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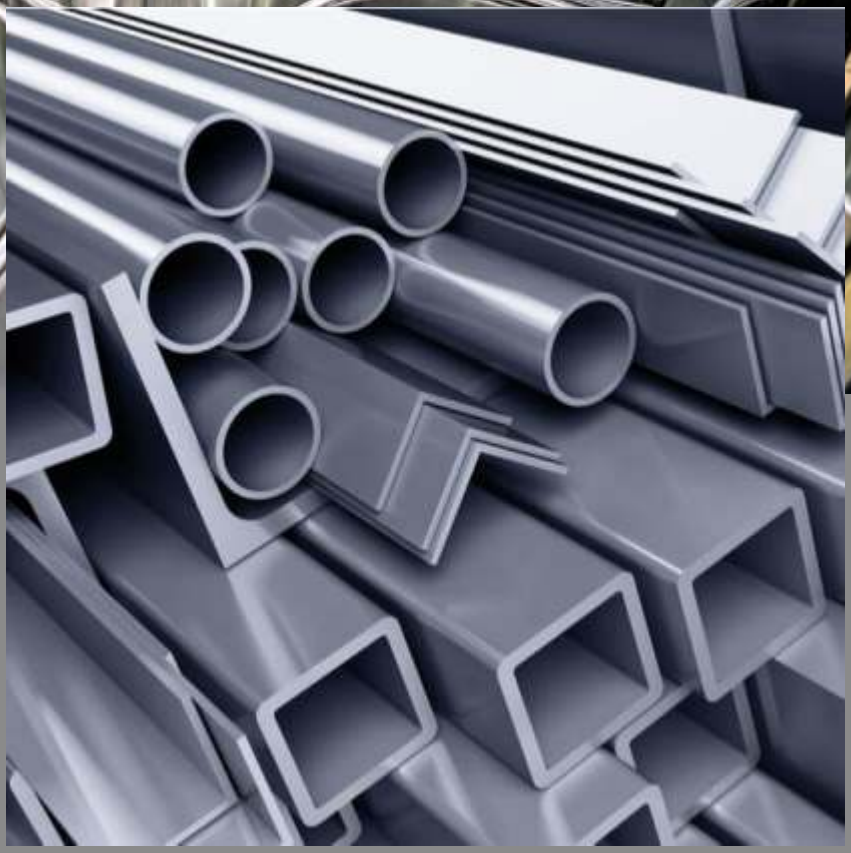

Indian Automobile industry is expected to generate huge demand for castings

Anuja Sharma
Chairman,
IIF Western Region

- **Aluminium – fast-tracking the development of India's solar industry**
- **Analyzing and optimizing cleaning processes**
- **Indian Aluminium Summit A Report**

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D. A. Chandekar
Editor

Dear Readers,

The last year was indeed a very eventful year for the global economy as well as for the metal sector. By June 2021, good amount of covid vaccination was already done and the pandemic too has almost calmed down. The global economy, which had suffered a tremendous jolt during previous year, had gradually started to stabilize. The logistics disruptions started getting corrected. The situation in metals sector was no different. The metal demand, which had dipped during the previous year, started heading north. Raw material and finished product linkages were getting re-established. Overall, the situation and also the industry sentiment was heading towards normalcy and suddenly it happened !

As such the relations between Russia and Ukraine were strained since a long time and the situation was gradually heading towards a bigger crisis. Finally Russia started full scale military operations in February 2022 and again the global economy so also the metallurgical sector got destabilized. Ukraine was a big exporter of semi finished and finished steel and other metals to the world which suddenly halted. Also due to war logistics (sea routes) of many raw materials got affected which resulted in decreasing the availability and increasing the prices of raw materials. Also the movement of finished products got disturbed due to some sea routes getting blocked by the war situation. All this naturally affected the metal and metal product demand which started moving downward. Thus with increased prices and reduced demand, the metals industry was again seen in an unstable situation. As such the war is being fought between only two countries, Russia and Ukraine, but many countries are politically involved in it and yet many other are being economically hit by it. This prompted many governments to take measures to protect their domestic industry and the markets. Indian government too has introduced new export duty structure in order to increase the availability of steel in the domestic markets and also to reduce the price to some extent. I think both the objectives were more or less achieved.

Now the situation has gradually started normalizing. Even if the war has not yet ended, the world including the metals industry has learnt to live with it. Also the experts are predicting that it will soon end. Their hypothesis is that Europe can not fight the winter without Russian gas and has to make truce. Ukraine has exhausted its resources and even Russian economy has started going down. Of course there are many more dimensions to this issue but ending of war seems the only solution to come out of such a difficult situation.

Let's see how the future unfolds !

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D A Chandekar, Editor & CEO of Metalworld Magazine had a exclusive interaction with the Anuja Sharma, Chairman, IIF Western Region & Director Marketing, SHAMLAX META-CHEM PRIVATE LIMITED to under the present status of foundry issues, challenging issues, policy framework required support from the government etc.

Indian Automobile industry is expected to generate huge demand for castings

"The future of the foundry sector in the country seems bright in coming years and is expecting robust growth until 2023."
Anuja Sharma, ***Chairman, IIF Western Region***
India rapid industrialization and urbanization to increase the utilization of the metal casting across the country.Moreover, the growing automobiles industry sales, along with the increasing environment concerns led to adoption of electric vehicles are providing a boost to the casting market. Additionally, the increasing infrastructural development projects across India have led to the rising demand for cast products, construction equipment, thereby enhancing the demand for the castings as well.

1) What is the present status and future prospects of the foundry industry?

India is the second largest producer of castings in the world with 14 MT per annum and China leading with about 44 MT per annum.

The Indian foundry industries produce various types of castings for application in the power, automotive, defence, railways, machine tools, agro machinery, tractor, earth - moving etc. Foundry is the mother of all industries and every industry directly or indirectly is related to the foundry sector.

Future of the foundry sector in the country seems bright in coming years and is expecting robust growth until 2023.

Growth of the foundry market is dependent on development of the overall automotive sector. The automobile sector in the country consumes around 40% of castings produced in India. Aluminium castings contributed around 15% of the total castings production in the country. This share is expected to increase by the end of 2023, due to shift in the demand from iron to lighter castings materials for manufacturing electric vehicles. Growth of the automobile industry is expected to generate huge demand for casting producers.

Demand for castings is expected to increase with growth of pipes and fittings market in India. A steady growth is expected in pipe and fittings castings. Due to shortage of fossil fuel and enhancement of renewable energy, there is a demand for wind energy globally. Indian foundries are major suppliers of quality turbine castings. Large consumer market and a stable political environment, India is emerging as a manufacturing hub for other countries. So by and large the future prospects of the foundry sector in the country in the short term as well as long term seem bright and prosper.

2) What are the challenging factors are heavily impacting on the foundries key raw material prices?

Foundries are used to seeing

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price hikes in the ratio of 4 to 5% in normal course but since last year steep hike in raw material cost put foundries in a difficult situation. During the last 3-4 months foundries faced hikes around 30 to 50%. These price hikes are partly due to the Russia - Ukraine war, high electricity rates, increase in petrol diesel rates, and a short supply of containers, steep hike in Ocean freights globally.

I think this situation is a temporary phase and the time is to " Revive and Survive. Some cost has to pass on to the customers which is a difficult task but very much needed to survive. Foundries need to enhance quality of production during this time. Many cost reduction changes can be done at shop floor level, Time to revise long term orders or scale down production. We are experiencing some stability in the market now, so this shall also pass.

3) What support does the foundry sector need from the government?

Government has taken proactive measures to curb inflation. The duty reduction on import of raw materials of steel may bring down the price of steel. Reduction of excise duty on petrol and diesel also help in reducing transportation costs for industries. Reduced import duty on coking coal, coke, ferronickel gives relief to the industries.

In our country the trend is more towards services than manufacturing, coping technology than innovations. Government should create a more foundry friendly environment. Make in India is a good initiative but we need many more reforms on labour law, electricity prices and land availability to achieve Industry 4.0.

4) What new initiatives / new activities you plan to start in your tenure as Chairperson of Western Region?

"Innovate to elevate" is the theme for IIF Western region 2022-23. Our focus will be on innovation and new technology and digitisation. We will try to fill the gap between Institutes and Industries by the project "Eklavya".

There will be some programs on skill developments as well. There are many ideas also, but LET THE ACTION SPEAKS MORE THAN WORDS.

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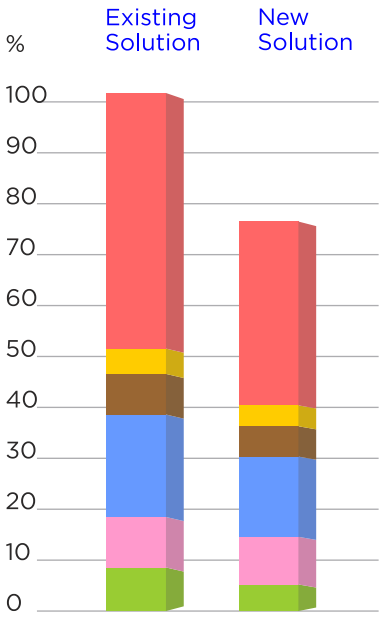

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Aluminium – fast-tracking the development of India's solar industry

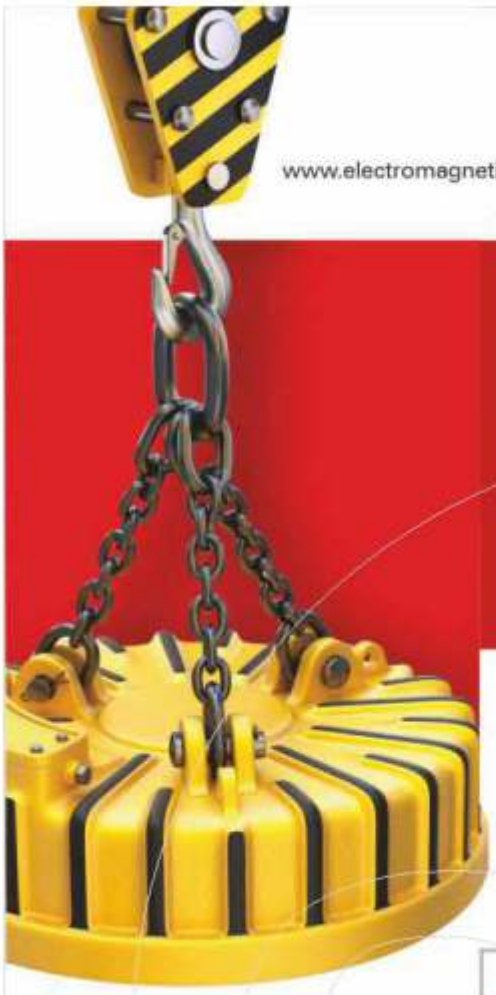
We are progressing towards a period where energy consumption needs to have a renewal approach. Thus, moving towards clean energy to reduce the carbon footprint is one of the significant measures to reduce the dependency by contributing effectively to the cause of the climate action plan. One of the phenomenal methods of achieving our renewable energy goals are being powered by the expansion and increased output of solar energy. The transition to a green economy and the emergence of solar power are both integral to our climate action initiatives. Solar power is seen to be an important aspect of our grid-connected power generation network. While it contributes to meeting India's energy security, it also assures sustainable growth while securing a green future.

Making the journey to becoming net-zero a reality is the creation of clean energy systems, where metals have a predominant role to play. A metal full of promise, aluminium has traditionally been used in the power sector for transmission and distribution. It is an enabler of clean energy and used in a variety of components of solar photovoltaics that drives the solar power sector.

A. S. Ganesan
Associate
Vice President
Domestic Marketing
& Sale -
Jindal Aluminium

A metal of promise

A study by the World Bank in 2020 shows that the single most widely used material in solar photovoltaic applications is aluminium. The photovoltaic system, also known as a PV system or solar power system, is a means of supplying usable solar power by using photovoltaics. The World Bank report attributes 85% of most solar PV components, including frames and panels, to be made of aluminium alloys. The metal is poised to fast-track the



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development of India's solar industry for the better.
The Government of India has already outlined a mission to establish India as a
global leader in solar energy. For this, the creation of a policy framework that targets installing 100 GW of grid-connected solar power plants has been set into motion. By 2030, India plans to ensure that about 40 percent of the cumulative electric power installed

capacity comes from non-fossil fuel-based energy resources. With the title metal of the future, aluminium is a material that is
considered beneficial for use in solar panels due to its high strength-to-weight ratio,
high surface reflectivity, and excellent electrical and thermal conductivity.
Most of the components that drive the solar power sector already have aluminium as
an important ingredient that bears its weight and holds it together. Aluminium alloy frames and mounting structures ensure that the PV panels are sturdy and remain in
place. Given its simple nature of manufacturing, transportation, and on-site assembly, components made of extruded aluminium are preferred. Besides less

expertise and time needed in the process, these parts require less maintenance and
are resistant to corrosion and any easy damage. Wind speeds of 150 Kmph/hr can also be easily handled by these heat-treated alloys.
Partnering change
As governments across the world are gearing up to address the challenges of Climate change through renewable energy, solar power has managed to establish
itself as an important source of green power and as a partner in making this happen.
The aluminium sector is all set to develop, expand and increase the solar sector's output.
Having set an ambitious target of 450 GW of renewable energy, India holds the
ranking of being 5th in solar and 4th in wind energy and is making forward strides in its renewable energy mission.
The potential that aluminium offers, makes an ambitious solar target look achievable. According to the World Bank, aluminium is the singular metal that is both high on impact and cross-cutting across all potential clean power technologies in the green
energy revolution that is underway. With a production capacity of 4.1 MTPA, the Indian aluminium sector is more than equipped to meet the local demand for this green energy revolution.
Downstream manufacturers have invested in R&D and innovation which is the key to developing various new-age high-performance
aluminium alloys to meet the requirements of various industries without having to depend on imports.
For downstream producer's opportunities in the Indian solar industry are immense. Given the technical abilities that they possess, players in the Indian solar space are more than keen to partner. The domestic solar energy industry expects materials
that are at par with global quality standards, access to R&D facilities and ensures that products and applications, both new and technology re-engineered specifically
for the solar industry are made available at a cost which is easy on the pocket.
For India, the abundant availability of sun rays makes it the most secure of all
energy sources that propel the solar industry. Both in India and the rest of the
world, aluminium, holds massive economic promise for the solar industry. It is an excellent opportunity for Indian downstream aluminium manufacturers to grow in stature and take the industry to newer economic heights. As aluminium fast tracks
the Indian solar industry, the downstream sector's domestic production story will not only meet our solar energy targets but also fuel the sector's vision of becoming a global manufacturing hub in aluminium used for solar energy components.

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Analyzing and optimizing cleaning processes

Cleaning processes often offer considerable potential for improvement when it comes to making parts cleaning operations more reliable, economical and sustainable. The first step is to carry out a systematic process analysis that also takes a close look at upstream and downstream production steps.

To ensure the quality of subsequent process steps, avoid rejects and guarantee the functionality of the end product, consistent parts cleanliness is an essential quality criterion. Ever-stricter or even modified cleanliness specifications must be met. In addition, demands on the speed, cost-effectiveness and sustainability of the cleaning process are constantly rising. However, how well, fast and efficiently the cleaning work is carried out depends not only on the equipment, the process technology and the medium used, but also on factors relating to the cleaning process itself.

Systematic process analysis - looking at the big picture

Doris Schulz
Journalist (DJV), Germany

So what do you do if parts suddenly come out of the system stained, if specifications for particulate or thin-film cleanliness are no longer met, the cleaned parts arrive at the customer's corroded, or cleaning is too slow/too cost-intensive? In the case of these and other problems, a systematic process analysis such as that carried out by the Ecoclean Academy at Ecoclean GmbH can pinpoint the root cause of the error. The cleaning experts not only focus on the actual cleaning process and equipment, but also assess the

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overall manufacturing environment. The smallest change to the part, part spectrum or material, type of contamination, or modifications to upstream or downstream processes is enough to seriously impair cleaning results.

Photo captions

Photo:
Ecoclean_Prozessanalyse_5

Thanks to systematic process analysis, which also includes the analysis of upstream and downstream production steps, sources of error and potential for improvement can be quickly identified.

Stains and thin-film residues on parts

According to the cleaning experts, a poor cleaning result or one that does not meet new higher requirements is a "classic"

reason for carrying out a process analysis. The first step is to identify the exact problem - are thin-film cleanliness specifications not being fulfilled or are there stains on the parts?

If staining is the problem, one of the questions to be asked is whether the quantity and composition of the contaminants (processing media and other substances) have changed or whether the constituents and concentration of the cleaning medium are still appropriate. Other factors, such as rinsing water quality, bath treatment, process technology and process sequence, as well as the drying step, are also closely examined. These are further influencing variables which play a role if thin-film cleanliness results are unsatisfactory.

Inability to meet particulate cleanliness requirements

If the cleanliness analysis after the cleaning cycle shows that too many or too large particles are still adhering to the parts, this may also be due to the cleaning program and process sequence used. Possible causes include residual particles in the working chamber or on the part carriers, an unsuitable filtration system or a clogged filter. Sometimes, it is the wrong choice of cleaning containers, such as crates made of perforated galvanized sheet metal, which hinders the efficient and reliable detachment and removal of the particles. This type of crate blocks ultrasonic waves and prevents them from developing their full effect on the wash load.

Likewise, the spray pressure does not reach the inside of the perforated crates. Compared to baskets made of round wire, a further problem is that the cleaning medium does not drip off these crates as effectively. This may result in the unwanted transfer of contaminants and/or cleaning chemicals.

In any case, much longer and thus more energy-intensive drying processes are required.

A further cause of a failed cleanliness inspection is often burrs that are still attached to the parts, which detach when the parts are handled during the residual contamination check and then show up on the particle filter.

If these particles are examined under a microscope, it can be determined whether they are chips or burrs. If the latter is the case, upstream processes must be evaluated to find out where the burrs occur and how their formation can be avoided. Particulate cleanliness can also be impaired by magnetism that is "bought in" with raw materials or arises during the manufacturing process. Magnetism binds chips to the parts and hinders or prevents their removal during the cleaning process.

Handling parts after cleaning

However, the cleaning process is not over when the parts come out of the machine with the required level of cleanliness. To prevent recontamination or corrosion,

which can occur even with preserved or passivated parts, it is important to look at how parts are handled after the cleaning step. The following questions need to be answered: Where, how and for how long are the parts stored? How are they transported to the next processing step? What kind of packaging is needed for this? In addition, high cleanliness requirements often make it necessary for processes such as internal transport, assembly or packaging to be performed in a clean environment or clean room.

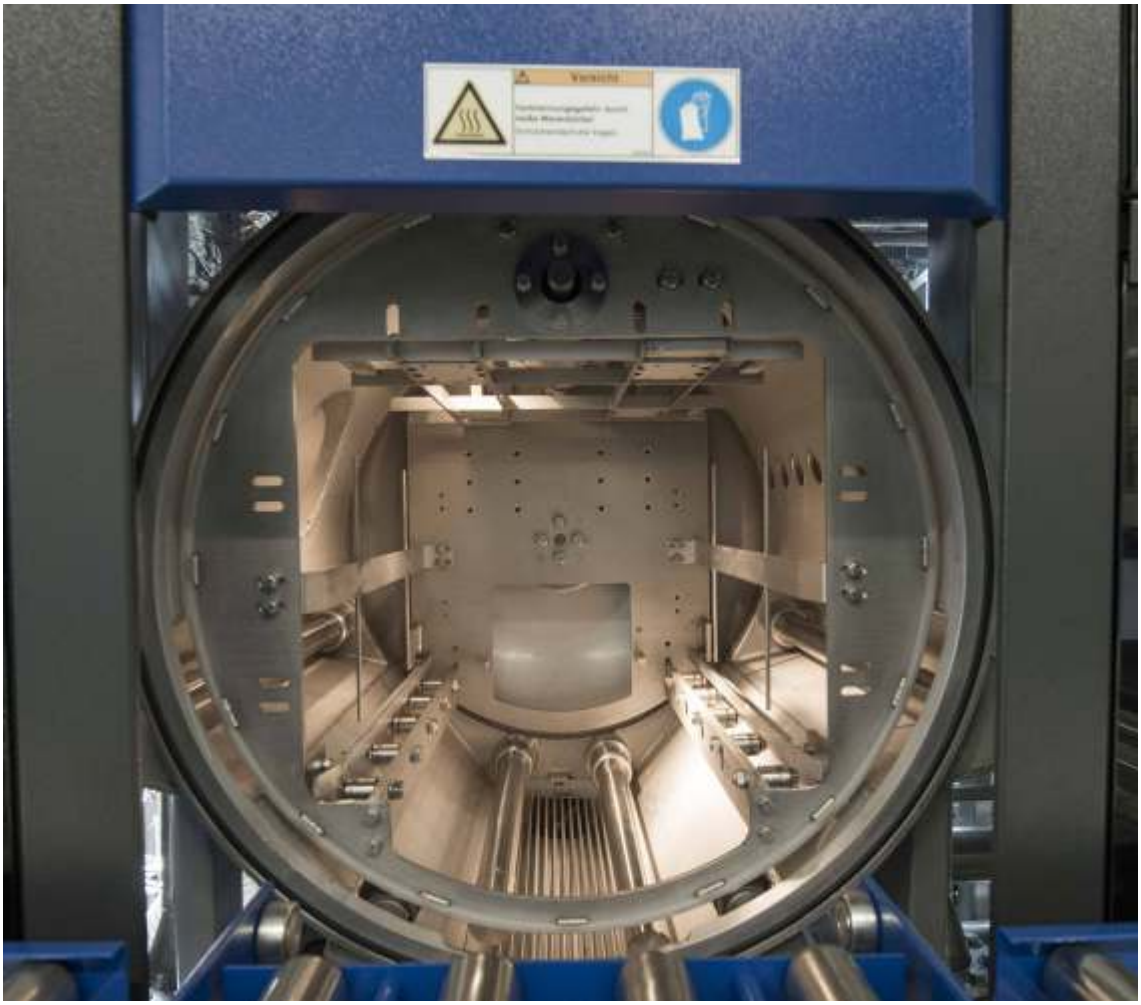
Updating the cleaning process

Besides cleaning problems, modified cleaning programs can be a further reason for carrying out a process analysis. The aim is generally to shorten process times or enhance the cleaning result. As always, the analysis starts by documenting the actual state, which includes verifying the process parameters, process sequence and process times. Based on the analysis results, potential for improvement can be identified and appropriate measures can be defined. These may include modernizing the system, such as by retrofitting or upgrading ultrasonic equipment.

Qualified personnel

It is essential that the parts cleaning staff are involved in the process analysis and optimization measures. Raising staff awareness about cleanliness, as well as about the capabilities of the cleaning technology and the impact of parameter settings on the cleaning result, is a key factor. If there is a change of personnel, it is also important that knowledge of how the cleaning system works and how, for example, bath treatment measures or regular maintenance work on the cleaning system are carried out is passed on. Otherwise, problems that had been eliminated in the past may occur again. Investing in the training and continuing education of cleaning staff is therefore a cornerstone in order to achieve reliable cleanliness requirements in an economical and sustainable manner.

The Ecoclean Academy therefore also combines process analyses with classic training courses.



Contact: Ecoclean GmbH, Dieter Ortner, academy.filderstadt@ecoclean-group.net, www.ecoclean-group.net

Indian Aluminium Summit & Expo

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Indian Aluminium Summit 2022 concluded successfully on the virtual platform on 16th July 2022. It was organised by Metalworld Magazine with the presence of eminent speakers who have deliberated on the theme of the summit. The Inaugural session, Panel discussion followed by 3 Business sessions and closing remarks. It was also supported by Key Industry Associations like MRAI, IBAAS, ASMA along with MCX was the Awareness Partner of the summit. AlCircle was the media partner.

(A) Inauguration session:

At the session, **Abhijit Pati (CEO & Whole time director) BALCO** said that the world economy is at a critical juncture. However, the Indian economy is poised to grow at 7-8% over the next few years. Growth will take place with domestic production, value addition and product development. Aluminium can play a critical role. India can become a global manufacturing hub. India has the second largest Aluminium manufacturing capacity in the world after China. Aluminium finds applications in transport, aerospace, defence, electrical, consumer goods and many other areas. Demand for Aluminium will double in India in the next few years. Downstream industry can also develop due to rise in the demand.

Dhiraj K. Chauhan
Director, METCON

There is a huge captive market for Aluminium. The Aluminum industry should get the right positioning and it must be protected from volatility. Government projects and the renewable energy sector provide good potential for consumption. India has high domestic capacity, still it is importing huge quantities of Aluminium. Indian Aluminium companies BALCO, HINDALCO and NALCO are getting technology ready.

Responsible consumption and sustainable production are very vital. Per capita Aluminium consumption in India is 2.67 Kgs against the world average

of 12 kgs.

Setting up R & D centres and innovation centres will help the Indian Aluminium industry grow.

P.S. Reddy (MD & CEO, MCX) highlighted the commodity exchange roles and responsibility. Pricing and trading of Aluminium are also very important. Now metals' trading is done with delivery based contracts. Nearly 2.5 lac MT of metals are delivered on MCX which include Al, Cu, Zn, Ni and Pb. MCX is a reference point for many clients for trading business. It needs support from Indian industry. It has plans for T bar and Al alloy trading also.

It has delivery centres at Thane (Maharashtra), Raipur (CG), Chennai (TN), Durgapur (WB) and Kolkata. IGST as well as CGST registration is necessary for clients for taking the delivery of traded metal at any delivery location.

MCX has set up a panel for trading of gold metal.

(B) Panel Discussion –"Emerging Technology Trends in Aluminium Industry".

Session was coordinated by **S.M.Kulkarni (Business Head - Tec Trans Associates).**

He observed that issues of Aluminium Industry are the same namely, energy consumption, carbon emission etc. Nearly 2000 papers are presented on Aluminium and the process is still evolving. Many parameters are observed during manufacture but are not used for improvements. Classical technology for Aluminium manufacture is used although, digitalization like Industry 4.0, application of sensors, modelling simulation, computation power techniques are available.

Among other eminent speakers, Mr Bibhu Mishra (President & head, Mfg. Centre of Excellence, Hindalco) observed that initially Industry 3.0 was applied. Large number of data were generated but then deleted after a short period of time. Then IT 4.0 was introduced.

S.N. Das (Ex DGM, NALCO) said that Aluminium smelters have high energy consumption. From power plant to smelter only 9-10 % electrical energy is utilized. From about 50% to now 100% slotted anodes will be used at NALCO to decrease energy consumption. Industry 4.0 is being tried in house. The pots are developed to operate at higher electrical current ~ 400 KA.

Dr Ashok Nandi (President, IBAAS) highlighted that mining is a data intensive industry. In Australian mines some work is going on about data analysis and utilization.

Attempts are made to utilize lower grades of Alumina. There are large variations in the quality of alumina w.r.t. % alumina, % silica etc. Now Sumitomo technology is being used to process alumina with 7– 8% Silica. Bauxite containing fly ash is used in the plant in Mongolia.

Predictive technology to mix low grade alumina with high grade alumina is not developed sufficiently. Information on the percentage of fines being supplied to the smelters during the next 10 to 20 days is required. Process discipline is also required. Flexible plant practices can help in using raw materials of varying quality. Government has not auctioned new mines for some time now. Captive mines should be available to smelters/aluminium manufacturers.

Present Production of Aluminium is 65 MMT and expected to go up to 120 MMT by the year 2050. Customers desire green Aluminium. 10 -12 Mt CO_2 is generated per ton of Aluminium in Indian plants against a world average of 4 Mt CO_2. Out of 50 billion tons of CO_2 generated globally, contribution from Aluminium production is 1 billion ton. The government has planned net zero CO_2 emission by the year 2070. The coal power plant can be modulated when the solar

power plant is running. Solar, wind and pumped power plants can be used simultaneously with proper planning. With the use of Aluminium air batteries in Electric Vehicles CO2 emission will come down.

Energy consumption is 13400 to 13800 KWH/Mt of Aluminium. With the application of superconductors it can decrease to 12000 KWH/Mt. Solution is to use renewable energy.

(C) Business session I – Applications and Processes.

The session coordinator was **S.S. Sabnis (Secretary –ASM International).** Following speakers participated.

(1) Ravi Agrawal – (Director) Pooja Castings Ltd. Which is the Aluminium castings manufacturer by Gravity and low pressure die casting methods. The processes were explained in detail. The dies are designed, manufactured and inspected with the scanner in their plant in house.

As per the details provided by Ravi Agrawal, 15 -20 Kgs of Aluminum is used in 2 wheeler (Bike), 25 Kgs in 2 wheeler (Scooter) and ~ 100 Kgs in 4 wheeler. The shift to Aluminium has occurred due to fuel economy, driving performance and safety since, Aluminium absorbs crash energy.

The castings produced by these techniques have a highly dense structure. But, the challenge for them is to produce zero defect castings.

Tilt pouring Gravity die casting helps to remove air from the molten metal and reduces the rejection due to porosity by 50%.

Counter pressure die casting method can produce zero porosity casting with excellent mechanical properties. Inclusions are also avoided in the casting. HPDC method can produce very thin walled casting of 2.5 to 3 mm wall thickness.

(2) Manish Patel – (Sr.GM - Business Development, APAR CABLE Solutions) He explained the applications & characteristics of different types of electrical conductors. APAR cables are in the business of Aluminium conductors and EPC activity. All types of cables are manufactured by APAR cables. It has full testing facilities like HV Test set up, Track resistance set up, Xenon weathering test etc.

Covered conductors have reduced electrical losses and less resistance. ACSR conductors give more strength on the line. AL 59 conductors have better current carrying capacity. Underground cables are costly and cost more to obtain the permission from authority. New conductors have high ampacity and lower weight.

Semi conducting conductors have some leakage current problem ~1 milliamp. For covered conductors, European standards SS-EN 50397 are followed. These conductors do not have any maintenance problems except occasional tree cutting. They are safe for installation on railway, river, road crossing and can be installed at lower height and have 40 - 50 years life. 50% of covered conductors are exported by APAR cables.

(D) Business session II – National price Benchmark for Base metals & Risk Management.

(1) Prakash Prabhu – (Manager PMT- MCX) said that the value chain consists of miners, refiners, converters, auto industry and recyclers. NALCO, HINDALCO and

VEDANTA are major players. For Aluminium, Raipur (CG) is a delivery centre. Now the trade contracts are delivery based and require CGST as well as IGST registration for taking delivery from any place.

(2) Kaushal Mehta – (Sr.V P – Motilal Oswal Financial Services) highlighted that initially trading was happening on papers and no physical deliveries were needed. The metals' prices were derived from the international market. After deliverable contracts were launched participation increased by over 10 times. Delivery centres are Raipur (CG) for Aluminium, Thane (MS) for Copper, Nickel and Zinc, Chennai (TN) for Lead. However, metal may be delivered from other locations also. Standards for quality, packing, and ingot shape/size are fixed.

features for users and producers and all participants in the value chain.

(3) Nikunj Agrawal - (Director, Plot Industries) They are in the business of recycling Lead batteries. India has two LME approved brands for Lead metal. MCX has established a "One Nation One Price" quote. Hence, common and reliable prices exist in India. Locally produced metal is available.

(E) Business session III – Recycling.

This session was coordinated **Dr Kishore Rajpurohit, (CMD, Global Commodity Pvt. Ltd.)**

Keegan Vaas – (G M, Middle East) Lindemann Germany, GMBH.

He explained in detail various equipment manufactured by Lindemann for the recycling industry.

These include Shears,

Process	Cost (Euro/Mt)	Feed	Output	Remarks
Shearing	17 - 21	Bulky, Heavy scrap	Mid size scrap	Easy handling
Bailing	9 -13	Light scrap	Dense bales 250 -400 mm	Easy handling
Briquetting	18 – 25	Chips	100 200 mm 2.4 MT/ M^3	Handling and yield. Liquid removal.
Shredding	40-50	Mixed scrap	<150 mm 0.7 – 1 MT / M^3	Handling and yield. Liquid removal.

Key points for integration – (a) physical delivery option (b) Warehouse facility across country (c) Paper hedging is more efficient when contract is settled through domestic price discovery (d) Exchange is continuously improving

Shredder, Scrap baler, briquetter, Chips processing line etc.Use of these equipment for recycling the scrap saves energy, reduces CO2 emission and gives improvement in melting process and also pollution is controlled.

The table below shows the cost of processing with scrap processing equipment.

Separation plants remove steel, rubber, plastics, screws etc with the X rays.

(2) Dr R N Chauhan – (Sr. Principal Scientist) JNARDDC. This institute focuses on the Aluminium recycling sector. Aluminium recycling needs only 5% energy. Less CO2 Emission and it does not change the quality of recycled material.

This institute has quality testing equipment like SCM, Spectrometer etc and is spread over 100 acres of land, 264 KW Solar power plant and 20 % area is meant for Laboratory. It has planned Reference Metals production for spectrometer analysis.

(3) **Ravi Sablaka - (Taran Alloys)** Aluminium is used in aircraft, buildings etc. They convert recycled scrap and manufacture Aluminium alloys with Cu, Zn, Si, Li etc. Battery recycling is also going up in India. In China the demand for Al alloy is good but labour is costly. India has an advantage on labour cost.

During the closing remarks, **Chandekar (Editor & CEO) Metalworld** thanked all the speakers and participants for a very interesting presentation and lively discussion.

Growing usage of aluminium in the auto industry bolsters sustainability and safety

Vedanta Aluminium, India's largest producer of aluminium, makes a case for 'green' aluminium at the recently held national webinar by Automotive Component Manufacturers Association (ACMA) of India.

With its world class-aluminium smelters, metal expertise, global technology partnerships and deep R&D capabilities, Vedanta Aluminium has been a long-time partner to the auto industry, developing product solutions perfectly tailored to their evolving needs.

The company is keen to partner with the automotive sector across the value chain, from large players to OEMs and MSMEs, for reducing the industry's import dependence.

ACMA's event, themed on 'Light-weighting with Aluminium and Sustainability' witnessed participation of top executives from key players in the auto, auto components and aluminium industry.

Nikhil Bhagchandani, Dy. Director - Marketing, Vedanta Aluminium, who was the keynote speaker at the event, highlighted the importance of 'green' aluminium (i.e. aluminium with low carbon footprint) in bolstering the endeavours of automakers to decarbonise their products.

The company is India's first to launch low carbon aluminium, branded 'Restora', for customers looking to source raw materials responsibly for creating a green value chain. Restora has a carbon footprint that is nearly half the global threshold for aluminium to be considered as low carbon. It's second green product, Restora Ultra, has an even lower carbon footprint, that is near-zero and is amongst the lowest in the world.

Aluminium is currently the second most used metal in vehicles and the fastest growing, a clear indication of the metal's growing prominence in automobile manufacturing.

With evolving consumer consciousness towards sustainability and tightening of emission norms, there has been a significant increase in aluminium usage in vehicles, be it battery electric vehicles (BEVs), hybrids or internal combustion engine vehicles. The reason being aluminium's unique properties which lend themselves very well to the auto industry:

Owing to its high strength-to-weight ratio, more aluminium in vehicles makes them significantly lighter, faster, easier to manoeuvre and high on performance.

Light weighting of vehicles also reduces their fuel consumption, thereby helping with cost savings and reducing carbon footprint.

In electric vehicles, increase in aluminium usage in the vehicle extends its driving range by offsetting battery weight, thereby reducing cost of ownership, even with addition of more safety features.

Aluminium continues to drive vehicle safety as well, since pound for pound, aluminium can absorb twice the crash energy of mild steel.

Highly malleable & ductile, aluminium also gives automakers exceptional design flexibility, across a wide range of applications – from car frames to engines, battery casings, doors & windows, wheels, and many other smaller components in between.

Further, aluminium's natural resistance to corrosion gives vehicles a longer life and reduces the need for frequent maintenance, again reducing cost of ownership.

Finally, nearly 90 per cent of all the aluminium used in a vehicle can be recycled at the end of its lifecycle, increasing the vehicle's salvage value.

The Indian automotive industry, which is gradually adopting the advantages of aluminium, is poised to become the 3rd largest automotive market in terms of volume by 2030 (as per Invest India), propelled by electric vehicles, heavy vehicles and passenger vehicles. Prior to the pandemic, India's auto component industry imports stood at USD 15.40 Billion.

Speaking on the opportunities of indigenous development and localised sourcing of auto components and parts, Rahul Sharma, CEO – Vedanta Aluminium, says, "The national vision for self-reliance calls for increased focus on localizing sourcing of raw materials, parts and components by the Indian automotive industry. At Vedanta Aluminium, we offer our customers 360-degree holistic solutions to meet their evolving business needs, such as catering to their need for decarbonisation with 'Restora', our low carbon aluminium brand. We are further keen to co-create innovative product solutions for new and emerging applications of aluminium in the automotive industry, and together with them shape the future of mobility."

Ramachandra Rao, Chairman - ACMA CFT on Raw Materials, & Executive Chairman - Indo Schottle Auto Parts Pvt. Ltd., said, "Aluminium is a critical raw material for the auto industry, as is evidenced by the metal's increasing usage globally in automotive applications. As the Indian auto industry increasingly localises sourcing of raw materials, domestic aluminium manufacturers like Vedanta Aluminium can be ideal partners for automakers. Whether it is light weighting, environmentally-friendly products or new alloys, such partnerships can shape the future of our auto industry."

Vedanta Aluminium has been a catalysing force for the automotive industry, producing high-end alloys like Primary Foundry Alloy and Cylinder-head Alloy, which address automakers' most pressing needs for cost, quality, safety and sustainability, with light weighting. Notably, both alloys were entirely being imported into India until Vedanta Aluminium started supplying them indigenously.

As applications of aluminium in vehicles continues to rise, Vedanta Aluminium is rapidly expanding its value-added product portfolio for the auto industry. The company has also developed an online solution that brings together all of Vedanta's products under one roof for customers, including after-sales technical support, logistics and financial solutions.

Vedanta Aluminium currently produces one of the largest product ranges in aluminium, including billets, ingots, wire rods, rolled products, slabs and more.

Hindustan Zinc reports best quarterly performance backed by favourable commodity prices

Hindustan Zinc on Thursday reported its best-ever quarterly earnings performance backed by high metal production and favourable commodity prices.The VedantaGroup company reported a 44% year-on-year growth in its consolidated topline to Rs 9,387 crore.High power and fuel costs meant that the company's cost of production for zinc during the quarter went up by 23% year-on-year to Rs 97,423 per ton.

Hindustan Zinc had been prioritising the production of zinc over lead and silver over the past couple of quarters given a sharp spike in the prices of zinc. However, with the prices of the metal correcting faster than lead and silver over the past one month, production of zinc has been reduced to normal levels.The company has given guidance for capital expenditure to the tune of $125-150 million (Rs 1,000-1,200 crore) for the ongoing fiscal year. As of June 30, 2022, the company had investments and cash and cash equivalents of Rs 24,254 crore as compared to Rs 20,789 crore at beginning of the quarter.

Vedanta Aluminium Signs MOU with TÜV SÜD for roadmap to become water positive

Vedanta Aluminium, India's largest producer of aluminium,has embarked on its ambitious commitment to turn net water positive, by partnering with TÜV SÜD, a global leader in safety, security & sustainability solutions. Under this partnership, Vedanta Aluminium and TÜV will chart the roadmap for the company's water positivity goal by working in the areas of baseline study, bolstering the accounting process for water consumption, capacity building for continual improvement and conservation, and implementing innovative solutions & initiatives for a sustainable water footprint. Water management is a crucial pillar in Vedanta Aluminium's journey of Environment, Social & Governance (ESG) excellence for climate action, the company is committed to the Vedanta Group's goal of net water positive operations by 2030.

NALCO mines receives Five Star Rating Award at 6th National Conclave of Mines and Minerals

NALCO's Panchpatmali Central & North Bauxite Mines received "Five Star Rating" Award at 6th National Conclave of Mines & Minerals held at New Delhi today. The prestigious award was presented by Hon'ble Minister of Parliamentary Affairs, Coal & Mines Shri Pralhad Joshi ji, in the presence of Hon'ble Minister of State in Mines & Coal RaosahebPatilDanveji& Mines Secretary Shri AlokTandon.Shri Sridhar Patra, CMD, NALCO while congratulation the Mines collective said that this award reflects our deep commitment towards sustainable mining, which is at the core of our mining operations.

Nalco launches 240 smart classrooms

As part of the AzadiKaAmritMahotsav, Nalco participated in the Iconic Week celebration of the Union Mines Ministry by launching 300 smart classrooms in 120 Government schools.

At a function held in hybrid mode, Union Secretary, Mines AlokTandon, in presence of Nalco CMD Sridhar Patra inaugurated the 240 smart classrooms in 91 schools in the first phase. The balance 60 smart classrooms in 29 schools are in advanced stage of completion.

The multi-locational event was witnessed by senior officials of the Ministry of Mines, Directors of Nalco, large numbers of school children, officials and employees of Nalco, officials of district administration of Koraput and Angul, education officers, school authorities and public representatives.

At ground level, the inaugural ceremony was held at Government High School, Angul and Sri JagannathBidyapith, Sunabeda.

The schools from the districts of Angul, Dhenkanal, Koraput, Nabarangpur and Khordha, where the smart classrooms have been completed were inaugurated.

The flagship education project of Nalco has been commissioned by EdCIL(India) Limited. The schools have been identified in association with district administration to develop smart classrooms by installing integrated community computer-cum-projector with ancillary devices. The project also envisages handholding and training on a continuous basis for teachers and students. The total project cost is Rs.7.65 crore.

How green aluminium can help in global supply chains

Aluminium is inevitable for a resilient, efficient and sustainable global supply chain which strives to achieve an optimum level of movement of goods. While being

cost-efficient, quick and flexible, it incorporatesa management process that binds together a network of suppliers, manufacturers and warehouses, and means of transportation. And if there is one metal that is inevitable to have a robust, effective, and sustainable supply chain spanned across the world, it is aluminium.

It goes without saying that if the world is to meet the ever-growing demand of its increasing population, aluminium the 'green metal,' has a competitive advantage today & will be imperative tomorrow in the global supply chain.

From construction to planes, from household appliances to the packaging of foods and beverages, the fundamental properties of aluminium such as its design, strength-to-weight ratio, infinite recyclability, sustainability, high corrosion resistance, and supreme formability provide endless possibilities. They make this green metal, the metal of the future for a more sustainable world.

Transportation accounts for about 20 percent of the world's energy demand.

Aluminium components in an articulated truck can reduce the weight of the vehicle by up to 2,000 kg. Owing to the property of its strength-to-weight ratio, an aluminium-intense truck can carry a heavier load with exceeding statutory weight limits. Decreasing the weight of vehicles leads to improved fuel efficiency, reducing energy consumption and greenhouse gas emission. Compared to steel, aluminium can reduce the weight and in turn the overall transportation costs, making business a profitable affair. In addition to this, aluminium has also proven to be an effective material for the construction of cargo holds, including insulated holds as it is non-reactive and non-abrasive.

Aluminium in a sea vessel

Since the first all-aluminium seagoing vessel built in 1892 in France, aluminium, over 120 years, is still the most preferred material in the maritime supply chain due it its lightweight and ease of fabrication along with corrosion and fatigue resistance. Aluminium's superlative properties allow vessel volume and height to be increased without loss of stability. Further, the aluminium claddings of the interiors are attractive and easy to clean. Along with low maintenance cost, there have been reports that over 30-years-old aluminium crafts show no signs of metal fatigue.

Along with low maintenance cost, there have been reports that over 30-years-old aluminium crafts show no signs of metal fatigue. In comparison with their steel counterparts, the use of aluminium in the global supply chain can increase the speed, and size of the vessels while improving their fuel economy, safety, reliability and costs.

Jindal Aluminium unveils new brand identity

Jindal Aluminium Ltd has announced the launch of a new logo and brand identity. The changes mark the continuity of its transformation and growth story, the company said.

Pragun Jindal Khaitan, Vice Chairman and Managing Director, Jindal Aluminium Ltd said, "Our new logo and brand identity are in line with how the organisation has grown across five decades. Our approach over all these years has been to follow a bold and synergetic diversification model of organic growth without wavering from our core business competency. The changes to our logo and brand identity significantly represent the Jindal Aluminium of today and the pride that we take in our legacy. As an organisation, we felt the need to bring together, an idea of our journey and where we are headed. Thus, the change not only showcases what the company has always stood for as a brand, and its support for people, society and the economy but also provides a glimpse of future possibilities."

The new logo design consists of a legacy ring and a glyph that sports the company name to showcase Jindal Aluminium's 5-decade legacy and its recommitment to providing the same set of values to customers in the future. Its timelessness, integrity and perfection, are symbolised through a shade of aluminium on the legacy ring, a testament to the quality products produced and representation of the Aluminium value chain.

The glyph element brings an intrinsic and perpetual meaning representing our foundation and symbolizing our convergence to quality and trust. The name on the logo reflects a stable, reliable and mature organisation. The new logo is a representation of acceptance and openness while binding everything together.

Following a phase-wise approach, the new logo will be implemented across all physical assets, social media platforms and marketing literature.

Wheels India expects demand for cast aluminium wheels to grow this year

Wheels India manufacturers of wheels for automobiles expects the demand for cast aluminium wheels to grow this year, according to a top company official.

The company managed to breach the milestone of Rs 1,000 crore in its exports last year. The foundation has been built to grow the exports market along with customers in the coming years, company Chairman S Ram told shareholders at the 63rd annual general body meeting here.

Wheels India was able to increase its production of forged aluminium wheels for sale in Europe and in the United States, he said.

"Last year, we saw the first full year of production of cast aluminium wheels from the new plant at ThervoyKandigai (near Chennai). The wheels are sold to the largest aftermarket distributor of cast aluminium wheels in the world," he said.

"The demand is expected to grow this year", he said.

The company witnessed a strong revival in the construction equipment industry last year as demand in most 'economies' registered a recovery post-COVID-19 pandemic and the demand was expected to remain strong this year, Ram said.

On the wind-mill segment, he said Europe was facing an energy crisis following the Russia-Ukraine conflict. He said it should improve the prospects for the global windmill industry where Wheels India supplies its parts.

The Chairman said Wheels India recorded some growth in the commercial vehicle segment and demand for small, light, intermediate and heavy commercial vehicles was increasing after steep decline witnessed for two years due to the outbreak.

The automotive industry should see an improvement this year with 'moderation of commodity inflation' and 'improving availability' of parts, he said.

Referring to the merger of Sundaram Hydraulics with Wheels India following the approval from the Board, he said, it was likely to help grow hydraulic products manufactured by the Sundaram Hydraulics for construction industry where Wheels India has a strong strategic relationship with customers.

Vedanta aluminium output rises by 3% to 565,000 tonnes in Apr-Jun

Mining giant Vedanta Ltd reported a 3 per cent increase in its aluminium production to 5,65,000 tonnes in the April-June quarter of the ongoing fiscal.

The company had produced 5,49,000 tonnes of aluminium in the corresponding quarter of the previous fiscal, Vedanta Ltd said in a filing to BSE.

Mined metal production at Zinc India increased by 14 per cent to 2,52,000 tonnes due to higher ore production

across all the mines and supported by better mill recovery.

The production of saleable iron ore in Karnataka in the first quarter declined by 14 per cent to 1.26 million tonnes over 1.46 MT on account of heavy rainfall which impacted ore handling.

The company's total production of saleable steel declined by 7 per cent to 2,69,000 tonnes over 2,89,000 tonnes in the year-ago period.

It achieved 14 per cent rise in ore production to 1,40,000 tonnes in the Q1 FY'23, over the corresponding quarter of previous fiscal.

Novelis drives responsible aluminum supply in the North American market with ASI Performance Standard Certification

Novelis, a leading sustainable aluminum solutions provider and the world leader in aluminum rolling and recycling, announced today that three of its plants in North America that produce material for the beverage can market have been awarded Performance Standard Certifications by the Aluminium Stewardship Initiative (ASI).

This achievement recognizes Novelis' responsible manufacturing practices by ASI, a global, multi-stakeholder, non-profit standards setting and certification organization. Together with the company's strong focus on the circular economy and industry-leading levels of recycled content across its product range, the certification demonstrates Novelis' ambition to be the aluminum industry leader in sustainability.

The certifications for the Greensboro, GA, Berea, KY, and Warren, OH, plants further strengthensNovelis' ability to meet customers' growing demand for sustainable aluminum solutions in the beverage packaging market and beyond. The company has been delivering ASI-certified material since August 2021 in Europe, South America and Asia.

"This certification is the latest step in our sustainability journey and demonstrates our unwavering commitment to providing sustainable aluminum solutions to our valued customers," said Tom Boney, Executive Vice President and President, Novelis North America. "Aligned with our purpose of shaping a sustainable world together, we aim to collaborate and inspire our suppliers, customers and partners throughout the entire value chain to participate in these responsible practices."

The ASI Performance Standard addresses environmental, social and governance principles for the production of aluminum, assuring that the ASI-certified organization's production practices are responsible.

“Novelis aims to achieve ASI Certification in all its plants worldwide. The completion of these ASI certifications are part of our ongoing commitment to being a responsible partner to our customers and working with them to achieve their sustainability goals," said Suzanne Lindsay-Walker, Vice President of Sustainability. "Adherence to the standards provides a clear indication of the care and commitment that certified companies share regarding human rights, climate change, the environment and circularity with regard to aluminum manufacturing."

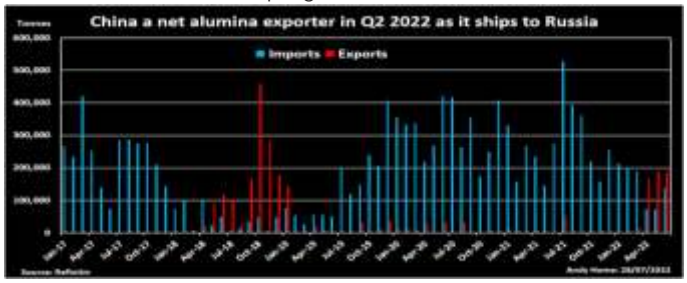
China's exports smooth aluminium supply-chain disruption

China is playing a crucial role in rebalancing the global aluminium supply chain in the wake of Russia's invasion of Ukraine.

The country has lifted exports of alumina to Russia, compensating for the loss of raw materials feed after Australia banned exports in reaction to what the Kremlin terms its "special military operation".

China has also stepped up exports of aluminium this year, particularly to Europe, where smelters are struggling with the power price surge resulting from reduced flows of Russian gas.

The country's exports of semi-manufactured products are also accelerating, although this is unlikely to be seen as a welcome development by the West, which has long accused China of dumping aluminium in this form.



China's imports and exports of alumina

Russian aluminium hasn't been targeted by Western sanctions but the country's giant producer Rusal is facing ongoing disruption to its raw materials supply.

Hydro announces investments to meet low-carbon demands from auto sector

Norwegian aluminium company Norsk Hydro announced a fresh wave of investments on Thursday July 7, expanding the company's use of post-consumer scrap and focusing on meeting low-carbon aluminium demand

from the European automotive industry.

The company has begun production at its aluminium recycling plant in Rackwitz, Germany, to produce an additional 25,000 tonnes per year of HyForge, it said.

The investment will increase the use of post-consumer scrap as a major raw material at the plant, which already produces 95,000 tpy of extrusion ingot.

HyForge is Hydro's range of forged aluminium which is delivered with a certified low-carbon footprint, as per the Hydro REDUXA 4.0 certificate.

The expansion is planned to become operational by the end of the first quarter of 2023 following an estimated €40 million ($40.72 million) investment.

"With more automotive customers putting emphasis on sustainability, we are taking this breakthrough step at Rackwitz to produce aluminium HyForge products, resulting in even smaller diameter billets, while ensuring a best-in-class climate footprint by using a high share of post-consumer scrap in the process," EivindKallevik, executive vice president for Hydro Aluminium Metal, said in a statement.

"The business case shows that it is not only profitable, but it also has an important sustainability dimension, and it brings us closer to reaching our ambitious recycling targets," he added.

The announcement comes at a time of increased focus on sustainability and a desire by companies such as Hydro to meet the growing demand for low-carbon aluminium production, with European scrap prices rising as a result.

Fastmarkets most recently assessed the price for aluminium scrap floated frag, delivered consumer Europe at €1,580-1,680 per tonne on Friday, July 1, up from €1,420-1,490 per tonne one year earlier, after reaching a peak of €1,920-2,000 per tonne in March 2022.

New 'green' automotive extrusion press in Denmark

Hydro will also invest 300 million Norwegian krone ($29.69 million) in a new extrusion press at its plant in Tønder, Denmark.

The 12-inch press will mainly serve the European automotive and electric vehicle (EV) market, adding production capacity and the capability to produce extrusions with larger cross-sections.

"The Tønder plant is an important part of our automotive network, supplying European carmakers with high-end and safety-critical components. We are expecting rapid growth in the automotive industry's use of extruded aluminium components in the coming years," said Bruno D'hondt, Hydro's senior vice president, who leads the European extrusion business unit.

"This is in line with our strategy of lifting profitability and driving sustainability in our automotive business," he added. Hydro expects to extrude the first billet from the new press in mid-2024.

The Tønder plant sources low-carbon and recycled aluminium from Hydro and has direct access to Hydro recycled aluminium range 'Restore' which is produced at the Sjunnen recycling operation in Sweden.

The entire production process at Tønder, including extrusion and fabrication, is based on renewable hydropower from Sweden, Hydro said. Fastmarkets last assessed the aluminium low-carbon differential value-added product, Europe at $20-35 per tonne on Friday, July 1, rising from $10-15 per tonne when the differential was first launched in May 2021.

Copper price expected to rebound further, poll shows

Copper prices are expected to rebound further in the coming months after heavy losses, a Reuters poll showed, as China unleashes more infrastructure spending and

other stimulus for the economy.

News of more infrastructure projects and support for

China's property market boosted copper prices this week.

Copper rose 2.9% to $3.58 ($7,876) a tonne on the Comex market in New York during the Friday morning session.

"Industrial metal prices may have undershot as the market mood shifted sharply from extremely bullish to bearish," said Julius Baer analyst Carsten Menke.

"While China's lockdowns remain a wild card, we believe the worst in terms of Chinese growth is behind us."

Analysts expect a tight supply situation to ease, having marked down estimates for a global deficit this year to 30,000 tonnes, less than a third of the 110,000 tonnes forecast in the April poll.

Codelco copper slump underscores global mine supply challenges

Codelco, the world's biggest copper supplier, saw production fall 9.3% last quarter from a year prior, the latest example of supply-side challenges for metal markets.

The results delivered Friday by Chile's state producer reflect a disappointing year of output for a nation that accounts for about a quarter of the world's mine supply.

On the same day, the South American country's copper commission projected a 3.4% annual drop in domestic production amid declining ore quality, water restrictions and union protests.

Mines globally are grappling with logistical challenges exposed by the pandemic and exacerbated by Russia's invasion of Ukraine and Chinese lockdowns against the coronavirus — all at a time of ballooning costs and lower prices.

The Santiago-based firm produced 371,000 metric tons in the second quarter, down from 409,000 tons a year earlier. Its revenue tumbled along with a commodity rout spurred by recession fears.

The Chilean government's copper commission, Cochilco, said Friday that it expects prices of the metal to recover in the remainder of the year amid waning concerns over global inflation and Chinese measures against Covid-19. Still, it noted plenty of risk, including a sharper-than-expected global slowdown and consumer price surprises that could spur further monetary tightening.

While the copper market is expected to swing to a small surplus as demand softens and new supply enters from the Democratic Republic of the Congo, longer-term prospects remain bright due to need for battery metals in the push toward cleaner energy.

In the meantime, supply disappointments may help blunt softening consumption as economies slow. While Chile has the largest copper reserves, ore grades have been steadily falling, meaning mines need to move more rock to produce the same amount, pushing up costs.

In June, Codelco endured protests at some operations after disclosing a plan to shut one of its smelters over contamination concerns. Earlier this month, it temporarily halted work on projects to review safety procedures after two fatal accidents.

The state company recently approved a plan to resume work on a $1 billion desalination plan in northern Chile as part of a goal of reducing continental water consumption by 60%.

Copper futures rose on Friday, heading for their best week since early March.

Glencore copper production down 15% in H1, reduces FY2022 copper guidance

Glencore (LSE: GLEN) reported today that its own sourced copper production was 510,200 tonnes in H1 2022, down 15% compared to H1 2021.

The company said that lower copper production was due to ongoing geotechnical
constraints at Katanga, the basis change arising from the sale of Ernest Henry in January 2022, Collahuasi mine sequencing and lower copper units produced within Glencore's zinc business.

Glencore's own sourced zinc production was 480,700 tonnes in H1 2022, 17% lower than in H1 2021 reflecting progressive reduction in the South American portfolio through disposals and closures, Covid-19 related absenteeism leading to lower development rates and sequence changes at Mount Isa and somewhat lower Antamina production.

The company's own sourced nickel production was 57,800 tonnes in H1 2022, up 21% than in H1 2021 reflecting Koniambo operating both production lines in 2022 and Murrin stable operations compared to maintenance in base period.

The company's attributable ferrochrome production of 786,000 tonnes in H1 2022 was 2% higher than in H1 2021, reflecting consistent smelter performance.

Coal production was 55.4 million tonnes, or 14% higher

than in H1 2021, mainly reflecting higher attributable production from Cerrejón, following the acquisition in January 2022 of the remaining two-thirds interest that Glencore did not already own.

Importantly, Glencore said that its full-year 2022 production guidance remains unchanged with the exception of copper, where the ongoing geotechnical constraints relating to Katanga's open pit and continued management of higher levels of acid-consuming ore, largely account for the reduced guidance of 1,060kt (previously 1,110kt).

Glencore is one of the world's largest global diversified natural resource companies and a major producer and marketer of more than 60 commodities. Glencore companies employ around 135,000 people, including contractors.

Vale Indonesia, China's Huayou sign agreement with Ford for nickel plant

Nickel miner Vale Indonesia, China's Zhejiang Huayou Cobalt and U.S. car maker Ford Motor signed a non-binding memorandum of cooperation to build a plant in Indonesia to extract nickel chemicals, Vale said in a statement on Thursday.

The companies plan to create a partnership to build a plant to produce 120,000 tonnes per annum of mixed hydroxide precipitate, material extracted from nickel ore that would be used in batteries for electric vehicles.

Vale said the new partnership with Ford will be built on its framework agreement with Huayou, signed in April. Under the April agreement, Huayou will develop the project in Southeast Sulawesi and Vale will have rights to acquire up to a 30% stake in the project.

"This three-way relationship is a creative way to secure the nickel Ford needs to help deliver millions of EVs for our customers and it keeps our environmental, social and governance goals front and center in the process," Lisa Drake, Ford's vice president of EV industrialization, said in the statement.

SMM expects 31% increase in the Lithium Battery Scrap volume to reach 1,72,782 mt in H2 2022

According to the SMM survey, a total of 131,446 mt of lithium battery scrap (including batteries, pole pieces and black mass) were recycled in China from January to June 2022. In January 2022, recycling enterprises rushed to restock lithium battery scrap raw materials to reserve their raw material inventory after the Spring Festival holiday. In February 2022, due to the Spring Festival, logistics and transportation stagnated, and suppliers resumed their work late, thus the purchase of scrap decreased.

Enterprises mostly consumed their in-plant inventory of

raw material, and the recycling volume dropped by 57% compared with January. At the beginning of March 2022, the "Black Swan" incident of nickel prices directly affected the domestic prices of refined nickel. The pricing of lithium battery scrap is based on the prices of refined nickel and nickel content. At this time, the downstream precursor procurement tended to be cautious, affecting the demand for nickel and cobalt salts. Recycling enterprises mostly held a wait-and-see attitude and slowed down their purchases, etc., resulting in the overall recycling volume still not recovering to the level of January.

From April to May 2022, the pandemic situation in China was severe. Long-term pandemic-related closure and control in Shanghai and other places affected the supply chain and production of some car companies, weakening the demand in the ternary market. However, the cost of recycling lithium battery scrap gradually increased, and the profits of nickel-cobalt products decreased. Some enterprises had to cut their production to mitigate risks, which indirectly leads to the low recycling volume. In June 2022, with the improvement of the pandemic, the ternary demand gradually recovered. Recycling enterprises made a large number of purchases and replenishment in June, and the recycling volume increased by 62% compared with that in May.

According to the SMM data, from January to June 2022, 82,963 mt of ternary scrap, 38,290 mt of LFP scrap and 10,192 mt of LCO scrap were recycled. Ternary scrap accounts for 63%, LFP scrap accounts for 29%, and LCO scrap, for 8%. Because the ternary scrap contains Ni-Co-Li elements, it can be recycled and extracted to make nickel sulphate, cobalt sulphate, lithium carbonate and other raw materials, and the comprehensive yield is higher than that of LFP and LCP. Therefore, ternary battery powder and pole piece powder are the hottest raw materials in the

recycling market, and the former accounts for more than half of the recycling industry. The lithium in LFP scrap can be recycled, and the output of lithium carbonate can also bring higher gross profit. At present, it is on the eve of the decommissioning of LFP batteries, recycling enterprises are also laying out LFP scrap production lines, and the recycling volume of LFP will increase gradually and steadily. As an important raw material for recycling cobalt smelting enterprises, LCO scrap can produce high cobalt salt to ensure the long-term supply of cobalt salt, and at the same time, recycling and extracting lithium can also obtain some considerable profits.

Battery swapping: How India is pushing ahead with electric vehicle adoption

The Indian vehicle market is dominated by two and three wheelers, which makes it simpler to charge and swap out smaller powerpacks.

t may not have enough electric vehicles, powerpacks or the capital, but India has found a way towards mass electrification: swap batteries.

The solution, where empty batteries can be exchanged for charged-up ones, is still in nascent stages in China, the world's largest EV market, where it is anchored in strong government policy. Elsewhere, it hasn't quite taken off. But for India, it could help leap-frog the nation's bid to reduce transport emissions and boost its electric footprint.

Across the Indian capital's dense localities, battery swapping stations are becoming a frequent site at local provision stores and small retail outlets. Meanwhile, the government has pushed out an EV battery swapping policy draft in recent months to bolster adoption and supply. It's also scouting sites along India's emission-heavy highways for new stations for swapping and charging.

For the most part, ambitious Indian startups have pushed their way forward. Sheru, a technology platform, allows electric autorickshaw drivers to swap batteries at retail stores or pay as they use them. It's working with stakeholders across the energy storage value chain. Meanwhile, Battery Smart, which just raised $25 million in a funding round led by Tiger Global, is focused on quickly building a swapping network and is working with domestic battery manufacturers. Sun Mobility is partnering with Amazon India in Maharashtra to put swapping stations at its warehouses.

For now, it's showing promise because the Indian vehicle market is dominated by two and three wheelers, making it simpler to charge and swap out the smaller powerpacks. It brings down the costs of commute sharply for users, while increasing energy efficiency. These smaller vehicles are also responsible for a significant share of the emissions. This way could prove to be a model for other emerging markets across the world, struggling to meet their green promises.

The policy draft, while a progressive step, will need to be backed by state governments and big bucks to be adopted in smaller, denser and more polluted second and third tier cities. It'll also need to get meatier on details on the types of batteries to maintain quality, insurance for the safety of drivers and manufacturers, and providing better tax incentives for increasingly pricey powerpacks. In addition, state enterprises need to get involved, as they have in China

Feasibility of battery swapping for cars

The longer-term challenge for India will be whether it can use battery swapping for cars effectively when mass adoption reaches the four wheeler category.

Even the likes of Tesla Inc. have tried battery swapping. But Musk's company abandoned the project after setting up just one battery station. Other attempts include a Renault-Nissan alliance that had agreed to manufacture 100,000 EVs to the specifications of Better Place, the now defunct venture capital-backed firm that developed and sold battery charging and switching stations.

Passenger Vehicle dispatches increase by 19 pc in June as Chip supply improves

As per the latest month data released from SIAM for the month of June 2022, indicate that the industry seems to have bounced back in the first quarter of the financial year 2022-23 as Covid restrictions wane and supply chains get better with an improved chip supply.

The month of June 2022 also saw the total passenger vehicle dispatches to dealers rising 19% year-on-year to 20,81,148 units, data released by the industry body SIAM (Society of Indian Automobile Manufacturers) shows.

Commenting on Q1 performance, Mr Rajesh Menon, Director General, SIAM said, "In Quarter-1 this year, sales in the Passenger vehicle segment stood at 9.1 lakh units, in Two-wheeler segment 37.25 lakh units, in Three-wheeler segment 76 thousand units and in Commercial vehicle segment 2.25 lakh units.

Recently the government has taken significant measures to ease the inflationary pressure and help the common man by reducing central excise duty on petrol & diesel and changing the duty structure to moderate prices of steel & plastic.

Indian Automobile Industry appreciates and thanks the government for these efforts. Industry also keenly looks forward to similar support on CNG prices which has seen exponential increase in the last 7 months. Support on CNG prices would help the common man, facilitate public transport and will enable a cleaner environment." Society of Indian Automobile Manufacturers.

Total commercial vehicle wholesales also rose to 2,24,512 units against 1,05,800 units a year ago. Two-wheeler dispatches jumped to 37,24,533 units as against 24,13,608 units in the year-ago period.

Similarly, three-wheeler dispatches grew to 76,293 units in the first quarter from 24,522 units in the year-ago period.

Total sales across categories rose to 49,35,870 units in the April-June quarter compared to 31,90,202 units in the first quarter of last fiscal.

SIAM Director General Rajesh Menon said that in the first quarter, PV sales stood at 9.1 lakh units while two-wheeler dispatches were at 37.25 lakh units. Similarly, commercial vehicle sales stood at 2.25 lakh units.

"Recently, the government has taken significant measures to ease the inflationary pressure and help the common man by reducing central excise duty on petrol and diesel and changing the duty structure to moderate prices of steel and plastic. Indian automobile industry appreciates and thanks the government for these efforts," Menon said.

The industry also keenly looks forward to similar support on CNG prices, which have seen an exponential increase in the last seven months, he said.

"Support on CNG prices would help the common man, facilitate public transport and will enable a cleaner environment," Menon added.

SIAM

Segment wise Comparative Production, Domestic Sales & Exports data for the month of June 2022

(Number of Vehicles)

Category	Production		Domestic Sales		Exports	
Segment/Subsegment	June		June		June	
	2021	2022	2021	2022	2021	2022
Passenger Vehicles (PVs)*						
Passenger Cars	167,932	159,121	121,378	132,342	34,837	37,071
Utility Vehicles (UVs)	117,913	154,492	100,760	133,076	17,677	19,437
Vans	10,145	10,398	9,495	10,370	397	97
Total Passenger Vehicles (PVs)	**295,990**	**324,011**	**231,633**	**275,788**	**52,911**	**56,605**
Three Wheelers						
Passenger Carrier	49,047	53,078	5,615	17,934	45,278	33,674
Goods Carrier	2,720	7,551	3,559	7,050	1,406	287
E-Rickshaw	41	1,282	196	1,464	-	-
E-Cart	22	240	34	253	-	-
Total Three Wheelers	**51,830**	**62,151**	**9,404**	**26,701**	**46,684**	**33,961**
Two Wheelers						
Scooter/ Scooterettee	252,558	449,905	247,499	421,362	23,995	33,535
Motorcycle/Step-Throughs	1,077,419	1,210,557	777,169	849,928	322,314	361,585
Mopeds	19,653	34,326	35,897	37,474	726	288
Total Two Wheelers	**1,349,630**	**1,694,788**	**1,060,565**	**1,308,764**	**347,035**	**395,408**
Quadricycle	746	198	-	47	665	234
Grand Total	**1,698,196**	**2,081,148**	**1,301,602**	**1,611,300**	**447,295**	**486,208**

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

Society of Indian Automobile Manufacturers (13/07/2022)

10th International Bauxite,Alumina & Aluminium Conference & Exhibition

IBAAS-JNARDDC 2022

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NEW DATES

September 14-17, 2022

Courtyard Marriott, Raipur, INDIA

- Participation by more than 50 companies
- Over 200 delegates expected to attend
- Over 40 abstracts received
- Non-Ferrous metal recycling sessions by JNARDDC
- Aluminium Sustainability sessions by ASI

Special Sessions

Sustainability by Aluminium Stewarship Initiative ASI (September 16)

One day brainstorming on Non-Ferrous Metal Recycling in India to be organized by JNARDDC (September 17)

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