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	Biogas Ammonium sulphate N, K-concentrates Calcium phosphate Organic soil amendments
AM-Power, Belgium 180 kton manure and food waste	Biogas N, K-concentrates Organic fertilizer
Acqua & Sole, Italy 120 kton Sewage sludge	Biogas Ammonium sulphate Organic fertilizers
Oaklands, United Kingdom 50 kton poultry manure	Liquified biogas Liquid CO_2 Ammonium sulphate Organic fertilizer
GNS, Germany 60 kton corn sillage and 18 kton poultry manure	Biogas Ammonium sulphate Calcium carbonate Organic Fertilizer

Our Partners

WAGENINGEN UNIVERSITY & RESEARCH

A-Tuottajat

EBA European Biogas Association

RISE

GZV Groot Zevert Vergisting

Rika Biofuels Integrated Biogas Solutions

nijhuis industries

acqua & sole

AM POWER

GHENT UNIVERSITY

Gesellschaft für Nachhaltige Stoffnutzung mbH GNS

AICL Fertilizers

PRO MAN CONSULTING RESEARCH AND INNOVATION

vcm

UNIVERSITÀ DEGLI STUDI DI MILANO

Contact

Programme Coordinator
Wageningen Environmental Research
Dr. Oscar Schoumans
PO Box 47
6700 AA Wageningen
The Netherlands

T +31 (0)317-486446
E systemic@wur.nl

www.systemicproject.eu

Horizon 2020

SYSTEMIC

Circular solutions for biowaste

Urgency to close nutrient cycles

In the present economy many natural resources are becoming scarce while on the other hand waste disposal is increasing. Large amounts of nutrients are lost through incineration of waste, accumulation in soils and through harmful nutrient emissions to water and air.

Biowaste contains many valuable nutrients that can be recovered and reused to close the nutrient cycle. SYSTEMIC facilitates the transition towards a circular economy by demonstrating new approaches for the recovery of nutrients from animal manure, sewage sludge and food waste.

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

Treatment of biowaste

Within the circular economy, biowaste is a source of energy, organic matter and nutrients. The recovered nitrogen, phosphorus and potassium from biowaste can either be used as a direct substitute of fertilizers, or as a resource for the production of mineral fertilizers. The remaining organic matter with a reduced mineral content is a valuable soil improver that can be applied in the local region. This treatment approach of biowaste will:

- reduce the energy consumption and CO_2 emissions associated with synthetic nitrogen production,
- reduce Europe's dependency on external and finite phosphate reserves,
- reduce CO_2-emissions of biowaste transport, and
- reduce the nutrient losses to water and air due to the increased nutrient utilisation

Towards a circular economy

At five large-scale demonstration plants throughout Europe, SYSTEMIC demonstrates new approaches for the valorisation of biowaste into *green energy*, *mineral resources*, *fertilizers* and *organic soil improvers*. Existing biogas plants will be enhanced with novel nutrient recovery technologies. These pioneering plants play a pivotal role in the evaluation of the performance of our new circular solutions. The composition and quality of the 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 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