



NUTRI•KNOW

# Policy workshop: Barriers and Opportunities for Circular Fertilisers and Energy

29 April 2026

Brussels



# Agenda

**Feedback letter on Nitrates Evaluation**  
October, 2025

**The Nitrates Directive**

**ReNure**

**Fostering sustainable microalgae cultivation in Europe as a local source of alternative protein**  
October, 2025

**Take-home messages**

- Sustainable microalgae production requires reduced reliance on nitrogen and critical phosphorus resources.
- Market growth is constrained by high production costs, unfamiliarity for consumers, and limited presence in mainstream supermarkets.
- Policy support should encourage R&D investment for efficiency, financial incentives for circular cultivation, and procurement to increase consumer acceptance and market penetration.

**1. Introduction**

Within the European Green Deal, the Farm to Fork strategy and resilient food system within the EU. As part of this effort, algae present a promising solution as they grow in arable land, they do not require pesticides, and their side-streams from other industries, reducing reliance on virgin resources.

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Despite these advantages, microalgae production faces several barriers including high initial investment costs, biomass, and a heavy dependence on mineral nutrient sources for cultivation.

To unlock the full potential of algae as a source needed to foster industry growth, drive innovation, and improve food security in Europe.

**2. Recycled nutrients suitable for microalgae cultivation.**

Several residual streams from agricultural and industrial processes are available for recycling, which can be used as a nutrient source for microalgae cultivation. However, when these streams are recycled and reused effectively, they can contribute to a more circular and sustainable food system.

**Streamlining policy to support implementation of farm-scale digesters in Flanders and scaling in Europe**  
October, 2025

**Take-home messages**

- Farm-scale digestion contributes significantly to farm-level emission reduction, but its implementation in Flanders is stalled by complex permitting procedures and strict nitrogen regulations.
- Small-scale digesters should be allowed under permit exemptions or simplified notification procedures with clear environmental safeguards.
- Faster approval of emission-reducing technologies and a clear policy signal would unlock deployment and help meet climate and nitrogen reduction targets.

**Introduction**

Farm-scale anaerobic digestion, also known as pocket digestion, refers to the technology that produces green electricity and heat from on-farm manure and/or other agricultural residual streams to meet (part of) the farm's energy needs. The resulting product is rich in nutrients which can be recovered and specifically applied as a fertiliser. In the end, it fosters soil health, maintains and improves soil fertility, and also water that can be put to valuable use if recovered.

The technology is well established in Flanders, with close to 60 operational plants in 2024, mainly mono-manure digesters. Nevertheless, optimisation in view of improving production and further increasing the positive climate contribution is ongoing. Fresh manure digestion can reduce methane emissions from long-term manure storage on a standard dairy farm by up to 70%. In terms of overall manure and energy related GHG emissions of a standard dairy farm, considering storage and application on a farm. Moreover, farm-scale digestion can serve as a catalyst for additional ammonia emission reduction when combined with advanced and sustainable manure management or downstream digestate treatment techniques, such as stripping, scrubbing, for nutrient recovery. Together with advanced and sustainable manure management, this navigates more and more farmers towards an economically profitable and ecologically future-proof model. The years 2023 and 2024 were therefore marked by numerous initiated (permit) processes. Nevertheless, the failure to effectively grant permits was also the harsh reality for (small-scale) biogas projects.

A recent sector survey by Biogas-E shows that the permitting (procedure) is perceived as very complex, mainly due to the stringent nitrogen regulation for agricultural projects, which is also still in jeopardy and causes a near stand-still. This bottleneck results in conflicting advice, a complex preliminary study and a long lead time - things that are

## Feedback & next steps

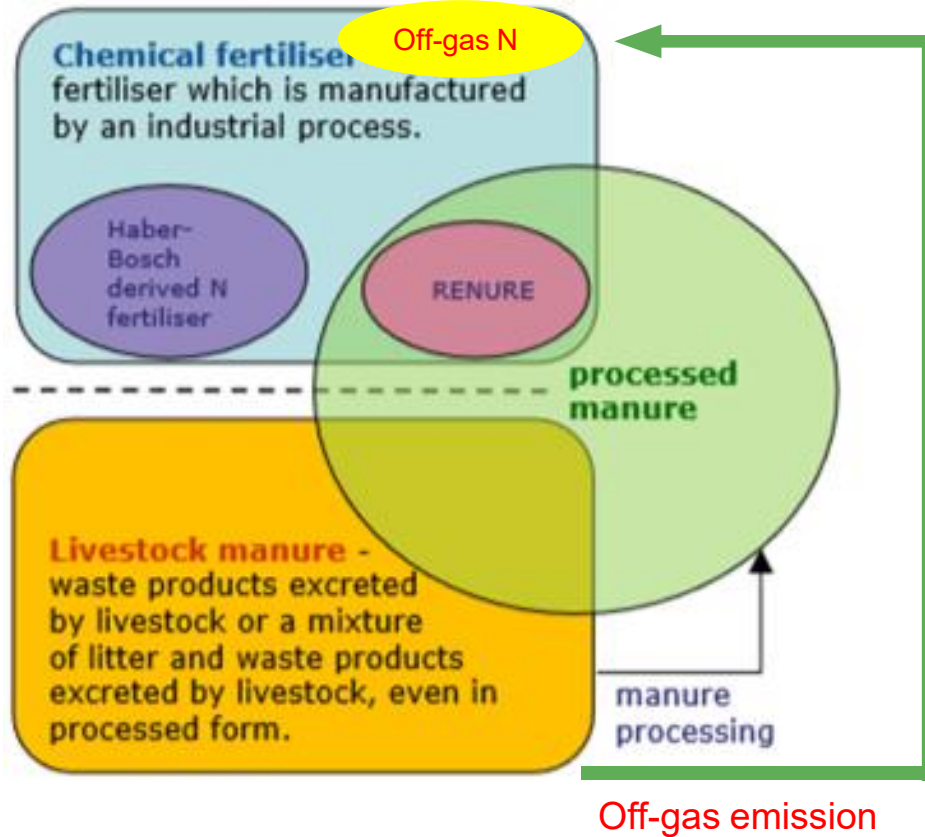


Panel discussion

## Three policy briefs



# Policy brief 1: RENURE as alternative fertilisers



12 March 2024

Joint feedback on the Nitrates Directive Evaluation

28 May 2025

Joint letter on the implementation of RENURE

- Closer dialogue between policy makers and EU-projects on nutrient recycling;
- Implementation of the RENURE criterion defined by the EC-JRC in conclusion to the SAFEMANURE evaluation;
- Harmonize legal status of ammonium salts derived from emissions.



# Policy updates on RENURE

## 19 September, 2025

Amendment to the Nitrates Directive was approved in the Nitrates Committee

## 9 February, 2026

Amendment has been in force but still needs to be transposed into national legislation

- **Application:** maximum 80 kg RENURE nitrogen per hectare per year.
- **Quality requirements:** no heavy metals and strict control of composition.
- **Restrictions:** no expansion of livestock numbers.

storage  
reporting  
low-emission techniques  
Criteria  
production  
quality  
monitoring  
application  
environmental impact



# Policy brief 2: implementation of pocket digestion



**Pocket digestion** for on-site manure processing to produce bioenergy and biobased fertilisers

## Challenges

- × Complex **permitting** procedure due to the emission related regulations



## Recommendations

- Accelerate recognition of emission-reducing technologies;
  - Exempt this technology from the permit obligation or make the implementation possible via a notification;
  - Issue a clear policy signal to break the deadlock around this mature technology.
- ✓ **A dedicated document is being developed by Biogas-E and INAGRO to map the environmental aspects of permit applications for pocket digesters.**



# Policy brief 3: microalgae as alternative protein



**Circular protein** from microalgae cultivation as local produced alternatives for imported soyameals

## Challenges

- × No mature **market** for algae as novel protein source;
- × Unclear **end-of-waste** status of proteins derived from residual streams;
- × Conceivable **risks** and **quality requirements** for circular protein



## Recommendations

- Targeted economic incentives to close price gap;
- Strategic demand creation through public sector, consumer-focused initiatives and events;
- Establish Circular Protein Platform to support knowledge exchange and regulatory coordination.

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**what is your main  
professional activity?**

① Start presenting to display the poll results on this slide.



## what is your main professional activity? (1/2)

0 5 4

Farmer/practitioner

● 2 %

Farm advisor

● 0 %

Technology provider

▬ 9 %

Fertiliser production

▬ 4 %

Food industry

● 0 %

Research & Academia

▬ 57 %

## what is your main professional activity? (2/2)

0 5 4

Public administration

▬ 6 %

National food authorities

● 0 %

Financial Institution

● 0 %

Media

● 0 %

Civil society organisation (CSOs, non-profit)

▬ 9 %

Other:

▬ 13 %

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**Which country is your activity based on?**

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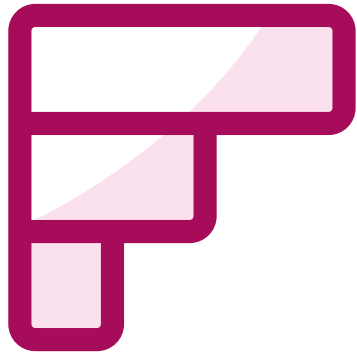
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**What are the major challenges/concerns of implementing RENURE/pocket digestion/algae cultivation technologies and products?**


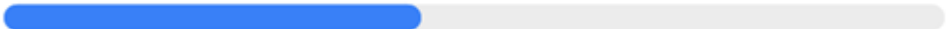
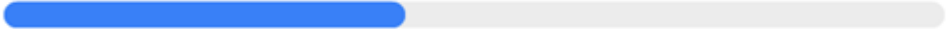
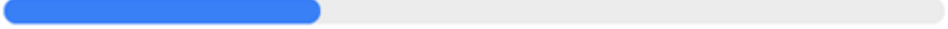
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## What are the major challenges/concerns of implementing RENURE/pocket digestion/algae cultivation technologies and products?

(1/2)

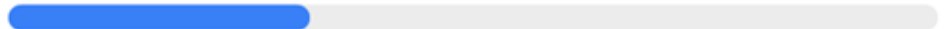
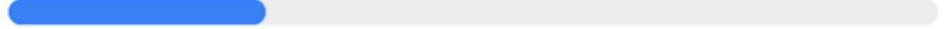

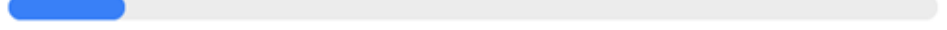
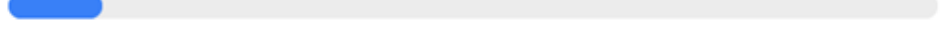
0 5 2

1. Lack of legal clarity regarding the regulatory status of the technologies/products  
 4.94
2. Lack of information on the cost structure of implementing the technologies/products  
 3.83
3. Additional investment is needed to produce or apply the technologies/products  
 3.67
4. Misalignment between EU-level legislation and national implementation rules  
 2.85

## What are the major challenges/concerns of implementing RENURE/pocket digestion/algae cultivation technologies and products?

(2/2)

0 5 2

5. The financial support from government is not sufficient  
 2.73
6. There is a lack of confirmed results/successful cases from historical implementation  
 2.29
7. Specific skills are needed to implement the technologies/products  
 1.89
8. I am not aware of the technologies/products  
 0.89
9. other  
 0.65





# Results from NUTRI-KNOW survey in 2023

1. Lack of legal clarity regarding the regulatory status
2. Misalignment between EU-level legislation and national implementation rules
3. There is a lack of confirmed results/successful cases from historical implementation
4. I am not aware of the technologies/products
5. Specific skills are needed to implement the technologies/products
6. Lack of information on the cost structure of implementing the technologies/products
7. Additional investment is needed to produce or apply the technologies/products
8. The financial support from government is not sufficient



# Talk to our panelists



**Mr. Benjamin van Doorslaer**



**DG AGRI**



**Mr. Ignasi Salaet**



**Mr. Klaas Vanhee**



**Dr. Marcella de Souza**



Funded by  
the European Union



# Wrap-up





# NUTRI•KNOW

## Thank you!

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