



National Water Grid

Australian Hydrogen Council

Webinar : Hydrogen production and water use

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The National Water Grid Authority acknowledges the First Nations people of Australia and recognises their ongoing connection to culture, country and water.

We acknowledge First Nations peoples as the Traditional Owners, Custodians and Lore Keepers of the world's oldest living culture and pay respects to their Elders past, present and emerging.

The National Water Grid



National Water Grid Fund:

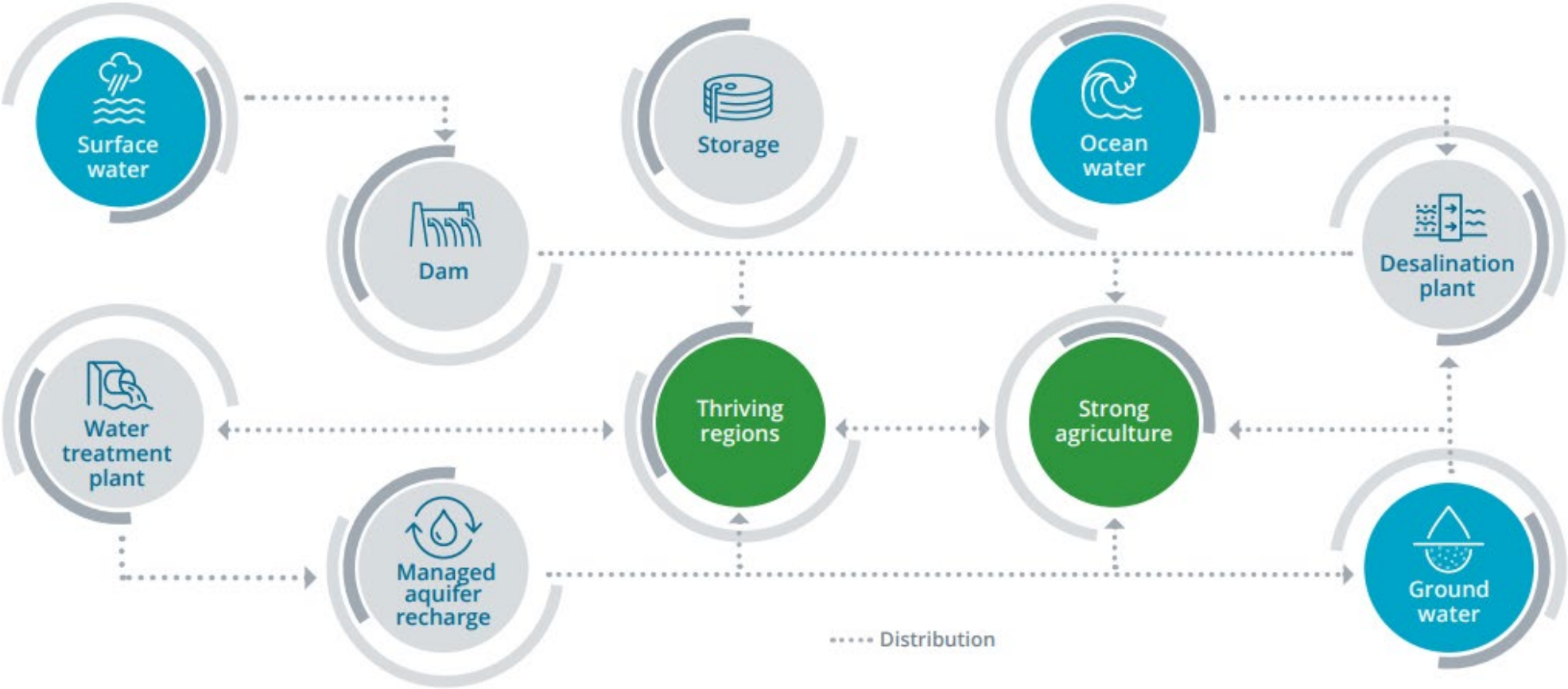
Administered by the National Water Grid Authority, within the Department of Climate Change, Energy, the Environment and Water.

The National Water Grid:

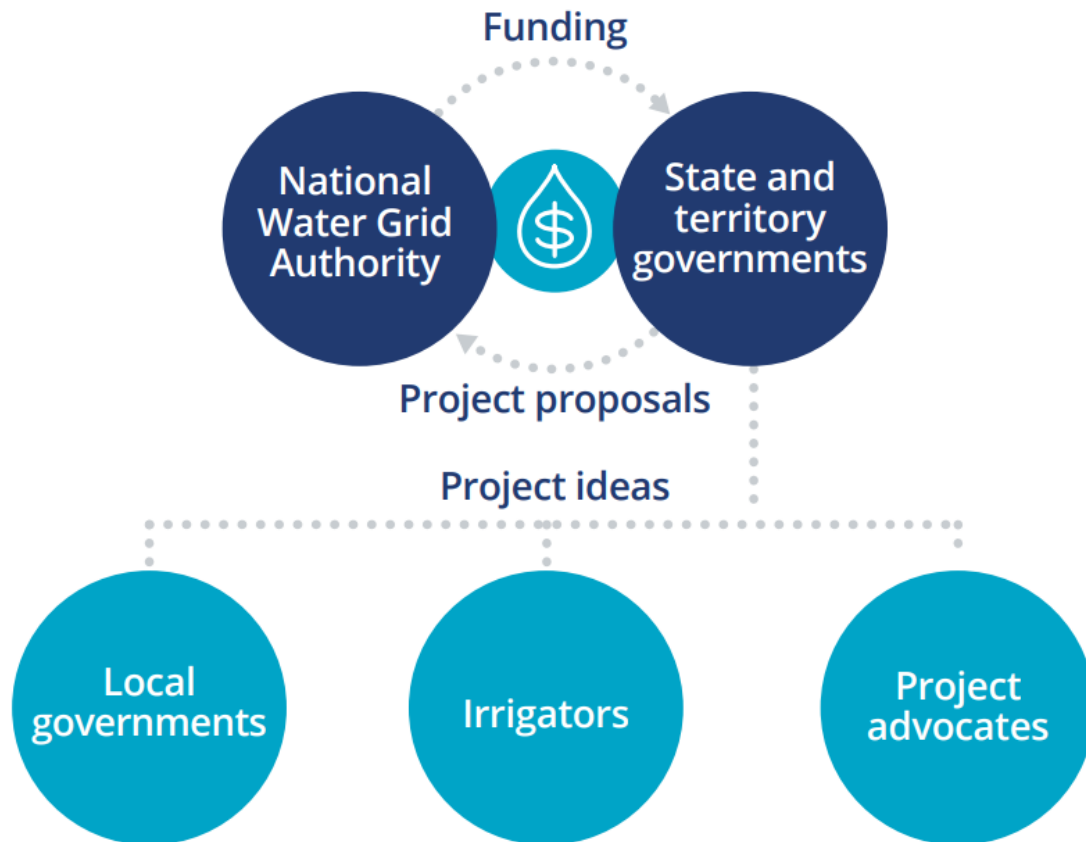
Government's vehicle for investment in long-term water security through a diverse variety of science, planning and construction projects.

- **Secure water supplies** for regional and remote communities in the face of climate change.
- Long term and coordinated approach to **water infrastructure planning**.
- **Partnerships** with state and territory governments.

What can a water grid look like?



Working across government



When **all three levels of government** are **working together** we can achieve the **best outcomes** for future-proofing Australia.

State and territories are responsible for managing water resources, and for bringing forward projects under the NWGA Investment framework.

Local knowledge is important for helping informing investment decisions.

All levels of government and private investors can contribute funding to projects.

The scope of the Investment Framework will be determined by the Australian Government.

How are National Water Grid Fund investment decisions made?



- The National Water Grid Fund Investment Framework provides criteria for eligibility
- Projects must go through the steps of business case development and assessment
- > \$250 million also involves assessment by Infrastructure Australia
- National Water Grid Fund projects are funded via Federation Funding Agreements with states and territories - this follows proposals being submitted by states and territories and assessment by the Australian Government
- Capital projects are typically 50/50 funded

The investment decision-making and implementation process

The investment process includes each stage of the project lifecycle to inform investment decisions.



Adapting to the Australian environment and climate change

National investments

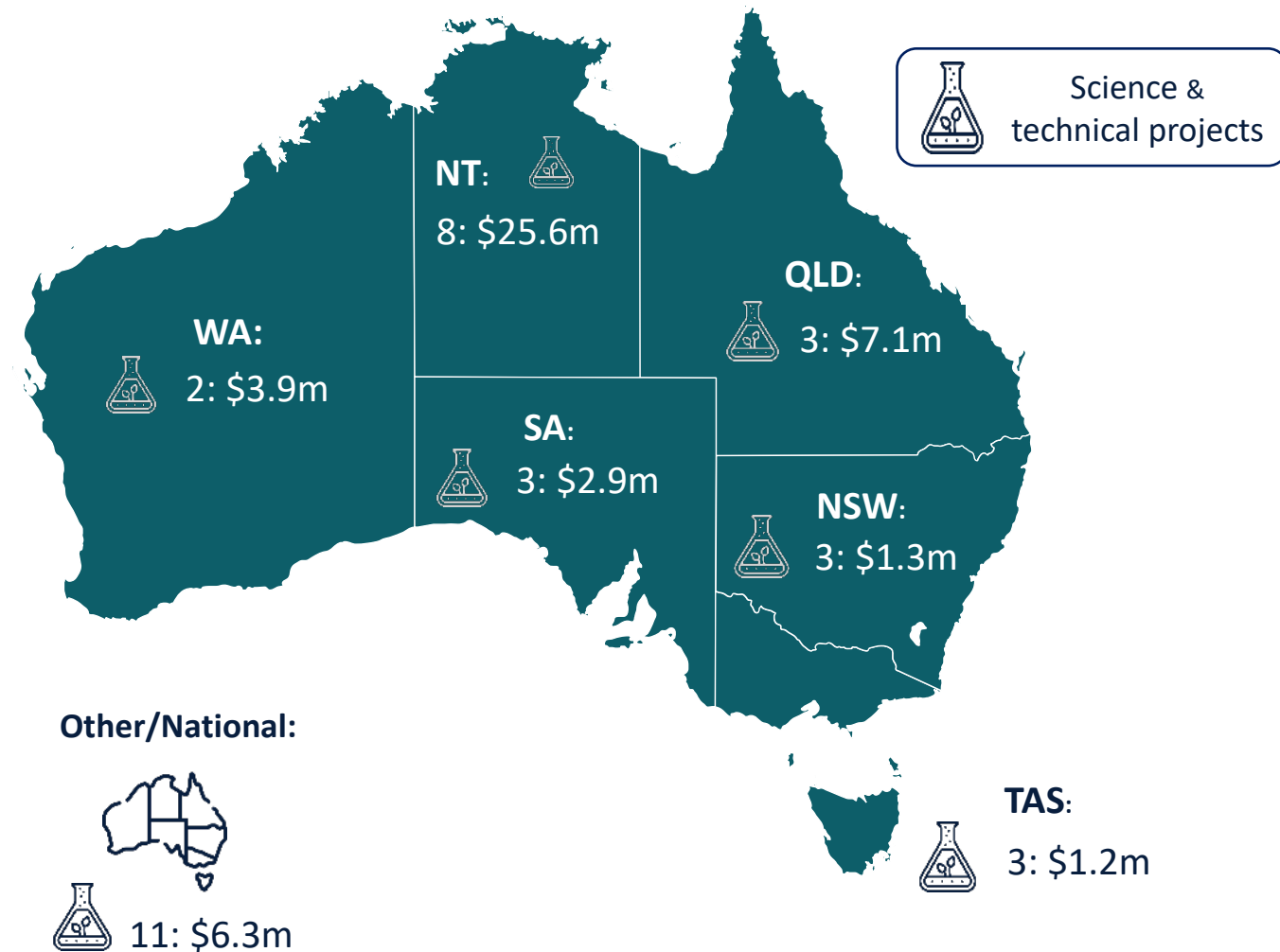
- **Sustainable** development of water resources, **alternative water supplies** and **better use of existing supplies**.

Multidisciplinary projects

- Including water **recycling**, water **distribution**, **desalination**, **managed aquifer recharge** as well as water **storage** facilities.

Evidence based

- Underpinned by **business cases**, **science** and an Investment Framework that takes into account sustainable development, economic merits and the National Water Initiative.

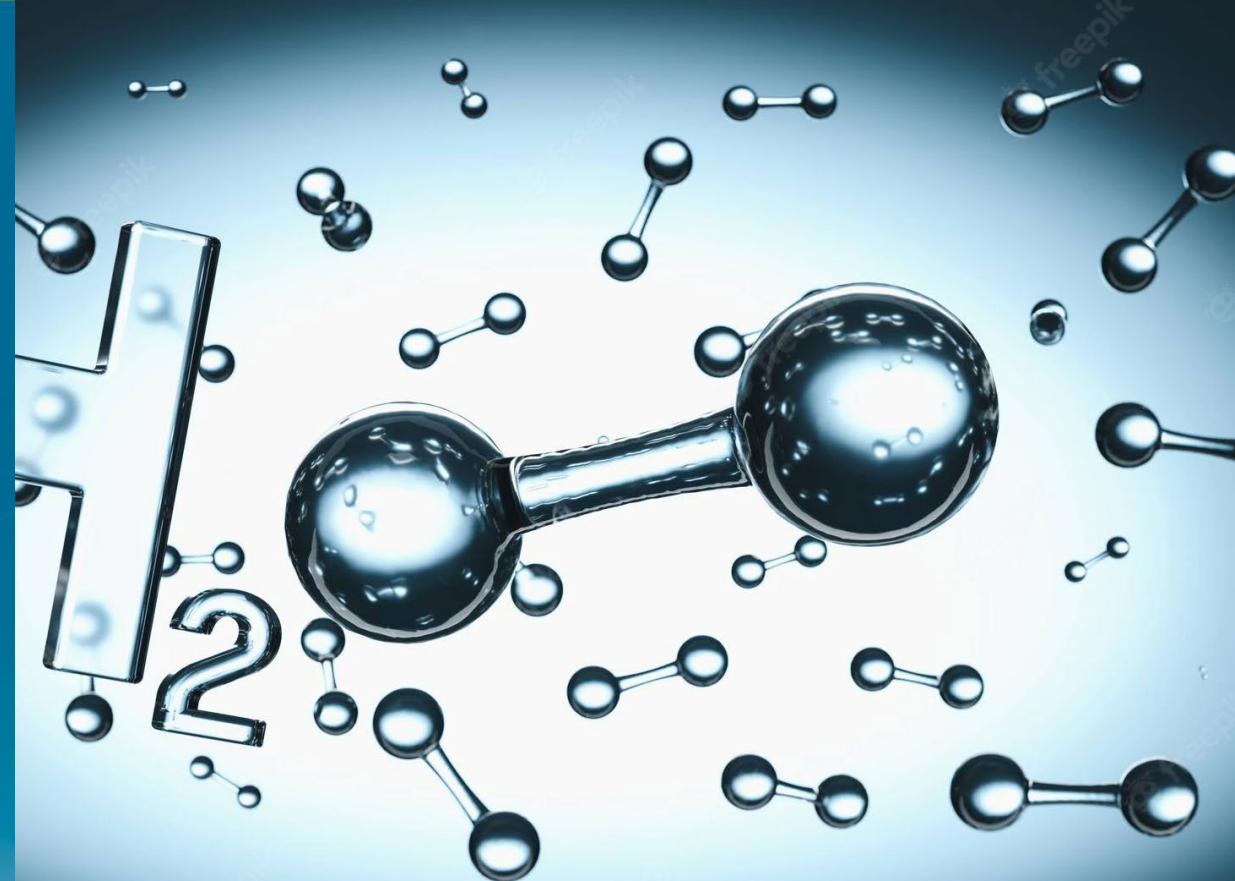


Planning for water demands of hydrogen production

Hydrogen production can play a critical role in meeting emission reduction targets, in Australia and globally

Careful consideration of water source is needed to manage impacts on other users

The National Water Grid Authority welcomes the opportunity to engage in the conversation around water security, water infrastructure and balancing all of the demands on water



Water is essential to communities, industry and the environment

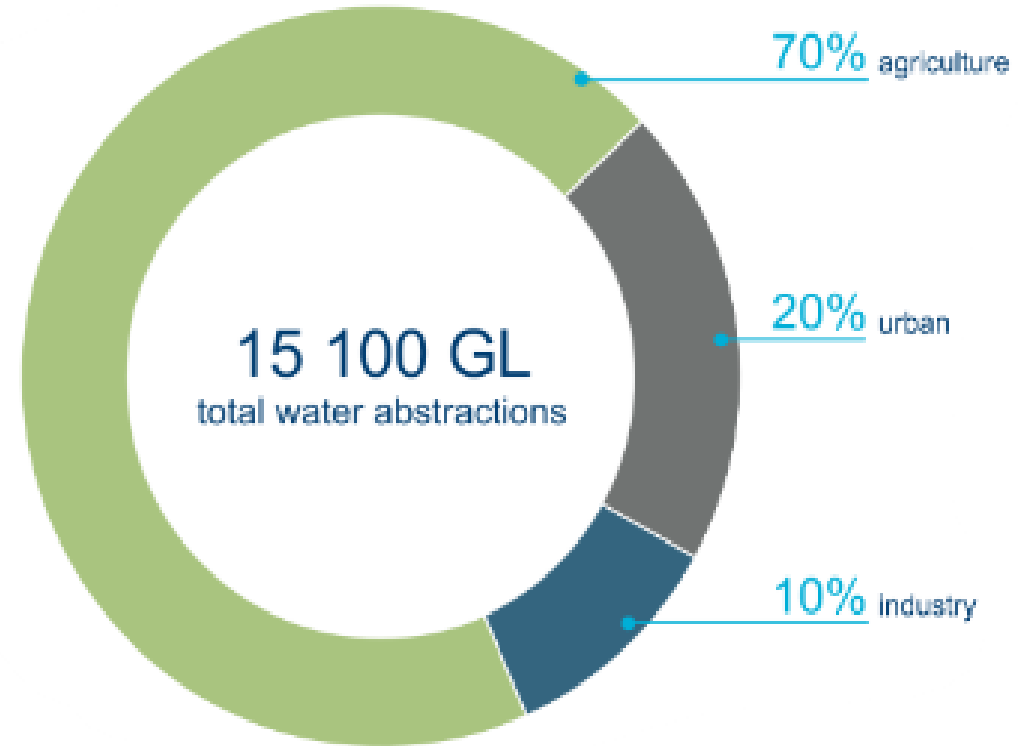
Competition for secure and reliable access to water **increases with increases in demand.**

Split of the water abstractions pie in 2018-19:

- 70% = Agriculture
- 20% = Urban (cities and towns)
- 10% = Industry

The environment also needs water:

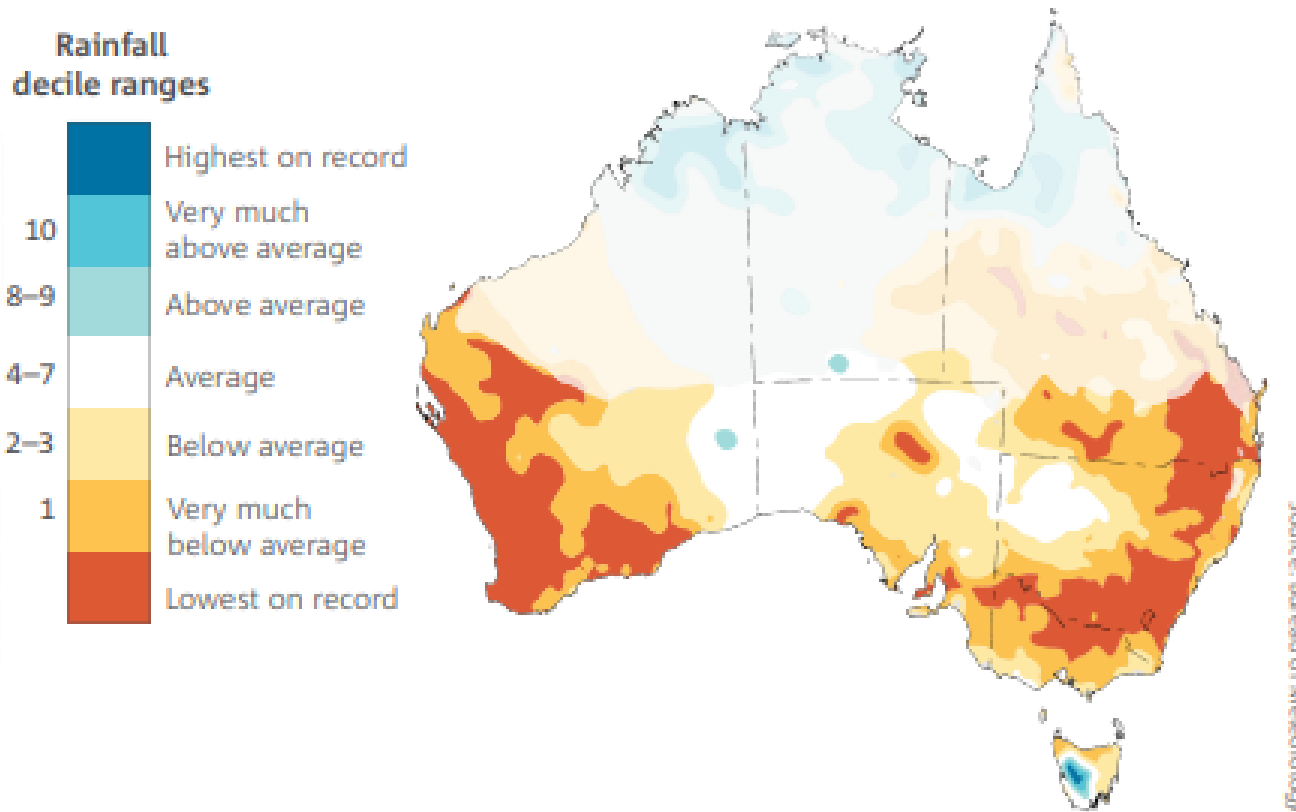
- Wetlands
- Groundwater dependent ecosystems



Water use in 2018-19

(Bureau of Meteorology National Water Account)

Pressures and risks on water supplies



April to October rainfall deciles for 2000-2019

State of the Climate Report (CSIRO, Bureau of Meteorology)

The National Water Grid Authority is investigating ways to **increase security of supply**

In addition to climate change and increased demand to support growth industries with a significant reliance on water (e.g. hydrogen), demand for secure and safe water supply must also contend with population growth and movement of people to regional communities.

Desalination – Groundwater and Seawater

Hydrogen production requires highly purified water

Desalination – removes dissolved salts to produce purified water and brine (requires disposal)

Brackish (salty) groundwater can be purified – potential impacts from groundwater extraction and brine disposal

Seawater desalination – reduces negative impacts of water extraction and brine disposal



Sydney Desalination Plant – Kurnell, NSW
Powered by renewable energy
Can supply up to 15% of Sydney’s water needs

Summary and key takeaways

Hydrogen industry has great potential to help Australia achieve its net-zero emission targets and develop a new export industry.

With the current and growing demands on water supply, proper consideration and planning must go into choosing sites and water sources to minimise impacts on other water users and the environment

The National Water Grid Authority welcome the opportunity to contribute to the discussion

Projects under the National Water Grid Fund must meet the Investment Framework, have a Business Case assessed and support of jurisdictions

Questions

www.nationalwatergrid.gov.au