



## **IPHE Country Update April 2023: Australia**

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<b>Covered Period</b>	April 2022 to April 2023

### **1. New Initiatives, Programs, and Policies on Hydrogen and Fuel Cells**

- During 2022-23 the Australian Government announced a range of climate change initiatives that will provide support for the hydrogen industry. This includes:
  - legislating Australia's greenhouse gas emissions reduction targets of a 43% reduction from 2005 levels by 2030.
  - transforming Australia's electricity supply to support a greater proportion of renewables, with a target of increasing the portion of renewable energy in our National Electricity Market to 82 per cent by 2030.
  - supporting the development of new, clean energy industries, the decarbonisation of existing industries and the transition of Australia's workforce, particularly in our non-urban regions; and
  - decarbonising Australia's transportation network.
- Australia released the [2022 State of Hydrogen report](#) which has found that Australia is well placed to play a significant role in the global hydrogen industry.
  - In recognition of the need to accelerate activity to compete internationally, Australian Energy and Climate Ministers decided to refresh the National Hydrogen Strategy which was published in 2019.
  - The review of the Strategy will take account of developments globally and in Australia since the original strategy was developed, including the impact of the Inflation Reduction Act and other policies to support hydrogen emerging overseas.
- Australia signed a memorandum of understanding with the Netherlands, advancing cooperation on a green hydrogen supply chain.
- The Australian Government is providing over \$500 million towards the establishment of hydrogen hubs through the 'Regional Hydrogen Hubs' program and other commitments, including feasibility studies in support of potential future hydrogen hubs.
- In January 2023 funding was announced for four successful projects under the German–Australian Hydrogen Innovation and Technology Incubator (HyGATE) initiative which aims to bolster efforts to establish a green hydrogen supply chain from Australia to Germany.
- Australia released the first National Hydrogen Infrastructure Assessment to support targeted and coordinated infrastructure investment, through identifying infrastructure needs and gaps; and where investments could be best prioritised to achieve maximum impact.

### **2. Hydrogen and Fuel Cell R&D Update**

- Since 2017, the Australian public and private sectors have invested more than \$570 million into hydrogen research and development (R&D) and demonstration projects. Over the past year there has been a notable increase in R&D funding from the private sector.
- R&D projects that progressed in 2022 include:



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- The New Energies Service Station Geelong Demonstration Project developed by Viva Energy to demonstrate hydrogen refuelling for heavy fuel cell electric vehicles.
- The Innovations in Sustainable Aviation Fuels (SAF) Production and Deployment at Scale Project which is focused on the production, compression and storage of hydrogen and synthesis of SAF from hydrogen and CO<sub>2</sub>.
- Other new projects and facilities in R&D include the Hunter Hydrogen Research and Innovation Facility (HyRIF), Hunter Node of the New South Wales Decarbonisation Hub and the AMMONIAC project.
- The Australian Government supported CSIRO and the Australian Hydrogen Research Network to create the HyResearch web portal, which reports on all aspects of Australian research and development through the entire hydrogen supply chain.
- Australia sent delegations of hydrogen researchers to five countries in 2022 through the Hydrogen RD&D International Collaboration Program to strengthen relationships and identify collaboration opportunities.

### 3. Demonstration, Deployments, and Workforce Developments Update

- According to Bloomberg New Energy Finance, Australia has a hydrogen and derivatives industry investment pipeline of AUD\$230 to \$300 billion<sup>5</sup> representing approximately 40 per cent of all global renewable hydrogen projects announced to date.
- The number of proposed, approved (final investment decision) and operational hydrogen and ammonia projects in Australia has more than doubled in the last year to over 100.
  - More than 20 projects are operational or have reached final investment decision. Most of these are small-scale, with the largest being 10 MW.
  - Industry has announced 11 gigawatt scale Australian based clean hydrogen and ammonia projects
- Projects that progressed over 2021-23 include:
  - Yuri Clean Ammonia Project, Pilbara, Western Australia - The Australian Government, through ARENA, is providing up to \$42.5 million to Engie Renewables Australia for an \$87 million hydrogen project. The project will deliver the first 10 MW electrolyser in Australia and will use renewable electricity to supply hydrogen to Yara's liquid ammonia facility in Karratha from 2024. The project reached a Final Investment Decision in September 2022 with construction to begin in 2024.
  - The ATCO Hydrogen blending project commenced operation in December 2022. The project will see renewables-based hydrogen blended into the existing natural gas distribution network within the City of Cockburn, involving around 2,700 connections.
  - Hydrogen Park South Australia was officially opened on 10 May 2021. It produces renewable hydrogen using a 1.25MW electrolyser for blending with natural gas for supply to more than 700 homes and is also providing direct hydrogen supply to industry.
  - Details of all Australian hydrogen projects can be found at [HyResource \(csiro.au\)](https://research.csiro.au/hyresource/)

### 4. Investments: Government and Collaborative Hydrogen and Fuel Cell Funding

As of December 2022, hydrogen specific funding, which refers to programs that specifically target hydrogen projects and applications for funding, totalled \$6.3 billion<sup>1</sup>.

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<sup>1</sup> Data sourced from the CSIRO HyResource web page <https://research.csiro.au/hyresource/funding/> and includes Commonwealth and State and Territory Government funding.



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Specific funding announcements since the last member update include:

- \$50 million in research and development funding from the Australian Government to help progress critical green hydrogen and low-emissions steel technologies.
- Over half a billion dollars for our Regional Hydrogen Hubs Program
- \$593 million committed by the South Australian Government towards the construction of a hydrogen power station, electrolyser, and storage facility expected to be operational by the end of 2025.
- \$275.4 million to establish the Driving the Nation Fund to invest in cheaper, cleaner transport, bringing total investment for electric and hydrogen vehicle infrastructure to over \$500 million.
- The Victorian, NSW and Queensland governments are collaborating on the development of hydrogen refuelling networks on primary freight highways, with the NSW and Victorian Governments committing \$10 million each. The federal government recently committed up to \$80 million in support of these state-based hydrogen highway initiatives.

### 6. Regulations, Codes & Standards, and Safety Update

- From December 2022 to February 2023 the Government consulted on a proposed design for Australia's Guarantee of Origin (GO) scheme.
  - The proposed design builds on consultation and co-design with Australian industry through our GO scheme trials and collaboration through the IPHE to develop and agree carbon accounting methodologies for the hydrogen supply chain.
  - The Government is currently considering the outcomes of consultation and next steps.
- The initial stage of the National Hydrogen Regulatory Review was completed in late 2022.
- Following on from this review, Australian Governments have agreed to develop the 'National Hydrogen Codes of Practice' which include:
  - Hydrogen Production Safety.
  - Ammonia Production Safety.
  - Hydrogen Refuelling Stations.
  - Hydrogen Appliances, Plant and Equipment Compliance.
  - Ammonia Appliances, Plant and Equipment Compliance.
- The National Codes will provide clear regulatory pathways for the lifecycle of the relevant projects, by:
  - Identifying regulatory obligations associated with the lifecycle of the relevant hydrogen or ammonia project in each Australian jurisdiction.
  - Outlining the standards which regulators will utilize when assessing and determining compliance with regulatory obligations through the project's lifecycle.
- It is intended that the National Codes of Best Practice will support national regulatory consistency, provide regulatory certainty to industry, and support greater efficiency in all Australian jurisdictions across the hydrogen industry.