Practice Abstract 4: Planning Farm-Based Biogas Systems – A Tool to Estimate Potential and Environmental Benefits

COUNTRY AND CLIMATIC ZONE

Pan-European

CONTACT

hne@conterra.dk

3 BENEFITS OF THE PRACTICE

- Enables site-specific estimation of biomass availability and biogas potential.
- Assesses the environmental impacts of biogasification, including GHG emissions and nutrient cycling.
- Supports evidence-based planning for biogas deployment at both farm and regional levels.

PRODUCTION SYSTEM

N/A

KEYWORDS

Biogas, Emissions Reduction, Farm-Level Planning Tools

SUMMARY FOR PRACTITIONERS ON THE MAIN FINDING(S)/INNOVATIVE SOLUTION(S) – IN ENGLISH

HarvRESt's online biogas planning tool helps farmers and planners assess biogas potential and environmental impacts using real farm data. It supports decision-making at multiple scales, from individual farms to whole regions.

Funded by the European Union

LONGER DESCRIPTION – IN ENGLISH

The Online Tool for Biogas Planning, developed by HarvRESt, provides agricultural stakeholders with a powerful resource to evaluate biomass potential**,** biogas production, and associated environmental effects such as greenhouse gas (GHG) emissions and nutrient cycling outcomes.

What sets this tool apart is its integration of farm-specific activity data into well-established biogas and environmental models. The system continuously ingests updated data from participating farms and uses this to feed dynamic calculation modules that reflect the latest conditions on the ground.

Key functionalities include:

- Estimating biogas potential from diverse organic feedstocks (e.g., manure, crop residues)
- Calculating GHG mitigation effects from biogasification, comparing scenarios with and without biogas adoption
- Evaluating changes in plant nutrient cycles, such as nitrogen and phosphorus balances
- Generating spatial analyses: Results can be queried at multiple geographic scales – from an individual farm to entire regions – making it highly flexible for different planning contexts

The tool supports a wide range of stakeholders, including farmers evaluating on-site biogasification, policymakers designing regional energy strategies, and consultants modelling GHG reductions.

Its visualisation and query options help bridge the gap between technical modelling and practical planning, offering transparent, data-driven insights to advance sustainable bioenergy deployment in agriculture.

ADDITIONAL DISSEMINATION AND COMMUNICATION MATERIAL(S)

Title/Description: Online Biogas Planning Tool (ConTerra)

URL: TBD

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