



13 April 2025

Submission: National Hydrogen Regulatory Guidebook – Pipelines

The Australian Pipelines and Gas Association (APGA) represents the owners, operators, designers, constructors and service providers of Australia's pipeline infrastructure. APGA members ensure safe and reliable delivery of over 1,500 PJpa of gas consumed in Australia alongside over 4,500 PJpa of gas for export.

APGA and its members are at the forefront of Australia's renewable gas industry, helping achieve net-zero more quickly and affordably. We support a net zero emission future for Australia by 2050¹ and consider renewable gases to represent a real, technically viable approach to lowest-cost energy decarbonisation in Australia. APGA sees renewable gases such as hydrogen and biomethane playing a critical role in decarbonising gas use for both wholesale and retail customers.²

APGA welcomes the opportunity to contribute comments to the National Hydrogen Regulatory Guidebook – Pipelines. This work is an important piece of a broader catalogue for hydrogen regulation in Australia, and one that is key to unlocking development in this key infrastructure. APGA commends the work to date and the collaborative approach both DCCEE and DISR have taken in developing these documents.

There are some aspects of the Guidebook which APGA considers worth expanding on to ensure that it covers the breadth of the regulatory landscape for hydrogen infrastructure. Not the least of which, the decision for the Guidebook to focus on high pressure pipelines.

Focus on high pressure pipelines

Currently, there is no hydrogen transport in high pressure pipelines, but it is being blended at 10% into low pressure distribution pipelines in several locations across the country. The regulatory framework of those blending operations is not theoretical but is in practical operation; absent a greater consideration of this the Guidebook will be of limited use until hydrogen production scales sufficient for high pressure transport. APGA recommends that the Guidebook team work with both the Australian Gas Infrastructure Group (AGIG), ATCO and Jemena to understand the regulatory frameworks applying to:

¹ APGA, *Climate Statement*, available at: <https://www.apga.org.au/apga-climate-statement>

² ACIL Allen, 2024, *Renewable Gas Target – Delivering lower cost decarbonisation for gas customers and the Australian economy*, <https://apga.org.au/renewable-gas-target>

- Hydrogen Park – Adelaide, Tonsley, Murray Valley, Gladstone (AGIG)
- Hydrogen Blending Project (ATCO)
- Western Sydney Hydrogen Hub (Jemena).

Australian Standard 4645:2018 – Gas distribution networks

The Guidebook considers and covers the AS2885 series in detail. AS2885 relates to high pressure gas and liquid petroleum pipelines, generally referred to as transmission pipelines. These are typically long-distance and constructed in steel.

In Australia, pipeline transport of hydrogen currently happens at the distribution level, where it is blended into distribution pipelines. These pipelines are covered by the AS4645 series. Distribution network pipelines typically operate at much lower pressures, and are made of different materials, from steel to various types of plastic.

There are different considerations for carriage of hydrogen (and blends) for which pressure is the primary variable. For example, carriage of hydrogen in some high pressure pipelines has the risk of embrittlement as a primary concern, where this risk is considerably lower in low pressure distribution pipelines – especially those made of plastics.

High pressure and low pressure pipelines have distinct risk profiles. The Guidebook should more clearly reflect these – the existence of AS4645 is noted in the main document but the interaction between it and

Australian Standard 4564:2025 – General-purpose natural gas and natural gas equivalents

AS4564 specifies the quality of natural gas, for the purposes of transport in transmission and distribution pipelines and also for use in natural gas appliances and equipment.

In July 2025, AS4564 was updated to expand the coverage of the Standard to natural gas equivalents, including hydrogen and biomethane. It also introduced a specific hydrogen blending limit of 10% by volume. Previously, there was no specified allowable hydrogen limit, with only the Wobbe Index limit to constrain hydrogen blending.

While further revisions to the Standard may change the allowable volume in the future, this has relevance for the development of hydrogen pipelines which should be discussed in the Guidebook, potentially in a separate section on blended pipelines which have slightly different technical, operational and regulatory considerations to 100% hydrogen.

Annexure 3 – Repurposing existing pipelines for hydrogen services

This annexure provides for a more detailed overview of key regulations relevant to the repurposing of existing pipelines for hydrogen transmission. Other than the fact that AS4564:2025 may present a barrier to repurposing that is not considered in the Guidebook (see above), APGA recommends that DCCEEW and DISR closely review this section in consultation with APA. APA undertook a detailed consideration of the regulatory

framework during its Parmelia Gas Pipeline Hydrogen Conversion Project³, which also considered in detail how compliance with existing standards might be achieved.⁴ This knowledge would be a useful addition to this annexure to ensure it practically reflects the standards in place and how they would apply to a real conversion project.

APGA Renewable Gas Connections Code of Practice

While not directly focused on renewable gas pipelines, APGA's Renewable Gas Connections Code of Practice is relevant when considering the interface between production facilities and pipelines. It provides guidance for renewable gas producers, gas distributors, transmission pipeline operators, on the safe connection of renewable gas production facilities to gas distribution networks and pipelines. This document should be included in Annexure 1 as a reference.⁵

To discuss any of the above feedback further, please contact me on +61 409 489 814 or crafael@apga.org.au.

Yours sincerely,



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³ <https://www.apa.com.au/operations-and-projects/future-energy/future-energy/parmelia-gas-pipeline-pgp-hydrogen-conversion-project>

⁴ See 10.5 Pipeline Design, in APA, 2023, *Parmelia Gas Pipeline Conversion Technical Feasibility Study – Public Knowledge Sharing Report*, https://admin.apa.com.au/media/5qxleokq/3419_apg_public_pipeline_conversion_v6.pdf

⁵ APGA, 2024, *Renewable Gas Connections Code of Practice*, <https://apga.org.au/code-of-practice-renewable-gas-connections>