Public Interest Advocacy Centre

Review into extending the regulatory frameworks to hydrogen and renewable gases

Consultation Paper

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Public Interest Advocacy Centre
ABN 77 002 773 524
www.piac.asn.au

Gadigal Country
Level 5, 175 Liverpool St
Sydney NSW 2000
Phone +61 2 8898 6500
Fax +61 2 8898 6555

About the Public Interest Advocacy Centre

The Public Interest Advocacy Centre (PIAC) is leading social justice law and policy centre. Established in 1982, we are an independent, non-profit organisation that works with people and communities who are marginalised and facing disadvantage.

PIAC builds a fairer, stronger society by helping to change laws, policies and practices that cause injustice and inequality. Our work combines:

- legal advice and representation, specialising in test cases and strategic casework;
- research, analysis and policy development; and
- advocacy for systems change and public interest outcomes.

Energy and Water Consumers' Advocacy Program

The Energy and Water Consumers' Advocacy Program works for better regulatory and policy outcomes so people's needs are met by clean, resilient and efficient energy and water systems. We ensure consumer protections and assistance limit disadvantage, and people can make meaningful choices in effective markets without experiencing detriment if they cannot participate. PIAC receives input from a community-based reference group whose members include:

- Affiliated Residential Park Residents Association NSW;
- Anglicare;
- Combined Pensioners and Superannuants Association of NSW;
- Energy and Water Ombudsman NSW;
- Ethnic Communities Council NSW;
- Financial Counsellors Association of NSW;
- NSW Council of Social Service;
- Physical Disability Council of NSW;
- St Vincent de Paul Society of NSW;
- Salvation Army;
- Tenants Union NSW; and
- The Sydney Alliance.

Contact

Douglas McCloskey
Public Interest Advocacy Centre
Level 5, 175 Liverpool St
Sydney NSW 2000

T: (02) 8898 6534
E: dmccloskey@piac.asn.au

Website: www.piac.asn.au

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The Public Interest Advocacy Centre office is located on the land of the Gadigal of the Eora Nation.

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Introduction

The Public Interest Advocacy Centre (PIAC) welcomes the opportunity to respond to the Australian Energy Market Commission's (AEMC) Consultation Paper (the Paper) Review into extending the regulatory frameworks to hydrogen and renewable gases.

PIAC submits the use of Natural Gas Equivalents (NGE) is not in the interests of consumers. Consumers do not benefit from the introduction of NGEs and it would likely result in cost increases for them.

If the use of NGE products is allowed in existing gas networks, measures must be taken to ensure genuine equivalence of the quality, safety and efficiency of the products delivered to consumers. The interests of all energy consumers must be prioritised in all decisions impacting the future of the energy system.

The Energy Ministers' vision of an export future for hydrogen must not be subsidised by energy consumers. It is not appropriate for the use of hydrogen and other gases in gas networks to underwrite or subsidise potential export industry opportunities. Neither does it justify modifying gas networks, which will increase costs for consumers, reduce the quality and efficiency of gas delivered to consumers, and impede the efficacious decarbonisation of the energy system.

Credible climate responses in the consumer interest

Accelerated action to reduce and eliminate greenhouse gas emissions from our energy system is urgently required. Eliminating methane emissions is increasingly recognised as a priority to achieve agreed emissions and global temperature targets.

The case for high levels of hydrogen and other gases in gas distribution networks is contested. Many independent technical and economic specialists regard it as unviable and much less efficient than electrification alternatives.

The emissions reduction impact of blending hydrogen and other gases in gas networks at low levels is negligible at best. Depending on the source of the blended gases, it is likely blending would result in absolute emissions increases.

The questionable benefits must also be weighed against the readily available, proven alternatives such as rapid electrification. The climate and consumer benefits of rapid electrification may be delayed or undermined by pursuing doubtful and costly gas alternatives - for instance, by duplicating fixed network costs and undermining the scope to use heating and water-heating loads to balance the electricity system more efficiently and affordably for consumers.

If hydrogen blends, NGEs or other fuels are allowed in gas networks, their utility, efficiency and long-term benefit to consumers must be demonstrated, compared to the credible alternatives. The National Gas Objective (NGO) and National Energy Retail Law (NERL) require decisions to be made in of the long-term interests of consumers. The future composition of energy networks must evaluate the efficiency of energy and whether a continued role for gas networks in a decarbonised future is in the long-term interests of consumers at all.

Ensuring consumer interest and protection in the use of Natural gas equivalents

PIAC agrees that if Natural Gas Equivalents are introduced to gas networks the regulatory framework will need be expanded to protect the interests of consumers. The National Gas Law (NGL) National Gas Rules (NGR) and National Energy Retail Regulations (NERR) should be reviewed to ensure continued efficiency and consistent consumer protection where NGEs are used in gas distribution networks.

The definition and accommodation of NGEs must focus on suitability of consumption on equivalent terms with Natural Gas (NG). Equivalence must be assessed holistically and ensure there is no impact on the:

- safety of the network,
- life of network assets,
- cost of providing gas through networks,
- safety of consumers,
- utility, efficiency, or life of consumer appliances, and
- effectiveness and accuracy of metering and billing for consumers.

Other gases

PIAC opposes the extension of the NGL and NERL to accommodate the introduction of other gases (OG).

Australia's existing gas appliances and transmission networks are not built for hydrogen, and only able to accommodate very low-level blends at best. Some industrial processes cannot tolerate any hydrogen. Any amount of hydrogen significant enough no materially reduce emissions would require expensive appliance replacement or upgrades and the overhaul of many safety standards and measures (such as replaced fire alarms, leak detection and ventilation systems) for businesses and households using gas. Changes, replacements, and upgrades would be required throughout gas networks.

Extending the legal and regulatory frameworks now, prospectively, has real risks for the ability of the energy frameworks to support an energy system that is as affordable, efficient, safe, and reliable. The existing framework was created to ensure the infrastructure providing essential services to, and regulated returns from, the community was operated transparently, efficiently, and affordably in the interests of consumers.

The community's need for the existing gas infrastructure and the gas it provides is established. This does not apply to OG products, which may be so different from existing gas as to require an largely new network and the complete replacement of gas appliances. If the future case for these products is demonstrated, their value for consumers and the community proven, it will be reasonable to consider how that need should be met, and regulated. As distinct products they will have distinct properties. They will have distinct consumer safety, reliability, quality, security, efficiency, and choice considerations. This will require an appropriate legal and regulatory framework if the need for OG products and their value to the community is demonstrated. That is not yet the case and it would be inappropriate to use the current legal and regulatory framework for such a prospective, risky, and unproven purpose.

Responses to consultation paper questions

Question 1: Scope of the review

1. Do you agree with the Commission's preliminary position on the scope of this review?

The Commission must consider whether the proposed reforms are in the long-term interests of all energy consumers. The Commission has been tasked with considering what would be required to implement the proposed policy of low-level blending in gas networks. But any reforms should consider the energy system (and all energy consumers) as a whole, rather than a narrow consideration of gas consumers and gas networks.

Questions 2: Assessment framework

1. Do you agree with the Commission's proposed assessment framework for this review?

PIAC broadly agrees with the scope of the proposed assessment framework with the following comments:

- **Total energy network efficiency**
  The Commission has responsibility to consider the long-term interests of all energy consumers with respect to the efficiency of the energy system as a whole. The potential of the proposals to introduce inefficiency and cost to gas networks, as well as undermine long-term efficiency gains in electricity networks should be assessed.

- **Allocative efficiency**
  An assessment of allocative efficiency should consider whether the changes enable NGEs and constituent gases to be allocated to their highest value use. In the case of NGEs and constituent gases consideration of value should also include an assessment of climate mitigation impact relative to cost. Assessment of allocative efficiency should also consider allocation of climate policy and energy transition costs across both electricity and gas networks to areas that deliver greatest long-term value to consumers.

- **Productive efficiency**
  A proper assessment of productive efficiency is central to the consumer interest. It is implausible that hydrogen, in particular, could be cost competitive with existing gas sources. It is vastly more expensive as an additive, and reduces the efficiency of the gas products it is blended with. Productive efficiency of NGEs should also be considered relative to electrification alternatives.

- **Dynamic efficiency**
  This must consider impact on the promotion of efficient investment in both electricity and gas distribution and transmission networks over time, in terms of the implicit objective of the proposals, asking: Do the reforms contribute to the most efficient investments in emissions reduction?

- **Innovation**
  Innovation must be assessed in terms its purpose. Innovation is not a benefit in and of itself, and has merit only when it brings about tangible benefits for consumers. This includes improving the efficiency of the energy system and contributing to emissions reduction.

- **Implementation considerations**
  This assessment must consider if the proposed measures are targeted, fit for purpose and proportionate to the issues they are intended to address. A priority will be clearly establishing whether the stated objectives are in the consumer interests. The objective provided by Energy Ministers to 'pursue hydrogen export opportunities' arguably is not relevant to the AEMC's requirements to consider and promote the long-term interests of energy consumers with respect to price, efficiency, quality and safety of service. The proposed changes may contribute to the objective of Energy Ministers, but it would do so at the cost of consumer interests and efficient investment in the energy system.

- **Decarbonisation**
  PIAC strongly supports the prioritisation of rapid decarbonisation of the energy system and including decarbonisation as a key assessment criterion for the proposal. This assessment must also consider the materiality of decarbonisation and whether the proposals will result in direct material reductions in methane and carbon emissions.

  This assessment must also consider the contingency of the decarbonisation potential of the proposals and what is required for them to result in material reductions in methane and carbon emissions.

  This assessment must also consider the relative decarbonisation impact of the proposal compared to energy system alternatives (such as electrification) and the potential for the proposals to impede or undermine less costly, more efficient, and more material decarbonisation by making the full benefits of electrification harder to realise.

- **Quality, safety, reliability, and security of supply**
  This assessment criterion is central to determining whether the proposals are in the consumer interest. Priority should be given to assessing the impact on the quality and safety of supply. Consideration of the quality of supply should also include consistency of the quality of supply.

- **Consumer protections**
  This assessment criteria should consider the potential for the proposals to increase costs for all consumers and the impact this would have on energy affordability and increasing consumer vulnerability.

  This criterion should also consider the direct implications for consumers ability to accurately monitor their usage, receive consistent outcomes from their gas supply, and be billed consistently and accurately for their usage. Consistency of supply and clear lines of responsibility for gas outside required specifications should also be considered as part of this assessment.

Question 3: Supplier access to pipelines

2. **Do you think service providers should be required to publish information on where connections by suppliers of natural gas equivalents or constituent gases would be technically feasible, or should this just be left to negotiations?**

   PIAC agrees that service providers should be required to publish information on pipeline feasibility.

Question 4: Ring fencing arrangements

1. **Do you think the ring-fencing exemptions in the NGR should be amended to accommodate trials by service providers? Why?**

   The NGR should not be amended to accommodate trials by service providers. Trials are likely to require augmentation of aspects of network infrastructure and processes that impact on network costs. Trials may also be seen as a basis for further augmentation, expansion, and extension of networks, with material implications for costs recoverable from future consumers. It is not appropriate for service providers or related ring-fenced entities to be able to undertake activities that will create a revenue case or an increased cost recovery requirement from their regulated network business, that is not in the long-term interests of consumers.

2. **If so, do you think there should any limit on the volume of service providers should be able to produce, purchase or sell (eg up to the unaccounted for gas level)?**

   Network service providers should not be able to produce, purchase or sell gas. PIAC would be concerned to see any service provider volume limit linked to unaccounted for gas (UAFG). Linking a service provider limit to UAFG may create a perverse incentive to not address and minimise unaccounted for gas in order to produce, purchase or sell a higher volume of gas.

   UAFG is a material climate risk representing potential fugitive methane emissions that must be addressed. UAFG is also an inefficiency in the system that adds indirect costs to consumers. Service providers must be responsible for addressing UAFG. They should have a strong incentive and requirement to transparently monitor, efficiently address and minimise UAFG, to limit both methane emissions and avoidable unnecessary costs for consumers.

Question 5: Rules for scheme pipelines

2. **Do you think Part 9 of the NGR should be amended to clarify how government grants or funding are to be treated for regulatory purposes?**

   The NGR should be amended to clarify where government grants or funding should be treated as revenue or assets for pipeline businesses for regulatory purposes. Generally, grants should reduce the costs recovered from consumers and in any case should not result in recovery of costs related to activities covered by the grants or revenue, from consumers.

Question 7: Pipeline gas type information

1) **Do you think service providers should be required to publish information on;**

   a) **The type of gas they are licenced to transport in their user access guides and, in the case of scheme pipelines, the access arrangement and access arrangement information? Why?**

      Service providers should be required to publish information on the type of gas they are licenced to transport, including composition and cost.

   b) **Any firm plans to conduct either a trial or to transition the pipeline (or part of the pipeline) to a natural gas equivalent or other gas product? Why?**

If service providers are allowed to proceed with trials or transitions to NGEs they should be required to provide transparent and detailed public information in advance of this intention. Trials or transitions could have material consequences for the ongoing costs of access to the pipeline and gas services provided through them. These are relevant to consumer and user decision-making. Consumers may wish to disconnect from the gas pipeline at a point of appliance replacement, electrify and avoid inefficient costs involved in the provision of networked gas equivalents. Trials or transition decisions also have consequences for the utility of the gas provided, it's cost and efficiency in operating appliances. Consumers should be notified of this well in advance of any proposed commencement.

2) **Do you think this information should also be reported on the AEMC's Pipeline Register?**

Information on intention to initiate trials or transitions should be reported on the AEMC's pipeline register.

Questions 8: Extension of the transparency mechanisms to natural gas equivalents

3. **Should blending facilities be treated as production facilities for the purposes of the Bulletin Board, GSOO, and VGPR, or should specific reporting obligations be developed for these facilities? Why? If you think specific**

Blending facilities would appear to fill an equivalent function to a production, compression and injection facility and should be regulated and required to report accordingly.

Question 9: Extension of the transparency mechanisms to constituent gases

1. **Do you think the following transparency mechanisms should be extended to the facilities and activities involved in the supply of constituent gases as part of the initial rules package or should the applications of one or more be deferred until a later process? Why?**

   a) **The Bulletin Board**
   Yes

   b) **The GSOO**
   Yes

   c) **The VGPR**
   Yes

   d) **The compression and storage terms and prices**
   Yes

   e) **The AER's gas reporting functions**
   Yes

Facilities and activities involved in the supply of constituent gases should be brought into the transparency mechanisms as part of the initial rules package. These activities contribute to material costs to NGE products even at low levels and should be subject to equivalent transparency measures from the outset. This is crucial to ensure efficient decision making can be informed by transparent information regarding the costs of activities contributing to the supply of NGEs

2. **If you think the transparency mechanisms should be extended as part of the initial rules package:**

   a) **What facilities do you think should be captured?**

   All facilities should be subject to transparency mechanisms as part of the initial rule changes.

Question 10: Trading natural gas equivalents in the facilitated markets

1. **Do you think natural gas equivalents should be traded through the facilitated markets, or outside of the facilitated markets?**

   NGEs should be treated as equivalent products where they are allowed. Trade in NGEs should be undertaken through the facilitated markets.

Question 12: Unaccounted for gas in the facilitated markets

1. **Do you think initial trials involving the injection of natural gas equivalents into the distribution system should be accommodated by amending jurisdictional arrangements for UAFG?**

   UAFG should not be linked to the injection of NGEs. UAFG is a material emissions issue that should be addressed as part of emissions reductions measures. UAFG could represent a material contribution to methane emissions through fugitive losses across the network. UAFG is also a source of inefficiency in the network, contributing to additional costs borne by consumers.

   Strong incentives to transparently identify, monitor and reduce UAFG should be implemented and retained to ensure methane emissions from the network are minimised, and excess costs to consumers removed. Linking UAFG to NGE injection trials may create a perverse incentive to not be transparent in accurately identifying UAFG or working to reduce it. Any trials to inject NGEs should be derived and limited independently of the level of UAFG.

Question 15: Gas specification in the facilitated markets

1. **In relation to the STTM, do you think Part 20 of the rules should be amended to clarify that AS 4564-2005 can be augmented or replaced to accommodate blending in certain parts of the STTM distribution systems? Are any other changes required, including to accommodate impacts on connected transmission pipelines?**

   PIAC does not support any measures undermining the integrity or consistency of gas specifications. Consumers must have the quality, safety and efficiency of gas provided through pipelines maintained consistently and reliably. No amendment to the rules should allow uncertainty in relation to the standards and specifications. If NGEs are not able to meet agreed standards for gas they should not be regarded as genuine equivalents. PIAC strongly

disagrees with any changes to rules that may 'accommodate' impacts on connected transmission pipelines, where this may increase safety, security and reliability risks.

Question 16: Blending constraints in the facilitated markets

1. **Who should be responsible for the creation of natural gas equivalent blends and ensuring that these remain consistent with revised gas specification?**

   Gas distribution networks service providers, as the entities responsible for distributing gas to consumers, should be responsible for ensuring services meet specification standards. The Australian Energy Market Operator (AEMO) should be given powers to monitor this responsibility and ensure any NGE is supplied within required specifications parameters. Ensuring that specifications and standards are met consistently must be a priority to support the ongoing safety quality and efficiency of services to consumers.

Question 19: Other potential issues in the regulated markets

1. **Are there any issues the AEMC should consider in relation to the recovery of the cost of the renewable component of the natural gas equivalent from retail customers, for a natural gas equivalent?**

   PIAC does not consider it appropriate to refer to additional constituent gases as renewable where the source of those gases is not yet known or certain. Many potential constituent gases, including hydrogen, may involve the production of greenhouse gases or be produced through emissions intensive processes. The AEMC should ensure any use of the term 'renewable' is only applied where it is accurate. Considering the prospective nature of the proposed changes to regulations, it would be more appropriate to refer only to 'constituent gases' at this stage.

   The AEMC should consider the source of constituent gas and the emissions involved in its production. A constituent gas should only be considered renewable where its production involves no net emissions.

   The AEMC should also consider the materiality of the contribution any constituent gas makes to the reduction emissions from the gas supplied. There should be transparent information regarding the overall emissions 'discount' or reduction enabled through any NGE. This figure should be a clear comparison to natural gas emissions and the level of emissions involved in an equivalent use of NGEs (that is the emissions embodied in the amount of NGEs required to deliver an equivalent heating value or undertake an equivalent practical process, for instance running benchmark gas water heater.

   Retailers should not be able to charge consumers a premium for NGEs based on it being a 'cleaner, greener or more renewable product' where this is not universally accurate. PIAC considers it more appropriate for NGEs to be compared to zero emissions energy solutions, such as decarbonised electricity.

2. **Are there any issues the AEMC should consider in relation to retail competition and consumer choice as a consequence of the introduction of natural gas equivalents?**

Retailers should not be able to charge consumers a premium for NGEs based on it being a 'cleaner, greener or more renewable product' where this is not a reasonable reflection of the impact of the gas.

Question 20: Consumer protection framework

1. **Do you consider changes are required to the consumer protection framework to reflect the physical properties of natural gas equivalents compared to natural gas? Specifically:**

   a) **Should retailers be required to notify existing customers prior to the transition from the supply of natural gas to a natural gas equivalent that the customer is now being supplied with natural gas equivalent and the changes the customer may see in relation to the quantity of gas metered at their premises following the transition?**

   PIAC's preference, if NGE supply is allowed, is for NGEs to be genuinely equivalent, to the point that they are functionally indistinguishable from NG products. Where NGE products are not direct equivalents and may result in changes to efficiency, quality, consistency or affordability of gas services, retailers must be required to provide clear and consistent information to consumers regarding the reason for this. Genuine equivalence should not impact the consumer and the utility, safety and efficiency (or cost) of their supply.

   Metering and billing should promote information provision for consumers. Where there are differences in volume of gas required to enable the same consumer outcomes, the metering and billing arrangements should be such that this has no impact on the consumer. If a higher volume of NGE is required to deliver the same outcome, but this higher volume will be delivered at an equivalent cost, then retailers need not be required to provide additional information. Household consumers are not generally aware of the detailed numbers related to their energy consumption and focus on the impact of that energy consumption (that is how much energy is required to deliver an impact and how much that impact costs). If higher volume is simply a property of the NGE and will not result in changes to impact or costs, there is no need to provide specific information on volumes that may increase consumer confusion. This consideration may be different for larger commercial or industrial customers.

   b) **Should the model terms and conditions for standard retail contracts and the minimum requirements for market retail contracts be amended to make clear if the supply of gas under the contract is a supply of natural gas or natural gas equivalent?**

   PIAC prefers that any use of NGEs is based on them being equivalent and indistinguishable from existing gas. This would involve no impact on consumers or pipelines and reduce the need for specific terms or recognition in supply contracts.

   Where NGEs are not direct equivalents, contracts must support informed consent by consumers and ensure consumers are aware the gas provided will be an NGE. This should set out the range of impacts resulting from the use of an NGE, higher cost and lower quality and efficiency than the equivalent NG. Where a 'range' of gases or levels of blends will be provided through the contract, this should also be made explicit in supply contracts.

2. **Do you consider that customers should be informed if price variations occur because of the transition to natural gas equivalents?**

   PIAC does not support the introduction of NGEs increasing prices for consumers and it should not be acceptable for retailers to charge consumers higher prices for a product sold as an 'equivalent'. Any consumer price premium is unreasonable where they have no choice in accepting and receive no benefit from the use of that equivalent. It would be particularly unacceptable if the use of that NGE involved a relative reduction in utility or quality of service. Where NGE products are allowed any cost impact of the use of NGE products should be clearly indicated to consumers. Consumers must have access to the information required to make informed decisions and understand their usage and costs. This includes what is driving any cost changes and make informed assessments as to the value of retaining a gas connection or electrifying and achieving more rapid and efficient decarbonisation.

   The costs of accommodating NGEs, and its relatively poor impact on emissions reduction, must be able to be compared with the costs of electrification and improved electricity network efficiency. The costs of accommodating NGEs must be clearly revealed to enable this assessment and effective decision making on an individual and systemic level.

3. **How should the risks of 'off spec' natural gas equivalents be allocated under the NERL and NERR? Is the existing allocation of risk for the quality of natural gas appropriate if distributors have responsibility for creating natural gas equivalents (for example, through the operation of blending facilities?? What is the appropriate mechanism for managing loss suffered by customers as a result of 'off spec' natural gas equivalents?**

   It is unacceptable for consumers to bear risk or cost impact from the provision of 'off spec' gas, including NGEs. Consumers rely on gas delivered within safety and quality specifciations and cannot manage any impacts of gas outside these specifications. Specifications and delivery standards for gases must be adhered to. The existing conditions do not provide appropriate protection to consumers. If changes are made to accommodate the use of NGEs, they should include measures ensuring consistent quality and safety of gas within defined specifications on quality whether NG or NGE. Any risks of the delivery of 'off spec' gases, including NGEs, must be borne by those responsible for providing them and most able to manage them.

   Gas network service providers are most capable of continuing to manage the specifications of the service (such as composition, quality, pressure, flow) and should be the entities responsible for any risk of delivery outside of specified parameters. AEMO should be given responsibility to monitor networks service provider performance in meeting these responsibilities.

   Water service quality specifications contained in operating licences for urban water businesses in NSW are an example of how losses or other consumer impacts can be identified and compensated. A range of different loss categories and impacts could be outlined with criteria as to when they are met, including severity and duration with rebates set accordingly and paid to consumers.

   This framework should not place the burden of proof on consumers but make an automatic assumption that any delivery of off-spec NGE to any (and all) consumers results in payment of the appropriate rebate to all.

Continued engagement

PIAC welcomes the opportunity for further contribution to the review, and to meet with the AEMC and other stakeholders to discuss these issues further.