



AHC Submission in response to the Draft Hydrogen Safety Code of Practice

Australian Hydrogen Council

24 June 2022

Submission to the QLD Government

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About the Australian Hydrogen Council

The Australian Hydrogen Council (AHC) is the peak body for the hydrogen industry, with more than 100 members from across the hydrogen value chain.

Our members are at the forefront of Australia's hydrogen industry, developing the technology, skills and partnerships necessary to build Australia's hydrogen economy.



Thank you for providing the opportunity to provide feedback on the Queensland Government's Draft Hydrogen Safety Code of Practice.

AHC appreciates the Queensland Government's leadership role in the development of a safety framework for hydrogen however we note that this is a first step as it primarily covers fuel consumers / distribution rather than production and a broader framework may be required to manage issues related to green fleets, manufacturing or the role of hydrogen in the electricity grid (either through fuel cells or turbines).

One of the key safety considerations in these fields is the availability of a suitably qualified and experienced workforce and we consider it vital that regulatory frameworks align with training and accreditation schemes. We urge the Queensland Government to engage with developments in this sphere and where possible to adopt standards, qualifications and requirements which will be recognised across Australia to ensure that sufficiently large workforce can be mobilised to assist with achieving Australia's hydrogen ambitions.

Comments on specific elements of the Draft Code can be found below.

AHC looks forward to continuing to work with the government on the development and implementation of this scheme and on the delivery of its hydrogen strategy more broadly.

We welcome the opportunity to provide further detail about any aspect of this submission via GM Policy, Mr Joe Kremzer who can be contacted by email on jkremzer@H2council.com.au or telephone 0413 266 081



Feedback Form

Hydrogen Safety Code of Practice Consultation Draft

Petroleum and Gas Inspectorate

May2022

Hydrogen safety policy proposals for consultation

Please use the template below to provide feedback on the Draft Hydrogen Safety Code of Practice and policy proposals

Please provide feedback to hydrogensafety@rshq.qld.gov.au by **24 June 2022**

Feedback form – Draft hydrogen safety code of practice	
Company or Entity Name:	Australian Hydrogen Council
Representative Name/Email:	Joe Kremzer/jkremzer@h2council.com.au
Feedback on Policy Proposals	
<ul style="list-style-type: none">• If accepted do the proposals enable effective safety regulation for the hydrogen industry?• Are there any unnecessary barriers created by the policy proposals?• Are there any gaps the draft Code has not addressed?	
PROPOSAL	FEEDBACK
<u>A7.1 Prescribed quality of hydrogen</u> The prescription of <i>AS/ISO 14687 Hydrogen fuel quality - Product specification (AS/ISO 14687)</i> in s72 of the P&G Safety Reg provides a specific and relevant requirement for the quality and composition of hydrogen when supplied as a fuel gas, equivalent to what already applies to Liquid Petroleum and natural gas.	AHC agrees with the proposal to prescribe the quality of hydrogen via reference to AS/ISO 14687

<p><u>A7.2 Hydrogen gas distribution systems</u></p> <p>Where the hydrogen component of fuel gas is outside the scope of AS/NZS 4645, the following alternative method of compliance is proposed.</p> <p>Section 675(1)(e) of the P&G Act provides a method for formal safety assessment which can be applied to a gas distribution system. The chief inspector could receive notification of the formal safety assessment prior to supply commencing.</p> <p>Where hydrogen is supplied to a gas distribution system, the operators shall ensure that the risks are managed to an acceptable level. This includes ensuring quality is maintained within agreed limits</p>	<p>AHC consider that this is an appropriate alternative approach to ensuring safety where the hydrogen component of fuel gas is outside the scope of AS/NZS4645.</p>
<p><u>A7.3 Prescribed odour</u></p> <p>Section 7 of the Code provides an alternative means of achieving safety outcomes for supply of unodourised hydrogen fuel gas.</p> <p>An operator is able to supply unodourised hydrogen to a consumer, if:</p> <ul style="list-style-type: none"> • the supply is to a vehicle or vessel through a dispenser, or • they have obtained a copy of the gas compliance certificate (GCC), and • that GCC shows that the system being supplied to is safe for use with unodourised fuel gas. <p>Other than for supply to a mobile fuel cell gas system, where a consumer requires fuel gas to be supplied unodourised, the system owner must:</p> <ul style="list-style-type: none"> • obtain approval for the gas device from an appropriate GDAA 	<p>AHC is concerned that the drafting appears to place responsibility for ensuring that a vehicle is certified to UN Regulation 134 on the vehicle’s owner and requires the owner to demonstrate certificate prior to refuelling. This appears onerous and impractical on face value however we consider that the obligation could be simply complied with if registration for use on Queensland roads (which would require UN Regulation 134 certification of GDAA approval) is taken as sufficient evidence of certification. We consider that this approach should be made explicit in the Code.</p> <p>If vehicle registration is accepted as evidence of compliance, more formal provision of evidence need only be provided where the vehicle is not registered for use on Queensland roads. This would apply to off road applications such as mining and agricultural settings.</p>

<ul style="list-style-type: none"> • ensure the gas system being supplied to is designed for unodourised fuel gas supply by a suitably qualified engineer • have an appropriately authorised person install the gas system in line with system design and device approval and issue a GCC • operate and maintain the gas system safety in line with the approval requirements including any conditions imposed • retain evidence of the approval and GCC for the operating life of the gas system. <p>For supply to a mobile gas system the <u>owner of the vehicle or vessel</u> must:</p> <ul style="list-style-type: none"> • ensure the mobile fuel cell gas system is certified (approved) to <i>UN Regulation No. 134 – Hydrogen fuel cell vehicle safety</i> (UNR 134) or approved by an appropriate GDAA • ensure the fuel cell gas system is installed by an appropriately authorised person (i.e., holder of an appropriate GWA) • retain evidence of the UNR 134 certification or GDAA approval and GCC for the life of the gas system • for commercial vehicles and vessels, retain records of the twelve monthly inspections of the fuel cell gas system. 	
<p><u>A7.4 Fuel Gas Delivery Network Operating Plant</u></p> <p>A proposed future amendment to regulation would define all hydrogen delivery networks as operating plant.</p>	<p>No Comment</p>

<p><u>A7.5 Gas Device Approval</u></p> <p>The code proposes the use of Reference standard and the process outlined in Figure 2.</p>	<p>In the absence of a Federal ADR, given the emergent status of Hydrogen as an automotive fuel source, AHC agrees with the general process outlined in Figure 2. as long as complying the vehicle can be undertaken by compliance engineers that do not necessarily hold GDAA certification until such time as a Federal ADR becomes available.</p> <p>That is; for a Type B Gas system in a mobile application that complies with UN Regulation UN No. 134 that the importer's compliance engineer can issue a certificate of compliance and that multiple product of the same type can be approved through a blanket approval process.</p>
<p><u>A7.6 Gas System Installation</u></p> <p>The code proposes the use of Reference standard and the process outlined in Figure 2.</p>	<p>Use of an appropriate reference standard ensures that safety requirements are met without imposing onerous compliance obligations on installers.</p>
<p><u>A7.7 Type B Multiple Device Approval</u></p> <p>A provision for a GDAA holder to approve multiple type B devices and on the same approval.</p> <p>Additionally, the Chief Inspector may issue a blanket approval and publish this on a Queensland Government website (e.g. for a specified model of an imported vehicle certified to UN R134).</p>	<p>The concept of approving multiple devices on the same approval appears to be a reasonable approach and is consistent with the current process for approval of vehicles under relevant Australian Design Rules (ADRs).</p> <p>We understand however, that compliance engineers for device importers would rarely, if ever hold a GDAA and instead rely upon technical documentation relating to the design and engineering of a device based on overseas standards. This fact would likely drive a significant push from device importers for blanket approvals from the Chief Inspector.</p> <p>The proposal for the issuance of a blanket approval appears reasonable but lacks the detail needed to provide manufacturers and importers of devices comfort that the process will be sufficiently straightforward and not impose undue regulatory barriers.</p>
<p><u>A7.8 New and Updated Terms</u></p>	<p>AHC has some concerns that the updated terms may lead to duplication rather than harmonisation with existing approvals processes.</p>

<p>A definition for <i>fuel cell gas system</i> be included. This will enable specific requirements relevant to be prescribed, e.g., it will ensure the approval process for a hydrogen fuel cell considers the entire system in which it will operate so all operational components which present safety risks, including production and storage, are assessed.</p> <p>A definition for <i>reference standard</i> be included. There are a number of Australian and International standards that are relevant for ensuring hydrogen applications operate safety. Initially, it is proposed these hydrogen standards may be used achieve safety outcomes.</p> <p><i>Gas fuel systems</i> are defined as “A gas system that supplies gas as a fuel to an engine”.</p> <p>It is proposed to amend the definition of a gas fuel system to include fuel gas supplied to a mobile fuel cell.</p>	<p>Currently Table 5 states that for Type B Class FC, GDAA approvers would be required to demonstrate:</p> <ul style="list-style-type: none"> • Previous experience working on similar devices • Formal training and qualifications on similar systems • Knowledge of hazardous area and electrical component requirements for hydrogen and/or other similar gases. <p>Compliance engineers are very experienced in gathering technical and engineering evidence to ensure that all of the aspects of compliance can be certified to despite all of the development and engineering to comply with UN 134 being undertaken overseas.</p>
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GENERAL FEEDBACK

CLAUSE #	COMMENT (including recommendations)
6.5	<p>The code of practice should recognise that existing hydrogen fuel cell automobiles are designed specifically to enable modular disassembly and reassembly and that service and maintenance not associated with the vehicle’s hydrogen components can be readily managed by technician’s with current automotive repair qualifications. A</p> <p>AHC considers that no additional qualifications need be imposed where works do not interact with the vehicle’s hydrogen system however any work on the vehicle’s hydrogen components only be undertaken by individuals that have successfully completed training that is provided by, or on behalf of, a manufacturer of that kind of hydrogen vehicle or that hydrogen system should be permitted to work on that manufacturer’s hydrogen system.</p>

