

Rio Tinto partners with Caterpillar on autonomous machinery at advanced mine

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Development of Rio Tinto's most technologically advanced mine has progressed following an agreement with global equipment manufacturer Caterpillar to provide state-of-the-art heavy machinery for the Koodaideri iron ore operation in the Pilbara, Western Australia.

Caterpillar, with support of their local Western Australian dealer WesTrac, will supply a fleet of 20 autonomous 793F trucks as well as four autonomous blast drills. Beyond the autonomous fleet, Caterpillar will also provide loaders, dozers, graders, water carts and diggers for the operation which will be Rio Tinto's first Pilbara mine to be primarily operated using Caterpillar machinery. The two companies have also agreed to study the potential for increased levels of automation of heavy mining equipment at the mine in the future.

The partnership with Caterpillar at Koodaideri will enhance Rio Tinto's industry-leading Mine of the Future™ programme which connects all components of the mining value chain for the first time, as well as making increased use of automation and digitisation. Caterpillar's machinery will be integrated with Rio Tinto's Mine Automation System (MAS), which collects and enhances data created by the company's mining operations, to improve productivity across Rio Tinto's entire iron ore network.

WesTrac estimate the work will create 50 new WA-based roles across project management, product support and technical support, as well as technical trades and apprentices.

Rio Tinto Iron Ore chief executive Chris Salisbury said "We're pleased to be partnering with Caterpillar and WesTrac to help make Koodaideri the most technology-enabled and innovative mine in our Pilbara iron ore network.

"Technology is rapidly changing our mining operations as we harness innovation to make our operations safer, smarter and more productive. This extension of our partnership with Caterpillar and WesTrac represents an exciting step for our business.

"The development and adoption of technology will continue to change the way we work and we remain committed to providing opportunities for new roles, new skills, redeployment and retraining. Our partnership with the Western Australian government and South Metropolitan TAFE is working to develop the first nationally recognised certificates in automation, helping to ease the industry's transition to the mines of the future."

Caterpillar's group president with responsibility for Resource Industries Denise Johnson said "The Caterpillar team is looking forward to working with Rio Tinto at Koodaideri to apply our proven mining equipment and autonomous technology and to implement additional MineStar™ autonomy solutions. Caterpillar and WesTrac welcome the opportunity to support the development and operation of this technologically advanced mine. We are excited to work together to advance Rio Tinto's mine automation and digitalisation programme."

Notes for editors

Koodaideri, 100 per cent owned by Rio Tinto, is located approximately 35 kilometres north-west of Rio Tinto's Yandicoogina mine site, and about 110 kilometres from the town of Newman. The \$2.6 billion mine was approved in November last year with construction commencing earlier this year.

Koodaideri Phase 1 will help sustain Rio Tinto's existing production capacity by replacing depletion elsewhere in the system. Production capacity of the mine will be 43 million tonnes annually and is expected to commence by the end of 2021. A pre-feasibility study into Koodaideri Phase 2, which could increase annual capacity to 70 million tonnes, is ongoing.

Koodaideri has significant innovations in scope including:

- a digital replica of the processing plant, accessible in real time by workers in the field;
- fully integrated mine automation and simulation systems;
- advanced automation including an automated workshop, and;
- numerous data analytics capabilities and control loops to optimise production and reduce downtime.

Engineering firm Worley was recently awarded a contract to perform the engineering, procurement and construction management for the project. As part of the contract, Rio Tinto and Worley are utilising a data centric engineering approach and will produce a digital asset of the Koodaideri plant, making the operation safer and more efficient.

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