ALCOA AND RIO TINTO ANNOUNCE WORLD'S FIRST CARBON-FREE ALUMINUM SMELTING PROCESS

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- A revolutionary process to make aluminum produces oxygen and replaces all direct greenhouse gas emissions from the traditional aluminum smelting process.
- Alcoa and Rio Tinto launch new joint venture, Elysis, for larger scale development and commercialization of the process, with a technology package planned for sale beginning in 2024.
- Alcoa, Rio Tinto, the Government of Canada, the Government of Quebec and Apple agree to provide a combined investment of $188 million (CAD).
- Apple helped facilitate the collaboration between Alcoa and Rio Tinto on the carbon-free smelting process, and has agreed to provide technical support to the JV partners.
- Technology represents the culmination of decades' worth of research and development. Elysis will have access to a host of patents and intellectual property.
- Rio Tinto's Vincent Christ named Chief Executive Officer of Elysis.

PITTSBURGH--(BUSINESS WIRE)-- Alcoa Corporation (NYSE: AA) and Rio Tinto (NYSE: RIO) today announced a revolutionary process to make aluminum that produces oxygen and eliminates all direct greenhouse gas emissions from the traditional smelting process.

Executives of Alcoa, Rio Tinto and Apple were joined by Canadian Prime Minister Justin Trudeau and Premier of Québec Philippe Couillard for the announcement, which signals the most significant innovation in the aluminium industry in more than a century.

To advance larger scale development and commercialization of the new process, Alcoa and Rio Tinto are forming Elysis, a joint venture company to further develop the new process with a technology package planned for sale beginning in 2024.

Elysis, which will be headquartered in Montreal with a research facility in Quebec's Saguenay–Lac-Saint-Jean region, will develop and license the technology so it can be used to retrofit existing smelters or build new facilities.

When fully developed and implemented, it will eliminate direct greenhouse gas emissions from the smelting process and strengthen the closely integrated Canada-United States aluminum and manufacturing industry. The new joint venture company will also sell proprietary anode and cathode materials, which will last more than 30 times longer than traditional components.

Canada and Quebec are each investing $60 million (CAD) in Elysis. The provincial government of Quebec will have a 3.5 percent equity stake in the joint venture with the remaining ownership split evenly between Alcoa and Rio Tinto.

Apple is providing an investment of $13 million (CAD). The company helped facilitate the collaboration between Alcoa and Rio Tinto on the carbon-free smelting process, and Apple has agreed to provide technical support to the JV partners.

Alcoa and Rio Tinto will invest $55 million (CAD) cash over the next three years and contribute specific intellectual property and patents.

The patent-protected technology, developed by Alcoa, is currently producing metal at the Alcoa Technical Center, near Pittsburgh in the United States, where the process has been operating at different scales since 2009. The joint venture intends to invest up to $40 million (CAD) in the United States, which would include funding to support the supply chain for the proprietary anode and cathode materials.

Vincent Christ, an experienced leader with more than 30 years' experience at Rio Tinto Aluminium, has been named Chief Executive Officer of Elysis. Most recently, he has served as head of technology, research and development and automation programs. He holds an engineering degree in electronics and industrial information technology.

Quotes:

"This discovery has been long sought in the aluminum industry, and this announcement is the culmination of the work from many dedicated Alcoa employees. Today, our history of innovation continues as we take aluminum's sustainable advantage to a new level with the potential to improve the carbon footprint of a range of products from cars to consumer electronics."
Alcoa President and CEO Roy Harvey

"This is a revolutionary smelting process that can deliver a significant reduction in carbon emissions. It builds on the key role aluminium has to play in driving human progress, by making products infinitely recyclable, stronger, lighter and more fuel efficient. Rio Tinto is proud to work with Alcoa, Apple and the governments of Canada and Quebec, to drive an innovation that can transform the industry and our customers' supply chains."

Rio Tinto chief executive J-S Jacques

“Today’s announcement will create and maintain thousands of jobs for Canadians, significantly reduce Canada’s carbon footprint, and further strengthen the aluminum industry in North America. It is a truly historic day for the aluminum industry – and for all Canadian aluminum workers – who play such an important role in our economy and our country’s future.”
Prime Minister of Canada Justin Trudeau

“With the establishment of this new facility, Québec will continue to lead the world in the development of advanced aluminium smelting technologies. Our investment will play a key role in the large scale development of this carbon-free aluminium smelting technology, so it can be deployed and deliver significant environmental benefits with well paid, highly skilled jobs here in Québec.”
Premier of Québec Philippe Couillard

“Apple is committed to advancing technologies that are good for the planet and help protect it for generations to come. We are proud to be part of this ambitious new project, and look forward to one day being able to use aluminum produced without direct greenhouse gas emissions in the manufacturing of our products.”
Tim Cook, Apple CEO

Quick Facts about Elysis

- Our name refers to the process at the center of aluminum smelting, the electrolysis of alumina. It’s a tribute to our history, but it indicates a fundamental change that will be known as the Elysis process.
- Elysis will directly employ 100 people, including research and development, management and sales.
- At the Elysis facility in Québec, employees will work on the commercialization of the world’s first zero-carbon aluminum smelting technology.
- In Canada, the technology could eliminate the equivalent of 6.5 million metric tonnes of greenhouse gas emissions, if fully implemented at existing aluminum smelters in the country. That represents an amount roughly equal to taking nearly 1.8 million light-duty vehicles off the road.

About Alcoa

Alcoa (NYSE: AA) is a global industry leader in bauxite, alumina, and aluminum products, and is built on a foundation of strong values and operating excellence dating back nearly 130 years to the world-changing discovery that made aluminum an affordable and vital part of modern life. Since developing the aluminum industry, and throughout our history, our talented Alcoans have followed on with breakthrough innovations and best practices that have led to efficiency, safety, sustainability, and stronger communities wherever we operate. Visit us online on www.alcoa.com, follow @Alcoa on Twitter, and on Facebook at www.facebook.com/Alcoa.

Dissemination of Company Information

Alcoa Corporation intends to make future announcements regarding company developments and financial performance through its website at www.alcoa.com.

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