From Concept to Reality: The Start-up of UPM's Biorefinery in Leuna

Dr. Konrad Gebauer

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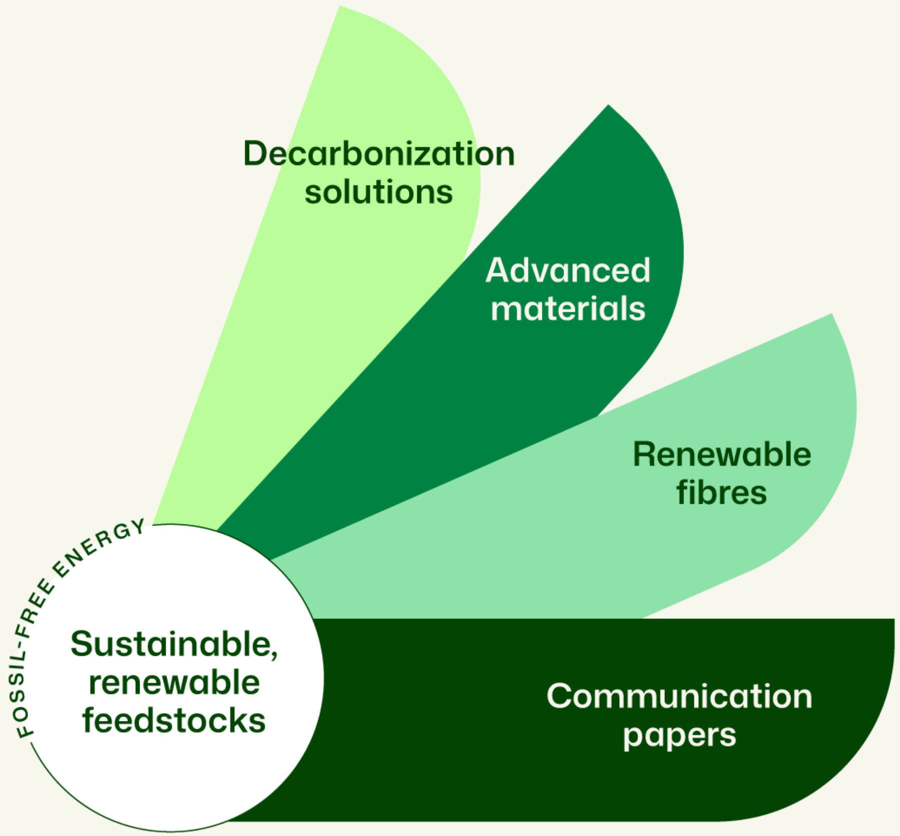
We are a material solutions company

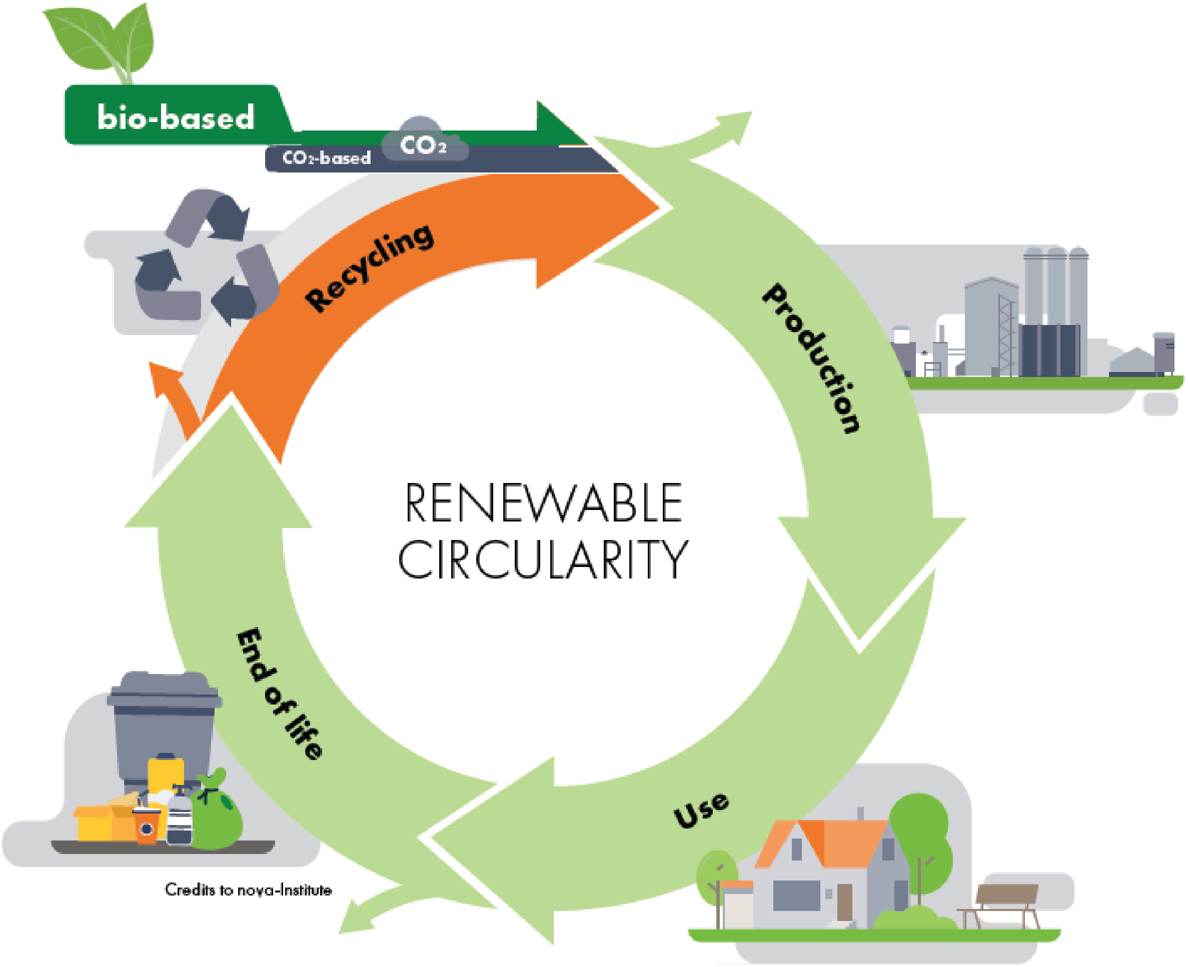
We contribute to the sustainable transformation of society with material solutions, utilizing sustainable, renewable feedstocks.

We create long-term value through our extensive portfolio of renewable fibres, advanced materials, decarbonization solutions, and communication papers.



The “Renewable Carbon Cycle”

- Bio-based chemicals play a central role in a circular economy based on renewable carbon
- Key technologies for the defossilization of the chemical industry are:
  → Recycling
  → Biomass utilization
  → Use of CO_2 (CCU)



Pioneering sustainable chemistry, transforming industries.

UPM Leuna biorefinery

> 1,200 million €
Investment

Production volume:
220,000 T
per year

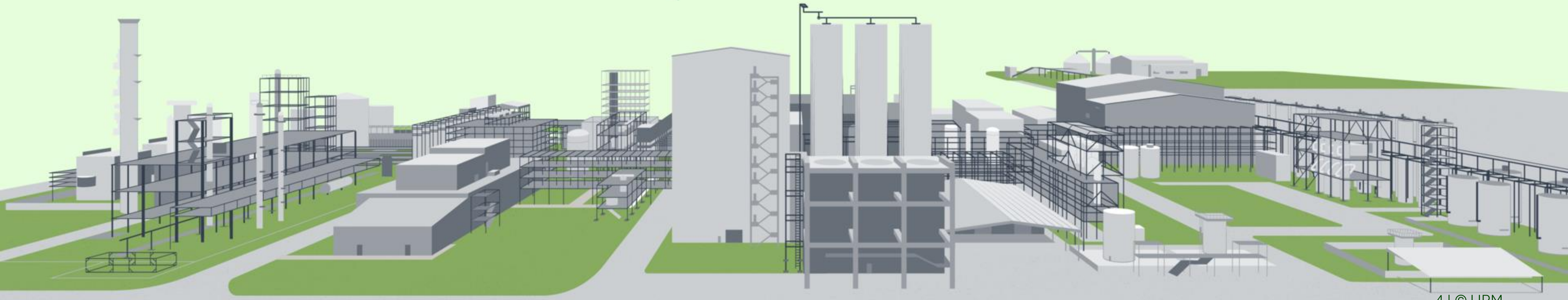
> 100
Employees
at the Leuna site

Start of construction:
January
2021

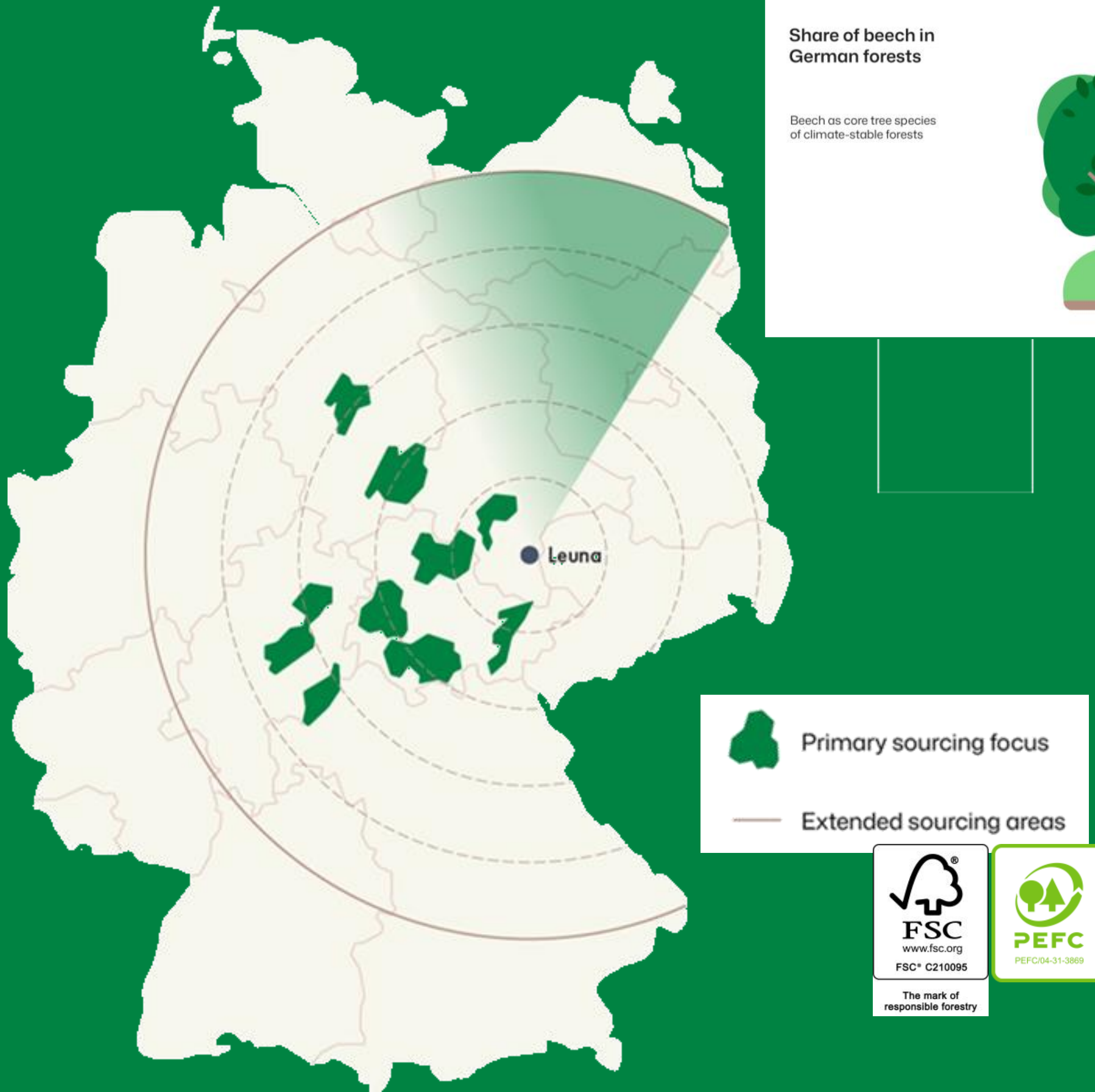
Production ramp-up:
2025

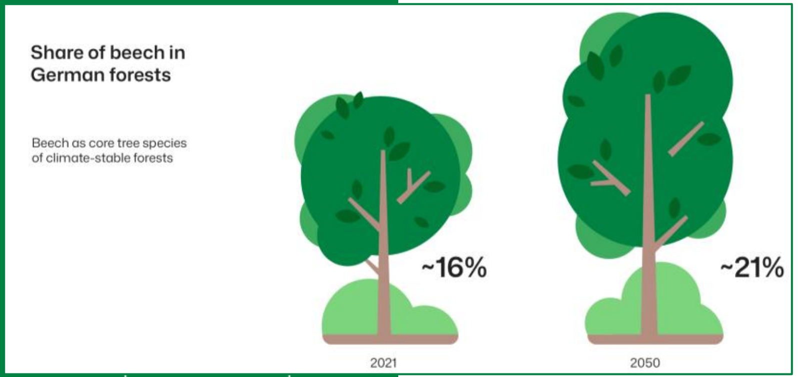
Beechwood-based products:

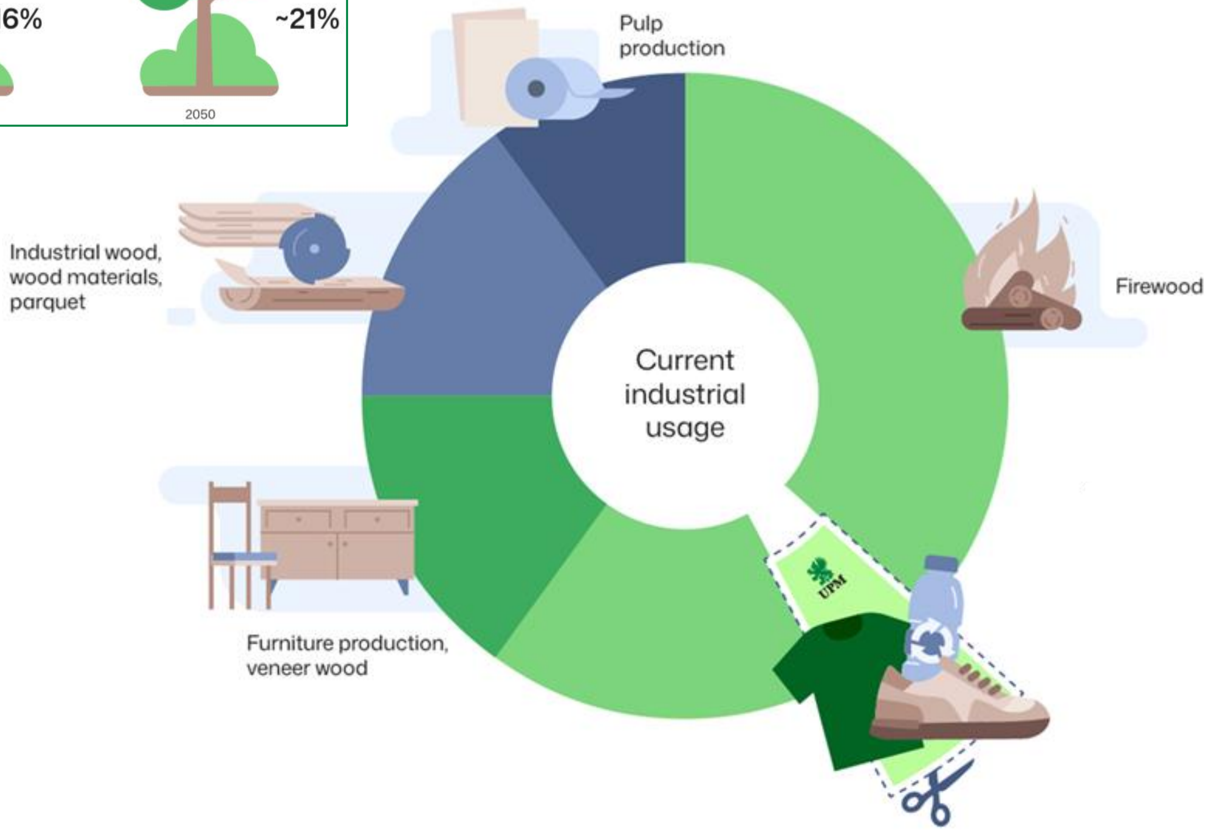
→ Bio-Monoethylene Glycol (BioMEG)
→ Bio-Monopropylene Glycol (BioMPG)
→ Renewable Functional Fillers (RFF)



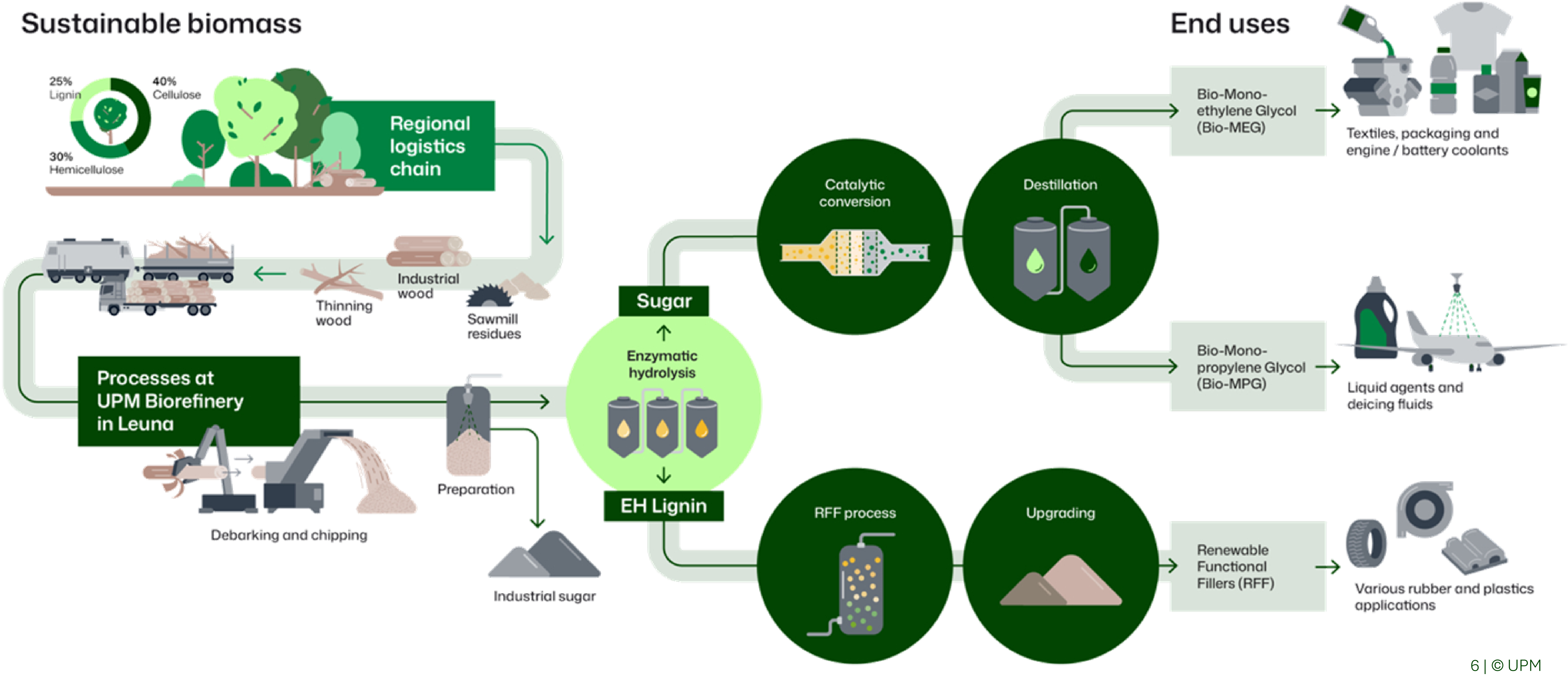
Our raw material: Beechwood







UPM's biorefinery complexity calls for a sequenced start-up



UPM Biochemicals is a frontrunner in sustainable chemicals offering a distinct product value add

UPM Biochemicals value add

Average sustainable chemical

CO_2 negative from day one*	High GHG reduction
Renewable carbon	100% biogenic feedstock
Certified, sustainable biomass	Fully certified and traceable, non-food feedstocks
Regional value chains	Supply security and credible social sustainability
Enhanced product performance	Additional technical performance

* from cradle to gate based on revised and third-party validated LCA according to ISO 14040 and ISO 14044 considering biogenic carbon from our feedstock and purchasing green electricity
#with unlimited use quantity in the final product

UPM BioPura™ BioMEG – Partnering for sustainable solutions

UPM

selenis

bormioli pharma

Renewable carbon content: 30 %

VAUDE
The Spirit of Mountain Sports

Renewable carbon content: 30 %

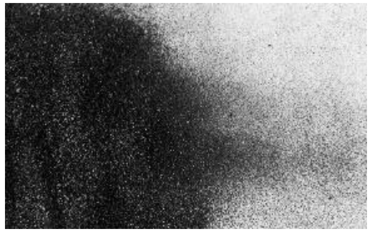
HAERTOL
Chemie GmbH

Renewable carbon content: 99 %

UPM BioPrimo™ Lignin and UPM BioMotion™ RFF: perfect application areas for each kind of material

UPM BioPrimo™ **Lignin**

BioSource for
Carbon Materials



Biodegradable Plastics
(e.g., mulch films)

Bio-based
XPS Insulation Boards

Bio-based Asphalt (replacing
fossil bitumen)

UPM BioMotion™ **RFF**

Tires

Mechanical
Rubber Goods
(e.g., profiles, hoses)

NIR-sortable
Black Pigment

Bio-Based
Light-Weight Filler
for Plastics

UPM