



SCALING GREEN HYDROGEN CRC

What is the problem or challenge being solved?

Globally, vast amounts of hydrogen are used to make chemicals and produce refined transport fuels. As companies around the world increase their reliance on renewable energy, new challenges are emerging – among them how do we store excess renewable energy like sun and wind and how do we help industries who cannot easily transition to these renewable energy sources, such as fertiliser, heavy transport, aviation, and shipping?

Green hydrogen can help us address these challenges by providing long-term storage for excess energy and producing a zero-emission fuel offering the same range and convenience as fossil fuels.

The largest operating electrolyser in Australia has a capacity of 1.25 MW. Scaling to as much as say 1 TW of electrolysis requires more than just the ad hoc addition of more and bigger electrolysers. Our domestic electricity and water sectors need to be massively scaled and coupled, delivering no less service than that enjoyed by current electricity and water customers. The sector needs to develop with a strong focus on people and decarbonisation in mind.

The challenge is multi-disciplinary and diverse, requiring a consortium of industry, government, and research leaders to develop collaborative solutions to ensure that the industry can deliver on its full potential.



The opportunity

The key opportunity is to rapidly expand hydrogen's role in our economy, helping Australia and the world reach crucial net-zero targets. Australia can lead the Asia-Pacific in domestic clean energy and green hydrogen expertise.

Green hydrogen will lead to a further increase in global electricity demand, and its emergence will in fact couple those sectors to the electricity and water sectors through the scale of electrolysis required.

We would love to talk to you about how the Scaling Green Hydrogen CRC could support your organisation to contribute to achieving net-zero emission targets.

Our vision

The vision for the Scaling Green Hydrogen CRC is to see an Australia green hydrogen sector by 2040 with 1 TW of installed electrolysis delivering green hydrogen at competitive costs for domestic and export customers. Success will be measured by tonnes of CO₂e abated in Australia and our export markets, the growth of domestic manufacturing and service activity, and sustainable jobs created in Australia.

Scaling Green Hydrogen CRC

The Scaling Green Hydrogen CRC will help build confidence with:

- Evidence-based solutions for addressing key challenges through innovative manufacturing techniques, new policies, and regulations for industry to operate under
- Collaboration across electricity, water, chemicals, transport, infrastructure, and manufacturing sectors
- Links between partner organisations, world class researchers, best practice projects and hydrogen end users
- Support for the growth of production, storage, and utilisation infrastructure to drive a world-class domestic supply chain and build export capabilities
- Increased capability in Australia's SMEs, emerging entrepreneurs, and the research sector to create a global Hydrogen Equipment, Technology and Services (HETS) sector

Scaling Green Hydrogen CRC seeks to raise \$5 million per annum from key stakeholders for the 10-year life of the CRC which will see an additional \$50 million matched Commonwealth funding being requested.

Driving the rapid expansion of green hydrogen's role in global economy.

Program 1 – Production & Storage

Technologies and business models for harnessing renewable electricity for producing and storing green hydrogen at scale

- Solutions for scaling green hydrogen production
- Renewable energy-based production technologies
- Distributed vs centralised models
- Shared infrastructure
- Electrolyser CAPEX and OPEX reductions
- Balance of plant development
- Storage technologies and options
- Emerging production technologies



Program 2 – Water

Decoupling freshwater resources from green hydrogen production

- Technologies for alternative water sourcing
- Shared infrastructure and models
- Beneficial co-products and co-location
- Integrated planning



Program 3 – Chemicals

New and efficient process for hydrogen derived commodity chemicals and fuels

- Green hydrogen derived fuels (such as sustainable aviation fuel)
- Green hydrogen derived chemicals (such as methanol)
- Green ammonia and fertilisers
- Technologies and models for distributed production



Program 4 – Mobility

Zero emission shipping, trucking, aviation, and rail in Australia

- Refuelling systems for aviation, shipping, rail, and trucking
- Multi-user and shared infrastructure
- Fuel cell technologies



Get involved

To discuss how you can participate in developing our bid or join our consortium, contact a member of our bid team.

Paul Hodgson
Interim CEO
+61 431 882 911
PaulHodgson@consultingis.com.au

Program 5 – Enabling

Best practice processes and systems to support the growing sector and deliver shared value

- Sustainable financial and techno-economic models
- Beyond social licence – mutually valuable partnerships with First Nations and other communities
- Safety, regulations, and standards
- A sovereign and innovative supply chain
- Addressing UN SDGs



Capacity Building

- Workforce Skills and Education Program
- SME & Industry Commercialisation Program
- Green Hydrogen Fellows Initiative

Dr Chris Matthews
Bid Engagement Manager
+61 413 184 655
Chris.Matthews@adelaide.edu.au