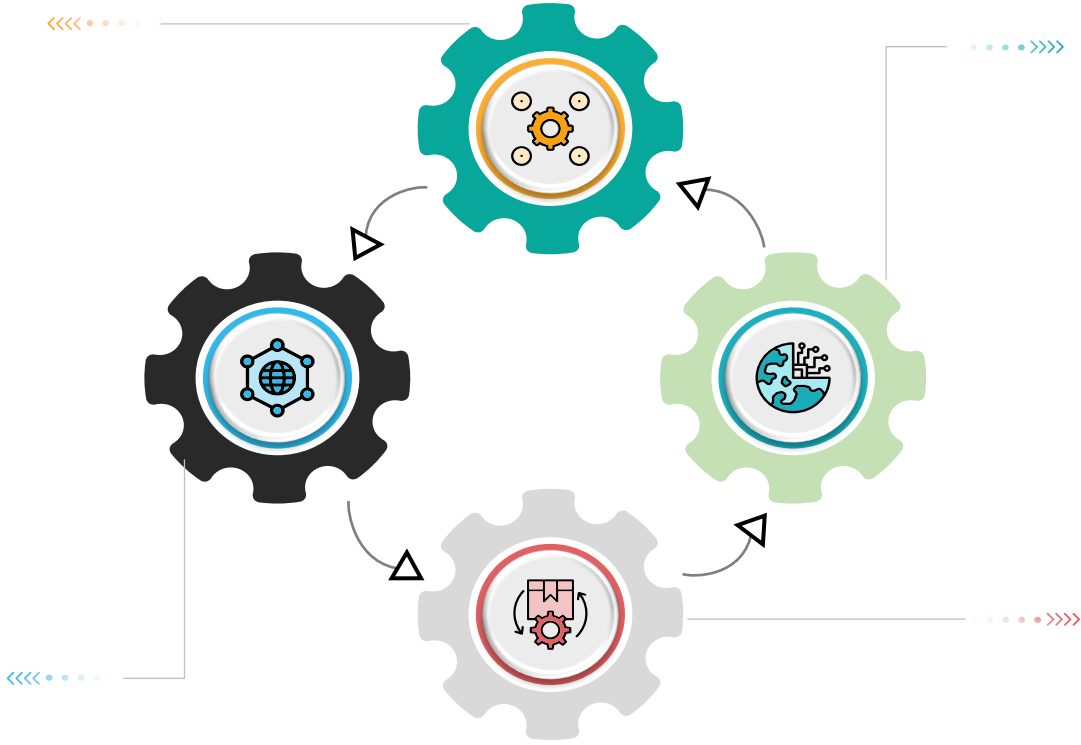
End to End Manufacturing Capabilities

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

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**A leader in critical and differentiated
engineered products**

Three Decades in Precision Engineering

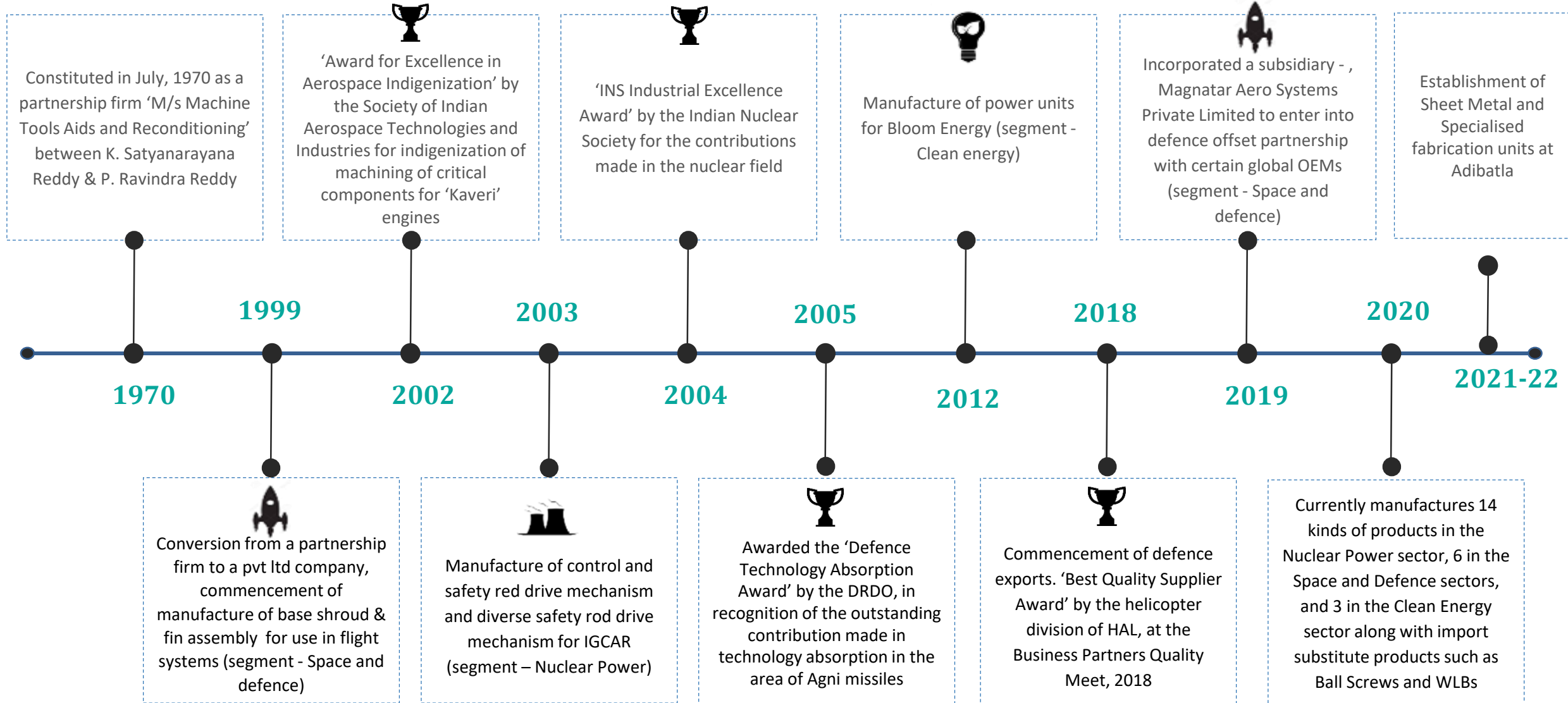
Product Offerings - Nuclear Power

Product Offerings - Space & Defense

Product Offerings - Clean Energy



Three Decades in Precision Engineering



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

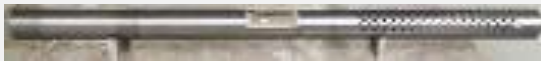
Moves fuel machining head in sideways and vertical directions to allow loading and unloading of various fuel bundles in the nuclear reactor



Shield Plug



Sealing Plug



Liner Tube

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.

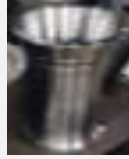
Components for Aircraft



Main Gear Box – Magnesium



Titanium Center Piece

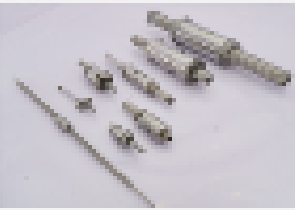


Sukhoi – HPC Shaft Nickel Alloy



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

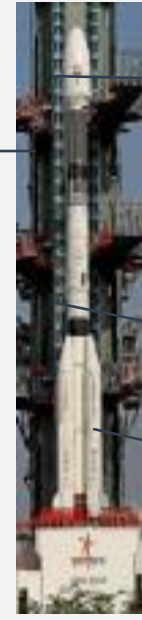
Components for Geosynchronous Satellite Launch Vehicle (GSLV)



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



POGO Command Module

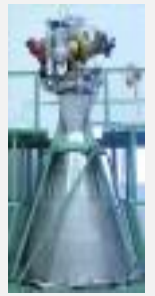


← Stage 3

→ Stage 4 – Inside Satellite

→ Stage 2 - 4 Nos.

→ Stage 1 - 4 Nos.



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

Clean Energy Sector

Existing Product Supplies

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

Under Development and manufacturing

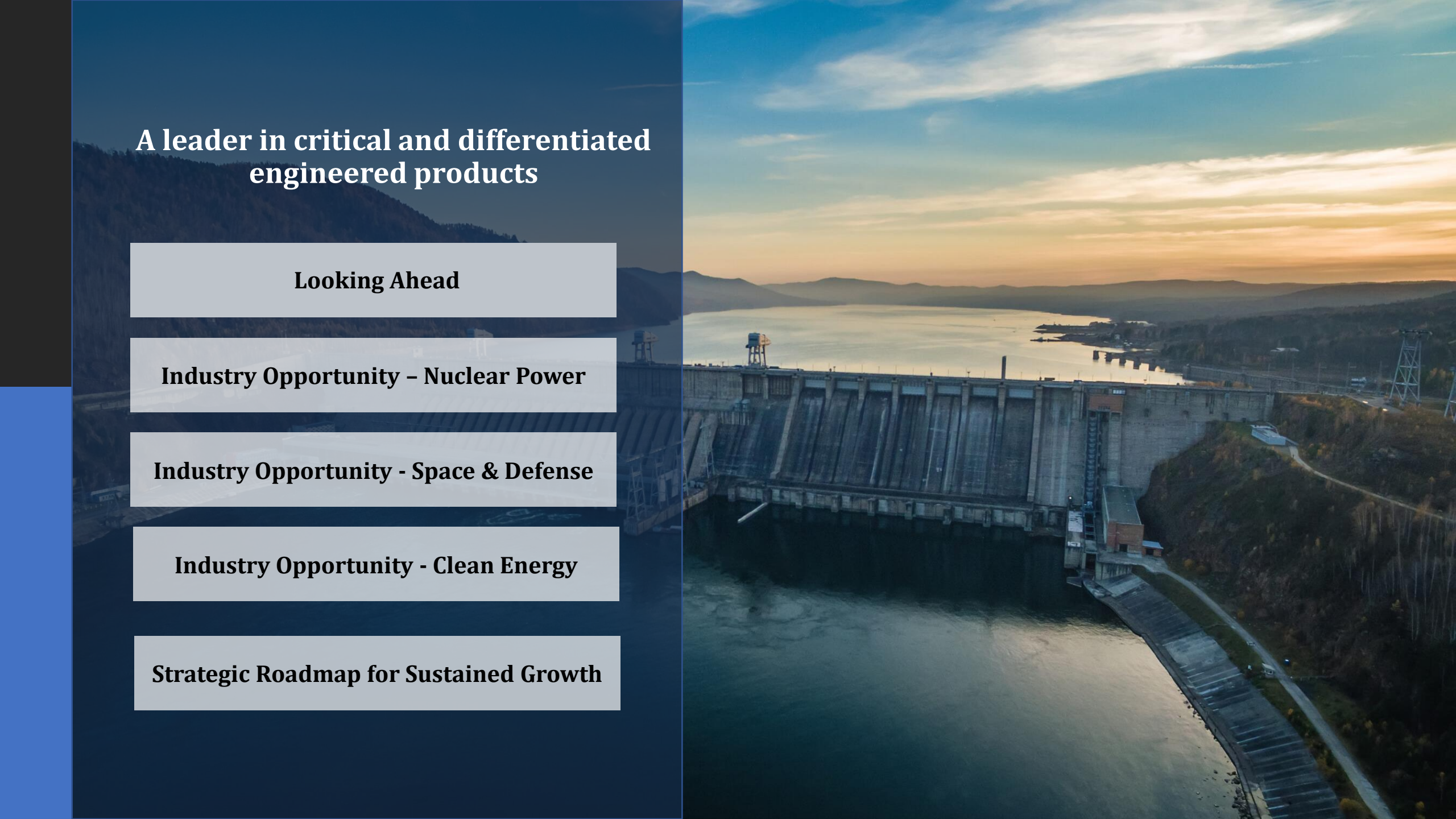
- MTAR is developing the following products in collaboration with Bloom to expand its product portfolio in clean energy sector:
 - Hydrogen boxes- Use Hydrogen to generate power
 - Electrolyzers - generate green hydrogen from water that shall be used in power units to generate power with zero carbon 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

An aerial photograph of a large concrete dam with multiple spillways, situated on a river. The scene is captured at sunset, with a warm orange and yellow glow on the horizon and sky. The water in the reservoir is calm, reflecting the sky. In the background, there are rolling hills and mountains under a blue sky with scattered clouds. The foreground shows the dam's structure and a road leading to it.

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**
- Govt 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

Industry Opportunity – Nuclear Power



Net nuclear power capacity target of 26.2 GWe by 2031

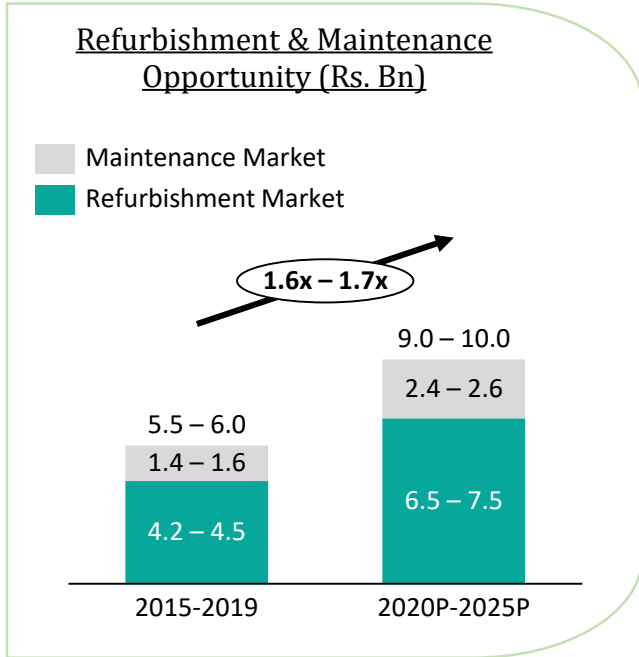
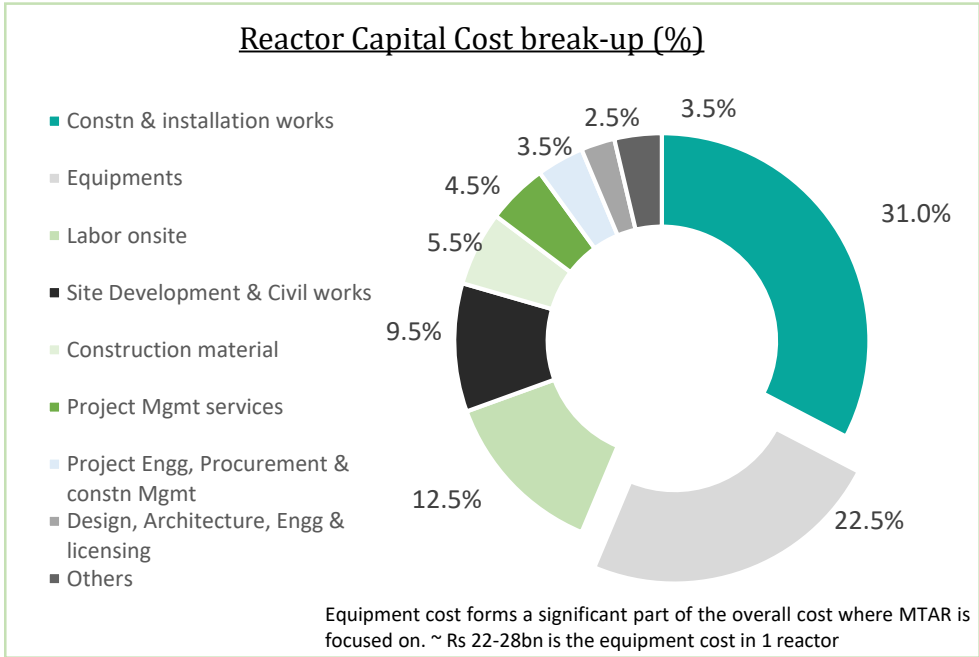
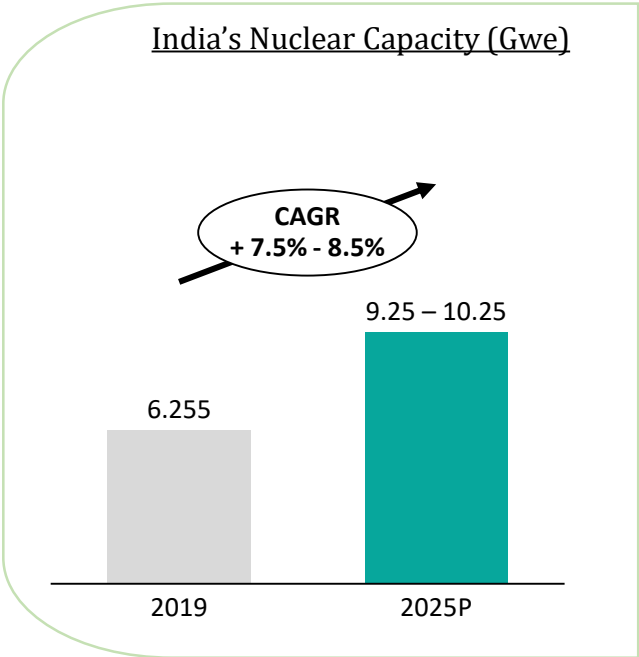
22 Operational Reactors – Capacity of 6.3 GWe

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

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



Industry Opportunity - Space and Defence



ISRO Successfully completed 118 spacecraft missions and 78 launch missions

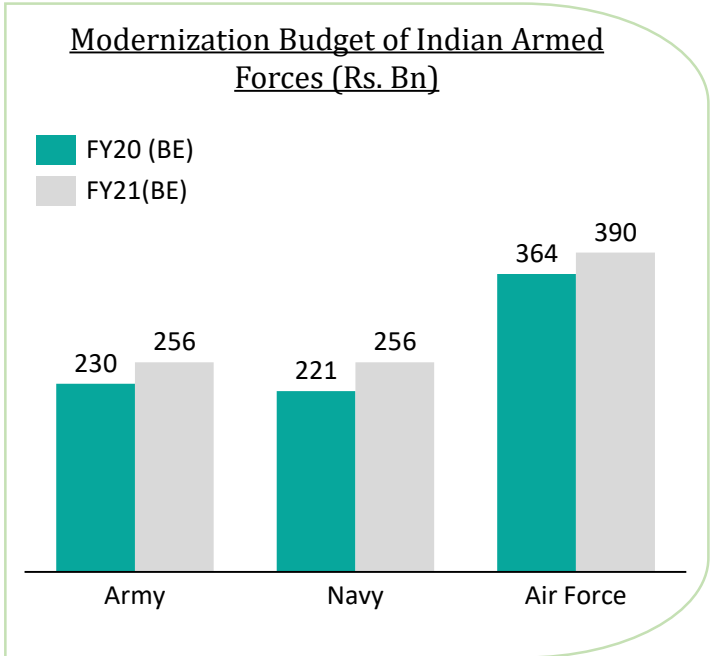
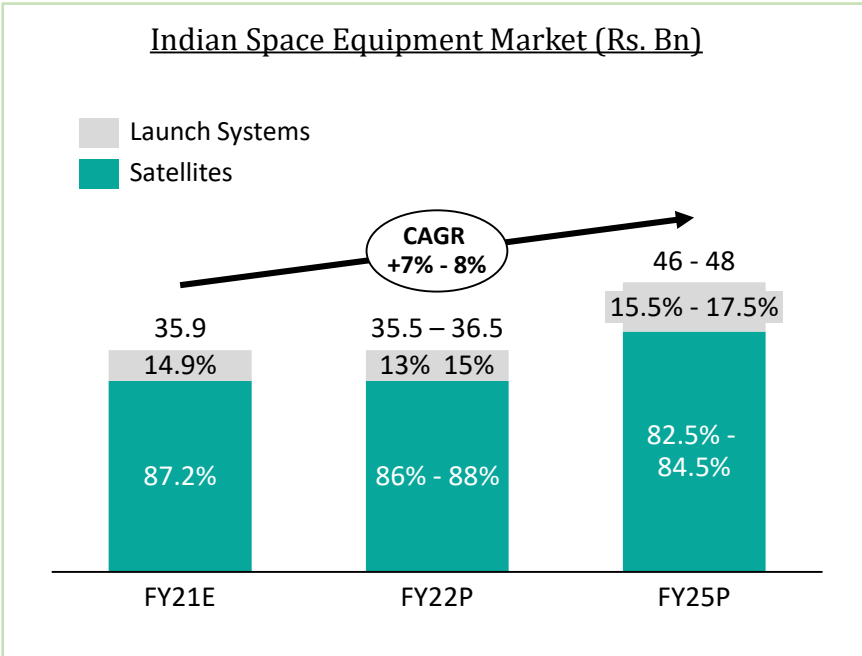
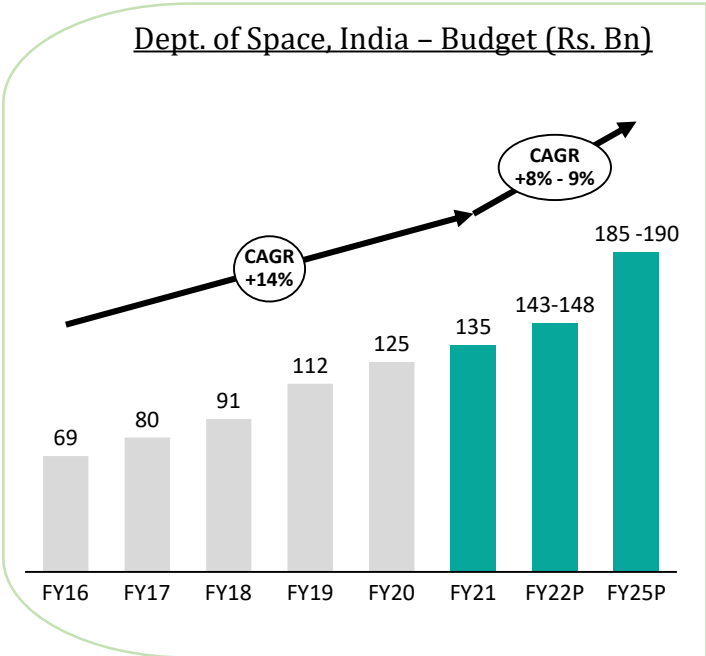
ISRO Conducted 14 missions in FY19 and more than 11 missions in FY20

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

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



Industry Opportunity - Clean Energy



Renewable accounts for 26% of global electricity generation

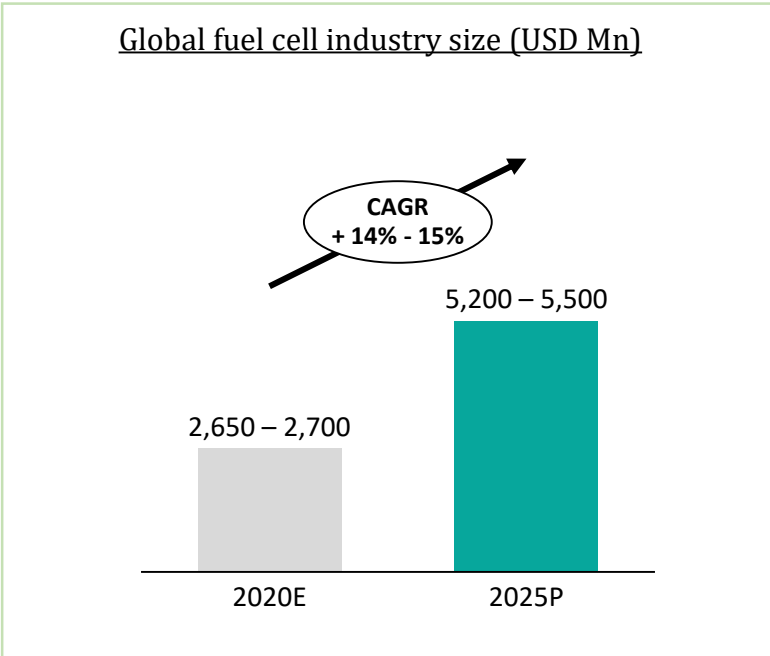
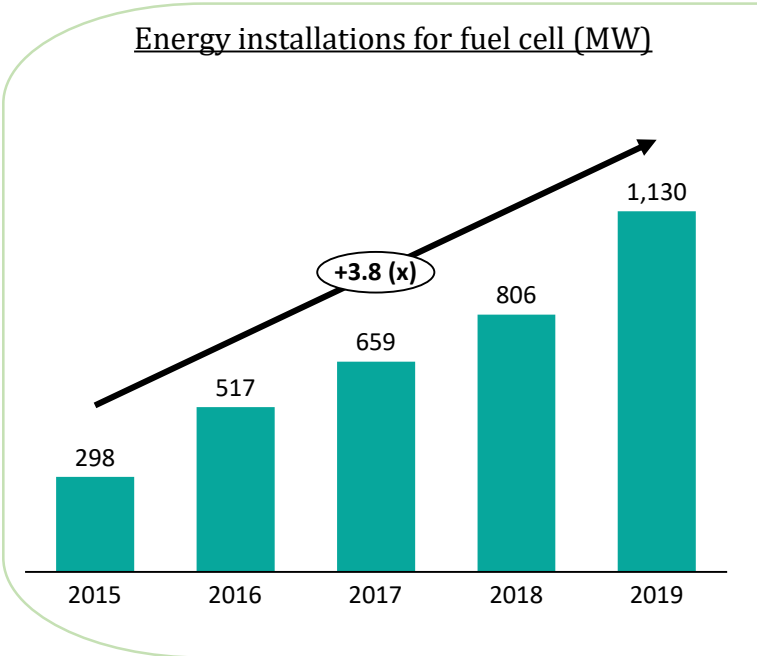
Fuel cell market growing at 15% CAGR with increased R&D

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

Bloom is one of the largest and amongst the fastest growing players globally in the fuel cell segment. MTAR has a 9+ years of strong relationship with Bloom & will start manufacturing more products for them like Hydrogen boxes and electrolyzers



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

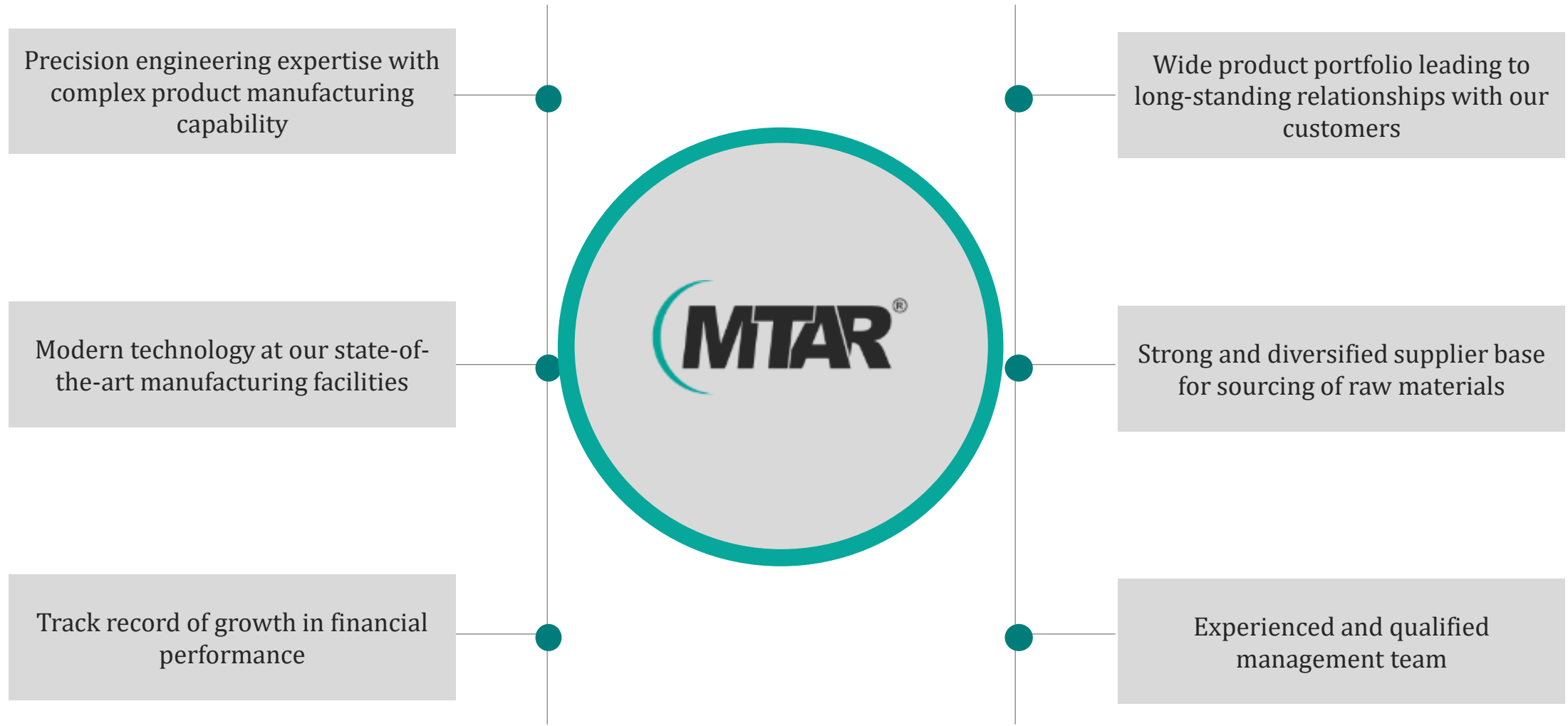
Operational Efficiencies



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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Celebrating 5^{Years}
of Engineering Excellence