

HOW TO IDENTIFY SUSTAINABLE BIOMETHANE FEEDSTOCKS

ENSURING AN ADEQUATE & SUSTAINABLE SUPPLY

Meeting the EU's 35 bcm biomethane target requires a significant effort to identify and ensure an adequate supply of sustainable feedstocks. The Biomethane Industrial Partnership's Task Force 3.4 took a deepdive and developed a methodology to identify and select sustainable biomethane feedstocks.

A methodology to identify sustainable biomethane feedstocks

The Task Force 3.4 analysis leverages the collective expertise of the BIP Task Force members, combined with the multi-criteria approach developed by the *Biogas Solutions Research Center (BSRC) project*. This approach was adapted to the specific scope of the Task Force, serving to provide a set of selection criteria for identifying and selecting sustainable feedstocks for biomethane production:

Key question: Is this feedstock suitable for sustainable biomethane production?



AGRICULTURAL RESIDUES

Residues from harvesting, liquid and solid manure, etc.



AGRO-INDUSTRIAL WASTE AND RESIDUES

Waste and residues generated from processing of agricultural material



WASTEWATER & SEWAGE SLUDGE

Industrial and municipal wastewater, sewage sludge, etc.



ORGANIC FRACTION OF MUNICIPAL WASTE

Food waste from households, supermarkets, etc.



INNOVATIVE FEEDSTOCKS

Plant or aquatic biomass, etc.



DESCRIPTION OF FEEDSTOCK

Feedstocks can be categorised according to the type, key components, dry matter content, volatile solids percentage and Carbon-to-nitrogen ratio.



AMOUNT & VALUE OF BIOFERTILISERS

This criterion assesses the amount and value of digestate as biofertiliser obtained from the feedstock, considering aspects such as nutrient content and fertilising properties.



BIOMETHANE YIELD

Biomethane yield measures the gas output per unit of feedstock. The most reliable used assessment is the Biochemical Methane Potential (BMP) test.



TECHNOLOGICAL FEASIBILITY

Technological feasibility determines if the technologies and infrastructures exist and if they are available and applicable for biomethane production from feedstock.



SUITABILITY FOR ANAEROBIC DIGESTION

This criterion assesses if feedstock contains the necessary components for efficient digestion considering factors as biodegradability and other properties.



PROFITABILITY OR COST-EFFICIENCY

Producing biomethane from a specific feedstock should be profitable. Perspectives and opportunities vary based on the context.



ACCESSIBILITY OF FEEDSTOCK

Evaluating accessibility should consider geographical, physical and year-round accessibility, and opportunities for feedstock synergies when they differ in accessibility.



CONTROL & COMPETITION

This criterion assesses feedstock security, competition and the potential for producing alternative products, influencing long-term profitability and market value.



AMOUNT OF BIOMETHANE PRODUCTION

This criterion estimates the biomethane potential of the feedstock total amount, by combining biomethane yield (per feedstock unit) with an estimated feedstock quantity.



INSTITUTIONAL SUPPORT & SOCIETAL ACCEPTANCE

Utilising a specific feedstock for biomethane production should take into consideration the level of support by the government, other institutions and the general public.



NUTRIENT CONTENT & SUITABILITY FOR BIOFERTILISERS

This criterion assesses whether the feedstock has a desirable nutrient content and suitability for biofertilisers, focusing on aspects such as its characteristics and presence of undesirable substances.



ENVIRONMENTAL & GHG REDUCTION

Feedstock should yield the best results in terms of sustainability and GHG emissions savings criteria as laid down in the Renewable Energy Directive ((EU) 2018/2001).

ASSESSMENT CRITERIA

INVENTORY OF DATA

ASSESSMENT WITH SCALE DEFINITION

Quantitative and qualitative scales are defined for each criterion to facilitate the assessment process

ANALYSIS & INTERPRETATION

DECISION

Identifying sustainable feedstocks: paving the way to 35 bcm biomethane

This methodology outlines how to identify sustainable feedstocks and ensure an adequate and sustainable supply, that will help achieve the EU's ambitious 35 bcm biomethane target. Together, we are driving Europe towards a greener future with renewable energy solutions that are not only achievable but transformative.

NEXT STEPS



Scan the QR code and download the Task Force 3.4 report:



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