Enabling hydrogen in Queensland – Policy and programs

Chris Shaw, Deputy Director-General Hydrogen
Department of Energy and Public Works

Queensland Government

Queensland tackles decarbonisation as a whole of government priority

Together we will deliver:

- ✓ 50% renewable energy target by 2030
- ✓ 30% emissions reduction below 2005 levels by 2030
- ✓ 70% renewable energy by 2032
- ✓ 80% renewable energy by 2035
- ✓ **Zero net emissions by 2050**

The Hydrogen Division's Purpose is to:
'Lead, build connections and act now to secure a hydrogen future for all Queenslanders'

Queensland Energy and Jobs Plan

Increasing the Queensland Renewable Energy and Hydrogen Jobs Funds to **$4.5 billion** to deliver investment in publicly owned renewables including **$500 million for batteries**

$285 million for early works on first two stages of backbone transmission with Powerlink to deliver **$365 million** Gladstone Grid Reinforcement

Over $270 million to advance Borumba and Pioneer-Burdekin Pumped Hydro

$11.6 million to grow the renewable energy supply chains and support manufacturers

$4 million to advance bioenergy sector

$20 million for hydrogen initiatives

Queensland on track to be a hydrogen powerhouse

- ✓ More renewable energy projects supported by the Queensland Renewable Energy and Hydrogen Jobs Fund
- ✓ Gas Supply and Other Legislation (Hydrogen Industry Development) Amendment Bill 2023 introduced into Parliament
- ✓ Commercial technical and economic studies to supercharge renewable hydrogen hubs underway

Action 1.6 Grow the future hydrogen industry

Supercharging our hydrogen hubs

Investing $15 million to plan for hydrogen hubs in key locations.

Creating domestic demand

Investing in a 200MW hydrogen-ready gas peaking power station at Kogan Creek.

Increasing community awareness

$5 million renewable hydrogen community awareness and engagement program.

Hydrogen legislation

Preparing legislation to provide a clear pathway for a renewable hydrogen industry.

Updated Hydrogen Industry Strategy

Planning to support the industry's growth, exploring potential for hydrogen gas targets.

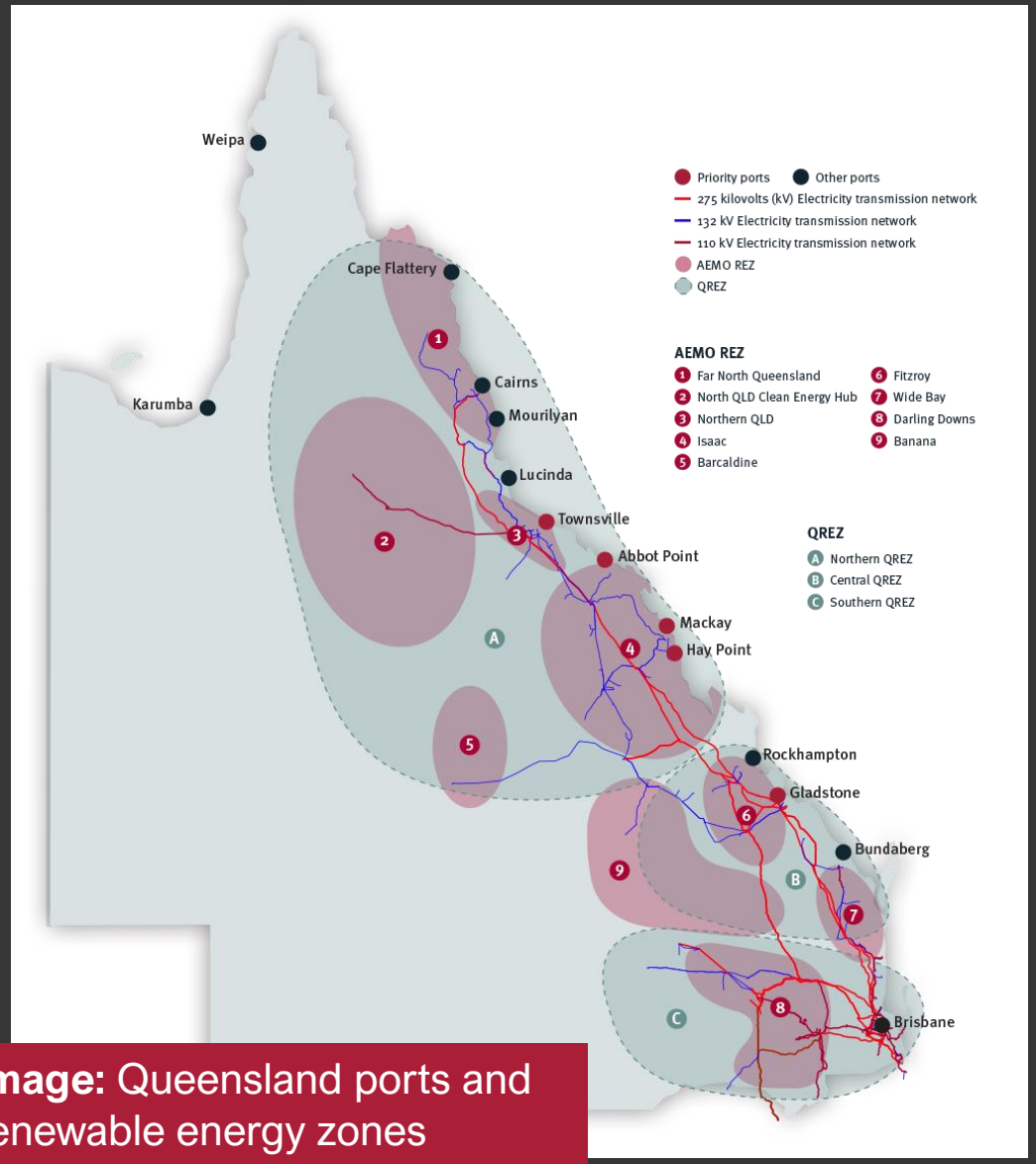


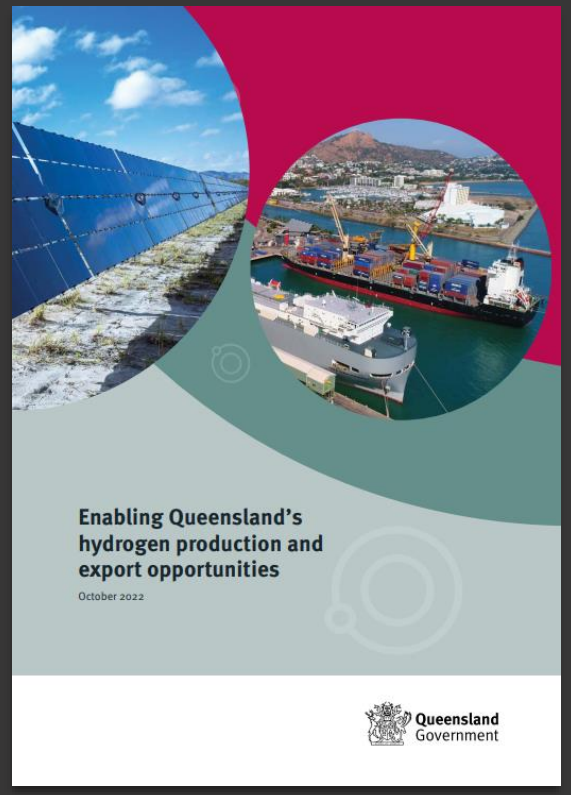
Image: Queensland ports and renewable energy zones

Hydrogen in Queensland just makes sense!

- ✓ Significant wind and solar resources.
- ✓ Large transmission network and established industrial hubs in Northern Queensland.
- ✓ 14 ports, 5 priority ports - majority public owned.
- ✓ Experience and an energy exporter and capability in export of bulk commodities out of multiple ports.
- ✓ Publicly owned generators, ports and transmission network.
- ✓ Plenty of land including State Development Areas (SDAs) and Infrastructure Corridors.
- ✓ Large regional population and highly skilled workforce

Hydrogen will play an important role in helping to meet Queensland's decarbonisation targets

The *Enabling Queensland's hydrogen production and export opportunities* report:



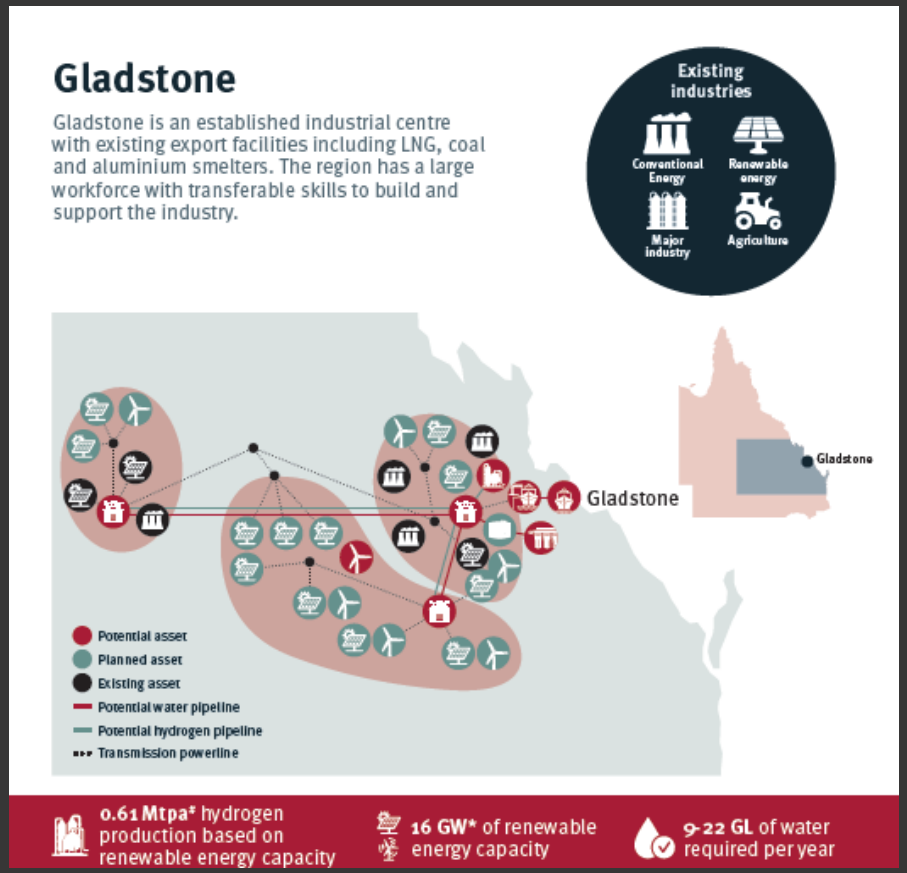
- ✓ **Demonstrates Queensland's unique opportunity** to create an internationally significant renewable hydrogen export industry.
- ✓ **Identifies and evaluates each of Queensland's key export regions** including existing infrastructure and its potential role in local supply chains.
- ✓ **Gives strategic insight for proponents** into Queensland's hydrogen production potential as they plan, develop and secure capital, partners and off-take for their projects.
- ✓ **Provides industry and government partners a platform for future planning** and provides a reference to guide industry to grow sustainably, while balancing economic, social, environmental and cultural values.

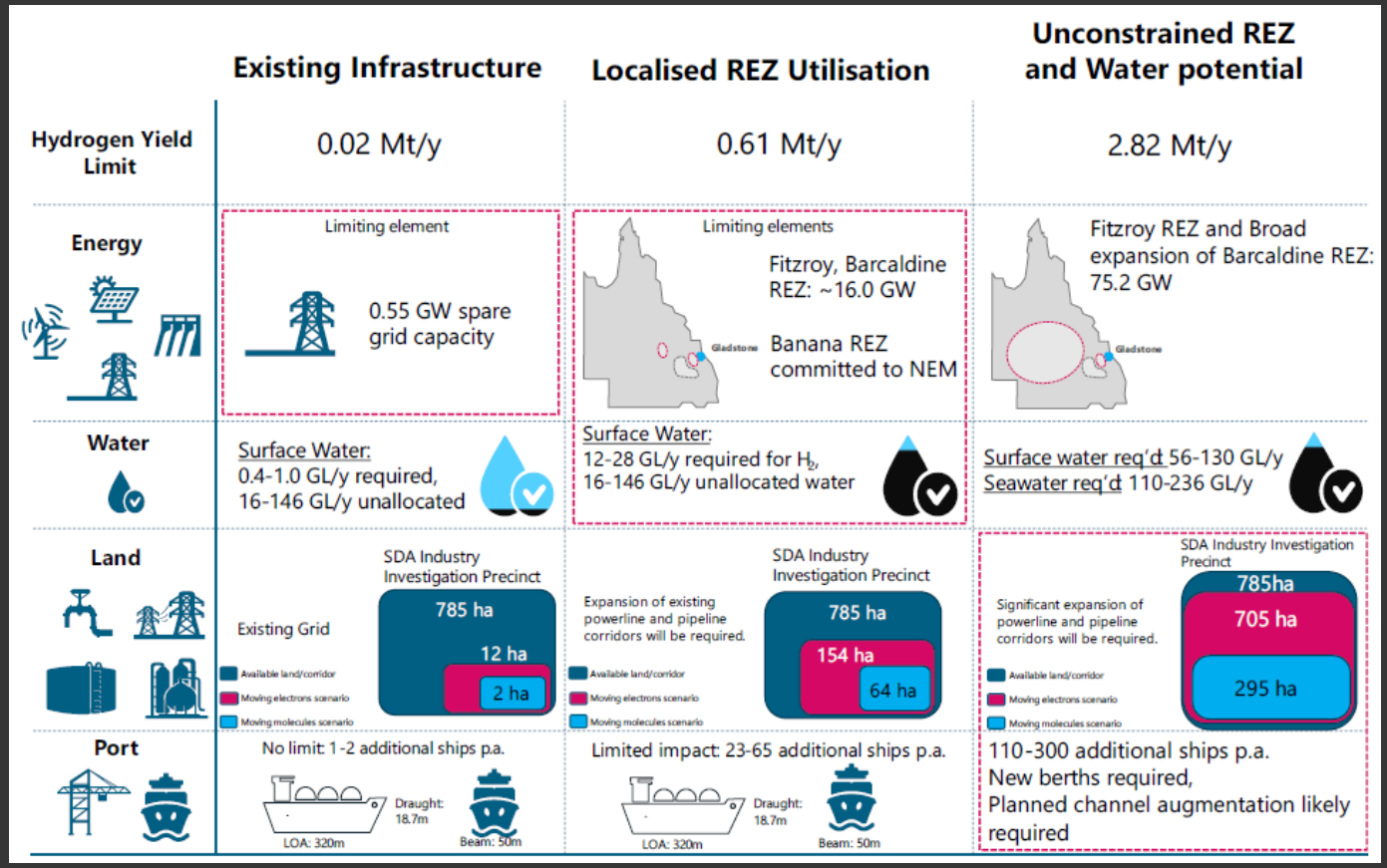
Building the Picture

What it could look like and What we need to get there

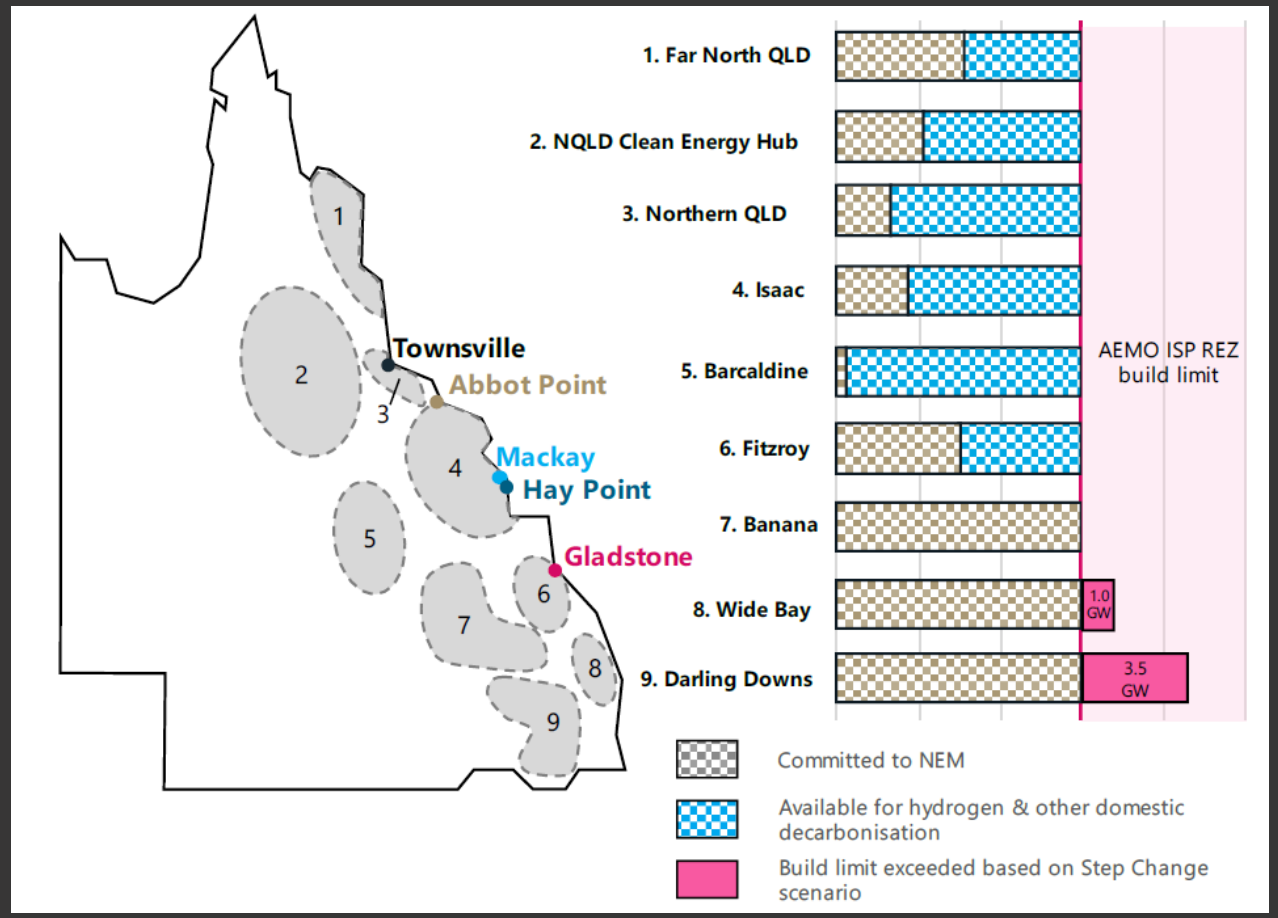
Consideration given to both moving electrons/ molecules configurations and multiple carrier types.

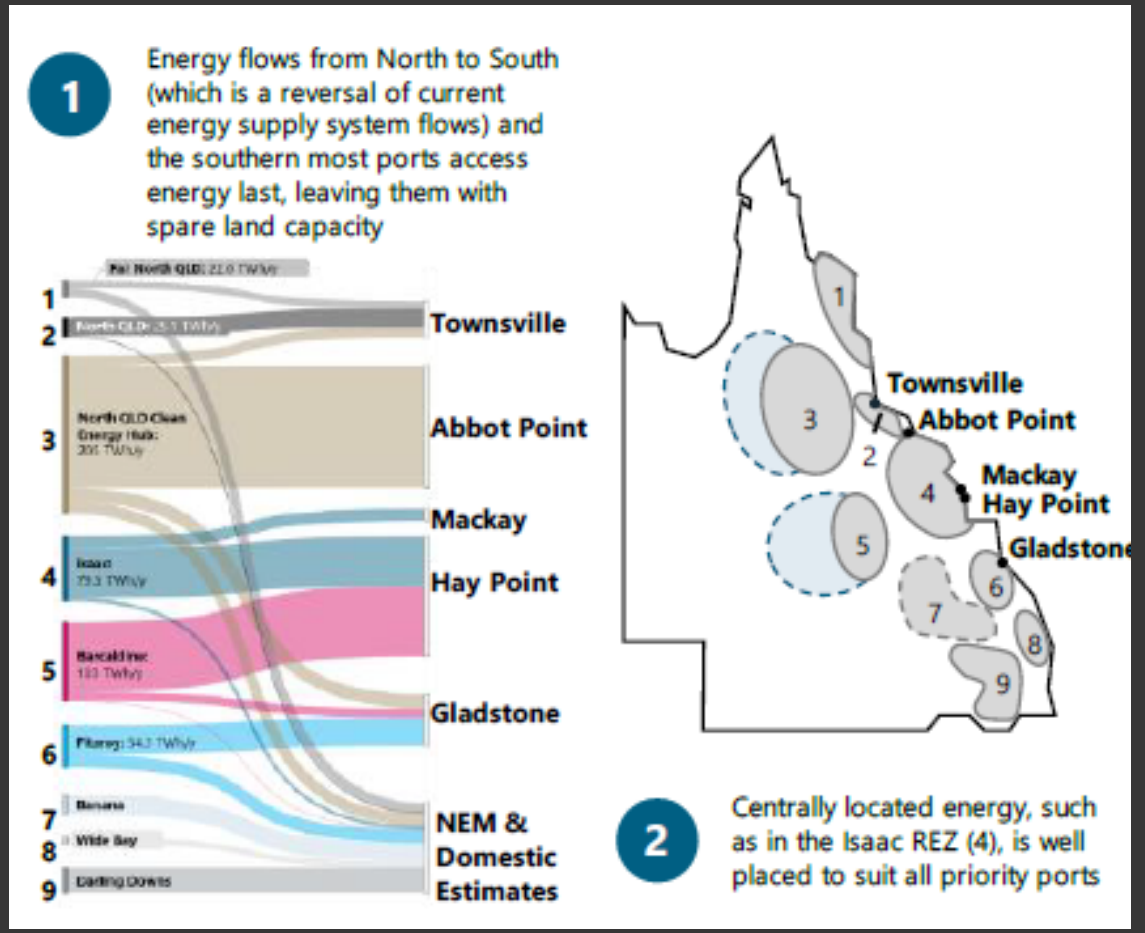
What pieces of infrastructure could be required as industry grows and what sorts of production volumes could be possible.





Key findings





Queensland – a hydrogen superpower

ENEOS
Direct-MCH Pilot Plant

- ✓ Bulwer Island site
- ✓ Electrolyses directly to highly effective hydrogen carrier, Methylcyclohexane (MCH)
- ✓ Opened January 2023
- ✓ Successfully shipped 200L of MCH to Japan.

CQH2 Alliance
Central Queensland H2 Project

- ✓ 3000MW Project at Aldoga
- ✓ Significant Japanese and Singaporean Partners
- ✓ Currently undertaking FEED
- ✓ Targeting FID by late 2024
- ✓ $15m funding

Rio Tinto & Sumitomo
Yarwun Hydrogen Calcination Pilot Demonstration Program

- ✓ Construction starting 2024 on a hydrogen plant at Yarwun Alumina Refinery
- ✓ Lower carbon emissions from the alumina refining process
- ✓ 2.5MW on-site electrolyser to supply 6,000 tonnes of hydrogen to the refinery per year

Advancing domestic applications across the State

Chemical Feedstock

Power Generation

Mobility

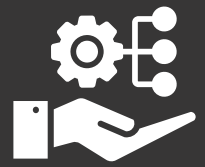
Industrial Use

Community Engagement

- $5 Million to expand community awareness on hydrogen and build social licence.

Policy and Legislation

- Initial Bill progressing with broader reforms being considered and consulted on



Project Planning

- $15 Million in technical studies to support strategic project planning in our hydrogen hubs

Industry Investment

- $35 Million Hydrogen Industry Development Fund
- $4.5 Billion Queensland Renewable Energy and Hydrogen Jobs Fund

Revising the Strategy

- Refreshing the Queensland Hydrogen Industry Strategy for actions beyond 2024.

We’re working to get all the policy and program settings right

Thank You

Chris Shaw

Deputy Director-General – Hydrogen

Department of Energy and Public Works

https://www.epw.qld.gov.au/about/initiatives/hydrogen