

DECARBONISATION ACCELERATED

EXTENDED REALITY PITCH CHALLENGE

TUESDAY 12 SEPTEMBER 2023 | 12:30-5:30PM | THE PRECINCT

PROBLEM STATEMENT

The Australian resources sector has been the backbone for global and domestic energy production for many decades. With a long and proud history of innovation, the Queensland resource sector has continually embraced change to meet social and economic needs.

Growing social consciousness, combined with strong science, has seen many global companies, including mining companies, take a leadership position to lower their own carbon emissions. Given the strong demand for natural resources and elevated coal prices, there is a need to accelerate the reduction in carbon from the traditional resource sector, whilst still meeting demand.

Like any large industry, mining relies on a supply chain. That supply chain (METS businesses - Mining Equipment, Technology and Services) has an opportunity to be proactive in embracing the changes required to lower carbon outputs and secure new business opportunities being driven by decarbonisation.

The Greater Whitsunday region is striving towards a future state where we are renowned for our biomanufacturing, modern manufacturing, and agriculture industries. Mining of metallurgical coal will remain an integral sector within our region but with increased adoption of renewable energy sources and technology, including automation to enable production of lower carbon steel.

How can Extended Reality (XR) or immersive technologies be used to communicate how METS businesses can reduce their carbon outputs? And as a result, how will this reduction contribute to the broader decarbonisation and diversification vision for the region?

To do this, a solution is to be developed that communicates the following key messages:

- **What is decarbonisation?**
- **How can businesses reduce carbon outputs?**
- **What are the benefits of decarbonisation – to businesses and the Greater Whitsunday region?**
- **How can innovation be used to support the region's decarbonisation vision?**

A solution could be any immersive product – for example a VR experience, AR app or game, provided it utilises an immersive technology as its **primary** delivery method. Secondary delivery methods may be 2D video outputs, etc.

This pilot experience could be the first in a number of XR products that are used to educate and communicate steps and actions for decarbonisation and enhance a suite of online resources that will be developed.

KEY MESSAGE INFORMATION

What is decarbonisation?

Major companies with a presence in the Greater Whitsunday region, such as BHP, Anglo America, Nordzucker and Tassal, are already working towards decarbonisation targets. Their expectation is that their associated supply chain will decarbonise as a result.

To decarbonise is to significantly reduce or remove Carbon Dioxide (CO₂) emissions directly related to human activity (deforestation, electricity consumption and industrial manufacturing) from the atmosphere. While the definition of decarbonisation is widely understood throughout the Greater Whitsunday region, the 'how to' tends to be less understood.

The Decarbonisation Accelerated project focuses on the dimensions of people, industry, environment, and opportunity to identify initiatives that will support the Greater Whitsunday region and beyond to implement carbon reduction measures, while pursuing new value opportunities.

This challenge seeks to utilise XR as an education and/or communication tool to:

- effectively deliver information and resources to motivate and equip local businesses and sectors with the skills and capabilities to reduce carbon outputs.
- highlight the long term social and economic benefits for the business and the region through competitive advantage and diversification of value streams driving strong and sustainable economic growth by connecting into adjacent industries, as well as new emerging priority sectors.

How can businesses reduce carbon outputs?

To ensure continued participation in key supply chains, businesses will need to adapt and implement initiatives like Scope 1, 2 & 3 outlined below to make measurable reductions in carbon production.

Scope 1, 2 & 3 emissions is a classification system designed to group Green House Gas (GHG) emissions expelled by businesses to help measure, manage, and reduce their emissions.

Scope 1: Direct GHG emissions from sources owned or controlled by the business. *Reduce carbon outputs by:*

- Switching diesel and petrol cars for electric vehicles.
- Source alternative technologies that use renewable fuel and energy sources to power stationary combustion systems (manufacturing machinery).
- Update old machinery/tools and replace with energy efficient options.
- Reduce, reuse, recycle.

Scope 2: Indirect emissions from the generation or consumption of purchased energy including electricity, steam, heat, and cooling. *Reduce carbon outputs by:*

- Generating renewable energy onsite through solar or wind.
- Power Purchase Agreements. Purchasing power from a generator (usually solar or wind farm) at an agreed price over a fixed term, usually 10 years.

Scope 3: All indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions. Scope 3 provides the biggest hurdle for businesses wanting to reduce their carbon footprint. *Reduce carbon outputs by:*

- Reducing staff business travel (air, rail, taxis & buses).
- Collaborate on solutions to reduce emissions with current suppliers or consider changes to the supply chain.

Scope 1, 2 & 3 emissions is the physical process of reducing carbon emissions, but it is important to consider the opportunity to influence a change in human behaviour. The three main categories for a person to change their behaviour is capability, motivation, and opportunity. Ultimately, it is the positive human influence that a business requires to enable change processes. Educating staff on the process of decarbonisation, implementing systems, encouraging innovation, and highlighting the opportunities both personally and professionally for the individual and the business will increase the motivation and commitment of staff to the process of decarbonisation and the opportunity for diversification.

What are the benefits of decarbonisation – to businesses and the Greater Whitsunday region?

80% of the value in coal mining in our region is connected to metallurgical coal, which remains essential to the production of steel across the world. This sector will continue to be integral within the decarbonisation supply chain as the demand for steel increases due to renewable energy infrastructure and other technologies.

By decarbonising, the Greater Whitsunday region will become more robust, and more financially diversified to enable the region to absorb the rise and fall of economic conditions through new industry opportunities that arise in renewable energy, biofuels, biomanufacturing and agriculture industries.

Quality of life is a significant factor for many who call the region home and a low carbon economy will promote a competitive advantage for many businesses, which will create new jobs and open new markets for technologies and ideas. For businesses this will encourage people seeking employment opportunities that connect with their values to relocate to the Greater Whitsunday region.

Positive results of business decarbonisation can include cost savings, new revenue streams, brand loyalty, competitive advantage as well as ecological and social benefits.

How can innovation be used to support the decarbonisation vision?

Innovation will enable the rise of new sectors being driven by decarbonisation e.g. biomanufacturing, renewable energy, circular economy etc. It will create new value stream opportunities for both businesses and our region more broadly.

With decarbonisation gaining traction within the region, the development and adoption of low emission technologies will support the transition to renewable energy sources (wind, solar, biofuels and hydrogen) and improve energy efficiency.

To support the decarbonisation vision, businesses will need to adopt new technologies to assist them to decarbonise, e.g. renewable energy technologies, biofuel technologies, new modes of transportation (electric vehicles), new modes of communication and climate accounting.

Early planning and continual collaboration within the METS sector to adapt to the upcoming changes will ensure our region will continue to benefit from sustained economic growth as it moves towards decarbonisation. The increasing mandates for businesses to decarbonise and the drive to evolve, through financial motivation, capitalising on the opportunities that decarbonisation presents, will increase innovation and push businesses to diversify and increase efficiencies. To support the regions transition towards decarbonisation, new workforce opportunities will emerge to provide knowledge and support to businesses through education, training, carbon accounting and connection to new technologies.

ELIGIBILITY REQUIREMENTS

- Must have a Queensland registered ABN and be registered for GST.
- Be a Queensland-based start-up or SME with a full-time equivalent employee count below 200.
- Must have a product, which is at or beyond minimum viable product, being developed in Queensland.
- Must not have had a previous commercial contract with the Resources Centre of Excellence or GW3 - this opportunity is intended to provide new opportunities for SMEs/start-ups to work with these organisations.
- Must be a member of the Queensland XR Hub (can join when registering intent to pitch if not already a member).
- Must be available to pitch online the week of 21 August 2023 (if more than four eligible companies register).
- Must be available to pitch in person and have a demonstration booth at the Decarbonisation Accelerated XR Pitch Challenge event on Tuesday 12 September 2023 from 12:00pm - 5:30pm.

PITCH PROCESS

- Expression of Interest Registration - closes COB **4 August 2023**.
- Online Pitch Briefing Session - **7 August 2023**, 2:00pm - 3:30pm.
- Intent to Pitch Registration (10-minute pitch + 5 minutes for questions) - closes COB **14 August 2023**.
- Online pitches to shortlist to final four (if more than four eligible companies register) - week of **21 August 2023**.
- Finalist pitches at XR Pitch Challenge event - **12 September 2023**.
- Pitch winner to be announced on the day.
- Post event - contracts drafted and pilot development commences.

PILOT FUNDING

- The Resources Centre of Excellence will be providing \$40,000 AUD (excl GST) that will be matched by Advance Queensland. Total funding for pilot project is \$80,000 AUD (excl GST).