

# The emerging hydrogen industry in Australia

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# The Australian Hydrogen Council

## Who we are

We are energy and technology companies, vehicle manufacturers and infrastructure providers with interests across the hydrogen value chain.

## Our vision

A hydrogen economy built upon clean and renewable energy technology.

## What AHC does

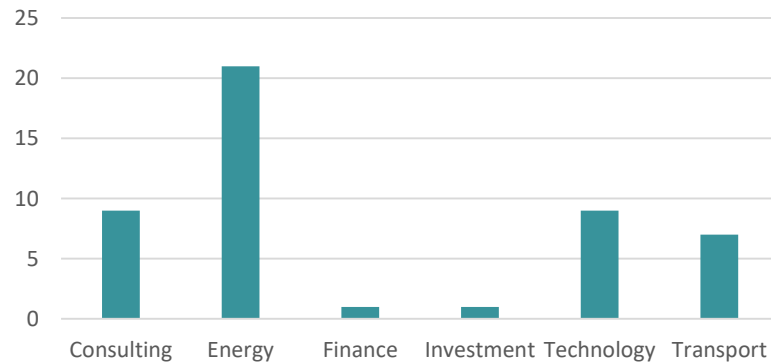
We connect the hydrogen industry and its stakeholders in building a secure, clean and resilient energy future based on hydrogen.

# AHC members

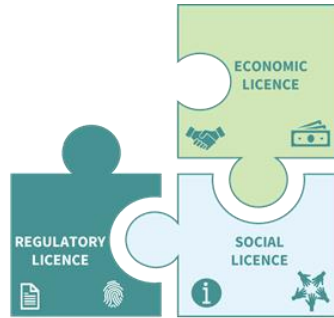
As of September 2020, AHC has 48 members

- All are companies
- Range of sizes and locations

AHC members - September 2020



# AHC in 2020



## Policy and regulation

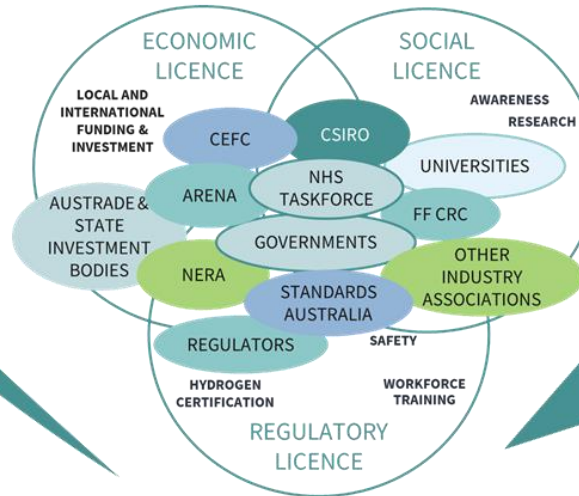
Developing policy to advance the Australian hydrogen industry

*Trusted advisor to government*

*Connecting the industry to policy processes*

## Events and public advocacy

Connecting members with one another and key stakeholders



## Relationships

Sharing knowledge and working with everyone in the hydrogen ecosystem

# Why hydrogen?



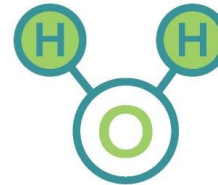
Most common substance in the universe



Produced from many energy sources



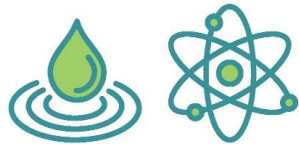
No greenhouse gas emissions in use



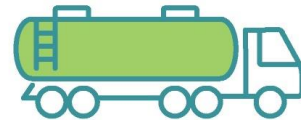
Can be made cleanly using water



Higher energy density than batteries when compressed



Can be stored as a liquid or gas



Can be stored, transported & exported



No more or less safe than petrol or diesel fuels



Can provide energy to all parts of the economy



# Some project examples

**Western Australia** – ATCO has a research and development facility at its Jandakot Operations Centre called the Clean Energy Innovation Hub.



Image: Hydrogen Park South Australia

**South Australia** – Hydrogen Park South Australia (Hyp SA) is Australia's largest renewable gas project and will produce green hydrogen to blend into the natural gas network.



**Tasmania** – Tasmania plans to develop a green hydrogen hub, with the Bell Bay Advanced Manufacturing Zone in the State's North-West suggested as the ideal candidate. The hub would begin as a 100MW green hydrogen production facility with the possibility of expansion to 1000MW by 2030.



**Queensland** – BOC's production facility in Bulwer Island, Brisbane, will produce green hydrogen to service FCEVs and supply BOC's industrial customers. The project also includes a hydrogen refuelling station.



SUISO FRONTIER at Kobe terminal in Japan

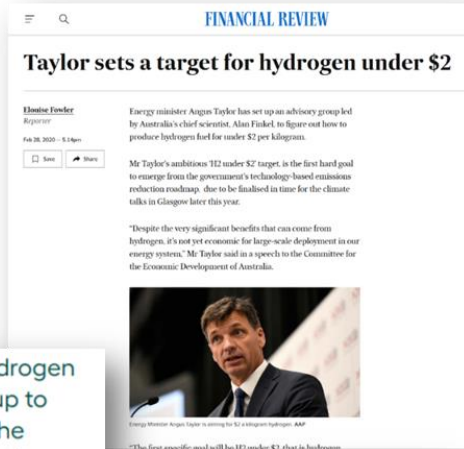
**Victoria** – The Hydrogen Energy Supply Chain (HESC) is a world-first pilot project to safely and efficiently produce and transport clean hydrogen from Victoria's Latrobe Valley to Japan.

# The policy environment

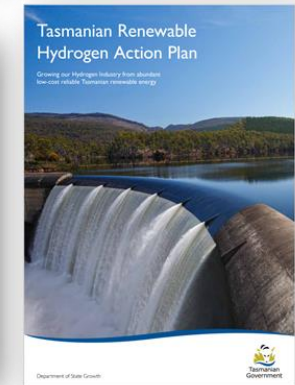
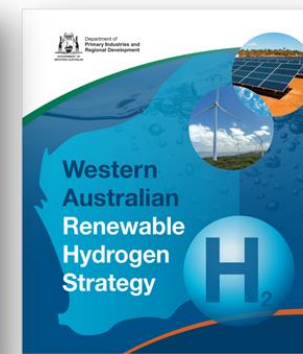
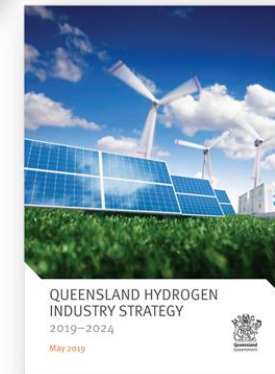
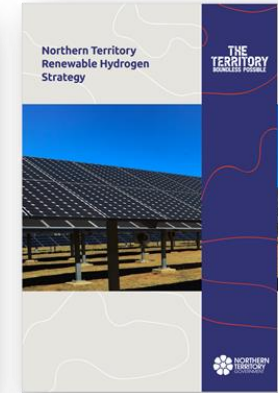


**H** The CEFC Advancing Hydrogen Fund is aiming to invest up to \$300 million to support the growth of a clean, innovative, safe and competitive Australian hydrogen industry.

The CEFC debt and/or equity finance will focus on projects that align with the National Hydrogen Strategy, including projects which have State or Territory Government financial support.

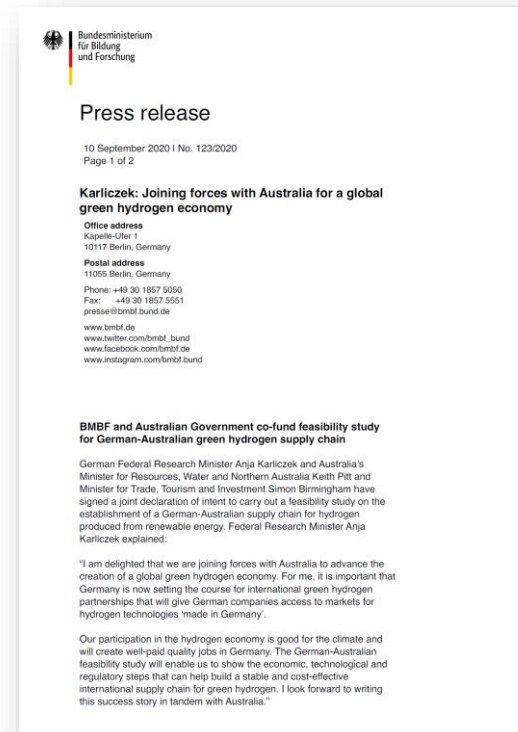
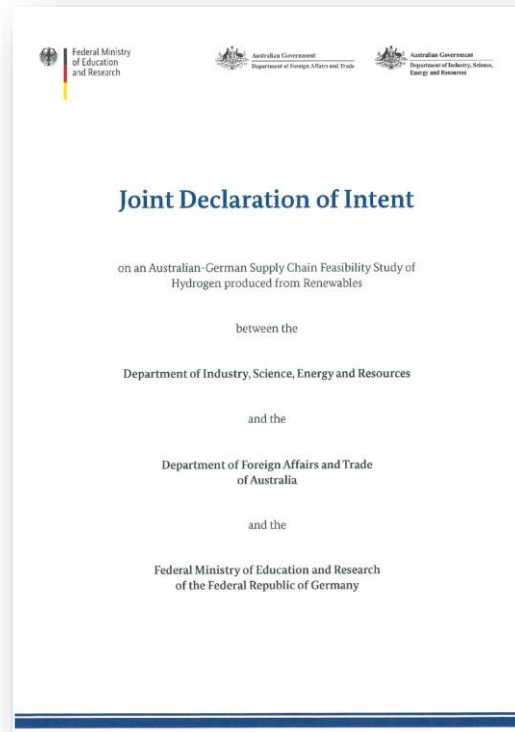


Energy Minister Angus Taylor is setting for \$2 a kilogram hydrogen. AAP





# Australian-German supply chain feasibility study of hydrogen produced from renewables

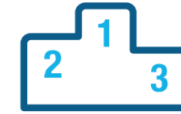




# Getting to scale

- Currently the main challenge
- Governments and industry are currently working on understanding and connecting:
  - National Hydrogen Strategy's stated ambition for Australia to be a top 3 exporter by 2030
  - H2 under \$2 stretch target
  - Size and type of projects to meet volume
  - Costs and timing for project size/types
- Hydrogen's versatility also requires coordination across sectors and applications – a complex task

## MEASURES OF SUCCESS



**AUSTRALIA**  
is one of the top three exporters of hydrogen to Asian markets



**AUSTRALIA**  
has an excellent hydrogen-related safety track record



**HYDROGEN**  
is providing economic benefits and jobs in Australia



**AUSTRALIA**  
has a robust, internationally accepted, provenance certification scheme in place

# Further references

[www.industry.gov.au](http://www.industry.gov.au)

[www.csiro.au](http://www.csiro.au)

[www.ga.gov.au/scientific-topics/energy/resources/hydrogen](http://www.ga.gov.au/scientific-topics/energy/resources/hydrogen)

[www.arena.gov.au](http://www.arena.gov.au)

[www.H2council.com.au](http://www.H2council.com.au)

Australian Government  
Department of Industry, Science, Energy and Resources

Search industry.gov.au

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We may use the information you provide to report email list and campaign performance to other Commonwealth, state and territory government agencies involved in developing the Australian Hydrogen Strategy.

Last updated: 15 June 2020  
Contact ID: 40195

Hydrogen Technology Marketplace

Explore our repository of hydrogen production and storage technologies collected during the National Hydrogen RD&D study.

Process Group

- Select all
- Production - Biological hydrogen production
- Utilisation - Emerging fuel cells and turbine technologies
- Utilisation - Mature fuel cells
- Production - Biomass and waste conversion
- Production - Electrolysis
- Production - Fossil fuel conversion
- Production - Photochemical and photocatalytic processes
- Production - Thermal water splitting
- Storage - Compression and liquefaction
- Storage - Chemical storage

Technology Readiness Level

- Select all
- TRL1
- TRL2
- TRL3
- TRL4
- TRL5
- TRL6
- TRL7
- TRL8
- TRL9

Keywords

Search by keyword

Apply filter Clear filter

COAG Energy Council AusH2 - Australia's Hydrogen Opportunities Tool

Inspection Tool

Click on the map to query a point, you may click again to select a different point.

Hydrogen Projects

General

ID	25
PROJECT_NAME	Jemena's Western Sydney Power to Gas Trial
STATE	NSW
LOCATION	Western Sydney
LATITUDE	-33.830952
LONGITUDE	150.865007
ORGANISATION	Jemena Gas Networks (JGN)
STATUS	In development
ENERGY_SOURCE	Solar and Wind
PRODUCTION_TECHNOLOGY	PEM electrolyser
ELECTROLYSER_SIZE_MW	0.5
HYDROGEN_PRODUCED_TONNES_PER_YEAR	40
DESCRIPTION	Jemena Gas Networks (JGN) is exploring a 'power to gas' pilot on their gas network and will enable a future hydrogen refuelling station to be integrated into the project. The trial will convert solar and wind energy into hydrogen gas through a 500 kW PEM electrolyser. Energy will be stored onsite in an underground buffer store and in JGN's gas network. The facility will be located at JGN's Horsley Park Transfer Receiving Station in Western Sydney, and will have a production capacity of 100 m3 per hour of hydrogen gas. The project is presently at the detailed design stage, with first gas scheduled for Q4-2020.
REFERENCE	<a href="https://jemena.com.au/about/innovation/power-to-gas-trial">https://jemena.com.au/about/innovation/power-to-gas-trial</a>
EXPECTED_START_DATE	September 2023



Federal Ministry  
for Economic Affairs  
and Energy



MITTELSTAND  
**GLOBAL**  
ENERGY SOLUTIONS  
MADE IN GERMANY

Thank you for your attention!

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16 September 2020

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Facilitator

