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1 November 2024

Commissioners Joanne Chong and Alison Roberts
Productivity Commission

Via online submission: https://www.pc.gov.au/inquiries/current/circular-economy

Call for submissions: Opportunities in the Circular Economy

Australian Gas Infrastructure Group (AGIG) welcomes the opportunity to make this submission on the Productivity Commission's Opportunities in the Circular Economy inquiry.

We are one of Australia's largest energy infrastructure groups with distribution, transmission and storage assets worth over $9 billion. We deliver natural gas reliably, safely and efficiently to over 2 million residential, commercial and industrial customers across Australia. In addition, we also operate Hydrogen Park South Australia, currently Australia's largest grid-connected electrolyser, and have commenced construction for renewable hydrogen projects in Victoria and Queensland. We are also looking in investing in a range of other renewable gas projects, including biomethane production facilities, across the country, continuing our journey to net zero and reducing reportable emissions.

Current circular economy theory recognises the limitations of traditional waste management approaches and emphasises alternative activities businesses can undertake to reduce waste in value chains. This shift towards a more circular economy aims to mitigate negative environmental impacts, such as greenhouse gas emissions.

Biomethane production is strongly aligned with circular economy principles. By utilising organic materials like agricultural residue, food waste, and wastewater, biomethane production captures and utilises methane that would otherwise be released into the atmosphere, significantly reducing greenhouse gas emissions. Biomethane is a mature technology that has been adopted overseas and has the same physical and chemical properties as natural gas – requiring no changes to appliances, and therefore can be delivered through the existing gas infrastructure to deliver renewable energy at scale. In providing new supply of renewable energy, biomethane can play a significant role in decarbonisation – not only for commercial and industrial customers for whom gaseous fuels are critical to their operations, but for domestic customers who use gas as their fuel of choice because of its properties.

To fully realise the potential of biomethane as a renewable energy source, and its circular economy benefits, we recommend a number of priority actions to accelerate commercialisation for the biomethane industry:

1. The Future Made In Australia (Guarantee of Origin) Bill[1] be fast-tracked by the federal government, with the prioritisation of biomethane for inclusion on the Product Guarantee of Origin (P-GO) process;
2. Continue to support the federal government on work being undertaken under the National Greenhouse Energy Reporting Scheme (NGERS) to allow entities covered by the Safeguard Mechanism to recognise emissions reduction arising from the use of biomethane in networks;
3. State governments to develop supply-side financial incentives and/or mandates to incentivise the collection of feedstock with federal government co-ordination and support;

[1] Future Made in Australia (Guarantee of Origin) Bill 2024 [Provisions] and related bills available at https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/GuaranteeofOrigin

4. Federal and state governments to develop demand-side incentives, such as a renewable gas target to incentivise biomethane production;
5. Federal and state governments to continue to allow all customers to choose renewable gases such as biomethane to decarbonise – including residential, commercial and industrial customers;
6. Federal and state governments to support the coordination of supply chains to fully utilise waste resource potential; and
7. Federal and state governments raise public awareness and acceptance of biomethane as a clean and sustainable energy source.

We are encouraged by your paper's focus on identifying opportunities within the circular economy that benefit both the economy and the environment, and we see biomethane as doubly efficient opportunity to maximise this by utilising the waste products mentioned above for production of biomethane combined with continued use of existing gas network infrastructure that is reliable, efficient, and safe.

We look forward to working with the Australian government to develop a more efficient and effective circular economy through the production and delivery of biomethane. We urge the Australian Government to continue collaborating closely with industry stakeholders like AGIG and relevant parties to ensure the successful integration of renewable fuels into the energy market.

Should you have any queries about the information provided in our submission, please contact Mehar Vilkhu, Senior Policy Advisor at Mehar.Vilkhu@agig.com.au.

Yours sincerely,

C.McArthur

Cathryn McArthur
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Australian Gas Infrastructure Group

Opportunities in the Circular Economy

1. Circular Economy Success Stories and Measures of Success

Biomethane is a renewable gas that is made by upgrading biogas, which is in turn created from waste from wastewater treatment plants, biodigesters, agricultural feedstock and landfill gas recovery systems. Biomethane has a Lower Heating Value (LHV) of around 36 MJ/m^3 meaning it is indistinguishable from natural gas and so can be used without the need for any changes in transmission and distribution infrastructure or end-user equipment[2]. Biomethane will play an important role in decarbonising natural gas use.

The use of circular economy principles to deliver biomethane at scale has been delivered internationally. We highlight examples in Denmark and Great Britain which benefitted from policy frameworks which encouraged the use of circular economy principles. These projects utilised existing waste resources to develop biomethane supply and delivered it using existing gas infrastructure.

Bioenergy Roadmap – Effective Implementation in Denmark

Since the introduction of a new subsidy scheme in 2012, Denmark's biogas production has seen a significant increase, with approximately 150 biogas plants currently in operation[3]. This growth has been driven by the use of livestock waste, which accounts for around 75% of the feedstock, while the remaining 25% comes from various organic wastes, including household and industrial waste, straw, and energy crops[4].

Subsidy Details

The subsidy program supports all uses of biogas, including combined heat and power (CHP) generation, industrial heat, vehicle fuel, and upgrading biogas to Biomethane for injection into the natural gas network. The subsidy consists of three components: a basic subsidy amount for certainty, an amount adjusted in proportion to natural gas prices, and an additional 'early bird' subsidy to incentivise quick starts. Long-term policies and targets were also essential to create stability in the biogas sector and attract investment.

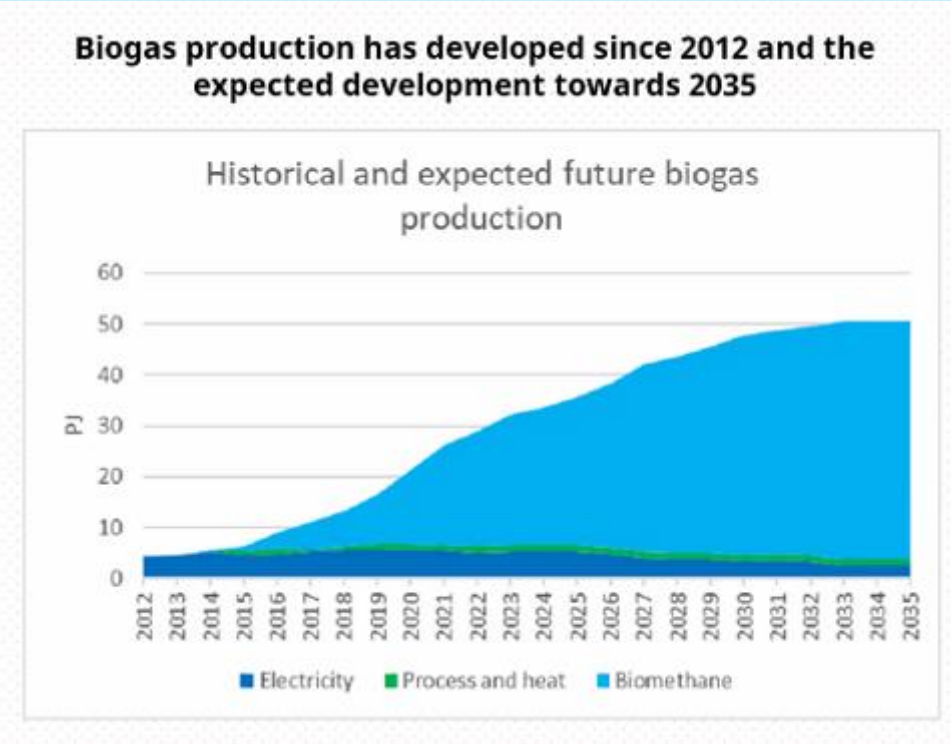
Initially, biogas in Denmark was primarily used for electricity production. However, today around 80% of biogas produced is upgraded and fed into the natural gas grid, a trend that is expected to continue[5]. This shift not only enhances the efficiency of biogas utilisation but also integrates renewable energy into the existing gas infrastructure, promoting a more sustainable energy system.

In 2023, the share of biomethane in the Danish gas system reached nearly 40%, showcasing the country's commitment to green energy. Denmark has set an ambitious goal to achieve 100% green gas consumption by 2030. This target underscores the importance of continued investment in biogas infrastructure and the development of supportive policies to maintain momentum in the transition to renewable energy.

[2] An introduction to biogas and biomethane, International Energy Agency available at https://www.iea.org/reports/outlook-for-biogas-and-biomethane-prospects-for-organic-growth/an-introduction-to-biogas-and-biomethane
[3] Biogas in Denmark, Danish Energy Agency available at https://ens.dk/en/our-responsibilities/bioenergy/biogas-denmark
[4] Biogas in Denmark – Biomass input and biogas production, Danish Energy Agency available at https://ens.dk/en/our-responsibilities/bioenergy/biogas-denmark
[5] Biogas in Denmark – Biogas production and use, Danish Energy Agency available at https://ens.dk/en/our-responsibilities/bioenergy/biogas-denmark

Denmark's experience highlights the potential of biogas as a key component of a sustainable energy strategy. By leveraging existing waste streams and integrating biogas into the natural gas grid, Denmark is paving the way for other countries to follow suit in their pursuit of a greener future.

Figure 1: Biogas production has developed since 2012 and the expected development towards 2035



Source: Danish Energy Agency available at https://ens.dk/en/our-responsibilities/bioenergy/biogas-denmark

Great Britain – Green Gas Support Scheme

In the UK, the Green Gas Support Scheme (GGSS)[6] is a government scheme that provides financial incentives for new anaerobic digestion biomethane plants to increase the proportion of green gas in the gas grid.

Registered participants in the GGSS receive quarterly support payments based on the volume of eligible biomethane injected into the gas grid. Payments continue for up to 15 years from the tariff start date, provided participants meet eligibility and compliance requirements. Producers receive a decreasing tiered tariff in addition to the wholesale gas price starting at around AUD $36 per GJ for smaller projects, and around $20/GJ for larger projects as at 1 October 2024[7].

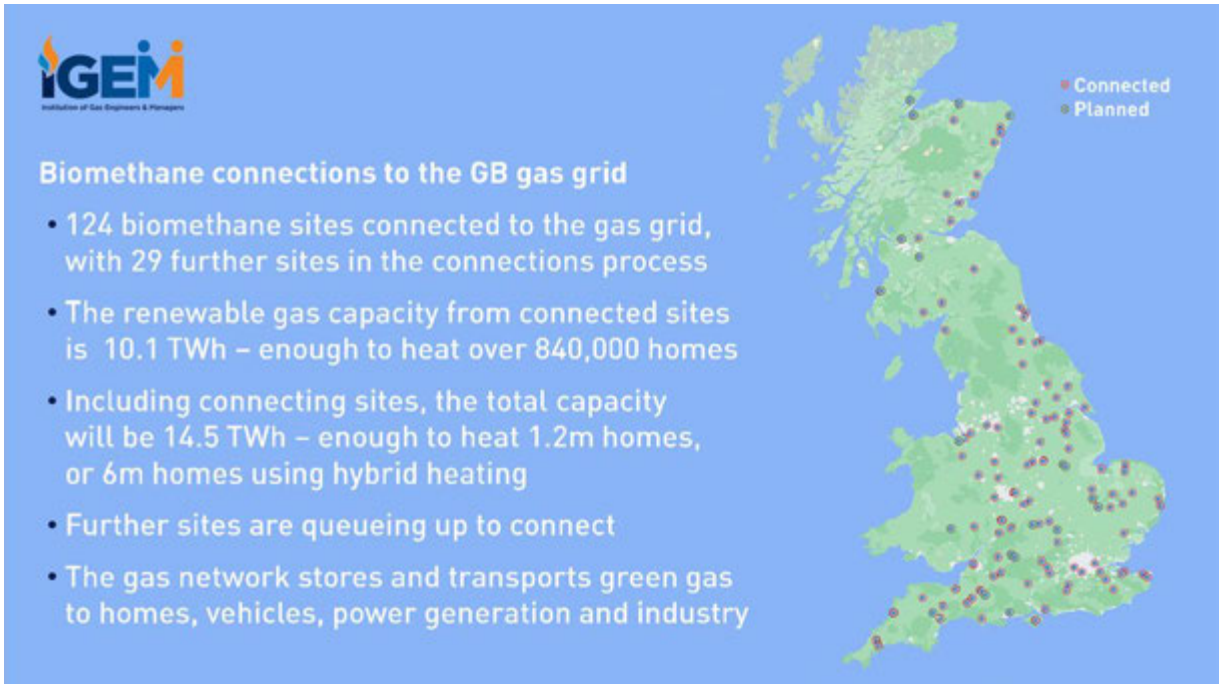
With supportive policies in place in Great Britain, The Institute of Gas Engineers & Managers notes that *"there are currently 124 biomethane sites connected to the gas grid, with 29 further sides in the connections process. The renewable gas capacity from connected sites is 10.1 TWh – enough to heat over 840,000 homes. Including connecting sites, the total capacity will be 14.5 TWh (approx. 43.5 PJ) – enough to heat 1.2m homes, or if maximising the potential for hybrid heating systems, with boilers*

[6] Green Gas Support Scheme and Green Gas levy, Ofgem available at https://www.ofgem.gov.uk/environmental-and-social-schemes/green-gas-support-scheme-and-green-gas-levy

[7] Green Gas Support Scheme Tariff Table, Ofgem available at https://www.ofgem.gov.uk/publications/green-gas-support-scheme-tariff-table?dm_i=1QCB,8Q36J,RJMFGO,108W11,1. Converted based on an exchange rate of GBP to AUD = 1.94 as of 21 October 2024.

burning biomethane used in conjunction with heat pumps powered by renewable electricity, biomethane can help heat up to £6m homes – 22% of all homes in the UK."[8]

Figure 2 IGEM - Biomethane connections to the GB gas grid



Source: IGEM Launches ground-breaking grid connections research at Parliamntary Reception, IGEM available at https://www.igem.org.uk/resource/igem-launches-groundbreaking-grid-connections-research-at-parliamentary-reception.html, slide 5[9]

There are further practical examples of the circular economy in action in the UK with specific policy to divert organic wastes from landfill. This ultimately gets processed at operations such as 'ReFood' into biomethane and digestate. There are multiple similar facilities throughout the UK, exporting energy and digestate or compost.

[8] Call for Evidence: Future Policy Framework for Biomethane Production, IGEM available at https://www.igem.org.uk/resource/call-for-evidence-future-policy-framework-for-biomethane-production.html
[9] IGEM Launches ground-breaking grid connections research at Parliamntary Reception, slide 5, IGEM available at https://www.igem.org.uk/resource/igem-launches-groundbreaking-grid-connections-research-at-parliamentary-reception.html

Source: The Process, ReFood Pure Bioenergy available at https://refood.co.uk/the-process/

Biomethane in Australia

Anaerobic digestion utilising waste to produce biomethane, while technically mature, is still in its early stages commercially in Australia. AGIG is at the early stages of developing a number of biomethane projects across our networks, and also working with industry to facilitate connections to our networks[10].

The Malabar Biomethane Injection Plant in New South Wales is owned and operated by Jemena Gas Networks and is a pioneering project that captures methane from sewage sludge at the Malabar Wastewater Treatment Plant in Sydney[11]. This biomethane is then injected into the gas network, displacing natural gas. The project is a collaboration between Sydney Water and Jemena, supported by the Australian Renewable Energy Agency (ARENA). It is expected to remove 5,000 tons of carbon emissions annually, with the potential to scale up to 11,000 tons.

Victoria's first anaerobic digestion facility from pre-consumer food waste was established in Wollert in 2017, with a second facility in Lilydale currently being constructed (ReWaste Wollert & Lilydale). These facilities receive food waste and export renewable electricity generated from biogas. There is great potential for these facilities to upgrade their biogas and inject into the gas grid in future, therefore exporting even more renewable energy whilst unlocking the storage potential of gas infrastructure. Digestates shall also be exported in future as an organic soil improver/fertiliser, further enhancing the circular benefits of these facilities.

[10] Biomethane, Australian Gas Infrastructure Group (AGIG) available at https://www.agig.com.au/biomethane
[11] Malabar Biomethane Facility, Jemena available at https://www.jemena.com.au/future-energy/future-gas/Malabar-Biomethane-Injection-Plant/

2. Opportunities to Progress the Circular Economy in Australia

Australia's Bioenergy Roadmap[12] showed significant bioenergy resources are available in the short to medium term (potentially 349 PJ of biomethane nationally) and indicated the bioenergy sector has the potential to contribute to Australia's GDP by about $10 billion annually, create over 26,000 jobs, and reduce emissions by 9% by 2030.

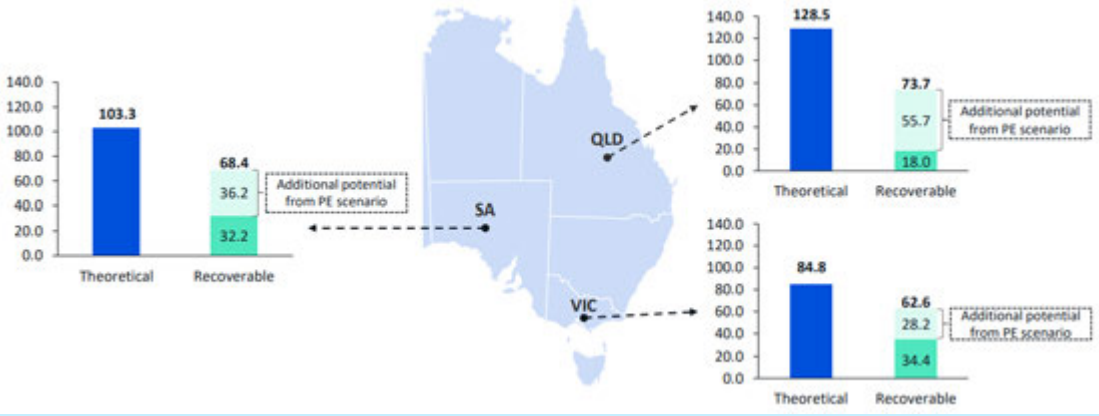
To realise the bioenergy and biomethane potential on our networks, we have undertaken studies of biomethane potential around our national distribution networks. Talking to our customers has also indicated that many of our customers prefer gas – not only because it would be challenging or not possible for them to electrify, but for various other reasons including reliability, cost, and utility. They also highlight the importance of utilising existing infrastructure in the existing distribution network to achieve commercial scalability. The potential for industry and regions which are highly dependent on gas to capitalise on biomethane potential using circular economy principles, is particularly well highlighted in the case of regional economies – such as the Greater Shepparton region, which we use as an example.

Renewable Gas Grid Integration - Blunomy study showcasing Australia's potential

A Blunomy report recently commissioned by AGIG indicated that the estimated state-wide theoretical biomethane potential in Victoria (including NSW regional areas), South Australia and Queensland is 323.5 PJ, with 84.6 PJ recoverable in a Business as Usual (BAU) scenario, while 204.7 PJ is recoverable under a Policy Enabled (PE) scenario[13].

In AGIG's networks across Australia, there is potential to recover 88.3 PJ[14] of biomethane to supply energy demand, creating 10,100 jobs. Under a BAU scenario, Victoria's recoverable potential is 34.4 PJ which is 38% of the state's theoretical biomethane, however it can reach up to 62.6 PJ, representing 68% of the states biomethane potential where agriculture is dominant feedstock, responsible for 50% of the potential supply[15].

Figure 3: Biomethane production potential by state in Australia (PJ)



Source: Biomethane Potential in AGIG's Network Catchment and Associated Co-benefits Final Report, Page 16

[12] https://arena.gov.au/knowledge-bank/australias-bioenergy-roadmap-report/
[13] Biomethane Potential in AGIG's Network Catchment and Associated Co-benefits Final Report, Page 16, Blunomy and AGIG at https://www.agig.com.au/-/media/files/agig/Annual-Reports/240712_Biomethane-potential-and-cobenefits-Public.pdf
[14] Biomethane Potential in AGIG's Network Catchment and Associated Co-benefits Final Report, Page 20, Blunomy and AGIG at https://www.agig.com.au/-/media/files/agig/Annual-Reports/240712_Biomethane-potential-and-cobenefits-Public.pdf
[15] Biomethane Potential in AGIG's Network Catchment and Associated Co-benefits Final Report, Page 17, Blunomy and AGIG at https://www.agig.com.au/-/media/files/agig/Annual-Reports/240712_Biomethane-potential-and-cobenefits-Public.pdf

There is a role for all customers to play in delivering biomethane at scale

In 2023, our distribution networks in South Australia, Queensland and Victoria delivered approximately 228 PJs of natural gas to around 2.1 million customers[16]. This comprises a mix of residential, business and industrial customers who share fixed infrastructure that pipes natural gas today to their homes and businesses reliably, efficiently, and safely.

It is understood that industrial processes require molecular energy and cannot electrify for various reasons, including technical reasons, cost, and reliability[17]. A study KPMG undertook with our Victorian customers indicated that biomethane was an attractive pathway for decarbonisation through initial blends through the existing distribution network. While behind-the-meter projects played a role, the specialised knowledge required to operate and connect a biomethane plant, and the aggregation and scaling of feedstock was an issue. Furthermore, reliability is critical to the operations of these businesses[18]. We would be pleased to provide the Commission with a detailed briefing of this work.

For residential customers, continuing to provide choice in their energy use, and allowing them to choose biomethane (or other renewable gases such as hydrogen) to decarbonise, instead of mandating an electrification-only pathway, is critical to avoid inadvertent outcomes. Frontier Economics indicates that the upfront capital costs of electrification can be up to $40,000 for a typical home[19]. Even after substantial consumer-funded subsidies in Victoria from the Victorian Energy Upgrades (VEU) scheme, there may still be significant upfront capital costs associated with electrification[20]. Furthermore, residential customers have indicated through various research that many retain a preference for gas while also wanting to contribute to decarbonisation targets[21].

Our customers share the fixed costs of operating the natural gas network today – approximately 98% of our network costs are funded by residential customers. Internal modelling undertaken for AGIG by Frontier Economics indicates that the cost to deliver natural, or renewable gases via the network, would increase by about 43 times for industrial customers if all residential and commercial customers were removed from the network.

Biomethane provides an alternative pathway. By supporting the industry to develop, projects across the existing gas network can inject into the existing infrastructure to a large customer base. This provides customers with continued choice of how they meet their energy needs, and benefits from the efficiencies of accessing a large, existing customer base. Furthermore, it allows the utilisation of reliable, existing, world-class infrastructure – our mains replacement program means that most of our underground distribution network has been replaced with new polyethylene pipes, minimising fugitive emissions while being capable of delivering renewable gases such as hydrogen and biomethane at 100%.

Waste Management and Circular Economy

Biomethane can be produced from various sources, including municipal solid waste and agricultural residues[22]. This is an opportunity to create revenue streams for waste produced. Blunomy's research commissioned by AGIG on biomethane mapping in our networks indicates that biomethane production

[16] AGIG 2023 ESG report, Appendix 1, AGIG available at https://www.agig.com.au/-/media/Files/AGIG/Annual%20Reports/ESG-2024/AGIG%20ESG%202023_Digital.pdf
[17] Victorian Gas Substitution Roadmap Update, Chapter 4, Dec 2023, Victoria State Government available at https://www.energy.vic.gov.au/__data/assets/pdf_file/0027/691119/Victorias-Gas-Substitution-Roadmap-Update.pdf
[18] Industrial decarbonisation survey, July 2024, KPMG and AGIG
[19] Cost of switching from gas to electric appliances in the home, Frontier Economics for GAMAA available at https://gamaa.asn.au/wp-content/uploads/2022/07/Frontier-Economics-Report-GAMAA.pdf
[20] See footnote 17, Figure 14
[21] AGN Voice of Consumers Quarter 2 April to June 2024 report, AGIG, and also see Household energy preferences: Research Report, August 2021, JWS Research for Department of Environment, Land, Water and Planning available at https://engage.vic.gov.au/download/document/27749
[22] An introduction to biogas and biomethane, International Energy Agency available at https://www.iea.org/reports/outlook-for-biogas-and-biomethane-prospects-for-organic-growth/an-introduction-to-biogas-and-biomethane

can utilise organic waste, diverting it from landfills and reducing methane emissions from waste decomposition, and that the cost of biomethane from landfill gas capture ($10.2/GJ) and wastewater treatment plants ($9.4/GJ) could be competitive with natural gas price (~$10.73)[23]. In addition, agricultural residues for biomethane production supports sustainable farming practices and provides additional revenue streams for farmers.

The research further indicates that supportive waste recovery policies could increase the amount of feedstock available for producing biomethane.

Figure 4 Potential sources of feedstock on AGIG's networks

Category	Stream	Recovery rates[1]	Rationale
Urban waste	C&I - Organics	BAU 20% PE 80%	• **BAU**: Partial recovery of food organic waste. Garden organics with relatively higher lignin content are sent to landfills or composting. • **PE**: National waste management policy for source separation of food waste, which is then diverted from landfills.
	MSW – Organics	BAU 23% PE 80%	
	MSW – Biosolids	BAU 50% PE 65%	• **BAU**: Considers competing use of biosolids for land application and soil conditioning. However, there is limited recovery of what remains. • **PE**: Water and other utilities commitments to achieve 100% recovery by 2030–2050 can drive uptake for anaerobic digestion. Further improvements are possible by optimising retention time and volume of bacteria in the AD process.
Agricultural Residues	Cropping	BAU 35% PE 75%	• **BAU**: Competing uses, such as land cover, animal bedding, and animal feed. Still, farmers leave substantial stubble on the field for burning later. • **PE**: Policy ban on stubble burning increases incentives to collect, improving recovery rate.

Source: Biomethane Potential in AGIG's Network Catchment and Associated Co-benefits Final Report, Page 10

Victoria can be used to demonstrate an example of the potential for industrial and commercial customers, who produce significant amounts of waste, to contribute to the production and use of biomethane to decarbonise their current natural gas use. Figure 5 shows the location of our commercial (using <10 TJ p.a.) and industrial customers (using >10 TJ p.a.) while Figure 6 shows the location of feedstock potential. Similar maps for QLD and SA feedstock potential on AGIG networks are available in our Blunomy report[24].

[23] Biomethane Potential in AGIG's Network Catchment and Associated Co-benefits Final Report, Page 38, Blunomy and AGIG at https://www.agig.com.au/-/media/files/agig/Annual-Reports/240712_Biomethane-potential-and-cobenefits-Public.pdf

[24] Refer to footnote 13 to 15.

Figure 5 AGIG's commercial and large industrial customers in Victoria

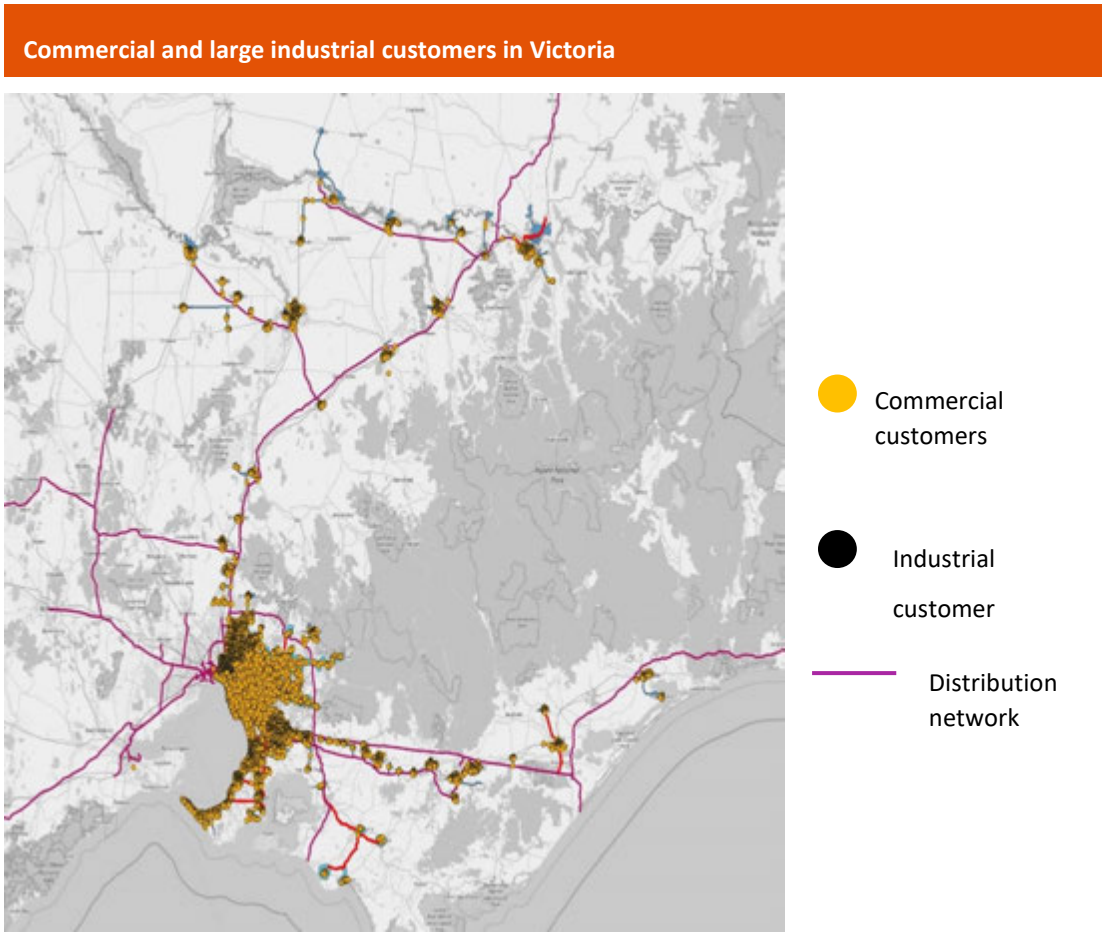
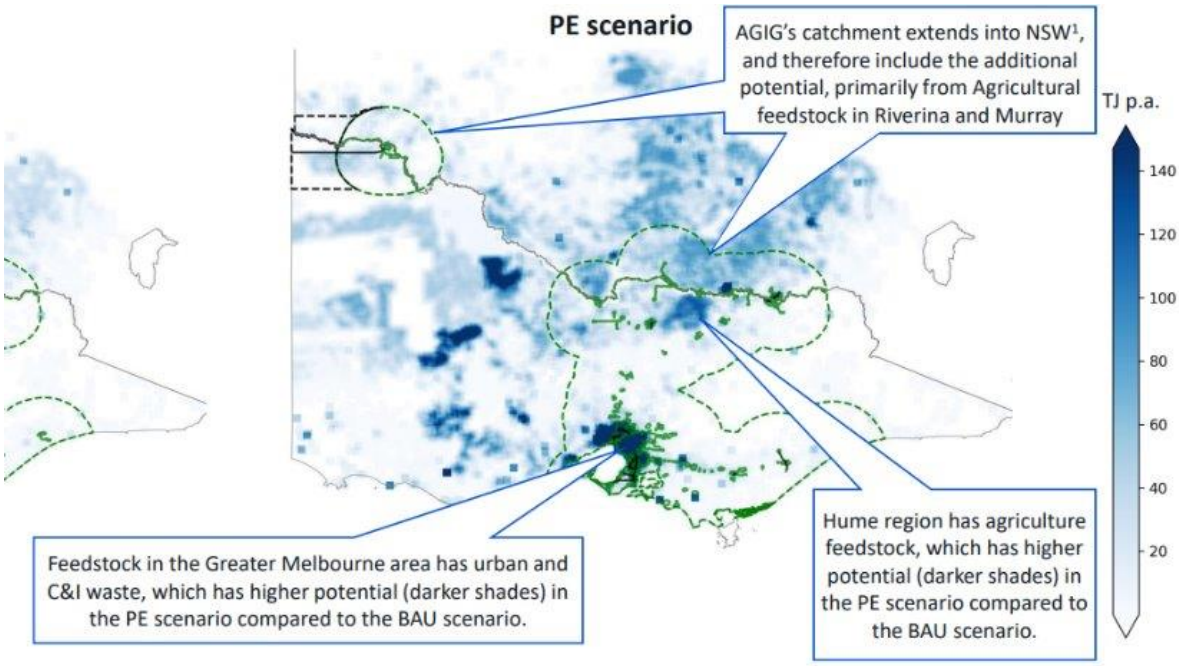
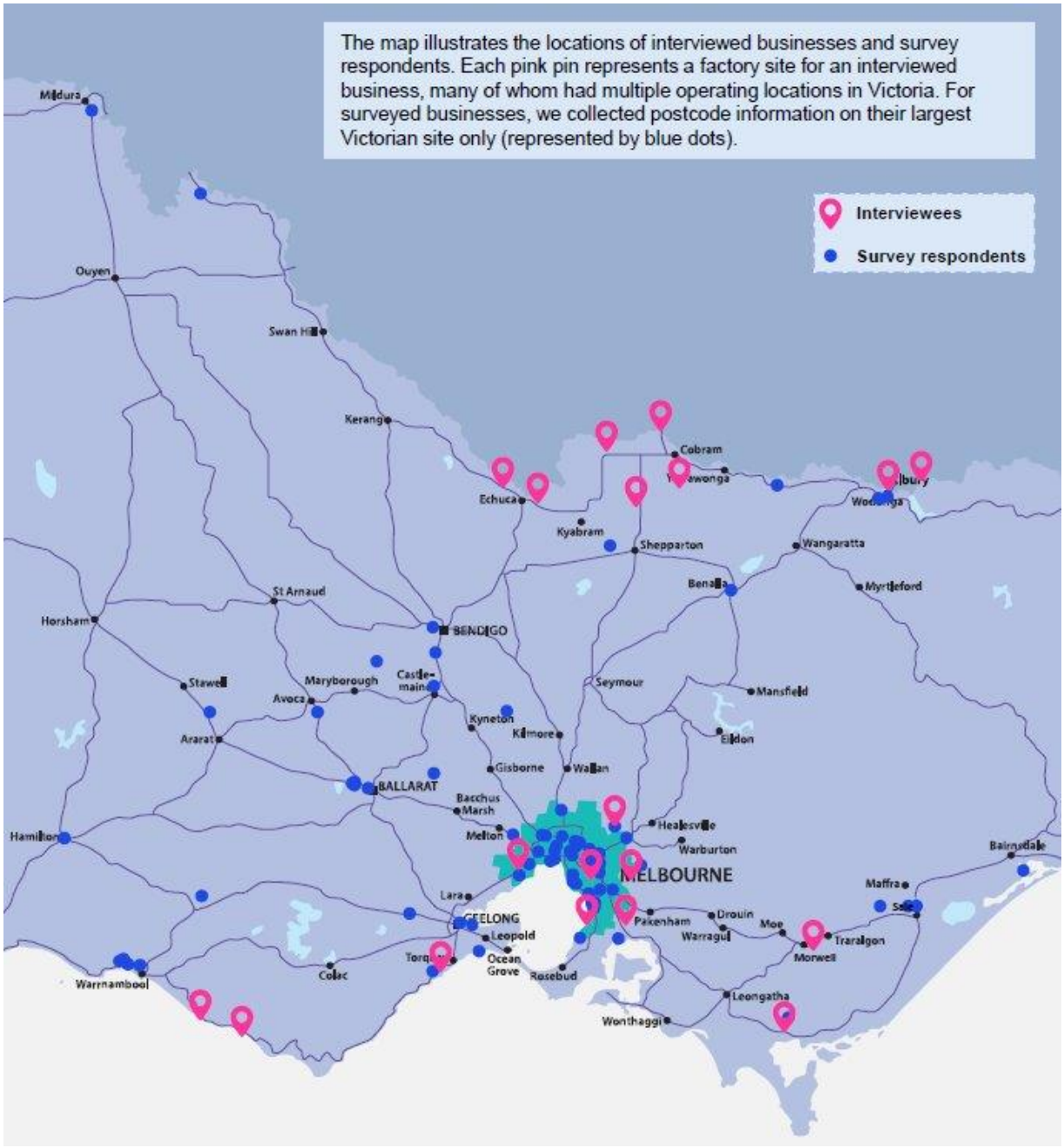


Figure 6 Map of biomethane potential on AGIG's networks in Victoria



KPMG undertook research on our large, industrial gas customers in Victoria that indicated many of the gas users were situated in agricultural production clusters (such as in Northern Victoria) or had significant waste streams that could be utilised – or located near industrial precincts near wastewater treatment plants[25].

Figure 7 Selected large gas users



Case study: Greater Shepparton Region

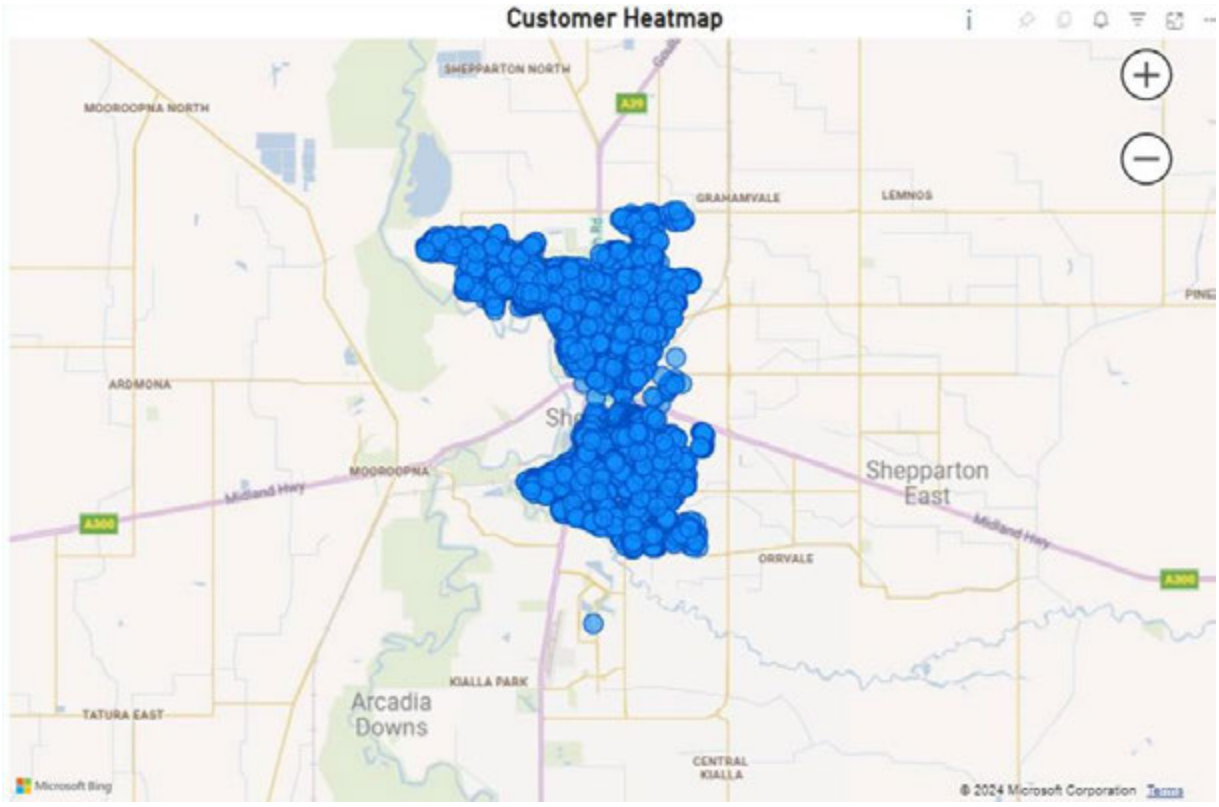
The Shepparton region is one of the largest single postcodes that AGIG (through AGN Victoria) services with around 14,000 connections. It is located within the Goulburn Valley "food bowl"

[25] Refer to footnote 18.

consisting of a cluster of large gas users for whom renewable gases such as biomethane are an attractive decarbonisation pathway. It is a centre for food manufacturing, fabricated and primary metal manufacturing, machinery and equipment manufacturing - and located strategically along an agricultural trucking route. The region produces 48.5% of Victoria's fruit, and with 18% of regional Victoria's food processing with large household brands[26].

The manufacturing precinct is located in a cluster to the east of Shepparton CBD[27]. This cluster offers synergies from sharing the fixed costs of infrastructure such as gas distribution network mains – of the nearly 14,000 connections, 600 of these are non-residential, further illustrating the importance of the need to share the fixed costs of infrastructure to deliver energy reliably, efficiently, and safely. These economies of scale can also be applied to the aggregation of agricultural and municipal solid waste for feedstock.

Figure 8 Location of gas connections in Shepparton



We therefore encourage that the opportunity to utilise existing supply chains and infrastructure to create a circular economy, in regions such as Shepparton, be fully explored. Blunomy's report also highlighted the potential for the biomethane industry to create jobs in regional areas, supporting local economies.

[26] Building on Strength, Page 6, Committee for Greater Shepparton available at https://www.c4gs.com.au/wp-content/uploads/C4GS-Building-on-Strength-eBook.pdf
[27] Building on Strength, Page 7, Committee for Greater Shepparton available at https://www.c4gs.com.au/wp-content/uploads/C4GS-Building-on-Strength-eBook.pdf

3. Government's role in a Circular Economy

While biomethane is a relatively mature technology overseas, to support its commercialisation in Australia we provide a number of recommended priority actions which would accelerate the development of biomethane.

Certification

Certification of biomethane is critical to putting a financial value on the emissions reduction and allows an explicit value to be put in business cases for renewable gases such as biomethane. Progressing existing initiatives by the Federal Government in certification would accelerate development of projects. We recommend that:

1. The Future Made In Australia (Guarantee of Origin) Bill[28] be fast-tracked by the federal government, with the prioritisation of biomethane for inclusion on the Product Guarantee of Origin (P-GO) process;
2. Continue to support the federal government on work being undertaken under the National Greenhouse Emissions Reporting Scheme (NGERS) to allow entities covered by the Safeguard Mechanism to recognise the emissions reduction arising from the use of biomethane in networks.

Provide incentives for the collection of feedstock

Policy should aim to incentivise the collection of waste for feedstock – this can be achieved by providing financial incentives (similar to the Green Gas Support Scheme in Great Britain[29]) which incentivise waste producers to sell their feedstocks to biogas or biomethane producers, or mandating waste recovery rates or targets for waste producers – which will see waste being used for feedstock, rather than being flared or being sent to landfill.

3. State governments to develop supply-side financial incentives and/or mandates to incentivise the collection of feedstock with federal government co-ordination and support .

Renewable Gas Targets

Governments should also consider providing demand signals that further incentivise the development of renewable gases such as biomethane – for example, the Renewable Fuels Strategy and Renewable Fuels Scheme being developed in New South Wales[30].

4. Federal and state governments to develop demand-side incentives, such as a renewable gas target to incentivise biomethane production.

Allow customer choice and utilisation of existing infrastructure

Utilising existing distribution network infrastructure that delivers natural gas today reliably, efficiently and safely. Renewable gases such as biomethane and renewable hydrogen aligns with circular economy principles (re-use and repurpose[31]). A sensible and cost-effective way to develop biomethane production boosts the circular economy benefits that come along with effective waste management. To remain a viable pathway, fixed costs for the infrastructure must be spread out among users. Utilising network infrastructure has benefits not only by providing biomethane producers with a wider

[28] Future made in Australia (Guarantee of Origin) Bill 2024 [Provisions] and related bills, Environment and Communications available at https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/GuaranteeofOrigin

[29] See footnote 6.

[30] Building a thriving renewable fuel industry in NSW, NSW Climate and Energy Action available at https://www.energy.nsw.gov.au/nsw-plans-and-progress/regulation-and-policy/public-consultations/building-thriving-renewable-fuel

[31] Opportunities in the circular economy Call for Submissions, page 5, Productivity Comission available at https://www.pc.gov.au/inquiries/current/circular-economy/call-for-submissions/circular-economy-call.pdf

market and enabling commercial production of biomethane, but also by continuing to allow all customers choice in their energy mix.

5. Federal and state governments to continue to allow all customers to choose renewable gases such as biomethane to decarbonise – including residential, commercial and industrial customers.

Coordination of supply chains

As demonstrated in Section 2, ensuring a consistent and sustainable supply of organic waste feedstock is critical for scale, and significant opportunities exist in areas with existing large industrial users of natural gas to decarbonise using waste resources from production processes to create biomethane. However, the right infrastructure and coordination is needed to ensure that efficient supply chains are in place.

6. Federal and state governments to support the coordination of supply chains to fully utilise waste resource potential.

Public Awareness and Acceptance

While biomethane is a relatively mature technology overseas, it is relatively new in Australia. Increasing public awareness and acceptance of biomethane as a clean and sustainable energy source is important for its widespread adoption, and for encouraging waste recovery efforts. Efforts to raise public awareness and acceptance of biomethane by Governments would be welcome.

7. Federal and state governments raise public awareness and acceptance of biomethane as a clean and sustainable energy source.