



## Rio Tinto and Alcoa announce world's first carbon-free Aluminum smelting process



**R**io Tinto and Alcoa Corporation announced a revolutionary process to make aluminium that produces oxygen and eliminates all direct greenhouse gas emissions from the traditional smelting process.

Executives of Rio Tinto, Alcoa 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 commercialisation 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 aluminium 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.

Rio Tinto and Alcoa 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 programmes. He holds an engineering degree in electronics and industrial information technology.

## Primetals Technologies sells two copper rod mills to Southwire for end user Ningbo in China

**E**nabling expansion into new geographic markets, Ningbo Jintian Copper (Group) Co. Ltd. has signed contracts with Southwire Company, LLC of Carrollton, Georgia, USA for two identical SCR 7000 copper rod mills to be supplied by Primetals Technologies in 2019. The first new mill will operate in Hangzhou, Zhejiang Province, China, and the second mill will be installed in Guangzhou, Guangdong Province.

Start-up is expected in the summer of 2019 for the first mill and early 2020 for the second. These new orders bring the total number of copper rod mills supplied by Primetals Technologies to Southwire for Ningbo to four, increasing their total annual installed capacity to nearly 1 million metric tons.



Primetals Technologies is responsible for the engineering, manufacturing and commissioning of the rolling mill and coiler equipment for the Southwire SCR 7000 rolling mills to produce electrolytic tough pitch (ETP) copper for the building construction wire and cable market. The contract scope includes a Morgan No-Twist mill with 13 independently driven roll stands, which will produce 2 to 4 ton

coils of 8 mm, 9.5 mm, 12.7 mm, 16 mm, 18 mm and 25 mm diameter rod from an 8,200 mm<sup>2</sup> cast bar at a production rate of 48 metric tons per hour. Each mill will have an annual capacity of approximately 315,000 metric tons.

The contract also includes for each mill a 24-inch entry shear and table, one 18-inch roughing mill stand, four 12-inch roughing mill stands, and eight 8-inch finishing mill stands, all with hydraulic roll mounting, a rod cooling and cleaning system including injectors and air wipes, rollerized turndown, two pinch rolls, coiler, designs for a conveyor with rotary turntable, and two lubrication oil systems. The arrangement will also include the latest inline recirculating coil handling system.