AHRN

AHRN Newsletter May 2022

Mission The Australian Hydrogen Research Network (AHRN) is the community of researchers and interested stakeholders supporting the emerging hydrogen industry. We foster excellence in hydrogen-related research through an ongoing program of seminars and knowledge-sharing activities. By providing thought leadership, advocacy, and research tools, the AHRN offers its members domestic networking opportunities as well as access to international collaborations.

A flyer with more information on the AHRN can be downloaded here. ***Please share this with your colleagues to encourage them to join our network***.

In this newsletter:

Online AHRN Seminar on Hydrogen Research and the Australian Gas Industry, Monday 6th June at 1.00 pm AEST

Our seminar series continues by bringing together key personnel involved in the Australian natural gas industry to examine how hydrogen may play a role in the industry as we seek to decarbonize the energy supply sector. Presentations will cover everything from the Gas Vision for 2050 report, to the practical issues involved in hydrogen injection into gas networks, and the development of gas industry standards.

Confirmed speakers:

- Professor Andrew (Alf) Garnett, Director of the University of Queensland Centre for Natural Gas
- Dennis Van Puyvelde, Head of Renewable Gas, Energy Networks Australia
- Tony Williams, Director GPA Engineering
- Alistair Wardrope, Armani Energy, and formerly Jemena

All those who have registered with the AHRN will soon receive an invitation to attend this seminar. If you are not yet on our database and wish to attend, please send your details to the AHRN admin via Hydrogen_Mission@csiro.au

The following seminar will be focused on activities within South Australia and is being organised with the help of Prof Paul Medwell from the University of Adelaide. We are open to your ideas for seminars, workshops and other events that you feel would be useful to the AHRN. Please feel free to contact us to offer help and suggestions.

Australian Hydrogen Research Conference 2023

We are pleased to confirm that the AHRN research conference will be held at the Canberra from Wednesday 6th to Friday 8th of February 2023.

The Conference committee received responses from three potential professional conference organisers (PCO) from which it has appointed Arinex as the PCO for the 2023 conference. A program committee has been set up led by Dr Siva Kuraturi from ANU and an international advisory panel for the conference has been appointed. As reported last month, we are very grateful for financial support provided by the CSIRO via the DISER international program as the first major sponsor of the conference and have already started receiving offers of support from other organisations. We shall shortly be issuing a sponsorship prospectus for the conference, so if you know of any companies or individuals that would like to offer support, please contact the conference chair Kenneth Baldwin Kenneth.baldwin@anu.edu.au deputy chair Andrew Dicks adicks@ah2rn.org.au, or Dan O Sullivan, dan.osullivan@csiro.au

International collaboration program

Expressions of interest for overseas delegations

Applications have now closed for expressions of interest (EOI) for international for the delegations DISER International Hydrogen Research Collaboration Program. Over 80 applications have been received and are now undergoing peer review with the aim of selecting up to 35 Australian researchers to visit up to 10 countries as a prelude to setting up the fellowship program. The delegation selection process is expected to be completed by the end of June and the first delegation to be underway by mid-September with all of the visits completed by the end of 2022. The fellowship program will also commence before the end of the year with up to 40 Research fellows funded to undertake overseas placements activities of up to 12 months duration. By the end of the delegations and the fellowship program, Australia will have stronger research connections, collaboration pathways, knowledge sharing and international relations between Australia's research institutions and the world's leading international hydrogen research organisations.

If you have any questions about the international collaboration program, please contact the Program Manager Dan O'Sullivan.

Career opportunity for early-mid career researchers

CSIRO has launched a major new initiative, "Impossible without you", searching for talented early-mid career researchers in priority areas such as hydrogen energy. The initiative is looking to recruit the next generation of inventors, innovators, researchers and change makers to tackle some of the biggest challenges facing Australia, from building Australia's hydrogen industry and ending plastic waste to growing our protein industries and protecting regional towns from drought. CSIRO's Missions, such as the Hydrogen Industry Mission, provide an opportunity for early career researchers in science and engineering to collaborate across disciplines, sectors and systems to solve impossible problems. More on this exciting initiative can be found on LinkedIn or CSIRO's web page. To submit an application for the Hydrogen Industry Mission you can do this online up until the 19 June, details here.

Other Australian News

Hydrogen strongly featured in the Smart Energy Conference. In a major in-person conference since NSW opened its borders to international travel, the second day of the Smart Energy Conference strongly featured hydrogen projects. Even in the stream devoted to energy storage hydrogen was promoted in a presentation by Prof Ken Baldwin from ANU. But the main session on hydrogen featured 21 presentations in four dedicated sessions. The first segment on "global market trends and forecasts" was headed by H E Paul Gullen Larsen, Ambassador of Norway to Australia, followed by high level presentations from CWP Global, DNV, GEV and the German-Australian Chamber of Industry and Commerce. The following session on "The Early Emerging

Markets" featured topics that ranged from the cautious progress made by Alana Barlow Sumitomo to the bullish potential of the H2U projects presented by Attilio Pigneri. The following session on "certification and standards" was marred by communications issues with presentations made online, and demonstrated that we are not yet fully ready for hybrid events of this magnitude, where some sessions attracted an audience of almost 1000. The final session on domestic markets again ranged from aspirations of the Queensland startup company Line Hydrogen and the proposed Scaling Green Hydrogen CRC, to important but necessary considerations of hydrogen standards development and cluster development.

Major delegation offers innovative solutions and opportunities to partner with Australia on some of the world's biggest clean hydrogen projects. After the 6th May AHRN webinar on international collaboration, a trade mission from Australia travelled to Rotterdam to attend the World Hydrogen Summit and Expo. Highlights for Australia included the signing of a deal between the State of Queensland and Port of Rotterdam to export 20mn t/yr of hydrogen to the Port of Rotterdam by 2050. This announcement builds on the announcement of a 2GW/yr electrolyser plant in Gladstone that was recently granted major project status by the state government. At the same event, BP announced a proposal for 30% stake in the proposed Asian Pacific Renewable Energy project, currently led by CWP Global.

Announcements made on hydrogen hubs program. During April and into May several announcements were made under the 2022 federal election caretaker arrangements. These include Seven implementation grants totalling AUD $430 million for the clean hydrogen industrial hubs program. The projects announced are the WA Government Pilbara Hydrogen Hub, bp Australia's H2Kwinana Clean Hydrogen Industrial hub, Stanwell Corporations Central Queensland hub, Port of Newcastle's Hydrogen hub, NSW, Origin Energy's Hunter Valley H2 Hub NSW, SA Govermnets Port Bonython Hydrogen Hub and Tasmanian Government's Tasmania Green Hydrogen Hub. Up to $23 milion has also been allocated to hub development and design grants. These grants have been awarded to Engie, Santos, Ark Energy, Origin Energy,Vena Energy, amd INPEX Operations. More information is given on the hyresource website
https://research.csiro.au/hyresource/australian-clean-hydrogen-industrial-hubs-program/

Short Report on Hydrogen Industry Policy Initiatives and the Status of Hydrogen Projects in Australia. In this report, recently published under the Hyresource program Section One summarises the key hydrogen-related policy initiatives announced in Australia since the publication of the first report in December 2020. Section Two examines the current status of the main funding, support and investment programs directly supporting hydrogen projects. Section Three summarises the current state of hydrogen projects in Australia, with emphasis on projects at the Operating, Under construction and Advanced development stages of the project life-cycle. Section Four reviews key features of global and local trends in hydrogen in mobility applications. The report can be downloaded here: https://research.csiro.au/hyresource/wp-content/uploads/sites/378/2021/05/Short-Report-on-Hydrogen-Policy-and-Projects-Status-in-Australia-May-2021-v0.pdf

Wrightbus signs deal with Volgren. UK bus manufacturer Wrightbus announced on 11th May that it has signed a 'landmark deal' with the Australian bus body builder, Volgren, to provide its hydrogen fuel cell powertrain technology. Volgren which builds bodies for

many operators throughout Australia, has already produced battery electric buses and the deal with Wrightbus will initially see the manufacture of 2 single-deck hydrogen buses powered by the NexGen fuel cell powertrain.

Raven SR Inc. signs MoU with Gevolve Solutions to build waste to hydrogen plant. Wyoming based Raven SR has signed a Memorandum of Understanding (MoU) with First Nations majority owned, Gevolve Solutions, to build waste to hydrogen facilities using Raven SR's proprietary non-comnbustion steam/CO2 technology. The initial project will be to establish a waste-to-hydrogen facility in WA before expanding to other states.

Thyssenkrup opens office in Perth. Now producing a standard 10 MW alkaline electrolyser the European company Thyssenkrup is securing a presence in Australia to explore both domestic scale hydrogen production facilities and the giga-watt scale opportunities that may open up for the Australian hydrogen industry.

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International News

FFI appoints new CEO and looks turn US coal mine and generating facility into huge green hydrogen hub. Dr Andrew (Twiggy) Forest has resumed executive role as chairman at Fortescue Metals Group and transferred the CEO role of FFI to former head of GE Europe Mark Hutchinson. Andrew Vesey, the former AGL boss has reportedly become the head of energy transition projects at FFI. https://reneweconomy.com.au/forrest-takes-executive-role-at-fortescue-makes-big-changes-to-top-ranks/

Plug Power to supply the 'world's largest electrolyser' to landmark Danish project. US-based Plug Power, that has an MoU with FFI to build electrolysers in Queensland for the

Australian market, revealed in 17th May a landmark agreement with H2 Energy Europe to supply 'the world's largest' electrolyser to date for a hydrogen production project in Denmark. The electrolyser system, totalling 1GW, will be utilised within a green hydrogen production complex, with a capacity of 100,00 metric tonnes per year, for use in northern Europe's transportation sector. This is a major development for not only Plug Power but the wider hydrogen economy with vast quantities of hydrogen set to be generated for vehicles.

bp and Linde launch carbon capture project to produce low-carbon hydrogen on the Gulf Coast. On 17th May BP and Linde announced plans to advance a major carbon capture and storage (CCS) project in Texas, US, which would allow low-carbon hydrogen production at Linde's existing facilities. It is understood bp will review, develop, and permit geological storage sites for permanent sequestration of the carbon dioxide.

Australian Hydrogen Events 2022/23

- 31 May - 1 June, The Australian Hydrogen Conference, Adelaide Convention Centre23 June, Renewable Hydrogen Offtake Forum, The Intercontinental, Melbourne
- 25-26 July, Connecting Green Hydrogen, APAC 2022, Conference and Exhibition Centre, Melbourne
- 6-7 September, Energy and Mines Australia Summit the Westin, Perth.
- 8-9 September, H2Q Hydrogen Connect Summit, Brisbane Convention and Exhibition Centre
- 26-27 October, All Energy Australia 2022, Melbourne Conference and Exhibition Centre
- 30 Oct-4 November, 17th International Symposium on Metal-Hydrogen Systems, Pan Pacific Hotel, Perth WA
- 6-8 February 2023, The first Australian Hydrogen Research Conference

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