PIGergy

A novel means of unleashing the energy potential of pig waste

> *The research under PIGergy is showcasing the amalgamation of two cutting-edge reaserch fields to produce a simple solution for the agricultural community and energy users"*

PIGergy has been running for 11 months for lead partner GlasPort Bio (GPB) and for KiRa Technologies (KiRa). This project is an Irish/Italian collaboration which takes pig waste (manure), treats it to enhance its carbon content and generates a material suitable for energy production in a novel combined heat and power (CHP) design **– FAPE.**

An objective is to reduce greenhouse gas (GHG) emissions from stored manure, a major contributor to emissions each year. Pigs contribute 0.16 Gigatones of CO_2-eq. of total EU GHG emissions, where manure management contributes >27% of this figure. In addition, PIGergy aims to sustainably generate energy as an alternative to land-spreading. These goals feed into the EU GHG emissions and renewable energy targets for local producers. PIGergy is a two-step treatment: GPB uses its natural, novel antimicrobuial agent, effective against all bacteria in trials showing methane reductions of >98%, and KiRa's BioGS-micro-CHP system based on biomass gasification.

Project Duration

30.10.2019 - 29.10.2021

Project Budget

Total Budget: € 499,813.-

Funding: € 299,850.-

Project Coordinator

GlasPort Bio (Ireland)

Project Partners

- KiRa Technologies (Italy)

Project Website

https://glasportbio.com/era-net-smart-energy-systems-ses/

https://www.kiratechnology.com/en/Pigergy.html

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ERA-Net Smart Energy Systems

This project has received funding in the framework of the joint programming initiative ERA-Net Smart Energy Systems. The initiative has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreements no. 646039 and no. 755970.

ERA-Net Smart Energy Systems Joint Call 2018

This project has been awarded funding within the ERA-Net SES Joint Call 2018 for transnational research, development and demonstration projects. EUR 33.4 Mio of funding have been granted to 23 projects from 16 regions and countries.

Joint Programming for Flourishing Innovation from Local and Regional Trials towards a Transnational Knowledge Community

www.eranet-smartenergysystems.eu

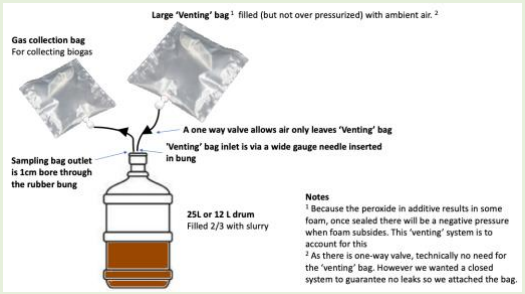
Main Objectives

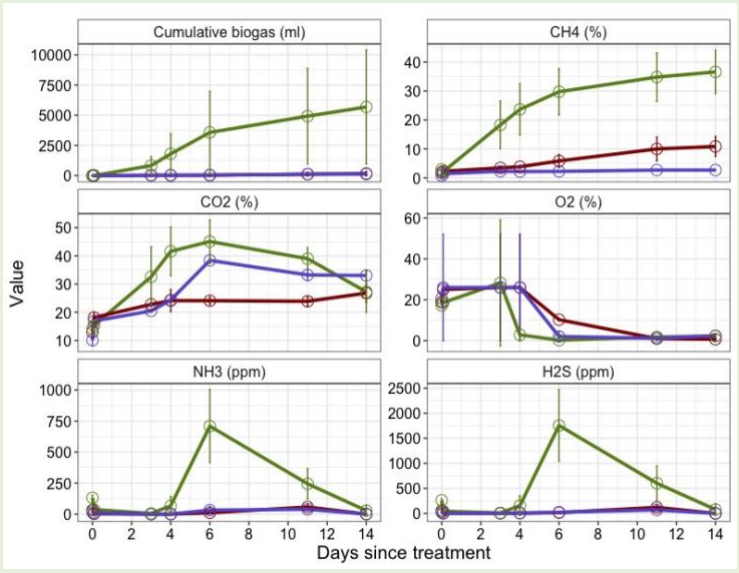
Year One: Biomass treatment, optimisation (GPB) and optimisation of the novel micro-CHP (KiRa).

Expected Main Results

Communicaiton and dissemination: Project website and social media is active and regularly updated, with project team presenting findings at events where possible with current restrictions. Project partners are involved in Knowledge Community Standard obligations under ERA Net SES.

GPB have developed reaction cocktails (liquid, powder) for biomass testing; comprehensive biomass characterisation has been carried out.





Effect of two additive versions on the biogas volume and composition, from 16 kg of pig slurry over a 14-day period. The green line is 'untreated' and the purple and red lines are different compositions of additive.

Dewatering of biomass in Ireland has occurred, with sufficient quantities sent to Italy for further dewatering and pelletisation ahead of energy production.

Significant research and advancement at KiRa Technologies on: electronic control and stirling engine development of their novel CHP.

GlasPort Bio

FaPe
KiRa Technology

seai SUSTAINABLE ENERGY AUTHORITY OF IRELAND

MINISTERO DELL' ISTRUZIONE, DELL'UNIVERSITÀ E DELLA RICERCA