

Nutrient Recycling Community



Anaerobic digestion and biogas valorisation

Anaerobic digestion is a **widespread** technology that is **conventionally implemented** for solid or liquid organic waste valorisation. Two by-products are obtained: **digestate and biogas**. Digestate is often high in carbon and nutrients, which, if appropriately managed, shows potential as **soil amendment** or **organic fertiliser**, although it can be used to obtain other specific products. After its suitable treatment, biogas can be upgraded to **biomethane** which shows potential to partially substitute natural gas.

Other potential products:

Bio-based fertilisers: Raw digestate or after its transformation

Innovative applications raised by speakers:



- Use of online sensors (e.g. NIR) for VFA monitoring in reactor
- Potential as pre-treatment for the recovery of lignin (use of lignocellulose degrading bacteria)

Benefits of the use of anaerobic digestion and recovered fertilising products:



- Use in marginal soils to grow perennial crops as carbon storage strategy or environmental eco-services

Key challenges to be addressed:

- Degradation of pollutants
- Inhibitory effect of some feedstocks

