

BIOGASNET

Sustainable Biogas Purification System
in Landfills and Municipal Solid Waste
Treatment Plants

Demonstrating a new cost-effective and environmentally friendly technology for biogas desulphurisation

LIFE BIOGASNET project develops an innovative and low-carbon footprint technology for biogas upgrading with the aim to boost the use of biogas as a sustainable energy source and reduce the carbon footprint of the energy cycle promoting the circular economy concept.



What are the objectives?

- Reduce waste generation
- Promote a sustainable, low-carbon and technologically-advanced economy
- Promote resource efficient and competitive technologies
- Generate secondary raw materials
- Develop environmental policies and strategies

What are the expected results?

55%
environmental
footprint reduced

83%
reduction of
sulphur dioxide
emissions

Production of
423kg
of sulphur per year in landfills and

3051kg
of ammonium sulphate in
municipal solid waste plants



Project prototype

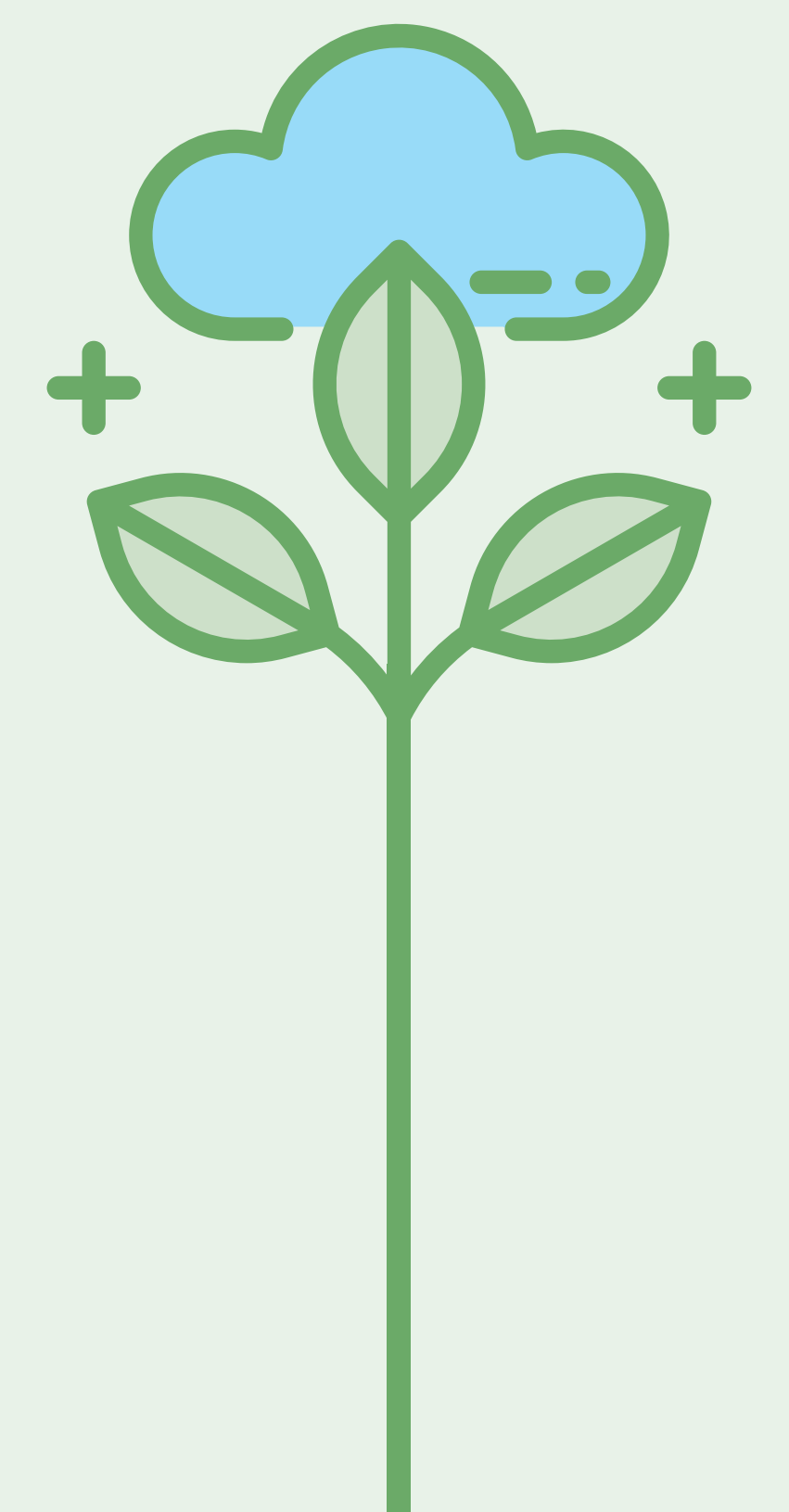
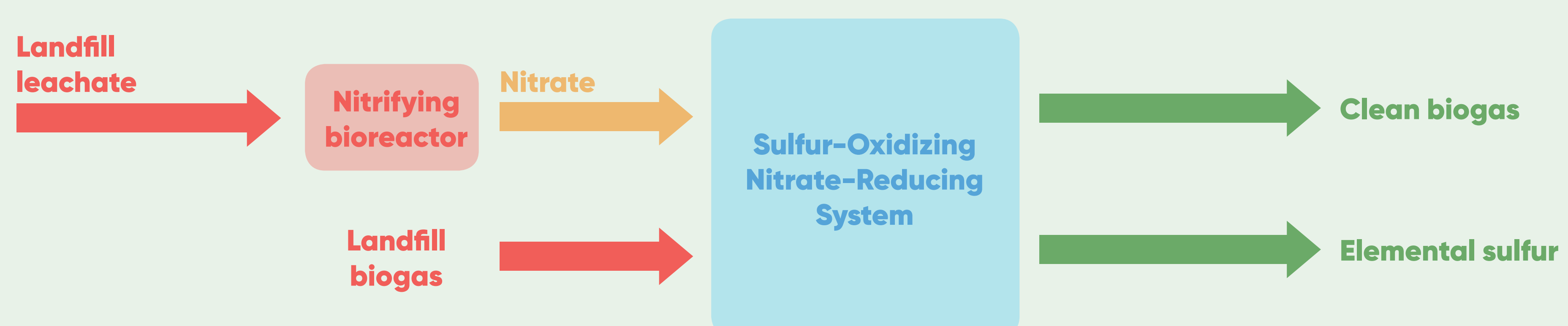
During the project a prototype has been designed to be constructed and operated in two European facilities with different biogas sources with the objective to validate the technology and demonstrate its robustness under different conditions.

Prototype installed and operated for 12 months at the Miramundo-Los Hardales environmental ecopark

The installation of the prototype consists of two main equipments: a **nitrification bioreactor**, fed by landfill leachate, and an **anoxic bioscrubber**, fed by the effluent from the nitrification bioreactor and the biogas from the landfill wells.

The main objective of this prototype operation is to gather information for the **optimisation of the technology, the search of its limits and the**

definition of advanced control strategies. The installation of the prototype allows to show the robustness of the technology allowing to obtain a by-product (elemental sulfur) of interest besides reducing the amount of leachates generated in the landfilling process.



Prototype installed at a solid waste plant in Athens

After this 12 months, the prototype will be moved to a municipal solid waste treatment plant (MSWTP) in Greece to obtain information about its performance in another scenario. In this case, the prototype will be expanded with a scrubber to carry out the absorption of ammonium in water.

More information:

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