

Vedanta first in India to launch primary foundry alloy

Vedanta Aluminium becomes first Indian aluminium producer to launch primary foundry alloy for the automotive industry. **Mayank Dhingra** reports.

Vedanta Aluminium, one of the largest primary aluminium producers of India, recently announced the formal launch of its newest product line, Primary Foundry Alloy (PFA) for the Indian automotive industry.

After unveiling PFA in early September at the SIAM annual convention, the company became the first primary aluminium producer to supply the raw material for alloy wheels in the country. The company says until now, the automotive and ancillary industries were completely dependent on imports for the product.

Vedanta is investing in creating a PFA capacity of 240,000 tonnes in alignment with the government's 'Make in India' initiative to cater to the domestic requirements of automotive suppliers and OEMs to rely on locally sourced raw material. The company says the localisation of the sustainable domestic raw material supply chain will help the Indian automotive industry in its lightweighting initiatives as well as reduce forex outgo.

According to Ajay Kapur, CEO - Aluminium and Power, Vedanta, "As a long-term strategy, we are adopting various



PFAs' excellent metal quality and their outstanding castability, makes these alloys a great option for the automotive industry.

measures to serve the growing demand of our Indian customers. With the introduction of the Primary Foundry Alloy, we have expanded our product portfolio that will enhance our reach to the end customers and allow us to become a significant player in the product value chain in the automotive industry. We believe the new product will not only support the auto sector but also help reduce India's import bill."

PFA is a part of the cast aluminium alloy family, which is predominantly an alloy of aluminium,



Ajay Kapur, CEO - Aluminium and Power, Vedanta Aluminium, revealed the primary foundry alloys at the SIAM Convention 2019.

Vedanta Aluminium's Jharsuguda plant. The company says PFAs will be ideal for aluminium alloy wheels, cylinder heads and brakes and expects that with the increasing focus on reducing vehicle weight, safety-critical parts will be made from PFA instead of cast iron to offer increased strength.



INTERVIEW AJAY KAPUR, CEO, ALUMINIUM AND POWER, VEDANTA ALUMINIUM

PFAs, which are known to have excellent metal quality and outstanding castability, are typically used for parts, components and structures. What parts, in your opinion, are they ideal for?

Primary Foundry Alloy (PFA) for the automotive industry will be ideal for aluminium alloy wheels, cylinder heads and brakes. We also anticipate that with increasing focus on reducing vehicle weight, safety-critical parts will be made from PFA instead of cast iron in order to offer higher strength.

What is the cost-benefit analysis for PFA compared to conventional materials?

The lightweight property of PFA will play a key role in saving costs. It should be noted that 1 kg of aluminium is capable of substituting 3kg of steel. Aluminium is also better and durable in comparison to steel and therefore delivers better value. Moreover, the investment in creating this new product line will allow automotive suppliers and OEMs to locally source materials rather than importing them. This localisation of the sustainable domestic raw material supply chain will further reduce cost.

At which of Vedanta's facilities have you incorporated the 240,000T capacity that was announced?

Vedanta has a capacity of 10 KTPA in Jharsuguda and alongside, Bharat Aluminium Company (BALCO) has a capacity of 90KTPA. In 10kg (small form) category, we have 190KTPA and in the 22kg category, we have 50KTPA capacity.

How soon do you plan to commence supplies of PFA to automotive ancillaries and OEMs?

We have already started

supplying to OEMs and ancillaries in the area of wheel manufacturing in India. Our proactive move to expand business on this front helped us on-board some of the most reputed equipment manufacturers and auto ancillaries as our clients. In the near future, we will look to expand our alloy portfolio for supporting manufacturing of cylinder heads, ABS brakes and certain applications where steel or iron is getting substituted with aluminium alloy.

How smooth was the overall process, given that automotive companies first go through rigorous checks and balances before material approval?

We have installed best-in-class capacities at our plants in Jharsuguda and BALCO. We are also the first company in India to attain TS-16949 certification. Considering the approval process, the key OEMs and ancillaries in India have been already on-boarded. The process is on for the rest of the players.

What portion of the total capacity would be dedicated to the automotive sector?

At our cast houses, we have a dedicated 240 KT Primary Foundry Alloy capacity focused on the automotive sector. Almost 10 percent of our billet volumes are sold to the automotive sector. Overall, 15 percent of Vedanta's aluminium sales feed the automotive sector.

While price advantage is going to be a key factor prompting customers to shift to local from imported raw material, but where does the localised material stand against the imported one in terms of quality?

We have invested in cutting-edge technologies from internationally acclaimed companies such as Properzi



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of Italy and Befesa of Spain. This investment assures top-notch quality in our processed material. This is complemented with a state-of-the-art laboratory facility and product-testing equipment, which enable us to provide products that are at par or even better than our global peers.

Moreover, a supply chain based on domestic capability as opposed to imports ensures certain natural benefits for the business. In this case, the major benefits

will be inventory cost reduction, exchange rate risk optimisation, and more customised offerings.

While there is an anti-dumping duty on passenger vehicle rims currently enforced by the government, that's still not the case with two-wheelers. Do you voice the industry's opinion about implementing an anti-dumping duty for that segment as well?

In 2014-15, the government of India imposed anti-

dumping duty on import of passenger vehicle wheels. This move went on to create a pocket of investment in the country with many companies putting up manufacturing units in the last five years, which also went on to create scores of employment.

Interestingly, all these wheel manufacturing units are CNG-based and hence environment friendly. Similarly, the setting up of an alloy wheel manufacturing for two-wheeler segment instead of relying on imports (more than \$300 million at material level) will be a good opportunity for the country. Something we believe the government should consider.

According to ACMA, of nearly 35 million two-wheeler alloy rims annually, only 13 million are currently produced in the country. If an anti-dumping duty is imposed, do you think India is capable of handling all of the domestic demand?

Two-wheeler wheel manufacturers are not operating at their full capacity and always face steep price competition from China and other countries for supply. As I mentioned earlier, if the domestic two-wheeler wheel manufacturing ecosystem is supported, it can create the same robust investment story as that of four-wheeler wheel manufacturing in the country.

What new areas of application do you foresee aluminium taking place in the coming future, considering that lightweighting and meeting stricter emission norms are the biggest tasks facing automakers?

Aluminium is a metal of the future and holds strategic importance for the economy. Its versatility makes aluminium the metal

of choice for all kinds of transportation, power, aerospace, defence, building and construction needs. And given the role it plays in supporting the core sectors meet the government's 'Make in India' initiative, we expect its application to only expand with time.

Every kilogram of aluminium used reduces the weight of a car by a kilogram, if not more. India is already behind the global benchmark when it comes to aluminium usage in vehicles. Experts project that by 2025, the average aluminium content in a car will reach 250kg.

With stricter safety and emission norms alongside demand for lightweighting and electric vehicles, we foresee the aluminium industry segments like extrusion, casting and rolling play major transformational roles in the near future. Electric vehicles need to rely on aluminium to make the cars lighter and efficient. Aluminium will be used to substitute parts made of steel to optimise the weight of cars. Aluminium would be used for all safety components requiring strength.

Currently, India's foundry market for automotive components is small (only 10 percent of total foundry market – 10 million of cast iron + aluminium) in comparison to USA's foundry market which is at 14 million tonnes per annum, of which 3.3 million is aluminium (24%). With increasing focus on safety and emission, this gap is going to shrink in the coming years. We need to focus on bridging technology for casting aluminium in India to realise its full potential and the potential of aluminium.

Does PFA offer flexibility in properties compared to conventional aluminium?
A Primary Foundry Alloy-

casted auto component's strength can be increased through heat treatment. This is a unique feature that cannot be done with plain aluminium.

Is Vedanta researching such newer materials which would be helpful in building lightweight vehicle components in the times to come? Could you detail some examples?

Yes, we have a 'Centre of Excellence' at Jharsuguda, looking at specifically these areas of development. For instance, we have already started working on new alloys, which will be required in India to meet stricter safety and emission norms (ABS brakes, knuckle joints, cylinder heads).

Considering the nature of your business, do you consider electric mobility to be a threat or an opportunity for Vedanta in the future?

E-mobility will bring with it new ownership models and competition. It will be exciting and interesting to see how it pans out. However, as far as our market is considered, only 15-20 percent of passenger cars in India use aluminium alloy wheels, which are rapidly substituting steel wheels for their ability to perform better with tubeless tyres.

Moreover, India is importing aluminium wheels worth around US\$ 300 million per year alongside PFA import of US\$ 250 million. Hence, the opportunity is huge.

Are there companies in India which are using PFA-based products for exports?

There are ancillaries who are exporting wheels from India. We are well positioned to support them with supplies from India from our Special Economic Zone.

MAYANK DHINGRA



Primary foundry alloys are produced as continuous cast or mould cast ingots. The products are stacked and strapped into bundles of various sizes.

silicon and magnesium. Aluminium PFAs are known for their excellent metal quality offering superior castability that make them a preferred choice for critical applications in the auto industry. These alloys are used to manufacture important components such as alloy wheels, cylinder heads and brake systems among others.

Vedanta says at present, the share of aluminium alloy wheels in India is significantly lower compared to the rest of the world. With increased focus on lightweighting of vehicles, it is expected that over the next few

years there will be a surge in the uptake of alloy wheels due to certain undeniable advantages.

Metal of the future

The biggest strength of its products, the company claims, is that they use best-in-class technology to conform to the global specifications and standards as well as undergo rigorous quality assurance checks to ensure that customers access products of world-class quality. Vedanta states that its capability to customise these alloys also equips the company to address the varying requirements of the auto industry.

The introduction of PFA in the company's portfolio is part of its belief that aluminium is the metal of the future, and holds significant strategic importance for the economy. Its versatility makes aluminium the metal of choice for transportation, power, aerospace, defence, building and construction and packaging industry, and these new value-added products will assist its adoption for other industries as well. ■

PFAs find application in a number of automobile parts, components and structures.

