

# AHRN

## Newsletter May 2023

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### Online AHRN Seminars

The first online seminar of 2023 was delivered by Assoc Prof Jacob Leachman of Washington State University, USA. The presentation is available [here](#). This was the first time we have had a presentation from another country, and it was a great way to start the year following the successful conference in February. Our strategy team is planning more such events in the following months.

On **June 7th** there will be a seminar on **hydrogen production by electrolysis**. The speakers are:

- Associate Professor Amgad Rezk (RMIT), "Vibro-H<sub>2</sub>: A Novel High Frequency Vibration Platform for Enhanced Green Hydrogen Production"
- Professor Gerry Swiegers (University of Wollongong), "Membrane free Capillary Electrolysis"
- Dr Nasir Mahmood (RMIT), "Sea water electrolysis"

Please look out for notices of upcoming seminars on "Critical Minerals for the Hydrogen Industry" and "International Cooperation on the Roadmap to Hydrogen."

### Next Australian Hydrogen Research Conference

Last month we invited leading hydrogen research groups to submit an expression of interest to host the next Australian Hydrogen Research Conference. Perth was the first city to offer to run the next event hosted by Curtin University and the University of Western Australia, and so AHRC2024 will be in Western Australia. The AHRN hopes that the conference can be held in different locations in future years to maintain a fresh approach with a new local organising committee in for each conference.

### Status of hydrogen research

The paper produced for the February research conference is available for download [here](#).

### **Australia's critical hydrogen research questions**

Those attending the AHRN conference in February heard presentations across the hydrogen supply chain and three expert discussion panels were held on Industry and on Policy, leading into a final Key Research Questions panel discussion on the last day chaired by Australia's Chief Scientist, Dr Cathy Foley. The research panel was asked to discuss Australia's top hydrogen research questions. The outcome of these discussions is embodied in a short report available to download [here](#). Key recommendations were:

1. Develop and implement a mechanism to help identify, monitor, and refine Australia's hydrogen R&D priorities. Monitoring should be linked to other monitoring of hydrogen industry development.
2. Consider leading this mechanism from the Office of the Chief Scientist.
3. Report the identified R&D priorities in the next version of Australia's Hydrogen Strategy.
4. Build collaborative hydrogen industry-research sector interactions through engagement programs and activities which unite industry and R&D communities in identifying and addressing key industry challenges.
5. Continue to grow a comprehensive stakeholder network by supporting future hydrogen-specific conferences and events.

### **Establishing the independent AHRN**

The AHRN strategy group is busy preparing the ground to move the organisation from within CSIRO to a new company structure. We have reached out to three key helpers in this regard: First, the law firm of Hamilton Locke, which is very active in the hydrogen business with several partners including the H2Q cluster; a leading IT consultancy based in Queensland and a global Audit and Accountancy company with offices throughout Australia.

In the coming weeks the new AHRN will be established as a public non-profit Australian company. In future all activities of the AHRN will be accountable to the company board of directors and we are currently seeking to establish a strong independent board that will enable good collaboration between research providers, funders, industry, and government. If you have board level experience, we would love to hear from you as we set up the new company.

### **RESEARCH FELLOWSHIPS**

#### **International Hydrogen Research Collaboration Program**

An expression of interest (EOI) for the Australian Government International Hydrogen Research Collaboration Fellowship Program is available for download [here](#).

The program is open to all Australian early to mid-career researchers wishing to further their careers in hydrogen by spending 3-12 months in world class labs and institutions overseas currently being identified by the Australian Hydrogen Research Network (AHRN).

Please feel free to publish or share the EOI in any newsletters, communication outlets or other networks you might be involved in. EOIs should be emailed to

**int-h2collab@csiro.au**

The EOI will remain open until spaces become full.

If you have any questions, please do not hesitate to contact the program manager, Dan O'Sullivan

@ **dan.osullivan@csiro.au**

## **Other Australian News**

### **State of Hydrogen 2022**

Under the National Hydrogen Strategy, the Australian Government is committed to undertake an annual review of Australia's clean hydrogen industry development performance and publish an annual State of Hydrogen report. The 2022 report was released in April 2023.

The report covers:

- Australia's pathway for a clean hydrogen future
- The development of Australia's hydrogen industry so far, and how it compares to the rest of the world.
- What governments around Australia are doing to advance the industry.
- The path ahead for the hydrogen industry in Australia.

The report can be downloaded here:

<https://www.dceew.gov.au/sites/default/files/documents/state-of-hydrogen-2022.pdf>

<https://www.dceew.gov.au/sites/default/files/documents/state-of-hydrogen-2022.docx>

### **National Hydrogen Infrastructure Assessment**

The Australian Government has completed Australia's first assessment of infrastructure requirements for hydrogen through to 2050.

The National Hydrogen Infrastructure Assessment aims to support targeted and coordinated infrastructure investment, through identifying infrastructure needs and gaps; and where investments could be best prioritised to achieve maximum impact.

The final report can be downloaded here:

<https://www.dceew.gov.au/sites/default/files/documents/national-hydrogen-infrastructure-assessment-final-report.pdf>

### **National Hydrogen Strategy Review**

As recommended by Dr Alan Finkel at the AHRC in early February, representatives of all Australian governments agreed to review the National Hydrogen Strategy at the inaugural Energy and Climate Ministers Council meeting on 24th February. The Department of Climate Change, Energy, the Environment and Water will soon commence a public consultation process to assist in the preparation of an updated strategy. If you would like to contribute and receive notification of when this process has commenced, please contact [hydrogen@dceew.gov.au](mailto:hydrogen@dceew.gov.au)

## **ARENA announces national R&D Funding Round**

The Australian Renewable Energy Agency (ARENA) recently announced \$50 million for two funding rounds targeting research and development (R&D) for renewable hydrogen and low emissions iron and steel.

Funding for successful research and development projects will be provided over two phases, with an initial laboratory-based research phase followed by a commercialisation phase aimed at scaling up and demonstrating research breakthroughs. \$25 million will be allocated to each of the funding rounds, with grant funding for successful applicants expected to range between \$500,000 and \$5 million. The Hydrogen Research and Development Round includes funding for two streams: one focused on improving and optimising the production of renewable hydrogen and hydrogen derivatives such as ammonia, and another investigating storage and distribution solutions.

Expressions of Interest for ARENA's Hydrogen R&D Funding Rounds are due 1 June 2023. For more information visit ARENA's funding page.

## **Hydrogen industry technical series**

The hydrogen industry technical series has been a practical in-person program, jointly hosted in Melbourne by the Australian Institute of Energy (AIE) and Engineers Australia (EA) over a 10-week period starting February 15 and running to April 19. The series of weekly events included presentations from leading practitioners in the hydrogen industry, panel discussions, three site visits and networking opportunities. The participation of 950+ attendees and 47 presenters representing 35 organisations and the positive initial feedback received has made what was initially seen as a trial series a huge success and generated great momentum and the necessary confidence to progress the series nationally. Discussions are therefore starting to be held between the appropriate representatives of the AIE and EA in other cities around Australia. Members of the AHRN are encouraged to be involved in the planning of their local series and more information on the expectations of the proposed national technical series is available from Dr Andrew Dicks ([adicks@ah2rn.org.au](mailto:adicks@ah2rn.org.au)) or from Luigi Bonadio ([luigi.bonadio@h2australia.com](mailto:luigi.bonadio@h2australia.com)).

## **First Ever Australian Hydrogen Grand Prix a Roaring Success**

On April 21 the Horizon Hydrogen Grand Prix (H2GP) came to Australia for the first time ever. School teams from across Queensland and Australia got the chance to put their renewable energy engineering skills to the test - racing their self-built, hydrogen-powered RC cars over a thrilling 'endurance race'.

Over the course of this hydrogen-powered race teams had to use every scrap of knowledge gained over the past six-month educational program - such as hydrogen fundamentals, mechanical engineering, data analysis and much more - to actively solve problems in a team and keep their cars on the track.

Horizon education is seeking to provide fuel cells and other hydrogen technologies to schools throughout Australia and the H2GP is a key element in its educational program. At a time when the importance of training and hydrogen skills development is increasing, the H2GP

helps focus attention on the need to encourage the next generation of scientists and engineers in our schools. Plans are now in place to recruit new teams of students from across Australia to participate in Regional Horizon H2GP events, including in Central Queensland. The location and venue for the 2024 national event will be confirmed later this year. Schools interested in entering a team and participating in the H2GP program from Horizon Educational can visit <https://www.h2grandprix.com/>.

## **International News**

### **IEA Australia 2023 Report**

The International Energy Agency (IEA) regularly conducts in-depth peer reviews of the energy policies of its member countries. This process supports energy policy development and encourages the exchange of international best practices and experiences to help drive secure and affordable clean energy transitions.

Since the IEA's last review in 2018, Australia has significantly raised its climate ambitions, with the 2022 Climate Change Act doubling the target for emissions reductions by 2030 and setting the goal of reaching net zero emissions by 2050. In this report, the IEA provides energy policy recommendations to help Australia effectively manage the transformation of its energy sector in line with its goals. Several responses from Government and hydrogen stakeholders such as FFI have already responded to the IEA report.

### **Plug Power moves from Queensland to Korea**

Following the announcement earlier this year that Fortescue Future Industries will not continue the collaboration with US-based Plug Power to build electrolyzers in Queensland, the company has recently pledged to spend USD 746 million to build a gigafactory for hydrogen facilities and a research facility in South Korea. Plug Power has been working with SK group since early 2021 when SK made a USD 1.6 billion capital investment in Plug Power and became its largest shareholder.

### **Japan increases its future hydrogen supply**

The Japan Times recently reported that Japan plans to increase its supply of hydrogen sixfold from the current level to around 12 million tons by 2040. The Prime Minister, Fumio Kishida pledged to revise the basic Japan Hydrogen Strategy of 2017 to achieve carbon neutrality by 2050. Kishida's view is that, to maintain its position as a leading country in hydrogen energy, Japan must accelerate the construction of a stable international supply chain with Australia, Middle East and Asia. "At the same time, Japan has an enormous investment in Australian LNG [Liquified natural gas] supply through the Ichthys and other projects and it is likely that gas will still play an essential role during the energy transition period until such time as the infrastructure and supply of such hydrogen and ammonia low-carbon energy sources is realised," she said.

### **Australian Hydrogen Events 2023**

- 25-26 May, The Australian Hydrogen Conference 2023, Brisbane Convention and Exhibition Centre, [com.au](https://www.com.au)

- 25-26 July, Connecting Green Hydrogen APAC 2023 – Melbourne  
<https://apac.gh2events.com/agenda>
- 6-7 September, Second Annual Hydrogen Connect Summit, Brisbane Convention and Exhibition Centre <https://hydrogenconnect.com.au>
- 26-27 October, Asia-Pacific Hydrogen Summit and Exhibition 2023, ICC Sydney,  
<https://asia-hydrogen-summit.com>
- 27-29 November, Positioning Hydrogen – 2023, Melbourne Convention and Exhibition Centre, <https://hydrogenconferenceaustralia.com>

If you have news items that you would like to share with the Australian Hydrogen Research Network, please send them to [adicks@ah2rn.org.au](mailto:adicks@ah2rn.org.au)