

Turning Biomass into Value-Added Products

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Fortum Bio2X

Fortum
Bio2X[®]

Our purpose is to aid the transition to a fossil-free world by creating sustainable alternatives based on renewable feedstocks

We want to become the leading producer of non-wood, bio-based raw materials enabling the transition towards a circular economy



Fortum
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Bio2X enables the transition to renewable materials

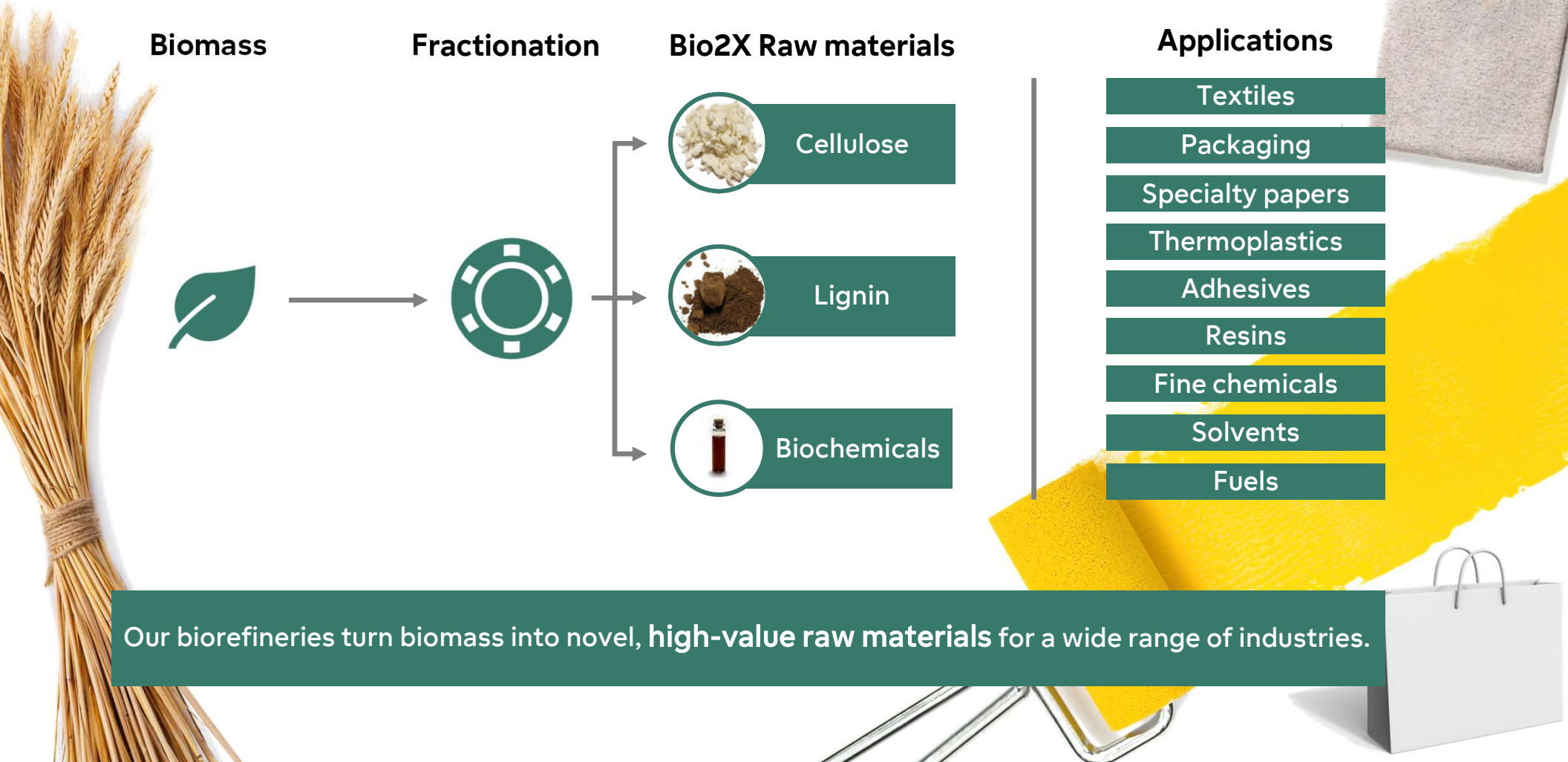
Resource-efficient biorefining

- ✓ Feedstock flexibility – From locally sourced sustainable biomasses
- ✓ High-value raw materials – Fractionation into cellulose, lignin, and biochemicals

Innovative industrial applications

- ✓ Close collaboration with our pilot customers. Strategic partnerships
- ✓ Active R&D serving the demand for bio-based materials

Bio2X: Provider of bio-based materials



Case example: Wheat straw converted into clothing

- Straw-based collection debuted in March 2021 by award-winning designer Rolf Ekroth
 - T-shirts, hoodies, skirts, capes made of knitted fabric
 - Up to 75% Bio2™Textil, combined with organic cotton or lyocell
- Technology
 - fractionation by Chempolis
 - fiber by Infinited Fibre Company
- Featured in, e.g., Vogue USA and Mission Magazine
- Further testing with raw material and technologies is on-going



"The fabric made of Bio2™Textile is amazing, it looks good and feels comfortable. It is an honor to be the first designer in the world to use it."

- Rolf Ekroth -

Our biorefinery projects

Assam BioRefinery Private Limited (ABRPL)

Site Location: Assam, India

Start of Production: 2023

Feedstock: 300 kt / a Bamboo sourced locally

Products:

- Bio ethanol
- Bio coal
- Furfural
- Acetic acid

Triticum: Biorefinery for Europe

Site Location: Central Europe

Start of Production: 2028 (projected)

Feedstock: 300 kt / a Straw sourced locally

Products:

- Cellulose
- Lignin
- Furfural
- Furfuryl alcohol
- Acetic acid

Bio2X uses Chempolis Formico[®] fractionation technology

Organosolv technology, process
chemicals in closed-loop system

High feedstock flexibility

Low temperature fractionation for
superior product qualities

High selectivity for optimal yield



What is ExpandFibre?



ExpandFibre (2020-2024) is a 50 M€ R&D collaboration and an Ecosystem launched by Fortum and Metsä Group and co-funded by Business Finland. It focuses on upgrading pulp fibre, hemicellulose and lignin from renewable and sustainable sources of straw and northern wood into new bioproducts. Its ambition is to meet the growing demands for sustainable textile fibres and other added value biomaterials.

The **research and development in ExpandFibre**, aiming at producing new ground-breaking technologies and smart business concepts, is divided into **seven research themes**:



Textiles



Biocomposites



Packaging



Lignin products



Hemicellulose products



Sourcing & fractionation of straw



Other fibre products



ExpandFibre invites actors in these value chains to join in building a world-leading innovation ecosystem to eventually commercialize new bioproducts and green businesses

EXPANDFIBRE



Metsä

expandfibre.com

Expand Fibre ecosystem



A hand holding a glowing lightbulb in a field of tall grass at sunset. The lightbulb is held up, and its glow is reflected in the sun in the background. The scene is bathed in warm, golden light.

Thank You

#jointhebioeconomy

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