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GREEN FURNACE



Sebastien Roussel

Sector President – John Cockerill Industry
Chairman – John Cockerill India Limited

- New Startup in Medical Industry using Nanotechnology
- SMS group participates at 'India Steel 2023'
- Secondary Steel Conclave - Focus on Performance & Resource Optimization

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Editorial Desk



D. A. Chandekar
Editor

Dear Readers,

The Indian iron & steel industry is performing well in spite of the adverse conditions prevailing in most of the parts of the globe. The reason is obvious, it is domestic consumption which is and was always driving not only the steel demand but also the national economy as a whole. I have also argued that with 140 crores of aspiring population, India is not likely to face recession. Today also I do not find any reason to deviate from this logic.

It is said that bad or rather challenging days are your best teachers. We all have gone through such a challenging period for the last three years or so. The covid 19 pandemic had really devastated not only families but also many businesses. Others somehow managed to survive using all their brains and the undying fighting spirit. During this survival journey, we have learnt many professional and management lessons. Cost and inventory control, working efficiency improvement, logistics optimization, employing new technologies, all these things we learnt and also

practised during the pandemic period. Now the pandemic is over and the iron & steel industry has in a way bounced back. My dear friends, my humble request is that let us not forget the lessons learnt and continue practising them.

One area where we all have to work together is to improve our industry's image. I have seen many of my friends being proud of their association with IT or Auto industry but rarely I have seen somebody aspiring for a job or a career in steel industry. Yes, ours was supposed to be a dirty industry offering jobs at add locations and in dusty hot environment. The salaries were far less than so called 'elite' sectors and thus 'Metallurgy' was undoubtedly the last choice of any engineering student. I know the things have changed a lot. Metallurgists no longer sit in hot iron cabin but have shifted to a decent control room. Many steel plants have excellent housekeeping and offer very clean and pleasant environment. The salary structure has also improved a lot during this period. Apart from the materialistic compensation, steel is a core sector and it directly impacts the infrastructure growth and one would get a feeling of participating in nation building. Many prestigious industry sectors such as auto, railways, aerospace, power, defence etc. can not survive and grow without steel. Such is the importance of our sector.

I do agree that our industry now offers a bright growing career to a young engineer but the old perception about our industry still persists. We all have to work together to change it, isn't it ?

Write your comments :

<https://steelworldblog.wordpress.com/>

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Statistics

42 PV dispatches highest ever in April, grow
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Sebastien Roussel

Sector President – John Cockerill Industry
Chairman – John Cockerill India Limited

«John Cockerill India is well set up to support a fast growing Indian market and help Indian steelmakers on their path towards sustainable and responsible steelmaking.»



A young dynamic leader with a successful record of accomplishment and over 17 years' experience in global management, strategy, and operations, Sébastien ROUSSEL held several management positions in various fields, such as project management, finance and operations management, in Belgium and in the USA.

Since joining the Belgian John Cockerill Group in 2006, he acquired solid managerial experience and leadership skills. Sébastien served in management positions of the Group's Energy and Environment sectors of activity and currently holds the position of President of "John Cockerill Industry". He is

Chairman of John Cockerill India Limited and Board Member of several of John Cockerill's international subsidiaries, including listed companies and joint ventures.

Q1. As the President of the John Cockerill Industry Sector and Chairman of John Cockerill India Limited what are your long-term and short-term objectives?

By acquiring John Cockerill India Limited over fifteen years ago, the international engineering Group John Cockerill with headquarters in Belgium since 1817, vividly illustrated that they believed very early in the growth of the Indian market. At that time the newly acquired entity, highly focused on cold rolling mills

and traditional process lines, integrated the Group's Industry Sector. Over the years, John Cockerill Industry pursued the goal of increasing its execution capabilities out of India, all while aiming at the development and expansion of its Indian operations' product portfolio. Today, we believe that we are well set up in India to support the current and expected fast growth of the country's steel industry through our company's projects team supplemented by a highly competent engineering team, and state of the art workshops at Taloja and Hedavali with optimized production processes.

Additionally, over the past two decades, John Cockerill's Industry Sector has significantly invested in R&D activities in Europe and other

A Narrow Width Caster, But A Marquee Achievement



We surpassed yet another key milestone on our journey to maximising the percentage of continuous casting in India, having just commissioned our latest in a long series of continuous casters.

The caster is a 6/11M narrow width Caster having 2 strands, commissioned in April 2023 for our long-standing customer, Sambhv Sponge Power Pvt Ltd in Raipur. The slab width is 400mm, and is executed in a Tubular Mould for the very first time.

With this latest feather in our cap, we continue to inch closer to our vision of maximising our footprint all across the country.

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Face to Face

parts of the western world. An investment that has also helped us to focus on our top priority of upgrading and expanding our product offerings in the domestic Indian market with particular attention to serve the growth of India with its huge ambition for building domestic infrastructure. One of our main focuses will, however, be the automotive sector. A significant growth industry

considerably increase our Indian footprint.

In this context, I would like to also make a particular mention of our strategically located workshops in Taloja and Hedavali, that I am very proud of, and in which we have more than 30 high-end machines, heavy capacity EOT cranes, and enough space for handling equipment and operations. Our Zero Accident Policy and our very strong safety

have also increased our focus on customer service and spare parts offering, ensuring hassle-free lifecycle support for our clients all over the country.

Q2. How equipped is the Industry sector to meet the challenges of the global climate and sustainability goals?

Our innovation projects are ever more focusing on reducing the carbon footprint of steel manufacturing, including the storage of CO₂ and the reduction of CO₂ emissions. Faced with the challenges of climate change, John Cockerill Industry's teams innovate every day to enable their steelmaking clients to move towards a greener and smarter steel production. As such, our latest generation of steel production lines incorporate the most advanced technologies in terms of energy efficiency and environmental performance. And on top of this, John Cockerill Industry is resolutely investing in R&D partnerships aiming at developing completely new processes.

The contribution of our experts is decisive in these type of research partnerships. One of them is destined to revolutionize the upstream steelmaking process. Under development with the world's leading steelmaker ArcelorMittal, this disruptive innovation process is no longer focusing on simply reducing CO₂ emissions of the current steelmaking process, but inventing a new, 100% zero carbon process. This unique cold direct electrolysis process extracts iron from iron ore



for which we have to offer high value-added solutions and a strong legacy from Europe which we intend to bring to India. The recent orders for several high-performance processing lines, received from major clients like TATA and ArcelorMittal/Nippon Steel (AMNS) are perfectly illustrating the relevance of this strategy and John Cockerill's determination to support India in its growth plan. Our long-term objective is crystal clear:

culture translates into an impressive safety record of over 3500 days without accidents for Taloja and 1800 days for Hedavali. Both facilities are prime examples of our commitment to safety and Taloja a flagship of our future development. The planned increase of the production of high value-added equipment will help us to cater to almost all current and future needs of our clients and help India with the expected unprecedented growth of its steel industry.

Last, but not least, we

Out of its manufacturing workshop in Taloja, John Cockerill caters to some of the world's top steelmakers - TATA, AMNS, JSW and Jindal. The workshop is a flagship of the Industry Sector's future development in and outside India.

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Face to Face

using electricity. The dedicated production plants are to be built by John Cockerill Industry's project teams for this first-class steelmaker all over the world. No need to say, that we are very proud of our experts making a decisive contribution in these type of research partnerships.

In this context, I would also like to mention the galvanizing and annealing lines for Indian steelmakers Tata Steel and AMNS to be supplied in the months to come. These five lines feature the most cutting-edge technologies and innovations in terms of energy efficiency, optimization of zinc consumption and resistance to corrosion. Together, they will allow an annual production of 2.5 million tons of steel. In addition to the high levels of quality, reliability, flexibility, and safety that they guarantee, their environmental performance will enable these two giants to continue to progress on the path towards sustainable and responsible steel making.

Another prominent example of how we address sustainability goals, are our eco-friendly FB ARPs (fluidized bed acid regeneration plants) recycling close to 100% of the Hydrochloric Acid (HCl) used in the strip and long products pickling process, thus considerably minimizing the environmental impact of our clients' steel production plants. On the back of



John Cockerill's Automation Department in Thane offers control solutions to execute real time control & maintain critical process parameters .

increasingly stringent environmental laws, India is one of our international growth markets for this type of installations. A trend that is perfectly illustrated by one of our very recent orders placed by Jindal Steel & Power Limited for 2 Fluidized Bed (FB) ARPs.

I am very happy that today, the advanced design of our industrial facilities includes the optimization of their overall environmental footprint, whether in terms of their energy efficiency, CO2 emissions, or the treatment of their effluents.

Q3. Are you catering to the world market from your Indian manufacturing base or are you only targeting the domestic market?

We are already catering to the export market out of our Indian locations for many years. The equipment and components that we manufacture in India are exported to Europe, the US, Egypt, Africa, and many other countries in which our Sector is building steel production facilities. In fact, we just completed a project for a leading US steelmaker for which the skin pass mill has been 100% engineered and manufactured in India. In the years to come, we are keen to further increase the participation of our Indian

facilities in our sector's projects related to engineering and manufacturing.

These export activities combined with the drastically growing domestic market needs are the obvious reasons for the expansion of our manufacturing facilities in India and important cornerstones of our Sector's growth strategy.

Q4. You said that innovation is key to your future development in India, but also worldwide. More explicitly, what does this mean for your Sector of activities?

At John Cockerill, innovation is above all a state of mind, a way of looking at things. Technological innovation, which is essential for our engineering and services activities, requires a truly open-minded approach to all the company's activities, including its operating methods and processes.

We know that innovation is the key for both, supporting India on its growth path, and helping our clients achieve profitable growth, all while helping them produce the latest types of steel grades and address ever changing market needs.

Digitalization is one of the important fields in which we have been considerably innovating in recent years. With the COVID-19 pandemic, never in living memory have businesses had to adapt to such massive change in such a short span of time. For many, the call of the day was, and still is, maintaining operational levels while our most critical



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Face to Face

resource – people – have been constrained by needed social distancing practices and work from home requirements. To help steelmakers navigate a way through the new normal, John Cockerill Industry has developed its OPExS™ GoMobile. As an essential part of a manufacturing control strategy, this Operational Process Expert System collects, organizes, and analyzes process data on site in real time, enabling advanced and remote monitoring and control to help operations to get smarter.

Additionally, knowing that the implementation of Industry 4.0 and the resulting digitalization is re-defining the line operator's role, we are also offering our newly designed digital operator training. Whether related to the interface with the automation, or the ever more complex production processes, an increased level of expertise is required to efficiently run production equipment and lines.

To improve operator training efficiency, John Cockerill's Trainlab™ software integrates 3D reproductions of equipment to create an interactive and user-friendly training environment. A new level of training experience that is used for John Cockerill's zinc bath equipment of galvanizing lines. Each module immerses the operator into a virtual 3D environment, allowing to reduce training costs and improve the operator's

retention rate.

Another vector of growth is the electrical steel market segment. John Cockerill Industry has grown its product offering focusing on e-mobility. The average growth of e-steel is estimated at around 6.3% from 2021 to 2026 and projected to reach \$45.8 billion in 2026. Today, John Cockerill Industry's product offer includes all technologies essential to produce high-grade non-grain-oriented (NGO) electrical steel to serve this market.

Q5. With the recent orders that John Cockerill has won (AMNS and JSOL) it's clear your sector has

two of the measures the Indian Government has put in place to support the industry. On the back of a fast-growing economy, India's steel industry is poised to grow in the years to come. We are confident that for a steel sector continually aspiring to modernize and upgrade its steel production facilities all while rendering them more energy efficient, environmentally friendly, and profitable, John Cockerill's outstanding products and experience in the fields of engineering, project management, manufacturing and sourcing, make us as the best solution provider on the Indian market.

A clear indicator for us is the fact that our references on the Indian market have only been



become more aggressive in India and John Cockerill looks to be the preferred partner. What is your approach and focus?

India is currently the second-largest producer of crude steel in the world and is projected to double its production capacity by 2030 from the current level of 154 MT to 300 MT. The National Steel Policy of 2017 and the acceptance of 100 % foreign direct investment are just

The Indian management team is to support John Cockerill's long-term objective: considerably increase its Indian footprint.

getting stronger in recent years. Today we cater to some of the world's top steelmakers – TATA, AMNS, JSW and Jindal. And we know, that having recognized and proven references in a conservative business like ours is a must. Steelmakers hesitate to invest in large CAPEX particularly when it comes to the automotive industry. We are confident, that our growing recognition will also help us push our new products and



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technologies in evolving markets both in India and abroad. The rapidly growing electrical steel market is one of them. With e-mobility becoming the norm in many parts of the world, we have been developing very specific technologies to cater for this booming industry and become a partner of choice for steel producers catering to this industry.

Having said that, in the face of the ongoing re-mapping of the steel market, we will also continue to heavily invest into the development of our core technologies. An investment that is to allow us to be the first choice for all the players of an ever faster changing steel industry, whether related to their capital or operational expenditures.

Q6. Could you throw some light on the new product portfolio – IPS, especially created to focus on the Group's H2 giga-factories.

"Meeting the needs of our time" is the mission that has been driving John Cockerill for the past 200+ years. It is this same spirit that made us call into being a new division with the goal to offer a full range of cross-industry services to help organizations around the world build sustainable facilities. The newly created division is called Industrial Project Services (IPS) and has a combined base in Belgium and India. With its backbone made up of experienced engineering and project execution experts, IPS's first mission is



the construction of the Group's H2 Gigafactories. A mission that is fully in line with one of our Group's main ambitions: enable the most energy-intensive industries to reduce their environmental footprint by helping them to use green energy. As such, the new plants are to manufacture electrolyzers to produce carbon-free hydrogen. With the drastically growing need of the steel industry for green hydrogen on the back of an increasingly popular Direct Iron Reduction (DRI) process, the giga factories built by IPS are helping steelmakers to produce the necessary energy.

IPS's overall objective is to focus on industrial projects that are supporting carbon neutrality and ecological transition. Projects that often call for multi-disciplinary skills to address most adequately some of the important topics of our time such as energy efficiency, power optimization, carbon capture or other environmental related topics for which the

Sébastien Roussel with the Indian IPS team providing tailored and single-source engineering consultant services to help clients invest confidently in the future.

newly created division offers a wide range of tailored and value-added services. IPS is acting as an engineering consultant taking care of all the stages of engineering and providing a single point of contact. Its flexible scope comprises strategic consultancy, project planning, engineering, sourcing, project management, factory construction management and audits for clients. With the goal to build them in the most efficient and sustainable manner, IPS will supply the full-circle, all-encompassing project management services for the construction of these plants, from the initial idea to the final production facility. In short IPS delivers single-source, life-cycle solutions with the goal to help our clients invest confidently in the future.

With this new service, our cutting-edge technologies, and ambitious innovations, we plan to contribute to today's markets' needs and make a difference in a world that is undergoing an exciting transformation to meet the global climate and sustainability goals.



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Maanshan Iron & Steel started combined billet & beam-blank caster

Chinese steel producer Maanshan Iron and Steel, also known as Masteel, recently started up a 6-strand combined billet and beam-blank caster supplied by Primetals Technologies at its steel plant in Maanshan, Anhui province, China. The order was placed in December 2021 and encompasses engineering, supply of key equipment, Level 1 and 2 automation systems, and advisory services for implementation and startup.

Ahead of schedule The project included a complete casting machine and lasted just 13 and a half months from the kick-off meeting until the first cast. The project team faced some challenges related to global supply chain issues and Covid-19 restrictions. However, as all involved parties focused on close collaboration and effective communication, the team managed to start up the new equipment two weeks ahead of schedule. The caster has an annual capacity of 1.1 million tons and casts structural steel, low alloyed grades for bridges, weather resistant grades, and steel for the mining industry. It is designed for high productivity – up to 330 tons per hour. Thanks to the new billet and beam-blank caster, Masteel will be

able to increase its annual production. Precise spray cooling A dual-type oscillator assures state-of-the-art oscillation accuracy, which guarantees optimal lubrication of the mold and best possible surface quality.

Primetals Technologies' secondary cooling solution prevents any over-cooling of the flange tips and the development of surface cracks. The 6-strand caster also features Primetals Technologies' patented continuous straightening concept for reducing the tension caused by the straightening process. Optimized production The Level 2 automation system CC Optimizer handles the production planning and records data on heat, strand conditions, and products



alsoencompasses several expert systems.

A cut length optimization system, Yield Expert adjusts the strand to maximize the number of items scheduled for production. Production events and quality-related information are examples of data being collected and evaluated by Quality Expert. The process optimization solution is rounded off by Speed Expert, a system that calculates the optimal casting speed. The process optimization experts of Primetals Technologies were able to execute the complete startup of the Level 2 automation system remotely. One of the largest iron and steel producers in China, Masteel mainly manufactures steel plates, section steel, wire rods, and train wheels.



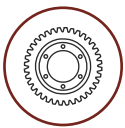
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ARORA STEEL, A Rising Star in Alloy & Special Steels

ARORA STEEL (AISRM) , a well-known Alloy & Special Steel Plant based in Ludhiana, crossed a major milestone in March'23 by commissioning its State of the Art Continuous-HV Mill. This will significantly improve ARORA's product quality and volumes.

ARORA STEEL began its humble journey in 2004 as a Rolling Mill and commenced its operations in 2015 as a Steel producer with the commissioning of EAF/LF/VD/CCM facilities. Our journey over the last 8 years has been remarkable& we have transformed into a Premier Alloy steel plant with 2.5L TPA capacity equipped with best of the manufacturing, inspection and testing facilities. We have been blessed with outstanding support& guidance from our customers & OEMs all along the journey.

ARORA STEEL is led by Mr Raminderpal Singh Dua, Managing Director , a technocrat with a vision and commitment to values , systems and

professionalism. He is ably supported by Mr Kapil Sharma, Executive Director, a well-known face in the Alloy steel Industry. Mr Ekjot Chawla , Director , looks after Commercial functions. We have a strong and loyal team of apx1000 employees- Engineers, Technicians and staff.

We are North India's largest alloy & special steel plant with a largest bloom size (250x320 mm) which enables us to provide very wide range of rolled sizes. NABL accredited & fully equipped Metallurgical laboratory ensures that we produce material conforming to Indian and Global specifications. We offer products in As Rolled, Peeled & Ground and Heat-Treated conditions.

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Nitin Bhat

Chief Marketing Officer
Arora Iron & Steel Rolling Mills Pvt Ltd,

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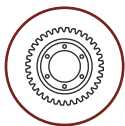
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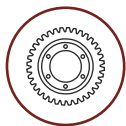
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New Startup in Medical Industry using Nanotechnology



Introduction

In our earlier articles of March and April 2023 issues of STEELWORLD and METALWORLD respectively, introduction to nanotechnology is briefly described to the readers by highlighting the importance of some known metals in the nanoform size (1-100 nm range) and giving best results as far as antimicrobial activity, corrosiveness, stability and mechanical strengths are concerned. Nanotechnology has revolutionized the field of material science, including the development of metals with enhanced properties through the integration of nanostructures. Nanotechnology in

metals involves the use of nanoscale particles, fibers, and coatings to alter the physical, chemical, and mechanical properties of metals.

By incorporating nanoscale particles, metals can be made stronger, more durable, and more resistant to wear and corrosion due to the high surface area to volume ratio of nanoparticles that allows for a greater number of atoms to be exposed, leading to enhanced properties. In addition, nanoparticles can be added to metals to improve their electrical, thermal, and magnetic properties, making them useful in a range of applications. Thus the integration of Nanotechnology in metals has led to the development



Ramesh Chaughule
Adjunct Professor,
Ramnarain Ruia
Autonomous College



Dipesh Mohile
Managing Partner, IIA
Ventures, Mumbai



Vinay Joshi
Director, Joint
Replacement Surgery,
Kokilaben Ambani
Hospital

of new materials with enhanced properties, as well as new manufacturing techniques that enable the production of complex shapes and structures. These advances have the potential to revolutionize industries and improve the performance and durability of metal-based products. There are several combinations of nanomaterials that are used with nanohydroxyapatite materials. One such combination is hip implants using nano zinc and HA (hydroxyapatite) currently being researched for their potential to improve the performance and longevity of hip implants.

Nanoparticles to Control Biofilms

Biofilms are a common cause of infections in hip replacement surgery, and controlling them is a critical challenge. One potential approach to controlling biofilms in hip replacement surgery is the use of nanoparticles (NPs). Nanoparticles have unique physical and chemical properties that make them highly effective in targeting biofilms. They can penetrate the biofilm matrix and disrupt the bacterial cells, thereby preventing their growth and spread. Studies have shown that the positive charge on the metal ion is critical for antimicrobial activity, allowing for the electrostatic attraction between the negative charge of the bacterial cell membrane



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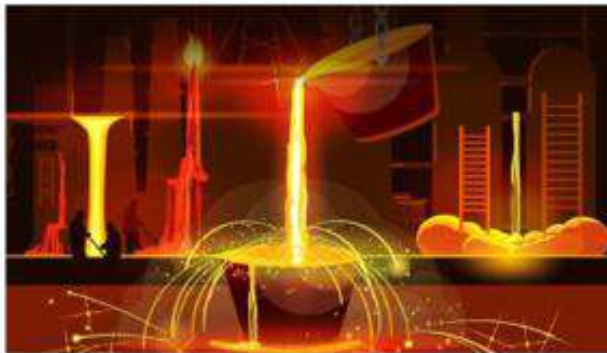


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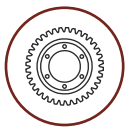
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and positively charged nanoparticles.

Recent studies have shown that silver nanoparticles, in particular, can effectively control biofilms in hip replacement surgery. Silver nanoparticles have been shown to have strong antibacterial properties and can prevent the formation of biofilms on the implant surface. Other types of nanoparticles, such as zinc oxide and titanium dioxide nanoparticles, have also shown promise in controlling biofilms in hip replacement surgery. These nanoparticles have been shown to inhibit bacterial growth and biofilm formation and prevent bacterial adhesion to the implant surface.

It is also important to note that the use of nanoparticles in medical devices is highly regulated, and any products containing nanoparticles need to comply with the necessary regulatory requirements. Thus nanoparticles have shown promise in controlling biofilms in hip replacement surgery. However, more research is needed to determine their safety and effectiveness, and Regulatory compliance is crucial before they can be used in medical devices.

Materials and Methods

Nano zinc oxide (ZnO) has been shown to have antimicrobial properties, which can help reduce the risk of implant infection. In addition, ZnO can also promote tissue healing and



reduce inflammation around the implant, leading to improved outcomes for patients. The use of ZnO nanoparticles in hip implants could, therefore, reduce the incidence of implant failure due to infection and improve the success rate of hip replacement surgeries. Nano hydroxyapatite, on the other hand, is a material that mimics the structure of natural bone, and has been used to improve the

Robotics software at the Kokilaben Ambani hospital, Mumbai.

integration of the implant with the surrounding bone. This can lead to better implant stability and reduced risk of implant failure over time. By incorporating HA nanoparticles into the surface of the hip implant, it is possible to improve the biocompatibility and performance of the implant, leading to better outcomes for patients. The combination of nano zinc and HA in hip implants is an area of active research, with



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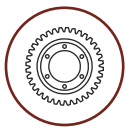
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several studies investigating the potential benefits of using these materials together. While it is not yet clear whether hip implants using nano zinc and HA will become widely available, early research results are promising, and there is a possibility that they could provide a significant improvement over current hip implant technology.

Robotics surgery

The Kokilaben Ambani hospital in Andheri, Mumbai is well equipped for robotic surgery and the first hospital in Mumbai Knee replacement surgery using robotics is a form of minimally invasive surgery that utilizes a robotic arm and specialized software to assist the surgeon during the procedure. The robotic arm is controlled by the surgeon, who uses it to make precise cuts and placements of the knee implant.

The use of robotics in knee replacement surgery has several potential benefits over traditional knee replacement surgery. These benefits include: Precision: Robotic-assisted surgery allows for precise and accurate placement of the knee implant, potentially resulting in better alignment and stability of the joint. Personalization: The use of robotics allows for a more personalized approach to knee replacement surgery,

as the software can create a 3D model of the patient's knee and assist the surgeon in choosing the best implant size and positioning for the individual patient.

Smaller incisions: Robotic-assisted surgery can often be performed using smaller incisions than traditional knee replacement surgery, which may result in less pain and a faster recovery time.

Reduced blood loss: The precise nature of robotic-assisted surgery may result

deeply impacted by the startups and advances in technology in general. Throughout the world, 'startup ecosystems' are thriving because of the investments from Angel Investors, VC / PE funds and government grants / support. However we must remember here that the majority of the successful startups do not engage in fundamental scientific research & development. The capital invested in startups is not 'patient capital' in the sense that it usually cannot afford to



in less blood loss during the procedure.

Startups

In recent times, startups have been the growth engines for many countries & have been responsible for disruption and transformation in every aspect of our day-to-day lives. How we live, get entertained, shop, eat, commute or even sleep is

wait the long gestation periods of scientific breakthrough. Thus, the startups focusing on deep science traditionally require a different approach and not surprisingly, the medical field has seen such breakthroughs regularly. Part of the reason for this trend is that the Pharma / Life Science companies have invested in drug- discovery for a long time

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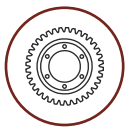
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Industry Update

& are used to the long research and development cycles. Using nanotechnology to further the research & outcomes is a natural extension for this industry. Nanotechnology has been in the labs since the turn of the century & entrepreneurs as well as established businesses have been exploring various

business from the product. Startups innovating using nanotechnology for the life-science and Pharma have begun triumphing in spite of the large upfront investments, expensive infrastructure, long gestation periods and limited talent pool. This is predominantly achieved through the support of larger companies in the industry through hand-

deploy patient capital will yield great results and expand Nanotechnology outside the medical / life-science industries.

Market

There were no commercial companies manufacturing hip implants using a combination of nano hydroxyapatite (nHA) and nano zinc oxide (nZnO). However, there are several companies



that manufacture hip implants with a nano hydroxyapatite coating, such as Smith & Nephew's OXINIUM™ Hip System and Stryker's Triathlon® Tritanium® Total Hip System. These coatings have been shown to

commercialization options. As discussed above, Nanotechnology has received maximum breakthroughs so far in the fields of life-sciences and Pharma industries. Startups focusing on cancer research using Nanotech have been in the news in India as well as abroad for receiving funding as well showing promising results. There is strong evidence backed by success stories that startups are crossing the proverbial 'valley of death' in this space. Valley of the death for a startup is the crucial period between idea / MVP and generating

holding / mentoring, providing infrastructure & talent and most importantly funding the startups. Now, a conscious and consistent push is required to accelerate the commercialization of the nanotechnology outside the Pharma / life-science industries and into industries such as manufacturing, chemicals, clean-tech, food & beverages, personal care etc. Nanotechnology has shown great potential to transform these industries. Large & established enterprises that are willing to innovate and

improve the biocompatibility and durability of the implant, leading to better long-term outcomes for patients.

Conclusion

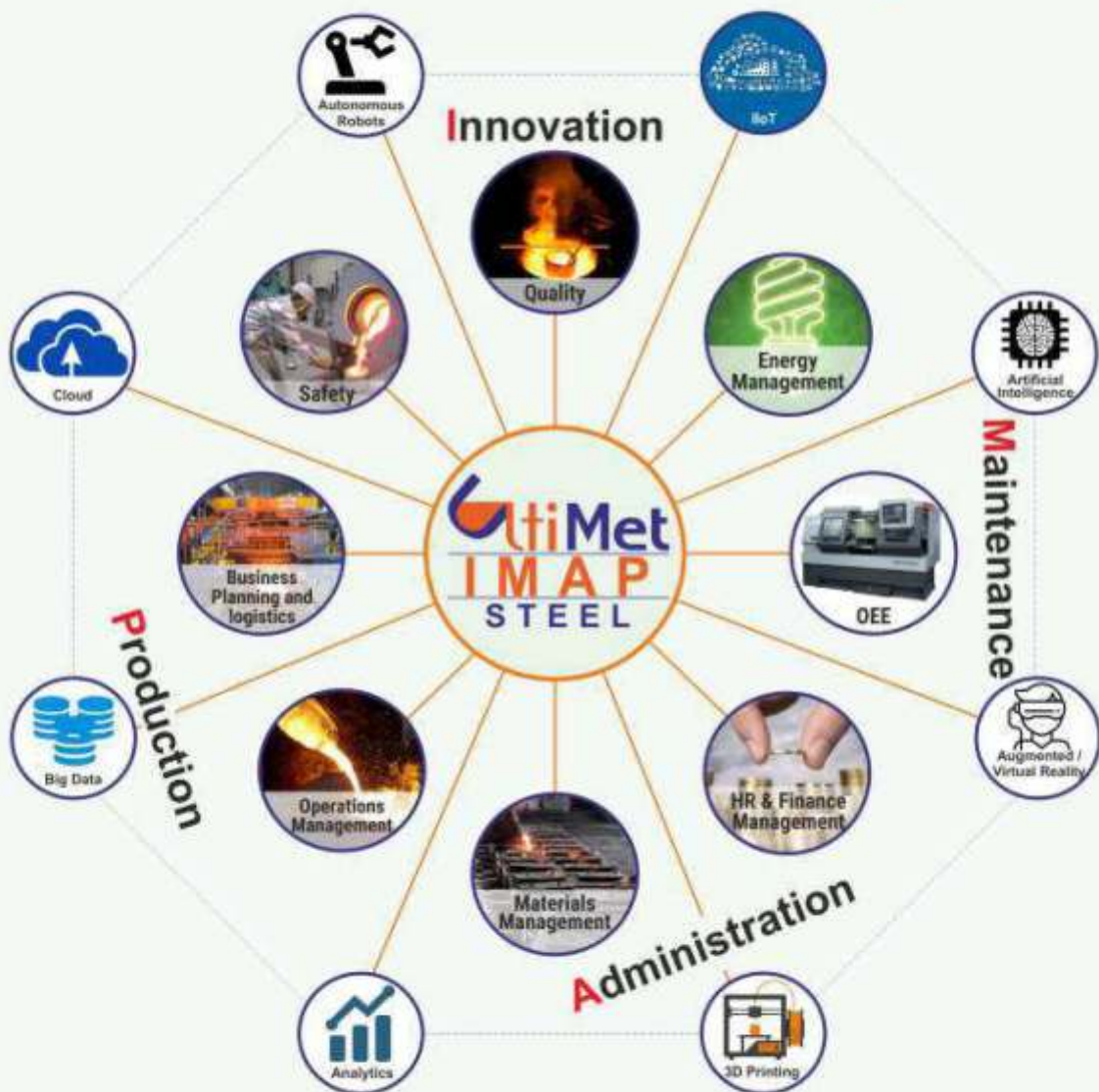
It is possible that in future, commercial companies may develop hip implants that incorporate both nanoHA and nanoZnO in a combination, as the use of these materials is an active area of research. However, more studies are needed to fully understand the benefits and limitations of these materials in hip implants, as well as their long-term effects on patients. ■

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SMS group participates at 'India Steel 2023'

- Over 300 visitors at the exhibition booth with product technology display
- Thought leadership participation at CEO Round Table

SMS group India participated at the 5th International Exhibition and Conference 'India Steel 2023' held at Mumbai, from 19th – 21st April 2023 at Mumbai Exhibition Centre, Mumbai. The Ministry of Steel, Ministry of Commerce and Industry, Government of India and FICCI jointly organized the three-day biennial exposition themed on 'Amritkaal Journey: Facilitating the Indian Growth Story'. As a proud sponsor of the event, SMS group presented thought leadership technologies, views and ideas, key challenges and opportunities in the evolving Indian steel landscape.

In the CEOs Round Table Interaction conducted by Secretary & Additional Secretary Ministry of Steel, it was voiced by all the CEOs of Indian Steel Industry that India is undeniably in the phase of 'AmritKaal' an era of development and utmost energy and agile support in terms of policy and governance. Mr. Ulrich Greiner Pachter, CEO, SMS group- India Region & Asia Pacific shared his views on future roadmap for steel industry. He said, "India is

developing economically, and has a huge potential market for the steel industry. SMS group will support in its effort to make the Indian industry environment friendly by way of decentralizing know-how, competency that is backed by European technology".

Mr. Atul V, Vice President, SMS group India was part of a panel discussion on "Technology Solutions for Enhancing Productivity & Efficiency" chaired by Ms. Ruchika Chaudhry Govil, Additional Secretary, Ministry of Steel, Government of India and Shri Parmjeet Singh, Additional Industrial Advisor, Ministry of Steel, Government of India. He said, "Since in India, conventional route of iron

making i.e. blast furnace would still be in demand, when we are targeting efficiency and productivity – 'Blue' Blast Furnace and EASyMelt (Electrically Assisted Syngas sMELTer) can be seen as the technologies for the future."

This session focused on the latest innovative technologies that are set to bring a change in Indian steel.

SMS group India displayed its advance technologies, products and solutions at the exhibition booth along with other technology providers and major steel producers. With a significant increase from the previous edition, India Steel 2023 concluded with over 12,000 visitors, 8,300 B2B meetings, 130 G2B meetings, and participating countries.

About INDIA STEEL EXPO:



SMS group team post inauguration of the booth on the first day of India Steel 2023

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Analysis

INDIA STEEL EXPO, since its inception in 2013, the exhibition has become a well-reputed platform for discussing prospects of the steel industry, exhibiting the most state-of-the-art solutions and equipment. Traditionally, the exhibition brings together state authorities and businessmen, as well as leading international experts to exchange opinions, exhibit achievements, and sign mutually beneficial agreements”.



Mr. Atul V, Vice President, SMS group India (Metallurgy) along with a visitor at the booth



Foreign Nationals visitor at the 'Technology App' display on the booth



Mr. Ulrich Greiner Pachter, CEO, SMS group- India Region & Asia Pacific in discussion with a visitor at the booth

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Secondary Steel Conclave - Focus on Performance & Resource Optimization

A Secondary Steel Conclave - Seminar on Performance & Resource Optimization's Through Low Carbon & Advanced Technologies was organized by National Institute of Secondary Steel Technology, Bureau Of

emissions. He explained various steps being taken by the government for the upgradation of the secondary steel sector to improve efficiency and quality. He requested industries to share their

also requested NISST to develop a pilot project on use of natural gas for DRI production.

Sh R.K Paul, Director NISST emphasized the need for decarbonisation in the secondary Steel sector and requested the industries to come forward and take services of NISST. Shri Shankar Agarwal, President, WBSIMA also addressed the industrialists and highlighted the challenges faced by sponge Iron industries. He raised issues in allotment of iron ore as well as coal mines and requested the Government to ease out the BG requirements in allotment of mines.



Energy Efficiency and GIZ GmbH in association with Steel Rolling Mills Association (SRMA) and West Bengal Sponge Iron Manufacturers Association (WBSIMA) supported by the Ministry of Steel on Friday, 28th April, 2023 at Hotel Hyatt Regency, Kolkata. The seminar has been organized to deliberate on Performance & Resource Optimisation and reduction in carbon emission. The seminar was inaugurated by Sh Parmjeet Singh, Addl. Industrial advisor, Ministry of Steel, Government of India. He appraised the participants about the contribution of the steel sector in GHG

expansion plans with the government through the JPC so that appropriate policy interventions are devised by the Government. He requested participants to actively participate in the technical proceeding of the seminar.

Mr Vivek Adukia, Chairman, SRMA welcomed the Chief guest Mr Parmjeet Singh, Addl Industrial Advisor, Government of India, Ministry of Steel, officials from BEE, GIZ, NISST, IISST & Industry entrepreneurs. He highlighted the various problems being faced by the industries especially iron ore shortage and need for government incentives on green steel production. He

Me Sushim Banerjee, CEO, IISST emphasized the need for skilling the manpower in Iron & Steel sector to improve efficiency, quality & green steel production. Sh Nitin Jain, Program head, Energy Efficiency Industries, GIZ highlighted the contribution of GIZ in assisting secondary



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Analysis

Steel Sector through various initiatives for improved efficiency and green steel production.

The keynote address was delivered by Mr P Shyam Sunder, Jt. Director, BEE. He appraised the participants about the need for energy efficiency and initiatives taken by BEE to assist the secondary Steel Sector.

for extending full support to make the Seminar successful. He also thanked all speakers, session chairmen in technical sessions and Ms Priyanka Chandra of GIZ for compering the program.

Presentations were given by Mr P Shyam Sunder, Jt. Director, BEE, Mr Piyush Sharma, Energy Advisor, GIZ, Mr Vishva Bandhu, Joint

Some of the topics in the presentations were - Energy Efficiency Policies for industries, Energy Efficiency in industry and Data, Techno-commercial aspects of using Raw Materials in Sponge Iron making and Best practices, Worldwide best practices in the secondary steel sector, Saving Energy and coal consumption through refractories in DRI kiln, Improving efficiency of steelmaking via Induction Furnace route, Techno-commercial aspects in Induction Furnaces for overall improvement and best practices, Energy Audit – a systematic approach of energy efficiency improvement, Selection of proper mould tubes for continuous casting, Energy efficiency improvement in coal and gas fired furnaces, Energy efficient recuperators for maximum waste heat recovery, Energy savings and



Sh Vishva Bandhu, Joint Director (Tech), NISST thanked the chief guest, BEE, GIZ and the Industry Associations SRMA, WBSIMA. He also thanked the Joint Plant Committee (JPC) as knowledge partner and Steel Mint as media partner. He was thankful to the sponsors of the seminar especially Megatherm Induction, Eastern Equipments, Passary Minerals Pvt Ltd, Murugappa Morgan Thermal Ceramics, SRMB for their support to the seminar. He also thanked Advertisers for placing advertisements in the Souvenir of the Seminar. His special thanks to Mr Vivek Adukia, Chairman SRMA and Mr Shankar Agarwal, President, WBSIMA

Director(Tech) NISST, Mr Jaidhish Passary, Director, Pasmin Group, Dr Helmut Berger, MD, Allplan GmbH, Mr Sumit Ray, Sr Manager, Megatherm, Mr Anil Mohindru, Sr Dy Director (IS) NISST, Mr S.P. Singh, Sr Dy Director(T), NISST, Mr Vikas Agrawal, Director, Eastern Equipments & Engineers, Mr Sudip Samanta, AGM, Murugappa Morgan Thermal Ceramics and Mr Ayan Ganguly, Energy Advisor, GIZ, Mr Siddarth Maloo, Jay Market Creators and a special address by Dr Winfried Damm, Head, Energy, GIZ, India.



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RINL records its best performance for Any April Month, since inception with the Production of 4,19,000 Tons of Hot Metal from (a growth of 20% over corresponding period last year (CPLY) -April,2022) from 2 Blast Furnace operation, 2,02,000 tons of Hot metal from Blast furnace-1 (Godavari- A growth of 14% over CPLY), 2,18,000 tons of Hot metal from Blast furnace-2 (Krishna-

a growth of 26% over CPLY), 61,000 tons of products from Structural Mill (more than 100% growth over CPLY), 1,43,000 tons of finished steel from expansion units (Wire rod mill-2, Special Bar mill & Structural Mill), 80,000 tons of high end value added steel (growth more than 100% over CPLY) is the unit wise best performance

On the Technical Parameters front also, a Blast furnace productivity of 2.09 tons (of Hot Metal) /day/cum by BF Shop (both blast furnace 1 & 2 together), a Blast furnace productivity of 2.01 tons (of Hot Metal) /day/cum by Blast Furnace -1 and a Blast furnace productivity of 2.17 tons (of Hot Metal) /day/cum by Blast Furnace -2 achieved during the month of April, 2023 is the BEST performance achieved for any April month, since inception registering an impressive growth of 20%, 14% and 26% respectively over the corresponding period last year (CPLY-April, 2022).

Tata Steel initiates trial for hydrogen gas injection in Blast Furnace



Tata Steel has commenced the trial injection of hydrogen gas using 40% of the

injection systems in 'E' Blast Furnace at its Jamshedpur Works. This is the first time in the world that such a large quantity of hydrogen gas is being continuously injected in a blast furnace.

The trial started on April 23, 2023 and is expected to continue for 4-5 days on a continuous basis. It will provide valuable insights into operating blast furnaces with greener fuel injectants, reducing fossil fuel consumption and subsequent CO2 emissions from the blast furnace. The endeavour is aligned with the Company's vision of becoming Net Zero by 2045.



The trial has the potential to reduce the coke rate by 10%, translating into around 7-10% reduction in CO2 emissions per ton of crude steel produced.

NMDC iron ore output rises

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NMDC Ltd reported a record production of 3.51 million tonnes and sales of 3.43 million tonnes in April, marking an 11.42% and 9.93% increase respectively compared to the same period last year.

The Ministry of Steel noted that the company continues its exceptional

performance, having surpassed 40 million tonnes consecutively in FY22 and FY23. NMDC's iron ore production plays a significant role in India's economic growth, as the country is among the largest global producers and consumers of the commodity.

The successful completion of this trial will demonstrate Tata Steel's capability to design, fabricate and commission the injection system, develop and establish necessary general and process safety protocols, and provide process control insight for pure hydrogen injection into the blast furnace



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PV dispatches highest ever in April, grow 13% YoY, shows SIAM data

2-Wheeler dispatches are up 15% YoY, SIAM says all segments have posted growth this April, indicating a smooth shift to BS VI Phase 2 emission norms

Passenger vehicle sales continued to be on a double-digit growth trajectory even as the country transitioned to BS VI phase II emission norms in April. In fact, domestic sales (wholesales) of passenger vehicles this April were the highest recorded in any April, said the Society of Indian Automobile Manufacturers (SIAM).

"Domestic sales of Passenger Vehicles of April 2023 have been the highest ever in April, returning a growth of 12.9 percent, compared to April 2022," said Rajesh Menon, Director General of SIAM. The total number of units sold in this category was 331,278 units versus 293,303 units a year ago (refer to chart).

Apart from passenger vehicles, two-wheelers, as well as three-wheelers, have also done well in April.

Vinod Aggarwal, President, SIAM, said, "All the segments - Passenger Vehicles, Two-Wheelers and Three-Wheelers have posted growth in April 2023, compared to April 2022, which clearly indicates that the industry has been able to transit very smoothly to BS VI Phase 2 emission norms from April 1, 2023." He added. "As we gradually get into the monsoon season, among other factors, good rainfall can also help the Auto Industry sustain its growth."

Despite growth in dispatches, PV segment leader Maruti Suzuki India's production dipped by 5.7 percent in April to 144,097 units. On the other hand, Mahindra and Mahindra (M&M) has managed to raise production by almost 35 percent in April. Tata Motors did not share production numbers.

Two-wheeler sales in April went up by 15.1 percent year-on-year (YoY). Three-wheeler sales more than doubled to 42,885 units in April.

Commenting on sales data of April 2023, Mr Vinod

Aggarwal, President, SIAM said, "All the segments viz. Passenger Vehicles, Two-Wheelers, and Three-Wheelers have posted growth in April 2023, compared to April 2022, which clearly indicates that Industry has been able to transit very smoothly to BS 6 Phase 2 Emission Norms from 1st April 2023. As we gradually get into the monsoon season, among other factors, good rainfall can also help the Auto Industry sustain its growth."

Commenting on April-2023's performance, Mr Rajesh Menon, Director General, SIAM said, "Sales of Passenger Vehicles of April 2023 has been the highest ever in April, returning a growth of 12.9%, compared to April 2022. Two-Wheelers also posted a growth of 15.1% in April 2023, compared to last year. Domestic sales of Three-Wheelers in April 2023 have reached nearer to the pre-covid levels for the month of April." According to a recent ICRA report, the electric segment could account for 14-16 percent of new three-wheeler sales (excluding rickshaws) by FY2025, up from 8 percent currently. Penetration is estimated to rise to 35-40 percent by FY2030 as the product gains more acceptance and financing-related challenges subside.

Kinjal Shah, Vice President & Co Group Head, Corporate Ratings, ICRA said in March, "e3Ws (including e-rickshaws) have been at the forefront of India's electrification journey, being among the early adopters. In 10M FY2023, the 3Ws (excluding rickshaws) recorded an electric penetration of 8 percent, compared to 4 percent for two-wheelers and 1 percent for passenger vehicles."

A favorable regulatory environment with central and state government subsidies to lower capital costs, as well as reduction or waiver of registration fees, road taxes, and permit requirements, continues to be supportive of e-auto adoption. "Coupled with the inherently lower running costs, this results in a much lower (40-45%) total cost of ownership (TCO) than conventional diesel or CNG 3Ws, making the conversion to e-autos an attractive proposition," Shah said.

Domestic Sales for April

Domestic Sales for April	April 2022	April 2023
Passenger Vehicles	293,303	331,278
Two-Wheelers	31,808	36,696
Three-Wheelers	22,736	42,885

A

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SLAM

Summary Report: Production, Domestic Sales & Exports data for the month of April 2023

Report I

(Number of Vehicles)

Category Segment/Subsegment	Production		Domestic Sales		Exports	
	April		April		April	
	2022	2023	2022	2023	2022	2023
Passenger Vehicles (PVs)*						
Passenger Cars	1,51,398	1,42,933	1,12,923	1,25,758	29,451	22,946
Utility Vehicles (UVs)	1,47,606	1,62,268	1,27,282	1,48,005	16,921	17,689
Vans	11,469	10,921	11,511	10,508	126	284
Total Passenger Vehicles (PVs)	3,10,472	3,16,122	2,51,716	2,84,271	46,498	40,899
Three Wheelers						
Passenger Carrier	41,576	54,709	12,555	34,608	35,375	22,997
Goods Carrier	7,566	6,183	7,348	5,367	405	97
E-Rickshaw	469	1,738	830	2,591	-	-
E-Cart	268	131	264	319	-	-
Total Three Wheelers	49,879	62,761	20,997	42,885	35,780	23,094
Two Wheelers						
Scooter/ Scooterette	4,09,280	4,96,196	3,88,442	4,64,389	36,160	49,535
Motorcycle/Step-Throughs	10,85,543	10,45,771	7,35,360	8,39,274	3,69,273	2,08,852
Mopeds	35,960	36,435	38,780	34,925	6	-
Total Two Wheelers	15,30,763	15,78,402	11,62,582	13,38,588	4,05,439	2,58,187
Quadracycle	101	314	26	61	66	296
Grand Total	18,91,215	19,57,599	14,35,321	16,65,805	4,87,783	3,22,476

* BMW, Mercedes, ILR, Tata Motors and Volvo Auto data is not available

Society of Indian Automobile Manufacturers (SIAM/2023)

SLAM

Category & Company wise Summary Report for the month of April 2023

Report II

(Number of Vehicles)

Category Segment/Subsegment	Production		Domestic Sales		Exports	
	April		April		April	
	2022	2023	2022	2023	2022	2023
Manufacturer						
Passenger Vehicles (PVs)						
FCA India Automobiles Pvt Ltd	1,341	1,186	886	558	366	407
Force Motors Ltd	99	4	88	-	-	-
Honda Cars India Ltd	9,122	4,950	7,874	5,313	2,034	2,363
Hyundai Motor India Ltd	59,000	60,491	44,001	49,701	12,200	8,500
Isuzu Motors India Pvt Ltd	223	58	23	34	-	-
Kia Motors India Pvt Ltd	27,650	29,902	19,019	23,216	8,077	7,785
Mahindra & Mahindra Ltd	24,516	33,219	22,526	34,698	643	879
Maruti Suzuki India Ltd	1,52,954	1,44,097	1,21,995	1,37,320	18,216	16,804
MG Motor India Pvt Ltd	3,208	5,418	2,008	4,551	-	-
Nissan Motor India Pvt Ltd	6,000	3,401	2,110	2,617	1,229	633
PCA Motors Pvt. Ltd	35	954	51	1,003	-	686
Renault India Pvt Ltd	8,688	2,868	7,584	4,323	917	75
SkodaAuto India Pvt Ltd	4,387	3,889	5,152	4,009	-	164
Toyota Kirloskar Motor Pvt Ltd	8,735	20,205	14,777	13,896	14	1,307
Volkswagen India Pvt Ltd	4,634	5,480	3,612	3,032	2,802	1,266
Total Passenger Vehicles (PVs)	3,10,472	3,16,122	2,51,716	2,84,271	46,498	40,899

SLAM

Category & Company wise Summary Report for the month of April 2023

Report II

(Number of Vehicles)

Category Segment/Subsegment	Production		Domestic Sales		Exports	
	April		April		April	
	2022	2023	2022	2023	2022	2023
Manufacturer						
Three Wheelers						
Atul Auto Ltd	1,559	743	1,346	582	245	133
Bajaj Auto Ltd	24,985	41,256	8,915	31,283	20,053	11,653
Continental Engines Pvt Ltd	421	492	485	358	-	-
Force Motors Ltd	140	210	-	-	84	140
Mahindra & Mahindra Ltd	2,543	4,846	3,009	5,552	18	6
Plaggio Vehicles Pvt Ltd	7,003	6,868	5,889	3,305	1,442	1,329
TVS Motor Company Ltd	13,217	9,652	1,346	1,605	13,938	9,832
Total Three Wheelers	49,879	62,761	20,997	42,885	35,780	23,094
Two Wheelers						
Ather Energy Pvt. Ltd	3,957	7,183	3,894	6,749	-	-
Bajaj Auto Ltd	2,65,101	2,57,834	93,233	1,81,600	1,88,478	1,06,167
Chetak Technology Lte	-	373	-	136	-	-
Hero MotoCorp Ltd	4,06,969	4,30,788	3,88,760	5,86,161	20,131	6,923
Honda Motorcycle & Scooter India Pvt Ltd	3,58,371	3,82,923	3,18,734	3,36,290	42,295	36,456
India Kawasaki Motors Pvt Ltd	117	80	231	415	-	-
India Yamaha Motor Pvt Ltd	68,284	88,535	43,966	52,959	27,783	16,646
Mahindra Two Wheelers Ltd	-	-	14	-	-	-
Okinawa Autotech Pvt. Ltd	10,111	-	10,192	58	-	-
Plaggio Vehicles Pvt Ltd	7,156	6,278	5,223	2,990	1,820	1,446
Royal-Enfield (Unit of Picher Motors)	67,720	71,014	53,852	68,581	8,503	4,255
Suzuki Motorcycle India Pvt Ltd	65,067	86,036	54,327	67,250	17,690	21,472
Triumph Motorcycles India Pvt Ltd	50	34	86	63	-	-
TVS Motor Company Ltd	2,62,081	2,86,436	1,80,533	2,32,553	50,489	61,930
Total Two Wheelers	15,30,763	15,78,402	11,62,582	13,38,588	4,05,439	2,58,187
Quadracycle						
Bajaj Auto Ltd	101	314	26	61	66	296
Total Quadracycle	101	314	26	61	66	296
Grand Total	18,91,215	19,57,599	14,35,321	16,65,805	4,87,783	3,22,476

Society of Indian Automobile Manufacturers (SIAM/2023)



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SIAM						
Segment & Company wise Production, Domestic Sales & Exports Report for the month of April 2023						
						Report III
						(Number of Vehicles)
Category	Production		Domestic Sales		Exports	
Segment/Subsegment	April		April		April	
Manufacturer	2022	2023	2022	2023	2022	2023
Passenger Vehicles (PVs)						
A: Passenger Cars						
Honda Cars India Ltd	8,522	4,950	7,239	5,313	2,031	2,097
Hyundai Motor India Ltd	30,050	29,248	20,439	22,397	8,051	6,206
Mahindra & Mahindra Ltd	-	-	1	-	-	-
Maruti Suzuki India Ltd	1,01,389	1,01,319	76,900	90,062	15,205	13,125
Nissan Motor India Pvt Ltd	3,298	63	-	-	1,220	592
Renault India Pvt Ltd	2,197	1,009	2,066	1,082	250	45
SkodaAuto India Pvt Ltd	2,666	1,781	2,652	1,707	-	-
Toyota Kirloskar Motor Pvt Ltd	120	72	2,775	3,716	-	-
Volkswagen India Pvt Ltd	3,156	4,491	851	1,481	2,684	881
Total A: Passenger Cars	1,51,398	1,42,933	1,12,923	1,25,758	29,451	22,946
B: Utility Vehicles (UVs)						
FCA India Automobiles Pvt Ltd	1,341	1,186	886	558	366	407
Force Motors Ltd	99	4	88	-	-	-
Honda Cars India Ltd	600	-	635	-	3	268
Hyundai Motor India Ltd	28,950	31,243	23,562	27,304	4,139	2,294
Isuzu Motors India Pvt Ltd	223	58	23	34	-	-
Kia Motors India Pvt Ltd	27,650	29,902	19,019	23,216	8,077	7,785
Mahindra & Mahindra Ltd	24,214	33,199	22,168	34,694	643	859
Maruti Suzuki India Ltd	40,399	31,877	33,941	36,754	2,885	3,445
MG Motor India Pvt Ltd	3,208	5,418	2,008	4,551	-	-
Nissan Motor India Pvt Ltd	2,702	3,338	2,110	2,617	9	41
PCA Motors Pvt. Ltd	35	954	51	1,003	-	686
Renault India Pvt Ltd	6,371	1,859	5,528	3,241	667	30
SkodaAuto India Pvt Ltd	1,721	2,108	2,500	2,302	-	164
Toyota Kirloskar Motor Pvt Ltd	8,615	20,133	12,002	10,180	14	1,307
Volkswagen India Pvt Ltd	1,478	989	2,761	1,551	118	385
Total B: Utility Vehicles (UVs)	1,47,606	1,62,268	1,27,282	1,48,005	16,921	17,669
C: Vans						
Mahindra & Mahindra Ltd	302	20	357	4	-	20
Maruti Suzuki India Ltd	11,166	10,901	11,154	10,504	126	264
Total C: Vans	11,468	10,921	11,511	10,508	126	284
Total Passenger Vehicles (PVs)	3,10,472	3,16,122	2,51,716	2,84,271	46,498	40,899

SIAM						
Segment & Company wise Production, Domestic Sales & Exports Report for the month of April 2023						
						Report III
						(Number of Vehicles)
Category	Production		Domestic Sales		Exports	
Segment/Subsegment	April		April		April	
Manufacturer	2022	2023	2022	2023	2022	2023
Three Wheelers						
A: Passenger Carrier						
Atul Auto Ltd	808	340	591	201	245	129
Bajaj Auto Ltd	22,296	37,886	6,414	28,320	19,957	11,565
Continental Engines Pvt Ltd	139	73	160	34	-	-
Force Motors Ltd	140	210	-	-	84	140
Mahindra & Mahindra Ltd	901	2,392	1,025	2,119	4	4
Piaggio Vehicles Pvt Ltd	4,233	4,257	3,065	2,363	1,308	1,326
TVS Motor Company Ltd	13,061	9,551	1,300	1,571	13,777	9,833
Total A: Passenger Carrier	41,576	54,709	12,555	34,608	35,375	22,997
E-Rickshaw						
Atul Auto Ltd	90	272	93	265	-	-
Continental Engines Pvt Ltd	20	406	48	324	-	-
Mahindra & Mahindra Ltd	359	1,060	689	2,002	-	-
Total E-Rickshaw	469	1,738	830	2,591	-	-
B: Goods Carrier						
Atul Auto Ltd	526	-	544	-	-	4
Bajaj Auto Ltd	2,697	3,373	2,504	2,963	96	88
Continental Engines Pvt Ltd	262	13	271	-	-	-
Mahindra & Mahindra Ltd	1,152	1,397	1,157	1,228	14	2
Piaggio Vehicles Pvt Ltd	2,773	1,399	2,824	1,142	134	3
TVS Motor Company Ltd	156	1	48	34	161	-
Total B: Goods Carrier	7,566	6,183	7,348	5,367	405	97
E-Card						
Atul Auto Ltd	137	131	120	116	-	-
Continental Engines Pvt Ltd	-	-	6	-	-	-
Mahindra & Mahindra Ltd	131	-	138	203	-	-
Total E-Card	268	131	264	319	-	-
Total Three Wheelers	49,879	62,761	20,997	42,885	35,780	23,094



SIAM						
Segment & Company wise Production, Domestic Sales & Exports Report for the month of April 2023						
						Report III
						(Number of Vehicles)
Category	Production		Domestic Sales		Exports	
Segment/Subsegment	April		April		April	
Manufacturer	2022	2023	2022	2023	2022	2023
Two Wheelers						
A: Scooter/ Scooterettes						
Ather Energy Pvt. Ltd	3,857	7,185	3,884	8,748	-	-
Bajaj Auto Ltd	1,401	4,375	1,248	4,548	-	72
Chetak Technology Ltd	-	373	-	138	-	-
Hero MotoCorp Ltd	28,135	27,520	25,438	25,384	557	1,893
Honda Motorcycle & Scooter India Pvt Ltd	1,99,660	2,56,914	1,80,781	2,46,016	20,956	18,798
India Yamaha Motor Pvt Ltd	11,216	16,863	9,874	16,245	3,206	1,708
Okinawa Autotech Pvt. Ltd	10,111	-	10,182	36	-	-
Piaggio Vehicles Pvt Ltd	7,155	5,278	5,223	2,990	1,820	1,446
Suzuki Motorcycle India Pvt Ltd	52,095	74,948	53,098	66,694	6,508	13,716
TVS Motor Company Ltd	95,830	1,02,740	99,096	95,594	3,113	11,902
Total A: Scooter/ Scooterettes	4,09,260	4,96,196	3,88,442	4,64,389	36,160	49,535
B: Motorcycle/Step-Throughs						
Bajaj Auto Ltd	2,84,790	2,53,463	91,987	1,77,144	1,88,478	1,06,085
Hero MotoCorp Ltd	3,77,834	4,03,248	3,73,052	3,60,800	19,574	8,030
Honda Motorcycle & Scooter India Pvt Ltd	1,56,711	1,06,009	1,37,953	92,274	21,339	17,660
India Kawasaki Motors Pvt Ltd	117	80	234	418	-	-
India Yamaha Motor Pvt Ltd	57,068	52,676	34,294	36,694	24,057	14,938
Mahindra Two Wheelers Ltd	-	-	14	-	-	-
Royal-Enfield (Unit of Eicher Motors)	67,720	71,014	53,852	68,881	8,303	4,255
Suzuki Motorcycle India Pvt Ltd	10,972	11,988	1,229	565	11,152	7,758
Triumph Motorcycles India Pvt Ltd	60	34	88	63	-	-
TVS Motor Company Ltd	1,30,271	1,47,261	42,667	1,02,437	96,370	49,928
Total B: Motorcycle/Step-Throughs	10,85,543	10,45,771	7,35,360	8,39,274	3,69,273	2,08,652
C: Mopeds						
TVS Motor Company Ltd	35,960	36,435	38,780	34,925	6	-
Total C: Mopeds	35,960	36,435	38,780	34,925	6	-
Total Two Wheelers	15,30,763	15,78,402	11,62,582	13,38,588	4,05,439	2,58,187
Quadracycle						
Bajaj Auto Ltd	101	314	26	61	66	296
Total Quadracycle	101	314	26	61	66	296
Grand Total	18,91,215	19,57,599	14,35,321	16,65,805	4,87,783	3,22,476

Society of Indian Automobile Manufacturers (12/05/2023)

SIAM						
Sub-segment & Company wise Production, Domestic Sales & Exports Report for the month of April 2023						
						Report IV
						(Number of Vehicles)
Category	Production		Domestic Sales		Exports	
Segment/Subsegment	April		April		April	
Manufacturer	2022	2023	2022	2023	2022	2023
Passenger Vehicles (PVs)						
A: Passenger Cars - Upto 5 Seats						
Mini: Seats upto-5, Length Normally <3600 mm, Body Style-Hatchback, Engine Displacement Normally upto 1.0 Litre						
Regular						
Maruti Suzuki India Ltd (Alto, Spresso)	22,665	16,918	17,137	14,110	3,708	2,930
Renault India Pvt Ltd (Kwid)	2,197	1,009	2,066	1,082	260	45
Total Mini	24,862	17,927	19,203	15,192	3,968	2,975
Compact: Seats upto-5, Length Normally between 3600 - 4000 mm, Body Style-Sedan/Estate/Hatch/Notchback, Engine Displacement Normally upto 1.4 Litre						
Regular						
Honda Cars India Ltd (Amaze, Jazz)	4,743	2,519	4,939	3,393	90	4
Hyundai Motor India Ltd (Aura, Grand i10, 20, Santro, Xcent)	27,683	20,936	19,658	18,396	6,548	2,233
Maruti Suzuki India Ltd (OFM Models: Baleno, Celerio, Dzire, Ignis, Swift, Vento)	16,978	83,256	59,184	14,935	9,912	10,857
Toyota Kirloskar Motor Pvt Ltd (Ganza)	-	-	2,646	3,653	-	-
Volkswagen India Pvt Ltd (Polo)	795	-	725	-	877	-
Total Compact	1,10,196	1,06,711	87,155	1,00,377	17,227	12,594
Super Compact: Seats upto-5, Length Normally between 4000 - 4250 mm, Body Style-Sedan/Estate/Hatch/Notchback, Engine Displacement Normally upto 1.6 Litre						
Regular						
Mahindra & Mahindra Ltd (Verito)	-	-	1	-	-	-
Total Super Compact	-	-	1	-	-	-
Mid-Size: Seats upto-5, Length Normally between 4250 - 4500 mm, Body Style-Sedan/Estate/Hatch/Notchback, Engine Displacement Normally upto 1.6 Litre						
Regular						
Honda Cars India Ltd (City)	3,779	2,437	2,300	1,920	1,941	2,093
Hyundai Motor India Ltd (Verna)	2,370	8,312	781	4,001	1,513	3,973
Maruti Suzuki India Ltd (Ciaz)	1,768	1,145	579	1,017	1,585	138
Nissan Motor India Pvt Ltd (Sunny)	3,289	63	-	-	1,220	592
Volkswagen India Pvt Ltd (Vento, Virtus)	2,361	4,487	123	1,481	2,007	981
Total Mid-Size	13,564	16,442	3,783	8,419	8,266	7,677
Executive: Seats upto-5, Length Normally between 4500 - 4700 mm, Body Style-Sedan/Estate/Notchback, Engine Displacement Normally upto 2 Litre						
Regular						
Skoda Auto India Pvt Ltd (Octavia Slavia)	2,598	1,787	2,575	1,585	-	-
Total Executive	2,598	1,787	2,575	1,585	-	-
Premium: Seats upto-5, Length Normally between 4700 - 5000 mm, Body Style-Sedan/Estates, Engine Displacement Normally upto 3 Litre						
Regular						
Skoda Auto India Pvt Ltd (Superb)	70	-	74	121	-	-
Specialty						
Toyota Kirloskar Motor Pvt Ltd (Camry)	120	72	123	83	-	-
Total Premium	190	72	203	184	-	-
Total Passenger Cars	1,51,398	1,42,933	1,12,923	1,25,758	29,451	22,946

*Only production volume of OEM Model is reported by Maruti Suzuki India Limited.



Statistics

SFAI						
Sub-segment & Company wise Production, Domestic Sales & Exports Report for the month of April 2023						
						Report IV
						(Number of Vehicles)
Category	Production		Domestic Sales		Exports	
Segment/Subsegment	April		April		April	
Manufacturer	2022	2023	2022	2023	2022	2023
B: Utility Vehicles (UVs)						
B : Utility Vehicles/ Sports Utility Vehicles; 4x2 or 4x4 offroad capability ; Generally ladder on frame ; 2 box : 5 Seats or more but upto 10 Seats.						
UVC : Length < 4000 mm & Price <20 Lakhs						
Honda Cars India Ltd (WR-V)	600	-	636	-	3	266
Hyundai Motor India Ltd (Venue)	9,710	11,698	8,392	10,342	942	1,005
Kia Motors India Pvt Ltd (Sonet)	7,650	13,594	5,404	9,744	2,135	4,205
Mahindra & Mahindra Ltd (Bolero, Xuv100, Thar, Xuv300)	15,346	17,882	14,747	18,118	490	588
Maruti Suzuki India Ltd (OEM Model # Brezza, Fronx, Jimny)	23,425	20,517	11,764	20,620	2,510	145
Nissan Motor India Pvt Ltd (Magenta)	2,504	3,338	1,966	2,817	9	41
PCA Motors Pvt. Ltd (C3, EC3)	-	928	-	993	-	686
Renault India Pvt Ltd (Kiger, Triber)	5,371	1,859	5,526	3,247	687	39
Toyota Kirloskar Motor Pvt Ltd (Urban Cruiser)	-	-	3,524	-	-	-
Total UVC	62,607	69,814	51,960	66,975	6,826	6,989
UV1 : Length 4000 to 4400 mm & Price <20 Lakhs						
Force Motors Ltd (Gurkha)	95	4	88	-	-	-
Hyundai Motor India Ltd (Creta)	16,156	15,763	12,651	14,186	2,733	513
Kia Motors India Pvt Ltd (Seltos)	13,003	9,659	7,506	7,213	5,376	2,854
Mahindra & Mahindra Ltd (XUV400)	-	1,136	-	602	-	-
Maruti Suzuki India Ltd (Ertiga, Grand Vitara, S-Cross)	15,578	8,508	17,811	13,274	275	3,272
MG Motor India Pvt Ltd (Ascot)	918	1,060	249	704	-	-
Nissan Motor India Pvt Ltd (Kicks)	192	-	144	-	-	-
SkodaAuto India Pvt Ltd (Kushaq)	1,643	1,745	2,413	2,162	-	154
Toyota Kirloskar Motor Pvt Ltd (Model Manufactured for the sale to other)	-	12,777	-	2,616	-	1,307
Volkswagen India Pvt Ltd (Taigun)	1,407	989	2,631	1,520	118	385
Total UV1	49,042	51,639	43,493	42,577	8,532	8,505
UV2 : Length between 4400 - 4700 mm & Price <20 Lakhs						
Hyundai Motor India Ltd (Alcazar)	3,005	3,062	2,422	2,037	434	775
Kia Motors India Pvt Ltd (Carens)	6,597	6,649	5,754	6,107	596	715
Mahindra & Mahindra Ltd (Marazzo, Scorpio, Xuv500, Xuv700)	8,818	14,181	7,374	14,374	153	271
Maruti Suzuki India Ltd (XL6)	4,385	2,851	4,366	2,880	-	27
MG Motor India Pvt Ltd (Hector)	1,995	3,121	1,448	3,103	-	-
Total UV2	24,810	29,887	21,364	28,481	1,183	1,788
#Only production volume of OEM Model is reported by Maruti Suzuki India Limited.						

SFAI						
Sub-segment & Company wise Production, Domestic Sales & Exports Report for the month of April 2023						
						Report IV
						(Number of Vehicles)
Category	Production		Domestic Sales		Exports	
Segment/Subsegment	April		April		April	
Manufacturer	2022	2023	2022	2023	2022	2023
UV3 : Length >4700 mm & Price <20 Lakhs						
Isuzu Motors India Pvt Ltd (Hi-Lander, V-Cross)	211	54	20	33	-	-
Toyota Kirloskar Motor Pvt Ltd (Innova Crysta, Innova HyCross)	6,538	4,701	6,351	4,837	-	-
Total UV3	6,749	4,755	6,371	4,867	-	-
UV4 : Price between Rs. 20 to 30 Lakh						
FCA India Automobiles Pvt Ltd (Jeep Compass)	1,341	1,739	886	268	366	314
Hyundai Motor India Ltd (Kona, Tucson)	38	600	97	556	-	-
Kia Motors India Pvt Ltd (Carnival)	403	-	355	-	-	-
Mahindra & Mahindra Ltd (Alturas G4)	50	-	47	-	-	-
MG Motor India Pvt Ltd (ZS EV)	229	917	228	463	-	-
PCA Motors Pvt. Ltd (C5 Aircross)	35	28	51	10	-	-
Total UV4	2,094	2,284	1,664	1,288	366	374
UV5 : Price >Rs. 30 Lakh						
FCA India Automobiles Pvt Ltd (Jeep Meridian)	-	447	-	292	-	39
Hyundai Motor India Ltd (Ioniq5)	-	100	-	183	-	-
Isuzu Motors India Pvt Ltd (MU-X)	12	4	3	4	-	-
Kia Motors India Pvt Ltd (EV6)	-	-	-	152	-	-
MG Motor India Pvt Ltd (Gloster)	66	320	83	281	-	-
SkodaAuto India Pvt Ltd (Kodak)	79	383	97	142	-	-
Toyota Kirloskar Motor Pvt Ltd (Fortuner, Land Cruiser, Velfire)	2,077	2,655	2,127	2,727	14	-
Volkswagen India Pvt Ltd (Tiguan)	71	-	130	31	-	-
Total UV5	2,304	3,889	2,430	3,816	14	39
Total Utility Vehicles (UVs)	1,47,606	1,62,263	1,27,282	1,48,005	16,921	17,669
Vans						
C : Vans ; Generally 1 or 1.5 box; seats upto 5 to 10						
V1 : Hard tops mainly used for personal transport, Price upto Rs. 10 Lakh						
Mahindra & Mahindra Ltd (Maxximo, Supro)	296	20	339	-	-	20
Maruti Suzuki India Ltd (Eeco)	11,162	10,901	11,154	10,504	126	254
Total V1	11,458	10,921	11,493	10,504	126	284
V2 : Soft tops mainly used as Maxi Cabs, Price upto Rs. 10 Lakh						
Mahindra & Mahindra Ltd (Supro)	6	-	18	4	-	-
Total V2	6	-	18	4	-	-
Total Vans	11,464	10,921	11,511	10,508	126	284
Total Passenger Vehicles (PVs)	3,10,472	3,16,122	2,51,716	2,84,271	46,498	40,899



SIAM						
Sub-segment & Company wise Production, Domestic Sales & Exports Report for the month of April 2023						
						Report IV (Number of Vehicles)
Category	Production		Domestic Sales		Exports	
Segment/Subsegment	April		April		April	
Manufacturer	2022	2023	2022	2023	2022	2023
Three Wheelers						
A: Passenger Carriers						
A1: No. of seats Including driver not exceeding 4 & Max.Mass not exceeding 1 tonne						
Atul Auto Ltd (Atul Gemini,Atul Rik,Atul Rik + 3P ,Atul Rik 3P 200,R k)	378	255	193	135	215	73
Bajaj Auto Ltd (Maxima,RE)	22,296	37,868	6,414	28,320	19,957	11,565
Continental Engines Pvt Ltd (Baxy Express Passenger)	139	73	160	34	-	-
Mahindra & Mahindra Ltd (Alfa,Treo)	901	2,392	1,025	2,119	4	4
Piaggio Vehicles Pvt Ltd (Apo Auto,Apo City)	4,233	4,257	3,066	2,363	1,308	1,326
TVS Motor Company Ltd (TVS King 4S)	13,061	9,551	1,300	1,571	13,777	9,833
Total A1	41,008	54,414	12,157	34,542	35,261	22,801
A2: No. of seats Including driver exceeding 4 but not exceeding 7 & Max.Mass not exceeding 1.5 tonnes						
Atul Auto Ltd (Atul Gem)	428	85	398	88	30	58
Force Motors Ltd (Minidor)	140	210	-	-	84	140
Total A2	568	295	398	66	114	196
Total A	41,576	54,709	12,555	34,608	35,375	22,997
Total Passenger Carriers	41,576	54,709	12,555	34,608	35,375	22,997
E-Rickshaw						
Atul Auto Ltd (Atul Elite)	90	272	93	265	-	-
Continental Engines Pvt Ltd (Baxy F Rath)	20	406	48	324	-	-
Mahindra & Mahindra Ltd (e-Alfa Mini,Treo Yaari)	358	1,060	889	2,302	-	-
Total E-Rickshaw	468	1,738	830	2,591	-	-
B: Goods Carrier						
B1: Max mass not exceeding 1 tonnes						
Atul Auto Ltd (Atul Gem,Atul Gemini Atul Smart Aqua,Atul Shakti)	526	-	544	-	-	4
Bajaj Auto Ltd (Maxima)	2,697	3,373	2,504	2,983	96	80
Continental Engines Pvt Ltd (Baxy Cargo,Baxy Cargo Super King EV)	262	13	271	-	-	-
Mahindra & Mahindra Ltd (Alfa,Treo Zor Grand)	1,152	1,397	1,157	1,228	14	2
Piaggio Vehicles Pvt Ltd (Apo Xtra)	2,772	1,399	2,824	1,142	134	3
TVS Motor Company Ltd (TVS King Cargo)	158	1	46	34	181	-
Total B1	7,566	6,183	7,348	5,367	405	97
Total Goods Carrier	7,566	6,183	7,348	5,367	405	97
E-Cart						
Atul Auto Ltd (Atul Elite Cargo)	137	131	120	116	-	-
Continental Engines Pvt Ltd (Baxy E Cart)	-	-	6	-	-	-
Mahindra & Mahindra Ltd (e-Alfa Cargo)	131	-	136	203	-	-
Total E-Cart	268	131	264	319	-	-
Total Three Wheelers	49,879	62,761	20,997	42,885	35,780	23,094

SIAM						
Sub-segment & Company wise Production, Domestic Sales & Exports Report for the month of April 2023						
						Report IV (Number of Vehicles)
Category	Production		Domestic Sales		Exports	
Segment/Subsegment	April		April		April	
Manufacturer	2022	2023	2022	2023	2022	2023
Motorcycle/Step-Throughs						
B : Motorcycles/Step-Through: Big wheel size – more than 12".						
B2: Engine Capacity >75 CC but less than equal to 110 CC						
Bajaj Auto Ltd (Boxer,CT,Discover,Patna)	1,36,252	73,127	44,814	50,987	89,992	44,224
Hero MotoCorp Ltd (HF Deluxe Passion Splendor)	3,05,859	3,49,177	3,12,942	3,12,854	9,496	5,378
Honda Motorcycle & Scooter India Pvt Ltd (Dream,Livo,Shine)	17,134	3,786	14,504	-	6,020	4,592
India Yamaha Motor Pvt Ltd (Crux,Saluto RX)	2,708	5,985	-	-	3,324	3,360
TVS Motor Company Ltd (Radeon,Sport Star City)	62,455	44,620	31,520	32,474	35,063	14,770
Total B2	5,24,438	4,76,695	4,03,780	3,96,325	1,43,895	72,324
B3: Engine Capacity >110 CC but less than equal to 125 CC						
Bajaj Auto Ltd (Boxer,CT,Discover,Husqvarna,KTM,Platina,Pulsar)	74,950	1,02,281	42,777	81,270	37,937	18,828
Hero MotoCorp Ltd (Glamour,Splendor)	59,375	49,565	52,924	46,723	3,222	648
Honda Motorcycle & Scooter India Pvt Ltd (CB Shine)	1,13,387	91,862	1,05,413	89,281	4,785	2,741
India Yamaha Motor Pvt Ltd (Saluto YD125)	3,070	4,405	-	-	2,650	3,308
Suzuki Motorcycle India Pvt Ltd (Hayate)	240	180	-	-	455	260
TVS Motor Company Ltd (Raider,Star City 125,Victor)	48,107	60,628	3,302	31,431	47,860	28,374
Total B3	2,99,129	3,08,901	2,04,506	2,48,745	96,890	54,155
B4: Engine Capacity >125 CC but less than equal to 150 CC						
Bajaj Auto Ltd (Boxer,CT 150,Pulsar)	38,887	25,311	2,177	18,881	28,205	11,478
Hero MotoCorp Ltd (Hunk)	3,783	1,452	-	-	4,495	1,501
Honda Motorcycle & Scooter India Pvt Ltd (CB Unicorn 150)	200	64	-	-	240	56
India Yamaha Motor Pvt Ltd (FZ,SZ)	29,248	24,442	16,508	20,931	15,616	5,266
Total B4	70,198	51,269	18,685	37,812	46,457	18,291
B5: Engine Capacity >150 CC but less than equal to 200 CC						
Bajaj Auto Ltd (Avenger,Husqvarna,KTM,Pulsar)	24,622	37,692	1,340	23,657	19,418	17,764
Hero MotoCorp Ltd (Xpulse 200 Xtreme)	8,807	3,052	7,160	1,202	2,381	503
Honda Motorcycle & Scooter India Pvt Ltd (CB 200X,CB Hornet 160R,C)	21,321	3,744	14,778	-	8,089	5,064
India Kawasaki Motors Pvt Ltd (W175)	-	-	-	143	-	-
India Yamaha Motor Pvt Ltd (MT 15,R15)	19,496	16,118	17,116	15,783	1,449	1,974
Suzuki Motorcycle India Pvt Ltd (Gixxer,Intruder)	7,776	8,565	1,008	558	8,470	5,942
TVS Motor Company Ltd (Apache)	17,072	39,480	7,342	38,148	11,771	5,252
Total B5	99,094	1,09,231	48,804	79,421	51,562	36,539



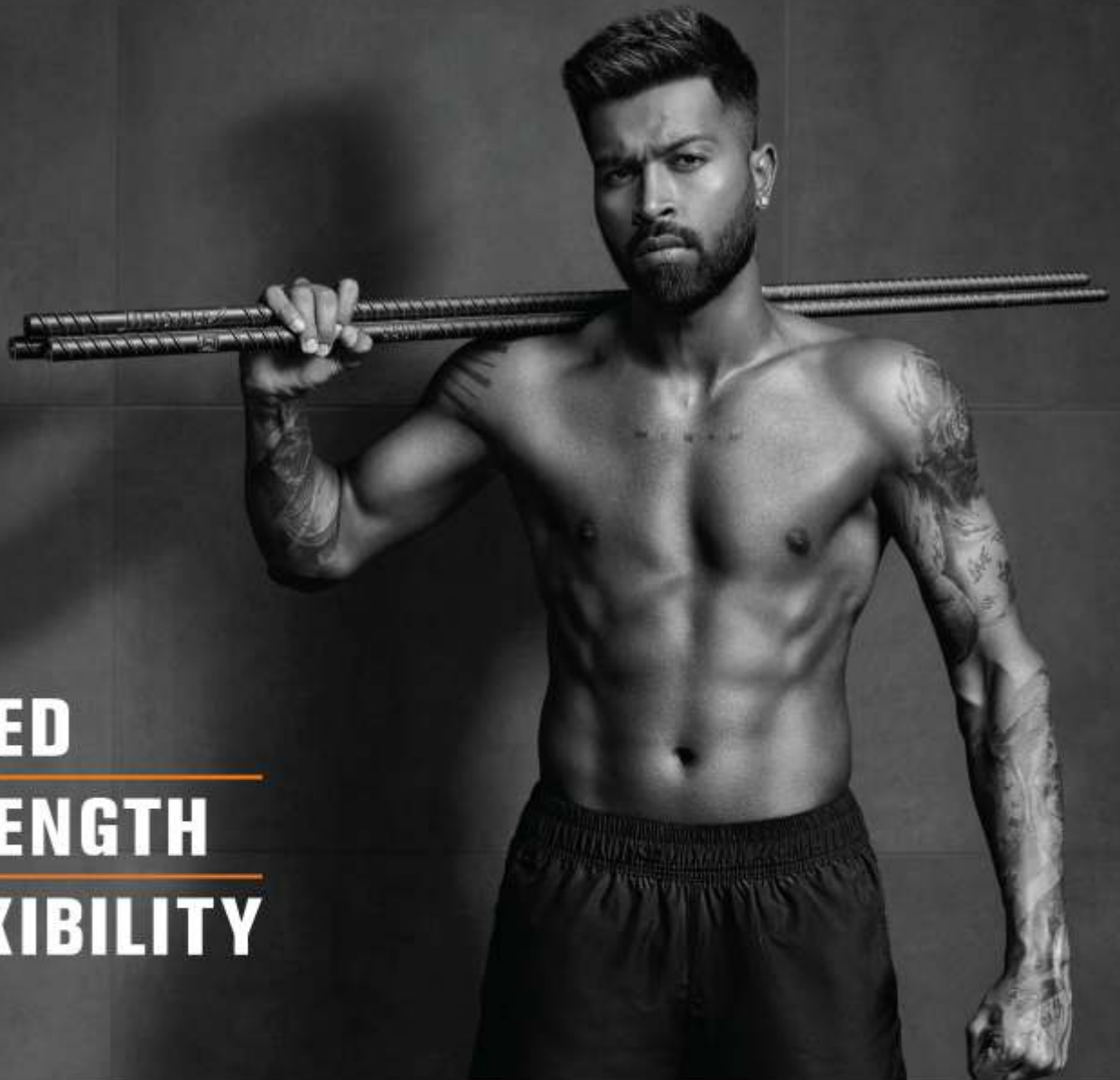
Statistics

SIAM						
Sub-segment & Company wise Production, Domestic Sales & Exports Report for the month of April 2023						
						Report IV
						(Number of Vehicles)
Category	Production		Domestic Sales		Exports	
Segment/Subsegment	April		April		April	
Manufacturer	2022	2023	2022	2023	2022	2023
B6: Engine Capacity >200 CC but less than equal to 250 CC						
Bajaj Auto Ltd (Avenger, Dominar, Husavarna, KTM, Pulsar)	4,145	6,633	288	2,094	4,246	4,829
India Kawasaki Motors Pvt Ltd (KX 250)	-	-	3	-	-	-
India Yamaha Motor Pvt Ltd (FZ25)	2,546	1,126	610	-	1,118	1,042
Suzuki Motorcycle India Pvt Ltd (Gixxer 250, V-Strom SX)	2,956	3,212	238	-	2,226	1,554
Total B6	9,647	10,971	1,119	2,694	7,590	7,425
B7: Engine Capacity >250 CC but less than equal to 350 CC						
Honda Motorcycle & Scooter India Pvt Ltd (CB300R, H'ness, MC 300N)	4,829	6,553	3,234	3,013	2,221	5,207
India Kawasaki Motors Pvt Ltd (Ninja300)	89	-	85	125	-	-
Mahindra Two Wheelers Ltd (Mojo)	-	-	14	-	-	-
Royal-Enfield (Unit of Eicher Motors) (Bulot 350, Bulot Electra Classic 350)	56,967	63,430	48,623	62,366	2,042	2,372
TVS Motor Company Ltd (BMW, RR 310)	2,637	2,553	403	324	1,676	1,492
Total B7	64,322	72,536	52,329	65,818	6,839	9,071
B8: Engine Capacity >350 CC but less than equal to 500 CC						
Bajaj Auto Ltd (Dominar, Husavarna, KTM)	7,834	8,439	581	1,855	10,879	8,364
Honda Motorcycle & Scooter India Pvt Ltd (CB 500)	-	-	1	-	-	-
India Kawasaki Motors Pvt Ltd (Ninja 400)	-	-	-	5	-	-
Royal-Enfield (Unit of Eicher Motors) (Himalayan)	8,959	4,194	3,070	3,621	2,807	767
Total B8	16,793	12,633	3,662	5,181	13,266	9,731
B9: Engine Capacity >500 CC but less than equal to 800 CC						
Honda Motorcycle & Scooter India Pvt Ltd (CBR 850F)	20	-	33	-	-	-
India Kawasaki Motors Pvt Ltd (Ninja650, Versys 850, Vulcan S, Z650, Z800)	18	80	84	64	-	-
Royal-Enfield (Unit of Eicher Motors) (650 Twin, Super Meteor)	1,794	3,390	2,159	3,014	2,754	1,116
Suzuki Motorcycle India Pvt Ltd (DL650CX)	-	-	10	-	-	-
Triumph Motorcycles India Pvt Ltd (Street, Triple, Tiger 660, Tiger 800 X)	63	-	53	-	-	-
Total B9	1,885	3,470	2,339	3,068	2,754	1,116

SIAM						
Sub-segment & Company wise Production, Domestic Sales & Exports Report for the month of April 2023						
						Report IV
						(Number of Vehicles)
Category	Production		Domestic Sales		Exports	
Segment/Subsegment	April		April		April	
Manufacturer	2022	2023	2022	2023	2022	2023
B10: Engine Capacity >800 CC but less than equal to 1000 CC						
Hero MotoCorp Ltd (883 Iron)	-	-	5	-	-	-
India Kawasaki Motors Pvt Ltd (Ninja ZX-10R, Z900)	10	-	42	57	-	-
Triumph Motorcycles India Pvt Ltd (Boneville T100, Speed Twin, Street Triple)	7	34	19	42	-	-
Total B10	17	34	66	99	-	-
B11: Engine Capacity >1000 CC but less than equal to 1600 CC						
Hero MotoCorp Ltd (Pan America, Spoiler S)	-	-	2	6	-	-
Honda Motorcycle & Scooter India Pvt Ltd (Africa Twin)	20	-	20	-	-	-
India Kawasaki Motors Pvt Ltd (Ninja1000, Versys 1000)	-	-	20	22	-	-
Suzuki Motorcycle India Pvt Ltd (Hayabusa)	-	31	3	57	-	-
Triumph Motorcycles India Pvt Ltd (Boneville Bobber, Boneville 1120, Speed Triple)	-	-	12	18	-	-
Total B11	20	31	57	101	-	-
B12: Engine Capacity >1600 CC						
Hero MotoCorp Ltd (Fat Bob, Fat Boy 114, Heritage Classic, Road Glide)	-	-	19	5	-	-
Triumph Motorcycles India Pvt Ltd (Rocket III)	-	-	4	5	-	-
Total B12	-	-	23	10	-	-
Total Motorcycle/Step-Throughs	10,85,543	10,45,771	7,35,360	8,39,274	3,69,273	2,08,652
C: Moped: More than 75 CC to 100 CC and with fixed transmission Ratio, Big wheel size – more than 12"						
C1: Engine capacity less than or equal 100 CC						
TVS Motor Company Ltd (TVS XL)	35,960	36,435	38,780	34,925	6	-
Total Mopeds	35,960	36,435	38,780	34,925	6	-
Total Two Wheelers	15,30,763	15,78,402	11,62,582	13,38,588	4,05,439	2,58,187
Quadracycle						
Bajaj Auto Ltd (Quie)	101	314	26	61	58	298
Total Quadracycle	101	314	26	61	58	298
Grand Total	18,81,215	19,57,599	14,35,321	16,65,805	4,87,783	3,22,476
Society of Indian Automobile Manufacturers (12/05/2023)						



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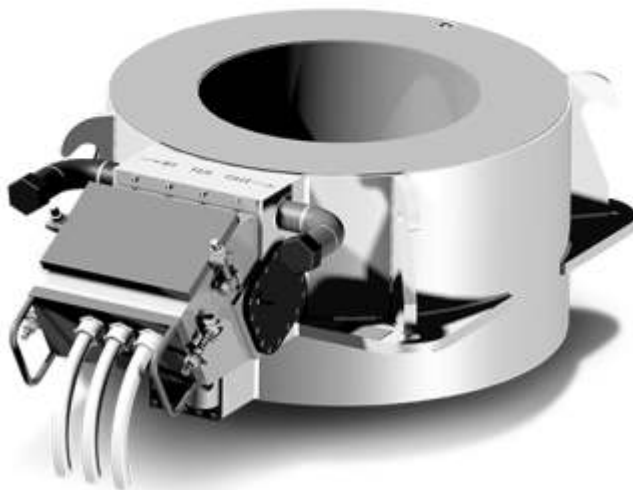
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Caster EMS



MFM - Gaussmeter



EAF EMS



Automatic Powder Feeder



Mould Level Control

PRODUCT RANGE

- Mould Electro-magnetic Stirrers (M-EMS) for CCM
- Strand & Final Electro-magnetic Stirrers (S-EMS & F-EMS) for CCM
- Tundish Stirrers
- EAF, LF & ladles Stirrers
- Aluminum furnace Stirrers
- No-Fe caster Stirrers
- Mould Level Detectors based on inductive, ultrasonic or optical sensors (ILD, ULD, OLD)
- Powder Thickness Control based on ultrasonic, laser line or induction sensors
- Automatic Mould Powder Feeders (MPF)
- Vibrational & Optical Slag Detectors (VSD & OSD) for ladle-tundish
- Mould Oscillation Checker (OPI), portable or fixed
- Magnetic Field Meter (MFM) for Stirrers
- Stirrer maintenance & reconditioning



Engineering & Technologies

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