**HyResearch – Projects Listing**

**Guidance notes for Project Description Template Completion**

***CSIRO and the Australian Hydrogen Research Network (AHRN) are working collaboratively on HyResearch, an online portal and database that provides information on Hydrogen R&D activities within Australia.***

***The following provides guidance notes on completion of a project description template that would provide basic core information on an R&D project for display on the Portal.***

***V1 dated 29-11-2021***

***V2 dated 23-06-2022***

***V3 dated 07-05-2024***

***V4 dated 09-09-2024***

***V5 dated 28-02-2025***

***V6 dated 09-04-2025***

**Contents**

1. **Projects to be included**

This section describes the nature/manner of projects for inclusion in HyResearch and the process for updating included descriptions.

1. **Project description template – guidance notes**

This section provides guidance notes on completing the project description template that forms the basis of the HyResearch Projects page.

1. **Hydrogen supply chain: research focus areas – key words**

This section describes the hydrogen supply chain key words for use in completing the ‘research focus areas’ part of the Template. To support efficient user search/filter processes, it is critical that the key words are used exactly as described in this section.

1. **Projects Description Template – ready for completion**

This section includes the clean description template for completion and onforwarding to the HyResearch project manager: peter.grubnic@csiro.au

1. **Projects to be included**

Defined as having a sole or substantial research focus on an element or elements of the hydrogen value chain, and can include collaborations with industrial organisations that can be publicly described in full or large part as per the project description template overleaf

Most obvious candidates are projects linked to funding sources; for example, including the below sources but not limited to:

* Australian Research Council (ARC) project grants.
* Cooperative Research Centres (CRCs) with hydrogen supply chain related projects.
* ARENA funded hydrogen-related R&D projects.
* Other projects from major programs that can be publicly listed on HyResearch.

The above sample includes projects funded through several of the main national R&D funding programs. As a sample, they do not cover all the national programs that provide support for hydrogen supply chain R&D projects nor those provided by State programs nor through public-private-research partnerships or collaborations of varying kinds (nor through solely University funded projects).

HyResearch is intended to access this full range of funded projects for inclusion.

Each R&D project would consist of a set of activities that can be linked to funding sources, would be organised and managed for a specific purpose, and would have its own objectives and expected outcomes.

It is intended that newly funded projects would be included as soon as possible as they become active. An annual review process would review/update information on existing projects.

1. **Project description template – guidance notes**

**Project Title**:

Include project title here

**R&D Focus Areas**:

Please include here the relevant key word(s) from the listings shown overleaf. For optimal search filtering, key words usage must be exactly as shown overleaf. In case multiple key words are required, please use a **maximum of the top two listing of key words**.

**Lead Organisation**:

Include name of lead organisation or organisations here

**Partners**:

Include name of any project partners here; if no partners, please type in Not Applicable

**Status**:

Choice of Completed or Active, as relevant for this project

**Start date**:

Include month and year please

**Completion date**:

Include month and year please if actual or estimated completion timing is known/defined, or just year if completion timing is less defined

**Key contacts**:

Include the name or names, professional email addresses (subject to researchers being OK to publicly provide such addresses) of lead and other key researchers engaged on this project.

**Funding**:

Include main funding sources supporting the Project activities and amounts provided where this is publicly available/can be made publicly available; e.g. ARENA, ARC, specific name of CRC, etc.

**Project total cost:**

As can be made publicly available, please provide amount of total project costs and include whether this is cash contribution only or combined cash+in-kind contribution.

**Project summary description**:

Include a summary 2-3 paragraphs describing the nature of the projects intended aims, any key outcomes achieved, etc (which can be publicly disclosed). If a more detailed description is easily provided, please do so. While a key aim is to foster researcher connections, to reach the fullest stakeholder audience, layman’s language is optimal (to the extent possible).

**Related publications and key links**:

Include titles of/links to relevant journal articles, reputable media reporting, conference presentations, etc.

**Higher degree studies supported**:

Include as you wish to make publicly available, the number of PhD and/or Masters students whose research thesis or similar is solely or substantially supported by the activities of the project.

Examples of completed descriptions can be accessed through the [HyResearch Projects](https://research.csiro.au/hyresearch/projects/) page.

1. **Hydrogen supply chain: R&D focus areas - key words**

**(In case multiple key words are required, please use a maximum of the top two listing of key words.)**

**Whole supply chain:** key words below

Whole supply chain

**Hydrogen production**: key words below

Biological hydrogen production

Biomass and waste conversion

Direct hydrogen carrier production

Electrolysis

Fossil fuel conversion

Natural hydrogen

Photochemical and photocatalytic processes

Thermal water splitting

**Storage**: key words below

Compressed gas

Cold/cryo compressed

Liquid hydrogen

Ammonia

Hydrides

Liquid organic carriers

Synthetic fuels and chemicals

 Adsorbents

Proton Batteries

Underground storage

Pipeline storage

**Distribution and supply**: key words below

Pipeline materials and performance

Pipeline design and integrity management

Pipeline and network operations

Hydrogen embrittlement

Non-pipeline non-export supply technologies

*(Note: shipping technologies supporting export potential is covered under* ***Utilisation)***

**Cross-cutting**: key words below

Separation materials and technologies

Specialised components and devices

Advanced manufacturing

Technology integration process improvement

Water use and treatment

Land use and ecological impacts

Emissions and atmospheric impacts

Materials and waste management

Safety and standards

Social licence

Socio-technical risks

Local communities

Indigenous culture and communities

Communication and engagement

Techno-economic evaluation

Geographical modelling

Computational modelling

Materials modelling

Nanomaterials

Energy systems integration

Sector coupling

Supply chain integration

Hydrogen market development

Policy

Regulations

Hydrogen certification schemes

Skills and labour market

**Hydrogen utilisation**: key words below

Electricity *(includes grid balancing & stability, grid integration, stationary fuel cells, engines & turbines)*

Export potential *(includes shipping technology development, loading/offloading, infrastructure optimisation from production site to port loading site)*

Gas networks and appliances *(includes appliance testing, metering, hydrogen gas separation)*

Heat storage *(covers thermal batteries based on metal hydrides)*

Industrial heat processes *(includes steel, cement, metals refining, etc.)*

Industrial feedstock processes *(includes ammonia, synthetic fuels, and methanol production)*

Mobility (*includes mobile fuel cells; onboard storage; refuelling stations; bunkering: land, sea, air mobility forms; vehicle/engine improvements)*

***(Note: information in brackets above acts only as content guidance as each utilisation key word/words can cover a wide range of optionalities; information in brackets is not to be used as key words)***

1. **Project description template – ready for completion**

**Project Title**:

XXXXXXXXXXXXXXXXXX

**R&D Focus Areas**:

XXXXXXXXXXXXXXXXXX

**Lead Organisation**:

XXXXXXXXXXXXXXXXXX

**Partners**:

XXXXXXXXXXXXXXXXXX

**Status**:

XXXXXXXXXXXXXXXXXX

**Start date**:

XXXXXXXXXXXXXXXXXX

**Completion date**:

XXXXXXXXXXXXXXXXXX

**Key contacts**:

XXXXXXXXXXXXXXXXXX

**Funding**:

XXXXXXXXXXXXXXXXXX

**Project total cost:**

XXXXXXXXXXXXXXXXXX

**Project summary description**:

XXXXXXXXXXXXXXXXXX

**Related publications and key links**:

XXXXXXXXXXXXXXXXXX

**Higher degree studies supported**:

XXXXXXXXXXXXXXXXXX