

Summary of Nivala case study

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Introduction



UNISECO is a European research project aiming to develop innovative approaches to enhance the understanding of socio-economic and policy drivers and barriers for further development and implementation of agro-ecological practices in EU farming systems.



Finnish case study: Introduction

The Finnish case study investigates barriers and drivers for building a centralized biogas plant in Nivala.

A “real-life” project by Valio (milk cooperative) and later also Gasum (biogas developer) is used as an example.

Farms would provide cattle manure and leftover grass silage (feed) to the plant and in exchange they would receive biogas and biofertilizer.

Research questions

- How can the biogas plant (s) reduce the adverse environmental impacts of agriculture in Nivala's dairy-intensive sector?
- What incentives for key players would lead to an investment decision and help the system progress towards carbon neutrality in Nivala?

Methods

- Farm data collection for 3 different decision support tools
- Interviews of farmers, administration and other stakeholders for describing the Nivala case as a system and the stakeholders that play a role in biogas investment decisions
- Interviews to identify barriers and drivers
- Co-construction of a strategy that leads to solutions

Ongoing research

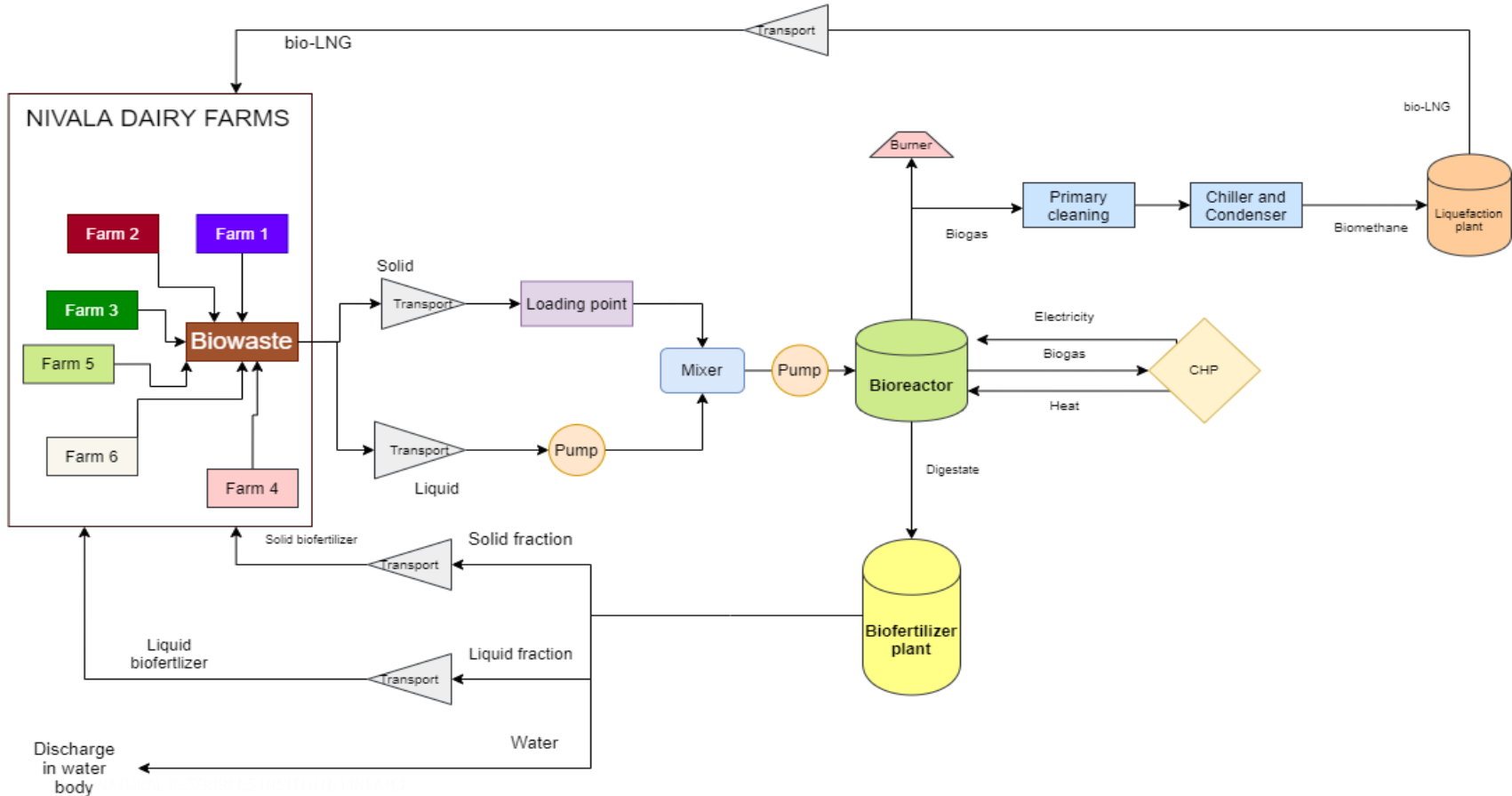
Assessment of environmental impacts of a centralized, large scale biogas farm on conventional dairy farms.

1. Impact of using manure and excess silage as feedstock, and fertilizing with digestate that has been separated to solid and liquid fractions
2. Impact of replacing diesel with liquified biomethane in farm operations

Calculations on both farm and system level

Finnish case study: system diagram

CENTRALIZED, OFF SITE BIOGAS PRODUCTION FACILITY



Expected outcomes by mid 2021

- Estimated impact of biogas investment on carbon footprint of milk in Nivala
- Estimated impact of biogas investment on nitrogen and phosphorus load of milk in Nivala
- Analysis of economic incentives and the impact of policies

Preliminary results on farm level show reduction in carbon footprint and an improvement in water quality.

**Thank you very much
for your attention.**