ROADS AUSTRALIA PRESENTATION

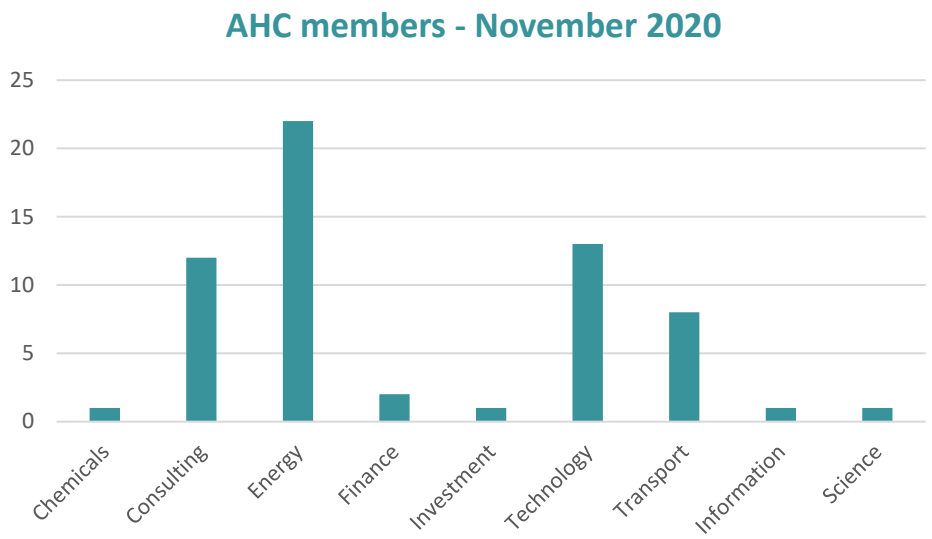
AUSTRALIAN HYDROGEN COUNCIL

8 DECEMBER 2020

AHC MEMBERS

As at November 2020, AHC has 61 members

- All are companies
- Range of sizes and locations
- Highest industry representation is from the energy sector, with other main categories of technology, transport and consulting



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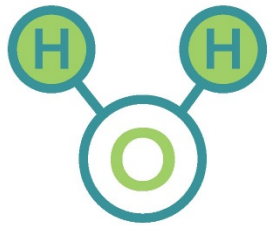
WHY HYDROGEN?

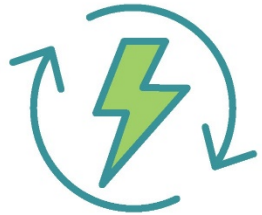
Most common substance in the universe

Produced from many energy sources

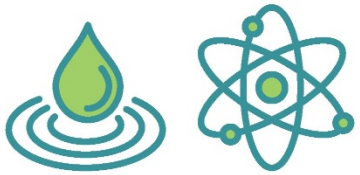
No greenhouse gas emissions in use



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

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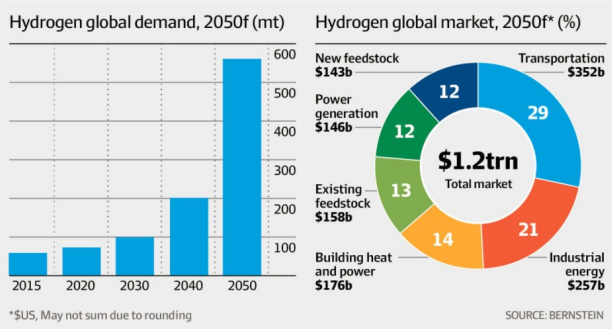
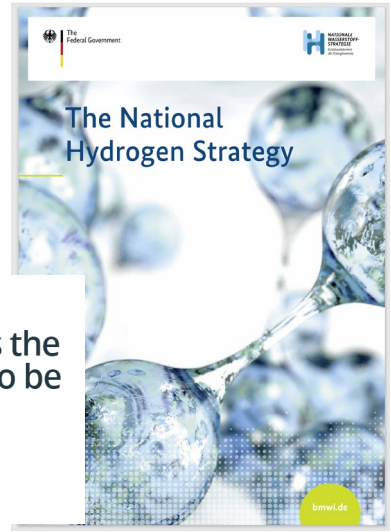
GLOBAL HYDROGEN MOMENTUM CONTINUES TO GROW



South Korea joins China, Japan in net-zero in $80B squeeze on Australian fossil exports

South Korea, Japan and China's tightened climate goals will crunch Australian thermal coal, make LNG investments harder and possibly kill Santos' Barossa LNG project.

PETER MILNE
28 OCT 2020 · 3 MIN REA



World's largest renewable energy project proposed for north-west Australia ditches electricity in favour of ammonia exports

ABC Kimberley / By Ben Collins and Vanessa Mills

Posted Tue 10 Nov 2020 at 2:29pm, updated Tue 10 Nov 2020 at 2:59pm

Premier **Annastacia Palaszczuk** noted at the end of last week that demand for renewable hydrogen out of Japan was growing rapidly.

"If we can position Queensland as a key exporter of this resource, Queensland will be at the forefront of the renewable energy revolution. To do that, we must partner with Japanese energy suppliers – and when it comes to hydrogen, they don't come any larger than Iwatani.

"Hydrogen is the future. We're investing in this sector because we know the great potential this industry has to drive Queensland's economic recovery in years to come.

"For the first time in history, I have appointed a Minister for Renewables and Hydrogen. This is testament to the importance of this industry in rebuilding our economy."

Newly-appointed Minister for Renewables and Hydrogen **Mick de Brenni** said the partnership with Iwatani was evidence of Queensland's commitment to rapidly developing its potential as a green hydrogen exporter.

Exclusive World Europe Hydrogen

Germany names hydrogen the hero of its post-coal future

By Bevan Shields
September 27, 2020 – 11.45pm

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171 View all comments

London: Australian wind and solar farms could help Germany phase out its use of coal under a major export deal which also promises to create thousands of new jobs.

Work begins on German-Australian 'hydrogen bridge'

Australia and Germany have officially started a joint-feasibility study on green hydrogen production and trade, or what the German Federal Minister of Research has described as a "hydrogen bridge."

DECEMBER 2, 2020 BLAKE MATICH

HYDROGEN AUSTRALIA

Image: Australian Government Department of Industry, Science, Ener

JAPAN, THE NEW HYDROGEN NATION

Feb 04, 2020 08:22 | Hanna Makino, Swiss Business Hub Japan

Japan was the first country to adopt a "Basic Hydrogen Strategy" and plans to become a "hydrogen society". The nationwide hydrogen market is expected to grow 56-fold to JPY 408.5 billion (approx. CHF 3,7 billion) by 2030, providing exciting business opportunities.

BUSINESS

Germany and hydrogen — €9 billion to spend as strategy is revealed

As part of its stimulus package, Germany intends to expand the role of green hydrogen to help end the country's reliance on coal. The government agreed on a plan on how to spend the €9 billion earmarked for the project.

Sep 14, 2020 - 03:13 pm

France presents national hydrogen strategy

BARBARA POMPILI | BRUNO LE MAIRE | FCEV | FRANCE | HYDROGEN | SUBSIDIES

The French government presented a national hydrogen strategy. It provides for an investment of 7.2 billion euros by 2030 and a hydrogen production capacity of 6.5 GW by 2030. At the same time, a national H2 committee will be established.

The French Ministry of the Environment and the Ministry of Economy have published a joint strategy paper focussing on the decarbonization of hydrogen production and the design of a hydrogen industry.

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SOME PROJECT EXAMPLES

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

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.

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.

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.

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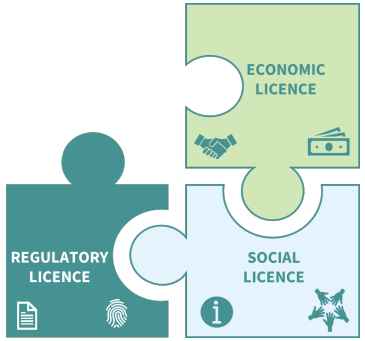
AHC IN 2020

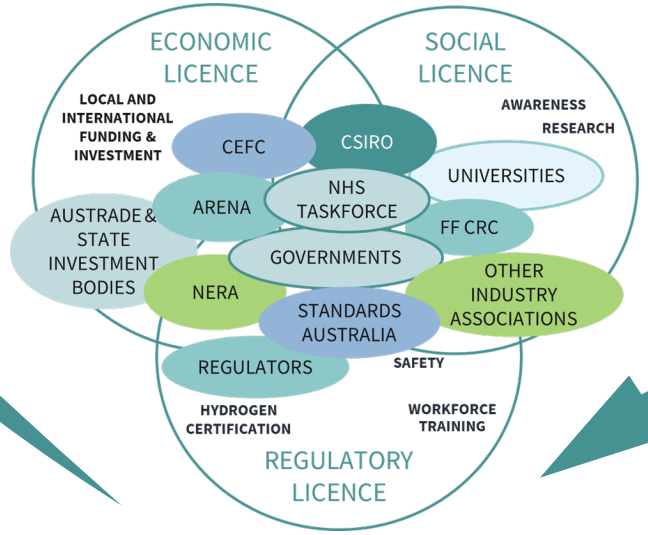


Policy and regulation

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

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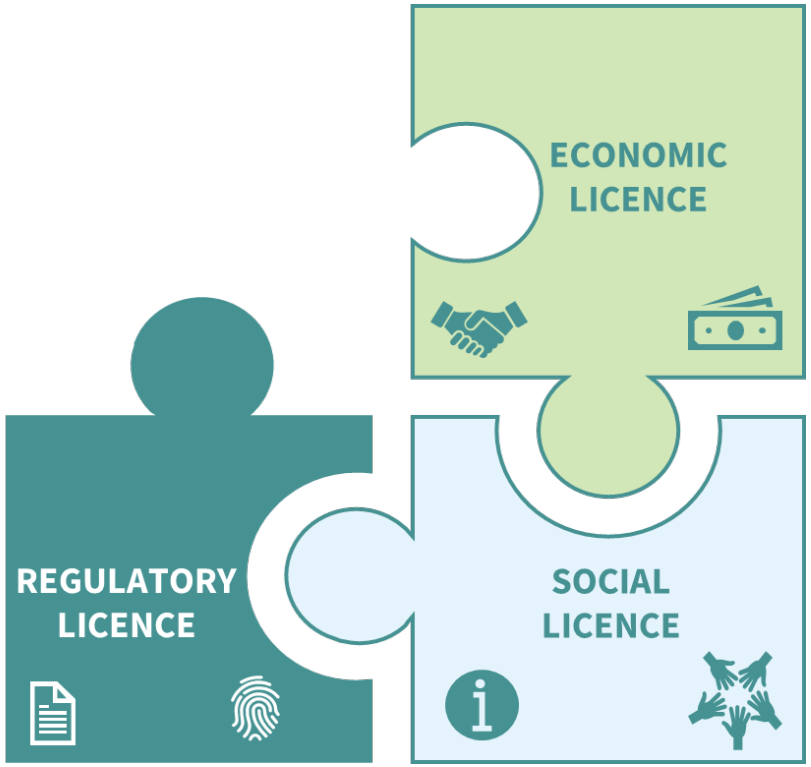
POLICY AND REGULATION

AHC focuses on the demand side and aligning different sectors…

Responsive and fit-for-purpose standards and regulations
- Hydrogen certification
- Safety
- Workplace training



Collaborating across uses to improve the business case
- Hubs, consortia
- Information sharing

Understanding and meeting future customer expectations
- International and domestic
- Pricing, fossil fuel vs renewable

Understanding and meeting societal and community expectations
- Working with communities
- Educating and informing
- Industry undertakings

… where getting the right settings for demand will pull through investment in the right supply

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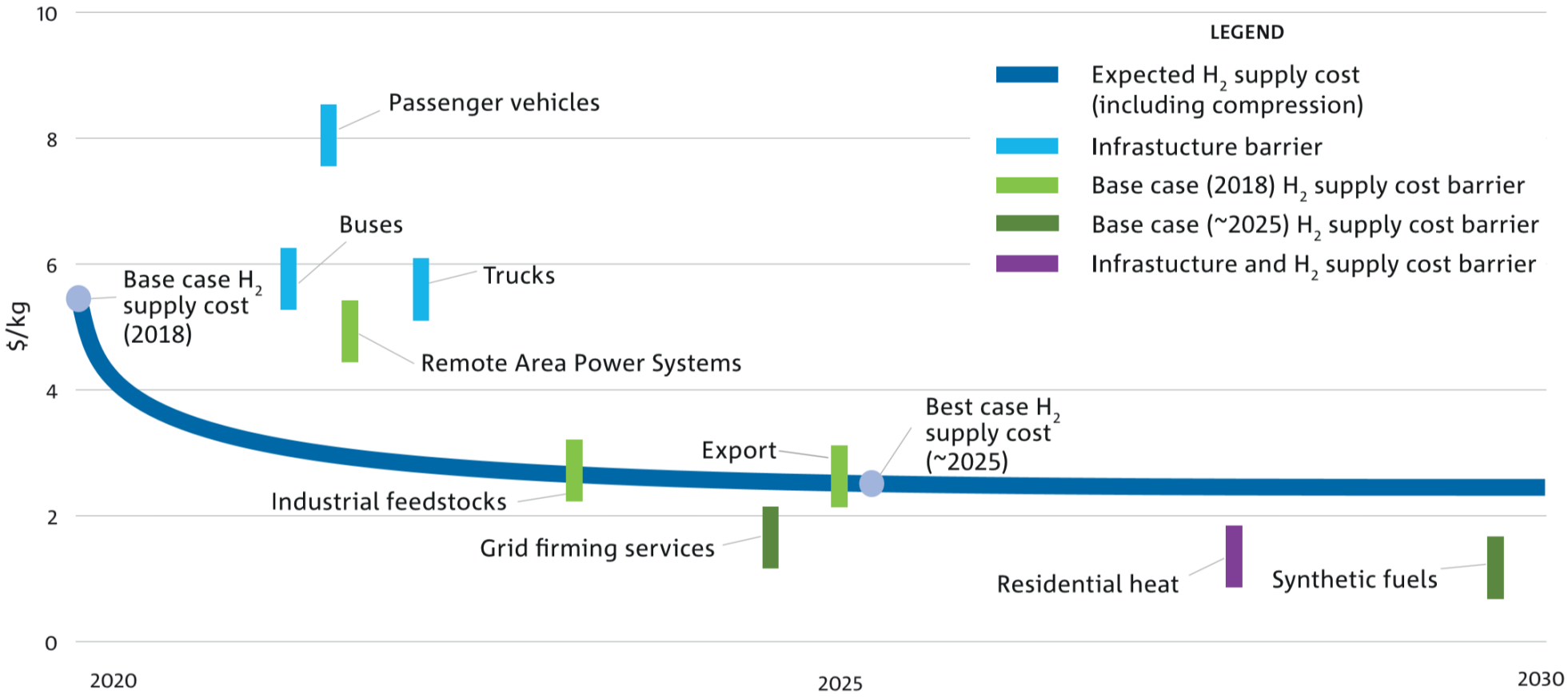
DRIVING DEMAND

Hydrogen competitiveness in targeted applications



Source: CSIRO 2018

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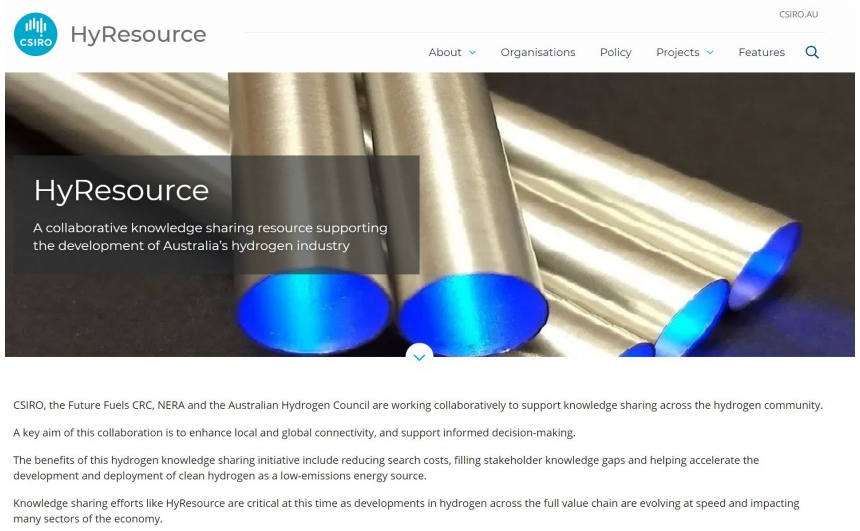
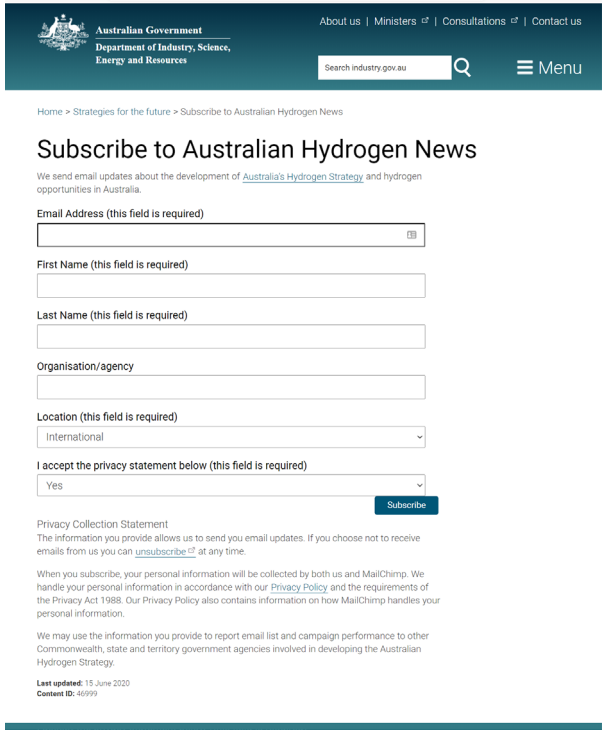
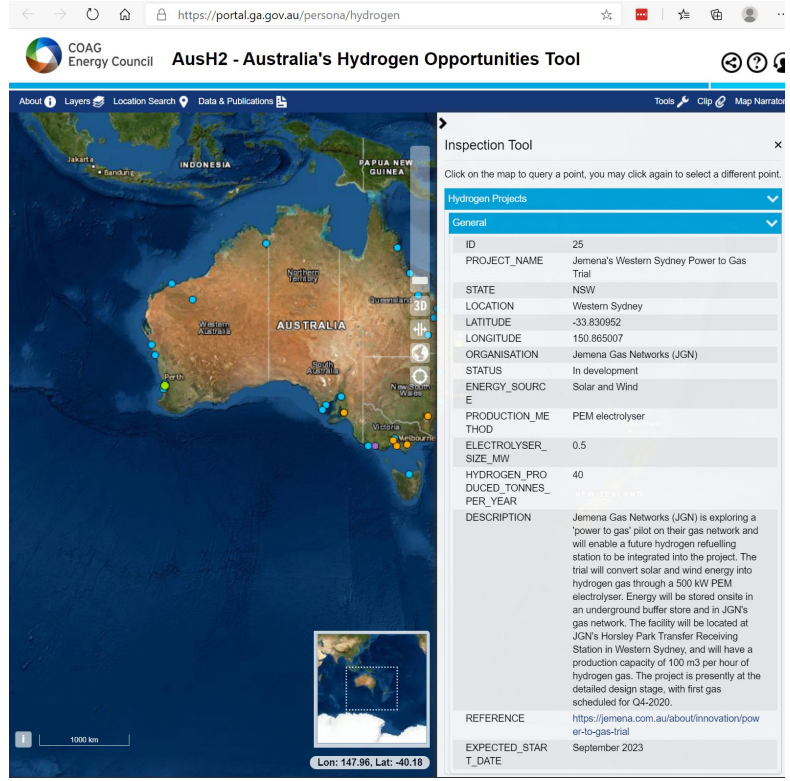
FURTHER REFERENCES

- www.research.csiro.au/hyresource/
- www.industry.gov.au
- www.ga.gov.au/scientific-topics/energy/resources/hydrogen
- www.arena.gov.au
- www.H2council.com.au







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END

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