



1



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UPM 2021: 17 000 employees 9.8 billion EUR sales



UPM Pulp
A versatile range of chemical pulp for many growing end uses



UPM Timber
Certified sawn timber



UPM Forest
Sourcing wood raw material for sustainable and recyclable products



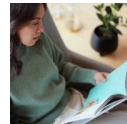
UPM Energy
Low-emission electricity generation of hydro, nuclear and thermal power



UPM Rafiatac
Self-adhesive label materials for promotion, information and functional labelling



UPM Specialty Papers
Labelling materials, release base papers, flexible packaging papers, office and graphic papers



UPM Communication Papers
Magazine paper, newsprint and fine papers for a wide range of end uses



UPM Plywood
Plywood and veneer products for construction, vehicle flooring and LNG shipbuilding

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UPM Biorefining: Creating new business and competitive advantage



BIOFUELS

Renewable and sustainable products for the transport and petrochemical industries



BIOCHEMICALS

Replacing fossil-based materials



BIOMEDICALS

Wood-based biomedical products for medical and life science applications



BIOCOMPOSITES

Replacing fossil-based materials

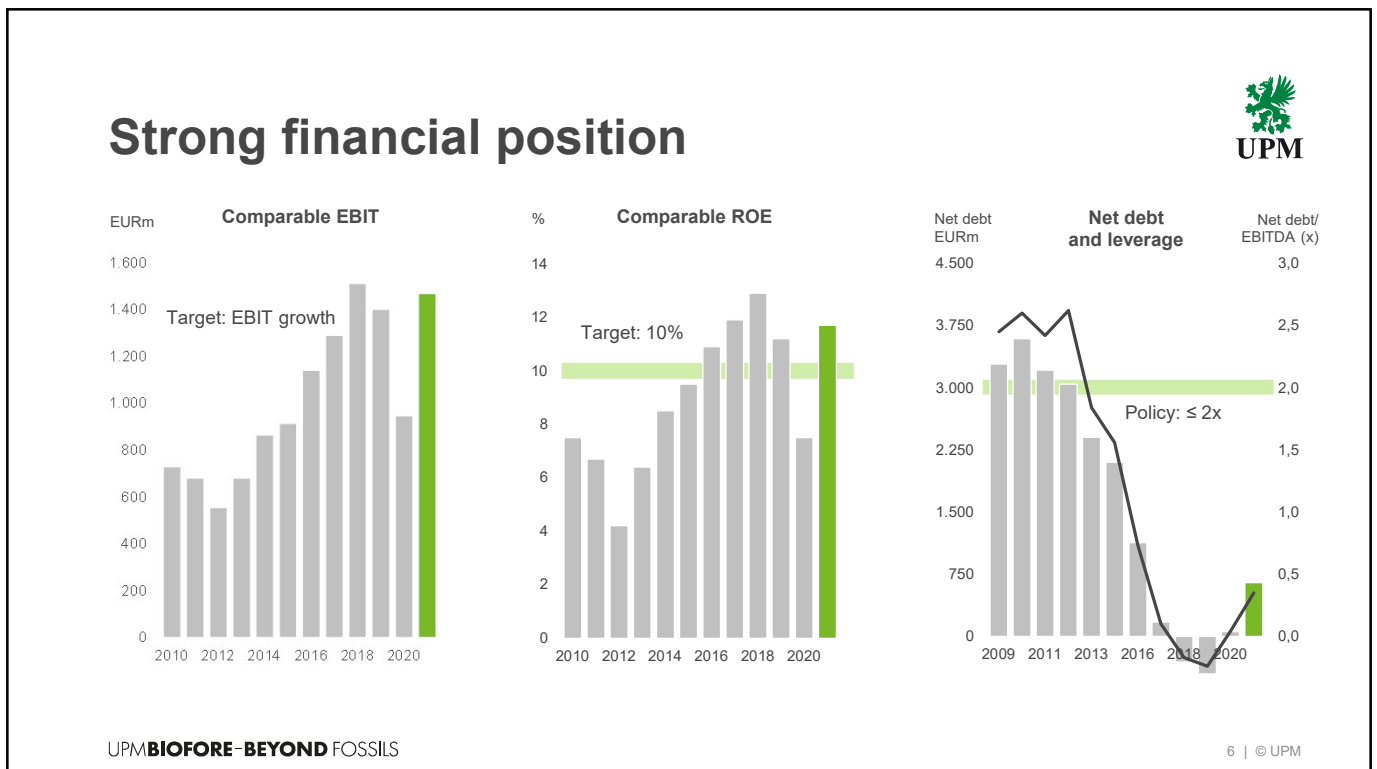
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Our climate commitment



WE ACT THROUGH FORESTS

Committed to climate-positive forestry and enhancing biodiversity



WE ACT THROUGH EMISSION REDUCTIONS

- 65% from own CO₂ emissions
- 30% from CO₂ emissions of supply chain



WE ACT THROUGH PRODUCTS

- Innovative products
- Scientifically verifying the climate impact of all our products





SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

BUSINESS AMBITION FOR 1.5°C





OUR ONLY FUTURE


THE Paris...
CLIMATE 10 years
PLEDGE Early

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It's a material world




WHAT WE OFFER




A sustainable and healthy lifestyle – Meeting daily consumer needs



Innovation for a better future – Replacing fossil fuels and materials



Building better – Low-carbon construction



Driving the transition – low-emission energy

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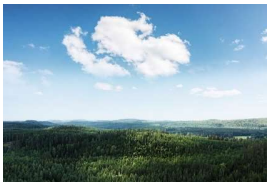
Sustainable choices



HOW WE MAKE A POSITIVE IMPACT



Enabling sustainable
Consumer choices



Mitigating
climate change



Improving
biodiversity



Advancing a circular
Bioeconomy

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We ensure forest growth



100%
traceability
covered by a
third-party
verified Chain
of Custody

No wood
from tropical
rainforests or
forests converted
to plantations

100% from
sustainable
sources

Guaranteed
sustainability
by FSC™
and PEFC
certifications

Forest
biodiversity
preserved

100 new trees every minute



We plant
50 million trees
every year

100 trees
per minute

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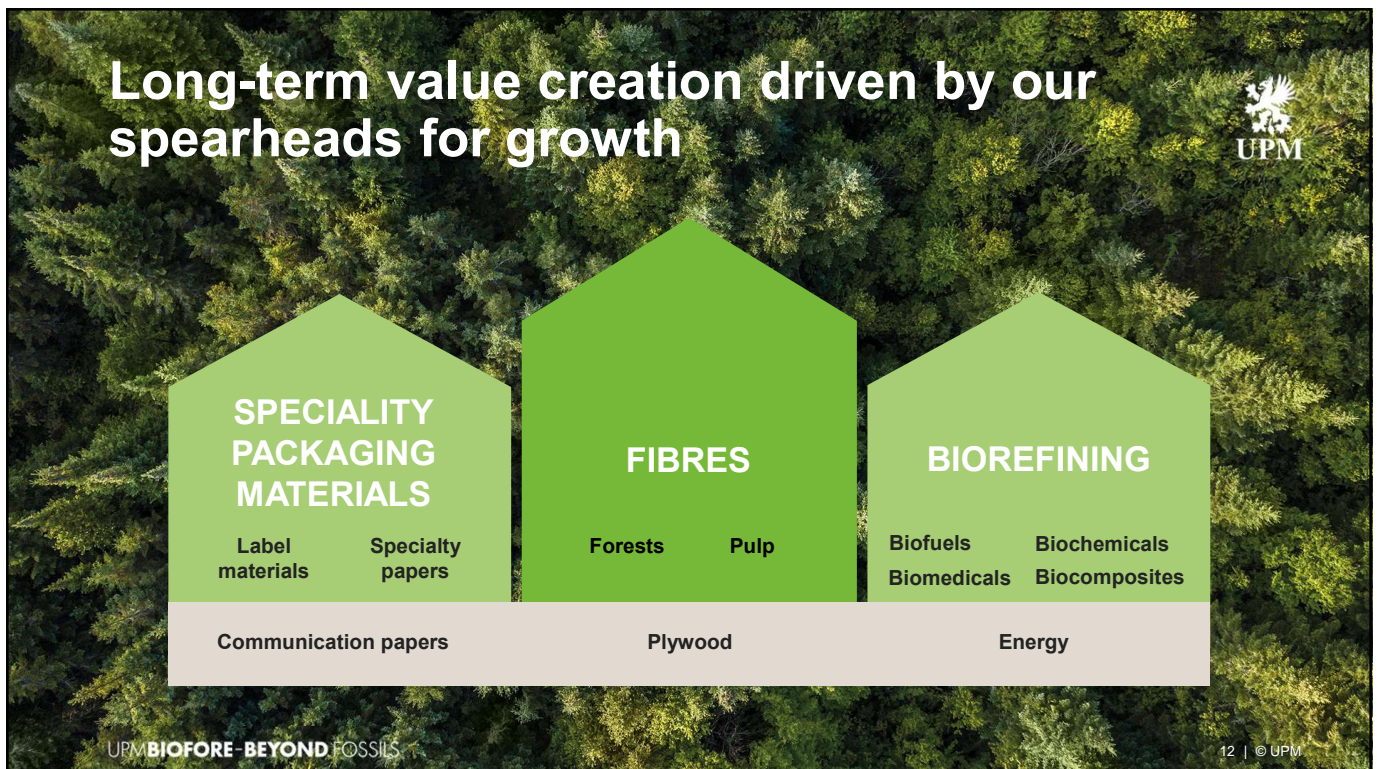
OUR SPEARHEADS FOR GROWTH

Our transformation is in an intensive phase, with growth investments totalling EUR 4 billion scheduled to be completed by the end of 2023.

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Long-term value creation driven by our spearheads for growth

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SPECIALITY PACKAGING MATERIALS	FIBRES	BIOREFINING
Label materials	Forests	Biofuels
Specialty papers	Pulp	Biochemicals
		Biomedicals
		Biocomposites
Communication papers	Plywood	Energy

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Implementing biorefineries at different maturity levels



**Mature
Businesses**



UPM Pulp
known feedstock,
known technology,
known markets



UPM Biofuels
new feedstock,
known technology,
known markets



UPM Biochemicals
new feedstock,
new technology,
new markets

**New
Businesses**

Cost leadership
Economies-of-Scale

← Increasing capacity

Market/Technological
risk mitigation

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UPM Paso de los Toros – World-class pulp mill

USD 3.47 billion investment in Uruguay



Pulp mill and deep seaport
terminal in Montevideo
Jobs and other opportunities
for the residents of the region



Pulp is used in tissue,
specialty and packaging
papers, for example



Total annual capacity
of 2.1 million tonnes of
eucalyptus pulp



Scheduled to start
up in Q1 2023

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Progress in UPM Paso de los Toros and the Montevideo port



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Moving forward with biofuels growth plans

Basic engineering phase of a next generation biorefinery



Potential industrial scale biofuels biorefinery



Products would significantly reduce carbon footprint in the road transport and aviation

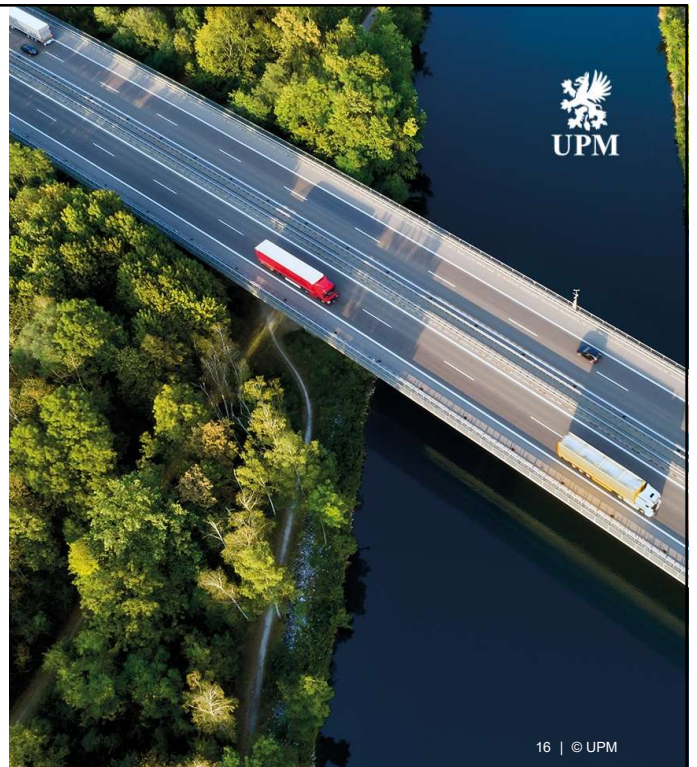


Capacity would be 500,000t of renewable fuels incl. sustainable jet fuel



Potential investment in Rotterdam, the Netherlands.

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New business in wood-based biochemicals

EUR 750 million investment at Leuna, Germany



Industrial scale biorefinery



Alternatives to fossil materials in various consumer-driven end-uses



Total annual capacity of 220,000 tonnes



Scheduled to start up by the end of 2023

UPM **BIOFORE-BEYOND FOSSILS**



UPM **BIOCHEMICALS**

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Building a Biorefinery is a multi-piece puzzle – No one-size-fits-all



- Type
- Sustainability
- Supply chain and certification
- Cost

Biomass

Site

- Greenfield, brownfield, Chemical Park
- Customer centric or biomass centric
- Expansion; utilities, logistics

- New or established
- Drop-in or performance chemicals
- Biodegradable
- Economies of Scale
- LCA

Products & Markets

Technology

- New or established
- Own development or license model

- CO₂-price
- Subsidies, GPP
- Circularity

Regulation

Financing

- Equity/Debt
- Funding
- Green Financing

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Unique technology concept

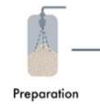


SUSTAINABLE BIOMASS

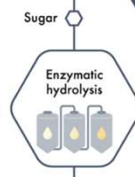
REGIONAL LOGISTICS CHAIN



PROCESSES AT UPM BIOREFINERY IN LEUNA

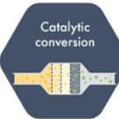


Industrial sugar



Sugar

Lignin



END USES

Bio-Mono-ethylene Glycol (Bio-MEG)



Bio-Mono-propylene Glycol (Bio-MPG)



Renewable Functional Fillers (RFF)



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Combination of wood-processing and petrochemical processes



Technological proximity to Pulp&Paper industry

SUSTAINABLE BIOMASS

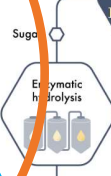
REGIONAL LOGISTICS CHAIN



PROCESSES AT UPM BIOREFINERY IN LEUNA

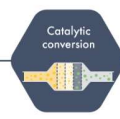


Industrial sugar



Sugar

Lignin



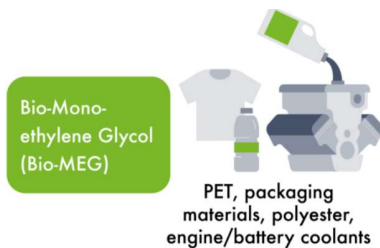
Technological proximity to PetroChem industry

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Large volume renewable chemicals for commodity markets



„Drop-in“ chemical

Approx. 60% CO₂ reduction

Market demand: **30 Million tons/a**



New product alternative for carbon black

Approx. 90% CO₂ reduction

Market demand: **14 Million tons/a**

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Simplified biomass checklist

- Define suitable type of biomass (technical limitations) and required sustainability criteria (e.g., FSC/PEFC)
- Screen areas providing long-term enough of the selected biomass (logistic and economic limitations)
- How is the biomass used today? Which end use will be replaced?
- What is the long-term ecological impact on changing that use?



Leuna Biorefinery

Hardwood; 100% FSC/PEFC

Globally 10 regions shortlisted; Final decisions CE hardwood forests

>60% of hardwood directly to incineration

New demand supports forest conversion towards mixed and hardwood forests



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Attractive location and efficient value chain



- CO₂-light energy supply concept
- Total site costs and expansion possibilities
- Utility integration costs
- On-site synergies, e.g., side-stream integration
- Logistics flexibility
- Biomass/Customer proximity
- Country/Regional risk mitigation
- Funding opportunities



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