

B5 B&O Workshop #1

17 - 23 Mar 2022

Poll results

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- What are the most relevant economic barriers to AD deployment? Pick the three most relevant
- Are there any other major economic barriers not listed yet? Please drop a quick note.
- What are the most relevant technological barriers to AD deployment? Pick the three most relevant
- Are there any other major technological barriers not listed yet? Please drop a quick note
- What are the most relevant social barriers to AD deployment? Pick the two most relevant.
- Are there any other major social barriers not listed yet? Please drop a quick note
- What are the most relevant environment barriers to AD deployment? Pick the one that is most relevant.
- Are there any other major environment barriers not listed yet? Please drop a quick note
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What are the most relevant economic barriers to AD deployment? Pick the three most relevant
(1/2)

0 2 0

Costs/capital requirements



Competition with other fuels



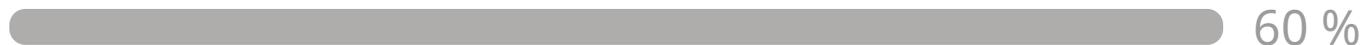
Lack of R&D funding



High costs of production, cleaning and upgrading



Lack of subsidies and support



What are the most relevant economic barriers to AD deployment? Pick the three most relevant (2/2)

0 2 0

Uncertainty with creating value from AD



Are there any other major economic barriers not listed yet? Please drop a quick note.

0 1 3

(1/2)

- Commuting to biogas as a user means that you are also committing to natural gas for makeup fuel to meet demand
- Competition from other waste disposal methods (some non-compliant)
- Security of feedstock availability ACCU entitled for feedstock diverted
- Not sure if this comes under 'Social' or 'Economic', but the commercial aspect of securing feedstock supply agreements (agreed volumes and timelines of supply)
- Infrastructure cost for biogas upgrade or biogas utilisation is high. Investment is not viable unless exceeding a certain size.
- Emphasis on green H2 in investment and research space
- Focus on these barriers first and foremost
- Digestate reuse barrier Long term feed stock certainty
- Balance of plant can also be significant

Are there any other major economic barriers not listed yet? Please drop a quick note.
(2/2)

0 1 3

- lack of long-term feedstock contracts
- Alternative value of feedstock eg as fertilizer
- Lack of incentives for companies to use biogas
- The uncertainty of electricity prices and how they'll change.

What are the most relevant technological barriers to AD deployment? Pick the three most relevant

0 2 2

(1/2)

Infrastructural



Feedstock supply and transport



Being reluctant in signing long-term agreements



Long distances between biogas unit and targeted feedstocks



Lack of industrial experience on biogas



What are the most relevant technological barriers to AD deployment? Pick the three most relevant

(2/2)

0 2 2

Lack of reliable information and guidelines



Lack of industry partners to co-develop biogas projects



Are there any other major technological barriers not listed yet? Please drop a quick note (1/2)

0 1 4

- ADs produce a waste/by-product stream. Acceptance of disposal and/or further end use options for this by-product stream
- Access to networks for electricity / gas sale in smaller rural and remote opportunities
- Lack of proven / established technology providers
- Techniques to monitor/evaluate feedstock quality, gas quality, and digestate quality
- RE100 compliant fuel that can be substituted with biogas in order to make up the full energy requirement of a user. Not many options currently available.
- Lack of small, modular, low maintenance systems for on-farm use.
- Acceptability of digestate as a product for re-use
- Every project is different because it's site specific science. So it takes some work to even determine if there is a project. People also see issues with having to have new expertise on site.
- Consistent availability and

Are there any other major technological barriers not listed yet? Please drop a quick note (2/2)

0 1 4

- mix of feedstock
- limited choices of technology providers
 - Integration with existing operations
 - Not enough demonstration sites
 - Expertise in digesting a broader range of feedstocks that might be found in the ag space (i.e. poultry, sugar, etc.)
 - Feedstock consistency. We've definitely had issues with that. Initially it was great, but then changed a lot.
 - Too many of the options were economic

What are the most relevant social barriers to AD deployment? Pick the two most relevant.

0 2 0

Complex 'ecosystem' of partners



Trust – need for collaborative partnerships



Lack of stakeholder engagement – place-based issues



Limited public understanding of biogas production



Are there any other major social barriers not listed yet? Please drop a quick note (1/2)

0 1 1

- We care too much what people think. They build houses right now an STP and now we have to worry about smells from a pre-existing sites.
- Gas is dangerous
- Perceived to be 'not as good' as composting
- Lack of understanding /education/awareness from the community of the environmental and climate implications of business as usual compared to AD and bioenergy
- Concerns with the risk of disposing of digestate. Ag based projects can be treated as industrial waste (largely driven by State based regs)
- Acceptance and/or recognition of biogas and "green gas" broadly as true renewable/sustainable solutions
- NIMBY concerns about odour, truck movements, pests
- Concerns about biohazards from transport of feedstock
- Moving mindsets from business as usual to new approaches
- Socialising across government

Are there any other major social barriers not listed yet? Please drop a quick note
(2/2)

0 1 1

agencies and financial institutions is paramount

- Councils take several years to act
- Getting local community onboard (NIMBY issues)

What are the most relevant environment barriers to AD deployment? Pick the one that is most relevant.

0 1 8

Characteristics of biogas

6 %

Characteristics of feedstock

44 %

Quality of feedstock supplied (need for additional processes/treatment)

50 %

Are there any other major environment barriers not listed yet? Please drop a quick note

0 1 0

(1/2)

- Removal CO2 and H2S
- Agricultural crop vs residue
- The community understands that using biogas for energy still produces CO2 - need for carbon capture and storage to close the loop?
- Biogas converted to biomethane does not give users a carbon benefit. This is environmental reporting issue at the fed level. Limits the voluntary market for biomethane supply
- approvals processes - both town planning and environmental.
- Changing regulations re transport of farm residues between sites.
- Confusion caused by some organisations calling AD feedstock a good waste
- Any waste to energy project has the public thinking burning stuff and therefore no good e.g. DKRs
- Disposal of digestate. FOGO digestate needs to go back to landfill based on state regs.
- Concerns over odour from biogas systems/ digestate ponds
- regulatory and community

Are there any other major environment barriers not listed yet? Please drop a quick note
(2/2)

0 1 0

- acceptance of disposal and end use of digestate
- Acceptability of digestate as a product for reuse
- characteristics of digestate

What do you see is the key role of a regulatory framework for biogas and biomethane?

0 1 1

(1/3)

- To connect local biomethane supply to international markets where incentives are available. This could be done via our international gas supply chain (i.e. LNG and domestic gas system)
- Challenge will also be the crediting periods on ERF and markets for credits for biogas
- To ensure all renewable gases are recognised equally (biomethane and hydrogen)
- Accounting for the full carbon benefit of AD (renewable fertiliser, renewable gas, biogenic CO₂)
- Safety, compliance, fairness and transparency enabling policy mechanisms to work.
- State based schemes need to dovetail into fed policies. As an example, the NSW RGC does not reduce emissions for a user under the federal government's emissions reporting framework
- Consistency of regulatory approach across state borders (i.e. a national approach)
- to facilitate projects - to work

What do you see is the key role of a regulatory framework for biogas and biomethane?

0 1 1

(2/3)

towards how projects can be implemented, recognising their role in CO2 abatement, waste management etc, rather than "regulate"

- To harmonise it with existing framework so developers know what's ahead of them, makes it easier to design appropriate laws, policies and laws accordingly and levels the playing field so incumbents can't bitch and moan about this aspect.
- Certainty and incentives.
- Challenge is to balance the

regulation of emissions reduction / biogas vs incentivization. Victoria recently released draft guidelines on managing greenhouse gas emissions that could be read as a legislative requirement that would mean ERF would not apply

- To support users and suppliers of biomethane to come together. To facilitate policy to create incentives for development and reduce costs for users
- Key for this industry is get biomethane recognised as a

What do you see is the key role of a regulatory framework for biogas and biomethane?

0 1 1

(3/3)

zero emissions gas under NGER, CERT and Safeguard Mechanism. At the moment, users who purchase the gas cannot receive emissions benefits from buying it. This limits the market uptake

- Safety, incentives
- Ensure quality, safety, reporting
- Feed in Tariffs or RNG biogas certificate scheme
- There's uncertainty about the future value of RECs, LGCs especially. If there could be certainty

for this, it would be much easier to make a business case stack up!

- "LGCs" for biogas!

How can carbon mitigation benefits be better recognised and rewarded?

003

- A change to NGER to support biomethane, inclusion of biomethane in CERT and the ability for biomethane to reduce emissions for Safeguard Facilities Method reporting entities. The market wont purchase biomethane if it cannot reduce its Scope 1 emissions
- More methodical optiond
- Remove the current limits for crediting in ERF, particularly now the Commonwealth are stepping back as a major purchaser.

What policy drivers could be introduced to support AD/Biogas and Biomethane?

008

(1/2)

- . streamlined approval process - maybe a code/guidelines prepared by State Planning Authorities to help smaller councils understand and consider applications. . careful consideration of how much farm residue needs to be regulated when transported between sites. . Gas Safety - in qld, AD plants have to pay a safety licence and inspection fee similar to CSG a
- Inclusion of biomethane/AD in the Low Emissions Technology statement.
- Feed in tariffs / biogas certificate scheme Mandate or target for % RNG in grid
- Extension of the H2 Guarantee of Origin scheme to support biomethane.
- Grants, pilots, tax incentives
- Clearer, more transparent pathway through the compliance regime and maybe even some support for initial leaders
- Tax fossil fuel gas higher
- Bring back CTIP
- Streamlining approval processes

What policy drivers could be introduced to support AD/Biogas and Biomethane? (2/2)

008

- Extension of ERF methods to support a larger supply of bioenergy resources (i.e. ag waste)
- Feed in tariffs / biogas certificate scheme Mandate or target for % RNG in grid

What renewable gases should be recognised in the existing National Gas Market laws?

003

- A given!
- Biomethane is interchangeable with natural gas. We can go to 100%. In some distribution networks we are looking at transitioning to 100% biomethane
- Qualifier on other responses:
Green hydrogen
- Biogas behind the meter, biomethane to the grid, hydrogen and upgraded syngas
- Biomethane, hydrogen and renewable methane (hydrogen methanated with biogenic CO₂)

Should the existing market institutions (AEMC, AER, AEMO) have primary responsibility in respect of biomethane?

0 0 4

- Yes, could get messy, inconsistent otherwise
- yes. Please no more bureaucracy
- I don't know - Don't have enough knowledge of the gas market
- Yes. Leverage existing market operators to reduce costs for consumers

A question for further discussion: What “laws” could be introduced to support AD/biogas and Biomethane?

0 0 4

- Set a binding target for a 100% green gas grid. Perhaps 2050 with incremental targets every year.
- Renewable Fuel Standard for bioCNG into vehicles
- Extend H2 GoO for biomethane. CERT for biomethane. NGER changes. Biomethane into the LET. Renewable gas target for our regulated pipelines
- Renewable Gas Act? (like the Renewable Energy (Electricity) Act)
- Don't do what Calif. originally did!!