



EAFRD-funded projects

Agro-fibres to replace plastic

Establishing a research centre in a small Finnish municipality

Finnish agro-fibre research centre helps reduce fossil fuel reliance.

A bioeconomy research and development centre were established by the Finnish company Fibre-X Finland Oy to develop substitutes for plastic from agro-fibres and agricultural waste. A brownfield industrial space was reused and refurbished to host test and laboratory equipment. New products and processes are already attracting interest from customers including a EUR 30 million bioeconomy plant using wood-based textile fibre and carbon-neutral production of biocarbon and viscose fibre from hemp.



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Location

Nationwide (Finland)

Programming period

2014 - 2020

Priority

P6 - Social Inclusion and Economic Development

Measure

M07 - Basic services and village renewal in rural areas

Funding (EUR)

Total budget 246 224
EAFRD 20 682
National/Regional 28 562
Private 196 980

Project duration

2019 - 2021

Project promoter

Fibre-X Finland Oy

Contact

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www.fiber-x.fi

Results

The company employs 13 people and has had a rapid growth in operations. The turnover has grown from 400,000 EUR in 2021 to current 2.1 million EUR as of August 2022. Approximately 10 employees are working full time on the built pilot machine constructed in the project.

The company is designing and building a pilot plant for producing wood-based textile fibre in Lappeenranta, commissioned by Nordic Bioproducts. The value of the investment is around 30 million EUR, and it will have a significant regional economic impact throughout the province. The company is also designing a bio-plant concept in Northern Ostrobothnia that enables carbon-neutral production of biocarbon and viscose fibre from hemp.

It is planned to export new products through international partnerships that have already been forged.

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Context

In nature, non-degradable plastics are a major environmental problem, and there is a great need for environmentally friendly and cost-effective raw materials to replace plastic.

Fiber-X Finland Oy is a company based in Southeast Finland at the core of the country's forest industry area. The company develops plastic-substitutes from agro-fibres (hemp, flax, willow) and agricultural waste (straw). Deforestation and global warming can be reduced when waste materials and fast-growing agricultural fibres are used for replacing materials of fossil fuel origin.

This growth-oriented company relies heavily on excellence and the development of the bioeconomy. It is uniquely placed to make a positive impact on the regional economic development through its own expertise and international partnerships. Fiber-X Finland Oy co-operates not only with foreign partners, but also with LUT University and other educational institutions in the region. It aims to develop and test products which can be rolled out or upscaled to production through other partners.

The company planned to start upscaling production but needed research facilities to develop and test its products. Its research centre was established in the small municipality of Lemi with 3,000 inhabitants.

In addition to CAP support, the company received ERDF funding (REACT-EU ERDF measures) for a different project to develop products based on waste straw fibre, hemp and recycled cotton and their development and production processes.

Objectives

The project goal was to establish a centre to conduct research and product development. It would also serve companies and other operators in the industry in supporting their product development, test runs and training needs. The research and development centre would meet the needs of companies, particularly in the intermediate phase of product development between the laboratory scale and commercial scale.

Fiber-X Finland's intention is to make Southeast Finland a leading force in the bioproduct sector.

Additional sources of information

[Article - Fiber-X Finland fights climate change with research and product development](#)

Activities

The project involved refurbishing a redundant industrial facility and converting it into the company's research and development centre to host its test and laboratory equipment.

A test paper machine, a pulp processing plant and a laboratory were installed in the industrial space. The modification work for the research building included, among others, increasing the capacity of the electrical connection (transformer, cabling and required work), cabling for and inside the building, waterproofing work, sewage system work, changes to air conditioning, installation of a Valmet DNA DCS automation system and control instrumentation (valves, sensors), mechanical installation work, equipment restoration work (bearings, painting, machine frames), piping and welding. The modification work in the building employed local operators.

The company actively looks out for potential partners with whom they can network and cooperate to upscale research to production levels.

Main results

The region now has a research facility to carry out high-quality, innovative product development.

The new company employs 13 people and has had a rapid growth in operations. The turnover has grown from 400,000 EUR in 2021 to current 2.1 million EUR as of August 2022. Approximately 10 employees are working full time on the built pilot machine constructed in the project.

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The investment project reused a redundant building to develop a research facility in a brownfield industrial space.

This project has been categorised under 'Resilient futures' by the nominating National Rural Network