

# ARENA's Renewable Ammonia Projects

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## ARENA's Purpose

ARENA is the Australian Renewable Energy Agency.

The Agency was established by the Australian Government in July 2012 .

Our purpose is to improve the competitiveness of renewable energy technologies and increase the supply of renewable energy through innovation that benefits Australian consumers and businesses.

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## PROJECTS BY TECHNOLOGY



## RECENT ACTIVITY

**\$70M** Renewable Hydrogen Deployment Funding Round received 36 Expressions of Interest

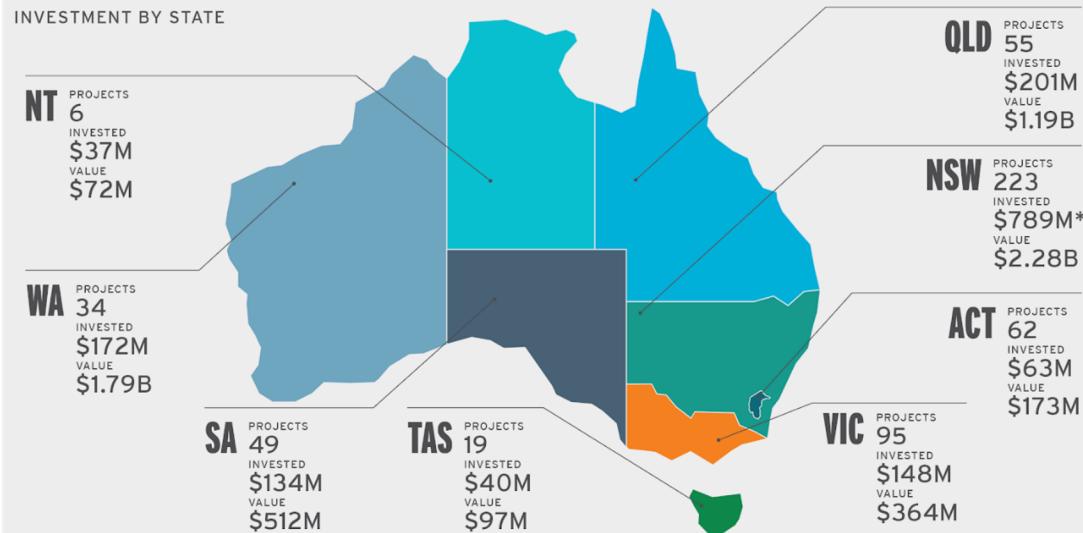
**\$1.7M** to assess the feasibility of a renewable hydrogen and ammonia production facility in WA

**\$1.1M** to trial renewable methane in Australia's gas pipelines

**\$490K** to address emerging power system strength challenges so that more wind and solar can connect to the grid

**\$480K** for an Australian startup program that will assist clean energy entrepreneurs

## INVESTMENT BY STATE



\* Includes \$567 million contributed to projects inherited by ARENA in 2012.

## INVESTMENT LEVERAGE ALONG THE INNOVATION CHAIN

**STUDY** **\$1:\$1.59**

**R&D** **\$1:\$1.59**

**DEMONSTRATION** **\$1:\$1.85**

**DEPLOYMENT** **\$1:\$5.91**

## ENGAGEMENT

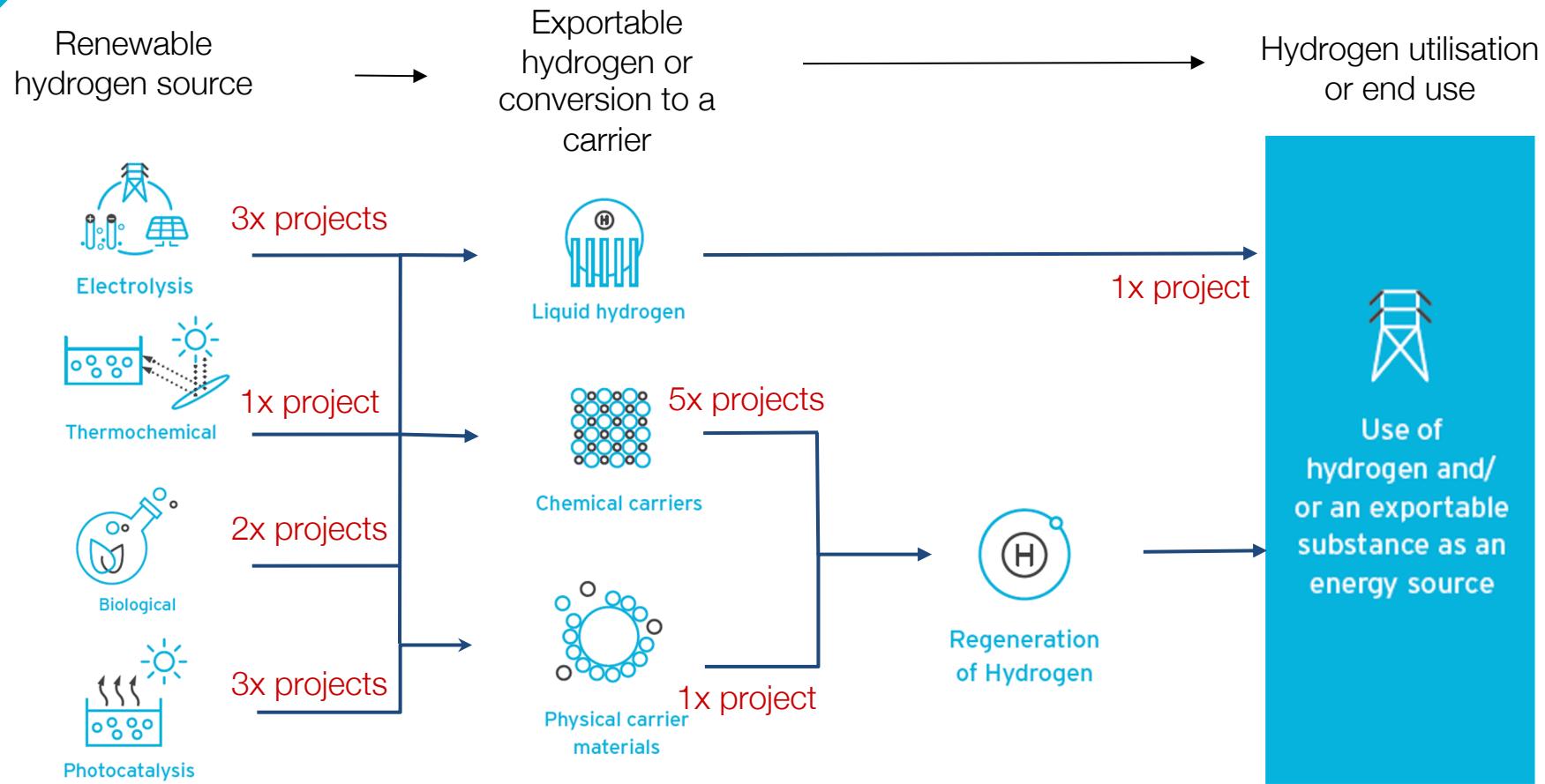
### ARENA INSIGHTS WEBINAR

More than 100 industry professionals heard from AEMO, SAPN, Infigen, Simply Energy and Electranet on the January 2020 separation events in South Australia

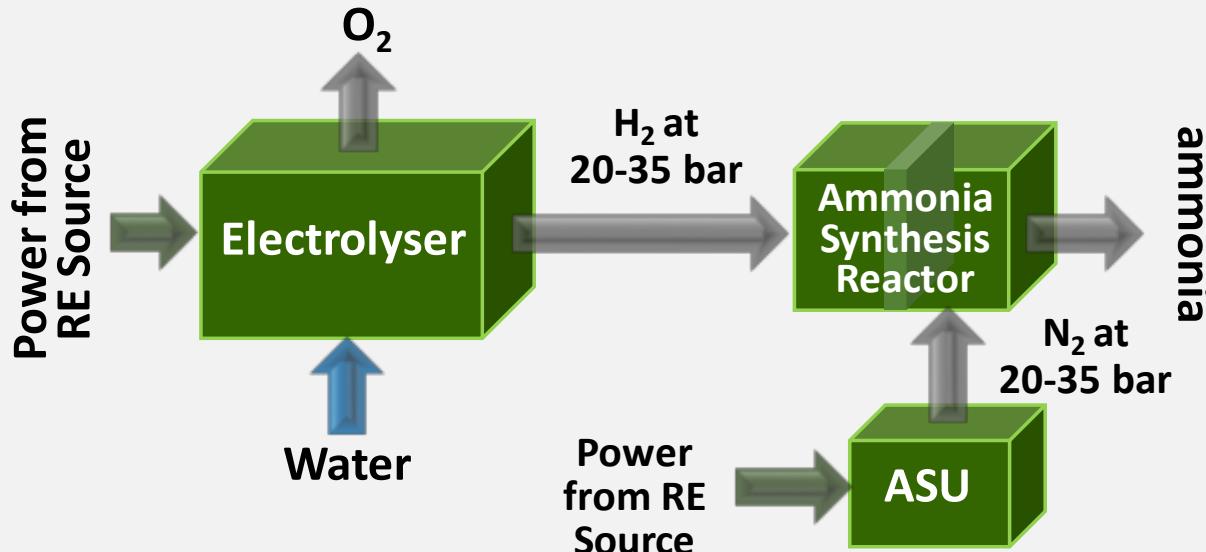
### BIOENERGY ROADMAP

Sought input from Australia's bioenergy sector to help develop a Bioenergy Roadmap

# ARENA awarded \$22.1 million to 16 hydrogen R&D projects across the supply chain



## CSIRO: Ammonia production at distributed scale



# Monash: Ammonia Production from Renewables at Ambient Temperature and Pressure



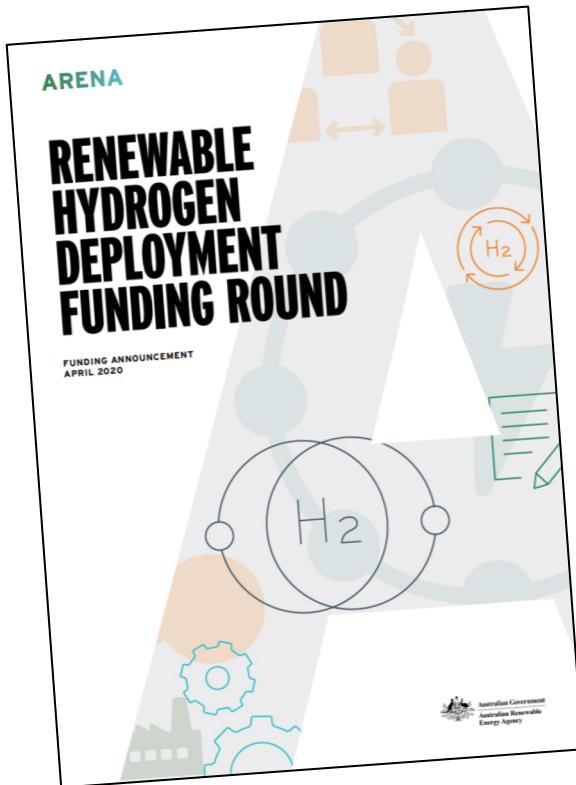
# BP Australia, QNP, Dyno Nobel, Yara

- Determine the technical and economic feasibility of producing renewable ammonia at a commercial scale
- Helping to further progress the commercialisation of renewable hydrogen production
- Analyse the end-uses and offtake demand for renewable hydrogen in domestic and international markets
- Understand the implications of a fully integrated renewable hydrogen supply chain



QNP Ammonia Plant

# ARENA Hydrogen Funding Round



- **Demonstration** of electrolysis and associated renewable hydrogen technologies at scale
- Provide **price discovery and transparency** in relation to the current and projected economics for renewable hydrogen technologies
- Facilitate a **pathway to technical and commercial viability** of renewable hydrogen in Australia
- \$70 million funding envelope - ARENA anticipates supporting more than one project

# Yara / Engie and green ammonia

