



Bioenergy Australia Pty Ltd  
PO Box 127, Civic Square, ACT 2608



## BIOENERGY AUSTRALIA SUBMISSION

### Victoria's Gas Substitution Roadmap

Bioenergy Australia is the national industry association committed to accelerating Australia's bioeconomy. Our mission is to foster the bioenergy sector to generate jobs, secure investment, maximise the value of local resources, minimise waste and environmental impact, and develop and promote national bioenergy expertise into international markets.

The recent development of a national Bioenergy Roadmap by the Commonwealth Government is a critical achievement for the industry. Due for release later this year, the Bioenergy Roadmap clearly identifies the role that the bioenergy sector can play in accelerating Australia's clean energy transition, and the investment signifies the validity and potential value of the Australian bioenergy industry. It will highlight the significant opportunity presented by biomethane to decarbonise Australia's gas networks. We trust that when released, the Bioenergy Roadmap will be a valuable resource to inform Victoria's Gas Substitution Roadmap.

We thank the Victorian Government for this opportunity to respond to Victoria's Gas Substitution Roadmap. Victoria is in the enviable position to become an exemplar, demonstrating to the rest of the nation what is possible by driving a green gas economy. We are eager to support Victoria on this worthwhile endeavour.

The purpose of this submission from Bioenergy Australia is to highlight the substantial role biogas and biomethane can play in Victoria's efforts to transition towards a net zero emissions economy and the policy instruments required to activate a renewable gas industry in Victoria.

#### *The opportunity*

Biomethane is uniquely placed to utilise existing gas infrastructure, making it an affordable and quickly deployable opportunity to decarbonise Victoria's gas network. It is Bioenergy Australia's opinion that provision of support for a Victorian biomethane industry will greatly assist to:

- decarbonise the gas industry, including driving rapid changes through the upgrading of existing biogas infrastructure to provide biomethane,
- reduce the risk of gas constraint,
- deliver effective pricing and improved consumer ability to purchase renewable gas,
- improve investment across the Victorian gas market, supporting wider uptake of biomethane technology by the waste sector, and
- create substantial employment opportunities, particularly in regional areas.

The technology to upgrade biogas to biomethane and inject it into the grid has been successfully installed in over 750 locations throughout the world. Australia has the technical capability to use this technology, interface it, install and operate it. Indeed, Bioenergy Australia has a member company that pioneered upgrading landfill biogas and injecting to the gas grid in the 1988, finding it technically feasible but economically unviable at that time.

The current [Malabar biomethane injection project](#) will demonstrate the process of upgrading biogas to biomethane for injection into the Jemena gas distribution network. The biogas produced from the anaerobic digestion process at Sydney Water's Malabar wastewater treatment plant uses its existing infrastructure and then goes on to utilise the new gas cleaning and upgrading equipment prior to injection into the distribution network. The project investment is \$14 million, with \$5.9 million of this funded on behalf of the Australian Government by the Australian Renewable Energy Agency (ARENA).

Looking overseas, Europe has been a strong adopter of biomethane. Biomethane plants in Europe [increased by 51%](#) in the 2 years from 2018 to 2020, from 483 plants to 729. Copenhagen is an exemplar in this space and has announced that 100% of their gas network will be supplied by biomethane by 2025. Australia lags far behind these numbers, but with an abundance of feedstock, particularly in Victoria, there is no reason this cannot change quickly.

### *Why Biogas?*

Biogas is typically produced from organic wastes from primary and secondary production sectors. Biogas includes landfill gas, biogas produced through anaerobic digestion and gas from the combustion of biomass residues such as sawmill residues, agriculture waste, construction wastes, or municipal wastes.

Utilisation of organic waste to produce biogas can play a central role in the national transition to a circular, low carbon economy. Organic wastes can be converted into renewable, reliable, and distributable sources of energy to produce heat, renewable gas and electricity, or transport fuel. They

can support other renewables such as hydrogen and will play a crucial role in stabilisation of the gas network moving forward<sup>1</sup>.

As widely demonstrated by results achieved internationally, the development of a strong bioeconomy can provide skilled employment opportunities to regional areas and stimulate economic development. The International Renewable Energy Agency (IRENA) [2019 review](#) shows global employment in the bioenergy sector has grown in the last few years, reaching 3.18 million jobs in 2018.

Looking at domestic opportunities, the Clean Energy Finance Corporation (CEFC) report [“The Australian bioenergy and energy from waste market”](#) estimates that bioenergy has the potential to attract at a minimum \$3.5-\$5 billion investment, mostly in regional economies and the [Infrastructure Partnerships Australia report – putting waste to work](#), showed the investment opportunity in energy from waste of \$8.2 billion to \$13.7 billion by 2030.

Within the agriculture industry, biogas represents a key employment opportunity for regional areas. By using locally produced waste, the biogas industry can support local economies and regional communities, creating jobs, and offering new income sources, particularly for farmers. Through collaboration with different farms, a regional biogas plant can create a variety of job opportunities along the supply chain, from raw material cultivation and collection, to transport, storage, and pre-processing. By increasing decentralised energy production, income stays in regional areas instead of going to global energy markets.

#### *Ensuring success*

Biomethane injected at distribution level has the potential to be a dispatchable and versatile resource that can balance the gas market. However, it is not yet easily available, nor its value recognised.

Whilst existing gas infrastructure can be utilised for biomethane, additional infrastructure by way of gas cleaning and upgrading equipment is required to see the value of gas as a product in itself realised rather than gas to electricity as is more commonly seen.

It is not only financial investment in infrastructure that is required but also investment in rules and regulations including gas standards, specifications, and government policy support. Considering the reliability and security benefits associated with biogas, biomethane projects must be incentivised through market mechanisms to ensure their full benefits can be harnessed for Victorian gas consumers.

---

<sup>1</sup> Biogenic CO<sub>2</sub> from biomethane upgrading process can be methanated with hydrogen to produce hydrogen derived renewable methane. This will overcome the 10% technical barrier associated with transporting hydrogen in existing gas pipelines and supply chains.

Without market mechanisms which facilitate and reward distributed biogas, this unique resource may cease to thrive. However, if properly incorporated into the Department's proposed recommendations, biomethane generation can play an important stabilisation and decarbonisation role.

More specifically, Bioenergy Australia proposes that each of the following mechanisms be adopted in Victoria to overcome current barriers to maximise Victoria's green gas potential:

- **Rapid development of a renewable gas certification scheme to support customers to use renewable energy**

A key policy barrier to the growth of renewable gas is the lack of a market mechanism to support and encourage the use of biomethane in the national gas grid (and biogas behind the meter). Some of our largest companies (e.g., Brickworks, Arnotts and Boral), are publicly asking for renewable gas – but there is no mechanism to provide them with this product. Our members also have a range of clients seeking behind the meter solutions for renewable gas. Similarly, Australian gas consumers are increasingly aware of the environment and their purchasing power. The demand is high for gas companies to provide, and governments to support, a green gas alternative.

However, with no mechanism to verify renewable gas usage, these companies cannot clearly support desired investment, leaving a lack of urgency by some of the biggest gas users in the country to replace their natural gas with either biogas or biomethane.

The Malabar biomethane injection project specifically interacts with the New South Wales gas market and is also aiming to explore how best gas consumers can ensure they are paying for renewable gas by exploring renewable gas trading opportunities. It is expected that the learnings from this will be able to be applied across other gas networks and beyond the wastewater sector in the future.

Early findings from GreenPower and the Malabar biomethane injection framework together with renewable gas certification processes commencing imminently elsewhere (eg New Zealand) need to be considered as quickly as possible to rapidly establish a nation-wide certification and trading scheme. This should be pursued urgently, not over a period of years.

Following the establishment of a renewable gas program, it would also be necessary for there to be a unified community information campaign on the benefits of renewable gas and its availability for purchase.

- **Implementation of an effective Emission Reduction Fund (ERF) method for biomethane to support investment in new projects, working with the federal government**

Biogas use could greatly assist with hard-to-abate industries to rapidly reduce Australia's carbon emissions. Various technologies will be incentivised once their abatement value is enabled through a Biomethane ERF method. A Biomethane ERF Method is currently under development by the Clean Energy Regulator but current drafts do not allow the inclusion of agricultural waste as a feedstock, which will greatly impair its value as a mechanism to drive industry growth. Similarly, the proposed crediting period needs to be extended to be equivalent with international benchmarks to support the investment required for green gas projects. Bioenergy Australia has communicated these requirements to the Clean Energy Regulator.

- **Implementation of a Green Gas Target, incorporating biomethane and hydrogen**

The development and use of Green Gas Target would act to incentivise supply chain participants to shift from fossil fuel gas to renewable gas – similar to the function of the Renewable Energy Target (RET). This could be expected to rapidly build scale and bring down renewable gas costs.

- **Provide suitable financial incentives**

Biogas has not yet been able to compete with the low costs of natural gas as enjoyed in the current policy and finance environment. There are both capital expenditure barriers (eg cleaning and upgrading infrastructure) and operational expenditure barriers at this time. To promote biogas sector development, there ought to be:

- a. Funding for projects or project hubs,
- b. Funding for biogas cleaning and upgrading infrastructure for new and existing biogas facilities, and
- c. A renewable gas injection tariff.

- **Pursue supportive policy and education**

The intended rollout of food and green waste services to all households in Victoria plus the additional measures to promote commercial food waste recovery are welcomed to support biogas feedstock quality and quantity. Clear planning and sustained investment in this roll-out and for related waste infrastructure will support its success.

We now need supportive, clear and fair regulation for the use of anaerobic digestates as a by-product of anaerobic digestion. The regulation of digestates and other organic waste

reprocessing outputs (eg aerobic compost) should be risk-based and equivalent (ie, technology-agnostic).

Alongside this, biogas generators, especially landfill operators, could greatly benefit from waste policies that incentivise the maximised capture and use of biogas, in a manner that effectively complements carbon abatement mechanisms.

Gas injection standards and regulatory guidelines for pipelines should be reviewed to enable renewable gas to be injected into the system. Further, carbon benefits from the use of renewable gas need to be passed onto those users who purchase the gas. We understand that changes to the national carbon emission reporting framework may be required to accommodate this.

We thank the Victorian Government for the opportunity to provide this material and we look forward to sharing the Commonwealth Bioenergy Roadmap upon its release. Please do not hesitate to get in

Sincerely,

A handwritten signature in black ink, appearing to read 'Shahana McKenzie', written in a cursive style.

Shahana McKenzie, CEO Bioenergy Australia