May 2024

Initiating Coverage | Sector: Aerospace and Defence

MTAR Technologies

The clean revolution!

Meet Jain - Research Analyst (Meet.Jain@MotilalOswal.com)

Research Analyst: Sumant Kumar (Sumant.Kumar@MotilalOswal.com) / **Omkar Shintre** (Omkar.Shintre@MotilalOswal.com)

MTAR Technologies

Running at full throttle and ready to take off

MTAR Technologies (MTARTECH) has established itself as a key supplier of precision engineered systems for clean energy - fuel cells, nuclear, etc. - to global MNCs, government departments, and large Indian public and private sector enterprises. The company has seven manufacturing units (including one EOU) in Hyderabad.

- MTARTECH's business segments are poised to report strong order inflows (39% CAGR during FY24-26E), aided by emerging global demand (fuel cells) and accelerated government initiatives (in nuclear, space, and defense).
- Clean Energy - the fuel cells segment is likely to maintain its dominance in the order book/revenue, with its contribution expected to be ~50%/57% by FY26 vs 55%/60% in FY24.
- The nuclear, space, and defense sectors are also expected to see a significant ramp-up in order flows with increase in the government's focus on indigenization. Further, import substitution will emerge as a new growth engine for the company, with the development of critical parts for the existing business segments.
- We expect a revenue/EBITDA/adj. PAT CAGR of 38%/53%/67% over FY24-26, with RoE/RoCE improving to ~23%/21%% by FY26 from ~12%/11% in FY24. We initiate coverage on MTARTECH with a BUY rating and a TP of INR2,800 (premised on 40x FY26E EPS).
- Key risks include client concentration (Bloom Energy), order deferment, supply chain issues, and a rise in working capital requirement.

MTAR Technologies

BSE SENSEX	S&P CNX
74,006	22,502

Bloomberg	MTARTECH IN
Equity Shares (m)	31
M.Cap.(INRb)/(USDb)	62.8 / 0.8
52-Week Range (INR)	2920 / 1660
1, 6, 12 Rel. Per (%)	10/-22/-16
12M Avg Val (INR M)	856

Financials & Valuations (INR b)

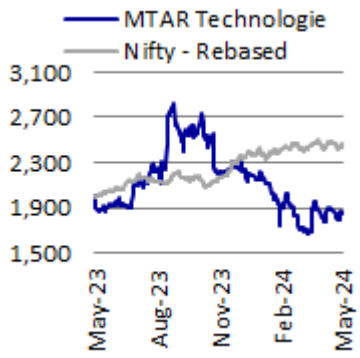
Y/E MARCH	2024E	2025E	2026E
Sales	6.1	9.1	11.6
EBITDA	1.4	2.3	3.2
Adj. PAT	0.8	1.5	2.2
EBITDA Margin (%)	22.7	25.5	27.7
Cons. Adj. EPS (INR)	25.4	47.3	70.5
EPS Gr. (%)	-24.4	86.3	48.9
BV/Sh. (INR)	227.0	274.3	344.8
Ratios			
Net D:E	0.2	0.1	0.0
RoE (%)	11.9	18.9	22.8
RoCE (%)	11.3	16.8	20.8
Valuations			
P/E (x)	80.4	43.1	29.0
EV/EBITDA (x)	46.3	27.6	19.7
FCF Yield (%)	-0.2	0.2	1.0

Shareholding pattern (%)

As On	Mar-24	Dec-23	Mar-23
Promoter	37.3	37.3	46.6
DII	18.1	19.0	27.6
FII	10.6	11.0	2.5
Others	34.1	32.7	23.3

FII Includes depository receipts

Stock's performance (one-year)



CMP: INR2,042 TP: INR2,800 (+37%) Buy

The clean revolution!

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- **MTARTECH's business segments are poised to report strong order inflows (39% CAGR during FY24-26E), aided by emerging global demand (fuel cells) and accelerated government initiatives (in nuclear, space, and defense).**
- **Clean Energy – the fuel cells segment is likely to maintain its dominance in the order book/revenue, with its contribution expected to be ~50%/57% by FY26 vs 55%/60% in FY24.**
- **The nuclear, space, and defense sectors are also expected to see a significant ramp-up in order flows with increase in the government's focus on indigenization. Further, import substitution will emerge as a new growth engine for the company, with the development of critical parts for the existing business segments.**
- **We expect a revenue/EBITDA/adj. PAT CAGR of 38%/53%/67% over FY24-26, with RoE/RoCE improving to ~23%/21%% by FY26 from ~12%/11% in FY24. We initiate coverage on MTARTECH with a BUY rating and a TP of INR2,800 (premised on 40x FY26E EPS).**
- **Key risks include client concentration (Bloom Energy), order deferment, supply chain issues, and a rise in working capital requirement.**

Clean Energy – an emerging source of energy

- MTARTECH manufactures power units, specifically hot boxes (Yuma and Santa Cruz), used in solid oxide fuel cell (SOFC) and electrolyzers for Bloom Energy USA (BE), a global leader in SOFC manufacturing.
- Hot box is a chamber containing a cathode and anode, in which the chemical reaction to generate power takes place. It is located inside a fuel cell enclosure.
- It is the fastest-growing segment (41% CAGR over FY18-23) and forms the majority of MTARTECH's revenue (~77%/62% in FY23/9MFY24).
- The US and South Korea together account for 95% of the installed capacity of large-scale fuel cells for stationary applications. Other regions, such as Europe and Japan, are also evaluating options for installing fuel cells.
- BE has received USD4.5b worth of orders from the SK Group in South Korea for ~500MW of methane-based fuel cells. For this, MTARTECH has received a mandate of 10,000 boxes from BE to be delivered to South Korea in the next three years.
- The South Korean government is looking to install 15GWe of fuel cells by CY40, which could translate into 0.3m of hot boxes. This demand is solely from South Korea, while other regions are also looking to adopt fuel cells as a clean energy source. This could create a **massive opportunity for MTARTECH** as it is the largest supplier of hot boxes to BE. The company is set to increase its wallet share by offering new products such as sheet metal fabrication and enclosures for fuel cells.

- Apart from BE, MTARTECH is also in talks with other players in the clean energy domain to widen its scope and absorb more opportunities in this budding space along with de-risking its customer profile. One such new addition is Fluence Energy, an energy storage company formed by Siemens and AES. The management expects this client's revenue mix to become as large as BE in the next couple of years.
- We expect this business to post a 35% CAGR over FY24-26 and maintain its dominant share in MTARTECH's order book and revenue at 50% and 57% respectively, in FY26.

Traction improves in the Space and Nuclear sectors

- MTARTECH has been a key supplier of mission-critical components and critical assemblies for the space and nuclear sectors since their inception.
- In FY23, 9%/11% of its revenue/order book mix came from the space segment, which clocked a 22% revenue CAGR over FY18-23. Conversely, the nuclear segment recorded flat growth over FY18-23 and contributed to ~8%/17% of revenue/order book in FY23.
- The Department of Space's budget is forecasted at INR130b by FY25 vs. INR125b in FY22, taking into account plans to launch 30-35 satellite missions over FY23 and FY25. Further, the Indian satellite manufacturing and launch systems market is estimated to reach INR46-48b by FY25 at a CAGR of 7-8%.
- In the nuclear sector, the GoI has planned to build 10-12 reactors, taking the total capacity to ~22.4 GWe by CY31. For the same, NPCIL has started floating tenders for fleet reactors that could translate into order inflows for MTARTECH in the coming quarters.
- The total investment for building these reactors would be INR1,760-1,800b. Of this, the equipment market share would be INR350-435b. MTARTECH has ~20-25% equipment share in each nuclear reactor.
- Further, the company has an opportunity of ~INR70-80b from the refurbishment market, where 2.6 GWe is currently in refurbishment stage and another 3.5-4.0 GWe is expected to come by CY25. MTARTECH is expected to **receive a huge order flow of ~INR5b for Kaiga 5 and 6 reactors in FY25,** thereby boosting its nuclear revenue growth.
- We expect the space/nuclear businesses to report a revenue CAGR of 94%/22% over FY24-26, supported by an order book CAGR of 19%/75%.

Valuation and view: Primed to take off; initiate coverage with a BUY rating

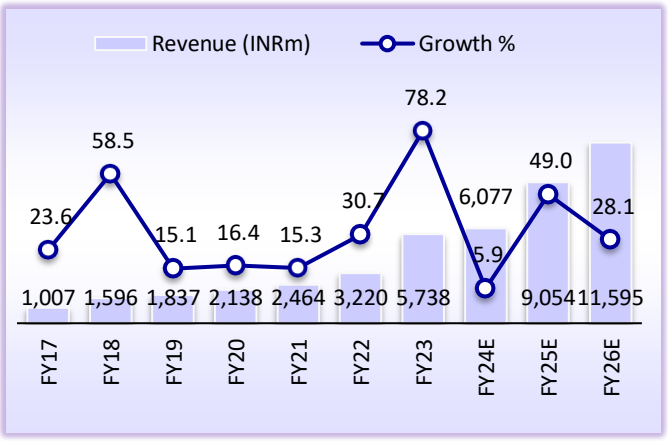
- MTARTECH, being the key supplier of precision engineered systems to large global MNCs, government departments, and large Indian public and private sector enterprises, has over the years created a niche for itself in the industry.
- As the largest supplier of fuel cell components to BE (global leader), the company will benefit from the emerging demand for fuel cells in the coming years. Further, the company is also increasing its wallet share with BE by offering more products, such as precision sheet metal fabrication and enclosures, with the aim of carrying out a complete fuel cell integration for BE.
- Apart from fuel cells, its other business segments (such as nuclear, space, defense and products) offer a huge runway for growth. We believe the company can capitalize on this opportunity with its strong manufacturing capabilities and

customer relationship management. Consequently, MTARTECH is likely to clock a CAGR of 39% in the order book and 38% in revenue during FY24-26.

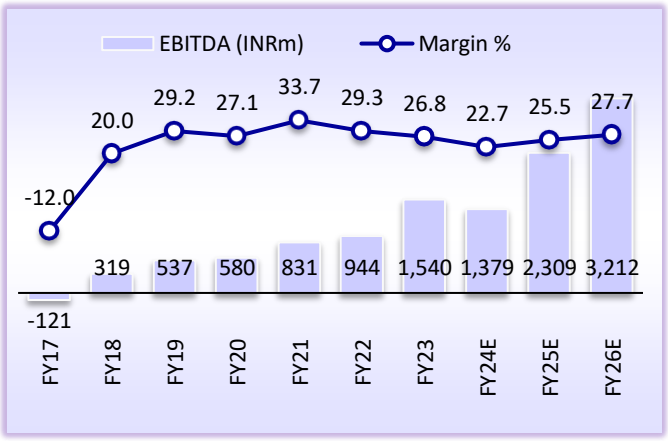
- We expect MTARTECH to clock a revenue/EBITDA/ adj. PAT CAGR of 38%/53%/ 67% over FY24-26, with RoE/RoCE of ~23%/21% by FY26E (vs. ~12%/11% in FY24).
- During FY24-26, the company is anticipated to generate a cumulative FCF of INR673m, with CFO/EBITDA averaging at 26%.
- We initiate coverage on MTARTECH with a BUY rating and a TP of INR2,800, premised on 40x FY26E. We believe that: 1) a 67% earnings CAGR over FY24-26E, 2) strong return ratios (RoE of 23%, ROCE of 21%, and RoIC of 22% in FY26E), 3) a robust order book CAGR of 39% over FY24-26E, and 4) a healthy balance sheet will help MTARTECH trade at premium multiples.

Story in charts

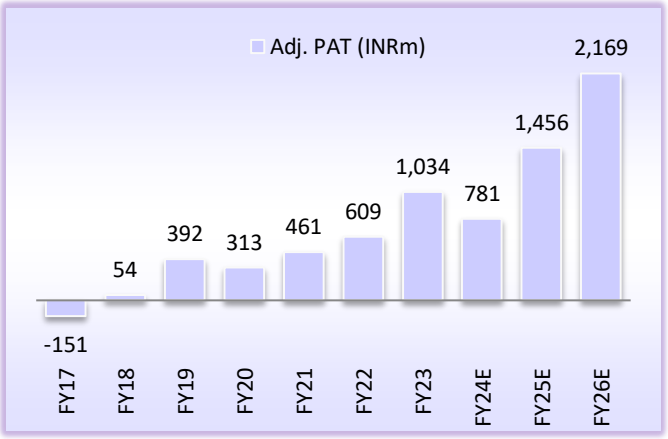
Strong revenue trajectory at 38% CAGR over FY24-26E…



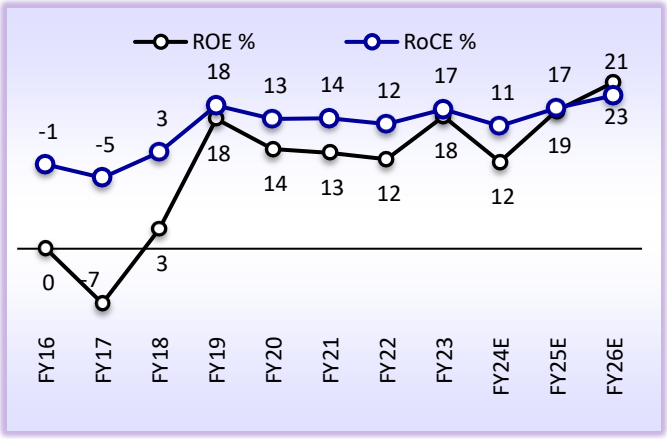
…is translating into a higher margin profile…



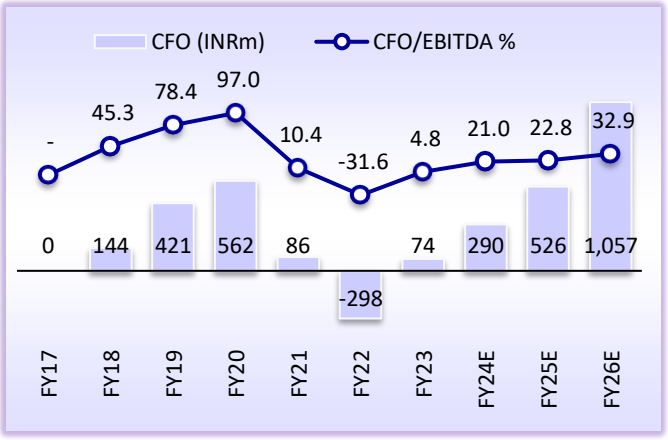
…and robust growth in PAT at 67% CAGR over FY24-26E



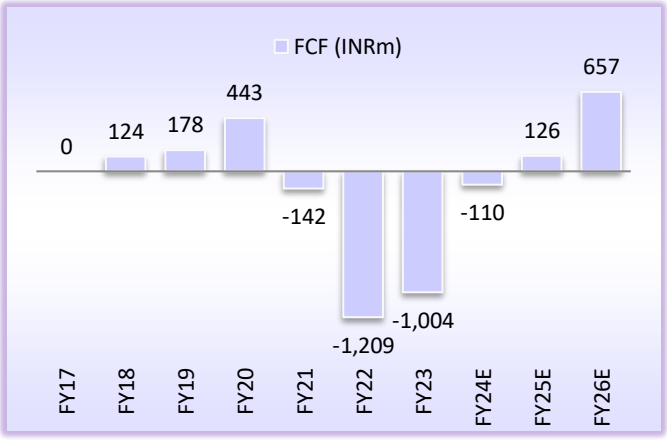
Return ratios continue to improve



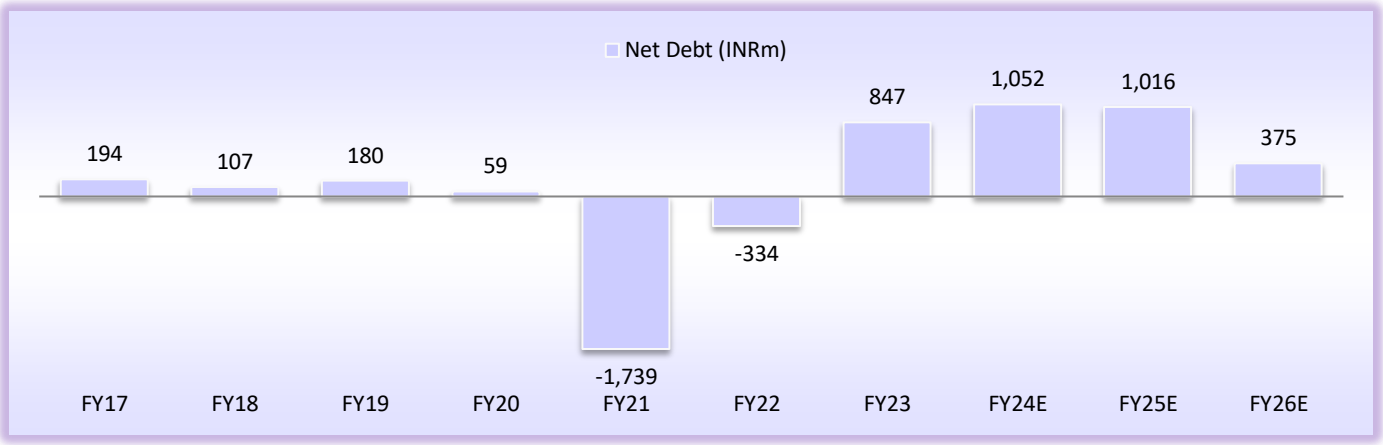
CFO/EBITDA ratio to improve…



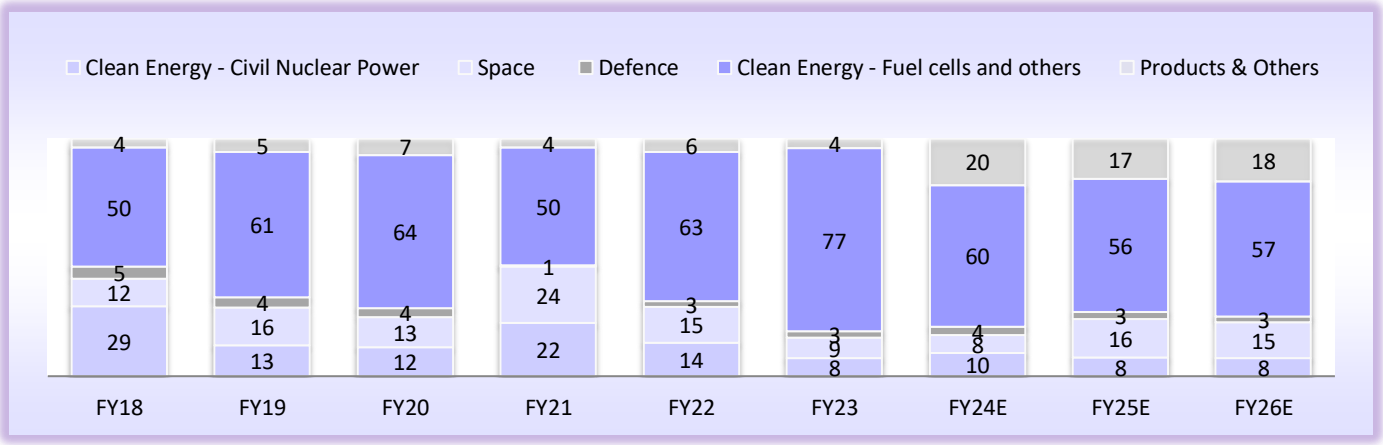
…resulting in better free cash flows…



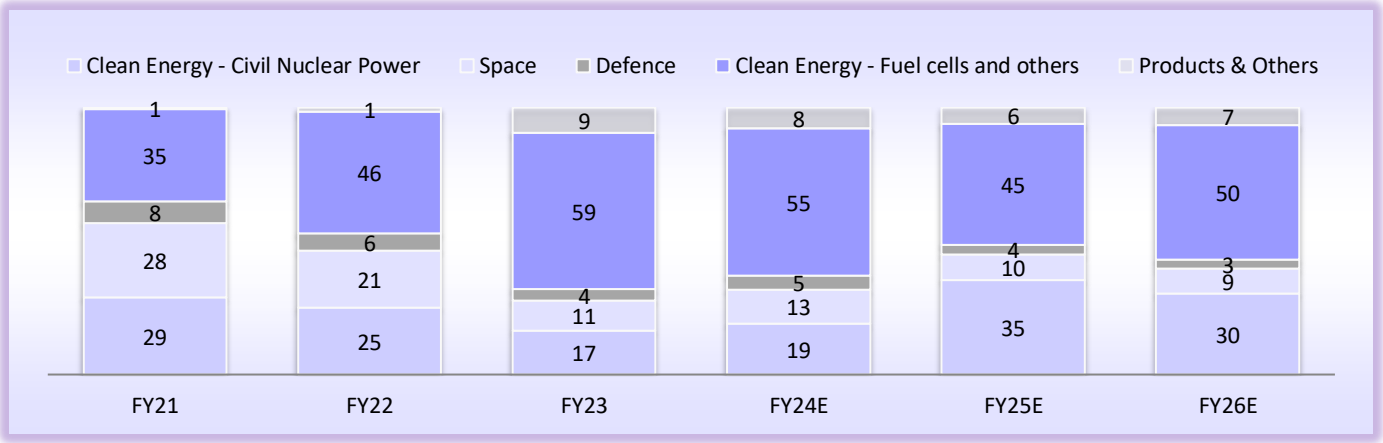
...and a strong balance sheet



Segmental revenue mix with growth across all segments (%)

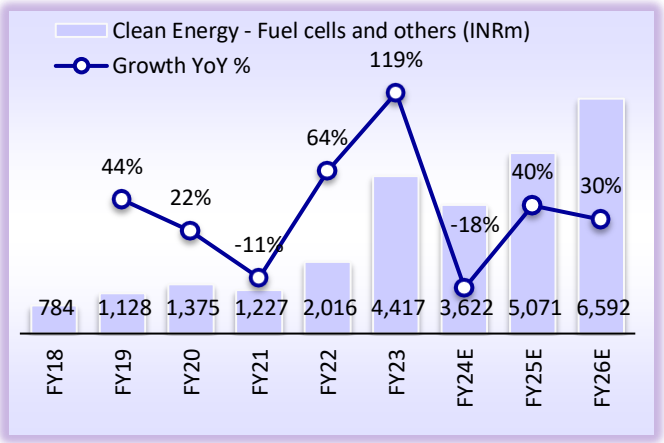


Segmental order book mix (%)

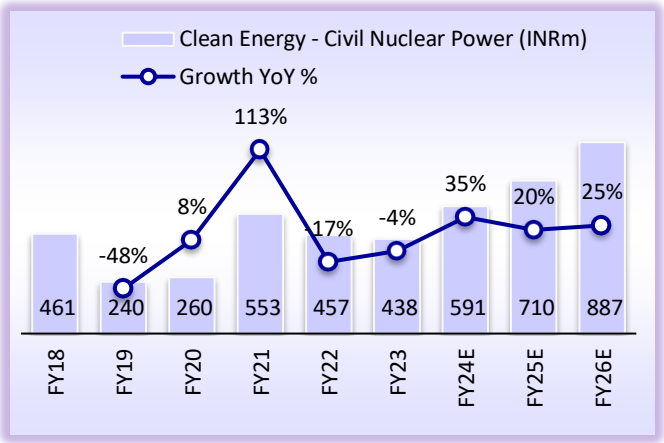


Source: Company, MOFSL

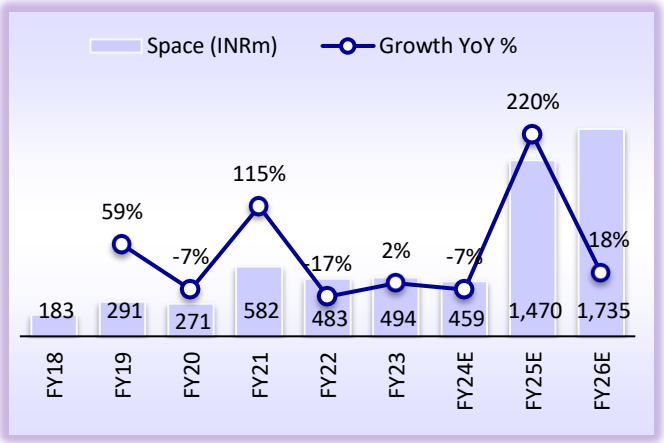
Strong growth with 35% CAGR over FY24-26E…



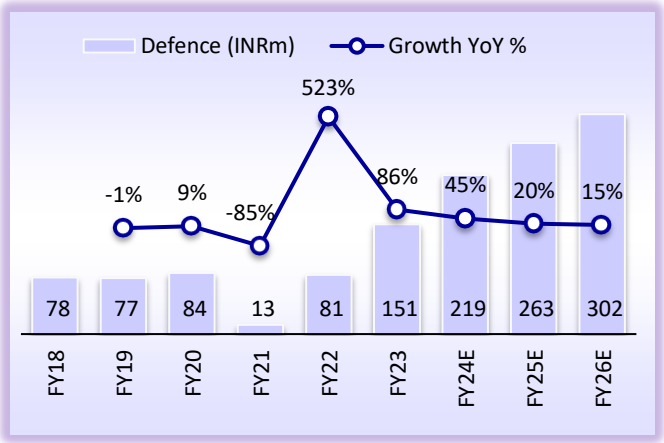
…while Civil Nuclear revenue to clock a CAGR of 22%



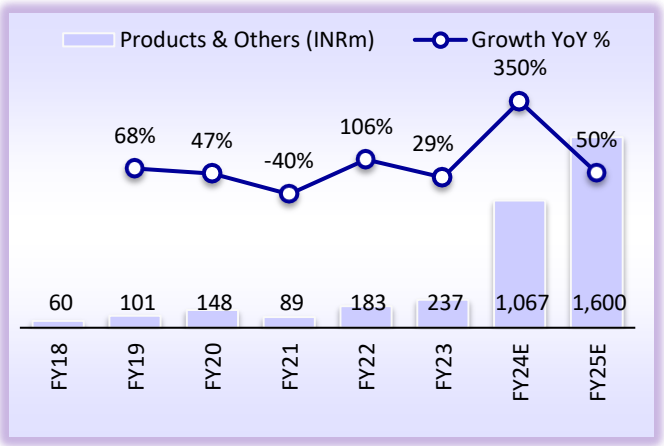
Space segment revenue to register 94% CAGR over FY24-26E



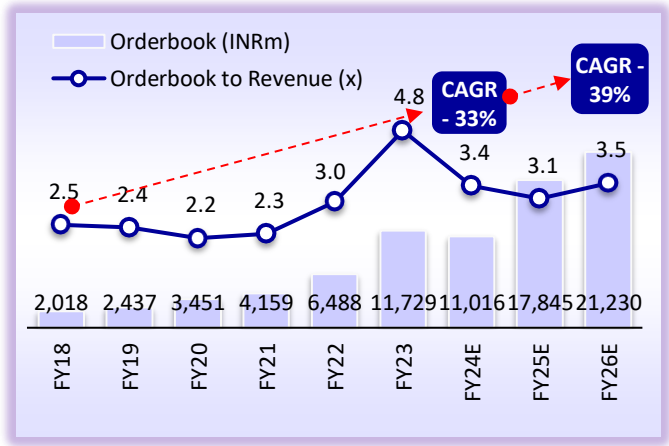
…with Defense revenue recording a CAGR of 17%



New segment revenue CAGR at 32% over FY24-26E



Order inflows to accelerate with healthy traction across all the business segments



Company overview

Established in 1970, MTARTECH is in the business of manufacturing various precision machine equipment, power units, assemblies, sub-assemblies, and spare parts for energy, nuclear, space, aerospace, defense and other engineering industries. The company has seven manufacturing units including an Export Oriented Unit (EOU) in Hyderabad, Telangana. All Plants located in proximity to major defense organizations.

Exhibit 1: Business Overview

Business Division	Nuclear	Clean	Space	Defense	Products & Others
FY24E Revenue (INR m)	591	3,622	459	219	1,185
FY24E Mix %	10	60	8	4	20
Revenue CAGR FY18-24 (%)	4	29	17	19	64
Revenue CAGR FY24E-26E (%)	22	35	94	17	32
Products	❖ Fuel machining head, ❖ Bridge and column, ❖ Grid plate, ❖ Sealing plug, ❖ Shielding plug, ❖ Liner tubes and end fittings, ❖ Drive Mechanisms, ❖ Top hatch cover beams and deck plate assembly, ❖ CHAS	❖ Manufactures power units (hot boxes) of hydrogen boxes and electrolysers. ❖ It also fabricates specialized components for the hydel power sector	❖ Actuator assembly components, ❖ Components for LCA, Valves, ❖ Electro-pneumatic modules, ❖ Liquid propulsion engines, ❖ Cryogenic engines (turbo pumps, booster pumps, gas generators and injector heads for such engines)	❖ Base shroud assembly and air frames, ❖ Various missile parts such as magnesium gear boxes, and aero structures	❖ Ball screws ❖ Water lubricated bearings
Application	Used in Nuclear Reactors	Acts as a reactor for fuel cells. Electrolysers generate green hydrogen through the electrolysis of steam. Green hydrogen could be used in fuel cells to generate electricity	Used in space launch vehicles - PSLV and GSLV for various space missions such as Chandrayaan-II and Mangalyaan	Used in missiles and aircrafts	Import substitutes used in various assemblies such as actuators etc. in space launch vehicles, missiles etc.
Major Clients	DAE, BARC, NPCIL, IGCAR	Bloom Energy, Voith Hydro, GE Energy, Andtriz, Hitachi, Fluence Energy	ISRO, Vikram Sarabhai Space Centre, SAE, LPSC	DRDO, HAL, BDL, Rafael, GE, Tata, Elbit Systems	
Key Market	India	US and South Korea	India	India and Israel	India
Growth Drivers and Opportunity Size	India Plans to commission 20 nuclear power plants by 2031 to add ~15,000MW. Of the total investment, ~22% (~INR560b) would be for the equipment market and ~8% (~INR210) for constructing reactors.	BE has recently received order of USD4.5b from SK group in South Korea for Methane based fuel cells for ~500MW. The opportunity in South Korea is for 15,000MW. BE is also looking to enter into Europe. MTARTECH is continuously expanding its portfolio offerings with BE.	The global space market opportunity amounts to USD360b. ISRO intends to commercialize the Indian space sector and offer its products and services to other countries. Over the next five years, the private sector will receive the mandate for ~70% of all the upcoming space missions.	India plans to spend USD130b on military modernization over the next 7-8 years while reducing import dependency. Indigenization of 50% of the requirement. Increase FDI to 74% from 49%	Import substitute. Manufactures at 1/3rd of the import cost

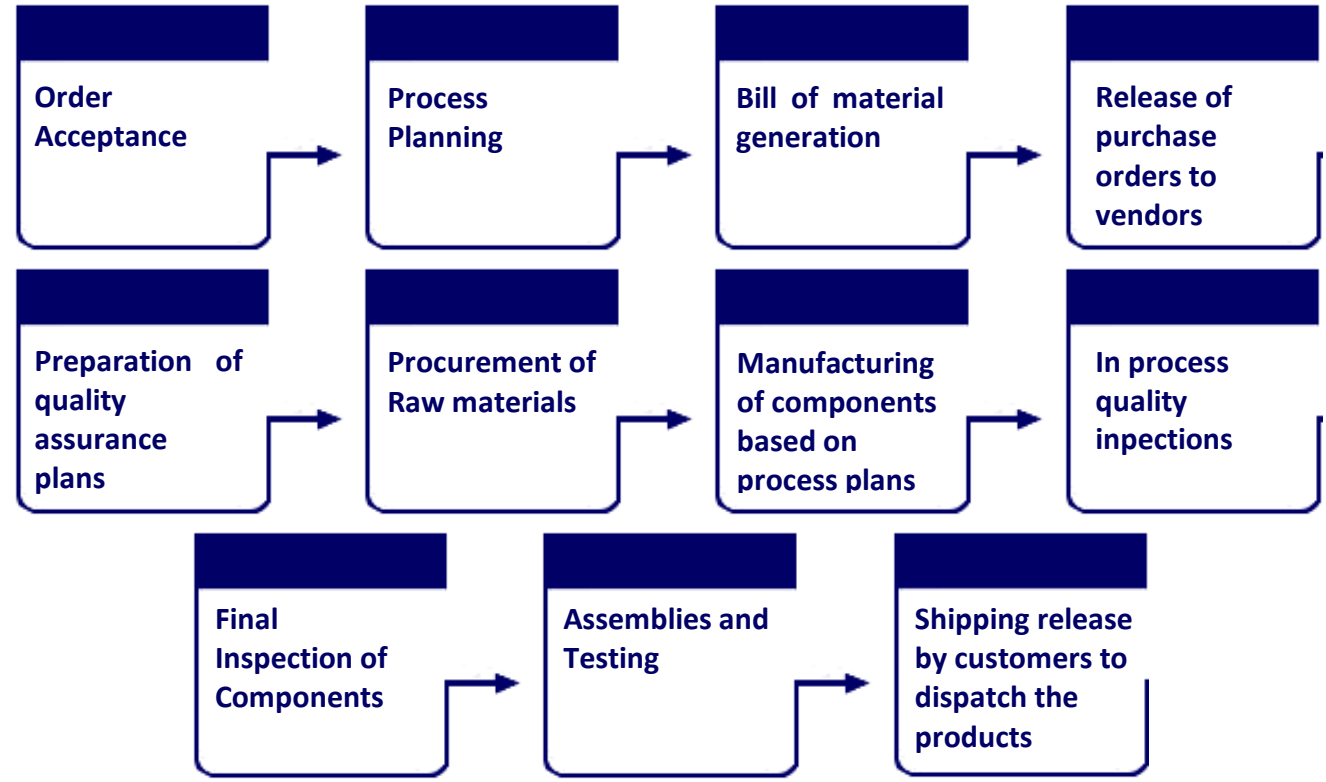
Source: Company, MOFSL

Exhibit 2: Manufacturing capabilities to support strong order inflow

Plant	Products Manufactured	End use Sector
Unit -1	❖ Manufacturing of complex nuclear assemblies such as fuelling machine head, thimble package, top hatch beam, bridge and column and defence equipment, among others	Clean Energy - Civil Nuclear Power, Defence and Space
Unit -2	❖ Liquid propulsion engines such as Vikas engine, Cryogenic engines, Semi Cryo engine, electro pneumatic modules for use in Polar Satellite Launch vehicle (PSLV) and Geosynchronous Satellite Launch Vehicle (GSLV) and satellite valves	Space
Unit -3	❖ High Volume nuclear assemblies, including coolant channel assemblies, products such as Ball Screws, Water Lubricated Bearings, Roller Screws and other nuclear site orders	Clean Energy - Civil Nuclear Power, Defence and Space
Export Oriented Unit (EOU)	❖ SOFC & Hydrogen units, electrolysers, ASP assemblies for Clean Energy, high precision equipment to Aerospace MNCs	Clean Energy - Fuel Cells & MNC Aerospace
Unit -4	❖ This is a supporting unit and undertakes rough machining	-
Unit -5	❖ This is a supporting unit and undertakes surface and heat treatment	-
Unit -6: Adibatla (new plant)	❖ Sheet metal components and enclosures for Clean Energy - Fuel cells; critical structures for Clean Energy - Hydel & Waste to Energy sectors	Clean Energy - Fuel Cells, Hydel and others

Note – all units are located in Hyderabad, Telangana Source: Company, MOFSL

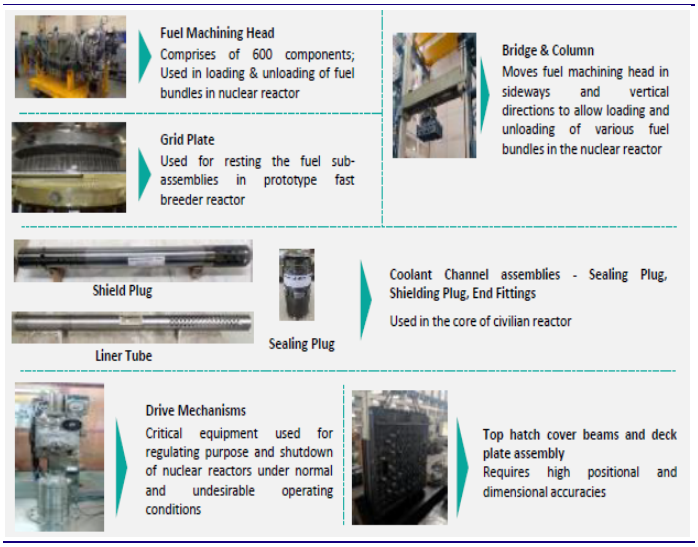
Exhibit 3: Product manufacturing cycle



Source: Company, MOFSL

Product description

Exhibit 4: Nuclear Sector

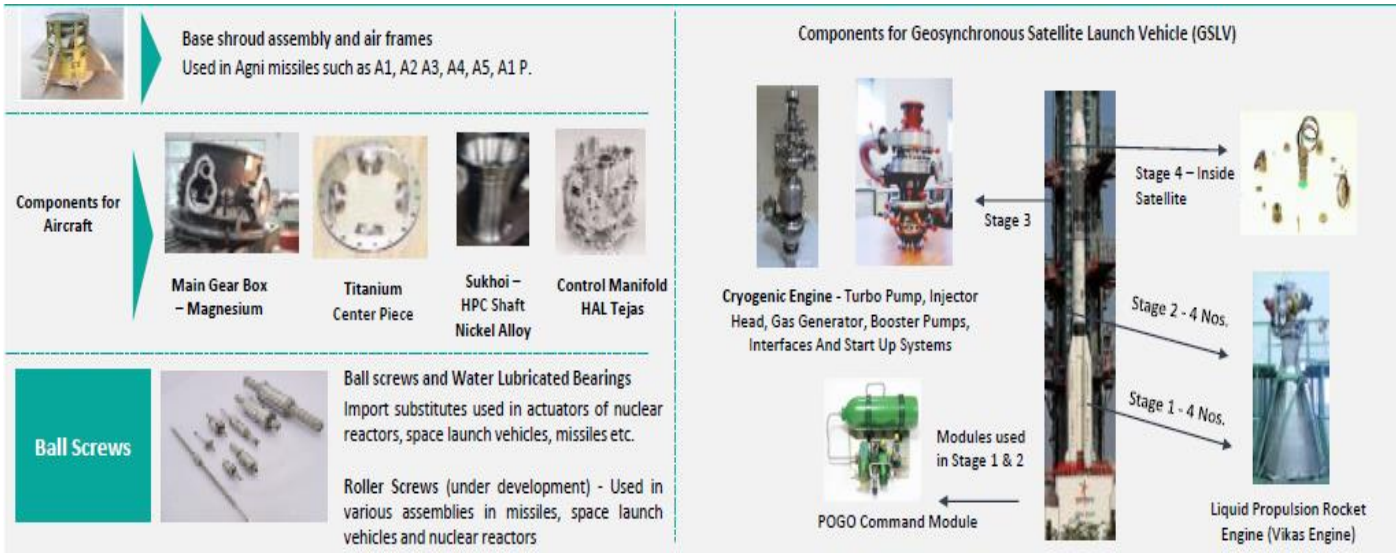


Source: Company, MOFSL

Exhibit 5: Fuel Cell – SOFC and Hydrogen units

Source: Company, MOFSL

Exhibit 6: Space and Defense Sector



Source: Company, MOFSL

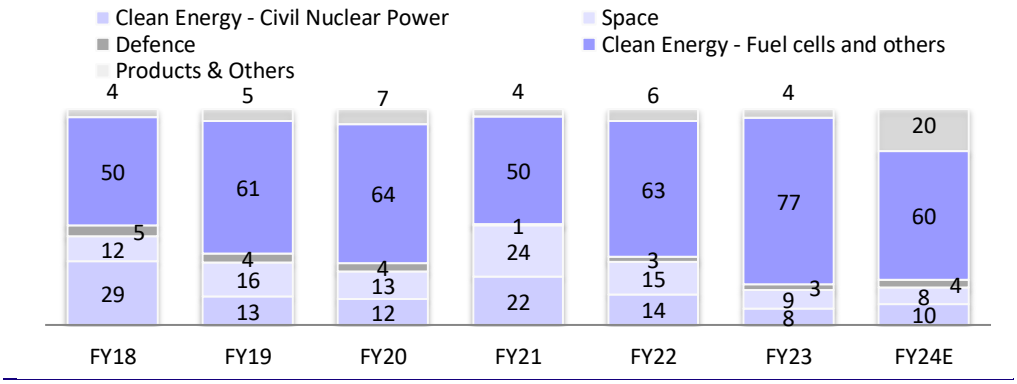
Firing on all cylinders

Order book and revenue to witness healthy growth over FY24-26E

- **Over the years, MTARTECH has established itself as a key supplier of precision engineered systems to large global MNCs, government departments, and large Indian public and private sector enterprises.**
- **MTARTECH's business segments are poised to report strong order inflows (at 39% CAGR during FY24E-26E) aided by emerging global demand (fuel cells) and accelerated government initiatives (in nuclear, space and defense).**
- **Clean Energy – the fuel cells segment is likely to continue its dominance in the order book/revenue, with its contribution expected to be ~50%/57% by FY26 from 55%/60% in FY24.**
- **The nuclear, space and defense sectors are also expected to witness a significant ramp-up in order flows thanks to the government's increasing focus on indigenization.**
- **Further, import substitution will emerge as a new growth engine for the company, with the development of critical parts for the existing business segments.**

- MTARTECH is engaged in the manufacturing and assembly of critical precision components with close tolerances of 5-10 microns through its competencies in precision machining, assembly, testing, quality control, and specialized fabrication.
- MTARTECH caters to end-use segments such as clean energy (fuel cell), nuclear, space, defense and aerospace. The fuel cell is the largest segment with 77% revenue share in FY23 up from 50% in FY18 followed by Space (9%), Nuclear Power (8%), Products & Others (4%) and Defense (3%).

Exhibit 7: Fuel Cells segment dominates the segment revenue mix (%)



Source: Company, MOFSL

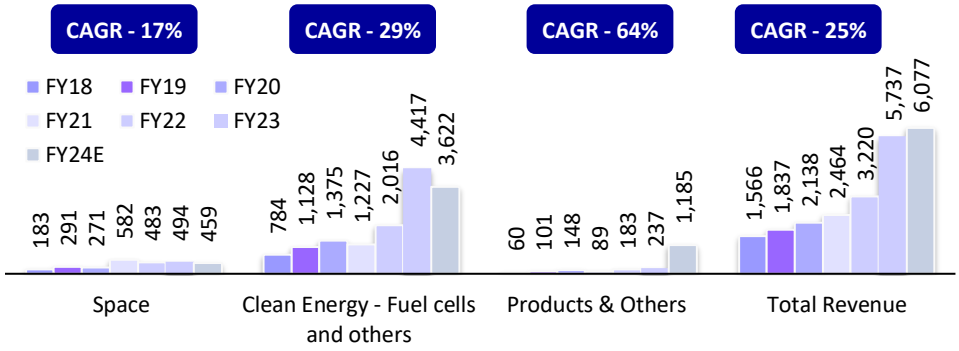
- Even though fuel cell dominates the segment mix, the company has been a key supplier of precision engineered systems in other segments such as space, defense and nuclear to reputed organizations such as ISRO, DRDO and NCPIL, among others.
- MTARTECH's major product portfolio includes three kinds of products in the clean energy sector, 14 kinds of products in the nuclear sector, and six kinds of products in the space and defense sectors.
- As these products require high positional and dimensional accuracy, the expertise in manufacturing these products has not only been acquired by the

company over a period of time, but has also, in the process, created entry barriers for other players.

Robust growth journey so far with more acceleration visible in near term

- The company has registered a strong revenue CAGR of 25% over FY18-24E (despite the pandemic), aided by healthy 33% order book growth during the same period.
- Clean Energy (fuel cells)/space/products segments led the growth with a revenue CAGR of 29%/17%/64% during FY18-24. However, going forward, the nuclear and defense segments are also expected to report a strong order book pipeline.

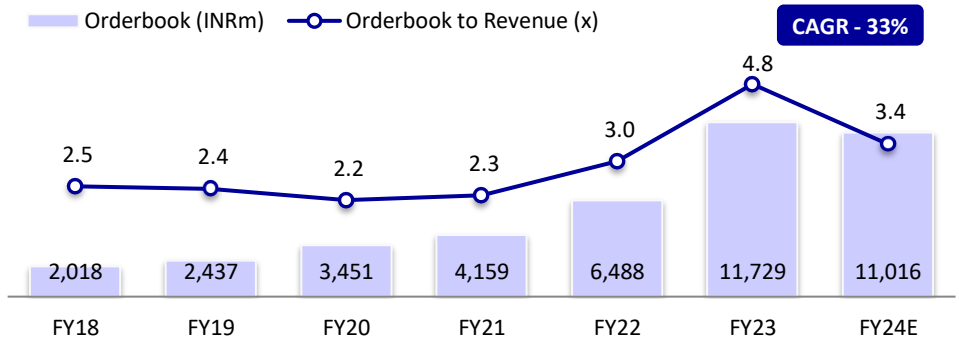
Exhibit 8: Fuel Cells, Space & Product segments led the revenue growth until now (INR m)



Source: Company, MOFSL

- MTARTECH registered a strong order book CAGR of 33% over FY18-24E, aided by the expansion of its product portfolio and strong demand from end-use segments.

Exhibit 9: Order book witnessed 33% CAGR over FY18-24E

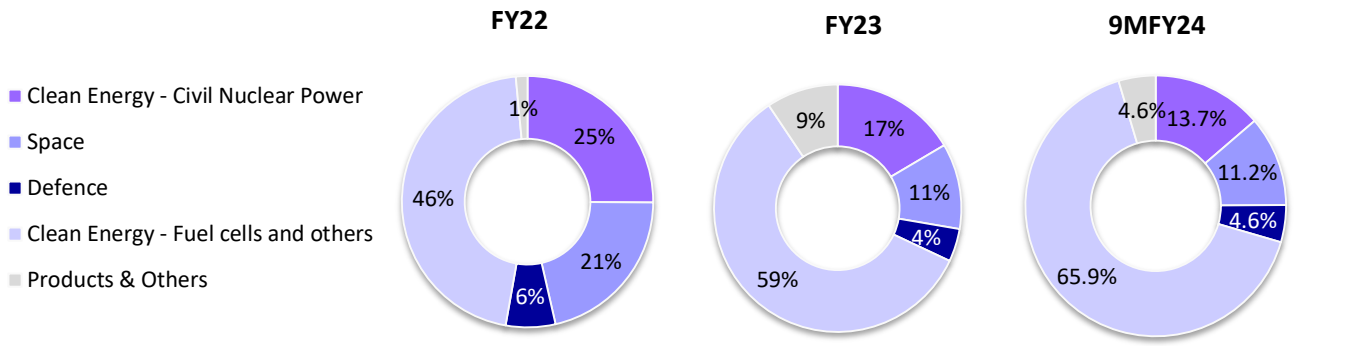


Source: Company, MOFSL

- The Fuel cells division drove the majority of growth in the order book, to INR6.9b in FY23 from INR3.0b in FY22. The order book further grew to INR7.8b in 9MFY24, flat vs. 9MFY23, because of the deferment of an order for hot boxes due to design changes by clients.
- The order book mix of fuel cells also improved from 46% in FY22 to 59% in FY23 and to ~66% in 9MFY24. As of 9MFY24, the company had an order book of INR11.8b. Fuel cells contributed the most to the order book at 66%, followed by

Nuclear Power (14%), Space (11%), Products and others (4.6%) and Defense (4.6%).

Exhibit 10: Change in order book mix in 9MFY24



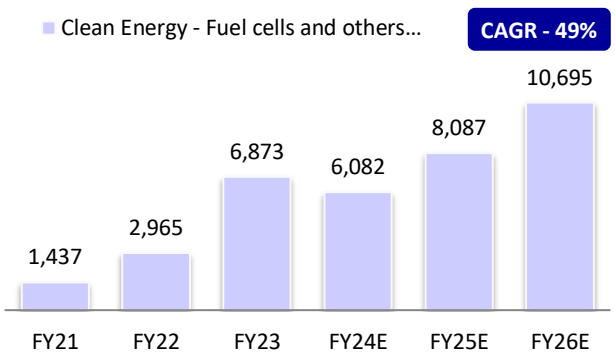
Source: Company, MOFSL

- We expect an increase in the pace of order inflows across the segments, led by factors such as an increase in wallet share of the company with BE, new client additions, a rise in the number of space vehicle launches by ISRO, the government's aim to build more nuclear reactors by 2030, and the import substitution opportunity.

Increase in content per fuel cell for BE

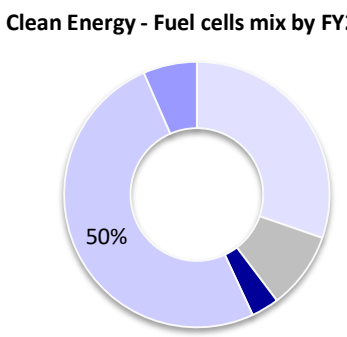
- Currently, MTARTECH supplies Yuma hot boxes (largest supplier) to BE for their SOFC fuel cells. The company has also supplied an initial batch of Keeylocko hot boxes (40% more efficient than Yuma) to BE. However, due to certain design changes, BE has halted the orders and production of Keeylocko, which impacted MTARTECH's revenue in 9MFY24.
- BE has introduced an advanced version of Yuma hot boxes in FY24 named "Santa Cruz," which generates 65kw of energy vs. 50kw from Yuma. Also, the realization of Santa Cruz is ~USD800 higher than that of Yuma hot boxes. BE has shifted entirely to Santa Cruz from Yuma boxes in 2QFY24.
- In FY23, MTARTECH delivered 4,545 Yuma boxes, and the company is expected to sell ~3,500 units of hot boxes (majorly Santa Cruz) in FY25. In FY23, the company supplied 138 units of electrolysers and is expected to sell more units in FY25.
- MTARTECH has also completed the qualification process for anode splitter plate (ASP) assemblies and delivered INR75m of orders in 4QFY23. It has also commenced the development of heaters and ceramic assemblies.
- Further, MTARTECH recently started to supply sheet metal and enclosure requirements to BE from its newly commissioned (Sep'22) specialized fabrication facility in Adibatla, Hyderabad.
- The company's long-term vision is to carry out full integration for BE and ship fuel cells directly to other countries from its facilities.

Exhibit 11: Strong order inflows…



Source: Company, MOFSL

Exhibit 12: …to maintain higher order book share by FY26E

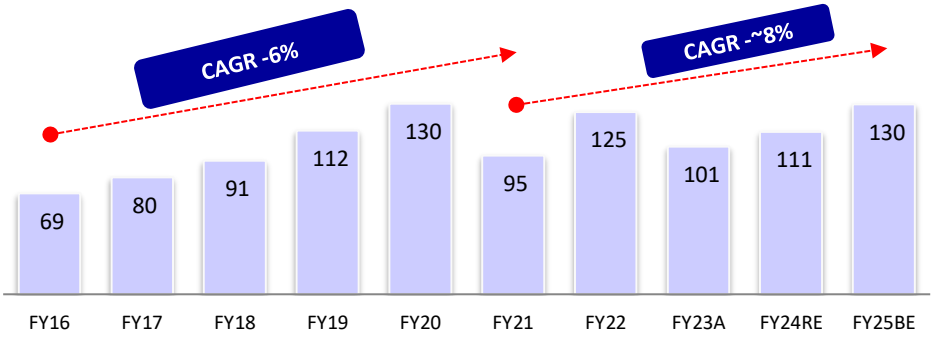


Source: Company, MOFSL

Increase in the number of space satellite launches by ISRO over the next few years

- In 9MFY24, 6%/11% of revenue/order book mix came from the space segment, which witnessed a 17% revenue CAGR over FY18-24E.
- Since its inception, the Indian Space Research Organization (ISRO) has conducted a total of 125 spacecraft missions and 92 launch missions. MTARTECH has been a key supplier of liquid propulsion engines, cryogenic engines and electro-pneumatic modules to ISRO for these missions.
- ISRO has planned to launch 31 satellite missions in FY21 and FY22 that got hit by the onset of Covid; ISRO could only launch two/five/six missions in FY21/FY22/FY23. ISRO is expected to accelerate its launches from FY24 to 21-30 missions over FY24 and FY25.
- The budget estimate for the Department of Space is forecasted at INR130b by FY25 from INR125b in FY22, taking into account the above-planned missions.

Exhibit 13: Space sector's budget trend (INR b)



Note: BE – Budget Estimate; RE- Revised Estimate; E - Estimate
Source: India Budget, Crisil, MOFSL

- Further, according to CRISIL research, the Indian satellite manufacturing and launch systems market is estimated to reach INR46-48b by FY25, recording a CAGR of 7-8% over FY21-25.

Exhibit 14: Indian space equipment market CAGR by type…

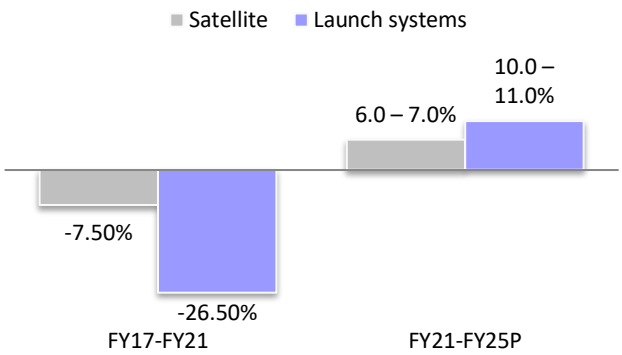
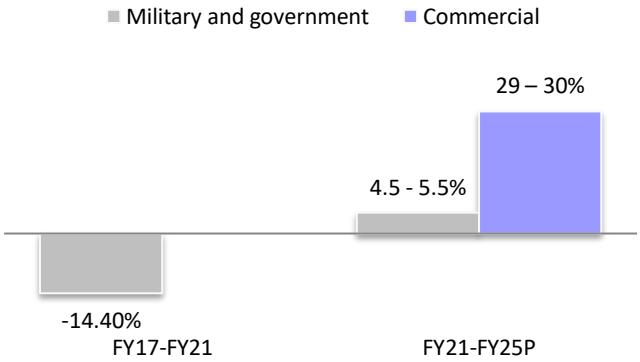


Exhibit 15: …and by application

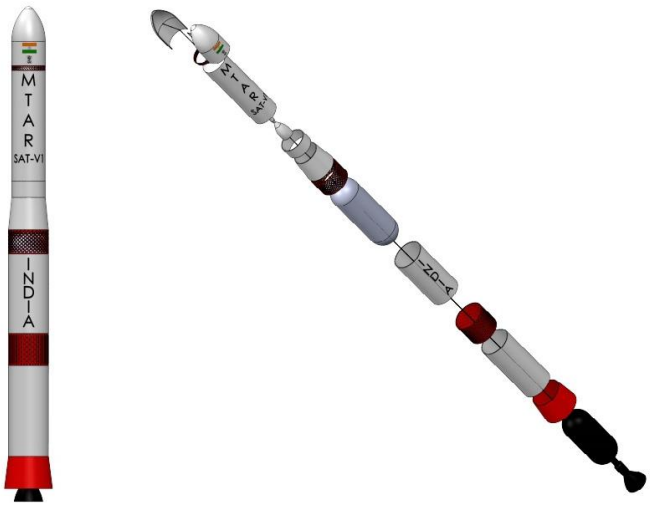


Source: ISRO, CRISIL, MOFSL

IN-SPACe has been established to assume the role of a facilitator and regulator. It will liaison between private players and ISRO to ensure optimum use of the space agency's infrastructure, scientific, and technical resources and data on space missions.

- Since inception, ISRO has been the only player in the end-to-end procurement and assembly of launch vehicles and satellites in India's space program. However, with the increasing demand for satellite applications, ISRO intends to commercialize the Indian space sector. ISRO has set up a new commercial arm, NewSpace India, in CY19 to outsource the production of five PSLVs to the consortium of HAL-L&T and upon successful execution of this, the arm will further roll out the production of 12 more PSLVs.
- MTARTECH has also signed an MOU with Indian National Space Promotion and Authorization Centre (IN-SPACe) India for design and development of a two-stage low earth orbit all liquid small satellite launch vehicle (SSLV) – GARUDA 1 powered by semi-cryogenic technology with a payload capacity of 500kg. SSLV (expected to complete in the next two to three years) is expected to generate a strong order pipeline for the supply of engines and other components used in similar launch vehicles.
- MTARTECH seeks to develop 100-ton and 10-ton all-liquid engines in-house and intends to take the support of IN-SPACe for the procurement and marketing of Avionics.

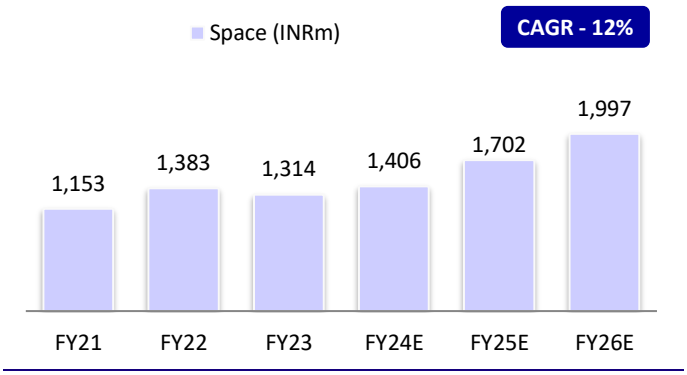
Exhibit 16: Low Earth Orbit Small Satellite Launch Vehicle



Source: Company, MOFSL

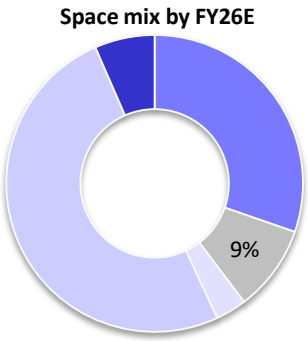
- From the above visible demand opportunities, we expect an increase in order inflow for the company over the next few years.

Exhibit 17: Order book CAGR of 12% over FY21-26…



Source: Company, MOFSL

Exhibit 18: …leading to order book share of 9% by FY26E

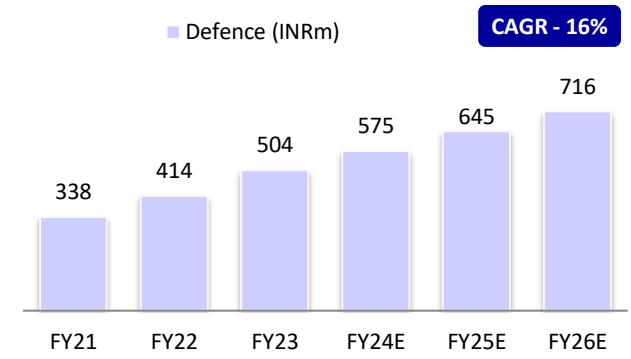


Source: Company, MOFSL

Defense JV with international player on cards

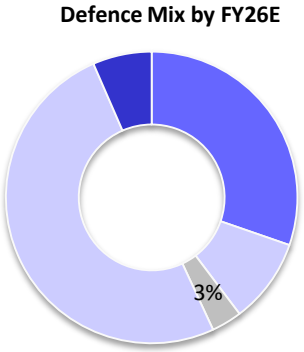
- The revenue contribution of MTARTECH's defense segment is marginal (3% in FY23). Growth in this business was flat over FY18-22 (1% CAGR over FY18-22). However, it witnessed a strong growth of 86% in FY23 on the back of a ramp-up of roller screws and electro-mechanical actuators.
- The company follows a job work model for defense, with all the raw material and design being supplied by government defense bodies such as DRDO and BDL, and international players, such as Rafael.
- We expect the share of defense in the consolidated revenue to remain at ~3% by FY26, with a revenue CAGR of 17% over FY24-26. Higher revenue growth is driven by an increase in order flows from its existing customers.
- The government aims to increase its self-reliance in the defense sector; this will boost local manufacturing by PSUs and joint ventures, and increase private participation.
- For the same, the government has released an order to mandatorily use 50% indigenous content in defense products. Also, in order to attract global players, the foreign direct investment (FDI) limit in the Indian defense sector was increased to 74% from 49% under the automatic route.
- The Indian government's funding for the next five to seven years is expected to be USD130b for defense procurement, and the government is looking to achieve a revenue target of USD25b in terms of the country's defense manufacturing.
- The company obtained a defense industrial license in FY24 for the production of various mechanical and electronic subsystems in the defense sector. This enables MTARTECH to be a manufacturing partner for foreign MNCs that are looking to cater to the Indian defense industry. For this, MTARTECH is also actively looking to enter into defense offset partnerships with certain global OEMs and has incorporated a subsidiary named Magnatar Aero Systems in this regard.
- We expect the JV to aid the company in scaling up its defense business by playing on the 'Make in India' theme for large defense projects.
- We have not yet incorporated the potential revenue/profits from this JV to our estimates.

Exhibit 19: Order book CAGR of 16% over FY21-26…



Source: Company, MOFSL

Exhibit 20: …while order book share to drop to 3% by FY26E



Source: Company, MOFSL

Government's push to build more nuclear reactors by CY31

- Clean energy – the nuclear segment accounted for ~8%/17% of revenue/order book in FY23. The segment's revenue growth remained flat at INR438 in FY23 vs. INR461m in FY18. However, in 9MFY24, it increased by 2.3x YoY to INR404m, i.e., ~92% of FY23 revenue.
- MTARTECH manufactures and supplies specialized products, such as fuel machining head, drive mechanisms, bridge and column and coolant channel assemblies, ball screws and water-lubricated bearings, among other critical products under the nuclear segment. (Refer Annexure)
- India currently operates 22 nuclear reactors with an installed capacity of 6.8 GWe. Additional eight reactors, with a combined capacity of ~6 GWe, are under construction.
- As part of its massive infrastructure scale-up program, the Government of India (GoI) has sanctioned the manufacturing of 10 pressurized heavy water reactors (PHWR) in fleet mode (10 x 0.7 GWe) with a combined generation capacity of 7.0 GWe.
- NPCIL has started floating tenders for fleet reactors (14 reactors), which could translate into order inflows for the company in the coming quarters. GOI aims to increase the nuclear capacity to 22.4 GWe by CY31.

Exhibit 21: Increase in nuclear capacity in India (GWe)

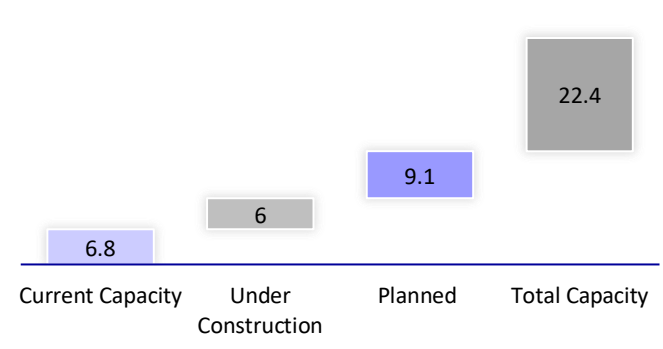
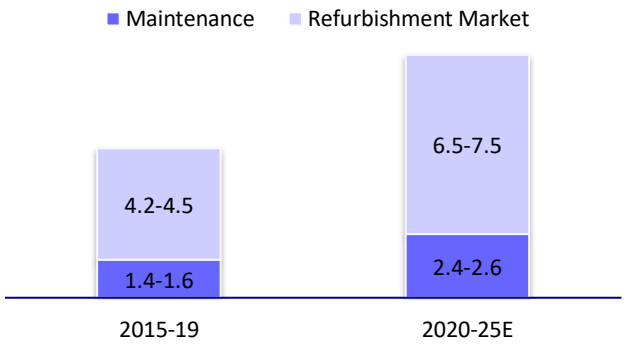


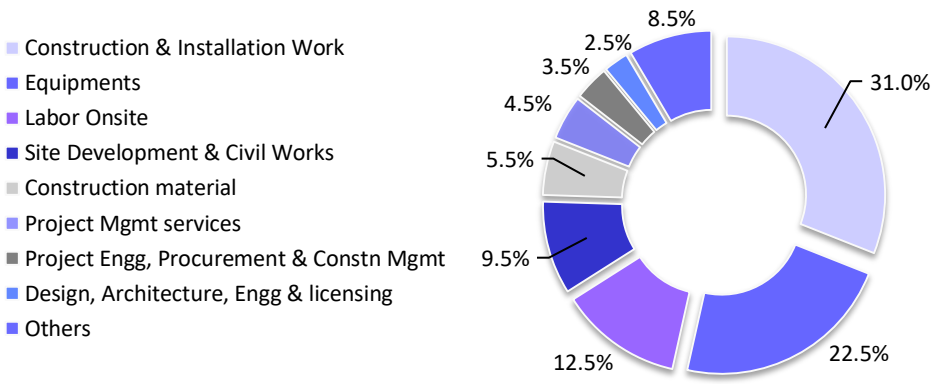
Exhibit 22: Upcoming capacity for refurbishment (GWe)



Source: NPCIL, World Nuclear Association, CRISIL Research, MOFSL

- The total investment for building these reactors would be INR1,760-1,800b. Of this, INR350-435b would be the equipment market. MTARTECH has approximately 20-25% equipment share in each nuclear reactor.

Exhibit 23: Reactor Capital Cost breakup



Source: Company, MOFSL

- Equipment costs form a significant part of total costs. The Equipment cost in one reactor is ~INR22-28b.

Exhibit 24: Huge opportunity coming in from new-build market

New-build market (INR b)	Overall capital cost	Equipment cost
Operational reactors	110-120	22-28
Under-construction reactors	680-720	130-170
Planned expansion (medium to long term)	1,760-1,800	350-435

Source: NPCIL, World Nuclear Association, CRISIL Research, MOFSL

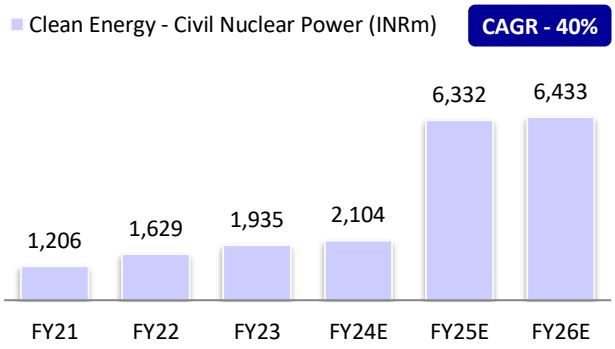
Exhibit 25: Reactors under construction and new reactors planned

Particulars	Construction start	State	Type	Gross capacity (Gwe)
Under-construction reactors				
PFBR	2004	Tamil Nadu	FBR	0.5
Kakrapar 4	2010	Gujarat	PHWR	0.7
Rajasthan 7 & 8	2011	Rajasthan	PHWR	0.7*2
Kudankulam 3 & 4	2017	Tamil Nadu	PHWR	1*2
Gorakhpur 1, & 2	2018	Haryana	PHWR	0.7*2
Total				**6.0**
New reactors planned				
Gorakhpur 3 & 4		Tamil Nadu	FBR	0.7 * 2
Chutka 1 & 2		Gujarat	PHWR	0.7 * 2
Mahi Banswara - 1, 2, 3 & 4		Rajasthan	PHWR	0.7 * 4
Kaiga 5&6		Tamil Nadu	PHWR	0.7 * 2
Kudankulam - 5 & 6		Haryana	PHWR	1.0 * 2
Total				**9.1**

Source: NPCIL, World Nuclear Association, CRISIL Research, MOFSL

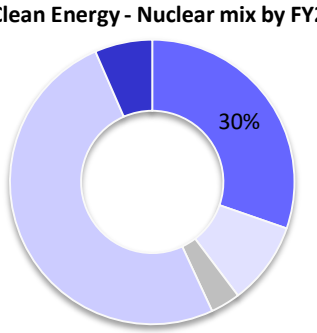
- The company expects ~INR5b worth of orders flowing in for the Kaiga 5 and 6 reactors in 1QFY25
- Also, the aftermarket provides a good revenue opportunity in the form of maintenance and refurbishment as the majority of India's installed reactor base hits the critical 20-year life span in the coming years. The market was valued at INR5.5-6b during FY15-19 and is estimated to be INR9-10b over FY20-25.
- As of CY19, nuclear power plants with 2.6 GWe capacity were in the refurbishment stage. This is expected to rise to 3.5-4.0 GWe by 2025. MTARTECH supplies 14 different equipment to the nuclear sector, translating into an addressable market opportunity size of INR7-8b per reactor. The total addressable **market opportunity for MTARTECH stands at ~INR70-80b** as it caters to ~20-25% of the equipment portion of the overall order of 700MWe PHWR nuclear plant.

Exhibit 26: Strong order inflow…



Source: Company, MOFSL

Exhibit 27: ...to increase order book share by FY26E



Source: Company, MOFSL

New product launches to substitute imports

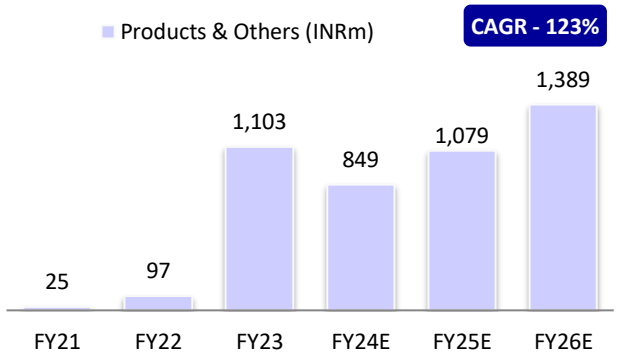
- The product and other segment currently accounts for only 4%/9% share in revenue/order book in FY23. However, it witnessed exponential growth in 9MFY24, up 5.7x YoY to INR866m (3.7x of FY23 revenue), accounting for 20% of total revenue in 9MFY24.
- Lately, the Ministry of Defence (MoD) announced 101 major pieces of defense equipment that the MoD will no longer clear for import. Instead, these 101 items will be incrementally procured from indigenous sources as per the provisions of Defence Acquisition Procedure (DAP) 2020.
- In this regard, the company has recently developed a few products such ball screws and water-lubricated bearings, which find various applications in Clean Energy - civil nuclear power, and space & defense sectors, and were earlier imported into India. This opens up an entire import market for the company.
- The company is further developing products such as Roller screws, Electro-mechanical actuators, Valves, ASP assemblies, and bellows for fuel cells, and heaters for electrolysers. These products are developed to capture the import market.
- We expect a strong revenue growth in this segment on the back of higher order inflow, thereby taking the revenue mix to 18% by FY26E.

Exhibit 28: Other key products under development

Segment	Product	Comment
Defence	Valves	❖ Started design work
Space	Semicryo Engines	❖ Started development process. First engine is expected to be rolled out by FY24
	SSLV	❖ Received in-principle approval for concept design and development
Clean Energy	Bellows	❖ Received qualification and commenced production
	ASP Assemblies	❖ Received qualification and manufactured prototypes; production to commence from 3QFY23
	Ceramic Assemblies (import substitute)	❖ Initiated development process
	Heaters	❖ Initiated development process
	Dielectrics	❖ Commenced discussion to develop dielectrics by end of FY 24
	Manifolds	❖ Qualification process on going

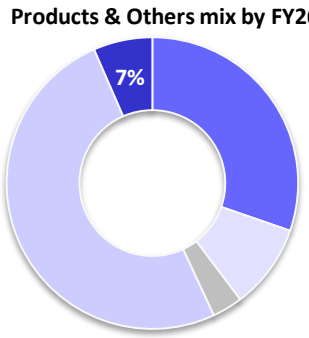
Source: Company, MOFSL

Exhibit 29: New product launches to boost order book…



Source: Company, MOFSL

Exhibit 30: …sustaining order book mix at 7% by FY26E



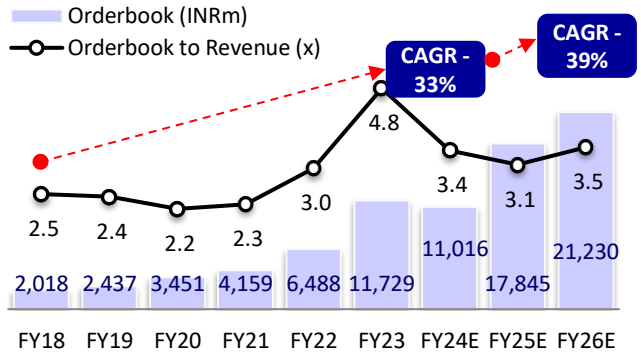
Source: Company, MOFSL

MTARTECH forays into new revenue-generating endeavors

- MTARTECH has started catering to customers in hydel and waste energy sectors under the clean energy segment. It has added customers such as Voith, Andritz, and Hitachi Zosen through its new specialized fabrication facility at Adibatla.
- Further, MTARTECH has also received in-principle approval from its Board to establish a dedicated electronics manufacturing vertical. The company shall be investing in a phased manner to establish a full-fledged Electronic Manufacturing Systems (EMS) facility.
- EMS is an emerging sector in India with 'Make in India' theme for the electronics industry. Global players looking to de-risk from China are looking for an alternative manufacturing hub. And the Indian government is focused on making India the global electronics manufacturing hub. **Please refer to our EMS IC note**
- MTARTECH's entry into the growing sector is encouraging, thereby adding to its existing high growth business segments.

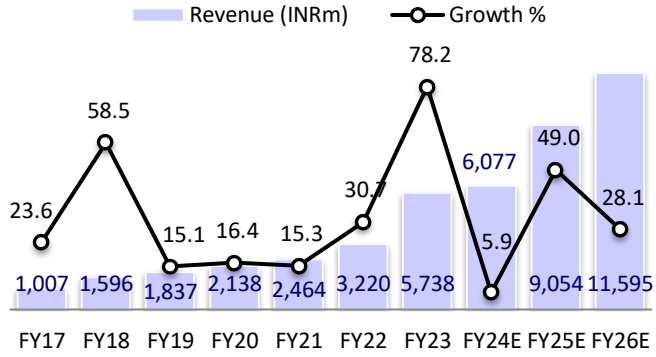
With strong order book visibility across all the segments, along with entry into emerging businesses, the company is on a strong footing to register a revenue CAGR of 38% over FY24-26.

Exhibit 31: Exponential increase in order book…



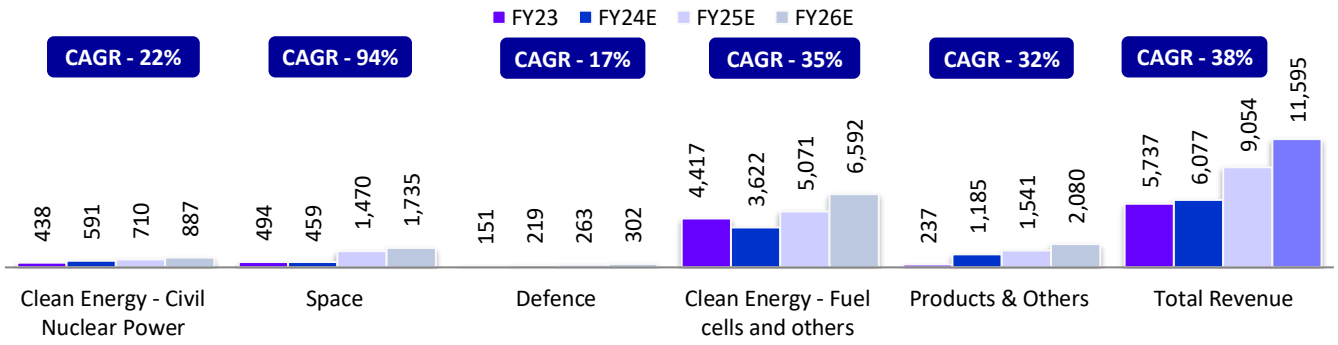
Source: MOFSL, Company

Exhibit 32: …to drive higher revenue growth



Source: MOFSL, Company

Exhibit 33: Strong revenue CAGR expected across each of the business segments over FY24-26E



Source: Company, MOFSL

Clean Energy – growth catalyst

Fuel Cells - Emerging alternative source of energy

- **Revenue growth from the Fuel Cell segment is expected to pick up pace in the coming years with strong demand from existing geographies and potential entry into new geographies.**
- **BE is the largest player in the SOFC segment and targets to register a revenue CAGR of 30-35% over CY20-30E. MTARTECH is deriving majority of the revenue (over 75% in FY23) from BE to benefit the most.**
- **MTARTECH to capitalize on BE's strong growth by increasing its wallet share with additional offerings such as sheet metal fabrication and enclosure. Further, the company aims to integrate the entire fuel cell and supply it to BE's customers globally.**

- With increasing awareness of climate change, the concept of clean energy (with minimal/virtually zero emission of air pollutants) has gained traction. Renewable clean energy, including solar, wind, hydro, waste-to-energy, and tidal, are in the middle of transition to a less carbon-intensive and more sustainable energy system. But under renewable sources, the bulk of the energy production is centralized.
- However, one such source of clean energy is fuel cells, which can produce electricity through distributed generation (located where it is required the most) with uninterrupted power supply in areas such as data centers, servers, hospitals, and cellular towers.
- Fuel cells generate power through chemical energy of hydrogen or another fuel rather than combustion. Fuel cells are deployed across stationary and portable applications mentioned in Exhibit 34.

Exhibit 34: Fuel cell applications

Stationary	Portable
Primary Power Source	Laptops
Power back-up	Cellular phones
Transportation charging stations for:	Power tools
Automobiles	Military equipment
Buses	Battery chargers
Utility vehicles	Unattended sensors
Scooters & bicycles	Unmanned aerial and underwater vehicles

Source: Company, MOFSL

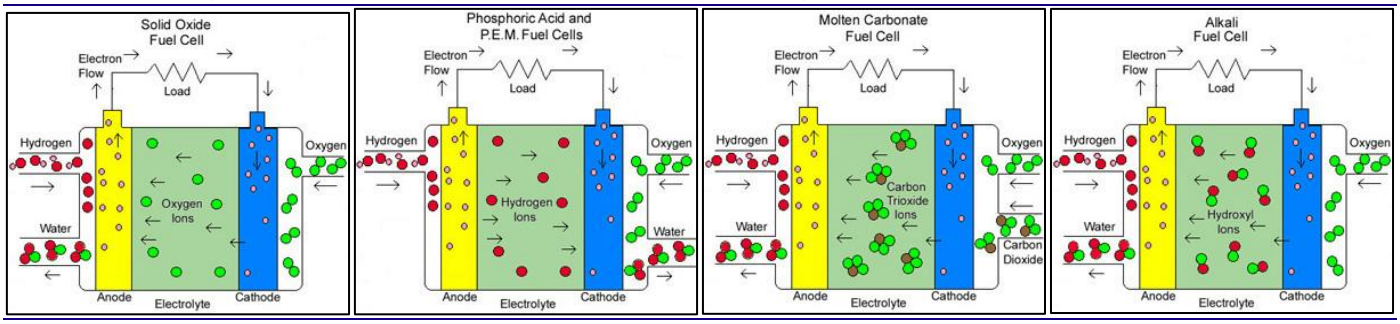
Exhibit 35: Indian Fuel cell opportunity size

Parameter	2019	2025P	Growth
Fuel industry size (INR b)	2.8	5.2-5.5	1.9x
Fuel industry installations	1.1 GW	5.0+ GW	4.5x

Source: CRISIL, MOFSL

- There are multiple technologies under fuel cells, which are differentiated based on the chemical composition of the electrolytes such as PEMFC (polymer electrolyte membrane fuels), AFC (alkaline fuel cell), direct methanol fuel cell (DMFC), PAFC (phosphoric acid fuel cell), MCFC (Molten carbonate fuel cell), and SOFC (solid oxide fuel cells). MTARTECH supplies hot boxes to BE, the largest global manufacturer of SOFC.

Exhibit 36: Power generation chemical process across Fuel Cell technologies



Source: Smithsonian Institution

SOFC vs. PEMFC

- There are multiple technologies under fuel cells, and two of them are widely used - SOFC and PEMFC.

Key distinction between SOFC and PEMFC

SOFC

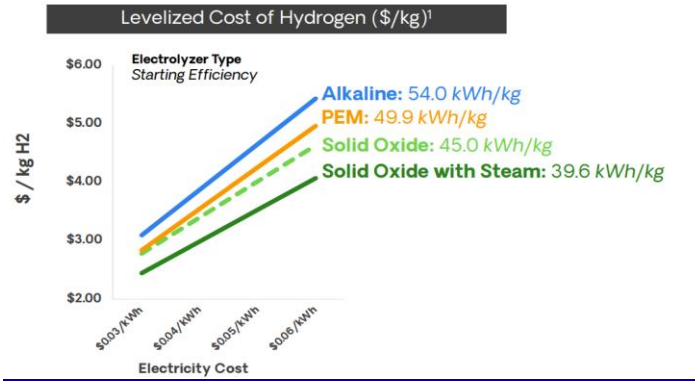
- SOFC is less sensitive to impurities and can utilize other fuels such as methane, diesel, and methanol.
- SOFC is the cheapest when run on methane (in terms of USD/kWhe).
- SOFC has a higher average lifetime.
- SOFC can be combined with a natural gas turbine and, in that way, further increase its electrical efficiency.
- Due to its high working temperature, SOFC can further increase its efficiency by utilizing heat recovery.
- SOFC is the only technology of the two that releases harmful emissions, e.g., CO2, nitrogen oxides (NOx), sulphur oxides (SOx), and particulate matter (PM) during operation.

PEMFC

- The average price/kw for PEMFC is half that of SOFC.
- PEMFC is more compact than SOFC and has higher energy density.
- PEMFC has the highest electrical efficiency.
- Currently, PEMFC is mainly used in transportation, followed by small scale residential units. Over 90% of PEMFC systems deployed globally are for the transport sector.
- PEMFC contributes to almost 80% of fuel cell deployment currently.

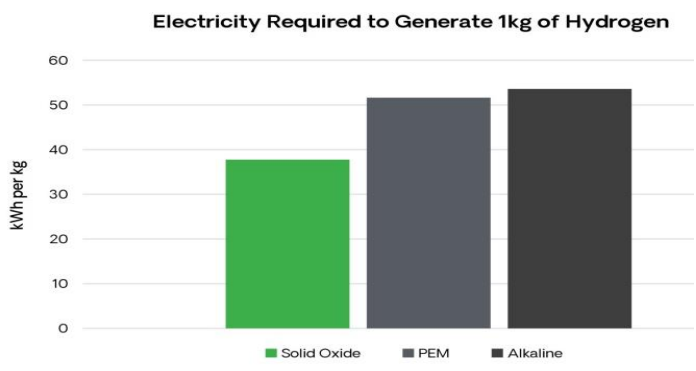
Source: MOFSL

Exhibit 37: SOFC offers the lowest cost hydrogen and…



Source: Bloom Energy, MOFSL

Exhibit 38: …uses the lowest amount of electricity to produce hydrogen



Source: Bloom Energy, MOFSL

Exhibit 39: Key features of all Fuel Cell technologies

Fuel cell type	PEMFC	AFC	DMFC	PAFC	MCFC	SOFC
Operating temperature	<120°C	90-120°C	30-130 °C	150–200°C	600–700°C	500–1,000°C
Typical stack size	1–100 kW	1–100 kW	25-5 kW	5–400 kW, 100 kW module (liquid PAFC) <10 kW (polymer membrane)	300 kW –3 MW, 300 kW module	1 kW – 2 MW
Electrical efficiency (%)	60% direct hydrogen fuel, 40% reformed fuel	60%	40%	40%	50%	60%
Major players	Ballard	AFC Energy	SFC Energy	Doosan Corporation	Fuel Cell Energy	Bloom Energy
Application Type	Portable, Stationary and Transport	Stationary	Portable and Transport	Stationary	Stationary	Portable, Stationary and Transport
Applications	Backup power, Portable power, Distributed generation, Transportation, Specialty vehicles, Grid support P2P	Military, Space, Backup power, Transportation	Portable consumer devices, Military, Smaller vehicles such as forklifts and tuggers	Distributed generation	Electric utility, Distributed generation	Auxiliary power, Electric utility, Distributed generation
Advantages	Solid electrolyte reduces corrosion and electrolyte management problems Low temperature Quick start-up and load following	Wider range of stable materials allows lower cost components Low temperature Quick start-up	Ideal for consumer goods such as mobile phones, digital cameras or laptops Low noise and thermal signatures and no toxic effluent	Suitable for CHP Increased tolerance to fuel impurities	High efficiency Fuel flexibility Suitable for CHP Hybrid/gas turbine cycle	High efficiency Fuel flexibility Solid electrolyte Suitable for CHP Hybrid/gas turbine cycle
Challenges	Expensive catalysts (fuels must be purified, and a platinum catalyst is used on both sides of the membrane) Sensitive to fuel impurities	Sensitive to CO2 in fuel and air Electrolyte management (aqueous) Electrolyte conductivity (polymer)	Ill-suited for powering large vehicles Limited power production capacity	Expensive catalysts Long start-up time Sulphur sensitivity	High-temperature corrosion and breakdown of cell components Long start-up time Low power density	High-temperature corrosion and breakdown of cell components Long start-up time Limited number of shutdowns

Source: Company, MOFSL

Fuel cell vs. traditional power generation

- In SOFC, the oxygen ions pass the membrane and react with the fuel on the anode side, thereby, generating electricity through chemical reaction. The traditional combustion engine involves several more steps before the energy converted can be used.
- The traditional way to produce electricity onboard is with an auxiliary, diesel engine or genset, which drives the generator. Here, the energy is converted three times, i.e., from chemical energy to heat, heat to mechanical, mechanical energy to electricity, whereas in a fuel cell, the energy conversion is only a one-step process, from chemical energy directly to electric energy.

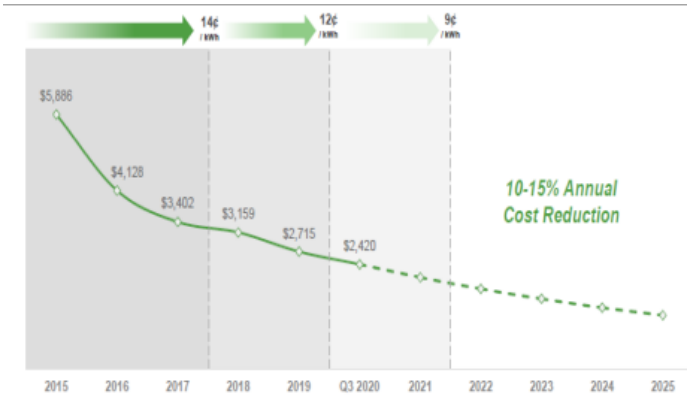
Exhibit 40: Key benefits of Fuel cells vs. traditional power source

Advantage	Comment
Uninterrupted power with high efficiency	❖ Fuel cells are designed to provide 24x7 power and enjoy a track record of no outages, compared with grid power, while generating the highest electrical efficiency of 65% among peers. They even survived major storms, which adversely impacted other power sources.
Lower emissions	❖ Fuel cells generate 50% lower CO2 (when input used other than green hydrogen) vs. the US base load power generation with no particulates (SOx and NOx). ❖ A recent study indicates that fuel cells are able to reduce carbon reduction as effectively as renewables, given their high capacity factor (of 95%) against 10-30% for solar/ wind.
Lower production footprint and no transmission lines	❖ A 1MW fuel cell module takes only 170sqmt of space as against 22,257sqmt by a solar PV (12,500% higher), while onsite generation eliminates T&D infra requirements

Source: MOFSL

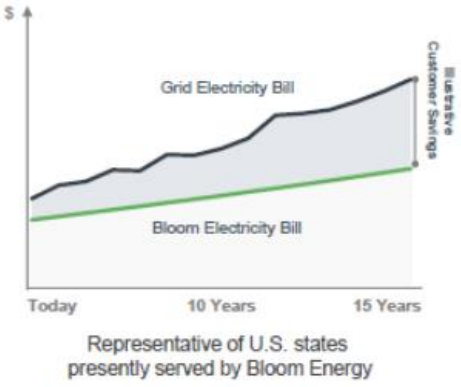
- Currently, being in the nascent stage, fuel cells are more expensive (in terms of cost/kwh) than other renewable power sources. However, with an increase in the adoption of fuel cells leading to economies of scale, the cost/kwh is expected to decline and be comparable to other renewable sources.
- Over the last five years, the cost of fuel cell systems has declined 20%, with an increase in volumes.
- Manufacturing costs form a large part of total costs of fuel cells, which depend mainly on production volume. For instance, scaling fuel cell production to 50,000 units from 10,000 can reduce unit costs by as much as 7-10% and this can further fall by 40-45% when production volume increases to 200,000 units.

Exhibit 41: Annual cost reduction (USD/kw)



Source: BE, MOFSL

Exhibit 42: Lower and predictable cost in long run



Source: BE, MOFSL

Exhibit 43: Lower production footprint with adoption of Fuel cells vs. solar energy

The image to the right shows a typical solar farm and approximate land needs for electrolyzers and batteries. The overall footprint of batteries and the electrolyzer system are significantly smaller than the solar farm.

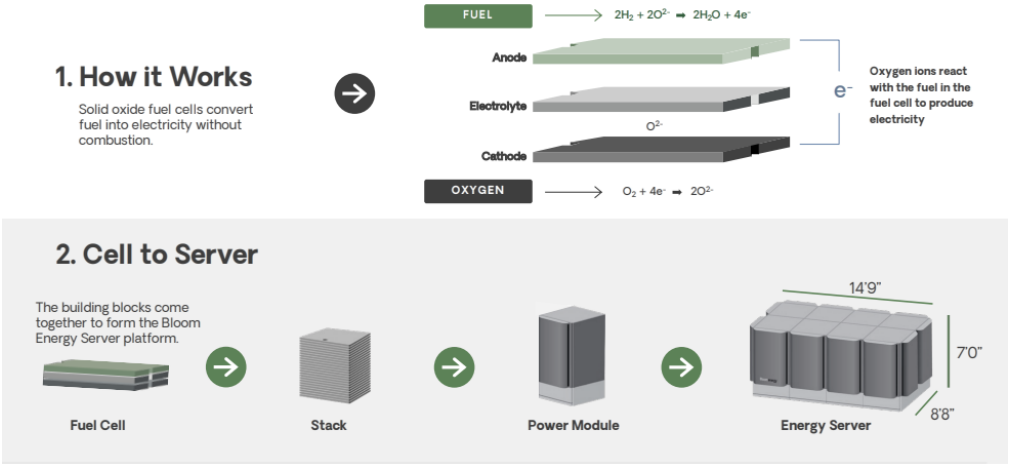
A small portion of this battery system can be used to keep high temperature electrolyzer stacks at their desired temperature when the renewable energy is not available.

Source: Bloom Energy, MOFSL

Bloom Energy is the largest manufacturer of SOFCs globally (~44% global market share)

- BE was founded in CY01 under the name Ion America before being renamed to Bloom Energy in CY06. BE produces SOFC power generators called Bloom Energy Servers (also known as Bloom Boxes).
- BE offers services to the banking, financial services, cloud services, data centers, technology, communications and media, consumer-packaged goods and consumables, government, healthcare, hospitality, logistics, manufacturing, real estate and retail industries, where there is a need or undisrupted power supply. The company's manufacturing facilities are located in California and Delaware. The SOFC market has approximately 50% active competitors, but the top four account for 85.2% of total installed capacity. With a 44% global market share, Bloom leads among the top four companies, followed by Doosan-HyAxiom, FuelCell Energy and Panasonic.
- BE has the largest installed base of Bloom Energy Servers in the US, representing its biggest market. Its key customers in the US include AT&T, Caltech, Delmarva Power & Light Company, Equinix, The Home Depot, Kaiser Permanente, and The Wonderful Company.
- Apart from the US, South Korea is the world leader in the deployment of fuel cells for utility-scale electric power generation and BE's second largest market base (entered this market in 2018). SK ecoplant, a subsidiary of the SK Group, is BE's primary distributor of its systems in this region.
- BE is operating smaller deployments in India and Japan with commercial customers. It also has additional projects in Europe, Southeast Asia, and Australia.

Exhibit 44: Fuel cell basics – Bloom Boxes

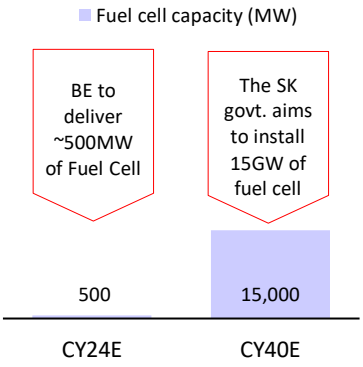


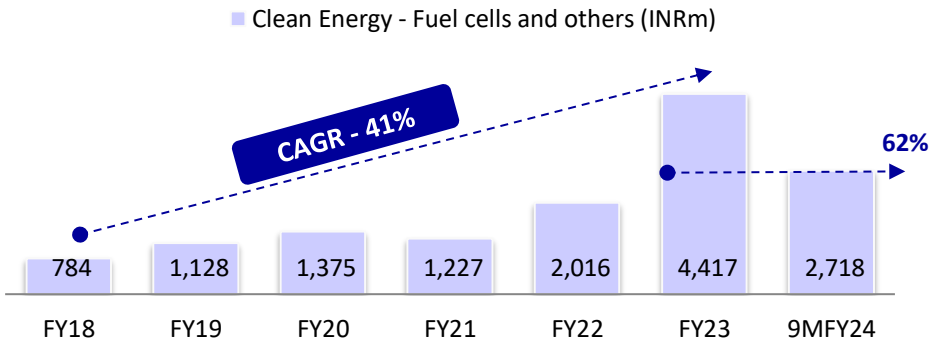
Source: Bloom Energy, MOFSL

Bloom Energy estimated to grow by 30-35%

- MTARTECH manufactures power units, specifically hot boxes and electrolyzers, for BE, which is the global leader in the manufacturing of SOFC. This segment accounts for the majority of revenue (~77%/64% in FY23/1HFY24) and is the fastest-growing segment (CAGR of 41% over FY18-23).
- Fuel cells, which use chemical energy of hydrogen or another fuel to produce electricity, are one of the evolving distributed sources of electricity.
- Applications of fuel cell technology have increased over the past five years. The US and South Korea together account for 95% of the total installed capacity of large-scale fuel cells for stationary applications.

Exhibit 45: MTARTECH marginally behind FY23 revenue trend in 9MFY24





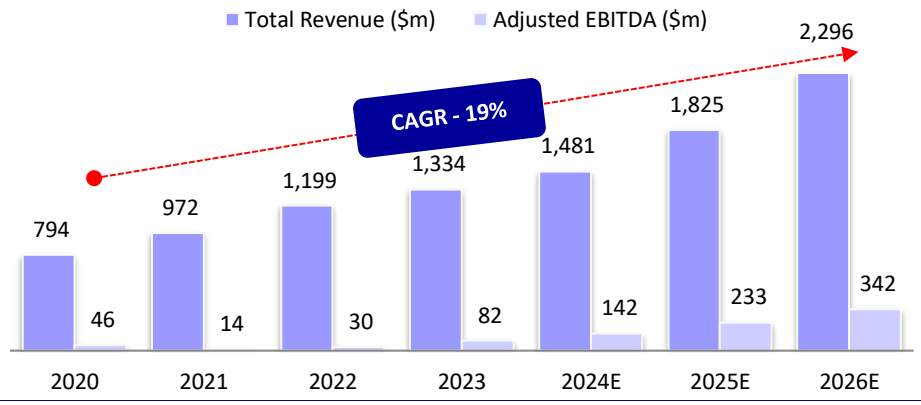
Source: Company, MOFSL

- BE received a USD4.5b order from SK ecoplant in South Korea to provide equipment and services for methane-based fuel cells for ~500MW in 2024.
- For this order, MTARTECH received the mandate for 10,000 boxes to be delivered in the next three years (by 2025), of which some boxes have been delivered in 2022/2023.
- In CY19, the South Korean government released a Hydrogen Economy Roadmap for installing 15,000MW of stationary fuel cells by CY40, which could translate into 0.3m hot boxes. **The total opportunity size from hydrogen fuel cells is estimated to be USD300b**; including other areas such as the US commercial and

industrial market and international expansion, the total opportunity is estimated to be more than USD2t (as per industry reports).

- Apart from the US and South Korea, other countries are also looking for cleaner energy sources, like fuel cells, which can result in a huge market opportunity.
- BE forecasts a CAGR of 25-30% in its power generation segment revenue to USD8-10b by CY31 from USD1b in CY21, which includes product, installation, electricity and service of the current SOFC business, including natural gas, renewable fuels and hydrogen. BE's total revenue is estimated to see a 30-35% CAGR to USD10b by the end of CY30.

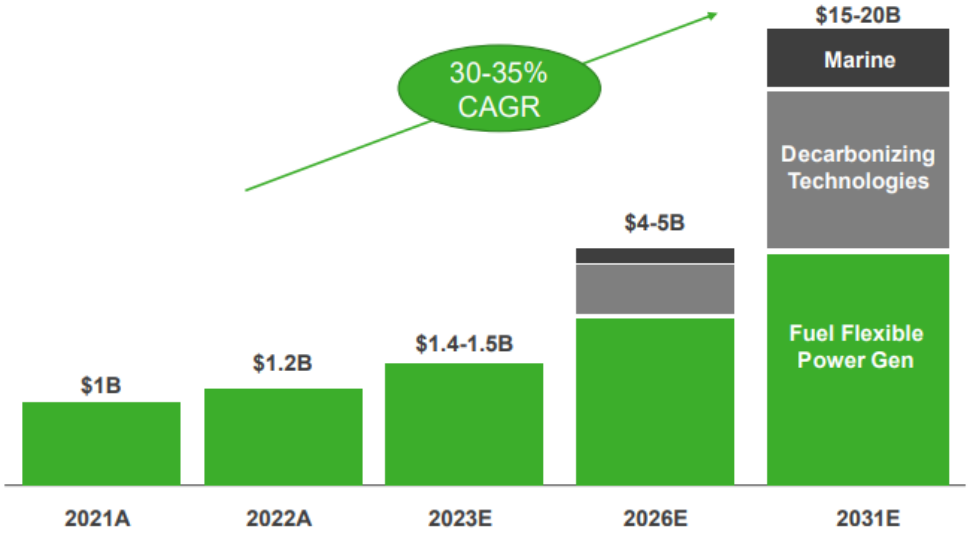
Exhibit 46: As per consensus, BE estimated to post revenue CAGR of 19% over CY20-26



Source: Bloomberg, MOFSL

- As per the consensus and given strong demand visibility, BE is expected to grow its revenue at a strong rate with an improving return profile.

Exhibit 47: BE's internal forecast of 30-35% CAGR indicates strong growth visibility



1. Power gen includes Product, Install, Electricity & Service for our current SOFC business including natural gas, renewable fuels and hydrogen;
2. Decarbonizing technologies includes sales for Electrolyzers & Utility-scale Carbon Capture;
3. Marine represents the future SOFC business on the Marine platform.

Source: Bloom Energy, MOFSL

- Out of the two suppliers of hot boxes to BE, MTARTECH, being the largest supplier, will benefit from the increasing demand for fuel cells and a strong growth trajectory for BE.
- A majority of BE's growth comes from the power generation segment, where MTARTECH plays a key role in supplying power units for its Bloom boxes. Also, MTARTECH has started supplying electrolyzers (138 units in FY23) to BE. This growth can be translated into a strong revenue stream for MTARTECH, thereby cementing its long-term growth visibility.
- Apart from BE, the company is also in talks with other players in the clean energy space to diversify away from single customer risk and tap the growing potential of fuel cells.
- Recently, it partnered with **Fluence Energy** (subsidiary of Siemens and AES) to manufacture a complete assembled unit for its energy storage business.
- The management expects revenue from this business to be as large as revenue from BE. The company is expected to deliver around 300 units in FY25 followed by 1000/3000 units in FY26/FY27. MTARTECH will have to expand its facility dedicated to Fluence products to manufacture over 3,000 units.
- Fluence Energy clocked a revenue of USD2.2b in FY23 and has guided to generate revenue of USD2.7-3.3b in FY24 (September year-end).

Increase in content per fuel cell for BE

- MTARTECH supplies Yuma hot boxes (largest supplier) to BE for their SOFC fuel cells. The company has also supplied an initial batch of Keeylocko hot boxes (40% more efficient than Yuma) to BE. However, due to certain design changes, BE has halted the orders and production of Keeylocko, which impacted MTARTECH's revenue in 9MFY24 (down 9% YoY).
- BE has introduced an advanced version of Yuma hot boxes in FY24 named "Santa Cruz," which generates 65kw of energy vs. 50kw from Yuma. Also, the realization of Santa Cruz is ~USD800 higher than that of Yuma hot boxes. BE has shifted entirely to Santa Cruz from Yuma boxes in 2QFY24.
- In FY23, MTARTECH delivered 4,545 Yuma boxes and the company is expected to sell ~3,500 units (Santa Cruz majorly) of hot boxes in FY25. In FY23, the company supplied 138 units of electrolysers.
- Further, the company recently started to supply sheet metal and enclosure requirements for BE from its newly commissioned (Sep'22) specialized fabrication facility in Adibatla, Hyderabad. The company commenced shipments to South Korea and the US and supplied INR311.3m worth of sheet metal orders for the SOFC in FY23.
- In FY23, the company supplied 138 units of electrolyzers. MTARTECH has also completed the qualification process for ASP assemblies and delivered INR75m of orders in 4QFY23. It has also commenced the development of heaters and ceramic assemblies.
- The company's long-term vision is to achieve full integration for BE and to ship fuel cells directly to other countries from MTARTECH's facilities.

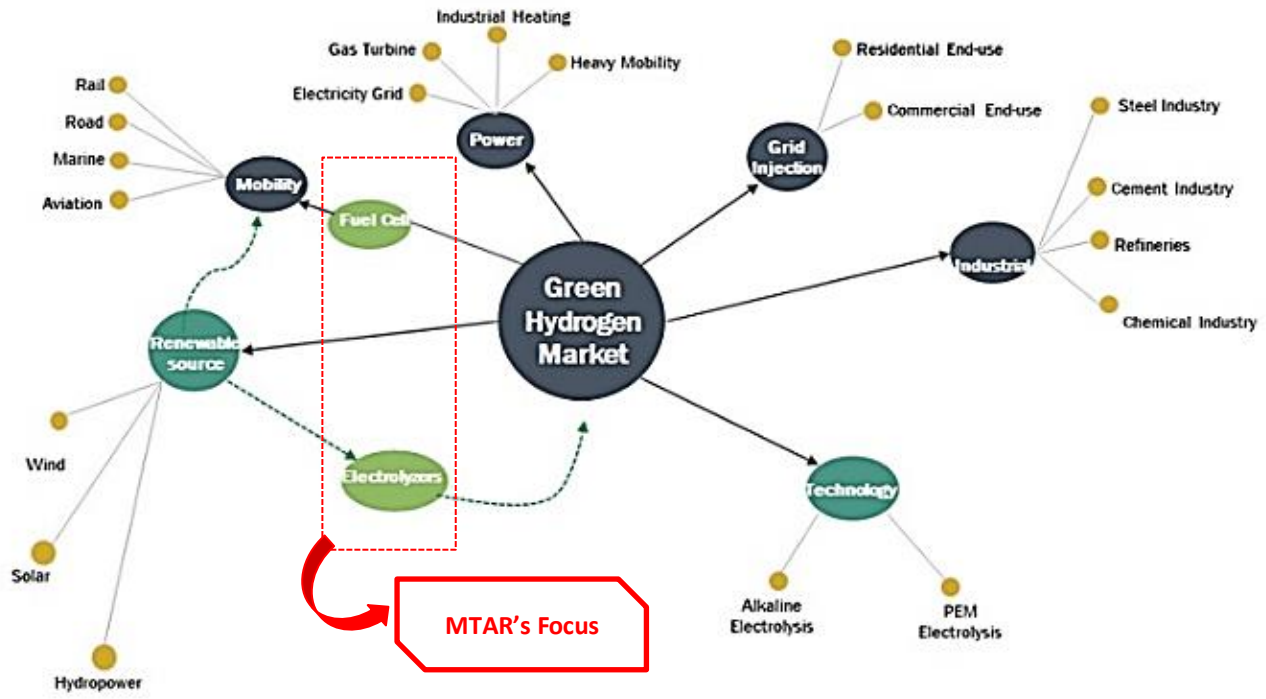
Electrolysers - Brewing Opportunity

- An electrolyzer is a system that uses electricity to break water into hydrogen and oxygen in a process called electrolysis. Through electrolysis, the electrolyzer

system creates hydrogen gas. The remaining oxygen is released into the atmosphere or can be captured or stored to supply other industrial processes or even medical gases in some cases.

- The hydrogen that is produced through this process is called "Green Hydrogen" as there is no carbon emission during the process.
- Green hydrogen can be replaced with other hydrogen (such as pink, blue and grey, based on their CO2 emissions) in industries such as steel, chemicals and predominantly in power generation through fuel cells.
- BE has built, installed and operationalized a 4MW Bloom electrolyzer span of two months and is delivering the equivalent of over 2.4 metric tons per day of hydrogen output, which is a great stride in the production of green hydrogen.
- MTARTECH has recently built and delivered 138 units of electrolyzers to BE.
- The management expects this product to generate a similar revenue run rate going forward as hot boxes currently do.
- As per industry reports, the Green hydrogen market is expected to clock massive growth over CY22-CY27, with market value reaching ~USD7.3b by CY27 from USD676m in CY22 (i.e. CAGR of 61%).
- Recently, the Union Cabinet of India approved a National Green Hydrogen Mission with total incentives of INR197.4b (over USD2b), with the projected production capacity of 5MMT by CY30.
- With strong traction visible in this space, MTARTECH has already put in motion its plans to capitalize on this opportunity.
- We expect this sector and MTARTECH to grow significantly in coming years with a wider adoption of green hydrogen globally.

Exhibit 48: Green Hydrogen Market Ecosystem



Source: MarketsandMarkets Report, MOFSL

Longstanding customer relationships - Entry barriers

- MTARTECH has established long-term relationships with its customers across all business segments.
- The customer profile ranges from large global MNCs, government departments, and large Indian public and private sector companies.
- The company started with one product, i.e. coolant channel assemblies for the Department of Atomic Energy (DAE), and now has over 30 products across the segments.

Exhibit 49: Existing Customers

Source: Company, MOFSL

Exhibit 50: Customers in Pipeline

Source: Company, MOFSL:

- Further, MTARTECH is leveraging these relationships by offering more products and increasing its wallet share with customers.
- For instance, for BE, the company is offering sheet metal fabrications and enclosures for fuel cells and targets to do the full integration on fuel here.
- Also, in FY22-23, MTARTECH added Voith, Andritz, Hitachi Zosen in the Clean Energy segment; Worldwide Oil Machines, Balaji Amines in the products segment; and Bental Systems, Thales, Collins Aerospace in Aerospace segment.

Valuation and view

- MTARTECH has over the years created a niche for itself in the industry, being the key supplier of mission precision engineered systems to large global MNCs, government departments and large Indian public and private sector companies.
- The company's majority of revenue comes from the clean energy fuel cells business, which relies heavily on one customer, BE. However, BE is estimated to report a strong 19% CAGR over CY20-26E, with strong demand visibility globally for fuel cells.
- MTARTECH, being the largest supplier of components to BE, will benefit from the growing size of BE in the coming years. Also, to tap the opportunity further, the company is increasing its wallet share with BE by offering more products such as precision sheet metal fabrication and enclosures, with the end target of achieving a complete fuel cell integration for BE.
- Apart from fuel cells, other business segments such as nuclear, space, defense and products offer a huge growth runway, which we believe the company can capitalize on with its strong manufacturing capabilities and customer relationships. We estimate a 39% CAGR in its order book and a 38% CAGR in revenue over FY24-26.
- The management remains optimistic about industry growth prospects and has entered into import substitution products, such as ball screws and roller screws, among others, ahead of its time. Also, the company recently commissioned a new facility at Adibatla, Telangana, to grab the increasing opportunity pie from the fuel cell, hydel and waste-to-energy sectors.
- We expect MTARTECH to register a CAGR of 38%/53%/67% in revenue/EBITDA/adj. PAT over FY24-26, with RoE/RoCE of ~23%/21% by FY26E (vs. ~12%/11% in FY24).
- Over FY24-26E, the company is expected to generate cumulative FCF of INR673m with CFO/EBITDA averaging at 26%.
- We initiate coverage on MTARTECH with a BUY rating and a TP of INR2,800, premised on 40x FY26E. We believe that: 1) a 67% earnings CAGR over FY24-26E, 2) strong return ratios (RoE of 23%, ROCE of 21% and RoIC of 22% in FY26E), 3) a robust order book CAGR of 39% over FY24-26E, and 4) a healthy balance sheet will help MTARTECH trade at premium multiples.

Risks and concerns

Customer concentration

- A significant proportion of the company's revenue comes from one customer i.e. BE (over 75% in FY23).
- MTARTECH has a limited number of customers in other segments, which poses a risk in case of an adverse change in the supply chain strategies of these customers, deferment of orders, a reduction in their outsourcing of the products offered by MTARTECH or their decision to choose competitors over the company.
- These factors are likely to adversely affect the company's revenue, which in turn may lead to a significant impact on its financial condition and cash flows.
- However, the company has a long association with these customers, ranging from up to four decades.
- The company's longstanding relationship with customers such as BE, NPCIL, ISRO and DRDO is a result of its consistent and successful supply of complex products to them.
- To mitigate this risk, the company is actively engaging with new customers across segments.

The order book from segments, excluding fuel cell, is dependent entirely on government entities.

- MTARTECH currently derives and expects to continue to derive a significant share of revenue from NPCIL, ISRO and DRDO.
- However, their orders depend upon the availability of budgets extended to the respective departments of the Government of India, under which these entities operate.
- The company's future revenue is dependent on the availability of such budgetary appropriations and any disruptions or reductions to such appropriations or unavailability of funds to such departments could have an adverse impact on the funding of these orders and consequently, adversely affect the company's revenues.

Stressed working capital to impact liquidity

- MTARTECH's working capital days increased to 240 days in FY23 from 182 days in FY20 due to an increase in inventory days (246days in FY23 vs. 129 days in FY20) amid supply chain disruption during the pandemic. The payable days increased exponentially to 139 days in FY23 vs. 52 days in FY20 due to INR720m worth of inventory being in transit, which also reflected in inventory days.
- Receivable days also increased from 105 days in FY20 to 133 days in FY22.
- This resulted in lower cash flows i.e. CFO of INR74m in FY23 vs. INR562m in FY20, thereby increasing the borrowings to INR1,434m in FY23 vs. INR291m in FY20.
- We expect that with the normalization of supply chain, however, working capital is expected to be ~220 days by FY26.
- However, a slower-than-expected reduction in working capital days will result in an extended liquidity crunch, keeping the borrowings elevated.

ESG initiatives

Environmental initiatives

- Nearly 85% of the company's revenue in FY23 is derived from manufacturing climate positive products in the civil nuclear power, fuel cells, hydel, and waste-to-energy sectors.
- The company has set up two solar rooftop plants with a total capacity of 1.38 MWe at Unit 2 and EOU to reduce our energy consumption; intends to set up the solar rooftops at Adibatla and Unit 3.
- MTARTECH's facilities at Unit 2, EOU and Adibatla are certified for ISO 14001:2015, Environmental Management System.

CSR initiatives

- MTAR has allocated INR11.7m in FY23 toward various CSR initiatives, including education & skill development, health, eradication of poverty, and the promotion of cultural heritage.
- The company has adopted two schools near Adibatla and Nadargul to enhance the infrastructural facilities.

Governance

- As of Sep'23, the board comprised nine directors, which included four independent directors and one female director.
- The board comprises seasoned professionals with expertise in various fields, contributing diverse experiences.
- The Board's performance is assessed annually based on their responsibilities, and a strong compliance mechanism is in place to adhere to applicable rules and regulations.

The company has been awarded a rating by Dun & Bradstreet (D&B) for its ESG practices. The company has scored an overall rating of 2 – good on a 5-point scale. The governance aspects of the company are rated as 1 (very good), environment aspects as 2 (good), and social aspects as 3 (Medium). As per D&B, the company is performing better than the industry in the environmental and governance practices, whereas the company is on par with the industry in social practices.

Bull and Bear cases

Bull case

- ☑ In our bull case, we assume a revenue CAGR of 47% over FY24-26E on the back of an increase in order flows from clean energy, nuclear order inflow (INR5b), defense tie-ups with foreign MNCs, and strong growth in products and other segments.
- ☑ We expect margin to expand by ~610bp to ~28.8% over FY26E from 22.7% in FY24E, led by operating leverage, economies of scale and better product mix.
- ☑ EPS to register a robust CAGR of 82% over FY24-26E.

Bear case

- ☑ In our bear case, we assume a revenue CAGR of 30% over FY24-26.
- ☑ Margin will expand by ~360b by FY26E from 22.7% in FY24E.
- ☑ EPS to register a CAGR of 51% over FY24-26E.

Exhibit 51: Bull and Bear case scenario (INR m)

	Particulars	FY24E	FY25E	FY26E	CAGR (FY24-26E, %)
Bear case	Revenue	6,077	8,065	10,265	30
	EBITDA	1,379	1,976	2,700	40
INR2000	EPS	25.4	38.8	57.6	51
Base case	Revenue	6,077	9,054	11,595	38
	EBITDA	1,379	2,309	3,212	53
INR2800	EPS	25.4	47.3	70.5	67
Bull case	Revenue	6,077	10,123	13,058	47
	EBITDA	1,379	2,683	3,761	65
INR3340	EPS	25.4	56.9	84.4	82

Source: MOFSL, Company

SWOT analysis

Key management personnel

Mr. Parvat Srinivas Reddy, Managing Director & Promoter

Mr. Reddy has nearly three decades of industry experience in the manufacturing and construction sectors. He has been associated with MTARTECH for the past 13 years. He holds a bachelor's degree in industrial production engineering, from the University of Mysore and a master's degree in science, specializing in industrial engineering from College of Engineering, Louisiana Tech University. Mr. Reddy is instrumental in setting up and growing the company's export vertical.

Mr. Subbu Venkata Rama Behara, Chairman

Mr. Behara is the Chairman and Independent Director. He has more than 20 years of manufacturing industry expertise and held senior leadership positions in various renowned firms, including Tata and Hyundai. He has immense global exposure with proven leadership abilities in transforming the organizations by formulating the growth strategies. He was recognized as India's 100 most powerful CEOs by ET. Currently, he is acting as an independent director to firms, including Sona BLW Precision Forgings and KPIT Technologies.

Mr. Gunneswara Rao, CFO

He is responsible for heading finance, mergers & acquisitions, corporate affairs, and corporate strategy at MTARTECH. He has more than 21 years of experience across the finance spectrum in strategic planning, P&L management, tax compliance, fund raising, financial accounting, and charting out annual operating plans. He was previously associated with Tata Sikorsky Aerospace as CFO for 11 years.

Mr. Praveen Kumar Reddy, Executive Director

Mr. Praveen Kumar Reddy holds a bachelor's degree in electronics and communication engineering from the Faculty of Engineering, Andhra University. He has worked with the company for 20 years in various functions including operations, supply chain and business development. He is responsible for heading business development in the organization.

Financials and valuations

Consolidated - Income Statement (INRm)

Y/E March	FY19	FY20	FY21	FY22	FY23	FY24E	FY25E	FY26E
Total Income from Operations	**1,837**	**2,138**	**2,464**	**3,220**	**5,738**	**6,077**	**9,054**	**11,595**
Change (%)	15.1	16.4	15.3	30.7	78.2	5.9	49.0	28.1
RM Cost	708	835	912	1,163	2,695	3,057	4,436	5,508
Employees Cost	435	516	530	708	935	972	1,331	1,658
Other Expenses	157	208	192	406	568	668	978	1,218
Total Expenditure	**1,300**	**1,558**	**1,634**	**2,276**	**4,198**	**4,697**	**6,745**	**8,384**
EBITDA	**537**	**580**	**831**	**944**	**1,540**	**1,379**	**2,309**	**3,212**
Margin (%)	29.2	27.1	33.7	29.3	26.8	22.7	25.5	27.7
Depreciation	112	121	126	143	187	239	273	298
EBIT	**425**	**459**	**705**	**801**	**1,353**	**1,140**	**2,036**	**2,914**
Int. and Finance Charges	45	48	70	66	146	229	244	190
Other Income	35	44	13	88	195	134	154	174
PBT after EO Exp.	**415**	**455**	**648**	**822**	**1,402**	**1,044**	**1,946**	**2,898**
Total Tax	24	142	188	213	368	263	490	729
Tax Rate (%)	5.7	31.2	29.0	26.0	26.2	25.2	25.2	25.2
Reported PAT	**392**	**313**	**461**	**609**	**1,034**	**781**	**1,456**	**2,169**
Adjusted PAT	**392**	**313**	**461**	**609**	**1,034**	**781**	**1,456**	**2,169**
Change (%)	625.7	-20.1	47.1	32.2	69.9	-24.4	86.3	48.9
Margin (%)	21.3	14.6	18.7	18.9	18.0	12.9	16.1	18.7

Consolidated - Balance Sheet (INRm)

Y/E March	FY18	FY19	FY20	FY21	FY22	FY23E	FY24E	FY25E
Equity Share Capital	282	268	308	308	308	308	308	308
Total Reserves	2,068	1,983	4,460	4,890	5,894	6,675	8,131	10,300
Net Worth	**2,350**	**2,251**	**4,768**	**5,197**	**6,201**	**6,983**	**8,439**	**10,607**
Total Loans	287	291	170	959	1,434	2,234	1,834	1,334
Deferred Tax Liabilities	0	53	127	163	182	182	182	182
Capital Employed	**2,638**	**2,595**	**5,064**	**6,319**	**7,817**	**9,399**	**10,455**	**12,123**
Gross Block	1,978	2,028	2,273	2,710	3,842	4,557	5,020	5,433
Less: Accum. Deprn.	356	477	603	746	932	1,172	1,445	1,743
Net Fixed Assets	**1,622**	**1,551**	**1,671**	**1,964**	**2,910**	**3,386**	**3,576**	**3,690**
Capital WIP	56	117	105	438	644	329	266	253
Total Investments	**0**	**0**	**0**	**623**	**275**	**275**	**275**	**275**
Curr. Assets, Loans&Adv.	**1,373**	**1,794**	**4,087**	**4,252**	**6,804**	**7,130**	**8,856**	**11,013**
Inventory	411	755	1,025	1,703	3,866	3,663	4,713	5,877
Account Receivables	504	616	773	1,360	2,084	1,831	2,604	3,177
Cash and Bank Balance	108	233	1,909	669	312	907	543	684
Loans and Advances	351	191	380	520	543	729	996	1,276
Curr. Liability & Prov.	**414**	**868**	**799**	**958**	**2,816**	**1,720**	**2,518**	**3,109**
Account Payables	60	306	371	570	2,182	1,082	1,612	2,065
Other Current Liabilities	329	495	397	353	559	577	815	928
Provisions	26	67	32	35	75	61	91	116
Net Current Assets	**959**	**927**	**3,288**	**3,294**	**3,989**	**5,409**	**6,338**	**7,905**
Appl. of Funds	**2,638**	**2,595**	**5,064**	**6,319**	**7,817**	**9,399**	**10,455**	**12,123**

Financials and valuations

Ratios

Y/E March	FY19	FY20	FY21	FY22	FY23	FY24E	FY25E	FY26E
Basic (INR)								
EPS	**13.9**	**11.7**	**15.0**	**19.8**	**33.6**	**25.4**	**47.3**	**70.5**
Cash EPS	17.9	16.2	19.1	24.4	39.7	33.2	56.2	80.2
BV/Share	83.3	84.1	155.0	169.0	201.6	227.0	274.3	344.8
Valuation (x)								
P/E	147.0	174.5	136.4	103.2	60.7	80.4	43.1	29.0
Cash P/E	114.2	126.0	107.2	83.5	51.4	61.5	36.3	25.5
P/BV	24.5	24.3	13.2	12.1	10.1	9.0	7.4	5.9
EV/Sales	31.5	25.6	24.8	19.4	11.1	10.5	7.0	5.4
EV/EBITDA	107.6	94.4	73.5	66.2	41.3	46.3	27.6	19.7
FCF per share	6.3	16.6	-4.6	-39.3	-32.6	-3.6	4.1	21.4
Return Ratios (%)								
RoE	17.8	13.6	13.1	12.2	18.1	11.9	18.9	22.8
RoCE	17.7	13.4	13.6	11.9	16.6	11.3	16.8	20.8
RoIC	17.0	13.4	18.9	15.5	17.9	11.8	17.7	21.5
Working Capital Ratios								
Fixed Asset Turnover (x)	0.9	1.1	1.1	1.2	1.5	1.3	1.8	2.1
Asset Turnover (x)	0.7	0.8	0.5	0.5	0.7	0.6	0.9	1.0
Inventory (Days)	82	129	152	193	246	220	190	185
Debtor (Days)	100	105	114	154	133	110	105	100
Creditor (Days)	12	52	55	65	139	65	65	65
Leverage Ratio (x)								
Current Ratio	3.3	2.1	5.1	4.4	2.4	4.1	3.5	3.5
Interest Cover Ratio	9.5	9.6	10.1	12.0	9.3	5.0	8.3	15.3
Net Debt/Equity	0.1	0.0	-0.4	-0.1	0.1	0.2	0.1	0.0

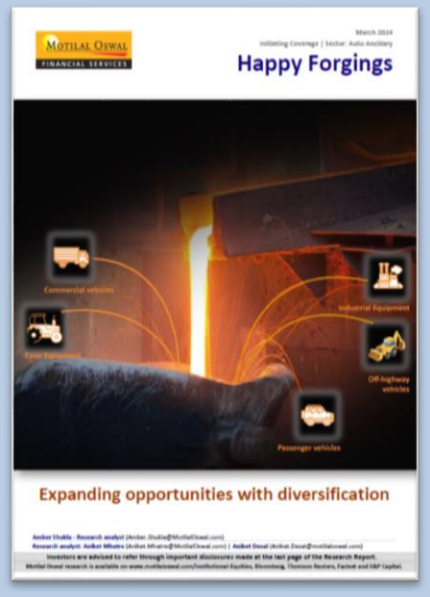
Consolidated

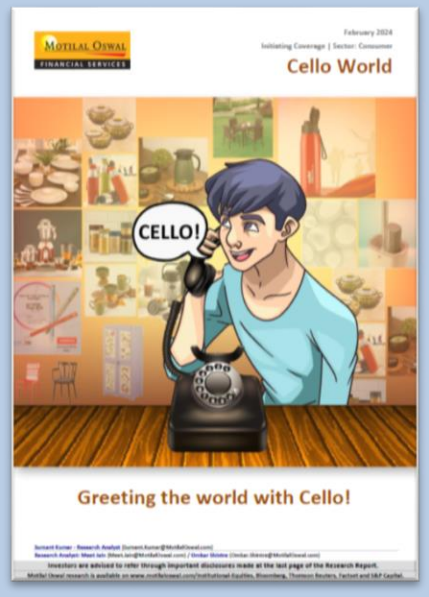
(INRm)

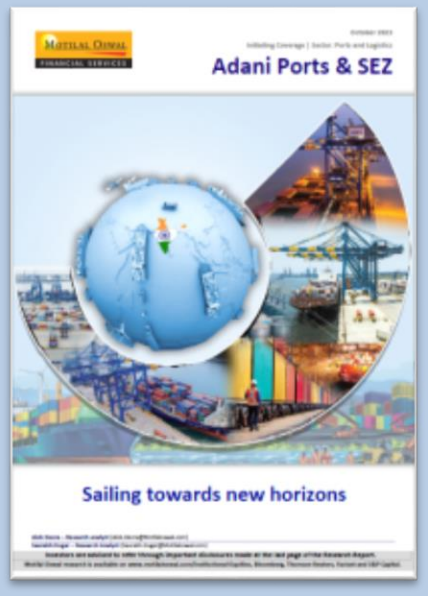
Y/E March	FY19	FY20	FY21	FY22	FY23	FY24E	FY25E	FY26E
OP/(Loss) before Tax	416	455	648	822	1,402	1,044	1,946	2,898
Depreciation	112	121	126	143	187	239	273	298
Interest & Finance Charges	38	38	57	66	146	96	90	16
Direct Taxes Paid	-94	-72	-117	-180	-323	-263	-490	-729
(Inc)/Dec in WC	-57	26	-617	-1,079	-1,291	-827	-1,293	-1,425
CF from Operations	**415**	**567**	**97**	**-227**	**121**	**290**	**526**	**1,057**
Others	7	-5	-11	-71	-47	0	0	0
CF from Operating incl EO	**421**	**562**	**86**	**-298**	**74**	**290**	**526**	**1,057**
(Inc)/Dec in FA	-243	-119	-228	-911	-1,078	-400	-400	-400
Free Cash Flow	**178**	**443**	**-142**	**-1,209**	**-1,004**	**-110**	**126**	**657**
(Pur)/Sale of Investments	0	0	0	-780	377	0	0	0
Others	-86	-2	8	241	-166	134	154	174
CF from Investments	**-329**	**-121**	**-220**	**-1,450**	**-867**	**-266**	**-246**	**-226**
Issue of Shares	0	0	2,127	0	0	0	0	0
Inc/(Dec) in Debt	90	-5	-122	789	457	800	-400	-500
Interest Paid	-62	-59	-64	0	-137	-229	-244	-190
Dividend Paid	-102	-170	-80	-185	0	0	0	0
Others	0	-179	-60	-64	0	0	0	0
CF from Fin. Activity	**-75**	**-414**	**1,802**	**541**	**320**	**571**	**-644**	**-690**
Inc/Dec of Cash	**17**	**28**	**1,667**	**-1,207**	**-473**	**594**	**-364**	**141**
Opening Balance	91	108	233	1,909	670	312	907	543
Other cash & cash equivalent	0	97	9	-32	116			
Closing Balance	**108**	**233**	**1,909**	**670**	**312**	**907**	**543**	**684**

NOTES

RECENT INITIATING COVERAGE REPORTS







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BUY	>=15%
SELL	< - 10%
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Nainesh Rajani
Email: nainesh.rajani@motilaloswal.com
Contact: (+65) 8328 0276

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Contact Person	Contact No.	Email ID
Ms. Hemangi Date	022 40548000 / 022 67490600	query@motilaloswal.com
Ms. Kumud Upadhyay	022 40548082	servicehead@motilaloswal.com
Mr. Ajay Menon	022 40548083	am@motilaloswal.com

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