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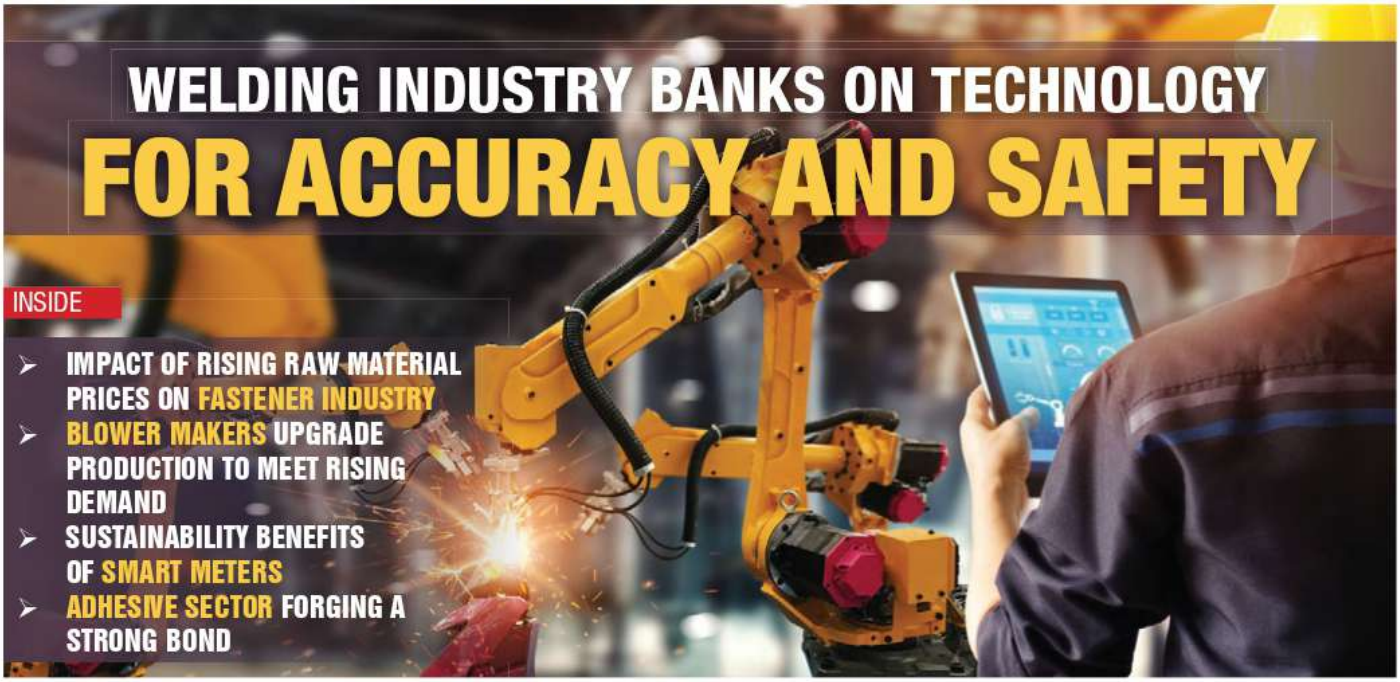

WELDING INDUSTRY BANKS ON TECHNOLOGY FOR ACCURACY AND SAFETY

INSIDE

UV, CO_2, FIBER LASER MARKING MACHINE

C And C Laser Engineering Pvt Ltd provides state-of-the-art laser marking machines with the lasers ranging from the Far IR – CO_2, IR – Fiber/Diode-pumped, GR & UV – Diode-pumped fiber-coupled lasers. These are flexible, cost effective and low maintenance marking systems. These laser marking machines have numerous benefits – compact design, air cooled, energy efficient, low maintenance, long-life components, faster processing, high reliability, reduced energy bills, and many more. The machines can mark on metals and non-metals as well. Customised solutions like engraving, 3D engraving, thin film patterning, security markings are also offered. Fixed, variable text, serial nos., bar-codes, logos, vector-raster graphics, ODBC external data, data from servers & much more is offered. C And C Laser Engineering also offers compact lasers for all applications – lasers of wavelengths from Far IR – CO_2 lasers, Diode-pumped fiber-coupled IR, Green, UV and DUV lasers, Diode Lasers. Lasers offered are used for industrial applications like cutting, welding, marking, engraving, research and medical.

C And C Laser Engineering Pvt Ltd
119, Shree Krishna Industrial Estate, Off Western Express Highway
Near Dahisar Toll Booth, Adj to Mahanagar Gas Station
Ketkipada, Dahisar (East), Mumbai 400 068
Tel: 022-49727168
Mobile: 09833105515
Email: info@cnclaserengg.com

SLEW BEARINGS

Mac Marketing Corp offers various types of slew bearings such as ball slew ring bearings single row, double-axial ball slew ring bearings, three-row roller slew ring bearings, cross-roller slew ring bearings, and combi slew ring bearings. These bearings are manufactured in European Union and these are already operating in different applications and industry sectors. They can operate in harsh environments and offer benefits such as significant high load cases, specific turning characteristics and high lifetime requirements. These bearings range up to 7000 mm outer diameter and beyond upon request. Mac offers solutions for various sectors such as stacker reclaimers, radar, gun turret, battle tank, rocket launcher, robots, wind mills, antenna, nuclear reactor, construction equipment, cranes, steel plant, cement plant, paper mills, Amusement parks, mining equipment, medical equipment, machine tools, water treatment plant & thickener, material handling equipment, foundry equipment, windmill tunnel, off-shore, aerial devices. MAC Marketing has over 30 years of experience in the field of rolling bearings and allied products, which find numerous applications in various industries, etc.

Mac Marketing Corporation
Mac Manor, No 235, RMV, 5th Cross
2nd Stage, 2nd Block, 80' Road, Bangalore 560 094
Tel: 080-23516096 Mobile: 09845018280
Email: info@macmktg.com

"Aluminium has potential for significant applications in RE sector"

Aluminium (Al) offers benefits like high strength to weight ratio, corrosion resistance, exceptional design flexibility, etc making it highly suitable for applications in renewable energy (RE) sector. Vedanta Aluminium - India's largest green power buyer - is looking to partner with extruders and downstream manufacturers catering to the solar industry for producing high-quality equipment. In this interview with Rakesh Rao, **Rahul Sharma, CEO – Aluminium Business, Vedanta Ltd,** highlights on the role of aluminium in RE sector and his company's plans.

How does renewable energy (RE) fit into Vedanta Aluminium's mission and vision?

Vedanta Aluminium is India's largest producer of 'green metal' aluminium and its value-added products. To meet our business and social sustainability imperatives, we have been leveraging global expertise, adopting green technology and smart solutions, and using resources judiciously, to create a lasting positive impact on the environment, our communities, partners, and customers.

Our vision is to become the leader in all aspects of business, and sustainability is no different. Aluminium manufacturing being an energy intensive process, we work with a two-pronged strategy – attaining the highest standards of energy efficiency at our plants, and increasingly moving towards a low-carbon energy mix.

Standing testimony to that fact, our aluminium smelters, alumina refinery and power plants are frontrunners in energy-efficiency nationally. On the renewable energy adoption front, Vedanta Aluminium Business was India's largest green power buyer, procuring 354 million units of renewable energy at the Indian Energy Exchange Green Market in Q1 FY 21-22.

What are the key challenges in the growth of the RE sector?

Lack of funding is primary challenge that India needs to overcome in order

to achieve its target of 175 GW of renewable power by 2022. Indian Renewable Energy Development Agency (IREDA) also has to deal with nearly Rs 21.2 billion tied up in 86 NPAs, and 30+ projects being overdue accounts with outstanding loans of Rs 17.48 billion. There is also the matter of outstanding dues of RE generators/producers, which amounted to Rs 117.5 billion in July 2020, which is further stressing the assets.

Secondly, with solar energy being a key component of India's RE ambitions, solar parks can provide economies of scale. However, to build and manage them efficiently, India will need to have forward-looking and well-aligned policies across states and interlinked industries, promote domestic manufacturing of cells and modules, incentivise developers and discoms, and improve the power infrastructure. Collaboration among energy ecosystem partners like producers, discoms, investors and manufacturers is critical. Further, the industry will require its own technical expertise in the form of skilled workforce, workforce management, scheduling, understanding of legal and regulatory framework, etc.

What role can aluminium play in RE sector?

Aluminium is the second most important metal in the world today. It is a strategic metal, with critical applications in core industries such as aerospace, national defence, automotive, building and construction, electrical distribution, renewable energy generation, etc. The metal offers high strength to weight ratio, corrosion resistance, exceptional design flexibility and infinite recyclability, traits that have potential for significant applications in RE sector.

According to a World Bank report on green energy revolution, aluminium is the only metal that is both high-impact and cross-cutting, in all potential clean power technologies. Aluminium is used in most clean energy technologies - especially solar, where it accounts for 85% of most photovoltaic (PV) components in the form of the frames and mounting structures that hold the PV panels together and support

them. Besides being lightweight, extruded aluminium sections are strong and corrosion-resistant, so they can withstand extreme stress and loading from wind and other climactic forces.

Additionally, aluminium will find extensive usage in transmission and distribution of the energy generated, as it is the material of choice for energy transmission over long distances. According to the International Energy Agency, aluminium demand in transmission and distribution is slated to grow to 6.1 million tonnes and 10.3 million tonnes by 2040, from 2020 levels of 4.2 million tonnes and 5 million tonnes.

How is Vedanta Aluminium positioned to cater to RE sector?

Vedanta Aluminium offers the largest range of high-quality aluminium products like billets, wire rods, alloy ingots, slabs, rolled products, T-ingot, sow ingot, flip coils, P1020 ingots, and molten metal under one roof. Many of our products, especially billets and wire rods, have potential for extensive usage in the RE industry. Vedanta is the largest producer of wire rods, ex-China, and the largest exporter of billets to the US. Billets can be extruded to create mounting structures for solar panels, and wire rods find extensive usage in electrical transmission & distribution.

We are willing to partner with extruders and downstream manufacturers catering to the solar industry, and support them with top-quality line raw material. In fact, we have proposed the creation of an Aluminium Park near our largest aluminium smelter complex at Jharsuguda, Odisha, which has the potential to support a vibrant downstream ecosystem catering to multiple industries, RE included.

What are Vedanta Aluminium's climate impact reduction targets and priorities?

In FY21, we have significantly reduced our GHG emission intensity by 21% for our Aluminium Business with 2012 as baseline. We further aim on reducing our GHG emission intensity by 25% over 2012 baseline by 2025. The Vedanta Group has pledged to move towards carbon neutrality, and the Aluminium Business is making rapid strides to significantly contribute towards it.

Our sustainability priorities are mapped along the lines of – Governance, Environment (Air Quality, Water, Energy and Waste Management), Climate and Carbon Footprint, People Health & Wellbeing, and Social Impact. We have created targets against each performance area, keeping in line with industry benchmarks, which are driven under the watchful eye of a designated Sustainability Committee. We benchmark our sustainability practices with global peers, through platforms like the Dow Jones Sustainability Index.

Can you highlight some recent and ongoing sustainability initiatives at Vedanta Aluminium?

For us at Vedanta Aluminium, staying competitive in the market and being sustainable are two sides of the same coin. We are determined to make our business more sustainable through a robust approach that leverages best-in-industry practices and next-gen technology, consistent improvements in efficiency of resource-intensive processes, exploration of circular initiatives, and incorporation of 'Design for Sustainability' principles in the way we work. For example:

- Climate action initiatives across all Business Units have resulted in energy conservation of 1.4 million GJ and GHG savings of 0.32 million tonnes of carbon dioxide equivalent (tCO2e) in FY 20-21.
- Our aluminium smelter at Jharsuguda in Eastern India is India's first, and the world's third smelter to deploy Digital Smelter Solution, which uses digital twin technology, predictive and prescriptive analytics to enhance energy efficiency, reduce raw material consumption and arrest wastage of material.
- Cutting edge digital interventions like Manufacturing Execution System (MES) have enabled remote visibility of equipment level operations status and data analytics. This enables us to run our plants most efficiently and sustainably.
- Our power plants have incorporated digital twin technology for both predictive and prescriptive analytics to enhance efficiency, avoid downtimes and optimise operational processes.
- Image and video analytics, contextual analytics and situational awareness, safety & security risk analysis allow us to identify and avert risk with minimal human intervention.
- Vedanta Aluminium is now testing blockchain platform for international commodity purchases. Logistics Automation has enabled a highly efficient and entirely paperless process from mines to plants with increased efficiency and reduced leakages.
- We have partnered with Runaya Refining for 100% utilization of dross, a by-product of aluminium smelting, resulting in zero waste.
- We have recycled 16.5 billion litres of water in FY 20-21, leveraging technology for focused control and monitoring of water consumption. Water saving projects across our Alumina Refinery, Aluminium Smelters and Power Plants have alone resulted in water conservation to the tune of 700 million litres.

Vedanta Aluminium recently became India's largest green power buyer. Can you tell us a bit more about that?

We purchased 354 Million Units of green power from IEX Green Market for aluminium production at our largest integrated aluminium smelter in Jharsuguda, Odisha. This has also resulted in GHG emission reduction by nearly 0.28 million metric tonnes of CO2 equivalent, in line with our 2025 target of reducing GHG emission intensity by 25% over 2012 baseline. The consumption share of green energy at our operations is slated to grow significantly. IPF