LOCK THE GATE ALLIANCE
AUSTRALIANS WORKING TOGETHER TO PROTECT OUR LAND, WATER, AND FUTURE

Submission to Towards 2050: Gas infrastructure in a zero emissions economy

The Lock the Gate Alliance is a national grassroots organisation made up of over 120,000 supporters and more than 250 local groups who are concerned about the impacts of unconventional gas and coal mining on communities nationally. These groups are located in all parts of Australia and include farmers, Traditional Custodians, conservationists and urban residents.

We thank the Victorian Government for the opportunity to write in submission to *Towards 2050: Gas infrastructure in a zero emissions economy*, providing input to a critical issue for all Victorians with implications for the energy future of Australia. We are impressed by the leadership shown by Infrastructure Victoria in framing four scenarios to inform the Victorian Gas Substitution Roadmap.

The gas substitution roadmap needs to build on Victoria's existing policy achievements by setting clear targets and timeframes for the urgent phase out of gas use, and the equitable wind down of gas production.

Gas infrastructure is increasingly understood to be stranded assets – or liabilities. The gas pipeline explosion in the Gulf of Mexico and the explosion in the Caspian Sea are a reminder of the destructive potential of gas exploration, extraction and transportation and the desirability of substitution. These disasters coupled with the significant concerns raised by the Intergovernmental Panel on Climate Change sixth assessment report published on 9 August point to the critical urgency of a rapid deployment of strategies to mitigate climate pollution.

Further, the impacts of gas appliances on human health[1] impose a duty of care on the Government to adopt every measure possible to expedite the replacement of these appliances with clean electric units. Taking into account the health and by extension health budget implications of gas use, particularly in homes, schools, early learning centres, hospitals and places where people gather means that a "no regrets" approach to Victoria's energy future means a clear framework of targets and timelines for the phasing out of gas at the earliest possible opportunity.

Our recommendations outlined in this submission are:

- Complete and rapid transition from gas to electricity
- No new household gas connections
- Equitable retirement of gas connections and infrastructure
- Gas supply wind-down
- No importation or use of fracked gas
- Maximising energy efficiency as a first priority
- Decentralised, integrated renewable electricity backed by batteries
- Modelling pathways to a gas free Victoria using proven technologies

[1] https://www.climatecouncil.org.au/resources/gas-habit-how-gas-harming-health/

Further information, evidence or concerns in relation to the scenario design and analysis

Lock the Gate expresses a strong preference for scenario A of the four given scenarios, in particular for the least use of fossil or alternative gas uses and the greatest deployment of efficiency measures.

We believe that any modelling must prioritise maximised thermal and appliance efficiency with a view to implementing – and mandating - continuing best practice to the fullest possible extent.

We would like to see modelling undertaken that investigates an expedited zero gas future for Victoria.

Further information or evidence that can help identify an optimum scenario for a net zero emissions gas sector in 2050

Our view is that the only way to guarantee a net zero emissions gas sector is to remove gas entirely from the energy mix.

Policies and/or regulations to support the development of low carbon pathways such as biogas, green hydrogen, and carbon capture and storage

Pursuing biomethane must only be undertaken in a framework of strict environmental objectives. That is, climate change mitigation must be a driving consideration, so options that produce waste carbon dioxide or fugitive methane are not acceptable. Equally, biodiversity protection, food production and soil fertility are paramount considerations in developing a technology of this kind and the use of woody vegetation would not be supported. While in principle biomethane can be shown to be carbon negative, the potential for fugitive emissions creates a climate hazard which should be avoided at all costs.

Biomass electricity, particularly if sourced from Victoria's carbon dense forests is unscalable and a misallocation of resources that can have other more beneficial uses such as water and carbon security, and habitat outside of the scope of climate and energy considerations.

Hydrogen may be an important fuel in the future, but the Victorian strategy must specify that hydrogen will only be sourced from renewable energy not from fossil fuel sources such as gas and coal.

Carbon Capture and Storage is a costly, underdeveloped technology that defers effort to stop polluting the atmosphere and creates unknown long-term risks.

Solar thermal is able to provide Victoria's highest temperature industrial needs and we recommend a stronger emphasis and assessment of this in Infrastructure Victoria's scenario analyses for the Roadmap.

We call on the Victorian Government to prohibit new gas connections, developments or expansions. Policy to support this prohibition would include allowing local governments to ban new gas connections through their planning schemes and removing any state mandate to install or connect gas to properties. At every possible opportunity, existing and proven technologies such as traditional renewable energy sources like solar and wind backed by battery storage should be prioritised and supported in the scenario analyses of the VGSR with clear timetables, targets and integrated cross-departmental policy outlined for this transition.

Best ways to maintain the reliability and affordability of Victoria's gas supply if natural gas use declines

Confident and clear policy priorities that guide the state towards decarbonisation and the phase out of gas use can manage the challenges of reliability and affordability on the downward curve of gas use. Government has a clear leadership role to play in the decline of fossil gas and managing the costs associated with energy substitution from gas to clean electric. Due to the impact of spot prices driven by market pressures beyond the control of the Victorian Government, including export, the options for managing retail prices in Victoria are limited.

As gas loses market share due to declining social acceptability and an increased uptake in renewables the price of delivery and use is more prone to volatility.

Making a commitment to entirely remove gas from the energy mix in Victoria negates the requirement to manage affordability or reliability in the long term.

Implications of decarbonisation pathways for the electricity generation, transmission and distribution networks

Renewable energy sources like solar photovoltaic, wind turbines and batteries are already working and proving their might in replacing older fossil-based energy. The recent disastrous storms across Victoria in June provided as stark a demonstration of the fragility of centralised power transmission as they did the benefits of decentralised power networks. As these climate disruption events increase in frequency and scale, integrated small to large scale generation sites will offer greater reliability in baseload energy security than the old, centralised pole and wire network.

In July, the City of Melbourne announced a scheme to build a battery network in Council buildings to supply on-demand electricity[2]. The development of independent power precincts and virtual power plants is an emerging area of energy management under trial and adoption nationally[3] and globally[4].

As the landscape of electricity generation changes the demand on and use of the old transmission grid, our energy network must become more dynamic to accommodate connection through a series of localised generation and power storage points. In 2012, AEMO directed CSIRO to model scenarios for a 100% renewably-powered grid in either 2030 or 2050[5]. In July of this year, AEMO's new CEO observed that since that earlier report, 90 cents in every dollar invested in energy has been in wind and solar and that Australia's 1000% increase in renewable installation in the past three years is double that of the rest of the world. He committed to the NEM sustaining 100% renewable energy by 2025[6].

Given this confidence by the national market operator we request that scenario modelling incorporates assessment of agile, decentralised power networks state-wide removing altogether the need for any further gas pipelines and planning for power precincts with the capacity to meet localised energy demand.

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[2] https://www.theage.com.au/national/victoria/melbourne-to-build-inner-city-battery-network-in-green-power-push-20210726-p58cwo.html

[3] https://arena.gov.au/projects/tesla-virtual-power-plant/

[4] https://www.next-kraftwerke.com/company

[5] https://publications.csiro.au/rpr/download?pid=csiro:EP126455&dsid=DS2

[6] https://aemo.com.au/en/newsroom/news-updates/the-view-from-the-control-room

Victorian Government assistance in optimising Victoria's existing gas infrastructure during the transition to net zero emissions, over the short (10 years), medium (20 years) and long-term (30+ years)

The International Energy Agency's *Net Zero 2050 Roadmap*[7] establishes that achieving decarbonisation by mid-century and preventing average global warming above 1.5 degrees means no further development of gasfield developments globally beyond those already approved.

> All the technologies needed to achieve the necessary deep cuts in global emissions by 2030 already exist, and the policies that can drive their deployment are already proven...Policies should limit or provide disincentives for the use of certain fuels and technologies, such as unabated coal-fired power stations, gas boilers and conventional internal combustion engine vehicles. Governments must lead the planning and incentivising of the massive infrastructure investment, including in smart transmission and distribution grids.

This means gas infrastructure has a use-by date and measures to accelerate electrification and fuel switching must be put in place. Such measures would be consistent with Victoria's greenhouse gas abatement targets of 28-33% by 2025, 45-50% by 2030 and commitment to reach net zero by 2050.

Creating barriers to demand will negate the requirement for any further gas exploration or extraction, or for transportation or additional storage. As gas infrastructure including transmission pipelines reach their end of life their retirement must be mapped and planned for. This approach will save Victoria from both the upfront expense of project establishment along with the decommissioning and remediation costs at the inevitable point where gas infrastructure is retired.

Applicable principles or necessary measures to manage the impacts of gas decarbonisation on households and businesses

Any progress towards switching from gas to cleaner energy sources must be fair and must not penalise lower income households or smaller businesses lacking the financial resources to make that switch. A rapid transition from gas heating and other household or small business appliances must be feasible across the board without economic barriers serving as an obstacle.

Support for low-income households and businesses to switch to replacement clean electric alongside maximal efficiency installations will ensure an equitable shift from gas to renewables.

Scenario modelling would best benefit Victoria by considering the resources required to retrofit Victoria's low income and energy inefficient households and places of business and planning acquisition of the resources required alongside realistic timeframes and economic modelling.

[7] https://www.iea.org/reports/net-zero-by-2050

Policies, programs and/or regulations the Victorian Government should consider or expand to encourage households, commercial buildings and small businesses to reduce their gas use

Replacing the requirement to connect greenfield developments to the gas network with a ban on new connections is a matter of urgency.

Broad scale amendments will be required to the *Plumbing Regulations 2018*[8] to reflect the rapid phase out of gas from the energy mix. Crucially, this must include removing the requirement for heat pumps and solar hot water to be gas boosted and prohibition on heat pump hot water services being connected to mains electricity managed.

The Victorian Energy Upgrades Program recognises that:

> *Insulation is the most cost-effective way to improve the energy efficiency and comfort of your home. It can help you spend less on heating in winter and less on cooling in summer. By insulating your home, you could save up to 45 per cent on your energy bills.*

However, insulation improvements are not currently included in the program. Expanding the VEU Program to offer a full suite of efficiency and clean energy improvements across households and businesses that are unable to manage these costs themselves should be modelled on a means tested basis. It would be useful to know the extent to which the upfront costs of expanding this Program to capture those homes and businesses requiring subsidies to transition are likely to be recovered in better health outcomes for individuals and removing the need to upgrade gas transmission network as they reach end of life.

Until we have maximised efficiency measures we won't be able to accurately assess Victoria's energy requirements in order to appropriately meet them.

We are encouraged to observe that Infrastructure Victoria's own consultation paper references the 2020 Northmore Gordon report *Victorian Gas Market – Demand Side Measures to Avoid Forecast Supply Shortfall*. We endorse a Victorian Government commitment to full expedited implementation of the measures described in that report through an expansion of the Victorian Energy Upgrades Program.

Necessary policies, regulations or other support to assist industrial users to switch from natural gas to lower emissions energy sources or chemical feedstocks

The use of gas as a chemical feedstock has developed as a consequence of the affordability and availability of gas. Industries have had no need to reconsider unrestricted use of gas to produce items such as plastics, fertiliser, animal and fish feed. As gas reserves deplete, climate change mitigation increases in urgency and the public appetite for gas declines, many of the industries that have relied on gas will need support from the government to retool their equipment and reorient their businesses to replace it.

[8] https://content.legislation.vic.gov.au/sites/default/files/c9944133-841f-370f-9721-4645cbe0eae0_18-149sra003%20authorised.pdf

Single use plastics are facing stronger bans nationally and Victoria has implemented and announced its own ban on certain single use plastic items. Beyond government-enforced prohibitions businesses are increasingly under consumer pressure to remove plastic from their supply chain, further reducing the demand for plastic which requires gas as a feedstock.

The growing sustainable agriculture movement signals a shift from broad-scale application of chemical fertilisers in favour of lower impact regenerative practices.

To adequately inform the Roadmap, scenario modelling must consider historical and projected changes in the industries that gas has supplied to appropriately predict demand from industry alongside feedstock alternatives.

For industrial heating we advocate a combination of process redesign that exhausts efficiency measures - with a commitment to continuous best practice - coupled with an assessment of the scale of solar thermal plants or hydrogen supply required for industrial process heat currently serviced by gas. This is in line with findings by ARENA in 2019 that there are renewable options for all current industrial uses of process heat[9].

Victoria can and should invest in technologies that are tried and tested and have the agility and capacity to meet the bulk of our energy needs. We suggest that the Roadmap to the fullest extent possible prioritise the roll out of these technologies rather than unproven, unwieldy or polluting technologies such as carbon capture and storage or biomass.

Finally, we reiterate the importance that the Roadmap commit to removing fossil gas from all use in Victoria and recognise the extent to which existing efficiency and renewable technologies can be installed and retrofitted state-wide to fully secure Victoria's clean, reliable energy future.

Lock the Gate Alliance commends the Victorian Government for undertaking this important body of work and we look forward to seeing the detailed scenario analyses included Victorian Gas Substitution Roadmap on its completion.

For further information regarding this submission please contact [redacted]

[9] https://arena.gov.au/assets/2019/11/renewable-energy-options-for-industrial-process-heat.pdf