

NEW BIOMETHANE:

Exploring future pathways and technologies for biomethane production beyond biogas upgrading

Preliminary Report of the EBNet workshop on novel and emerging sources of biomethane production

Jointly hosted by the Environmental Biotechnology Network working groups in Anaerobic Digestion, Anaerobic Fermentation, Bioelectrochemical Systems and Bioinformatics

The Leonardo Royal Hotel, Birmingham, 15-17th January 2025

Workshop participants

Angela Bywater, University of Southampton
Michael Chesshire, Lutra Ltd.
James Chong, University of York
Peter Coleman, DESNZ
Gavin Collins, University of Galway
George Fudge, WASE
Stefano Giacalone, BMA
Miao Guo, King's College London
Elizabeth Heidrich, Newcastle University
Lauren Hilton, Future Biogas Ltd
Ciara Keating, University of Durham

Richard Kershaw, Yorkshire Water
Chloe Langley, BBSRC
Joe Mann, AD Ingenuity LLP
Chris Moorin, Future Biogas Ltd.
Matt Reilly, University of York
Jhuma Sadhukhan, University of Surrey
Arne Seifert, Krajete GmbH
Mark Walker, University of Hull
Dyon Whiteley, WASE
Dr Yue Zhang, University of Southampton

Also contributing

Yadira Bajon-Fernandez Cranfield University
Sonia Heaven, University of Southampton

Workshop Facilitator

Mark Walker, University of Hull

Assisted by:

Louise Byfield, EBNet

Cite as: EBNet, 2025. Preliminary Report of the EBNet workshop on novel and emerging sources of biomethane production. <https://ebnet.ac.uk/resources/>.

Contact:

Dr Mark Walker, University of Hull, EBNet Anaerobic Digestion Working Group Lead.

Mark.walker@hull.ac.uk

The Environmental Biotechnology Network ebnet@ebnet.ac.uk



INTRODUCTION

On 15-17th January 2025 four EBNet Working Groups (WG) co-hosted a workshop bringing together key individuals in the field of novel biological pathways to produce 'New Biomethane'. The aim of the workshop was to assess new technologies and sources and put them in the context of national & international decarbonisation of energy and adjacent sectors. The event was attended by 20+ individuals with a range of backgrounds and expertise including representation from academia, industry, research funders and government.

WORKSHOP SCOPE

The scope of the workshop was defined to include the production of biomethane from novel or emerging processes and/or sources such as conversion of biomass through bioelectrical processes or CO₂ biomethanation. This meant that conventional biogas upgrading (CO₂ scrubbing or removal from biogas), or production of methane/syngas from thermal biomass processing were outside of the scope. For the purpose of the workshop, mainly for convenience in terms of the scope, biomethane included any methane produced through a biological process, independent of the carbon source (i.e. biogenic or fossil).

WORKSHOP OVERVIEW

The workshop was structured into a number of sessions where table-groups of participants were set a series of collaborative tasks relating to the development of New Biomethane. The workshop agenda is provided in Appendix 1. Tasks generally required the production of schematic diagrams, and these were photographed to record the workshop outputs. To record individual views on these diagrams, a voting system using colour 'dots' was used to express characteristics such as 'most/least important' 'unclear/needing more explanation' etc., which were also recorded as part of the workshop outputs.

Examples of the diagrams produced during the workshop are shown in Appendix 1. These will be analysed, digitized and summarised in the final report of the workshop. In addition, subsets of the data will be presented at conference(s) including the upcoming Carbon Recycling Network Conference on 10-12th March 2025. Outputs will also be used as the basis for a strategy document for circulation to relevant bodies and individuals (e.g. funding agencies and government and regulatory bodies), and will include technology development roadmaps, systemic integration opportunities and impacts of at-scale deployment of the chosen technologies.

APPENDIX 1 – WORKSHOP AGENDA

Date	Time	Activity
15/01/2025	1200	Lunch and registration
	1330	Session 1 - Workshop scope and participant introductions
	1500	Break
	1530	Session 1 - Extended introductions
	1700	End of Day 1
	1900	Dinner
16/01/2025	0930	Session 2 - Technological pathways and innovation requirements (Task 1)
	1100	Break
	1130	Session 2 - Technological pathways and innovation requirements (Task 2)
	1300	Lunch
	1400	Session 3 - R&D/innovation pathways (Task 3)
	1530	Break
	1600	Session 3 - R&D/innovation pathways (Task 4)
	1730	End of Day 2
	1900	Dinner
17/01/2025	0930	Session 5 - Stakeholders and applications (Task 5)
	1045	Break
	1100	Session 5 - Stakeholders and applications (Task 5)
	1130	Group discussion and summary of next steps
	1200	Lunch

APPENDIX 2 – SELECTED EXAMPLES OF RAW WORKSHOP OUTPUTS (Individual's names are redacted)



