GLENCORE

GLENCORE SURAT HYDROGEN

Glencore's climate change commitments

Hydrogen is one potential pathway to a net zero emission future. Today hydrogen is mostly used by heavy industry but in the future hydrogen could also be used for energy and transport. Hydrogen could assist an orderly transition that allows utilisation of Australia's natural resources while also offering a pathway to achieving net zero emissions in Australia and globally.

Glencore aims to be a net zero emissions company by 2050. As well as providing the metals and minerals for a low carbon future, Glencore is investing in new ways to utilise the energy in coal reserves while also reducing emissions from fossil fuels. Glencore's Surat Hydrogen Project will produce hydrogen and ammonia from coal and use carbon capture and storage technology to capture and permanently store most of the emissions from the process.

Glencore's Climate Change Commitments

Our climate change strategy:

1. **Be a leader in enabling decarbonisation of global energy demand.**
2. **Help meet continued demand for 'green' metals for the transition.**
3. **Responsibly meet the energy needs of today.**

Our decarbonisation pathway

Our portfolio profile provides the flexibility to decarbonise our emissions footprint → **Short-term:** 2026 Target of 15% reduction in total CO_2e emissions[1] → **Medium-term:** 2035 Target of 50% reduction in total CO_2e emissions[2] → **By 2050** we have set ourselves the ambition of achieving net zero total CO_2e emissions[3,4]

(1) Compared with 2019 levels. (2) IPCC 1.5c aligned for fossil fuels sector by 2035. (3) Net zero ambition exceeds the pathway for IPCC 1.5°C. (4) Post 2035, we have set ourselves the ambition to achieve, with a supportive policy environment, net zero total emissions by 2050.

Advancing lower emissions hydrogen by utilising energy in coal resources with CCS

Glencore is overseeing a managed decline of our global coal business.

While our Australian business will continue to supply the coal required to meet ongoing global steel production and energy demand, our overall production profile will decline.

To meet our climate change targets we will remain responsible stewards of large undeveloped coal resources – like Wandoan in Queensland.

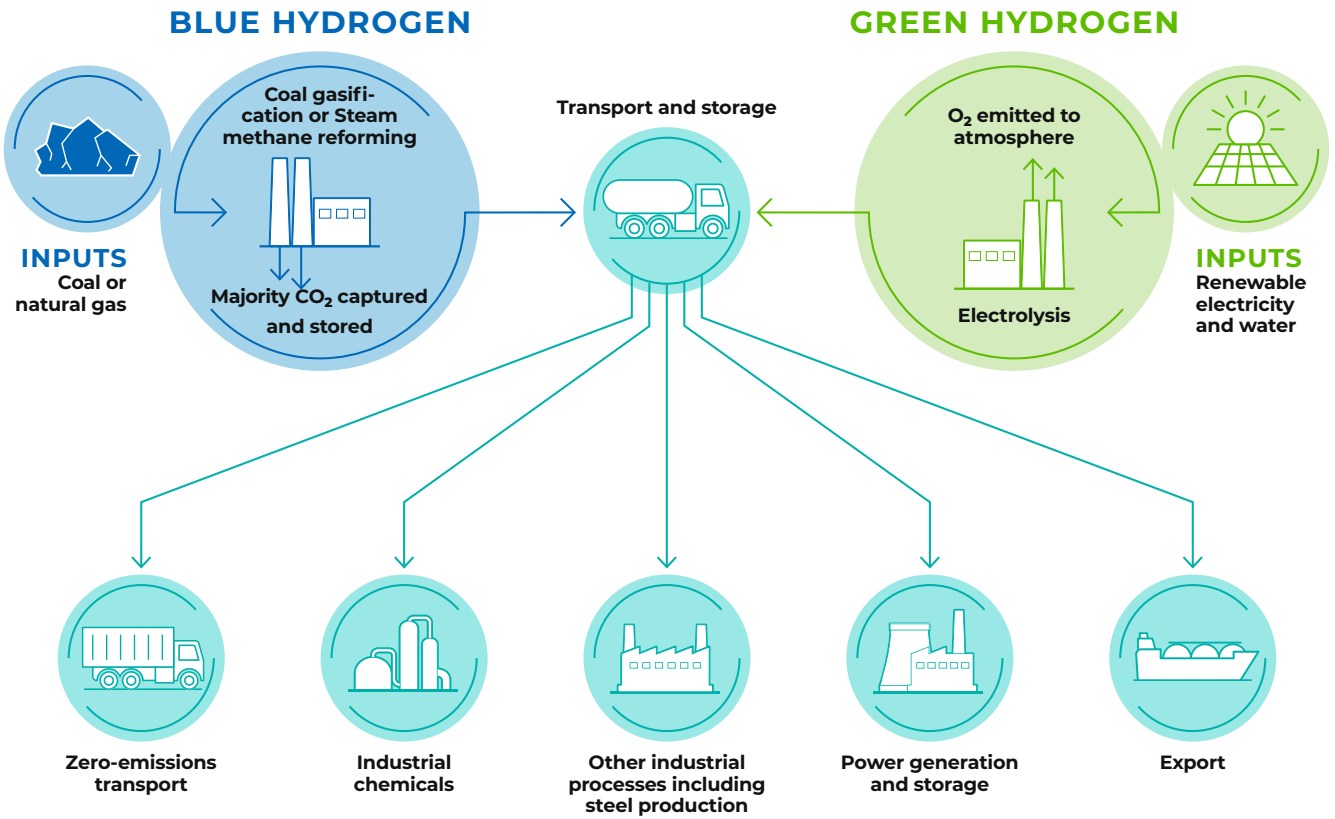
While Wandoan is unlikely to be developed to supply traditional coal markets, this coal resource contains valuable energy.

The challenge we set for ourselves was to consider an alternative way to utilise the energy contained in the Wandoan coal resource in order to:

- support the transition to a net zero emission economy
- create value by developing a state resource for the benefit of the community
- continue to meet Glencore's climate change commitments.

The Project is also consistent with the United Nations (UN) Sustainable Development Goals (SDGs), including universal energy access for all which has been identified as the 'overriding priority' by the UN Framework convention on Climate Change (UNFCCC) and G20.

What's the difference between Blue and Green Hydrogen?



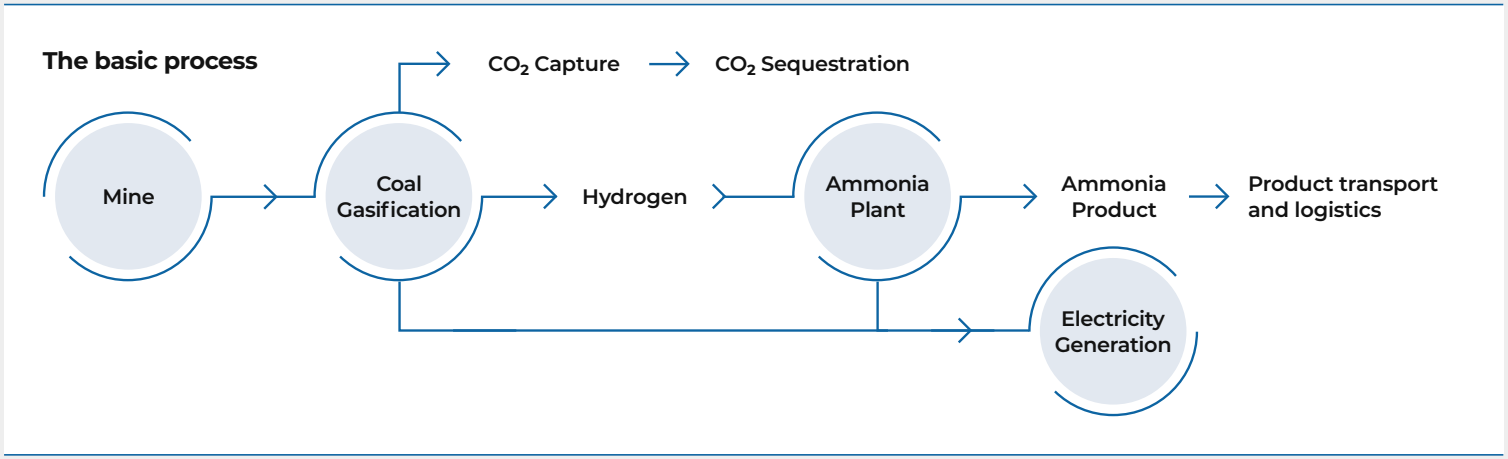
What is the Glencore Surat Hydrogen Project?

Glencore's Surat Hydrogen Project will produce hydrogen and ammonia from coal and use carbon capture and storage to capture and permanently store most of the emissions from the process.

Our blue hydrogen project will convert the energy in our Wandoan coal resource in Queensland into hydrogen and ammonia using gasification technology.

To produce hydrogen from coal it needs to be gasified to create syngas which is then processed to make hydrogen and then ammonia.

We use ammonia, which is a hydrogen carrier, to economically and safely store and transport the hydrogen we have created so it can be used in Australia and exported to customers overseas.



The five key components of the project

1. **Coal to ammonia production**

Mining

- Conventional truck and shovel mine producing coal feedstock for the hydrogen and ammonia plant.
- Emissions from the mine will be subject to Government climate change regulation.

Gasification

- Coal feedstock is 'gasified' to produce a 'syngas' consisting of mainly hydrogen and carbon monoxide.
- Impurities are removed from the syngas and its hydrogen content enriched.

Note: Coal gasification occurs above ground as part of a large-scale industrial facility, and should not be confused with underground coal gasification.

Ammonia production

- Hydrogen is removed from the cleaned syngas.
- The hydrogen is then combined with nitrogen to synthesise ammonia using the Haber-Bosch reaction.

2. **Energy generation**
   As a result of the hydrogen and ammonia production process, gas and heat is produced which is utilised to generate on-site low carbon electricity for the overall process.

3. **Capture**
   Majority of carbon dioxide is captured as part of the hydrogen production process and compressed for transport.

4. **Transport**
   Ammonia: Ammonia product is transported via pipeline to the port in a compressed liquid form. At the port, ammonia is stored in tanks ready for export.
   Carbon dioxide: Carbon dioxide is also compressed and transported via pipeline to the storage site.

5. **Carbon dioxide storage**
   The carbon dioxide is injected underground to a depth of more than two kilometres where it is permanently stored and subjected to ongoing monitoring.

Why the Wandoan coal resource?

The Wandoan resource has a number of attributes which make it ideal for producing hydrogen.

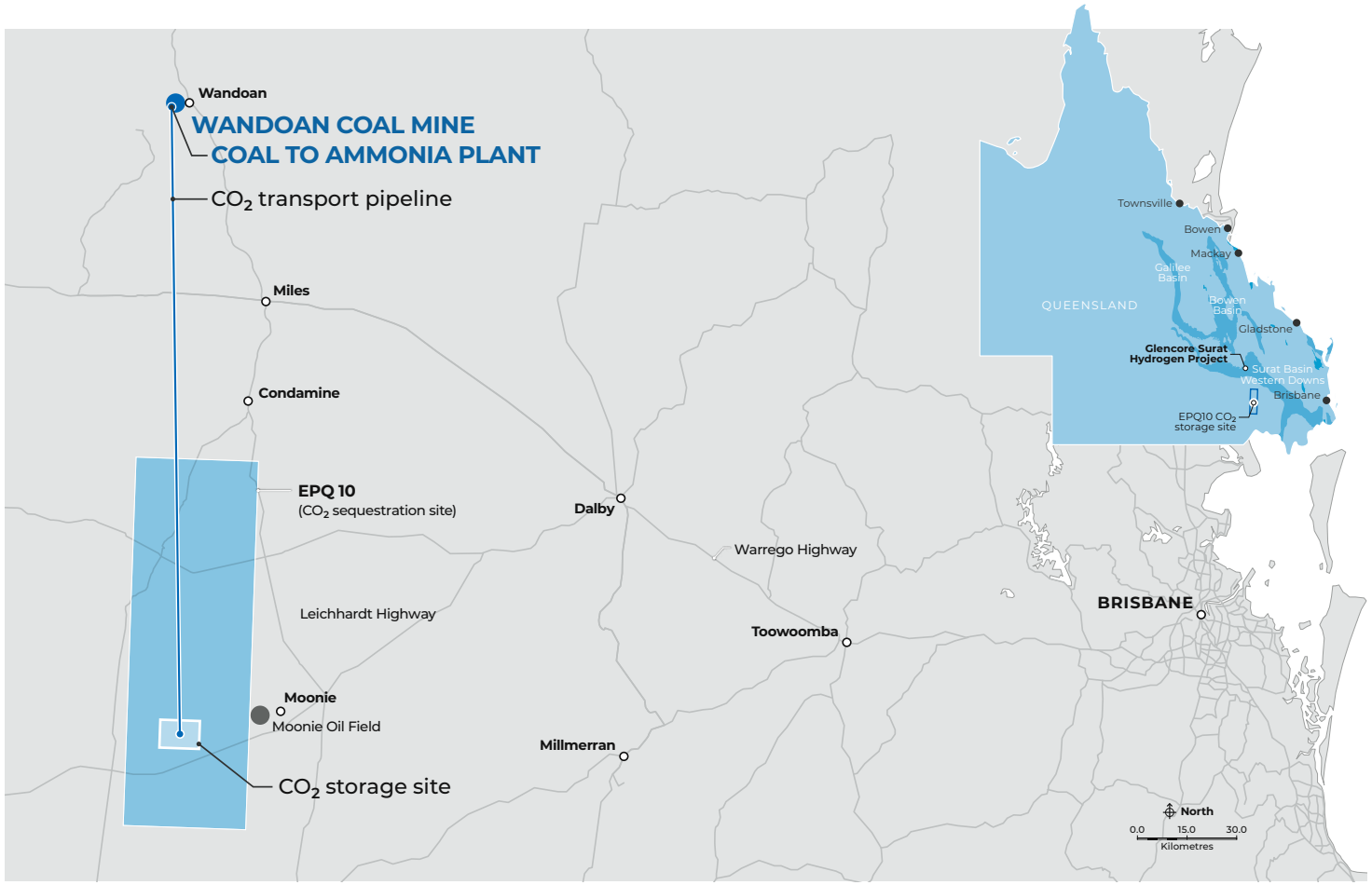
- The **low strip ratio** means relatively low mining costs in order to establish a plentiful feedstock.
- The properties of the coal are **suited to gasification** making the hydrogen liberation process much easier.
- The nearby **proximity to a highly prospective Glencore owned carbon storage site** – the 2009 National Carbon Storage Taskforce report and the Queensland Government CO_2 Storage Atlas identified the Surat Basin as a key geostorage area. The report found almost three billion tonnes of theoretical CO_2 storage potential is available in the area.

Development of Glencore Surat Hydrogen has the potential to provide significant opportunities for the local, regional and state economies, with infrastructure development as well as benefits to local communities including jobs, training, business opportunities and upgraded local services.

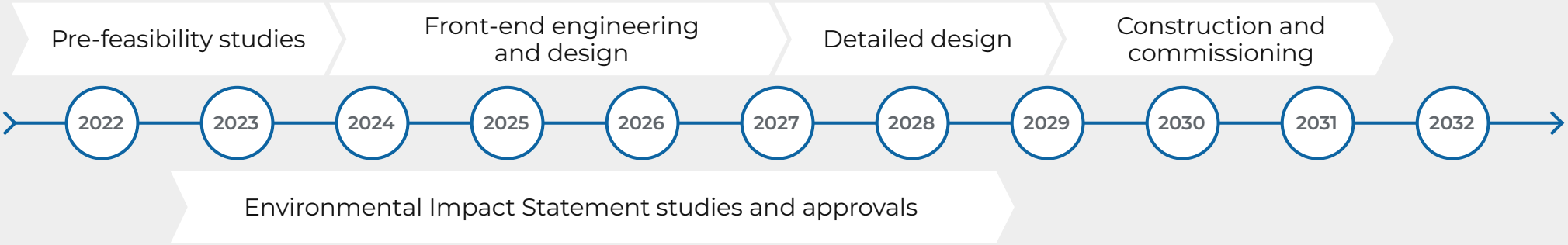
Where is the Project located?

Wandoan is located 400 kilometres north-west of Brisbane, and 380 kilometres south-west of the Port of Gladstone.

Subject to regulatory approval, the hydrogen facility will be located in the region west of the town of Wandoan. The captured carbon dioxide will be transported via pipeline to the permanent storage site located at Glencore's EPQ 10 storage tenement about 200 kilometres to the south.



Project development schedule (approvals and development)



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