

AIA ENGINEERING LIMITED

... ..vast opportunity ensures growth visibility

LKP
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AIA Engineering Limited (AIAE) is a dominant player in High Chrome Mill Internals (HCMI), a Global Duopoly. Highly engineered consumables are used for grinding and crushing in mining and cement industry and offer a sizeable play on global mining consumables space in grinding media for gold, copper and iron having an addressable market opportunity of ~2-2.5 mn tons. Mining offers immense growth prospects as only 20- 25% of consumables have shifted from conventional forged products to high chrome, where AIAE's solutions are superior to peers with strong value proposition. In addition to grinding media, the company is also very bullish in the Mill Liner segment where it is manufacturing and supplying Metal Liners based on unique patented Mill Liner design. In Cement Industry which has been one of the mainstays of growth all these years has matured in usage of High Chrome Mill Internals use and AIAE has attained strong market share of 95% domestically. Company's growth is linked mainly to the overall growth of the industry and gaining higher market share. AIAE's technological leadership over the years in high chrome mill internals, strong growth opportunity in mining sector and superior financial metrics of growth, margins, cash flows and ROIC are key business moats. Hence we Initiate BUY and value the stock at 30x FY26E with a TP of ₹4,225

High growth opportunity in mining as it shifts to high chrome media

AIAE is focused on three major ores namely iron, gold and copper which have an annual addressable replacement market of 2-2.5mn MT for mill internals. Mining industry is undergoing a shift from conventional forged grinding media to more efficient and cost saving solution of high chrome grinding media. While 15-20% market has converted to high chrome, 80-85% market would convert gradually providing a decadal growth opportunity. Compared to the opportunity size of 2-2.5mn MT, AIAE's supplies are ~200,000 MT in FY23E, with likely volume addition of ~40,000 MT every year. AIAE is also a dominant supplier of such products for the cement industry with a domestic market share of 95% and global (ex-China) market share of 35%.

Mill Liners addition enhances AIAE's value proposition significantly

Along with high chrome grinding media, the commissioning of a dedicated mill liner plant has enhanced AIAE's value proposition materially. Its solutions are now superior to peers in terms of lower wear rates, better through-puts, savings in capital and operating costs and improved ore recovery in down process. Similar to the market share dominance achieved by AIAE in the cement industry, it is poised to attain a similar leading market share in mining industry worldwide.

Key Financials	FY22	FY23	FY24E	FY25E	FY26E
Total Sales (₹ mn)	35665	49088	49804	56729	62757
EBITDA Margins (%)	20.2	25.3	27.5	24.2	24.2
PAT Margins	17.4	21.5	23.1	21.1	21.1
EPS (₹)	65.7	112.0	121.8	126.9	140.7
P/E (x)	54.6	32.1	29.5	28.3	25.5
P/BV (x)	7.1	5.9	5.1	4.4	3.8
EV/EBITDA (x)	44.8	25.2	22.8	22.4	19.8
RoE (%)	13.7	20.2	18.6	16.6	16.0
RoCE (%)	13.4	19.4	17.4	15.8	15.3

Rating	BUY
Current Market Price (₹)	3,560
12M Price Target (₹)	4,225
Potential upside (%)	19

Stock Data

Sector :	Industrial Products
FV (₹) :	2
Total Market Cap (₹ bn) :	336
Free Float Market Cap (₹ bn) :	141
52-Week High / Low (₹)	3,830 / 2,384
BSE Code / NSE Symbol	532683 / AIAENG
Bloomberg :	AIAE IN

Shareholding Pattern

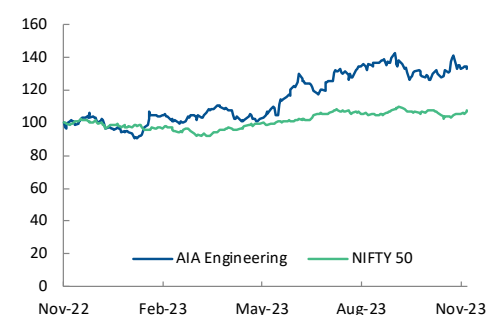
(%)	Sep-23	Jun-23	Mar-23	Dec-22
Promoter	58.47	58.47	58.47	58.47
MFs	17.38	18.02	18.02	17.78
FPIs	18.50	18.05	18.04	17.78
Insurance	2.48	2.45	2.29	2.58
Others	3.17	3.01	3.18	3.39

Source: BSE

Price Performance

(%)	1M	3M	6M	12M
AIAE	2.7%	-1.0%	28.0%	36.8%
Nifty 50	0.2%	1.5%	8.1%	7.4%

* To date / current date : November 16, 2023

AIAE vs Nifty 50

Business strength well validated through the underlying strong financial metrics

AIAE has grown revenues/EPS CAGR of 11%/17% over FY13-23. Over this period, margins have shown good consistency with an average gross/EBITDA margin of 62%/24% reflecting ability to pass on variations in raw material and freight costs. Average OCF/EBITDA of 57% and sizeable FCF have led to a strong balance sheet (net cash of INR 25.6bn in Mar-23). Average post-tax ROIC of 23% remains strong and reflects prudence in capital allocation.

Capex to spur growth

To capitalise on the conversion trend from forged media to high chrome mill internals in the mining industry, AIAE plans to expand capacity from 440,000mt to 520,000mt by FY24 through brownfield capex of ₹2bn. The company has a healthy balance sheet (net cash of ₹ 25bn as of FY23) with negligible leverage and strong free cash flow generation.

Outlook

AIAE's strategy is to serve as a complete solution provider for grinding media and mill liners. The company has indicated that core client industries remain strong and that it does not anticipate any major macroeconomic challenges for its customers in the mining, cement and utilities verticals over the next 12 months. To capitalise on the conversion trend from forged media to high chrome mill internals in the mining industry, AIAE plans to expand capacity from 440,000mt to 520,000mt by FY24 through brownfield capex of ₹2bn. The company has a healthy balance sheet (net cash of ₹25bn as of FY23) with negligible leverage and strong free cash flow generation. AIAE's technological leadership over the years in high chrome mill internals, strong growth opportunity in mining sector and superior financial metrics of growth, margins, cash flows and ROIC are key business moats. Hence we Initiate BUY and value the stock at 30x FY26E with a TP of ₹4,225

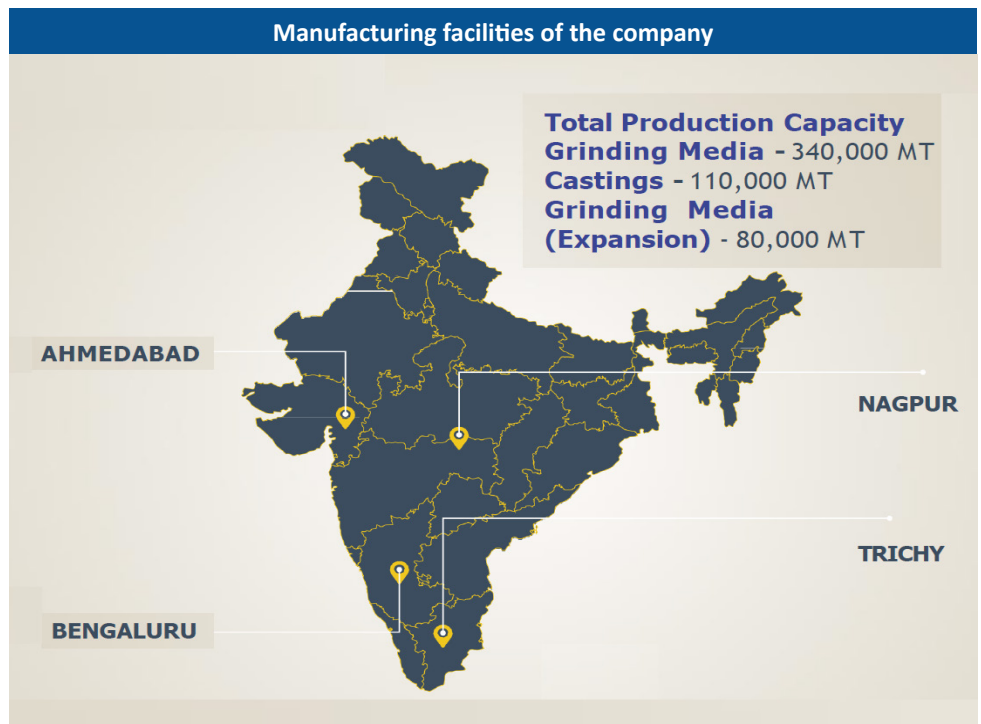
Concerns/Risks

- **Forex fluctuations:** AIA derives nearly 73% of product sales through exports while imports are largely domestically sourced. Any sharp appreciation in INR is likely to result in likely compression in operating margins.
- **Sharp increase in commodity prices:** While AIAE has ability to pass impact of increase in raw material and freight costs, the same happens with a 3-6 month lag. In the interim, any sharp movement in these costs can lead to compression in margins.
- **Protectionist policies/anti-dumping duties in export markets:** AIAE uses its India based facilities as a manufacturing hub for exports around the world. In the recent past anti-dumping duties imposed by its target countries like Canada, Brazil and South Africa have impacted the company's sales volumes. Any increase in such protectionist measures can lead to volume disruption in future as well.

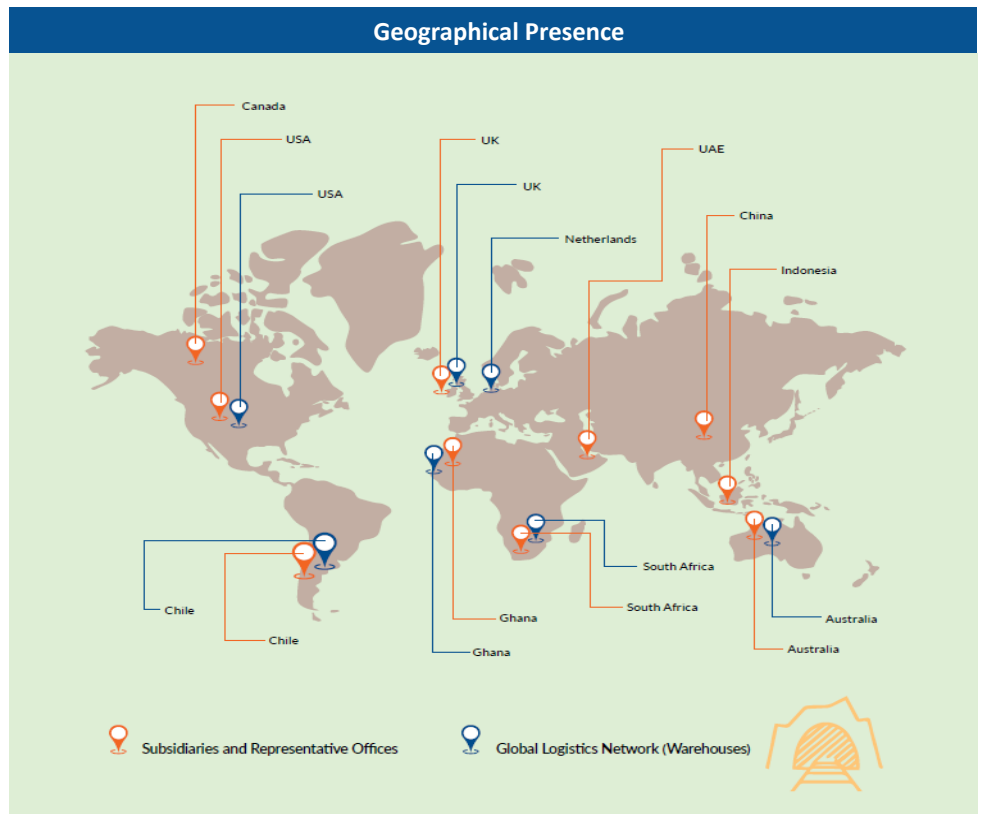
Business Overview

About the Company: AIAE designs, manufactures and markets a wide range of consumable wear parts (Mill Internals) which are used in the process of Crushing and Grinding in Cement, Mining, Thermal Power and Aggregate industries. AIAE partners with customers in these industries in their cost and process optimization journey, helping them improve operational parameters. Company employs casting process for the manufacture of the products. AIAE primarily services the Global Cement and Mining Industries, where it offers customised grinding and crushing solutions relating to consumable wear parts which are used in the process of grinding and crushing in Cement and Mining industries. In India, they are also servicing the Thermal Power Plants by offering similar solutions for grinding/crushing of coal/lignite used in the Boilers. In Mining industry the level of penetration of High Chrome wear parts (mainly High Chrome Grinding Media and Mill Liners) is only in the region of around 20-25% thereby leaving a considerable growth opportunity for conversion of the mines from the use of conventional wear parts (mainly Forged Grinding Media) into their High Chrome Grinding Media. AIA key focus at present is the Global Mining Industry with specific focus on Copper, Gold and Iron ore mines across all Geographies where mining of these ores is happening.

AIAE has manufacturing plants located at Ahmedabad, Nagpur, Bengaluru and Trichy with total installed capacity of 390,000 MT as on FY22. It recently commissioned 50,000 MT liners capacity in 2QFY23 while another greenfield plant of 80,000 MT grinding media is scheduled for commissioning by end of FY24. Both these plants will lead to enhancement in total capacity of AIAE from 390,000 MT in FY22 to 520,000 MT by end-FY24, thereby aiding enhanced volume growth. While the manufacturing is entirely done domestically, the international markets form a significant share of total revenue at 78% in FY22. AIAE offers its products and customer support globally through its wholly owned subsidiary Vega Industries (Middle East) FZC, which in turn has many step down subsidiaries in various geographies.



Source: Company, LKP Research



Source: Company, LKP Research

Industry Perspective

Strong standing in the Cement space

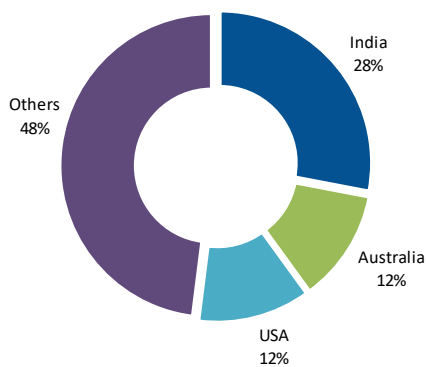
The global cement market is projected to grow from USD340 bn in 2022 to USD482 bn by 2029, at a CAGR of 5.1% given rising population leading to increased demand for residential and spends on infrastructure. The opportunity in Cement Industry for the products continued to be in the range of around 3 Lakhs – 3.25 Lakhs tons per annum, and excluding China this was around 1.8 Lakhs – 2 Lakhs tons per annum. Again, from a Global Industry perspective, the Cement Industry has practically worldwide converted into the use of High Chrome consumable wear parts. While the overall demand position of Mill Internals in Cement Industry has remained flat, in certain markets particularly markets like India and East Asian markets as well as certain other pockets in Southern Hemisphere, the demand has remained quite strong. Going forward, Cement Industry should continue to grow at a near double digit growth rate in India and in normal single digit growth rate of around 3% to 4% worldwide and matching with this AIA supplies to the Cement Industry will also therefore grow in tandem, with some additional growth coming from increased market share. However, as compared to Mining, the consumption of wear parts in Cement Industry is much lower and therefore in absolute terms this will imply only some marginal increase in AIA's volumes in this industry.

Key Business Strengths

High technology-oriented engineering and customized nature of product

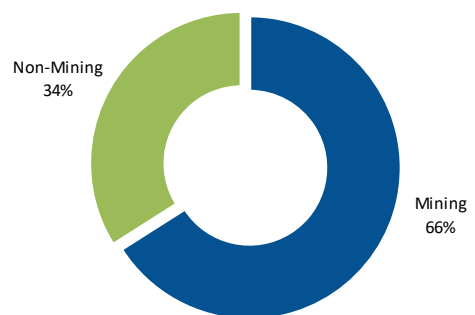
AIAE is India’s largest and world second largest manufacturer of impact, abrasion and wear resistant, High Chrome Mill Internals (HCMI), used primarily in cement, mining and thermal utility industries. Products primarily comprise of grinding media/grinding balls, mill liners and other mill internals for use in the grinding and crushing mills catering to the cement, mining and thermal power industries. Since the ores of even the same commodity vary significantly from one site to another the metallurgy of the consumables needs to be customised for each site and each ore. Also, their design needs to be optimised to improve the efficiency of grinding, reduce power consumption (~50% of cost of grinding cost) and improve the flow of materials through the mill. The design of mill liners needs to be optimised to have the right amount of lift of grinding media in the mill and to ensure that the drop/impact of the media is on the ore and not on the liner. If the grinding media do not drop on the ore then efficiency of grinding gets compromised.

Geography wise revenue split in FY23



Source: Company, LKP Research

Product wise revenue split in FY23



Source: Company, LKP Research

High replacement demand drives volumes

The company services the replacement demand of the cement, mining and thermal utility industries and the original equipment manufacturer (OEM) requirement for new capacities added. AIAE also offers such wear products for use in quarries supplies crushed aggregates. These products being consumable in nature, replacement demand by processing plants forms a large part of the total demand with the rest being demand from OEMs supplying the capital equipment like mills and crushers. As the products are of daily need, the volume offtake is largely driven by replacement demand. This is a key positive as despite being in the capital goods sector, the business model is not cyclical.

Mining offers high growth prospects after dominance in Cement

Over the decades, AIAE has developed technical expertise in metallurgy, grinding applications and component design for tube and vertical mills used in the cement sector. AIAE has achieved a dominant 95-97% market share in India and 30-35% market share worldwide (ex-China) in the cement sector. Over the years, cement sector has matured and attained full penetration of high chrome media owing to its various benefits. However, mining sector is still in the process of gradually transitioning from conventional forged media to high chrome media, with the current level of penetration being only 15-20%.

This offers strong and prolonged growth potential as (1) consumption volumes of grinding media is 10x in mining compared to cement, and (2) cost saving for a customer is significantly higher as cost of wear parts is 8- 10% of total production cost in mining vs. 1-2% in cement.

Sticky Customer Base: Mineral processing sites do not tend to easily switch to a substitute supplier due to the high cost of initial planning involved, lead time required for approvals, degree of certainty of the products of an established supplier, high cost of downtime of a site, and relatively lower percentage cost of components in the total operating costs of a mineral processing site. It takes up to 18 months to become an approved supplier once approved by a customer and these approvals do not have an expiry period.

Play on OPEX Cycle

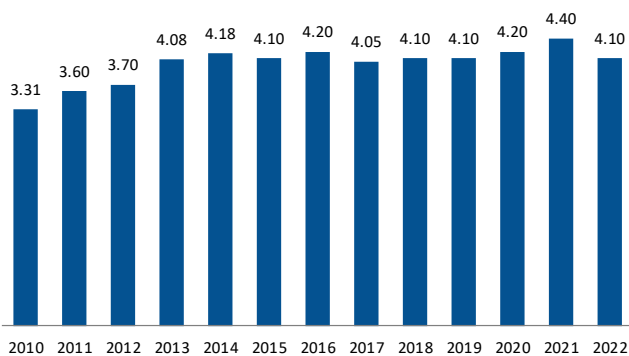
Manufacturers of grinding media, mill Liners and other consumables primarily cater to the after-market spends of a mineral processing unit. The life of these consumables typically varies from 6 months and up to 2 years based on the hardness of the ore to be refined. After-market spend is typically three times the upfront capex spend over the lifecycle of a mill, and is a recurring cost for miners.

Highly penetrated market; growth tied to the industry outlook

The Cement industry has largely converted into high chrome mill internals which restricts incremental opportunity of conversion of customers from forged to high chrome media. Also, with dominant market share of 95% in India and sizeable 35% globally (ex-China), AIAE’s growth outlook is linked to the underlying industry growth rather than market share expansion. The Indian cement industry remains an important focus area for AIAE.

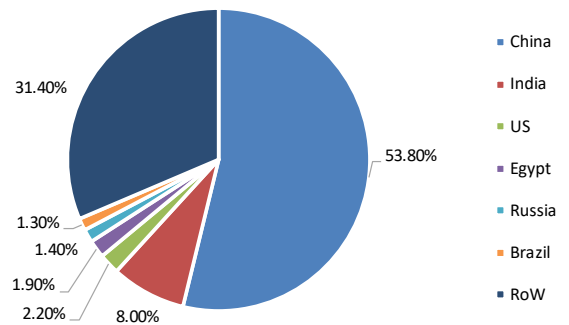
Stable demand globally

■ Global Cement production trend (MT)



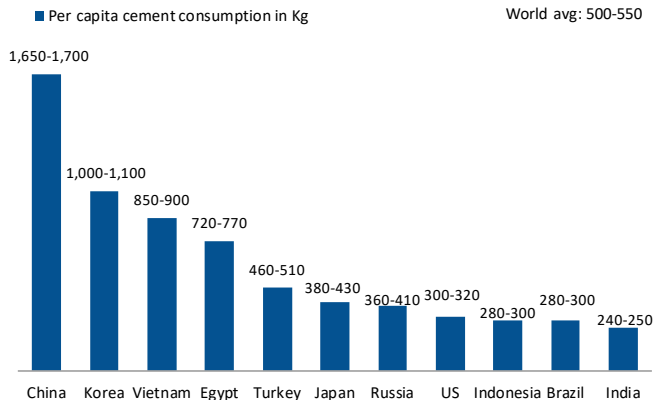
Source: Company, LKP Research

India is the second largest cement producer in the world



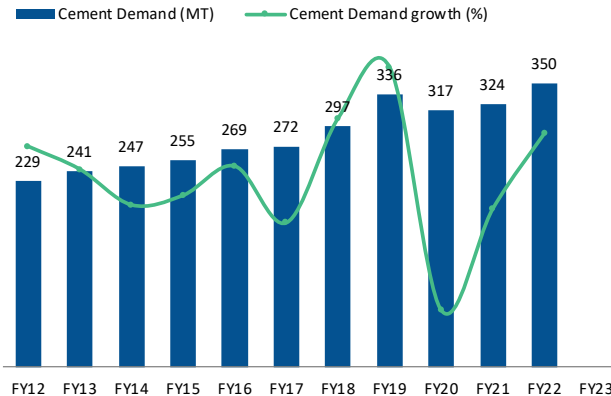
Source: Company, LKP Research

India remains a highly under penetrated market



Source: Company, LKP Research

Cement demand in India expected to grow

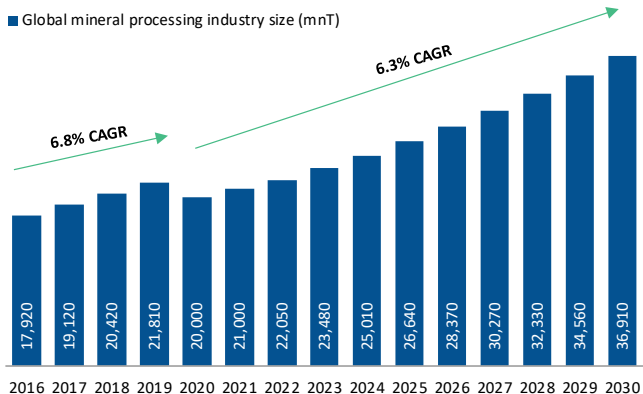


Source: Company, LKP Research

Mining provides another dimension for growth

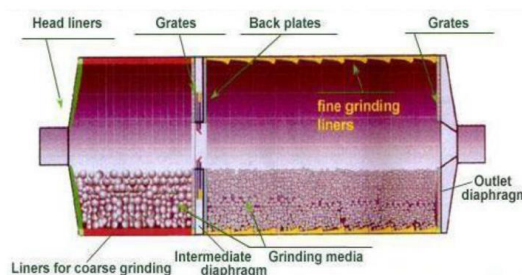
Globally the Mining Industry is growing at the rate of around 3% to 4% per annum has remained largely unaffected from the disruptive factors which impacted other economies as fallout of the geopolitical tensions, particularly considering the fact that Mining Industry is concentrated in certain regions like North America, Latin America, Australia, Africa, Far East, China and CIS countries and has a very little presence in Europe. Further, while Copper and Gold have continued to remain extremely bullish, Iron being the base metal has also witnessed a steady growth trend. Particularly about Copper, its prospects for a sustained growth are extremely bright given the fact that the whole world is now moving towards Renewables/EVs and as a direct fallout the demand for Copper, being the metal of choice for Electrical industry, Copper consumption is expected to grow manifold in the coming years, given the increased focus in the Global markets on Environmental Protection and sustainability. It is also noteworthy that the miner processing industry typically grows 300-400bps faster than the underlying growth in the end commodity due to de-gradation of ores leading to declining yields.

Mineral processing industry outlook



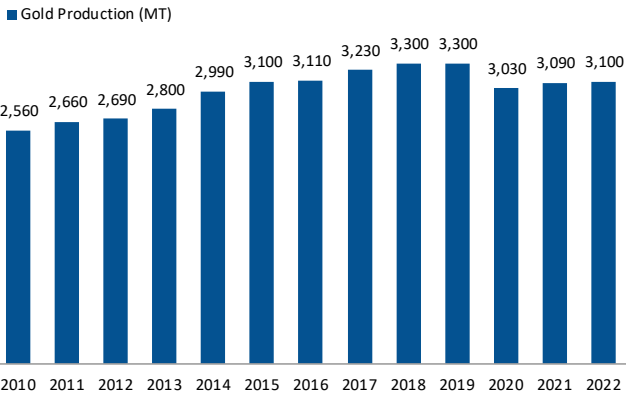
Source: LKP Research

Tube mill internal showcasing high Chromium wear resistant parts for grinding & crushing equipment



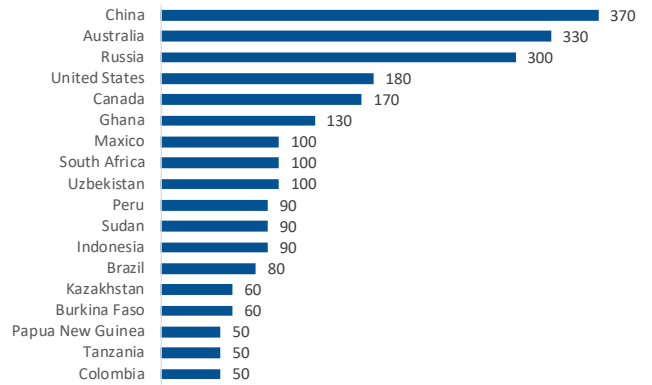
Source: Company, LKP Research

Global gold mining production trend



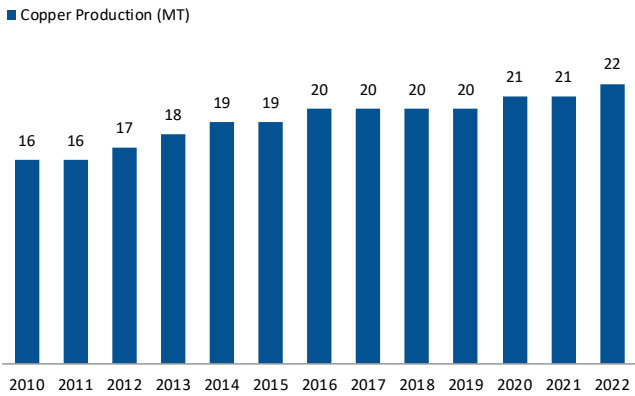
Source: Company, LKP Research

Global country wise gold mining production



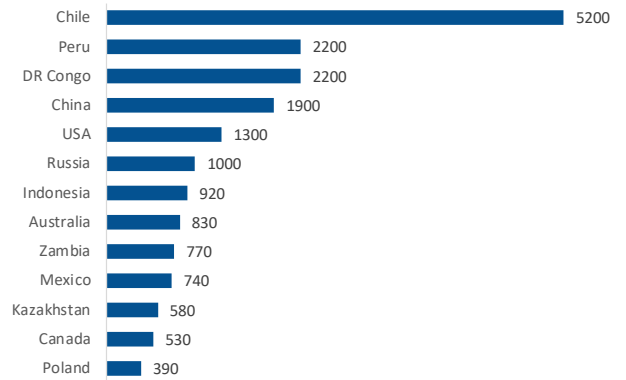
Source: Company, LKP Research

Global copper mining production trend



Source: Company, LKP Research

Global country wise copper mining production



Source: Company, LKP Research

Opportunity Landscape for AIAE in Mining

Copper and gold mine processing sites are key consumers, as the mined material is significantly abrasive; also, the yield per tonne of ore mined in these two segments is declining due to ore degradation and excess mining in the past. Mill liners primarily a life of 6 months to 2 years, based on the hardness of the ore to be refined. The life of grinding media depends upon the volume of impact and abrasion of the media.

Demand is primarily driven by LATAM countries, which account for 40% of global copper production and 8% of global gold production, largely due to the presence of large copper and iron ore mines in the region. China accounts for 10%. Demand of mill consumables like grinding media and liners is higher in replacement against newly installed grinding machine. The ratio is expected to be about 70% to 80% from replacement and 20% - 30% from new installed machines.

The global grinding media market is estimated at \$4bn and generates an annual volume of 3mt. Specifically for gold, copper and iron ore (target areas for AIAE) the annual demand for grinding media is estimated at 2.5mt. About 20-25% of this target segment of AIAE has converted to high-chrome grinding media and conversion of the balance market over a period of time remains a key growth opportunity besides the organic growth outlook for the mineral processing industry. The high chrome grinding media market is dominated largely by Magotteaux and AIAE.

The global mill liner market is estimated at \$1.8bn and is largely driven by ore beneficiation in gold and copper worldwide and iron ore in Brazil and China. The market is oligopolistic in nature with the top 5 producers, namely Metso- Outotec, Me Elecmetal, Bradken, PT Growth and Tega Industries, accounting for 50% market share. Of the total market of USD1.8bn, AIAE addresses the c USD900mn Metallic liner market for large diameter SAG mills. Mill liners for the mining industry is a new product line for AIAE (started in 2018) with volume of c25,000 MT in FY23. AIAE commissioned a new plant dedicated for Metallic Mill Liners in FY23 with capacity of 50,000MT.

Market dynamics for grinding media

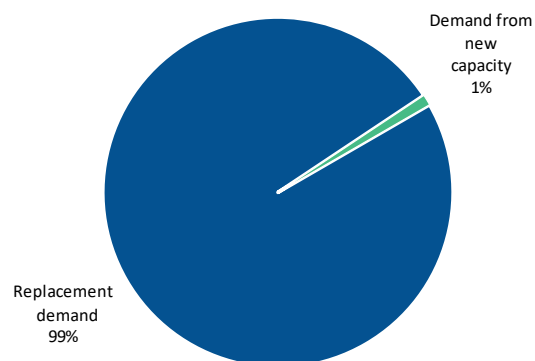
Market assessment (approx, p.a)x	Cement	Mining
Total market volume (mt)	0.3	3.0
Total market size (USD mn)	450	4000
Focus market for AIAE (mt)	0.3	2.5
Target product segment for AIAE	High chrome	High chrome
Penetration levels of target segments (as % of the focus market)	95%	20-25%
Growth opportunity	Low	Strong

Source: Company, LKP Research

Market dynamics for mill liners

Market assessment	Mining	Comments
Total market size (USD mn)	1800	Rubber, Metallic and Composite
Target product segment (AIAE)	Metallic Liners	Solution for SAG mills
Target market size (AIAE)	0.3mt pa	FY23 sales: c25,000 MT
Target market size (AIAE)	USD 900mn	
Growth opportunity	High	Due to very low market share

Source: Company, LKP Research

Replacement demand vs. demand from new capacity addition


Source: Company, LKP Research

Conversion of conventional Forged Grinding Media to High Chrome Grinding Media to drive growth

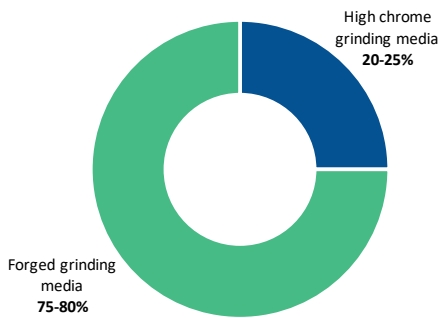
High chrome media has advantage over forged media: Within Mining, conversion of conventional Forged Grinding Media to High Chrome Grinding Media remains the largest growth opportunity. AIAE manufactures and supplies high chrome mill internal products (casting) used by cement, mining and utility industries. The Company services the replacement demand of these industries and the OEM requirement for new capacities added. These high chrome products seek to replace the conventional forged products in grinding mills (current penetration being low at 20-25%). High chrome metallurgy leads to cost savings through lower wear rates and lower consumptions owing to the High Chrome content. Other benefits include down process benefits in the form of reduction in the cost of other expensive reagents/ improvement of recoveries by use of High Chrome Grinding Media.

Foray into Metal Mining Liners is another focused area of growth.

Size of the opportunity for AIAE products in Mining Industry, the consumption of Grinding Media would be in the region of around 3 million tons per annum while that of Metal Mill Liners would be in the region of around 3 Lakhs tons per annum. Particularly for the three metals which AIAE is concentrating i.e. Copper, Gold and Iron Ore, then the addressable markets for AIAE would be around 2.5 million tons per annum for the Grinding Media against which the present penetration of High Chrome Grinding Media is quite low in the region of 20% to 25%, which leaves a significant headroom for the company for conversion from the use of conventional Forged Grinding Media into our High Chrome Grinding Media.

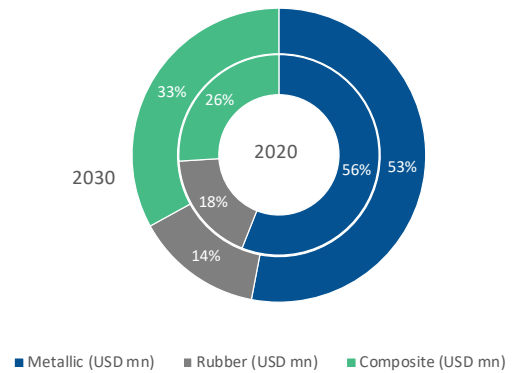
In Mill Liner space, AIAE has a very unique solution for the SAG Mills, based on unique patented Mill Liner technology, whereby they are in a position to offer distinct advantages in the form of increased throughput, improved grinding efficiency and reduced power costs.

Chrome grinding media penetration levels at 20-25%



Source: Company, LKP Research

Current mill liner demand by type (%)








Source: Company, LKP Research


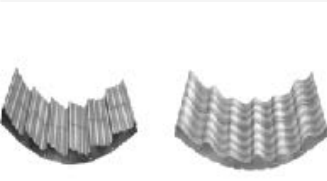
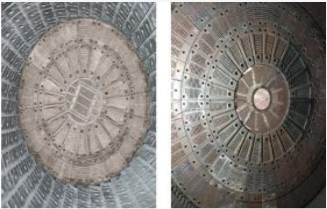
Chrome grinding media penetration levels at 20-25%

Huge opportunity size for AIAE in Mining: Growth in mining industry will help AIAE in increasing the size of the opportunity, from a strategic standpoint considering the huge headroom of conversion available with AIAE and are largely agnostic to Mining Industry Cycles in the sense that even if theoretically for some reason there is no growth at all in the Mining Industry space or even if there is some de-growth owing to fall in demand for commodities and metal in near term, given the considerable headroom available for conversion of Mines to High Chrome use, a Zero or even a negative growth in the mining should not have any material adverse impact on the growth plans.

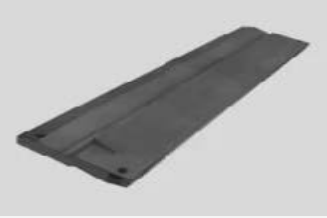


Product Portfolio

		Mining segment
Product		Remarks
	High Chrome Grinding Media	AIA/VEGA manufactures High chromium cast grinding media which is wear, corrosion and impact resistant helps in efficient ball mill grinding. Grinding media is tailor made for each milling application. There is a wide range of alloying options which are decided after adequate test work and technical analysis. The company manufacture grinding media with chrome content ranging from 3 % to 33% in sizes ranging from 12 mm to 125 mm as required by the application.
	Shell Liners	Shell liner design is critical aspect to facilitate efficient mill performance along with higher mill availability. The design is based on multiple parameters such as ore quality, feed size, required product, grinding media size and media/pulp volume.
	Ball mill lining system	AIAE offers optimized Cr-Mo steel, martensitic steel and white iron (16 -25% Cr) alloys for Ball Mill Lining System.
	Rod mill linings	AIAE offers optimized Cr-Mo steel, martensitic steel and white iron (14 – 26% Cr) alloys for Rod mill lining system.
	Hardware	Selection of optimum alloy steel without impurities, hardware is produced with best forging process and suitable heat treatment to get required toughness

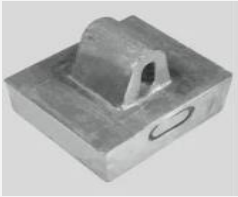

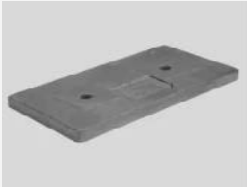
Source: Company, LKP Research

Cement segment		
Product		Remarks
	High Chrome Grinding Media	Big balls, ranging from 100 mm to 60 mm, are essentially used in the first chamber of the mills for crushing the feed material. These balls impart potential energy for crushing and thus required to possess a combination of wear and impact resistance.
	Screening Solutions	Optimum grinding requires effective crushing. First chamber liners are designed to achieve size reduction at optimal power. AIA / Vega Liners provide –a)Strong implication on process aspects b) Affects mill productivity and specific power consumption c) High crushing efficiency at desired wear life
	Tube Mill Diaphragms	Diaphragm is a partition wall restricting the metallic content within the chamber and controlling the movement of feed material through the mill.

Source: Company, LKP Research

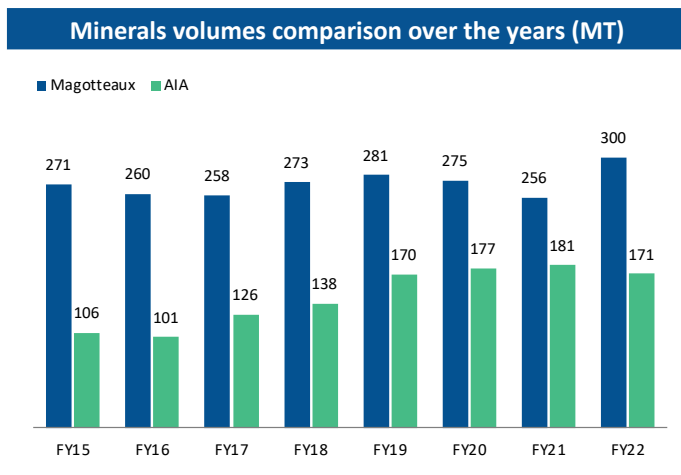
Quarry segment		
Product		Remarks
	Blow bars	AIA Engineering Ltd./Vega Industries have developed an impact-resistant, non-conventional alloy for maximum crushing efficiency. This blow bars solution is offered with and without ceramic, and is a set supplied with inhouse weight-balanced conditions to take care of rotor vibration. This product benefits include: a) Highly trusted and established alloy for impact resistance b) High Crushing efficiency and low cost per ton of crushing c) Uniform wear profile resulting in uniform end product size d) Long lifespan.
	Hammers	Constructed with a superior alloy, our Hammers come with differential hardening to curb breakage at the shank. Variants in solutions include those with or without ceramic, and are also accompanied by inhouse weight-balanced conditions to take care of rotor vibrations. Hammers benefits include: a) High crushing efficiency b) Low cost per ton of crushing c) Uniform wear profile resulting in uniform end product size d) Long lifespan.
	Impellers	Impellers are made with superior alloys for high wear-resistance and accompanied by in-house weight-balanced conditions to take care of rotor vibration. These solutions too, come in two variants: ceramic and without ceramic. Impellers benefits are: a) Uniform wear profile resulting in uniform particle size b) Low cost per ton of crushing c) Special-grade alloy for rotors with a high R.P.M d) Easy installation and maintenance-free operations

Source: Company, LKP Research

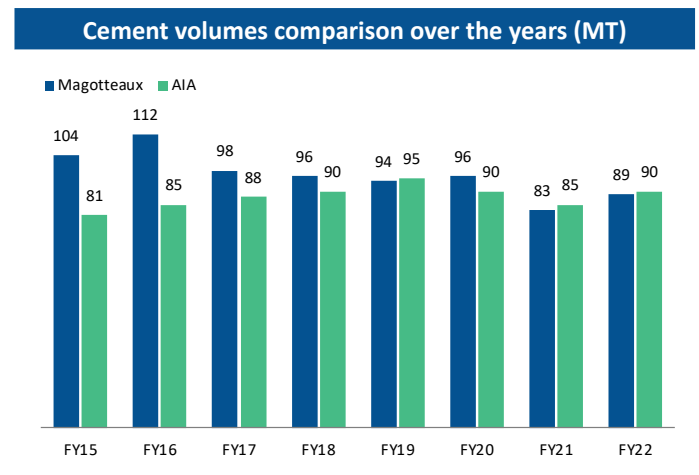
Product	Remarks
 <p>Anvil</p>	Anvils are made with superior alloys for high wear-resistance and long lifespan, offered in two variants: ceramic and without ceramic. Anvil benefits are –a) Uniform wear profile b) Easy installation and maintenance-free operation.
 <p>Feed Disk</p>	Feed disks are constructed using superior alloys for high wear-resistance and long lifespan, and are offered in two variants: ceramic and without ceramic. AIA / Vega’s Feed disk is beneficial in the following ways: a) Uniform wear profile b) Easy installation and maintenance-free operation.
 <p>Frame Liners</p>	Designed for easy installation and maintenance-free operation, these solutions provide protection to the crusher housing. These solutions ensure superior product life with superior alloys.

Source: Company, LKP Research

Key metrics comparison between AIA and Magotteux

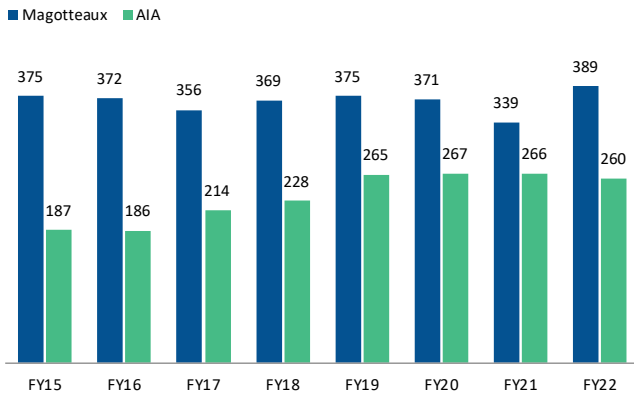


Source: Company, LKP Research



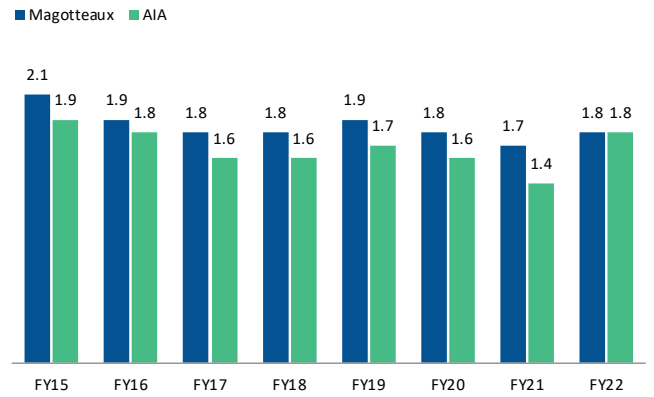
Source: Company, LKP Research

Total volumes comparison over the years (MT)



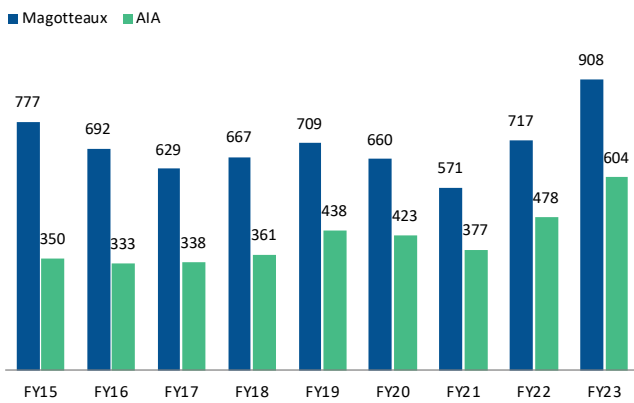
Source: Company, LKP Research

Realisation (USD/kg)



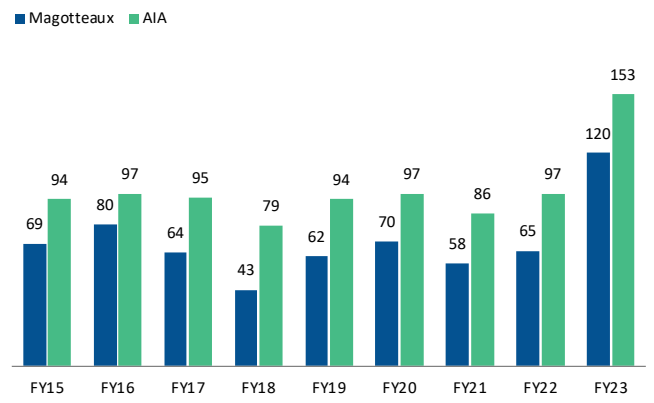
Source: Company, LKP Research

Revenue comparison over the years



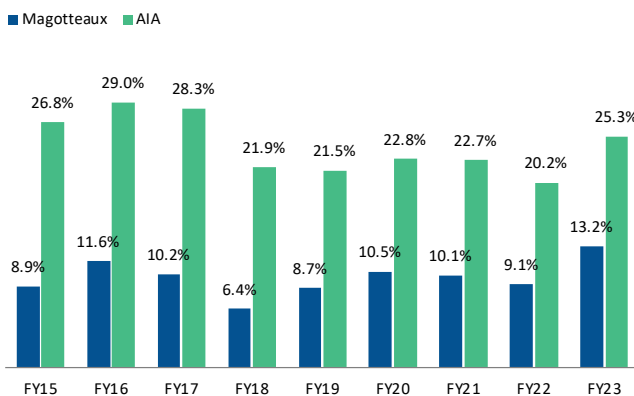
Source: Company, LKP Research

EBITDA comparison over the years



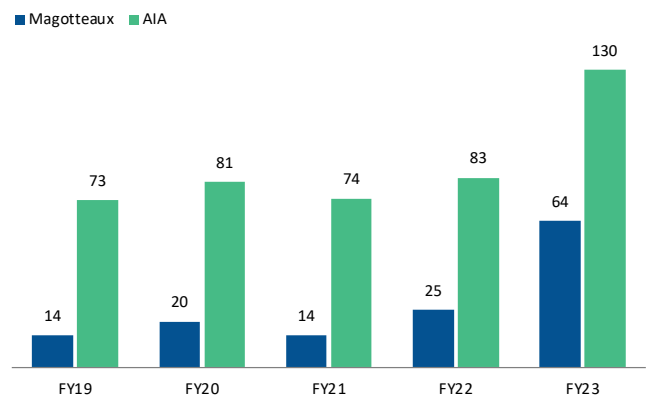
Source: Company, LKP Research

Total volumes comparison over the years (MT)



Source: Company, LKP Research

PAT comparison over the years



Source: Company, LKP Research

Financials

Strong financial metrics justifies business strength

AIAE has grown at revenue/EPS CAGR of 11%/17% over FY13-23. Over this period margins have shown good consistency with an average gross/EBITDA margin of 62%/24% reflecting ability to pass on variations in raw material and freight costs. Average OCF/EBITDA of 57% and sizeable FCF have led to a strong balance sheet (net cash of Rs 25.6bn in Mar-23). Average post-tax ROIC of 23% remains strong and reflects prudence in capital allocation. Volume CAGR over past 10 years stood at 6%, driven by a healthy 10% CAGR in the mining segment but a muted 1.4% CAGR in the non-mining segment (cement and thermal power). Going forward, we forecast revenue CAGR of 10% during FY23-26E aided by 10% CAGR in volumes – led mainly by increasing penetration in the mining segment (both for high chrome grinding media and for metallic liners). In FY23 particular revenues has grown 38% YoY with exports forming 72% of sales and annual sales volumes soared to 11% growth YoY. RM cost as % of sales declined from 79.8% in FY22 to 74.7% in FY23 leading to expansion in EBITDA margins from 20.2% in FY22 to 25.3% in FY23. Higher operating leverage along with higher other income (+50% YoY) led by higher interest income from financial assets, gain on sale of current investments led to PAT improve 70% YoY.

Healthy cash flows and balance sheet over the past decade

AIAE's operating profit has remained healthy over the past decade with an average EBITDA margin of 23.3%. AIAE has a history of consistent and robust cash generation despite an elevated NWC intensity inherent to the business. AIAE needs to keep two months of finished goods at its warehouse near customer's plants to ensure just-in-time delivery as its products are daily consumables. Over FY13-22, average annual capex is at ₹1.4bn for capacity expansion, funded largely through internal accruals. AIAE generated operating cash flows of ₹40.1bn over FY14- 23 and continues to be a net cash company. We expect FCF to further improve as the current phase of capex peaks in FY24. The cash flow conversion is healthy, with EBITDA to OCF conversion at 58% and OCF to FCF conversion at 60% over FY13-22. The return ratios are decent with RoE/RoCE of 17.5%/ 16.9%, on an average over FY13-23, largely suppressed due to high cash position (avg. RoIC pre-tax at 31.8%).

Quarterly Result Snapshot

AIAE's consolidated sales in Q2FY24 fell 3% YoY to ₹12.9bn. Mining volumes fell 4% YoY to 52,093MT, while non-mining volumes (cement + power) grew 5% YoY to 25,632MT. EBITDA grew by 23% YoY to ₹3.8bn with EBITDA margin higher by 600bp YoY at 29.5% led by favourable mix and lower RM costs & freight rates. Going forward, the benefit of lower RM & freight is likely to get passed on to customers and the sales mix should also revert in favour of grinding media. As a result, EBITDA margins should moderate with guidance of 22-24%. Other income was up 94% YoY, due to higher treasury yields resulting in PAT growth of 32% YoY to ₹3.2bn. Profitability was enhanced by higher contribution from more profitable non-grinding media such as tube liner, mill liner and VSMS. AIAE lowered its incremental volume guidance in FY24 to 10-15k MT from 30k MT given slower pace of new customer conversion. The shortfall in FY24 could be made up in FY25 leading to stronger volumes. Capacity expansion plan of ₹5bn is on track which will increase capacity from 440k MT currently to 540k MT by FY25.

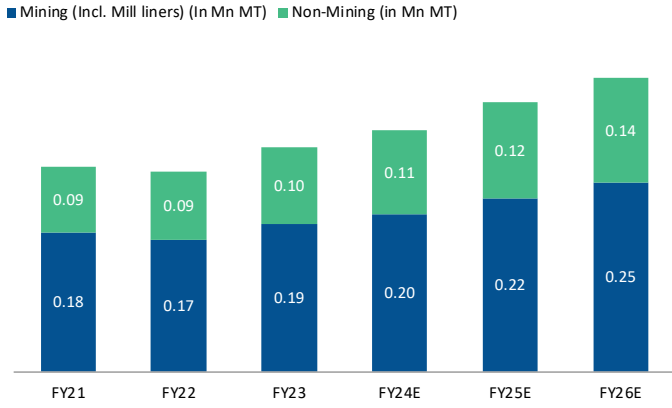
Quarterly Performance

(₹ mn)	Q2FY24	Q2FY23	YoY (%)	Q1FY24	QoQ (%)
Net sales	12,739	13,116	-2.9	12,203	4.4
Other Operating Income	209	171	22.7	193	8.5
Total sales	12,948	13,287	-2.5	12,396	4.5
Direct Costs	5,470	5,748	-4.8	5,414	1
Gross Profit	7,478	7,539	-0.8	6,982	7.1
Staff Cost	433	374	15.9	406	6.7
Other Expenses	3,224	4,045	-20.3	3,145	2.5
Total Expenditure	9,127	10,167	-10.2	8,966	1.8
EBITDA	3,821	3,120	22.5	3,430	11.4
Depreciation	245	246	-0.2	242	1.1
EBIT	3,576	2,874	24.4	3,188	12.2
Interest	74	39	91.5	75	-1
Other Income	623	321	93.9	595	4.7
PBT	4,125	3,157	30.7	3,708	11.2
Tax	884	708	24.9	983	-10
PAT	3,241	2,449	32.3	2,725	18.9
Less : Minority interest	10	1	862.8	2	459.2
PAT after minority	3,231	2,448	32	2,723	18.6
EPS (₹/share)	34.3	26	32	28.9	18.6
As a % of revenue					
Direct Costs	42.2	43.3		43.7	
Gross Margin	57.8	56.7		56.3	
Staff Cost	3.3	2.8		3.3	
Other expenses	24.9	30.4		25.4	
EBITDA Margin	29.5	23.5		27.7	
PAT Margin	25	18.4		22	
Tax rate	21.4	22.4		26.5	
Volume sales (MT)					
Mining	52,093	54,109	-3.7	53,256	-2.2
Others	25,632	24,391	5.1	20,790	23.3
Total	77,725	78,500	-1	74,046	5

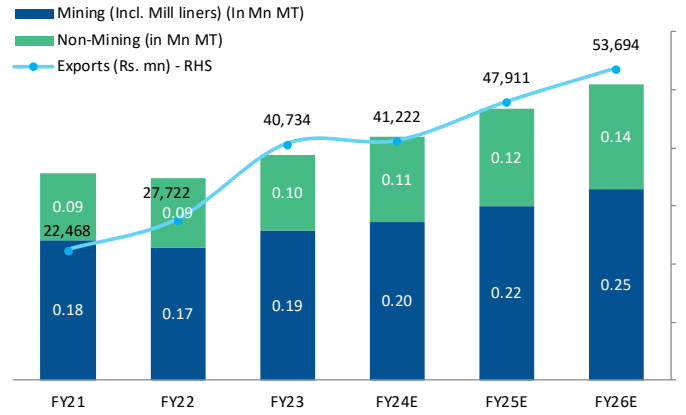
Source: Company, LKP Research

Story in charts

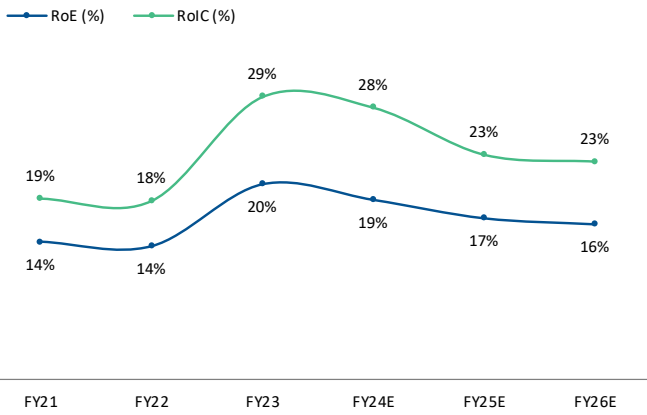
AIAE Sales Volume Breakup



Source: LKP Research

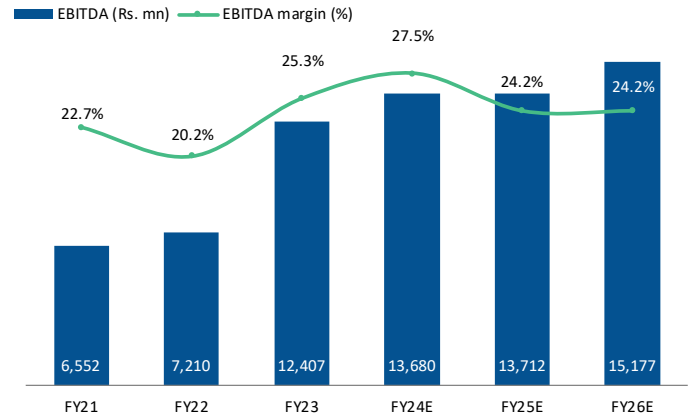


AIAE - Return Metrics (%)

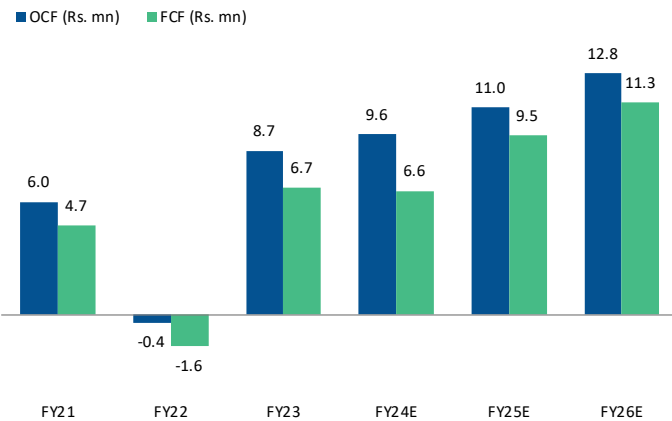


Source: LKP Research

AIAE – EBITDA and Margin Trend

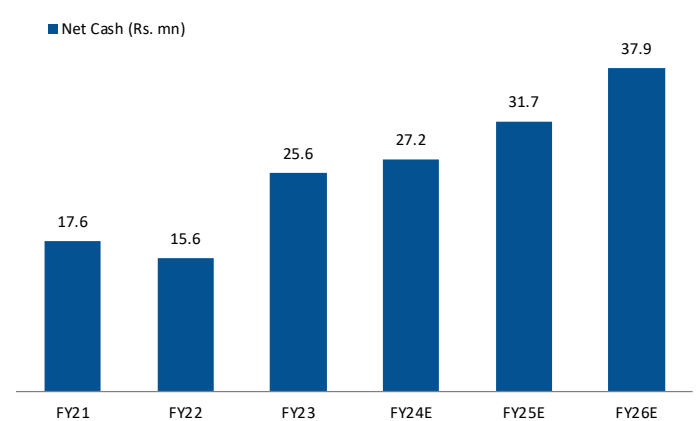


AIAE - Cash Flow (₹ bn)



Source: LKP Research

AIAE - Net Cash position (₹ mn)



Profit and Loss Statement

(₹ mn)	FY21	FY22	FY23	FY24E	FY25E	FY26E
Revenue	28,815	35,665	49,088	49,804	56,729	62,757
Gross profit	16,762	20,434	27,722	27,592	30,924	34,251
EBITDA	6,552	7,210	12,407	13,680	13,712	15,177
Depreciation	935	921	930	1,074	1,190	1,332
EBIT	5,617	6,288	11,476	12,606	12,523	13,845
Other Income	1,722	1,563	2,345	2,525	3,221	3,689
Interest expense	43	39	201	300	290	290
Exceptional items	0	0	0	0	0	0
PBT	7,296	7,813	13,620	14,831	15,454	17,244
Reported PAT (after minority interest)	5,661	6,197	10,559	11,488	11,970	13,270
Adj PAT	5,661	6,197	10,559	11,488	11,970	13,270
EPS (Rs.)	60.0	65.7	112.0	121.8	126.9	140.7

Balance Sheet

(₹ mn)	FY21	FY22	FY23	FY24E	FY25E	FY26E
Net Worth	42,531	47,634	57,003	66,799	77,078	88,659
Deferred Tax	470	390	399	399	399	399
Total debt	1,845	28	4,960	5,000	5,200	4,800
Other liabilities and provisions	1,078	1,236	1,337	1,470	1,618	1,779
Total Networth and Liabilities	45,924	49,288	63,698	73,668	84,294	95,636
Gross Fixed assets	12,087	12,759	15,837	18,837	20,337	21,837
Net fixed assets	7,525	7,337	9,485	11,411	11,721	11,889
Capital work-in-progress	1,609	2,102	1,074	1,074	1,074	1,074
Goodwill	589	563	543	543	543	543
Investments	8,086	10,554	22,543	25,543	28,543	31,543
Cash and bank balances	13,954	5,061	8,060	9,661	14,350	20,214
Loans & advances and other assets	1,861	5,322	3,817	4,070	4,348	4,654
Net working capital	12,299	18,348	18,176	21,366	23,715	25,719
Total Assets	45,924	49,288	63,698	73,668	84,294	95,636

Cash Flows

(₹ mn)	FY21	FY22	FY23	FY24E	FY25E	FY26E
Cash flows from Operations (Pre-tax)	7,829	1,232	11,719	12,874	14,430	16,692
Cash flows from Operations (post-tax)	5,984	(393)	8,677	9,559	10,976	12,752
Capex	(1,242)	(1,255)	(1,948)	(3,000)	(1,500)	(1,500)
Free cashflows	4,743	(1,648)	6,730	6,559	9,476	11,252
Free cashflows (post interest costs)	4,712	(1,678)	6,562	6,259	9,186	10,962
Cash flows from Investing	(3,513)	999	(12,083)	(6,000)	(4,500)	(4,500)
Cash flows from Financing	665	(2,675)	3,950	(1,957)	(1,787)	(2,387)
Total cash & liquid investments	19,468	15,610	30,595	32,196	36,885	42,749

Key Ratios

(₹ mn)	FY21	FY22	FY23	FY24E	FY25E	FY26E
Growth ratios						
Revenue	-3.3%	23.8%	37.6%	1.5%	13.9%	10.6%
EBITDA	-3.7%	10.0%	72.1%	10.3%	0.2%	10.7%
Adj PAT	-4.1%	9.5%	70.4%	8.8%	4.2%	10.9%
Margin ratios						
Gross	58.2%	57.3%	56.5%	55.4%	54.5%	54.6%
EBITDA	22.7%	20.2%	25.3%	27.5%	24.2%	24.2%
Adj PAT	19.6%	17.4%	21.5%	23.1%	21.1%	21.1%
Performance ratios						
Pre-tax OCF/EBITDA (%)	119.5%	17.1%	94.5%	94.1%	105.2%	110.0%
OCF/IC (%)	25.2%	-1.3%	28.3%	24.6%	24.5%	25.5%
RoE (%)	14.2%	13.7%	20.2%	18.6%	16.6%	16.0%
RoCE (%)	13.6%	13.4%	19.4%	17.4%	15.8%	15.3%
RoCE (Pre-tax)	17.5%	16.9%	25.0%	22.5%	20.3%	19.9%
RoIC (Pre-tax)	24.1%	23.2%	37.6%	36.2%	29.9%	29.2%
Fixed asset turnover (x)	2.4	2.9	3.4	2.9	2.9	3.0
Total asset turnover (x)	0.7	0.7	0.9	0.7	0.7	0.7
Financial stability ratios						
Net Debt to Equity (x)	(0.4)	(0.3)	(0.4)	(0.4)	(0.4)	(0.4)
Net Debt to EBITDA (x)	(2.7)	(2.2)	(2.1)	(2.0)	(2.3)	(2.5)
Interest cover (x)	139.5	(10.2)	43.2	31.9	37.8	44.0
Cash conversion days	156	188	135	157	153	150
Working capital days	166	230	154	176	170	166
Valuation metrics						
Fully Diluted Shares (mn)	94	94	94	94	94	94
P/E (x)	60.3	55.1	32.3	29.7	28.5	25.7
Dividend pay-out (%)	15.0%	13.7%	14.3%	12.3%	11.8%	10.7%
Dividend yield (%)	0.2%	0.2%	0.4%	0.4%	0.4%	0.4%

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