



# **A forest-based bioeconomy: Finland is bringing bio-based solutions to a low carbon world**

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# FINLAND - HOME OF BIO-BASED INNOVATIONS



- Competence in sustainable forest management and forest resource information
- World-leading education and research
- Frontrunner companies with strong knowledge
- Vibrant new businesses based on renewable raw material
- Excellent piloting opportunities for new fibre-based processes and products
- Ecosystems RDI between academia and industry
- Digitilization



# Vision 2035

## Sustainably towards higher value added

- increasing the value added of the bioeconomy was identified as an important priority that is not addressed in other strategies
- timeline in line with Finland's carbon neutrality targets
- focus on creating a broad-based action plan
- productivity of work based on technological development in key role
- instead of taking a stand on the amount of production, the strive is to create a higher value added

# Bioeconomy is guided by a wide range of strategies in EU



# Measures



## Higher value added from the bioeconomy

- RDI programme
- pilot and demonstration plants
- climate change and biodiversity actions
- regional bioeconomy action plans

## Strong competence and technology base

- research and education
- development of technologies
- digitalisation

## Competitive operating environment

- ecosystem services commercialization
- streamlined permit processes for investments
- innovative sustainable public funding models
- cross-border cooperation

## Usability and sustainability of bioresources and other ecosystem services

- demand and availability of biomass and side streams
- increasing the value added in ecosystem service industries

## Increasing value added in different sectors

forest • food • energy • water and water biomass • bioeconomy services  
textiles and clothing industry • chemical industry



# Next generation of biobased packaging

## UPM

Bioplastics for paperboard packaging

Tall oil for the new bioplastic cartons

## Kotkamills

Recyclable cupstock based on dispersion barrier

## Stora Enso

Fibre-based, recyclable EcoFishBox with minimal plastic content

## Huhtamäki

Sustainable paper straws for McDonald's

## Paptic®

New material replacing paper and plastic packaging

## Woody®

New type of wood-based packaging material

## Sulapac®

Bio-degradable and microplastic-free material

## Jospak

Recyclable cardboard tray with 85 % less plastic



# New opportunities for the Finnish textile industry



## Metsä Group

- Has established with Japanese Itochu Textile Company a joint venture to produce Kuura textile fibres from paper-grade pulp

## Spinnova

- Turns cellulose into textile fibres without harmful chemicals

## Infinited Fiber Co.

- Recycles textile and cardboard waste by turning it into textile fibres to be reused preserving 100 % quality

## Nordic Bioproducts

- Norratex technology enables the use of many types of organic raw materials, including forest and agricultural side streams in addition to textile waste. 2022 announced a 30 million euro investment in a new pilot plant.





# From waste to value

## Stora Enso

- supplies active anode materials, Lignode<sup>®</sup>, for lithium-ion batteries based on lignin coming from trees

## Neste

- the largest producer of renewable diesel and jet fuel in the world
- turns a wide variety of renewable fats and oils into premium-quality renewable products

## ST1

- uses ethanol production technologies that utilise biowaste and side streams (saw dust, food, bakery etc.)

## UPM

- produces UPM BioVerno, a fuel made from crude tall oil extracted in the pulp production process







**Thank you for your attention!**