



LIFE BIOGAS XPOSE - LIFE BIOGAS XPOSE -
Maximized biogas potential from resource
innovation in the Biogas Öst region

LIFE12 ENV/SE/000683



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Project description:

Background

Climate change is a threat to our global environment and one of the greatest challenges we are facing. The EU has set ambitious goals to meet its climate change objectives, including a 20% reduction of greenhouse gas (GHG) emissions and a 20% share of energy from renewable sources by 2020.

Biogas is seen as a particularly important and useful area of investigation for achieving these goals. Sustainably-produced biogas can be used as vehicle fuel, replacing fossil fuels and substantially reducing CO₂ emissions. Furthermore, the very processes used to produce biogas from organic waste capture the natural emissions of methane (CH₄) and nitrous oxide (N₂O) from degeneration of organic materials. Finally, the by-product of biogas production - digestate - can be used as a bio-fertiliser, reducing the demand for chemical fertilisers.

Sweden's biogas development has been relatively successful, notably regarding the use of bio-methane (BM) as a vehicle fuel. Current biogas production in Sweden is 1.5 TWh. However, the full potential of biogas production from waste-based substrates is 15 TWh (74 TWh including forest) and more recent development of the sector has not been strong. BM production has not been able to match growing demand, reducing the likelihood of the market turning away from fossil-fuel alternatives on a long-term basis.

Objectives

The LIFE BIOGAS XPOSE project aims to foster the development of BM as a viable alternative to fossil fuels. It will evaluate different forms of waste to identify the most efficient means for obtaining biogas. It thus aims to demonstrate how BM can substantially contribute to the 2020 targets of reduced GHG emissions, increase renewable fuels, energy efficiency and resource efficiency.

The project will work to maximise the extraction of biogas from already used waste streams by testing new technologies. Processes such as dry fermentation, methanation of syngas and small-scale upgrading will be tested as potential means for increasing BM production. In addition, new substrates – such as horse manure and sewage sludge - will be examined as potential sources for biogas extraction.

The project will address issues throughout the entire biogas cycle. These will include optimising systems of logistics for harnessing and valorising biomass, such as maximising the collection of regional waste resources. All actions will be implemented in the region of Öst, which will see its BM production increased and serve as a benchmark in this field for other regions in Europe.

Expected results: The project expects Öst to become a showcase region of sustainable and maximised biogas production, achieving the following:

- A 1 000 Gwh increase in biogas production;
- 5% of the total regional vehicle fuel demand to be met by BM;
- A 400 000-tonne reduction in total CO2 emissions by replacing fossil fuels in the transportation sector;
- A doubling of the amount of bio-waste collected in the region for BM production;
- Promotion of BM as a viable means of achieving EU and national environmental goals around renewable energy, resource efficiency and GHG emissions; and
- The establishment of at least five more production plants.

Results

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Environmental issues addressed:

Themes

Energy - Supply

Keywords

emission reduction, greenhouse gas, renewable energy

Natura 2000 sites

Not applicable

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Beneficiaries:

Coordinator	Vafab Miljö AB
Type of organisation	SME Small and medium sized enterprise
Description	Vafab Miljö AB is a public regional waste management company located in Västerås, Sweden. It operates recycling units, waste stations and processing units, and is the primary owner of the biogas production company, Svensk Växtkraft AB.
Partners	Biogas Öst AB, Sweden Cortus AB, Sweden Institutet för jordbruks- och miljöteknik AB (JTI), Sweden NeoZeo AB, Sweden

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Administrative data:

Project reference	LIFE12 ENV/SE/000683
Duration	01-JUL-2013 to 29-JUN -2018
Total budget	8,308,568.00 €
EU contribution	1,600,000.00 €
Project location	Stockholm(Sverige) Östra Mellansverige(Sverige) Småland med Öarna(Sverige) Sydsverige(Sverige) Västsverige(Sverige) Norra Mellansverige(Sverige) Mellersta Norrland(Sverige) Övre Norrland(Sverige) Baltic Sea Sverige (S)(Sverige)

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Brochure	Title: "BIOGAS XPOSE : Maximized biogas potential from resource innovation in the Biogas Öst region" (2.54 MB) Editor: Region Östergötland No of pages: 4
Project web site	Project's website

Publication: Guidelines-Manual Title: "Biogas in Sweden : Best practises" (15.6 MB) Editor: BIOGAS XPOSE No of pages: 23
Slides Presentation Title: "Biogas Upgrading Module to Produce Biomethane" (3 MB) Author: Petr Vasiliev Editor: NeoZeo Biogas upgrading No of pages: 10

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