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Katie Brown
Executive Director - Electrification, Efficiency and Safety
Energy Division
Department of Energy, Environment and Climate Action

Via: Engage Victoria (<https://engage.vic.gov.au/victorias-renewable-gas-future>) and Gas Roadmap (DEECA) (gas.roadmap@deeca.vic.gov.au)

Victorian Industrial Renewable Gas Guarantee consultation

Energy Networks Australia (ENA) welcomes the opportunity to make a submission to the Victorian Industrial Renewable Gas Guarantee consultation paper (referred to hereafter as the Directions paper).

ENA represents Australia's electricity transmission and distribution and gas distribution networks. Our members provide over 16 million electricity and gas connections to almost every home and business across Australia.

Key messages

- ENA supports the introduction of renewable gas scheme for Victorian customers.
- The initial targets appear un-ambitious based on a range of estimates of biomethane potential in Victoria. The review after 3 years should consider expanding the 2035 target.
- Australian households should be encouraged to continue to make choices to decarbonise their homes in ways that suit their needs and in an affordable, staged approach.
- ENA supports the proposal for the Victorian renewable gas scheme to align with existing renewable gas certification.
- Biomethane projects supported by the scheme should provide additional abatement.
- The Renewable Gas Guarantee aims to provide a social benefit of reduced emissions by introducing renewable gas. To minimise the impact on one group of customers, the costs should be socialised.

Decarbonisation priorities

ENA supports reaching net zero emissions by 2050 or earlier¹, which requires coordinated actions across all sectors. Australia will need to play a vital role to both decarbonise its domestic economy and its emission intensive industries.

Reducing emissions comes at different costs and complexities across sectors. Some sectors are able to reduce emissions in the near term, while other sectors require further technology or deployment cost breakthroughs.

ENA's member businesses are key enablers to decarbonise the energy sector. Analysis done by BCG highlights priorities for decarbonising the Australian economy focussing on the greatest emissions impact for effort. They are²:

- Continue the switch from coal-fired electricity generation to renewables. This will be supported by effective investments in transmission and distribution infrastructure to connect new sources of renewable electricity generation with customers.
- Encourage the uptake of electric vehicles. Smarter use of the distribution grid can encourage renewable generation during the day to be used to replace fossil fuels for cars.
- Develop renewable gas solutions for industry. Many industrial and commercial businesses do not have practical alternatives to the use of gaseous fuel. The volume of fuel required shows a clear pathway for gas networks' key role in decarbonising the energy system.

A focus on decarbonisation of industry will help to achieve economies of scale and accelerate the transition of the rest of the economy.

A fair transition for all of Australia's families

Australian households can and want to participate in the transition in a meaningful way. While natural gas provides around 70 per cent of energy to Victorian homes (not including transport fuels), it only represents 6 per cent³ of Victorian emissions.

Australian households should be encouraged to continue to make choices to decarbonise their homes in ways that suit their needs and in an affordable, staged approach. Australia has some of the highest rates of installed rooftop solar and customers want to continue to be a part of the solution to reducing emissions.

While individual circumstances will vary, research consistently shows that the best 'bang for buck' to decarbonise households starts with rooftop solar, energy efficiency practices and purchasing an EV (and charging it from solar). Electrification of gas provides a lower emissions benefit and is a complex issue involving over 5 million diverse households. The cost implications for households are highlighted by research conducted by CSIRO and Dynamic Analysis for Energy Consumers Australia (ECA), with key results shown in the Figure 1⁴. ENA is completing additional whole of system analysis on the impacts from policy forced electrification. The results shows that all households will be worse off,

¹ ENA recognises that the Victorian Government has a net zero emissions target for 2045.

² BCG (2023), *The role of gas infrastructure in Australia's energy transition*

³ Victorian homes and small businesses consumed 102 PJ of natural gas in 2022/23 producing 5.2 Mt CO₂. Victoria's net emission are 84.7 Mt so emissions from natural gas used in homes represents 6.2%.

⁴ CSIRO and Dynamic Analysis, Consumer impacts of the energy transition: modelling report, July 2023.

whether the electrify or not. ENA will provide this work in its response to the Victorian Building Electrification RIS consultation paper.

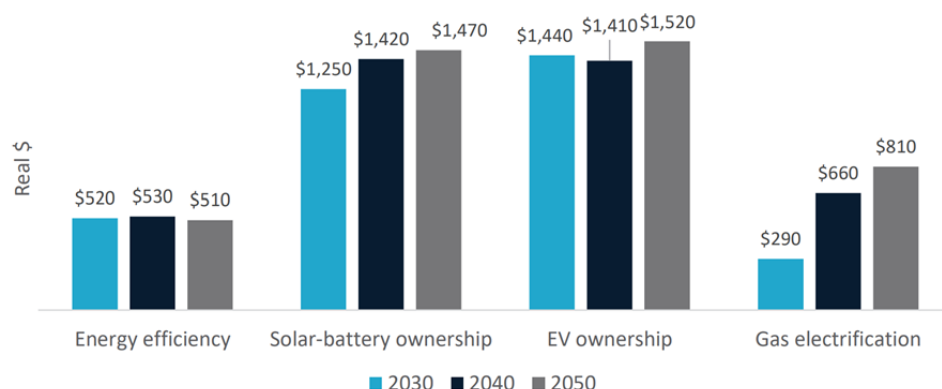


Figure 1: Household energy transition options provided bill savings (Source: CSIRO/ECA (2023), ENA analysis)

The greatest near-term benefits come from EVs, solar, and energy efficiency practices.

Any support for household emissions reductions should be targeted at those most in need and initially at the improved efficiency, solar and EV applications that will make the biggest difference for customers. As a whole, electricity and gas networks support helping customers to make *decarbonisation choices* that are best suited to them, at least cost. There is no one-size-fits-all solution, and individual circumstances must be considered, including consumer preferences, location, budget, and home type.

A renewable gas target

ENA supports the objectives of the Directions paper to develop the renewable gas industry in Victoria and achieve emissions reductions from gas use by Victorian customers. Gas networks will play an essential role in delivering renewable gas to industrial customers. The benefits of introducing a renewable gas obligation in Victoria include:

- Development of a new market to balance out declining natural gas supply for Victoria;
- Allow businesses to seek voluntary actions to reduce their emissions from gas use; and
- Support broader energy security as Australia progresses through the energy transition.

Future Fuels CRC⁵ has consulted across industry to identify options for designing a renewable gas target. There are a number of issues that need to be addressed in the design of a RGT including:

- Which gases should be eligible?
- What should be the basis for crediting gases?
- Which uses of renewable gas should be eligible?
- Should there be segmentation? (i.e. specific targets for specific gases or specific gas uses)
- Who should meet the costs?

⁵ FFCRC (2023), *Design options for a Renewable Gas Target*, available from:

<https://www.futurefuelsrc.com/webinar-recording-out-now-a-renewable-gas-target-for-australia/>

- Should targets be set in terms of quantities or prices?
- Should the scheme use a bilateral transactions model or a funding pool approach?
- Should there be discrimination over the geographic source and use of renewable gas?
- Should there be a uniform national or separate State schemes?
- What ambition should an RGT have in terms of renewable gas take-up?
- Should concessions be granted to any parties affected by the scheme?
- How should the RGT interact with other schemes (e.g. Safeguard)?
- What would be the terms of opt-out from the scheme?

During stakeholder interviews by FFCRC with both industry partners and government officials it was noted that there was universal agreement that renewable gas has an important role to play in the future Australian energy mix, but there were differing views, and therefore some uncertainty, regarding how large that role is. The researchers prepared nine design options for an RGT. The options illustrate different degrees of intervention in the fuel mix and different approaches to allocating costs. They all share common features that were generally agreed or regarded to be of secondary importance.

ENA recommends that the Victorian government reviews the previous work carried out by FFCRC.

ENA supports the introduction of renewable gas for Victorian customers

ENA supports a renewable gas target scheme to introduce renewable gas for Victorian customers.

The proposed renewable gas targets of 4.5 PJ by 2035 and 1 PJ within the first 3 years (say by 2028) is on the low side compared to estimates of available resources to produce biomethane (e.g. Australia's bioenergy roadmap). It is also very low compared to the information that was provided to Sustainability Victoria

ENA recommends that the Victorian Government consults on the requirement of biomethane produced under the target to be additional. This is important to support new projects collecting waste streams and processing that to produce biomethane. Existing biogas producers (e.g. landfill operators) are already producing biogas and converting that to renewable electricity supported by government incentives. The overall impact on emissions by switching the biogas from being used for renewable electricity to having it be processed as renewable gas should be considered if those projects were to be eligible under the target. This is particularly important when noting the difference in emissions benefit between this activity displacing brown coal generation and in the activity displacing renewable wind and solar generation (which will be increasingly the case over time).

ENA supports the initial target but recommends that a key feature of the 3-year review should be on increasing this target.

We have provided responses to the consultation questions below.

We would welcome the opportunity to work with the Victorian government to support the introduction of renewable gas for Victoria's gas customers. If you wish to discuss any of the matters raised in this response further, please contact Dennis Van Puyvelde, Head of Renewable Gas, via: dvanpuyvelde@energynetworks.com.au.

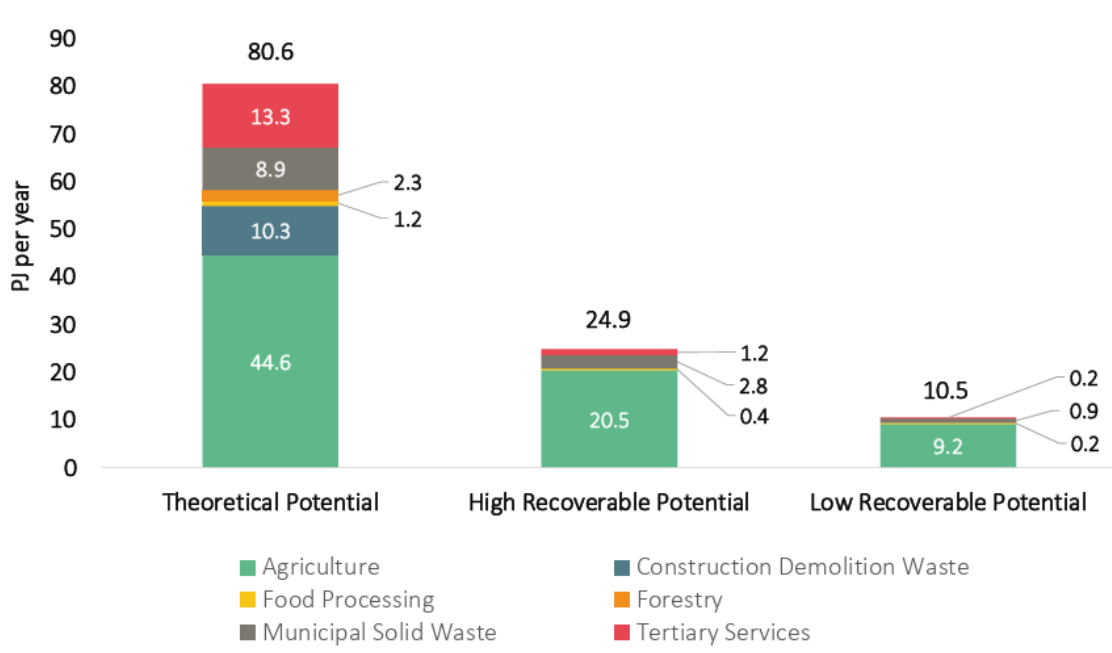
Yours sincerely,



Dominic Adams

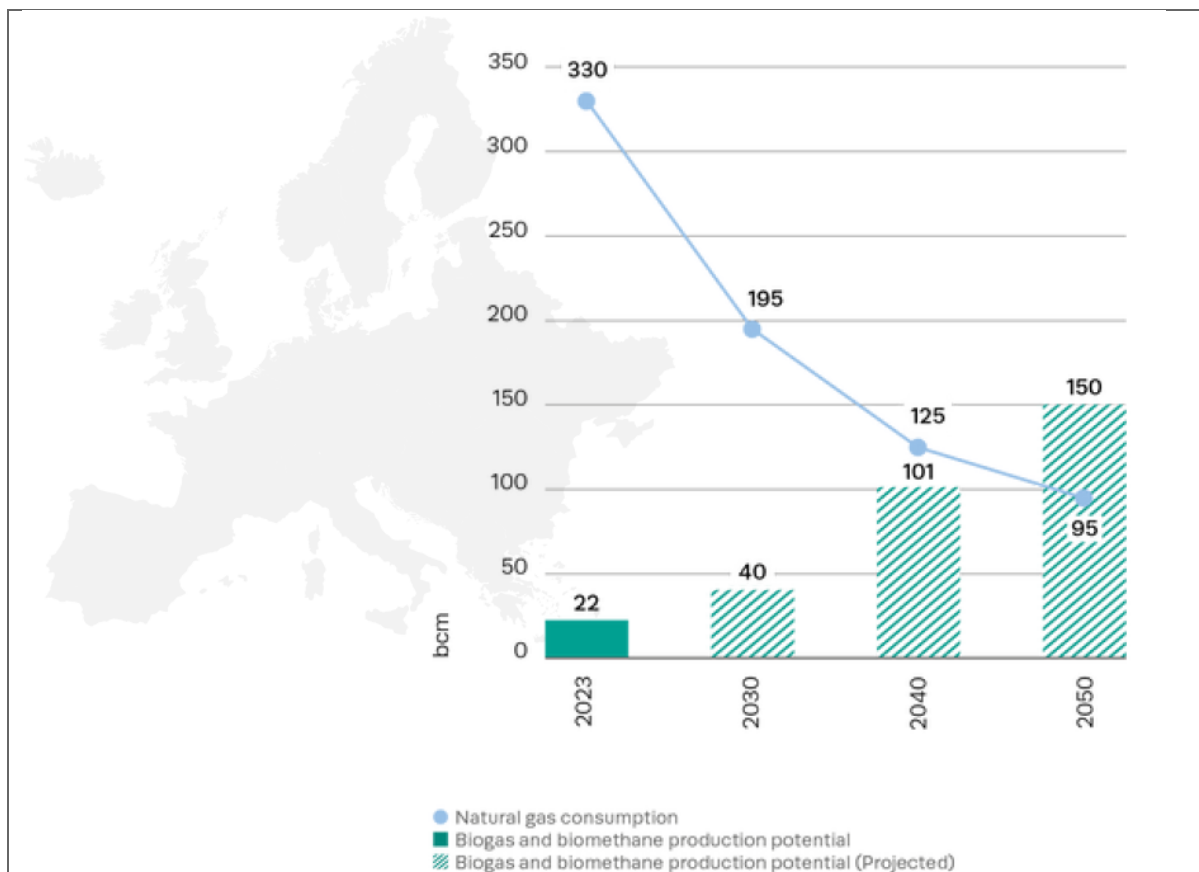
Acting CEO

ENA's responses consultation questions

Consultation question	ENA's position																																
Industry Capacity																																	
Q1: How do you assess the feasibility of the 4.5 PJ target by 2035? Do you think 1 PJ of biomethane production annually is possible within the first three years of the scheme? If so, why? If not, why not?																																	
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Figure 2 - Sector breakdown of Victoria's recoverable biogas potential from anaerobic digestion  <table border="1"><thead><tr><th>Potential Category</th><th>Agriculture</th><th>Construction Demolition Waste</th><th>Food Processing</th><th>Forestry</th><th>Municipal Solid Waste</th><th>Tertiary Services</th><th>Total</th></tr></thead><tbody><tr><td>Theoretical Potential</td><td>44.6</td><td>10.3</td><td>2.3</td><td>1.2</td><td>8.9</td><td>13.3</td><td>80.6</td></tr><tr><td>High Recoverable Potential</td><td>20.5</td><td>1.2</td><td>2.8</td><td>0.4</td><td>1.2</td><td>0.2</td><td>24.9</td></tr><tr><td>Low Recoverable Potential</td><td>9.2</td><td>0.2</td><td>0.9</td><td>0.2</td><td>0.2</td><td>0.2</td><td>10.5</td></tr></tbody></table>		Potential Category	Agriculture	Construction Demolition Waste	Food Processing	Forestry	Municipal Solid Waste	Tertiary Services	Total	Theoretical Potential	44.6	10.3	2.3	1.2	8.9	13.3	80.6	High Recoverable Potential	20.5	1.2	2.8	0.4	1.2	0.2	24.9	Low Recoverable Potential	9.2	0.2	0.9	0.2	0.2	0.2	10.5
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Biogas can be produced from a range of different feedstocks with agricultural cropping waste providing the largest contribution. ENA's members are providing more detailed information on how much biomethane could be provided to the market, and within what timeframes.																																	
It is important to note that the technology for biomethane production is well established. A new report by the European Biogas Association⁷ notes that there are already 1,500 biomethane plants in Europe producing over 22 bcm (approx. 770 PJ) of biomethane, representing 7 per cent of current EU gas demand. Due to a forecast decline in gas demand and strong growth in biomethane potential we can see all of the EU's gas demand be met by biomethane by 2050 (see below), even in the event that demand forecasts are incorrect and significantly higher gas consumption occurs.																																	

⁶ ENEA Consulting (2021), *Sustainability Victoria - Assessment of Victoria's biogas potential*, Figure 2

⁷ European Biogas Association (2024), *Decoding Biogases*



ENA recommends that the Victorian Government consults on the requirement of biomethane produced under the target to be additional. This is important to support new projects collecting waste streams and processing that to produce biomethane. Existing biogas producers (e.g. landfill operators) are already producing biogas and converting that to renewable electricity supported by government incentives. The overall impact on emissions by switching the biogas from being used for renewable electricity to having it be processed as renewable gas should be considered if those projects were to be eligible under the target.

ENA supports the initial target but recommends that a key feature of the 3-year review should be on increasing this target.

Q2: Could industry potentially deliver volumes greater than 4.5 PJ by 2035?

ENA's gas members are providing information on specific projects and opportunities for renewable gas available to their networks. This is significantly above 4.5 PJ by 2035.

Additionally, Future Fuels CRC has carried out several assessments of biomethane opportunities and the impact of supportive policy settings to get this renewable gas to market. Their latest report⁸ identifies how the first 20 PJ of biomethane by state could be brought to market via a range of mechanisms such as enabling markets for other revenue streams (e.g. digestate), introducing a renewable gas incentive (such as proposed by the Directions paper) and recognition of abatement opportunities through accessing ACCU's.

⁸ Future Fuels CRC (2025), *RP1.2-06 Report 2: Identifying most investable sites_FinalPublished_.pdf*

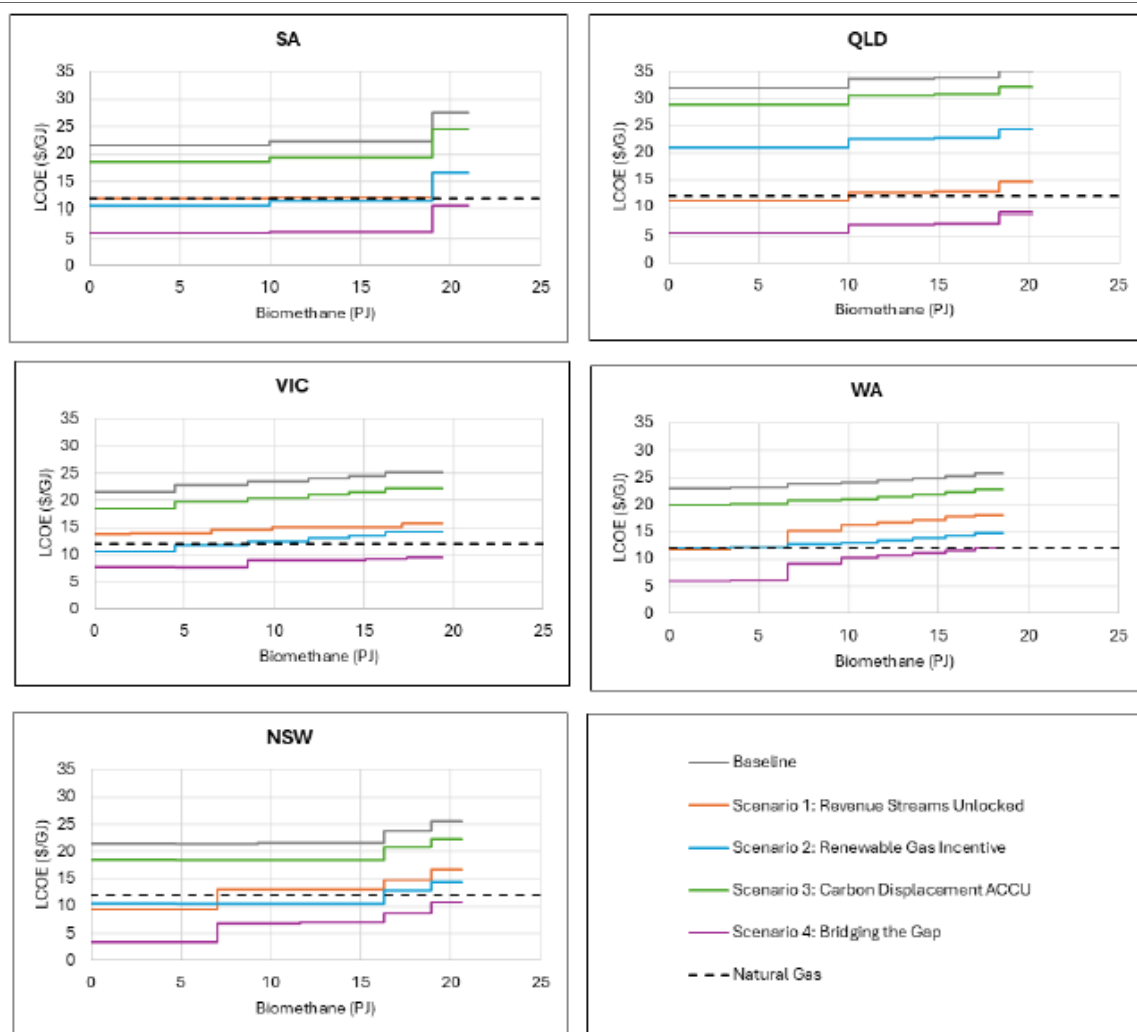


Figure ii - Cost curves of the first 20PJ of biomethane in each state. The coloured lines represent the four policy enabled scenarios.

As can be seen, a renewable gas incentive of \$11/ GJ creates a volume of biomethane in Victoria of around 12 PJ at a cost similar to or below the natural gas price. Combinations of the above policy settings (e.g. combining a renewable gas incentive and accessing revenue streams) could increase the volume of commercially available biomethane.

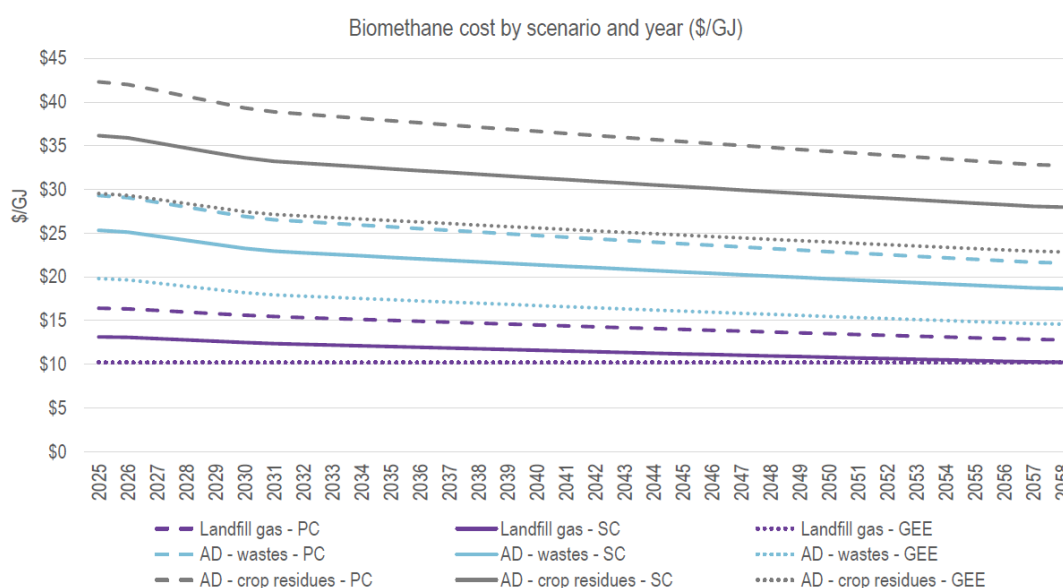
The stepwise nature of the above chart reflects increasing costs for feedstock that is more difficult to collect and/or process and/or connect to the gas infrastructure. The design of a certificate scheme should consider how the incentive provided by those certificates can contribute to making offsetting the cost differential between the biomethane produced (from different feedstocks) and the natural gas price. While a Feed in Tariff may provide less administrative overhead, a Contracts for Difference scheme may produce a better match for different feedstock types but will require more administrative overhead. A recent report by KPMG⁹ for ENA outlines how FiT or CFDs can be implemented. They note that the first important step is to set an ambitious but realistic target and we responded to that in Q1.

⁹ <https://www.energynetworks.com.au/resources/reports/kpmg-report-policy-options-to-support-australias-decarbonisation-journey/>

Q3: How should the dual ambitions of scaling up a renewable gas sector while directing renewable gases to their highest-value use cases to drive additional decarbonisation be managed?

Renewable gas can be produced via different technology pathways with very different cost structures. ACIL Allen¹⁰ provided the following input during the ongoing development of the inputs for the 2026 AEMO's Integrated System Plan. The ACIL Allen data indicates declining biomethane costs over time for different technologies (and scenarios), with cost from landfill gas being the lowest, followed by those from anaerobic digestion of wastes and then agricultural cropping residue. The data provided is an average for technology types and individual projects will have their own specific costs.

Biomethane costs by scenario and year



Note: AD = anaerobic digestion; PC = Progressive Change scenario; SC = Step Change scenario; GEE = Green Energy Exports scenario

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A flat pricing structure, as initially adopted by the RET, results in the lowest cost technology being developed. This is ideal when using a market based mechanism to achieve the lowest cost of abatement. Unfortunately, it does not support the development of a broader range of technologies. This was an observation from the early days of the RET, where the lowest cost technology was supported (being wind) and supplementary measures were needed to support other renewable technologies, such as large scale solar. ARENA¹¹ announced a new funding round in 2015 and supported twelve projects via its Large Scale Solar program. This provided a 25 per cent reduction in capital costs for large scale solar technology and increased the competitiveness of that technology.

Given the observations of the Large Scale Solar round, the Victorian Government should consider whether the renewable gas target should purchase abatement at the lowest cost, or supplement a target with support for specific technologies that are not yet commercially viable.

¹⁰ ACIL Allen (2024), *Renewable gas outputs – draft results – input for the 2025 IASR, AEMO*.

¹¹ <https://arena.gov.au/renewable-energy/large-scale-solar/>

Consideration should also be given to a requirement of additionality of biogas/ biomethane production, as noted in the response to Question 1.

Cost Recovery

Q4: Should the costs of a renewable gas certificate scheme be recovered from all gas users, including residential and small commercial (i.e. Tariff V) users? OR Should the costs of a renewable gas certificate scheme be recovered from industrial gas (i.e. Tariff D) users only?

One of the objectives of the Renewable Gas scheme is to reduce emissions from ongoing gas use by Victorian customers. Since this is a regulatory intervention, the associated reduction in emissions becomes a public good where all Victorian customers benefit. Furthermore, it is a national good and the scheme should ensure it can work alongside a national Renewable Gas Target if it eventuates in the coming years.

As a public good, it may be appropriate to spread the costs of the scheme to as wide a customer base as possible. It could be socialised across all Victorian residential, commercial and industrial gas customers.

Alternatively, if businesses were to seek their own benefits by purchasing additional certificates to meet internal guidelines, this should be at their own expense. It could be argued that this could also be a social good, but as it is over and beyond the regulatory requirement, it provides additional benefits to that business (e.g. being able to promote itself as net-zero), which may provide additional revenue opportunities that should not be subsidised by the broader community.

Liabe Entity

Q5: Should the liable entity (i.e. the organisation that must procure and surrender certificates in line with annual targets) under any Victorian renewable gas certificate scheme be: Licensed gas retailers along with wholesale energy purchasers who do not procure gas through a licensed retailer? OR Are there other actors that could potentially be liable entities?

Noting the above preference for recovering the costs from all gas customers, the preferred liable entity should be licensed gas retailers along with wholesale energy purchaser who do not procure gas through a licensed retailer.

This approach is similar to the Commonwealth Government's Renewable Energy Target and the familiarity and prior experience of administering a familiar scheme may minimise the administrative burden of the scheme.

Others

Are there any other comments ENA should make?

Victoria is connected to the east coast gas system. This has historically allowed gas produced in Victoria to flow north to New South Wales. However, the infrastructure also provides opportunities to bring gas down from Queensland, South Australia or New South Wales.

Australia's estimated biogas potential by biomass stream and region was estimated by Deloitte in 2017. This indicated an east coast biogas supply of around 268 PJ from a range of sources including urban waste, livestock residue and agricultural cropping waste. This biogas, once produced outside of Victoria could be injected into transmission pipelines to meet the demand of Victorian gas users. The east coast is interconnected and gas can be shipped from where it is produced to where it is needed, as has been done for many years. This creates opportunities for Victoria to consume higher volumes of renewable gas compared to that which can be produced

from feedstocks available within its borders, and for the continued utilisation of valuable gas transmission infrastructure, ensuring competitive gas prices over time for Victorian gas customers.

Table 3.5 Estimated biogas potential by biomass stream (PJ), and potential biogas supply as a share of regional gas consumption from the distribution network (%)

State	Urban waste	Agricultural crop residue	Livestock residue	Food processing residue	Total biogas (PJ)	Biogas potential (excluding agricultural crop residues)	Total biogas potential
NSW	3.5	75	8.8	0.6	88	15%	103%
VIC	2.4	38	6.8	0.4	48	5%	27%
QLD	8.6	66	8.8	0.6	84	70%	327%
SA	3.3	40	1.9	0.2	46	17%	142%
WA	1.7	100	1.4	0.4	103	13%	384%
TAS	0.2	0.4	0.4	0.0	1	23%	36%
ACT	0.2	0.0	0.0	0.0	0.3	2%	3%
Total	19.9	319.4	29.3	2.2	371	14%	102%

Source: Deloitte analysis based on biomass and waste data from (AREMI, n.d.). Benchmark biogas yields from (Sustainable Energy Authority of Ireland)

Source: Deloitte Access Economics (2017), *Decarbonising Australia's gas distribution networks, a technical report for Energy Networks Australia*.