



Submission to the consultation 'Extending the national gas regulatory framework to hydrogen blends and renewable gases'

The aim of the Officials consultation paper is to recommend changes to existing law to 1) enable the incorporation of hydrogen and other 'clean' fuels into the East coast gas grid 2) to create a system which creates confidence to invest in the grid 3) to ensure an efficient system through ensuring competition amongst corporations involved in the system.

We focus on the first of these aims: the need to change the law to incorporate hydrogen in the gas grid.

Our view is that the existing law does not need to be altered because the argument for incorporating hydrogen into the grid is fundamentally flawed. Our reasons are as follows.

- **Blending some hydrogen into the existing gas grid**

The view that adding *some* hydrogen to the fossil gas supply would curtail emissions is hardly tenable. It is generally accepted that blending 10% hydrogen **by volume** is feasible (without significant investment in the current infrastructure) and this is currently being trialled. But in terms of energy input, this is only About 3% of total energy and so would only reduce emissions by that amount. *In other words, 97% of emissions would continue to be produced – and only if the hydrogen being blended has zero emissions associated with its production.*¹

While this hydrogen blending will not require investment in the existing infrastructure, there will be a significant investment in the production of emission free hydrogen. As it is inevitable that we will stop using fossil gas in the coming decades, this investment will be wasted.

The gas industry will expect the public to pay for this “blending development” with government subsidies. This would create a barrier to fast full electrification. Would it not be cheaper and permanent for the government to pay enough users to “get off gas” to achieve a 3% reduction in usage and emissions?

The proposal to blend hydrogen into the gas supply comes mainly from the gas industry. Given the minuscule greenhouse gas emissions reduction and the costs associated with this conversion, it is difficult not to see the aim of the proposal as being to distract, delay, subvert, and confuse the public about the role of hydrogen in the gas supply.² (No2.2) To be serious about “Zero Emissions by 2050” we need to transition to electrification as fast as possible and to start now. The transition will take time, but it need not be disruptive.

- **Replacement of fossil gas with hydrogen**

While replacing all fossil gas with emission free hydrogen would end emissions from the gas supply, the investment of doing so would be enormous. Most of the infrastructure would need to be replaced to accommodate the hydrogen. Part of the enormous investment will be associated with avoiding disruption during a transition.

Further, the evolution and industrialization of hydrogen electrolysis is in its infancy and attempting to roll it out at this time would be fraught with problems.

- **Replacement of fossil gas with electricity**

The alternative to such a costly venture is to replace gas with renewably based electricity as the energy source.

- For domestic use, as is well known, this requires all gas appliances (ovens, cook tops, water heaters and room heating) to be replaced with electric appliances. While each individual instance of this transition is relatively simple, it will have to occur literally millions of times and over many years.
- Larger institutional users (schools, hospitals, prisons, swimming pools, sporting facilities and so on) will require detailed engineering assessments and a transition will take many years.
- There will be industrial users for which there is no simple transition (glass and cement manufacture for example) and these require individual solutions. But these most difficult to transition processes should not provide an alibi for not transitioning all that can be electrified in the near and medium term.

*What is needed is an all of government plan to transition the energy system away from gas to electricity as fast as possible.*³ All of government includes Federal, State and Local government and cross departmental collaboration within each tier of government. To transition efficiently, a bipartisan approach is probably required. A good example of this is the current transition of our waste handling systems.

- **Development of a 'fit for purpose' hydrogen industry**

The view that adding hydrogen to the gas supply would stimulate demand for hydrogen and so accelerate the development of a hydrogen industry is also a flawed argument if the consequences of the addition are both very costly and lead to prolonging the production of fossil gas. Building scale in green hydrogen production should be focused directly on the uses where gas rather than electricity is required, such as iron and steel production, refining of bauxite to alumina, cement and glass production plus others. Further, the development of hydrogen production/equipment should not be led by the fossil gas industry because of the obvious conflict of interest involved. It is like asking the industry to design and develop its own coffin. Australia has a rich history of developing advanced technology through the CSIRO and our Universities. This is where the funding should be directed.⁴

- **Recommendation**

Facilitating changes to the law to include some hydrogen in the gas supply only provides state legitimacy to an enterprise whose effect is to subvert real efforts to reduce greenhouse gas emissions. On these grounds, we recommend the existing law remain unchanged.

¹ <https://www.utilitydive.com/news/high-risk-small-reward-regulators-should-tread-carefully-when-reviewing-u/621390/>

² <https://www.forbes.com/sites/energyinnovation/2022/03/29/gas-utility-hydrogen-proposals-ignore-a-superior-decarbonization-pathway-electrification/?sh=13cf9d9676a1>

³ <https://energyinnovation.org/publication/assessing-the-viability-of-hydrogen-proposals-considerations-for-state-utility-regulators-and-policymakers/>. It is possible that the amount of hydrogen could be increased above 10%, perhaps up to 20% **by volume**.

⁴ There is a recent example in the development of hydrogen production at the University of Wollongong <https://www.theguardian.com/australia-news/2022/mar/16/australian-researchers-claim-giant-leap-in-technology-to-produce-affordable-renewable-hydrogen>

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For the Beyond Gas Network

The ***Beyond Gas Network*** is a network of Climate action networks, centred in the east and Southeast of Melbourne but with links across Australia. The Network's focus is on Federal and State governments' gas expansion plans at a time when the focus by all governments, industry and community should be on reducing dependence on fossil fuels and upon a rapid acceleration of renewables. The network's constituents across Australia would number in the many thousands.