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■ **India's copper demand continues to be robust in the coming years**

Rohit Pathak
CEO, Birla Copper
(Hindalco Industries Limited)
President – IEEMA, President –
IPCPA and Director – FAI

■ **RAA Channelizing for Sustainable Recycling in Africa**

■ **Strengthening macroeconomic stability is a cornerstone of the Union Budget 2023-24**

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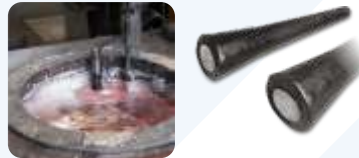
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D. A. Chandekar Editor

Dear Readers,

I had said in my last piece that the Indian metals industry has learnt to survive and grow despite of Ukraine - Russia war and overall recessionary trend in many parts of the world. This is mainly because of the growing consumption in the country and less dependency of overseas trade. India's GDP growth rate is the highest among the large economies and all the major international monetary agencies have predicted a decent GDP growth rate of more than 6 % for the fiscal 2023-24. This means that Indian economy would grow faster than China, the US and also the other major countries having large sized economy.

Recently the union finance budget was announced by the Indian Finance Minister Nirmala Sitaraman. It has more than 30 % more outlay for infrastructure development, a big provision for the development of Railways and also schemes for MSME sector. It was very well received by the industry. The metallurgical fraternity thought that the enhanced outlay for the infrastructure and development of railways is sure to translate into huge metals demand. This will not only ensure a sustained growth for metals producing companies but also create jobs, direct as well as indirect. Further, the development of railways, apart from creating metals demand, also includes its modernization program. We can expect a more efficient and modern railway service in coming

Editorial Desk



years. MSME is supposed to be the backbone of any economy. The budget promises to strengthen this crucial sector and improve its bottomline and viability. We all know that MSME is the biggest job creator in any economy and if it is healthy and growing, it can give a big boost to the economy wheel. Also a lot of fund has been allotted to logistics development. This will also directly benefit metallurgical sector as the logistics plays a very important and major role in this industry process chain. To produce a tonne of metal, several tonnes of raw materials have to be moved. Thus the total transport requirement per tonne of metal is huge. Thus it is natural that all the major trade bodies and also the major steel business houses have wholeheartedly welcomed this union budget.

Overall, the fortune seems to be favouring Indian economy and also Indian metals sector. Here I would again like to mention that infrastructure development occupies majority of space in any economy's growth and the metallurgical sector is at the centre of the infrastructure development. Thus 'India's Growth Story' can not be completed or fully achieved without a strong support from metals industry. So friends, it is time to work hard and achieve a sustainable growth, for ourselves and also for the country !

Write your comments :

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India's copper demand continues to be robust in the coming years

Rohit Pathak

CEO, Birla Copper (Hindalco Industries Limited)
President – IEEMA, President – IPCPA and
Director – FAI



“I believe India will be one of the key demand drivers for copper over the next few decades. As India becomes the driver of the global economic growth and accelerates its Net Zero journey, our requirement will grow 4-5x by 2050”

Rohit Pathak,
CEO, Birla Copper (Hindalco Industries Limited)

Pathak is the President of IEEMA, President – IPCPA and Director – FAI. From 2021 onwards, he has been appointed as the CEO of Birla Copper, the largest Copper player in India and globally for Copper Rods

(outside China). This is the Copper business of Hindalco Industries Limited, a flagship company of the Aditya Birla Group. Am also on the Board of Birla Copper Asoj Pvt Limited.

- 2019 Onwards – On the National Executive Council of IEEMA (the industry association of the electrical equipment industry in India) as a director since 2019 and the President of the Association for the year 2022-23. Am also the President of the Indian Primary Copper Producers Association (IPCPA) since 2022 and a Director of the Fertilizer Association of India (FAI) since 2021
- 2019-2021 – Appointed first CEO of Aditya Birla Power Composites Limited, a JV of Grasim Industries Limited with Maschinenfabrik Reinhausen of Germany for Composite

Hollow Core Insulators. This was in addition to the role of CEO of Aditya Birla Insulators. Was also on the Board of ABPCL

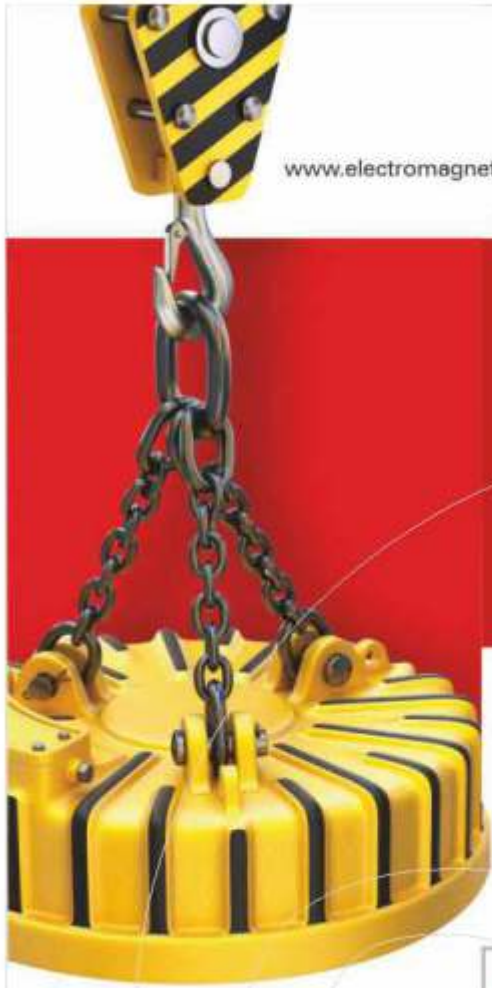
- 2016-2021 – President & CEO of Aditya Birla Insulators (largest Insulator player in India and 3rd largest porcelain player globally), where he is leading the transformation of ABI into an International business and diversification into Composites. ABI recently completed 50 years in the Insulator industry, and offers the complete range of insulators across voltages, applications and materials
- 2011-2016 – Principal EA to Aditya Birla Group Chairman, Mr. Kumar Mangalam Birla, helping manage all the Businesses of the \$60+ billion Aditya Birla Group. Advised Mr Birla on key priorities (such as M&A, organic growth, special

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- 2001-2011 – Associate Principal at McKinsey & Company, where I developed and sustained two of the five largest clients for McKinsey in India, working on diverse issues such as new market entry, business turn around, inorganic growth, large scale performance transformations, and business plan development and delivery. Also, led the Procurement practice and Co-led the Automotive & Assembly practice in India.
- 1997-1999 - Design Engineer at Analog Devices Inc, and worked on the development and design of the cutting-edge range of microprocessors at its Bangalore and Austin (USA) Design Centres

Dnanesh Chandekar, Editor & CEO, Metalworld had an exclusive interaction with Rohit Pathak, CEO, Birla Copper (Hindalco Industries Ltd.) to understand more on copper demand, expectation from the policy makers etc.

Excerpts :

How is the status of Copper Business in the country?

India has seen a strong revival in copper demand over the past year, and demand has reached back to the pre-covid levels in FY23. Almost all segments, from housing wires to winding wires to railways

have seen good growth. The positive part is that domestic players, especially Hindalco, has been able to ensure this increase in demand is mostly met by us. While India remains a net importer, we have been able to increase our production to serve our customers. What I feel very proud of over the past year is that given the disrupted global supply chains, we were able to ensure our customers did not suffer any shortage of copper for their productions. We continue to serve most of our customers for their copper requirements within 24 hours across the length and breadth of the country. Overall, I believe, the copper demand in the country is robust and will see a sharp increase in the coming years. And we will bolster our capacity to serve the same, not just of copper rods but also of specialty alloys that will be needed as India develops.

How do you see the future of Copper Business, globally & in India?

Copper is the metal of the 21st Century. Electricity will become the main source of energy the world over, doubling its relative share to ~50% of global energy demand over the coming couple of decades. Renewables and mobility, which will see rapid growth as the world pushes for Net Zero, will increase the copper intensity 2-4x in electricity generation and mobility. Further, the “digital” component in our lives will continue to grow exponentially. Efforts on Energy Efficiency will gather momentum at the same time, which will ensure the growth is less resource intensive that what it has been over the past few decades. Overall, with these

mega trends of Electrification of the economy, Urbanization, Digitalization and Green Energy, copper demand will more than double by 2050.

This will require three interventions from the supply side – i) investment in opening new copper mines (that has slowed down once again after a brief impetus of late), ii) new custom smelter capacities to come up (China, which had put up >90% of the new smelter capacity over the past 2 decades will not be able to sustain that momentum), and iii) formal recycling industry to gain momentum to cater to demand of high purity copper for electrical applications (instead of the “remelting” that is far more prevalent as of now).

As Copper producing industry, what support you need from policy makers?

I believe India will be one of the major drivers for Copper demand growth over the next few decades. As India becomes the driver of the global economic growth and accelerates its Net Zero journey, our requirement will grow 4-5x by 2050.

To cater to this demand, we need to ensure we create the smelting & refining capacity in India to remain self-sufficient for copper. There are two reasons for this – i) India does not have enough mineral resources of copper and hence we need to ensure the smelting capacity is at least developed in India, ii) no other country, other than China, will have sufficient smelting capacity to meet the 4-5 Mn Tons demand of India – so unless we build the smelters, we will be increasingly dependent on China.

To encourage this, the policy makers need to create a level playing field for the copper smelting industry and remove the inverted duty structure for



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Face to Face

the metal where the raw material for smelting, copper concentrate, comes in at 2.5% duty but copper cathodes and rods are coming in at 0% from FTA countries.

Apart from this, the other initiative which the policy makers are working on, but could be accelerated, is to push for the “formalization” of the copper recycling industry – as shared earlier, most of the copper scrap gets remelted today and this impure copper finds its way into electrical applications

self-sufficient for Copper – i) removal of the 2.5% import duty on Copper Concentrate to address the inverted duty and encourage smelting capacity creation, and ii) creating a formal copper scrap recycling sector with strong standards for copper processing and plugging the GST evasion by the informal sector.

What new initiatives are being taken at Hindalco in copper production & processing?

Well, in-line with the growing demand for copper,

and copper foils, ii) setting up a state-of-the-art recycling facility for copper scrap to fulfil the demand for high purity copper, and iii) evaluating smelting capacity addition if the policy support is provided for access to copper concentrate. As the leading Copper player of India, and in the world, we remain committed to ensuring that India remains self-sufficient for its growing copper demand.



creating safety risks and quality concerns, apart from the GST loss for the nation. In a nutshell, I believe, there are two specific interventions that are needed to ensure India is

Hindalco is working on three broad areas – i) developing new products that will be needed to serve the domestic demand such as specialty alloys for railways, inner groove tubes for A/Cs



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RAA Channelizing for Sustainable Recycling in Africa



Introduction

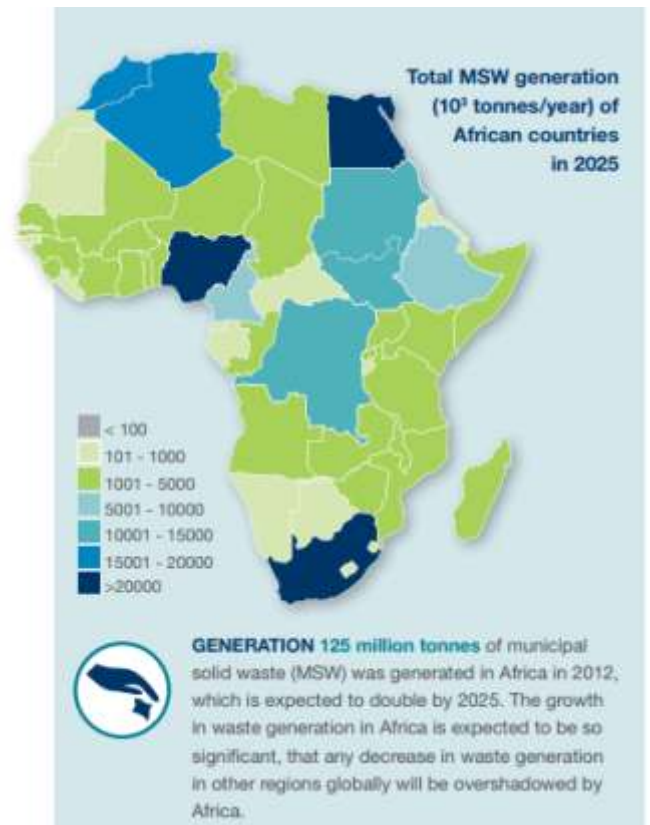
The Recycling Association of African has seen significant growth since its inception in 2021, and maintaining a promising outlook for the future. The need for sustainable waste management practices has become increasingly important, and African countries are slowly recognizing the potential benefits of a thriving recycling industry. Africa is the world's second largest continent with an area of about 30,000,000 square kilometers and a growing population of more than 1.2 billion and with an estimated GDP of 5.5 trillion US-Dollar, the continent is an economic area with rising importance. At RAA, we are working to correct the negative rhetoric that has tarnished Africa. From being a needy continent for human aid and a lack of resources to being one of the most potential natural and human resource centric continents. The current state of the African recycling industry is

one of growth and potential. According to the World Bank, the recycling industry in Africa has seen a yearly growth rate of between 6% and 8% in recent years. This growth is due in part to the increasing recognition of the environmental and economic benefits of recycling. The increasing urbanization of African countries has also led to a rise in the amount of waste generated, which has created a larger market for the recycling industry to serve. However, Africa has to face development challenges, as the urban population is increasing at a rate of 3.5 percent per annum. One aspect is the waste management, which is driven not only by population growth but also by changing consumption habits, production patterns and global waste trade. Africa currently recycles only 4 percent of its waste, and it needs harnessing waste as a resource – unlocking socio-economic opportunities by moving waste up the management hierarchy, away from disposal and towards prevention, reuse, recovery and recycling. Across Africa, recycling is emerging as a viable enterprise, driven more by unemployment and socio-economic need than by public or private sector design.

The promising image and challenges of African recycling industry:

The future outlook of the African recycling industry is promising, as there is a growing demand for recycled materials, particularly in the construction and manufacturing sectors. In

Dr. Salam Al Sharif,
*Founding
Chairman RAA*



addition, the rising awareness of environmental issues and the need for sustainable waste management practices is expected to continue to drive growth in the industry. This trend is also expected to continue as African countries continue to urbanize and their populations continue to grow. However, despite the positive



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outlook for the African recycling industry, there are several challenges that need to be addressed in order for it to reach its full potential. One of the biggest challenges is the lack of proper waste management infrastructure in many African countries. This makes it difficult for recyclers to properly collect, sort, and process waste materials. This in turn makes it more difficult for the industry to function efficiently and effectively, and also has a negative impact on the environment. Another challenge facing the African recycling industry is the lack of investment in the sector. Many African countries lack the funds needed to invest in the necessary infrastructure and equipment for a thriving recycling industry. This makes it difficult for the industry to grow and compete with other sectors. In addition, the lack of investment also makes it difficult for the industry to attract the necessary talent and expertise to run a successful business. The lack of proper regulations and policies is also a challenge for the African recycling industry. Many African countries lack the proper legal frameworks to support and encourage the growth of the recycling industry. This makes it difficult for the industry to operate efficiently and effectively, and also creates a disincentive for investment in the sector. Likewise, the low level of public awareness about

recycling is also a challenge for the African recycling industry. Many African citizens are not aware of the importance of recycling and the benefits it provides. This makes it difficult for the industry to grow and compete with other sectors. In addition, the lack of public awareness also makes it difficult for the industry to attract investment, as many investors are hesitant to invest in sectors that are not well-understood by the public. Vision of RAA for African Recycling Industry Though recycling is a billion-dollar industry, many governments across Africa have not yet tapped into its potential. Across the continent, only South Africa has made significant strides to recycle, and this is where Recycling Association of Africa will be channelizing the recycling industry in Africa. The Recycling Association of Africa (RAA) is a non-profit organization dedicated to promoting sustainable waste management practices in Africa. RAA has been promoting recycling from its inception in 2021 having a strong membership from the African continent (of the 251 registered members – out of which 210 are African based companies) with the vision of transforming the recycling industry in Africa into a thriving and environmentally responsible sector that can provide economic and social benefits to the communities. One of the key contributions of the RAA is promoting awareness about the

importance of recycling and waste management in Africa through conferences, networking and education.

On 15th March 2023 RAA – MRC Conference in Dubai, will explore the African recycling industry which will provide the gateway to connect business opportunities in Africa. The event will pave way to see the larger side of recycling industry of Africa where high-ranking

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diplomats and stakeholders from Africa will be part of the conference. (Why choose Dubai - Dubai provides a dynamic business event offering – made up of global connectivity; the city is strategically connected place both logistically and trading as most of the African and Middle East recycling industry are closely trading across the



Technology



region). RAA is working towards to build close synergy with waste management companies, NGOs, and other stakeholders to improve the recycling industry in Africa. RAA has a clear vision of building the connectivity with local governments, businesses, and communities to educate people about the benefits of recycling, as well as the importance of reducing waste in order to protect the environment and advocating for preservation of natural resources and utilizing urban mines before having to utilize

underground mines. The long-term vision of the Recycling Association of Africa is to create a sustainable and thriving recycling industry in Africa that provides economic and

social benefits to communities while also protecting the environment. RAA takes pride in promoting sound recycling practices throughout Africa as well as supporting the African economy in building bridges throughout the Middle East,

Europe and around the globe. To learn more about RAA, don't miss participating at the inaugural conference in Dubai at the Ritz Carlton hotel by checking out our website www.raafrica.org and make your registration at your earliest. ■





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1st HR Conclave 2023 - QCFI Mumbai Chapter

Mumbai Chapter organised 1st HR Conclave on Saturday, the 21st January 2023, at Hotel Holiday Inn, Anehri (E). The Theme was: "Innovating Future Human Resource Practices – A step towards achieving Global Leadership".

The Conclave was inaugurated by Chief Guest, Mr. Martin Kitching, CEO – Learn N Work, UK. Key Note Speaker, BK Sister Shivani, Senior Rajyoga Teacher, Mr. Satish Kalokhe, President-Emeritus, QCFI, Mr. D.K. Srivastava, Executive Director, QCFI and CA Vijay Bapna, Immediate Past President Mahaveer International graced the function.



Mr. K.B. Bharati, Chairman, Mumbai Chapter & Vice President, QCFI welcomed the dignitaries on the dais, with bouquets and shawls and delivered welcome address.



The welcome speech was followed by release of a Souvenir at the hands of Chief Guest. Two QC Teams – Trishul & Swaraj from RCF Mumbai were felicitated at the hands of Chief Guest for their 25 and 33 years uninterrupted journey in the QC Movement. Three organisations 1. NVM Engg Private Ltd, 2. AstecLife science Ltd, Mahad & 3. Exide Industries Ltd, were conferred with HR Excellence Awards.





All the Dignitaries delivered most knowledgeable and motivating speeches.

Mr. D.K. Srivastava talked about formation QCFI as a National Body in 1982 and explained its objectives. He also presented various activities, training programs, certification programs and its connection with JUSE (Union of Japanese Scientists & Engineers). Mr. Satish Kalokhe congratulated Mumbai Chapter for organising HR Conclave under leadership of Mr. K.B. Bharati. He said the HR function has become very important in the present business scenario.

Mr. Sapan Bardhan Convener of the HR Conclave delivered his views about the Conclave and explained Day's

Program.

BK Sister Shivani's address to the audience was based on the "Self Care for Empathetic Leadership". She called for creating transformation and change in self. She also guided the audience how to lead life without stress.

Mr. Martin Kitching shared his organisational functioning, products and services, new Intelligent Resource Management System, across the Globe. He said QCFI has done an extremely excellent work in the area of Quality Improvement. At the end, he quoted Richard Branson in his speech to "Take care of your employees and they will take care of your business"

Afternoon sessions consisted of presentations

by the speakers and panel discussions. The audience responded well in the question & answer session with thunderous applause. Mr. Bardhan and Mr. Potdar managed the afternoon sessions with professional approach and human touch. Mr. Deepak Redgaonkar compered the day's proceedings with professional order and quotes. Panel discussion was conducted by Mr. Sapankumar Bardhan. Panelists were Mr. Ajay Agrwal, Global Product Application Specialists – Auto. Tech, Shell India Markets Pvt. Ltd., Mr. DyaneshChandekar from Metal & Steel World and Mr. Siraz Henry – CEO – Goldplay OTT. They all shared their thoughts on "Roles in achieving Global Leadership".

Mr. S. S. Patankar, Vice Chairman, QCFI Mumbai delivered vote of thanks to all the Speakers, Panellists, Governing Council Members for their support, and Mumbai Chapter's Office Staff.





Strengthening macroeconomic stability is a cornerstone of the Union Budget 2023-24



Kumar Mangalam Birla,
Chairman, Aditya Birla Group
- Strengthening macroeconomic stability has been a cornerstone of the Modi government's economic policymaking. And, this has been a key factor in catapulting India's economic fortunes. Budget 2023-24, too, passes the macroeconomic 'pariksha' with flying colors. The finance minister has once again done a stellar job of supporting growth whilst maintaining fiscal pragmatism. That too, at a time when most advanced economies are wrestling

with recessionary conditions. The government's move to boost capital spending by more than a third, to Rs 10 trillion will ensure the growth juggernaut remains unstoppable. At 3.3 percent of the gross domestic product, the capex outlay is almost 3 times the 2019 levels. We are truly in the midst of a 'capex mahoosive'. The sustained thrust on government capex lays the foundation for future growth and employment. In the near term, it should crowd in private investment. The government has identified 100 critical infrastructure projects for last and first-mile connectivity at an investment of Rs 75,000 crore. In addition, there is a plan to add 50 airports, heliports, and aerodromes. The government has announced this increased expenditure program without compromising the credibility of the fiscal deficit. The

target of 5.9 percent for the 2023-24 financial year (FY24) appears realistic. The finance minister's commitment of pulling back deficit targets to the long-term desired path is also encouraging. The government has wisely renewed its focus on keeping a tight rein on its finances and sticking to the path of fiscal consolidation. This is probably the best course of action in the current troubled global environment. Let us not forget the situation in much of the developed and developing world today. Currencies in some countries have collapsed due to sky-high inflation, and jittery bond markets have reacted by sending interest rates higher. Debt has piled up so high, even in some developed countries, that higher rates are likely to make interest payments a massive burden. Much of this has been caused by high government spending, leading to inflation. Fortunately, in India, the



government was wise and prudent in spending during the Covid-19 years and did not give in to demands for large fiscal giveaways. India, too, had to wrestle with high inflation but those pressures have been contained to a large extent on the back of deft and tactful handling by the Reserve Bank of India. This prudent course has enabled the government in this Budget to wisely propose meaningful spending measures and tax sops — infrastructure, railways, and rural credit being prime examples. The government's track record on infrastructure creation has so far been excellent with a number of roads, highways, expressways, and urban metro lines being built at record speed. It is possible to imagine that large parts of the country would have overcome the infrastructure deficit a few years later, with citizens enjoying a much better quality of life. Meaningful and measured tax sops have also been granted in the Budget. The government has kept in mind the middle class and the tax-paying citizenry whose vast economic contribution, especially during and after the pandemic, helped buoy economic growth. The sops announced — including a reduction in slabs and an increase in exemption limit — will help hard-pressed households weather the inflationary storm better. It will also boost consumption, a key pillar of our economic growth. Overall, Budget

2023-24 is bold and imaginative in its scope and yet realistic in its assumptions. It will protect growth in the near term and more importantly, lay the foundation for a glorious Amrit Kaal.

Pratik Agarwal,

Managing Director, Sterlite Power -

"The budget has laid down



a promising path for the nation's green growth, clearly identified as one of the seven pillars, with a sizable outlay of Rs 35,000 crore. India is among the few developing countries focusing on green growth in addition to meeting the basic needs of power for the masses. The finance minister has taken proactive steps to promote battery storage and pumped storage projects to ensure stable and round-the-clock supplies from renewable resources like solar and wind power. Focus on discoms is key to achieving any real progress in the power sector, commend the measure of tying 0.5% of the state deficit to power sector reforms. This is an added incentive for the states to reform the DISCOMs. However, along with this, a major incentive and disincentive

package for the discus would prove beneficial. Overall, the budget has pushed all the right buttons and is well in line with the macroeconomic goals of the country."

L.Pugazhenty,

Past President, The Indian Institute of Metals -

The recently presented Union



Budget 2023 (which some called it is a pre-election budget) is actually a well-balanced budget for giving a big infra push in India & to make India a Rs. 7 Trillion Economy by 2030. Let us all hope that the thrust and flow of funds will continue in the coming years to realize these cherished objectives. Capital expenditure, 33% up, amounting to Rs.10 Lakh Crores has been earmarked for boosting demand for steel, nonferrous metals, cement etc. Highways will receive Rs.2.7 Lakh Crores, 25% more. For modernization & upgradation, Railways has been allocated Rs.2.4 Lakh Crores. Transition to Green Energy gets Rs.5000 Crores. For telecom expansion, Rs.1.2 Lakh Crores have been allocated. Housing for poor, Awas Yojana, will receive Rs.79000 Crores, 66% up. Drinking water for all, Jal Jeevan Mission, has been allocated Rs.70000 Crores. Rs.16000 Crores for Urban



Feature

Rejuvenation Mission. Natural farming will benefit from Green Hydrogen. Surprisingly funds for Rural employment, MGNRES, slashed by 33% to Rs.6000 Crores. Disinvestment target Rs.51000 Crores. For better Regional Connectivity, 50 additional airports and heliports will be created. A fund for Credit Guarantee for MSMEs has been created. It is likely that cars and EVs will get a demand boost. For the FAME II scheme, there is a higher allocation of funds. Duty-free Lithium cells have been announced. For 5G services, 100 Labs will be established. To guide investors in infrastructure, an Infra Finance Secretariat will be established. The Budget has also announced schemes for taxpayers, senior citizens, women, etc. On the whole it is a well-conceived budget and one only hopes that it will propel India to the next level of excellence.

Arun Misra,
CEO, Hindustan Zinc -



" The green-growth oriented Budget 2023 reflects the resilience and a high probability of emerging as a USD 5 trillion economy while keeping net zero and Sustainable Development

Goals (SDG) commitment at the core. The importance of green technology, green farming, green equipment, and allied green services in the budget will propel India's journey to net zero by 2070. With the focus on the "Green Growth" strategy, the demand for zinc as a metal of sustainability will rise given its varied applications. Overall, this budget can actualize the vision of Lifestyle for Environment and take it to the masses, positioning India to inspire the world with a roadmap of how a large developing economy can be resource and carbon efficient. With the rise in demand of galvanized steel in infrastructure projects for first & last-mile connectivity the demand for zinc is likely to rise as a consequence. India is on the verge of a clean energy shift which will propel the demand of metal for achieving the sustainability vision."

Anil Agarwal,
Chairman, Vedanta -

"This Budget is one of the best budgets ever, truly



inclusive, and addresses the aspirations of every section of society. It empowers India's 1.4 billion people as drivers of the India story. I

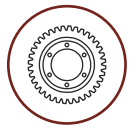
compliment the PM and FM for the long-term vision that was laid out in the Budget speech as well as the many progressive announcements, like increased outlay for capital expenditure, incentives for the start-ups and MSMEs, green energy, a lower tax for the middle class and boost to tourism which will create massive jobs and reinforce India's position as the fastest growing major economy in the world"

Dr. Rahul Sharma – Director (India), International Zinc Association.

Indian Railways is the largest consumer of steel in India.



Now, the railway budget has been clouded with Union budget. We are looking forward to budget allocation for the modernization of railway tracks. So, theoretically speaking, rails should give a service life of 12 years, but because of corrosion, Indian railways have to change rails within 3-4 years, which is again us lost to the exchequer international incrustation has proposed to Indian railways to start using zinc thermal spray drills for railway tracks, which will not only give 12 years of service life but will also ensure the safety of passengers."



11th Asian Metallurgy Emerging Trends in Indian Automobile Industry

Auto industry is such a strategically positioned industry that it appeals to the consumers who purchase automobile or steel industry which supplies steel to automobiles & many other metal parts which are used in automobile are



supplied by metallurgical industry & so we have chose this subject Emerging Trends in Automobile Industry.

Udayan Pathak

(Chairman, ASM International Pune Chapter) – Ms Jambhale what are the requirements in terms of the regulations & policies in the next 10 years & how materials & metallurgy can be a kind of crucial role for the success or failure?

Ms Medha Jambhale (Dy. Director ARAI) – In last 100

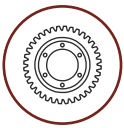


years, automobile has

evolved & become more faster & sophisticated. This era is more exciting as well as promising for all of us . In recent years we have seen changes as electrification , autonomous driving, even the flying cars which are completely different from the traditional cars & there is a shift in using the automobiles. Let us understand some transformation that we will be witnessing in the next decade the first transformation that I clearly see is Intelligent Automobile while we are driving, the cars are becoming more smarter when they are connected to the internet like any normal gadget now vehicles are getting connected to the internet & they are giving predictions to a driver so vehicles are really becoming smarter, they can even monitor our eyes. Second transformation that we are looking at is autonomous cars, we will definitely be self driving automobiles. There are some challenges in terms of legislation , infrastructure, societal readiness & acceptance towards this to some extent. A survey says that we can definitely reduce accidents to more than 90% if we go and adopt different features as autonomous car or autonomous vehicle. Next thing that we can see is a integrated vehicle, so these vehicles are getting connected to smart cities



this a value added advantage that we will be getting in the next decade. One side cities are becoming smarter, we are seeing huge changes in the public transport, the road & the infrastructure can be seen on one screen. The safety & the future is going to be improved so this is the third trend that we are looking at, as integrated vehicle with smart cities . Fourth trend we are looking at is mobility as a service trend, so the utility is definitely going to increase, it is going to bring different economy trends in the market . One more trend that is going to be there is the alternate power resources i.e. electrification Last trend is manufacturing trend , it is considered that the manufacturing plants are going to change so presently there are huge manufacturing plants & mega factories which are being established they are having different automations for safety, quality , industry 4.0 . The mobility case is little different for India, C stands not only for connected but also comfort A stands not only for autonomous but also affordable S stands not only for shared but also for sustainable & E stands for not only electrical but also for environment friendly vehicles . I feel the targets are going to be changing so how to reduce the weight ? Should we optimize design or should we use alternate material ? What is the right material & developing right material in right time is



Industry Update

going to be a continuous challenge in future. These challenges need to be really answered very critically & carefully so material is going to play a crucial role, without material we cannot do anything. Light weight materials like highly advanced steels, high strain steel, aluminium, magnesium these are the metals which are taking place into these automobiles. Composition is another area which is going to be there in the market so both particle field composites, fiber reinforced composites are being used similarly Carbon-fiber-reinforced polymers (CFRP) also will be a crucial material that will be used even if it is having some higher cost it is definitely going to be used so these new material also will add some manufacturing processes. There are two trends that I am looking at, one is alternate material design by ICME approach that's Integrated Computational Material Engineering so all the materials that we are developing today & will be developing tomorrow also that will be through ICME approach second trend that we are looking at is the material car development. In ARAI, we are working on both these technologies so Integrated Computational Material Engineering where we could simulate the material starting from micro level that is atomic level to macro level. Second is the material car development, here also ARAI has done

considerable progress. So what we have to remember in short is that the change is the only thing that is going to be constant

Udayan Pathak – Senthil tell us about the challenges, the crucial role of metallurgy whether it is ferrous or material engineering.

Senthilkumaran

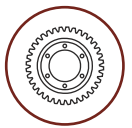
Varatharajan (Head, Materials Technology, Mahindra & Mahindra) - When you look at the current



scenario, automotive manufacturers has become more like integrators but the challenge is how to be integrated but at the same time keep the DNA of the particular brand intact. For example Mahindra which is more like an authentic SUV even though the constituents & the vendors are the same how do we put together a product that will still be the DNA of the product or the brand so this is important. But the most important thing in the current scenario is the time we take to bring a new product so gone are those days when we use to have one model & it used to run for 10-15 years being the backbone of the revenue nowadays the lifecycle of product is shrinking. If we

look at the three things that is defining today's automotive industry it is multi-material, multi-model & multi-market. If we look at the new trend of electrification also we have to meet the safety requirements so we have to use aluminium in the structure we have to use structural composites long fiber, short fiber composites, polymer composites in the automotive front-end so multi material is a important thing. Multi-model that means we need to be very fast in adoption that means it also has a linkage to industry 4.0. The last one is Multi-market many of the Indian OEM's particularly because of the difference in the emission & norms between us & other markets we were not able to do a kind of pan gold export but now because of electrification this particular thing is going to take a big change so that means we need to be ready for multi-market when I say Multi-market there are a lot of material regulation. Sustainability is one of the very prominent point even if we want to attract the investors in any space whether it is an electric vehicle or in a conventional thing the investors first look at what is the robust process. A lot of impetus is going into the coating, surface protection, painting processes, corrosion protection. Mahindra is really looking at a group level. We are very conscious about the materials & process selection the kind of equipments we put in our manufacturing facility. The entire industry is moving towards zero emission & zero carbon footprint.

Udayan Pathak- Thankyou



Senthil one of the point which you really pointed out is that product life cycle is shrinking day by day & the product development time is reducing so from 10 years probably it has come down to 36 months out of which 18 months are going to be the digital arena & 18 months are going to be the physical arena which includes the manufacturing component. So there the role of suppliers becomes very crucial role so lets go to Rahul Khajure from Volvo, so Volvo itself has set up a benchmark for passenger safety in the Indian markets & with that background Rahul is going to talk about the supplier quality

Rahul Khajure (Lead Supplier, Volvo Group)- If we see on the bird's eye view



everything is connected to sustainability . India has signed the Paris agreement to be a carbon neutral by 2070 so that is a target it means a lot of work has to be done in that direction its not an easy task Mahindra, Volvo has a target to be carbon neutral by 2040 we need support from our supply partners. One of the important policy as a country level which Indian government has taken is

voluntary vehicle scrap policy, starting from next year onwards so this is one of the key policy now we have challenges how to reduce the emission. Based on recent survey there are



more than 1 crore end of life vehicle available in market having age more than 15 years so that means potential vehicles have to be scrapped. Imagine 1 crore vehicle has to be scrapped in 5 years what is the market potential? in terms of year on year growth for the automobile sector, so as projection there will be 15 % growth in the automobile industry which is enormous by considering the current



situation of recession ,

supply chain constraint & the war situation globally. There will be increase in demand inspite of difficult situation . There are only 2 important aspects which all our supply partners need to be capable

and that is to have a sustainable manufacturing process & second is to be equipped with industry 4.0 , solution like digitalization, automation & so on. First sustainable manufacturing process I think hardly people have imagined that in future we will use green hydrogen instead of coke to make green steel. Steel contributes to around 40 to 45% of vehicle weight, even today for medium to heavy commercial vehicle so sustainable manufacturing process is equally important . Partnership is the new leadership so collaborative work is necessary. Sustainability, industry 4.0 & partnership will definitely be sustainable in business for a long run .



US to impose 200% tariff on aluminium from Russia



The United States marked the first anniversary of Russia's invasion of Ukraine on Friday with new sanctions, export controls and tariffs against Russia and its allies aimed at undermining Moscow's ability to wage war.

Washington also said it would provide another \$2 billion in weaponry for Kyiv as it prepares for a spring offensive.

The aid did not include F-16 fighter jets that Ukraine has requested. President Joe Biden consulted leaders of the G7 bloc of wealth.

Mini Cooper SE Convertible wheels made entirely from recycled aluminum



Mini has revealed an interesting fact about its limited-run Mini Cooper SE Convertible: It's the first production car with wheels made from 100% recycled aluminum. Despite sharing the same look as wheels available on the regular SE hatch, they're actually much more environmentally friendly.

The wheels were developed with Swiss wheel manufacturer Ronal. The company sells aftermarket wheels under the Ronal and Speedline brands, and it supplies OEMs. And it's no stranger to more environmentally-friendly wheel production. It supplies wheels for the Audi E-Tron GT that are made using a smelting process that produces oxygen rather than carbon dioxide, and it now has a line of claimed carbon-neutral aftermarket wheels. But back to the Mini's wheels. Using all recycled aluminum has the obvious benefit of

not requiring new aluminum to be manufactured. But the benefits are greater than just the raw material use. Mini points out that a major improvement in carbon emissions comes from being able to skip the electrolysis process for new aluminum manufacturing. Pure aluminum is extracted from aluminum oxide (which is in turn taken from the mineral bauxite). To do this large amounts of electricity are passed through molten solutions of aluminum oxide and cryolite (which takes energy to heat) across graphite cathodes and anodes. Not only does this use a lot of electricity that has its own carbon costs, the oxygen that separates from the aluminum bonds to the graphite anodes, yielding more carbon dioxide (which is why the production of those Audi wheels is also interesting).

In total, Mini says the recycled wheel production reduces carbon emissions by 75%. More specifically, it estimates about 0.16 kilograms (0.35 pounds) per kilogram (2.2 pounds) of aluminum used. Mini also stresses that this process still maintains all the strength of conventional wheels, just in a greener way. And of course, the wheels themselves are recyclable again. Mini, and BMW more broadly, are looking at ways to upscale the process and to source suitable recyclable products, likely other old wheels from cars no longer on the road. Though neither company said anything about when we'll see fully recycled wheels more widely available.

On January 19, the board of HZL approved the acquisition of zinc assets of THL Zinc Ventures, a subsidiary of Vedanta Ltd.

Centre may ask Hindustan Zinc Ltd (HZL) to consider options, other than cash, like share swaps, rights issues or warrants for the \$2.98 billion acquisition of Vedanta's zinc assets, a report by *Mint* said. The Centre believes that the cash reserves must not be used for the party-related transaction.

"We understand that the company needs to acquire mines to grow its business, but that should not be done through a cash acquisition. There are these options which the company can exercise. The government is a stakeholder in the company and has the right to cash reserves, and we will not let them use it for a related-party transaction," an official aware of the development told *Mint*.

On January 19, the board of HZL approved the acquisition of zinc assets of THL Zinc Ventures, a subsidiary of Vedanta Ltd. THL Zinc will become a wholly owned subsidiary of HZL after the transaction is completed. According to the rules of the mines ministry, the deal violated minority stakeholder rights.

Vedanta owns a 64.9 per cent stake in HZL, while the Centre owns 29.5 per cent.

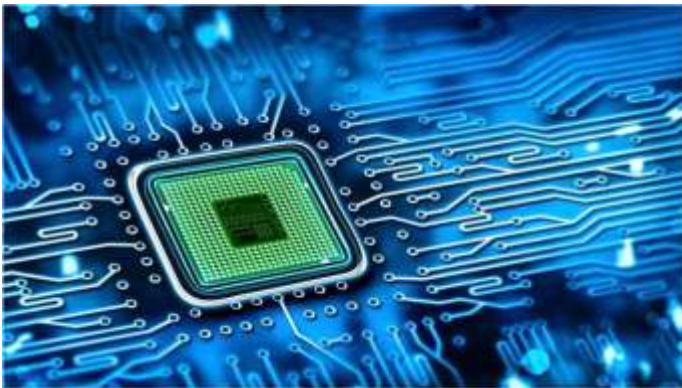
The report added that the Centre has plans to sell its stake



in HZL and it has written to the markets regulator opposing the deal.

In a recent interview, HZL Chief Executive Officer (CEO) Arun Misra said that the deal was necessary and HZL cannot limit its size and capacity to where it is today. India's annual zinc consumption is 650,000-680,000 tonnes and is expected to grow by 3-4 per cent. HZL produces 800,000 tonnes annually. The approvals of the deal are expected to come in the next 18 months.

How Vedanta's weak semiconductor proposal has emerged as a promising one



Vedanta has already shortlisted Prime Minister Narendra Modi's home state, Gujarat, for setting up its semiconductor and display fab and is fast progressing with its plan. India's semiconductor policy hasn't been off to a flying start. While the government hoped to receive applications from leading fabs, such as Global Foundries, Intel, TSMC, and Samsung, among others, all it received were semiconductor fab applications from three consortiums. Surprisingly, the Indian mining conglomerate Vedanta, led by Anil Agarwal, was keen to enter the semiconductor space. It had teamed up with Taiwan's Foxconn to apply for the Semiconductor Scheme.

And even though the India Semiconductor Mission (ISM) has yet to approve the application, Vedanta has already shortlisted Prime Minister Narendra Modi's home state, Gujarat, for setting up its semiconductor and display fab and is fast progressing with its plan. Vedanta's proposal, from being the weakest last year, has finally emerged as the most promising of the three applications.

Setting up a semiconductor fab is a multi-year project involving colossal capital and expertise. So the Indian government, or any government offering financial incentives, must carefully scrutinise the proposals received before approving them. This task was a little more challenging for India, given that none of the leading foundries had applied under the scheme. And while there is a wide range of parameters on which these applications are evaluated, the four primary ones are manufacturing grade technology (license), manufacturing (fab) expertise, funds and getting business for fabs. Vedanta Foxconn joint venture scored on the last two but lacked in the first two.

Manufacturing Grade Technology License for Fabs

One of the prerequisites for the project approval and qualifying for the incentive was to have a license-grade semiconductor technology manufacturer with sufficient experience in chip manufacturing. And neither Vedanta nor Foxconn had one. Vedanta is a mining and metals company primarily producing zinc, lead, silver, copper, iron ore, aluminium, and oil and gas. On the other hand, Foxconn is the leading multinational electronics contract manufacturing company based in Taiwan, manufacturing for Apple, Amazon, and Dell, to name a few. In mid-2021, Foxconn did announce its plan to enter semiconductor production and expand into supplying chips for electric vehicles (EVs) and electronics equipment used for healthcare. It even acquired Macronix 6-inch Wafer Fab for US\$90.8mn in August 2021. But this still does not qualify for a manufacturing-grade license for fabs.

Former RBI governor Raghuram Rajan, who recently questioned the proposal for the lack of semiconductor expertise, wasn't completely wrong. Even the Ministry of Electronics and IT and India Semiconductor Mission (ISM) have been concerned about this. Since day one, the latter has asked the consortium to submit more details, including the production-grade technology license.

"Acquiring the right technology and making it work in a new fab is a complex process. Many discussions are going on (Vedanta-Foxconn JV) with various technology providers, and a solution may emerge soon," explains Satya Gupta, President, of VSLI society and former head of IESA. But if rumours are to be believed, Vedanta-Foxconn JV is close to partnering with European chipmaker STMicroelectronics for the chip manufacturing unit. If the deal goes through, this will solve one of the biggest hurdles in Vedanta's semiconductor proposal.

Expertise in setting fab

Setting up a fab is not easy and requires expertise.

Vedanta, who holds the larger share in the JV, has solved this problem by hiring David Reed as the CEO of the semiconductor business. A veteran, with 35 years in the semiconductor industry, Reed has worked at NXP, Global Foundries and Texas Instruments and will be responsible for setting up a state-of-the-art semiconductor fab unit and semiconductor assembling and testing unit for Vedanta in India. Industry experts believe Reed can help close Vedanta's discussions with leading fabs for production-grade licenses.

Funds

Setting up a semiconductor fab is a high capital investment. Significant capital investment goes into purchasing and maintaining state-of-art equipment, constructing cleanroom facilities, and hiring highly skilled engineers and technicians. Depending upon the technology, a single fabrication plant can cost anywhere between \$2 billion to upwards of \$20 billion with a 40,000-wafer capacity. But this doesn't seem a problem as both Vedanta and Foxconn have deep pockets to invest in building a state-of-art fab in India.



Is Vedanta's Sterlite Copper plant in Tamil Nadu set for reopening?



After reports that Vedanta had shelved plans to sell the plant, newspaper advertisements have appeared in Tamil Nadu in favour of its reopening. Nearly five years after the Tamil Nadu government had sealed the Vedanta group's Sterlite Copper smelting plant in Thoothukudi, prospects of its reopening have brightened. After reports suggested that Vedanta had shelved plans to sell the plant, full-page newspaper advertisements have appeared in the state since February 17 to advocate the reopening.

'Give back our livelihoods', screams the advertisement and points out that the copper smelting plant had provided livelihood to scores of people in Thoothukudi for 22 years until the state government shut it in May 2018. It also listed various reasons favouring reopening of the plant, but stopped short of saying that was indeed being done.

Adani's Mundra Aluminium - preferred bidder for the Kutrumali bauxite block

Mundra Aluminium Ltd, a wholly-owned subsidiary of Adani Enterprises incorporated in December 2021, is selected as the preferred bidder for the Kutrumali bauxite block by the Odisha government. The news came after the company received a letter of intent dated February 27, 2023, from the Odisha government regarding the mineral block in Odisha.

Adani Enterprises said in an exchange filing, "We are pleased to inform that based on the outcome of the auction proceedings, Mundra Aluminium has been declared the "preferred bidder" and subsequently, a Letter of Intent dated February 27 has been issued by the Government of Odisha in respect of the following mineral block in Odisha."

Following the news, shares of Adani Enterprises, the flagship company of Adani Group, soared 12 per cent to INR 1,532.85 on the BSE in Wednesday's intra-day trade. The Kutrumali bauxite block, located in Odisha's Kalahandi and Rayagada districts, has geological reserves of 128 million tonnes.

In August 2022, Adani Enterprises said the Adani Group would invest INR 57,575 crore in Odisha to set up two projects - a 4 MMTPA Integrated Alumina Refinery and a 30 MMTPA Iron Ore (Value Addition) Project. The former,

to be set in the vicinity of potential bauxite reserves or operational mines, will produce smelter-grade alumina, which will help India reduce its reliance on imports. India's largest lead and zinc private sector, Hindustan Zinc Limited (HZL) is aiming to integrate Nature-based Solutions (NbS) into their Biodiversity Policy for sustainable developmental practices.

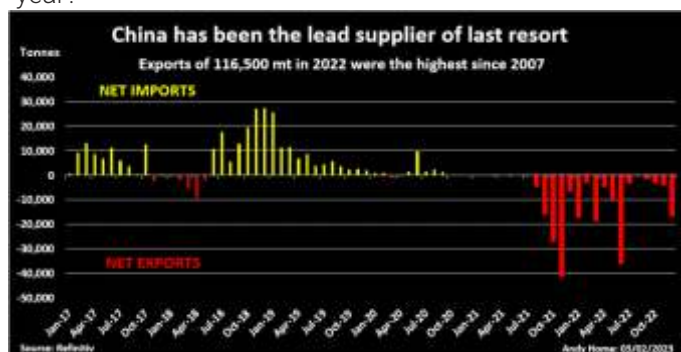
China's zinc and lead exports plug Western supply gaps

China was a net exporter of refined zinc last year for the first time since 2007, while exports of refined lead remained super strong for the second year running. China's shift to net exporter of both metals is a rare inversion of historical trade patterns and attests to the squeeze on availability in the rest of the world.

Lead and zinc are often dubbed sister metals since they tend to occur in the same geological formations. If a mine produces zinc, there's a very good chance it will produce lead as well.

The two sisters normally part company at the processing stage of the production chain but each has been hit with a run of smelter outages, causing mutual scarcity, high premiums and low exchange stocks.

China came to the rescue of beleaguered Western buyers of both metals last year. Will it have to do so again this year?



TRADE SWITCH

China exported 116,500 tonnes of refined lead last year, the highest-volume outflow since 2007. Imports were a negligible 1,500 tonnes. It was a second consecutive year of net exports, bringing the cumulative total to 210,000 tonnes since the start of 2021.

The country had been a modest net importer of lead in the prior four years, over which time cumulative exports amounted to just 43,000 tonnes.

High physical premiums in both Europe and the United States continue to draw refined lead out of China with another 16,400 tonnes departing in December, including 1,600 tonnes to Germany and 1,000 tonnes each to Belgium, Italy, the Netherlands and Turkey.

China's net exports of 1,700 tonnes of refined zinc last year may not sound a big deal but they reflect an equally dramatic warping of previous trade patterns.



Global demand of Lead & Zinc

(Source: ILZSG)

Lead:

Global demand of refined Lead is expected to exceed supply by 83000 tonnes and 42000 tonnes in 2022 and 2023 respectively. World refined Lead production is likely to fall by 0.3% in 2022 and rise by 1.8% in 2023. After rising by 4.6% in 2021, global demand for refined metal is forecast to rise by 0.8% in 2022 and by 1.4% in 2023.

Zinc:

Demand for refined Zinc is expected to exceed supply by about 297000 tonnes and 150000 tonnes in 2022 and 2023 respectively. Global refined Zinc metal production is forecast to fall by 2.7% in 2022 and to increase by 2.6% in 2023. World demand for Zinc metal is forecast to fall by 1.9% in 2022 and to rise by 1.5% in 2023.

IMF: India, China may drive half of '23 global growth.

The International Monetary Fund (IMF) has said India and China will account for half of the global economic growth in 2023, as the multilateral agency retained its growth forecast for Asia's third-largest economy for 2023-24 (FY24).

IMF Retains FY23 Growth Outlook at 6.8

The International Monetary Fund (IMF) has retained India's FY23 growth forecast at 6.8%, terming the country a bright spot and major engine of growth amid an expected fall in global growth to 2.9% in 2023 from an estimated 3.4% in 2022.

IMF retains India's FY 24 growth projection at 6.1

International Monetary Fund (IMF) has said that India remains the bright spot and maintained the country's growth projection at 6.1 per cent for 2023-24. (FY24). It further expects India's

growth to go up to 6.8 per cent in 2024-25. According to the latest update released, it revised the global outlook by 20 basis points for the year 2023 to 2.9 per cent.

The world faces a recession in 2023, higher borrowing costs aimed at tackling inflation cause a number of economies to contract, according to the Centre for Economics and Business Research (CEBR). The global economy surpassed \$100 Trillion for the first time in 2022 but will stall in 2023 as policy makers continue their fight against soaring prices, the British consultancy said in its annual World Economic League Table. "It's likely that the world economy will face recession next year as a result of the rises in interest rates in response to higher inflation," said Kay Daniel Neufeld, Director and Head of

Exports Decline 12% in Dec, Trade Deficit Widens to \$ 23.8 B

India's goods exports dropped 12.2% year on year in December to \$34.5 Billion as the deepening global slowdown dented consumer demand across most of the developed world and many emerging economies. The drop in imports was less as the growing Indian economy continued to ship in inputs and goods. Imports declined to \$58.2 Billion in December against \$60.3 Billion in the same month last year, as per data released by the Commerce and Industry Ministry.

Core Sector Growth Rises to 3-Month High of 7.4% in Dec

India's core sector grew 7.4% year on year in December 2022, against 3.8% in December 2021 and 5.7% in November 2022, as output in seven of the eight

components of the infrastructure sectors rose, as per data released recently. A surge in the output of coal, steel, cement, fertiliser and electricity aided higher growth in December 2022.

The data has been released a day before Finance Minister Nirmala Sitharaman presented the Union Budget for 2023-24.

Jan Manufacturing Moderates on Slow Rise in Total Sales

India's manufacturing sector activity moderated in January 2023 amid slower increase in total sales and headcounts were broadly unchanged amid sufficient staff numbers to cope with current requirements, according to a monthly survey.

India to grow fastest in 7 top emerging ecos: WB

India is expected to be the fastest growing economy of the seven largest emerging markets and developing economies (EMDEs), the World Bank has said in a latest report. The multilateral agency also cut global growth forecast sharply for 2023 to 1.7%, the third weakest pace of growth in three decades, from 3% expected just six months ago. The World Bank said growth in India is projected to slow from 8.7% in FY22 to 6.9% in FY23.

"The slowdown in the global economy and rising uncertainty will weigh on export and investment growth. Governments increased infrastructure spending and various business facilitation measures will crowd-in private investment and support the expansion of manufacturing capacity. Growth is projected to slow, to 6.6% in FY24 before falling back toward its potential rate of just above 6%," the World Bank said in its Global Economic Prospects report.

HZL Lines Up \$1 B for Electric Mining Vehicles

Vedanta group firm Hindustan Zinc Ltd said it has earmarked



Analysis

a USD 1 Billion investment for converting its diesel-run 900-odd mining vehicles into battery-operated ones over the next five years.

Hindustan Zinc is steadily switching to electric vehicles for its underground mine operations. HZL together with the Finnish technology company Normet Group Oy, has inducted battery-powered service equipment and utility vehicles into underground mining to help decarbonise and improve environmental sustainability in the mining industry, the company said in a statement.

Rlys rolls out plan to meet net-zero target of 2030

Railways ministry has rolled out a five-pronged energy efficiency plan to become carbon-neutral by 2030. The ministry is looking to reduce overall energy use with efficient operations and increase renewable energy (RE) usage. India, in its commitment to the United Nations Framework Convention on Climate Change, has set a target to become net zero by 2070. For the railways, the target year is 2030.

Rlys plans elevated tracks to run faster inter-city trains

Railways is readying a plan to build elevated tracks for running semi-high speed passenger trains on popular sectors such as Delhi-Jaipur, Mumbai-Pune, Bangalore-Chennai and

Delhi-Amritsar via Chandigarh. This will require investment of Rs 150-160 Crore per kilometre through direct budget support.

Different zones of Indian Railways have been tasked with carrying out studies for laying such tracks which can be used for inter-city fast train services, sources told TOI. Most of the routes identified are in the range of 200 km to 300 km and there is high demand for premium train service in these sectors.

18 road projects headed for the fast lane in FY24

In line with the thrust upon the Prime Minister Gati Shakti-National Master Plan, the government will prioritise and fast-track as many as 18 critical road infrastructure projects in the fiscal year 2023-24. The Centre has sights on 67 critical road projects that would result not only in integrated infrastructure development but also improve of logistics efficiency across the country over the next two years, a senior government official said. Extended monsoon has dampened the pace of National Highway construction. "However, the pace of construction has increased, and we are sure that the given targets shall be met by March 2023," she told PTI in an interview. The ministry has constructed 4,766 km of National Highways up to November 2022-23 compared to 5,1.18 km constructed till

November 2021-22.

343 Infra Projects Show Rs.4.5 Lakh Cr Cost Overruns

As many as 343 infrastructure projects, each entailing an investment of Rs 150 Crore or more, have been hit by cost overruns of more than Rs 4.5 Lakh Crore, as per an official report. According to the Ministry of Statistics and Programme Implementation, which monitors infrastructure projects of Rs 150 Crore and above, out of 1,438 projects, 343 reported cost overruns and as many as 835 projects were delayed. "Total original cost of implementation of the 1438 projects was Rs 20,35,794.75 Crore and their anticipated completion cost is likely to be Rs 24,86,069.52 Crore, which reflects overall cost overruns of Rs 4,50,274.77 Crore (22.12% of original cost)," the ministry's latest report said.

NHAI raised Rs.10,200 Crore for building roads

The National Highway Authority of India (NHAI) raised over ₹10,200 Crore up to December 2022 from foreign and Indian institutional investors to meet ever-growing budgetary support for establishing a country-wide road network, the Survey said.

India Likely to Export Mobiles Worth \$9 Billion in FY23

The government estimates India is likely to export mobile phones worth about \$9 Billion in FY23, up from \$5.8 Billion in the year before, as manufacturers step up production and outward shipments.

World Refined Lead Supply & Usage 2017-2022											
000 tonnes	2017	2018	2019	2020	2021	Jan-Nov		2022			
						2021	2022	Aug	Sep	Oct	Nov
Mine Prodn.	4601	4571	4678	4474	4563	4157	4084	382.8	383.7	389.9	407.7
Metal Prodn.	12017	12301	12342	11961	12382	11306	11252	1025.7	1036.3	1057.1	1063.9
Metal Usage	12159	12346	12299	11778	12326	11230	11243	1028.2	1034.5	1022.5	1053.2

World Refined Zinc Supply & Usage 2017-2022											
000 tonnes	2017	2018	2019	2020	2021	Jan-Nov		2022			
						2021	2022	Aug	Sep	Oct	Nov
Mine Prodn.	12654	12723	12799	12253	12797	11661	11416	1084.7	1045.2	1064.0	1090.7
Metal Prodn.	13538	13142	13546	13780	13858	12663	12204	1078.2	1092.8	1110.5	1075.6
Metal Usage	13998	13722	13788	13286	14048	12826	12432	1155.8	1186.7	1149.9	1195.1



Two-wheeler sales not matching pace of PVs, three-wheelers: SIAM

The growth in two-wheeler sales is not keeping pace with the sales growth logged by passenger vehicle and three-wheeler segments, said a top official of Society of Indian Automobile Manufacturers (SIAM).

Referring to the January 2023 sales data of automobile manufacturers, Vinod Aggarwal, President, SIAM said: "Better consumer sentiments is driving demand for passenger vehicles. Three-wheeler segment has gained traction compared to the past two years, though they are still to reach the pre-Covid levels. The rate of growth of two-wheelers in the recent year has not kept pace with the growth in the other segments."

According to SIAM, last month the passenger vehicles (cars, utility vehicles and vans) makers sold 2,98,093 units (2,54,287 units sold in January 2022) while sales of three-wheelers shot up to 48,903 units (24,178 units). The two-wheeler industry sold a total of 11,84,379 units last month (11,40,888 units).

Commenting on January 2023 sales data, Mr Vinod Aggarwal, President, SIAM said, "Better consumer sentiments are driving demand for Passenger Vehicles. Three-Wheeler segment has gained traction compared to the past two years, though they are still to reach the pre-Covid levels. The rate of growth of Two-wheelers in the recent year has not kept pace with the growth in the other segments. Positive announcements at the Union Budget should help in continuing with the overall growth momentum."

Commenting on January 2023 sales data, Mr Rajesh Menon, Director General, SIAM said, "Passenger Vehicles again saw highest ever sales in the month of January and for the first time, it has crossed 3 million sales mark in 10 months, from April to January period. Sales of L5 category Three-Wheeler more than doubled in January 2023, compared to January 2022, while Two-Wheelers posted a marginal growth of just around 4% in the month of January 2023, compared to January 2022."

SIAM							
Segment wise Comparative Production, Domestic Sales & Exports data for the month of January 2023							
Category Segment/Subsegment	Production		Domestic Sales		Exports		(Number of Vehicles)
	January		January		January		
	2022	2023	2022	2023	2022	2023	
Passenger Vehicles (PVs)*							
Passenger Cars	1,58,891	1,87,543	1,26,693	1,36,931	25,226	31,002	
Utility Vehicles (UVs)	1,40,636	1,75,357	1,16,962	1,49,328	15,505	24,527	
Vans	10,807	13,040	10,632	11,834	50	22	
Total Passenger Vehicles (PVs)	3,10,334	3,75,940	2,54,287	2,98,093	40,781	55,551	
Three Wheelers							
Passenger Carrier	58,941	60,016	16,592	37,061	37,910	22,995	
Goods Carrier	7,571	8,807	5,868	8,346	1,241	85	
E-Rickshaw	1,400	4,376	1,416	3,188	-	-	
E-Cart	297	378	302	308	-	-	
Total Three Wheelers	68,209	73,577	24,178	48,903	39,151	23,080	
Two Wheelers							
Scooter/ Scooterette	3,84,864	4,04,458	3,61,299	3,76,035	33,369	30,256	
Motorcycle/Step-Throughs	10,68,887	10,12,291	7,43,804	7,71,621	3,41,453	1,89,439	
Mopeds	42,313	37,727	35,785	36,723	144	408	
Total Two Wheelers	14,96,064	14,54,476	11,40,888	11,84,379	3,74,966	2,20,103	
Quadricycle	54	371	1	72	49	306	
Grand Total	18,74,661	19,04,364	14,19,354	15,31,447	4,54,947	2,99,040	
* BMW, Mercedes, Tata Motors and Volvo Auto data is not available							
Society of Indian Automobile Manufacturers (13/02/2023)							

SIAM													
Category & Company wise Summary Report for the month of January 2023 and Cumulative for April-January 2023													
Category Segment/Subsegment Manufacturer	Production				Domestic Sales				Exports				Report II (Number of Vehicles)
	January		April-January		January		April-January		January		April-January		
	2022	2023	2021-22	2022-23	2022	2023	2021-22	2022-23	2022	2023	2021-22	2022-23	
	Passenger Vehicles (PVs)												
FCA India Automobiles Pvt Ltd	1,320	1,200	14,124	14,387	861	685	9,656	10,848	263	360	5,059	3,982	
Force Motors Ltd	127	77	398	611	110	77	300	617	1	-	1	5	
Ford India Private Ltd	NA	NA	39,337	NA	NA	NA	15,818	NA	NA	NA	18,022	NA	
Honda Cars India Ltd	11,863	8,496	87,351	97,052	10,427	7,821	71,833	78,640	1,716	1,434	14,747	18,552	
Hyundai Motor India Ltd	48,900	57,200	4,98,000	5,92,077	44,022	50,106	3,92,850	4,69,945	9,405	12,170	1,09,464	1,31,269	
Isuzu Motors India Pvt Ltd	325	30	1,635	1,905	85	95	672	591	90	(73)	231	355	
Kia Motors India Pvt Ltd	23,518	30,206	1,85,855	2,99,090	19,319	28,634	1,46,044	2,23,128	5,492	6,608	39,833	72,148	
Mahindra & Mahindra Ltd	30,516	40,748	1,83,426	2,99,247	19,964	33,040	1,70,629	2,92,898	887	1,474	8,253	8,251	
Maruti Suzuki India Ltd	1,57,668	1,78,429	12,97,448	15,71,543	1,28,924	1,47,348	10,63,749	13,26,640	17,736	17,083	1,85,700	2,09,154	
MG Motor India Pvt Ltd	4,258	5,598	32,372	45,530	4,306	4,114	31,120	38,622	-	-	32	12	
Nissan Motor India Pvt Ltd	6,534	6,676	63,570	80,122	4,250	2,803	32,215	28,167	1,224	5,412	29,821	49,496	
PCA Motors Pvt. Ltd	52	793	726	6,756	40	804	664	6,719	-	-	-	-	
Renault India Pvt Ltd	8,847	14,392	88,786	1,01,068	8,119	3,008	72,389	66,921	430	6,401	18,810	27,934	
Skoda Auto India Pvt Ltd	3,180	5,453	25,590	47,336	3,009	3,818	23,851	44,419	-	-	-	288	
Tata Motors Ltd	NA	NA	2,48,600	4,09,173	NA	NA	2,49,249	4,08,087	NA	NA	1,381	1,766	
Toyota Kirloskar Motor Pvt Ltd	3,329	17,339	56,998	1,16,181	7,328	12,834	97,885	1,39,475	-	-	91	223	
Volkswagen India Pvt Ltd	9,897	9,303	60,908	56,993	3,523	2,906	24,201	34,071	3,537	4,682	33,333	23,153	
Total Passenger Vehicles (PVs)	3,10,334	3,75,940	28,85,124	37,39,071	2,54,287	2,98,093	24,03,125	31,69,788	40,781	55,551	4,64,778	5,46,588	
* Only cumulative data is available for Apr-Dec NA= Not Available													



SIAM						
Summary Report: Cumulative Production, Domestic Sales & Exports data for the period of April - January 2023						
						Report I (Number of Vehicles)
Category Segment/Subsegment	Production		Domestic Sales		Exports	
	April-January		April-January		April-January	
	2021-22	2022-23	2021-22	2022-23	2021-22	2022-23
Passenger Vehicles (PVs)*						
Passenger Cars	14,66,936	18,02,968	11,56,458	14,36,762	3,00,935	3,47,291
Utility Vehicles (UVs)	13,22,918	18,21,048	11,52,968	16,18,922	1,62,172	1,98,980
Vans	95,270	1,15,055	93,699	1,14,104	1,671	317
Total Passenger Vehicles (PVs)	28,85,124	37,39,071	24,03,125	31,69,788	4,64,778	5,46,588
Three Wheelers						
Passenger Carrier	5,45,440	6,04,601	1,33,443	2,82,186	4,16,498	3,22,433
Goods Carrier	68,534	81,362	59,738	77,968	8,700	4,142
E-Rickshaw	7,650	22,125	8,049	21,321	-	-
E-Cart	951	2,648	946	2,551	-	-
Total Three Wheelers	6,22,575	7,10,736	2,02,176	3,84,026	4,25,198	3,26,575
Two Wheelers						
Scooter/ Scooterette	36,56,870	46,72,260	33,81,753	43,61,347	3,03,771	3,40,636
Motorcycle/Step-Throughs	1,07,56,558	1,15,07,664	75,39,698	87,11,119	34,03,822	28,27,909
Mopeds	4,00,167	3,64,240	3,99,653	3,69,407	8,608	2,916
Total Two Wheelers	1,48,13,595	1,65,44,164	1,13,21,104	1,34,41,873	37,16,201	31,71,461
Quadracycle	3,898	1,904	65	513	4,188	1,506
Grand Total	1,83,25,192	2,09,95,875	1,39,26,470	1,69,96,200	46,10,365	40,46,130
* BMW, Mercedes, Volvo Auto data is not available and Tata Motors data is available for Apr-Dec only						
Society of Indian Automobile Manufacturers (13/02/2023)						

SIAM												
Category & Company wise Summary Report for the month of January 2023 and Cumulative for April-January 2023												
											Report II (Number of Vehicles)	
Category Segment/Subsegment Manufacturer	Production				Domestic Sales				Exports			
	January		April-January		January		April-January		January		April-January	
	2022	2023	2021-22	2022-23	2022	2023	2021-22	2022-23	2022	2023	2021-22	2022-23
Three Wheelers												
Atul Auto Ltd	1,717	2,218	13,469	20,582	1,426	2,034	11,834	18,061	301	171	1,392	2,209
Bajaj Auto Ltd	42,135	42,939	3,83,866	3,92,806	14,159	32,770	1,24,763	2,33,030	25,804	11,740	2,65,014	1,60,534
Continental Engines Pvt Ltd	477	512	3,265	5,360	475	519	3,271	5,446	-	-	-	-
Force Motors Ltd	204	414	3,007	2,452	-	-	-	-	154	364	2,786	2,464
Mahindra & Mahindra Ltd	3,235	8,004	21,574	48,297	2,868	6,562	22,224	47,473	28	53	318	463
Piaggio Vehicles Pvt Ltd	5,962	7,922	52,554	91,328	4,115	5,398	33,477	66,619	1,350	1,967	19,545	23,905
TVS Motor Company Ltd	14,479	11,568	1,44,840	1,49,911	1,135	1,620	6,607	13,397	11,514	8,785	1,36,143	1,37,000
Total Three Wheelers	68,209	73,577	6,22,575	7,10,736	24,178	48,903	2,02,176	3,84,026	39,151	23,080	4,25,198	3,26,575
Two Wheelers												
Ather Energy Pvt. Ltd	3,032	15,332	17,884	69,264	2,991	14,802	18,456	68,511	-	-	-	-
Bajaj Auto Ltd	3,08,283	2,62,619	32,35,165	29,51,602	1,35,496	1,40,428	14,37,480	15,31,126	1,87,934	1,00,679	18,63,715	14,27,220
Chetak Technology Ltd	-	1,812	-	4,835	-	1,943	-	2,138	-	-	-	-
Hero MotoCorp Ltd	3,65,744	3,97,008	40,70,055	43,99,191	3,58,660	3,49,437	38,96,300	42,70,746	21,816	7,253	2,39,440	1,43,997
Honda Motorcycle & Scooter India Pvt Ltd	3,48,965	2,96,845	31,26,988	38,61,964	3,15,216	2,78,155	28,73,595	36,00,901	39,013	18,220	2,92,114	2,90,880
India Kawasaki Motors Pvt Ltd	358	688	2,957	3,332	325	505	3,128	3,266	-	-	-	-
India Yamaha Motor Pvt Ltd	60,437	56,632	5,98,574	7,23,227	36,146	39,688	4,01,074	4,85,576	19,956	18,215	2,18,501	2,45,729
Mahindra Two Wheelers Ltd	-	-	-	72	-	-	-	96	-	-	-	-
Okinawa Autotech Pvt. Ltd	10,549	4,730	59,976	86,484	9,604	5,980	58,440	88,860	-	-	113	78
Piaggio Vehicles Pvt Ltd	5,876	4,891	63,637	53,315	4,202	3,001	43,042	38,255	1,322	1,696	21,009	15,416
Royal-Enfield (Unit of Eicher Motors)	58,594	65,380	4,67,081	6,94,705	49,726	67,702	4,10,631	6,10,520	9,112	7,044	64,807	80,596
Suzuki Motorcycle India Pvt Ltd	78,322	93,894	6,12,398	7,70,124	60,623	66,205	5,00,491	6,05,232	9,469	18,757	1,16,752	1,64,930
Triumph Motorcycles India Pvt Ltd	61	41	590	546	104	62	1,054	892	-	-	-	-
TVS Motor Company Ltd	2,55,843	2,54,604	25,58,290	29,25,503	1,67,795	2,16,471	16,77,410	21,35,754	86,344	48,239	8,99,750	8,02,615
Total Two Wheelers	14,96,064	14,54,476	1,48,13,595	1,65,44,164	11,40,888	11,84,379	1,13,21,104	1,34,41,873	3,74,966	2,20,103	37,16,201	31,71,461
Quadracycle												
Bajaj Auto Ltd	54	371	3,898	1,904	1	72	65	513	49	306	4,188	1,506
Total	54	371	3,898	1,904	1	72	65	513	49	306	4,188	1,506
Grand Total	18,74,661	19,04,364	1,83,25,192	2,09,95,875	14,19,354	15,31,447	1,39,26,470	1,69,96,200	4,54,947	2,99,040	46,10,365	40,46,130
Society of Indian Automobile Manufacturers (13/02/2023)												



SIAM												
Segment & Company wise Production, Domestic Sales & Exports Report for the month of January 2023 and Cumulative for April-January 2023												
Report III (Number of Vehicles)												
Category	Production				Domestic Sales				Exports			
	Segment/Subsegment		January	April-January	January		April-January	January		April-January		
Manufacturer	2022	2023	2021-22	2022-23	2022	2023	2021-22	2022-23	2022	2023	2021-22	2022-23
Passenger Vehicles (PVs)												
A: Passenger Cars												
Ford India Private Ltd	NA	NA	5,595	NA	NA	NA	2,006	NA	NA	NA	2,640	NA
Honda Cars India Ltd	11,353	8,376	81,473	91,562	9,933	7,638	66,487	73,699	1,692	1,329	14,009	18,024
Hyundai Motor India Ltd	23,750	29,400	2,59,778	3,13,274	19,553	22,574	1,87,334	2,17,943	6,560	7,452	74,721	93,789
Mahindra & Mahindra Ltd	-	-	-	-	12	-	41	214	-	-	2	-
Maruti Suzuki India Ltd	1,13,531	1,36,522	9,05,376	11,41,963	91,772	1,00,286	7,33,475	9,23,271	13,330	15,666	1,44,820	1,70,613
Nissan Motor India Pvt Ltd	2,898	3,575	26,488	39,893	273	-	1,766	-	927	3,257	23,369	39,725
Renault India Pvt Ltd	2,712	2,933	29,681	26,453	2,344	59	22,150	16,457	412	923	8,907	8,337
SkodaAuto India Pvt Ltd	265	2,242	6,892	24,388	288	1,609	7,039	22,054	-	-	-	-
Tata Motors Ltd*	NA	NA	1,05,695	1,35,198	NA	NA	1,05,226	1,35,177	NA	NA	366	150
Toyota Kirloskar Motor Pvt Ltd	97	76	770	798	1,488	3,386	19,955	33,002	-	-	-	-
Volkswagen India Pvt Ltd	4,285	4,419	45,188	29,439	1,030	1,379	10,979	14,945	2,305	2,375	32,101	16,653
Total A: Passenger Cars	1,58,891	1,87,543	14,66,936	18,02,968	1,26,693	1,36,931	11,56,458	14,36,762	25,226	31,002	3,00,935	3,47,291
B: Utility Vehicles (UVs)												
FCA India Automobiles Pvt Ltd	1,320	1,200	14,124	14,387	861	685	9,656	10,848	263	360	5,059	3,982
Force Motors Ltd	127	77	398	611	110	77	300	617	1	-	1	5
Ford India Private Ltd	NA	NA	33,742	NA	NA	NA	13,812	NA	NA	NA	15,382	NA
Honda Cars India Ltd	510	120	5,878	5,490	494	183	5,346	4,941	24	105	738	528
Hyundai Motor India Ltd	25,150	27,800	2,38,222	2,78,803	24,469	27,532	2,05,516	2,52,002	2,845	4,718	34,743	37,480
Isuzu Motors India Pvt Ltd	325	30	1,635	1,905	85	95	672	591	90	(73)	231	355
Kia Motors India Pvt Ltd	23,518	30,206	1,85,855	2,99,090	19,319	28,634	1,46,044	2,23,128	5,492	6,608	39,833	72,148
Mahindra & Mahindra Ltd	30,296	40,518	1,80,878	2,97,014	19,848	32,915	1,68,751	2,90,764	887	1,452	7,654	8,227
Maruti Suzuki India Ltd	33,550	29,097	3,01,261	3,20,472	26,624	35,353	2,40,340	2,95,525	4,356	1,417	39,922	38,328
MG Motor India Pvt Ltd	4,258	5,598	32,372	45,530	4,306	4,114	31,120	38,622	-	-	32	12
Nissan Motor India Pvt Ltd	3,636	3,101	37,082	40,229	3,977	2,803	30,449	28,167	297	2,155	6,452	9,771
PCA Motors Pvt. Ltd	52	793	726	6,756	40	804	664	6,719	-	-	-	-
Renault India Pvt Ltd	6,135	11,459	59,105	74,615	5,775	2,949	50,239	50,464	18	5,478	9,903	19,597
SkodaAuto India Pvt Ltd	2,915	3,211	18,698	22,948	2,721	2,209	16,812	22,365	-	-	-	288
Tata Motors Ltd*	NA	NA	1,40,994	2,70,261	NA	NA	1,42,095	2,68,570	NA	NA	899	1,536
Toyota Kirloskar Motor Pvt Ltd	3,232	17,263	56,228	1,15,383	5,840	9,448	77,930	1,06,473	-	-	91	223
Volkswagen India Pvt Ltd	5,612	4,884	15,720	27,554	2,493	1,527	13,222	19,126	1,232	2,307	1,232	6,500
Total B: Utility Vehicles (UVs)	1,40,636	1,75,357	13,22,918	18,21,048	1,16,962	1,49,328	11,52,968	16,18,922	15,505	24,527	1,62,172	1,98,980
C: Vans												
Mahindra & Mahindra Ltd	220	230	2,548	2,233	104	125	1,837	1,920	-	22	597	24
Maruti Suzuki India Ltd	10,587	12,810	90,811	1,09,108	10,528	11,709	89,934	1,07,844	50	-	958	213
Tata Motors Ltd*	NA	NA	1,911	3,714	NA	NA	1,928	4,340	NA	NA	116	80
Total C: Vans	10,807	13,040	95,270	1,15,055	10,632	11,834	93,699	1,14,104	50	22	1,671	317
Total Passenger Vehicles (PVs)	3,10,334	3,75,940	28,85,124	37,39,071	2,54,287	2,98,093	24,03,125	31,69,788	40,781	55,551	4,64,778	5,46,588

* Only cumulative data is available for Apr-Dec

NA= Not Available

SIAM												
Segment & Company wise Production, Domestic Sales & Exports Report for the month of January 2023 and Cumulative for April-January 2023												
Report III (Number of Vehicles)												
Category	Production				Domestic Sales				Exports			
	Segment/Subsegment		January	April-January	January		April-January	January		April-January		
Manufacturer	2022	2023	2021-22	2022-23	2022	2023	2021-22	2022-23	2022	2023	2021-22	2022-23
Two Wheelers												
A: Scooter/ Scooterette												
Ather Energy Pvt. Ltd	3,032	15,332	17,884	69,264	2,991	14,802	18,456	68,511	-	-	-	-
Bajaj Auto Ltd	1,003	1	5,994	27,877	1,268	1,568	6,071	27,977	-	-	-	5
Chetak Technology Ltd	-	1,812	-	4,835	-	1,943	-	2,138	-	-	-	-
Hero MotoCorp Ltd	20,298	20,192	2,78,215	3,15,582	21,987	22,970	2,63,333	3,05,139	644	82	8,817	8,200
Honda Motorcycle & Scooter India Pvt Ltd	1,83,951	1,67,938	17,72,218	21,84,431	1,75,832	1,50,243	16,45,571	20,43,993	19,617	11,416	1,47,993	1,60,299
India Yamaha Motor Pvt Ltd	16,840	10,595	2,00,267	1,82,248	13,251	9,183	1,75,473	1,61,232	2,736	1,519	36,108	27,523
Okinawa Autotech Pvt. Ltd	10,549	4,730	59,976	86,484	9,604	5,980	58,440	88,860	-	-	113	78
Piaggio Vehicles Pvt Ltd	5,876	4,891	63,637	53,315	4,200	3,001	43,035	38,246	1,322	1,696	21,009	15,416
Suzuki Motorcycle India Pvt Ltd	66,038	80,607	5,14,323	6,53,418	57,966	65,991	4,80,636	5,88,963	2,670	9,360	39,254	65,120
TVS Motor Company Ltd	77,277	98,360	7,44,356	10,94,806	74,200	1,00,354	6,90,738	10,36,288	6,380	6,183	50,477	63,995
Total A: Scooter/ Scooterette	3,84,864	4,04,458	36,56,870	46,72,260	3,61,299	3,76,035	33,81,753	43,61,347	33,369	30,256	3,03,771	3,40,636
B: Motorcycle/Step-Throughs												
Bajaj Auto Ltd	3,07,280	2,62,618	32,29,171	29,23,725	1,34,228	1,38,860	14,31,409	15,03,149	1,87,934	1,00,679	18,63,715	14,27,215
Hero MotoCorp Ltd	3,45,446	3,76,816	37,91,840	40,83,609	3,36,673	3,26,467	36,32,967	39,65,607	21,172	7,171	2,30,623	1,35,797
Honda Motorcycle & Scooter India Pvt Ltd	1,65,014	1,28,907	13,54,770	16,77,533	1,39,384	1,27,912	12,28,024	15,56,908	19,396	6,804	1,44,121	1,30,581
India Kawasaki Motors Pvt Ltd	358	688	2,957	3,332	325	505	3,128	3,266	-	-	-	-
India Yamaha Motor Pvt Ltd	43,597	46,037	3,98,307	5,40,979	22,895	30,505	2,25,601	3,24,344	17,220	16,696	1,82,393	2,18,206
Mahindra Two Wheelers Ltd	-	-	-	72	-	-	3	96	-	-	-	-
Piaggio Vehicles Pvt Ltd	-	-	-	-	2	-	7	9	-	-	-	-
Royal-Enfield (Unit of Eicher Motors)	58,594	65,380	4,67,081	6,94,705	49,726	67,702	4,10,631	6,10,520	9,112	7,044	64,807	80,596
Suzuki Motorcycle India Pvt Ltd	12,284	13,287	98,075	1,16,706	2,657	214	19,855	16,269	6,799	9,397	77,498	99,810
Triumph Motorcycles India Pvt Ltd	61	41	590	546	104	62	1,054	892	-	-	-	-
TVS Motor Company Ltd	1,36,253	1,18,517	14,13,767	14,66,457	57,810	79,394	5,87,019	7,30,059	79,820	41,648	8,40,665	7,35,704
Total B: Motorcycle/Step-Throughs	10,68,887	10,12,291	1,07,56,558	1,15,07,664	7,43,804	7,71,621	75,39,698	87,11,119	3,41,453	1,89,439	34,03,822	28,27,909
C: Mopeds												
TVS Motor Company Ltd	42,313	37,727	4,00,167	3,64,240	35,785	36,723	3,99,653	3,69,407	144	408	8,608	2,916
Total C: Mopeds	42,313	37,727	4,00,167	3,64,240	35,785	36,723	3,99,653	3,69,407	144	408	8,608	2,916
Total Two Wheelers	14,96,064	14,54,476	1,48,13,595	1,65,44,164	11,40,888	11,84,379	1,13,21,104	1,34,41,873	3,74,966	2,20,103	37,16,201	31,71,461
Quadricycle												
Bajaj Auto Ltd	54	371	3,898	1,904	1	72	65	513	49	306	4,188	1,506
Total Quadricycle	54	371	3,898	1,904	1	72	65	513	49	306	4,188	1,506
Grand Total	18,74,661	19,04,364	1,83,25,192	2,09,95,875	14,19,354	15,31,447	1,39,26,470	1,69,96,200	4,54,947	2,99,040	46,10,365	40,46,130

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