ESO

Greengassupport@energysecurity.gov.uk (by email only)

National Grid ESO
Faraday House
Gallows Hill
Warwick
CV34 6DA

Claire.Dykta@nationalgrid.com
nationalgrideso.com

25th April 2024

ESO Response to Future Policy Framework for Biomethane Production

Dear Green Gas Support team,

Thank you for the opportunity to respond to your Call for Evidence on the Future Policy Framework for Biomethane Production.

Who we are

As the Electricity System Operator (ESO) for Great Britain, we are at the heart of the energy system, balancing electricity supply and demand second by second.

Our mission, as the UK moves towards its 2050 net zero target, is to drive the transformation to a fully decarbonised electricity system by 2035, one which is reliable, affordable, and fair for all. We play a central role in driving Great Britain's path to net zero and use our unique perspective and independent position to facilitate network and market-based solutions to the challenges posed by the energy trilemma.

As National Energy System Operator (NESO) we will continue to build on the ESO's position at the heart of the energy industry, acting as an enabler for greater industry collaboration and alignment. We will unlock value for current and future consumers through more effective strategic planning, management, and coordination across the whole energy system.

Our key points

Biomethane has an important role to play in the transition to net zero and we support the Government's plans to introduce a framework to reduce barriers, increase investment and enable a long-term market.

Biomethane is a flexible fuel that could support decarbonisation in a number of different sectors. In the shorter term, biomethane can continue to have a valuable role in decarbonising gas supplies. In the longer term, biomethane should be prioritised for industrial sectors which are difficult to decarbonise through electrification or conversion to hydrogen and potentially as a fuel for power generation during wind droughts.

Our upcoming Future Energy Scenarios 2024 will provide further detail on the potential end-uses for biomethane in the different pathways to net zero.

Biomethane production must be underpinned by clear sustainability requirements to ensure expected greenhouse gas emission savings are actually delivered and that the environment is protected. We have set out some suggestions regarding assessing feedstocks and how to prioritise them.

We have responded to a number of questions which are relevant to our work and expertise, please find these below.

We look forward to engaging with you further. Should you require further information on any of the points raised in our response please contact Katy Read, Whole Energy Insight Manager at katherine.read@nationalgrideso.com.

Yours sincerely

Claire Dykta

Director, Strategy and Policy

Appendix 1 Consultation Question Responses

Question 1. a) Do you agree with the principles as a basis on which to develop the policy framework? b) Are there any crucial factors missing?

We agree with the principles, although consideration should be given to how the principle of adaptability applies to Advanced Gasification Technologies. The “potential use for production of other fuels, including hydrogen” is included as one of the adaptability factors. However, if this is applied to Advanced Gasification Technologies, they may be disadvantaged in future support schemes given they are not an efficient way to produce hydrogen. The principles need to also take into account the benefits of technologies utilising a different mix of feedstocks to anaerobic digestion, that results in a higher overall potential volume of biomethane production which supports the transition to net zero.

Question 2. Are there any other important current or future barriers to market growth not mentioned in Chapter 1 and what actions could the government or industry take to address them? Please provide supporting evidence, including any that highlights the scale of the impact.

Community opposition can be a barrier to market growth. The reasons behind this and how communities could be engaged and supported should be considered as part of the future framework.

Question 6. What are the most important end-uses for biomethane in the transition to net zero by 2050, and what are the implications for the framework? Please provide supporting evidence where possible.

We think that the most important end-uses for biomethane may evolve over time. In the shorter term, biomethane can continue to have a valuable role in decarbonising gas supplies to reduce the CO2 impacts of industrial and heating customers as well as contributing to low carbon electricity generation.

However, as we move to 100% zero carbon electricity, biomethane will have a more impactful role in decarbonising those sectors where electrification is more challenging and particularly as an intermediate measure where electricity grid reinforcements are taking place or where end-user assets are less economical to repurpose.

Longer term, there may be greater need to prioritise the use of biomethane for those industries hardest to decarbonise that are not located within industrial clusters with access to hydrogen, and potentially as a fuel for electricity generation during wind droughts. Maintaining parts of the gas network, and storage, for biomethane may have a number of advantages since it would be wholly compatible with existing infrastructure, could be readily blended with natural gas and requires around a third less storage volume compared to hydrogen. Where possible, the addition of BECCS would support the transition to net zero.

Our upcoming Future Energy Scenarios 2024 publication will set out further detail on the potential end-uses for biomethane in the different pathways to net zero, as well as where we see BECCS playing a role.

Question 13. What are the most significant barriers to store and transport the CO_2 to sequestration sites? Where possible, please answer with reference for a range of different sizes and types of biomethane plants.

CCS transport and storage at scale is as yet unproven, and biogas does not feature in planned first of a kind projects.

The government has set a minimum target of 20 Mtpa of capture capacity by 2030, however we note that there are only 8 Mtpa of projects currently shortlisted for funding, none of which are related to biogas. Consideration should be given to how this current gap could be addressed.

We would expect location to be a significant dependency. CCS infrastructure is expected to be concentrated around industrial hubs, so biogas plants not in those areas will find it hard to connect into the system. Small scale CCS on-site would be a costly alternative.

Question 23. a) Do you agree with the criteria set out in this chapter for assessing feedstocks? b) Are there any additional criteria that we should consider?

We agree with the criteria - they provide a solid foundation for ensuring that biomethane production is sustainable, regarding costs, emissions, air quality, land use and water quality.

Additional criteria to consider are:

Soil Health and Biodiversity Impact: It may be worth considering the impact of feedstock production on soil health, including soil carbon stocks, and soil fertility. The impact on biodiversity could be assessed to ensure that biomethane production does not lead to negative ecological outcomes, especially from energy crops and any feedstock that requires land use changes.

Supply Chain Sustainability: The sustainability of the feedstock supply chain could be assessed, including transportation emissions, energy use, and the processing of the feedstock. This ensures that the full lifecycle impact of biomethane production is considered.

Question 26. What are your views on the approaches set out in Chapter 4 for prioritising feedstocks? Are there any alternative approaches that we should consider for future policy?

The approaches set out in this chapter for prioritising feedstocks address the importance of biomethane production sustainability while also recognising the operational challenges.

Based on these, a hybrid and regional approach might be worth considering. For example, in regions with sufficient feedstock availability, mandating a certain percentage of feedstock coming from waste sources

would be straightforward and effective. It might also be suitable to apply a more prescriptive approach regarding the selection of feedstocks to ensure they adhere strictly to sustainability criteria.

For other areas where feedstock availability is more limited or varied, flexibility would be beneficial. For these regions, setting ambitious sustainability targets offers AD plants the flexibility to choose their feedstock mix based on local circumstances. This could promote the use of the most sustainable options available without being overly prescriptive about the specific types of feedstock used.