

# INDIA REFRACTORY SECTOR

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# Refractory Sector



## Hot Protection

We initiate coverage on Refractories, riding on the current boom in the steel industry. Heavy financial stimulus for infrastructure projects - domestic and global - is expected to keep demand for refractories robust in the near future. Historically, refractory companies have been steady revenue compounder with stable margins, net cash balance sheets and superior return ratios, a remarkable contrast to its customer steel sector, thereby largely obviating the severe cyclicality of commodity companies. We expect recycling and localisation to support margins for refractory players. We initiate on IFGL Refractories and RHI Magnesita India (RHIM) with a BUY rating with IFGL being our preferred pick.

- **Demand drivers at peak for refractory industry:** 75% of the refractory demand is driven by steel and rebound in steel demand post pandemic is already evident with 28% growth in 1HFY22 in steel production. We expect this trend to continue due to robust government spending on schemes like National infrastructure projects, PLI scheme, Jal Jeevan Mission, housing schemes, etc. New steel capacity worth ~38mnt in the next 4years will also drive additional demand for refractories. Strong export demand for Indian steel due to production curbs by China will further accelerate refractory demand. Historically, revenue growth of refractory players has been ~1.5x of growth in steel production and therefore we expect at least 12% CAGR revenue growth for refractory manufacturers over FY21-24E.
- **Refractory a consumable; does not face commodity-like volatility:** Despite 75% of the demand for refractories being driven by steel and hence perceived as susceptible to commodity price risks, our long-term study of refractory companies concludes that its gross margins vary within a very narrow range, unlike a typical commodity company. Their revenue growth has seen continuous compounding unlike declines seen by metal companies. Refractory companies also have a commendable track record of net cash balance sheets over the last 5years, superior and stable return ratios compared to a commodity company, and consistent FCF generation. As a steady consumable business, it deserves a higher multiple than commodity companies.
- **Localisation and recycling to support margins; discourage imports:** Recycled material which saves 30% of the cost is expected to increase as companies set new recycling plants (E.g.: RHIM). This will also reduce dependence on China. Advanced R&D expertise will further result in localisation of several products like Magnesita bricks (RHIM) and precasts (IFGL) thereby discouraging imports and controlling cost. However, high sea freight and shortage of RM from China can pressurize costs in medium term, partially compensated by higher realisations. We expect export demand to improve on recovery in steel production in EU and US. We expect consolidation to continue in the industry with smaller players being acquired by the large manufacturers that currently hold a 56% share in the domestic market.

**IFGL our preferred choice between the two BUYs:** We initiate coverage on IFGL Refractories Ltd. (IFGL) and RHI Magnesita India Ltd. (RHIM) with a BUY rating on both the stocks (Upside IFGL: 109% ; RHIM: 19%). **IFGL is our top pick as it is highly undervalued as compared to peers and we expect it to substantially improve its operational and financial performance making a case for re-rating.**

### Why should you read this report?

- An investment idea to ride the boom in steel industry without riding the volatility.
- Recent trends in the refractory industry which is transforming the business
- Investment thesis on IFGL Refractories Ltd. and RHI Magnesita India Ltd.

### Refractory companies are Continuous compounders

CAGR (%)	3-yr	5-yr	7-yr
<b>Revenue</b>			
Orient Refractories	17%	13%	14%
Vesuvius India	10%	9%	8%
IFGL Refractories	10%	4%	7%

<b>EBITDA</b>			
Orient Refractories	14%	10%	15%
Vesuvius India	6%	6%	7%
IFGL Refractories	13%	0%	6%

<b>PAT</b>			
Orient Refractories	17%	11%	17%
Vesuvius India	8%	7%	8%
IFGL Refractories	6%	-5%	3%

Source: Company, MNCL Research

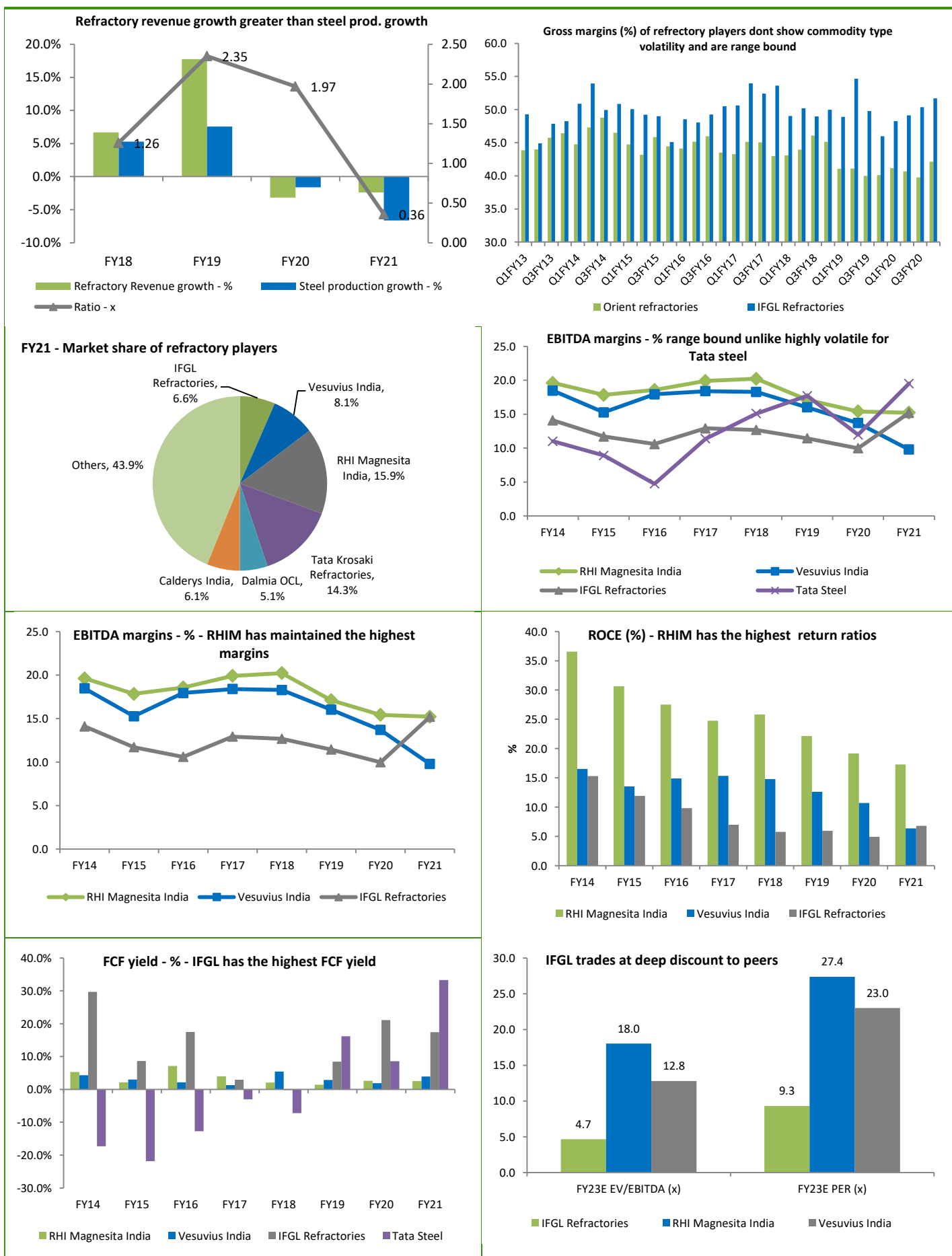
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# Investment Thesis in Charts



Source: Company, Bloomberg, MNCL Research estimates

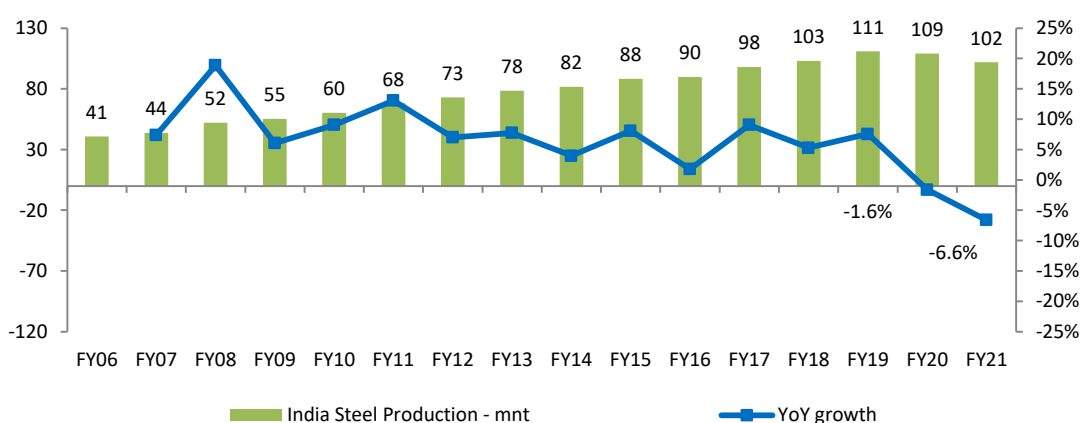
## Refractory demand drivers at peak

Refractory material has high heat resistance properties and is critical for high-temperature processes exceeding 1,200°C in a wide range of industries, including steel, cement, non-ferrous metals and glass. It is available in both shaped and unshaped forms depending on the use of the material. Although refractories form a very small cost of the end user industry but the dependency is very high as it protects the outer furnace/kiln from wear and tear; maximising life of the equipment. Further, 70% of the domestic demand for refractories is driven by steel manufacturers and the rest by other industries like glass, cement and non-ferrous metals. Steel demand in India as well as in the export market is at all-time highs due to the financial stimulus announced by several countries to fire up infrastructure projects along with pent up demand post the pandemic. Therefore, we believe that steel backed refractory demand will stay very robust for the next three years driving strong revenue growth for refractory manufacturers. In the following sections, we have discussed the main drivers for the steel demand.

## Steel production growth to touch decade high

Steel production in India as of FY21 has been on declining trend in the last two years and is still at FY18 levels of ~103mnt (refer exhibit 1). This was mainly due to the pandemic which led to countrywide lockdowns and a slump in consumption of steel starting late FY20. Disruption in overall economic activity has led to sequential decline in steel production for last two years.

**Exhibit 1: India's steel production is still at FY18 levels; de-grew steeply in the last 2 years**

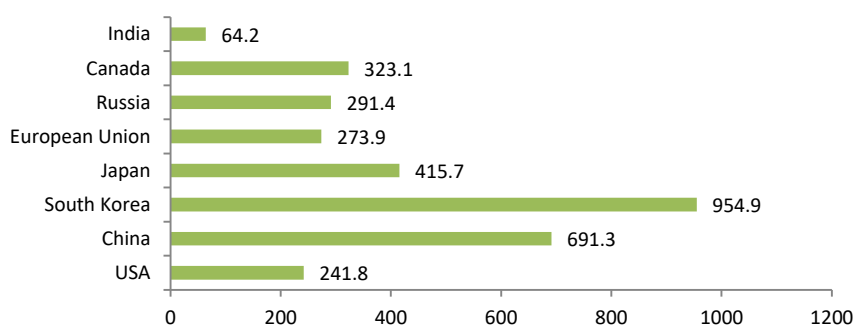


Source: Bloomberg, MNCL Research

With lockdowns being lifted across the country and economic activity reviving at a faster pace with lot of pent up demand from real estate and infrastructure projects, we have started seeing exponential rise in steel demand.

India has a target to transform into a US\$5tn economy by FY25 and to make this happen we will need tremendous spending on infrastructure projects to drive this growth. This will in turn drive demand for steel. India is the lowest at the per capita steel consumption (refer exhibit 2) as compared to both

**Exhibit 2: India's per capita steel consumption at 64.2kgs is the lowest as compared to both developed and developing nations**

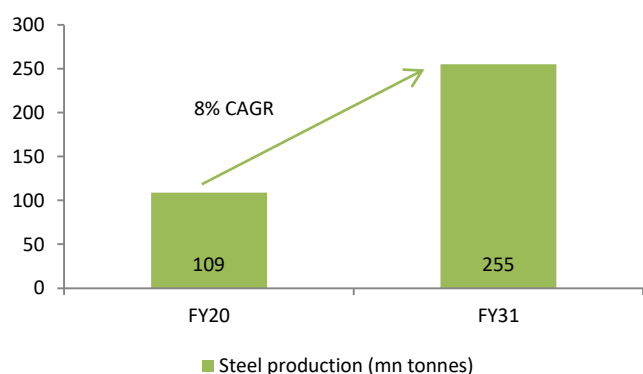


Source: World Steel Association, MNCL Research



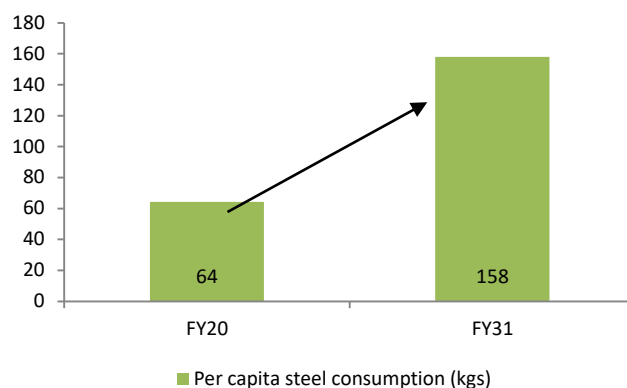
developed and developing economies. According to the National Steel Policy, the Ministry of Steel (MoS) has set a target of reaching ~160kgs per capita steel consumption by 2030 along with steel production of 255kgs, which implies 8% CAGR growth as shown in exhibit 3 and exhibit 4. In the next section we have discussed the main growth drivers which in turn will drive strong demand for refractories.

**Exhibit 3: Ministry of Steel has an ambitious target of 8% CAGR growth in Steel production over next 10 years**



Source: Ministry of Steel, Bloomberg, MNCL Research

**Exhibit 4: MoS also aims to more than double the per capita steel consumption in next 10 years**



Source: Ministry of Steel, WSA, MNCL Research

## Main drivers of steel demand

### National Infrastructure Pipeline (NIP)

The National Infrastructure Pipeline will be the biggest driver of steel demand for the next 5 years due to the enormous spending of Rs102tn over several sectors like Energy, urban & rural infrastructure, irrigation, railways, roads, etc., which are also the most vital areas for infrastructure development in any country. The government has laid down 6,800 infrastructure projects to be executed over FY20-25 out of which 163 projects are related to energy related pipelines, which are essentially made of steel pipes.

### Jal Jeevan Mission – Rural and Urban

With a huge focus over drinking water penetration to rural and semi-urban areas, the government of India has launched and executed an enormous campaign called Jal Jeevan Mission – Rural and Urban which is expected to spend massive Rs6.5tn over the next 5 years. Most of the pipes used for long distance water transportation are steel pipes. The government has seriously executed this project with enormous spending initiated in states like Madhya Pradesh, Uttar Pradesh, Kerala, etc.

### PLI Schemes

The Finance Minister has announced an outlay of Rs1.97tn for the Production Linked Incentive (PLI) Schemes across 13 key sectors, to create national manufacturing champions and generate employment opportunities for the country's youth. In addition to the three schemes announced earlier in March 2020, government of India has further introduced the following 10 new PLI schemes in November 2020.

### Vehicle Scrappage policy

The government of India has also announced the Vehicle Scrappage policy which requires that commercial vehicles used for more than 15 years and passenger vehicles used more than 20 years will have to be mandatorily scrapped if they do not pass the fitness and emission tests.

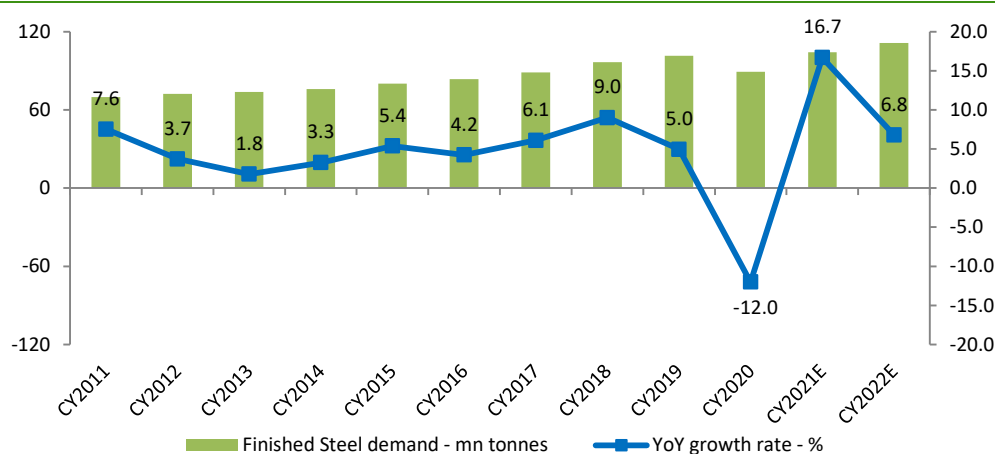
## PMAY – Urban & Rural

PMAY – Urban and Rural have been the flagship schemes of the government that has been focused towards constructing houses/passing on incentives on houses for at least a decade now. Budgetary allocations continue to be strong on this front, half of the sanctioned projects (114lakh houses) under PMAY – Urban are yet to be completed along with pending expenditure which should create substantial demand for steel.

## Rebound in steel production already visible

On the back of above mentioned demand drivers, **WSA expects steel demand** in India to grow at 20% & 6% in CY21 & CY22, respectively, which is a CAGR of 11.6% over next two years as shown in exhibit below. This is the highest growth rate as compared to the last decade average growth rate of 5%.

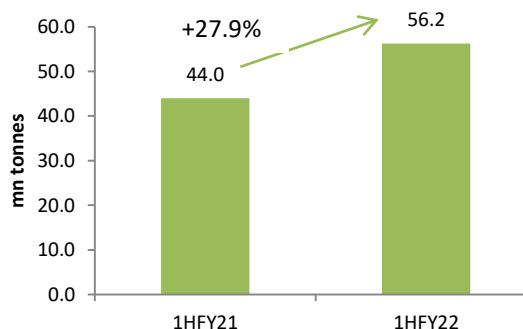
### Exhibit 5: WSA expects India's finished steel demand to grow at a CAGR of 11.6% over CY21-22 – higher than the last decade growth rate of 3.2% (CAGR)



Source: WSA, MNCL Research

Data for India's steel production for FY22 has already started reflecting this surge in demand (refer exhibit below). Steel production has shown ~27% yoy growth in 1HFY22 vs. 1HFY21 due to strong pent-up demand from multiple sectors.

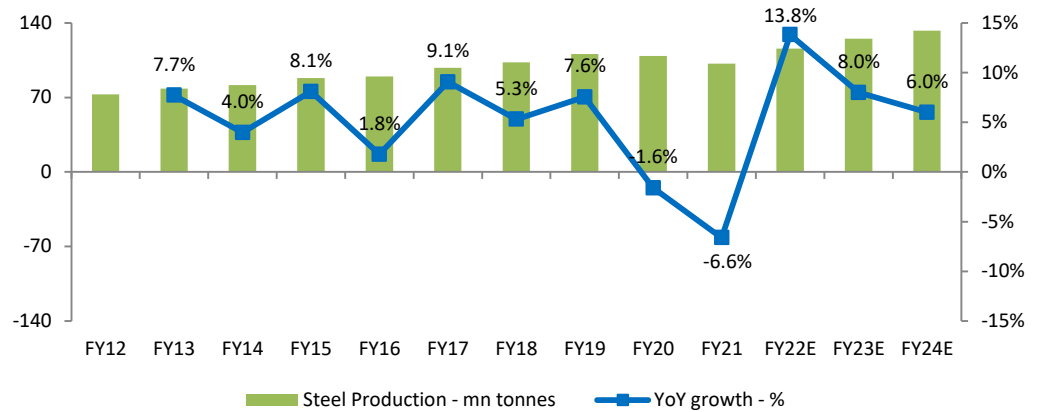
### Exhibit 6: 1HFY22 has already shown 27.9% growth in steel production on rebound in demand and low base in 1QFY21



Source: Bloomberg, MNCL Research

We expect India's steel production to grow at a CAGR of 11% over FY21-23E as shown in exhibit below.

**Exhibit 7: We expect India's steel production to grow by ~14% in FY22 and 11% CAGR over FY21-23E**



Source: Bloomberg, MNCL Research

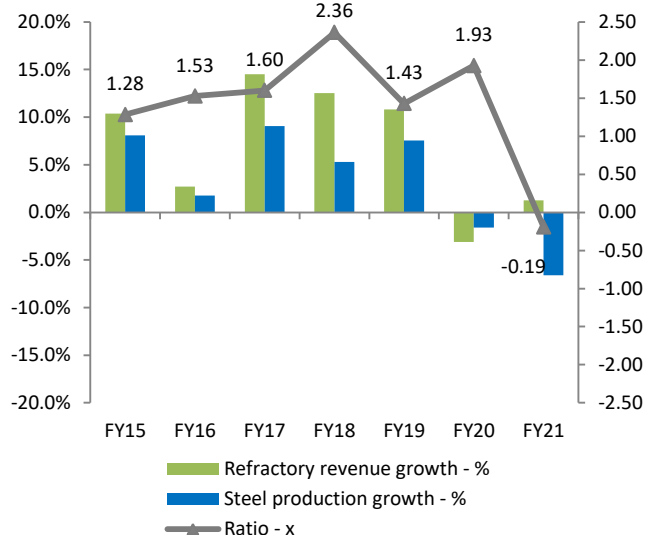
To understand the impact of steel production growth on revenues of refractory players, we have mapped this historical relationship as shown in the exhibits below.

Exhibit 8 shows the ratio calculated for three listed players over a longer period vs. exhibit 9 which shows the same ratio calculated for all the six major refractory players over four years. The average ratio in both cases is ~1.5x with a very strong correlation of more than 0.85.

**We expect average revenue growth for refractory players to be at least 1.5 times growth in steel production. Therefore, revenue of refractory players is expected to grow by at least 21%, 12% and 9% for the next three years based on our steel production estimates.**

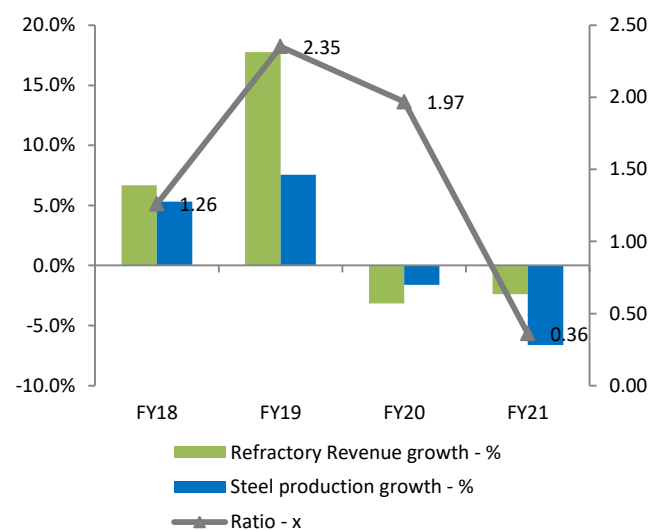
**Exhibit 8: Refractory revenue growth (3 listed players) vs. Steel production growth – Average ratio of 1.49.**      **Exhibit 9: Refractory revenue growth (6 large players) vs Steel production growth – Average ratio of 1.42.**

**Correlation: 0.89**



Source: Company, MNCL Research, 3 listed players – IFGL Refractorie, Vesuvius India & RHI Magnesita India.

**Correlation – 0.86**



Source: Company, PrivateCircle, MNCL Research, 6 companies – Vesuvius India, RHI Magnesita India, IFGL Refractories, Dalmia OCL, Tata Krosaki refractories and Caldey India.



## India - New steel demand

With strong outlook on steel demand from the end user industries, steel manufacturers have also announced their capacity expansion plan which is more than 35mnt of new steel capacities over the next 3.5 years. This is equivalent to ~35% growth in steel capacities in India which will surely translate into new demand for refractories. We believe that apart from replacement demand and demand from scale up of utilization at existing plant, new capacities will lead to big growth in volumes of refractory manufacturers.

**Demand for refractories starts 3-4 months prior to commercial production at the new steel plant, and therefore, we expect some of these listed players (having in-roads in large mills) to benefit hugely from these brownfield expansions. We list down the timelines for completion of brownfield capacities for some of the leading integrated steel plant in the exhibit below:**

**Exhibit 10: More than 30mnt new capacity by existing players to drive strong growth for refractories**

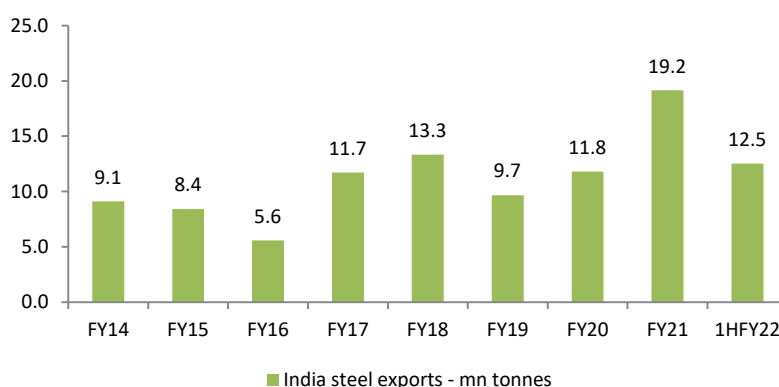
mn tonnes	2HFY22	1HFY23	2HFY23	1HFY24	2HFY24	1HFY25	2HFY25	Total (3.5 years)
Tata Steel					5.0			5
JSW Steel	6.0					5.0	2.3	13.3
Jindal Steel and Power	1.0				3.3		3.0	7.3
SAIL	2.0		1.0		3.0			6.0
NMDC	3.0							3.0
Arcelor Mittal Nippon Steel							3.0	3.0
RINL								0.0
<b>Total</b>	<b>12.0</b>	<b>0.0</b>	<b>1.0</b>	<b>0.0</b>	<b>11.3</b>	<b>5.0</b>	<b>8.3</b>	<b>37.6</b>

Source: Company, MNCL Research

## Steel exports to structurally rise; driving demand for refractories

India has never in a large way been a steel exporter until after the pandemic when supplies were diverted to export markets due to tepid demand in the domestic markets. Further, steel exports from India still continue in a large quantity because of the void created in the global markets due to several reasons which appear to be structural. As seen in exhibit below, India's steel exports have already covered 70% of the FY21 exports in 1HFY22 and some part of this is structural shift due to short supply from other countries like China.

**Exhibit 11: India's steel exports have already covered 70% of FY21 volume in 1HFY22 and is expected to be structurally elevated due to supply deficit in World ex-China**



Source: Steelmint, MNCL Research

China's measures to reduce pollution and carbon footprint has led to cuts in steel production leading to lower exports by China to make sure its production suffices the local demand. Also, in order to reduce exports, China has revoked the export rebates on steel, which has in turn presented an opportunity for India to fill the void in global markets. Other countries like Russia have also become part of this regionalization strategy; exhibit below shows the gradual reduction in Chinese steel exports in last few months.

#### Exhibit 12: Declining China steel exports an opportunity for Indian steel manufacturers



Source: Steelmint, MNCL Research

#### The US\$1tn infrastructure bill to drive steel export demand for India

The US President has signed a US\$1 trillion infrastructure bill to fix crumbling bridges and roads and by expanding broadband internet access to millions of Americans. This essentially includes spending for infrastructure development ranging from improving roads & bridges, fixing public transport systems & vehicles, bolster broadband infrastructure, upgrade electric grid, promote electric vehicles, modernize airports and also changes pipes and fix the drinking water network in the country. This will definitely lead to strong demand for steel from the end user applications. US being the world's largest steel importer is expected to burden the global steel market. India will stand to benefit from this opportunity.

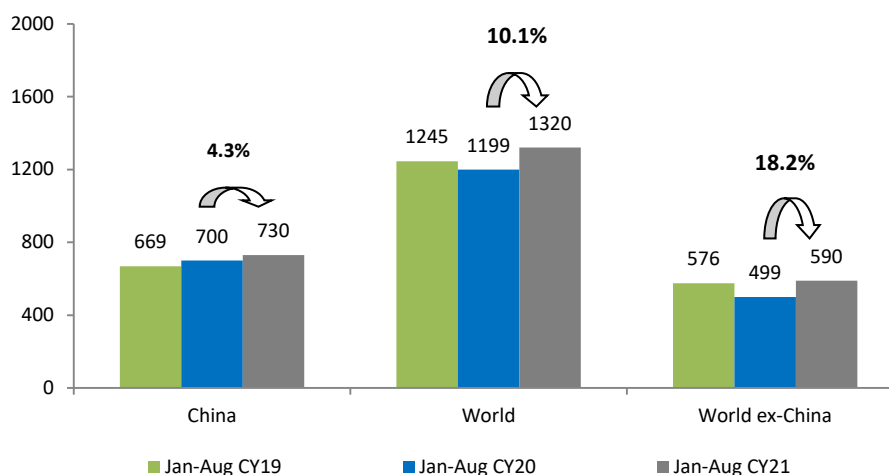
Given the above mentioned reasons coupled with several other countries like Europe which have strong demand for steel but are net importers of steel will drive export demand for Indian steel products.

## Dynamics of refractory industry signals strong revenue growth and improved profitability

### Export revenue: At inflection point

With global steel demand at inflection point due to the emergence of several economies from the pandemic coupled with various financial stimulus packages announced, we expect strong growth for refractory exports by Indian manufacturers. In the following exhibit we can see that steel demand in World ex-China have seen 18% growth (Jan-Aug CY21), which is very favorable for refractory exporters in India.

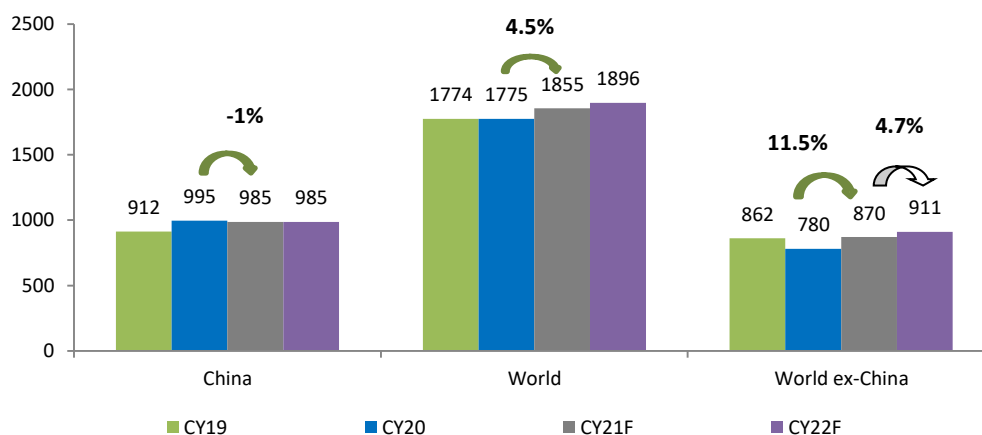
**Exhibit 13: First 8 months of CY21 have already seen recovery in steel demand in World ex-China, which is the major export destination for Indian steel exports**



Source: WSA, MNCL Research

Also, World Steel Association (WSA) expects steel demand in World ex-China to grow at a CAGR of ~8% for the next 2 years (refer exhibit below) implying strong volume growth for refractory exports from India for at least next 2 years.

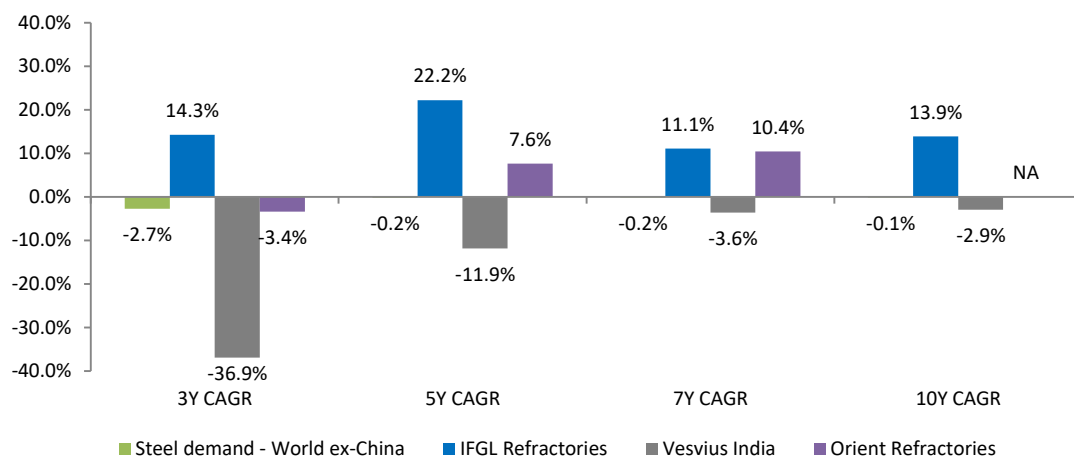
**Exhibit 14: World ex-China steel demand is expected to grow at 11.5% in CY21 and 4.7% in CY22 according to WSA estimates which is higher than its long term (15 year) CAGR of ~0.5%**



Source: WSA, MNCL Research

We also analyzed the growth of exports by India's 3 listed refractory players vs. the steel demand growth ex-China; exhibit below clearly depicts that export revenue of **IFGL Refractories has been most beneficial of the growth in steel demand in World ex-China over longer periods** and this is due to its subsidiaries and customer network in other countries.

**Exhibit 15: Growth in global steel demand ex-China vs. export revenue growth of listed players**



Source: Company, Bloomberg, MNCL Research; Period considered for analysis FY12-21

As explained in detail earlier some of the major factors driving export demand for refractories are:

1. New US\$1tn infrastructure bill passed in US
2. Europe shows green shoots after 3 years of muted steel demand
3. China pollution related production curbs and regionalization by other countries i.e. Russia to convert into higher steel exports for India

## Refractory revenue growth remains higher than steel production growth

We have also analyzed the relation of revenue growth of each refractory player vs. the steel production growth in India in the below exhibit. Here are the conclusions:

- **Orient Refractories (erstwhile RHI Magnesita India) has seen the highest growth in revenues due to lower export component in the standalone business followed by IFGL Refractories**
- **The ratio of refractory revenue growth to steel production growth is at least 1.5x**

**Exhibit 16: Long term (15-yr) refractory revenue growth is at least 1.5 times steel production growth**

CAGR (%)	3-yr	5-yr	10-yr	15-yr
<b>Refractory Revenue growth</b>				
Orient Refractories	4%	9%	11%	13%
Vesuvius India	-5%	3%	6%	9%
IFGL Refractories	7%	7%	8%	10%
<b>Steel production growth - India</b>				
	0%	3%	4%	6%
<b>Ratio - Revenue growth/ Steel prod growth</b>				
Orient Refractories	NM	3.6	2.7	2.1
Vesuvius India	NM	1.1	1.5	1.5
IFGL Refractories	NM	2.9	2.0	1.7

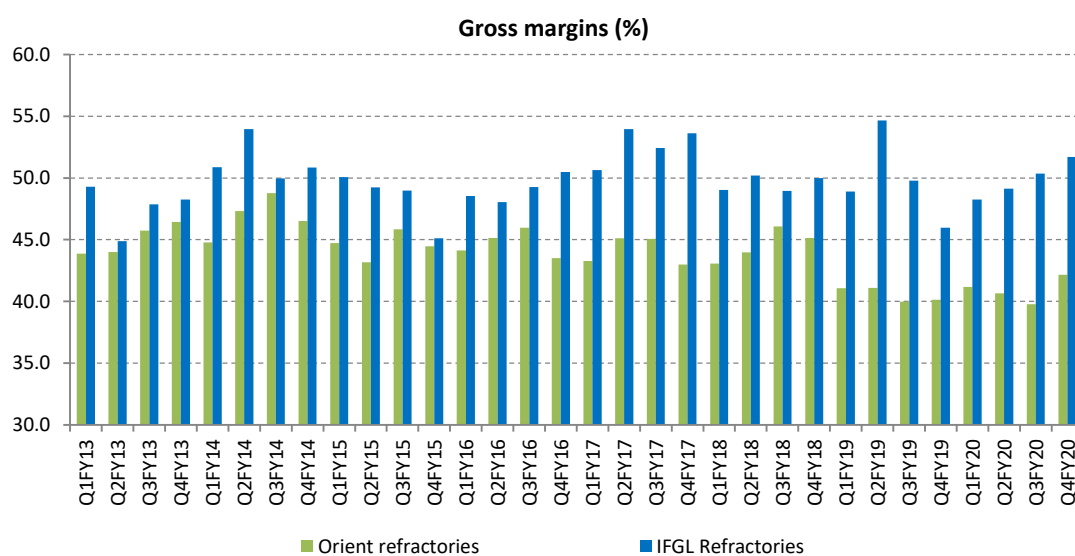
Source: Company; MNCL Research; Period considered for analysis: FY06-21

Therefore, we believe that export and domestic both factors are favorable for decade high growth in revenue of Indian refractory players.

## Gross margin trend shows no commodity price risk

We have analyzed the quarterly gross margin trends of two companies as shown in the exhibit below. We clearly see a trend that unlike a steel company, refractory companies do not have high volatility in spreads due to the pass on mechanism. High RM cost gets passed on in 1-2 quarters, thereby warranting a higher valuation multiple than steel companies. As seen below, gross margins for both the companies lie in the 5% range over long term.

**Exhibit 17: Gross margins remain short range bound over long term not displaying any major commodity price risk; Orient Refractories: 40-45%; IFGL Refractories: 45-50%**

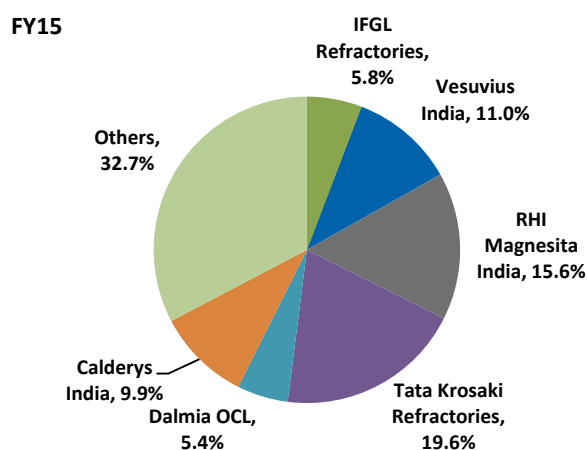


Source: Company, MNCL Research

## Consolidation continues with merger of RHI entities

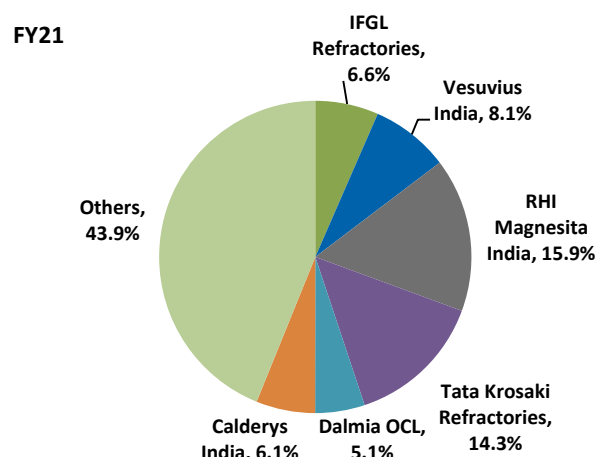
We have compared the market share of major refractory players in India in the below exhibits. A clear message is that consolidation continues in industry with the merger of RHI entities and acquisition of smaller refractory companies by the big players. While the pandemic took a hit on the revenues of several refractory players, companies like IFGL Refractories and RHI Magnesita India were clearly able to gain market share over the last 6 years. However, Vesuvius India, Tata Krosaki and Caldersys have lost market share.

**Exhibit 18: Tata Krosaki and RHI Magnesita are the largest players in the domestic refractory market**



Source: Company, Private Circle, MNCL Research

**Exhibit 19: IFGL Refractories and RHI Magnesita India have been successful to gain market share over last 6 years**



Source: Company, Private Circle, MNCL Research

## Recycling of refractories leads to huge cost savings

Refractory companies have started to use recycled raw materials to save on RM cost. Recycled materials lead to almost 30% cost savings and companies like RHI Magnesita India (RHIM) and IFGL have up to 12% recycled RM usage. Recycled RM is in very high demand and therefore in scarce supply in India. It also reduces dependency on RM imports from China. Therefore, several companies find it difficult to quickly scale up on proportion of recycled RM used. RHIM has made plans to setup magnesia bricks recycling facilities at their Cuttack plant.

## High sea freight impacts RM cost

Given several factors including disruption created by the pandemic, container availability for shipping purposes has become a severe problem and has led to exponential surge in sea freight rates for the RM sourced from China. This has affected all the refractory players increasing their freight cost, for both inwards and outward freight. We expect this issue to continue for at least one more quarter, which will suppress the margins of refractory players. As and when the refractory customers allow a pass on of the high RM cost, margin pressure is expected to ease again.

**The clear winner in this environment are players like RHI Magnesita India who have high localisation of RM and higher dependence on captive RM (from parent).**



## Large entry barriers lower new entrants risk

The Indian refractory industry has not seen any new player gain substantial market share in the last decade due to large barriers for new entrants as described below:

- Gestation period of 4-5 years for establishing market share among the steel plants
- Refractory is hardly 3-4% of the cost for steel plants, hence relationship plays a larger role in penetrating the market
- Product quality is important as it affects the efficiency of the heating furnaces
- R&D capabilities of large players are better with decades of experience

## Imports to reduce on localization of refractory products

The Indian refractory industry is maximizing localization of products which was imported previously from either China or EU/USA. Products like Magnesita bricks, lances are now being manufactured in India through the technical expertise of MNC parent thereby reducing dependency on imports and also reducing cost. RHI Magnesita and Dalmia OCL are working towards expanding capacity of Magnesita bricks of which 75% demand is catered to by imports from China currently.

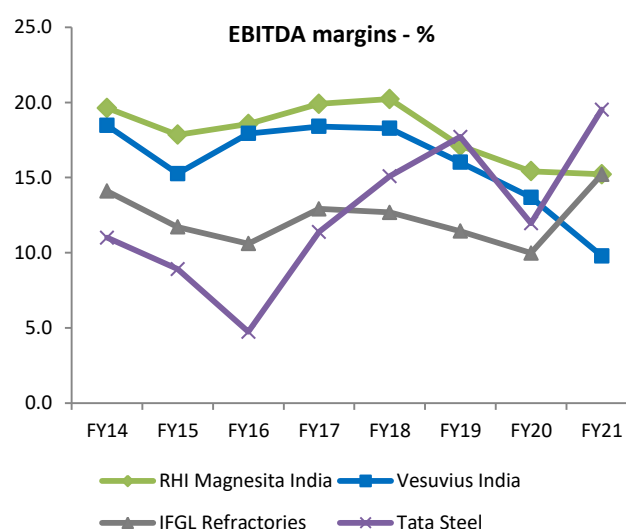
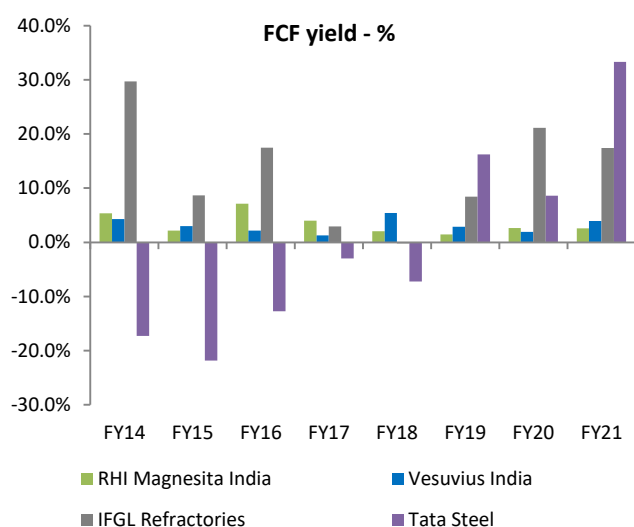
## Refractory business - Continuous compounders, net cash balance sheet, strong return ratios and consistent FCF generation

Refractory business is more comparable to consumable manufacturers and is far more superior than commodity businesses. We have analyzed the financials of the refractory players and compared it with steel company (Tata steel here) to understand their superiority.

As seen in the below exhibits, they are consistent FCF generators unlike a commodity company and easily have higher margins than a commodity company due to which they deserve higher multiples.

**IFGL has the highest FCF yield among the listed refractory players due to its low working capital requirement but RHIM is a clear winner over EBITDA margins due to its favorable sourcing of RM and higher dependence on the domestic markets.**

**Exhibit 20: Consistent FCF generation unlike a commodity company due to low debt and working capital discipline**      **Exhibit 21: Consistent and range bound performance on the EBITDA margins front unlike a commodity company**



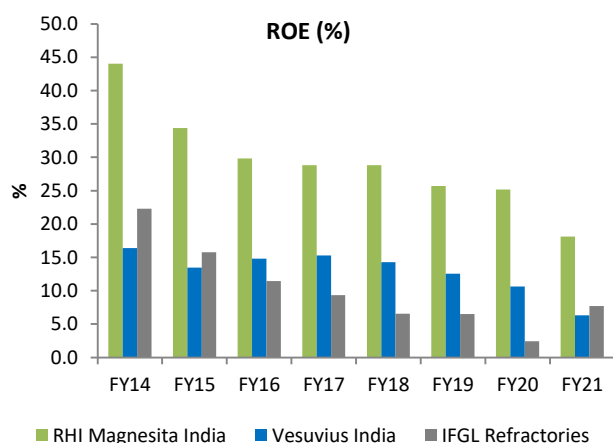
Source: Company, MNCL Research

Source: Company, MNCL Research

## Return Ratios

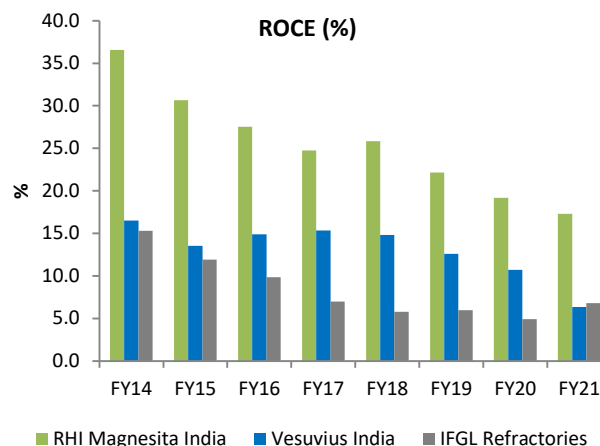
Refractory players have maintained strong return ratios over long periods due to low capital cost for organic expansions. Also, financing for new capacities have largely come from internal accruals. Among the three listed players, RHIM has the most superior return ratios due to better margin profile and lowest capital cost for new capacities.

**Exhibit 22: Strong return ratio profile**



Source: Company, MNCL Research

**Exhibit 23: High asset turnover helps maintain returns ratios at respectable levels even at lower utilisation rates**

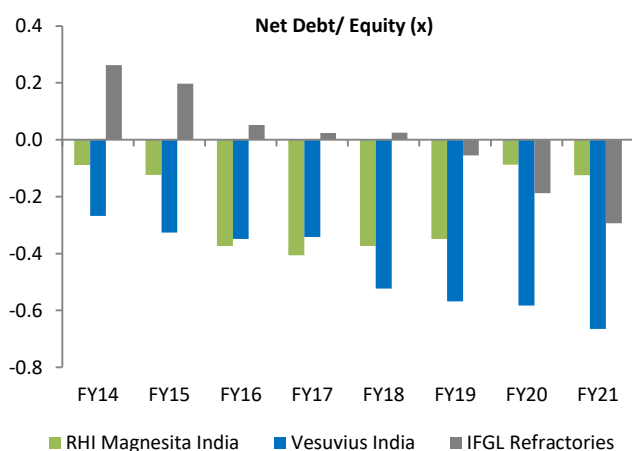


Source: Company, MNCL Research

## Healthy balance sheet over the years

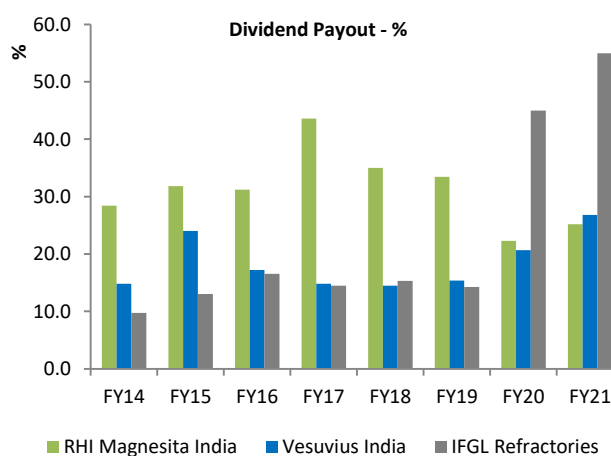
All the refractory players have maintained net cash balance sheet but their returns to shareholders have not been very high despite low capital requirements for organics expansions. Most of the listed players have been gathering cash to finance inorganic acquisition except IFGL Refractories which has rewarded their shareholders substantially in last two years.

**Exhibit 24: Net cash balance sheet over years eases expansion financing**



Source: Company, MNCL Research

**Exhibit 25: But, returns to shareholders have been mediocre except for IFGL, which had a 55% dividend payout translating into 5.8% dividend yield**



Source: Company, MNCL Research

## Strong and consistent earnings growth

As seen in the exhibit below, all the refractory companies have showcased strong growth in revenues and EBITDA over long periods, but PAT growth has been disappointing for IFGL over the long term as the annual amortization of goodwill started in FY17 after the amalgamation of Kandla plant that has lowered the PAT. Orient Refractories has been an outperformer across parameters, and we expect this to continue even after the merger with other RHI entities due to aggressive customer acquisition and capacity growth strategy.

### Exhibit 26: Consistent growth across Rev/ EBITDA/ PAT over long term unlike commodity companies

CAGR (%)	3-yr	5-yr	7-yr
<b>Revenue</b>			
Orient Refractories	17%	13%	14%
Vesuvius India	10%	9%	8%
IFGL Refractories	10%	4%	7%
<b>EBITDA</b>			
Orient Refractories	14%	10%	15%
Vesuvius India	6%	6%	7%
IFGL Refractories	13%	0%	6%
<b>PAT</b>			
Orient Refractories	17%	11%	17%
Vesuvius India	8%	7%	8%
IFGL Refractories	6%	-5%	3%

Source: Company; MNCL Research; Period considered for analysis: FY12-FY19 for accuracy purposes

## Initiate on IFGL Refractories and RHI Magnesita India with a BUY

In the following sections, we explain our thesis and initiate coverage on IFGL Refractories Ltd. (IFGL) and RHI Magnesita India Ltd. (RHIM) with a BUY rating on both the stocks (Upside IFGL: 109% ; RHIM: 19%). **IFGL is our top pick as it is highly undervalued as compared to peers and we expect it to substantially improve its operational and financial performance making a case for re-rating.**



## All round improvement in business to drive earnings growth

IFGL has gone through several improvements in last 2 years with respect to operations, cost optimization, new product introduction, customer additions on marketing side, addition of new capacities and improvement in operations in overseas subsidiaries. We have discussed each of them separately below to understand the earnings growth drivers going forward.

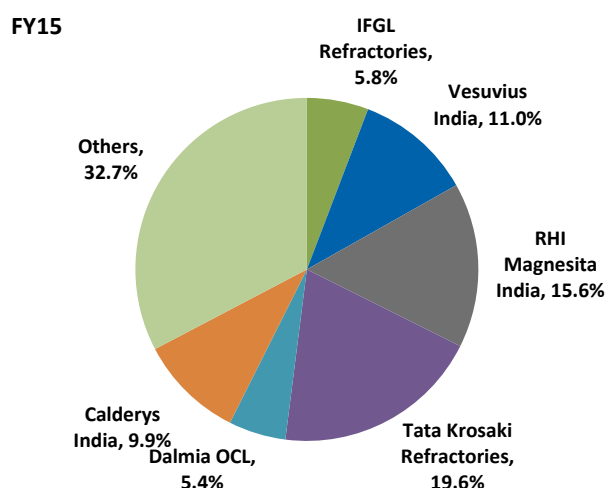
### Continuous customer and product additions to drive revenue growth

One of the main reasons for accelerated momentum in revenue is the customer addition in last 2 years which has helped the company sail through the tough times of the pandemic. Mapping the market share of IFGL Refractories over last 6 years, it is one of the two leading refractory manufacturers that have showcased considerable market share gains (refer exhibits below).

Another reason for customer addition is IFGL's entry in the mini mills segment in which there was no presence 3 years back. Their revenue share from mini mills has moved up to almost 10-11% as of FY21. This was possible due to poaching of higher level management from peer companies both on the operational side and marketing side in the last 2-3 years.

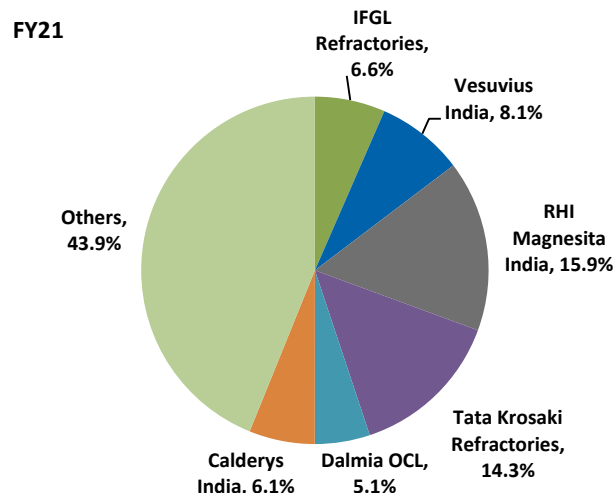
We expect this phenomenon to continue as IFGL is undergoing trial runs at couple of large steel plants, which will significantly improve their volumes if successful.

**Exhibit 27: Couple of large players lost market share but IFGL's market share has improved from 5.8% in FY15 to 6.6% in FY21**



Source: Company, Private Circle, MNCL Research

**Exhibit 28: Gain in market share was possible due to customer additions over last 2-3 years**



Source: Company, Private Circle, MNCL Research

Some of the existing customers in the large steel plant segment like JSW Steel, JSLP and SAIL have also been expanding (refer exhibit below), which will aid revenue growth for IFGL in the next 4 years.

**Exhibit 29: Apprx. 30mnt of new capacity by existing customers to drive volume growth for IFGL**

mn tonnes	2HFY22	1HFY23	2HFY23	1HFY24	2HFY24	1HFY25	2HFY25	Total (3.5years)
JSW Steel	6.0					5.0	2.3	13.3
Jindal Steel and Power	1.0				3.3		3.0	7.3
SAIL	2.0		1.0		3.0			6.0
Arcelor Mittal Nippon Steel							3.0	3.0
<b>Total</b>	<b>9.0</b>	<b>0.0</b>	<b>1.0</b>	<b>0.0</b>	<b>6.3</b>	<b>5.0</b>	<b>8.3</b>	<b>29.6</b>

Source: Company, MNCL Research

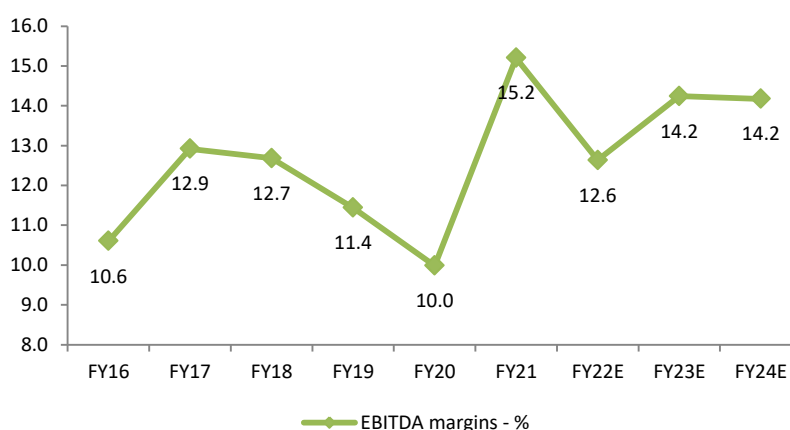
New product additions in the precast and monolithics segment at the new plant in Vizag will further magnify the revenue growth prospects for IFGL. We discuss this in detail in the following section.

## Higher utilisation and cost optimization improves margins

Ramp-up in utilisation levels despite ongoing capacity additions at Kandla and Kalunga is one of the major reasons for margin expansion in the last year. After the amalgamation of Kandla unit with parent, the capacity has risen twice – on expansion of ISO capacity at Kandla and on expansion of monolithics capacity at Kandla.

IFGL has been able to ramp up utilisation at shaped capacity post the expansion to optimum levels (85-90%) due to strong demand post pandemic and also backed by customer additions. The utilisation rate at Kandla's new unshaped refractory capacity has been ramped up at 30-35% levels and will take 1-2 years to fully ramp up. Reaching optimum capacity at shaped refractory units at Kandla and Kalunga has led to cost efficiencies. This along with other internal cost optimizations through small projects has led to sustainable growth in EBITDA margins for IFGL. The subsidiaries have also ramped up utilisation on support from improvement in economic activities in Europe and US post pandemic. Except Hoffman, which is at 85% utilisation, all other subsidiaries are operating at ~65% utilisation, better than pandemic years.

### Exhibit 30: EBITDA margin has seen an upward trajectory in FY21 partly due to higher utilisation and cost optimization measures; we expect sea freight inflation to keep margins muted in FY22E



Source: Company, MNCL Research estimates

We expect margins to remain subdued for at least two quarters due to surge in sea freight which had led to inflation in the raw material imported from China. IFGL does not have any support from parent (like what RHI Magnesita India has) to control raw material cost. Apart from the recycled raw materials and some locally sourced raw material (resin), Magnesia and Alumina are mainly sourced from China. Moreover, due to winter Olympics in China, all the refractory manufacturers are reserving inventories of raw materials translating into high demand. As shown in **exhibit above, we expect margins to remain muted in FY22 and rebound in FY23E (along with continuity of cost efficiencies) on gradual pass on of the high cost to end customer and also easing of freight cost.**

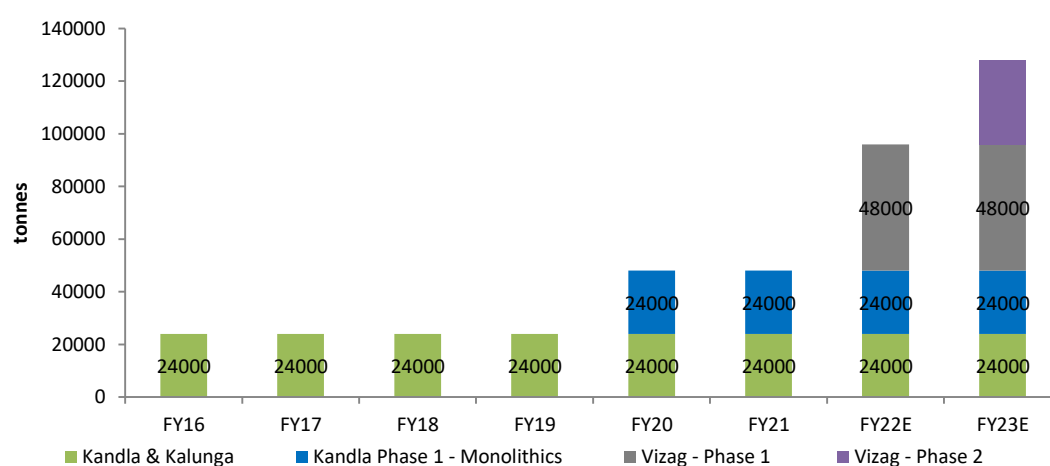


## Vizag plant – Benefits of favourable location and new products

IFGL has completed its recent capital expenditure at third location in India which is Vizag. Phase -1 of the plant was commissioned on September 01, 2021 at a capital cost of Rs300mn and would be mainly focussing on Monolithics and Pre-cast products. We believe this plant can open doors to several new products and customers along with cost benefits as discussed below:

- **Location advantage:** There are two advantages specific to the location for this plant. Firstly, this plant is at a port location and therefore catering to exports will be very favourable at least for road freight cost. Secondly, IFGL had no production facilities in the south India markets leading to higher freight cost to supply to steel plants in south from west and east. Therefore, for its customers like Vizag Steel – RINL and JSW Steel plants in South, this plant will ease the freight cost to deliver refractories.
- **New product introduction:** IFGL aims to introduce couple of new products in the market through the Vizag capacity, which is mainly meant to focus on domestic market at start. One of the probable products is lances (used by steel plants to remove unwanted materials from liquid steel, thereby creating cleaner molten steel), which is manufactured using technology used by Monocon. Rather than sourcing lances from Monocon UK, which is not competitive when it comes to pricing, IFGL plans to manufacture it at the Vizag facility. Another product called snorkel, which is used in secondary steel making stage mainly to make auto grade and high grade steels through RH degassing technology is also on the list of new product introduction. This product is a case of import substitution as several steel plants depend on imports of snorkel for their consumption purpose. Several large pre-cast shapes also will be introduced both for domestic use and export purpose.
- **Cost Advantage:** It is a modern plant both on technology side and fuel consumption side as compared to the Kalunga and Kandla plant, which would result in lower cost of production at this location as compared to other two locations
- **Enough supply backup for Monolithics:** This facility adds up lot of capacity for Monolithics considering Kandla Monolithics plant commissioned in FY20 is still running at 30% utilisation (refer exhibit below)

**Exhibit 31: IFGL's unshaped & pre-cast capacity rampup post Vizag plant**



Source: Company, MNCL Research estimates

We expect 20% utilisation for 2HFY22 from the Vizag capacity and then a ramp up in FY23E with increase in demand for its products. Phase-2 of Vizag is expected to be commissioned in 2QFY23E and will be mix of Monolithics and pre-casts.

## Strong capacity built up to brace for surge in demand

Along with the expansion in Monolithics and pre-casts capacity, IFGL is also debottlenecking the shaped capacity (ISO) at Kalunga at a capital cost of Rs100mn. Similarly, Rs100mn is being spent at Kandla for debottlenecking. We expect further ISO capacity expansion in 2 years at Kalunga due to very strong demand. Hence, IFGL will be very well placed with capacities. The average gross block turnover has dipped to 1.5x due to new capex which is yet not operative. We expect gross block turnover also to rise to 3x levels with ramp up of these new capacities.

With average gross block turnover of 3x across all its capacities as shown in exhibit below, IFGL should be able to realize Rs4-4.5bn worth of revenues from the ongoing and already announced capex in the next 3-4 years. We estimate growth of ~12.5% CAGR for IFGL's standalone revenues across FY21-23E.

**Exhibit 32: Apprx. 30mnt of new capacity by existing customers to drive volume growth for IFGL**

Rs mn	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21
Gross Block	1,757	2,238	2,474	2,732	2,824	3,076	5,632	5,853	6,076	6,331	6,476
Capex	157	49	194	100	199	169	133	449	394	249	311
Revenues	4,689	6,039	6,712	7,776	7,868	7,170	7,656	8,353	9,504	9,173	10,219
<b>Rev/Avg GB (x)</b>		<b>3.0</b>	<b>2.8</b>	<b>3.0</b>	<b>2.8</b>	<b>2.4</b>	<b>1.8</b>	<b>1.5</b>	<b>1.6</b>	<b>1.5</b>	<b>1.6</b>

Source: Company, MNCL Research

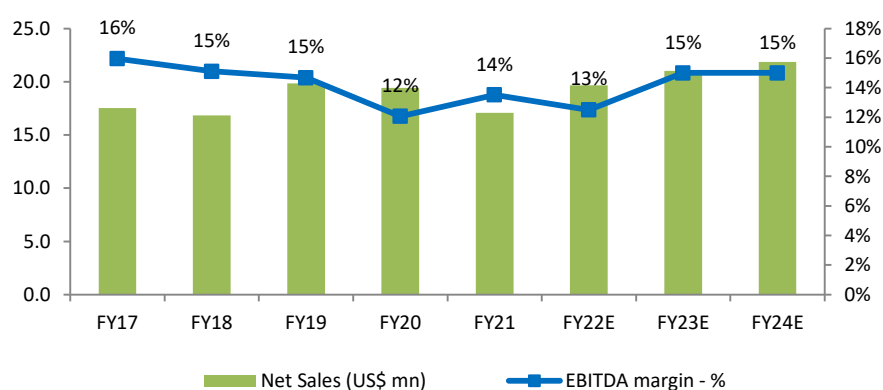
## Performance of subsidiaries at inflection point; some already showing improvement

Most of IFGL's subsidiaries have performed poorly in larger part of FY21 due to several reasons like muted product demand, pandemic led disruption, issues over product acceptability, higher cost due to low utilisation affecting margins. These factors are gradually getting resolved as some of the offshore subsidiaries have shown improvement in performance during the last two quarters. Although we expect high growth in FY22 followed by moderation in the following years, we do not see any substantial improvement in margin profile of the subsidiaries in our base case. In the following sections, we have analysed the performance of each subsidiary in detail:

### El Ceramics – Best of the lot

El Ceramics, which contributes to ~30% of the total revenue from subsidiaries is expected to continue its superior performance as compared to other subsidiaries on the back of strong rebound in demand for steel in US. Utilisation rate at El Ceramics was 65% in FY21 and is expected to rise on recovery of demand. We expect El Ceramics to continue its 15% margin trajectory once the issues over sea freight are resolved as seen in exhibit below.

**Exhibit 33: El Ceramics – Best of the lot in profitability**

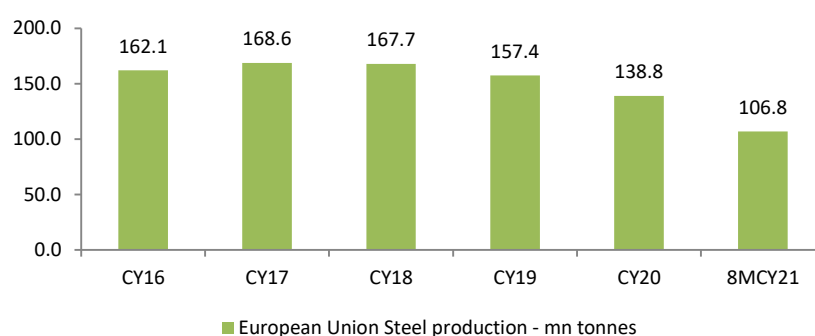


Source: Company, MNCL Research estimates

### Monocon UK – Expecting improvement on the back of improved demand

Monocon is the largest subsidiary revenue wise and contributes to 54% of the top-line. We expect performance at Monocon to improve due to the rebound of steel demand in the EU region after 3-4 years of sub-optimal performance. EU region was facing almost recessionary conditions before the pandemic due to slump in automobile sales and overall muted economic activity. The economy was seeing recovery in early CY20 when the pandemic hit and the steel demand never really picked up. As shown in the exhibit below, steel production in EU has finally showed signs of improvement.

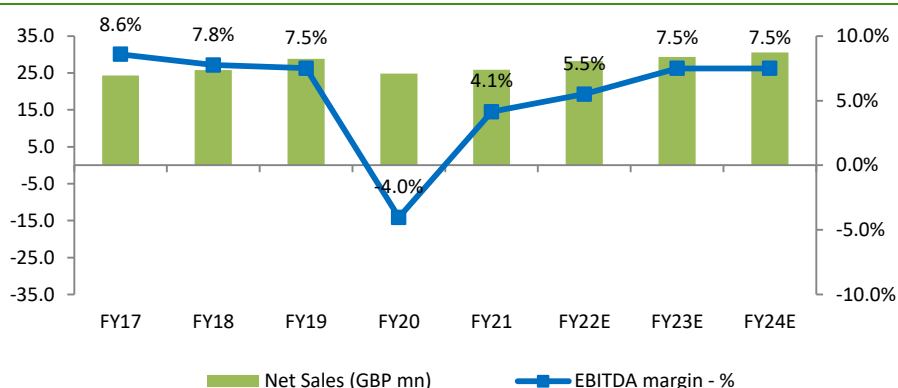
**Exhibit 34: Rebound in EU steel production after recession like conditions in CY18/CY19 followed by pandemic in CY20**



Source: Bloomberg, MNCL Research

Utilisation rate at Monocon was at 65% in FY21 and is expected to recover with higher growth in steel production. We do not estimate substantial increase in margin levels at Monocon, but we expect it to resume the historical trajectory after the easing of sea freight issues.

**Exhibit 35: Monocon UK – Financial performance to improve**

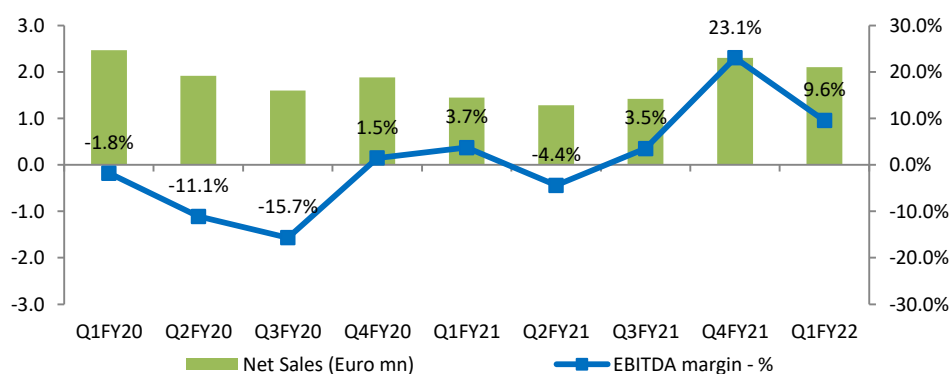


Source: Company, MNCL Research estimates

**Hoffman – Performance improvement seen due to product acceptability**

Hoffman Ceramics, Germany (15% of total subsidiary revenues) has been a poor performer historically due to issues over product acceptability as Hoffman has different product portfolio as compared to the other subsidiaries. Hoffman manufactures filters for iron, aluminium and steel castings and feeders for moulding plants. Demand for these industries is largely driven by automobile production. IFGL has been constantly working to improve its performance at Hoffman and has partially succeeded to improve margins in the last two quarters as seen in exhibit below. This is on the back of improved acceptability of its product supported by improved demand from end user.

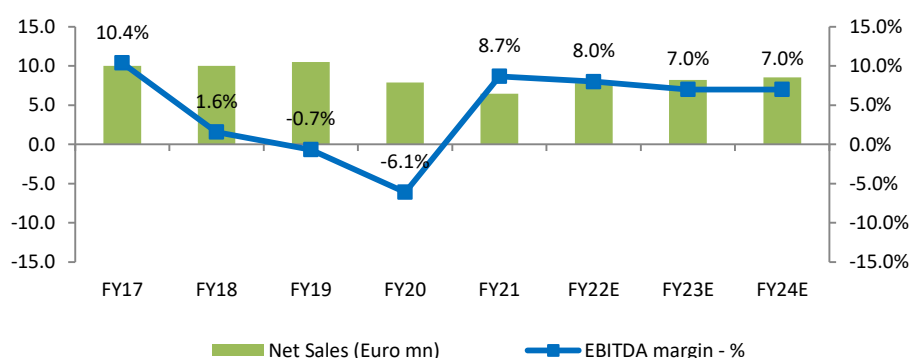
**Exhibit 36: Hoffman – Quarterly performance improves on product acceptability**



Source: Company, MNCL Research

We expect margins to sustain at higher levels as shown in exhibit below in our estimates.

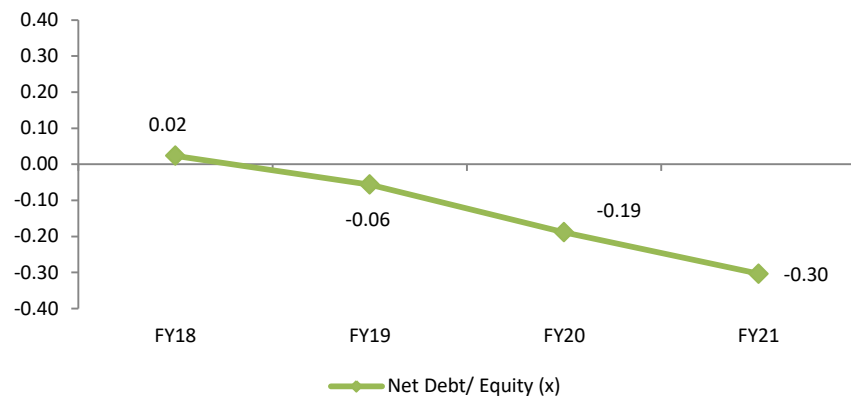
**Exhibit 37: Hoffman – financial performance**



Source: Company, MNCL Research estimates

Although the performance of IFGL's subsidiaries especially Hoffman and Monocon has not seen huge improvements in last 5 years, all the subsidiaries have collectively been net cash since last 3 years and never burned cash of the parent.

**Exhibit 38: Net Debt/ Equity for subsidiaries shows net cash situation for last 3years**



Source: Company, MNCL Research

## Financial Analysis – Improvement in return ratios to drive re-rating

### One-time write-off of goodwill amortization to improve return ratios

After the amalgamation of the Kandla entity with the parent, goodwill created on the books is being amortised over 10 years, which is optically denting the PAT every year and in turn also impacting the return ratios. This has also led to lower valuation attributable to the company in past. As IFGL will not receive any tax benefits of annual amortisation according to the new IndAS regulations going forward, IFGL has decided to take a one-time write-off of the amortisation after receiving all the regulatory and NCLT approvals. We expect this move to make a substantial difference on the return ratios as shown in the below exhibits.

The following table shows the total book value of goodwill created and also the amortisation charge on P&L taken by the company every year. With the one-time goodwill write-off, the complete charge of Rs1.33bn will be written off in one go and will show up in the P&L.

#### Exhibit 39: Impact on P&L of the one-time write-off of amortization for goodwill

Rs crore	FY17	FY18	FY19	FY20	FY21	FY22E	FY23E
Goodwill - Created on IFGL Kandla Merger	240.3	213.6	186.9	160.2	133.5	0	0
Goodwill - Acquisition of overseas subs.	108.9	122.3	120.9	103.6	111.9	NA	NA
Annual goodwill write-off - IFGL exp.	26.7	26.7	26.7	26.7	26.7	133.5	0
One time goodwill impairment - Hoffman				20.6			
<b>Total write-off</b>	<b>26.7</b>	<b>26.7</b>	<b>26.7</b>	<b>47.3</b>	<b>26.7</b>	<b>133.5</b>	<b>0</b>

Source: Company, MNCL Research estimates

The effect of this one-time write-off on the return ratios is as shown in the exhibit below:

#### Exhibit 40: Impact on return ratios after adjustment of Kandla goodwill amortisation write-off

	FY17	FY18	FY19	FY20	FY21	FY22E	FY23E	FY24E
<b>Reported</b>								
ROE	7.3%	6.3%	6.4%	2.4%	7.4%	8.1%	10.2%	10.5%
ROCE (pre-tax)	7.1%	7.2%	7.1%	5.0%	11.3%	10.7%	13.3%	13.5%
<b>Adj. for goodwill</b>								
ROE	16.7%	12.5%	11.8%	8.8%	10.5%	11.5%	13.6%	13.8%
ROCE (pre-tax)	15.0%	12.6%	12.0%	9.2%	14.9%	14.3%	16.9%	17.0%

Source: Company, MNCL Research estimates

Historically, ROE and ROCE ratio would have been safely above 10% and in the forward periods, these ratios will lie in the 13-17% range on a sustainable basis once the sea freight issue is resolved and the margins reach a sustainable level. We believe that these margins are very much comparable to Vesuvius India or RHIM, and therefore, it deserves higher multiples than what is presently attributed.

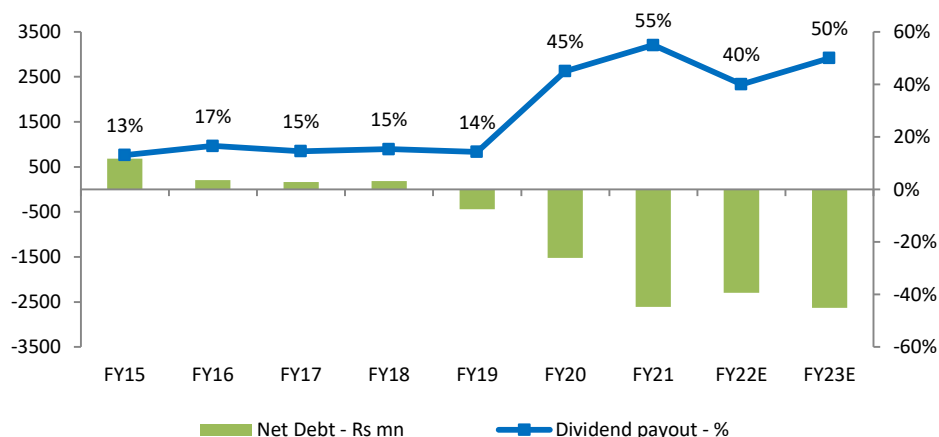
Adjustment of the overseas subsidiary related goodwill write-off can further zoom the return ratios but the management doesn't intend to write it off in one instance for now.



## Net cash balance sheet maximises shareholder returns

IFGL has maintained a very healthy balance sheet with net cash position since FY19. Net cash on books has been continuously increasing despite ongoing capex at multiple locations. IFGL has also increased returns to shareholders from FY19 and along with earnings growth, IFGL's dividend yield has touched 5.8% in FY21 at an all-time high dividend payout ratio of 55%. With the current expected capex schedule we expect IFGL to remain net cash along with stability on higher returns to shareholders as shown in the exhibit below. Also none of the pending capex will require external funding.

**Exhibit 41: Net Debt/ Equity for subsidiaries shows net cash situation for last 4 years**

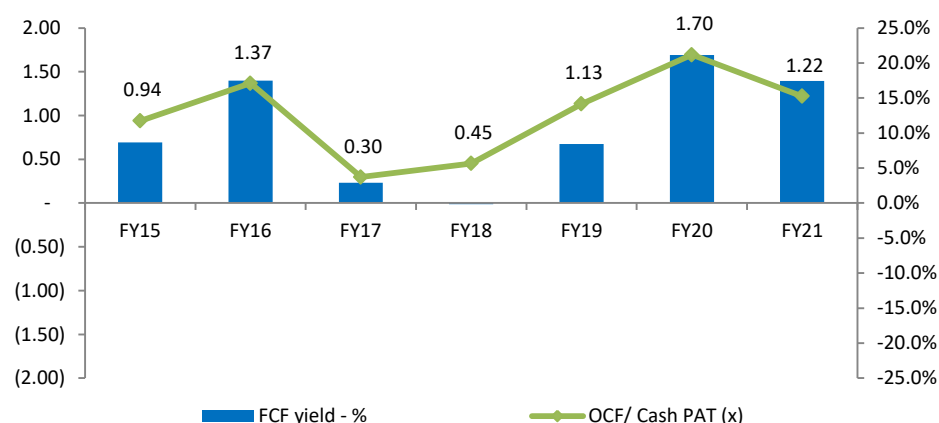


Source: Company, MNCL Research estimates

## Efficient cash flow generation

One of the reasons for IFGL's healthy cash accumulation, and hence, healthy balance sheet is the cash flow generation. IFGL has managed to keep a strict discipline on the working capital requirements due to which its OCF/Cash PAT has remained more than 1x for a long period as shown in exhibit below. Also, the fact that it has been expanding capacity at low capital cost has led to positive FCF yield for the past 6-7 years. Therefore, we believe the company has performed exceedingly well on cash flow management side.

**Exhibit 42: OCF/ Cash PAT > 1 and positive FCF yield for more than 5 years**



Source: Company, MNCL Research

## Valuation – Highly undervalued; Strong re-rating ahead

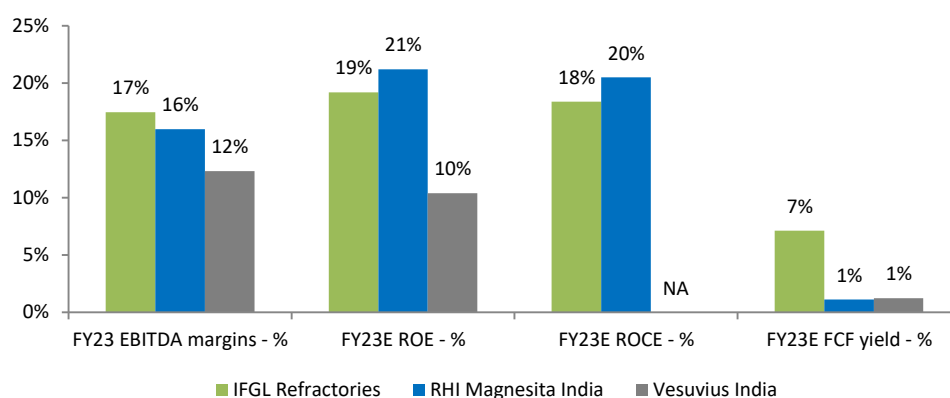
### SOTP Valuation

We value IFGL business using SOTP method due to different valuations attributable to the overseas subsidiaries and domestic business.

#### Domestic business

In the exhibits below, we present a peer comparison to explain that the financial performance of IFGL's standalone business is very much comparable to its peers. On FY23E basis, after the one time goodwill write-off, the return ratios of IFGL's standalone business will still be lower than peers but very much comparable to peers. On EBITDA margin front also, it is very much competent to its leading peer. With high OCF/Cash PAT ratio and net cash balance sheet, we believe IFGL deserves if not at par but still better valuations than what it trades at currently.

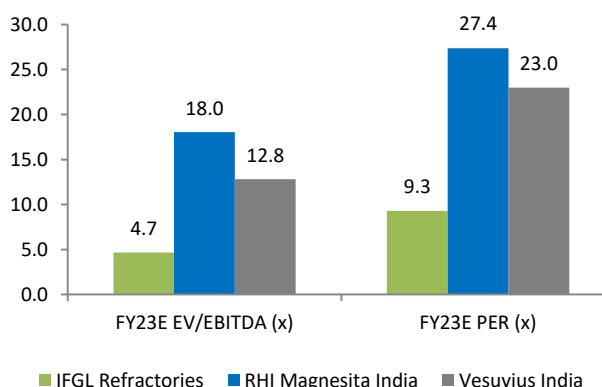
#### Exhibit 43: IFGL's standalone business has slightly lower return ratios but is certainly competent on margin front and has better FCF yield than peers



Source: Company, Bloomberg, MNCL Research estimates

IFGL trades at deep discount to its peers as shown in exhibit below – at almost 1/3<sup>rd</sup> valuation of the leading peer i.e. RHIM.

#### Exhibit 44: IFGL trades at deep discount to peers which we believe is not justified based on its financial performance



Source: Company, Bloomberg, MNCL Research estimates

**Probable reasons for trading at lower multiples:** Lower margin profile (ex-write-off) and low return ratio historically and poor performance by subsidiaries.

### What has changed now?

1. Cost optimization and cost efficiencies at higher utilization across domestic operations has elevated the sustainable margin profile
2. One-time write-off of goodwill amortization from Kandla merger to magnify return ratios as discussed previously.

We attribute a multiple at 40% discount to its leading peer RHI Magnesita India to value the domestic business.

Historically the gap between valuation of IFGL and Orient refractories has been 55-60% which we expect to reduce due to the ongoing improvement in business.

### Overseas business

We compare the financial performance of the subsidiary with the financials of global peers. Return ratio and margin profile is lower than the global peers as seen in exhibit below.

#### Exhibit 45: IFGL subsidiaries have margins and return ratios at discount to its global peers

	EBITDA margins - %		ROE - %		ROCE - %		EV/EBITDA (x)	
	FY20/CY19	FY21/CY20	FY20/CY19	FY21/CY20	FY20/CY19	FY21/CY20	FY20/CY19	FY21/CY20
IFGL subsidiaries	5.1%	5.1%	NA	NA	6%	14%	NA	NA
Vesuvius PLC	13.5%	10.4%	7.5%	3.9%	6.1%	3.7%	7.1	11.0
RHI Magnesita PLC	17.4%	18.6%	17.1%	3.4%	9.7%	8.5%	5.3	5.9
Shinagawa Refractories	10.6%	10.2%	9.9%	3.6%	8.4%	3.8%	2.6	3.5

Source: Company, Bloomberg, MNCL Research

Therefore, we value the overseas business at 4.2x Sept'23E EV/EBITDA, which is 40% discount to its global peers' 1-year forward EV/EBITDA and we value domestic business at 10.2x Sept'23E EV/EBITDA, which is again at 40% discount to its domestic peer's 1-yr forward EV/EBITDA to arrive at the fair value of Rs585/share. At CMP of Rs292, stock trades at 3.9x FY23E EV/EBITDA.

#### Exhibit 46: EV/EBITDA Valuation

(GBP mn) – Overseas business	Sept'23E	INR mn – domestic business	Sept'23E
EBITDA	4.8	EBITDA	1586
Global Peer avg. EV/EBITDA	7	Domestic peer avg. EV/EBITDA (FY17-21) valuation	17
Discount for IFGL overseas ops.	40%	Discount for IFGL domestic ops.	40%
EV/EBITDA (x)	4.2	EV/EBITDA (x)	10.2
<b>EV</b>	<b>20.3</b>	<b>EV</b>	<b>16,172</b>

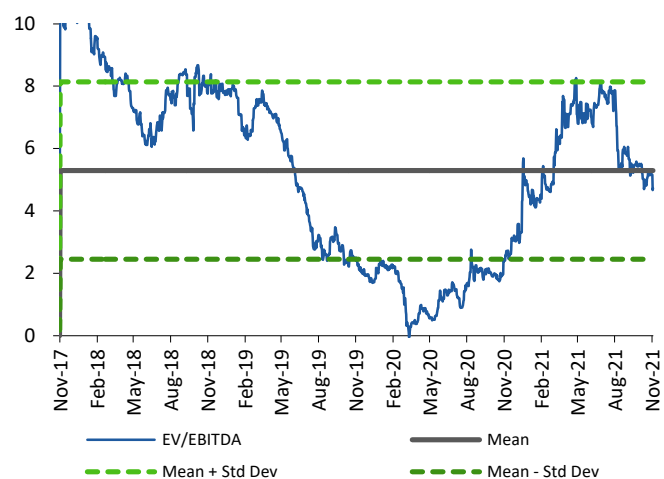
Source: MNCL Research estimates

#### Exhibit 47: EV/EBITDA Valuation

SOTP Valuation	Sept'23E
EV Overseas Ops (GBP mn)	20.3
GBP/INR	99
EV Overseas Ops (Rs mn)	2,013
EV Domestic Ops (Rs mn)	16,172
Total EV - IFGL Cons.	18,185
Subtract: Net debt / (net cash)	-2874
Fair value mkt cap	21059
No. of shares (mn)	36.0
<b>Fair Value/share (Rs)</b>	<b>585</b>
CMP	279
Upside	109%

Source: MNCL Research estimates

**Exhibit 48: 1-yr forward EV/EBITDA**



Source: Company, Bloomberg, MNCL Research estimates

**Exhibit 49: 1-yr forward PE ratio**



Source: Company, Bloomberg, MNCL Research estimates

## Key risks to our thesis

**Sea freight inflation lasting longer than our estimates:** IFGL has more than 50% of its raw material imported from China due to which higher sea freight has heavily dented its margins and will continue until pass on of the cost happens or sea freight issue resolves. If the margin pressure continues longer than our estimates, we may see downward revisions of our estimates.

**Raw material price risk:** Increase in raw material cost which is sourced from China due to either shortage created by China's domestic issues or due to accrual global shortage of raw material may lead to downward revision of our estimates. In this case we believe that realisations will help pass on the RM cost hike in longer run.

**Change of management:** There is a change in management due to demise of previous Managing Director. But, we believe that the leadership of Chairman and also the new hires made on the higher management positions will ensure the business momentum is maintained. Also the next generation of the promoter group is already a part of the business.

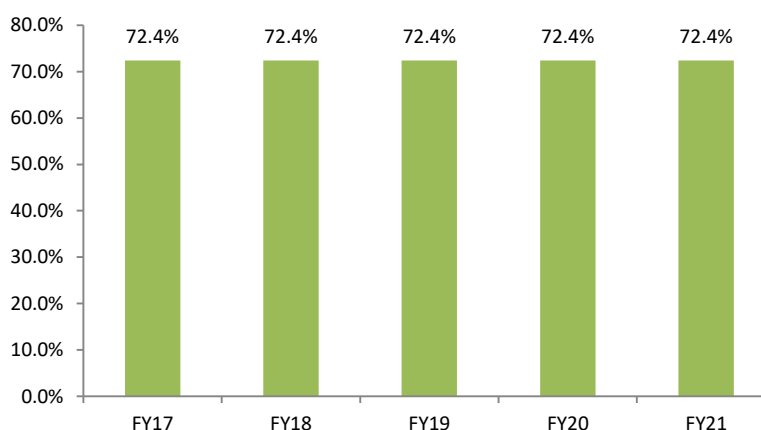
## Corporate Governance

We believe that sound corporate governance is necessary for enhancing the trust of shareholders and other stakeholders. We have undertaken a detailed corporate governance study covering broad aspects such as the composition of the board of directors, independent directors, compensation paid to the promoter directors and independent directors, details of auditors, nature and amount of contingent liabilities, related party transactions and CSR expenditure.

### Promoters and promoter group shareholding analysis

Bajoria Financial services pvt ltd. owned by S.K Bajoria group holds ~51% stake in the company which has been largely stable over the 5years. Other shareholders in the Promoter category are the Chairman and an MNC refractory manufacturer Krosaki Harima which holds 15.5% stake. The details of the shareholding and its movement are indicated in the chart below.

**Exhibit 50: Promoters have maintained shareholding in IFGL over the last 5 years**



Source: Company, MNCL Research

### Independent directors – Representation analysis

Over the last 5 years, IFGL's board has consistently maintained 50% of independent directors. This imparts greater credibility to IFGL and ensures well rounded decision making in the interests of all stakeholders. The details of the board composition are as follows:

**Exhibit 51: Board Composition**

Particulars	FY17	FY18	FY19	FY20	FY21
- Total Strength	10	10	11	10	10
- Promoter Group Directors	2	2	2	2	2
- Executive Directors	3	3	3	3	3
- Non -Executive Directors	1	1	2	2	2
- Independent Directors	6	6	6	5	5
- % share of Promoters	20	20	18	20	20
- % share of Executive and Non-Executive Director	30	30	27	30	30
- % share of Independent Directors	60	60	55	50	50

Source: Company, MNCL Research

## Executive director and promoter compensation analysis

The total executive director compensation has only exceeded the permissible limit set by Companies Act once in FY20 by a small margin otherwise it has been very much within the set limits. This shows the best of corporate governance practice followed by the company.

### Exhibit 52: Executive Director Compensation

Designation (compensation in Rs mn)	FY17	FY18	FY19	FY20	FY21
-Chairman	24	20	21	22	29
- % share of PBT	4.4	3.1	3.3	4.4	2.3
-Managing Director	29	29	39	39	43
- % share of PBT	5.3	4.6	6.2	7.7	3.5
-CEO	7	9	10	10	11
- % share of PBT	1.3	1.4	1.6	2.0	0.9
<b>- Total executive director compensation</b>	<b>60</b>	<b>57</b>	<b>71</b>	<b>71</b>	<b>83</b>
<b>- % share of PBT</b>	<b>11.1</b>	<b>9.1</b>	<b>11.1</b>	<b>14.1</b>	<b>6.6</b>

Source: Company, MNCL Research

## Independent directors – Compensation analysis

In FY21, IFGL had 5 independent directors on its board. The independent directors were collectively paid Rs0.76mn in FY21 equivalent to 0.12% of PAT. As per the company law, each independent director can be paid sitting fees of up to Rs1lakh per board meeting. Sitting fees paid to independent director is well within this permissible limit. Also, the total commission paid to all independent directors is 0.04% of FY21 PAT, which is well within the permissible limits of 1%. The details of the same are as follows:

### Exhibit 53: Independent Directors & their Compensation

Name	Sitting fees (Rs mn)	Commission (Rs mn)	FY21 Compensation (Rs mn)
D K Banerji	0.10	0.08	0.18
S Khasnobis	0.10	0.01	0.11
K Oshikawa	0.06	0.00	0.06
D G Rajan	0.10	0.05	0.15
Prof B Ray	0.08	0.01	0.09
K S B Sanyal	0.08	0.10	0.18
<b>Total</b>	<b>0.52</b>	<b>0.24</b>	<b>0.76</b>
<b>As % to PAT</b>	<b>0.08</b>	<b>0.04</b>	<b>0.12</b>

Source: Company, MNCL Research

## Contingent liability analysis

IFGL's contingent liabilities are negligible when compared to its net worth, for the last 5 years and therefore does not raise any red flag.

## Related party transaction analysis

IFGL's related party transactions mainly involve expenses and rent paid/ expenses received from subsidiary companies and holding companies which is very small in size. This raises no red flags.

## Auditor compensation analysis

IFGL has appointed M/s S R Batliboi & Co. LLP as its statutory auditor for a period of 5 years starting FY20. The fee paid to them is a nominal amount of Rs3.0mn (0.2% of FY21 Profit before Tax). Deloitte was the statutory auditor for IFGL before this change in auditors in FY20. The details are as follows:

### Exhibit 54: Auditor Compensation

Auditor Name	Type	Auditor Since	Auditor Fees – FY20 (Rs mn)	As % to PBT
M/s S R Batliboi & Co. LLP	Statutory	FY20	3.0	0.2%

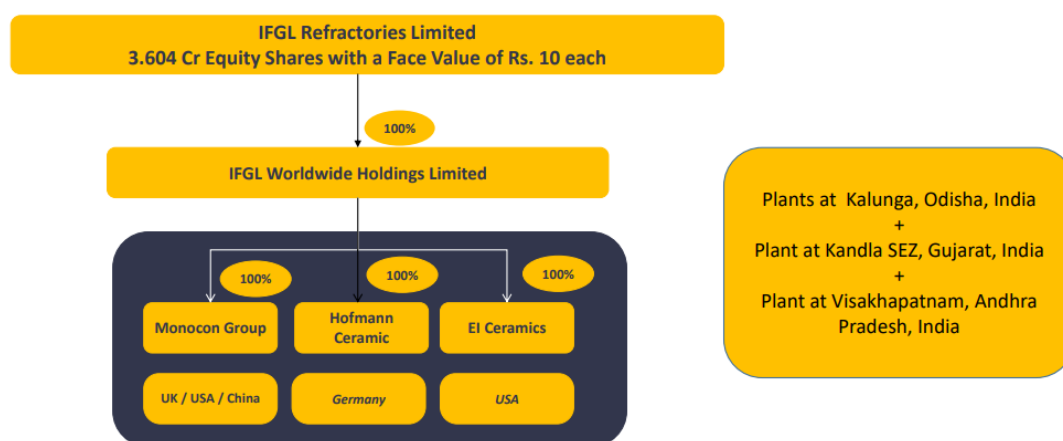
Source: Company, MNCL Research

## Company Background

IFGL Refractories Ltd. is a leading manufacturer of specialised flow control refractories – especially isostatic, slide gate and continuous casting refractories used in primary and secondary steel manufacturing. Its Promoters belong to the S.K Bajoria group of industries having 72.4% stake in the company. 85% of its revenue is derived from shaped refractory and almost 90% of its revenue is derived from large steel plants including PSU. The company supplies refractories to several major domestic steel mills like JSPL, JSW Steel, SAIL, Tata Steel, etc including Arcelor Mittal. It derives 60% of its standalone revenue from exports.

IFGL Refractories has a wide presence in the overseas markets through its wholly owned subsidiaries as shown in the below exhibit catering mainly to markets of EU, Middle East, Asia, US, etc. The company has presence in total 60 markets across the globe. It has recently expanded its presence in South India after commissioning its third plant in Vizag. Its Kalunga and Kandla capacities operate at more than 70% utilisation on aggregate basis. The company holds ~7% share in domestic market as of FY21.

**Exhibit 55: Domestic Manufacturing locations + overseas presence through three subsidiaries**



Source: Company, MNCL Research



## Quarterly Financials

### Exhibit 56: Quarterly Financials

Y/E March (Rs mn)	Q3FY20	Q4FY20	Q1FY21	Q2FY21	Q3FY21	Q4FY21	Q1FY22	Q2FY22
<b>Total Income</b>	<b>2183</b>	<b>2221</b>	<b>2032</b>	<b>2462</b>	<b>2890</b>	<b>2835</b>	<b>2748</b>	<b>3099</b>
Accretion to Stocks in trade & work in progress	86	-45	-6	-57	61	-46	1	-23
Cost of Raw materials consumed	882	1064	682	772	1110	1059	1134	1269
Purchase of traded goods	116	54	283	380	188	315	182	259
Staff cost	382	373	348	379	401	390	423	446
Other operational expenses	504	577	492	597	642	677	681	781
<b>Operating Profit (Core EBITDA)</b>	<b>213</b>	<b>198</b>	<b>234</b>	<b>391</b>	<b>489</b>	<b>441</b>	<b>327</b>	<b>368</b>
Depreciation	116	136	119	125	118	124	118	120
<b>EBIT</b>	<b>98</b>	<b>62</b>	<b>114</b>	<b>266</b>	<b>371</b>	<b>317</b>	<b>208</b>	<b>248</b>
Interest	8	11	7	9	6	9	9	10
Other Revenue/Income	18	32	32	22	28	44	31	38
<b>Profit Before Tax</b>	<b>108</b>	<b>-124</b>	<b>139</b>	<b>280</b>	<b>472</b>	<b>352</b>	<b>231</b>	<b>277</b>
Tax	36	16	37	73	99	378	52	77
<b>Profit After Tax</b>	<b>73</b>	<b>-139</b>	<b>102</b>	<b>206</b>	<b>373</b>	<b>-25</b>	<b>179</b>	<b>200</b>
Minority Interest	0	0	0	0	0	0	0	0
<b>PAT after minority interest</b>	<b>73</b>	<b>67</b>	<b>102</b>	<b>206</b>	<b>294</b>	<b>-25</b>	<b>179</b>	<b>200</b>
<b>Growth (%)</b>								
Revenue	-6.9	-11.0	-19.3	11.8	32.4	27.7	11.6	7.2
EBITDA	-6.7	-22.3	-18.6	80.0	129.1	122.6	-16.4	-24.6
PAT	-11.7	-48.8	-24.9	64.7	304.1	-137.9	-13.4	-31.9
<b>Margin (%)</b>								
EBITDA	9.8	8.9	11.5	15.9	16.9	15.6	11.9	11.9
EBIT	4.5	2.8	5.6	10.8	12.8	11.2	7.6	8.0
PAT	3.3	3.0	5.0	8.4	10.2	-0.9	6.5	6.5
<b>Segment Revenue (Net Sales/ Income from ops)</b>								
India	1186	1156	1247	1641	1775	1727	1582	1641
Asia (Excl India)	38	43	33	-50	110	47	38	-50
Europe	468	499	443	472	499	546	616	472
Americas	491	523	309	399	506	515	511	399

Source: Company, MNCL Research

## Financials (Consolidated)

### Exhibit 57: Income Statement

Y/E March (Rs mn)	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22E	FY23E	FY24E
<b>Revenues</b>	<b>7,868</b>	<b>7,170</b>	<b>7,656</b>	<b>8,353</b>	<b>9,504</b>	<b>9,173</b>	<b>10,219</b>	<b>12,094</b>	<b>13,223</b>	<b>14,172</b>
Materials cost	4,061	3,652	3,620	4,214	4,770	4,591	4,740	5,865	6,215	6,661
% of revenues	51.6	50.9	47.3	50.4	50.2	50.0	46.4	48.5	47.0	47.0
Employee cost	1,179	1,196	1,209	1,267	1,462	1,504	1,518	1,670	1,837	1,983
% of revenues	15.0	16.7	15.8	15.2	15.4	16.4	14.9	13.8	13.9	14.0
Others	1,706	1,562	1,837	1,813	2,185	2,162	2,408	3,025	3,254	3,463
% of revenues	21.7	21.8	24.0	21.7	23.0	23.6	23.6	25.0	24.6	24.4
<b>EBITDA</b>	<b>922</b>	<b>760</b>	<b>989</b>	<b>1,059</b>	<b>1,087</b>	<b>916</b>	<b>1,554</b>	<b>1,533</b>	<b>1,917</b>	<b>2,065</b>
<b>EBITDA margin (%)</b>	<b>11.7</b>	<b>10.6</b>	<b>12.9</b>	<b>12.7</b>	<b>11.4</b>	<b>10.0</b>	<b>15.2</b>	<b>12.7</b>	<b>14.5</b>	<b>14.6</b>
Depreciation & Amortisation	143	156	441	438	460	483	486	228	246	256
<b>EBIT</b>	<b>779</b>	<b>604</b>	<b>549</b>	<b>621</b>	<b>627</b>	<b>432</b>	<b>1,068</b>	<b>1,305</b>	<b>1,672</b>	<b>1,809</b>
Interest expenses	59	48	45	40	37	36	31	36	36	29
<b>PBT from operations</b>	<b>720</b>	<b>557</b>	<b>503</b>	<b>582</b>	<b>590</b>	<b>396</b>	<b>1,037</b>	<b>1,269</b>	<b>1,636</b>	<b>1,780</b>
Other income	67	51	39	44	50	110	205	134	170	213
Exceptional items	-	-	-	-	-	-	-	-	-	-
<b>PBT</b>	<b>787</b>	<b>608</b>	<b>542</b>	<b>625</b>	<b>640</b>	<b>506</b>	<b>1,242</b>	<b>1,402</b>	<b>1,806</b>	<b>1,993</b>
Taxes	254	157	46	154	136	105	586	421	542	598
Effective tax rate (%)	32%	26%	8%	25%	21%	21%	47%	30%	30%	30%
<b>PAT</b>	<b>533</b>	<b>451</b>	<b>497</b>	<b>471</b>	<b>505</b>	<b>401</b>	<b>656</b>	<b>982</b>	<b>1,264</b>	<b>1,395</b>
Minority/Associates	2	32	-0	-	-	-	-	-	-	-
<b>Adjusted PAT</b>	<b>531</b>	<b>418</b>	<b>500</b>	<b>471</b>	<b>505</b>	<b>195</b>	<b>656</b>	<b>982</b>	<b>1,264</b>	<b>1,395</b>

Source: MNCL Research Estimates

### Exhibit 58: Key Ratios

Y/E March	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22E	FY23E	FY24E
<b>Ratio Analysis:</b>										
<b>Y/E March</b>										
<b>Growth Ratio (%)</b>										
Revenue	1.2	(8.9)	6.8	9.1	13.8	(3.5)	11.4	18.3	9.3	7.2
EBITDA	(15.9)	(17.5)	30.1	7.1	2.6	(15.8)	69.6	(1.3)	25.0	7.7
Adjusted PAT	(17.0)	(21.2)	19.5	(5.7)	7.1	(61.4)	237.0	49.7	28.7	10.4
<b>Margin Ratios (%)</b>										
EBITDA	11.7	10.6	12.9	12.7	11.4	10.0	15.2	12.7	14.5	14.6
PBT from operations	9.2	7.8	6.6	7.0	6.2	4.3	10.1	10.5	12.4	12.6
Adjusted PAT	6.7	5.8	6.5	5.6	5.3	2.1	6.4	8.1	9.6	9.8
<b>Return Ratios (%)</b>										
ROE	15.8	11.4	9.3	6.6	6.5	2.4	7.7	11.5	14.9	15.3
ROCE	11.9	9.8	7.0	5.8	6.0	4.9	6.8	11.0	13.2	13.6
ROIC	12.2	10.4	7.1	6.0	6.5	5.1	8.3	14.2	17.5	18.6
<b>Turnover Ratios (days)</b>										
Gross block turnover ratio (x)	1.9	1.7	1.4	1.2	1.3	1.3	1.4	1.5	1.6	1.7
Debtors	84	92	109	124	88	84	82	85	85	85
Inventory	46	39	45	47	60	56	60	55	55	55
Creditors	46	50	56	55	48	49	55	55	55	55
Cash conversion cycle	84	81	98	117	100	91	86	85	85	85
<b>Solvency Ratio (x)</b>										
Net debt-equity	0.2	0.1	0.0	0.0	(0.1)	(0.2)	(0.3)	(0.3)	(0.3)	(0.3)
Debt-equity	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Interest coverage ratio	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
Gross debt/EBITDA	1.3	1.1	0.8	1.1	0.8	0.6	0.3	0.3	0.3	0.2
Current Ratio	3.0	3.2	3.3	3.9	3.8	3.3	3.3	3.3	3.5	3.6
<b>Per share Ratios (Rs)</b>										
Adjusted EPS	15.3	12.1	13.8	13.1	14.0	11.1	18.2	27.2	35.1	38.7
BVPS	99.6	111.7	190.3	208.7	220.5	224.5	247.1	226.4	243.9	263.3
CEPS	19.5	16.6	26.0	25.2	26.8	24.5	31.7	33.6	41.9	45.8
DPS	2.0	2.0	2.0	2.0	2.0	5.0	10.0	10.9	17.5	19.4
Dividend payout %	13.0%	16.5%	14.5%	15.3%	14.3%	45.0%	54.9%	40.0%	50.0%	50.0%
<b>Valuation (x)</b>										
P/E (adjusted)	9.5	9.1	10.3	23.3	16.8	14.8	9.5	10.2	8.0	7.2
P/BV	1.5	1.0	0.7	1.5	1.1	0.7	0.7	1.2	1.1	1.1
EV/EBITDA	6.2	5.3	5.3	10.6	7.4	4.8	2.3	5.1	3.9	3.3
Dividend yield %	1.4	1.8	1.4	0.7	0.9	3.0	5.8	3.9	6.3	6.9

Source: MNCL Research Estimates

**Exhibit 59: Balance Sheet**

Y/E March (Rs mn)	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22E	FY23E	FY24E
<b>SOURCES OF FUNDS</b>										
Equity Share Capital	346	346	360	360	360	360	360	360	360	360
Reserves & surplus	3,102	3,521	6,497	7,160	7,586	7,729	8,545	7,799	8,431	9,128
Shareholders' fund	3,448	3,867	6,857	7,520	7,946	8,089	8,905	8,159	8,791	9,488
Total Debt (incl. pref shares if its thr)	1,162	835	840	1,125	894	518	516	516	516	416
Def tax liab. (net)	108	112	21	32	100	122	478	478	478	478
Minority interest	96	129	0	-	-	-	-	-	-	-
Lease liabilities	-	-	-	-	-	129	121	121	121	121
<b>Total Liabilities</b>	<b>4,814</b>	<b>4,942</b>	<b>7,719</b>	<b>8,676</b>	<b>8,940</b>	<b>8,858</b>	<b>10,020</b>	<b>9,274</b>	<b>9,906</b>	<b>10,503</b>
Gross Block	4,064	4,353	6,721	7,076	7,285	7,367	7,595	8,195	8,445	8,595
Less: Acc. Depreciation	1,584	1,778	2,008	2,462	2,744	3,183	3,643	5,206	5,452	5,708
Net Block	2,480	2,575	4,713	4,613	4,541	4,184	3,952	2,989	2,993	2,887
Capital WIP	41	20	16	82	63	69	221	221	221	221
Net Fixed Assets	2,521	2,595	4,729	4,695	4,604	4,253	4,173	3,210	3,214	3,108
Right to use assets	-	-	-	-	-	220	203	203	203	203
Investments	5	85	124	132	460	937	1,278	1,278	1,278	1,278
Inventories	1,002	772	936	1,083	1,565	1,417	1,678	1,822	1,993	2,136
Sundry debtors	1,803	1,803	2,283	2,844	2,286	2,105	2,282	2,816	3,079	3,300
Cash	483	553	560	811	879	1,107	1,908	1,513	1,881	2,366
Loans & Advances	104	136	221	317	24	29	29	33	36	39
Other assets	39	33	90	101	423	223	287	287	287	287
<b>Total Current Asset</b>	<b>3,431</b>	<b>3,297</b>	<b>4,091</b>	<b>5,158</b>	<b>5,177</b>	<b>4,881</b>	<b>6,185</b>	<b>6,471</b>	<b>7,275</b>	<b>8,127</b>
Trade payables	1,000	990	1,168	1,254	1,244	1,242	1,551	1,822	1,993	2,136
Other current Liab.	30	27	52	49	51	189	266	33	36	39
Provisions	108	22	6	6	7	3	3	33	36	39
Net Current Assets	2,292	2,258	2,865	3,849	3,875	3,448	4,365	4,582	5,210	5,914
<b>Total Assets</b>	<b>4,818</b>	<b>4,938</b>	<b>7,719</b>	<b>8,676</b>	<b>8,939</b>	<b>8,858</b>	<b>10,020</b>	<b>9,274</b>	<b>9,906</b>	<b>10,503</b>

**Exhibit 60: Cash Flow**

Y/E March (Rs mn)	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22E	FY23E	FY24E
Operating profit bef working capital changes	1022	820	1120	1297	1113	1045	1650	1533	1917	2065
Changes in working capital	(119)	180	(644)	(731)	133	458	(63)	(613)	(260)	(218)
<b>Cash flow from operations</b>	<b>635</b>	<b>830</b>	<b>278</b>	<b>411</b>	<b>1094</b>	<b>1499</b>	<b>1394</b>	<b>500</b>	<b>1116</b>	<b>1249</b>
Net Capex	198	167	130	430	379	242	310	600	250	150
FCF	437	663	149	(19)	715	1257	1084	(100)	866	1099
<b>Cash flow from investments</b>	<b>(165)</b>	<b>(222)</b>	<b>(2)</b>	<b>(477)</b>	<b>(711)</b>	<b>(537)</b>	<b>(1064)</b>	<b>(467)</b>	<b>(80)</b>	<b>63</b>
<b>Cash flow from financing</b>	<b>(275)</b>	<b>(549)</b>	<b>(41)</b>	<b>179</b>	<b>(365)</b>	<b>(662)</b>	<b>(46)</b>	<b>(429)</b>	<b>(668)</b>	<b>(827)</b>
<b>Net change in cash</b>	<b>176</b>	<b>70</b>	<b>143</b>	<b>193</b>	<b>26</b>	<b>333</b>	<b>379</b>	<b>(396)</b>	<b>368</b>	<b>485</b>

Source: MNCL Research Estimates



## Merger of RHI entities – Birth of RHI’s manufacturing and R&D behemoth in Asia

RHI merged its Indian entities - RHI India Pvt. Ltd., RHI Clasil Ltd with Orient Refractories to create India’s largest refractory manufacturing and trading company called RHI Magnesita India (RHIM). This process was completed in May 2021 after receiving the final approval from NCLT. This merger is a step towards simplifying RHI’s India presence and maximizing synergies from consolidation of operations and customer network. RHI Magnesita aims to provide most comprehensive product and solutions portfolio and become an end-to-end solution provider for the customer. The integration will also result in improved allocation of capital and optimization of cash flows contributing to the overall growth prospects of the newly integrated company. In the following section, we will first walk through the operations of each entity and then discuss the possible benefits from this merger.

**Exhibit 61: Comparison of RHI entities**

	Orient Refractories	RHI Clasil Ltd.	RHI India
Refractory products	Isostatic pressed continuous casting refractories, slide gates, plates, nozzles, etc. Shaped: unshaped - 85%:15%	Alumina based refractories - mainly bricks - contract manufacturing	All refractory products sourced from various RHI entities - incl. imports from RHI entities
Area of specialization	Tundish and ladle Low cost manufacturer largely supplying to mini mills	Furnace and lining . An exporter of refractories as it is situated in Vizag, very close to port	All types
Production Facilities	Bhiwadi, Cuttack, Salem	Vizag	Trading company
Capacity	Special products – 45000 tonnes Cuttack – 13000 tonnes	Basic products – 65,000 tonnes	-
Customer profile	45% - mini mills; Rest - PSU and integrated steel plants	Steel and Cement industry	80% to large integrated steel plants 6-9%. It manufactures non value added products. So no scope of substantial margin improvement
Margin trajectory	Depends on product mix	Contract Manufacturing - Cost + 10% basis	
Sales/ distribution	7 sales offices in cities like Ludhiana, Hospet and Raipur	8 sales office in cities like Kolkata, Surat and Jamshedpur	Sales office in Hyderabad
RHI stake	69.6%	53.7%	100%

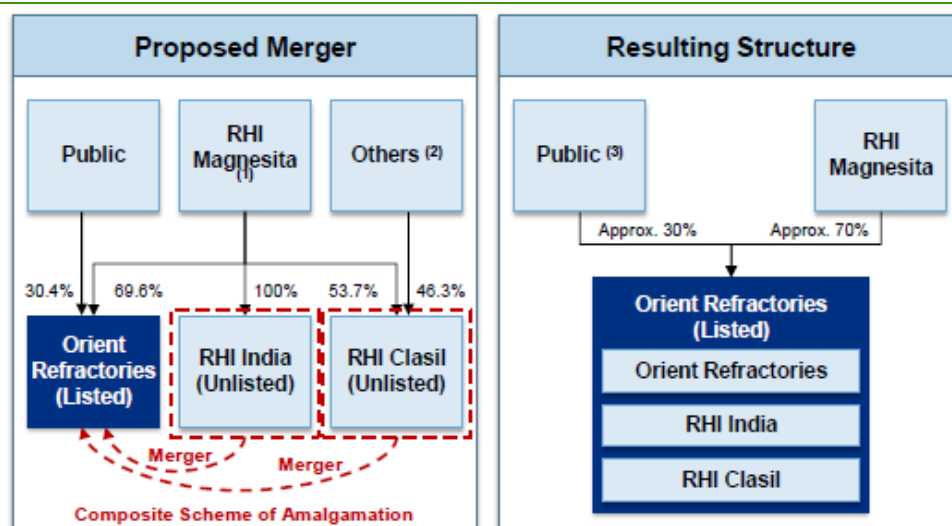
Source: Company, MNCL Research

### Key customers of the merged entity:

Jindal Stainless Ltd., JSW Steel, Gerdau, Tata Steel, Lafarge Holcim, Sunflag Steel, Birla Shakti Cement, SAIL, etc.

### Shareholding pattern pre and post-merger

**Exhibit 62: Shareholding Pattern – RHI Magnesita’s stake to stay at 70% in the merged entity**



Source: Company, MNCL Research

## Consideration for the merger

Merger will be completed through issuance of fresh equity shares to the shareholders of RHI India and RHI Clasil. Share swap ratio for the issuance of shares:

- 7,044 equity shares of Orient Refractories (of face value Re. 1 each) for every 100 equity shares of RHI India (of face value Rs10 each)
- 908 equity shares of Orient Refractories (of face value Re. 1 each) for every 1,000 equity shares of RHI Clasil (of face value Rs10 each).

Pursuant to the Scheme, equity shares of Orient Refractories will increase from ~120.1 mn equity shares to ~161 mn.

## Benefits of the merger

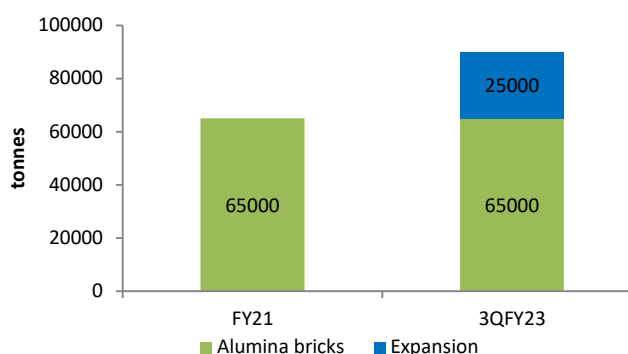
1. **Focus on full line contracts for increasing market share:** Delivering end to end portfolio of refractory products and services to customers, this will not only lead to higher volumes of sales to existing customers but will also lead to addition of new customers. Merged entity will also leverage RHI India's network at large integrated plants for sale of specialised flow control refractory products manufactured at Bhiwadi (Orient Refractories had low presence in large integrated steel plants). In-roads made by RHI entities in PSU steel plants will be leveraged for sale of locally made Magnesia bricks, which is an imported refractory product and therefore has huge scope of import substitution. This will in turn also reduce their dependency on Chinese products. The Cuttack Magnesia bricks plant has also got them in-roads into several customers which were previously not on-board due to high cost of imported Magnesia.
2. **Benefits of captive raw material (RM) sourcing from parent:** One of the reasons for lower RM cost for merged entity is the captive mines operated by its parent in Turkey, Brazil and Europe, which makes for 40% of total raw material requirement of the Indian entity. Only 20-25% of RM is sourced from China as compared to more than 40% sourcing by other refractory manufacturers in India and the rest is locally sourced. Sourcing can now happen centrally for all the manufacturing facilities in turn efficiently managing working capital.
3. **Integrated business & market intelligence centre for Asia and Africa:** RHIM plans to tap West Asia, South Asia and Africa markets using centrally managed sourcing of RM and production network of RHI entities. These 3 regions accounted for Euro530mn in revenues for the parent RHI Magnesita in CY19, which is ~18% of parent revenues. RHIM will also get into a technology transfer agreement with the parent which will give them in-roads into specialised value added products; previously only imported by RHI entities.
4. **Strengthen export channels – Geographical expansion:** Notably, 25% of the total sales is exported partly through Orient Refractories and mainly through the exporting arm - RHI Clasil, which has 50% exports of its total sales. RHIM plans to expand geographies and product base to capture higher share in export markets.
5. **R&D centre in Bhiwadi:** RHIM aims to develop at least 3 new products in the shaped refractory category at the new R&D centre at Bhiwadi. The research focus will be from the whole Asia market perspective along with leveraging the expertise of parent. It will work closely with the company's global R&D network for local raw materials development, provide solutions support for customer's performance improvement projects and support local manufacturing in the three plants in India. Construction of R&D centre at Bhiwadi was completed on November 15, 2021.
6. **Merging other RHI business in India:** In the medium term, RHIM will decide on merging its other entities in India which cater to refractory products for other industries like glass and cement. This will be evaluated once the Bhiwadi R&D centre is ready and operating.

## Expansion at RHI Clasil to further strengthen bricks portfolio

RHI Clasil caters to basic refractories i.e. alumina bricks and castables from its Vizag plant used in furnaces and cement kilns for lining purposes. Alumina has heat absorbing properties albeit less than magnesia products but is widely used in blast furnaces and electric arc furnaces. From the demand perspective, we believe demand for bricks will remain strong not only by replacement demand in the existing furnaces but also from the ~30mn tonnes of new steel capacities expected to be commissioned in the next 4 years.

The Vizag plant is operating at 90% capacity utilisation currently. Therefore, RHIM has announced capacity expansion by 25k tonnes which has been recently completed at a capital cost of Euro 5.5mn i.e. ~Rs500mn.

### Exhibit 63: Alumina bricks capacity expansion to 90k tonnes is expected to complete by 3QFY23

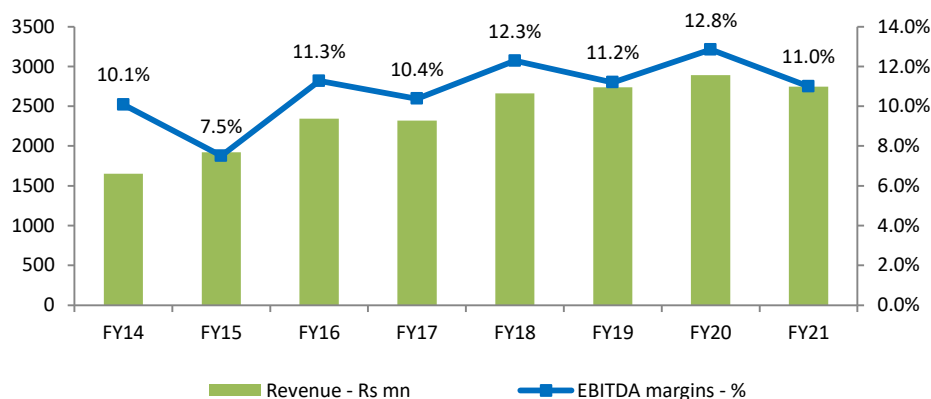


Source: Company, MNCL Research estimates

Revenue growth clocked by Clasil in past is 8-9% CAGR, which is expected to be maintained with upside risk of higher growth on the back of demand from steel plant expansions and customer acquisitions.

Notably, 60% of Clasil's revenue is from export and the rest 40% is domestic sales. Clasil has historically made 10-13% margins due to more than 60% of total sales to RHI entities on contract basis (cost + 10%); 20% is direct sales, which will make room for margin improvement. This is why we do not expect substantial change in margins at RHI Clasil.

### Exhibit 64: Margin remains in 10-13% range in long term at RHI Clasil



Source: Company, MNCL Research

## Import substitution to drive strong growth at Cuttack plant

The Cuttack plant is the finest acquisition by Orient Refractories because of its product portfolio of manufacturing Magnesia bricks through recycling. The recycling plant at Cuttack was acquired by Orient Refractories in November 2019 at a cost of Rs435.6mn with a recycling capacity of 10,000 tonnes per year. Debottlenecking work to expand the capacity of the plant to 18,000 tonnes per year is completed. Magnesia bricks had been seeing robust demand since couple of years as it has higher heat resistance properties than alumina bricks. Several customers have shifted to Magnesia bricks from Alumina bricks.

Two major benefits of this acquisition are:

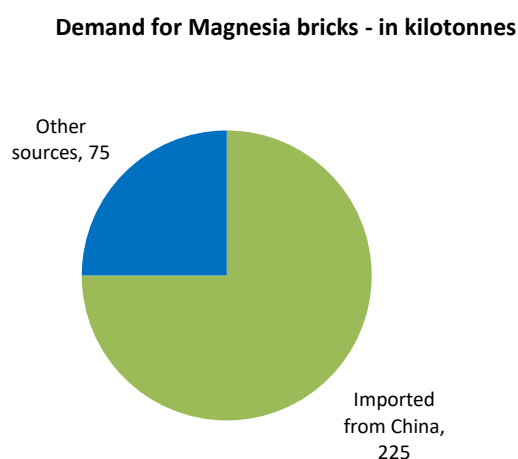
- Magnesia brick products help in completing the basket of refractory products required to provide full line contracts i.e. Total Refractory Management services to customers
- This product has also helped Orient Refractories get in-roads to several customers it could not get on-board before as the imports of Magnesia bricks was an expensive affair.

### Import substitution strategy

Magnesia bricks are highly import dependent product mainly from China. In FY20, out of the total domestic demand of 300k tonnes, 75% of the bricks were imported by China (refer exhibit below). Therefore, there is a huge demand for locally manufactured magnesia bricks which are cheaper than imports from China, and hence, RHIM will increase its capacity in two phases to 35,000 tonnes (refer exhibit below) at a capital cost of Euro 2mn in a period of 2 years. This will not only reduce RHIM's dependency on China but also reduce the overall RM cost as recycling results in substantial cost savings as explained in the industry section. Another peer who will capitalise on same opportunity is Dalmia OCL Refractories, that is also setting up India's largest Magnesia bricks plant with a capacity of 108k tonnes in 3 phases.

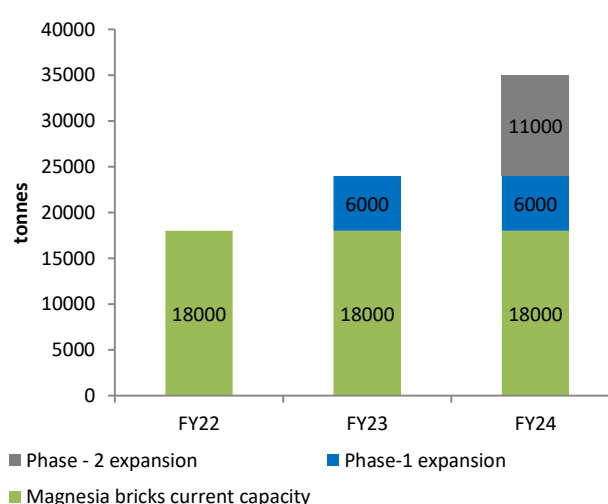
**We expect the Cuttack plant to be a major driver of the double digit revenue growth target guided by the company for next 2 years.**

**Exhibit 65: Imports of Magnesia bricks constitute 75% of the total domestic demand which will be gradually replaced by local production**



Source: Company, MNCL Research

**Exhibit 66: Doubling of Magnesia bricks capacity at Cuttack in 2 years**



Source: Company, MNCL Research



## Strategy for RHIM – Customer addition through full line contracts

There are two major strategies that RHIM aims to concentrate on for adding customer and gaining market share and to achieve the target of double digit revenue growth for the next 3 years.

**Addition of full line contracts:** RHIM aims to add more full line contracts through its Total Refractory Management (TRM) services with a target to add large steel plant customers. This is possible due to the large portfolio of products RHIM manufactures and the diversified customer base it already caters to although for specific products currently. RHIM aims to leverage the existing network of Orient Refractories in mini mills (specialised refractory products) and the in-roads of RHI India in large steel plants to expand their offerings and convert them into full line contracts. RHIM has made good progress with 25-30 TRM sites as compared to one of its large peer (8 TRM sites).

**To make India a manufacturing and R&D hub for Asia and Africa markets:** RHIM wants to convert the India operations into a manufacturing and R&D hub for its offerings in West Asia, South Asia and Africa markets with a goal to centralize supply chain and product development (new R&D centre at Bhiwadi). As part of the restructuring, an integrated regional Commercial, Supply Chain Management and Market Intelligence centre would be functional at its regional headquarters in Gurugram within 1-2 quarters to optimise operational and financial excellence across all its facilities. Additionally, a regional shared service centre (Integrated Business Centre) would be set up in India within a year.

RHIM will also continue to acquire small refractory businesses which meet their requirement with an aim to expand their product portfolio and customer network. **It has also very recently announced a very ambitious plan to spend Rs4bn on doubling capacities across all its locations in next 3 years, which implies strong demand expectations from steel manufacturers. We expect the revenue growth to be steep in this case but we wait for details from the company to correctly assess the expansion plan.**

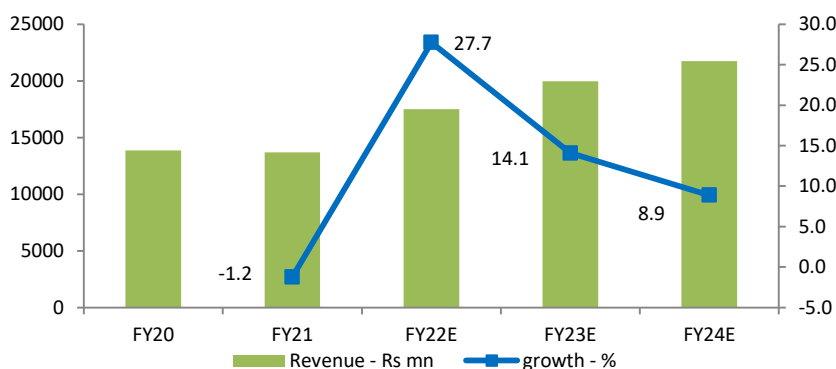
In the following section we explain the implications of RHIM’s current business strategy post-merger on its financials as assumed in our estimates.

### 1. Strong double digit revenue growth driven by the following factors:

- Leverage the network of RHI India in large steel plants to increase sales of special refractory products manufactured at Bhiwadi
- Geographical expansion with help of parent’s network in Europe
- Local to local sales of Magnesia products from Cuttack plant especially penetrating PSU customers
- Development of 2-3 new shaped refractory products at the new R&D centre

**Unaccounted and positive surprises to our estimates – Expansion announcement at Bhiwadi and any inorganic expansion**

**Exhibit 67: We expect RHIM to clock 16.6% CAGR revenue growth over FY21-24E**



Source: Company, MNCL Research estimates, Merged entity revenue available from FY20

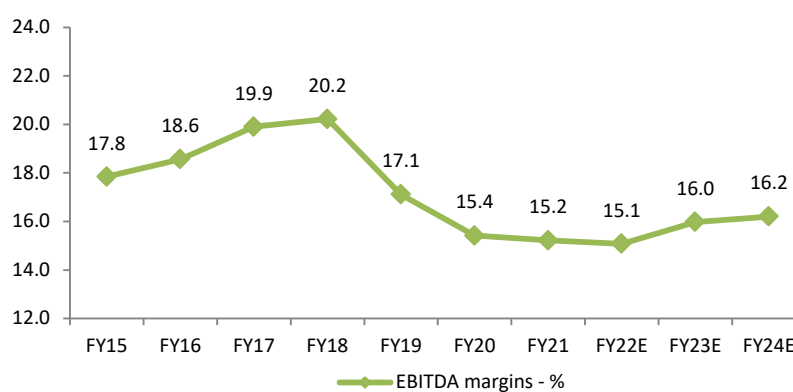
## 2. Margins – Short term pain but higher levels in long term

Due to substantial sourcing of raw material from parent and also constant attempts at using recycled raw material, RM cost is lower in comparison to peers which lead to higher margins. However, several factors offer support and also play spoilsport to margin trajectory going forward:

- Exponential increase in sea freight has led to raw material cost inflation. Shortage of raw material exported from China due to mining issues and heavy stocking by refractory players to brace for shortage during the winter Olympics in China. Both of these issues are expected to create short term pain for margins and last for at least 4-5 months.
- Increasing the use of recycled raw material at the Cuttack plant and reducing dependency on China will support margins. Gradual pass on of the raw material cost hike from Q4FY22 will lend relief to margins.
- Also, as compared to Orient Refractories, the margins for merged entity will be lower as the other two entities – RHI Clasil (supply to RHI entities at lower margins) and RHI India (trading entity) have low margin profile.

Accounting for all of these factors, exhibit below showcases our estimates on margin trajectory

### Exhibit 68: Margins to rebound on pass on of RM cost hike but will remain lower when compared to margins of Orient Refractories

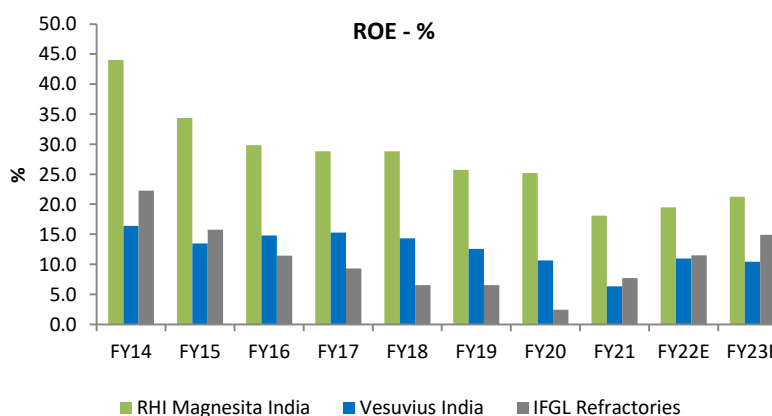


Source: Company, MNCL Research estimates; Merged entity nos are FY20 onwards- previous years are margins for Orient Refractories

## 3. Return ratios will continue to be superior to peers

Return ratios for the merged entity will be lower than that of Orient Refractories due to lower margin profile. But, superior return ratios as compared to peers will continue for RHIM (as showed in exhibit below) due to low capital cost of expansion backed by strong R&D capabilities of parent and high margins as compared to peers.

### Exhibit 69: ROE to decline as compared to Orient Refractories but will still remain higher than peers

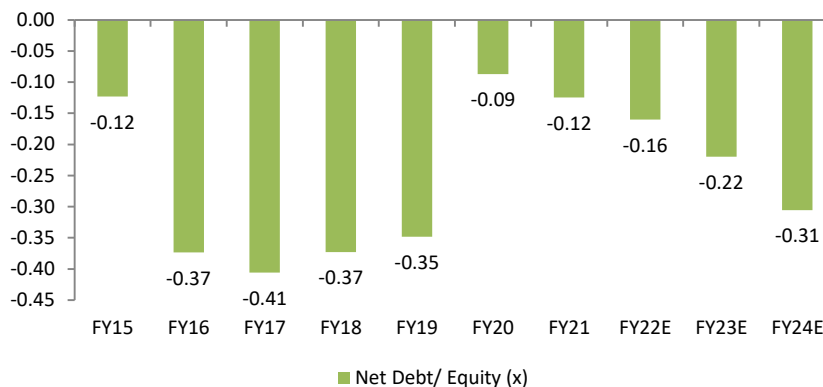


Source: Company, MNCL Research estimates, Bloomberg, RHIM merged entity numbers from FY20

#### 4. Net cash balance sheet to aid in pursuing inorganic growth

Balance sheet is expected to strengthen as and when capex spending decreases with net cash status maintained throughout as all the capital spending will be financed from internal accruals. RHIM will prioritize spending for growth and inorganic expansion over returns to shareholders.

#### Exhibit 70: Net cash status to aid large capex and acquisitions

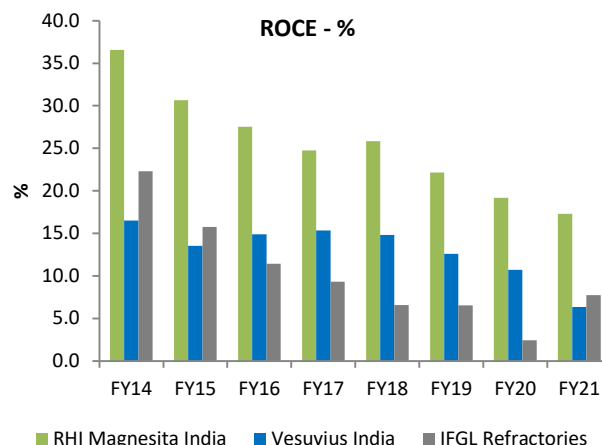
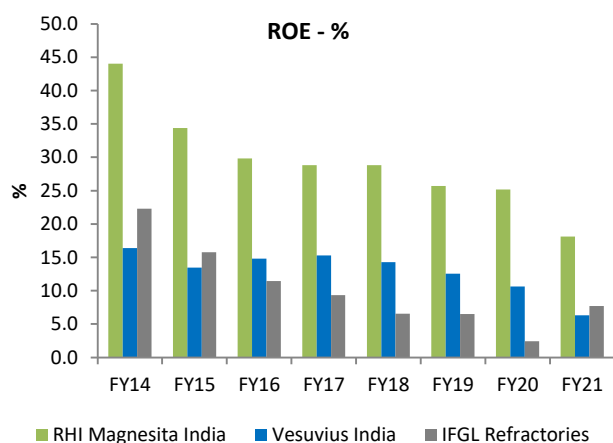


Source: Company, MNCL Research estimates, Merged entity numbers from FY20

## Valuation – Trading at premium valuations; initiate with BUY rating

RHIM and even Orient Refractories have historically traded at premium valuations as compared to other two listed players due to their industry leading margins and return ratio profile (as seen in exhibits below) along with strong revenue growth. This, combined with healthy balance sheet i.e. being net cash since at least last 6 years has helped them pursue expansions largely by using internal accruals.

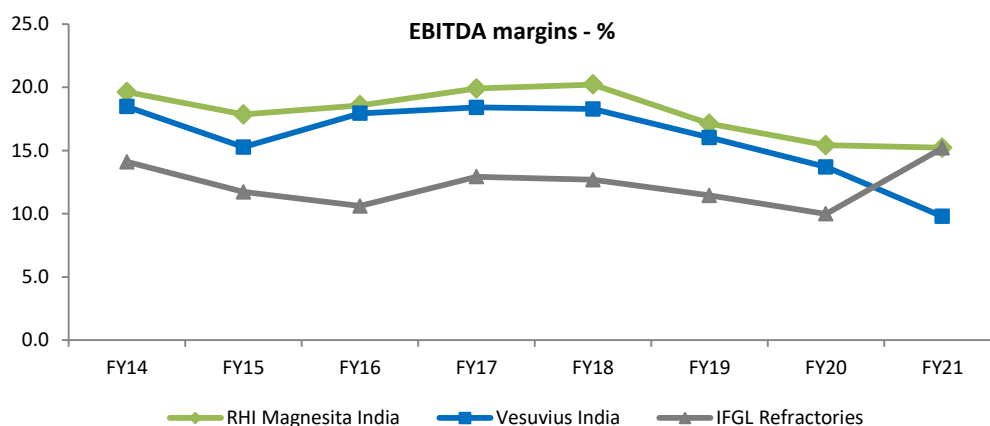
**Exhibit 71: RHIM has highest ROE among peers due to higher margin profile than peers**      **Exhibit 72: RHIM has highest ROCE among peers due to low capital requirement for expansion and superior margins**



Source: Company, MNCL Research

Source: Company, MNCL Research

**Exhibit 73: RHIM has highest margins among peers due to benefits of raw material sourcing from parent and recycling of raw materials along with benefits on fixed costs**



Source: Company, Bloomberg, MNCL Research

We also believe that currently RHIM has the best business among the three listed players due to comprehensive product portfolio (Magnesia bricks, specialised refractories from Bhiwadi), strategy to expand domestic market share and also leverage its manufacturing and R&D expertise (from parent) to drive excellence in new product development, derive synergies from existing supply chain and expand to new geographies. Its presence in both, mini mills and large integrated steel plants will only grow larger in its pursuit for more Total Refractory Management contracts. The very strong domestic demand for steel is a large tailwind to RHIM's growth.

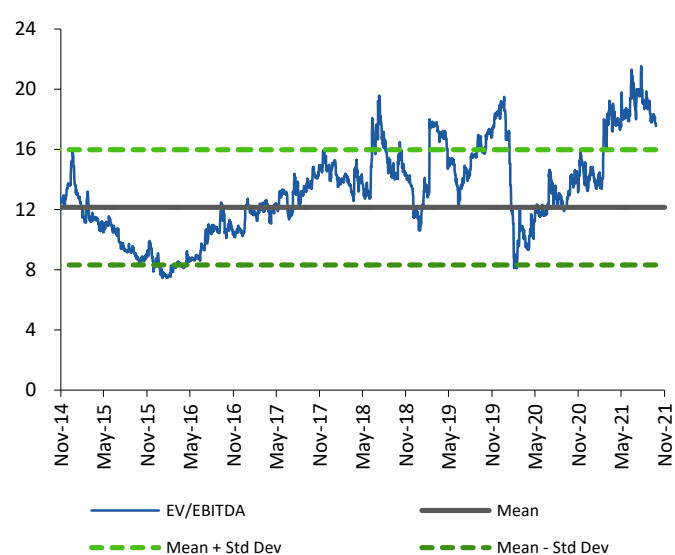
Therefore, we value RHIM at peak multiples i.e. average of 18x Sept'23E EV/EBITDA and 29x Sept'23E PER to arrive at a **TP of Rs400/share (~19% upside)** and attribute **BUY rating** to the stock. At CMP of Rs344, the stock trades at 16.6 FY23E EV/EBITDA and 25.7 FY23E PER.

#### Exhibit 74: Valuation

Valuation	Sept'23E
<b>EV/EBITDA Multiple</b>	
EBITDA (Rs mn)	3357
EV/EBITDA (x)	18
EV (Rs mn)	60418
Add: Net Cash (Rs mn)	3125
Fair value mkt cap (Rs mn)	63544
No. of shares (mn)	161
<b>Fair Value/share (Rs)</b>	<b>395</b>
<b>PE Ratio</b>	
EPS (Rs)	14.2
P/E (x)	29
<b>Fair Value/share (Rs)</b>	<b>411</b>
Avg. of P/E & EV/EBITDA (Rs)	400
CMP	344
<b>Upside</b>	<b>17.2%</b>

Source: MNCL Research estimates

#### Exhibit 75: 1-yr forward EV/EBITDA



Source: Company, Bloomberg, MNCL Research estimates

#### Exhibit 76: 1-yr forward PE ratio



Source: Company, Bloomberg, MNCL Research estimates

## New capex plan to drive aggressive growth

RHIM has recently announced its plans to spend Rs4bn on doubling its total capacity in 3 years along with aggressive focus on developing India as the manufacturing and R&D hub for its Asia and Africa market business. This will include expansion of its capacities at all locations. We believe this is triggered by two factors i.e. very steep rebound in refractory demand and RHIM also intends to capitalize on more localization – import substitution of refractory products.

We expect the following benefits from the announced capex:

- RHIM plans to manufacture certain high end refractory products at its Bhiwadi facility which it used to import from its European and American facilities. This is again an attempt at import substitution which can drive aggressive growth and reduce dependence on imports.
- The new Vizag capacity has been commissioned, which will drive higher growth in top-line as it was running at 90% utilization. Increase in Magnesia bricks capacity will further drive import substitution for the product.
- Indian facility being declared as a hub for their East Asia, South Asia and Africa markets would mean higher exports to these geographies.
- All the new capacities from the announced capex will only be commissioned after at least 9-12 months which will translate in revenues starting 2HFY23.

**We await further clarification from the company regarding the exact plan of expansion and means of financing the same before incorporating it in our target price but a preliminary attempt at estimates and valuation give us the following results.**

### Exhibit 77: Revised estimates on aggressive growth assumption based on the new capex program

Y/E Mar (Rs mn)	Revenue	YoY (%)	EBITDA	EBITDA (%)	Adj PAT	YoY (%)	Adj EPS	RoE (%)	RoCE (%)	P/E (x)	EV/EBITDA (x)
FY19	7,479	19.0	1,280	17.1	898	4.6	7.5	25.7	22.2	28.0	18.6
FY20	13,876	0.0	2,139	15.4	1,359	0.0	8.4	25.2	19.2	25.4	15.8
FY21	13,704	-1.2	2,085	15.2	1,366	0.5	8.5	18.1	17.3	22.7	14.4
FY22E	17,506	27.7	2,639	15.1	1,686	23.4	10.5	19.4	19.2	32.8	20.5
FY23E	20,548	17.4	3,342	16.3	2,216	31.4	13.8	21.8	21.4	24.9	16.4
FY24E	23,707	15.4	3,975	16.8	2,628	18.6	16.3	22.0	22.5	21.0	13.7

Source: Company, MNCL Research estimates

**Revised Target Price: On the above estimates, we value RHIM on same at average of 18x Sept'23E EV/EBITDA and 29x Sept23E PER to arrive at the TP of Rs425/share.**

## Key risks to our thesis

### Downside risk:

**Raw material (RM) price risk:** The current surge in RM cost due to high sea freight and also shortage of raw material in China can last longer than our estimates leading to downgrade in our estimates for FY23E. Pass on of high cost of RM is expected to set-off the RM cost hike starting Q4FY22. If the pass on from customers gets delayed, there is a risk of downward revision of estimates for FY22/FY23E.

**Failure of TRM strategy:** Failure of TRM strategy i.e. failure in acquiring full line contracts with new customers due to intense competition or issues over acceptability of products can lead to downward revisions in our growth estimates.

### Upside Risk:

**Inorganic expansion: RHIM is constantly looking out for refractory assets for acquisition.** This would provide a faster setup of facility to cater to robust demand from steel plants going ahead and will lead to upward revisions in our estimates subject to the structure of deal and performance of the acquired asset. Addition of new capacity at Bhiwadi will also lead to upward revision to our estimates

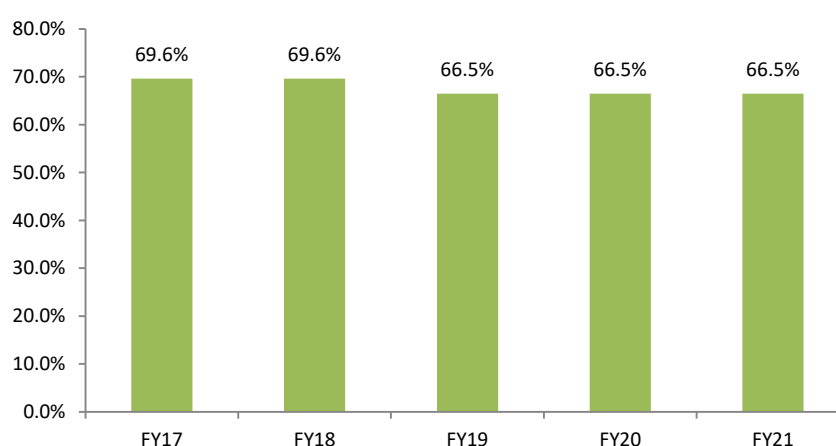
## Corporate Governance

We believe that sound corporate governance is necessary for enhancing the trust of shareholders and other stakeholders. We have undertaken a detailed corporate governance study covering broad aspects such as the composition of the board of directors, independent directors, compensation paid to the promoter directors and independent directors, details of auditors, nature and amount of contingent liabilities, related party transactions and CSR expenditure.

### Promoters and promoter group shareholding analysis

RHI Magnesita PLC is the holding company having ~66.5% stake in the company which has declined by 3% in FY19 when the merger with other RHI entities was announced. RHIM is yet to issue new shares according to swap ratio to the shareholders of RHI Clasil and RHI India Ltd. which will take the total shareholding to 70% in the merged entity. The details of the shareholding and its movement are indicated in the chart below.

**Exhibit 78: Promoters have slightly decreased stake in last 5 years owing to the merger**



Source: Company, MNCL Research

### Independent directors – Representation analysis

Over the last 5 years, RHIM's board has not maintained 50% of independent directors except FY20. This is not best of the practices followed by corporates. However, they have maintained the presence of women on board for the last 5 years. The details of the board composition are as follows:

**Exhibit 79: Board Composition**

Particulars	FY17	FY18	FY19	FY20	FY21
- Total Strength	6	6	6	6	7
- Promoter Group Directors	0	0	0	0	0
- Executive Directors	1	1	1	1	2
- Non -Executive Directors	5	5	5	5	2
- Independent Directors	2	2	2	3	3
- % share of Promoters	0	0	0	0	0
- % share of Executive and Non-Executive Director	17	17	17	17	29
- % share of Independent Directors	33	33	33	50	43

Source: Company, MNCL Research



## Executive director and promoter compensation analysis

The executive director compensation has never exceeded the permissible limit set by Companies Act. This shows the best of corporate governance practice followed by the company.

### Exhibit 80: Executive Director Compensation

Designation (compensation in Rs mn)	FY16	FY17	FY18	FY19	FY20
-Managing Director	21	23	28	28	35
- % share of PBT	2.0	1.8	2.0	1.5	1.9
<b>- Total executive director compensation</b>	<b>21</b>	<b>23</b>	<b>28</b>	<b>28</b>	<b>35</b>
<b>- % share of PBT</b>	<b>2.0</b>	<b>1.8</b>	<b>2.0</b>	<b>1.5</b>	<b>1.9</b>

Source: Company, MNCL Research

## Independent directors – Compensation analysis

In FY21, the independent directors were collectively paid Rs1.18mn equivalent to 0.09% of PAT. As per the company law, each independent director can be paid sitting fees of up to Rs1lakh per board meeting. Sitting fees paid to RHIM's independent director is well within this permissible limit. Also, the directors charged no commission, which displays good corporate governance. The details of the same are as follows:

### Exhibit 81: Independent Directors & their Compensation

Name	Sitting fees (Rs mn)	Commission (Rs mn)	FY20 Compensation (Rs mn)
Dr. Vijay Sharma	0.40	0.00	0.40
Mr. R. S. Bajoria	0.20	0.00	0.20
Ms. Sonu Chadha	0.40	0.00	0.40
Mr. Nazim sheikh	0.18	0.00	0.18
<b>Total</b>	<b>1.18</b>	<b>0.00</b>	<b>1.18</b>
<b>As % to PAT</b>	<b>0.09</b>	<b>0.00</b>	<b>0.09</b>

Source: Company, MNCL Research

## Contingent liability analysis

RHIM's contingent liabilities have been negligibly low as compared to its net worth for the last 5 years and therefore does not raise any red flag.

## Related party transaction analysis

RHIM's related party transactions in the last 5 years have been mainly sales, purchase, royalty payments to parent and subsidiaries which does not raise any red flag.

## Auditor compensation analysis

RHIM has appointed M/S Price Water house Chartered Accountants LLP, as its statutory auditor for a period of 5years starting FY18. The fee paid to them is a nominal amount of Rs11.4mn (0.6% of Profit before Tax). M/S Deloitte Haskins and Sells was the statutory auditor for RHIM before this change in auditors in FY18. The details are as follows:

### Exhibit 82: Auditor Compensation

Auditor Name	Type	Auditor Since	Auditor Fees – FY21 (Rs mn)	As % to PBT
M/S Price Water house Chartered Accountants	Statutory	FY18	11.4	0.6%

Source: Company, MNCL Research

## Company Background

RHI Magnesita India Ltd. has been incorporated in 2021 due to the merger of three RHI entities – Orient refractories, RHI India and RHI Clasil. The details of the three entities are as follows:

**Exhibit 83: Operational details of RHI entities**

	Orient Refractories	RHI Clasil Ltd.	RHI India
Refractory products	Isostatic pressed continuous casting refractories, slide gates, plates, nozzles, etc. Shaped: unshaped - 85%:15%	Alumina based refractories - mainly bricks - contract manufacturing	All refractory products sourced from various RHI entities - incl. imports from RHI entities
Area of specialization	Tundish and ladle Low cost manufacturer largely supplying to mini mills	Furnace and lining . An exporter of refractories as it is situated in Vizag, very close to port	All types
Production Facilities	Bhiwadi, Cuttack, Salem	Vizag	Trading company
Capacity	Special products – 45000 tonnes Cuttack – 13000 tonnes	Basic products – 65,000 tonnes	-
Customer profile	45% - mini mills; Rest - PSU and integrated steel plants	Steel and Cement industry	80% to large integrated steel plants 6-9%. It manufactures non value added products. So no scope of substantial margin improvement
Margin trajectory	Depends on product mix	Contract Manufacturing - Cost + 10% basis	
Sales/ distribution	7 sales offices in cities like Ludhiana, Hospet and Raipur	8 sales office in cities like Kolkata, Surat and Jamshedpur	Sales office in Hyderabad
RHI stake	69.6%	53.7%	100%

Source: Company, MNCL Research

### Key customers of the merged entity:

Jindal Stainless Ltd., JSW Steel, Gerdau, Tata Steel, Lafarge Holcim, Sunflag Steel, Birla Shakti Cement, SAIL, etc.

### Shareholding of promoter:

After the completion of merger i.e. post issuance of new shares to the shareholders of RHI Clasil and RHI India, the promoter RHI Magnesita PLC will hold ~70% stake in the company.

## Quarterly Financials

### Exhibit 84: Quarterly Financials – Merged entity numbers

Y/E March (Rs mn)	Q1FY21	Q2FY21	Q2FY21	Q4FY21	Q1FY22	Q2FY22
<b>Net sales</b>	<b>2316</b>	<b>3476</b>	<b>3839</b>	<b>4073</b>	<b>4293</b>	<b>4326</b>
Other Operating Income	0	0	0	0	0	0
<b>Total Income</b>	<b>2316</b>	<b>3476</b>	<b>3839</b>	<b>4073</b>	<b>4293</b>	<b>4326</b>
Accretion to Stocks in trade & work in progress	(238)	144	(167)	(377)	(653)	(611)
Cost of Raw materials consumed	847	1107	1350	1648	1420	1535
Purchase of traded goods	815	996	1195	1235	1914	1800
Staff cost	207	247	277	325	279	303
Other operational expenses	402	492	524	591	590	643
<b>Operating Profit (Core EBITDA)</b>	<b>283</b>	<b>491</b>	<b>660</b>	<b>652</b>	<b>742</b>	<b>656</b>
Depreciation	70	72	78	78	78	82
<b>EBIT</b>	<b>213</b>	<b>419</b>	<b>581</b>	<b>574</b>	<b>665</b>	<b>573</b>
Interest	5	8	10	42	26	(9)
Other Revenue/Income	27	29	19	49	36	8
Exceptional items	0	0	0	0	0	0
<b>Profit Before Tax</b>	<b>235</b>	<b>440</b>	<b>590</b>	<b>581</b>	<b>675</b>	<b>591</b>
Tax	59	115	151	155	175	160
<b>Profit After Tax</b>	<b>176</b>	<b>326</b>	<b>439</b>	<b>426</b>	<b>500</b>	<b>431</b>
<b>Growth (%)</b>						
Revenue	38.4	115.1	65.8	17.2	5.4	0.8
EBITDA	2.1	78.4	133.0	32.9	13.8	-11.6
PAT	-10.4	67.9	150.1	30.7	17.5	-13.8
<b>Margin (%)</b>						
EBITDA	12.2	14.1	17.2	16.0	17.3	15.2
EBIT	9.2	12.1	15.1	14.1	15.5	13.3
PAT	7.6	9.4	11.4	10.4	11.6	10.0

Source: Company, MNCL Research

## Financials (Merged entity)

### Exhibit 85: Income Statement

Y/E March (Rs mn)	FY20	FY21	FY22E	FY23E	FY24E
<b>Revenues</b>	<b>13,876</b>	<b>13,704</b>	<b>17,506</b>	<b>19,971</b>	<b>21,744</b>
Materials cost	8,644	8,554	11,170	12,476	13,480
<i>% of revenues</i>	62.3	62.4	63.8	62.5	62.0
Employee cost	924	1,056	1,193	1,348	1,524
<i>% of revenues</i>	6.7	7.7	6.8	6.8	7.0
Others	2,169	2,008	2,503	2,956	3,218
<i>% of revenues</i>	15.6	14.7	14.3	14.8	14.8
<b>EBITDA</b>	<b>2,139</b>	<b>2,085</b>	<b>2,639</b>	<b>3,191</b>	<b>3,522</b>
<b>EBITDA margin (%)</b>	<b>15.4</b>	<b>15.2</b>	<b>15.1</b>	<b>16.0</b>	<b>16.2</b>
Depreciation & Amortisation	262	298	332	381	425
<b>EBIT</b>	<b>1,878</b>	<b>1,787</b>	<b>2,307</b>	<b>2,809</b>	<b>3,097</b>
Interest expenses	123	65	62	67	40
<b>PBT from operations</b>	<b>1,754</b>	<b>1,723</b>	<b>2,245</b>	<b>2,742</b>	<b>3,057</b>
Other income	104	123	40	159	215
Exceptional items	<b>1,858</b>	<b>1,846</b>	<b>2,285</b>	<b>2,901</b>	<b>3,272</b>
<b>PBT</b>	<b>499</b>	<b>480</b>	<b>594</b>	<b>754</b>	<b>851</b>
Taxes	26.9	26.0	26.0	26.0	26.0
<i>Effective tax rate (%)</i>	<b>1,359</b>	<b>1,366</b>	<b>1,691</b>	<b>2,147</b>	<b>2,421</b>
<b>Reported PAT</b>	<b>1,359</b>	<b>1,366</b>	<b>1,691</b>	<b>2,147</b>	<b>2,421</b>
<b>Adjusted PAT</b>	<b>13,876</b>	<b>13,704</b>	<b>17,506</b>	<b>19,971</b>	<b>21,744</b>

Source: MNCL Research Estimates

### Exhibit 86: Key Ratios

Y/E March	FY20	FY21	FY22E	FY23E	FY24E
<b>Growth Ratio (%)</b>					
Revenue	NA	(1.2)	27.7	14.1	8.9
EBITDA	NA	(2.5)	26.6	20.9	10.4
Adjusted PAT	NA	0.5	23.8	27.0	12.8
<b>Margin Ratios (%)</b>					
EBITDA	15.4	15.2	15.1	16.0	16.2
PBT from operations	12.6	12.6	12.8	13.7	14.1
Adjusted PAT	9.8	10.0	9.7	10.8	11.1
<b>Return Ratios (%)</b>					
ROE	25.2	18.1	19.5	21.2	20.4
ROCE	19.2	17.3	19.2	20.5	20.2
ROIC	21.4	18.8	21.6	24.3	25.8
<b>Turnover Ratios (days)</b>					
Gross block turnover ratio (x)	7.7	4.6	5.1	5.0	4.9
Debtors	87	87	80	82	82
Inventory	73	94	110	105	105
Creditors	62	93	100	100	100
Cash conversion cycle	99	89	90	87	87
<b>Solvency Ratio (x)</b>					
Net debt-equity	-0.1	-0.1	-0.2	-0.2	-0.3
Debt-equity	0.1	0.1	0.1	0.0	-
Interest coverage ratio	15.3	27.6	37.2	42.0	77.4
Gross debt/EBITDA	0.3	0.3	0.2	0.1	-
Current Ratio	2.8	2.4	2.3	2.3	2.4
<b>Per share Ratios (Rs)</b>					
Adjusted EPS	8.4	8.5	10.5	13.3	15.0
BVPS	43.7	50.1	57.9	67.9	79.2
CEPS	10.1	10.3	12.6	15.7	17.7
DPS	1.9	2.1	2.6	3.3	3.8
Dividend payout %	22%	25%	25%	25%	25%
<b>Valuation (x)*</b>					
P/E (adjusted)	25.4	22.7	32.7	25.7	22.8
P/BV	4.9	3.9	5.9	5.0	4.3
EV/EBITDA	15.8	14.4	20.4	16.6	14.6
Dividend yield %	0.9%	1.1%	0.8%	1.0%	1.1%

Source: MNCL Research Estimates

**Exhibit 87: Balance Sheet**

Y/E March (Rs mn)	FY20	FY21	FY22E	FY23E	FY24E
<b>SOURCES OF FUNDS</b>					
Equity Share Capital	161	161	161	161	161
Reserves & surplus	6,872	7,897	9,165	10,775	12,591
Shareholders' fund	7,033	8,058	9,326	10,936	12,752
Total Debt (incl. pref shares if its thr)	656	598	598	346	-
Def tax liab. (net)	-	-	-	-	-
Minority interest	-	-	-	-	-
<b>Total Liabilities</b>	<b>7,689</b>	<b>8,656</b>	<b>9,924</b>	<b>11,282</b>	<b>12,752</b>
Gross Block	2,810	3,208	3,691	4,238	4,725
Less: Acc. Depreciation	578	832	1,165	1,546	1,971
Net Block	2,232	2,375	2,527	2,692	2,754
Capital WIP	86	463	547	545	313
Net Fixed Assets	2,318	2,838	3,074	3,237	3,067
Right to use asset	43	56	56	56	56
Investments	0	0	0	0	0
Inventories	2,778	3,531	5,276	5,745	6,255
Sundry debtors	3,324	3,277	3,837	4,487	4,885
Cash	1,270	1,602	2,026	2,713	3,884
Loans & Advances	56	52	48	55	60
Other assets	728	1,240	1,003	1,141	1,241
Total Current Asset	8,156	9,702	12,189	14,140	16,325
Trade payables	2,351	3,479	4,796	5,471	5,957
Lease liabilities	9	23	23	23	23
Other current Liab.	383	323	480	547	596
Provisions	84	116	96	109	119
Net Current Assets	5,328	5,762	6,794	7,989	9,629
<b>Total Assets</b>	<b>7,689</b>	<b>8,656</b>	<b>9,924</b>	<b>11,283</b>	<b>12,752</b>

**Exhibit 88: Cash Flow**

Y/E March (Rs mn)	FY20	FY21	FY22E	FY23E	FY24E
Operating profit bef working capital changes	2,263	2,136	2,639	3,191	3,522
Changes in working capital	-40	16	-609	-508	-469
<b>Cash flow from operations</b>	<b>1,732</b>	<b>1,654</b>	<b>1,436</b>	<b>1,929</b>	<b>2,203</b>
Net Capex	828	853	568	545	255
FCF	904	801	868	1,384	1,948
<b>Cash flow from investments</b>	<b>260</b>	<b>-788</b>	<b>-528</b>	<b>-386</b>	<b>-40</b>
<b>Cash flow from financing</b>	<b>-1,179</b>	<b>-537</b>	<b>-485</b>	<b>-856</b>	<b>-991</b>
<b>Net change in cash</b>	<b>813</b>	<b>330</b>	<b>423</b>	<b>687</b>	<b>1,171</b>

Source: MNCL Research Estimates

## Refractory – Industry Background

### Refractories- Overview

#### Introduction

Refractories are material having high melting points, with properties that make them suitable to act as heat-resisting barriers between high and low temperature zones. Refractories are inorganic non-metallic material which can withstand high temperature without undergoing physical or chemical changes while remaining in contact with molten slag, metal and gases.

#### Raw Materials

The principal raw materials used in the production of refractories are: the oxides of silicon, aluminum, magnesium, calcium and zirconium and some non-oxide refractories like carbides, nitrides, borides, silicates and graphite.

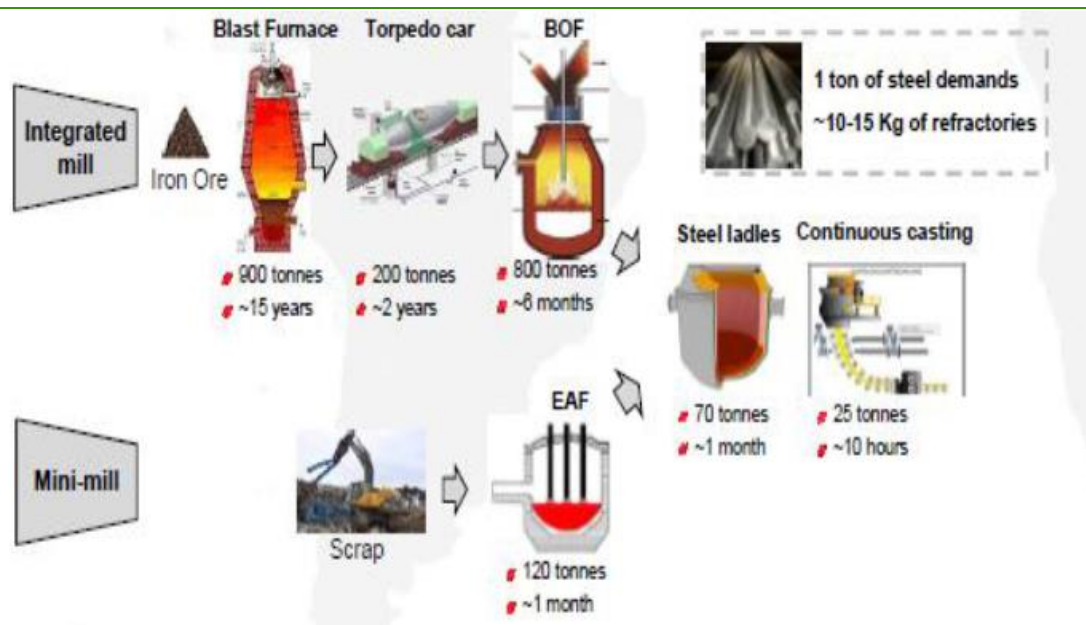
#### Uses

Refractories are used by the metallurgy industry in the internal linings of furnaces, kilns, reactors and other vessels for holding and transporting metal and slag. In non-metallurgical industries, the refractories are mostly installed on fired heaters, hydrogen reformers, ammonia primary and secondary reformers, cracking furnaces, utility boilers, catalytic cracking units, coke calciner, sulfur furnaces, airheaters, ducting, stacks, etc.

#### Classification

Refractories are classified according to their physical form. These are the shaped and unshaped refractories. The shaped is commonly known as refractory bricks and the unshaped as “monolithic” refractories. Shaped refractories are those which have fixed shaped when delivered to the user. These are what we call bricks. Brick shapes may be divided into two: standard shapes and special shapes. Unshaped refractories are without definite form and are only given shape upon application. It forms joint less lining and are better known as monolithic refractories. These are categorized as Plastic refractories, ramming mixes, castables, gunning mixes, fettling mixes and mortars.

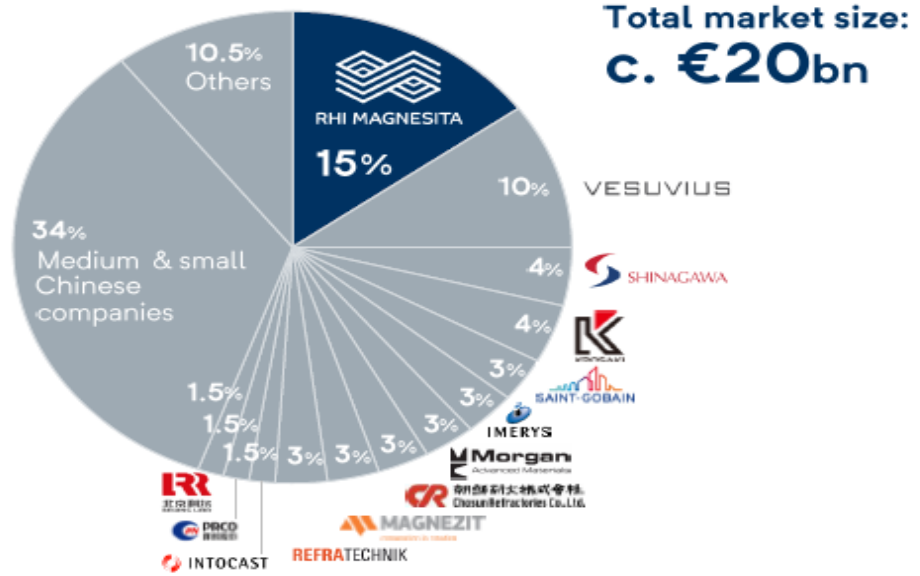
#### Exhibit 89: Use of refractory in steel making – Quantity and lifespan



Source: RHI Magnesita ppt, MNCL Research

Exhibit 90: Global market of refractories

Global market share



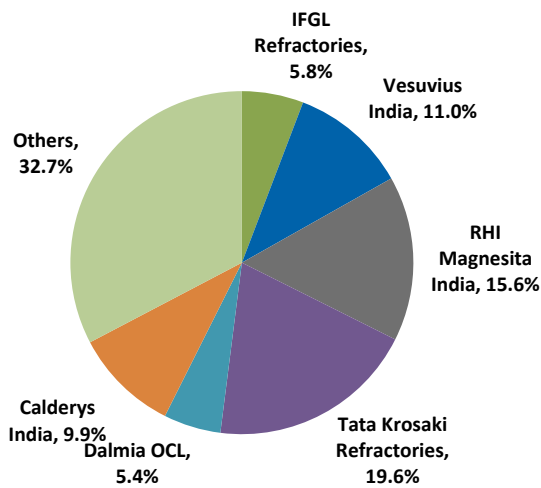
Source: RHI Magnesita ppt, MNCL Research

Refractory Market - India

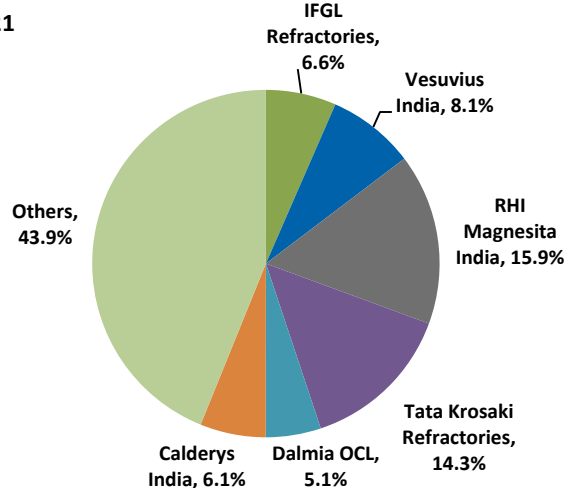
Exhibit 91: Couple of large players lost market share but IFGL's and RHI Magnesita's market share has improved

Exhibit 92: Gain in market share was possible due to customer and product additions

FY15



FY21



Source: Company, Private Circle, MNCL Research

Source: Company, Private Circle, MNCL Research

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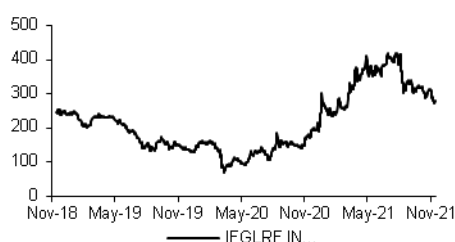
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### IFGL Refractories Ltd.



Source: Bloomberg, MNCL Research

### RHI Magnesita India Ltd.



Source: Bloomberg, MNCL Research

Analyst holding in stock: **NO**

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Buy: Upside by >15%, Accumulate: Upside by 5% to 15%, Hold: Downside/Upside by -5% to +5%, Reduce: Downside by 5% to 15%, Sell: Downside by >15%

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