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JM FINANCIAL

INOX India

A strong legacy with some interesting prospects; initiate with BUY

India's largest manufacturer of cryogenic equipment with 30+ years of experience

Estimate steady earnings growth, industry leading RoEs, and high cash flow translation

Opportunities in semiconductors, LNG trucking and ramp up of the kegs business, suggest upside risks.

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INOX India

A strong legacy with some interesting prospects; initiate with BUY

INOX India Limited is India's largest manufacturer of cryogenic equipment, a dominant player, ~4x the size of its nearest competitor. Its key strengths are (1) 30+ years of expertise in engineering and design, quality management, and testing, (2) an impeccable execution track record, and (3) most globally required certifications in place, all of which make it a preferred supplier for its clients.

INOX operates in three business areas – Industrial Gas, LNG, and Cryo Scientific Division (CSD), of which industrial gases contributed 63% to FY24 revenue. Given the steady growth opportunities in Industrial Gas storage and transportation, orders in LNG and CSD, and contribution from the recently commenced kegs business, we forecast a FY24-27E EPS CAGR of 16% and average RoEs of 30%.

Based on a steady earnings growth, industry leading RoE and RoCEs, and most importantly, high cash flow translation, we value INOX India at 37x Mar'27E EPS, hence, arrive at a target price of INR 1,240. However, upsides exist from (1) the upcoming semiconductor ecosystem in India, (2) increasing demand for LNG as a truck fuel, and (3) full ramp up of the kegs business. (See page 07-11 for details).

Key risks are: (a) inability to obtain regulatory approvals in new areas, (b) regulatory action, (c) cancellation or delay, in orders given the ongoing global uncertainty, and (d) dependence on product development for future success.

INOX is India's largest manufacturer of cryogenic equipment…: INOX is India's largest manufacturer of cryogenic equipment with 30+ years of experience in cryogenic equipment and systems. It operates in three business divisions – Industrial Gas, LNG, and Cryo Scientific Division (CSD). The company has recently ventured into the manufacturing of stainless steel beverage kegs, and has set up a facility in Savli with an investment of INR 2bn. This business is expected to ramp up to 10% of revenues by FY27E. When compared to Indian peers, INOX's FY24 revenues at INR 11.3bn, were ~4x of its nearest competitor (VRV Asia Pacific) and 6x of the other (Cryolor).

…and a leader in a regulated industry with barriers to entry…: Stringency related to design and manufacturing and the number of regulations in the cryogenic equipment for each country are barriers to entry for new players in the segment. INOX India's key strengths are (1) 30+ years of expertise in engineering and design, quality management, and testing, (2) an impeccable execution track record, and (3) most globally required certifications in place, all of which make it a preferred supplier for its clients.

…run by a team of professional leaders: While the Company is promoted by the Jain family, who participate in strategizing, it is run by a professional management, who have been with INOX for long years. Its CEO and CFO have been part since 1992 and 1993 respectively, while business heads; including industrial gases, LNG and CSD have been there since 1997, 1999, and 2011 respectively.

Initiate with BUY and TP of INR 1,240 per share at 37x Mar'27E EPS: We initiate coverage with a BUY rating and a target price of INR 1,240 at 37x Mar'27E EPS; driven by an (1) EPS CAGR of 16%, (2) average RoE/RoCE of 30%/26%, and (3) average OCF/PAT and FCF/PAT conversion of 79% and 42% respectively through FY24-27E. However, opportunities in (1) semiconductors, (2) LNG trucking and (3) full ramp up of the kegs business, suggest upside risks.

Recommendation and Price Target	
Current Reco.	BUY
Current Price Target (12M)	1,240
Upside/(Downside)	22.3%

Key Data – INOXINDI IN	
Current Market Price *	INR1,014
Market cap (bn) *	INR92.0/US$1.1
Free Float	25%
Shares in issue (mn)	90.8
Diluted share (mn)	90.8
3-mon avg daily val (mn)	INR522.9/US$6.1
52-week range	1,507/884
Sensex/Nifty	76,617/23,332
INR/US$	85.5

Price Performance			
%	1M	6M	12M
Absolute	5.7	-13.7	-15.7
Relative*	0.8	-7.0	-18.7

*To the BSE Sensex

Financial Summary					(INR mn)
Y/E March	FY23A	FY24A	FY25E	FY26E	FY27E
Total Revenue	9,659	11,312	13,165	15,182	17,648
Revenue Growth (%)	23.4	17.1	16.4	15.3	16.2
EBITDA	2,044	2,503	2,830	3,340	3,971
EBITDA Margin (%)	21.2	22.1	21.5	22.0	22.5
Adjusted Net Profit	1,527	1,960	2,101	2,534	3,034
Diluted EPS (INR)	16.8	21.6	23.2	27.9	33.4
Diluted EPS Growth (%)	17.0	28.3	7.2	20.6	19.7
ROIC (%)	61.1	55.6	41.9	39.3	39.0
ROE (%)	29.0	32.7	29.1	28.6	28.0
P/E (x)	60.3	47.0	43.8	36.3	30.3
P/B (x)	16.7	14.2	11.6	9.4	7.7
EV/EBITDA (x)	43.6	35.9	31.7	26.6	22.2
Dividend Yield (%)	1.1	1.1	0.7	0.8	0.9

Source: Company data, JM Financial. Note: Valuations as of 02/Apr/2025

JM Financial Research is also available on: Bloomberg - JMFR <GO>, Thomson Publisher & Reuters, S&P Capital IQ, FactSet & Visible Alpha.
You can also access our portal: www.jmflresearch.com
Please see Appendix I at the end of this report for Important Disclosures and Disclaimers and Research Analyst Certification.

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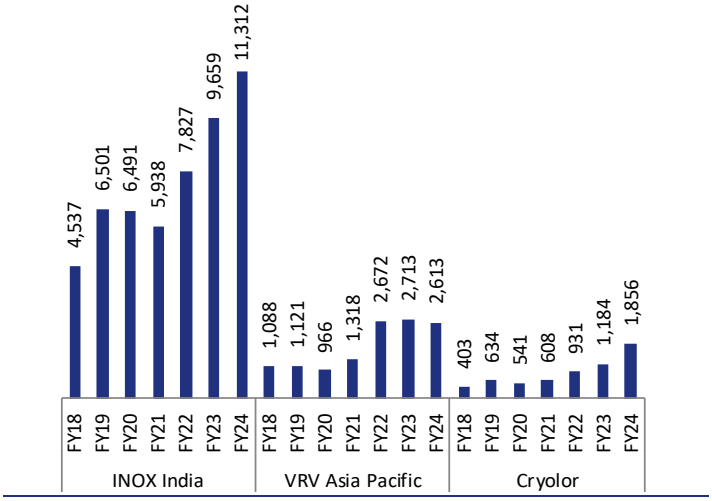
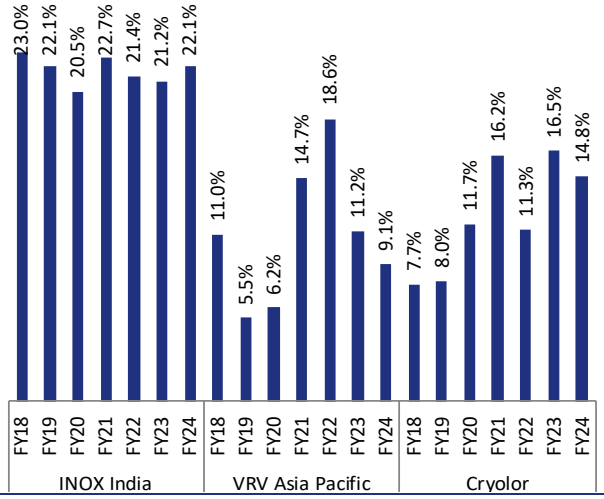
Focus charts

Exhibit 1. INOX India is 4x the size of its nearest competitor



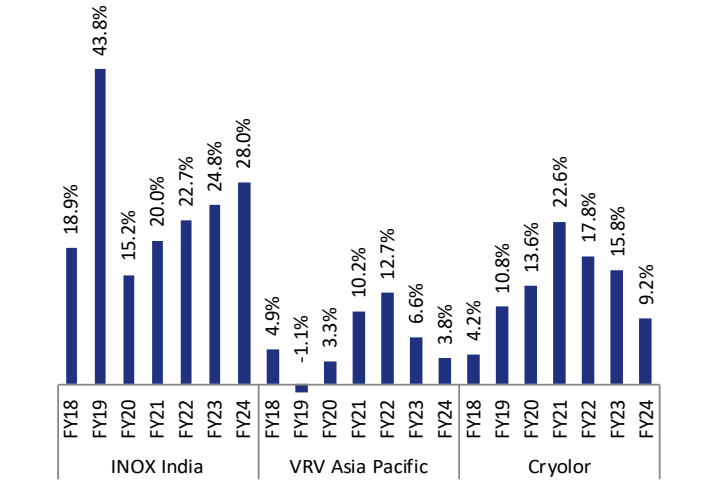
Source: MCA, JM Financial

Exhibit 2. INOX's EBITDA margins are the highest amongst peers



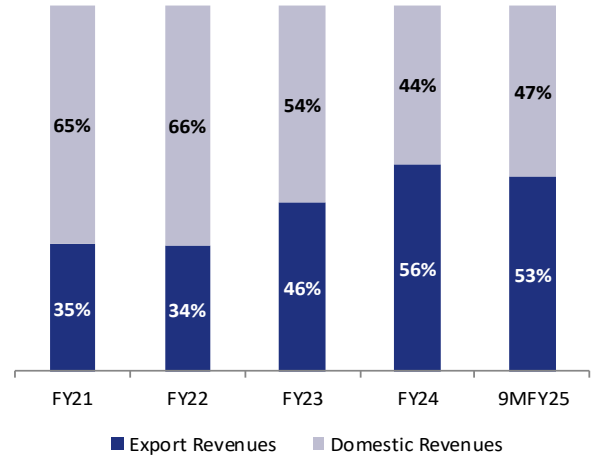
Source: MCA, JM Financial

Exhibit 3. INOX's RoCEs are the highest amongst its Indian peers



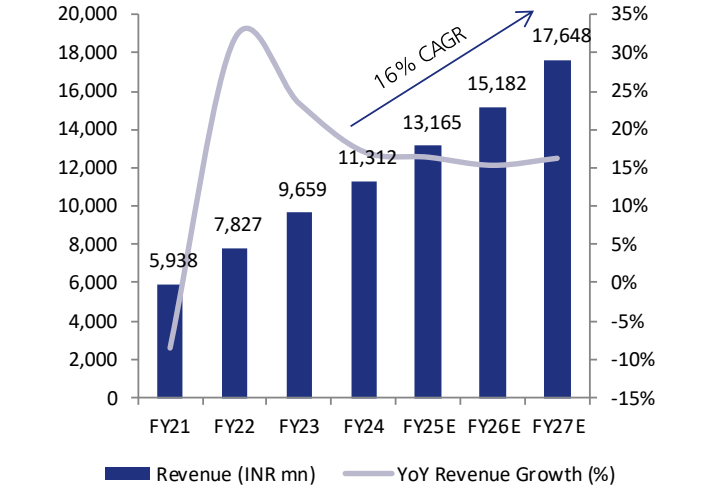
Source: MCA, JM Financial

Exhibit 4. INOX India's geographical revenue split



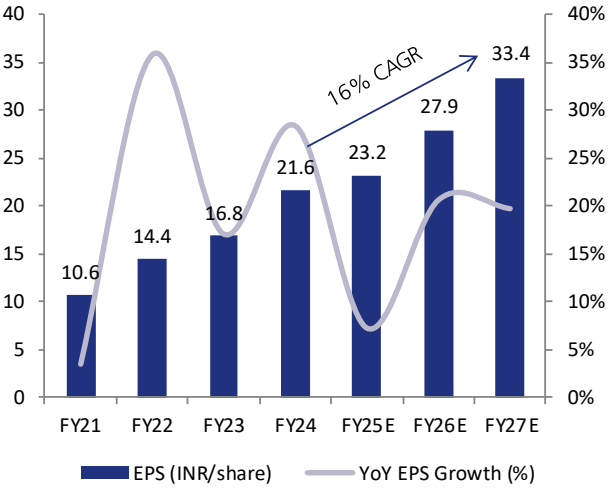
Source: Company, JM Financial

Exhibit 5. We expect a 16% revenue CAGR through FY24-27E



Source: Company, JM Financial

Exhibit 6. We expect a 16% EPS CAGR through FY24-27E



Source: Company, JM Financial

Investment Thesis and Valuations

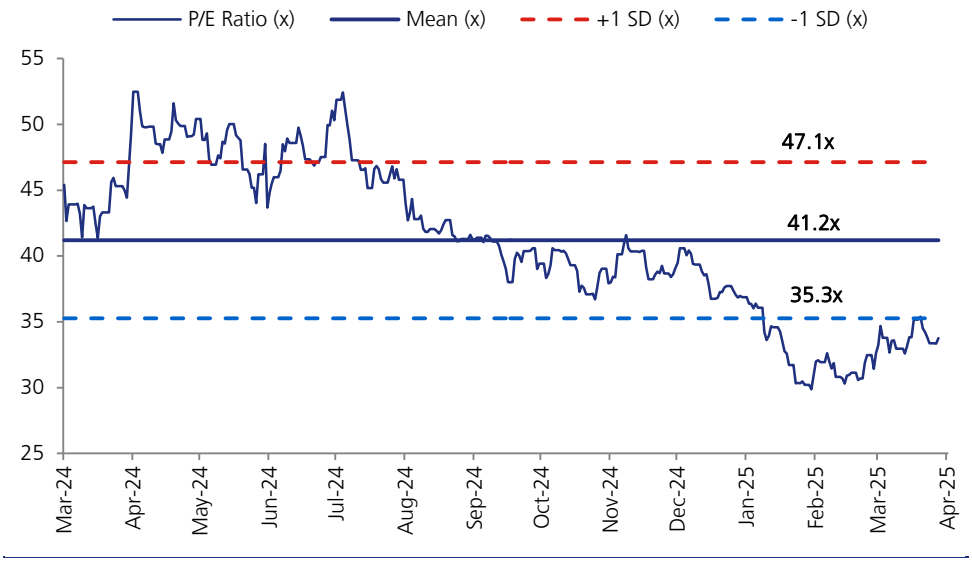
Investment Thesis

- INOX India is the largest supplier and exporter of cryogenic equipment in India. It has been in business for 30+ years, offering solutions across design, engineering, manufacturing and installation of equipment including systems for cryogenic conditions. It operates in three major business divisions – Industrial Gas, LNG, and Cryo Scientific Division (CSD).
- When compared to its Indian peers, its FY24 revenue, at INR 11.3bn, was ~4x that of its nearest competitor (VRV Asia Pacific) and 6x that of the other (Cryolor).
- INOX India's strengths are (1) 30+ years of expertise in engineering and design, quality management, and testing, (2) an impeccable execution track record, and (3) most globally required certifications in place, all of which make it a preferred supplier for its clients.
- Its offerings include standard cryogenic tanks and equipment, beverage kegs, bespoke technology, equipment, and solutions, as well as large turnkey projects, for end-use industries such as industrial gases, LNG, green hydrogen, energy, steel, medical & healthcare, chemicals & fertilisers, aerospace, pharmaceuticals, and construction.
- The company has also identified a new area of growth and ventured into the manufacturing of beverage kegs using NSF-certified stainless steel. It has also set up a facility in Savli, Gujarat, with an investment of INR 2bn, by forming a technology alliance with Supermonte, an Italian manufacturer of kegs.. This business is expected to ramp up to 10% of total revenue by FY27E.
- INOX India's business is a fair mix of domestic sales and exports, generally split into equal halves, and it has longstanding relationships with marquee customers such as Air Liquide Global E&C Solutions, Hyundai Engineering and Construction, Inox Air Products, Navin Fluorine, Prodair Air Products India Saint Gobain India, Shell Energy India, Think Gas Distribution, Ultra Gas & Energy, and ISRO.
- While the company is promoted by the Jain family, which actively participates in strategising, it is run by a professional management team, most of who have been with the company for several years. The CEO and CFO have been with the company since 1992 and 1993 respectively, while the business heads of industrial gases, LNG and CSD business have been with the company since 1997, 1999, and 2011 respectively.
- We factor in revenue/EBITDA/PAT CAGR of 16%/17%/16% through FY24-27E, with average RoEs and RoCEs of 30% and 26% respectively. We further expect INOX's cash translation to be robust through this period, with forecasts of an average OCF/PAT translation of 79% and average FCF/PAT translation of 42%.

Valuations

- We value INOX India at **37x Mar'27E EPS**, which is a 10% discount to its mean 1-yr forward P/E of 41x since listing, factoring in the recent P/E multiple derating that Indian equities have witnessed. On the back of this, we arrive at a **target price of INR 1,240**.
- INOX is **currently trading at 30x JMFLe and 28x consensus FY27E EPS**, which is below the -1SD 1-yr forward P/E multiple of 35x. This coupled with (1) 16% expected EPS CAGR, (2) industry leading RoEs of 30%, (3) huge pipeline of opportunities, and (4) ~30% correction from the top make it worth a look.
- INOX is sitting on a pile of potential opportunities, in the form of (1) semiconductors in the Industrial Gases business, (2) LNG trucking in the LNG vertical (3) new orders in the Cryo Scientific Division, and (4) The kegs business ramping up to its full potential, which can drive growth, higher than what we have factored in. Hence, as we see execution of this optionality, we remain open to revisiting our P/E multiples.

Exhibit 7. INOX India – 1-yr forward P/E band chart since listing



Source: Bloomberg, JM Financial

Exhibit 8. India machinery comparables

Company	M. Cap	EPS CAGR	P/E (x)			P/B (x)			EV/EBITDA (x)			RoE (%)		
	(USD mn)	(%)	FY25E	FY26E	FY27E	FY25E	FY26E	FY27E	FY25E	FY26E	FY27E	FY25E	FY26E	FY27E
INOX India (JMFLe)	**1,082**	**15.7%**	**43.8**	**36.3**	**30.3**	**11.6**	**9.4**	**7.7**	**31.7**	**26.6**	**22.2**	**29.1%**	**28.6%**	**28.0%**
INOX India (BBG)	1,082	17.7%	41.8	33.8	28.2	11.0	8.6	6.8	34.0	30.3	24.9	28.6%	27.7%	26.2%
Peer Comparisons														
GMM Pfaudler	548	1.7%	44.1	25.5	19.9	4.4	3.8	3.2	9.7	13.5	10.8	8.8%	13.7%	15.5%
ABB India	13,423	13.3%	56.4	49.1	43.9	13.5	11.4	10.0	48.2	42.9	37.5	25.9%	25.4%	24.9%
Honeywell India	3,552	18.1%	54.8	45.8	36.9	7.4	6.5	5.6	46.6	44.4	36.3	14.3%	15.2%	16.4%
Siemens India	21,933	17.1%	66.8	55.6	46.4	10.7	9.2	7.9	63.9	53.6	46.1	17.3%	17.9%	18.5%
Cummins India	9,816	18.9%	44.2	38.9	34.0	11.7	10.1	8.7	50.8	40.0	34.9	28.1%	27.9%	27.8%
Thermax	4,988	20.7%	63.3	49.1	38.7	8.3	7.3	6.4	54.2	45.5	35.7	14.4%	16.4%	18.6%
Schaeffler India	5,903	16.3%	44.2	37.6	33.3	8.5	7.5	6.6	33.0	28.5	24.6	20.1%	21.0%	25.3%
Grindwell Norton	2,166	8.4%	48.3	40.8	36.0	8.2	7.1	6.6	32.5	32.7	26.6	18.5%	19.2%	19.6%
CG Power	11,102	26.9%	93.3	68.5	53.9	25.2	19.7	15.5	80.8	68.6	50.3	30.5%	32.6%	32.4%
Average		**15.7%**	**57.3**	**45.7**	**38.1**	**10.9**	**9.2**	**7.8**	**46.6**	**41.1**	**33.7**	**19.7%**	**21.0%**	**22.1%**

Source: Industry, JM Financial

Diving deeper into drivers of growth

Why can Industrial Gases grow faster than the 8-10% industry growth rate?

How we view this vertical? We split business from this vertical into two broad segments, (1) growth in line with the industry to the tune of 8-10%, and (2) incremental opportunities coming in from industries such as healthcare, and electronics, amongst others.

INOX India's core Industrial gases business: This division involves the manufacturing, supply and installation of cryogenic tanks, majorly vacuum-insulated tanks and systems for storage, transportation, and distribution of industrial gases, which include green hydrogen, oxygen, nitrogen, argon, carbon dioxide, hydrogen and provides after-sales services. This equipment finds use in several end-use industries including steel, healthcare, chemicals & fertilisers, oil & gas, and automobiles, amongst others.

Exhibit 9. In which industries do major industrial gases find use?

Industrial Gas	Major applications
Oxygen	Steel, healthcare, manufacturing, chemical, water and wastewater treatment, pharmaceutical, pulp and paper, oil & gas, etc.
Nitrogen	Chemicals, oil & gas, food & beverage, steel and other metal manufacturing, electrical and electronics, mining, manufacturing, pharmaceutical, etc.
Hydrogen	Chemicals and fertilizers, oil & gas, manufacturing, steel & other metal manufacturing, power industry, float & sintered glass, telecom towers, etc
Carbon Dioxide	Chemicals and fertilizers, oil & gas, food & beverage, manufacturing, electrical & electronics, construction, etc.
Argon	Manufacturing, electrical & electronics, steel & other metal manufacturing, healthcare, automotive, aerospace, chemicals, etc.

Source: Industry, JM Financial

Potential from new opportunities in the industrial gases segment: Incremental opportunities for INOX India in the Industrial Gases segment exist in terms of (1) new investments in liquid oxygen tankers in the healthcare space, owing to efficiency of storage and ease of transportation and the upcoming semiconductor investments in India, and (2) recent announcements made by several companies, indicating investments of ~INR 1.5trln in the Indian semiconductor industry, to set up fabrication units and OSAT facilities. While the specifics are not known, we assume (which we believe is a fairly practical assumption) that cryogenics can possibly account for at least 0.1% of the total capex value, which translates into a revenue opportunity of INR 1.5bn for the industry over the next couple of years as these facilities are set up, given (1) INOX is already manufacturing tanks for Micron and (2) it is arguably the only company in India that has these capabilities, making it well-placed to win most of these orders.

Opportunities in the healthcare sector

- Medical oxygen plays a vital role in the healthcare sector since it is necessary for both surgical procedures and the treatment of numerous respiratory disorders. The Covid-19 pandemic highlighted the significance of having a strong infrastructure for medical oxygen supply. Medical oxygen serves as a respiratory assistance gas that is used for patients requiring supplemental oxygen. India's capacity to produce medical oxygen has expanded due to investments from both the public sector and the private sector.
- To improve distribution and manufacturing, the government has promoted cooperation between the public sector and the private sector through several initiatives driving the establishment of new oxygen plants, the renovation of existing facilities, and the promotion of investment and involvement from the private sector. Further, technology advancements have increased the generation and storage efficiency of oxygen.
- Faster growth of production capacity has been made possible by streamlined regulatory procedures and expedited permissions for the establishment of oxygen plants. Government's enhanced transportation planning has helped to guarantee that oxygen gets to isolated locations. This included the use of the Indian Railways' 'Oxygen Express' trains and the Indian Air Force airlifting oxygen containers.
- Further, while steps have been taken to improve the distribution and manufacturing of oxygen for hospitals, hospitals are also increasingly shifting to liquid oxygen systems, and that is where cryogenics come into the fray. At standard pressure and temperature,

oxygen in its gaseous form takes up far more space than when it is liquefied. Liquid oxygen occupies about 1/800th of the volume of gas oxygen, making it more practical for storage, especially in hospitals or remote locations where space is limited. The production and distribution of liquid oxygen is often more economical because bulk liquid oxygen can be produced and delivered at lower costs per litre. A recent development in this space is the Gujarat government announcing investments of INR 8bn to set up liquid oxygen facilities in hospitals across the state.

Opportunities in the semiconductor sector

- Cryogenic equipment and pipes are also used in semiconductor facilities. This appears to be a large opportunity in India, especially on the back of investments announced recently. Several large upcoming semiconductor facilities are expected to entail a total capital investment of INR 1.5trln. INOX has also made its foray into this segment, with its recent sale of nine tanks to Micron's OSAT plant in Gujarat.
- Tata's fab unit in Gujarat is expected to be spread over 80acres, and can require 50-60km of pipelines. Further, nearly 50-60 gases are used for semiconductor application, of which ~10 are manufactured in India, which means that the rest will be imported, necessitating the need of cryogenic equipment to store and transport these gases. INOX has experience in providing this equipment, which no other Indian peer has.
- While the exact proportion of cryogenics in semiconductor facilities is not known, if we assume cryogenics to be as low as 0.1% of the capex, it can mean an incremental revenue opportunity of INR 1.5bn, and as INOX is perhaps the only peer with these capabilities, the chances are high that it will capitalise on most of it.

Exhibit 10. Semiconductor investments planned in India

Semiconductor facility	Expected Capex (INR mn)
Tata Semicon Fab unit	9,10,000
Tata OSAT unit	2,71,200
Micron OSAT unit	2,36,500
Kaynes OSAT unit	33,000
CG Power OSAT unit	76,000
Total	**15,26,700**
If cryogenics are 0.1% of the total capex	**1,527**

Source: Industry, JM Financial

The LNG fuelling story

How we view this vertical? Similar to industrial gases, we split revenue in this vertical as (1) INOX's core business – includes LNG equipment for storage and LNG terminals – which is expected to register a growth rate of 12-15%, and (2) the opportunity that lies ahead in the form of LNG trucking ramp-up in India, which can drive growth rates in this vertical to 20%+.

As of Mar'25, India has ~1,500 LNG-powered trucks in operation. The Indian government aims to convert about one-third of its 7mn heavy-duty trucks to LNG within 5-7 years, indicating a significant potential increase in LNG vehicle adoption in the coming years.

INOX India's core LNG business: INOX India's core LNG business at the moment includes end-to-end LNG solutions, including mobile and permanent LNG fuelling equipment, LNG bulk storage, LNG gasification and regasification equipment, and LNG transport trailers, all with the required licences. Given the preference for greener energy alternatives and the government's push to reduce carbon emissions, LNG is emerging as a viable alternative.

The Company has also won several orders recently, which give us confidence of the growth we have factored in. This includes (1) a recent win in the Bahamas which is an order of INR 2bn+, (2) Projects in the UK, and the Caribbean, of a similar size, and (3) order from Adani Total Gas for 11 LNG terminals, of which 4 are underway and the longer term plan is for 50.

Potential from LNG trucking: The opportunity from LNG trucking exists in the form of setting up LNG fuelling stations and fitting tanks in trucks.

(1) **Setting up LNG fuelling stations:** The Indian government's target is to set up ~1,000 LNG fuelling stations, of which tendering is complete for ~50 (of which INOX has won 38-40). A single fuelling station means ~INR 50mn of business for INOX India, translating into potential incremental revenue of INR 47bn (950 LNG stations x INR 50mn each) over the longer term from LNG fuelling stations being set up. We understand that beyond the 50 stations referred to above, another 50 are in the pipeline. If even half of these (25 stations) come to INOX India until FY27, it can culminate into an additional opportunity of INR 1.3bn in revenue for INOX (over and above the INR 7bn in revenue we factor in over FY25-27E).

(2) **Fitting of storage tanks in trucks:** Opportunity also exists in LNG tanks fitted in trucks. INOX is working with Tata Motors, Ashok Leyland and Volvo for this. India currently manufactures ~300k diesel MHCVs annually and has about 1,500 LNG trucks plying on Indian roads, of which LNG tanks for 300 have been supplied by INOX, rest being imported. A tank fitted in an LNG truck costs about INR 0.5 mn. Assuming India adds another 3,000 trucks over the next couple years (conservative estimate, vs. the Government's target), and INOX supplies to half (1,500) of them, it can mean an incremental opportunity of INR 825 mn for INOX.

The LNG ecosystem in India, peer nations and India's aspirations

- Driven by its vision of transforming India into a gas-based economy, the Government of India (GoI) has identified LNG as a transport fuel as a priority area considering the potential benefits in terms of (1) reducing vehicular pollution, (2) saving in terms of import bill of the country and (3) wide-ranging benefits that may accrue to fleet operators, vehicle manufacturers and other entities in the gas sector.
- Furthering the above aspiration, GoI has set a target endeavour to put up nearly 1,000 LNG fuelling stations across the golden quadrilateral in India. This initiative is expected to drive a pickup in LNG trucks and help India achieve its target of a 15% share of natural gas in India's total energy mix by 2030 (from the current 6%).
- Data from Blue Energy Motors (an Indian start-up manufacturing LNG fuelled-trucks) suggests that, currently, there are 22 live LNG stations in India, and 14 upcoming stations. As of Mar'25, India has 1,500 LNG-powered trucks in operation. GreenLine Mobility Solutions, a logistics company, has ordered 2,000+ LNG trucks. On similar lines, Blue Energy Motors has sold ~600 LNG trucks till date and is targeting 3,000 units in FY26.
- **China:** China is miles ahead of India in this aspect. Nearly a fifth of total new truck sales in the country comes from LNG trucks. China started assessing LNG way back in 1961 and has made large strides in adopting it for its road transport. Its current fleet of LNG trucks stands at ~582,000 LNG heavy-duty trucks, supported by ~4,800 LNG stations across the country, making it the world's largest market for LNG trucks.
- **Europe:** Europe began considering LNG for its heavy duty vehicle (HDV) segment in 2011. Italy (operates 3,000+ LNG trucks and 103 refuelling stations) and Spain (operates 2,100+ LNG trucks and 76 refuelling stations) have been ahead of the curve.
- **India's aspirations:** The Indian government aims to convert about one-third of its 7mn heavy-duty trucks to LNG within 5-7 years, indicating a significant potential increase in LNG vehicle adoption in the coming years.

Exhibit 11. Live and upcoming LNG fuelling stations in India

Source: Blue Energy Motors

Data from Blue Energy Motors (an Indian start-up which manufactures LNG fuelled-trucks) suggests that, currently, there are 22 live LNG stations in India, and 15 upcoming stations.

Exhibit 12. Comparison of various fuel alternatives for M&HCVs

Points of difference	Diesel	CNG	LNG	Green Hydrogen	Electric HDV
Technology maturity	**High**	**Moderate**	**Moderate**	**Low**	**Low**
Why?	Well established. 95% of HDV registrations are diesel.	Well established. Limited capacity for long haul. 4% of HDV registrations	Common in US, China, Europe. India now has a fleet of ~7,000	Early stages of development; pilots being run globally	Range and battery a constraint
Infrastructure	**Widely Available**	**Limited for interstate**	**Limited; being developed**	**Not available**	**Limited**
Why?	India has a widespread well established network of retail outlets	Limited availability on interstate highways	Foundation stone laid for 50 stations, near term plan to reach 1,000	Pilots being run globally, availability of stations yet far away	Limited fast charging infrastructure
India's self-dependence	**Low**	**Moderate**	**Low**	**Yet to be known**	**Moderate**
Why?	More than 80% of India's crude oil requirements are met through imports	CNG produced locally, by compressing natural gas, which is imported	LNG is an imported fuel	Electrolysis can be done in India; hence unlikely to be imported	A significant amount of materials required for the battery are imported
Total Cost	**Moderate**	**Moderate**	**Moderate**	**High**	**High**
Why?	Base case, depending on fuel prices	Cheaper than diesel, but again, limited range a major challenge	Highly volatile. Cheaper than diesel as long a gas prices are benign	The costliest, given new technology and high cost of hydrogen	Cheaper than hydrogen. High upfront cost, ops can be cheaper
Emission Savings	**Low**	**Moderate**	**Moderate**	**High**	**High**
Why?	Emit air pollutants such as nitrogen oxide and other particulate matter	10% lower carbon emissions and fewer air pollutants	10% lower carbon emissions and fewer air pollutants	No major emissions	No major emissions

Source: Niti Aayog, JM Financial. Notes: (1) HDV – heavy duty vehicle, (2) Electrolysis - (3) M&HCV – medium and heavy commercial vehicles

Exhibit 13. The LNG supply chain and use of cryogenic equipment/INOX's presence therein

Activity	Description	Requirement of cryogenic equipment/INOX's involvement
Natural Gas extraction	Natural gas is extracted from onshore and offshore locations, and undergoes treatment to remove impurities	No cryogenic equipment required here
Liquefaction	Cooled below melting point of -163 degree Celsius to liquefy it	Cryogenic equipment required to store the liquefied gas
Transportation	Transported through LNG terminals, often across oceans. Low temperatures need to be maintained	Cryogenic equipment is used for transportation as well
Regasification	At the receiving end, converted back to gas by raising its temperature	INOX manufacturers vaporisers used in regasification
Distribution	Distribution of natural gas upon regasification	No cryogenic equipment required here

Source: Industry, JM Financial

Exhibit 14. Operating a LNG truck can mean potential savings of INR 200,000 annually

Key metrics	LNG	Diesel
Fuel tank capacity (litres) (A)	420	160
Mileage (Kmpl) (B)	3.3	7.0
Hence, total kilometres that can be travelled on a full tank (C = A x B)	1,400	1,120
Price per litre (D)	31	95
Hence, total cost of a full tank (E = A x D)	13,104	15,200
Price of fuel required per km (F = E/C)	9.4	13.6
Cost of Vehicle (G) (INR)	55,00,000	30,00,000
Assuming life of 5 years, per year cost of ownership (H = G/5)	11,00,000	6,00,000
Total km travelled in a year (I = 450 kilometres assumed daily x 365 days a year)	1,64,250	1,64,250
Cost of ownership per km (J = I/C)	6.70	3.65
Total cost of operations (includes fuel and ownership costs) per km (F + J)	16.06	17.22

Source: Industry, JM Financial

Our calculations suggests that operating an LNG truck can save the operator nearly INR 1.17 per kilometre. Assuming a truck completes 450km daily, it can mean cost savings of INR 500-600 on a daily basis and savings of ~INR 200,000 annually.

Business Analysis

India's largest manufacturer of vacuum insulated cryogenic equipment

INOX India is India's largest supplier of cryogenic equipment and amongst the leading manufacturers of cryogenic equipment globally. It has 30+ years of experience in offering solutions across design, engineering, manufacturing and installation of equipment and systems for cryogenic conditions. Its offerings include standard cryogenic tanks and equipment, beverage kegs, bespoke technology, equipment, and large turnkey projects within industries like LNG hydrogen, energy, steel, medical and healthcare, chemicals and fertilisers, aerospace, pharmaceuticals, and construction. Additionally, it manufactures a range of cryogenic equipment that is utilised in global scientific research projects.

INOX India is India's largest supplier of cryogenic equipment and amongst the leading manufacturers of cryogenic equipment globally.

The demand for cryogenic equipment across geographies is expected to be driven by higher demand for cleaner fuels such as LNG and hydrogen, given the increased focus on reducing carbon emissions from conventional energy sources. It is well positioned to leverage this opportunity through its in-house technology and LNG product range that covers the entire value chain. In the hydrogen segment, it is working on developing products and systems that are effective in complex industry environments like hydrogen storage, transportation, and distribution. This will address the need for large-scale movement of liquid hydrogen.

Understanding the fundamentals of cryogenics

In laymen terms, cryogenic equipment refers to a specialised category of machinery designed to handle and operate in extremely low-temperature environments. Generally, gases in the gaseous form occupy significantly larger areas, making transportation and storage difficult. Hence, they are cooled to extremely low temperatures, often as low as -150 degrees Celsius, to be converted into liquid form, making it easier to transport and store them. Consequently, in all use cases wherein cryogenic gases are used, cryogenic infrastructure is also required. Its common uses include:

Cryogenic equipment refers to a specialised category of machinery designed to handle and operate in low-temperature environments, especially when gases are cooled to extremely low temperatures, often as low as -150 degrees Celsius to be converted into liquid form, hence making it easier to transport and store these gases.

Consequently, in all use cases wherein cryogenic gases are used, cryogenic infrastructure is also required.

- **Automotive:** In the automotive manufacturing industry, cold shrink technology is frequently used, which ensures that individual engine components temporarily reach a freezing temperature and shrink slightly; this allows them, during the assembly process, to be pressed into the engine with a light force. As the concerned part warms up again, it expands and gets firmly anchored into the engine. Liquid gases are used to bring parts rapidly to extreme cold, and cryogenic infrastructure is needed to do this.
- **Electronics:** Cryogenic technology is extensively used in the electronics industry too. It is mainly during the testing of electronic devices that extremely cold liquid gases are applied. Liquid nitrogen is commonly used to test whether the equipment can withstand cold temperatures in everyday use. In the semiconductor industry as well, wherein precision is paramount, cryogenic equipment finds use. Cryogenic cooling is used to maintain the low temperatures required for semiconductor fabrication.
- **Food and Beverages:** In the food and beverages and food processing industries, liquid gases are used for cooling and the safe packaging of products. Some of the advantages of cryogenic technology in this industry are the processing speed and the fact that products are preserved for a long time while optimally retaining their shape. The use of liquid nitrogen or other refrigerants allows food to be frozen in a matter of seconds, preventing the formation of large ice crystals and reducing cellular damage.
- **Liquified Natural Gas (LNG)**: The LNG industry is growing at a rapid pace. It also offers some environmental advantages for the shipping and road transport sector and is, for that reason, increasingly being used as a fuel. To transport or store LNG in the liquid form, it must be stored at -162 degrees Celsius, which requires advanced cryogenics.
- **Healthcare and Pharmaceutical**: Liquid nitrogen is popularly used in the medical field. This liquid gas is used to perform specific medical treatments and to preserve complex biological structures (cryopreservation is used to preserve blood, cells, organs, and DNA). Liquid nitrogen also plays an essential role in the pharmaceutical industry; it is used frequently for moulding medicines into pill form.

- **Space research and missions:** Primarily because of the enormous power that cryogenic gases can generate, they are regularly used within the space industry. Cryogenic fuels like liquid hydrogen and oxygen are critical in space travel, particularly in fuelling rockets. In their liquid state at such low temperatures, these fuels offer a high energy density crucial for rockets to achieve the immense thrust necessary to escape Earth's gravitational pull.
- **Air separation:** The air separation industry extensively uses cryogenic equipment. Air separation takes place in air separation units, which essentially is a facility that separates atmospheric air into its primary components, nitrogen, oxygen, argon and other gases.
- **Hydrogen:** Interest in hydrogen is growing significantly. Hydrogen is a versatile, clean, and safe energy carrier that can be used as a "fuel" in a fuel cell or as a feedstock in the industrial sector. When hydrogen is combusted, only vapour is released. This makes it a unique fuel in terms of sustainability. Hydrogen will play an increasingly prominent role in the marine industry, the industrial sector, and the space industry in the coming years.

INOX's business is split into Industrial Gas, LNG, and the Cryo-Scientific division

Industrial Gas

- In this vertical, INOX India commands 60-65% market share in India and nearly 10% globally. Key products in this vertical include mass-manufacturing of standard vertical and horizontal tanks. This division involves the manufacturing, supply and installation of cryogenic tanks, majorly vacuum-insulated tanks and systems for storage, transportation, and distribution of industrial gases, which include green hydrogen, oxygen, nitrogen, argon, carbon dioxide, hydrogen, and after-sales services.
- INOX India's storage tank offerings include stationery storage tanks ranging from 1,000 litres to 1 mn litres capacity, portable storage tanks from 1 litre to 1,000 litres capacity and transport tanks and tankers/trailers up to 60,000 litres of capacity. Its product line also includes vaporisers of various types and equipment for pumping.
- INOX India also provides EPC services for cryogenic solutions, including bulk storage and regasification equipment, typically associated with petrochemical or steel projects.

Liquefied Natural Gas (LNG)

- INOX India's LNG vertical is involved in design, manufacturing, and installation of standard and engineered solutions for LNG, including static storage tanks (up to 1 mn litres capacity), transport trailers, LNG satellite stations for industrial users, marine fuel tanks, LNG and LCNG fuel stations and LNG vehicle fuel tanks.
- Through this vertical, INOX has supplied >60% of the tanks in both the stationary tank segment, (includes all LNG applications including LCNG stations), and trailer-mounted mobile LNG tanks in India. It also offers operation and maintenance for LNG solutions.

Cryo-Scientific Division (CSD)

- Through this division, INOX division provides equipment for technology-intensive applications and turnkey solutions for scientific and industrial research involving cryogenic distribution. Its activities here are focused on customised cryogenic storage and distribution systems for space research, cryogenic fuel filing systems for launch pads, space simulation chambers, vacuum jacked piping, and cryostat for MRI.
- It is also working with Indian companies in the International Thermonuclear Experimental Reactor (ITER) project; international nuclear fusion research and engineering megaproject.

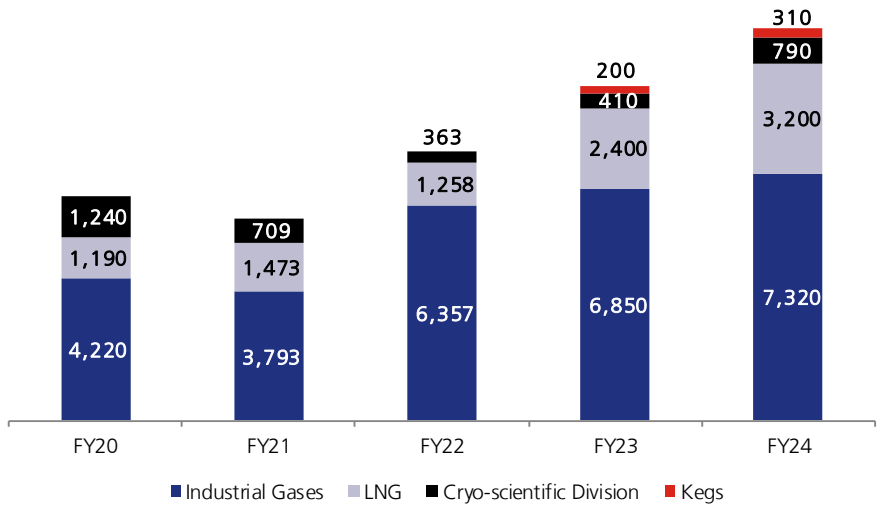
Foray into beverage kegs; full-blown operations from FY26

In FY25, management expects INR 500mn-600mn of revenue from the newly introduced beverage kegs business.

- **Reason behind the foray into beverage kegs:** To further expand its presence into the non-cryogenics space, building on its expertise in steel welding, INOX India introduced beverage kegs, predominantly used in the food and beverages industry. This foray also addresses concerns over the limited addressable market for cryogenics, and provides a path to growth as other growth levers are in the incubation phase catch-up.
- **Technology agreement:** INOX has signed a technology licence agreement (in Aug'22) with Supermonte SRL of Italy for the manufacture of stainless-steel beverage kegs using the Supermonte brand and technology. While Supermonte will provide the technical know-how to INOX, INOX will provide financial support to Supermonte. The go-to-market strategy in Europe will be managed by Supermonte, while ex-Europe by INOX.
- **More on the product:** INOX India's beverage kegs are manufactured using NSF-certified stainless steel and have been widely used in the food and beverage industry to store beer, syrups, and other beverages, ensuring the product remains unaltered during storage, regardless of its handling and climate conditions.
- **Economics of the product:** We understand that this is a weaker gross margin business, given the lower requirement of engineering expertise. On the flip side, overheads incurred are also lesser and operating leverage benefits can be significant. One beverage keg sells at EUR 50-60 euro (INR 4,500–5,500). General order size is ~INR 10mn-50mn. In FY25, the management expects INR 500mn-600mn of revenue from this business.
- **New greenfield manufacturing facility in Savli:** It has also set up a production facility to produce these stainless-steel beverage kegs at Savli, in Gujarat, for which it incurred capex of INR 2bn. It dispatched its first export order from this plant in 3QFY24 to Belgium and USA for initial approvals. The Savli facility for keg manufacturing is now fully geared up to cater to the requirements of domestic and international market. Until 2QFY25, the company had dispatched 11,000+ kegs to breweries across India, United States, Belgium, Germany and Brazil.
- **Capacities in the Savli facility:** Initial capacities in this facility are 300k beverage kegs per annum, which can be scaled up to 1mn kegs per annum. The company has developed 25+ variants of kegs required for the Europe and US market.
- **The path forward:** INOX's facilities have been approved by major breweries such as AB InBev, and product audits to win business from Carlsberg and Heineken are underway. The management believes that the South American market for beverage kegs looks very promising. As audits are underway, the management claims to have received positive feedback from most of the customers and breweries on the sample kegs provided to them for testing. Active RFQs for more than 1.5 lakh kegs have been received from potential customers from India, Australia, Belgium, US, Norway and Spain. RFQs are coming in, and the product has been approved by whichever breweries that it had supplied samples to so far, including Indian and international breweries.
- **Seasonality in beverage kegs:** January to July period is a seasonably strong season for the beer keg business, and inquiries start flowing in through October to December. On similar lines, INOX India is also witnessing incoming inquiries.

Key operational highlights

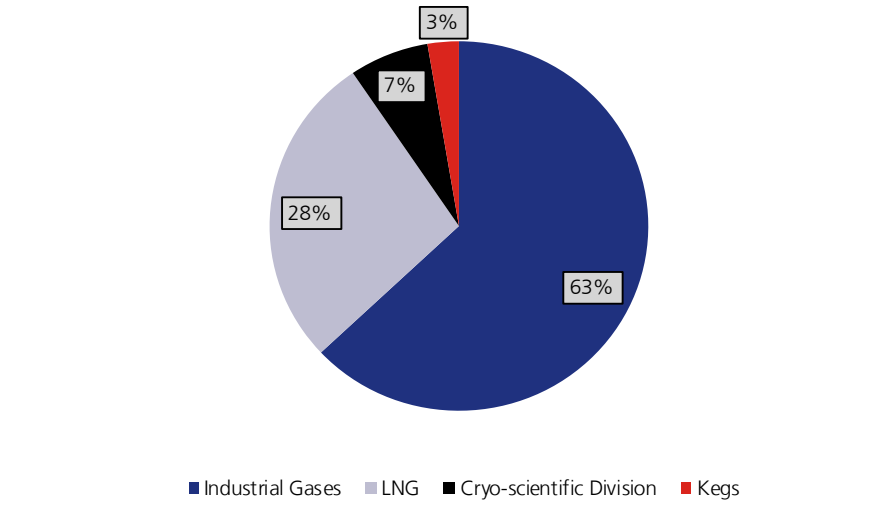
Exhibit 15. INOX India – revenue split by industry (FY20-24)



Source: Company, JM Financial

While INOX's revenue has registered 15% CAGR through FY20-24, LNG has been the fastest growing at a 4-year CAGR of 28%, followed by industrial gases, which registered 15% CAGR. The CSD vertical has shrunk and registered -11% CAGR through FY20-24. Revenue in the CSD vertical is relatively lumpy in nature.

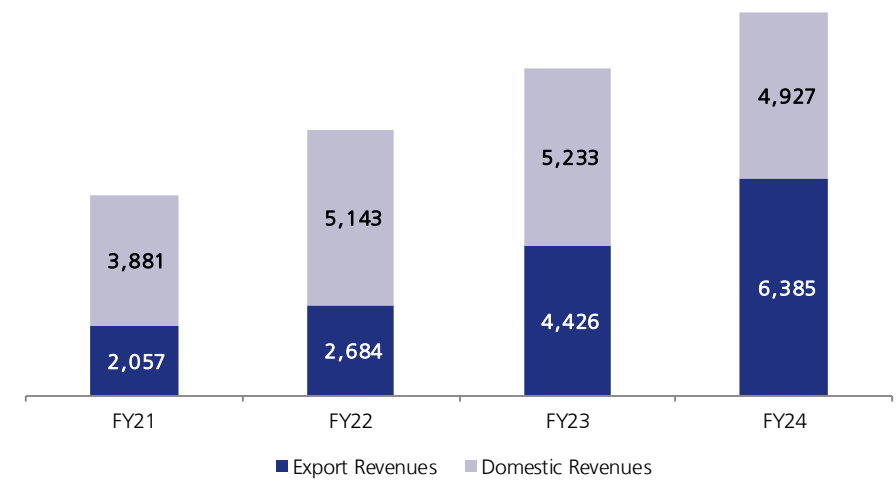
Exhibit 16. INOX India – FY24 revenue split by industry



Source: Company, JM Financial

In FY24, industrial gases formed the largest part of INOX's revenue at 63%, followed by LNG at 28%, CSD at 7% and the new beverage kegs business along with other avenues at 3%.

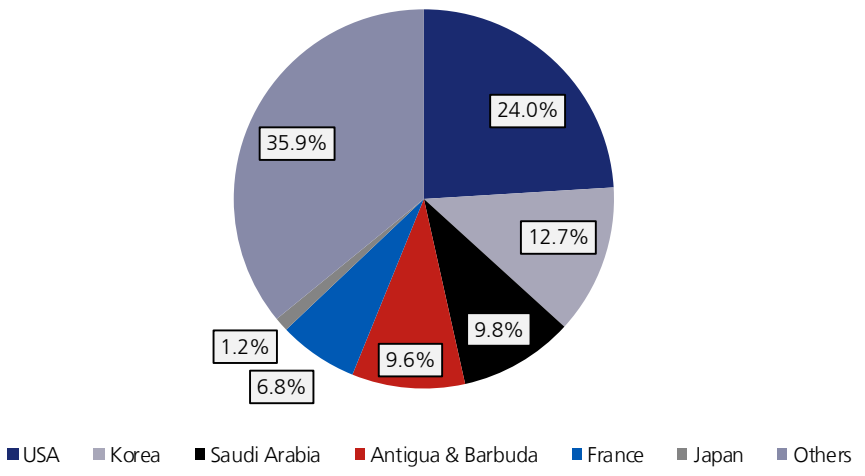
Exhibit 17. INOX India – revenue split by geography



Source: Company, JM Financial

INOX's export revenue and domestic revenue contributed 56% and 44% of FY24 revenue respectively. The management targets 50:50 to be a sustainable mix.

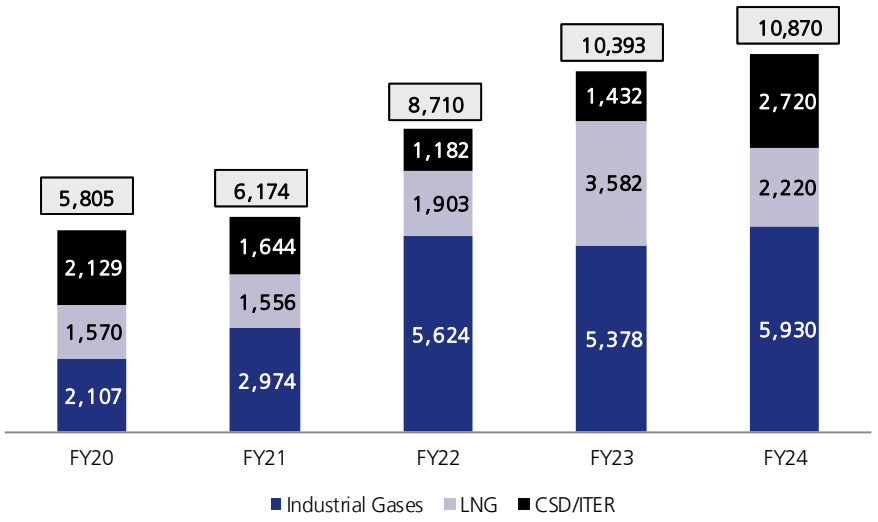
Exhibit 18. INOX India – FY24 export revenue split by nation



Source: Company, JM Financial

In FY24, out of the export revenue of INR 6.4bn, the top 3 nations that INOX exported to were: USA (24% of export revenue), Korea (13% of export revenue), and Saudi Arabia (9.8% of export revenue).

Exhibit 19. INOX India – historical order book trend

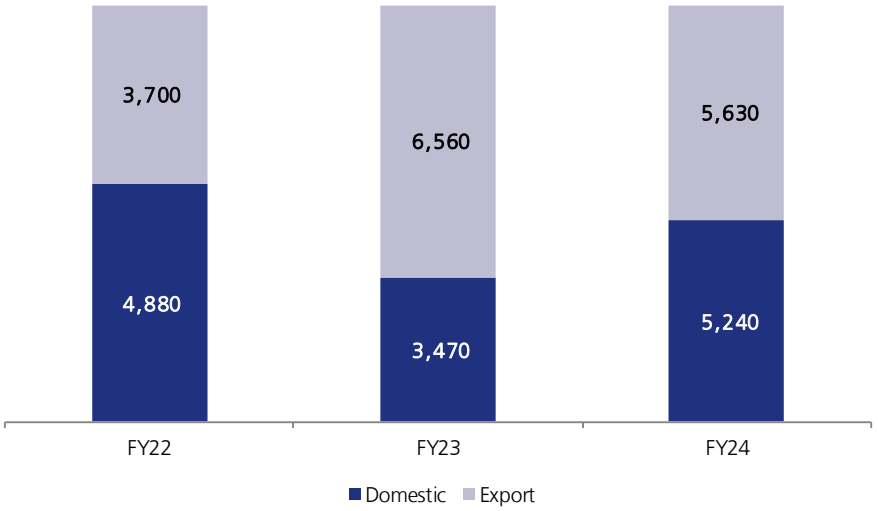


Source: Company, JM Financial

Out of INOX's ~INR 11bn order book, industrial gases form the largest component at 55%, followed by CSD at 25% and LNG at 20%.

Custom products are 60% of its business and standard products are 40%. Execution period is 8-14 months in custom tanks and 2-4 months in standard tanks.

Exhibit 20. INOX India – order backlog split by geography

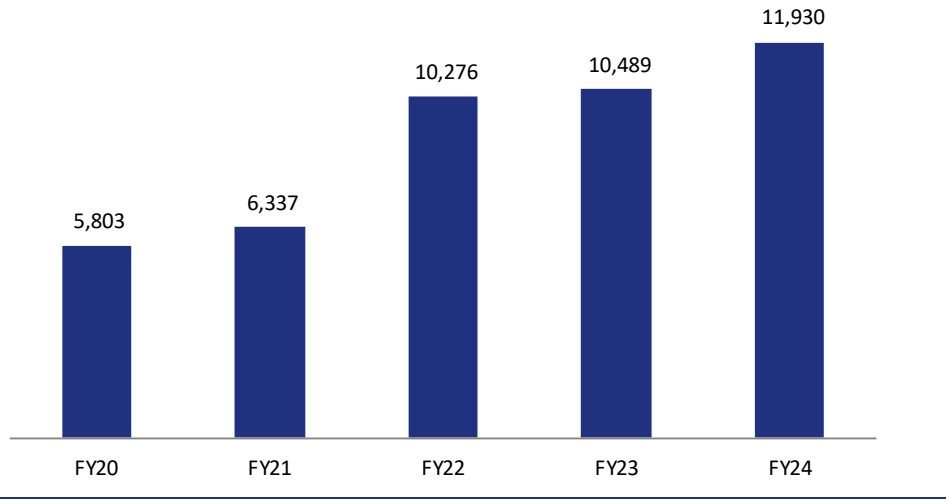


Source: Company, JM Financial

The current order book is a fair mix between domestic and export business, 48% of it consisting of domestic orders, and 52% being export orders.

Exhibit 21. INOX India – historical order inflow trend

Order inflows grew 14% in FY24. Total order inflows stood at INR 11.9bn.



Source: Company, JM Financial

Exhibit 22. A brief overview of INOX India's offerings

Division and offerings	Brief Description of product offerings
Industrial Gases	
Bulk storage tanks	Tanks for all liquefied gases in several pressure ratings and configurations
Engineered package systems	Turnkey solutions primarily for petrochemical or steel projects
Semi-trailer transport tanks	Semi-trailers with austenitic steel inner and outer vessels
ISO containers	Containers for transportation of liquified gases through road, rail, and sea
Microbulk units	Portable units to store large quantities of gases in cryogenic conditions
Vaporizers	Ambient and steam bath vaporizers
Cryo Bio	Products for dairy, animal husbandries, storing biological samples and livestock breeding
Refrigerant Cylinders	Disposable and non-refillable cylinders for storing refrigerants
Beverage Kegs	Stainless steel kegs used in F&B industry
Liquid medical oxygen systems	Supplied liquid medical oxygen infrastructure to 500+ hospitals through Covid
LNG Division	
Industrial applications	Manufacture LNG satellite stations, re-gas systems for heating, power, and feedstock
Mini LNG infrastructure	Mini LNG terminal solutions from concept to commissioning, design, development, and site implementation
High horsepower applications	High HP applications for LNG marine fuel gas, LNG rail locomotive fuel gas & mining truck LNG tanks.
LNG systems and equipment	Design, manufacture, and install LNG systems for industrial, marine, mining, and rail applications
Cryo Scientific Division	
Satellite and launch facilities	Involved in space projects, and have developed several storage and handling systems
Cryogenic propulsion system	Engage in R&D of cryogenic propulsion systems
Fusion and superconductivity	Developed cryogenic distribution systems that include superconducting magnets and cryopumps.

Source: Company, JM Financial

Diversified domestic and international customer base across industries

Exhibit 23. INOX India – segment-wise list of key customers

Source: Company, JM Financial

Manufacturing units

INOX India operates through four manufacturing units spread across Gujarat and Maharashtra and service distribution spread across the globe, and it is well equipped to cater to the requirements of its clients. Its manufacturing facilities include:

- Two facilities for cryogenic manufacturing; the Kalol unit, which is focused on catering to the domestic business, and the Kandla unit, which is focused on executing export orders.
- Third is the newly set up Savli facility for manufacturing of beverage kegs, spread across 32 acres with existing capacity of 300k kegs per year and the potential to scale up to 1 mn kegs per annum.
- Fourth is the Silvassa facility, which is predominantly for the manufacturing of disposable cylinders.

Exhibit 24. INOX India – manufacturing units

Source: Company, JM Financial

Top – notch product development and R&D capabilities

- Over the past 5 years, INOX India has added new products including liquid hydrogen storage tanks, LNG dispensers, LNG fuel tanks, and aluminium trailers; it has also obtained global approvals and certifications, including the ASME's 'U' Stamp, and approval under EN 13458, 13530 and Australian standard AS 1210.
- INOX's product development and engineering activities are critical in maintaining its competitive position, addressing customer needs and industry developments. It focusses on developing newer technologies, engineering new products, reducing production costs, simplifying manufacturing processes, improving safety, and reducing the environmental impact of its manufacturing process and end-products. Its cryogenic pressure vessels comply with international standards and requirements. Additionally, its engineering focus and deep domain expertise give it the ability to develop customised products and systems for customers, which, it believes, gives it a competitive advantage.
- For instance, INOX India manufactured and supplied cargo tanks for an inland waterway LNG bunker barge of a European customer. This barge required vacuum insulated LNG Type C tanks to be designed and manufactured under BV Classification Society standards. INOX India was able to successfully resolve the design, engineering, and manufacturing challenges, and ensure timely supply of the tanks on schedule for the plant's commissioning in 2019.
- Other examples of INOX's bespoke engineering include LNG mining tanks for a multi-national equipment manufacturer (which are designed and tested to its mining truck requirements) and disposable cylinders for National Refrigerants, Inc. (which conform to DOT 39). Apart from specialised product development, under its cryo-scientific division, INOX India also offers applications and turnkey solutions for scientific and industrial research. Its cryo-scientific division has experience and expertise to design, manufacture, install and commission cryolines, vessels and other related system following various international codes and standards.
- Its activities in the CSD division are focussed on satellite and launch facilities, cryogenic propulsion systems and research, cryogenic process technologies, and fusion and superconductivity.

Industry certifications are a barrier to entry

- These products warrant specialised engineering, industry certification and customer acceptance because of the extremely low temperatures and volatile nature of the gases that this equipment stores and handles. The company covers the full product lifecycle, from design engineering and product development, through the stages of manufacturing, sales and supply chain, and customer evaluation, and after-sales service.
- It has implemented an integrated management system for quality, safety, and environmental control of its operations. The stringency related to design and manufacture and the number of regulations in the cryogenic equipment segment are barriers to entry for new players in the segment.
- INOX India has obtained several approvals and certifications required to sell its products in the US, Europe, Australia, and other international markets.

Key raw materials

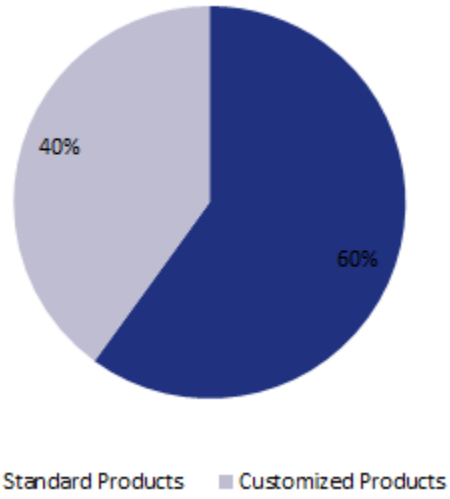
- INOX India's principal raw materials include stainless steel products, palladium oxide, carbon steel products (including sheets, plates, sections, and heads), valves and gauges, aluminium products, and fabricated metal components.
- Steel constitutes 35-40% of sales. The company uses austenitic stainless steel for manufacturing its equipment. This is because normal/carbon steel become brittle at very low temperatures and hence will not serve the purpose. Aluminium, although light, is not easy to weld and nickel steel is the cheapest option but corrosive in nature. Hence, its core properties along with easy availability make austenitic stainless steel the ideal form of steel for manufacturing cryogenic equipment. Besides steel, valves (5-8% of sales) and insulation material (5-6% of sales) are the key raw materials.

- INOX India has supply chain relationships both in India and internationally. Besides local sourcing, it also sources raw materials from vendors in Germany, France, the UK, and the US. For sourcing raw materials, the company does not usually enter into long-term supply contracts with any raw-material supplier and typically sources raw materials from third-party suppliers under contracts for shorter periods, or from the open market.
- Commodity components of its raw materials such as steel are susceptible to additional levels of volatility and can have a relational impact on raw material pricing. It has an in-house planning and inventory control team that determines procurement requirements and monitors inventory and finished products against various factors, including capacity
- Steel is purchased from India as well as sourced internationally.

Understanding the construct of the order book

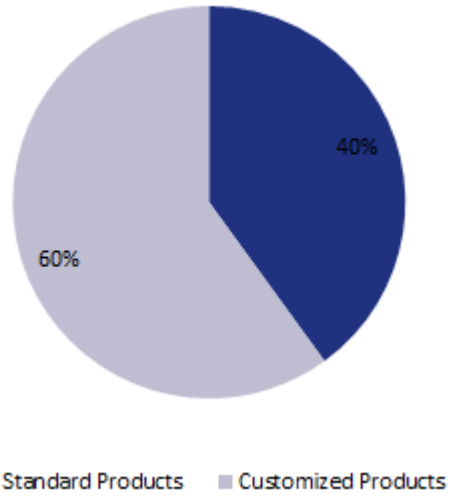
- INOX's order book consists of standard products, which are essentially off-the-shelf products (certain fixed specification products that it keeps in its inventory) and customised products. The margin differential between them is nearly 150-200bps, with custom orders being higher margin, depending on the complexity.
- Earlier (nearly 5 years ago), INOX's split was dominated by standard products, which were 60% of its order book/revenue. Today, custom products are 60% of its business and standard products are 40%.
- Execution period is 8-14 months in custom tanks and 2-4 months in standard tanks.

Exhibit 25. Order book split (5 years ago)



Source: Company, JM Financial;

Exhibit 26. Order book split (today)



Source: Company, JM Financial

How are INOX India's contracts with customers?

- Longer-term contracts generally have an escalation clause, and given longer execution cycles, increase input costs are passed on. Generally, within 25-30 days of receiving the order, steel prices are booked and quoted to the customer.
- However, the standard products are made from steel held in inventory and are, hence, priced accordingly. In the case of a short-term project order, where steel is bought to execute, the company runs the risk of raw material price inflation for the ~2 months through which the order is executed.

Recent developments, order wins and near-term triggers

Huge opportunity in the US on non-compete clause ending

As highlighted above, when INOX India sold CVA to Air Water Japan, it signed a non-compete agreement with the buyer to not manufacture and engage in stock-and-sale

assignments in the US. However, the agreement did not prohibit it from exporting directly to customers there. This non-compete clause comes to an end in Oct'28. The management believes that, upon opening up in Oct'28, this market can provide ample opportunities for the company in the cryogenic equipment space.

Clarity on levy of anti-dumping duty in USA

In May'23 INOX received intimation from the US Department of Commerce regarding the initiation of an investigation for the levy of anti-dumping duties on INOX's products. Further, in Sep'23, it received a similar intimation for an investigation with respect to countervailing duties. This was on INOX's range of non-refillable portable steel cylinders. In 1QFY25, the US regulatory authorities gave a final verdict in favour of INOX; no antidumping duties were levied and countervailing duties were limited to 2.26%.

Tie-up with Adani Total Gas

Adani Total Gas in early Feb'24 announced a tie up with INOX India as a supplier for its hydrogen and LNG equipment requirements. INOX will also help with Adani Group's requirements for transitioning to LNG as transport fuel. Both companies are expected to engage in the development of LNG infrastructure, including small-scale LNG plants and LNG stations. Revenue from this tie-up started coming 1QFY25 onwards.

Order to build the world's largest liquid air energy storage project in Manchester

In Nov'24, INOX received an order from Highview Power, for the supply of five 690kl cryogenic tanks for the project. INOX's scope is to design and manufacture these vessels. This order is executable over 12-15 months.

Received a major order to build a mini LNG terminal in the Bahamas

In Nov'24 INOX secured its largest-ever order, worth INR 2bn+. This order from Island Power Producers (IPP) is to design, engineer, and supply a Mini LNG terminal for a power plant project in the Bahamas and includes the supply of ten 1,500 cubic meter vacuum-insulated cryogenic storage tanks and a regasification system. With a total LNG storage capacity of 15,000 cubic metres, the facility is poised to become the world's largest installation of shop-built, double-walled vacuum-insulated cryogenic tanks, representing a model solution for energy generation and LNG distribution in remote locations

CVA acquisition was shale gas aspirations gone wrong

INOX India acquired CVA (Cryogenic Vessels Alternative), an American company, in 2009. INOX was an expert in static storage equipment, while CVA had a stronghold in transportation equipment. This synergy helped INOX enter into the fast-growing LNG space in the US. While INOX had a monopoly in India, this acquisition gave it global visibility, its market share reaching 10% of the global cryogenic and transportation equipment business.

INOX India's strategy here was to capitalise on the upcoming shale gas boom in the US. It bought 70% equity for INR 1bn and let the existing partners continue running the company on a day-to-day basis. CVA was making about USD 40mn in sales at the time of the acquisition, which increased to USD 152mn in sales in 3 years due to the increasing traction in shale gas. INOX India was making equipment for the extraction of shale gas, (liquid nitrogen pumpers and frag pumpers), used for digging 1-2 km deep into the earth and removing the gas. After this, with a deep fall in oil prices from 120 USD/bbl to 30-40 USD/bbl, extracting shale gas was not cost-efficient. At that time, INOX CVA's entire order book of USD 150mn got cancelled. INOX India, on the other hand, had placed orders for its raw materials which it had to pay for. INOX India sold CVA to a Japanese company (Air Water Japan) in 2016-17, which led to it signing a non-compete with Air Water Japan, according to which INOX India cannot set up any manufacturing plant in the US till FY27 nor can it store and sell in the US. However, INOX India can continue exporting from India and sell directly to customers in the US.

Private equity investment

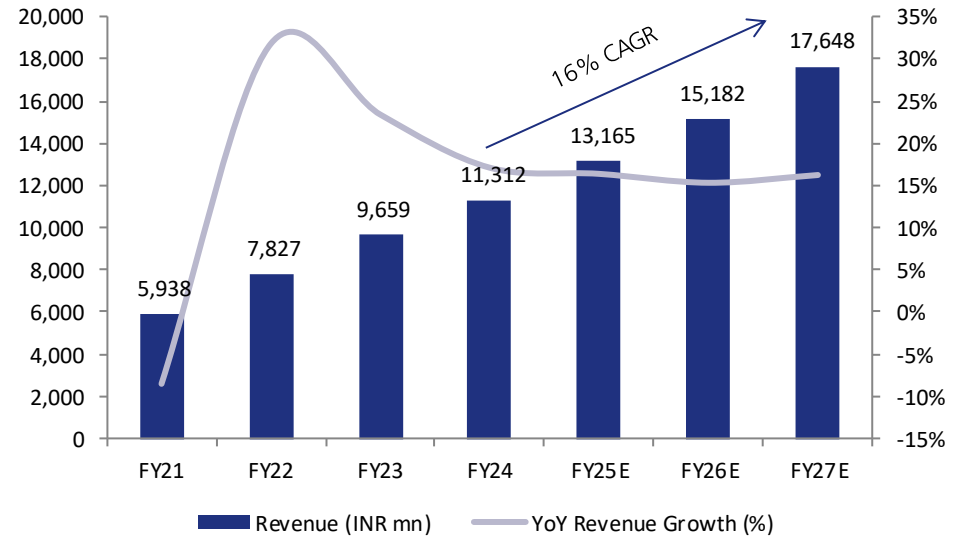
In 2012, Standard Chartered Private Equity invested USD 45mn to aid INOX India's expansion in the US and Brazil, as well as to fund a joint venture with JAT, a Chinese company. Given that the CVA acquisition did not play out as expected, it led the company into periods of financial distress, and hence the PE investors sought an exit. In 2014, the promoters agreed to return the money and in 2016 the money was finally returned.

Financial Analysis

Estimate 16% revenue CAGR, however, optionality not built in

We split revenue growth for INOX India, especially in Industrial Gases and LNG, as growth from existing opportunities and orders, and growth that can come in from potential opportunities such as semiconductors, healthcare, etc. for Industrial Gases, and trucking for the LNG segment. As a result, we factor in FY24-27E revenue CAGR of 16%, vs. management guidance (which already factors in part of these new opportunities) of 20%. Hence, upside risks to our estimates are likely, to factor in which we will track execution.

Exhibit 27. INOX India - revenue growth

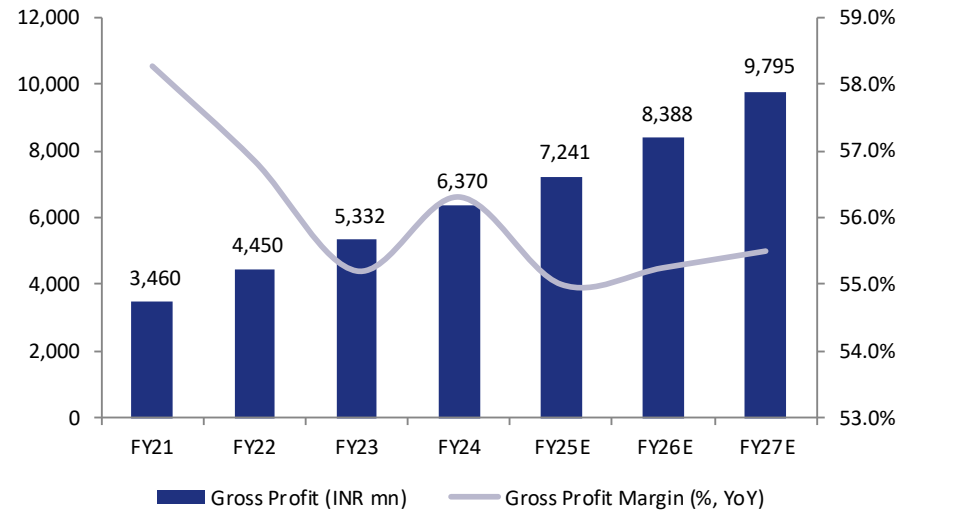


Source: Company, JM Financial

No major movement in margins, besides operating leverage benefits

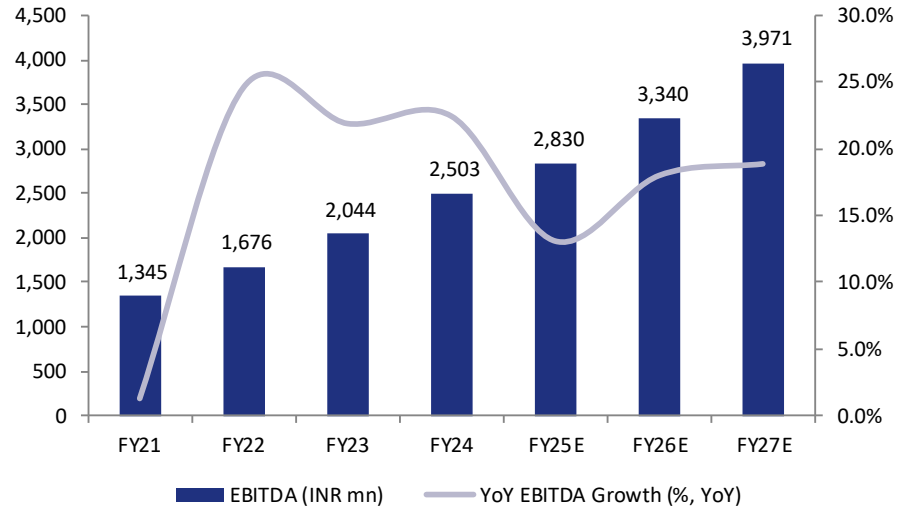
For INOX India, business in the CSD vertical is the highest in terms of margins, followed by LNG and Industrial Gases. The new kegs business is a relatively lower gross margin business (but lower operating expenses, hence not EBITDA margin dilutive). In our gross margin estimates, we build in a slight improvement of 25bps each in FY26E and FY27E basis LNG and CSD growing faster than the relatively lower margin industrial gases business. However, we do not expect gross margin to revert to earlier levels of 56-57% too soon, given the kegs business will limit gross margin upsides. Further, on EBITDA margin, besides the gross margin improvement highlighted above, we factor in some operating leverage benefits, and estimate a 50bps improvement in both FY26E and FY27E.

Exhibit 28. INOX India – gross profit and gross margin



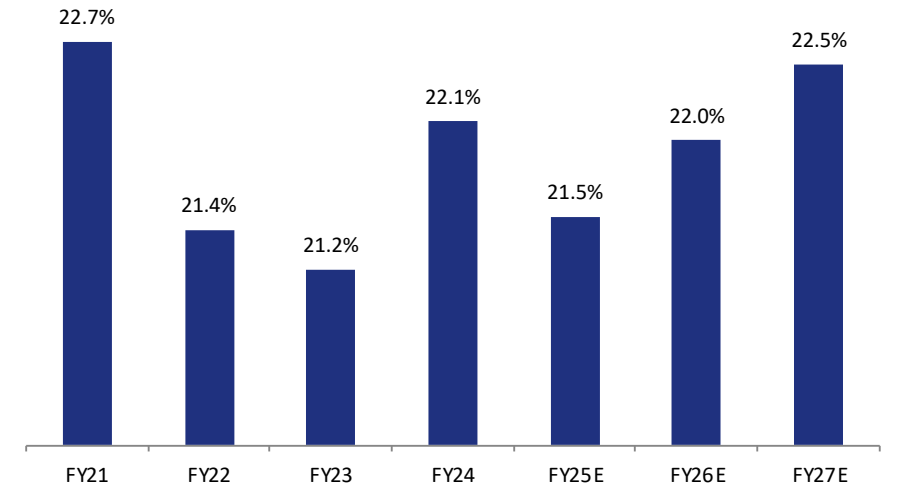
Source: Company, JM Financial

Exhibit 29. INOX India – EBITDA and EBITDA growth



Source: Company, JM Financial

Exhibit 30. INOX India – EBITDA margin

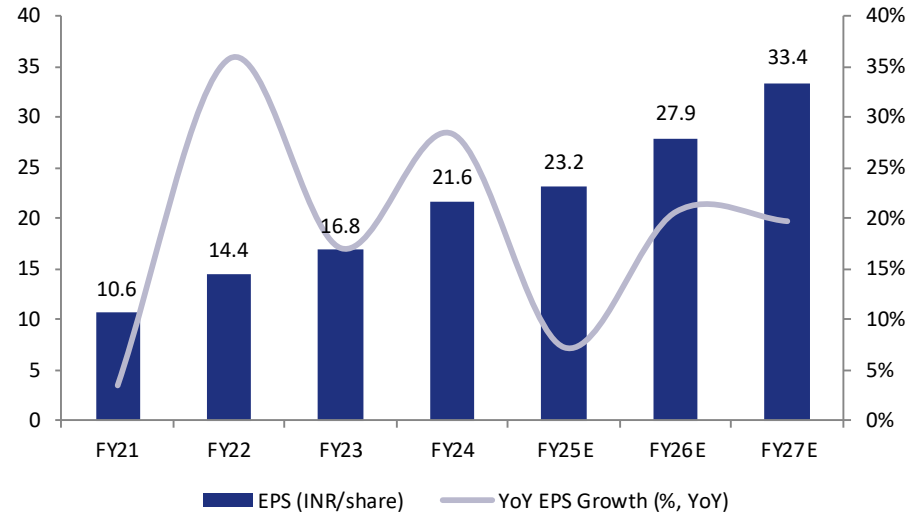


Source: Company, JM Financial

Estimate INOX India to post an EPS CAGR of 16%

We expect INOX India to post an EPS CAGR of 16% through FY24-27E driven by (1) 16% revenue CAGR and, (2) 50bps EBITDA margin improvement driving 17% EBITDA CAGR. However, the new Savli plant has been set up through FY24 and FY25, which will lead to depreciation expenses inching up; this explains why PAT CAGR is lower than EBITDA CAGR.

Exhibit 31. INOX India – EPS and EPS growth

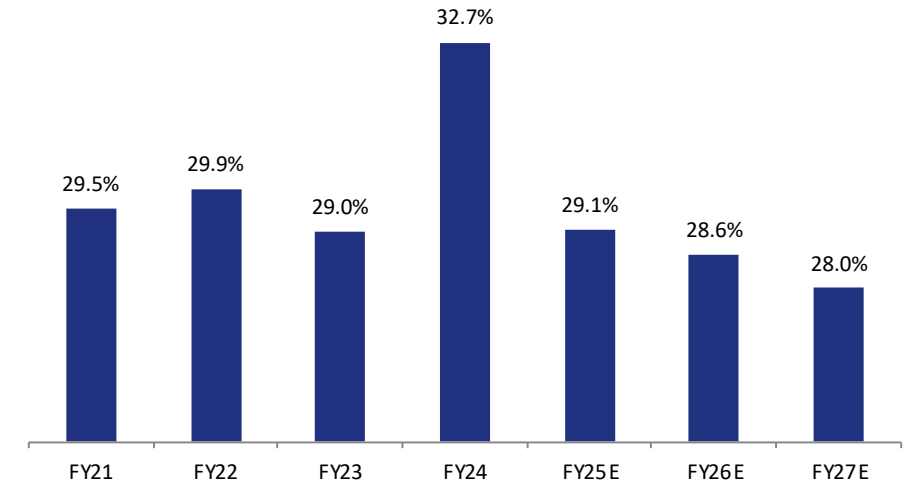


Source: Company, JM Financial

INOX has an impressive RoE and RoCE profile, which we believe it will maintain

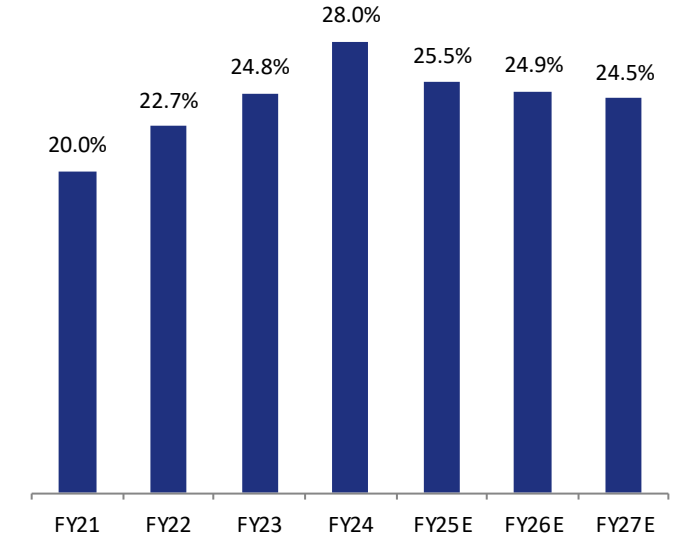
INOX has an impressive RoE and RoCE profile. Since FY21, until FY24, INOX's average RoE has been 30%; we expect INOX to maintain a similar trajectory going forward, and factor in average RoE of 29.6% across FY24-27E. Similarly, INOX has also maintained an impressive RoCE profile, which reflects in – (1) efficient use of assets, and (2) reiterates the fact that it does add significant value to clients. Across FY21-24, INOX's RoCE (post-tax) averaged 24% and RoCE (pre-tax) averaged 32%. Going further, we expect INOX to report average post and pre-tax RoCE of 26% and 34% across FY24-27E. The increase is primarily owing to the beverage kegs business operating on a higher asset turn model.

Exhibit 32. INOX India – RoE profile (%)



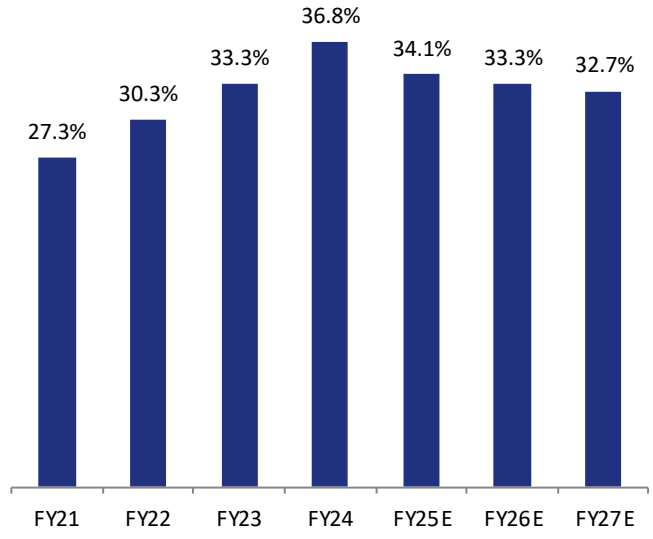
Source: Company, JM Financial

Exhibit 33. INOX India – RoCE profile (post-tax)



Source: Company, JM Financial

Exhibit 34. INOX India – RoCE profile (pre-tax)

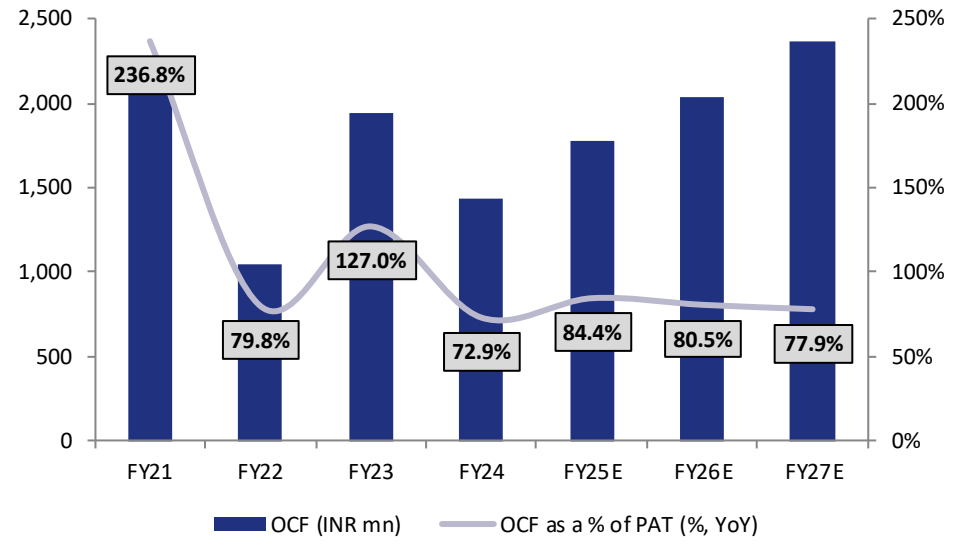


Source: Company, JM Financial

Impressive OCF and FCF generation track record

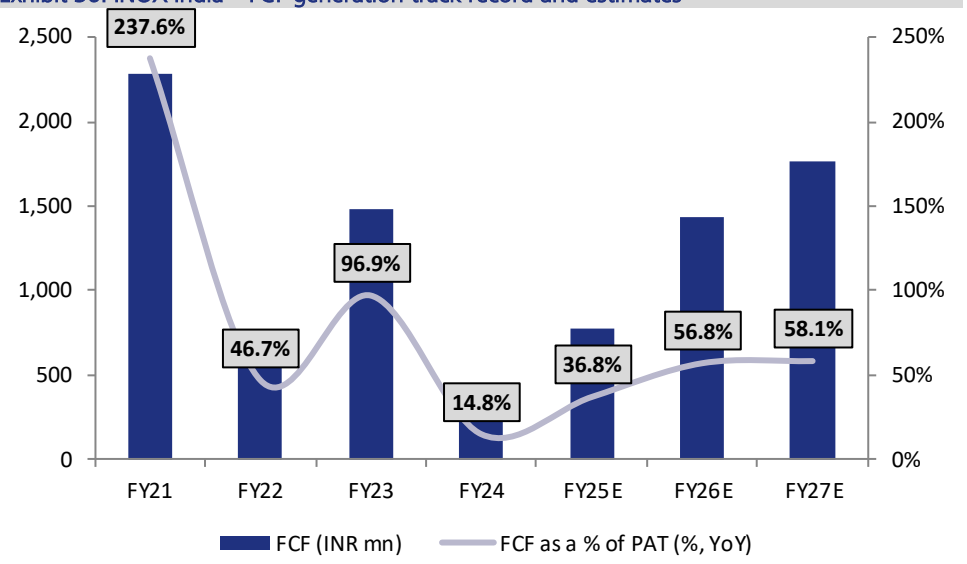
Across FY22-24, INOX India's average PAT to OCF and PAT to FCF translation was 93% and 53% respectively. We expect INOX to continue this trend going forward, and estimate PAT to OCF and PAT to FCF translation across FY24-27E to average 79% and 42% respectively.

Exhibit 35. INOX India – OCF generation track record and estimates



Source: Company, JM Financial

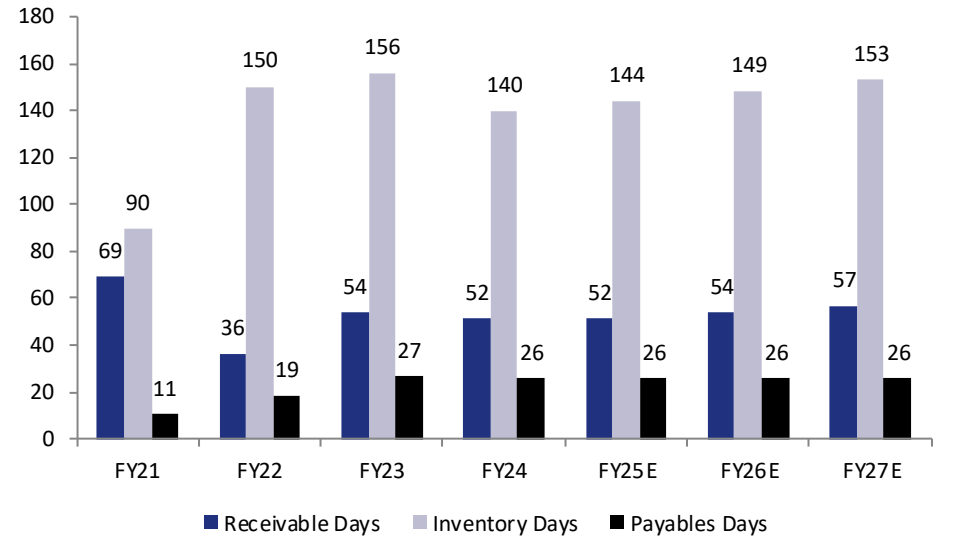
Exhibit 36. INOX India – FCF generation track record and estimates



Source: Company, JM Financial

We do not foresee any major changes to the working capital profile

Exhibit 37. INOX India – Working capital profile



Source: Company, JM Financial

Competitive Analysis and positioning vs. peers

Overview of the Indian competitive landscape

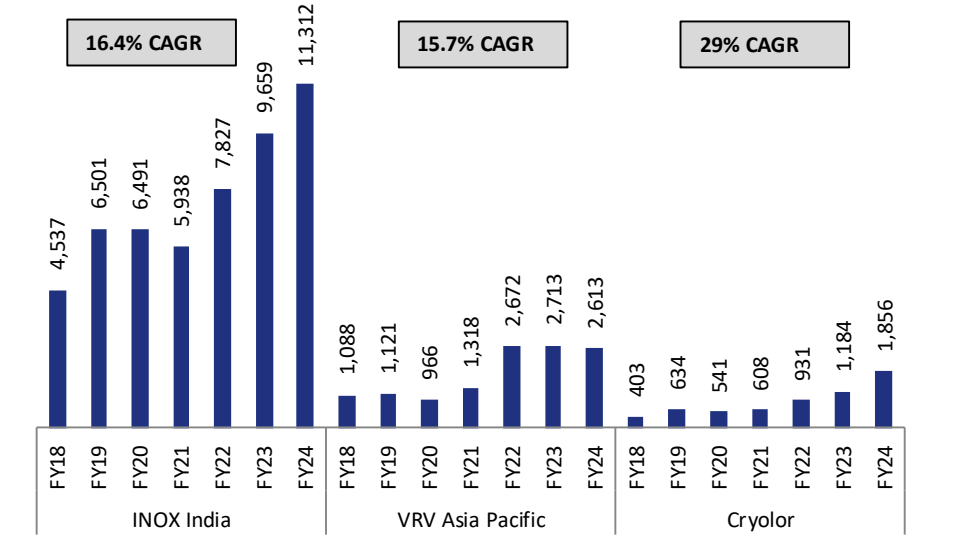
In India, INOX is the largest supplier of cryogenic equipment. Its closest peers in India are VRV Asia Pacific and Cryolor. It has a dominant position in the Indian market, with four times the revenue of the second largest player (VRV Asia Pacific). It also designs and manufactures cryogenic equipment that can meet international norms for exports to the US and Europe. According to CRISIL, INOX India is the largest exporter of cryogenic tanks from India in terms of revenue. In the LNG tank segment, Inox India has supplied 60%+ of the tanks in both the stationery and trailer-mounted mobile LNG tanks in India that have a valid PESO licence. INOX India has also received orders for supply of equipment for multiple auto-LNG-dispensing stations from IOCL, BPCL, and HPCL for the initial phases of the auto-LNG station rollout.

In India, INOX is the largest supplier of cryogenic equipment. Its closest peers in India are VRV Asia Pacific and Cryolor.

Linde India as potential competition

- Linde largely used to buy from Taylor Wharton, Chart VRV, Cryo LLC until 2016. However, to avoid the misuse of the import licence and avoid frequent inspections, Linde shifted to local manufacturers in India. INOX India was its preferred supplier, given it was the cheapest amongst peers and supplied good-quality products.
- However, INOX India's strict payment protocols led to supply chain disruptions for Linde. INOX India generally takes a large advance for the products and 100% payment before delivery. Delay in payment by Linde led to delayed dispatch by INOX India and a consequent supply disruption for Linde. This soured Linde's relations with INOX India and led to Linde exploring possibilities of manufacturing in-house (to avoid the heavy reliance on select manufacturers like INOX India).
- Linde manufactured six tanks in-house in the 8-9 months post commencement last year and expects to scale this to 15-20 tanks p.a. in the coming 5 years. Linde's annual requirement is 20-30 tanks. It started tank manufacturing in Kolkata and then set up another larger unit in Jamshedpur.
- There is a 10-15% cost advantage for Linde of manufacturing in-house vs. procuring from INOX India. As it gathers scale, Linde plans to completely stop purchasing from INOX India.
- For the time being, Linde has put a plant which is 1/20th the size of INOX's plant for manufacturing vertical tanks. This business is 20-30% of the overall portfolio of INOX, and for Linde, will only be for captive consumption. If Linde chooses to go beyond production for captive use, it can mean competition to INOX.

Exhibit 38. INOX India is the largest cryogenic equipment manufacturer in India

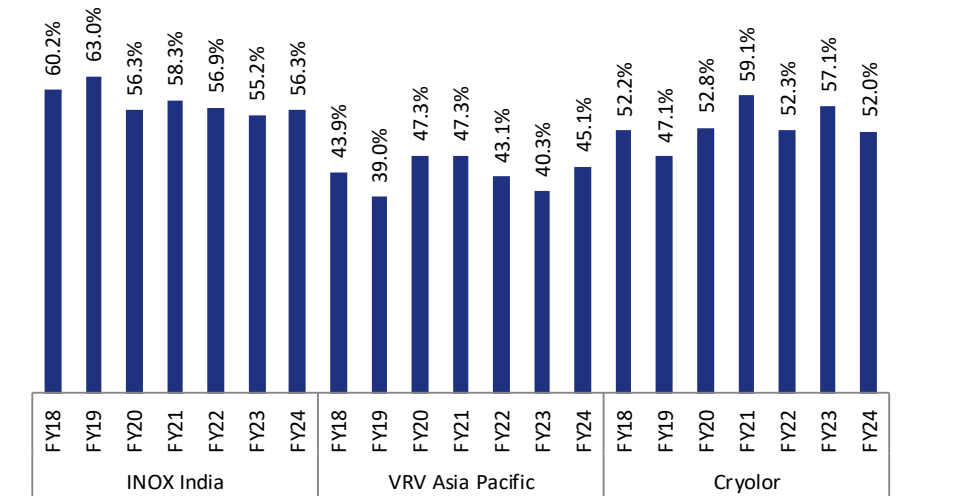


Source: MCA, JM Financial

INOX India is the largest manufacturer of cryogenic equipment in India. Its FY24 revenue, at INR 11.3bn, is ~4x that of its nearest competitor VRV Asia Pacific and 6x that of Cryolor. Through FY18-24, INOX has registered 16% revenue CAGR, lower than Cryolor's 29% but higher than VRV's 15%.

Cryolor's robust growth from FY22-24 can be attributed by strong demand from its parent company – Air Liquide.

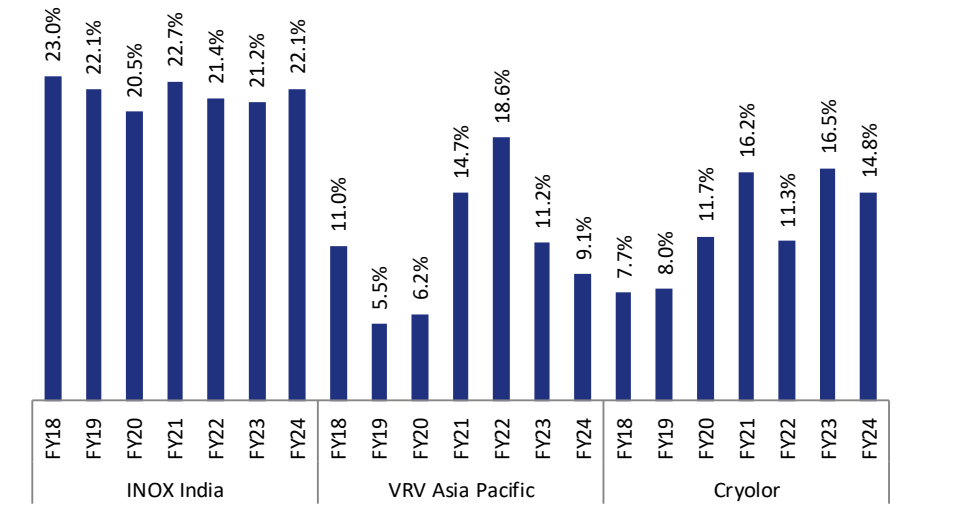
Exhibit 39. INOX India's gross margin the highest amongst peers



Source: MCA, JM Financial

INOX India enjoys the highest gross margin amongst its peers. Average gross margin through FY18-24 for INOX was 58% as compared to VRV at 43.7% and Cryolor at 53.2%.

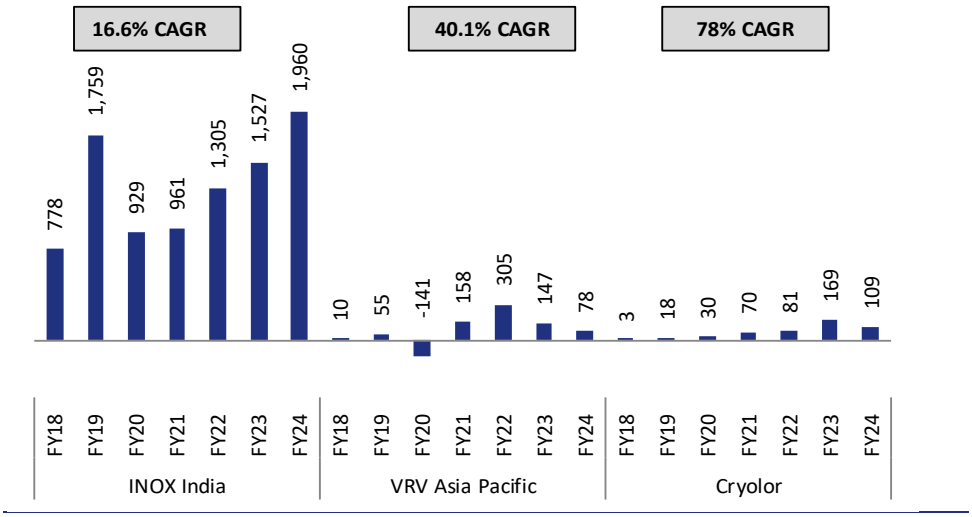
Exhibit 40. Akin to gross margin, INOX's EBITDA margin is also the highest amongst peers



Source: MCA, JM Financial

INOX India enjoys the highest EBITDA margin amongst its peers. Average EBITDA margin through FY18-24 for INOX stands at 21.8% as compared to VRV at 10.9% and Cryolor at 12.3%. Interestingly, INOX's EBITDA margin has been fairly steady over the years, consistently hovering ~20-22%.

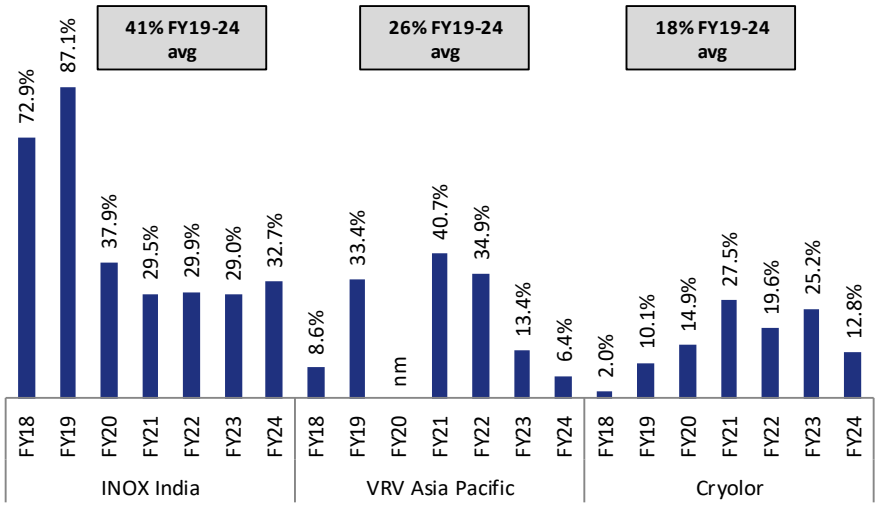
Exhibit 41. INOX India's PAT is ~9-10x that of peers



Source: MCA, JM Financial

INOX India remains the largest on the PAT front too. In FY24, its PAT, at INR 2.5bn, was 10x larger than VRV and 9x larger than Cryolor.

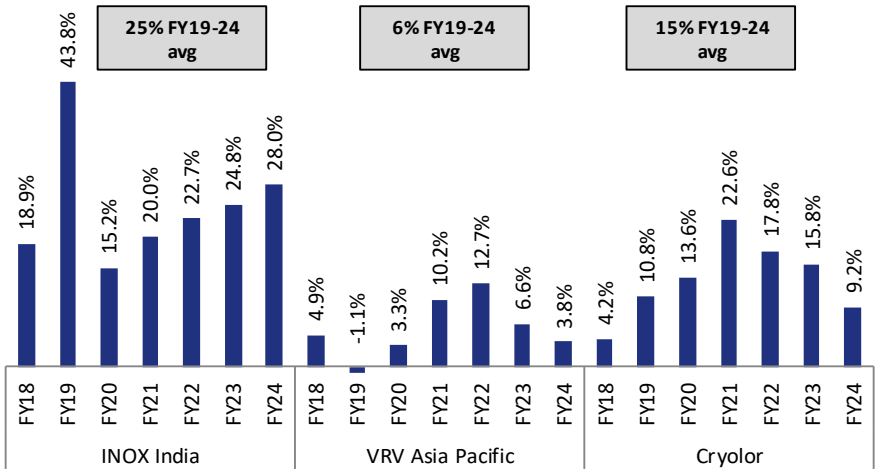
Exhibit 42. INOX India's average RoE across FY19-24 stood at 41%



Source: MCA, JM Financial

INOX India's RoE profile is superior as compared to peers. FY24 RoE stood at 32.7%, followed by Cryolor at 12.8% and VRV at 6.4%. Over FY19-24 as well, average RoE of INOX has been 41%, vs. VRV at 26% and Cryolor at 18%.

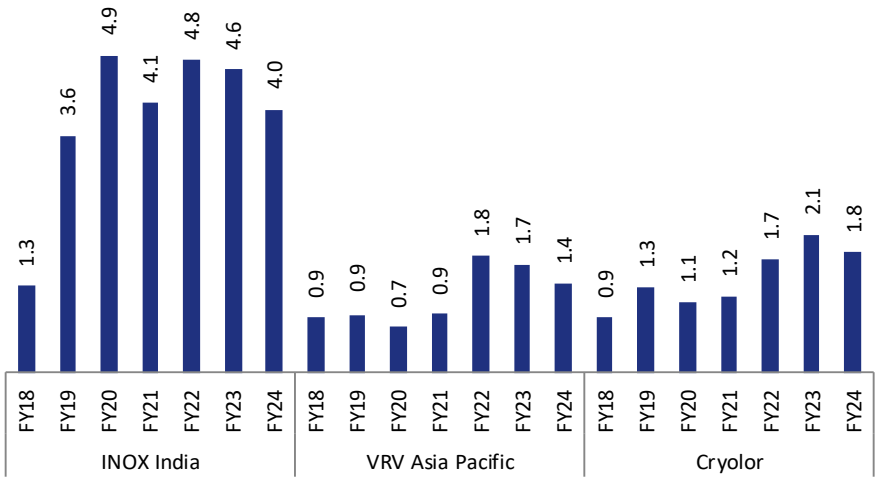
Exhibit 43. INOX India's average RoCE across FY19-24 stood at 25%



Source: MCA, JM Financial

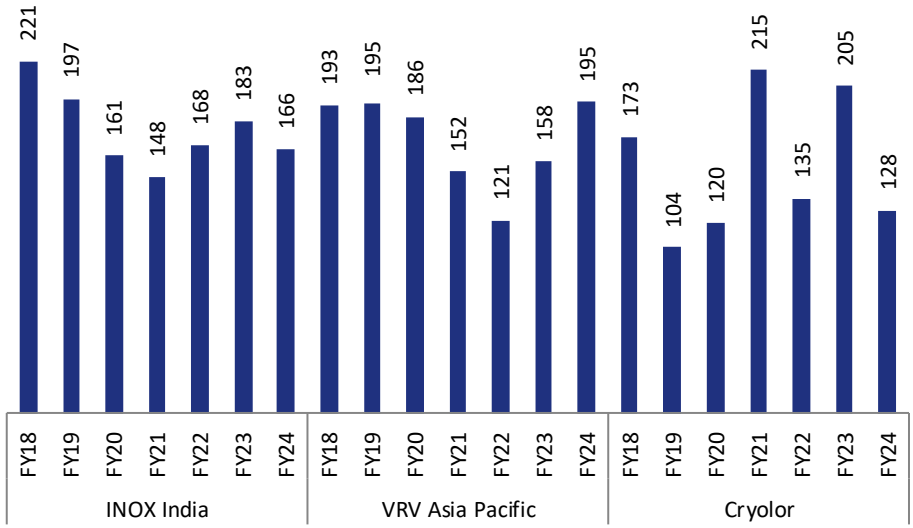
INOX India's RoCE (post-tax) profile is superior as compared to peers. FY24 RoE stood at 28%, followed by Cryolor at 9.2% and VRV at 3.8%. Over FY19-24 as well, average RoE of INOX has been 25%, vs. VRV at 6% and Cryolor at 15%.

Exhibit 44. Comparing Sales/Gross Block (x) amongst peers



Source: MCA, JM Financial

Exhibit 45. Comparing working capital cycles (days) amongst peers



Source: MCA, JM Financial

Company Background

India's largest supplier of cryogenic equipment

INOX India is the largest supplier of cryogenic equipment in India and amongst the leading providers of customised vacuum insulated cryogenic equipment globally. It is also the largest exporter of cryogenic tanks from India. The company possesses 30+ years of experience offering solutions across conceptualisation, design, engineering, manufacturing and installation of equipment and systems for cryogenic conditions. Its offering includes standard cryogenic tanks and equipment, beverage kegs, bespoke technology, equipment and solutions as well as the ability to execute large turnkey projects.

Through its offerings, INOX serves several industries including aviation and aerospace, construction and cement, cryo scientific research, dairy and livestock, electronics, fertilisers, chemicals, F&B, glass, ceramic, healthcare and pharmaceuticals, hydrogen, industrial gases, LNG, metal processing, O&G, refining and petrochemicals, paper and pulp, power and utilities, rubber, and water treatment.

Its business comprises three divisions:

- **Industrial Gas:** This division manufactures, supplies and installs cryogenic tanks and systems for storage, transportation and distribution of industrial gases such as green hydrogen, oxygen, nitrogen, argon, carbon dioxide (CO_2), hydrogen and provides after-sales services.
- **LNG:** This division manufactures, supplies and installs standard and engineered equipment for LNG storage, distribution and transportation as well as small-scale LNG infrastructure solutions suitable for industrial, marine and automotive applications; and
- **Cryo Scientific Division:** This division provides equipment for technology intensive applications and turnkey solutions for scientific and industrial research involving cryogenic distribution.

Exhibit 46. INOX India – in an nutshell

Source: Company

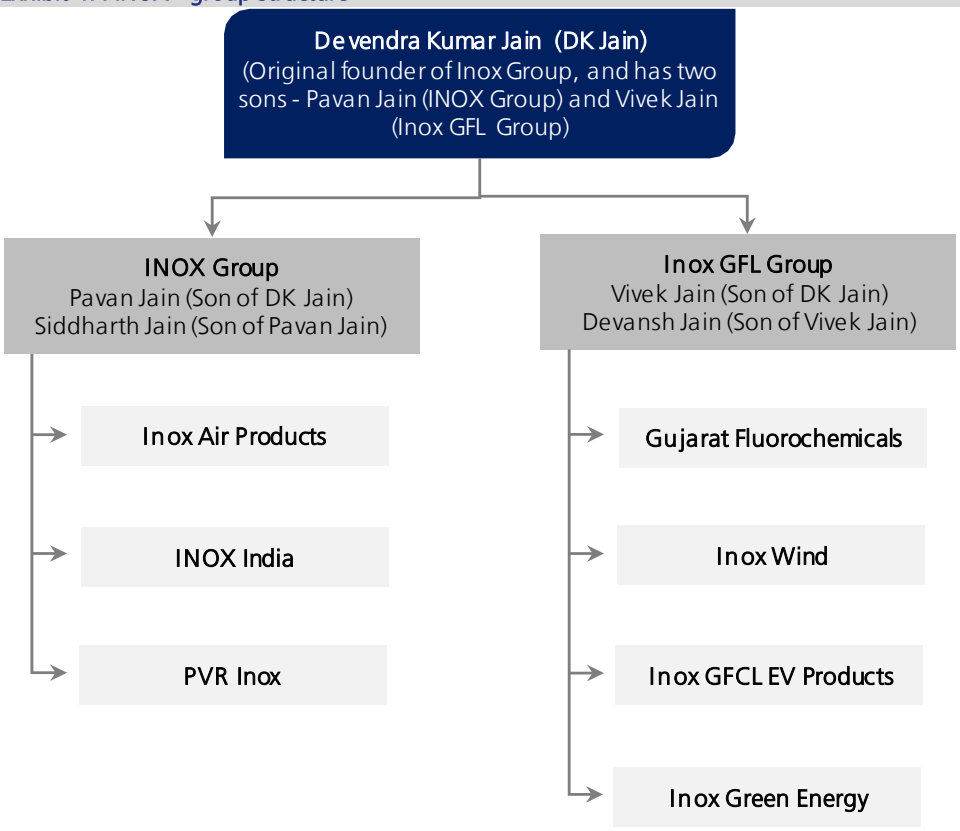
The demand for cryogenic equipment across geographies is expected to be driven by the increasing demand for cleaner fuels such as LNG and hydrogen due to the global focus on reducing carbon emissions from conventional energy sources. INOX India is well positioned to capture this global market growth with its in-house technology and its LNG product range that covers the entire value chain. In hydrogen, INOX's engineering teams are developing products and systems in complex industry environments like hydrogen storage, transportation and distribution to address the need arising from the increasing adoption of liquid hydrogen. For example, INOX was the first Indian company to manufacture a trailer mounted hydrogen transport tank, which it designed jointly with ISRO. Recent marquee orders that it executed include the manufacturing a 238kl liquid hydrogen storage tank for the first liquid hydrogen plant in South Korea, and four 311kl liquid hydrogen storage tanks for another customer in South Korea to be utilised for the construction of three liquid hydrogen plants.

An overview of the Inox Group

Mr Devendra Jain, the founder of Inox Group, had come up with the idea of extracting, liquefying, and selling gases extracted from air, through a friend's relative who worked at British Oxygen. Industrial gases were widely used in the steel, manufacturing and healthcare sector. It was a high-margin business. To learn more about this business, he travelled to Germany and the US, visited companies that had a successful track record in this business, and bought oxygen plant equipment from Germany for setting up the first unit at Pune in 1963. It was the beginning of Industrial Oxygen (later INOX), a company focused on producing oxygen.

Mr Devendra Jain was supported by his two sons, Mr Pavan Jain and Mr Vivek Jain. They realised that they were in a good position to expand into refrigerants, as sales of refrigerators were picking up. The duo envisaged that air-conditioners would follow soon. Hence, as an extension to the existing gas business, the company started manufacturing refrigerants like chlorofluorocarbon (CFC). While running Inox Air, the Jain family realised that to compete with large players like The Linde Group, Praxair, and Air Liquide, it needed to have access to capital and invest continuously in R&D. Hence, they delisted the company and partnered with Air Products (USA), which bought 50% stake in 1999. Industrial Oxygen became Inox Air Products, and today has 35% share in India. In 2021, the group split its business into two, with Pavan Jain getting the industrial gas and multiplex units, and Vivek Jain inheriting the specialty chemicals and renewable energy businesses. After the settlement, there were minor crossholdings across companies, which have not been cleared.

Exhibit 47. INOX - group structure



Source: BSE, Company, JM Financial

Exhibit 48. INOX - group structure

Source: BSE, Company, JM Financial

The genesis of INOX India

To support the incumbent industrial gases business, in 1992, Mr Pavan Jain started INOX India. Before INOX India was established, India had no other manufacturer of cryogenic tanks except one PSU, BHPV. BHPV's delivery timelines were 1-1.5 years. This affected the delivery timelines of Inox Air, which constantly required cryogenic equipment. Hence, the group tied up with a Japanese company, Nippon Gases, to meet its cryogenic requirements. Later, INOX India was established, using the technology from its Japanese collaborations. Today it is India's largest manufacturer of cryogenic equipment and has shifted from being a simple mass-manufacturer of tanks to providing 'solutions, its initial expertise lying in the LNG division. After this, it moved to R&D in the cryo-scientific division and started manufacturing tanks catering to extremely low temperatures. INOX India is also developing expertise in small containers, used as disposable cylinders and laboratory equipment. For instance, its tanks are used to store animal material, which is then used for crossbreeding cows.

Exhibit 49. Key milestones since inception

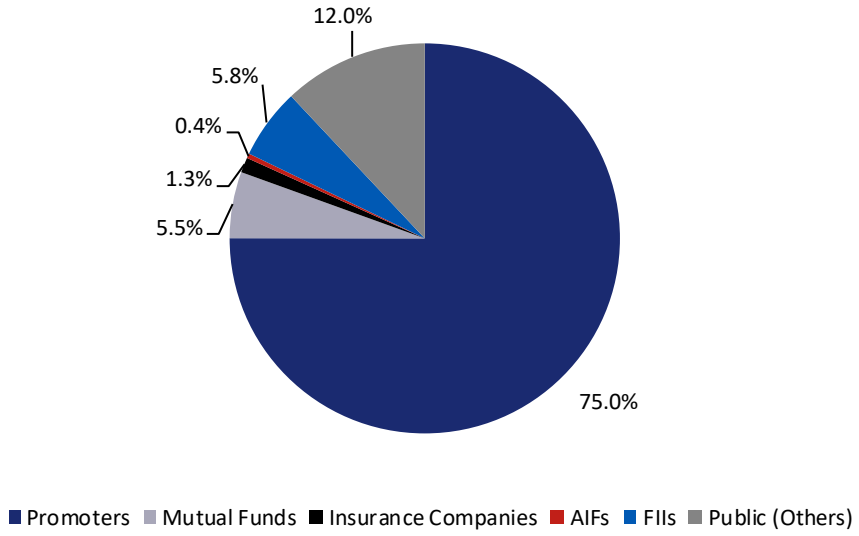
Year	Key milestones
1992	Founded by Mr Pavan Jain to facilitate expansion plans of INOX
1993	Technical collaboration with Nippon Sanso, Japan to manufacture cryogenic vessels and vacuum insulated tanks.
1996	Liquid Nitrogen containers launched with super-insulation technology.
2005	Demonstrated capability to design, manufacture, and supply products for space research (satellite launch pads).
2010	Designed and supplied 15 liquid hydrogen tanks to ISRO's launch facility.
2014	Received order to manufacture Multi-process pipe transfer lines for ITER
2019	Commissioned India's first LNG dispensing station.
2019	Successfully installed 2 1,000 m3 mini LNG Terminals in Scotland..
2020	Commissioned LNG fuel tanks for container ships owned by Crowley; operating between Puerto Rico and USA.
2021	Completed manufacturing of Cryolines for ITER Project.
2022	Built largest ever 238 m3 LH2 tank for Korea.
2023	Ground-breaking ceremony for India's largest cryogenic equipment manufacturing facility.
2023	Successfully dispatched 4 x 311 m3 LH2 tanks to Korea

Source: Company, JM Financial

Shareholding pattern

INOX India concluded its IPO and got listed on the exchanges on 21st Dec'23. The IPO was an offer for sale of 22.1mn shares, a total offer size of INR 14.6bn.

Exhibit 50. INOX India - shareholding pattern



Source: BSE, JM Financial

Exhibit 51. INOX India - management team

Source: Company

Exhibit 52. INOX India – key personnel from Promoter Group

Source: Company

Industry Analysis

Overview of cryogenic gases

Industrial gases are used in industrial processes for manufacturing products in a wide range of industries, including oil and gas, petrochemicals, chemicals, power, mining, metals, pharmaceuticals, electronics, glass, and aerospace. Nitrogen, oxygen, and natural gas are the major gases that account for almost 80% of the cryogenic equipment demand. The remainder demand is accounted for by other gases, including argon, helium, nitrous oxide, ethylene, and carbon dioxide. Nitrogen, oxygen, and argon are atmospheric gas. Their major source is atmospheric air, which is separated into its constituents by air separation units (ASUs). Natural gas and hydrogen are energy gases. Natural gas is a fossil fuel and is extracted by drilling. Hydrogen can be produced from non-renewable sources (fossil fuels) and from renewable sources (through electrolysis of water).

Atmospheric gas is produced by gas-production plants called air separation units (ASUs) which filter and cool the atmospheric air to very low temperatures. As gases are cooled, they turn into liquids. However, each gas liquefies at a different temperature. This property enables the separation of gases by distillation with very high purity levels. The output of this process is available as a liquid at a very low temperature, often below -150°C and is called cryogenic gas. Apart from atmospheric gases, energy gases (natural gas and hydrogen) can also be processed to become cryogenic gas. LNG is produced by the oil and gas industry though exploration and extraction of underground gas reserves and cooling it to about -162°C, which liquefies it, making it convenient for storage and transportation. Hydrogen is the lightest gas and hence occupies substantial volume under standard pressure conditions; liquefaction by cooling the gas can significantly reduce its volume.

As long as cryogenic gases are kept cool, they stay in liquid form and can be held at a lower pressure. Very large quantities can be contained in a smaller tank compared to their gaseous form, which requires high-pressure tanks that hold fewer amounts of gases by weight. If the temperature of a cryogenic liquid increases through absorbing heat from its surroundings, it turns into gas, increasing the pressure inside the equipment. To prevent this, the equipment must be properly insulated and be able to sustain certain pressure build up based on its design. There are regulations developed and maintained as per the application and product to ensure the safety of people working with or around these cryogenic gases, and the environment into which these gases might escape.

ASUs account for 58-62% of the demand for total global cryogenic equipment consumption. Major cryogenic equipment includes tanks, valves, vaporisers, and pumps. Other equipment include pipes, regulators, freezers, dewars, strainers, samplers, heat exchangers, leak detection equipment, dispensers, and accessories. For overseas transportation, LNG tankers are used to transport LNG to an LNG terminal at the destination port. Distribution of cryogenic liquids needs to be done in special insulated tankers that keep the cryogenic liquids from boiling and escaping into the atmosphere.

However, when these gases are used, they may be required to be converted to their gaseous form, either due to the end-use requirement or lack of cryogenic equipment at the end-use location. For example, medical oxygen is required to be converted to gas from liquid in hospitals where it might be stored in cryogenic tanks. However, in locations where cryogenic tank storage is not available, the gas is also distributed and stored in high-pressure cylinders. This is usually the case in end-use locations where the requirement for the gas is lower. High-pressure cylinders are not included in market-sizing of cryogenic equipment.

The equipment used to store, transport, and handle the cryogenic gases in liquid form are collectively referred to as cryogenic equipment

As long as cryogenic gases are kept cool, they stay in liquid form and large quantities can be contained in a smaller tank compared to their gaseous form which requires high-pressure tanks that hold fewer amounts of gases by weight.

If the temperature of a cryogenic liquid increases through absorbing heat from its surroundings, it turns into gas.

To prevent this, the equipment must be properly insulated and be able to sustain certain pressure build-up based on its design.

There are regulations developed and maintained as per the application and product to ensure the safety of people working with or around these cryogenic gases, and the environment into which these gases might escape.

Cryogenic industry supply chain

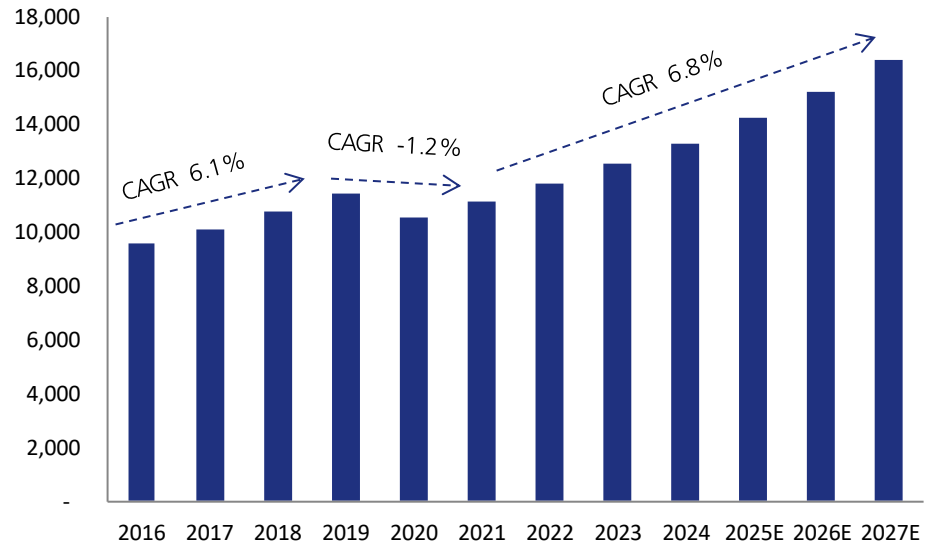
According to CRISIL, there are four major groups in the cryogenic industry:

- **Raw material manufacturers:** They include metal and metal part manufacturers that produce large quantities of steel and steel products, which are the major raw materials for cryogenic equipment, along with other metals such as copper and nickel alloys, chromium, and titanium.
- **Cryogenic equipment manufacturers:** They manufacture equipment such as tanks, valves, and vaporisers, which enable storage and handling of cryogenic gases. The equipment are supplied to gas companies for manufacture, storage, and transportation of industrial or energy gases such as LNG or hydrogen, and also to end-users of such gases.
- **Gas suppliers:** They include industrial gas manufacturers operating ASUs, or oil-and-gas majors producing LNG.
- **End-users:** They are industries where such gases are used, e.g., steel, glass, semiconductor, and hospitals.

Global cryogenic equipment industry

According to a CRISIL report, the global cryogenic equipment demand saw a CAGR of 6.1% over 2016-19. However, it contracted by 1.2% over CY20-21, mainly due to the Covid pandemic. As per the report, the global cryogenic equipment market was valued at USD 11.2bn in CY21 and demand is projected to see a CAGR of 6.8% over CY22-27E. Demand for cleaner fuels, such as LNG and hydrogen, due to the focus on reduction of carbon emissions from conventional energy sources, will drive the uptake of cryogenic equipment across geographies. Additionally, the increase in industrialisation in developing nations in the Asia Pacific is expected to boost the demand for industrial gases in segment such as electronics, space, and satellite and, in turn, increase the demand for cryogenic equipment.

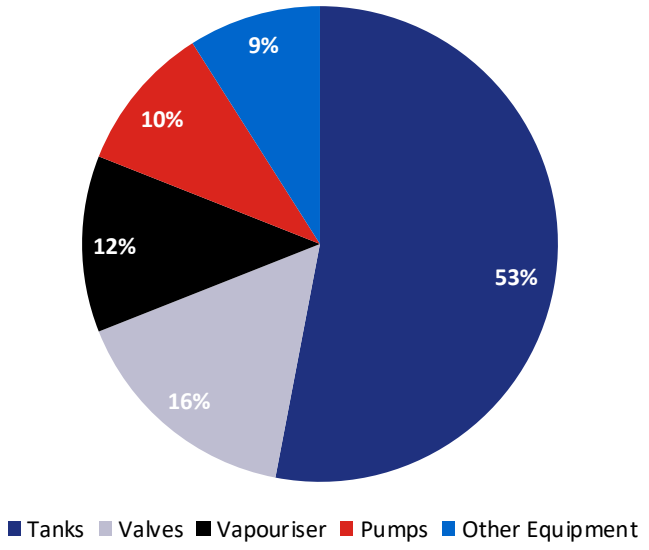
Exhibit 53. Global cryogenic industry demand (USD mn)



Source: Markets & Markets, CRISIL Research

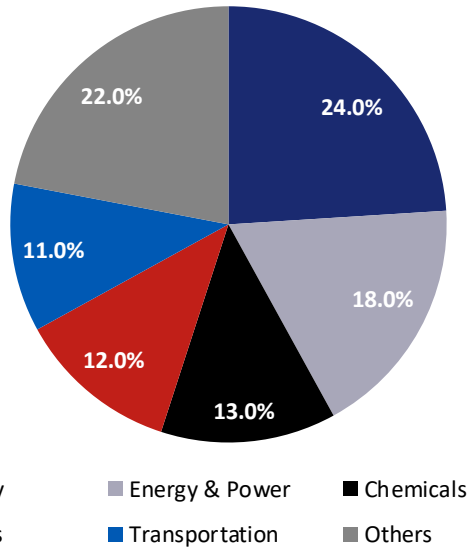
As per the CRISIL report, the global cryogenic equipment market was valued at USD 11.2bn in CY21. Tanks used for storage and transportation accounted for 53% of the total demand. The other major types of equipment are valves which are used to control flow and for safety, vaporisers which are used to convert cryogenic liquids to gaseous form, and pumps, accounting for approximately 16%, 12%, and 10% of the total demand, respectively. The major end-user industries that utilise cryogenic equipment are metallurgy, energy and power, chemical, electronics, transportation, and others.

Exhibit 54. Global share of type of cryogenic equipment



Source: Markets & Markets, CRISIL Research

Exhibit 55. Global share of cryogenic usage by industry



Source: Markets & Markets, CRISIL Research

- **Metallurgy:** This is the largest demand segment. Its large market share can be attributed to rapid industrialisation and favourable government policies globally benefitting the manufacturing and industrial sectors. In the metallurgy industry, processes such as metal forming, fabrication, welding, and combustion require industrial gases, and therefore cryogenic equipment, with oxygen and nitrogen the most used gases. Other gases such as argon and hydrogen are used to a lesser extent. According to CRISIL, the demand from metallurgy is expected to see a CAGR of 7.4% over CY22-27E, driven by demand for steel and aluminium from infrastructure, automobile, and consumer goods.
- **Energy and power:** This was the second-largest demand segment in 2021. Cryogenic equipment is used for various industrial gases across energy and power applications. Cryogenic equipment is also used by the energy and power industry for supply of some of its products (LNG and hydrogen) to other end-use industries. According to CRISIL, the demand from energy and power is expected to see a CAGR of 7.6% over CY22-27E.
- **Chemicals:** Industrial gases are used for polymerisation, synthesis of intermediates, synthetic gases, specialty chemicals etc. The cryogenic equipment demand from the segment has recovered from the low during the peak of the pandemic, with demand estimated to see a CAGR of 6.1% over CY22-27E, according to CRISIL. The growth is to be driven by increased consumption demand and a shift to lowering emissions.
- **Electronics:** Cryogenic gases cater to an array of applications in the electronics industry, such as fibre optics, flat panel displays, integrated-circuit manufacturing, packaging, assembly and testing, LED technologies, photovoltaics, printed circuit board (PCB) assembly and testing, and semiconductors. During the peak of the Covid pandemic, the electronics industry was the least impacted among the other cryogenic equipment end-user industries, owing to companies shifting to work-from-home during the lockdowns. Even after the restrictions were lifted, companies have continued to provide remote or hybrid work options, thereby requiring the use of multiple electronic devices and internet equipment. According to CRISIL, the demand from electronics will likely see a CAGR of 8.5% over CY22-27E.
- **Transportation:** Owing to the significant emission of pollutants as well as greenhouse gases from trucks, buses, ships, and airplanes, the transport industry has come under increasing pressure to shift to low-carbon alternatives. Low-carbon alternatives include electricity and compressed natural gas (CNG). These transport modes require fuel to be contained more densely – more fuel in smaller tanks. The demand is expected to see a CAGR of 6.6% over CY22-27E, with increasing shift to LNG and hydrogen fuel.

Global cryogenic equipment industry by cryogen

Nitrogen

- Nitrogen is used in industries and for medical use owing to high availability in the atmosphere and its inert nature. It is used in the energy and power industry for enhanced oil recovery, in fertilisers as a feedstock, and in chemical industries.
- The demand for liquid nitrogen equipment dipped during the peak of the pandemic in 2020 and 2021 as industrial demand slowed.
- Demand for liquid nitrogen equipment is expected to be driven by the electronics, energy and power, and chemical industries.

LNG

- Natural gas, which is largely methane, is cooled, thereby converted to liquid, and is also known as LNG. The cooling reduces the volume of natural gas by 600x, thereby making it cheaper to transport. While LNG is reasonably costly to produce, advances in technology are reducing costs associated with liquefaction and regasification. LNG is primarily used as an energy source for heating and electricity generation. It also has other uses such as feedstock in fertiliser and hydrogen production.
- LNG can also be used as a source of 'blue hydrogen', namely hydrogen produced from fossil fuels, but with carbon produced in the process captured and stored instead of releasing into the environment.
- With rising investments in LNG infrastructure, both for use as a fuel and as a source of blue hydrogen, the demand for cryogenic equipment from LNG is expected to see the fastest growth among cryogens over the long term, according to CRISIL.
- The shift to cleaner fuels is expected to drive demand in developed regions like the EU and the US, but higher growth is expected from the Asia Pacific, in line with the rising need for electricity due to the fast-growing developing economies in the region.

Argon

- Argon is an inert gas, rarely found in the atmosphere, making it expensive to produce. Argon is used in critical industrial processes, such as manufacturing of high-quality stainless steel and production of impurity-free silicon crystals for electronics. In fact, liquid argon is extensively used in the semiconductors industry.
- Other applications of liquid argon include fabrication of specialty alloys, lasers, and metals. Liquid argon has medical applications as well, specifically in cryosurgery and situations that require an inert environment.
- The gas also provides an environment inert from oxygen and nitrogen for annealing processes. Rising electronics demand is expected to drive the demand for argon-based cryogenic equipment.

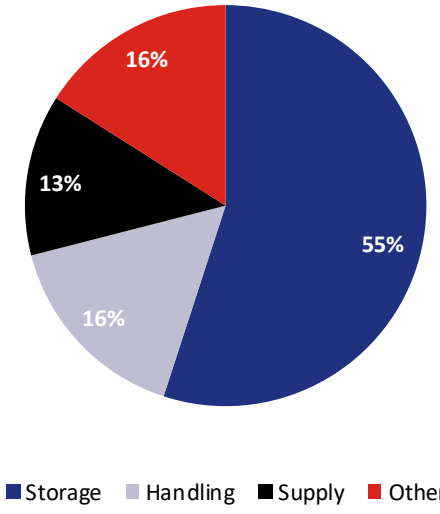
Hydrogen

- It is the lightest gas and hence occupies substantial volume under standard pressure conditions; liquefaction by cooling the gas can significantly reduce the volume. Storing in cryogenic tanks maintains the temperature of liquid hydrogen.
- Hydrogen is used in chemical and petroleum refining industries and may be produced from fossil fuels and renewable sources. Most of the hydrogen currently produced is from fossil fuels, but in the long term, hydrogen produced from renewable sources, i.e., 'green hydrogen' is expected to increase as production costs declines.
- This is expected to drive demand as a source of clean fuel, given that (1) it will be produced from fully renewable sources and (2) it emits no pollutants during use.
- The demand for cryogenic equipment from the hydrogen segment accounted for 3.5% of the global cryogenic equipment market in CY21. However, given the potential for hydrogen applications and increased investments in R&D to reduce production costs and the shift to make use of greener sources of fuel, the share of demand for cryogenic equipment from the hydrogen segment is likely to continue to expand.

Oxygen

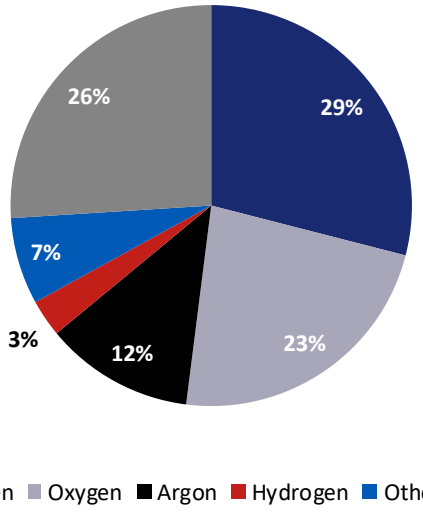
- Oxygen is abundantly available in the atmosphere and has a key role in the combustion and oxidation processes in industries such as metallurgy. It also finds use in aerospace, petrochemical, and medical applications.
- The electronics and metallurgy industries are projected to be the key demand drivers for oxygen-related equipment.

Exhibit 56. Global share of type of cryogenic equipment



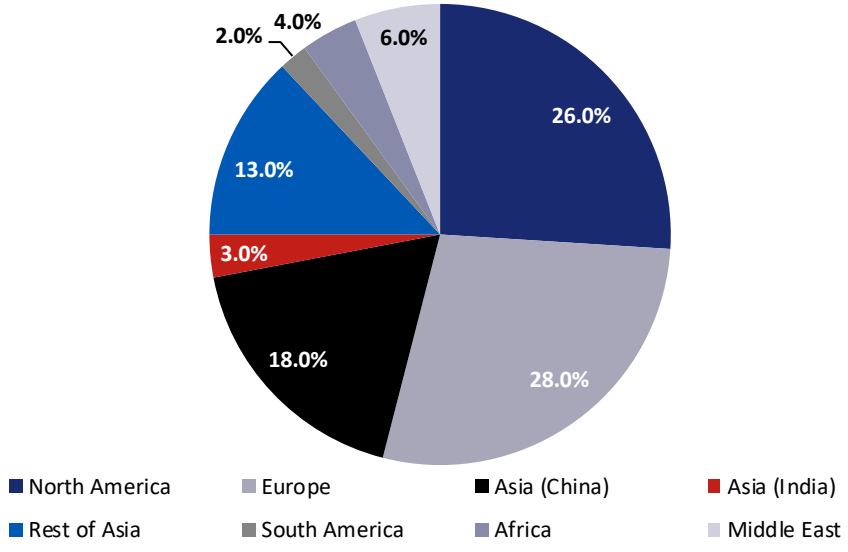
Source: Markets & Markets, CRISIL Research

Exhibit 57. Global share of equipment by cryogen



Source: Markets & Markets, CRISIL Research

Exhibit 58. Share of demand for cryogenic equipment region-wise



Source: Markets & Markets, CRISIL Research

Challenges of the cryogenic equipment industry

Cryogen leakage from equipment leading to health hazards

Some gases can be dangerous when inhaled even at normal temperatures. Due to cryogenic gases being stored at very low temperatures, their leakage poses health hazards. Prolonged exposure to cryogen can cause frostbite and damage to the lungs. In addition, discharge of the cryogen into an enclosed area can lead to oxygen deficiency in the area, posing a health risk. These risks necessitate extra care in designing, testing, and maintaining cryogenic equipment, which can be a hindrance to the adoption of cryogenic equipment.

Well-to-wheel emissions of LNG may lower its environmental benefit

Well-to-wheel emissions are calculated by looking at emissions for the entire value chain, instead of just at the end-use locations. Some studies have pointed out that, although replacing other fossil fuels with clean burning LNG can benefit at the location of use, there are potential emissions that negate some of the benefits elsewhere in the value chain. The main reason for this is that LNG, which is basically liquefied methane, is a very potent greenhouse gas, estimated to be 34-40 times more greenhouse effect producing than carbon dioxide. Accordingly, stringent regulations and adherence to these regulations with proper controls are required to obtain the desired benefit of shifting to LNG from fossil fuels.

Increased adoptions of electric vehicles may hurt LNG and hydrogen demand

Long-haul transport of heavy goods via roads, ships and airlines requires significant amount of energy. To cater to these segments, batteries alone can be economically unviable due to the current high upfront costs of the batteries and lower energy density (amount of energy contained in each size of battery). Hence, electric vehicles, at least in the present scenario, are mostly used in the short-haul or light-vehicle categories. However, efforts are underway to make battery vehicles more efficient, including the battery technology and the powertrain and physical characteristics of the vehicle. These improvements could enable battery vehicles to capture a larger share of the market, which would hurt LNG and hydrogen demand. The extent to which battery vehicles can compete with LNG and hydrogen-based vehicles will depend on technology breakthroughs.

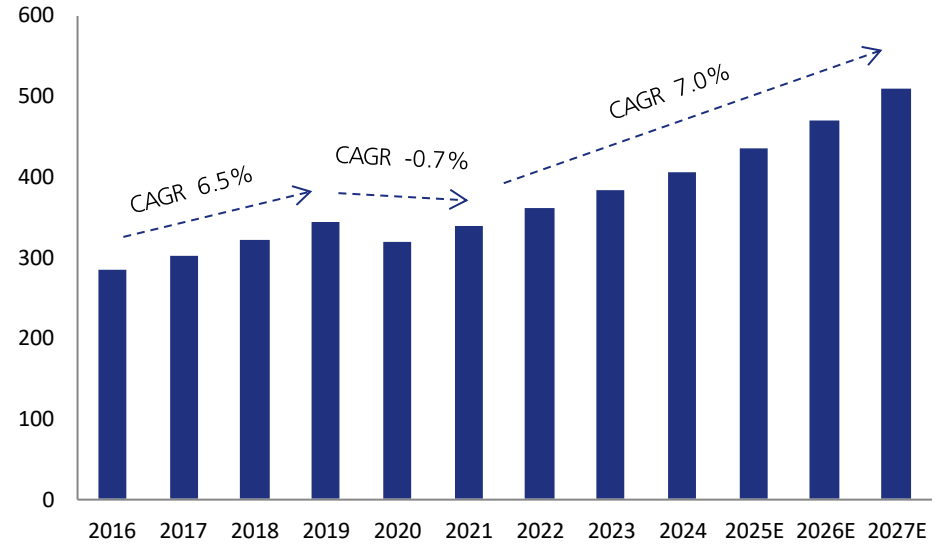
Volatility in steel prices that impact costs of cryogenic equipment manufacturers

Steel is a major raw material for cryogenic equipment. The changes in steel prices directly impact the gross margin of cryogenic equipment suppliers.

Indian cryogenic equipment industry

Indian cryogenic equipment market size was estimated to be USD 340mn in CY21. The demand for cryogenic equipment in India saw 6.5% CAGR over CY16-19. The lockdown and travel restrictions resulting from the Covid pandemic saw the demand growth for cryogenic equipment stall over CY19-21. Going forward, the demand is expected to see a CAGR of 7.1% over CY22-27E, according to CRISIL. Growth is expected to be driven by increase in industrial output, increase in investments in the electronics and space sectors, and shift towards cleaner fuel sources such as LNG and hydrogen in the industrial and transport sectors.

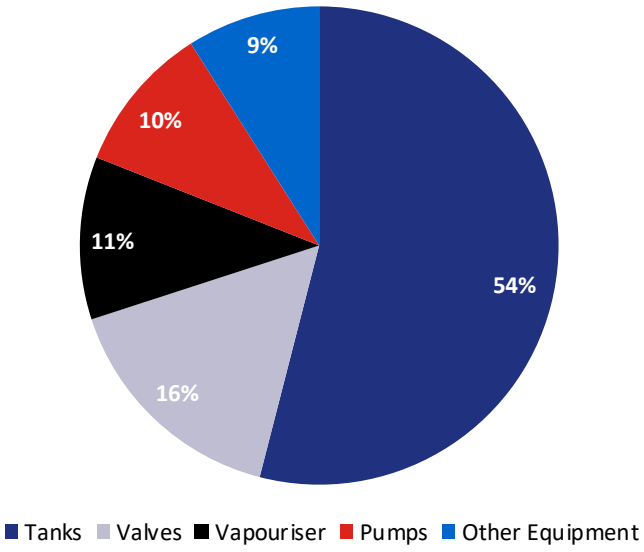
Exhibit 59. Indian cryogenic equipment demand (USD mn)



Source: Markets & Markets, CRISIL Research

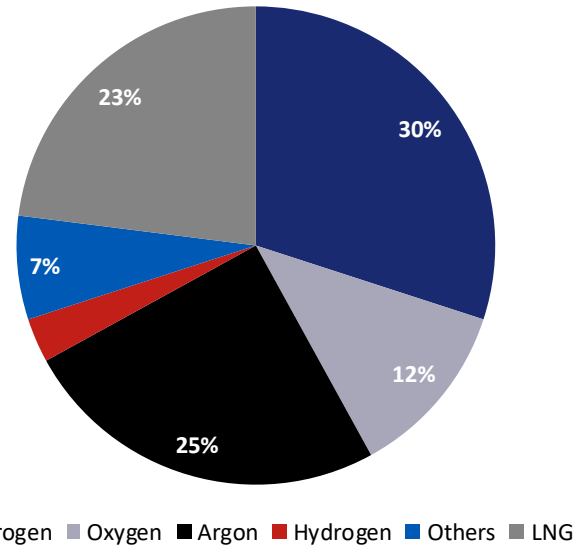
Tanks constituted 54% of India's cryogenic equipment in CY21. Valves, vaporisers, and pumps contributed 16%, 11%, and 10%, respectively. Other equipment accounted for 9%. In CY21, nitrogen and LNG were the major cryogenic gases used in the Indian cryogenic equipment industry, accounting for 30% and 23%, respectively, of the total equipment demand.

Exhibit 60. India - share of type of cryogenic equipment



Source: Markets & Markets, CRISIL Research

Exhibit 61. India - share of equipment by cryogen



Source: Markets & Markets, CRISIL Research

Regulations and policies impacting demand for cryogenic gases in India

The Paris Agreement (ratified by India) sets an objective of limiting global temperature rise this century to well below 2.0 degree celsius over pre-industrial levels, and to pursue efforts to limit temperature increase further to 1.50 degree celsius. To achieve this target would require a significant increase in the share of zero or low emission vehicles. This target, combined with growing environmental and sustainability awareness among the population, is expected to transform the global automobile industry from internal combustion engines to green mobility, such as hybrid vehicles, BEVs, fuel-cell vehicles, and alternative-fuel vehicles.

Corporate average fuel efficiency norms for PVs

Fuel efficiency norms target carbon emission by limiting carbon dioxide emissions from vehicles. In India, fuel standards for petrol, diesel, liquefied petroleum gas and CNG passenger vehicles came into force in Apr'17. These standards are based on the corporate average fuel efficiency (CAFÉ) system rather than specific vehicle level emission limits, and target to improve the fuel consumption of passenger vehicles gradually. Currently, the permissible carbon footprint is 130 g/km. Starting Apr'22, it was further reduced to 113 g/km. Investments required to make the vehicles more fuel efficient will add to the cost of vehicles which would be passed to end-users eventually. This is expected to incentivise the shift towards greener technologies such as natural gas and electric vehicles, as manufacturers will find it increasingly difficult to meet the norms with petrol and diesel vehicles alone, which in turn, will increase the demand for natural gas.

Transition to BS-VI BS emission standards

Bharat Stage (BS) emission standards are issued by the Government of India (GoI) to regulate the output of air pollutants from motor vehicles. The BS norms target pollutant emissions such as hydrocarbons, nitrous oxide, and particulate matter. In Apr'20, the GoI adopted the BS-VI norms, which incorporated substantial tightening of emission of nitrogen oxide and particulate matter. These emission standards pushed vehicle prices higher – diesel trucks and buses segments saw a higher rise in costs due to the significant upgrade of engines and exhaust systems. As the BS-VI norms were implemented in Apr'20, the total cost of owning diesel vehicles running, including both the initial cost of acquisition and maintenance costs, has suddenly increased. Such an increase in prices of diesel vehicles has resulted in consumers' shift towards more economical natural gas vehicles, thereby increasing the demand for natural gas.

Fuel efficiency norms of heavy commercial vehicles

To make heavy-duty trucks and buses more fuel efficient, the Ministry of Petroleum and Natural Gas and the Ministry of Heavy Industries are working on establishing fuel efficiency norms, which will be implemented soon.

Emission norms for other segments

Other than emission norms targeted at the automobile industry, the GoI has also implemented emission norms for other segments. For example, emission norms for tractors have been renamed 'TREM' norms and that for construction equipment vehicles to 'CEV' norms by the government in a notification dated 5 Oct'20. Similar norms are also applicable for emissions from gensets used for power generation. The common goal of these norms for various segments is to reduce emission of pollutants and greenhouses gas, thereby making manufacturers or operators look for alternatives, resulting in increasing demand for natural gas and natural gas-based equipment.

LNG adoption for the automobile sector

Since 2017, the GoI has amended the CMVR norms, which paved the way for manufacturers to develop vehicles using LNG. In 2018, the Gas Cylinder Rules were amended to include auto-LNG under its regulatory framework. Trials for the first LNG bus were held in Nov'16 to test the feasibility of LNG-powered vehicles. However, there has not been any significant market development in the use of LNG vehicles due to lack of auto-LNG dispensing stations. This deadlock was broken in Nov'20 with the GoI kicking off construction of 50 LNG fuel stations along the Golden Quadrilateral national highways connecting the four corners of the

country. A total of 1,000 LNG stations along the national highway network, industrial corridors, and mining areas of the country are planned at a total expenditure of INR 100bn. While manufacturers are yet to launch LNG commercial vehicles, the infrastructure being put in place will give confidence to the other stakeholders in the industry such as transporters and financers to transition to LNG.

Share of natural gas vehicles likely to increase in the future

Currently, CNG vehicles are primarily available in major metros and Tier-1 cities in India. The long waiting time to refill CNG vehicles has led to low buyer preference for CNG variants. However, the CNG network is expanding rapidly. GoI's focus to establish a gas-based economy aims for setting up 10,000 CNG stations by 2030, according to a CRISIL report. After the implementation of the BS-VI norms, the share of CNG vehicles has increased sharply in the light commercial vehicle (LCV) and PV segments in the past 5 years. For longer-distance transport, LNG is expected to gain favour, as large amounts of gas can be stored in liquefied form, which is ideal for heavy-duty trucks on long trips. Overall, the share of natural gas vehicles is expected to continue to increase, primarily due to favourable cost economics because of lower gas prices vs. diesel and expansion in LNG/CNG stations network across the country.

Hydrogen policy introduced by central and state governments

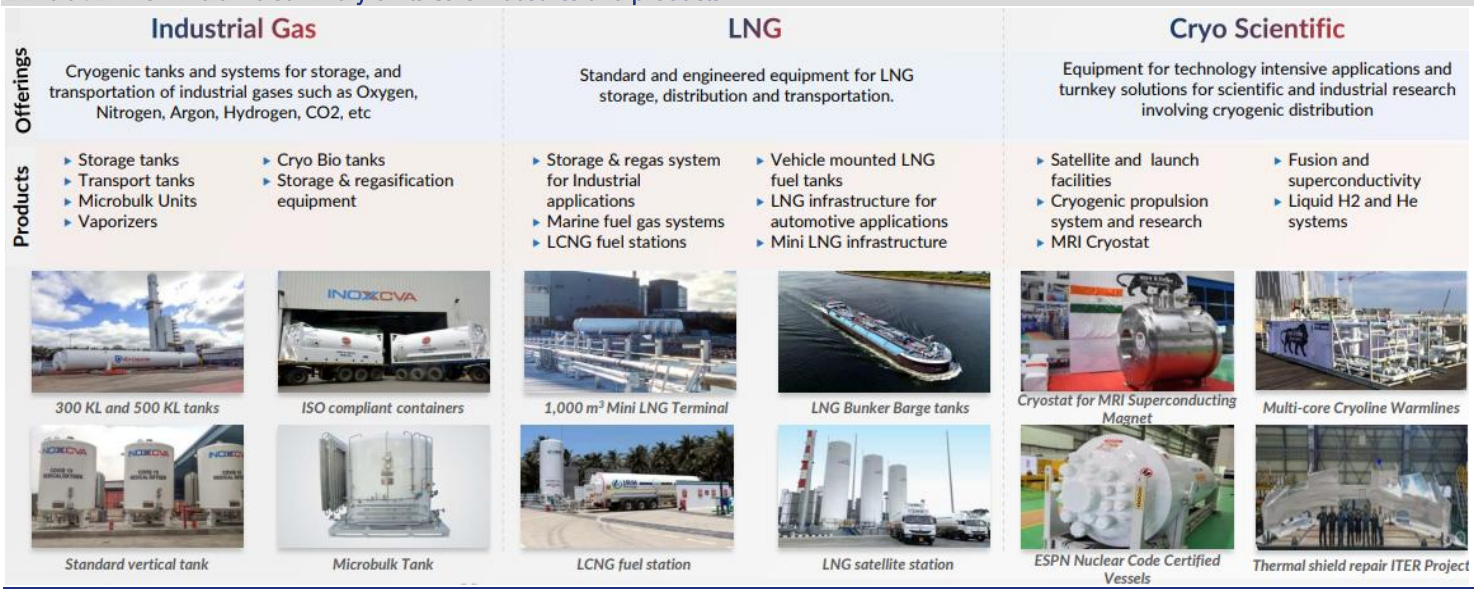
In the budget speech FY21-22, the Finance Minister of India proposed to launch the National Hydrogen Mission to support hydrogen production from green-power sources. It aims to develop India as a global hub for manufacturing hydrogen and fuel cell technology across the value chain. Along the lines of the Nation Hydrogen mission, the central government introduced the Green Hydrogen and Green Ammonia Policy in Feb'22. The policy aims to boost the domestic production of green hydrogen to 5 mn t p.a. by 2030. It has provided open access, grid finance and charted out a favourable regulatory environment to provide fast approvals for green hydrogen and green ammonia projects. Due to the current high production cost of green hydrogen, GoI provides free inter-state transmission system for 25 years for capacity installed by Jun'25, which will lower the production cost of green hydrogen. The central government has also authorised 30-day renewable energy banking at limited charges set by state commissions. The state governments too are looking to draft state-level hydrogen policies to support the hydrogen sector.

Licences required for manufacturing cryogenic equipment

In India, Petroleum & Explosives Safety Organisation (PESO) is the nodal agency covering the manufacture of cryogenic equipment, such as tanks for cryogenic gas, and operations of cryogenic equipment manufacturers. The licences are provided by PESO for 3 years and are renewed on meeting all the requirements.

Diving deeper into INOX India's offerings

Exhibit 62. INOX India – a summary of its core industries and products



Source: Company

Industrial Gas Systems

This division involves the manufacturing, supply and installation of cryogenic tanks, majorly vacuum-insulated tanks and systems for storage, transportation, and distribution of industrial gases which include green hydrogen, oxygen, nitrogen, argon, carbon dioxide, hydrogen and provides after-sales services. Its offerings include bulk storage, micro storage, transportation equipment, and vaporisers. The company has also ventured into manufacturing beverage kegs using NSF-certified stainless steel and has set up a facility by forming technology and marketing-related alliances with international industry players.

- **Bulk Storage Tanks:** Complete range of bulk storage tanks for liquefied nitrogen, oxygen, argon, carbon dioxide, nitrous oxide, apart from special range for hydrogen, LNG and ethylene in various pressure rating and piping configurations, basis the applications.

Exhibit 63. Bulk storage tanks

Source: Company

Exhibit 64. Bulk storage tanks

Source: Company

- **Engineered Package Systems:** Complete systems including all equipment required except the ASU outlet (which is used to deliver the gas at the final customer take-off point). INOX's strength lies in offering customised systems meeting customer needs, compliant to meeting project specifications, and meeting international standards.

Exhibit 65. Engineered package systems

Source: Company

Exhibit 66. Engineered package systems

Source: Company

- **Transport Storage Tanks:** Complete range of transport tank options for liquefied nitrogen, oxygen, argon, carbon dioxide, nitrous oxide, apart from special range for hydrogen, LNG and ethylene in various pressure ratings, basis the customer's requirements. This includes rigid chassis tanks, semi-trailers, ISO containers, and rail cars, all having their special characteristics in terms of vehicles they can be mounted on products they can transport.

Exhibit 67. Transport storage tanks

Source: Company

Exhibit 68. Transport storage tanks

Source: Company

- **Micro Bulk Units:** Essentially bulk storage tankers in miniature form. This includes offerings such as (1) Portacryo (mini bulk tanks), (2) Maxcyl liquid cylinders (larger portable liquid cylinders), (3) Microcyl cylinders (portable double walled vacuum insulated cylinders), and (4) micro bulk delivery units.

Exhibit 69. Portacryo mini bulk tank

Source: Company

Exhibit 70. Maxcyl liquid cylinders

Source: Company

- **Range of vaporisers and piping products:** INOX offers a full range of ambient air vaporisers in different versions designed basis customer requirements for a variety of end-use customer applications. Its offerings include:

  (i) Ambient air vaporisers, predominantly used for vaporisation of liquefied gases.

  (ii) Steam heated water baths, a special type of coil-wound heat exchanger used for vaporisation of liquefied gas.

  (iii) Shell and tube vaporisers, which are essentially vaporisers for high flow applications, built in vertical and horizontal configurations, specifically for large-scale projects.

  (iv) Vacuum jacketed piping and pressure regulating skids, which are multi-layer vacuum insulation pipelines designed to handle and transfer cryogenic liquids at desired temperatures and for long distances.

Exhibit 71. Ambient air vaporisers

Source: Company

Exhibit 72. Vacuum jacketed piping and pressure regulating skids

Source: Company

- **Beverage kegs:** Leveraging its 30 year-long expertise in stainless steel handling, welding, and producing quality steel container solutions, INOX expanded its current portfolio into beverage kegs. It has currently partnered with the Supermonte Group (based in Italy) to supply quality stainless steel returnable beverage kegs out of Italy and India.

Exhibit 73. Beverage kegs

Source: Company

Exhibit 74. Beverage kegs

Source: Company

LNG

Through this vertical, INOX offers to its clients, end-to-end LNG solutions, including mobile and permanent LNG fuelling equipment, LNG bulk storage, LNG gasification equipment, and LNG transport trailers, all with valid PESO licences.

- **Industrial applications:** INOX India provides engineering, procurement and construction solutions on a turnkey basis. It assists its client right from the initial layouts and design to after-sales maintenance and risk analysis, INOX works hand in hand with the client to provide seamlessly functioning and efficient LNG systems. This includes :

  (i) LNG Satellite Solutions, which includes a complete set of storage tanks, pumping systems, vaporiser systems, control systems, loading and distribution facilities, compliant with all necessary regulations.

  (ii) Storage and regasification equipment, used to ensure continuous supply of LNG to remote units and oil fields.

Exhibit 75. LNG satellite solutions

Source: Company

Exhibit 76. Mobile storage and regasification equipment

Source: Company

- **LNG infrastructure:** While the LNG market has witnessed a steep increase in demand in recent years, having LNG access and availability remains a prerequisite for deeper penetration. INOX has experience in design, development and deployment of infrastructure for the storage, loading, and distribution of LNG:

(i) Mini LNG terminal plants are used for processing natural gas. Along with cryogenic storage tanks, pressure pumps, vaporisers, regasification stations for trailers and railcars for further distribution are crucial. INOX offers the entire solution, from initial layouts to comprehensive aftersales services for commissioning mini LNG terminals

(ii) LNG delivery and bunker barge systems are cargo systems to facilitate distribution into areas wherein constructing pipelines is not feasible. INOX possesses capabilities to design and develop such delivery systems.

(iii) Small-scale Floating Storage and Regas Units (FSRUs) cater to small to medium scale LNG needs in power plants, local gas grids, etc., and are integrated with other gas systems and vessel automation. They are completely pre-fabricated units and are directly delivered to the shipyard.

(iv) Besides storage solutions, INOX also specialises in designing, manufacturing, and installing LNG trailer fill systems, used to offload fuel from large tanks into LNG trailers for further distribution. These integrate smoothly with liquefaction control systems.

Exhibit 77. Mini LNG terminals

Source: Company

Exhibit 78. LNG cargo delivery systems

Source: Company

Exhibit 79. Small-scale Floating Storage and Regas Units (FSRUs)

Source: Company

Exhibit 80. LNG trailer fill systems

Source: Company

Cryo-scientific division

Through this division, INOX provides equipment and turnkey solutions in segments such as clean energy, ultra-low temperature applications, and advanced technologies. It also offers turnkey solutions for cryogenics in scientific and industrial research. Its activities here are focused on customised cryogenic storage and distribution systems for space research, cryogenic fuel filling systems for launch pads, space simulation chambers, vacuum jacked piping, and cryostat for MRI. It is also working with a few Indian companies in the International Thermonuclear Experimental Reactor (ITER) project, which is an international nuclear fusion research and engineering megaproject.

- Satellite and launch facilities include specialised work in space exploration projects. Its expertise lies in (1) cryogenic propellant (liquid hydrogen/oxygen/methane) filling, (2) development of systems for handling of cryogenic fluids, (3) gas storage and servicing facility for launch pads, and (4) large capacity tanks for liquid hydrogen, liquid nitrogen and liquid oxygen storage systems.
- Cryogenic propulsion system and research offerings include contribution to R&D initiatives, and turnkey solutions for scientific and industrial research.
- Customised process technologies
- ITER project and superconductivity

Exhibit 81. Satellite and launch facilities

Source: Company

Exhibit 82. Cryogenic propulsion system and research

Source: Company

Exhibit 83. Cryogenic process technologies

Source: Company

Exhibit 84. Fusion (ITER) and superconductivity

Source: Company

Key risks

Continued dependence on manufacturing process and facilities

INOX's manufacturing processes involve heavy machinery including welding, stretching processes, pipe bending, rolling machines, heating processes, x-ray and gamma-ray imaging, lifting of heavy materials and handling of dangerous gasses and chemicals. Risks in manufacturing process include breakdown or failure of equipment, industrial accidents, severe weather conditions, and natural disasters. In addition, any strikes, work stoppages, or increased wage demands could also interfere with operations.

Customer and project concentration risk

The company is dependent on a limited number of private and public customers and projects. Its revenue from operations is concentrated with, and is dependent on, a limited number of customers and projects. In FY24 its largest customer contributed about 8.5% to total revenue vs. 11.6% in FY23.

Exhibit 85. Customer concentration

Customer concentration data points	FY21	FY22	FY23
Revenue from repeat customers			
Revenue from repeat customers	3,034	4,010	4,697
% of total	51.1%	51.2%	48.6%
Customer Concentration			
Top 20 Customers	3,064	3,739	5,849
% of Total	51.6%	47.8%	60.6%
Top 10 Customers	2,329	2,827	4,493
% of Total	39.2%	36.1%	46.5%
Largest Customer	705	715	1,117
% of Total	11.9%	9.1%	11.6%

Source: Company, JM Financial

Dependence on product development and engineering activities for future success

If the company does not successfully develop new cryogenic equipment and systems in a timely and cost-effective manner, its business may be affected.

Cancellation, delay, or reduction in customer orders

The contracts in the company's order book may be adjusted, cancelled, or suspended by its customers. Some of the contracts are subject to cancellation, termination, or suspension at the discretion of the customer at any stage of the contract. In addition, the contracts in the order book are subject to changes in the scope of services and products to be supplied as well as to adjustments to the costs relating to the contracts or place of delivery.

Reliance on third-party suppliers for key raw materials and shortfall in raw materials

The company's principal raw materials include aluminium products (sheets, bars, plate, and piping), stainless steel products (sheets, plates, heads, valves, instruments, and piping), palladium oxide, carbon steel products (sheets, plates, sections, and heads), valves and gauges, and fabricated metal components.

Inability to obtain required regulatory approvals and licences

Given INOX's products are used in several critical applications; its products undergo stringent testing procedures before commercial launch. Hence, for a successful commercial launch it is imperative for INOX to receive the requisite regulatory approvals and meet its requirements from time to time, which may include clearing periodic audits.

Regulatory actions by Indian and international authorities

Given INOX's presence in critical applications, chances of regulatory actions cannot be ruled out. Further, with nearly half the business coming from geographies other than India, the levy of trade restrictions (as observed in 2023 with the US Department of Commerce) is a risk to its business.

Financial Tables (Consolidated)

Income Statement (INR mn)

Y/E March	FY23A	FY24A	FY25E	FY26E	FY27E
Net Sales	9,659	11,312	13,165	15,182	17,648
Sales Growth	23.4%	17.1%	16.4%	15.3%	16.2%
Other Operating Income	0	0	0	0	0
Total Revenue	**9,659**	**11,312**	**13,165**	**15,182**	**17,648**
Cost of Goods Sold/Op. Exp	4,327	4,942	5,924	6,794	7,853
Personnel Cost	790	1,017	1,100	1,250	1,500
Other Expenses	2,498	2,850	3,310	3,798	4,324
EBITDA	**2,044**	**2,503**	**2,830**	**3,340**	**3,971**
EBITDA Margin	21.2%	22.1%	21.5%	22.0%	22.5%
EBITDA Growth	21.9%	22.5%	13.1%	18.0%	18.9%
Depn. & Amort.	139	181	245	274	310
EBIT	1,904	2,321	2,586	3,066	3,660
Other Income	183	313	323	373	445
Finance Cost	37	57	100	50	50
PBT before Excep. & Forex	2,051	2,578	2,809	3,388	4,056
Excep. & Forex Inc./Loss(-)	0	0	0	0	0
PBT	2,051	2,578	2,809	3,388	4,056
Taxes	523	618	708	854	1,022
Extraordinary Inc./Loss(-)	0	0	0	0	0
Assoc. Profit/Min. Int.(-)	0	0	0	0	0
Reported Net Profit	1,527	1,960	2,101	2,534	3,034
Adjusted Net Profit	**1,527**	**1,960**	**2,101**	**2,534**	**3,034**
Net Margin	15.8%	17.3%	16.0%	16.7%	17.2%
Diluted Share Cap. (mn)	90.8	90.8	90.8	90.8	90.8
Diluted EPS (INR)	**16.8**	**21.6**	**23.2**	**27.9**	**33.4**
Diluted EPS Growth	17.0%	28.3%	7.2%	20.6%	19.7%
Total Dividend + Tax	1,044	998	635	726	862
Dividend Per Share (INR)	11.5	11.0	7.0	8.0	9.5

Source: Company, JM Financial

Cash Flow Statement (INR mn)

Y/E March	FY23A	FY24A	FY25E	FY26E	FY27E
Profit before Tax	2,051	2,578	2,809	3,388	4,056
Depn. & Amort.	139	181	245	274	310
Net Interest Exp. / Inc. (-)	0	0	0	0	0
Inc (-) / Dec in WCap.	189	-714	-573	-769	-982
Others	83	1	0	0	0
Taxes Paid	-523	-618	-708	-854	-1,022
Operating Cash Flow	**1,939**	**1,429**	**1,773**	**2,040**	**2,362**
Capex	-459	-1,140	-1,000	-600	-600
Free Cash Flow	1,480	289	773	1,440	1,762
Inc (-) / Dec in Investments	628	22	-35	0	0
Others	-70	83	0	0	0
Investing Cash Flow	**100**	**-1,034**	**-1,035**	**-600**	**-600**
Inc / Dec (-) in Capital	-11	34	0	0	0
Dividend + Tax thereon	-1,044	-998	-635	-726	-862
Inc / Dec (-) in Loans	-456	72	-49	0	0
Others	0	0	0	0	0
Financing Cash Flow	**-1,511**	**-893**	**-684**	**-726**	**-862**
Inc / Dec (-) in Cash	**528**	**-498**	**54**	**714**	**900**
Opening Cash Balance	88	616	118	172	886
Closing Cash Balance	616	118	172	886	1,786

Source: Company, JM Financial

Balance Sheet (INR mn)

Y/E March	FY23A	FY24A	FY25E	FY26E	FY27E
Shareholders' Fund	5,495	6,491	7,957	9,765	11,936
Share Capital	182	182	182	182	182
Reserves & Surplus	5,313	6,309	7,775	9,583	11,755
Preference Share Capital	0	0	0	0	0
Minority Interest	0	0	0	0	0
Total Loans	0	49	0	0	0
Def. Tax Liab. / Assets (-)	83	85	85	85	85
Total - Equity & Liab.	**5,578**	**6,624**	**8,041**	**9,850**	**12,021**
Net Fixed Assets	1,560	2,498	3,254	3,579	3,869
Gross Fixed Assets	2,324	3,274	4,274	4,874	5,474
Intangible Assets	0	0	0	0	0
Less: Depn. & Amort.	766	823	1,067	1,342	1,652
Capital WIP	2	48	48	48	48
Investments	2,489	2,467	2,502	2,502	2,502
Current Assets	7,499	7,023	8,202	10,286	12,902
Inventories	4,128	4,338	5,201	6,177	7,396
Sundry Debtors	1,429	1,601	1,863	2,256	2,753
Cash & Bank Balances	616	118	172	886	1,786
Loans & Advances	481	11	11	11	11
Other Current Assets	845	955	955	955	955
Current Liab. & Prov.	5,970	5,364	5,916	6,517	7,251
Current Liabilities	802	965	1,096	1,238	1,412
Provisions & Others	5,168	4,400	4,821	5,279	5,839
Net Current Assets	1,529	1,659	2,286	3,768	5,650
Total – Assets	**5,578**	**6,624**	**8,041**	**9,850**	**12,021**

Source: Company, JM Financial

Dupont Analysis

Y/E March	FY23A	FY24A	FY25E	FY26E	FY27E
Net Margin	15.8%	17.3%	16.0%	16.7%	17.2%
Asset Turnover (x)	1.7	1.8	1.7	1.7	1.6
Leverage Factor (x)	1.1	1.0	1.0	1.0	1.0
RoE	29.0%	32.7%	29.1%	28.6%	28.0%

Key Ratios

Y/E March	FY23A	FY24A	FY25E	FY26E	FY27E
BV/Share (INR)	60.5	71.5	87.7	107.6	131.5
ROIC	61.1%	55.6%	41.9%	39.3%	39.0%
ROE	29.0%	32.7%	29.1%	28.6%	28.0%
Net Debt/Equity (x)	-0.6	-0.4	-0.3	-0.3	-0.4
P/E (x)	60.3	47.0	43.8	36.3	30.3
P/B (x)	16.7	14.2	11.6	9.4	7.7
EV/EBITDA (x)	43.6	35.9	31.7	26.6	22.2
EV/Sales (x)	9.2	7.9	6.8	5.9	5.0
Debtor days	54	52	52	54	57
Inventory days	156	140	144	149	153
Creditor days	34	33	33	33	33

Source: Company, JM Financial

APPENDIX I

JM Financial Institutional Securities Limited

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Rating	Meaning
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Hold	Price expected to move in the range of 10% downside to 10% upside from the current market price for stocks with market capitalisation in excess of INR 200 billion and REITs* and in the range of 10% downside to 15% upside from the current market price for all other stocks, over the next twelve months.
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