Alcoa's Advance Sustainably Strategy: The Alcoa Pathway to Sustainability in the Aluminium Industry

Pascal Lavoie
Director – Smelting Manufacturing Excellence
Alcoa, Deschambault-Grondine, Québec, Canada
Corresponding author: pascal.lavoie@alcoa.com

Abstract

As an infinitely recyclable, lightweight material, aluminium plays a pivotal role in realizing the world's decarbonization ambitions. However, a truly sustainable approach must take a mine-to-metal view of the entire production process and its associated impacts. As the inventors of the original aluminium process, Alcoa has a 135-year legacy of innovation and is leveraging that experience with a strategic priority to advance sustainably. This keynote presentation will outline some of the company's innovations and initiatives that are driving improvements across the entire aluminium value chain. Specifically, the presentation will discuss:

- Technologies to rehabilitate land after bauxite mining and accelerate reforestation in sensitive ecosystems.

- Processes that enable Alcoa to offer the world's only low-carbon smelter-grade alumina.

Alcoa operates the world's largest alumina refining system outside of China and has the globe's lowest average carbon footprint. The Company is also leading R&D to adapt Mechanical Vapor Recompression (MVR) to alumina refining via patent-protected innovation that has the potential to reduce a refinery's carbon footprint by 70 percent.

- Engineered solutions that unlock value from waste material, reducing environmental impacts from various production processes.

- Development of the revolutionary ELYSIS™ smelting technology, which has the potential to transform aluminium smelting by removing all direct greenhouse gas emissions from the traditional smelting process.

Through this presentation, industry partners and colleagues will learn how Alcoa is reducing impacts, protecting biodiversity, and setting industry benchmarks through innovative strategies and technologies.

Keywords: Aluminium, Sustainability, Mechanical Vapor Recompression, Elysis.