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Investigating low emissions steel production at Port Kembla

On behalf of the Australian Government, the Australian Renewable Energy Agency (ARENA) has today announced \$924,784 for BlueScope Steel to investigate options to decarbonise operations at the Port Kembla Steelworks (PKSW) in New South Wales.

The Port Kembla Steelworks Renewables and Emissions Reduction Study will consider the technical and economic viability of several decarbonisation options for the plant. This initial project will explore two main pathways to lowering emissions at Port Kembla: Smart Carbon Usage and Direct Carbon Avoidance. The project is expected to be completed in 13 months.

Smart Carbon Usage refers to opportunities to substitute coal with renewable carbon sources in the steel production process. The project includes a series of plant trials where BlueScope will investigate the potential to partially replace coal that is injected into the blast furnace with renewable biochar. Direct Carbon Avoidance refers to longer term opportunities to decarbonise steelmaking, including through the utilisation of renewable hydrogen, in combination with a Direct Reduced Iron process.

The project will provide valuable insights into the potential pathways to decarbonise steel production at PKSW. BlueScope's initial insights will be captured in a series of publicly released findings to maximise the benefit for a wider set of stakeholders.

BlueScope has engaged the University of Wollongong and the Future Fuels Cooperative Research Centre to assist in delivering the Project. These project partners will provide expertise in steelmaking technologies, process, modelling and pneumatic conveying of raw materials.

ARENA CEO Darren Miller said reducing emissions from making steel was a priority for Australia.

“To meet our net zero targets, Australia needs to reduce emissions from the iron ore mining sector and steel industry.

More than seven per cent of the world's emissions come from steelmaking and these emissions have proven difficult to abate. We're pleased to be partnering with an Australian company motivated to solve this decarbonisation challenge,” he said.

This project will explore prospective technologies which have the potential to reduce emissions across steel manufacturing at PKSW, including the role Australia's emerging renewable hydrogen industry can play on the pathway to low emissions steel. Based on the project's outcomes, future investigations will be tabled for those high-potential, priority technology options identified for PKSW.

“As the world's largest exporter of iron ore, Australia has an important role to play in lowering emissions across the steel value chain. We're excited by the insights this project will provide. This is a positive step toward building a low emissions steel industry here in Australia,” Mr Miller said.

ARENA has identified the steel and aluminium value chains as priority areas where it aims to support innovative and replicable technologies, processes and commercial models that can help to lower emissions.