IPO Note

September 13, 2022

Harsha Engineers International Limited

Issue Snapshot:
Issue Open: Sept 14 – Sept 16, 2022

Price Band: Rs. 314 –330 (Rs.31 discount to eligible employees)

*Issue Size: Rs 755.0 cr (Fresh issue of Rs 455 cr + Offer for sale of Rs 300 cr)

Reservation for:
QIB upto 50% eq sh
Non Institutional atleast 15% eq sh
((including 1/3rd for applications between Rs.2 lakhs to Rs.10 lakhs))
Retail atleast 35% eq sh
Employees Rs.2.5 cr

Face Value: Rs 10

Book value: Rs 68.34 (Mar 31, 2022)

Bid size: - 45 equity shares and in multiples thereof

100% Book built Issue

Capital Structure:
Pre Issue Equity: Rs. 77.25 cr
*Post issue Equity: Rs. 91.03 cr

Listing: BSE & NSE

Book Running Lead Managers: Axis Capital Limited, Equirus Capital Private Limited, JM Financial Limited
Sponsor Bank: Axis Bank and Kotak Bank

Registrar to issue: Link Intime India Private Ltd

Shareholding Pattern

Shareholding Pattern	Pre issue %	Post issue %
Promoter and Promoter Group	99.70	74.61
Public	0.30	25.39
Total	100.0	100.0

*=assuming issue subscribed at higher band
Source for this Note: RHP

Background & Operations:
Harsha Engineers International Limited (HEIL) is the largest manufacturer of precision bearing cages, in terms of revenue, in organised sector in India, and amongst the leading manufacturers of precision bearing cages in the world. It offers diversified suite of precision engineering products across geographies and end-user industries. Its business comprises: (i) engineering business, under which it manufactures bearing cages (in brass, steel and polyamide materials), complex and specialised precision stamped components, welded assemblies and brass castings and cages & bronze bushings; and (ii) solar EPC business, under which it provides complete comprehensive turnkey solutions to all solar photovoltaic requirements.

HEIL has approximately 50-60% of the market share in the organised segment of the Indian bearing cages market and 6.5% of the market share in the global organised bearing cages market for brass, steel and polyamide cages in CY 2021. It offers a wide range of bearing cages starting from 20 mm to 2,000 mm in diameter and its bearing cages find its application in the automotive, railways, aviation & aerospace, construction, mining, agriculture, electrical and electronics, renewables sectors etc.

It is a technology driven company with a strong focus on quality, design and tool development, which has allowed to develop products suited to its customers' requirements. It has the expertise to design and develop advance tooling in-house which enables it to manufacture precision bearing cages and complex and specialised precision stamped components. HEIL, which housed a team of 253 qualified engineers (including solar EPC business) as of March 31, 2022, along with its decades of experience in bearing cages engineering, enable it to develop specialized products and solutions. As of March 31, 2022, it has been able to manufacture more than 7,205 bearing cages and more than 295 other products for customers in the automotive, railways, aviation & aerospace, construction, mining, agriculture, electrical and electronics, renewables sectors, allowing it to meet changing customer requirements. In addition, over the past three years HEIL's product development and innovation centre has developed more than 1,200 products in different bearing types.

The Company has been able to leverage its tooling capabilities and the expertise developed in the stamping employed for manufacture of steel cages to diversify and grow its stamping components business. It also provides comprehensive metal stamping solutions ranging from simple to complex designs and geometries to its clients in automotive; bearing and sealing; and electrical and appliance industry. Its capability extends to manufacturing high quality precision components as well as semi assembled modular units. It has recently expanded its product portfolio to introduce sand casting, value added stamping components, bronze bushings etc. to cater to more end user industries such as wind, mining and shipping sectors.

HEIL has four strategically located manufacturing facilities for its engineering business with one of its principal manufacturing facilities at Changodar and one at Moraiya, near Ahmedabad in Gujarat in India, and one manufacturing unit each at Changshu, China and Ghimbav Brasov in Romania. Its presence in these strategic locations helps it to penetrate global markets more efficiently and in a cost effective manner and allow access to its customers. It supplies products to customers in over 25 countries covering five continents i.e., North America, Europe, Asia, South America and Africa. To help it meet 'just in time' requirements of its customers, it has entered into arrangements to stock inventory in warehouses spread across more than 20 locations across the world including in, Europe, US, China and South America. Its multinational presence has also allowed it to diversify its revenue geographically.

HEIL is also an EPC service provider in the solar photovoltaic industry and also provides operations and maintenance services in the solar sector. It has over 10 years of operating history in the solar EPC business. It has an in-house design, engineering, procurement, project management and O&M team which has a combined experience of installing at least 500 MW and more than 60 MW commissioning experience in roof top segment as of March 31, 2022. Revenue from solar EPC business aggregated to Rs. 829.46 million,

Rs. 541.92 million, and Rs. 641.94 million for Fiscals 2022, 2021 and 2020, respectively, constituting 6.28%, 6.20%, and 7.25% respectively, of its total revenue from operations. It has three wholly owned subsidiaries, one in China - Harsha Precision Bearing Components (China) Co. Ltd, one in the United States of America - HASPL Americas Corporation and one in the Netherlands - Harsha Engineers B.V., and a stepdown subsidiary in Romania - Harsha Engineers Europe SRL. The Company also has a 50% interest, as a partner, in Clenmax Harsha Solar LLP and 26% equity interest in Sunstream Green Energy One Private Limited (formerly known as Eirene Naval Systems Private Limited).

Objects of Issue:

The Offer comprises the Fresh Issue by the Company and an Offer for Sale by the Selling Shareholders.

The Offer for Sale

The Selling Shareholders will be entitled to their respective portions of the proceeds of the Offer for Sale after deducting their proportion of Offer related expenses. HEIL will not receive any proceeds from the Offer for Sale by the Selling Shareholders and the proceeds received from the Offer for Sale (net of Offer related expenses to be borne by the Selling Shareholders) will not form part of the Net Proceeds.

Fresh Issue

HEIL proposes to utilise the Net Proceeds of the Fresh Issue towards funding of the following objects:

- Pre-payment or scheduled repayment of a portion of the existing borrowing availed by the Company;
- Funding capital expenditure requirements towards purchase of machinery;
- Infrastructure repairs and renovation of its existing production facilities including office premises in India; and
- General corporate purposes.

Proposed Utilisation and Schedule of Implementation and Deployment of Funds (Rs.Mn)

Particulars	Total Estimated Cost	Amount proposed to be funded from the Net Proceeds	Estimated deployment in Fiscal 2023	Estimated deployment in Fiscal 2024
Pre-payment or scheduled repayment of a portion of the existing borrowing availed by HEIL	2700.00	2700.00	2,700.00	-
Funding capital expenditure requirements towards purchase of machinery	779.54	779.54	495.11	284.43
Infrastructure repairs and renovation of existing production facilities including office premises in India	71.16	71.16	71.16	-
General corporate purposes	*	*	*	*
Total	*	*	*	*

Competitive Strengths

Comprehensive solution provider offering diversified suite of precision engineering products across geographies and end-user Industries: HEIL has a diversified product portfolio in terms of the materials used as well as the dimensions and end-use of the finished products. It primarily manufactures bearing cages in the range of 20 mm to 2,000 mm in diameter. It has been successful in improving its current processes of manufacturing and new product development for different types of bearing cages mainly due to its designing and tooling development and technological capabilities. Within its diversified product portfolio, it manufactures bearing cages (including cylindrical roller cages, spherical roller cages, deep grove cages, angular contact cages, thrust roller cages and taper roller cages), complex and specialised precision stamped components, welded assemblies and brass castings and bushings. Since its incorporation, HEIL has manufactured more than 7,500 types of products in the automotive and industrial segments. It has approximately 50-60% of the market share in the organised segment of the Indian bearing cages market. Recently the Company expanded its product portfolio to introduce sand casting, value added stamping components, bronze bushings etc. to cater to more end user industries such as wind, mining and shipping sectors. Its products find application across automotive, aviation and aerospace, construction, mining, agriculture, electricals and electronics, renewables sectors. It supplies products to customers in over 25 countries covering five continents i.e. North America, Europe, Asia, South America and Africa. Given its wide presence, its revenue stream is diversified both geographically as well as across customers.

Long standing relationships with leading clientele*:* HEIL has established strong relationship with its customers who are leading global bearing manufacturers in the automotive, railways, aviation & aerospace, construction, mining, agriculture, electrical and electronics, renewables sectors. The bearing cages market globally is concentrated among a few global bearing manufacturers with top six global bearing manufacturers contributing to 54% of the market share in Fiscal 2022. As of March 31, 2022, it supplies to each of the top six

global bearing manufacturers. Its top 10 customers contributed to 44.70%, 48.24%, and 47.79% of its total revenue from operations for Fiscal 2022, Fiscal 2021 and Fiscal 2020, respectively. The average age of relationship with its top five customer groups spans more than a decade. The Company's long term relationships with customers is indicative of its quality consciousness and it's designing and tooling capabilities.

HEIL has partnered with certain of its key customer groups in the product development process, enabling its products to meet the exact specifications provided by the customers. Its long term relationship with its customers allows it to understand and cater to their diverse requirements, including the development of new products. Further, it gives an opportunity to cross sell across geographies and offer diversified product portfolio to its customers in other automotive and equipment segments into which they may diversify. The Company's long-standing relations with such customer's act as an endorsement of its operational and managerial capabilities and help it solicit new business from potential customers in the same industry.

Strategically located domestic and international production facilities and warehouses: HEIL has four strategically located manufacturing facilities spread across three countries in India, China, and Romania. As on March 31, 2022, its aggregate installed capacity across these manufacturing facilities was 4,596 metric tonne per annum for castings and 1,097.87 million pieces per annum for bearing cages. Its presence in these locations helps it overcome significant entry barriers in comparison with its competitors, allowing it to penetrate these markets more efficiently and becoming a local supplier to leading key global bearing players. Its presence in these strategic locations help it penetrate global markets more efficiently and in a cost effective manner. It also gives the ability to cater to the needs of customers from multiple locations, at times designing products at one location while manufacturing them at another. Additionally, to help HEIL meet just in time requirements of its customers, it has entered arrangements to stock inventory in warehouses over 20 locations across the world. Having proximity to its key customer groups gives a strategic advantage in ensuring greater cost effectiveness, quicker delivery and faster turn- around times, allowing to maximize customer satisfaction in a timely manner. Its multinational presence has also allowed to diversify its revenue geographically and enhanced its reputation which results in higher orders from India.

Expertise in Tooling, design development and automation: HEIL's decades of experience in precision engineering, expertise in area of tooling, strategically located production facilities, focus on design and tooling, coupled with technologically advanced and cost competitive manufacturing technology processes has enabled it to meet its customers' bespoke and stringent requirements. It has full-service capabilities across the product cycle including product design and development, material sourcing, designing and manufacture of complex tooling components, testing and measurement infrastructure, all under one roof for meeting the requirement of its global customers. The Company employ machining as well as stamping processes in its manufacturing process. Its machines are equipped for both individual and diversified processes, and their fungibility enables it to employ them in the most optimum manner to suit the customer's preferences. Its tool room at the Indian production facilities are equipped with tool design software like Pro Engineer for 3D modelling and detailing, Numerically Controlled Tool Path, Auto Cad Station, Sheet Metal Formability Simulation, Hyperworks, that allows to eliminate any defects in the designing process.

Bearing cage is an important component within a bearing and requires the highest lead time for development and technical and tooling expertise, for its manufacture when compared to other components of a bearing. Given the critical function of a bearing cage, and the resultant quality requirements, global bearing companies have steadily increased outsourcing manufacture of bearing cages and the business from these bearing companies has gotten concentrated to a few bearing cage manufacturers including HEIL. As bearing cage accounts for a small portion of the total cost of a bearing and considering the complexity of the production process for such bearing cages, the bearing cages gets a reliable vendor they will prefer continuing with for a long period of time. Its comprehensive tooling, testing and measurement infrastructure and independent tool designing capabilities it is well equipped to cater to the needs of the bearing manufacturers.

Consistent track record of growth and financial performance*:* HEIL focus on operational and functional excellence has contributed to the Company's track record of healthy financial performance. Its strong financial performance reflects the efficacy of the manufacturing and supply-chain management protocols that it has implemented while its steady operating cash flows enable it to meet the present and future needs of its customers and develop new value-added products. This aids in strengthening its trust and engagement with customers and which further enhances its ability to retain these customers and extend its engagement across products and geographies.

Strong, experienced and dedicated senior management team and qualified workforce: HEIL's senior management team comprising of its Promoters are qualified engineers and have extensive experience and knowhow in engineering sector, including, business development, operations, administration, marketing and human resource management. It leverages the understanding and the experience of its senior management in successfully managing its operations and growth. The Company's management team also includes a strong and experienced team of cross functional professionals across senior and mid-level management. In addition, it has a

dedicated team of engineers along with other skilled and technically qualified workforce. It continuously strengthens its engineering expertise by providing in-house training to its workforce, in order to diversify and update their skill sets and keep them updated with the latest changes in manufacturing technologies and processes.

Business Strategy:

Enhance market leadership in bearing cages and expanding customer base: With India in particular, and Asia Pacific markets in general, poised to do well in terms of bearing demand growth in the automotive and industrial machinery markets. Its manufacturing presence in India and China will help in capitalising on the expected growth in bearing cage demand from India and Asia Pacific markets, and present HEIL with significant opportunities for growth of its existing market share in these jurisdictions. Further, the expected growth in usage of bearings in several applications such as mining, automotive, heavy machinery, infrastructure development, power generation and construction is forecasted to drive the demand for bearings market and it is expected to grow at a CAGR of 6% to 8% over the period 2021 to 2029 and is estimated to be valued at USD 171.7 billion in the year 2029. Keeping pace with the market trends, it has started to expand its business into large diameter brass and steel bearing cages.

HEIL aims at further expanding its customer base in China as it is considered a versatile and consistent player in the bearing cages segment in China. It intends to further expand into the Japanese bearing market by supplying directly to its Japanese customers at their locations in Japan. It has recently started supplying products directly to their locations in Japan. Supplying products directly to their locations in Japan, HEIL will be able to better establish long standing relationship with its Japanese customers, and thus expand further into the Japanese bearing market. Further, it intends to make a strategic change in the product mix which may lead to increase in the sales of finished brass bearing cages to its existing and new customers. It also intends to leverage its European presence to grow its India business share in Europe by (i) procuring higher outsourcing orders from its Europe based Indian customers; and (ii) capitalising on increasing opportunities for outsourced components in Europe, from new customers and by increasing its supplies to existing customers. This will allow to increase its sales as well as profitability.

Retain and strengthen technological leadership through continued focus on development and automation: HEIL is a technology driven company focused on using appropriate cost effective technologies for different volumes and varieties of products, to become single point solution provider to its customers for their different needs of type of cages and different volumes of cages. It intends to digitalize its operations by implementing iOT system to connect the relevant machines or equipments and improve the operational process performance of its machines or equipments by having the right analysis of downtime or reasons for loss of productivity. To support this process, it has purchased and intends to purchase new equipments that are iOT compatible. It plans to continue expanding its development, engineering, tool design and manufacturing, process improvements, lean manufacturing techniques, and automate them to optimize man-power to ensure zero defect products. To further strengthen its technological capabilities, HEIL plans on acquiring and installing CNC lathes, high precision jig boring machine and automate its existing production lines. It plans to build a new development centre having modern software for designs and simulations for new designs of tools. It also plans to expand its talent pool to support new research capacities to keep up with emerging market trends.

Growing stamping and specialised component segment: HEIL plans on capitalizing on the existing niche and low volume high value products in the stamping and special component segment and gradually scale up its business over next three to five years. It plans on achieving this growth in two phases i.e. (i) manufacturing specialized parts/components and supplying to auto component assembly manufacturers and thereafter; (ii) change in supply process by manufacturing assemblies as composite component and supply directly to OEMs. HEIL have set up a dedicated stamping unit at its production unit at Moraiya and have installed certain machinery with tools for complex stamping at its primary manufacturing units. Further, it is in the process of developing complex compressor parts and certain other components which are used in the compressor industry and focus on manufacturing of bearing seals and stamping.

Focus on increasing operational efficiencies to improve returns: Offering quality products at attractive prices is a key aspect of maintaining and expanding relationships with customers. To that end, it has adopted several initiatives designed to improve cost efficiency, and as one of HEIL's primary business strategies it intends to continue improving its cost efficiency. The Company has adopted Total Productive Maintenance ("TPM") initiative across its plants in India to improve operational efficiency and the reliability of manufacturing processes by lowering break downs and rejections. It intends to continue implementing TPM initiatives across Indian production facilities and extend the same to its facilities in China and Romania in order to reap additional cost savings going forward. HEIL intends to use a variety of other manufacturing strategies, sourcing strategies and cost reduction strategies to continue to improve its operational efficiencies.

Increased focus on developing products suited to capture market opportunity in the growing electric vehicle segment: As the automobile segment is shifting focus to electric vehicles the need for more silent and lighter bearings, and its components, will be felt, and the demand is likely to increasingly shift towards precise dimension and dirt free bearing, steel and polyamide cages as a probable solution at a premium value. HEIL's inhouse tool and design facilities coupled with latest machinery, specialised cleaning equipment and

software would enable it to manufacture precision stamping components and steel cages suited for the electric vehicle segment including as import substitutes. In addition, it has also invested in enhancing its tool room and design capacity for faster cage mold development to focus more on developing polyamide cages in different categories to meet the increased demand from the electric vehicles pace in the coming years. With the growing penetration of EVs in the automotive market, the volumes of bearings are expected to grow at a CAGR of 5.2% during CY 2021 to CY2030 and electric vehicle penetration is expected to impact the volume of bearings demand by 0.7% in volumes in the automotive market. As HEIL is not into manufacturing needle cages bearing, it will have limited impact with the increasing penetration of electric vehicles. Further, the ability to develop customized bearings position HEIL well to tap into the growing demand and to enhance its share of the business in this segment.

Focus on growth by opportunistic inorganic acquisitions and partnerships with customers: HEIL has historically expanded its business through a combination of organic growth, acquisitions and strategic alliances with its customers and with other component manufacturers. Further, in order to reduce costs and synergize all its operations in India, it has integrated all its India businesses (engineering and solar EPC business) and operations into one entity. It also seeks strategic partnerships with its key customer groups for innovation and development of new products and supply them to new geographies. It further seeks to enhance its technological capabilities through inorganic acquisitions as well as through partnering with global technology leaders. It intends to use these to expand into new product categories and segments, leveraging its existing knowledge base and new technologies to increase product and customer base. HEIL intends to further pursue such strategic alliances and inorganic growth opportunities, with a particular focus on technologically-innovative acquisitions that may provide better access to technology with respect to its existing products and allow it to diversify its product and customer base opportunistically.

Over the years, HEIL has focused on moving up this value chain of complexity and specialization by enhancing its manufacturing capabilities to produce complex precision components for several of its customers. As its technological capabilities evolve, it intends to increase its focus on further diversifying its product portfolio and providing high margin complex precision components to its customers across the world.

Industry:

Overview of Global Bearings sector

General types of bearings and the components of a bearing

Bearings form an important part of many types of machines and is available in variety of shapes and sizes. The primary objective of a bearing is to prevent direct contact between two elements that are in relative motion. This in turn helps to prevent generation of heat and friction.

Rolling element bearings is a type of bearing that includes rolling components in the form of either balls or cylinders. These types of bearings aid in the free movement of parts in a rotational motion. The rolling element bearings usually consist of the following components:

- Inner ring
- Outer ring
- Rolling elements (rollers or balls)
- Cage
- Other elements of bearing apparatus

The rolling elements are trapped in between the rings and the cage holds the rolling elements in place.

Size of the global bearings market

The global bearings market was valued at USD 85.2 billion in 2015 and grew to USD 106.1 billion in the year 2019 at a CAGR of 5.6%. Owing to the global outbreak of Covid-19 since end of March 2020, the bearings market contracted in 2020 due to decline in demand and supply chain constraints on account of Covid-19 induced restrictions. However, a rebound was seen in 2021 and the market grew at an annual rate of 12% to USD 104.6 billion in 2021. Asia-Pacific region continued to grow rapidly during the year. The expected growth in usage of bearings in several applications such as mining, automotive, heavy machinery, infrastructure development, power generation and construction is forecasted to drive the demand for bearings market and it is expected to grow at a CAGR of 6% to 8% over the period 2021 to 2029 and is estimated to be valued at USD 171.7 billion in the year 2029.

Global bearings market size (in USD billion)

Type wise breakup of global bearings market

When split by type, the following are the types of rolling element bearings that hold majority of the market share.

Ball Bearings

Ball bearings as the name suggests involves balls in a row as the rolling elements and this type of bearing gives very low friction when rolling but has limited load capacity. The usage of ball bearings is growing in two and four-wheeler vehicles as they can withstand both thrust and radial loads which could be attributed to the rise in demand for ball bearings and they accounted for the largest share of about 43% in the global bearings market when split by type and stood at USD 44.5 billion in 2021.

Roller Bearings

Roller bearings contain rolling elements in the shape of a cylinder and can support greater loading than ball bearings. Roller bearings accounted for the second largest share of about 34% in the global bearings market when split by type and stood at USD 35.4 billion in 2021. The remaining 23% of the market includes 22% share of bearing units (consists of an insert bearing mounted in a housing) and 1% others.

Application wise breakup of global bearings market

Bearings by application can be used in varied industries as stated below:

- **Railways:** Auxiliary, Axel Box, Engine, Final Drive, Gear Box, Main Tractor motion, propeller shaft, transmission, wheel etc
- **Aviation & Aerospace:** passenger aircraft bodies, freight aircraft, helicopters, drones, aerospace engines, conveyors etc. This segment includes defense segment as well.
- **Automotive:** Passenger cars, passenger trucks, bus, commercial trucks, scooters, bikes, bicycles, etc
- **Agriculture**: Agriculture Trucks, Tractors, Loaders, Hay And Forage Equipments, Planting Machines, Floaters Tillage Machine etc.
- **Electrical & Electronics:** Alternators, Blowers, Compressors, Fans, Machine Tools, Power Tools, Pumps, Acs, Rolling Mills, Semiconductor Manufacturing, Computer Fans etc
- **Construction:** Cranes, Hydraulic Excavators, Asphalt Pavers, Motor Graders, Wheel Loaders, Off-Highway Trucks etc
- **Mining:** Crushers, Shaker Screens, Pulverisers, Shuttle Cars, Feeders, Mining Trucks, Excavators etc
- **Others:** This category includes the industries not classified above including wind sector

In 2021, Automotive accounts for the largest share at about 22.5% followed by Aviation and Aerospace at about 19.7%. Automotive is likely to maintain its position as the largest share in 2029 as shown in the chart below:

Exhibit 5: Application wise percentage share breakup of global bearing market in 2021

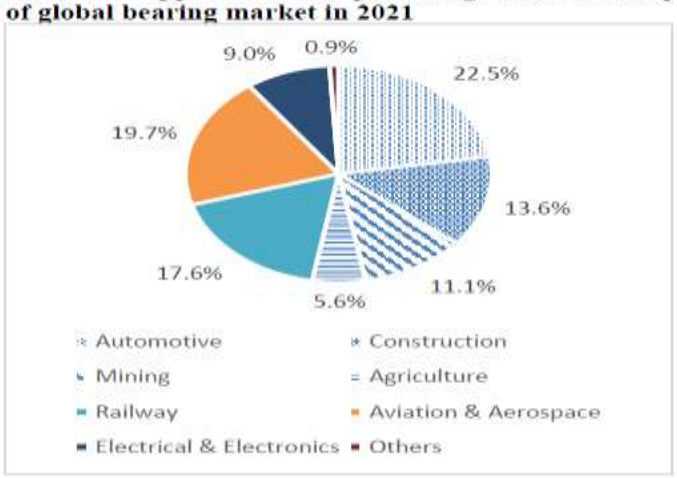
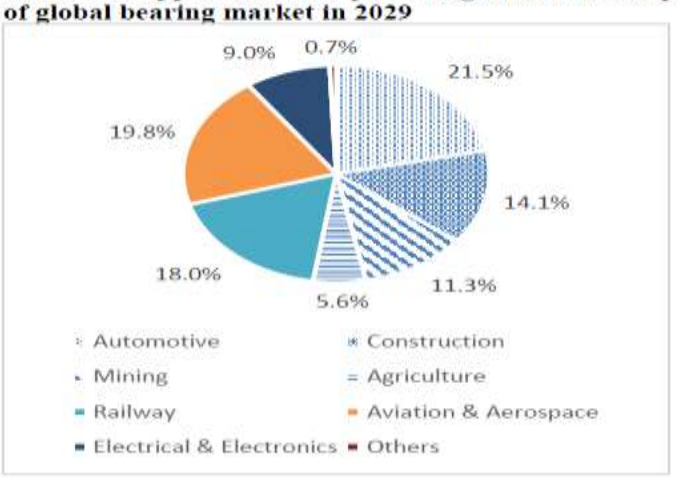


Exhibit 6: Application wise percentage share breakup of global bearing market in 2029



Geography-wise break-up of global bearings market

By region, in 2021, Asia Pacific bearings market accounted for the highest share in total bearings market at about 41.6% followed by Europe at around 27.6% and North America at about 25.9%. Latin America and Middle East & Africa stood at a share of 3% and 2% respectively.

Exhibit 8: Region wise percentage breakup of global bearings market in 2021

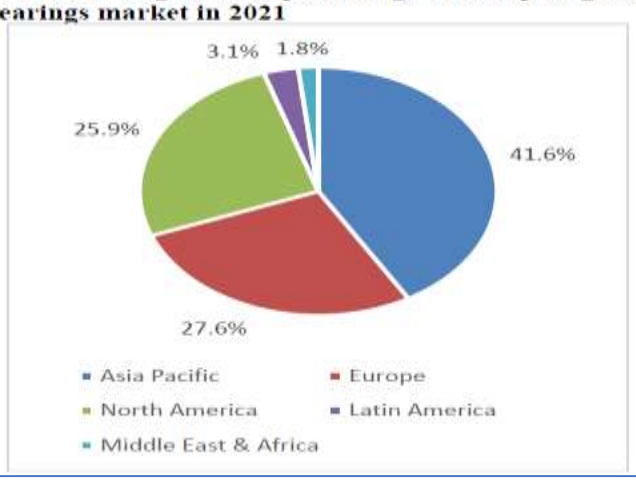
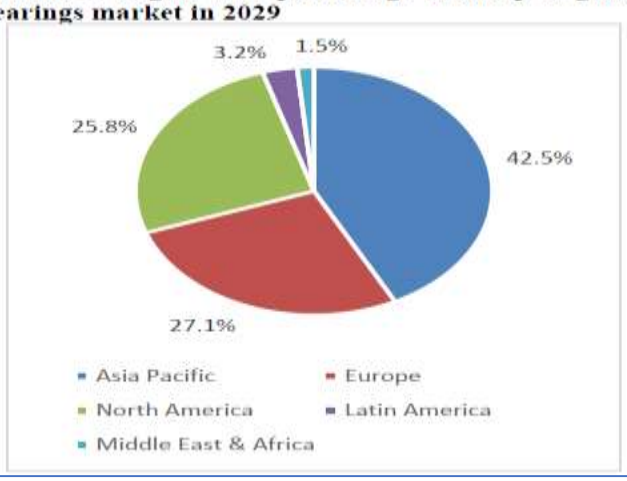


Exhibit 9: Region wise percentage breakup of global bearings market in 2029



Asia Pacific

With respect to revenue, the bearing market in Asia Pacific region was valued at USD 34.2 in 2015 and grew at a CAGR of 5.9% during 2015 to 2019. It is forecasted to grow at a CAGR of 6.7% during the period 2021 to 2029 and is expected to be valued at USD 73 billion in 2029.

Within Asia Pacific, India saw a rebound in growth in the automobile sector, particularly commercial vehicles segment. Growth in Passenger vehicle segment was dampened by semiconductor shortage. China's demand for light vehicles also witnessed a growth particularly in the EV space. Both these regions led to a sharp growth in 2021 for Asia-Pacific region. China accounted for the largest share at around 30% in 2021. Meanwhile, the revenues for bearings market in India accounted for a share of 12.5% and Indian bearings market is expected to grow at the highest CAGR of 8.3% amongst other countries within Asia Pacific region during 2021 to 2029 and is estimated to be valued at USD 10.3 billion in 2029**.**

Key players in global bearings market

Schaeffler AG

This company was established in 1883 and is headquartered in Germany. It offers bearings and other components. It has presence across North America, Europe and Asia.

JTEKT
It was incorporated in 1959 and is headquartered in Japan. It offers products such as sensors, bearings, automotive components and machine tools. It has presence in Europe, North America, Asia and other regions.

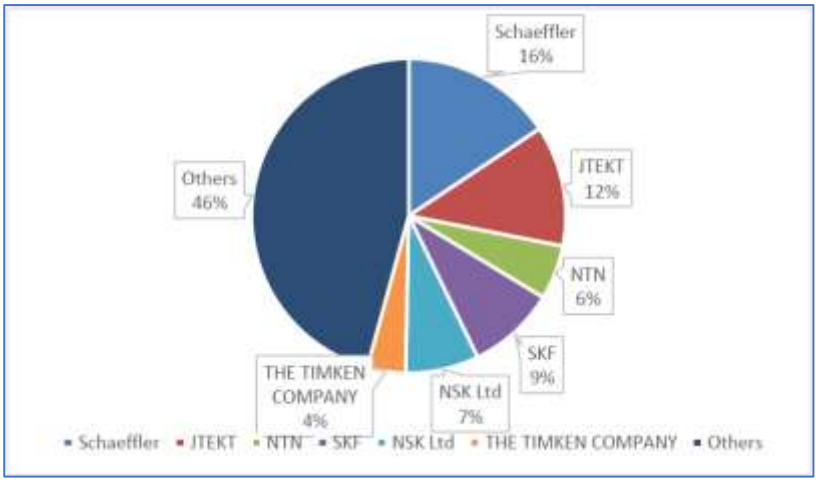
NSK
NSK commenced its operations in 1916 and is headquartered in Japan. It offers products such as bearings, precision machine components and automotive products. It has presence in Asia, America, Middle East, Europe and Africa.

SKF
SKF was established in 1907 and is headquartered in Sweden. It offers products such as machine tools, bearings etc. It operates in various regions including America, Asia Pacific, Europe, Middle East and Africa.

Timken
Timken was incorporated in 1899 and is headquartered in USA. It offers various types of bearings and power transmission products. It has presence in Europe, Middle East, Africa and America.

NTN
NTN is headquartered in Japan and is a precision machinery manufacturer that researches, develops, manufactures, and sells bearings and driveshafts (CVJs). It has presence in Europe, Africa, Asia Pacific and America.

Market share of key global bearing manufacturers in FY22



Impact of Electric Vehicles on bearings industry
The growing demand for EVs is estimated to have an impact on the bearing industry volumes. On one hand, the number of bearings required in an electric vehicle is likely to be lower as compared to the ones required in an internal combustion engine (ICE) model. Moreover, needle cages bearings used in engines and small cage bearing used in 2 and 3 wheelers are likely to be the most impacted type of bearings due to increasing penetration of EVs. Also, the bearing manufacturers are faced with the challenge of developing customized bearings for EVs.

Global Bearing cage market
Precision bearing cages forms one of the five components of a bearing; other such components being, the inner ring, outer ring and rolling elements like rollers or balls and cages. It accounts for a small portion in the total cost of bearings. Bearing cages are primarily utilized to:

- separate the rolling elements, reducing the frictional heat generated in the bearing
- keep the rolling elements evenly spaced, optimizing load distribution on the bearing
- guide the rolling elements in the unloaded zone of the bearing
- retain the rolling elements of separable bearings when one bearing ring is removed during mounting or dismounting

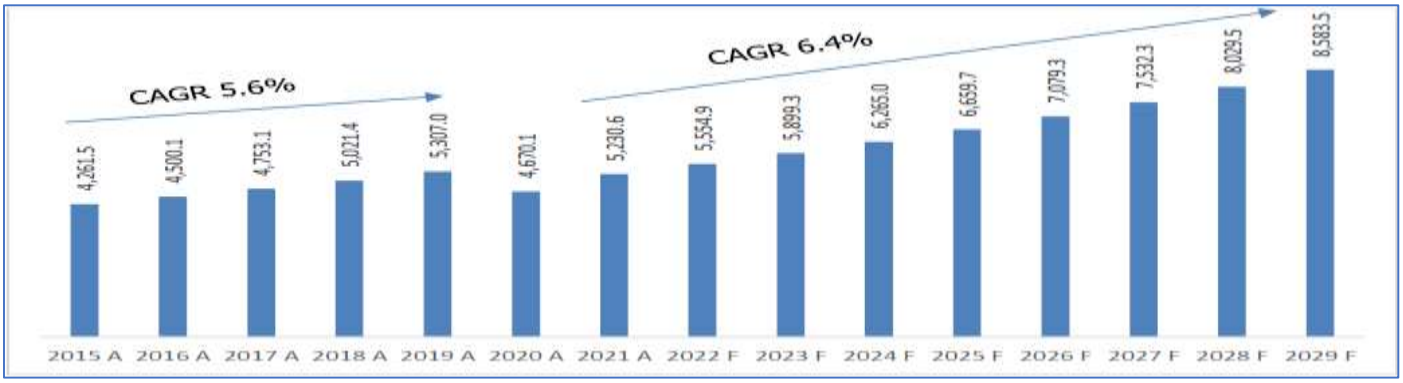
Bearing cage is an important component within a bearing and requires the highest lead time for development and technical and tooling expertise, for its manufacture when compared to other components of a bearing. The bearing cage category comprises of roller cages and ball bearing cages and the cages offer high rigidity, strength and high heat resistant operating conditions. Given the critical function

of a bearing cage, and the resultant quality requirements, global bearing companies have steadily increased outsourcing manufacture of bearing cages and the business from these bearing companies has gotten concentrated to a few bearing cage manufacturers.

Size of the global bearing cages market

The global bearing cages is estimated at about 5% of the global bearings market. The global bearing cages market was valued at USD 4,261.5 million grew at a CAGR of 5.6% between 2015 and 2019. The pandemic situation and geopolitical tensions led to contraction in demand for bearing cages and manufacturers faced supply chain constraints owing to restrictions. This led to contraction in global bearing cages market. However, there was a rebound in 2021 and growth was driven by the usage of bearings in several applications such as mining, automotive, heavy machinery, infrastructure development, power generation and construction. The bearing cages market is expected to grow at a CAGR of 6% to 8% over the period 2021 to 2029 and is estimated to be valued at USD 8,583.5 million in the year 2029.

Global bearing cages market size (in USD million)



Growth Drivers

Apart from the growth drivers stated for bearing manufacturers in bearings section of the report, other enablers are stated below:

Growing outsourcing trend of bearing components

Earlier, players used to manufacture bearing components inhouse. However, in recent years, manufacturers have started outsourcing to emerging regions such as China, India due to low cost manufacturing advantage. This is likely to positively impact the bearing cages manufacturers.

Shift of manufacturing units

While China is considered the global manufacturing hub, recent industry developments such as US China trade war and global outbreak of Covid-19 led to manufacturers setting up manufacturing units in regions other than China to emerging economies like India which bodes well for bearing cage manufacturers.

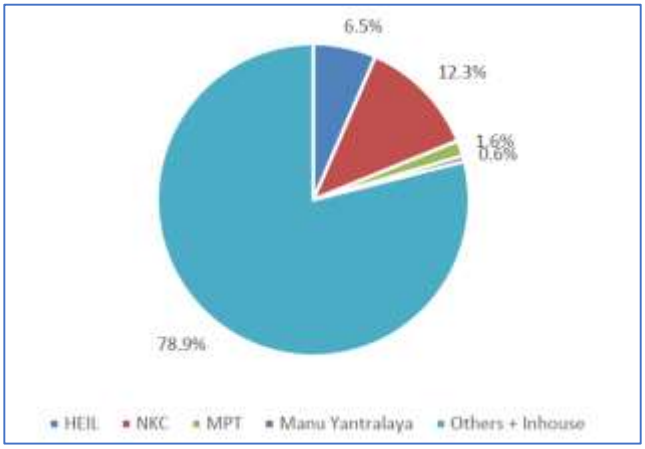
Market overview

The world bearing cage market is estimated at USD 5,230.6 million in 2021 as shown in the figure below. Brass, Steel and Polyamide cages form the majority share of the cages segment constituting an estimated 75% of the market. 60% of this market is estimated to be organized.

Key players and market share

The global bearing cage market is quite fragmented with presence of global and regional players. Some of the key players operating in the global bearing cages market are Nakanishi Metal Works Co Ltd (NKC; Japan), Harsha Engineers International Ltd (HEIL, India), MPT Präzisionsteile GmbH Mittweida (MPT Group Gmbh, Germany) and Manu Yantralaya Pvt Ltd (MYPT, India). The share of some of the key players operating in the global organized bearing (brass, steel and polyamide) cages market in stated in the chart below. This includes outsourced players in bearing cages market. Meanwhile, the global bearing cages segment also has a significant share of inhouse-production by key bearing manufacturers which is reflected in the remaining 78.7% of the share in the chart below.

Market share of key players in global organized bearing (brass, steel & polyamide) cages market (USD 2,549.6 million)



Overview of Global Stamping market

4.1 Stamping process

Stamping is the process of manufacturing which converts flat metal sheets into specific shapes and sizes depending upon the end user's requirement. It includes a number of metal forming techniques such as blanking, coining, bending, amongst others, which are used in the manufacturing process. Stamping experts also use Computer Aided Design or Computer Aided Manufacturing tools for creating different designs. There are different stamping types or techniques which can be used depending upon the product. The major types of stampings are:

- Progressive die stamping
- Fourslide stamping
- Transfer die stamping
- Deep draw stamping

Size of the global stamping market

The global stampings market grew at 4.5% CAGR between 2015 to 2019 and was valued at USD 192.9 billion in the year 2019. In the year 2020, the global stampings market de grew by 10% and slipped to 173.6 billion due to Covid- 19 impact. In coming years, the stampings market is projected to grow at a CAGR of 5.6% between 2021 and 2029and is expected to be worth USD 307.5 billion by 2029. Due to Covid -19 the year 2020 registered a decline in the global market however, the stampings market is expected to rebound and grow at a 5.6% CAGR in future. This rebound is mainly on account of growth in the sectors related to stampings that are expected to perform better because of pent up demand in the past years.

Key players in the global stamping market and company profiles

AAPICO Hitech Public Company Limited

AAPICO Hitech Public Company Limited was established in 1996 and is headquartered in Thailand. The Company is listed on Thailand Stock Exchange and is a premier manufacturer of OEM automotive parts, is involved in design of jigs and dies, plastic parts, fuel tanks amongst others. AAPICO recorded USD 0.6 billion revenue in the year 2021.

CIE Automotive

CIE Automotive was established in the year 1970 is headquartered in Spain. It Is a global supplier of components, assemblies and sub-assemblies for the automotive market. CIE offers products with multi technology for forging, aluminium injection, stamping and others. The company has a significant global presence across North America, Europe, Asia and others.

Outlook for the Global Stampings market

Due to the Covid-19 outbreak, the global economy had to face enormous adversities in the last two years. The lockdowns helped in limiting the spread of virus but brutally affected the industries globally impacting supply chains, trade, automotive industry, agriculture industry, electronics industry and many more had been severely disrupted. The impact of these industries was further passed on to the supporting and end user industries like manufacturing of parts and components due to lack of demand. The situation only improved when the vaccination drives started globally. Past year was a tough environment for the companies to carry on their business. However, returning back to normalcy, in the medium term the impacted sectors are expected to emerge stronger. With upgrading technologies, adoption to electric vehicles and improved demand supply conditions, in the upcoming years it is expected that there will be rise in

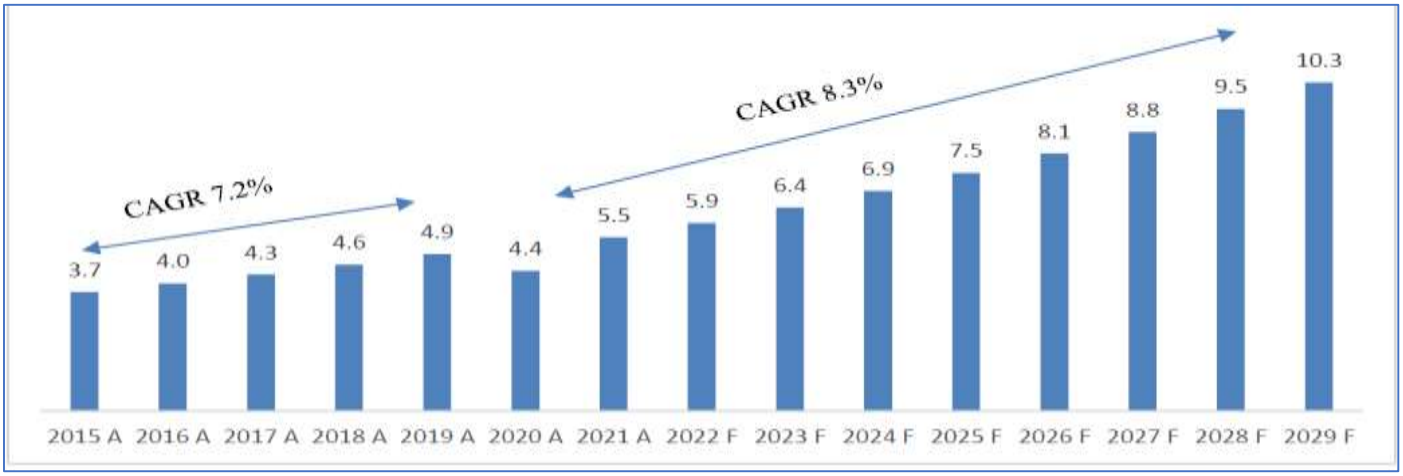
focus on manufacturing in numerous countries, especially in the Asia Pacific region which will provide opportunities for the market participants. The usage of stamping in the manufacturing of car body panels, transmission components, and interior and external structural components is expected to stimulate the demand further. While Medical industry which uses stamping process in manufacturing equipments like oxygen tank, micro- miniature parts, insulin pumps, etc. is slated to grow at highest CAGR, Construction, Agriculture and Electrical and Electronics and Automotive industry will still hold the top market share in future. This is mainly due to increase in manufacturing of automotive components which will be used in EV and also increase in electronics like battery and connector manufacturing.

Indian Bearings market

5.1 Size of Indian Bearings market

In terms of revenue, bearings market in India accounted for a share of about 5.2% in the global bearings market in 2021. Meanwhile, within Asia Pacific region, the revenues for bearings market in India accounted for a share of about 12.5% of the Asia Pacific region's revenues. The Indian bearings market grew at a CAGR of 7.2% from 2015 to 2019. The global outbreak of Covid-19 and subsequent imposition of restrictions led to fall in demand for bearings from end user industries and bottlenecks in supply chain networks of manufacturers. This in turn led to contraction of domestic bearings market in 2020. High and volatile commodity prices posed significant risks to the global economy and the effects were felt on both inflation and growth, and will fall unevenly across countries. There was a rebound seen in 2021 led by growth in the Asia-Pacific region, including India which showed expected growth in usage of bearings in several applications such as mining, automotive, infrastructure development and construction. Sharp growth in commodity prices also augured well for the overall growth in 2021. Threat of geopolitical conflict and supply chain issues (especially the semi-conductor shortage) will have an overhang in the near-term growth prospects. However, long term growth prospects remain intact, the market is expected to grow at a CAGR of 8.3% during 2021 to 2029 and is estimated to be valued at USD 10.3 billion in 2029.

Indian Bearings market size (in USD billion)



It is estimated that more than 50% of the consumption of bearings in the country is met through domestic production. Meanwhile, less than 40% of the demand is met through imports and it has been declining due to increasing localization by multinational players operating in the domestic bearing industry. It is likely that bearing players will make further investments to enhance product localization which will lead to decline in imports and in turn encourage domestic production.

Type-wise break up of domestic bearings market

The total bearings market on the basis of type can be split into ball bearings, roller bearings, bearing units and 'others' categories. Bearing units consists of a bearing mounted in a housing. Ball bearings accounted for the largest share at 43% in 2021 followed by share of roller bearings at 34%. Bearings units and others category accounted for share of 22% and 1% respectively.

Indian Bearing cages market

In terms of revenue, bearing cages market in India accounted for a share of about 5% in the global bearings market in 2021. Further, within Asia Pacific region, the revenues for bearings market in India accounted for a share of 12.5% of the Asia Pacific region's revenues. The Indian bearing cages market stood at USD 186.5 million in 2015 and grew at a CAGR of 7.2% during 2015 to 2019. The Indian bearing cages market contracted owing to the global outbreak of Covid-19 and geopolitical tensions that led to decline in demand from end user industries of bearing cages and manufacturers witnessed supply chain constraints. However, going forward, with resumption

of economic activities, the Indian bearing cages market is expected to grow at the highest CAGR of 8.3% amongst the countries within the Asia Pacific region during 2021 to 2029 and is estimated to be valued at USD 516 million in 2029.

Indian bearing cages market (in USD million)

Bearing cages are usually made of materials such as Steel, Brass, Polyamide, Polyetheretherketone, Phenolic Resin etc. Bearing cage business into large diameter brass and steel bearing cages are still more concentrated inhouse and there is likely possibility of higher outsourcing of the same going forward.

Indian Stamping market Outlook

The rapid spread of Covid-19 pandemic had a devastating impact on the Indian economy. All the major sectors, except agriculture were badly hit due to the pandemic. The Indian economy was already facing the headwinds before the onset of second wave. However, India's recovery gained momentum after fast paced vaccination drives in the country. The outlook for the Indian market is promising as in Asia Pacific, India is forecasted to grow at the CAGR of 7.4% between 2021-2029. The Stamping market has growth potential, mainly due to the progress in the automotive and electrical and electronics sector in India. Favorable conditions from manufacturing sector through Make in India and several government initiatives are helping in growth of automotive sector. As agriculture and allied industries are largest sectors in the country, technological advances in agricultural equipment will lead to increased use of stamping technology. The increasing industrialization, infrastructure development and growth in defence sector in the country is expected to increase manufacturing of machines/equipment in near term. Additionally, expected shifts in manufacturing units to India is also anticipated to grow the stampings market. Post Covid – 19, factors like low inventory levels, improvement in consumer sentiment, pent up demand will help the Indian market to grow in the coming years. Further, Government infrastructure projects like the National Infrastructure Pipeline will benefit the stampings industry. Increase in B2B sales channels and websites like IndiaMart provide opportunities to the sellers to reach high demand markets and expand.

Overview of Solar Industry

India has a large amount of solar energy potential. Approximately 5,000 trillion kWh of energy is incident over India's geographical area each year. Solar photovoltaic electricity can be successfully harvested, allowing for massive scalability in India. Rural electrification will benefit from off-grid, decentralized, and low-temperature applications. Millions of people in Indian communities have profited from solar energy-based decentralized and distributed applications that satisfy their cooking, lighting, and other energy demands. The social and economic benefits include less drudgery for rural women and girls who go great distances to harvest fire wood. Furthermore, throughout the years, India's solar energy sector has emerged as a key participant in grid-connected power generation capacity. It contributes to the government's objective of sustainable growth while emerging as a key anchor in meeting the nation's energy demands and ensuring energy security.

Outlook

Solar capacity addition witnessed a marginally slower pace in FY21 due to the Covid-19. However, capacity additions have picked up pace sharply this year – there are already capacity additions of about 14 GW in FY22 due to the introduction of basic custom duty on solar module and cells. Starting April 1, 2022, the Ministry of New and Renewable Energy (MNRE) has imposed a basic custom tax (BCD) of 40% on solar modules and 25% on solar cells. The April 2022 implementation date assures that currently contracted bids will not be harmed, and renewable energy providers will be able to factor in the new cost of solar cells and modules in future bids. Hence to meet the BCD timelines, there has been an increased pace of commissioning this year, as developers hurry to complete power purchase agreements (PPAs) and then sign equipment orders before the new duty cycle begins. The pace of commissioning of new capacities is expected to continue over the medium term, owing to increase in domestic manufacturing of solar modules, technological

breakthroughs, interest from domestic and institutional investors, and the Government of India's sustained attention. The developers are expected to face challenges amounting to rising cost of modules and other ancillary products due to increase in the prices of raw materials like polysilicon, glass, steel, aluminium and cost of fright; but it is expected late in 2023 or Q1 2024 the downward trajectory in solar modules prices will return. In near term, the solar-plus-storage infrastructure industry is expected to grow, as is the exploration of floating solar PV modules and the growth of community solar projects into new markets. Cost reductions, operational efficiency, and the possibility to minimize storage capital costs through the solar investment tax credit are all advantages of combining storage and solar

Key Concerns

- The current outbreak of COVID-19 has caused severe disruptions in the Indian and global economy. The continuing impact of the COVID-19 pandemic on the business, operating results, cash flows and/or financial condition is uncertain and cannot be predicted.
- Depend on a limited number of customer groups for a significant portion of revenue from engineering business
- Dependent upon network of agents for fulfilment of needs of customers. HEIL's inability to maintain its relationships with agents or deficiency in the service provided by such agents may adversely affect its business, results of operations, cashflow and profitability.
- HEIL is subject to various laws, regulations, approvals and licenses required in the ordinary course of business, including environmental, health and safety laws and other regulations.
- The Company has recently completed a corporate reorganisation, pursuant to which it may face administrative and operational difficulties.
- Exposed to foreign currency exchange rate fluctuations, which may adversely affect the results of operations and cause its quarterly results to fluctuate significantly.
- Financing agreements impose certain restrictions on the operations, and failure to comply with operational and financial covenants may adversely affect the reputation, business and financial condition.
- Inability to successfully diversify HEIL's product offerings of its engineering business may adversely affect its growth and negatively impact profitability.
- Depends on third parties for the supply of raw material and delivery of products. A disruption in the supply of raw materials or failure of its suppliers to meet their obligations could impact its production and increase the costs.
- Company and certain of HEIL's Subsidiaries have unsecured loans that may be recalled by the lenders at any time.
- Availability and cost of raw materials for engineering business could adversely affect the business, financial condition, results of operations and prospects.
- Geographical concentration of production units may restrict HEIL's operations and adversely affect the business and financial condition.
- HEIL is subject to strict quality requirements, customer inspections and audits, and any failure to comply with quality standards may lead to cancellation of existing and future orders and could negatively impact its reputation, business, cashflow and results of operations and future prospects.
- Activities involving manufacturing process can be dangerous and can cause injury to people or property in certain circumstances.
- Exposed to certain operational risks including loss or write off of inventory, credit risk and delay or non-realization of receivables in a timely manner or at all.
- HEIL's solar EPC operations expose it to certain risks including construction cost price fluctuation, equipment defects etc.

- It is subject to various risks associated with transportation and may face claims relating to loss or damage to cargo, personal injury claims or other operating risks.
- Any disruption in labour industry or strikes by workforce may affect the production capability of the Company.
- The performance of solar power projects is affected by varying factors beyond its control.
- Any order curtailing the prioritization of renewable energy or any change in central or state policies governing the solar sector could adversely affect the results of operations from solar EPC business.
- The reduction, modification or elimination of government and economic incentives for solar power projects may reduce the demand for solar power projects and thus adversely affect its solar EPC business
- Depends on suppliers from China for certain key components used in solar power projects. A disruption in the supply of these key components or failure of its suppliers to meet their obligations could impact its ability to set up solar power projects.
- Certain premises including certain of warehouses are not owned by HEIL and it has only lease rights over it. Further, some of its lease agreements may have certain irregularities.
- Conflicts of interest may arise out of common business objects for solar EPC business between HEIL and certain of its Group Companies which are in the same line of activity or business as that of the Company.
- Any failure to protect or enforce rights to own or use trademarks and brand name and identity could have an adverse effect on the business and competitive position.
- If HEIL fails to maintain an effective system of internal controls, it may not be able to successfully manage, or accurately report, its financial risks.
- Success depends on the ability to understand evolving industry trends and to fulfill the changing preferences of the customers.
- Any downgrade in credit ratings could increase the borrowing costs, affect the ability to obtain financing, and adversely affect HEIL's business, results of operations, cash flows and financial condition.
- HEIL may undertake strategic acquisitions or investments or strategic relocations, which may prove to be difficult to integrate and manage or may not be successful.
- Business operations may be disrupted by an interruption in power supply, which may impact its business operations.
- Success largely depends upon the knowledge and experience of Promoters and its Key Management Personnel as well as its ability to attract and retain skilled personnel. Any loss of key Management Personnel or its ability to attract and retain them and other skilled personnel could adversely affect the business, operations and financial conditions.
- Failure or disruption of information and technology ("IT") and/ or enterprise resources planning systems may adversely affect the business, financial condition, results of operations and future prospects.
- Business is subject to costs, risks and uncertainties, including those associated with laws and regulations in domestic and foreign jurisdictions in which HEIL operate, tariffs and trade relations and international political conditions.
- HEIL has not yet placed orders in relation to the capital expenditure to be incurred for the purchase of machinery and for the proposed infrastructure repairs and renovation of its existing production units including office premises in India. In the event of any delay in placing the orders, or in the event the vendors are not able to provide the machinery or other materials in a timely

manner, or at all, may result in time and cost overruns and its business, prospects and results of operations may be adversely affected.

- Corrupt practices or fraud or improper conduct may delay the development of a product and adversely affect the business and results of operations.

- Any downgrading of India's debt rating by an international rating agency could have a negative impact on the business and financial performance and the trading price of the Equity Shares post listing.

- Fluctuation in the exchange rate of the Rupee and other currencies could have an adverse effect on the value of Equity Shares, independent of its operating results.

Profit & Loss

Particulars (Rs in million)	FY22	FY21	FY20
Revenue from operations	13214.8	8737.5	8858.5
Other Income	175.2	29.8	136.5
Total Income	**13390.0**	**8767.3**	**8995.1**
Total Expenditure	**11524.7**	**7519.1**	**7998.7**
Cost of Materials Consumed	7991.6	4340.6	4480.1
Change In Inventories of Finished Goods & Work-In-Progress	-594.6	-193.4	101.0
Employee Benefits Expenses	1580.3	1463.8	1490.3
Other expenses	2547.3	1908.1	1927.3
PBIDT	**1865.3**	**1248.2**	**996.3**
Interest	245.6	299.9	328.0
PBDT	**1619.8**	**948.3**	**668.3**
Depreciation and amortization	353.6	341.1	352.4
PBT	**1266.2**	**607.2**	**315.9**
Tax (incl. DT & FBT)	**346.8**	**152.8**	**96.8**
Current tax	332.5	0.0	145.7
Deferred tax (credit)/charge	14.3	152.8	-62.7
MAT Credit reversed/(availed)	0.0	0.0	13.7
PAT	**919.4**	**454.4**	**219.1**
EPS (Rs.)	11.9	5.9	3.5
Face Value	10	10	10
OPM (%)	12.8	13.9	9.7
PATM (%)	7.0	5.2	2.5

Balance Sheet

Particulars (Rs in million) As at	FY22	FY21	FY20
Non-current assets			
Property, plant and equipment	2,828.8	2,678.0	2,620.0
Capital work-in-progress	21.1	33.4	33.9
Goodwill on Consolidation	710.6	731.4	701.0
Other Intangible Assets	17.6	14.7	16.9
Financial assets			
Investments	0.4	0.3	0.3
Loans & Advances	0.6	0.9	0.6
Other Financial Assets	6.4	4.0	3.9
Other Tax Assets [Net]	110.5	99.3	106.2
Other non-current assets	86.5	77.9	72.6
Total non-current assets	**3,782.2**	**3,640.0**	**3,555.3**
Current assets			
Inventories	3,757.2	2,675.5	2,319.3
Financial assets			
Investments	64.3	92.5	65.8
Trade receivables	2,827.5	2,138.8	2,386.6
Cash and cash equivalents	214.2	330.5	242.8
Other Bank Balances	178.9	122.5	328.5

Loans & Advances	123.4	48.3	69.7
Other financial assets	107.5	69.5	55.5
Other current assets	527.3	693.2	708.9
Total current assets	**7,800.3**	**6,170.7**	**6,177.1**
Total assets	**11,582.5**	**9,810.7**	**9,732.4**
EQUITY & LIABILITIES			
Equity			
Equity share capital	772.5	500.0	500.0
Other equity	4,446.1	3,771.8	3,219.8
Total equity	**5,218.6**	**4,271.8**	**3,719.8**
Liabilities			
Non-current Liabilities			
Financial Liabilities			
Borrowings	1,378.5	1,015.2	1,276.4
Lease liabilities	55.2	75.8	60.9
Provisions	110.6	95.2	68.9
Deferred tax liabilities (net)	39.5	20.0	-149.0
Other non-current liabilities	21.9	20.9	20.7
Total non-current liabilities	**1,605.6**	**1,227.0**	**1,277.9**
Current liabilities			
Financial liabilities			
Borrowings	2,406.4	2,469.8	2,844.3
Lease liabilities	8.6	6.0	9.7
Trade payables			
Dues to Micro & Small Enterprises	95.3	42.5	38.6
Dues to other than Micro & Small Enterprises	1,732.6	1,124.3	1,076.0
Other financial liabilities	235.0	262.5	183.9
Other current liabilities	238.3	398.1	551.9
Provisions	20.7	20.2	18.6
Current tax liabilities (net)	21.5	-11.4	11.7
Total current liabilities	**4,758.4**	**4,311.9**	**4,734.7**
Total liabilities	**6,363.9**	**5,538.9**	**6,012.6**
Total equity and liabilities	**11,582.5**	**9,810.7**	**9,732.4**

(Source: RHP)

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HDFC securities Limited, I Think Techno Campus, Building - B, "Alpha", Office Floor 8, Near Kanjurmarg Station, Opp. Crompton Greaves, Kanjurmarg (East), Mumbai 400 042 Phone: (022) 3075 3400 Fax: (022) 2496 5066

Compliance Officer: Murli V Karkera Email: complianceofficer@hdfcsec.com Phone: (022) 3045 3600

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