

The possibility of a low carbon economy through aluminium

By **Mr. R.K Jain***

As large-scale concerted efforts to reduce global warming gather pace, a rise in demand for environment-friendly metals is due in the coming years. As the world looks towards a low carbon economy; graphite, lithium, and cobalt find a mention along with aluminium, which is however by far the winning metal as it fits in perfectly as the most circular metal. Manufacturers of consumer goods, the food and packaging industry, healthcare, transportation, power, and housing are among sectors that are reducing carbon footprint through the usage of aluminium over plastic - a product that worked wonders in a linear economy but finds no place in the current scheme of things.

By its virtue of being a 100 per cent recyclable metal without any quality degradation, aluminium presents itself as a much sought-after ingredient in a low carbon economy. As we approach the 2030 deadline for the Sustainable Development Goals of the United Nations, aluminium presents the option of being the metal that will help the industry deliver on low carbon footprints. Leading international automobile manufacturers have already set themselves deadlines of 2040-50 to turn fully carbon-neutral. These efforts are inclusive of the usage of aluminium whose significance can be gauged from the fact that - for every 2.2 pounds used in the manufacturing of a car, an equal amount of overall weight of the vehicle is reduced. Similar commitments have also been seen in the packaging industry - an important user of aluminium.

The Indian industry has recently come together for a common charter that is being looked at as a significant step to adopt self-decarbonisation methods. This development shows that the Indian industry is working in sync to make themselves ready for a zero-carbon future by 2040 and also committed to producing products that support a circular economy. The possibility of a low carbon economy through aluminium is connected to the

3 B's – Build Back Better. As we rebuild, we must adopt sustainable aluminium practices to ensure a green recovery from COVID-19, while also not losing focus on tackling the dangers of climate change. In the post-COVID world, as governments narrow down their focus, clean energy is only getting cost-effective and reliable. It offers the aluminium industry a purposeful opportunity as the demand for a low-carbon variant of metal will grow.

The COVID-19 pandemic has presented us with an opportunity that permits the aluminium industry to adopt a new

received over other metals and makes it a cornerstone for various industries.

Though a herculean task to achieve; aluminium's recyclability facilitates in building a circular economy as its properties are not lost when recycled. A plus point of recycling is also that it takes just 5 per cent of the energy required in electrolysis than producing aluminium from Bauxite, thus, reducing energy usage by 95 per cent. Besides savings on energy, recycling also brings down CO₂ emissions on a large scale. By some studies, this saving is around 95 per cent



outlook, where a circular approach and low-carbon footprints are the future. The road to a low carbon economy begins with using renewable or clean energy to produce aluminium moving away from fossil fuels that have a cost impacting the environment. The fact that 75 per cent of all aluminium ever produced is still in use lets it score over other metals in a circular economy. Offering a tensile strength that ranges from 40 MPa to 700 MPa (Mega-Pascal) and being highly resistant to corrosion, aluminium is better

on greenhouse gas emissions for recycling if compared to the production process of aluminium.

It is here that it becomes pertinent that the industry moves towards a low carbon future with aluminium. A projected 8 per cent growth over five years should put India among countries that offer the possibility of a low carbon economy through aluminium as increased sectoral emissions call for immediate measures to enable a low carbon economy through the metal's usage. ■

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