

Newsletter



Hydrogen
Society
of Australia

Looking backwards, looking forward!

Hydrogen is marching on – will you join us?

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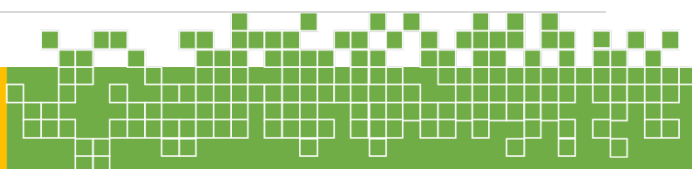
Message from the HSA President – Adam Osseiran

Welcome to our latest corporate member, **Infinite Green Energy (IGE)**, who is a fast-growing Australian company that is developing very promising Green Hydrogen projects, both nationally and internationally. More information about IGE initiatives is presented under our Members Spotlight (refer to Page 2).

One of our HSA initiatives is to help bridge the gap between industry and academia, through a series of online webinars referred to as **Hydrogen Links – Industry Focused Academic Research**. The objective of this initiative is both to raise the level of industry awareness and expertise and deepen the relationships between industry and academia within the HSA. Session 3 was a hybrid event with face-to-face networking event at Murdoch University, with the presentations broadcast online across the country (refer to page 3 and 4). An overview of the upcoming speakers confirmed to date is provided on Page 7. The Session 3 presentation recording will soon be available on the HSA website in our Members Only Knowledge Portal.

In this month's newsletter we have selected some of the hottest topics and activities in the green hydrogen ecosystem. We would like however to invite you, all our readers, whether you are HSA members or not, to tell us about clean hydrogen activities in your region, such as career opportunities, conferences, future developments, and news so that we can share them with all in our next editions. We also invite you to be involved in organising the celebration of the next **Australia Hydrogen Day 2023** on Sunday 8 October 2023 in your Capital City. Get involved and reach out on contact@hydrogensociety.org.au

If you are not yet a member of HSA, please consider joining us to get access to free or discounted events, training material and the latest information in the hydrogen space. [Click here to explore membership options](#)



Members Spotlight – Infinite Green Energy <https://igeh2.com/>

Infinite Green Energy (IGE) led by CEO Stephen J Gauld (Founder of the company) and Yolanda Gauld (Co-founder) is one of Australia’s leading Green Hydrogen companies, delivering projects in Australia and Internationally. In recent months IGE has announced its partners for two projects, being **Northam** and **Arrowsmith**. The **Northam** project will deliver 4 tonnes/day of hydrogen, targeting heavy haulage back-to-base trucks, whilst demonstrating to the Australian market at scale. IGE’s flagship project **Arrowsmith** is one of the largest Green Renewable projects in an advanced status. Arrowsmith will initially deliver 23 tonnes/day of hydrogen with initial expansion planned for 42 tonnes/day. Similar to Northam, the Arrowsmith offtake is targeting heavy haulage vehicles.

Arrowsmith was awarded **Lead Agency Status** from the Federal Government to assist with the development of this project. The Arrowsmith project also includes an international export terminal in its design which was completed in August 2021, allowing export of Cryogenic Hydrogen to the Asia Pacific markets, targeting South Korea and Japan. Once the initial phase of Arrowsmith has been completed, Arrowsmith will export 290 tonnes/day of Green Hydrogen via its offshore loading facility.

Northam Project

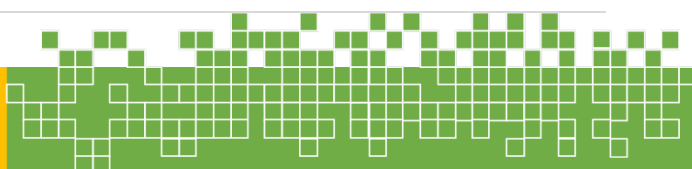


Arrowsmith Project



In addition to its Australian projects, IGE has two international projects, one being in Italy and the other in New Zealand. The Italian project (**Arrowsmith Italia**) delivers 12.5 tonnes/day and is in advanced development. IGE will deliver part of its Hydrogen to the hard-to-abate Industry sector and the balance to heavy haulage trucks in Europe. The New Zealand project (**Arrowsmith Taranaki**) will also target international export from the North Island where the concept select has already been completed with **Petrofac** and will now move into FEED. Like Arrowsmith, the offtake will head to Asia Pacific Markets delivering 300 tonnes/day of Liquid Hydrogen (LH2) or 1,500 tonnes/day of Green Ammonia.

Infinite Green Energy operates in three countries at this moment with pipelines in two further international locations. The company focuses on optimizing outcomes for all stakeholders, including the Traditional Landowners and other communities, as well as collaborating with Project Partners to deliver value to our strategic investors. IGE fuel target markets are to support power generation (ie. Data Centres), industrial plants, marine transition fuels and heavy transport sectors.



Hydrogen Links: Industry Focused Academic Research Session 3: Integrated Drinking Water and Renewable Energy based Power Supply for remote Aboriginal communities in WA [delivered on 2023 August 01]

A 100% renewable energy (RE)-based stand-alone power and water supply can be achieved using a resilient Renewable Energy Storage System RESS to provide a sufficient and stable power water supply. Murdoch University has conducted two projects in the Pilbara region of Western Australia (WA):

1. Power Supply: A feasibility study for a 100% renewable energy hydrogen-enabled microgrid. In this feasibility study, two different Sites were studied to techno-economically evaluate the transition to a 100% RE-based stand-alone microgrid (SAM) using a hybrid hydrogen-battery energy storage system. A diesel-power station transition to a 100% RE SAM power system has been modelled as a pilot project to demonstrate the techno-economic viability of using hybrid hydrogen-battery RESS to provide lower energy cost with sufficient autonomy and reduce the carbon footprint. Several scenarios were considered in the modelling for the most optimal Options for the locality in terms of the cost of energy and GHG emissions. All Options were modelled with the principle of a battery bank following the load fluctuations while the hydrogen fuel cell generator covers the baseload. The Simulation analyses revealed that a larger capacity of the hydrogen system adds more energy autonomy at a price. An additional scenario of having a diesel generator backup is the most robust and cost-effective Option. However, this Option comes at the cost of having a tiny percentage (1.5%) of fossil fuel penetration.



Furat Dawood

**PhD candidate at
Murdoch University
Hydrogen to Power**

2. Drinking Water Supply: The second research project in progress aims to desalinate available bore water at the remote communities to produce good quality drinking water, utilising the abundant renewable energy resources in the Pilbara/Kimberly region. Currently, drinking water used by many remote communities does not meet the quality standards for potable water. This is having a negative impact on the health and wellbeing of the Indigenous people, including higher kidney failure cases among the remote communities. Additionally, feasibility of producing a small amount of Haemodialysis water (Ultra-Pure Water) meeting clinical standards to enable doing dialysis at the community clinic will also be studied.

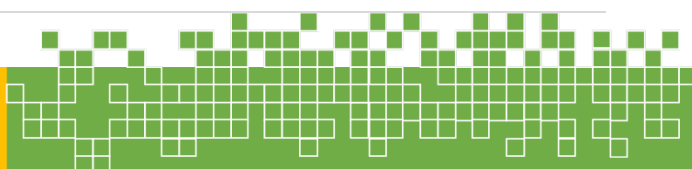


Benny Abraham

**PhD Candidate at
Murdoch
University**

Key takeaways:

- A 100% renewable energy (RE)-based stand-alone power and water supply can be achieved using a resilient RE Storage System RESS to provide a sufficient and stable power and water supply.
- A sufficient hybrid battery-hydrogen RESS can overcome the variability and intermittency nature of the RE resources and ensure a 100% RE penetration for both power and water supply systems. The production of hydrogen requires water, and water treatment requires power. The proposed 100% RE system emphasises the Energy-Water Nexus.
- The desalinated water blended with bore water in an appropriate ratio will provide sufficient drinking water for the communities. Blending water will help optimise the desalination equipment and reduce the overall power consumption of the desalination process.



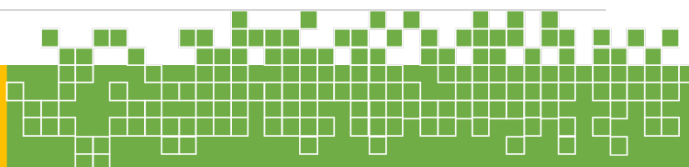


After the presentations by Furat Dawood (left) and Benny Abraham (right), Lorie Jones (centre) facilitated a Q & A session with the attendees, both online and in-person.



The in-person event was held at Murdoch University's Innovation Hub. Following the online presentations, the group headed outside for a walking tour of Murdoch's Renewable Energy facilities (ROTA).

Below left to right: Mark Tock (CSIRO), Vinod Patel (ICE), Ben Cook (WGC), Warner Priest (ICE), Lorie Jones (HSA), Pauran Hudson (Curtin Uni), Andrew Henderson (JTSI), Benny Abraham (Murdoch Uni), Furat Dawood (H2E) is behind the camera.



Career Opportunities:

There are a number of academic and employment opportunities highlighted in our Knowledge Portal including those listed below:

UNSW PhD Candidate

The University of New South Wales (Sydney, Australia) is looking for a PhD candidate to work on an Australian Research Council-funded project in Electrochemical Nitrogen Reduction in the School of Chemistry. Please apply if you have a passion for research and wish to pursue a career in the fields of clean energy and sustainability such as: Energy storage and conversion; Hydrogen economy; and Decarbonisation technologies. Click on the following link for further information: <https://hydrogensociety.org.au/phd-scholarships-on-electrosynthesis-of-ammonia-at-unsw/>

UNSW is also offering a number of PhD Scholarships on the following topics:

- Electrosynthesis of Ammonia [Click here for more information](#)
- Fuel Cells UNSW [Click here for more information](#)
- CO2 Electroreduction [Click here for more information](#)
- Water Electrolysis [Click here for more information](#)

Curtin University - Job opportunities with International Futures Lab – Redefine H2E (Munich)

Expression of Interest for Researcher positions at the Technical University of Munich: An opportunity provided by the Technical University of Munich, Curtin University, and the International Future Lab: Redefine H2E. Working under the supervision of Professor Peta Ashworth (Director of the Curtin Institute for Energy Transition), we have an exciting opportunity available for a Core Scientist. Click on the following link for further information. <https://hydrogensociety.org.au/job-opportunities-with-international-future-lab-redefine-h2e-munich/>

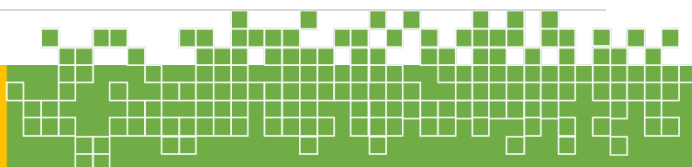
For the full list of opportunities currently advertised on the HSA website, [click on this link](#)

Member Benefit – WA Business News Subscription (free guest access and discount)

The Hydrogen Society of Australia (HSA) has an established relationship with Business News (BN), to explore and collaborate on opportunities to promote hydrogen initiatives to professionals and the broader community. Business News is a respected, trusted, and credible independent news source for WA businesses and for any Australian with an interest in commerce, politics, and industry. Business News would like to offer HSA members guest access for 4 weeks to explore our full content and features so that key individuals can gain a better insight into why Business leaders choose to engage with us year on year.

If you are interested to have free guest access for 4 weeks to explore Business News, please select the WABN subscription product within our HSA Members Only portal:

<https://hydrogensociety.org.au/product/hsa-members-benefit-wa-business-news-subscription/>



Member Benefit – Hydrogen Standard subscription (HSA members discount)

The Hydrogen Society of Australia (HSA) has partnered with The **Hydrogen Standard** to offer HSA members a significant discount to gain access to the **Global Government Hydrogen Platform**, a renowned source of hydrogen policy data. <https://thehydrogenstandard.com/hydrogen-global-governance-platform/>

The Hydrogen Standard provides market insights, research and news for the hydrogen community to stay up to date with the latest developments. One of the flagship products is the hydrogen global governance platform that provides insights into government commitments to hydrogen on a country, regional and global scale. If you can't keep up with all the developments governments across the globe are providing on their hydrogen roadmaps, you are not alone. More than 50 countries worldwide have now a strategic hydrogen document and another two dozen or so are actively considering or preparing one. As such, Hydrogen Standard has developed the Hydrogen Global Governance Platform, which keeps track of all those individual developments daily.

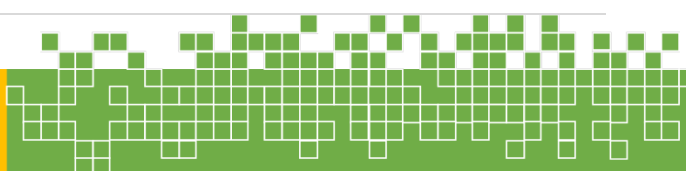
Subscribers will have access to a global, regional and country specific overview on a host of topics outlined in various government hydrogen roadmap strategies, such as funding arrangements, R&D interests, infrastructure commitments, fuel cell vehicle targets, electrolyser capacity commitments, trade agreements and more. The Hydrogen Society of Australia arranged for a demonstration of the Global Hydrogen Platform on **Wednesday 26 April, from 5:00pm to 5:30pm AWST**. The recordings of the April update are available on our website at the following link: <https://hydrogensociety.org.au/product/hsa-member-benefit-subscription-discount-hydrogen-global-governance-platform-by-the-hydrogen-standard/>

Thanks to the collaboration between the Hydrogen Standard and the Hydrogen Society of Australia, HSA members will get a significant discount on the initial subscription to the platform (75% for students; 52% for individuals and 80% for Enterprise members). If you are interested in subscribing to the **Hydrogen Global Governance Platform** at a significant discount, please select the Hydrogen Standard subscription product within our HSA Members Only portal: [Click here for further information](#).

Education and Knowledge Sharing – Past Events and Presentation Material

Log in to your password protected HSA members portal and you can access the videos and PowerPoint presentations from past events in the **Knowledge Centre**: <https://hydrogensociety.org.au/knowledge-centre/videos/> You can also view the event proceedings and find the links to the various presenters under **Past Events**:

<https://hydrogensociety.org.au/hydrogen-space-2023-networking-and-presentations/>



Upcoming Hydrogen Events

Hydrogen Links – Industry focused Academic Research Series

Over the coming months, the following line-up of speakers will present a short overview of their research. Each talk will range from 30 to 40 minutes, with a brief Q&A session at the conclusion:



- UNSW (**Quentin Meyer**) – How to make hydrogen fuel cells cheaper and more efficient [delivered - 25 May, refer to Issue 16, page 3]
- Washington State University (**Liam Turner**) - How to unlock zero waste liquid hydrogen storage through the cool properties of cryogenic Hydrogen [delivered - June 22, refer to Issue 17, page 3].
- MU and HBI (**Furat Dawood** and **Benny Abraham**) – Integrated Drinking Water and Renewable Energy based Power Supply for remote Aboriginal communities in WA. [delivered - August 01 – refer to this Issue 18, page 3 and 4].
- ECU (**Alireza Keshavarz**) – Hydrogen geo-storage: challenges and opportunities [August 31 – register now, [Click here for further details](#)].
- UNSW (**Chuan Zhao**) – Hydrogen production via electrolysis [September tbc].

This is an evolving series of presentations, with our objective being to lock in one online presentation a month. The intent is to hold some of these as hybrid events, including food and networking, as well as laboratory tours. We are reaching out to academic research institutions to encourage their participation. The latest information can be found at <https://hydrogensociety.org.au/product/hydrogen-links-industry-focused-academic-research-monthly-webinar-series-by-the-hsa/>

In addition to the academic research institutions, the Hydrogen Society of Australia is collaborating with like-minded organisations to foster collaboration and knowledge sharing between industry and academics, including:

- Australian Hydrogen Research Networks (AHERN);
- Global Hydrogen Economy (GlobH2E); and
- Commonwealth Scientific and Industrial Research Organisation (CSIRO).

AHRN will be contributing to our Hydrogen Links series and Andrew Dicks will also be delivering a half-day online workshop on Water Electrolysers and Fuel Cell Systems on 17 August 2023.

<https://www.eventbrite.com.au/e/water-electrolysers-and-fuel-cell-systems-explained>

The ARC Training Centre for the Global Hydrogen Economy (GlobH2E) is a research consortium established in 2021 and funded by the Australian Research Councils and industries. GlobH2E brings together leading Australian researchers and global research institutions, industry partners, hydrogen start-up and government agencies to work together to develop and ramp up new technologies and build nation's skills in a short timeframe. The full playlist of GlobH2E webinars can be found on YouTube at the following link: [Click here for further information](#) See below (page 8) for upcoming GlobH2E events over the month of August.

Global Hydrogen Economy (GlobH2E) events in the Month of August:

1. **GlobH2E webinar series** – with Benjy Lee on “*Setting up for a successful career in the new energy industry.*”
When: **Friday 4th August 12 – 1pm AEST**
Online via Team. Register via: <http://bit.ly/3pNQpIS>
2. **GlobH2E webinar series** –with Dr Jeremy Qiu (Chief Investigator from GlobH2E) on “*Data-driven planning and pricing strategies for hydrogen fuel cell vehicles*”
When: **Friday, 18th August 12 – 1pm AEST**
Online via Team. Register via: bit.ly/3OaVvSq
3. **WA Launch of ‘Powering Up’** with Dr Alan Finkel and Prof Peta Ashworth (Chief Investigator from GlobH2E), hosted by Curtin Institute for Energy Transition
When: **Wednesday, 23rd August, 5.30 – 7.30pm**
Where: State Library Theatre, 25 Francis St, Perth WA 6000
Register via: <https://form.jotform.com/231918273990869>

AHRN Event – Fuel Cells Research and Practice – Online – 09 August 2023

The previous seminar focused on the technical aspects of electrolyzers; our next speakers will be:

- Dr Qentin Meyer, Leader of fuel cell research group, UNSW - “How to make hydrogen fuel cells cheaper and more efficient”;
- Dr Andrew Dicks, Consultant, Griffith University – “Recent progress in the development of high temperature fuel cells for power and mobility”; and
- Dr Joe Varga – Chief Scientific Officer, Energys “ Commercial fuel systems – experience of Energys”

[Registration link for online research seminar](#)

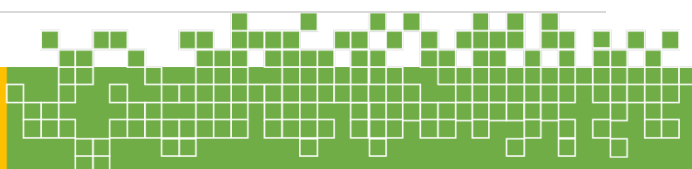
Hydrogen Safety and Hazardous Areas Conference – Perth – 10 & 11 August

The Hydrogen Safety & Hazardous Areas conference is a practical and informative platform to showcase best practice, new technologies, and the current standards and regulations for the use of hydrogen and for hazardous areas. It is an opportunity to be part of this rapid global move to renewables, where knowledge and safety are the focus. From research, case studies, to practical applications, this conference will offer valuable insights into hydrogen safety and hazardous areas here in Australia and overseas. For more information and to view the program, click here [Hydrogen Safety & Hazardous Areas - Conference Program](#).

We are pleased to inform you that HSA members receive an exclusive 10% discount on registration fees. Sign into your members portal and check out our Member Benefits and Discounts page to obtain the discount code for this conference. Use the code at the following registration link <https://events.idc-online.com/upcoming-conferences/hydrogen-safety-hazardous-areas-conference/individual-registration>.

Second Annual Hydrogen Connect Summit – Brisbane – 06 to 07 September 2023

The HSA was proud to have supported the first Hydrogen Connect Summit in Brisbane as an Endorsing Association. Following the Summit there have been myriad State, Federal and private sector initiatives to provide funding, stimulate investment, accelerate off take and address the skills challenge. Click here to view the White Paper <https://hydrogenconnect.com.au/latest-news/white-paper/> Dates are locked and loaded for the 2nd Annual Hydrogen Connect Summit 2023 (6-7 Sept 2023) at the Brisbane Convention & Exhibition Centre) and planning is already well underway. **HSA members will have access to an exclusive 20% discount off Summit registration.** <https://hydrogenconnect.com.au/>



ErLaw event – Annual Conference 2023 – Melbourne – 6 to 8 September 2023

The Hydrogen Society of Australia is collaborating with **Energy & Resources Law Association (ErLaw)** and has arranged a 20% discount for our members to participate in the Melbourne Hydrogen Forum 2023 to be held at W Melbourne Hotel, 408 Flinders Lane, Melbourne. The theme of this year's conference is **Resourcing the Future: Sustainable Solutions for the Energy and Resource Industries**. Leading experts will share practical insights on global trends across our two-day program. Key items of discussion will include:

- skills development, industry collaboration and best prospective use cases for Hydrogen in Australia;
- new adapted planning, environmental and permitting regimes that will be needed to accelerate hydrogen projects in Australia;
- key commercial, legal and risk issues in structuring hydrogen projects and developing contract terms for this novel market; and
- proposed Australian certification and accreditation arrangements, including the Guarantee of Origin work.

Sign into your members portal and check out our Member Benefits and Discounts page to obtain the 20% discount code for this conference. Use the code at the following registration link [Click here to register](#)

SPE Asia Pacific Hydrogen Week – Perth - 18 to 22 September 2023

As the world transitions toward cleaner and more sustainable energy sources to achieve net-zero goals, hydrogen is an emerging key player in the energy mix. The SPE Asia Pacific Hydrogen Week comprises of three main components – a training course, symposium, and forum. This event will facilitate opportunities for the energy community to network, gather insights and keep abreast of the hydrogen economy, production, operations, and supply chain through discussions on the latest research, developments, market outlook and technological advancements. Industry experts will strategically deliberate on the future of hydrogen and offer insights into key opportunities to scale up infrastructure development and new investments, optimise existing infrastructure for clean hydrogen supplies while addressing key challenges in policies, regulations and low-cost production. <https://www.spe-events.org/apachydrogenweek/about>

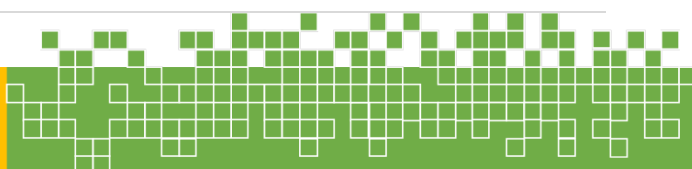
Fifth Australia Hydrogen Day – National – 08 October 2023

Following on from a very successful AHD event in 2022 held in Western Australia (in collaboration with Murdoch University), the Hydrogen Society of Australia is planning to promote a nationwide series of events this year, building upon our State Chapter structure. The coordinated planning for this series of events will require setting up a Working Group with priority. HSA members are invited to put their hands up to assist with this working group as a Volunteer. Further information about this process is forthcoming.

Snippets of Hydrogen making moves around the world

2023 07 02_Electrolyzers: The tools to turn hydrogen green_C&EN

A multitude of challenges stand in the way of green hydrogen as a climate-saving workhorse, the first being the availability of renewable electricity. "You have to have that energy come from a green source to actually make it viable," says Amanda Morris, a chemistry professor at Virginia Tech whose research includes catalytic materials for energy applications. "The solar capacity of the United States is nowhere close to being able to create a green hydrogen economy." Infrastructure is another hurdle, as hydrogen's small molecular size lets it leak through pipeline and container materials that work fine for other gases. Most of the hopeful new applications for H will also need to mature from pilot projects to commercial scale. And electrolysis will compete both with other low-carbon routes to hydrogen and with other uses for low-carbon electricity. The



industry will also need to build more electrolyzers. Electrolyzers are the core pieces of a chemical kit that splits a mole of H₂O into a mole of H₂ and a half mole of O₂. The report from Carbon Solutions puts the number of electrolyzers operating in the US at just 42, with a combined hydrogen production capacity of about 3,000 t per year. The US Department of Energy (DOE) aims to have 10 million t of clean hydrogen flowing per year by 2030, 20 million t by 2040, and 50 million t by 2050. About half that production will come from renewably powered electrolysis. [Click here for more details](#)

2023 07 03_Green energy approvals pathway starts_BN

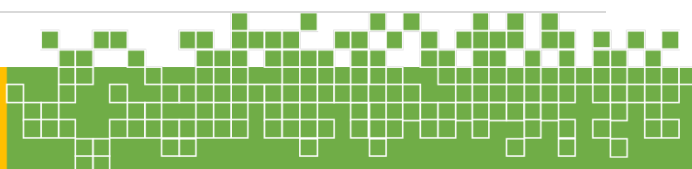
The state government will establish more dedicated teams to assess renewable energy projects as part of a \$22.5 million overhaul of Western Australia's environmental approval pathway. In December, the state government announced a \$22.5 million investment to overhaul WA's approach to environmental approvals including a dedicated cross-government green energy assessment unit. The state government today announced the start of its updated approvals pathway, which includes a dedicated energy approvals team. A green energy major projects group is also being established as the first point of contact and a green energy expert panel is being recruited to provide Environmental Protection Authority with information. The major projects group is being established in the Department of Jobs, Tourism, Science and Innovation while the expert panel will comprise members from government and industry, the state government said in a statement. Hydrogen Industry Minister Bill Johnston said the cross-agency collaborative framework created the right environment for **hydrogen** and renewable energy production. [Click here for further details](#)

2023 07 05_Latest updates on the World Hydrogen Leaders platform_Greenpowerglobal.com

- BP gets nod for 1st phase of solar-powered Aberdeen Hydrogen Hub: British oil and gas major BP Plc (LON:BP) announced on Thursday that its joint venture (JV) with Aberdeen City Council has received the approval of the local authority's planning committee for the first phase of the Aberdeen Hydrogen Hub project. [Click here for details](#)
- HyCC engages McPhy, Technip Energies for 20-MW Dutch green H2 project: HyCC has contracted French hydrogen equipment company McPhy Energy SA to supply the electrolyzers for its 20-MW Djewels green hydrogen plant to be located in Delfzijl Chemical Park in the Netherlands. [Click here for details](#)
- Interview with Marc van Deth, Market Development Manager, Clean Energy at Parker Hannifin: Discover more about Parker Hannifin's role in the global hydrogen value chain, as well as key takeaways from Parker's presentation during the congress on increasing electrolyser efficiency, a crucial element which is taking the spotlight in the fast-changing electrolysis market. [Click here for video](#)

2023 07 07_Australian Hydrogen News - consultation update_DCCEEW

The Australian government is leading a Review of the **National Hydrogen Strategy**. Australia's first National Hydrogen Strategy contained 57 actions and principles outlining the initial steps Australia could take to develop a large-scale hydrogen industry. Australia has the foundations to be a global hydrogen leader, and there is a need to consider updated or additional actions to ensure we reach our potential. The revised National Hydrogen Strategy will build upon the 2019 Strategy. It will focus on the role hydrogen technology needs to play for Australia to meet its commitments to achieve net zero emissions by 2050, and to reduce greenhouse gas emissions by 43% below 2005 levels by 2030. Submissions close on 18 August 2023. <https://consult.dcceew.gov.au/review-of-the-national-hydrogen-strategy>



2023 07 07_ Fast-tracking emissions reductions through net zero energy & industrial zones_Energy Insights

The Australian Petroleum Production & Exploration Association (APPEA) has released a report to input into discussion and thinking on the building blocks required to reach climate goals. APPEA's latest report, A Review of Net Zero Energy & Industrial Zones, is an interim scoping study developed by APPEA with technical support from the Commonwealth Scientific and Industrial Research Organisation (CSIRO). The report reveals how nine new Net Zero Zones - based around existing resources, industrial and manufacturing regions - could be established with shared infrastructure for natural gas, renewables, carbon capture utilisation and storage (CCUS) technology and **low-carbon hydrogen production**. Possible zones could be located in Adelaide-Port Augusta and the Cooper Basin in South Australia; Perth and the Pilbara in WA; Melbourne-Gippsland in southern Victoria; Sydney-Newcastle in NSW; Brisbane and the Surat Basin as well as Central Queensland; and the planned Middle Arm Sustainable Development Precinct near Darwin. These nine energy and industrial regions around Australia comprise 92% of all Safeguard Mechanism emissions as well as 98% of all large power generation emissions. [Click here for details](#)

2023 07 08_Large-scale hydrogen projects in line for Labor's \$2bn seed fund_Australian Business Review

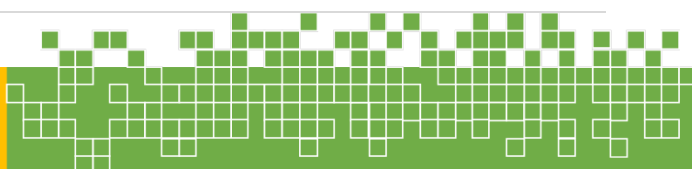
The federal Labor government has proposed limiting its \$2bn fund to only large-scale hydrogen projects that use renewable energy to power electrolyzers, as Australia looks to kickstart an industry that has split expert opinion. Unveiling for the first time its proposed merit criteria, federal **Energy Minister Chris Bowen** floated limiting the funding pool to projects over 50MW in size and powered only by renewable energy. "The \$2bn **Hydrogen Headstart** program puts Australia on course for up to a 1000 megawatts of electrolyser capacity by 2030. This will be a major step up for Australia's industry. The largest electrolyser projects that have reached final investment decision so far are at 1 to 10 megawatts in scale." By targeting 1000MW of electrolyser capacity for hydrogen production targeted for 2030, Labor is targeting about 100 times the capacity that is running or under construction in Australia. Australia is well on track to build an innovative hydrogen industry that will bring immense economic opportunities across the country, especially in the regions that have always powered Australia" Mr Bowen said. "We have up to \$300bn of potential renewable hydrogen investments in the pipeline, the largest in the world – but we face huge competition from other countries to create the environment to get these announcements to final investment decisions." [Click here for further details](#)

2023 07 11_Australia signs up to the Climate Club alliance, Albanese announces in Berlin_ABC

Prime Minister Anthony Albanese has announced that Australia has signed up to the Climate Club, an alliance of nations that aims to decarbonise industry and pursue net zero emissions by 2050. The Climate Club was formed last year and is an initiative of German Chancellor Olaf Scholz. He welcomed Australia's decision to join the group that includes the US, the UK, France, Italy and Canada. He said that Germany and Australia were already cooperating on the production and transportation of green hydrogen, and he looked forward to extending the partnership even further. [Click here for further details](#)

2023 07 11_Colorado's path to net-zero greenhouse-gas emissions by 2050_McKinsey

Because nearly one-third of hard-to-abate sectors could benefit from hydrogen energy to meet their decarbonization targets, increased production of this resource is critical to achieving net-zero emissions in Colorado. The state is uniquely positioned to benefit from and become a leader in the build-out of hydrogen, particularly green hydrogen, which is produced using renewable energy. A hydrogen hub developed in Houston offers a potential model. In 2020, the Greater Houston Partnership and the Center for Houston's Future convened a group of more than 50 companies and research institutions to promote the



development of green hydrogen. The group funded and published detailed research outlining the scale of the opportunity and advocated for the state to apply for \$8 billion in federal funding. Companies from this group have come together to form the **HyVelocity Hub**, which has applied for federal funding. Today, the Houston region produces and consumes a third of the nation's hydrogen and has more than 50 percent of the country's dedicated hydrogen pipelines. By 2050, it is projected that Houston's hydrogen economy will contribute to 180,000 jobs and \$100 billion in Texas GDP growth, as well as 220 metric tons of carbon abatement. A similar full-scale green-hydrogen hub in Colorado could support rapid, cross-sector decarbonization, particularly in transportation, and become an economic driver for the state. Analysis finds that by 2050, hydrogen could support \$65 billion in GVA, with green-hydrogen jobs helping to fill the gap left by the decline of Colorado's oil and gas industry.

2023 07 11_Korean support for green energy project_BN

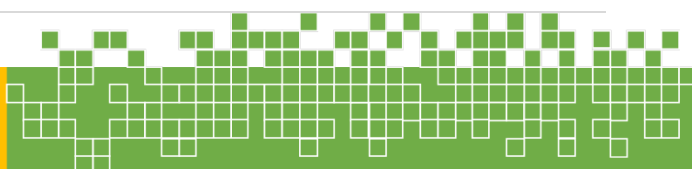
Korea's largest electricity utility has signed an early agreement with the backers of the **Western Green Energy Hub (WGEH)**, one of several giant renewable energy projects mooted for WA. Korea Electric Power Corporation said its memorandum of understanding was a step towards a joint development agreement for the Hub, which is targeting the production of green hydrogen. It said the MOU confirms its interest to participate in the project and "lays the foundation for deepening the relationship between KEPCO and WGEH". The project is backed by global investors **InterContinental Energy** and **CWP Global** and **Mirning Green Energy**, a commercial entity of the Mirning Traditional Lands Aboriginal Corporation. The Hub is earmarked for a vast area spanning 15,000 square kilometres in the far south-east of WA, between Esperance and Eucla. To be built over 20 years, it will have up to 3,000 wind turbines and 25 million solar panel modules. They will generate up to 50 gigawatts of renewable energy, which will be used to convert water (via electrolysis) into 3.5 million tonnes per year of green hydrogen. This will supply both domestic and international customers, including South Korea. [Click here for further details](#)

2023 07 13_Rio Tinto, Sumitomo to trial low carbon alumina_BN

Rio Tinto and Sumitomo Corporation will trial hydrogen calcination technology at **Yarwun Alumina refinery** after a \$32.1 million funding boost from the Australian government. The federal government's Australian Renewable Energy Agency (ARENA) today announced the funding towards the Rio Tinto and Sumitomo **Yarwun Hydrogen Calcination Pilot Demonstration Program** in Gladstone, Queensland. The demonstration program is valued at \$111.1 million and is intended to reduce emissions in alumina refining. Sumitomo will own and operate a 2.5-megawatt electrolyser at Rio Tinto's Yarwin site to directly supply hydrogen to the mining giant. The electrolyser will have a production capacity of more than 250 tonnes of hydrogen a year. If this pilot project is successful, it could be a game changer for Australian alumina production, paving the way for deployment across the industry, and underscoring the importance of low-cost green hydrogen to decarbonise our largest industrial emitters. [Click here for further details](#)

2023 07 13_Federal government to spend \$70 million on Newcastle 'hydrogen hub' that will power Orica_ABC [Click here for further details](#)

Newcastle is a step closer to becoming a hydrogen hub following a federal government commitment of \$70 million. The hub will be constructed at Kooragang Island near the Port of Newcastle. Climate Change and Energy Minister Chris Bowen announced funding for a 55-megawatt hydrogen electrolyser, which would split water into hydrogen and oxygen. The facility is expected to produce 5,500 tonnes of renewable hydrogen each year and create about 100 jobs. Explosives manufacturing company Orica will use most of the hydrogen to make its Hunter facility emission-free. Construction is targeted to begin in 2025 with operations expected



to commence in 2026. "This project is the next step towards using locally produced renewable hydrogen in Australia to reduce our industrial emissions and develop a renewable export future," Mr Bowen said.

2023 07 17_White hydrogen hunted_WaterCareer

Excitement about the possibilities of 'white' hydrogen is growing globally. Untapped reserves of geologic hydrogen deep underground could revolutionise the global energy system, offering a virtually limitless source of carbon-free power. While the transition to renewable energy has primarily focused on wind and solar power, scientists now believe that natural hydrogen generated through geologic processes could provide a far greater supply of energy. Geologic hydrogen is produced continuously and is believed to be created through a chemical reaction of water and iron-rich minerals. Startups such as **HyTerra** and **Natural Hydrogen Energy** are already drilling for geologic hydrogen in locations like Nebraska, Kansas, and Australia. These companies are akin to early oil drillers searching for petroleum. Major energy companies, including **Shell, BP, and Chevron**, have also joined a consortium to study geologic hydrogen. [Click here for more details](#)

2023 07 18_Four partners in \$3.5bn energy project

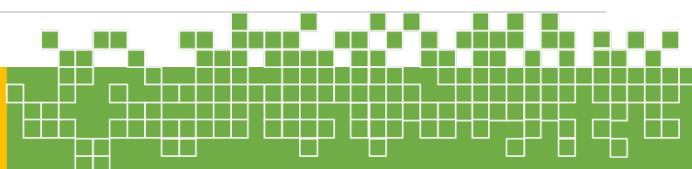
Three Aboriginal groups in the Kimberley have teamed up with global project developer **Pollination** to pursue an ambitious \$3.5 billion green energy project. The **East Kimberley Clean Energy project** proposes the construction of a 2,000-hectare solar farm capable of producing 900 megawatts of power. This would be Australia's largest solar farm though multiple other projects of similar scale have been proposed. The solar power would be used to produce 50,000 tonnes of green hydrogen per year. The proposed site for the solar farm and hydrogen plant is near **Kununurra**, on freehold land owned by MG Corporation, which represents the traditional owners in the region. The project plan envisages construction of a 120-kilometre pipeline to the port of Wyndham where the hydrogen would be converted to 250,000tpa of green ammonia. The proponents say the Ord River hydro power station at Lake Argyle would supply baseload energy to the ammonia plant. They say the result will be Australia's first and only 100 per cent renewable green hydrogen and ammonia project.

2023 07 20_FMG rebrands, invests in US_BN

Fortescue Metals Group has marked its 20-year anniversary by changing its branding to Fortescue, while its green energy arm has acquired the owner of a proposed green hydrogen project in the US. Under the branding changes, **Fortescue will operate with two divisions: Fortescue Metals and Fortescue Future Industries**. The group is investing \$US24 million (\$A35 million) to acquire a 100 per cent interest in **Phoenix Hydrogen Hub, LLC (PHH)**. This is the group's first major investment in the US following the passage of the **Inflation Reduction Act**, which provides large subsidies to new projects in sectors like critical minerals and green energy. PHH plans to develop a green hydrogen project in the city of Buckeye, near Phoenix, Arizona. Phase one of the PHH project is planned to be an 80-megawatt electrolyser and liquefaction facility, capable of producing up to 12,000 tonnes of green hydrogen annually. Fortescue said the large-scale deployment of hydrogen as a zero-emission fuel into the transportation sector in the US was expected to benefit from the hydrogen tax credit in the Inflation Reduction Act and state level incentives such as the Low Carbon Fuel Standard in California. [Click here for further details](#)

2023 07 21_Diversification critical to WA success: BCEC_BN

Economic diversification and global green energy trends are key to ensuring Western Australia's prosperity in an increasingly protectionist world, according to **Bankwest Curtin Economics Centre (BCEC)**. One particular opportunity is decarbonisation, with WA's economy ranked 12 in the world and first nationally for complexity



in renewable energy and decarbonisation technologies by a new BCEC index measuring green performance. BCEC defines green goods through its index based on a list of 575 products connected to decarbonisation, cleaner production, environmental protection or improvement. The numbers incorporate categories including iron ores and concentrates, which are designated as environmentally preferable materials and products, as well as renewable energy production and storage products. Critical minerals such as lithium are also considered green, as is **hydrogen**. The rate of green exports as a proportion of all exports nationally was 40 per cent in 2021. A series of green initiatives were among a number to attract state government co-funding support under the state's allocation of \$148 million through its **investment attraction fund**. That funding was designed to support industries identified in the **Diversify WA: Future State report** released in April under then-state development minister, now premier, **Roger Cook**. [Click here for further details](#)

2023 07 26_Mapping the way to renewable energy_EA Create

The Australian Government is aiming to position our hydrogen industry as a major global player by 2030, with a world-first online tool supporting that goal being selected as a finalist for the Eureka Prize for Innovative Research in Sustainability. Developed by a research team led by Dr Stuart Walsh of Monash University's Department of Civil Engineering and Dr Marcus Haynes of Geoscience Australia, the Economic Fairways Mapper project is designed to support the responsible and sustainable development of renewable energy and critical mineral resources in Australia. Its **Hydrogen Economic Fairways Tool (HEFT)** maps factors including: the economic viability of hydrogen projects in Australia using diverse datasets such as geological profiles; the cost of building a hydrogen plant; the availability and cost of energy and water sources; where and how to conduct the associated carbon capture and storage; transport methods; and the current market value of the resource. [Click here for more details](#)

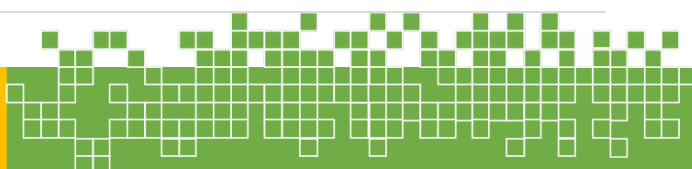
2023 07 27_Australia's going all-in on hydrogen_Stockhead

Deloitte's new **2023 Global Green Hydrogen Outlook** report paints an optimistic picture, suggesting green hydrogen could be competitive in less than 10 years with strong international climate action. The authors go as far to say the industry could overtake the global LNG business by 2030 and reach \$2.1 trillion per year by 2050. "Demand is expected to initially build on the decarbonisation of existing industrial uses of hydrogen, most notably for fertiliser production," the report says. "The net-zero transition then underpins rapid demand growth, cementing hydrogen's role as a versatile solution for decarbonisation. "By 2050, industry (iron and steel, chemicals, cement, and high temperature heating) and transport (aviation, shipping, and heavy road transport) respectively can account for 42% and 36% of total clean hydrogen demand." With time, the outlook shows green hydrogen has the potential to stand on its own feet and Australia looks to grab a piece of that prize with its \$2 billion **Hydrogen Headstart program** providing revenue support for large-scale renewable hydrogen projects through competitive hydrogen production contracts.

[Click here for more details](#)

2023 07 29_What is happening to gas in Victoria and will the rest of the country follow suit?_ABC

The Victorian government announced on 28 July that gas connections in new homes will be banned from next year. From January 1, 2024, any new residential build, including subdivisions and public and social housing, will be exclusively connected to electricity. Banning gas is a conversation all Australian state governments are having, said Adjunct Professor Bill Grace from the **Australian Urban Design Research Centre at University of Western Australia**. "Victoria has been the first to launch but in the meantime there's been activity at a lower scale," he said. [Click here for more details](#)



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