

Mitsubishi Corporation Joins Landmark Demonstration Project for Hydrogen-Based Ironmaking with Primetals Technologies and Partners

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Mitsubishi Corporation (MC) today announced its participation as a strategic partner in a groundbreaking demonstration project aimed at developing a new hydrogen-based fluidized bed fine ore reduction process (HYFOR) and electric smelting furnace (Smelter) for ironmaking. MC will collaborate with Primetals Technologies (Primetals), Rio Tinto, and voestalpine in this initiative.

The project will involve the construction and operation of an industrial-scale prototype plant at voestalpine's steelworks in Linz, Austria, with operations slated to commence in mid-2027. This innovative ironmaking process is projected to have a capacity of 3 tons per hour, producing hot metal and hot briquetted iron utilizing Primetals' proprietary HYFOR and Smelter technologies. Rio Tinto will supply 70 percent of the iron ore feedstock for the demonstration.

HYFOR represents a significant advancement as the world's first direct reduction technology for iron ore fines that eliminates the need for agglomeration and can utilize a broad spectrum of iron ore types. Primetals has successfully operated a pilot plant since 2021, conducting numerous successful test campaigns. Notably, when utilizing hydrogen derived from renewable energy sources, the HYFOR process has the potential to significantly decrease CO2 emissions compared to conventional ironmaking methods. The Smelter, powered by renewable energy, will be employed for melting and final reduction of direct reduced iron (DRI) to produce hot metal for steel production. Funding for the prototype plant's investment

and operation is being provided by the Austrian federal government and the European Union.

The demand for DRI, which boasts lower CO₂ emissions in the ironmaking process, is anticipated to grow substantially in the medium to long term. The successful demonstration of the HYFOR and Smelter technologies through this project is expected to play a crucial role in the decarbonization of the steel industry. By actively promoting this project, Mitsubishi Corporation reaffirms its commitment to contributing to the realization of a decarbonized society.