

EXILVA

Flagship demonstration of an integrated plant towards large scale supply and market assessment of MFC (microfibrillated cellulose)

Summary

Microfibrillated cellulose (MFC) is a revolutionary product, with potential in a huge range of applications, including personal care, cosmetics, home care, pharmaceutical excipients, adhesives and sealants, composites and resins, agricultural chemicals, oil field, fish, bait, concrete, and CO2 capture. It also has the potential to replace many fossil fuel-based products.

However, commercialisation of MFC has proved challenging, particularly making industrial quantities with sufficient running efficiency and stability. In addition, drying the MFC fibres in a cost effectively manner without losing significant performance is a major challenge.

The EXILVA project sets out to change this, by transferring technology from the existing pilot production and eventually scaling up to commercial levels.



<http://www.h2020-exilva.com/>, <https://www.exilva.com/>

Type of Action:

Innovation Action – Flagship

Value Chain: VC2 – forest-based

Start date: 01 May 2016

End date: 30 April 2019

BBI JU contribution:

€27.433.610,50

Objectives

- Successful technology transfer from the pilot plant to the flagship plant.
- Optimization of the full scale process.
- Reach a stable production of at least 1000 tons MFC per year of sufficient quality.
- A flagship unit capital intensity of: 33 million € /2000 tMFC.
- Mutual economic benefits between biomass industry and advanced market segments by supplying high performance MFC for an array of applications.
- Low CO2 footprint of MFC as a substitute product in marketable applications and a low CO2 footprint during MFC manufacturing (compared to main competitor process)
- Creation of direct and indirect jobs throughout the entire value chain.

Expected impacts

- Maintain the competitiveness in transformation of forest raw materials to high added value cellulose.
- Generate activity, including production, QA/QC, Sales and Marketing, R&D, and logistics, creating new value internally.
- Create direct jobs (estimates are about 57 FTE by 2020 according to the P&L)
- Create value of the cellulose feedstock, create innovation opportunities for the end products, and securing the continuation of these industries in Europe.
- Exhibit a significantly lower carbon footprint than the competing existing technologies.

Achievements & milestones

A natural alternative to plastic is coming to a product near you

12 February 2019

Extremely efficient to use, bringing about improvements in several industries and products, giving industry a tool to enhance performance... and all of this from sustainably sourced trees. Microfibrillated



Cellulose, a remarkable natural material that can replace oil-based products in industries as diverse as construction, cosmetics and agriculture, is now entering commercialisation thanks to our pioneering EXILVA project. [Read more](#)

Next-generation bio-based additive for replacing oil-based chemicals

January 2019

Find an article on our project Exilva that produces a new type of product called cellulose fibrils (also known as nanocellulose) and which is a powerful additive created using cellulose from Scandinavian forests. [Read more](#)

Maximising the commercial potential of super-strong microfibrillated cellulose

18 December 2017

A consortium made up of companies, research institutes and consultants has embarked upon an ambitious flagship project to introduce a plant-based cellulose ten-times as strong as steel into widespread use that could one day replace fossil fuel-based alternatives. [Read more](#)

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- Unilever (United Kingdom)
- Chimar (Greece)
- Østfoldforskning AS (Norway)
- Royal Institute of Technology (Sweden)
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Project coordination

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