



1 March 2024

Submission: Queensland Hydrogen Industry Regulatory Reform

The Australian Pipelines and Gas Association (APGA) represents the owners, operators, designers, constructors and service providers of Australia's pipeline infrastructure, connecting natural and renewable gas production to demand centres in cities and other locations across Australia. Offering a wide range of services to gas users, retailers and producers, APGA members ensure the safe and reliable delivery of 28 per cent of the end-use energy consumed in Australia and are at the forefront of Australia's renewable gas industry, helping achieve net-zero as quickly and affordably as possible.

APGA welcomes the opportunity to contribute to the Queensland Government's consultation on developing an effective regulatory framework for Queensland's hydrogen industry. For Queensland to make the most of its hydrogen opportunity it will need to find the right balance of regulation and streamlined process to enable projects to reach Final Investment Decision (FID).

APGA supports a net zero emission future for Australia by 2050¹. Renewable gases represent a real, technically viable approach to lowest-cost energy decarbonisation in Australia. As set out in Gas Vision 2050², APGA sees renewable gases such as hydrogen and biomethane playing a critical role in decarbonising gas use for both wholesale and retail customers. APGA is the largest industry contributor to the Future Fuels CRC³, which has over 80 research projects dedicated to leveraging the value of Australia's gas infrastructure to deliver decarbonised energy to homes, businesses, and industry throughout Australia.

APGA supports efforts by the Queensland Government, and other jurisdictions, to put in place frameworks supporting streamlined development of green hydrogen infrastructure. The consultation paper addresses a wide range of possible legislative interactions with hydrogen developments.

Regulation of hydrogen pipeline infrastructure

APGA highlights the previous work undertaken by the Queensland Government in the *Gas Supply and Other Legislation (Hydrogen Industry Development) Amendment Act 2023*. This Act recognises the importance of renewable gases (green hydrogen and biomethane) and ensures amended legislation considers it on an equal footing with natural gas.

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

² APGA, 2020, *Gas Vision 2050*, <https://www.energynetworks.com.au/resources/reports/2020-reports-and-publications/gas-vision-2050-delivering-a-clean-energy-future/>

³ Future Fuels CRC: <https://www.futurefuelscrc.com/>

The consultation paper proposes no further amendments to pipeline regulation frameworks. APGA considers that this is due in part to the advanced engagement of the pipeline industry on legislation to enable hydrogen and renewable gases.

However, by accepting amendments to the National Gas Law relating to the introduction of “covered gases”, the Queensland Government has introduced regulatory revenue risk to hydrogen pipelines deployed within the State. Not protecting hydrogen pipelines from this risk will impede hydrogen pipeline investment, in particular, investment in common-user hydrogen pipeline infrastructure.

Common-user infrastructure

Question 10: Are specific amendments required as part of this review of the hydrogen regulatory framework on matters relating to common user infrastructure?

As acknowledged in the consultation paper, the large upfront capital expenditure on new or expanded infrastructure can create barriers for developers of new projects. Larger, common-user pipelines are more efficient than smaller, per-user pipelines. However, the National Gas Law (NGL) disincentivises investment in larger, multi-user pipelines. The Greenfield Incentive and Price Protection Mechanism exist because of this fact, but are not guaranteed to be provided to new hydrogen pipeline infrastructure, impeding common-user hydrogen pipeline infrastructure reaching FID. APGA recommends the Queensland government guarantee Greenfield Incentive and Price Protection Mechanism for all hydrogen pipelines.

Larger, common-user pipelines are more efficient than smaller, per-user pipelines

Pipelines are a lower cost form of energy transport and storage than powerlines and electricity storage,⁴ and larger pipelines are more economically efficient than smaller pipelines. This is because pipeline throughput capacity increases with a square proportionality to circumference, providing significant economies of scale when larger pipelines are built.

Common-user pipelines not only divide the cost of infrastructure development across all users but provide a more cost efficient energy transport solution at the same time.

In the context of coordinating development of a hydrogen industry in Queensland, the most economically efficient outcome would be for fewer, larger hydrogen pipelines to be developed as common-user infrastructure instead of multiple smaller pipelines.

The alternative to fewer common-user pipelines has already been seen in Queensland from the CSG to LNG boom. During this period, three separate natural gas pipelines were developed to transport gas to the same location, traveling in the same easements for substantial distances. The same energy transport outcome could have been achieved at a lower cost had a single set of common-user pipelines been developed.

⁴ GPA Engineering, 2021, *Pipelines vs Powerlines: a technoeconomic analysis in the Australian context*, study commissioned by APGA, <https://apga.org.au/research-and-other-reports/pipelines-vs-powerlines-a-technoeconomic-analysis-in-the-australian-context>

National Gas Law disincentivises investment in larger, multi-user pipelines

The 2023 amendments to the National Gas Law (NGL) disincentivise building large pipelines that service multiple gas customers.⁵ The amendments expose spare 'uncontracted' capacity on all pipelines to binding arbitration under the Non-Scheme form of regulation, or to price setting under the Scheme form of regulation. This introduces revenue risk to pipeline investments if not fully contracted before being built.

Gas Transportation Agreement contracts entered into prior to Final Investment Decision (FID) cannot be impacted by the NGL. This combined with amendments to the NGL means investors are incentivised to address the abovementioned revenue risk by only investing in fully contracted pipelines. However, multi-user pipelines tend to not be fully contracted from day one, picking up additional users once infrastructure is in place. Availability of a common-user pipeline may even help justify the creation of a new users' business case to proceed, inherently leading to new customers after FID has been reached.

Under additional amendments in 2022, the national gas regulatory framework was extended to hydrogen and renewable gases and blends, treating these products as exactly the same as natural gas. Therefore, the NGL will likely provide much the same disincentive for common-user hydrogen pipeline infrastructure as it does to natural gas.

Unlike natural gas, hydrogen and renewable gases are manufactured products. Because they are not 'extracted' there is much more flexibility in the location of transport and storage infrastructure. This increases competition of the associated renewable gas pipeline services market, in turn constraining market power possessed by renewable infrastructure owners.

APGA has extensively detailed the potential negative impacts on hydrogen industry development of applying economic regulation to control market power in the mature natural gas infrastructure market to the immature hydrogen pipeline market.⁶ These were done without a single hydrogen pipeline having been built, breaking the key principle of not regulating without evidence of need, and introducing a key risk of economic regulation impeding innovation.

Not only is the hydrogen pipeline market immature, but the likelihood of market power is much less. The locational constraints of natural gas pipelines do not apply to hydrogen pipelines as hydrogen production can be developed anywhere. Any new hydrogen production

⁵ DCCEE, 2022, *Energy Ministers agree final package of gas pipeline regulatory amendments*, <https://www.energy.gov.au/energy-and-climate-change-ministerial-council/energy-ministers-publications/energy-ministers-agree-final-package-gas-pipeline-regulatory-amendments>

⁶ APGA, 2023, *Submission: Darwin to Tennant Creek Infrastructure Corridor*, https://39713956.fs1.hubspotusercontent-na1.net/hubfs/39713956/230223_apga_submission_-_darwin_tc_infra_corridor.pdf

APGA, 2023, *Submission: Mandatory Gas Code of Conduct*,

<https://apga.org.au/submissions/mandatory-gas-code-of-conduct>

APGA, 2023, *Submission: Reliability and supply adequacy framework for the East Coast Gas Market*,

<https://apga.org.au/submissions/reliability-and-supply-adequacy-framework-for-the-east-coast-gas-market>

APGA, 2023, *Submission: Future Gas Strategy*, <https://39713956.fs1.hubspotusercontent-na1.net/hubfs/39713956/231124%20APGA%20Submission%20-%20Future%20Gas%20Strategy.pdf>

and pipeline can compete with any existing asset base, breaking any market power of existing infrastructure.

Greenfield Incentive and Price Protection Mechanism

Recent NGL reforms also firmed the Greenfield Incentive and Price Protection Mechanism – the former protecting against a pipeline transitioning to Scheme regulation, and the latter protecting prices set through foundation contract execution in line with reaching FID.

The inclusion of these protections under the NGL recognises the fact that the current design of the NGL impedes investment. Neither protection is automatic or guaranteed, and neither protection can be put in place until after an investment decision is made. As such investors are still exposed to revenue risk at the point of reaching FID.

APGA recommendation

APGA recommends that the Queensland Government guarantee that hydrogen pipelines automatically receive both the Greenfield Incentive and Price Protection under the NGL in the State of Queensland.

This guarantee would address the revenue risk created by amendments to the NGL, making it easier for investors to achieve FID on larger, common-user pipelines which are not 100% contracted. By reducing revenue risk it would be more likely that lower cost pipeline transport is able to be developed through common-user infrastructure corridors to the benefit of all users.

To discuss any of the above feedback further, please contact me on +61 422 057 856 or jmccollum@apga.org.au.

Yours sincerely,



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Answers to consultation questions

Issue/Questions	APGA comment
<p>Planning framework</p> <ol style="list-style-type: none"> 1. Are reforms to the planning regulatory framework needed, or is guidance material for renewable hydrogen proponents enough? Why or why not? 2. Would any other process innovations or improvements in government agency engagement be beneficial? 3. Should a threshold be put in place so the state is the decision-maker for hydrogen projects? If yes, what should this threshold be set at and why? 4. Are there any other considerations relating to these options? 	<p>APGA defers to the expertise of renewable gas project operators.</p> <p>However, we note that currently where small scale hydrogen developments do not trigger thresholds for Major Hazards Facilities, local governments are the assessment authority under the <i>Planning Act 2016</i>. The technical expertise required to properly assess hydrogen projects may be beyond the expertise of local governments, even where the relative risk profile may be lower than other developments.</p> <p>Option 2 to develop a State code for assessment of small-scale hydrogen developments under the Planning Act, where the State Assessment and Referral Agency would act as the assessment manager for all hydrogen developments that do not trigger hazardous chemicals, is a sensible option. This code would specify elements of an assessment and the appropriate mechanisms for hazard identification and risk assessment.</p>
<p>Renewable energy</p> <ol style="list-style-type: none"> 5. Are reforms needed to any aspect of the electricity regulatory framework to support the effective and efficient development of the hydrogen industry? Why or why not? 6. Is an approval or licensing regime a suitable way to ensure there is enough renewable energy for the domestic market? 	<p>Ensuring a hydrogen developments ability to secure sufficient supply of renewable electricity to generate green hydrogen should be separated from any decision to adopt a hydrogen generation licensing framework. Licencing should be relative to the technology and output, not the inherently variable ability to secure input. Green status of hydrogen production is better addressed through renewable</p>

<p>7. What benefits and costs would the proposed options have on you, your organisation, the industry, workers or the broader community?</p> <p>8. Are there any other barriers that should be reviewed to stimulate renewable hydrogen industry growth?</p>	<p>gas certification schemes such as the GreenPower Renewable Gas Certificate program.</p> <p>Any additional regulation, including Hydrogen Generation Licences or Renewable Energy Zones (REZ) for hydrogen, should be done in a way to minimise additional regulatory compliance burden on producers. Hydrogen production within existing REZs could help reduce variable generation waste, overbuild of local electricity storage and overbuild of electricity transmission as electrolysis into hydrogen pipelines from existing REZs could provide a source of demand, storage and transmission for REZ generation.</p>
<p>Pipelines</p> <p>9. Are there further issues about the pipelines relating to hydrogen production that need to be considered as part of this review?</p>	<p>APGA recommends that the Queensland Government automatically guarantee that hydrogen pipelines receive both the Greenfield Incentive and Price Protection under the NGL (see substantive submission).</p>
<p>Common user infrastructure</p> <p>10. Are specific amendments required as part of this review of the hydrogen regulatory framework on matters relating to common user infrastructure?</p>	<p>See Q9 and substantive submission.</p> <p>Inclusion of hydrogen pipelines under the NGL introduced revenue risk for common-user hydrogen pipelines, in turn impeding investment in common-user hydrogen pipelines. This could be resolved through guaranteeing the Greenfield Incentive and Price Protection for all hydrogen pipelines in Queensland.</p> <p>APGA notes that the NGL amendments also introduce ringfencing obligations around renewable gas blending facilities, which may add additional complexity to investment decisions.</p>

<p>Water</p> <p>11. Are there specific amendments required as part of this hydrogen regulatory review relating to water infrastructure and supply?</p>	<p>Existing regulatory frameworks appear to be fit for purpose, however APGA will be interested in feedback received through this process.</p>
<p>Safety</p> <p>12. Is the current regulatory approach to safety proportionate to the safety risks of the hydrogen industry? If not, what are the key issues or gaps?</p> <p>13. What are your views regarding including safety provisions in a standalone Act versus maintaining provisions in existing Acts?</p> <p>14. Should consideration be given to changing the thresholds that apply to Major Hazard Facilities? Explain your view.</p>	<p>Any reforms to safety frameworks for hydrogen must acknowledge that there is no one-size-fits-all solution, and additional regulation must balance the scale and hazards of hydrogen developments relative to other permitted developments. Safety assessments for small scale hydrogen developments should take place under a State code and be assessed by the SARA.</p>
<p>Environment</p> <p>15. Are specific amendments, or any other process innovation or improvements, needed to help proponents identify and navigate the necessary environmental approvals?</p> <p>16. Are there any risks with the development and production of hydrogen that are not adequately covered by existing environmentally relevant activity processes?</p>	<p>Existing regulatory frameworks appear to be fit for purpose, however APGA will be interested in feedback received through this process.</p>
<p>Community impacts and benefits</p> <p>17. How should social impacts and benefits be assessed and managed for hydrogen projects?</p> <p>18. What are the impacts, costs or benefits associated with each of the options?</p>	<p>Existing regulatory frameworks appear to be fit for purpose, however APGA will be interested in feedback received through this process. Any additional regulation must consider scale, and there would be benefit in approving bodies (such as local governments) being supported by a robust information campaign from the Queensland Government.</p>

<p>19. What is the best way to ensure mutually beneficial engagement with, and outcomes for, First Nations peoples?</p>	
<p>Hydrogen storage</p> <p>20. What matters should be considered in expanding existing regulatory requirements or designing a new framework to support hydrogen storage?</p> <p>21. Should underground storage of hydrogen be permitted in Queensland? Why or why not?</p>	<p>Hydrogen storage should ideally be addressed in a State code, allowing for science based, expert assessment of developments.</p> <p>There are opportunities for hydrogen storage in pipeline linepack and in gas networks, with potential additional safety considerations (leaks and blowdown).</p>