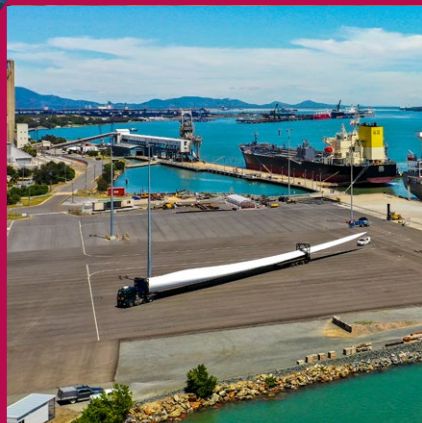
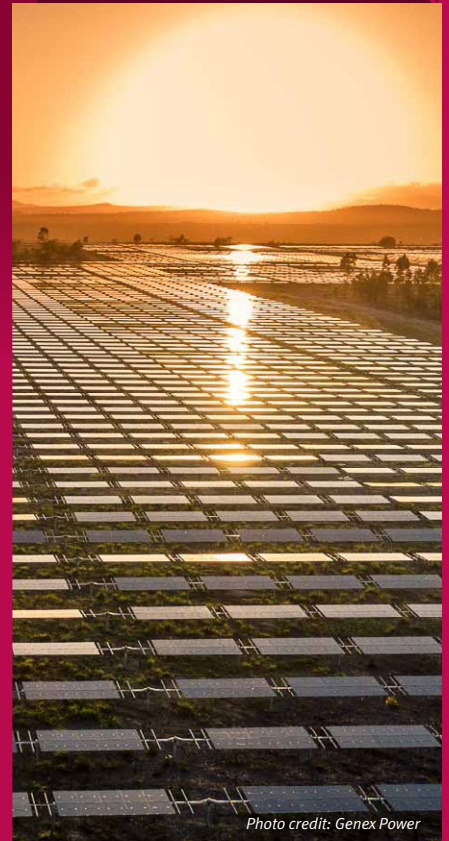


RENEWABLE HYDROGEN INVESTMENT OPPORTUNITIES

QUEENSLAND AUSTRALIA

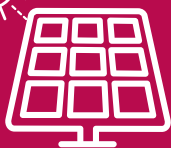


Queensland
Government
Australia



The opportunity

By 2032
Queensland
will have

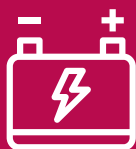


8 GW
of new
wind installed



4 GW
of new solar, over
14 million
panels

Up to
2,000
turbines



Over **5 GW** of storage

Queensland is hydrogen ready

There is no better time to invest in Queensland's renewable hydrogen industry.

Worldwide demand for renewable hydrogen is expected to exceed 500 million tonnes by 2050. By 2030, Queensland will be at the forefront, supplying domestic and export partners with a reliable and safe supply of renewable hydrogen. Australia's 'Sunshine State' has the potential to produce more than 10 million tonnes per year of renewable hydrogen¹, with much of this set to come from regional ports, like Gladstone and Abbot Point. Many of the projects in these areas are already supported by international partners from Japan, Korea, Singapore and Germany.

As leaders in Australia's renewable energy transformation, we have a proven track record of forging strong partnerships with businesses globally to secure a renewables industry—part of a global commitment to reach net zero carbon emissions by 2050.

Under the **Queensland Energy and Job Plan**, released in September 2022, the Queensland Government committed A\$19 billion to support enabling infrastructure to ensure the state's energy transformation is realised. This underpins Queensland's renewable energy target of 80 per cent by 2035 which has recently been legislated.

Queensland is refreshing its Queensland Hydrogen Industry Strategy for 2024, building on actions in the first strategy to increase Queensland's global competitiveness as a leading supplier of hydrogen.

Now is the ideal time to partner with Queensland and reap the benefits of a renewable hydrogen future.

¹ *Enabling Queensland's hydrogen production and export opportunities report*



The Queensland advantage

- World-class port infrastructure
- Australia's gateway to key trading partners
- Abundant solar and wind resources
- Government owned corporations across energy generation, transmission and distribution, water, and ports
- Highly-skilled workforce and attractive labour market
- Sustainable water resources
- Strong existing policy settings designed to ensure effective regulation of hydrogen industry development
- Strong domestic and global demand
- Proximity to Asian markets
- High safety standards, and just dealings with Traditional Owners — an advantage in an environment, social and governance (ESG) conscious world
- Fastest growing economy in Australia, expanding rapidly and committed to a renewable energy future
- Seven times the geographical size of Great Britain.

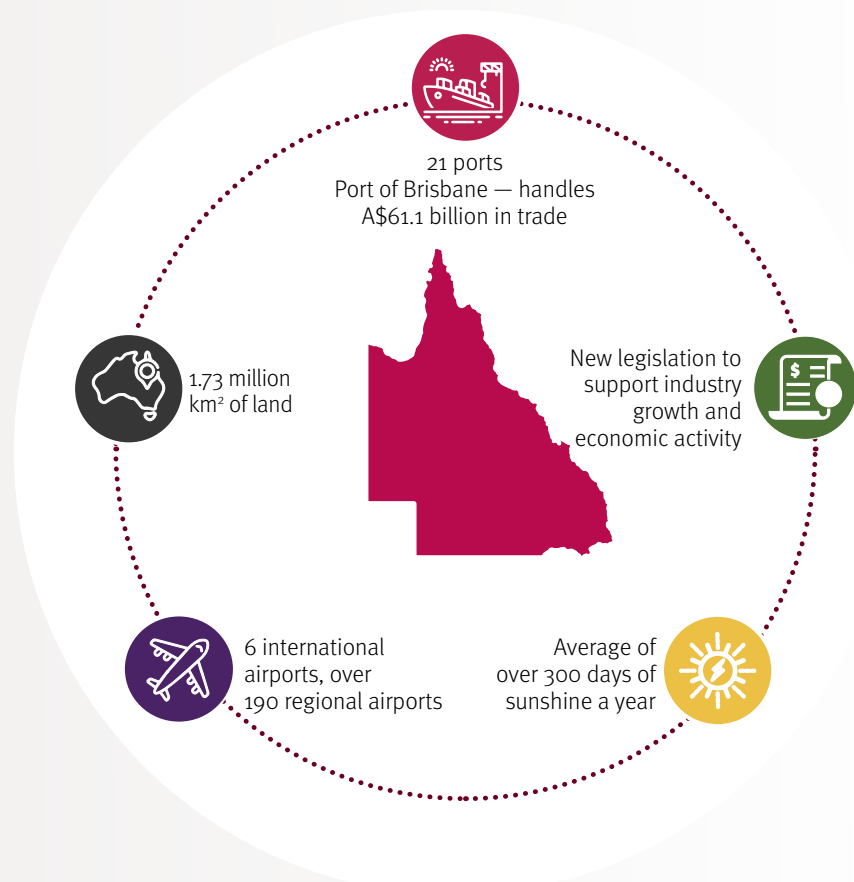


Join our renewable hydrogen revolution

Queensland is ready to support global decarbonisation efforts by producing and exporting renewable hydrogen.

The state's established credentials as a global energy exporter means we have existing infrastructure in place and the experience to meet global demand for renewable hydrogen. Coupled with available land and water, significant solar and wind resources, Queensland has a competitive advantage in ensuring a sustainable renewable hydrogen industry for years to come.

Already more than A\$300 million has been invested across Queensland to help accelerate infrastructure planning, support research and provide project seed funding. However, the potential for Queensland hydrogen is great and so are the many opportunities to invest in the 'Sunshine State' so that projects are realised to meet local and international demand.



Hydrogen in Queensland

- More than 50 renewable hydrogen and hydrogen-derivative projects progressing for both domestic and export applications.
- More than A\$300 million for hydrogen industry development, committed to hydrogen skills and projects.
- A\$20 million in strategic technical studies and programs to secure social licence, reduce barriers of development and enhance the scaling and growth of industry.
- Focus on large-scale production and innovation in hard to abate industries.

Queensland is establishing foundations to secure a thriving hydrogen industry, and leveraging opportunities in the energy system, in local manufacturing and industries associated with:

- green metals
- mobility applications including heavy haulage and marine
- industrial manufacturing (fertilisers)
- firming the electricity network.

This includes a workable legislative and regulatory environment, and an effective industry planning approach to leverage low-cost, reliable renewable hydrogen as an export fuel, with multiple carriers such as ammonia being considered.

The **Queensland Hydrogen Investor Toolkit** has been prepared to assist investors with project planning for hydrogen developments in Queensland. The toolkit includes useful contacts to assist with your project and will be regularly updated as new information is gathered from practical experience with facilitating renewable hydrogen projects in Queensland.



Find out more about
Queensland's hydrogen
production and export
opportunities.



Investor certainty

Queensland is perfectly placed for investment in renewable hydrogen generation. We have among the world's highest levels of solar exposure, strong wind resources and significant land mass; creating great opportunities for large-scale energy projects to support our renewable hydrogen sector for years to come.

Our publicly owned energy transmission network transports vast amounts of power across long distances — over 2,000km, from the southern border up to the far north of the state.

The Queensland Energy and Jobs Plan sets out clear actions that provide confidence to investors and capital markets on Queensland's investment opportunity and energy transition pathway. Additionally, the *Queensland SuperGrid Infrastructure Blueprint*, which outlines the optimal infrastructure pathway to transform the state's electricity system, will be reviewed and updated in 2025 to reflect the evolving renewables landscape.

The review and refresh of the Queensland Hydrogen Industry Strategy for 2024 is also underway to build on Queensland's ongoing support and vision for a thriving renewable hydrogen industry.



Government incentive to partner with private sector

A\$4.5 billion committed in funding to partner with the private sector to build renewable hydrogen projects.

Through the Queensland Renewable Energy and Hydrogen Jobs Fund, government owned energy corporations can invest in renewable energy and hydrogen projects, support infrastructure and partner with private industry.

Investment proposals are assessed on three key objectives

Renewable energy and hydrogen

Investment proposals that support additional renewable hydrogen production and storage capacity in Queensland, and the transition to Queensland's 80 per cent renewable energy target by 2035, will be considered.

Commerciality

Investment proposals must demonstrate commercial value.

Employment and jobs

Investments must create new and ongoing employment opportunities in Queensland consistent with the government's employment and procurement policies.



KEY RESOURCES

Everything you need to know about Queensland's renewable energy transition can be found by clicking on the links below:

- [Queensland Energy and Jobs Plan](#)
- [Queensland Hydrogen Industry Strategy](#)
- [Queensland SuperGrid Infrastructure Blueprint](#)
- [Queensland Renewable Energy Zone Roadmap](#)

CASE STUDY

Kogan Renewable Hydrogen Demonstration Plant – CS Energy

Queensland Government owned energy company CS Energy is developing the Kogan Renewable Hydrogen Demonstration Plant on Queensland's Western Downs.

The project is progressing with A\$28.9 million in funding from the Queensland Renewable Energy and Hydrogen Jobs Fund.

Powered by behind-the-meter solar energy, the demonstration plant will produce up to 75,000kg of hydrogen annually and help to decarbonise heavy transport by linking into Australia's Hydrogen Super Highway.

CS Energy will also export hydrogen to the Republic of Palau as part of a collaboration between Sojitz Corporation and Nippon Engineering Consultants. IHI Engineering Australia, a subsidiary of IHI Corporation Japan, is constructing the demonstration plant. Works began in mid-2023 and commissioning is scheduled for later in 2024.

Nearby, CS Energy is also developing the 400 megawatt hydrogen-ready, natural gas Brigalow Peaking Power Plant at the Kogan Clean Energy Hub to provide crucial firming capacity to support more renewables entering Queensland's energy grid.



Image credit: CS Energy

CASE STUDY

Central Queensland Hydrogen Project – Stanwell Corporation

Queensland Government owned Stanwell Corporation is leading the development of Australia's largest renewable hydrogen project, right here in Queensland.

In May 2023, Stanwell announced Front-End Engineering Design (FEED) for the Central Queensland Hydrogen Project (CQ-H2). The study, backed by A\$117 million from government and project consortium partners, brings the project one step closer to its Final Investment Decision (FID), planned for late 2024. This has been supported by A\$15 million from the Queensland Renewable Energy and Hydrogen Jobs Fund.

CQ-H2 is Queensland's largest renewable hydrogen project and ranks in the global top 10 hydrogen projects at the pre-FID stage. The new hydrogen export facility in Gladstone is expected to produce around 3,000 megawatts of hydrogen by the early 2030s, with the intention to export renewable hydrogen to Japan and Singapore, as well as supply large industrial customers in Central Queensland.

In a collaboration success story, Stanwell has partnered with Japanese companies Iwatani Corporation, Kansai Electric Power Company, Marubeni Corporation, and Singapore-led Keppel Infrastructure to undertake the FEED study to determine the commercial viability of CQ-H2.

At this stage, it's estimated CQ-H2 could generate around 8,900 new jobs and deliver more than A\$17.2 billion in hydrogen exports.



Image credit:
Stanwell Corporation

CASE STUDY

Decarbonising haulage in North Queensland - Ark Energy

The SunHQ Hydrogen Hub project is on track to help decarbonise haulage in North Queensland.

Phase 1 of SunHQ includes a 1 megawatt Proton Exchange Membrane (PEM) electrolyser which will produce renewable hydrogen from a behind-the-meter connection to the co-located Sun Metals Solar Farm. Hydrogen compression, storage and refuelling facilities will be located adjacent to the electrolyser.

The project is supported by up to A\$8 million from the Hydrogen Industry Development Fund, A\$3 million from the Australian Renewable Energy Agency, and A\$12.5 million from the Clean Energy Finance Corporation.

Initially, Ark Energy will source five 140 tonne rated hydrogen fuel cell electric trucks from Hyzon Motors and lease them to its sister company Townsville Logistics Pty Ltd. The fuel cell trucks are expected to be the largest of their kind in the world.

They will operate between the Sun Metals Zinc Refinery and the Port of Townsville, which is approximately a 30km round trip. The fuel cell trucks will replace five existing diesel trucks and avoid 1,300 tonnes of CO₂ emissions each year.

There will be additional capacity for Ark Energy to supply renewable hydrogen to third-party customers and support their transition to a low carbon future.

Ark Energy is also a key member of the Han-Ho Hydrogen Consortium, which are progressing a feasibility study into a green export corridor from North Queensland to the Republic of Korea, to supply more than 1 million tonnes of green ammonia per annum.

The Queensland Government is supporting projects in North Queensland by progressing a series of technical and planning studies under the A\$8.5 million Abbot Point Activation Initiative.



Image credit: Ark Energy

RENEWABLE HYDROGEN INVESTMENT OPPORTUNITIES

QUEENSLAND AUSTRALIA

Your opportunity to invest is now.



**Queensland
Government**
Australia

Find out more about hydrogen in Queensland www.energyandclimate.qld.gov.au/hydrogen



For more information about the
Queensland Energy and Jobs Plan:



qld.gov.au/energyandjobsplan



For more information on
investing in Queensland
tiq.qld.gov.au

May 2024