

Biogas for Transport in North Savo Region

Assessing the supply and demand sides of the biogas market and value chain with the aim of contributing to the EU's green goals.

EAFRD-funded projects

Location: Suonenjoki, Finland

Programming period: 2014-2020

Priority: P5 – Resource efficiency and climate

Focus Area: Renewable sources & waste management

Measures: M16 – Cooperation

Funding:	Total budget	133 180 (EUR)
	EAFRD	55 936 (EUR)
	National/regional	77 244 (EUR)

Timeframe: 01.06.2020 to 31.12.2021

Project promoter: SavoGrow Development Company

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Summary

Two LEADER LAGs pulled together resources to jointly undertake research to accelerate the development of the biogas industry in North Savo, a region in eastern Finland. The research included various surveys focusing on the biogas market and biomass production. Additional activities included awareness raising events and the development of market models to assess the potential of a biogas value chain.



Project Väädområde Syvhoje

Project results

- The research demonstrated that the transport sector in North Savo would have sufficient interest and demand for biogas, potentially replacing substantial amounts of fossil fuels.
- In terms of supply, the biogas survey showed that, out of the 177 farms interviewed, 95% were interested in selling grass, straw or hay for biogas production.
- New business models were developed both in terms of biogas production and biogas service stations.
- In terms of potential demand, the models estimated that there could be an energy market of around 40 GWh of biogas in the North Savo transport sector (equivalent to four million litres of diesel).

Key lessons and recommendations

- When assessing the potential for renewable energy production, it is important to look at the supply and demand side factors simultaneously and to develop them hand-in-hand.
- The feasibility of developing the biogas market is mostly dependent on the market selling price of biogas. Profitability is the key for any Green Deal investment while also dependent on policy priorities.
- Finnish law has required that at least 12% of car gasoline must come from renewable sources by 2022. This has guaranteed a market for LBG (liquefied biogas). In 2023, the minimum share rose to 13.5%. However, in future, political decisions will be key.

Context

In the North Savo region, the first biogas service station for cars and heavy traffic was opened in early 2020. At that time in Finland, access and geographic spread of biogas service stations was very limited, impacting negatively on both the demand for biogas for transport as well as on the supply and production of biogas. To accelerate and innovate the development of the biogas industry, the Finnish Regional Development Company SavoGrow seeks to promote the advance of the biogas industry in line with national bioeconomy strategies. For this purpose, it is necessary to simultaneously develop demand factors, i.e. the market, potential uses and consumer awareness etc., as well as supply factors, i.e. production methods, supply of biogas and distribution, etc. To address and improve the situation of the Finnish biogas industry, a cooperation project was developed by two neighbouring LAGs: Mansikka and Ylä-Savon Veturi.

Objectives

The main aims of this research project were:

- To undertake further research on the supply and demand sides.
- To identify ways how to accelerate the demand for biogas in the Finnish transportation system.
- To raise consumer awareness and improve uptake of biogas with target groups (taxi businesses, refuse collection companies, food and beverage transport businesses, and people who drive long distances to work).
- To plan a biogas production network.
- To design a biogas service station network.
- To boost new business models and investments in the biogas sector.

Activities

The research activities included:

- A biogas market survey (demand side), whereby 100 businesses were interviewed regarding their views and potential needs for biogas in transport. In addition, public sector bodies of the region were consulted on biogas infrastructure development opportunities.
- A biomass survey (supply side) was conducted with 177 farms, the food industry, other industries and municipal wastewater treatment stations to assess the potential availability of biomass. The findings informed the calculation of the required volumes of biomass and the identification of optimal locations for biogas plants.
- Feasibility studies regarding alternative production techniques and biogas plant locations were conducted. This included comparing wet and dry fermentation techniques and their profitability and exploring five alternative biogas plant models comprising four producing compressed biogas (CBG) and one producing liquid biogas (LBG).

The research activities included:

- Four online events with specific target groups with farms, the manufacturing and transport industry, local municipalities from the local development point of view, and public authorities in charge of licensing biogas plants.
- Three face-to-face events targeted at local consumers focusing on biogas cars and their testing results.
- Further activities comprised of:

- Numerous negotiations with businesses organised to explore the investment potential for the building of a biogas plant in the municipality of Leppävirta.
- Planning of the biogas service station network and designing new business models.

Main results

- The seven awareness raising events had 40 -100 participants each.
- In terms of supply, the biogas survey showed that from the 177 interviewed farms, 95% were interested in selling grass, straw or hay for biogas production. The feasibility studies assumed that biomass won't be transported further than 25km from any farm.
- New business models were developed both in terms of biogas production and biogas service stations.
- In terms of potential demand, the models estimated that there could be an energy market of around 40 GWh of biogas in the North Savo transport sector (equivalent to 4 million litres of diesel).
- The plans for a biogas plant investment in the municipality of Leppävirta have progressed well. The likelihood that the investment of one new biogas service station might go ahead soon is high. This investment might be led by a company that already has two biogas stations in the neighbouring region of North Carelia.

The results must be seen in the wider context: The biogas industry has a big potential of creating new jobs in the Finnish countryside. In the summer of 2023, 40 biogas plants are being planned across the country generating a capacity of around 700 GWh. It is estimated that this would create approximately 700 new permanent jobs.

“Respect for nature is important. I am proud to contribute. And as a reward the skylarks sing above my head.”

Jos Piffet
farmer

Additional information:

https://issuu.com/savogrow/docs/biokaasulla_liikkeelle_loppuraportti_issuu

