



Australia and Japan solving the greatest challenges

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Global Growth CSIRO

The Commonwealth Scientific and Industrial Research Organisation, or CSIRO is Australia's national science agency. For over 100 years CSIRO has built a track record of responding to challenges by delivering impact through innovative science and technology.

CSIRO's pioneering research in radioastronomy led to our invention of wireless LAN (WLAN), or fast wi-fi. Today, its myriad applications have fundamentally changed how we think of and use technology in our daily lives and across the globe.

CSIRO has been collaborating with Japan since the mid 1980's. A key focus of the bi-lateral relationship has been working with Japanese universities, research organisations and commercial businesses to deliver on science impact projects. For example:

- Long-standing relationships with the National Institute of Advanced Industrial Science and Technology (AIST) and JAXA.
- Working with companies such as Furukawa Battery, Idemitsu Kosan and Mitsubishi Heavy Industries on commercial engagements
- And most recently developing a research exchange program between Australia and Japanese early to mid-career researchers focused on Hydrogen research.

Today, we see opportunities like never before to step up the way we collaborate with Japan as both countries share challenges in decarbonisation and securing sustainable energy.

Mission-driven science

As a mission-driven agency, CSIRO research addresses 6 key challenges facing Australia: food security and quality; sustainable energy and resources; health and wellbeing; resilient and valuable environments; future industries; and a secure Australia and region.

To help solve these critical challenges, CSIRO is developing and launching missions.

These are bold initiatives that aim to tackle big, multi-faceted problems by bringing together research agencies, universities, industry, government and the international community to work collaboratively on outcomes that lead to positive benefit.

CSIRO is directing AUD\$100 million annually to the co-creation of missions, working with the brightest minds across the research sector and industry, locally and internationally. To date, CSIRO has launched eight missions, with AUD \$440m co-investment funding leveraged in support of launched missions, over 60 collaborations and close to 600 projects.

Missions provide a mechanism for concrete collaboration with international partners on issues of shared interest, such as decarbonising the hardest to abate sectors, ending plastic waste or increasing drought resilience.

Hydrogen Industry Mission

CSIRO's Hydrogen Industry Mission was launched in 2021 to achieve the vision of the National Hydrogen Strategy adopted by the Australian government. Its aim is to support global decarbonisation through a commercially viable Australian hydrogen industry comprising both domestic and export value chains by 2030.

The Hydrogen Industry Mission focuses on hydrogen research, development and demonstration projects including:

- Launching the Hydrogen Knowledge Centre - a collaboratively designed knowledge sharing resource to support and inform the development of a clean and competitive Australian hydrogen industry.
- Enabling science and technology including the Hydrogen Research, Development and Demonstration (RD&D) International Collaboration Program.

Hydrogen Research, Development and Demonstration (RD&D) International Collaboration Program

Australia's National Hydrogen Strategy¹ and CSIRO's [Hydrogen Research, Development and Demonstration report](#)² identified Australia's need to stimulate international research connectivity and knowledge sharing, build hydrogen RD&D capability and support industry development.

¹National Hydrogen Strategy

<https://www.dceew.gov.au/energy/publications/australias-national-hydrogen-strategy>

² Hydrogen Research, Development and Demonstration report

<https://www.csiro.au/en/work-with-us/services/consultancy-strategic-advice-services/CSIRO-futures/Energy-and-Resources/Hydrogen-Research-and-Development>

CSIRO was then commissioned by the Australian government to produce a [Global Report on Hydrogen RD&D Collaboration Opportunities](#), plus ten in depth country analysis reports including [Japan](#).

These studies are available through the [Mission Innovation](#), an international initiative launched alongside the Paris Agreement in 2015 and brings together governments, public authorities, corporates, investors and academia to enable widely affordable clean energy globally and achieve the goals of the Paris Agreement. CSIRO is a member of Mission Innovation and is a co-lead in Storage and Distribution within their [Clean Hydrogen Mission](#).

The centrepiece of the international program is to undertake international research delegations and establish a 2-way fellowship program between countries looking to collectively share resources and research talent.

An [expression of interest](#) is now open to the Australian research community where Australian researchers will receive funding from the Australian government to visit world class research institutions and labs to undertake between 3 to 12-month overseas placement activities. It is expected that around 30 Australian scientists will be selected to travel including to Japan.

Australian Hydrogen delegation to Japan

As part of the Hydrogen International RD&D program, an Australian Hydrogen research delegation travelled to Japan in December 2022. The delegation led by Dr Patrick Hartley, Mission Lead of CSIRO Hydrogen Industry Mission and Dr Rosalind Archer from Griffiths University, was comprised of six universities and CSIRO.

With the support of Austrade Tokyo, the delegation introduced the capabilities of each institute during a seminar hosted at the Australian Embassy in Tokyo, and held meetings to explore research exchange collaboration with a range of institutions including:

- Central Research Institute of Electric Power Industry
- Tokyo City University
- National Institute of Advanced Industrial Science and Technology (AIST) Fukushima Renewable Energy Institute
- AIST Global Zero Emissions Research Center)
- National Institute of Materials Science
- Research Center for Advanced Science and Technology (RCAST) at University of Tokyo; and
- University of Yamanashi.

The delegation also met with Japan Science and Technology Agency to discuss avenues for Japanese early career researchers to visit Australia to deepen this researcher exchange.

Photograph: Australian Hydrogen research delegation at AIST's Fukushima Renewable Energy Institute. Australian representation included officials from Griffith University, University of New South Wales, University of Newcastle, University of Sydney, University of Technology Sydney and Monash University, and CSIRO.

Accelerating decarbonisation through bilateral partnerships

Decarbonisation is a global challenge. The Australian and Japanese governments are making investments to achieve zero-emission goals by 2050. This includes the Japanese government's Green Innovation Fund's A\$2.35 billion commitment to Japan Suiso Energy as part of the blue hydrogen project in Australia.

For the last four years, Australia, represented by CSIRO, worked with G20 countries under [RD20 for Clean Energy Technologies](#), to accelerate decarbonisation. Overlaying these efforts with the closely aligned partnership with greater government and business collaboration, as a result of changes in the global geopolitical environment, there is no better time to step up our research collaboration between our countries.

CSIRO is optimistic that the research exchange collaboration, stemming from Australia's national hydrogen strategy and CSIRO's mission-driven approach, stimulates connectivity and knowledge sharing with Japan to build Australia's hydrogen RD&D capability and support industry growth. In the process, it is our hope that Australia and Japan strengthen our partnership and together play a significant role in solving today's and tomorrow's big challenges.

For further information about CSIRO's science and technology capabilities visit csiro.au or contact our team at global@csiro.au.