Waste Management in the Indian Aluminium Industry - Key to Circular Economy

Manasa Prasad Mishra
Director (Projects & Technical)
National Aluminium Company Ltd, Bhubaneswar, Odisha, India
Corresponding author: manasa.mishra@nalcoindia.co.in

Abstract

Aluminium is the second most used metal in the world, after steel, with an annual consumption of about 90 million tonnes (including scrap). When the world is aiming towards decarbonisation and Net Zero, aluminium with its obvious advantages, is poised to be a key enabler in achieving this goal and waste management would play a significant role in reaching this end.

India aims to become a USD 5 trillion economy in 5 years and a strong foundation is being laid to achieve this objective. The role of aluminium sector in this endeavour will be crucial. Government of India missions such as "**Make in India**" and "**Atmanirbhar Bharat**" aspire to make the country self-reliant in meeting all needs including production of high-end aluminium required for strategic sectors like defence and aerospace.
Production of primary aluminium, which is a resource intensive process, is also associated with significant amount of waste generation. While lot of focus is there on green aluminium, sustainable waste management has not received the desired attention.

Significant investment in R&D and collaborative efforts are needed to find ways to utilise the various waste generated in the aluminium value chain, i.e., from mining of bauxite ore to smelting and casting of aluminium. This paper deliberates on this issue, primarily from NALCO's perspective, the major wastes generated, the current practices of disposal and the opportunities for better management in future, in the backdrop of the latest developments in this field.

Keywords: Make in India, Atmanirbhar Bharat, Waste management in aluminium industry, Circular economy.