

Media Release

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Work starts on first zero-emissions capable freight locomotive built in Australia



Pictured: L to R: The Hon. Dr Steven Miles, Deputy Premier of Queensland; Lance McCallum, State Member for Bundamba; Andrew Harding, Managing Director & CEO, Aurizon and Colin Kerelchuk, Senior Vice President, Progress Rail.

Australia's largest rail freight company, Aurizon, today announced details of its investment to build the first zero-emissions capable freight locomotive constructed in Australia.

Aurizon has contracted Progress Rail, a Caterpillar company and global leader in rail technology solutions, to undertake the innovative project. This type of work has the potential to reduce Australia's transport emissions and transform the nation's freight supply chains.

This will be the first freight unit to be constructed in Australia powered by batteries, allowing the potential future use of totally renewable energy sources for freight hauls.¹ Batteries will also capture re-generative energy created when trains brake or travel downhill.

¹ Zero-emissions rail haulage will be technically achievable when totally renewable energy sources (eg solar, wind) are available to charge the locomotive batteries. This does not include associated activities such as loading and unloading and other activities within the haulage supply chain.

The prototype is being built at Progress Rail's Redbank facility in south-east Queensland. The unit will be designed as a heavy-haul freight locomotive, capable of working at locations across Aurizon's national footprint and suitable for Australia's harsh operating conditions.

Progress Rail will retrofit one of Aurizon's existing 4000-class diesel locomotives. Aurizon has more than 120 of the 4000-class locos in its national fleet, meaning a successful battery conversion could provide a much faster, less expensive decarbonisation pathway, using fully recycled assets.

Aurizon Managing Director & CEO Andrew Harding said the project sits at the heart of Aurizon's decarbonisation initiatives with a target of achieving net-zero operational emissions by 2050.

"Modern freight locomotives using renewable energy sources have the potential to transform the nation's freight supply chains for customers, communities and the Australian economy," Mr. Harding said.

"Not only will this dramatically reduce the carbon footprint for our freight transport needs and the community in general, but it will also provide a significant competitive advantage for Australian industries and exporters in global markets.

"Australia is ideally positioned to supply the world with great reserves of future-facing commodities that will fuel and feed a decarbonising world for decades to come. This includes commodities such as copper, nickel, rare earths, grain and phosphate.

"Delivering high-quality Australian products for export across zero or low-carbon supply chains will be a win-win for Australian companies and Australian communities," Mr Harding said.

"We are excited to support Aurizon in achieving their carbon reduction goals," commented Colin Kerelchuk, Senior Vice President at Progress Rail.

"This project leverages our worldwide capabilities, while heavily relying on our expert workforce in Australia. We will deliver this EMD® Joule out of our Redbank, Queensland facility, where we have recently secured a long-term lease extension to continue operations through 2034.

"With a presence in Queensland since 2015, we are well positioned to deliver broad technology and fleetwide modernizations to improve our customers' operational and emissions efficiencies," Mr Kerelchuk said.

Aurizon has also commissioned leading Australian universities (the University of Queensland and Central Queensland University) to undertake sophisticated modelling work and research on emerging battery technology, network infrastructure and charging facilities required to provide renewable electricity to the locomotive batteries.

Locomotives typically have an asset life of 20-30 years, so replacing the diesel engine with batteries and recycling the remainder of the locomotive is less expensive, more environmentally sound and based on circular economy principles.

The design phase and preliminary work on the retrofit has commenced at Redbank. Construction of the locomotive is expected to be complete by early 2025, with on-track trials commencing in the first half of 2025. The charging infrastructure on the selected Australian rail corridor will be completed concurrently.

NOTE NEWS EDITORS: Video footage of the conversion process is available [here](#), together with a [fact sheet](#).

About Aurizon:

Aurizon (ASX: AZJ) is Australia's largest rail freight operator and an ASX-listed company. Each year, the Company transports more than 250 million tonnes of Australian commodities, connecting miners, primary producers and industry with international and domestic markets. It provides customers with integrated freight and logistics solutions across an extensive national rail and road network, traversing Australia. This includes retail goods and groceries in containerised freight to cities and towns across our national footprint; future-facing commodities such as grain, phosphate and critical minerals; and of high-quality Australian coal and iron ore for export. We operate and manage 5,100 kilometres of track infrastructure that supports thriving domestic and export industries. This includes the Tarcoola to Darwin railway, a vital supply chain for central Australia that feeds into the nation's closest port to Asia; and the Central Queensland Coal Network which includes 2,100 kilometres of electrified corridor that is able to tap into renewable energy sources from the Queensland grid.

About Progress Rail:

Progress Rail, a Caterpillar company, is one of the largest integrated and diversified providers of rolling stock and infrastructure solutions and technologies for global rail customers. Progress Rail delivers advanced EMD locomotives and engines, railcars, trackwork, fasteners, signaling, rail welding and Kershaw Maintenance-of-Way equipment, along with dedicated locomotive and freight car repair services, aftermarket parts support and recycling operations. The company also offers advanced rail technologies, including data acquisition and asset protection equipment. Progress Rail's deep industry expertise, together with the support of Caterpillar, ensures a commitment to quality through innovative solutions for the rail industry. Progress Rail has a network of nearly 200 locations across the United States, Canada, Mexico, Brazil, Germany, Italy, Australia, China, India, South Africa, the United Arab Emirates and the United Kingdom. For more information, visit progressrail.com and follow @Progress_Rail on Twitter, YouTube, LinkedIn and Facebook.

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