

H2Networks All About Information & Collaboration

P: + 61 61619417 M: + 61 448 844 911 E: rob6star@tpg.com.au PO BOX 437 CURTIN ACT 2605

AIR LIQUIDE

Status of Vocational Hydrogen Training in Australia.

A Snapshot – 7th May 2021

Contact: Robert Edwards
Director H2Networks



Purpose

This document provides a snapshot of the current status of nationally recognised vocational (VET) hydrogen training courses in Australia. This document can be shared and will be updated on a quarterly basis.

The information in this document is sourced from Skill Service Organisations (SSOs) and industry associations.

The document aims to provide an insight of where overlaps may occur in the requirements for hydrogen specific training between industries, where developed competencies may be shared between industries or expanded upon and, it will help to prevent training gaps that may result in skills shortages for hydrogen related work.

Additionally, it will assist industry, including RTOs and GTOs, to understand timelines for the development and delivery of hydrogen training courses in Australia.

At the time of preparing this first edition there were no approved VET training courses for hydrogen work in Australia. There was one VET training package at the Validation stage and 2 at the Case for Change stage .

- Table 1) Provides an industry-by-industry snapshot of the stages that each industry is currently at in relation to the development of VET hydrogen training in Australia.
- Table 2) Provides a view of the industries and competencies where skill requirements will likely overlap or likely not be required at all.
- Table 3) Is a list of peak industry bodies whose input would help to better forecast skills requirements.
- Table 4) Required input of skills forecasts from peak industry bodies.
- Table 5) Provides a list of the competencies that have already been reviewed and developed, to validation stage, by Australian Industry Standards (AIS) for UEG hydrogen work.

Table 1) Hydrogen Training Snapshot in Australia – 7th May 2021.

Key to table 1)

Early stages of discussions for Case for Change between SSO and industry*
Status of Training Development presently at informal discussion stages
No formal discussions for training Underway
Formal case for Change discussions underway between SSO and Industry
Development of Training packages has begun. Validation and approval phase
Training packages approved and ready for delivery

*Enquiries will be made through relevant SSOs and peak industry bodies to fill these existing knowledge gaps.

INDUSTRY	IRC CODE	SSO	IS THERE A PRIORITY FOR SKILLS NOW? YES / NO / UNSURE REASONS	STATUS OF TRAINING
Automotive – Heavy Vehicle and Light Vehicle	AUM	PWC	UNSURE Discussions between SSO and industry have not been completed	Preliminary discussions have begun with industry to determine whether a Case for Change is required at this stage
Automotive - Allied Industry, Light Vehicle, Heavy Vehicle and Body Repair	AUR	PWC	UNSURE Discussions between SSO and industry have not been completed	Preliminary discussions have begun with industry to determine whether a Case for Change is required at this stage
Aviation	AVI	AIS	UNSURE Discussions with SSO Nothing requested by industry or IRC	NIL
Construction Plumbing and Services Downstream of the gas meter, domestic and commercial installation and appliances including LPG and LPG storage. Marine and Campers	CPC	Artibus	YES Extent currently being determined by working group.	Case for Change is being developed. Since the 26/3/2021 a working group, under the guidance of Artibus has been meeting to discuss the types of skills required and whether there is an impending skills Shortage.

				Competencies to be developed will be in the next edition
 Maritime	MAR	AIS	UNSURE Discussions with SSO UNSURE/ nothing requested by industry or IRC	NIL
 Aerospace	MEA	IBSA	NO Discussions with SSO There is nothing on the horizon	NIL
 Manufacturing and engineering	MEM	IBSA	NO Discussions with SSO Nothing has been requested by industry or IRC	NIL
 Resources and Infrastructure	RII	PWC	NO Discussions with SSO Nothing has been requested by industry or IRC	NIL
 Transport Logistics and Rail	TLI	AIS	UNSURE Discussions with SSO Some competencies already exist in other industries.	NIL
 Electrotechnology	UEE11	AIS	Discussions with SSO Formal request for input to Case for Change 28/4/2021	Early stages of discussions in Industry only. Request by MPANZ to address electrical skills requirements for fuel cells and electrolyzers.
 Gas Upstream of the gas meter – including distribution, transmission, storage, and production.	UEG	AIS	YES Industry decided there was a current and long-term need	Awaiting Validation Phase 6 new units relating to hydrogen have been developed 13 existing units of competency have been reviewed to include hydrogen
 Electrical Supply Generation	UEP	AIS	UNSURE Discussions with SSO and Australian Energy Council	NIL

Electrical safety and hydrogen													
Find and repair faults													
Apply safety practices													
Cooling / Chilling													
Dispensing													
Decommission and recommission hydrogen systems													
Characteristics and properties of Hydrogen													
Hydrogen combustion and Type A & B appliances													
Leak testing													

Table 3) List of peak industry bodies whose input would help to better forecast skills requirements. *

INDUSTRY BODY	REPRESENTING
Master Plumbers Australia & New Zealand (MPANZ)	Downstream of the gas meter, domestic & commercial production, storage & fuel cells
Australian Energy Council	Generators
NECA	Electrical and communication
Australian Airports Association	Airports & aerodromes
Australian Trucking Association	Owners & drivers
Motor Trades Association of Australia	Retail, service, repair & recycling
Australasian Railway Association	Freight & passenger rail including rail contractors AUS & NZ
Maritime Industry Australia	Maritime businesses & facilities
HCAA	Hydraulic Consultants

*Input has been received from MPANZ and the Australian Energy Council and the HCAA

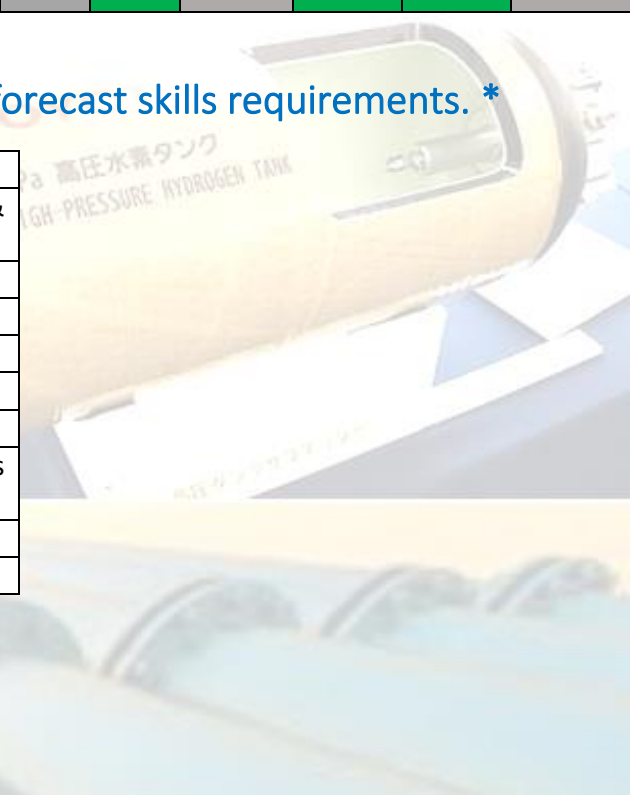


Table 4) Required input of skills forecasts from peak industry bodies.

FORECAST COMPETENCY REQUIREMENTS	IRC CODE	IRC CODE	IRC CODE	DATE REQUIRED	EXPECTED WORK OF TRAINEE UPON COMPLETION OF TRAINING
Electrolysis					
Other H2 production					
Fuel Cells					
Compression					
Storage					
Small diameter piping systems					
Piping systems above 20 bar (+ or -) ?					
Large diameter pipelines					
Work with hydrogen Gas					
Blending					
Control and Monitoring					
Purging					
Electrical safety and hydrogen					
Find and repair faults					
Apply safety practices					
Cooling / Chilling					
Dispensing					
Decommission and recommission hydrogen systems					
Characteristics and properties of Hydrogen					
Hydrogen combustion Type & B appliances					
Leak testing					



Table 5) Competencies reviewed and developed to validation stage by AIS for UEG hydrogen work.

This table may be inaccurate and is indicative only. The units of competency are at the validation stage.

EXISTING UNITS OF COMPETENCY REVIEWED TO ADDRESS HYDROGEN
UEGNSG121Y Prepare safe design specifications of a gas system
UEGNSG136Y Carry out transmission pipeline construction work activities
UEGNSG204Y Coordinate and conduct gas distribution pipeline repair and modifications
UEGNSG207Y Coordinate construction, laying and testing of gas distribution pipelines
UEGNSG216Y Commission or decommission gas distribution pipelines
UEGNSG220Y Construct and lay polyethylene gas distribution mains
UEGNSG223Y Construct and lay steel gas distribution pipelines
UEGNSG224Y Construct and lay copper and stainless-steel gas distribution pipelines
UEGNSG228Y Construct and lay large copper gas distribution pipelines
UEGNSG325Y Coordinate the operation of relevant plant and equipment for transmission pipeline construction
UEGNSG327Y Coordinate transmission pipeline construction operations
UEGNSG333Y Work in proximity of transmission pipeline construction plant and equipment
UEGNSG344Y Commission or decommission gas transmission pipelines
NEW UNITS OF COMPETENCY DEVELOPED FOR HYDROGEN
UEGNSG969Y (NEW UNIT) Commission, operate and maintain electrolysers
UEGNSG970Y (NEW UNIT) Fault find and repair hydrogen storage equipment
UEGNSG978Y (NEW UNIT) Monitor and control hydrogen in gas infrastructure
UEGNSG979Y (NEW UNIT) Handle hydrogen gas*
UEGNSG980Y (NEW UNIT) Inject hydrogen gas into distribution pipelines*
UEGNSG981Y (NEW UNIT) Inject hydrogen gas into transmission pipelines
UEGNSG982Y (NEW UNIT) Apply safety practices, procedures, and compliance standards for working with hydrogen
UEGNSG983Y (NEW UNIT) Undertake routine hydrogen storage operations

*979Y and 981Y may not be required.

Thank you for your contribution.

For further information contact...

Robert Edwards

0448 844 911

02 6161 9417

rob6star@tpg.com.au

