

UPM Biofore – Beyond Fossils

Developing our Climate Response

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UPM today



UPM BIOREFINING

Pulp
Plantations
Biofuels
Sawmills
Wood Sourcing
and Forestry



UPM ENERGY

Hydro-, nuclear-
and condensing power
(incl. shares in energy
companies)
Electricity production
and trading
Optimisation services



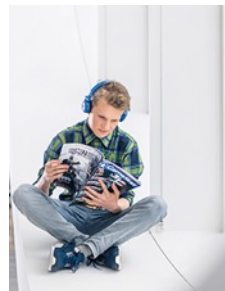
UPM RAFLATAC

Label materials
for product and
information
labelling



UPM SPECIALTY PAPERS

Fine and specialty
papers in China
and APAC
Labelling material
globally
Packaging papers
mainly in Europe



UPM COMMUNI- CATION PAPERS

Extensive product
range of graphic
papers for advertising
and publishing
as well as home
and office uses



UPM PLYWOOD

WISA® Plywood
and veneer
products
UPM Grada®
wood material



UPM BIOCOMPOSITES

UPM ProFi
UPM Formi

UPM BIOCHEMICALS

Chemical building blocks
Biomedical products
Lignin products

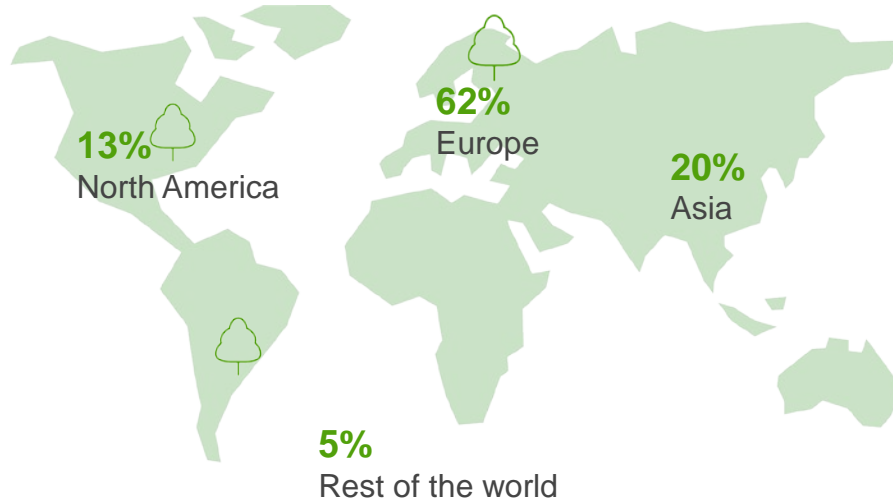
UPM BIOMEDICALS

Growdex

Global businesses – local presence

UPM's sales by market 2017

EUR 10 billion



54
production plants
in **12** countries



19,100
employees
in **46** countries

12,000
customers
in **120** countries

90,000
shareholders
in **35** countries

25,000
b-to-b suppliers
in **75** countries

Sustainable forestry: This is how we do it



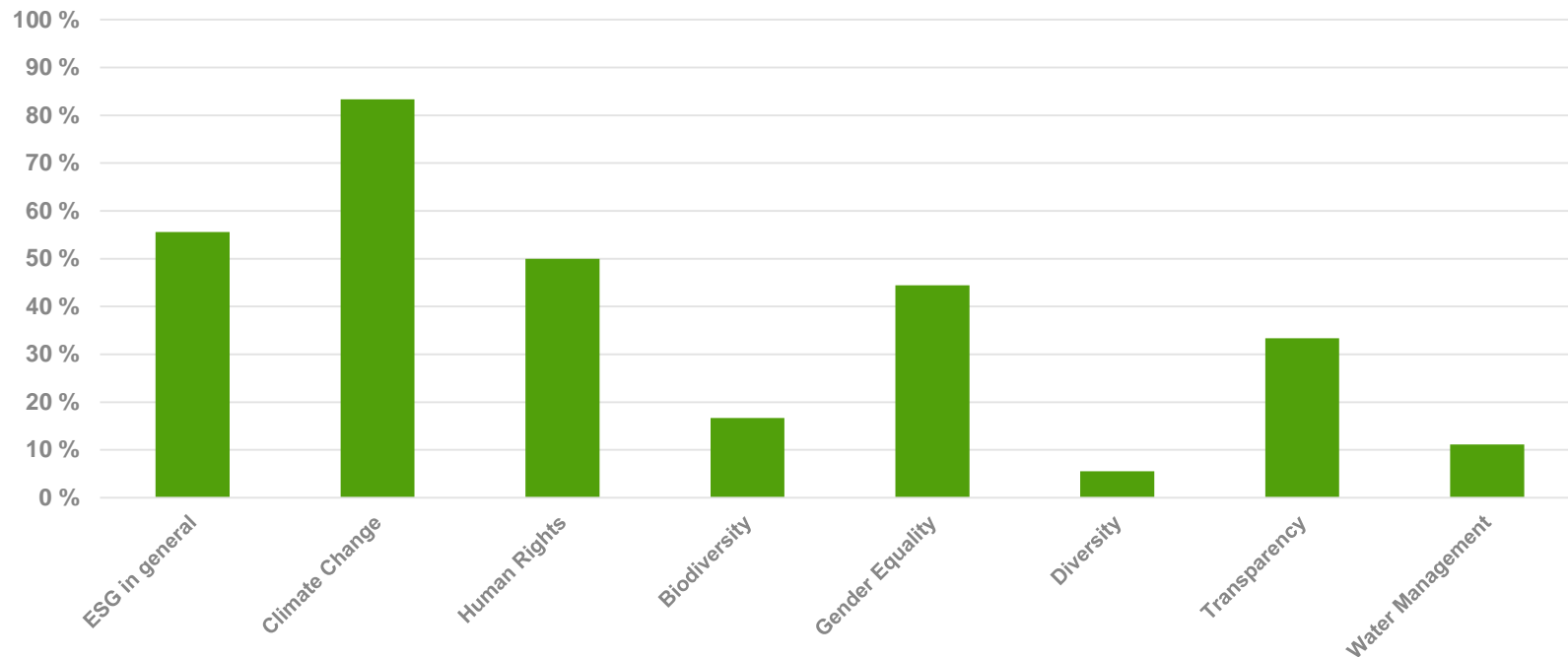
- Our own forests and plantations are 100% certified
- We know the origin of wood
- All fibre we use is certified by 2030 (2017: 85%)
- Unique partnership with FSC International
- Own long-term and global biodiversity programme
- Forests as carbon sinks
- No competing with food production
- No wood from tropical rainforests or plantations established by clearing rainforest
- No operations in areas where the rights of indigenous peoples are threatened



We are seen as the industry leader in responsibility...



Climate change is highlighted as a number one responsibility topic among selected investors*



Investors are taking concrete actions

- **BlackRock** (World's largest investment fund, assets USD 6 trillion)
 - "To prosper over time, every company must not only deliver financial performance, but also show how it makes a **positive contribution to society**," Larry Fink, CEO
 - **Climate is a source of portfolio risk.** Calculates **GHG emissions as a percentage of a company's sales** and estimates firms' **exposures to income shocks** from climate change.
- **Norges Bank** (World's largest sovereign wealth fund, assets 0.9 trillion)
 - "Companies should **plan for relevant climate scenarios** and incorporate material climate risks and opportunities in **strategic planning, risk management and reporting.**"
 - Climate change is one of the three responsibility focus areas:
publishes expectations to, analyses and engages with companies
- **Ilmarinen** (Finnish pension fund assets EUR 46 billion)
 - Aims for **decreasing CO₂ intensity** in its portfolio (2016: 354 t CO₂/1m€)
 - **Excludes** coal-dependent companies (30% of sales, or electricity generation)
 - **Invests** in companies that benefit from **business opportunities** related to climate change

From voluntary disclosure to regulation...

[Directive 2014/95/EU](#)



EU sustainable finance proposal to define sustainable economic activities:

✓ **Contribute substantively** to at least one and **not significantly harm** any of the other environmental objectives;

- 1) climate change mitigation; (2019)
- 2) climate change adaptation; (2019)
- 3) sustainable use and protection of water and marine resources;
- 4) transition to a circular economy, waste prevention and recycling;
- 5) pollution prevention and control; and
- 6) protection of healthy ecosystems.

✓ Follow minimum social and governance safeguards;

✓ Fulfill specific technical screening criteria

To be used by:

- A) Member States or the Union when setting any requirements on market actors in respect of financial products or corporate bonds that are marketed or deemed as environmentally sustainable.
- B) Financial market participants offering financial products as environmentally sustainable investments or as investments having similar characteristics. They would have to disclose information on how and to what extent the criteria for environmentally sustainable economic activities are used to determine the environmental sustainability of the investment.

Taxonomy has no behavioral requirements

What do we **need to know** and disclose ?

- Impact of climate change on the pricing and availability of raw materials, for example:
 - Availability of wood;
 - Delivery problems due to extreme weather conditions;
 - Scarcity of other resources, eg. water.
- Business risk is the main point that investors expect to hear from us
- At least two alternative scenarios, for example:
 - Below 2 (or 1,5) degrees with effective policies: price of carbon, price of carbon sequestration etc;
 - About 4 degrees with increased and severe physical risks.

What do we **want to confirm** and disclose ?

- Our contribution to the forest carbon balance:
 - Effect of sustainable forest management
 - How we can improve (for example carbon stocks, biodiversity, peatlands)
 - Risks of not managing the forests
- Holistic approach taking into account not only the forest part, but the whole value chain:
 - Products and their alternatives
 - Alternative sources of wood

Innovating a future beyond fossils

Resources are scarce globally – we need more renewable solutions and recycling. By **increasing the forest growth** and decreasing the use of fossil fuels we can mitigate the climate change and develop sustainable solutions for the future.

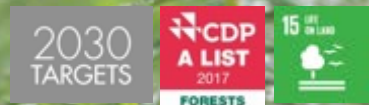


Limitless opportunities with sustainable forest management

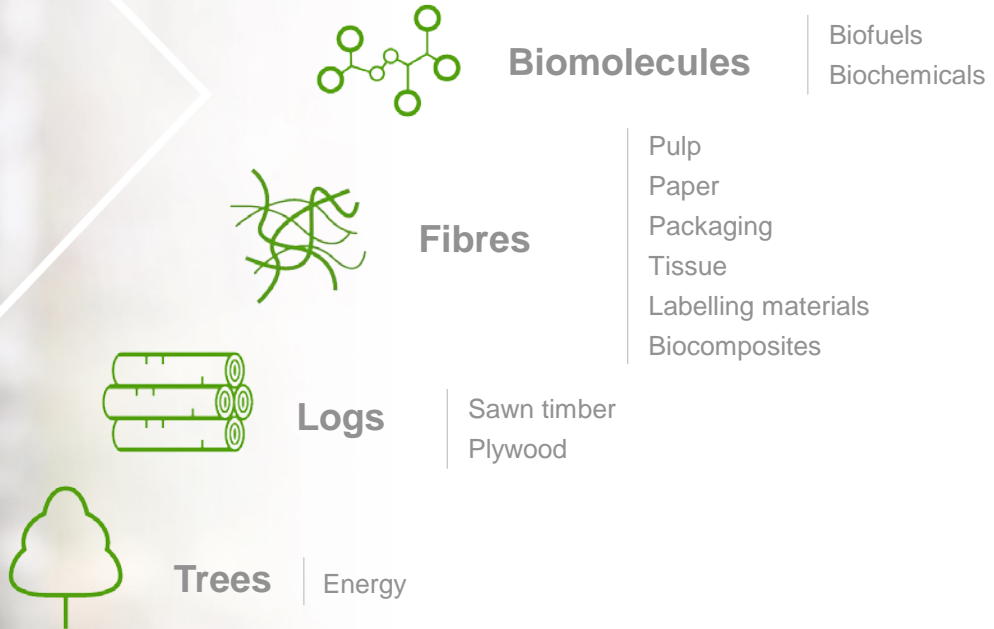


Forests can mitigate global warming while also yielding timber for various uses. **Our approach is to increase the forest growth through sustainable harvesting and effective regeneration practices.**

- We ensure that our most important resource, wood, grows in sustainably managed forests, which act as carbon sinks.
- We support the growth of highly biodiverse ecosystems that are less vulnerable to the effects of climate change.



Evolution of wood usage



Responsible production

The use of fossil fuels is the main driver of climate change.

We reduce our fossil CO2 emissions by following actions:

- We continuously increase energy efficiency in our operations.
- We enhance resource efficiency by circular bioeconomy solutions.
- We constantly increase the use of renewable, low-emission energy in all our operations.



Innovative, renewable, recyclable products and solutions



As bioforest industry leader we are committed to contributing to a healthy, prosperous and balanced future beyond fossils:

- We replace non-renewable materials with renewables with lower emissions.
- We produce and develop products that genuinely act as carbon sinks.
- We innovate new products to meet future needs.

Our safe and sustainable solutions are already changing businesses and lives around the world.



2030
TARGETS



UPM **BIOFORE**
BEYOND FOSSILS

