

A new cost-efficient and environmental friendly technology for biogas desulphurisation

LIFE BIOGASNET European project demonstrates an innovative, sustainable and low-carbon footprint technology for biogas purification based on biological processes.

The project aims to boost the use of biogas as a sustainable energy source and to promote renewable energies production through the circular economy concept.

LIFE BIOGASNET system will present potential environmental advantages minimising the environmental footprint up to 55% by reducing the carbon dioxide emission and the waste generation

Consortium:



More information:
www.biogasnet.eu
info@biogasnet.eu



The project has received funding from the LIFE Programme of the European Commission under contract number LIFE18 ENV/ES/000426



Sustainable biogas purification system in landfills and municipal solid waste treatment plants

Promoting the use of biogas as a sustainable energy source



Objectives:

Reduce waste generation

Promoting the circular economy concept, reducing the leachate production in landfills and reusing by-products generated.

From waste to resource

Producing secondary raw materials obtained from waste resources and desulphurisation process.

Resource efficient and competitive technologies

The combination of several well-established biological processes for biogas purification with by-product generation will lead to the establishment of very competitive technologies.

Environmental policies and strategies

To minimise the environmental footprint, the impact of biogas emissions and combustion in flares

Sustainable, low-carbon and technologically-advanced economy

The advanced biological process involves a reduction in the carbon footprint in comparison to traditional technologies.

The technology:

LIFE BIOGASNET will develop an innovative system for biogas desulphurisation based on biological processes and being able to obtain a high quality biogas and final valuable by-products.

A nitrification bioreactor and either an anoxic gas-phase biotrickling filter or an anoxic bioscrubber will be coupled to reduce hydrogen sulphide content in biogas.

The developed technology will present potential environmental advantages compared to conventional practices.

Expected results:

55%
environmental footprint reduced

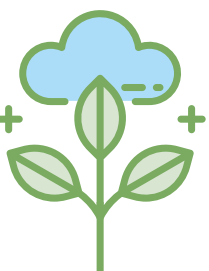


83%
reduction of sulphur dioxide emissions

Production of
423kg
of sulphur per year in landfills and

3051kg
of ammonia sulphate in municipal solid waste plants

Simultaneous removal of ammonia and hydrogen sulphide



Two prototype plants installed in Spain and Greece



Prototype installed

in Miramundo-Los Hardales landfill (Cádiz, Spain) for 12 months to gather information for the optimisation of the technology, its limits and the definition of advanced control strategies.

The prototype will be moved

to a Municipal solid waste management plant in Athens (Greece) where it will be operated for 12 months more to obtain information about its performance in a different scenario. The plant will be expanded with a scrubber to carry out the absorption of ammonium in water and this water will be used to feed the nitrification bioreactor.