



# UPM – The Biofore Company

Investor Presentation, October 2019



## UPM BUSINESSES

### 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 COMMUNICATION 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 Formi 3D®

### UPM BIOCHEMICALS

Wood-based biochemicals  
for variety of industrial uses

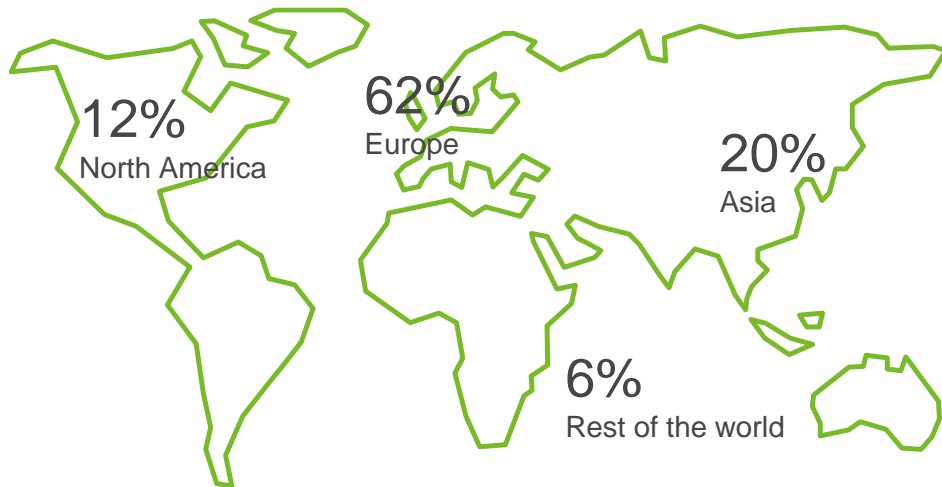
### UPM BIOMEDICALS

GrowDex®

## Global businesses – local presence

UPM's sales by market

**EUR 10,483 million**



54 production plants in 12 countries

19,000 employees in 46 countries

12,600 customers in 110 countries

100,400 shareholders in 32 countries

24,000 b-to-b-suppliers in 75 countries



# Sustainable and safe products for everyday use

**TIMBER**  
for construction

**ELECTRICITY**  
everywhere

**PULP AND BIOFUEL  
BASED MATERIALS**  
for packaging, transport,  
storage and hygiene  
products

**PUBLICATION PAPERS**  
for reading and  
advertising

**LABEL MATERIALS**  
for food packaging,  
drink bottles and for  
communicating information

**LABELS**  
for food products

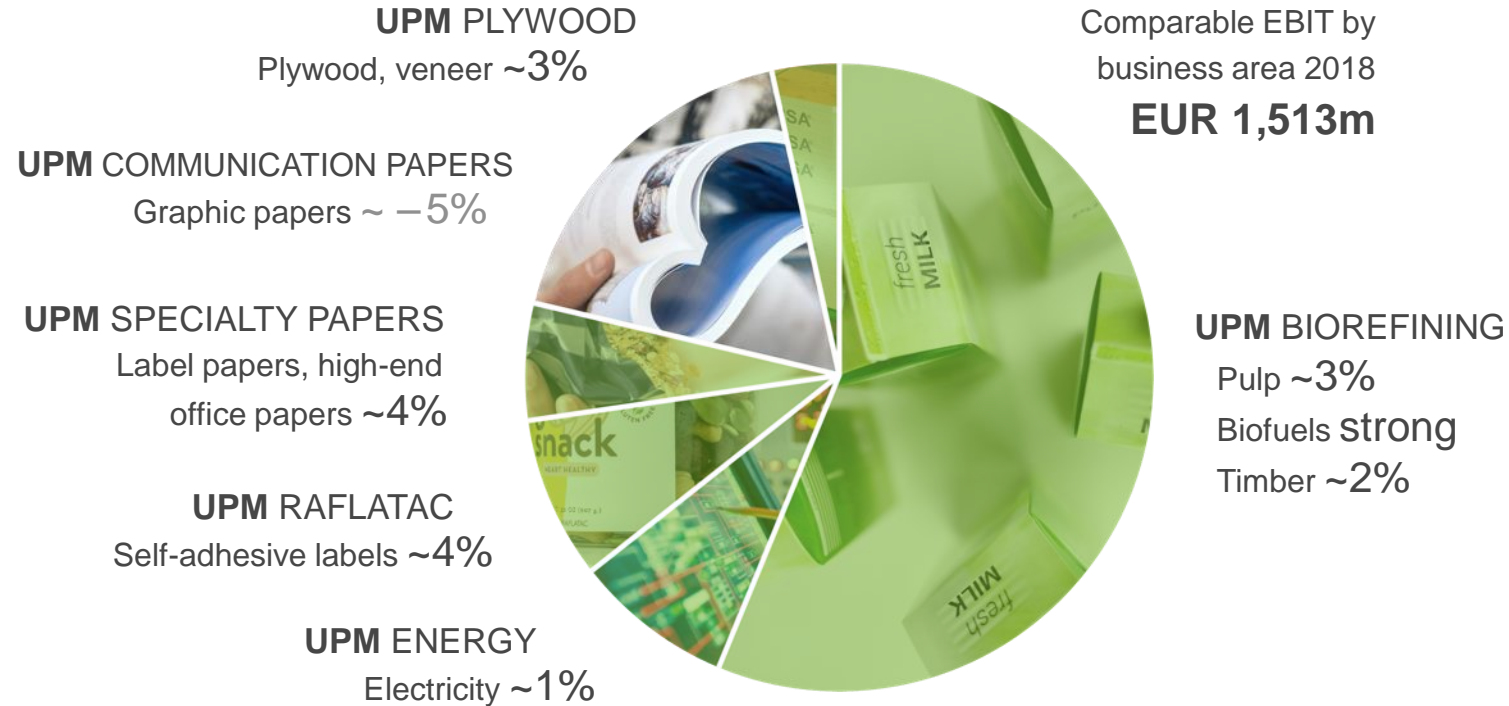
**SPECIALTY PAPERS**  
for food packaging

**WOOD MATERIALS**  
for construction  
and design features

**OFFICE  
PAPERS**  
for printing

**WOOD  
MATERIALS**  
for furniture and  
the home

# Operating on healthily growing markets



Comparable EBIT by business area 2018  
**EUR 1,513m**

Market demand trend growth, %

# Biofore strategy

**WE CREATE VALUE BY SEIZING THE LIMITLESS  
POTENTIAL OF BIOECONOMY**

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**1**

**PERFORMANCE**

**2**

**GROWTH**

**3**

**INNOVATION**

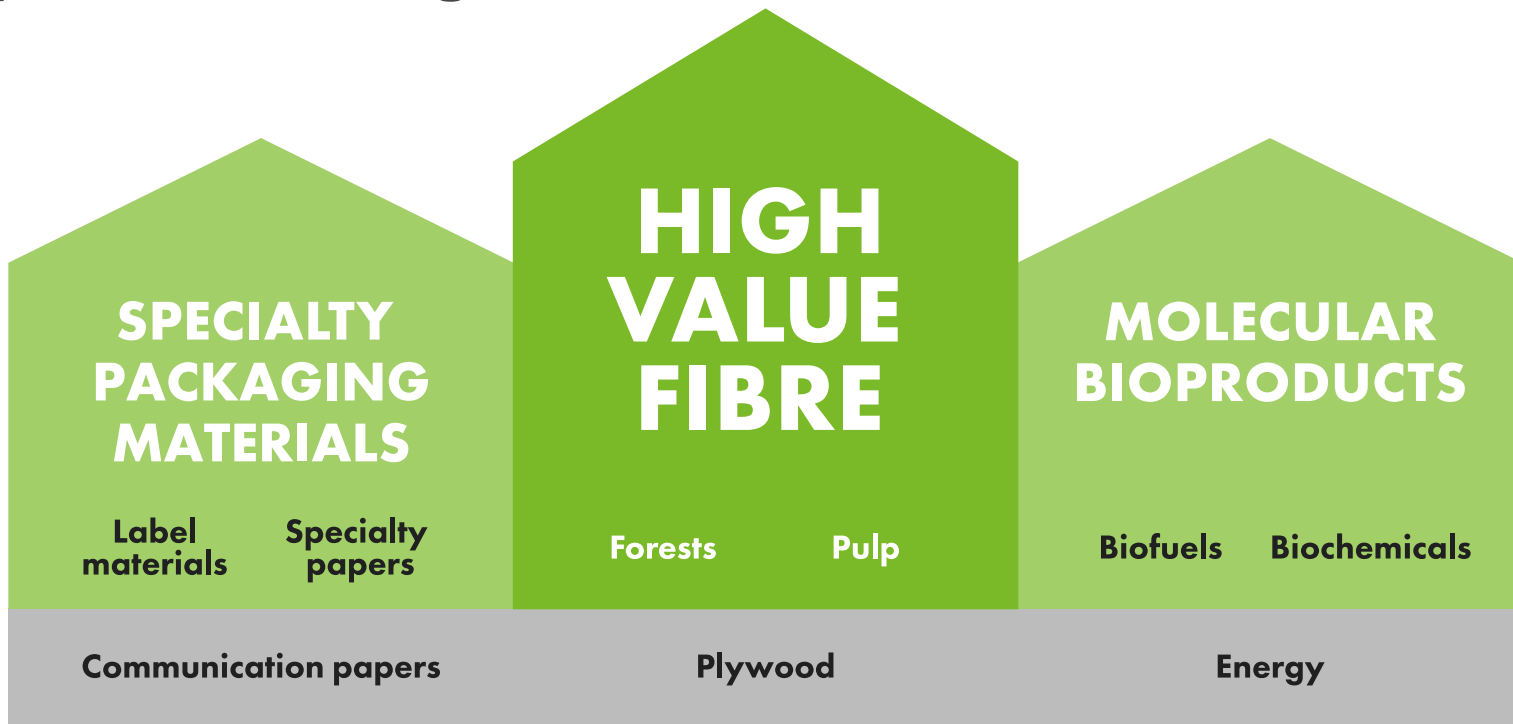
**4**

**RESPONSIBILITY**

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**STRONG LONG-TERM FUNDAMENTALS FOR DEMAND GROWTH  
AND HIGH BARRIERS TO ENTRY**

# Spearheads for growth



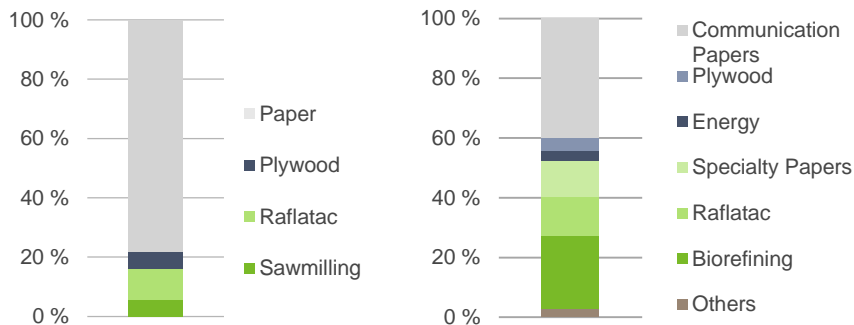
# UPM in transformation

**2008**  
vertically integrated  
paper company

**2018**  
six separate  
businesses

**Operating model**  
Promotes value creation

## Sales



## Business portfolio

Increasing share of businesses with strong long-term fundamentals for profitability and growth

**Sales** EUR 9.5bn  
**EBIT<sup>\*)</sup>** EUR 513m  
**ROE<sup>\*)</sup>** 3.5%

**Sales** EUR 10.5bn  
**EBIT<sup>\*)</sup>** EUR 1,513m  
**ROE<sup>\*)</sup>** 12.9%

## Business performance

Continuous improvement in financial, social and environmental performance

**Net debt** EUR 4.3bn  
**Market cap** EUR 4.7bn

**Net debt** EUR -0.3bn  
**Market cap** EUR 11.8bn

## Disciplined capital allocation

Driving value creation

<sup>\*)</sup> excluding special items for 2008, comparable figures for 2018

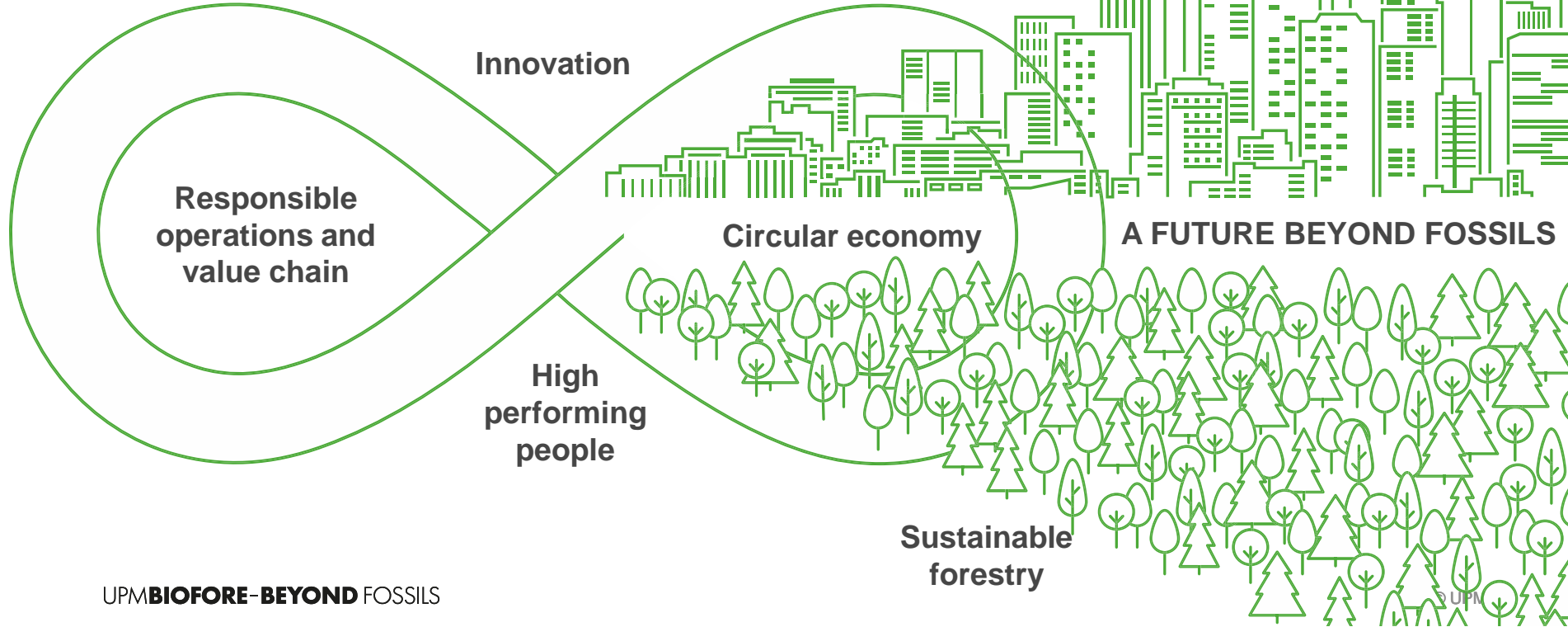


2030

# Limitless opportunities of bioeconomy

Sustainable and safe solutions for global consumer demand

2020



# UPM current investment portfolio for earnings growth

## Focused investments

- Chudovo plywood mill expansion  
+45k m<sup>3</sup> in Q3 2019, Russia
- Nordland PM2 conversion to release liner  
+110kt in Q4 2019, Germany
- Changshu release liner expansion  
+40kt in Q1 2020, China
- New power plant in Nordland  
in Q3 2022, Germany
- Kuusankoski hydropower refurbishment  
in Q4 2022, Finland

## Transformative prospects

### New 2.1mt eucalyptus pulp mill

- Mill investment of USD 2.7 billion, Uruguay
- Investments in port operations in Montevideo, local facilities in Paso de los Toros of USD 350 million
- Scheduled start-up in H2 2022

### Molecular bioproducts, possible biorefineries

- Basic engineering completed for a potential 150kt biochemicals refinery in Germany. Final site assessment and commercial studies ongoing.
- Environmental impact study completed for a potential 500kt biofuels refinery in Finland. Ambition to scale-up with a next generation biorefinery, development ongoing into next year.

# Continuously taking action to ensure competitiveness

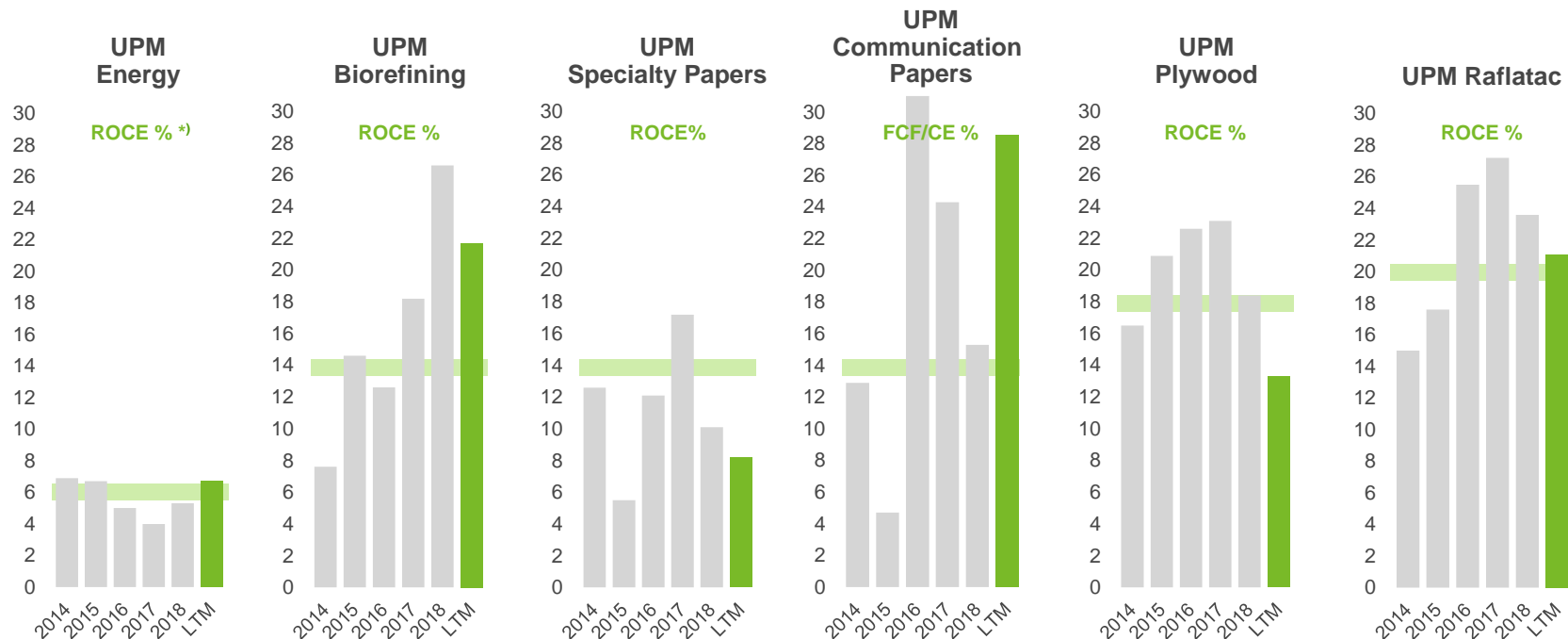
## UPM Communication Papers

- UPM Plattling PM 10 (LWC)  
-155kt closed down in Q3 2019
- UPM Rauma PM 2 (SC)  
-265kt, plan to close down by the end of 2019
- UPM Chapelle (newsprint)  
-240kt, plan to sell by the end of Q2 2020
- UPM Nordland PM2 (fine)  
-200kt, conversion to release liner in Q4 2019
- New power plant in UPM Nordland  
in Q3 2022

## All business areas and functions

- Continuous improvement programmes  
Variable costs, working capital, commercial strategies, maintenance and site costs, safety, environmental performance
- Efficient use of assets
- Fixed cost reduction  
New Business Services Hub in Wroclaw, Poland
- Product and mix development
- Digitalisation  
Customer interface, planning, data analytics

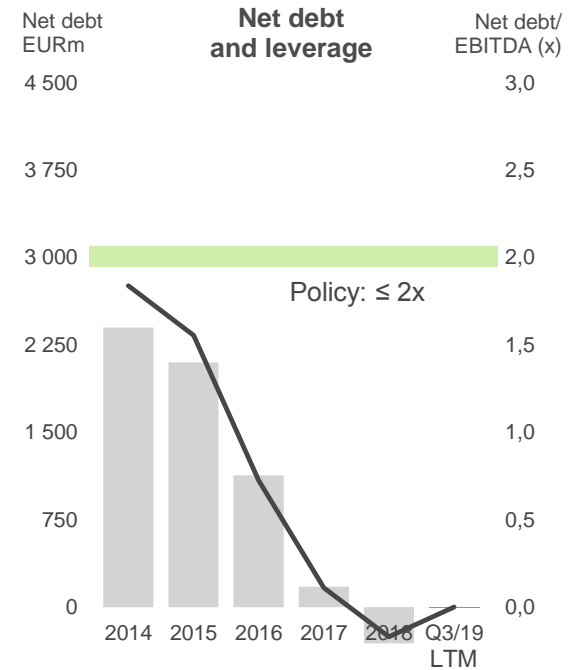
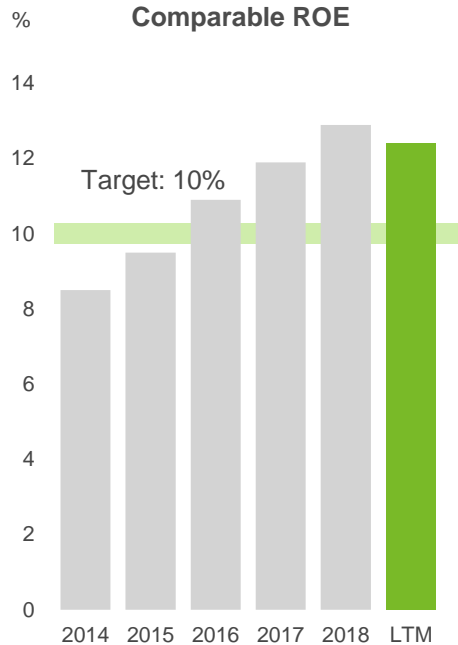
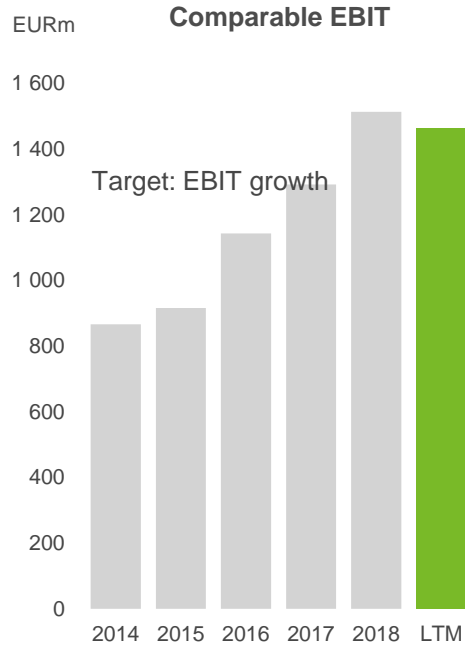
# Business area returns and long-term targets



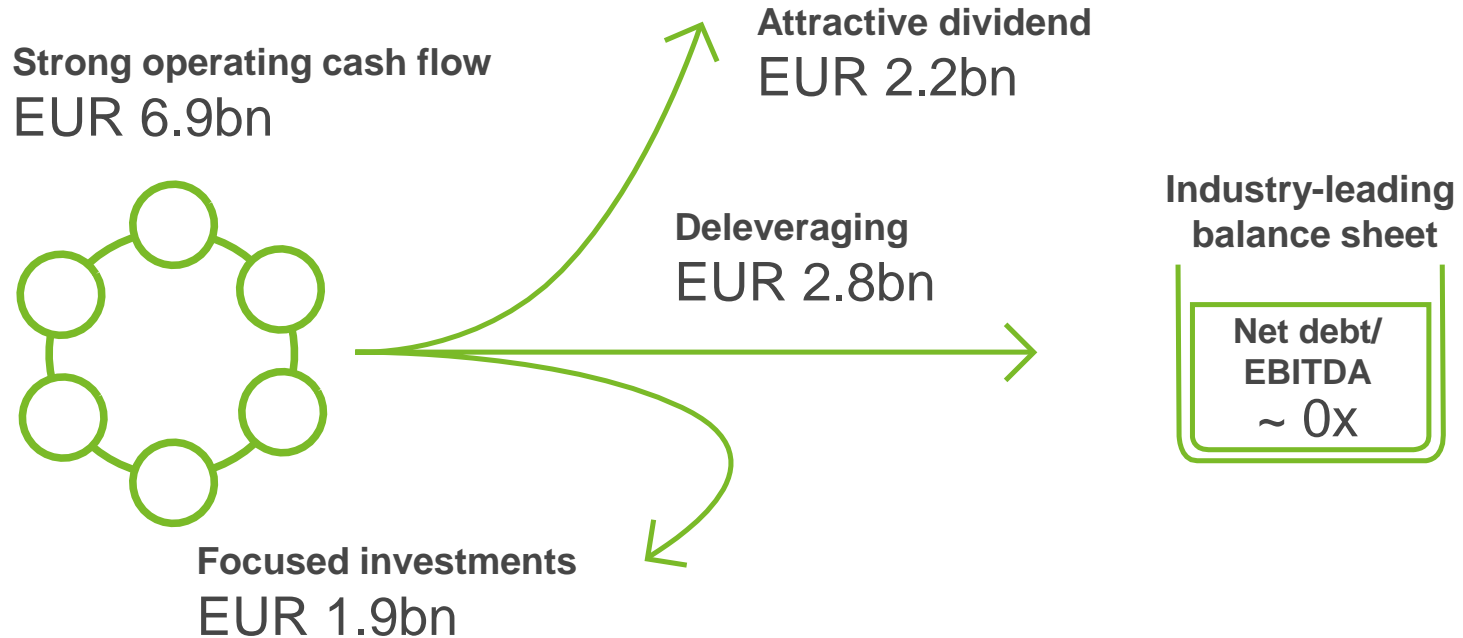
\*) shareholdings in UPM Energy valued at fair value

Long-term return target

# Group financial performance

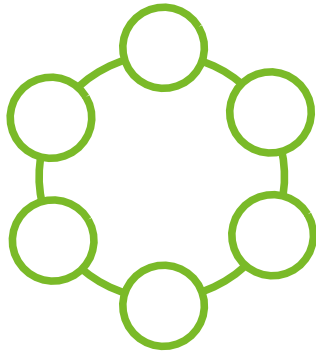


# 5-year cumulative cash flow (2014–2018) – efficient capital allocation in action



# Illustrative capital allocation <sup>\*)</sup> for the next 5 years

Performance focus  
Strong cash flow



Attractive dividend  
EUR ~3–4bn

High return  
investments  
EUR ~4bn

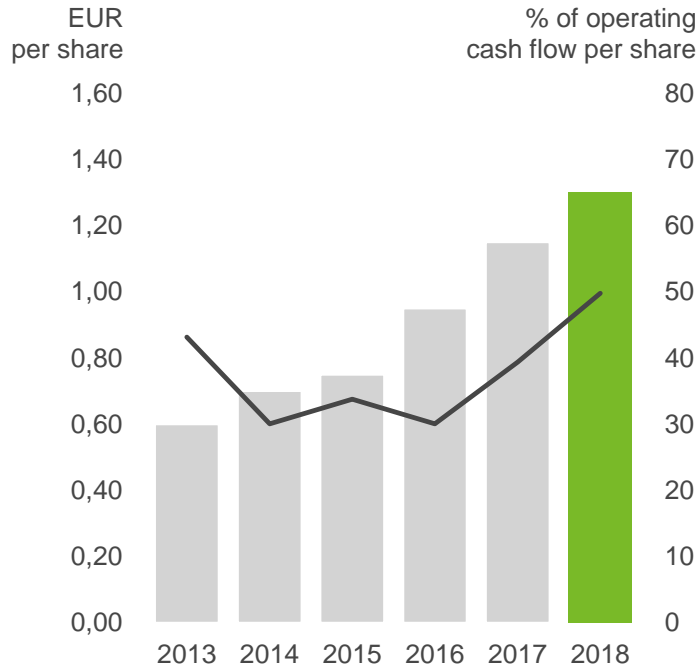
Industry-leading  
balance sheet



Maintain headroom

<sup>\*)</sup> This is not a forecast

## Dividend for 2018: 13% increase



### Long term dividend policy

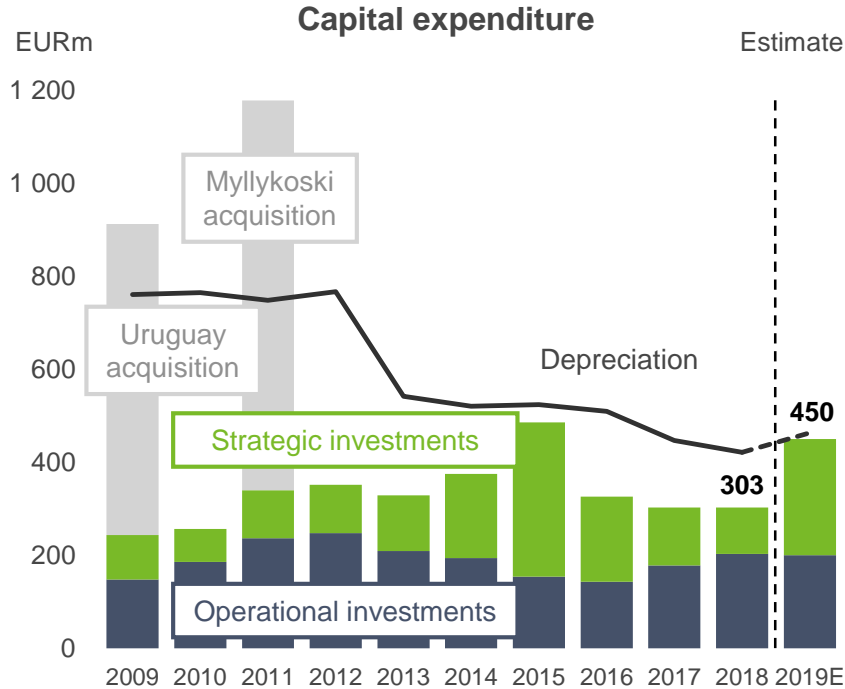
- UPM aims to pay an attractive dividend, 30–40% of operating cash flow per share

### Dividend for 2018

- EUR 1.30 (1.15) per share, totalling EUR 693m
- 50% of 2018 operating cash flow



# Low investment needs in existing assets allow growth projects with modest total capex



## Focused growth investments

- ✓ High returns and fast payback
- ✓ Low implementation risk
- ✓ Financed from operating cash flow

## Low replacement investments

- ✓ Asset quality in all businesses, e.g. large competitive pulp mills
- ✓ UPM Communication Papers

Modest total capex and attractive returns

# Value from responsibility

## Compliance

- Responsible business practises
- Decision making, management and operations guided by our values and UPM Code of Conduct
  - Reliable, credible and transparent reporting

## Responsible operations and value chain

- Material efficiency and circular economy thinking
- Climate solutions and working towards carbon neutrality
  - Diversity and inclusion
    - Responsible water use
    - Sustainable land use
    - Respecting human rights



## Renewable, recyclable and safe products

- Renewable and biodegradable raw materials and recyclable products
- Product stewardship
- Open and transparent product communications

## Value based leadership

- Safe and healthy working environment and wellbeing of employees
- Value-based and inspiring leadership
- Diversity and inclusion
- High performance and continuous professional development of employees
- Local commitment

# Our consistent efforts on responsibility have received recognition globally

- UN Global Compact LEAD
- Dow Jones Sustainability Index
- CDP Programs
- MSCI ESG Ratings



In collaboration with a RobecoSAM brand



<https://www.msci.com/documents/1296102/1523388/6/How-to-Reference-an-MSCI-ESG-Rating-Final.pdf>

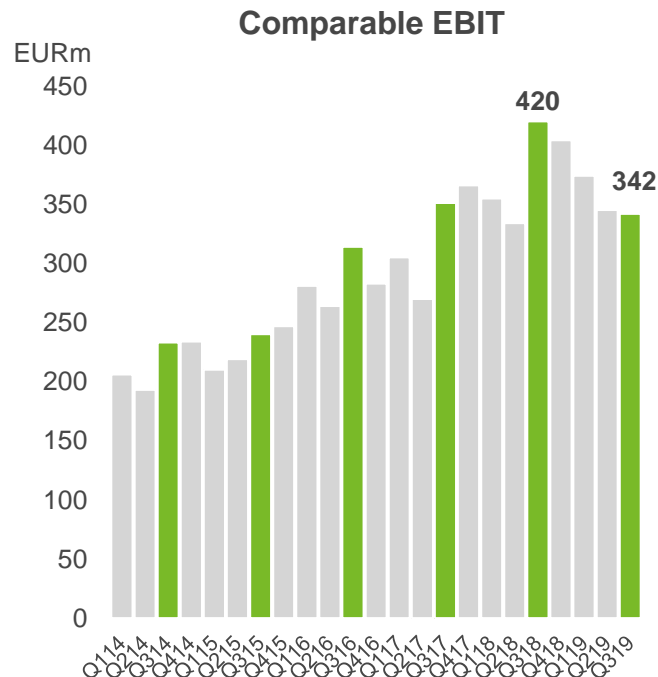


# Q3 2019: Good performance and strong financial position

## – Uruguay decision drives significant future earnings growth

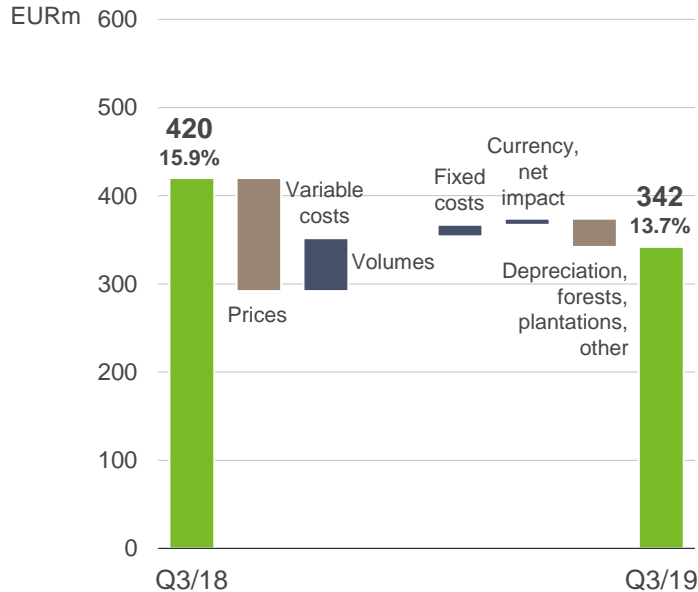


- Sales decreased by 6% to EUR 2,493 million (2,650 million in Q3 2018)
- Comparable EBIT decreased by 19% to EUR 342m (420m)
- Sales prices decreased, outweighing the impact of lower variable costs in all businesses
- Operating cash flow was strong at EUR 500m (405m)
- Net debt decreased to EUR -2m (4m)

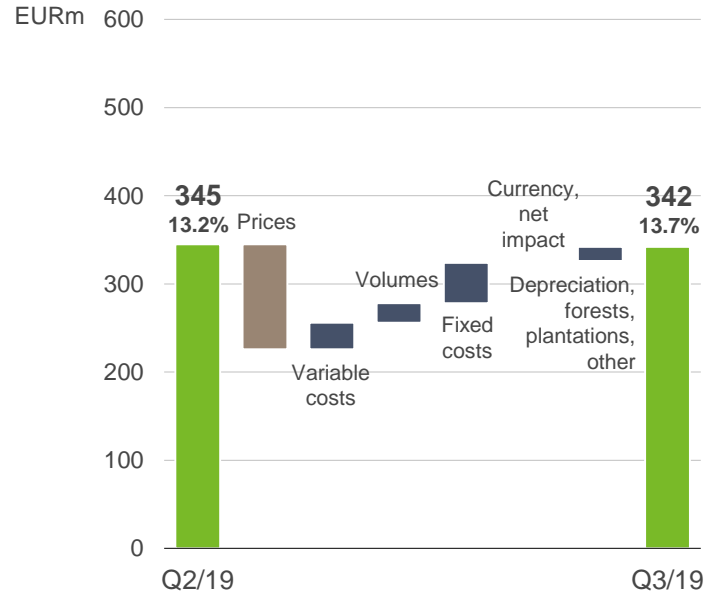


# Comparable EBIT in Q3 2019

Sales prices decreased, outweighing the impact of lower variable costs across all business areas.  
Fixed costs decreased.



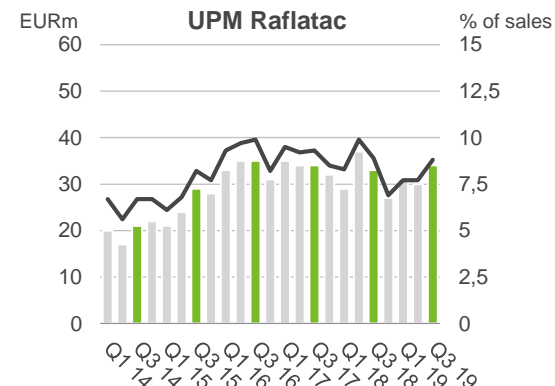
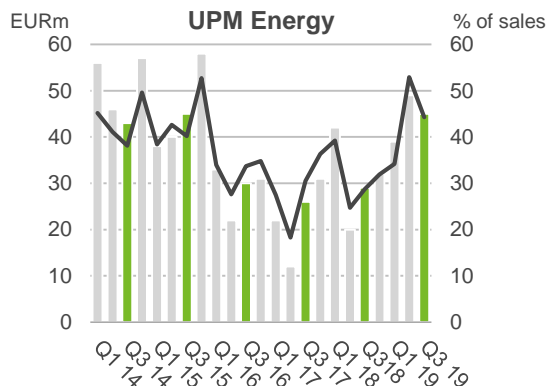
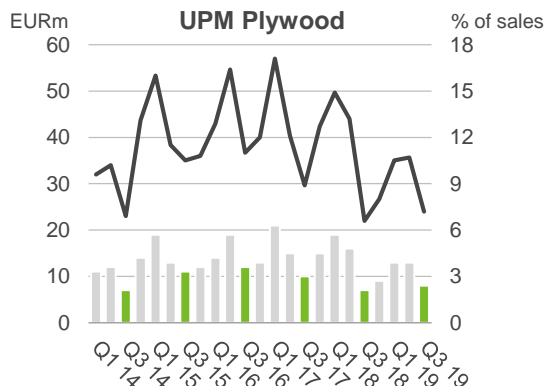
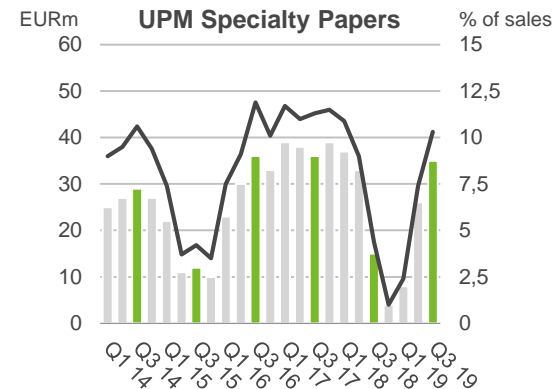
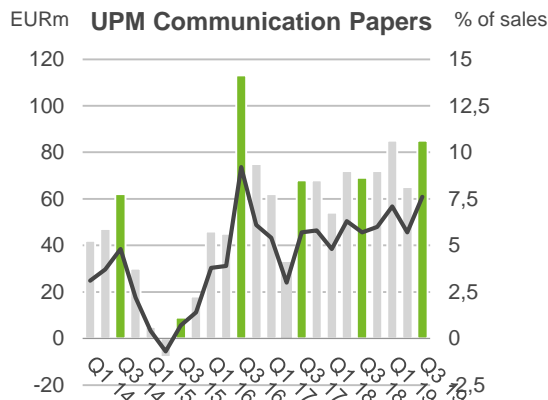
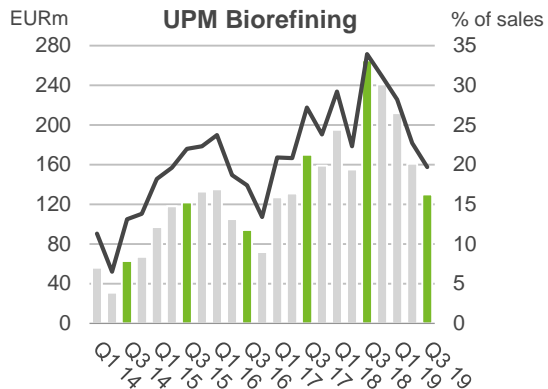
Sales prices decreased more than variable costs.  
Fixed costs lower, mainly due to seasonal factors.  
Deliveries increased.



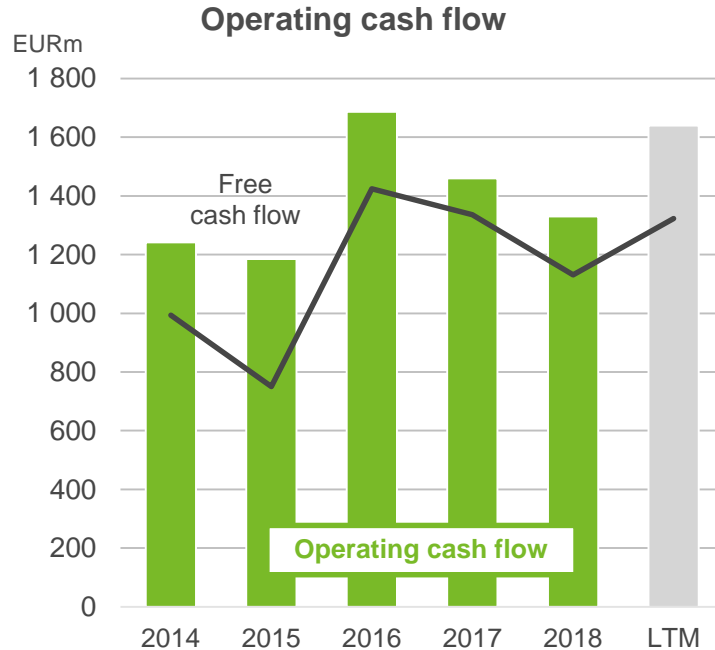


UPM

# Comparable EBIT by business area



# Consistently strong cash flow



- Q3/19 operating cash flow was EUR 500m (405m in Q3/18)
- Working capital decreased by EUR 112m (increased by 75m)
- Q1-Q3/19 operating cash flow was EUR 1,256m (947m)

# Outlook for 2019



The global economic growth is estimated to continue in 2019, albeit at a slower pace than in 2018. There are significant uncertainties related to global economic growth, including global trade tensions. Growth has slowed down in Europe, particularly in Germany. These issues may have an impact on the global economic growth and on UPM's product and raw material markets.

UPM reached record earnings in 2018. UPM's business performance is expected to be at a good level in 2019.

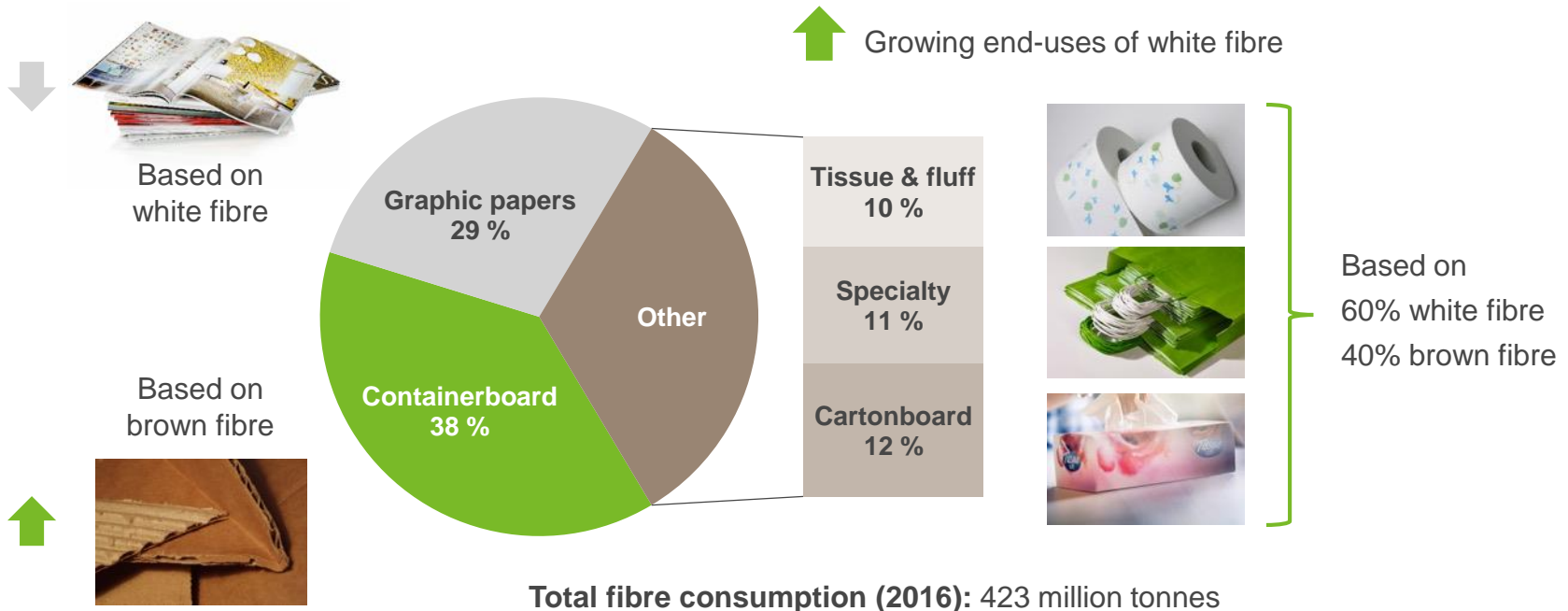
In 2019, demand growth has continued for most UPM businesses, albeit at a modest pace. Demand decline has continued for UPM Communication Papers.

Fair value increases of forest assets are not expected to contribute materially to comparable EBIT in 2019.

In Q4 2019, the average pulp price for UPM businesses is expected to be lower than in Q3 2019. UPM Biorefining is affected by the scheduled maintenance shutdown at the UPM Fray Bentos pulp mill. UPM Communication Papers is positively impacted by the annual energy related refunds.



# Market pulp consumed in growing end-uses – supply of alternative white fibres declines

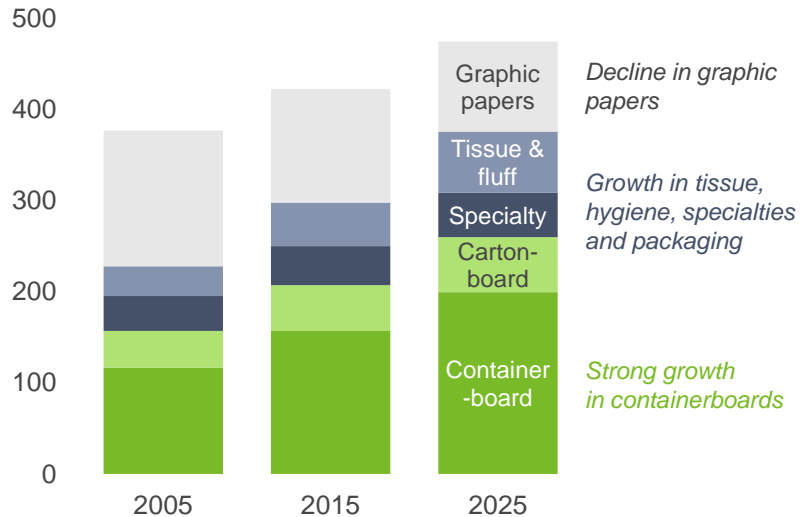


# UPM Biorefining

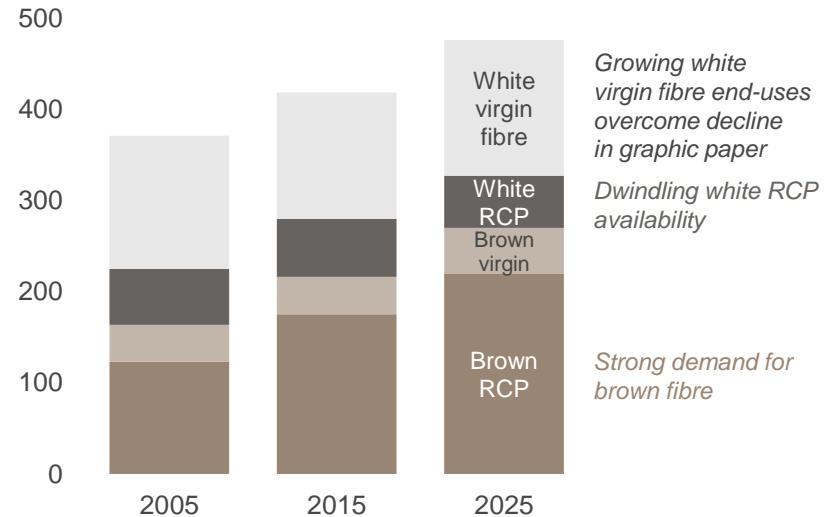
## Pulp demand outlook



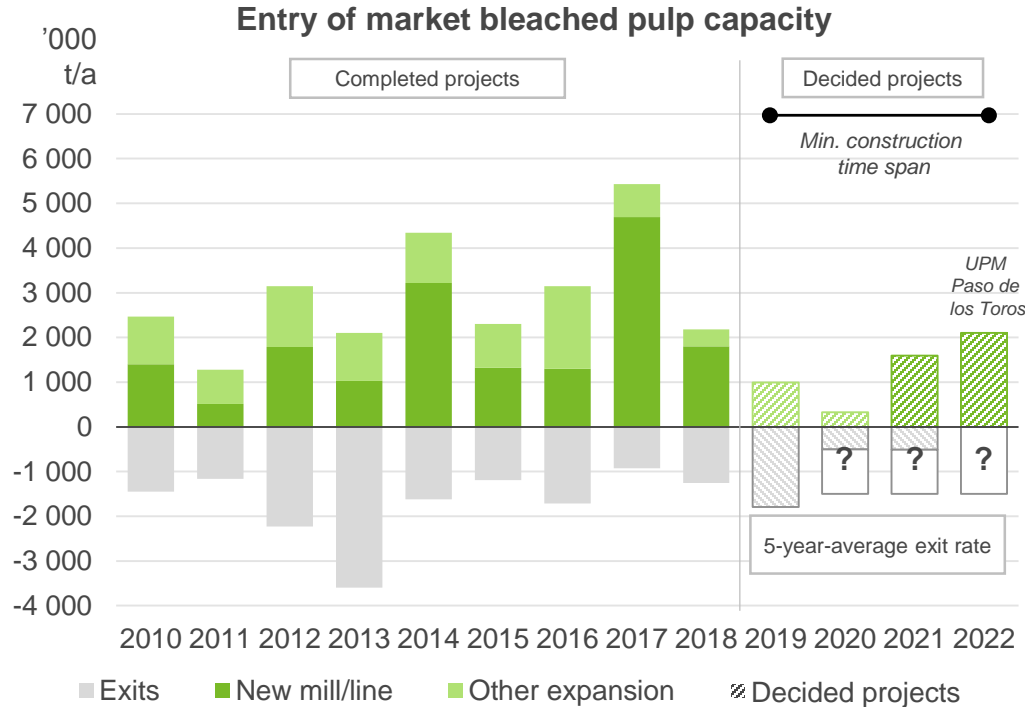
**Global consumption of end-uses**  
in million tonnes



**Global consumption of fibres**  
in million tonnes



# Few decided projects coming on stream in the short-term



**Below-average rate of expansion**

**Exits take place**

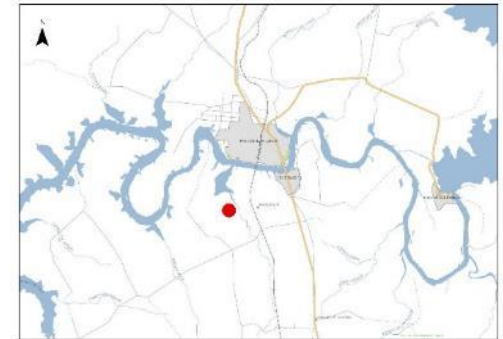
Note: Year 2022 including BHKP, BSKP, excluding fluff and dissolving

Sources: Pöyry, UPM

## UPM invests in a world class pulp mill in Uruguay



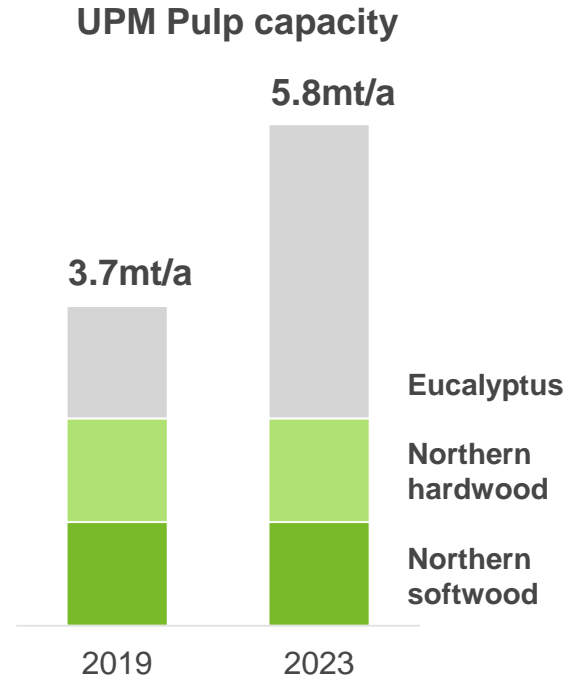
- UPM will construct a competitive new pulp mill with annual production capacity of 2.1 million tonnes of eucalyptus pulp
- Mill investment of USD 2.7 billion
- Investments in port operations in Montevideo, local facilities in Paso de los Toros of USD 350 million
- Scheduled start-up in H2 2022
- Located in the department of Durazno, close to the town of Paso de los Toros
- The main part of the total capital expenditure of USD 3 billion will take place in 2020–2022



# Transformative step in UPM's pulp business and in UPM's future earnings



- Significant step for UPM's future earnings
  - Expected cash cost level of USD 280 per delivered tonne of pulp<sup>(\*)</sup> – one of the most competitive mills in the world
  - Attractive returns in various market scenarios
  - Carefully prepared to ensure long-term competitiveness and to minimise risks both in the project phase and during continuous operations
- Step change in UPM's pulp business
  - +57% in pulp business size in a sustainable and highly competitive way
  - UPM becomes one of the most competitive suppliers of premium pulp in the world



## UPM Biorefining

# State of the art mill design



- Initial production capacity of 2.1 million tonnes of eucalyptus pulp, with further potential
- Mill investment USD 2.7 billion, efficient investment level compared with corresponding projects
- World-class single line pulp mill and Best Available Techniques (BAT)
  - Excellent safety
  - Proven high environmental performance
  - High availability and maintainability
  - High energy output, surplus renewable electricity 110 MW
  - Low costs



## Competitive wood supply

- Eucalyptus availability secured through UPM's own and leased plantations and wood sourcing agreements with private partners
- UPM's own and leased plantations in Uruguay cover 382,000 hectares, supplying both UPM Fray Bentos and the new mill near Paso de los Toros
- 30 years experience of sustainably managed and productive plantations

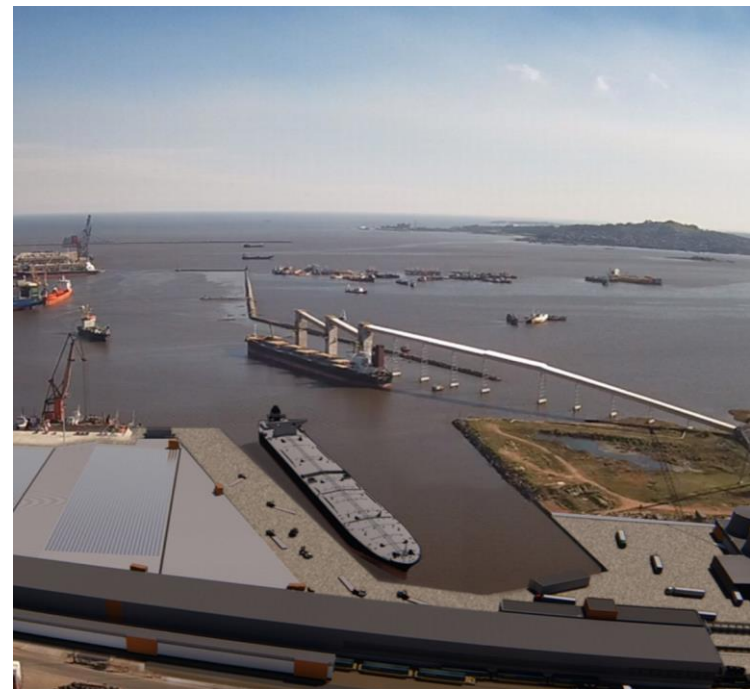


## UPM Biorefining

# Efficient logistics set-up



- UPM will invest USD 280 million to construct a deep sea pulp terminal in Montevideo port
  - Direct rail access from the mill to a modern port terminal creates an efficient supply chain to world markets
  - Synergies with the UPM Fray Bentos mill
- Agreed railway modernisation
  - Public-private-partnership agreement between the government and the construction company has been signed, financing is finalised
- Agreed road improvements





## Project schedule and capital outflow



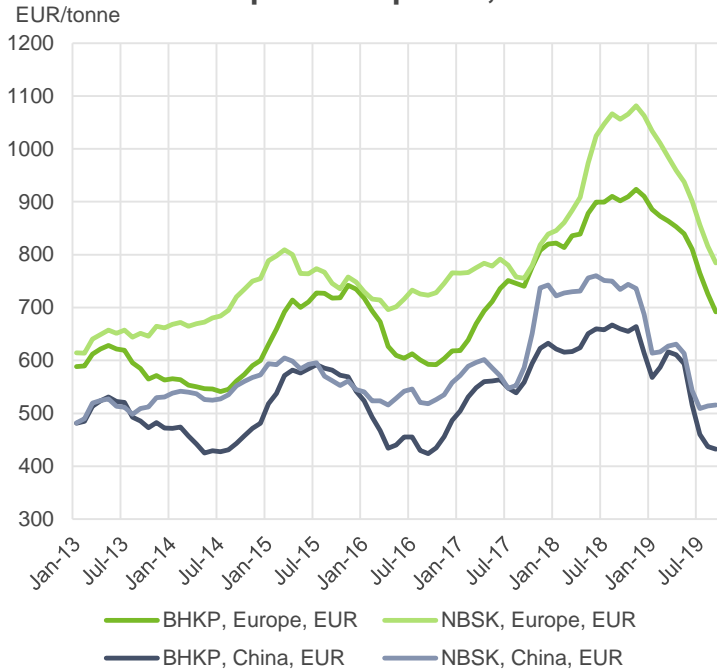
- The necessary permits have been granted and the material agreements with the Government of Uruguay have been concluded to the satisfaction of both parties.
- The Public-Private-Partnership agreement between the government and the construction company for the construction of the central railway was signed in May 2019 and the financing of the construction company is finalised.
- Among other project preparations, the site works for the mill and dredging of the port have been started. The tendering for the main equipment and manning of the project is ongoing. Commitments on major capital outlays will be made in line with the railway financing and execution.
- The mill is expected to start up in H2 2022.
- The main part of the total capital expenditure of USD 3 billion will take place in 2020–2022. UPM will have 91% ownership in the project and a local long-time partner which has been involved also in UPM Fray Bentos is owning 9%.

# UPM Biorefining

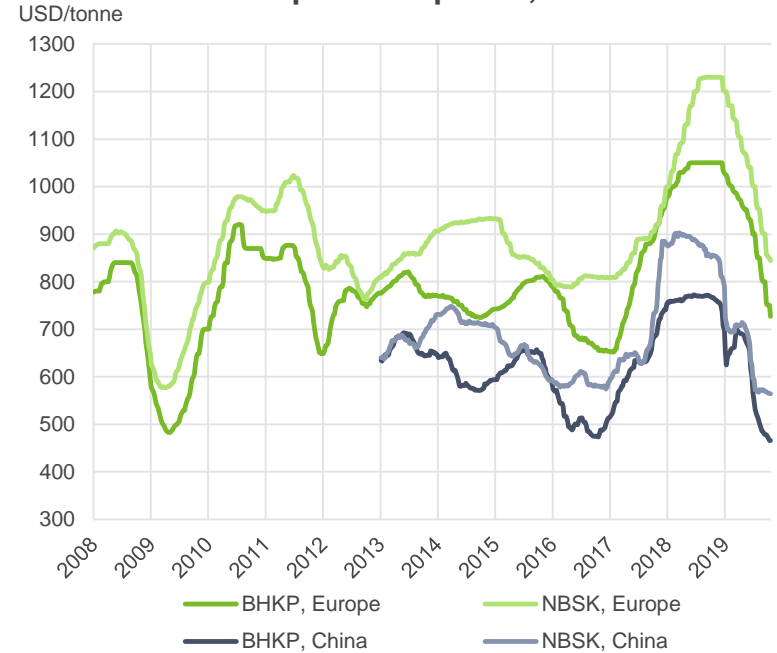
## Chemical pulp market prices



### Pulp market prices, EUR

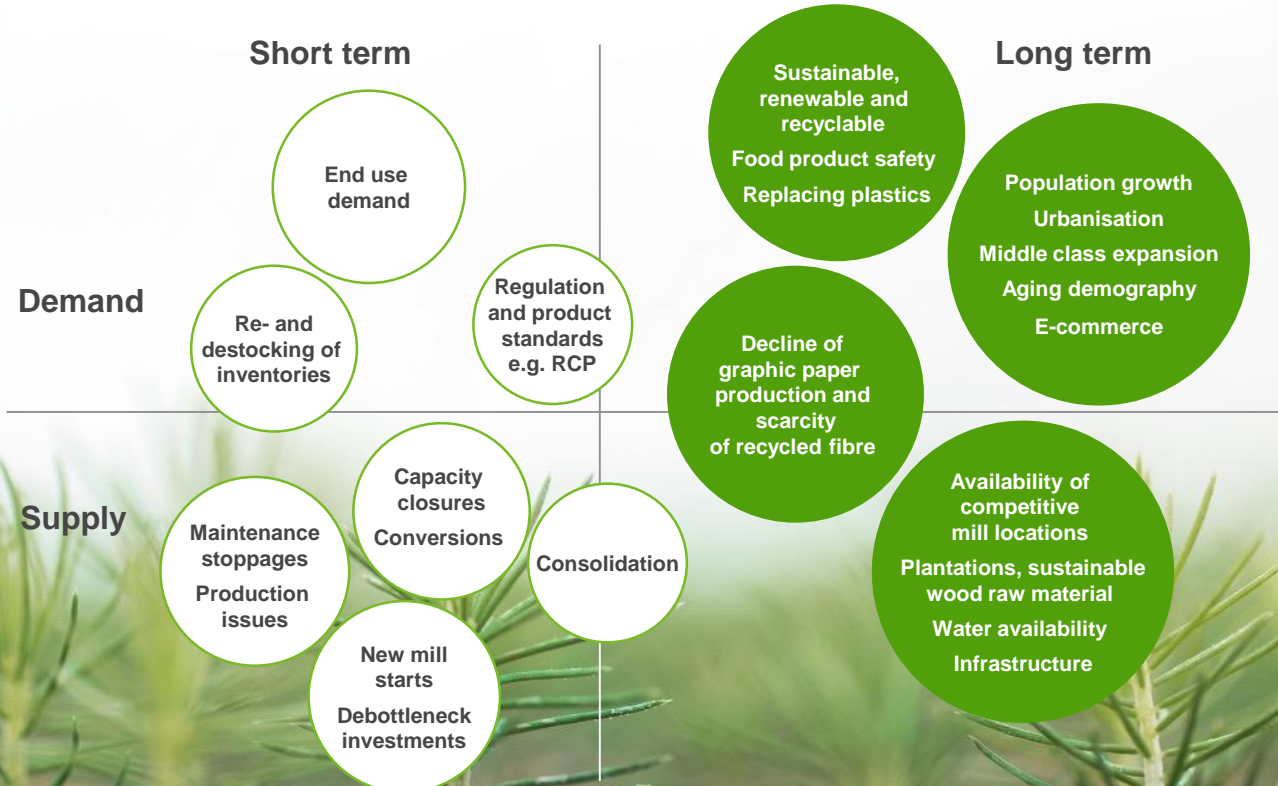


### Pulp market prices, USD



Source: FOEX Indexes Ltd

# Demand-supply drivers of pulp market



# Developing our forest assets

- Investing in strategic forest assets, e.g. in Uruguay
- Releasing capital from forests far from our mills
- Productivity with active management and nurseries
- Strong commitment to sustainability

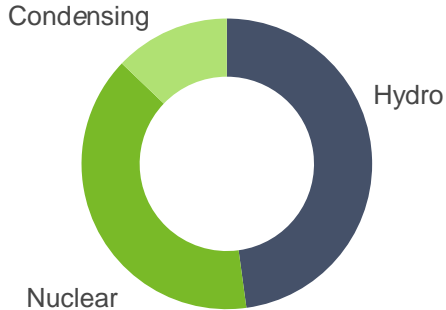


UPM forests and plantations	2008	2018	Area distribution	
Forest and plantation land (own and rented) (1,000 ha)	1,012	971	8%	8% US
Forest growth (million m <sup>3</sup> )	4.3	8.8	90%	53% Finland
Wood sourced from UPM forests and plantations (million m <sup>3</sup> )	2.2	4.6		39% Uruguay
Value of forests and plantations, including land (EURm)	1,270	2,514		
			2008	2018

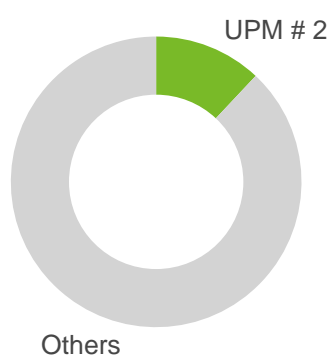
# UPM's power generation – competitive in all market conditions



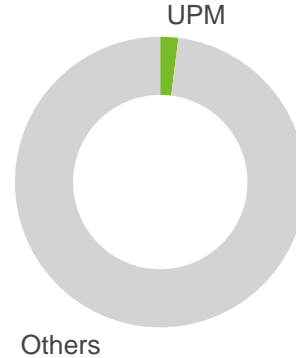
UPM's power generation assets



UPM in Finland



UPM in Nordics



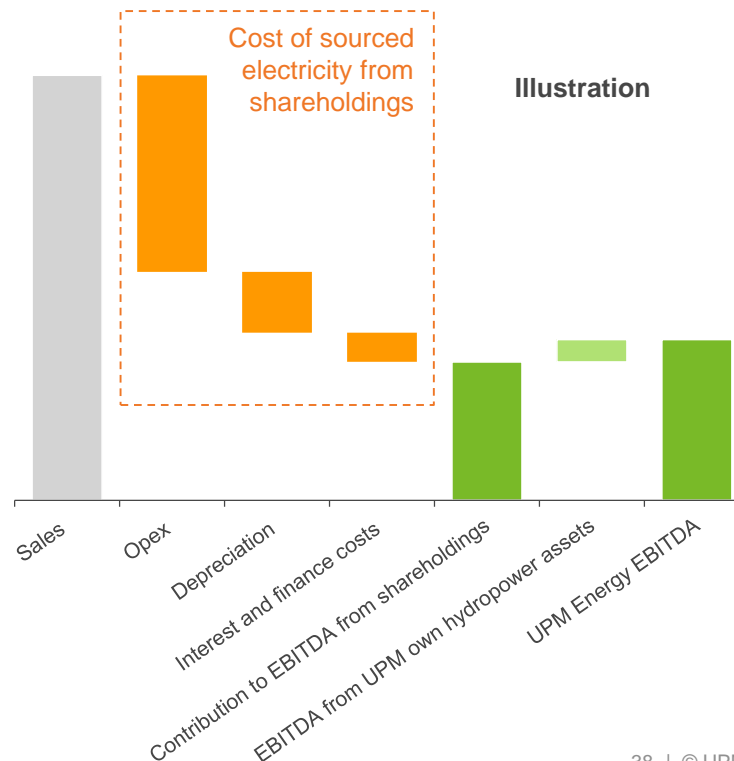
# UPM Energy

## UPM Energy

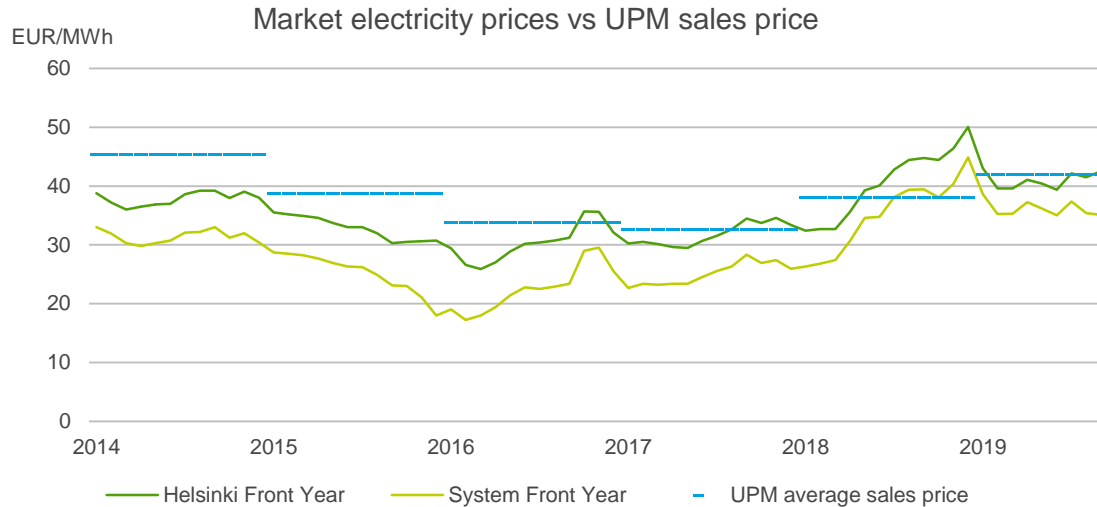


UPM Energy's power generation	MW	EURm
Hydropower holdings	551	740
Nuclear power OL1 and OL2	588	1,185
Nuclear power OL3 under construction	(494)	226
Condensing power	95	1
UPM Energy's shareholdings in total, valued at fair value	1,234	2,152
UPM own hydropower assets	160	
UPM Energy's in total (excl. OL3)	1,394	
UPM Energy capital employed		2,419

UPM Energy sources electricity from part owned energy companies at full cost (cost-price principle, mankala principle)



# Cost efficient generation enables robust profitability in changing market environment



UPM Energy profitability	2014	2015	2016	2017	2018	9M/19
Comparable EBIT, EURm	202	181	116	91	123	132
% of sales	43.5	43.6	32.7	28.8	31.5	43.2

# UPM Energy ROCE



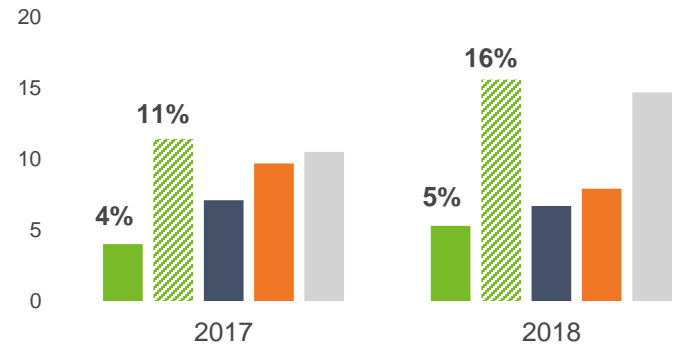
- In UPM balance sheet, UPM Energy shareholdings are valued at fair value
- Energy market transformation is ongoing
- UPM Energy assets are competitive



- UPM Energy comparable ROCE: shareholdings at fair value
- ▨ UPM Energy ROCE if calculated based on acquisition cost
- Fortum
- Vattenfall
- Statkraft

Source: Companies' financial reports, UPM

UPM Energy ROCE vs. Nordic peers





# UPM Raflatac

## Self-adhesive labels in end-use



PHARMACEUTICALS



WINE, SPIRITS & CRAFT BEVERAGE



FOOD



HOME & PERSONAL CARE



DURABLES



TRANSPORT & LOGISTICS



RETAIL, OIL & INDUSTRIAL



A4 & CUT-SIZE



SECURITY & BRAND PROTECTION



TYRE

# The self-adhesive labelstock market



>EUR 8bn global market

~4% p.a. growth

Private consumption driven

Largest of the labelling technologies

~1/5 of total self adhesive materials markets

## Strategy for profitable growth



Increased customer reach



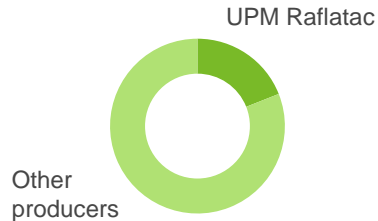
Wider product portfolio



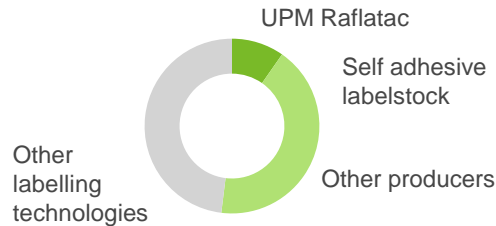
Winning operations

Enabled by strong common capabilities and global operating model  
Potentially accelerated with M&A if feasible

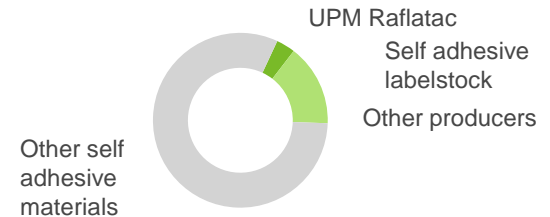
Self-adhesive labelstock market



All labelling technologies



All self adhesive materials



# Focus on global Labelling materials, Packaging in Europe and Office paper in APAC



# UPM Specialty Papers

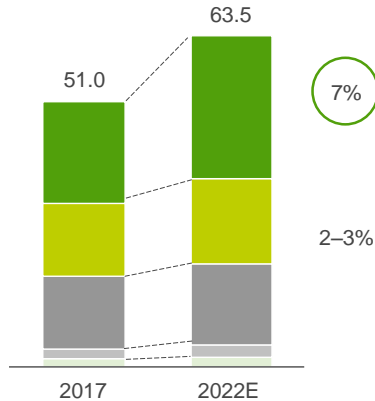
## Strong position in growing end use markets



### LEADERSHIP POSITION IN LABELLING MATERIALS

CASE: Siliconized release liner market, 51 Bn m<sup>2</sup>

CAGR  
5%

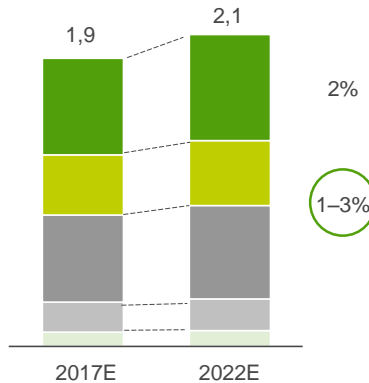


■ Asia ■ North America ■ Europe ■ South America ■ MEA

### NICHE PLAYER IN CONSUMER PACKAGING

Paper flexpack, million tonnes

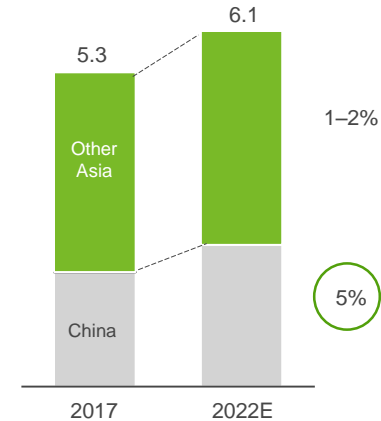
CAGR  
2%



### MAJOR SUPPLIER OF OFFICE PAPER IN ASIA

Asian cutsize market, million tonnes

CAGR  
2-3%



Source: AWA; Pira, UPM

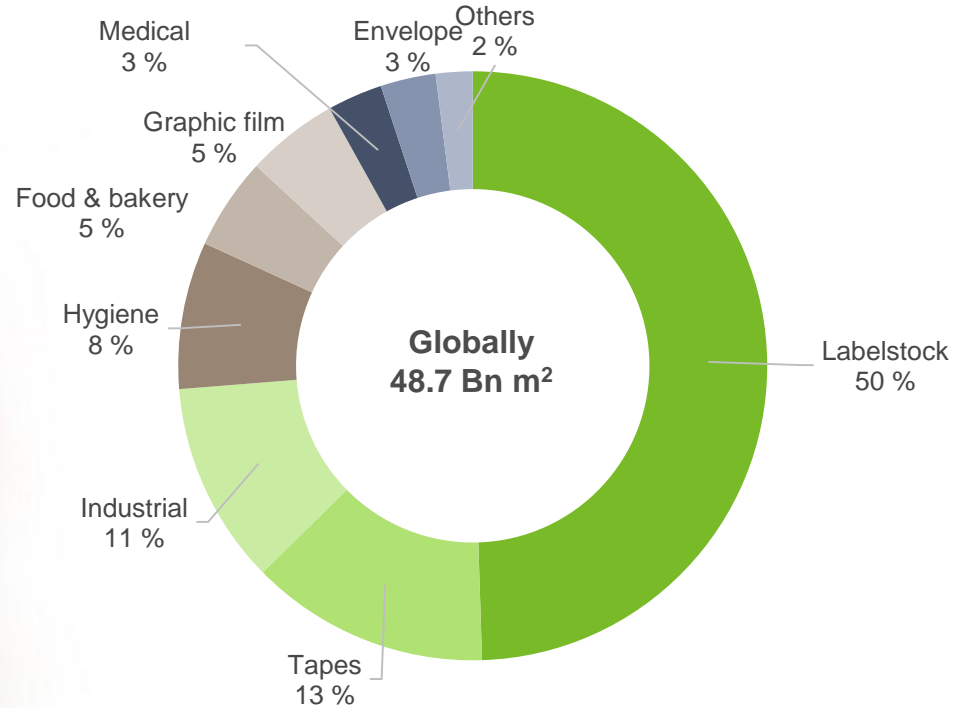
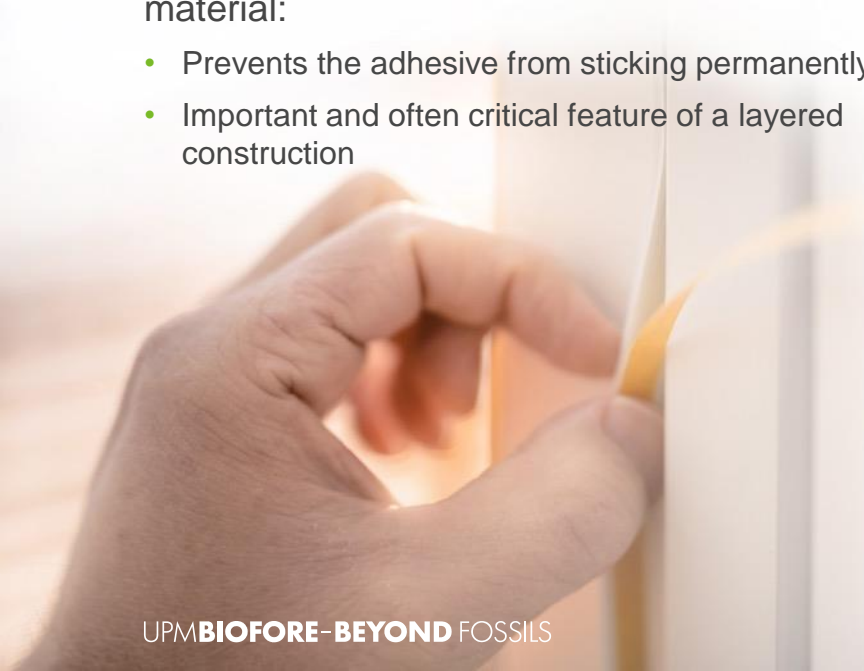
# Release liner opportunities in labelstock & other applications



## Product functions

Release liner carries the adhesive and face material:

- Prevents the adhesive from sticking permanently
- Important and often critical feature of a layered construction



Source: AWA

# UPM Specialty Papers Growth strategy



# Our focus: Strengthen industry leadership role



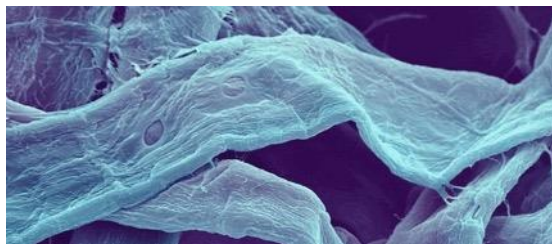
## 1 Uncompromising performance



Continued focus on stringent capacity management and performance improvement.

**Zero accidents**

## 2 Targeted innovation



Targeted investments in innovation to drive performance, increase efficiencies and extend our position in the market.

**Leadership**

## 3 Commercial excellence



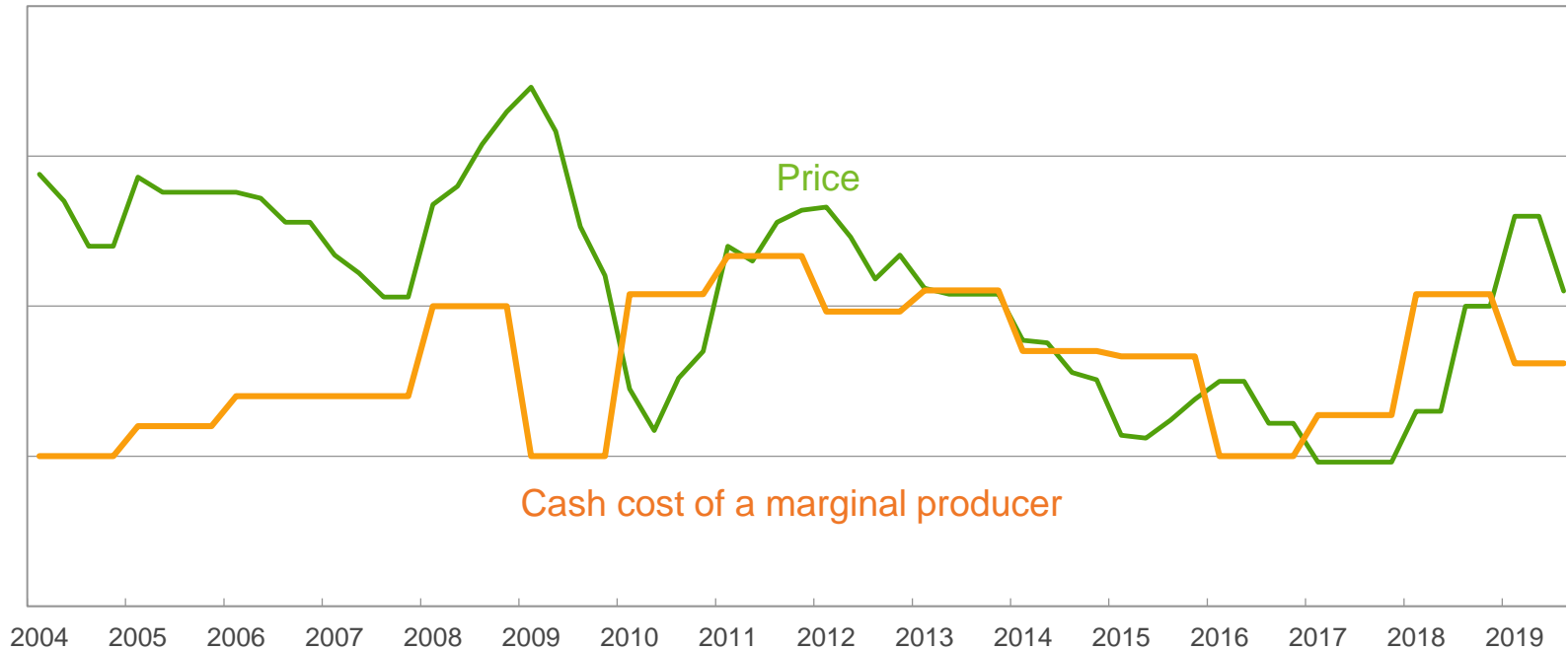
Optimize and evolve commercial interface and supporting processes to ensure supply security and customer value add.

**Focused on sustainability**

# Paper price vs. cash cost of marginal cost producer



EUR/t

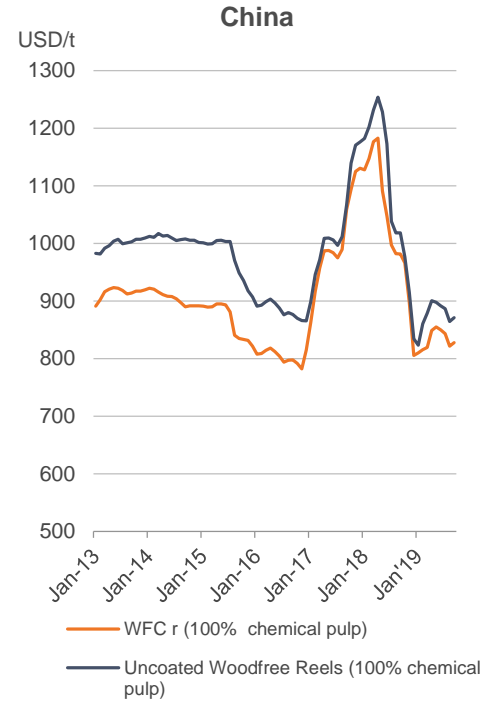
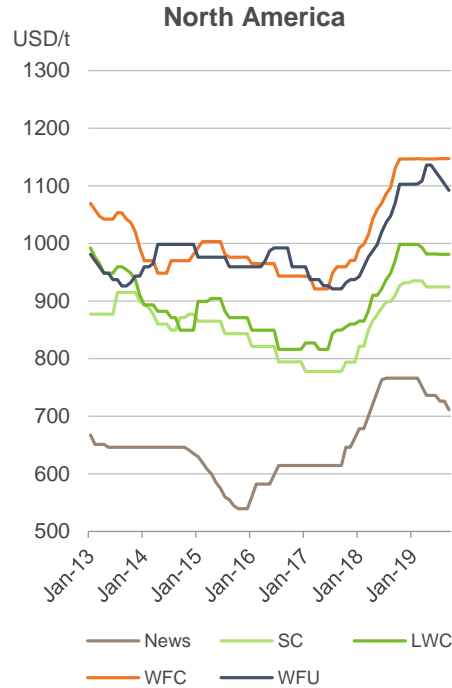
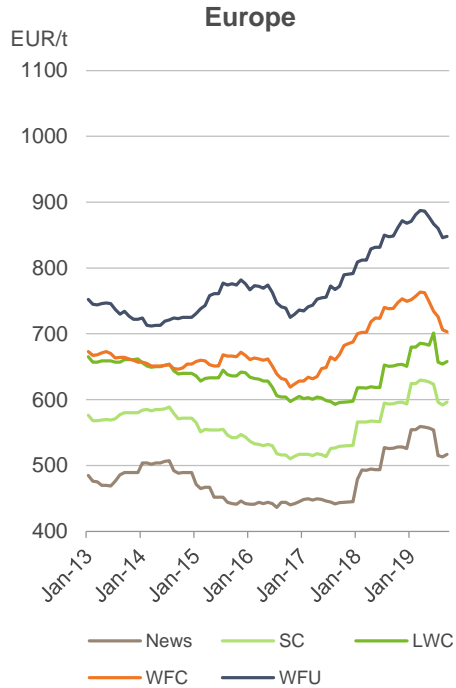


Sources: PPI, RISI, Pöyry



# UPM Communication Papers

## Graphic paper prices



Sources: PPI, RISI

# UPM Plywood focuses on three end use segments



## Construction



### UPM's position and direction

- Leading position in high and medium range standard products in Europe through well established distribution network providing easy access to WISA® plywood
- Uncompromised sustainability, certified products and operations
- New growth sought by strengthening position in selected emerging markets

## Vehicle flooring



### UPM's position and direction

- Leading position in Europe
- Competitive edge built on smoothly running operations and needs-based product design creating value to both vehicle manufacturers and operators
- Growth sought by expanding to new markets and related end use segments

## LNG shipbuilding



### UPM's position and direction

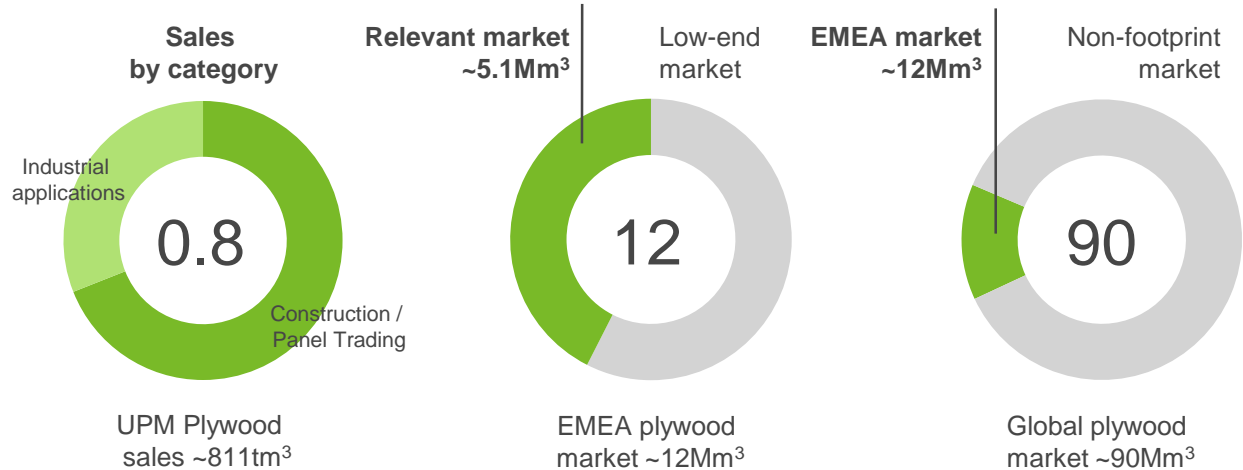
- Global leader in LNG plywood
- Competitive edge based on right quality and accurate on-time deliveries
- Long term commitment and benchmark service level
- Focus to secure leading position in LNG carriers and to extend offering into related applications using the same technologies (e.g. land storage tanks)

# UPM's key markets are in the high and mid segments primarily in EMEA region



## Strategic choices

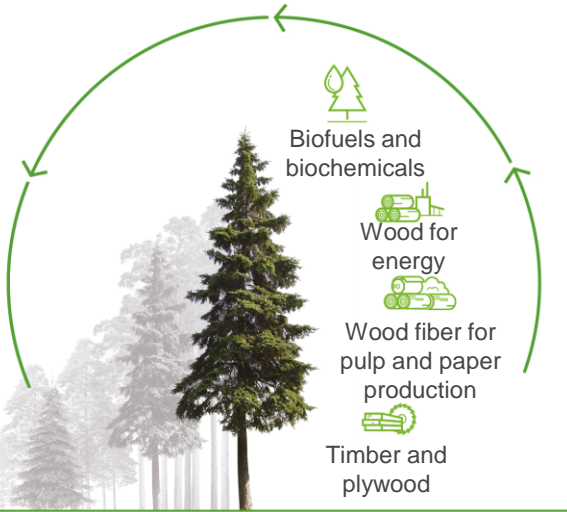
1. Demanding industrial applications
2. High and medium range standard products
3. Selected customers
4. EMEA region and LNG business globally



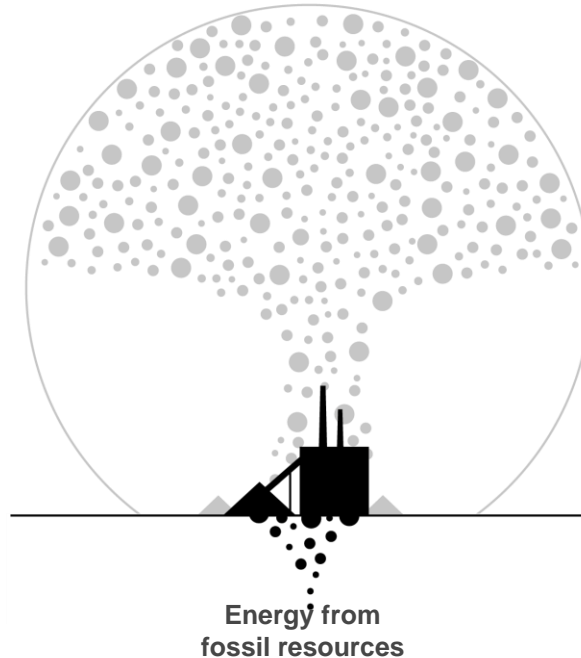
# Bioeconomy offers a sustainable alternative to fossil-based economy



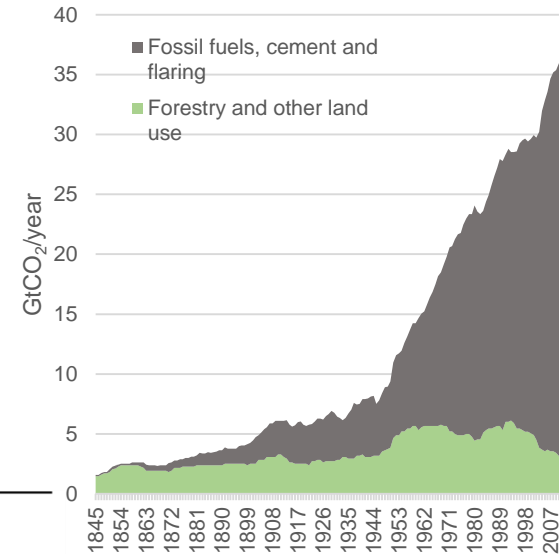
Biomass use is not increasing CO<sub>2</sub> to carbon cycle



Use of fossil resources increases CO<sub>2</sub> amount



Use of fossils has increased global CO<sub>2</sub> -emissions

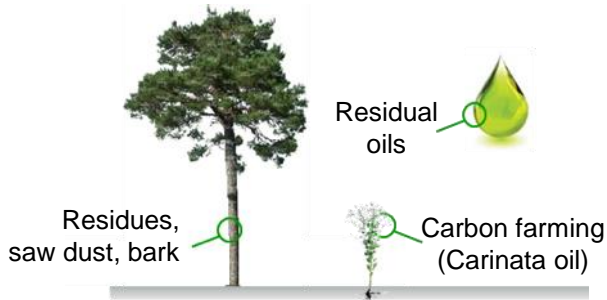


Source: IPCC AR5

# The possible Kotka Biorefinery: an innovative and robust concept to scale up the business



- ✓ **Competitive and sustainable feedstocks**



UPM feedstocks

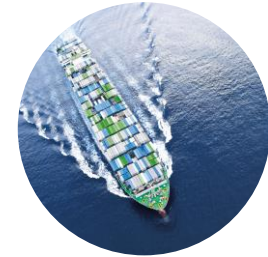


Lappeenranta Biorefinery  
100kt



Potential Kotka Biorefinery  
500kt

- ✓ **Low-carbon fuels for road, aviation, shipping and petrochemicals**



UPM renewable fuels

- ✓ **World-scale biorefinery leveraging UPM ecosystem**
- ✓ **Significant efficiency gains enabled by economy of scale and synergies with Lappeenranta**

# Biochemicals products are sustainable and competitive alternatives to replace fossil materials



## BIOREFINERY PROCESS

FIXED TECHNOLOGY PLATFORM

VARIABLE FOR EACH BIOREFINERY

**STEP 1: SUGAR PULPING**  
Disintegrating wood into sugars,  
lignin and green energy

**STEP 2: CHEMICAL CONVERSION**  
Conversion of sugars into targeted  
biochemicals

BIOMASS



SUGARS



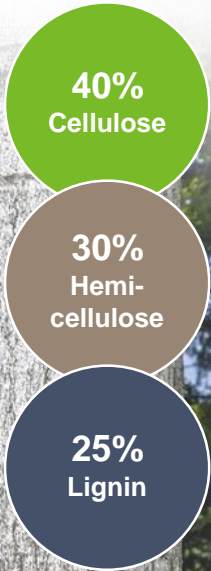
Biochemical A  
:  
:  
:  
Biochemical N



Lignin



GREEN  
ENERGY



# Biochemicals biorefinery targeting to produce bio-MEG, bio-MPG and lignin from hardwood



## Monoethylene glycol

- Existing fossil-based market
- Market demand > 26 m tonnes
- CAGR > 3%
- Application examples:



Textiles



Bottles & packaging



Deicing fluids



## Monopropylene glycol

- Existing fossil-based market
- Market demand > 2 m tonnes
- CAGR > 5%
- Application examples:



Composites



Pharma & cosmetics



Detergents



## Biorefinery lignin

- Performance chemical
- Application driven
- Strong IP position
- Application examples:



Wood resins



Plastics



Foams & coatings

UPM **BIOFORE**  
**BEYOND** FOSSILS

