Media Release

Australia's leading iron ore producers partner with BlueScope on steel decarbonisation

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Australia's two largest iron ore producers and its biggest steelmaker have partnered in their efforts to accelerate the decarbonisation of steelmaking by agreeing to jointly investigate the development of the country's first ironmaking electric smelting furnace[1] (ESF) pilot plant.

Under a new framework agreement, Rio Tinto, BHP and BlueScope will consolidate the work each party has completed to date, leveraging both BHP's and Rio Tinto's deep knowledge of Pilbara iron ores with BlueScope's unique operating experience in ESF technology.

The collaboration provides a platform to develop and potentially invest in a pilot facility and aims to demonstrate that production of molten iron from Pilbara ores is feasible using renewable power when combined with Direct Reduced Iron (DRI) process technology. If successful, it could help open a potential pathway to near-zero greenhouse gas emission-intensity operations for steelmakers that rely on Australian iron ore to meet global steel demand.

The parties will assess several locations in Australia for the proposed pilot facility, and will consider factors like supporting infrastructure, available workforce, access to target industry and supply chain partners, and suitability for operational trials. The pre-feasibility study work program is expected to conclude at year-end. If approved, the pilot facility could be commissioned as early as 2027.

Rio Tinto Iron Ore Chief Executive, Simon Trott said: "The carbon intensity of iron and steelmaking requires profound change to meet the needs of our planet and our climate objectives. We must find better ways to enable these materials to be made more sustainably through leveraging technology."

"We firmly believe the best way to tackle a challenge of this scale is through collaboration with industry and importantly this new agreement will leverage the more than two years of work we have already completed with BlueScope on this technology. This partnership will benefit from Rio Tinto's and BHP's unrivalled experience of Pilbara ores as well as the technical steelmaking capability and unique operating knowledge of BlueScope. We are excited to add this partnership to the suite of projects we have underway with our customers and suppliers to find better ways to accelerate their efforts to meet their decarbonisation targets."

Incoming BHP Western Australia Iron Ore (WAIO) Asset President, Tim Day said: "We are thrilled to partner with Rio Tinto and BlueScope to progress what we see as a potential breakthrough in reducing carbon emissions from steel production. Collaborations like this are so important for the success of these technologies and build on our work on blast furnace abatement projects, and our ongoing research and development projects with leading steelmakers, research institutes and technology providers around the world."

"Combining our expertise, we hope to help fast track near-zero emission-intensity pathways for steelmakers using Pilbara ores. Technology pathways compatible with renewable energy and scalable to the order of hundreds of millions of tonnes of steel production would be a major step forward in setting up Pilbara ores, and the world, for a low greenhouse gas emission future."

BlueScope Chief Executive Australia, Tania Archibald said: "We have a clear vision for BlueScope in Australia as a vibrant, modern and sustainable manufacturer with a clear role to play in enabling Australia's energy transition. Building a pathway to low emission-intensity iron and steelmaking in Australia is a key

[1] Also known in the industry as an 'electric melter'

priority for our business. We're excited to be partnering with Rio Tinto and BHP to explore the decarbonisation of the ironmaking process, and leverage the natural advantages of Australia – namely our iron ore resources and the abundant potential for renewable energy.

"We believe DRI is the most prospective technology to decarbonise our Australian business, and the development of ESF technology is key to unlocking Australia's unique advantages in this decarbonisation journey – and, more importantly, has the potential for wider adaptation across the global steel industry. We believe that this collaboration where we can contribute BlueScope's unique experience in operating an ESF will be key to cracking the code for Pilbara ores in low emission-intensity ironmaking."

Notes to editors

Pilot Electric Smelting Facility

A pilot facility would be intended to test and optimise production of iron from the ESF, a type of furnace being developed by leading steel producers and technology companies targeting low CO2 emission-intensity steel. The ESF is capable of producing iron suitable for the basic oxygen steelmaking (BOS) process. Iron ore is first converted to direct reduced iron (DRI) before being charged into the ESF. Together, the DRI-ESF equipment can replace the blast furnace, eliminating the need for metallurgical coal. Estimates show that reductions of more than 80 per cent in CO2 emission intensity are potentially achievable processing Pilbara iron ores through a DRI-ESF pathway, compared with the current industry average for the conventional blast furnace steel route.

Other lower CO2 emission-intensity production routes, such as electric arc furnaces, require scrap steel and DRI produced from high grade iron ores. The ESF allows for greater flexibility in input raw materials, addressing one of the key barriers to wider adoption of low carbon emissions technology. The ESF also has the potential to be integrated into a steel plant's existing downstream production units.

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