

Demonstration plants



SYSTEMIC will demonstrate circular solutions for biowaste at five large-scale demonstration plants in the EU.

Demonstration plant	Products
Groot Zevert, The Netherlands 100 kton pig slurry and co-products	Biogas NK concentrate Calcium phosphate struvite Organic soil amendments
AM-Power, Belgium 180 kton manure and food waste	Biogas NK concentrate Ammonia water Organic fertiliser
Acqua & Sole, Italy 120 kton sewage sludge	Biogas Ammonium sulphate Organic fertilisers
RIKA - Friday's, United Kingdom 50 kton poultry manure	Biogas Ammonium sulphate Organic fertiliser
GNS-Benas, Germany 60 kton corn silage and 18 kton poultry manure	Biogas Ammonium sulphate Calcium carbonate Organic fertiliser



Our Partners



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SYSTEMIC
Circular solutions for biowaste

Urgency to close nutrient cycles



In the present economy, natural resources are becoming scarce and valuable nutrients are being lost, leading to significant environmental damage.

Biowaste – animal manure, sewage sludge and food waste – can offer opportunities to reduce harmful impacts to soil, water and air through the recovery and re-use of nutrients, therefore closing the nutrient cycle.

The SYSTEMIC project works to facilitate the transition to a circular economy in Europe by demonstrating new approaches to nutrient recovery from biowaste.

Recovery of nutrients from biowaste is essential to sustaining our future food production while decreasing environmental impacts.

Treatment of biowaste



Within a circular economy, biowaste can be a source of energy, organic matter and nutrients, including: nitrogen, phosphorus and potassium. These can be used either as a direct substitute of fertilisers or as a resource for the production of mineral fertilisers. The remaining organic matter can be used to improve soils in the local region.

Such an approach to biowaste will:

- reduce the energy consumption and CO₂ emissions associated with synthetic nitrogen production;
- reduce Europe's dependency on external and finite phosphate reserves;
- reduce CO₂ emissions of biowaste transport; and
- reduce the nutrient losses to water and air due to the increased nutrient use.

Towards a circular economy



SYSTEMIC demonstrates new approaches for the valorisation of biowaste into green energy, mineral resources, fertilisers and organic soil improvers at five large-scale biogas plants throughout Europe. These pioneering plants will be enhanced with novel nutrient-recovery technologies and play an important role in the testing of our new circular solutions.

The composition and quality of the recovered products will be tuned to meet the requirements of regional markets. This market-driven approach is needed to develop a viable and sustainable industry.

The wider uptake of our approaches and transition towards a circular economy will be stimulated through:

- creation of business opportunities for ten additional plants (outreach locations);
- dissemination of economic and environmental benefits;
- policy recommendations.

SYSTEMIC will boost the implementation of circular solutions for biowaste in Europe.

Circular Solutions for Biowaste

