

26 November 2021

Senior Energy Officials
Department of Industry, Science, Energy and Resources,
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Submitted via: renewablegas@industry.gov.au

Dear Senior Energy Officials,

**Extending the national gas regulatory framework to hydrogen blends & renewable gases
Changes to the NGL, NERL and Regulations: Consultation Paper**

AusNet is pleased to have the opportunity to provide this submission to the Officials' consultation paper on extending the application of regulatory arrangements and protections for Natural Gas (**NG**) to Natural Gas equivalents.

The Consultation Paper is part of a broader package of reforms being considered under the Extending the national gas regulatory framework to hydrogen blends and renewable gases reform package. We support the objective of these reforms, which is to bring renewable gas networks within the scope of the national gas legislative and regulatory framework.

We are a major energy network business that owns and operates key regulated electricity transmission and electricity and gas transmission and distribution assets located in Victoria. These assets include:

- More than 6,000 kilometres of electricity transmission network that services all electricity consumers across Victoria;
- An electricity distribution network delivering electricity to approximately 750,000 customer connection points in eastern Victoria; and
- A gas distribution network delivering gas to approximately 760,000 customer supply points in an area of more 60,000 square kilometres in central and western Victoria.

We believe the use of gas networks to store and transport renewable energy will be essential for the efficient transition to renewable energy.

AusNet supports the proposed extension of the National Gas Law (**NGL**) to NG equivalents, and over time NG will likely evolve into NG equivalents as the incremental injection of renewable energy gases like hydrogen occurs. During the transition to renewable energy sources, existing appliances will be replaced with appliances that can consume NG equivalents with an increasing proportion of renewable gas content. NG equivalents will use the same pipelines as NG, will be used to fuel the same types of appliances as NG, and will largely share the same customer base as NG. In the longer term, we support the proposed application of the same markets, transparency mechanisms and frameworks to NG equivalents to facilitate the development of the NG market. However, the NGL does not allow gas distributors to own production or the sharing of marketing staff. There is a material risk that this could impede or preclude gas distributors from producing hydrogen at this early stage while the market for NG equivalents is in its infancy will prevent the take up of NG equivalents.

In principle, we agree that Constituent Gases (**CG**) of blends (e.g. hydrogen, biofuel methane) should also be subject to the NGL, on the proviso that there are clear, broad ring-fencing exemptions enabling gas distributors to produce CG particularly while the market is in its infancy and an amendment to section 139 of the NGL so as not to preclude gas distributors from owning CG production facilities.

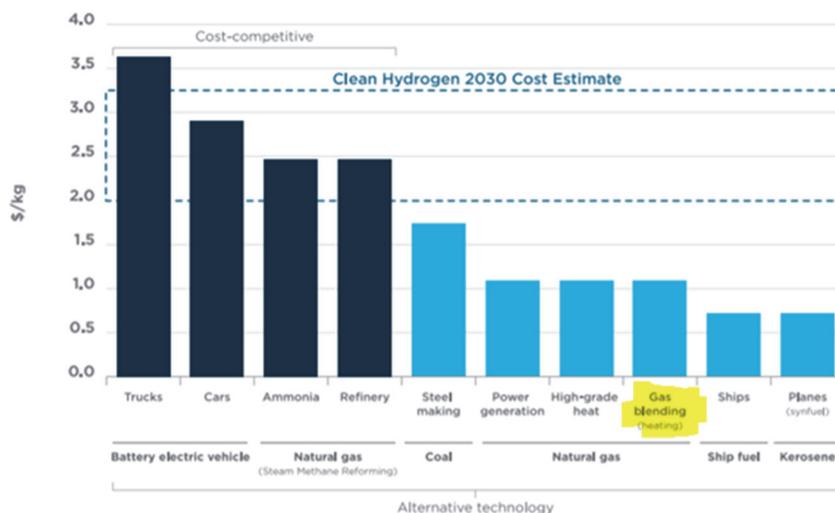
Suggested NGL changes

When NG equivalents containing hydrogen become cost competitive, hydrogen production will not be concentrated in specific exploration areas. Rather, production will follow renewable energy generation and could be located anywhere and by undertaken by anyone. Issues of market power associated with NG equivalents can be avoided with respect to renewable CGs by ensuring curtailment of gas injection at blending facilities is subject to a curtailment policy approved in access arrangements. This approach would require NGR changes and would mirror the current queuing policy for shippers. With these changes to the National Gas Rules (**NGR**), NGL section 139 could be amended to exclude CG without any risk that it would impede the development of a competitive market.

In addition to amending NGL section 139, we recommend amending NGL section 140 to allow joint marketing while ever the hydrogen market is in its infancy and market power is not a concern (i.e. because there is no market). In these circumstances, gas distribution businesses should be able to share marketing staff during the initial stages of the transition. During these stages it is vital that customers are provided with clear and compelling information. This will assist customers to understand and adapt to the use of NG equivalents or CG. Customers would need trusted advice to purchase appliances compatible with NG equivalents. Common marketing staff may be helpful to encourage customer uptake of blended gas and provide a consistent, reliable source of information to customers when making these appliance purchasing decisions.

Based on research performed by Advisian, we consider the use of hydrogen in the existing gas distribution networks is not expected to be cost competitive with the incumbent NG technology until at least 2050. Vehicle transport, and in particular heavy vehicle transport, is more cost competitive for the development of hydrogen than blending hydrogen in existing gas networks. The Australian National Hydrogen Strategy reached the same conclusion.

Figure 1.3 Breakeven cost of hydrogen against alternative technology for major applications, in 2030.



Source: COAG Energy Council, Australian National Hydrogen Strategy, November, p6

Preventing gas distributors from producing hydrogen now while the market is still in its infancy risks precluding the take up of blended gas and hydrogen altogether. As recognised by the policy intent of this review, prematurely ruling out this pathway to energy decarbonisation is not desirable. Therefore, it would be better to facilitate market development during the early stages of the transition to cost competitive renewable gas by permitting economies of scale and other cost efficiencies.

An alternative option to updating sections 139 and 140 may be to relocate all ring-fencing related provisions in NGL sections 137 to 147 (with the necessary modifications), to the NGR. This would make it easier during the transition to update the ring-fencing rules to address the relevant needs of customers and the market as it changes and develops over time.

This approach would allow for the application of evolving ring-fencing obligations that could allow gas distributors to produce hydrogen for small and large-scale trials and should be able to share marketing staff to effectively engage with customers during the transition.

Regulation of blending facilities

AusNet supports the application of economic regulation to blending facilities. Blending facilities are the gateways between this new and emerging market to accessing fully regulated distribution networks. The importance of blending facilities and monitoring of blending cannot be overstated, and currently there is no evidence that non-regulated gas producers are wanting to establish blending facilities.

As there also is no evidence that blended NG equivalents with hydrogen remains homogeneous throughout the pipeline. Hydrogen may be consumed or leak at a faster rate than NG. For example, blended gas injected into a single town gate network may not remain at the same blending ratio as it was injected throughout the pipeline. At least during the initial stages of the transition to renewable gas networks, this uncertainty necessitates a role for the gas network in installing monitoring equipment throughout gas pipelines to monitor the ratios and manage the

output of blending facilities to ensure safety thresholds are not exceeded. There will be an important role for gas distributors to actively monitor the blending compositions across the gas network and also to maintain safe operation of assets.

With the application of economic regulation to blending facilities, gas distributors could own these facilities, recover the costs through regulated tariffs or as regulated ancillary services (e.g. reference or non-reference service charges). Classifying blending services as ancillary services enables gas distributors to have control over these assets and enables the option of market competition. New entrants would not be prohibited from establishing blending facilities and when they become cost competitive, they could compete with the regulated gas distributor. Extending NGR obligations that currently apply to the queuing policy for shippers to curtailment would ensure each party seeking to sell hydrogen into regulated networks for NG equivalents are treated equally. The curtailment policy would then be approved as part of the access arrangement determination, and this would complement our above suggested NGL changes.

Appendix A of our submission includes a table addressing selected questions that inform the above positions.

If you have any queries on our submission, please do not hesitate to contact Justin Betlehem on 03 9695 6288.

Yours sincerely,

A handwritten signature in black ink that reads "C. Eddy". The signature is written in a cursive style with a horizontal line underneath the name.

Charlotte Eddy
General Manager Regulatory Strategy and Policy

Appendix A: Response to selected questions asked in the consultation paper

AusNet's feedback	
1 What are your views on the potential approach to extending the application of the NGL to NG equivalents and related facilities and activities? Are there any other approaches that you think would better achieve the objectives of Energy Ministers (see section E.3)?	AusNet supports the extension of the application of the NGL to NG equivalents to facilitate the transition to renewable gas networks.
2 What are your views on the policy intention to enable all elements of the national gas regulatory framework to apply to NG equivalents and their related facilities and activities in the same way that they do to natural gas?	As discussed above, we support the transition of the national gas regulatory framework to apply to NG equivalents and their related facilities and activities in the same way that they do to NG.
3 What are your views on the NGL requiring jurisdictions to make a local regulation to confirm when a gas or gas blend authorised for supply through a pipeline (or part of a pipeline) is an NG equivalent?	Jurisdictions currently specify the composition requirements for NG and we would expect jurisdictions would specify the requirements for NG equivalents.
4 Who is likely to operate the blending facilities involved in the creation of NG equivalent blends?	Initially and while the market matures and we learn how to safely control gas blends throughout the pipelines, blending facilities are likely to be operated by the gas distribution network service provider, the Declared Distribution System (DDS) service provider in Victoria. In the future, connected blending facilities may be able to operate through a contractual relationship with the DDS service provider and under the supervision of AEMO for gas quality.
5 Do you think blending facilities should be subject to the same economic regulatory framework that applies to pipelines? Please explain your response to this question.	AusNet agrees that blending facilities should be subject to the same economic regulatory framework that applies to the pipeline the blending facility connects to. For example, blending facilities connected to full regulation covered pipelines should also be subject to economic regulation.

AusNet's feedback	
<p>6 Are there any specific physical characteristics of NG equivalents or the supply chain for these products that you consider should be taken into account when extending the natural gas regulatory framework to NG equivalents?</p>	<p>The most significant issue of NG equivalents is it is an emerging technology with no supply chain. It is not cost competitive and will not be so for more than a decade or two. As competitive production markets are unlikely to drive the initial stage of the transition to renewable gas networks there will be a need to adjust ring fencing to allow gas distributors to make greater contributions to the transition in the initial stage.</p> <p>The next significant physical characteristic of NG equivalents that needs to be considered when extending the gas framework is the fact blended gas does not remain at the same composition ratio after blending occurs. This means gas distribution network service providers need to have an active role in monitoring and managing gas compositions throughout their pipelines.</p> <p>Differences like lower energy content can be managed by the application of adjusted heating values to suit the composition changes. Pending the concentration of blend in use, there will be a need for infrastructure upgrade in some areas to address compatibility and reliability issues. Some meter change-overs may also be required.</p>
<p>9 What are your views on the proposal to amend the NGL to enable the national gas regulatory framework to apply to the constituent gases and related facilities and activities involved in the supply of NG equivalents, where appropriate to do so?</p>	<p>AusNet considers the application of the current NGL and regulatory framework is problematic with respect to NGL sections 139 and 140.</p> <p>Section 139, if applied to NG equivalents and CGs without amendment, would prevent gas distributors from producing CGs that may be required while lead development of NG equivalents during the early stages when hydrogen production is not cost competitive.</p> <p>Section 140 would prevent a regulated gas distributor from sharing marketing resources with pilots and trials that produce CG. During the early stages of the transition to cost competitive renewable gas, while the economic viability of NG equivalents is unclear, economies of scale and other cost efficiencies should be permitted to facilitate market development.</p>
<p>10 What are your views on the proposal that pipelines involved in the transportation of a constituent gas (e.g. a hydrogen pipeline) be subject to economic regulation under the NGL and NGR?</p>	<p>We support the application of economic regulation to CG under the NGL and NGR to facilitate the potential growth of open access 100% hydrogen pipelines, as discussed above, subject to the amending NGL sections 139 and 140 to enable gas distributors to participate in activities that will help facilitate the economy's transition to renewable gas networks.</p>

AusNet's feedback	
13 Are there any other changes that you think need to be made to the NGL to accommodate constituent gases and related facilities and activities?	As discussed above, we suggest relocating all ring-fencing related provisions in NGL sections 137 to 147 (with the necessary changes) to the NGR. During the transition the NGR could be updated to address the relevant needs of the market at the time.
14 What are your views on the potential approach to extending market body functions and powers to: (a) NG equivalents and related facilities and activities? (b) constituent gases and related facilities and activities?	AusNet supports the extending market body functions and powers to NG equivalents and CG.
15 Do you think arrangements are needed for distribution pipelines attached to the DWGM and STTM to provide for independent management of blending limits (or gas specification requirement) imposed by a jurisdiction? If you think AEMO or another third party should be responsible for this function, please explain what costs and benefits you think would be associated with it doing so.	We support the application of current markets and transparency arrangements to NG equivalents and CG. However, the DWGM and STTM cannot efficiently replace the role of gas distributors for pipeline monitoring and blending limits. For AEMO to perform this role, it would require all the gas distributors' planning and detailed network information. This would be a substantial duplication of network planning staff and information, and ultimately an additional and unnecessary cost to consumers. It would also be appropriate for AEMO to indemnify the gas distributors for risks associated with the pipeline operation and any issues that arose.
16 Are there any other changes to market body functions and powers required to accommodate NG equivalents, their constituent gases, or related facilities and activities?	AEMO would need to have an active role, in conjunction with the gas distributors, in regulating the quality of blended gas produced, in determining and applying updated heating values to customer metering, and overseeing the development of appropriate metering specifications for blended gas.
17 Are there any other approaches that you think would better achieve the objectives of Energy Ministers?	No
18 What are your views on the potential approach to extending the application of the NERL to NG equivalents?	AusNet supports the application of the Victorian energy retail law to renewable gas markets and Victorian regulators. Our gas networks are in Victoria, where the NERL does not apply.

AusNet's feedback	
19 What are your views on the potential approach to extending the AER's and AEMC's functions and powers under the NERL to NG equivalents?	See above
20 Are any other changes to the NERL or the market bodies' functions and powers under the NERL required to accommodate NG equivalents?	See above
21 Are there any other approaches that you think would better achieve the objectives of Energy Ministers (see section E.3)?	No
22 What are your views on the potential approach to allowing the NGL to accommodate OG products over time, as described in section 5.1?	AusNet supports a regulatory framework that allows jurisdictions to extend the NGL to Other Gas (OG) products, noting that the framework should only be applied once OG products are market-ready. As this time, jurisdictions can make the necessary instruments to activate the regulatory changes.
23 Could amending the NGL in the manner described in section 5.1 lead to any unintended consequences? If so, please explain what those unintended consequences may be.	<p>We support jurisdictions having the ability to licence OG products and make general regulation covering OG and CG. Engagement with jurisdictional governments will be essential to the success of the renewable gas transition.</p> <p>There is presently considerable uncertainty about many key aspects of what a potential OG product market might look like. Legislating now in the absence of a clear understanding about how these issues are likely resolve themselves is unlikely to result in a framework that best promotes market development or the NEO.</p>
24 What are your views on the proposal to apply the economic regulatory provisions to pipelines involved in the haulage of OG products and their constituent gases?	If OG products emerge, we would likely support the application of economic regulatory provisions to pipelines involved in the haulage of OG products and their constituent gases.