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Alcoa exploring technology to further reduce carbon emissions in alumina refining

PITTSBURGH, May 20, 2021 – Alcoa Corporation (NYSE: AA) today announced a development project with the potential to significantly reduce carbon emissions in the alumina refining process, which would further enhance the Company's strong sustainability performance across the aluminum value chain.

The Australian Renewable Energy Agency (ARENA) has granted to Alcoa of Australia \$8.8 million (A\$11.3 million) to test the potential use of renewable energy in a process known as Mechanical Vapor Recompression (MVR). Alcoa of Australia is currently conducting technical and commercial studies to adapt MVR technology to refining. Electricity sourced from renewable energy would power compressors to turn waste vapor into steam, which would then be used to provide refinery process heat.

If the feasibility studies are successful, Alcoa of Australia plans to install, by the end of 2023 a three megawatt MVR module with renewable energy at the Wagerup refinery in Western Australia to test the technology at scale.

"Already, Alcoa is the world's lowest carbon intensity alumina producer, and the application of MVR, if proven successful, would be an important step forward in further reducing greenhouse gas emissions," said Eugenio Azevedo, Alcoa's Vice President for Continuous Improvement. "Using lower carbon alumina in the smelting process will reduce the overall carbon footprint of the metal, too, when considering the indirect and direct emissions across bauxite mining, alumina refining and aluminum smelting and casting."

The MVR technology powered by renewable energy could reduce an alumina refinery's carbon footprint by 70 percent. The technology also has the potential to significantly reduce water use in the refining process by capturing water vapor that would otherwise be lost to the atmosphere.

Alcoa of Australia has filed provisional patent applications in Australia for the use of MVR technology in the alumina refining process. The patent applications cover a variety of MVR applications in retrofit and greenfield scenarios in refining.

The development project aligns with Alcoa's strategic priority to "Advance Sustainably." Today, Alcoa's global refining system has the industry's lowest average carbon intensity, and Alcoa is the only company providing a low-carbon alumina brand, EcoSource™. Marketed as part of the Company's [Sustana™ line of products](#), EcoSource has no more than 0.6 metric tons of carbon dioxide equivalents for every ton of smelter-grade alumina produced, which is better than 90 percent of the industry.

About Alcoa

Alcoa (NYSE: AA) is a global industry leader in bauxite, alumina and aluminum products, with a strong portfolio of value-added cast and rolled products and substantial energy assets. Alcoa is built on a foundation of strong values and operating excellence dating back 135 years to the world-changing discovery that made aluminum an affordable and vital part of modern life. Since inventing 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.

About Alcoa of Australia

Alcoa of Australia is owned by Alcoa World Alumina and Chemicals (AWAC), an unincorporated global joint venture between Alcoa Corporation and Alumina Limited that consists of a number of affiliated entities that own, operate or have an interest in bauxite mines and alumina refineries, as well as an aluminum smelter, in seven countries. Alcoa Corporation owns 60 percent of AWAC with Alumina Limited owning 40 percent.

Dissemination of Company Information

Alcoa Corporation intends to make future announcements regarding company developments and financial performance through its website at www.alcoa.com, as well as through press releases, filings with the Securities and Exchange Commission, conference calls and webcasts.

Forward-Looking Statements

This news release contains statements that relate to future events and expectations and as such constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements include those containing such words as “anticipates,” “believes,” “could,” “estimates,” “expects,” “forecasts,” “goal,” “intends,” “may,” “outlook,” “plans,” “projects,” “seeks,” “sees,” “should,” “targets,” “will,” “would,” or other words of similar meaning. All statements by Alcoa Corporation that reflect expectations, assumptions or projections about the future, other than statements of historical fact, are forward-looking statements. Forward-looking statements are not guarantees of future performance and are subject to known and unknown risks, uncertainties, and changes in circumstances that are difficult to predict. Although Alcoa Corporation believes that the expectations reflected in any forward-looking statements are based on reasonable assumptions, it can give no assurance that these expectations will be attained and it is possible that actual results may differ materially from those indicated by these forward-looking statements due to a variety of risks and uncertainties. Additional information concerning factors that could cause actual results to differ materially from those projected in the forward-looking statements is contained in Alcoa Corporation’s filings with the Securities and Exchange Commission. Alcoa Corporation disclaims any obligation to update publicly any forward-looking statements, whether in response to new information, future events or otherwise, except as required by applicable law.

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