

Friday 26 November 2021

**Attention:** Senior Energy Officials  
c/o Department of Industry, Science, Energy and Tourism  
Via: [renewablegas@industry.gov.au](mailto:renewablegas@industry.gov.au)

## Hydrogen blends and renewable gases reforms

Energy Networks Australia (ENA) welcomes the opportunity to provide input during the consultation period on the proposed reforms to the National Gas Law (NGL) in relation to hydrogen and renewable gas blending. This submission is in response to the Senior Energy Officials' Consultation paper (the Paper).

ENA is the national industry body representing Australia's electricity transmission and distribution and gas distribution networks. Our members provide more than 16 million electricity and gas connections to almost every home and business across Australia.

To date, the focus of decarbonisation has been on the electricity sector, but gas networks are on their own decarbonisation journey. Customers tell us that they are seeking a clean energy future and are engaged in achieving emission reductions from gas use. New renewable fuels, such as hydrogen and biomethane, have the potential to become mainstream and complementary energy solutions that will use existing energy infrastructure. Our gas networks are leading the development of renewable gas projects and blending renewable hydrogen in the Adelaide and Sydney gas distribution networks, with further projects under development in Victoria, Western Australia and Queensland.

### Key Messages

1. Energy Networks Australia is supportive of the proposed definitions for *Natural Gas Equivalent*, *Constituent Gas* and *Other gas products*.
2. Renewable gas markets are at the early stages of market maturity and application of the full natural gas regulatory framework in an emerging renewable gas market context will need to be appropriately implemented to avoid stifling investment.
3. Blending facilities are similar to injection points on the gas networks and DNSPs are likely the party best placed to operate them.
4. DNSPs will need to develop capability to safely, reliably and efficiently operate blended and 100 per cent renewable gas networks. However, there will be barriers to carrying out trial projects under the proposed framework. Expanding the definition of pipeline services or implementing appropriate ring-fencing exemptions should be considered to allow trial projects to proceed and to develop DNSP capability to manage renewable gases in networks.
5. In a growing and commercial market, the market competition of *Pipelines* involved in shipping renewable gas should be the driving principle when considering the required level of the gas regulatory framework that should be applied.

### Package of regulatory reforms

We understand that our response to the 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*. The broader package of reforms consists of several overlapping consultations, including:

- » Senior Energy Officials' [Consultation Paper](#) on changes to the National Gas Law, National Energy Retail Law and Regulations,
- » The AEMC's [Consultation Paper](#) on changes to the National Gas Rules and National Energy Retail Rules,
- » The AEMC's [Consultation Paper](#) on a rule change request from the Victorian Minister for Energy, Environment and Climate Change to enable the inclusion of renewable gas facilities into the Victorian Declared Wholesale Gas Market, *and*
- » The AEMO's [Consultation Paper](#) on changes to its procedures and other subordinate instruments.

Gas distribution network service providers (DNSPs) are on a decarbonisation journey with the long-term objective to supply 100 per cent renewable gas in gas distribution networks for customers. Gas networks are actively developing and proceeding with renewable gas trial projects in order to build the capabilities necessary to effectively operate renewable gas-blended networks and 100 per cent renewable gas networks.

ENA supports the overall objective of these reforms, which is to bring hydrogen blends, biomethane and other renewable gases within the scope of the national gas legislative and regulatory framework. These reforms will enable DNSPs to continue learning and innovating in the renewable gas space and progressing renewable gas options for customers.

## Renewable gas definitions

The Paper introduces three new definitions for gas, including:

- » **Natural gas equivalents (NGE)**, defined as *a gas (such as biomethane) or blend of gases (such as a low-level natural gas-hydrogen blend) supplied to consumers by pipeline and that is suitable for use as natural gas – that is, it is safe for use in natural gas appliances,*
- » **Other Gas products (OGP)**, defined as *gas or gas blends supplied to consumers by pipeline other than natural gas or natural gas equivalents, and*
- » **Constituent gas (CG)**, defined as *gases (other than natural gas) that are not themselves authorised for supply to end users but are used to create an NG equivalent or other blend subject to the NGL.*

The Paper also notes that Jurisdictions must define these gases through licensing. This can create the potential for different *NGE* specifications to exist at the same time around Australia. Jurisdictional licensing of these gases will see the economic regulatory framework be applied to the shipping of those gases. In turn, this can enable hydrogen blending in networks and support the early stages of a renewable gas market.

*OGPs* are defined as those that are not presently suitable to be used in existing appliances. Jurisdictions can authorise these gases, which will allow *Pipelines* to be within the scope of economic regulation of the NGL. While there are a range of AEMC rules to be developed for these *OGPs*, this definition may enable demonstrations of 100 per cent hydrogen in new residential developments, which is an important step in developing a renewable gas market to reach 100 per cent renewable gas.

CGs are the individual gases used to produce NGEs. It is most likely that these gases will be concentrated streams of hydrogen that can be blended with natural gas to produce a NGE.

ENA supports these definitions. ENA encourages jurisdictional legislators to coordinate on the characterisation of these definition.

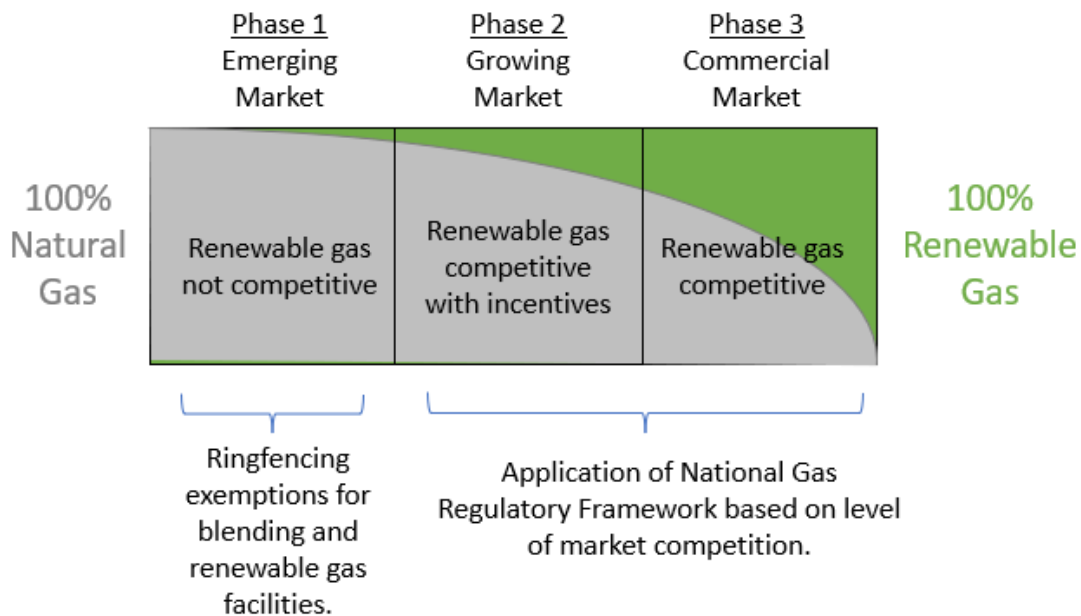
## Application of the National Gas Regulatory Framework

### Supporting the development of renewable gas

Renewable gas markets are at the early stages of market maturity and are currently not commercially competitive with natural gas. It is important that the regulatory framework promotes investment in renewable gas technologies, including trial projects to develop knowledge and capability of how to effectively operate renewable gas facilities.

Customer demand for clean energy sources is growing and jurisdictional legislation has mandated net-zero targets across the country. It is in customer interests if the proposed reforms promoted trials of NGEs and minimised barriers to supplying NGEs to gas network customers.

In an emerging market, DNSPs need to be able to demonstrate the safe operation of blending renewable gases and conversion to 100 per cent renewable gas into their networks. Expanding the definition of pipeline services or broadening ring-fencing exemptions should be considered for these blending facilities and directly connected renewable gas facilities to support cost recovery on these investments, and enable the appropriate personnel to work on these facilities.



*Figure 1: Application of the National Gas Regulatory Framework as renewable gas becomes commercially competitive.*

Australia's DNSPs have been leading investments and demonstrations of renewable gas production and blending facilities. Renewable gas projects led by gas networks are operating in SA, NSW and WA, with further projects planned in QLD, VIC and WA. In an emerging market where renewable gas is not

competitive with natural gas, the only parties investing to progress the renewable gas market as a replacement for natural gas in networks are DNSPs. These investments are primarily undertaken for three reasons:

- » to engage with customers about the opportunities of renewable gas,
- » to build capability managing and operating renewable gas facilities, and
- » to identify potential network modifications required prior to converting the network to 100 per cent renewable gas.

DNSPs will need to operate renewable gas blending facilities, which will initially be used as additional injection points into the network for NGEs. The nature of these blending facilities will change from initially blending small volumes of renewable gas into a natural gas stream to becoming injection points for 100 per cent hydrogen when the network (and its end users) are converted.

Renewable gas is likely to be a competitive commodity bought and sold in a competitive market when renewable gas technology develops sufficient scale. The market competition of *Pipelines* involved in shipping renewable gas should be the driving principle when considering the appropriate requirements of the gas regulatory framework that should be applied.

In this rapidly developing market, ENA suggests that it would be appropriate to ensure that market bodies have the appropriate level of flexibility to undertake their obligations to support market development.

### The pipeline service definition should be amended to facilitate trial projects

As discussed above, the fuels transported in gas networks are currently changing and *NGEs* are not likely to share the same characteristics as natural gas. As one example, natural gas is produced and injected into the gas network from a small number of very large facilities, whereas *NGEs* are likely to be produced and injected in a larger number of smaller facilities. In order for DNSPs to understand how to effectively and efficiently work with *NGEs* and facilitate their transport through gas networks, they will need to undertake trial production and network blending projects.

DNSPs are currently the only party undertaking trials of renewable gas blending in networks. These trials involve renewable gas production facilities, blending facilities and the associated infrastructure required to operate the facilities. However, investments in trial facilities are currently not recoverable through network charges as they are not an activity that is recognised as a Pipeline Service under the NGL.

ENA believes that one option to facilitate the delivery of trial projects is by amending the definition of a pipeline service in the NGL to ensure that DNSPs can undertake all activities involved in trial projects. ENA considers that the Australian Energy Regulator has sufficient discretion as part of an Access Arrangement review to set the price and access terms for this service, however, further work will need to be undertaken to provide customers and stakeholders comfort that this option could be appropriately implemented.

Where appropriate, it would be beneficial if amendments to the pipeline service definition also ensured that DNSPs could capture production of renewable gases for the purpose of supporting a DNSP to deliver ancillary services. For example, this would allow DNSPs to meet their unaccounted for gas obligations with renewable gas.

## Ring-fencing

ENA believes the option most likely to facilitate the effective delivery of trial production and network blending projects is to amend the definition of a pipeline service. However, another option is to implement appropriate ring-fencing exemptions.

In our submission to the AEMC's [Consultation Paper](#) on reviewing the National Gas Rules and National Energy Retail Rules, ENA will be advocating for amendments to the ring-fencing exemption criteria in the National Gas Rules to allow DNSPs to own and operate renewable gas production facilities in renewable gas trial projects.

## Flexibility in a rapidly developing renewable gas market

As a matter of principle, consideration should be given to relocating the NGL clauses related to ring-fencing as well as pipeline and ancillary services into the NGR. This will create more flexibility to ensure that the gas regulatory framework can respond to market developments as renewable gas markets develop. This approach is consistent with the electricity regulatory framework where the ring-fencing provisions are located in the rules rather than the law.

If you have any questions or would like to discuss the contents of this submission further, please do not hesitate to contact ENA's Head of Renewable Gas, Dr Dennis Van Puyvelde ([dvanpuyvelde@energynetworks.com.au](mailto:dvanpuyvelde@energynetworks.com.au)).

Yours sincerely,



Garth Crawford

**General Manager, Economic Regulation**