

Gas infrastructure advice submission - 94

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Stakeholder group/interest: Parent and citizen

Q1. Do you have any further information, evidence, or concerns that you wish to raise in relation to the scenario design and analysis?

There is a strong environmental, social, economic and moral argument for a rapid and major transformation of our energy and infrastructure settings. This will inevitably require impacts on the employment of those involved in the energy sector, and it is essential that, in the move to clean energy, a transition pathway be made available to those previously employed in the fossil fuel industry.

Q2. Do you have any further information or evidence that can help identify an optimum scenario for a net zero emissions gas sector in 2050?

The International Energy Agency report 'Net Zero by 2050: A roadmap for the global energy sector' notes a range of uncertainties such as 'the roles of bioenergy, carbon capture and behavioural change in reaching net zero', and 'The Roadmap sets out . . . to guide the global journey to net zero by 2050. These include, from today, no investment in new fossil fuel projects . . . '

IPCC released a report noting (from the summary statement release) Global warming of 1.5°C and 2°C will be exceeded during the 21st century unless deep reductions in carbon dioxide (CO₂) and other greenhouse gas emissions occur in the coming decades, and

'limiting human-induced global warming to a specific level requires limiting cumulative CO₂ emissions, reaching at least net zero CO₂ emissions, along with strong reductions in other greenhouse gas emissions. Strong, rapid and sustained reductions in CH₄ emissions would also limit the warming effect resulting from declining aerosol pollution and would improve air quality.'

The argument for eliminating gas production and combustion is strong, and becoming stronger and more urgent.

Q3. What policies and/or regulations, if any, are needed to support the development of low carbon pathways such as biogas, green hydrogen, and carbon capture and storage?

The terminology needs to be protected to avoid corruption of the understanding of this term. Notably, 'Green Hydrogen' should be reserved for hydrogen produced from renewable energy sources. The Victorian Government, in consultation with other responsible agencies, such as other state governments, should make this term distinct from other terms which allow the use of fossil fuels in hydrogen production.

In a dry nation-continent such as Australia, the concept of substituting natural gas with hydrogen produced from fresh water is deeply flawed and problematic. Hydrogen should be produced from sea water, except where fresh water is very plentiful, and does not pose a threat to the environment.

Biogas should be recovered from naturally occurring sources only. The artificial production of biogas will increase emissions of greenhouse gases, and legislation should be directed to preventing artificial production.

Effort, including legislative effort, should be primarily directed toward reducing greenhouse gas production. Carbon capture and storage (which is predicated on the initial production of carbon dioxide) should be seen as a secondary measure, albeit an important one in dealing with pre-existing atmospheric CO₂.

The development of low carbon pathways require legislation to ensure the development is 'true to cause', and does not embrace the use of fossil fuels.

Relevant government agencies should be comprised of people with relevant expertise in the development of low or zero carbon technologies (eg relevant scientists, supportive business people, supportive community representatives) and not be hijacked by fossil fuel lobbyists.

Q4. What is your view on the best ways to maintain the reliability and affordability of Victoria's gas supply if natural gas use declines?

Victoria's gas supply will inevitably become more unreliable and unaffordable as ageing infrastructure fails, as funding for supplies dries up, as supplies diminish, and as market demand (driven in part by limitations driven by legislation) decreases. This is a consequence of the urgent imperative to eliminate gas from our energy sector, and the exploration and mining of gas and other products producing greenhouse gases.

It may be sensible to permit low-level maintenance of gas infrastructure in the short term, in some quite limited circumstances. However, there is an urgent need to abandon all aspects of fossil fuels. The challenge is not to preserve the life of fossil fuel delivery, but to transition to zero carbon, renewable energy immediately, or as soon as is humanly possible. Certainly there should be, from today, no investment in new fossil fuel projects (IEA report above)

Q5. What else can you tell us about the implications of decarbonisation pathways for the electricity generation, transmission and distribution networks?

Electricity from solar production is quite significant, but there seems to be problems integrating domestic rooftop energy production into the grid. The technical problems need to be addressed, to allow the grid to accept rooftop electricity production, and the suppliers of this energy to be suitably rewarded without penalty. Electricity suppliers should play their part in upgrading of relevant infrastructure. This may impact negatively on consumers, including low income earners. On the other hand, the provision of cheap electricity through widespread rooftop solar panels will impact all consumers positively. An additional benefit of electricity transmission and distribution networks may also be reduction in fires from ageing/faulty poles, wires and other equipment. As fires are quite costly to the community, this preventive aspect may bring about significant savings (although these savings may not be immediately recognisable, as they will appear retrospectively as an absence of unanticipated costs)

Local microgrids should be developed and trialled with a view to widespread implementation. This may reduce the load on existing electricity transmission infrastructure.

In the absence of neighbourhood microgrids, neighbour to neighbour sharing of solar-generated power may be a possibility. Certainly the unwelcome proposal to charge households who have invested in solar panels (with the reasonable expectation of a rebate) for the power they feed into the grid makes neighbour to neighbour sharing more palatable.

Q6. How can the use of Victoria's existing gas infrastructure be optimised during the transition to net zero emissions, over the short (10 years), medium (20 years) and long-term (30+ years)? How can the Victorian Government assist in this?

Some of the existing gas infrastructure may be suitable for, or adaptable to, the use of Green Hydrogen (which could be abbreviated to GH₂) as a replacement fuel. However, as the Engage Victoria website notes, much of this infrastructure may be aging and unreliable.

The context of gas infrastructure needs to be recognised: Natural gas is a greenhouse gas. It is a much more potent greenhouse gas than CO₂. The combustion of natural gas produces a greenhouse gas (CO₂). There is an urgent need to cease production of greenhouse gases.

Also, the properties of hydrogen are quite different to those of natural gas. It is difficult to imagine how existing gas infrastructure can accommodate the safe distribution of hydrogen.

Q7. What principles should apply or what measures will be needed to manage the impacts of gas decarbonisation on households and businesses?

The current use of natural gas is intended to meet a need- often the production of heat for cooking, or household temperature heating. These needs need to be met in a low- or zero-carbon manner. This must be done urgently to reduce greenhouse gas production. It should be done in a way which can (where possible) provide an example for emulation by other global communities.

Efficiencies should be embraced wherever possible to reduce the need for gas. In the domestic setting, one energy efficient device is a heat-pump hot water service, which reportedly use approximately a quarter of the energy that traditional electric hot water services consume to produce a similar volume of similarly heated water.

Q8. What policies, programs and/or regulations should the Victorian Government consider or expand to encourage households, commercial buildings and small businesses to reduce their gas use?

The Victorian Government can be rightly proud of the incentive it has provided to encourage the uptake of solar panels, heat-pump hot water services, etc. At present, only one such rebate can be provided per household under this scheme. This is a limitation to households which seek to implement multiple energy-saving, pollution-reducing, low- or zero-carbon technologies into their home. I would encourage the Victorian Government to consider lifting or easing this limitation. Energy-efficient households will be less reliant on gas combustion for heating, or electricity consumption from electricity provided from gas-fired power stations.

We need to reduce greenhouse gases as much as possible, as quickly as possible.

There are other measures that can reduce greenhouse gases. These include:

- facilitating energy-efficient, low-carbon households through incentivising double glazing (retro-fitted where suitable), roof, wall and floor insulation, draught-sealing, reverse-cycle airconditioning, induction cooktops, heat-pump hot water, in addition to the solar panel etc rebates already available
- Legislating against connection of new households to the gas supply network

Q9. What policies, regulations or other support, if any, do you think are needed to support industrial users to switch from natural gas to lower emissions energy sources or chemical feedstocks?

I note from the Victorian Government 'Towards 2050' report that:

The commercial sector comprises the remaining 13% of Victoria's natural gas use. As in the residential sector, gas in the commercial sector is mostly used for space heating. For commercial buildings, there are some additional end-use applications like cooking and water heating in retail sectors, and dryers and pool heating in hotels.

This heating requirement can be replaced by:

green electricity, either produced by rooftop solar panels, innovative use of solar panels in other locations (walls, or serving a dual purpose in outdoor shelters, etc), or from purchasing green electricity via incentives or legislation

Heat-pump hot water services and water-heating facilities.

Electric ovens and induction cook tops (induction cooktops are more energy efficient than other types of electric cooktops)

This same report identifies the plastics manufacturer Qenos as a large consumer of gas. Globally, there has been increasing recognition of the harmful environmental impact of plastic, and it can only be hoped that plastic production will significantly reduce. In the meantime, alternative feedstock for industries such as Qenos should be explored. Such alternative feedstock should meet the requirement to not contribute to greenhouse gas production, or be a greenhouse gas. It is pleasing to note on the Qenos website:

‘Qenos also liaises with governments to develop policies that encourage sustainable investment in greenhouse gas reduction and resource efficiency.’

It may be helpful to require industry to publish the effectiveness of their efforts to reduce greenhouse gas production.

It should be noted that some industrial applications call for cooling. Heat pumps provide an energy efficient means of cooling and, again, incentives or legislation may assist in the uptake of energy efficient, low-carbon practices.

Another element of significance is the mounting international pressure for products and practices with a low or zero carbon footprint. This international pressure includes the likelihood of trade sanctions. It may be in Victoria’s (and Australia’s) best economic interests to engage enthusiastically and with great urgency in a low/zero carbon economy.

In addition, the value of moral integrity on the global stage cannot be understated. Australia is not, in absolute terms, a large economy. However, as a nation we have played a role disproportionate to the size of our economy on the international stage. Our moral integrity has historically been a significant driver behind this. Recent changes have undermined this moral authority, to the detriment of this nation.

As a major contributor to the Australian economy and the international presence of the nation, Victoria can play a substantial role in restoring Australia’s moral credibility. Victoria needs to lead in the advancement of a low-pollution, zero carbon economy, and make a powerful contribution to reducing greenhouse gases including natural gas, and addressing climate change.

How would you like your submission treated?

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