Making our world more productive

Buy Range	**₹3990 – 4000**
Target	**₹4750 – 4770**
Recommendation	**BUY**

Highlights

- **Linde India Ltd (LIL) is by far the largest industrial gas player in India currently, both in terms of revenue as well as number of installations, with a domestic market share of more than 50%.** LIL owns and operate 33 production facilities and filling stations across the country, including India's largest air separation plant at Jamshedpur. **Commences construction of its 250 TPD new ASU in Ludhiana, Punjab** It supplies a wide variety of gases and mixtures as well as provide a range of related services equipment, pipelines and associated engineering services catering to the needs of a wide variety of industries.
- **Largest player in the Indian Tonnage gases market with the Indian industrial gas market is estimated at ₹200bn**, out of which nearly 40% is captive.
- **Linde – Praxair have 15-20% market share in Medical oxygen – lifeline for hospitals**. The Indian Hospitals sector, which accounts for a substantial part of the Indian healthcare market, which is estimated grown to USD 132bn in FY22, and is growing at a growth rate of 16-17%. **The Indian medical tourism market is anticipated to grow from its current size of $3 bn to $7-8 bn The Company has maintained its focus on Line Integrated Valve (LIV®) cylinders for medical oxygen as well as ENTONOX®, an anaesthetic gas used for natural childbirth as well as for short term pain relief in a variety of medical procedures. More than 200 tonnes of medical oxygen are delivered every day by Linde India to meet hospitals' demand.** It also provides medical engineering services to set up pipelines within hospitals with access to each bed which has a huge potential.
- LIL's revenue is typically skewed towards Steel industry at 65% while 14% from healthcare, 10% from auto and others contributing 10%. In order to make a more balanced portfolio of downstream application between cyclical end markets and resilient end markets, LIL is developing new market in food processing, tyres, oil and gas and increasing its penetration in healthcare. It has also set up a food lab in south of India.
- **Cryogenic food chilling: CRYOLINE freezer** – LIL constructed its first Linde Food Lab in Mangalagiri, near Vijayawada in 2017. CRYOLINE freezer is the world's first hygienic individual quick freezing (IQF) freezer with a proprietary rolling wave action ideal for wide range of products. **It uses the extreme low temperatures of liquid nitrogen (LIN) for processing fruits, vegetables, meat, poultry, seafood etc**. This lab would help the Indian food processing industry in capitalizing on its food preservation technologies. Mangalagiri is both geographical and in terms of the presence of a large number of firms involved in the food processing sector.
- **Cryogenic Spice Grinding** – The Linde solution of **cryogenic grinding for food products employs a high technology combination of cryogenic grinding screw, storage tanks, and cryogenic pipeline**. Currently spice producers use LIL's cryogenic grinding solutions for turmeric and garam masala. The grinding of spices at low temperature using LIL based grinding solutions results in spices that are distinctly higher in colour and aroma.
- **Automobile Industry – Shielding gases – VARIGON, CORGON** and **CRONIGON**. Most of the leading automotive manufactures of passenger and commercial vehicles, rely on Linde shielding gases due to its ability to utilise the right mix of gases to deliver faster welds with higher quality. The shielding gases not only protect the finished weld from oxygen and nitrogen from atmosphere but can also have positive effect on weld metal properties such as strength, corrosion resistance and toughness.
- High purity gases are critical for semiconductor manufacturing because gases can create the chemical reactions needed to shape a semiconductor's electrical properties. Producing integrated circuits is highly complex and requires over hundreds of different gases throughout all the stages, which makes the range of gases used one of the broadest in any industry. As these industries continues to grow and evolve, so do the gases used in the process. Some of the core gases used include bulk gases like nitrogen, oxygen, argon, hydrogen and many electronic specialty gases.

LINDE INDIA LTD

COMPANY BACKGROUND

Linde India Ltd (LIL) is by far **the largest industrial gas player in India currently**, both in terms of revenue as well as number of installations, **with a domestic market share of more than 50%.** LIL owns and operate 33 production facilities and filling stations across the country, including India's largest air separation plant at Jamshedpur. It supplies a wide variety of gases and mixtures as well as provide a range of related services equipment, pipelines and associated engineering services catering to the needs of a wide variety of industries.LIL is part of **Linde Plc** is a **global multinational chemical company** founded in Germany and, since 2018, domiciled in Ireland and headquartered in the United Kingdom. **Linde Plc is the world's largest industrial gas company by market share and revenue.** It serves customers in the healthcare, petroleum refining, manufacturing, food, beverage carbonation, fiber-optics, steel making, aerospace, material handling equipment (MHE), chemicals, electronics and water treatment industries. In India, Linde group is represented through five legal entities: Linde India, Praxair India, Linde Engineering India, Bellary Oxygen (JV) and Linde South Asia Services. LIL is part of the Linde Group which is globally the largest industrial gas Company. In 2018 the merger of Linde AG and Praxair, the #2 and #3 industrial gas players in the world, created the world's largest IG company. It has two broad business segments i.e., **Sale of Industrial Gases (IG)** and **Project Engineering and Design segment (PED) contributing revenue of ~71% and 29% respectively in FY23**. The primary products in its industrial gas business are atmospheric gases (oxygen, nitrogen, argon, rare gases) and process gases (carbon dioxide, helium, hydrogen, electronic gases, specialty gases, acetylene). Many of these products are co- products of the same manufacturing process. LIL primarily functions through 3 different types of networks, namely, Tonnage (Onsite), Bulk and Packaged gas. **LIL** typically **receives 41% of revenue from on-site, 31% from Bulk, 14% from packaged gas and 14% from healthcare** In the PED segment the company designs, engineers and builds equipment that produces industrial gases primarily for internal use and offers customers a wide range of gas production and processing services. LIL also supplies products to neighbouring countries like Bangladesh and Sri Lanka which could further develop. **LIL's revenue is typically skewed towards Steel industry at 65% while 14% from healthcare, 10% from auto and others contributing 10%.**In order to make a more balanced portfolio of downstream application between cyclical end markets and resilient end markets, LIIL is developing new market in food processing, tyres, oil and gas and increasing its penetration in healthcare. It has also set up a food lab in south of India.

Investment Rationale

1. Linde India possess largest network in the country

Linde India owns and operate 33 production facilities and filling stations across the country, including India's largest air separation plant at Jamshedpur. It supplies a wide variety of gases and mixtures as well as provide a range of related services equipment, pipelines and associated engineering services catering to the needs of a wide variety of industries. Linde India has the largest sales and distribution network in the country giving it a wide geographic reach and placing it close to customers in any part of India.

Industrial Gases – Uses & process – Air separation Unit (ASU) is the most common process used to extract the main constituents of atmospheric air. The three main components of atmospheric air are Nitrogen (78.1%), Oxygen (20.9%) and Argon (0.9%). The remaining gases in the air are in small quantity and are normally not recovered, even though in very large ASUs, Neon, Xenon and Krypton are recovered in small quantities. Cryogenic air separation utilizes the differing condensing/boiling points of the components of air to enable separation by distillation at cryogenic temperatures. Different industrial gases are used in a wide variety of industries, but most notably in the metal, polymer and food industries.

- **Oxygen –** To oxidise unwanted impurities in the steel manufacturing process, Manufacturing sector, Food Industry, Medical and others.
- **Nitrogen –** Cooling (industrial processes, food industry, etc) and as an inert atmosphere

Important Data	
Nifty	18.610
Sensex	62,866
CMP	₹4,011.1
Market Cap (₹)	₹342.1bn
52W High/Low	₹4265/2711
Shares o/s (mn)	85.28
Daily Vol. (3M NSE Avg.)	67,623
BSE Code	523457
NSE Code	LINDEINDIA
Bloomberg Code	LIIL:IN

Shareholding Pattern (%) – Mar'23	
Promoter	75.0
DIIs	8.0
FIIs	2.8
Public	14.2

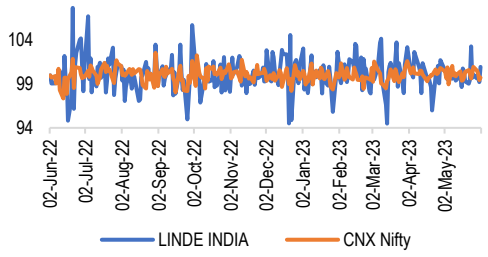
Financials & Valuations

Particulars (₹ mn)	CY19	CY20	CY21
Operating Revenue	**17,618**	**14,711**	**21,120**
EBITDA	**4,168**	**3,748**	**5,466**
EBITDA Margin (%)	***23.7***	***25.5***	***25.9***
Net Profit	**7,272**	**1,511**	**5,072**
EPS (₹)	85.3	47	24.2
DPS (₹)	1.5	10.0	3.0
RoE (%)	33.5	6.8	18.7
RoCE (%)	7.4	6.1	9.1
P/E (x)	47.0	226.4	67.4
EV/EBITDA (x)	81.7	90.9	60.9
P/BV (x)	15.8	15.3	12.6

Particulars (₹ mn)	(15M) FY23P	FY24E	FY25E
Operating Revenue	**31,355**	**30,834**	**35,426**
EBITDA	**7,642**	**8,274**	**10,134**
EBITDA Margin (%)	***24.4***	***26.8***	***28.6***
Net Profit	**1,196**	**1,897**	**2,689**
EPS (₹)	35.5	23.1	23.1
DPS (₹)	12.0	14.0	16.0
RoE (%)	17.1	16.0	18.6
RoCE (%)	11.6	12.5	15.7
P/E (x)	63.6	65.6	51.5
EV/EBITDA (x)	43.3	39.2	31.7
P/BV (x)	10.9	9.8	8.6

Source: Company, Way2Wealth

Relative performance



Source: Company Data, Way2Wealth

Analyst
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Research Analyst
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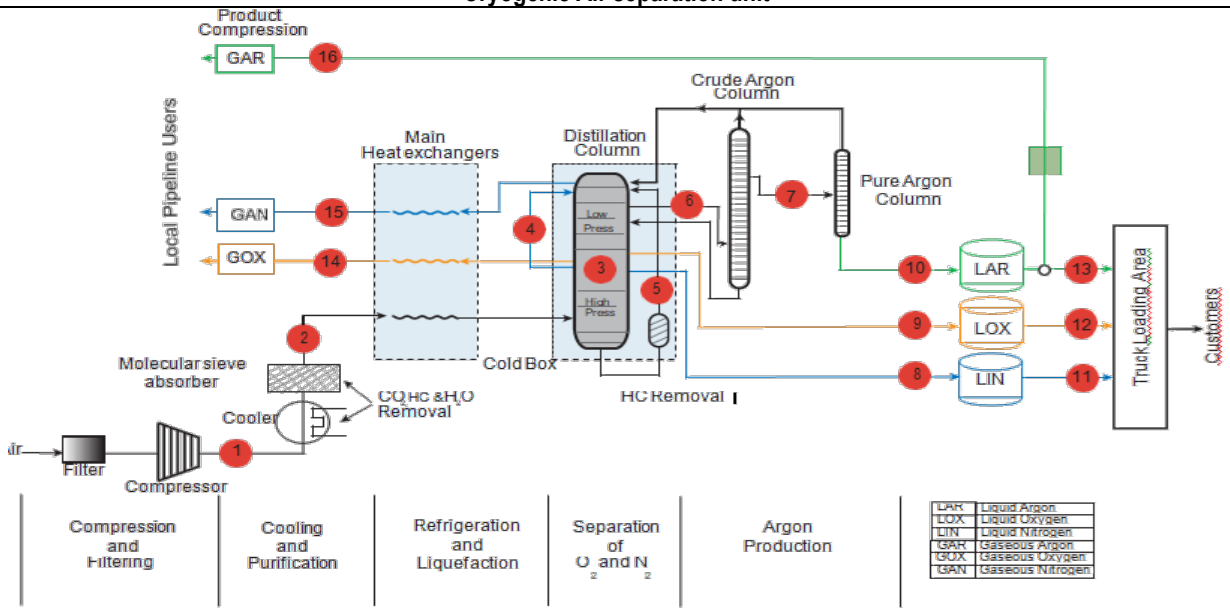
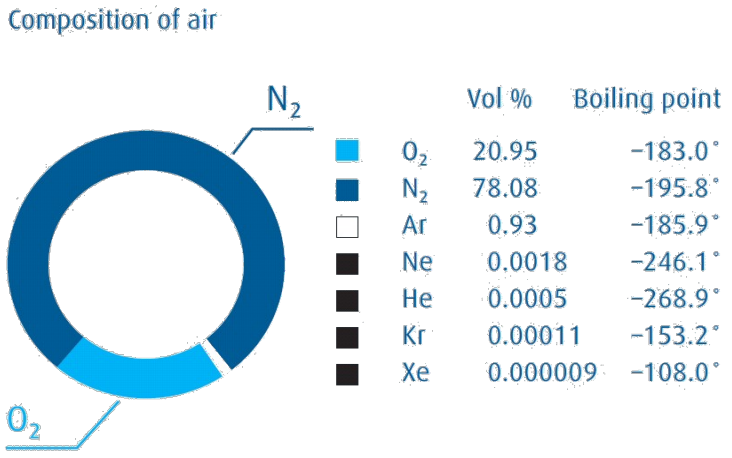
- **Argon –** It is highly unreactive "noble gas" and so, like nitrogen, can be used as a protective blanket to prevent substances from oxidising used in stainless and alloy steel production. Key uses include in welding process to protect the molten metal, and in light bulbs to prevent the white-hot tungsten filament from oxidising.
- **Carbon Dioxide** widely used in food industry, such as removing caffeine from coffee and carbonating beer.
- **Hydrogen –** The majority of the hydrogen is sold to the edible fats and oils industry where it is used to hydrogenate vegetable oils to make margarine.
- **Acetylene** is mainly used in oxy-acetylene flames for cutting mild steel and for welding.
- **Commences construction of its 250 TPD new ASU in Ludhiana, Punjab** - Linde inaugurated mechanical construction work at its new, upcoming air separation unit (ASU) at Ludhiana, Punjab. This will be Linde's second plant in North India, the other one being at Selaqui, Uttarakhand. This 250 TPD new ASU is expected to be operational towards the end of 2023. The additional supply will support expansion of Linde's footprint in North India. This plant would also significantly enhance its liquid medical oxygen production capacity in Punjab.

Cryogenic Air separation unit



Source: Company, Way2Wealth

BOILING POINTS OF VARIOUS GASES



Source: Linde Engineering

Typical Cryogenic air separation process:

Air compression - Using compressors, pressurise air feedlines in order to achieve required production.

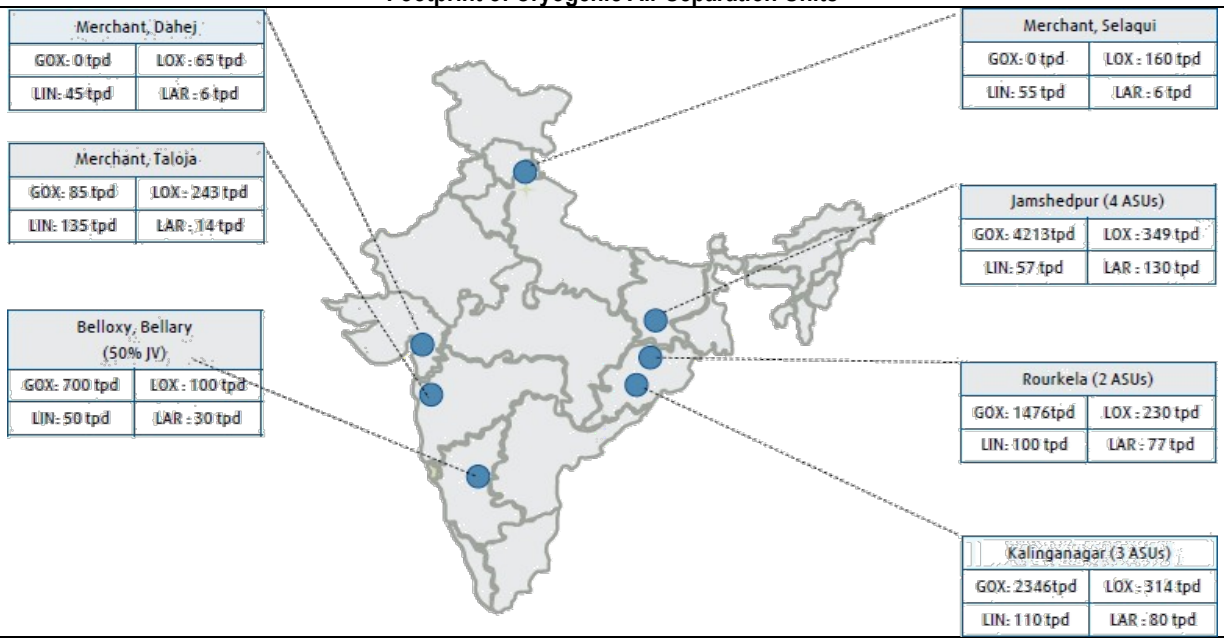
Air Cooling an purification - Removing water and CO2

Heat exchanging - Cooling of incoming air using heat exchangers

Distillation - Partial separation of air into its constituents, using distillation columns

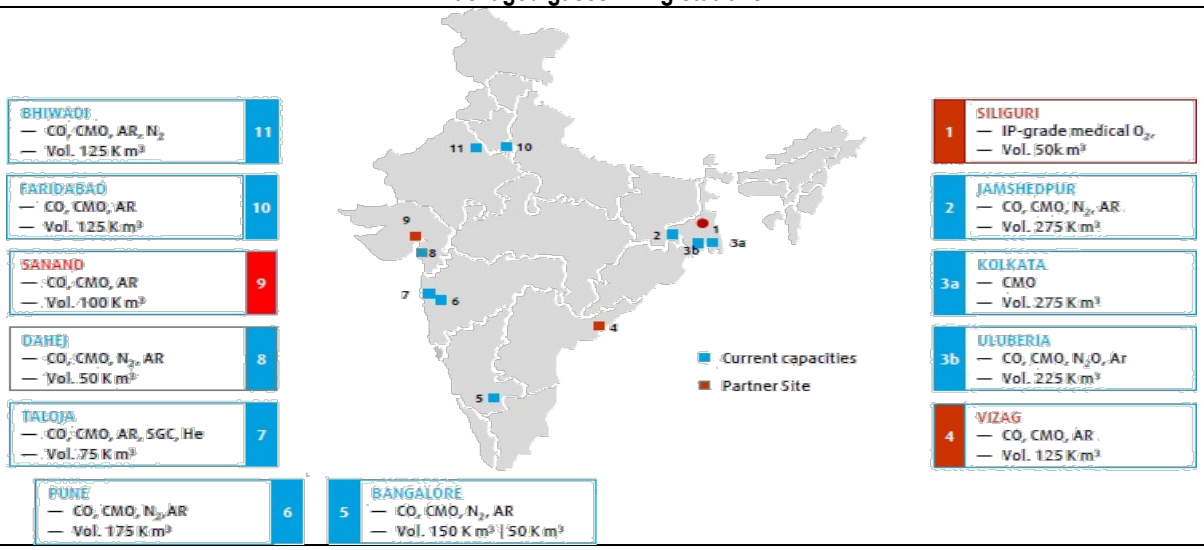
Product Compression - Using compressor, pressurise outgoing product to meet end-use requirement.

Footprint of Cryogenic Air Separation Units



Source: Company

Packaged gases filling stations



Source: Company

2. The Indian industrial gas market is estimated at ₹200bn, out of which nearly 40% is captive

World industrial gas market was estimated at US$ 95bn (1,542,484 mn SCF - standard cubic feet / 43,678 mn scm - standard cubic metre) in 2020 and is expected to grow at 5-6% over the next five years. **Oxygen and nitrogen account for 28-30%, and 22-25% of demand, while Argon, Carbon Dioxide and Hydrogen also are key gases used**. Globally, **four sectors namely healthcare (19-20%), manufacturing (25-26%), metallurgy and glass (21-22%) and Chemical & Energy (18-19%) account for bulk of demand**, with food and retail sectors among other notable users. Asia Pacific is the fastest growing region led by higher GDP growth and industrialisation, accounting for 1/3rd of consumption. Globally three players command nearly 3/4th of the market**. Linde Plc (post Praxair merger) is the largest player, with 32-33% market share followed by Air Liquide (31%), Air products (12%). There are a host of small and local players in each market like TNS with 6% market share in India**.

3. Largest player in the Indian Tonnage gases market

Depending on the customer's needs, gases can be supplied by gas companies in liquid and gaseous form and through different supply modes viz., **Tonnage (on-site), Bulk (liquid) or Cylinder**. The distribution in **tonnage** and **cylinders** is generally made in **gaseous form** while **bulk distribution** is generally made in **liquid form.** The industrial gases are sold in all the aforesaid supply modes, while **medical gases are sold either in bulk cylinder modes and specialty gases are sold only through the cylinder mode. Tonnage supplies are considered appropriate for large users whose demand for gas is more than 30 tonnes per day ("tpd"), bulk supplies are considered appropriate for medium users with demand up to 30 tpd while cylinder supplies are appropriate for small users with daily requirement ranging from 5 to 50 litres**. **The gas supplies in tonnage mode are generally made from the plants located on or adjacent to the customer premises("on-site")** while **bulk supplies** are made from **off-site plants** (which may be a standalone plant dedicated to bulk supply ("merchant plants") or a captive or tonnage plant some capacity of which is available for bulk supply ("piggy back plants"). **The cylinder supplies are also generally made from offsite locations** (which can be the merchant plants or the piggy back plants with cylinder filling facilities or the cylinder filling stations).**Typical shipping distances from the filling site for Cylinder oxygen and nitrogen is around 100-150 kms; 100-250 kms for GAR; and up to 400 kms for hydrogen.** The pricing of tonnage supplies is generally the outcome of bidding processes and includes price of the gas to be supplied, plant installation cost, maintenance and facility charges etc. The pricing of bulk supplies is generally based on negotiations with separate pricing for gas, delivery charges, facility charges (storage tank and vaporising equipment installed at customer's premises).**The pricing of cylinder supplies is also generally based on negotiation.** There are differences between the contract duration which is generally agreed for the aforesaid supply modes. **While tonnage contracts are generally for a term of 10-20 years, bulk contracts are agreed for 3-5 years and cylinder contracts for 1-3 years.**

Bulk distribution is generally made in liquid form. Apart from gas companies, a number of industrial companies (like manufacturers of steel, fertilizer, etc.) operating In-house plants for their captive use, also sell gas which is in excess of their own requirements as liquid in the bulk market. These companies have certain advantage over gas companies, such as (1) lower cost of power which is mostly captive (2) no need to invest a significant amount in infrastructure required for supplying the products to end customers, as they encourage resellers to procure the product from their plants (reseller are happy since they in-turn don't have to make any investment in storage, just the tankers).The bulk markets is characterized by presence of different types of competitors such as global gas companies such as **Linde, Praxair, Air Liquide and Air Products. Local players such as Bomoxy, Shreeram etc**. who are engaged in production and sale of a few gases and are present in few regions in India other local players who are small and relatively unorganized and may be engaged in provision of a few gases in selected areas either by production of gases as by products or otherwise or by way of resale.

Cylinder market is highly fragmented, with presence of a large number of players. However, large industrial gas companies have strong presence in institutional supplies.

4. Strong Infrastructure Pipeline to drive Steel growth enabling robust demand for Industrial gases

With the target of making India an US$ 5tn economy by FY24-25, the NIP provides for a spending commitment of US$ 1.4tn. Core sectors to benefit from the NIP are energy (24% of total spending), roads (19%), urban (16%), and railways (13%), while irrigation, rural infrastructure and others constitute lower allocation. Continued thrust by government to use domestically manufactured iron & steel products in government procurement. Restrictions on steel imports led by government measures such as implementation of anti-dumping duty, Minimum import price (MIP) India became the second-largest consumer of finished steel products in the world, surpassing the US in CY19 with production in CY22 at 124.7mn tonnes (MT) +5.5% YoY. In FY23, the crude steel production rose by 4.18% to 125.32MT compared to 120.29MT on FY22.The production of finished steel was at 121.39MT, +6.77% from 113.6MT year ago. Domestic consumption of steel rose by 12.69% to 119.17 MT against 105.75 MT in FY22.In FY22, Domestic finished steel production grew by 18.1% YoY to 114 MT and consumption grew by 11.4% YoY to 105.75 MT. For Apr'23, production of crude steel at 10.51 MT (+1.2% YoY), finished steel production at 9.98 MT (+3.7% YoY) and consumption of finished steel at 9.88 MT (+7.2% YoY). Steel demand in India expected to grow 7.5% in FY24 to 128.85 MT and 6.3% in FY25 to 136.9 & MT as per ISA. India's per capita steel consumption grew at a CAGR of 4.1% to 68.9 kg between FY08 and FY18, driven by rapid growth in the industrial sector and robust infrastructure development. However, compared with the global average of 208 kg, there exists a significant growth potential. National Steel Policy (NSP) was introduced in CY17 to increase per capita steel consumption to 160 kg by FY 31. The NSP also set a target of achieving 300 MT of production capacity which is almost double current capacity levels Industrial gases used in the metals & metal fabrication industry include oxygen, hydrogen, nitrogen, carbon dioxide and acetylene**. Additionally, higher spends on Infra is likely to drive demand for Nitrogen while automotive sector is large consumer of Argon.** Structural reforms including a steep cut in corporate tax rates; continued rationalisation of the GST structure; speeding up of insolvency proceedings; financial restructuring of public sector banks (PSBs); and easing liquidity and funding pressure for NBFC's are expected to boost the economy and metals demand overall enabling incremental demand for industrial gases**.**

5. Linde – Praxair have 15-20% market share in Medical oxygen- lifeline for hospitals

Today, **medical oxygen is used for almost all modern anaesthetic technique**, to restore tissue oxygen tension in wide range of health conditions, to provide life support, in aiding resuscitation, et al. As of now**, nearly 15% of oxygen manufactured in India is used for medical purposes. Oxygen sources include cylinders filled with either liquid or gaseous oxygen or on-site oxygen generation.** The Indian healthcare infrastructure has not kept pace with population growth in past 70 years. India still ranks low on broad healthcare parameters globally. However, the situation has meaningfully improved in past 2 decade. Post the Covid-19 pandemic, the focus of Government has further increased on improving the healthcare sector in India. Accordingly, **the Government of India is planning to increase public health spending to 2.5% of the country's GDP by 2025.The Indian healthcare sector is estimated to have grown three-fold rise, growing at a CAGR of 22% during 2016-2022 to reach US$ 372bn in 2022 from US$ 110bn in 2016.The Indian Hospitals sector,** which accounts for a substantial part of **the Indian healthcare market, which is estimated grown to USD 132bn in FY22, and is growing at a growth rate of 16-17%.**The **Indian medical tourism market is anticipated to grow from its current size of $3 bn to $7-8 bn.** In terms of market shares, as per industry sources, **Linde - Praxair have 15-20% market share.** Further, there are several large competitors that are active in this area such as **MDD Medical Systems (approx. 40-45% supply share)**, **Draeger India Private**

Limited (approx. 10-15% supply share), Puspa Medical (approx. 5-10% supply share), MPS, Benson Medical, Alcon, Atlas Corp India among others. The Company has maintained its focus on **Line Integrated Valve (LIV®)** cylinders **for medical oxygen** as well as **ENTONOX®, an anaesthetic gas used for natural childbirth as well as for short term pain relief in a variety of medical procedures.LIV** is lightweight, ready-to-use mobile gas solution with mounted integrated valve pressure regulator. **ENTONOX** is a ready-to-use medical gas mixture consisting of 50% nitrous oxide and 50% oxygen for use in all situations **where analgesia and sedation with rapid onset and offset is sought**. **More than 200 tonnes of medical oxygen are delivered every day by Linde India to meet hospitals' demand.** It also provides medical engineering services to set up pipelines within hospitals with access to each bed which has a huge potential.

LIV and ENTONOX

Source: Company, Way2Wealth

6. Industrial gases are integral to Semiconductors

Government is focused on its important objective of building the overall semiconductor ecosystem and ensure that, it in-turn catalyses India's rapidly expanding electronics manufacturing and innovation ecosystem. This vision of Atmanirbharta in electronics & semiconductors was given further momentum by the Union Cabinet, chaired by the Prime Minister of India, approving the "Semicon India" programme with a total outlay of ₹760bn for the development of semiconductor and display manufacturing ecosystem in our country. The programme aims to provide financial support to companies investing in semiconductors, display manufacturing and design ecosystem. This will serve to pave the way for India's growing presence in the global electronics value chains. India Semiconductor Mission (ISM) has been setup as an Independent Business Division within Digital India Corporation having administrative and financial autonomy to formulate and drive India's long term strategies for developing semiconductors and display manufacturing facilities and semiconductor design ecosystem. Envisioned to be led by global experts in the Semiconductor and Display industry, ISM will serve as the nodal agency for efficient, coherent and smooth implementation of the schemes.

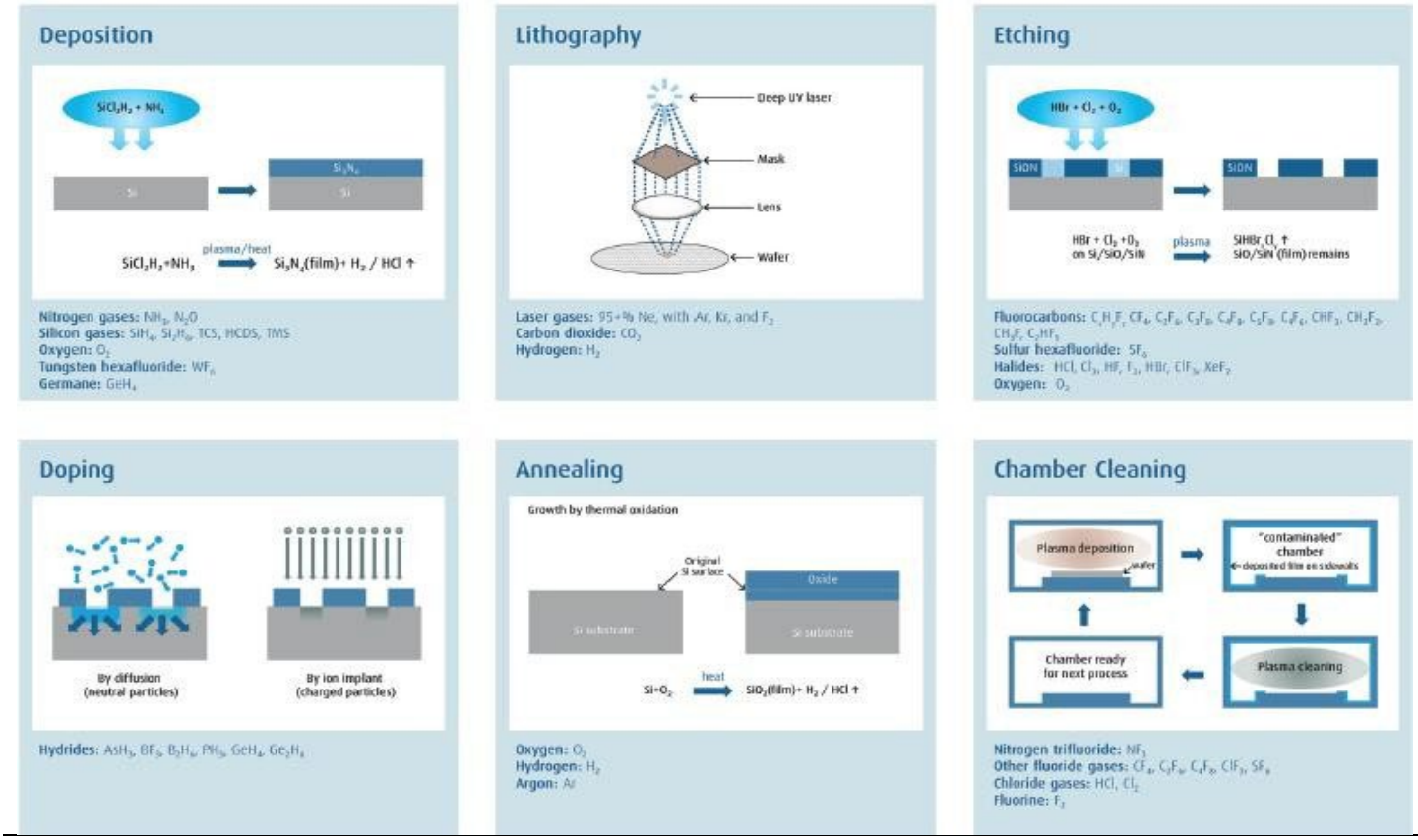
Following four schemes have been introduced under the aforesaid programme:

- **Scheme for setting up of Semiconductor Fabs in India** provides fiscal support to eligible applicants for setting up of Semiconductor Fabs which is aimed at attracting large investments for setting up semiconductor wafer fabrication facilities in the country. Following fiscal support has been approved under the scheme: 28nm or Lower - Up to 50% of the Project Cost, Above 28 nm to 45nm - Up to 40% of the Project Cost and Above 45 nm to 65nm - Up to 30% of the Project Cost

- **Scheme for setting up of Display Fabs in India** provides fiscal support to eligible applicants for setting up of Display Fabs which is aimed at attracting large investments for setting up TFT LCD / AMOLED based display fabrication facilities in the country. The Scheme provides fiscal support of up to 50% of Project Cost subject to a ceiling of ₹120bn per Fab.
- **Scheme for setting up of Compound Semiconductors / Silicon Photonics / Sensors Fab and Semiconductor Assembly, Testing, Marking and Packaging (ATMP) / OSAT facilities in India –** The Scheme provides a fiscal support of 30% of the Capital Expenditure to the eligible applicants for setting up of Compound Semiconductors / Silicon Photonics (SiPh) / Sensors (including MEMS) Fab and Semiconductor ATMP / OSAT facilities in India.
- **Design Linked Incentive (DLI) Scheme** offers financial incentives, design infrastructure support across various stages of development and deployment of semiconductor design for Integrated Circuits (ICs), Chipsets, System on Chips (SoCs), Systems & IP Cores and semiconductor linked design. The scheme provides "Product Design Linked Incentive" of up to 50% of the eligible expenditure subject to a ceiling of ₹150mn per application and "Deployment Linked Incentive" of 6% to 4% of net sales turnover over 5 years subject to a ceiling of ₹300mn per application.

High purity gases are critical for semiconductor manufacturing because gases can create the chemical reactions needed to shape a semiconductor's electrical properties. Producing integrated circuits is highly complex and requires over hundreds of different gasses throughout all the stages, which makes the range of gases used one of the broadest in any industry. Due to its complexity, the gases used need to be precise and accurate at every stage of the manufacturing process to configure the semiconductor properly. As these industries continues to grow and evolve, so do the gases used in the process. Some of the core gases used include bulk gases like nitrogen, oxygen, argon, hydrogen and many electronic specialty gases

Semiconductor Process and Gases used



Source: Company

Electronic Specialty Gases	
Nitrogen trifluoride(NF3)	**Cleaning of process chambers and etching.**
Tungsten hexafluoride(WF6)	**Low pressure or plasma-enhanced CVD (chemical vapor deposition) of tungsten,tungsten silicides, and tungsten nitricides.**
Hydrogen chloride(HCl)	**Epitaxial and cleaning processes.**
Ammonia(NH3)	Chemical vapor deposition process.
Disilane(Si2H6)	Low-temperature silicon deposition for making high-quality ultra-thin epitaxiall films in advanced technology nodes.
Germane(GeH4)	Precursor used to form and deposit the SiGe(silicon-germanium) layer on silicon wafers.
High-purity carbon dioxide(CO2)	Treatment of the immersion water supply for immersion lithography tools
Nitrous oxide(N2O)	Chemical vapor and atomic layer deposition.

Source: Company

Electronic Bulk Gases	
Nitrogen	**N2 is by far the most used gas in semiconductor manufacturing. It is used for purging vacuum pumps, in abatement systems, and as a process gas.** In large, advanced fabs, consumption of nitrogen can reach 50,000 cubic meters per hour, which makes the case for cost-effective, low-energy, on-site nitrogen generators.
Hydrogen	H2 is increasing in usage due to larger fabs and higher process intensity. It is used during epitaxial deposition of silicon and silicon germanium and for surface preparation. With the move to EUV (extreme ultra violet), hydrogen demand will continue to grow. Linde is ready and can deliver hydrogen as compressed gas or in liquid form (only in US and Europe), or on-site through steam reforming or electrolysis.
Argon	Ar is used ubiquitously in the fab for plasma deposition and etching processes as well as deep UV lithography lasers used to pattern the smallest features in semiconductor chips. And increasingly, tools using small droplets of liquid argon are employed to clean debris from the smallest, most fragile chip structures.
Helium	Second lightest element and coldest liquid and is used in electronics manufacturing at hundreds of points in the fab for cooling, plasma processing, and leak detection
Oxygen	O2 is used for growing oxide layers in etching. Ultra-pure liquid oxygen (LOX) can be provided on-site with less than 10 ppb impurities without the need for an external purifier.
Carbon Dioxide	CO2 is used to support leading-edge immersion lithography, specialized cryogenic cleaning applications, and DI (deionized) water treatment

Source: Company

The latest **computer chips are made using more than 1,000 steps and have more than 10 bn individual transistors, all connected by nano-scale wires in intricate, 3D levels of design – they all are made using mostly simple, building block-like processes in use for over 50 years, and are built and shaped using mostly gas materials. Every chip starts with a 'wafer' made of pure semiconducting material such as silicon. Thin layers of different materials are added to the surface of the silicon wafer, by way of deposition (additive) and etching (subtractive) chemical reactions – each requiring various reactive gases such as nitrogen trifluoride (NF3), tungsten hexafluoride (WF6), germane (GeH4)** and **nitrous oxide (N2O**). Other specialty gases are also used for 'doping' i.e. altering the properties of the semiconductor crystal to improve its conductivity. Gases are even used to clean the process chambers afterwards. Linde's **SPECTRA-N** series of nitrogen generators are designed to scale with customer requirements and meet highest level of operational efficiency.

7. Other industries using LIL's IG

Cryogenic food chilling: CRYOLINE freezer - LIL constructed its first **Linde Food Lab in Mangalagiri, near Vijayawada in 2017**. It's portfolio of cryogenic freezers and related equipment offer range of cutting edge solutions that help local growers earn more returns from their produce. CRYOLINE freezer is the world's first hygienic individual quick freezing (IQF) freezer with a proprietary rolling wave action ideal for wide range of products**. It uses the extreme low temperatures of liquid nitrogen (LIN) for processing fruits, vegetables, meat, poultry, seafood etc**. This lab would help the Indian food processing industry in capitalizing on its food preservation technologies. Mangalagiri is both geographical and in terms of the presence of a large number of firms involved in the food processing sector.

Cryogenic Spice Grinding – The Linde solution of cryogenic grinding for food products employs a high technology combination of cryogenic grinding screw, storage tanks, and cryogenic pipeline. Currently spice producers use **LIL's cryogenic grinding solutions for turmeric and garam masala.** The grinding of spices at low temperature using LIL based grinding solutions results in spices that are distinctly higher in colour and aroma. The adoption of Linde's solution has not only boosted productivity and reduced power bills but also enhance quality of products

Automobile Industry – Shielding gases – VARIGON, CORGON and CRONIGON. Most of the leading automotive manufactures of passenger and commercial vehicles, rely on Linde shielding gases due to its ability to utilise the right mix of gases to deliver faster welds with higher quality. **The shielding gases not only protect the finished weld from oxygen and nitrogen from atmosphere but can also have positive effect on weld metal properties such as strength, corrosion resistance and toughness**. As one of the leading suppliers, LIL has a long standing commitment to the welding industry and have vast experience in all shielding gases process and advise clients on right mixture best suited to individual application challenges.

8. Project Engineering Division (22.5%/29.4% of sales in Q4FY23/FY23)

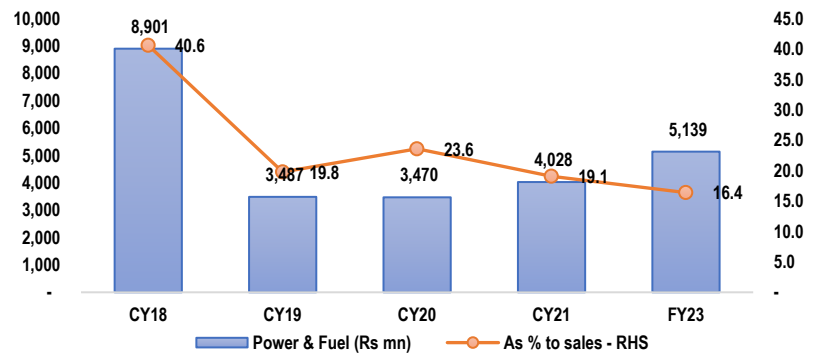
The Project Engineering Division (PED) comprises the business of design, engineering, supply, installation, testing and commissioning of Air Separation units (ASU) and related projects on turnkey basis. It has U-stamped (American Society of Mechanical Engineers (ASME) U stamp is certification of quality for boiler and pressure vessels) certified works to make core equipment like distillation columns for ASUs, cryogenic liquid storage tanks, ambient and steam bath vaporizers, LINIT plants, etc. The project engineering business, therefore, reflects the appetite for new projects in diverse core sectors of the economy. PED also manufactures cryogenic vessels, small size liquid Nitrogen Plant, steam bath vaporisers, containerized micro plants for cylinder filling for in-house use as well as for sale to third party customers. **Linde India Ltd has been able to develop capabilities on application technology gas sales and project engineering by leveraging the strengths of its parent Linde Plc.** The order intake during the year 2021 was to the tune of ₹5,026mn. This includes export order of 2 cold boxes for 100 tpd ASU (LION 2) each received from Linde Engineering, Munich for their ASU project in Egypt. Apart from this, PED also received order worth ₹1,234mn for 250 tpd merchant ASU at Dahej, Gujarat for Linde Gas division. Some of the major orders received by PED during 2021 were from refineries, steel and mining sectors such as 150 tpd N2 plant from Technip for their Nyara Refinery project, 160 tpd N2 plant from JSW for their works at Vasind, 900 Nm3/hr. N2 generator with LOX production from Mundra Solar Energy Ltd., 120 tpd Low purity O2 VPSA from Sesa Goa Ltd, 2 x cold boxes for 100 tpd ASU (LION 2) received from Linde Engineering, Munich for their ASU project at Giza, Egypt, 120 tpd Low purity O2 VPSA from Group company Praxair India Pvt. Ltd. for their Scott Glass Project at Jambusar, Gujarat and 250 tpd Merchant ASU from Praxair India Pvt. Ltd. at SriCity in Tamil Nadu.

Portfolio	Key Customers
Cryogenic ASU - 40 to 2550 TPD	Steel Sector: SAIL, TATA, JSW, BPSL, NMDC, RINL
VPSA O2 Plant - Upto 200 TPD GAN Generator : Upto 250 TPD	Oil & Gas: HPCL, IOCL, BPCL, ONGC, GAIL, HMEL, MRPL, CPCL
LINIT Plant: 20 to 100 Ltr/hr	LNG Terminals: Dahej, Mundra, Kochi, Ennore,
Compressed Air Station	
He distribution system	Electronic: Adani
O2 Storage & Distribution System Oxygen PRMS (Pressure Reducing and Metering Station)	Export Projects: JGC Japan, CSTS, Indonesia, LG Malaysia, LG, Bangladesh
Electronic Gas distribution	

Source: Company, Way2Wealth

Key Risks

- **Sharp increase in power costs –** Energy is the single largest cost item in the production and distribution of industrial gases. Most of Linde's energy requirements are in the form of electricity, natural gas and diesel fuel for distribution. **Linde attempts to minimise the financial impact of variability in these costs through the management of customer contracts and reducing demand through operational productivity and energy efficiency**. **Large customer contracts typically have escalation and pass- through clauses to recover energy and feedstock costs**. Large customer contracts typically have escalation and pass- through clauses to recover energy and feedstock costs. Such attempts may not successfully mitigate cost variability, which could negatively impact Linde's financial condition or results of operations.



Source: Company, Way2Wealth

- **Revenue concentration in steel sector –** Steel and other metallurgical industries account for around two-third of total revenue from the gases segment, which exposes the company to inherent cyclicality and sluggish growth during economic downturns**. Aggressive addition of new merchant capacities by competitors in an already competitive marketplace and some of the steel majors implementing plans to set up Air Separation Units may have adverse impact on the fortunes of the gases industry and price in certain geographies**

View

Demand for industrial gases will be driven by metals, industrial, and healthcare sectors, each of which are poised for strong growth acceleration as India's thrust for infrastructure keeps on rolling. Linde (along with Praxair) is one of the two key players (INOX Air Products being the other), which will dominate the industry within the organized space going forward. After its business integration with Praxair India, is well poised to register exponential earnings growth over the next 3–5 years on the back of expected acceleration in demand for industrial gases in India and profitability improvement. Incrementally, Linde Plc has got a BOO order from Infineon Technologies for onsite production and storage of green hydrogen, this augurs well for Linde, which can source technology from Linde Plc in future as the Indian government has laid strong emphasis on clean fuel technology transition. **Hence we view it as a BUY with Target range ₹4750-4770**.

Q4FY23 & FY23 FINANCIAL PERFORMANCE

(₹mn)

Particulars	Q4FY23	Q1CY22	YoY (%)	Q4CY22	QoQ (%)	(15M)FY23	CY21	YoY (%)
Revenue	**6,302.4**	**5,342.7**	**18.0**	**6,970.0**	**(9.6)**	**31,355.2**	**21,119.6**	**48.5**
Cost of Matl	*1,293.9*	*1,377.4*	*(6.1)*	*1,984.8*	*(34.8)*	*8,246.4*	*3,931.6*	*109.7*
Stock Purchases	*1,009.8*	*469.7*	*115.0*	*1,072.9*	*(5.9)*	*4,407.0*	*2,912.0*	*51.3*
Inventory Changes	*7.7*	*41.8*	*(81.7)*	*(35.6)*	*(121.5)*	*(67.0)*	*26.4*	*(353.4)*
Raw Matl Cost	2,311.3	1,889.0	22.4	3,022.1	(23.5)	12,586.4	6,870.1	83.2
Employee Exps	101.1	130.7	(22.7)	134.6	(24.9)	638.7	502.5	27.1
Power & Fuel	1,020.2	1,002.2	1.8	1,095.5	(6.9)	5,139.2	4,028.5	27.6
Freight Charges	343.7	290.6	18.3	305.8	12.4	1,586.5	1,318.3	20.4
Other Exps	668.7	713.1	(6.2)	733.6	(8.8)	3,762.4	2,934.5	28.2
EBITDA	**1,857.4**	**1,317.1**	**41.0**	**1,678.4**	**10.7**	**7,642.0**	**5,465.9**	**39.8**
EBITDA Margin (%)	***29.5***	***24.7***	***482***	***24.1***	***539***	***24.4***	***25.9***	***(151)***
Other Income	217.0	139.8	55.2	191.3	13.4	1,039.7	546.6	90.2
Finance cost	11.7	11.3	3.2	11.1	5.3	56.6	30.5	85.2
Depreciation	657.9	457.2	43.9	481.1	36.8	2,528.7	1,813.7	39.4
JV Profit/ (Loss)	5.2	21.2	(75.8)	32.3	(84.0)	86.3	56.2	53.6
Exceptional Item	-	-	-	-	-	-	2,754.5	(100.0)
PBT	1,410.0	1,009.6	39.7	1,409.8	0.0	6,182.9	6,979.0	(11.4)
Tax	417.4	349.8	19.3	309.8	34.8	802.3	1,906.8	(57.9)
Net Profit	**992.5**	**659.8**	**50.4**	**1,100.1**	**(9.8)**	**5,380.6**	**5,072.2**	**6.1**
EPS (₹)	11.6	7.7	50.4	12.9	(9.8)	63.1	59.5	6.1
Adjus.Net Profit	992.5	659.8	50.4	1,100.1	(9.8)	5,380.6	2,317.7	132.2
Adjus.EPS (₹)	11.6	7.7	50.4	12.9	(9.8)	63.1	27.2	132.2

Source – Company, Way2Wealth

As % of Sales	Q4FY23	Q1CY22	YoY (BPS)	Q4CY22	QoQ (BPS)	(15M)FY23	CY21	YoY (BPS)
Raw Matl Cost	36.7	35.4	132	43.4	(668)	40.1	32.5	761
Gross Margin	63.3	64.6	(132)	56.6	668	59.9	67.5	(761)
Power & Fuel	16.2	18.8	(257)	15.7	47	16.4	19.1	(268)
Freight Charges	5.5	5.4	1	4.4	107	5.1	6.2	(118)
Other Exps	10.6	13.3	(274)	10.5	9	12.0	13.9	(190)

Segmental Revenue (₹ mn)	Q4FY23	Q1CY22	YoY (%)	Q4CY22	QoQ (%)	(15M)FY23	CY21	YoY (%)
Gases & products	4,887.3	4,159.5	17.5	4,886.3	0.0	22,143.8	16,610.7	33.3
Project Engg	1,893.7	2,301.9	(17.7)	2,447.8	(22.6)	10,460.8	4,578.7	128.5

Segmental EBIT (₹ mn)	Q4FY23	Q1CY22	YoY (%)	Q4CY22	QoQ (%)	(15M)FY23	CY21	YoY (%)
Gases & products	1,220.3	1,017.3	19.9	1,246.1	(2.1)	5,273.1	3,871.2	36.2
Project Engg	151.0	275.7	(45.2)	288.5	(47.7)	1,114.4	484.6	130.0

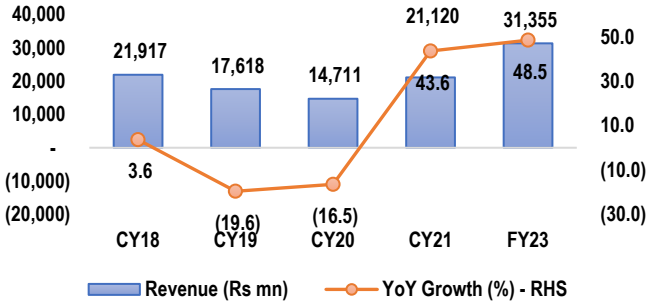
EBIT Margin (%)	Q4FY23	Q1CY22	YoY (BPS)	Q4CY22	QoQ (BPS)	(15M)FY23	CY21	YoY (BPS)
Gases & products	25.0	24.5	51	25.5	(53)	23.8	23.3	51
Project Engg	8.0	12.0	(400)	11.8	(381)	10.7	10.6	7

Revenue Mix (%)	Q4FY23	Q1CY22	YoY (BPS)	Q4CY22	QoQ (BPS)	(15M)FY23	CY21	YoY (BPS)
Gases & products	77.5	64.6	1,297	70.1	744	70.6	78.7	(803)
Project Engg	22.5	35.4	(1,297)	29.9	(744)	29.4	21.3	803

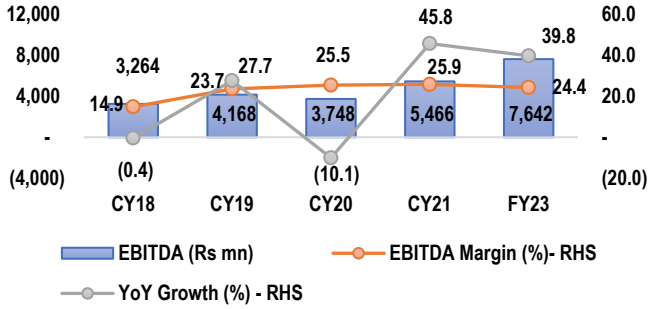
Source: Company, Way2Wealth

Past Performance

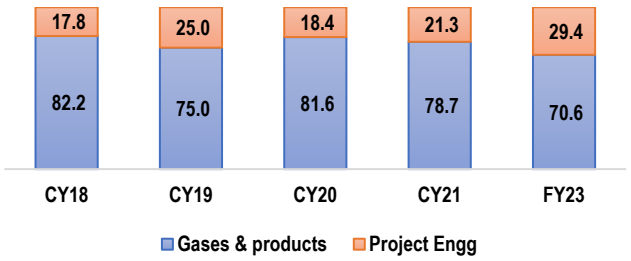
Revenue 9.4% CAGR CY18-FY2



EBITDA 23.7% CAGR CY18-FY23



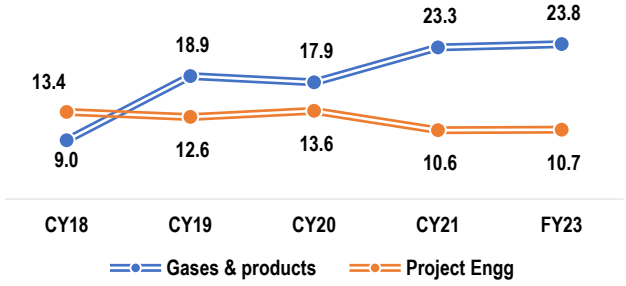
Revenue Mix (%) with Gases/PED CAGR 5.3%/26.8% CY18 -FY23



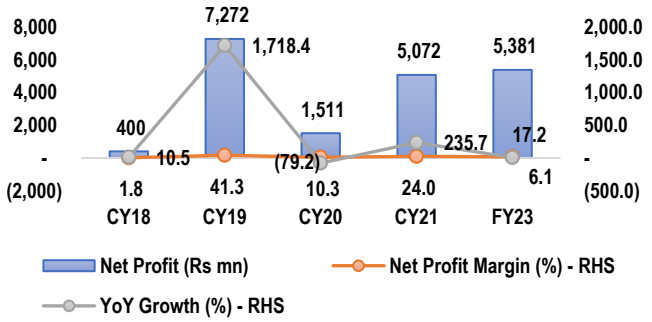
Costs as % of Sales

	CY18	CY19	CY20	CY21	FY23
Raw Matl Cost	17.9	23.7	23.5	32.5	40.1
Gross Margin	82.1	76.3	76.5	67.5	59.9
Power & Fuel	40.6	19.8	23.6	19.1	16.4
Freight Charges	7.8	10.3	7.5	6.2	5.1
Other Exps	13.0	16.1	15.2	13.9	12.0

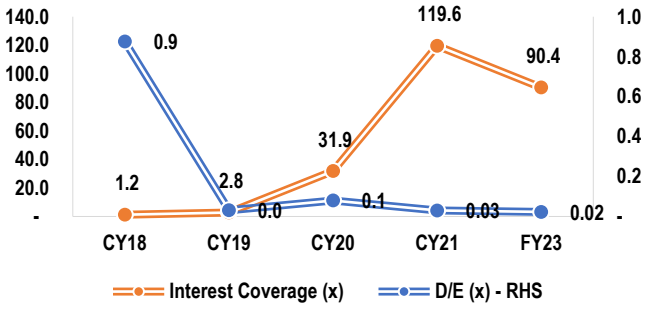
Segmental EBIT Margin (%)

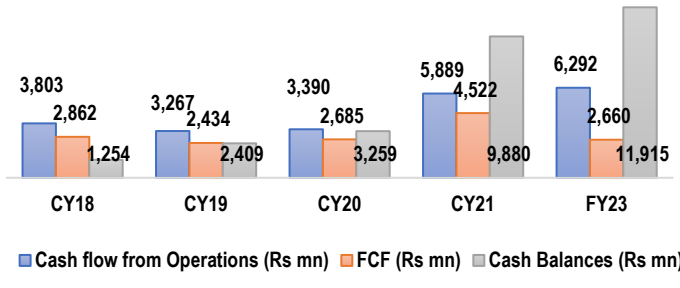


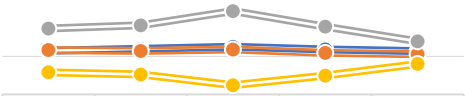
PAT 92% CAGR CY18-FY23



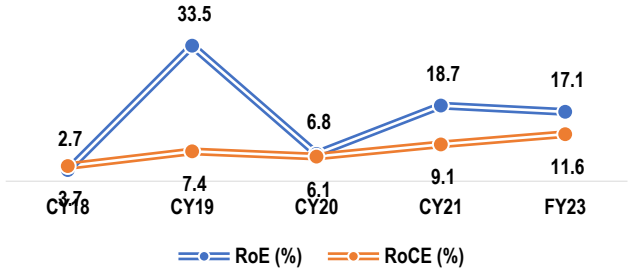
Negligible Debt with sound W.C mgmt enabling strong cash flows and return ratios







	CY18	CY19	CY20	CY21	FY23
Receivables Days	59	79	101	73	56
Inventory Days	66	57	72	37	22
Payable Days	293	327	477	312	158
NWC Days	(168)	(190)	(303)	(202)	(80)



Source: Company, Way2Wealth

FINANCIALS & VALUATIONS

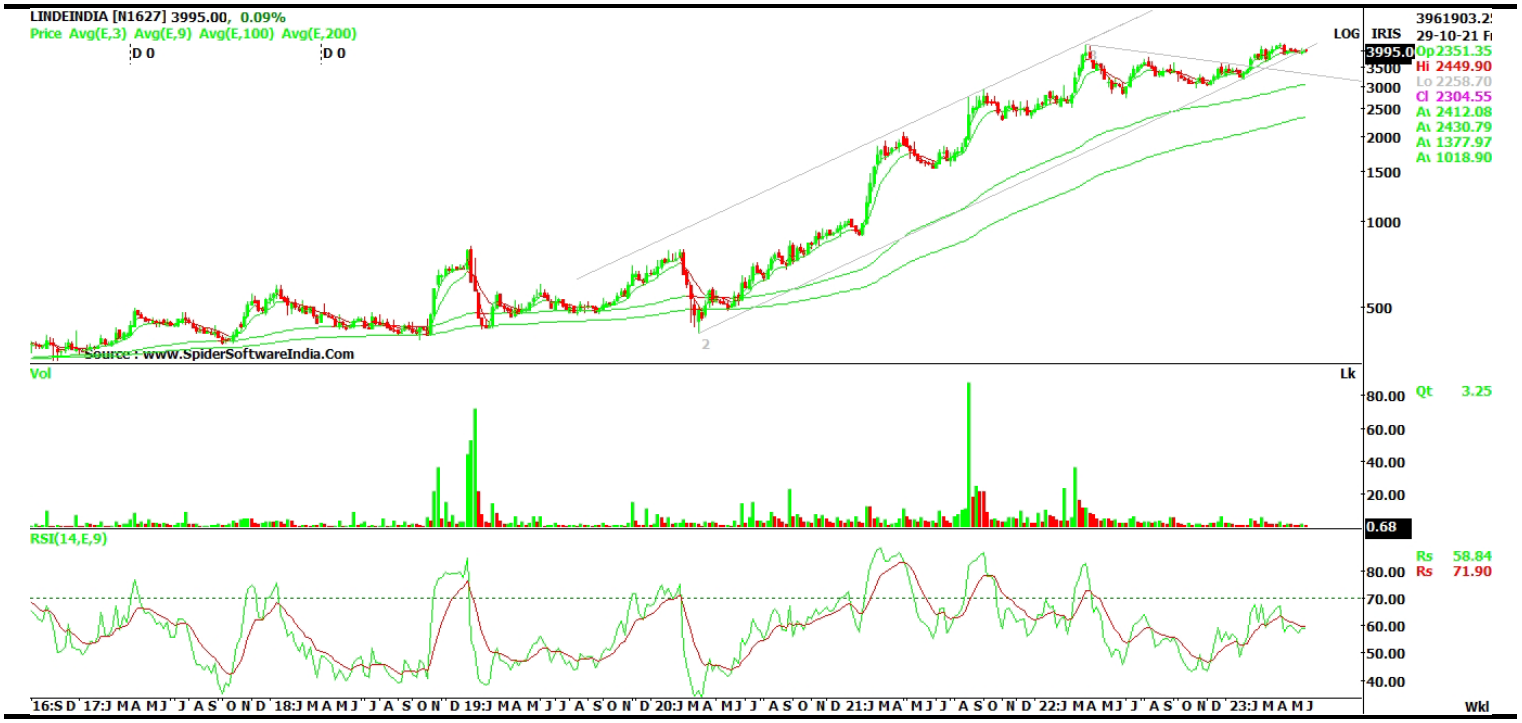
(₹mn)

Particulars	CY18	CY19	CY20	CY21	(15Months) FY23P	FY24E	FY25E
Gases & products	*18,021*	*13,221*	*12,001*	*16,611*	*22,144*	*18,272*	*19,368*
Project Engg	*4,049*	*4,473*	*2,855*	*4,579*	*10,461*	*6,181*	*7,418*
Revenue	**21,917**	**17,618**	**14,711**	**21,120**	**31,355**	**30,834**	**35,426**
EBITDA	**3,264**	**4,168**	**3,748**	**5,466**	**7,642**	**8,274**	**10,134**
EBITDA Margin (%)	***14.9***	***23.7***	***25.5***	***25.9***	***24.4***	***26.8***	***28.6***
Net Profit	**400**	**7,272**	**1,511**	**5,072**	**5,381**	**5,213**	**6,643**
EPS (₹)	4.7	85.3	17.7	59.5	63.1	61.1	77.9
DPS (Rs)	1.0	1.5	10.0	3.0	12.0	14.0	16.0
RoE (%)	2.7	33.5	6.8	18.7	17.1	16.0	18.6
RoCE (%)	3.7	7.4	6.1	9.1	11.6	12.5	15.7
Cash Balances	1,254	2,409	3,259	9,880	11,915	15,462	18,271
FCF	2,862	2,434	2,685	4,522	2,660	2,523	4,191
Receivable Days	59	79	101	73	56	74	70
Inventory Days	66	57	72	37	22	39	35
Payable Days	293	327	477	312	158	165	150
Net Debt/ Equity (x)	0.8	(0.1)	(0.1)	(0.3)	(0.4)	(0.3)	(0.2)
P/E (x)	855.4	47.0	226.4	67.4	63.6	65.6	51.5
EV/EBITDA (x)	108.3	81.7	90.9	60.9	43.3	39.2	31.7
P/BV (x)	23.4	15.8	15.3	12.6	10.9	9.8	8.6

Source: Company, Way2Wealth

TECHNICAL VIEW

The stock had been moving sideways and in a narrow range between 3640-4269 in the past three months after rallying sharply from 1526 to 4269. As of now, the stock is trading above its short term 20& 50-DMA, which earmarks inherent strength in the counter. After testing 4269 the stock witnessed higher level profit booking, Stochastics signalled a positive crossover with heavy volumes, confirming the breakout on the upside. Based on above technical observations, we expect the upward sloping channel in the counter to continue with immediate resistance placed at 4550-4600. If the stock can give a sustained close above this level, then we would see the stock testing 4850 and 4950 levels in the short term to medium term scenario. Going forward, **Overall, we advocate to Buy LINDE INDIA around 3950-4050 range and add on dips till 3640 for above mentioned targets 4600 then 4850 levels. On the downside 3550-3414 would the act as strong support and slip below that would negate above positive view.**



Source: Falcon7

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Disclosure of Interest Statement LINDE INDIA LTD. as on 05thJune 2023

Name of the Security	LINDE INDIA LTD.
Name of the analyst	Jayakanth Kasthuri
Analysts' ownership of any stock related to the information contained Financial Interest Analyst : Analyst's Relative : Yes / No Analyst's Associate/Firm : Yes/No	NIL No No No
Conflict of Interest	No
Receipt of Compensation	No
Way2Wealth ownership of any stock related to the information contained	NIL
Broking relationship with company covered	NIL
Investment Banking relationship with company covered	NIL

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