

# UPM – THE BIOFORE COMPANY

# AIMING HIGHER WITH BIOFORE

Investor presentation  
December 2017

# UPM today



## UPM BIOREFINING

Pulp  
Biofuels  
Timber



## UPM ENERGY

Electricity  
generation and  
trading



## UPM RAFLATAC

Label  
materials for  
product and  
information  
labelling



## UPM SPECIALTY PAPERS

Label papers,  
release liners,  
office papers  
and flexible  
packaging



## UPM PAPER ENA

Magazine  
papers,  
newsprint and  
fine papers



## UPM PLYWOOD

Plywood and  
veneer  
products



## UPM BIOCOMPOSITES

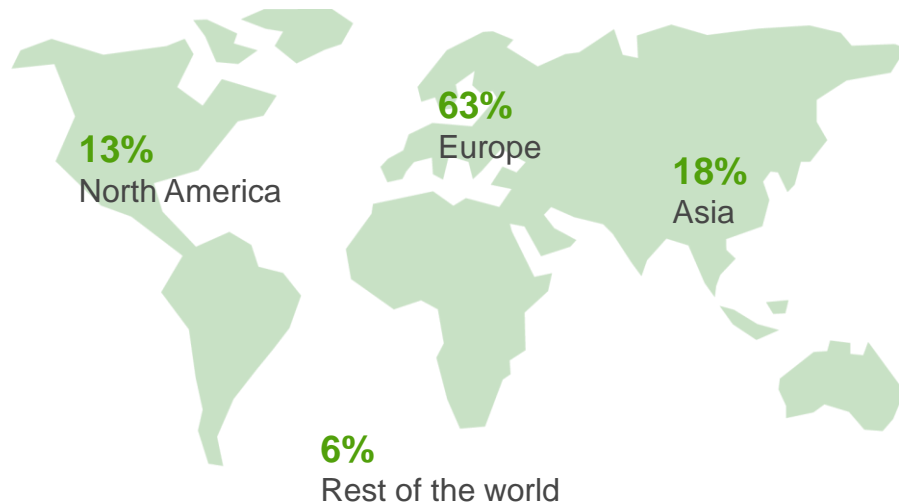
UPM  
BIOCHEMICALS

**WOOD SOURCING  
AND FORESTRY**

# Global businesses – local presence

UPM's sales by market 2016

**EUR 9,812 million**



**54**  
production plants  
in **12** countries



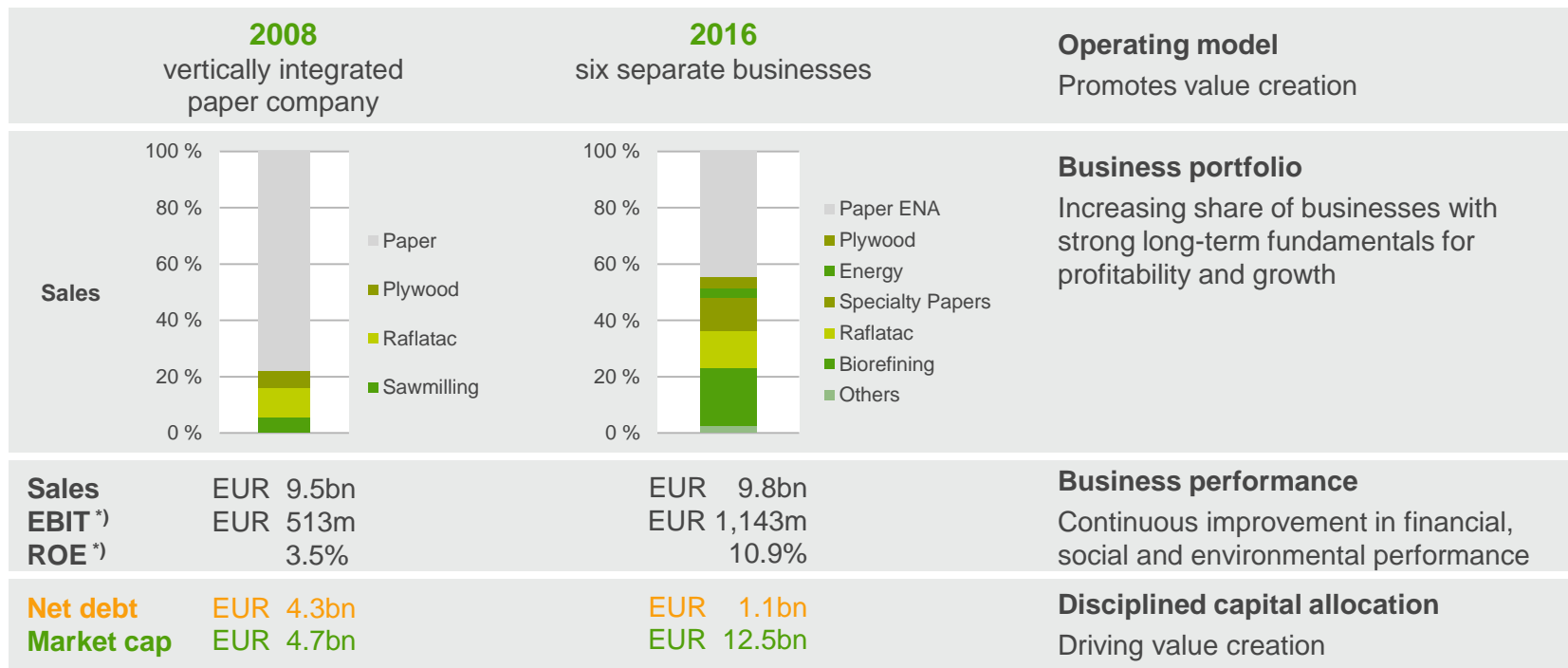
**19,300**  
employees  
in **45** countries

**12,000**  
customers  
in **120** countries

**85,000**  
shareholders  
in **40** countries

**55,000**  
suppliers  
in **70** countries

# UPM in transformation



\*) excluding special items for 2008, comparable figures for 2016

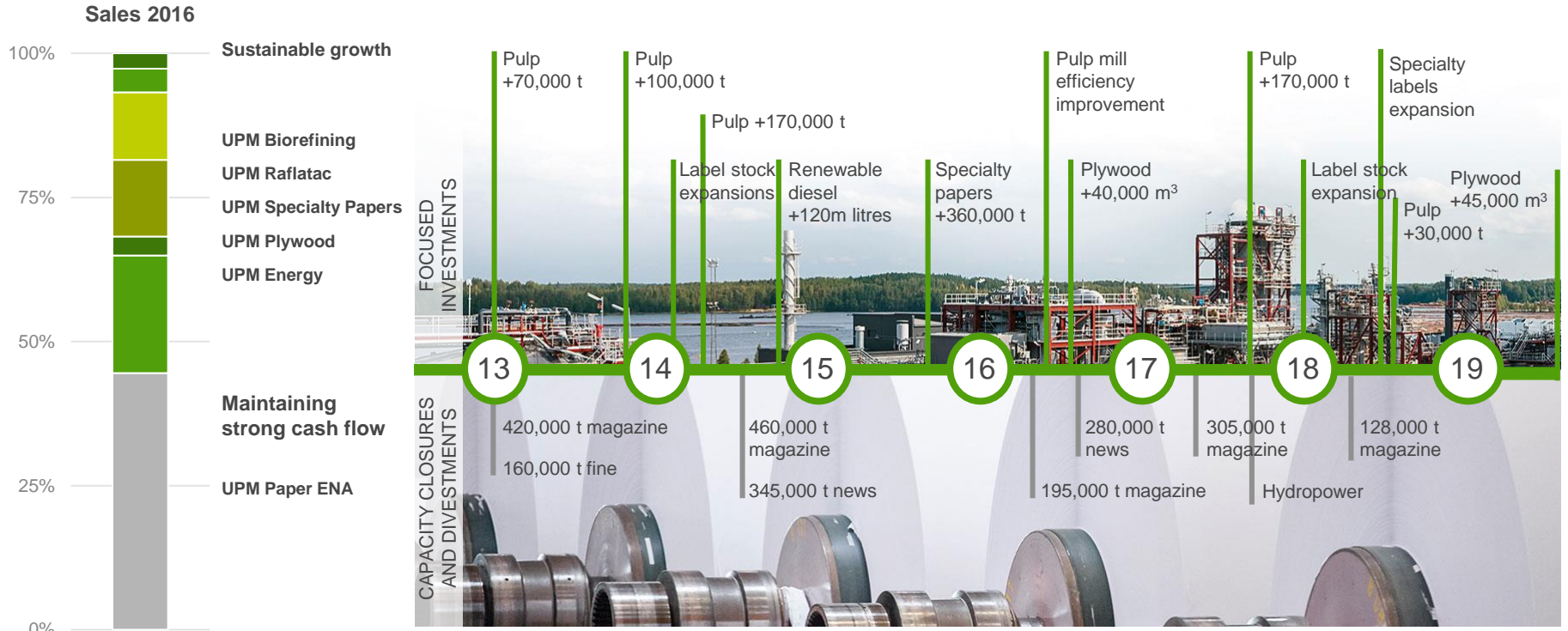
# Competitive businesses with strong market positions

## Operating on healthily growing markets

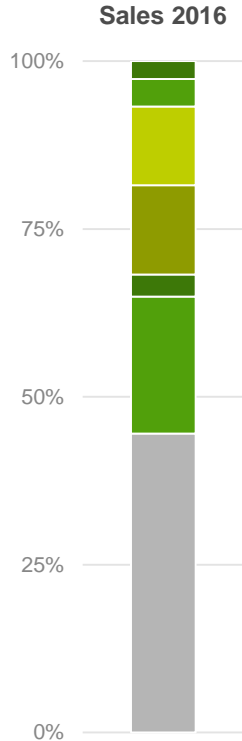


*By comparable EBIT 2016  
Demand trend growth, % pa*

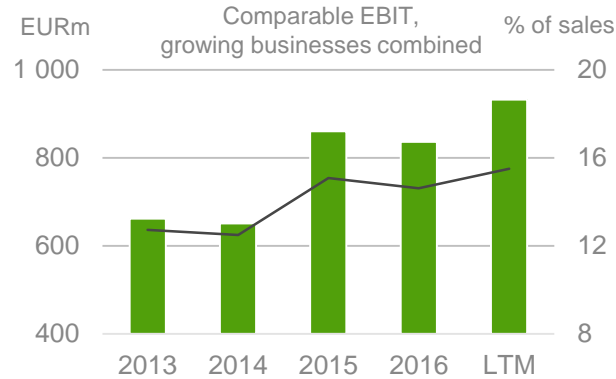
# Increasing share of businesses with strong long-term fundamentals for profitability and growth



# Value creation through sustainable growth and cash generation



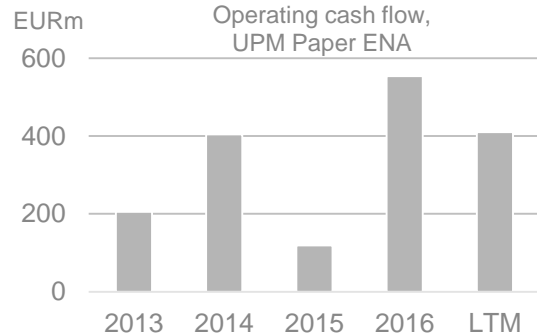
UPM Biorefining  
UPM Raflatac  
UPM Specialty Papers  
UPM Plywood  
UPM Energy



## Sustainable growth

- Commercial success
- Cost efficiency
- Focused growth investments
- Product mix development

UPM Paper ENA



## Maintain strong cash flow

- Commercial success
- Cost efficiency
- Efficient use of assets, including restructuring



# Growth initiatives – focused growth projects have contributed well to UPM's profits and returns



## Current ongoing focused growth projects

- Kymi pulp mill expansion 2
- Raflatac expansions in Poland and Finland
- Kaukas pulp mill expansion 2
- Chudovo plywood mill expansion

## Long term growth opportunity in pulp

- Agreement with the Government of Uruguay to establish a competitive operating platform in Uruguay

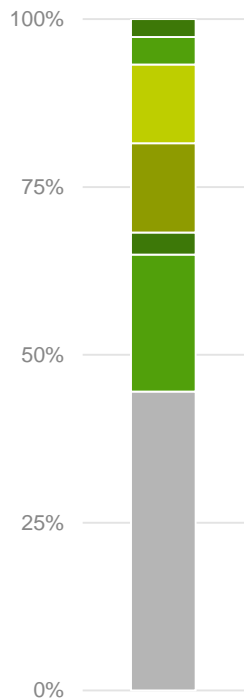
## New biomolecule businesses

- Evaluation of building a biochemicals refinery
- Lappeenranta Biorefinery reached designed capacity and generates a good financial return



# Focused investments are delivering growth

Sales 2016



Average delivery growth 2011 –2016

## UPM Biorefining

Pulp  
Biofuels

CAGR **+3%**  
**New business**

## UPM Raflatac

Standard products  
Films and specials

CAGR **+4%**  
CAGR **+8%**

## UPM Specialty Papers

Label materials  
Cut-size

CAGR **+4%**  
CAGR **+6%**

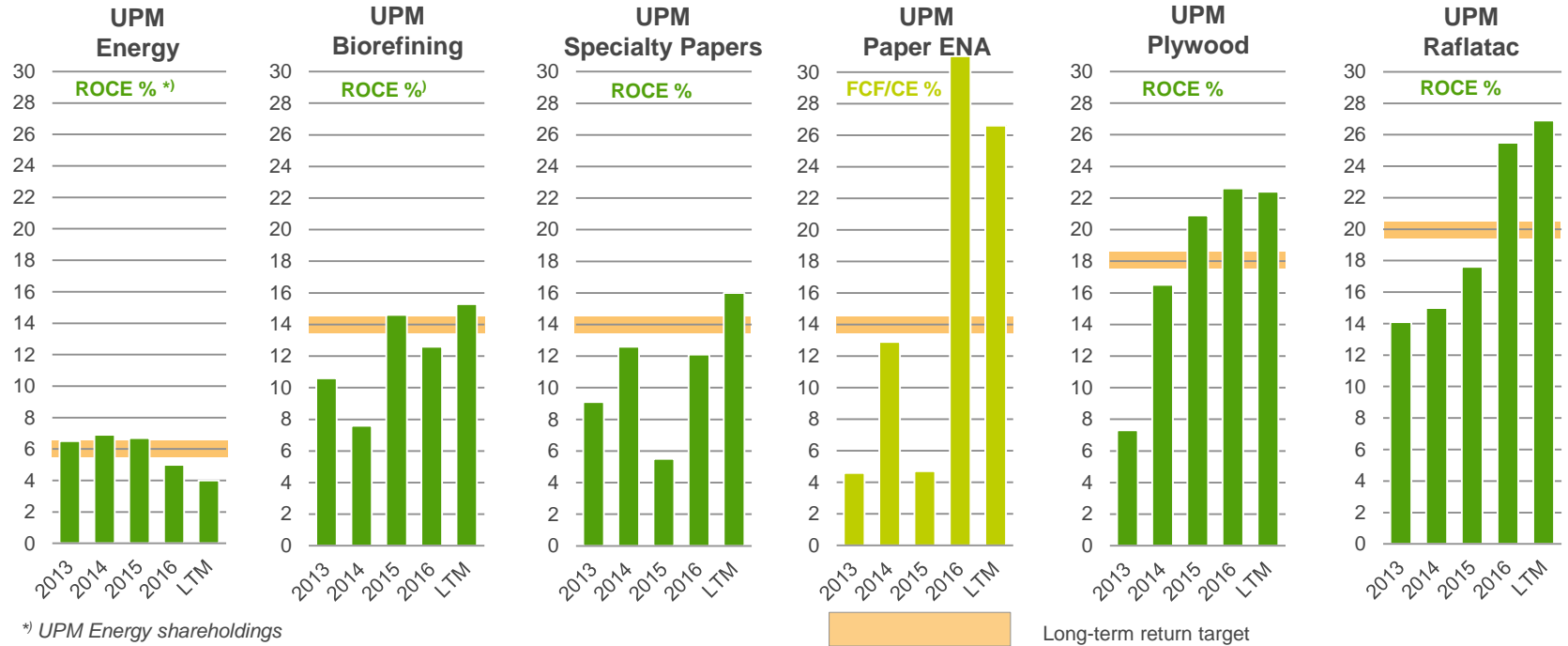
## UPM Plywood

Plywood

CAGR **+3%**

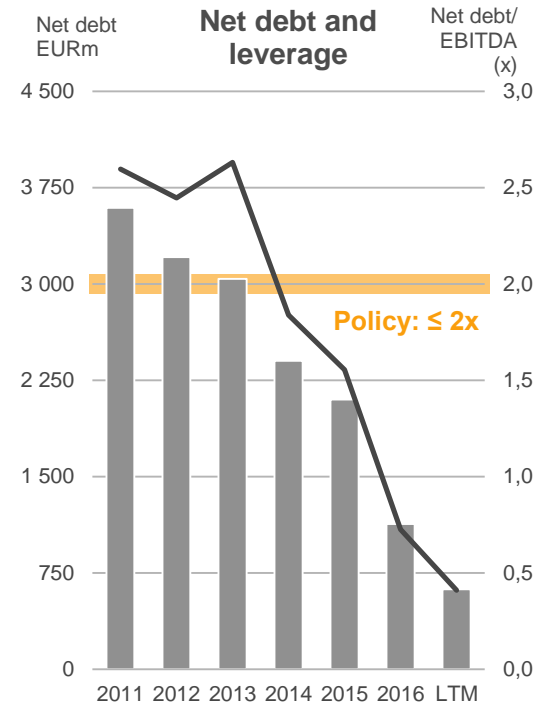
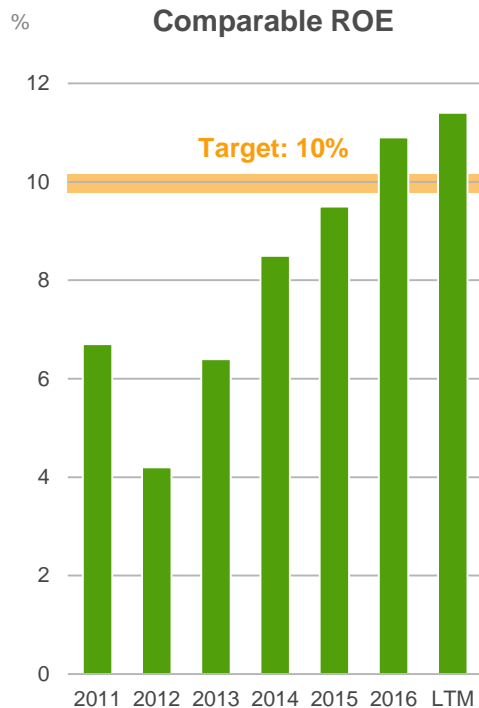
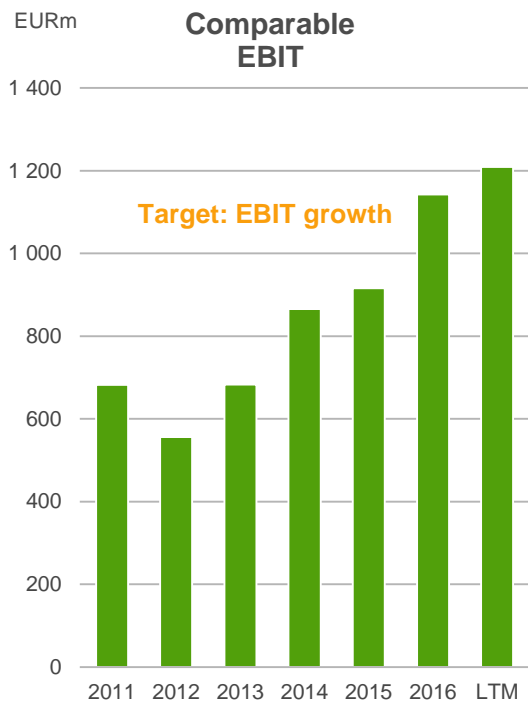


# Business area long-term targets compared with realised returns



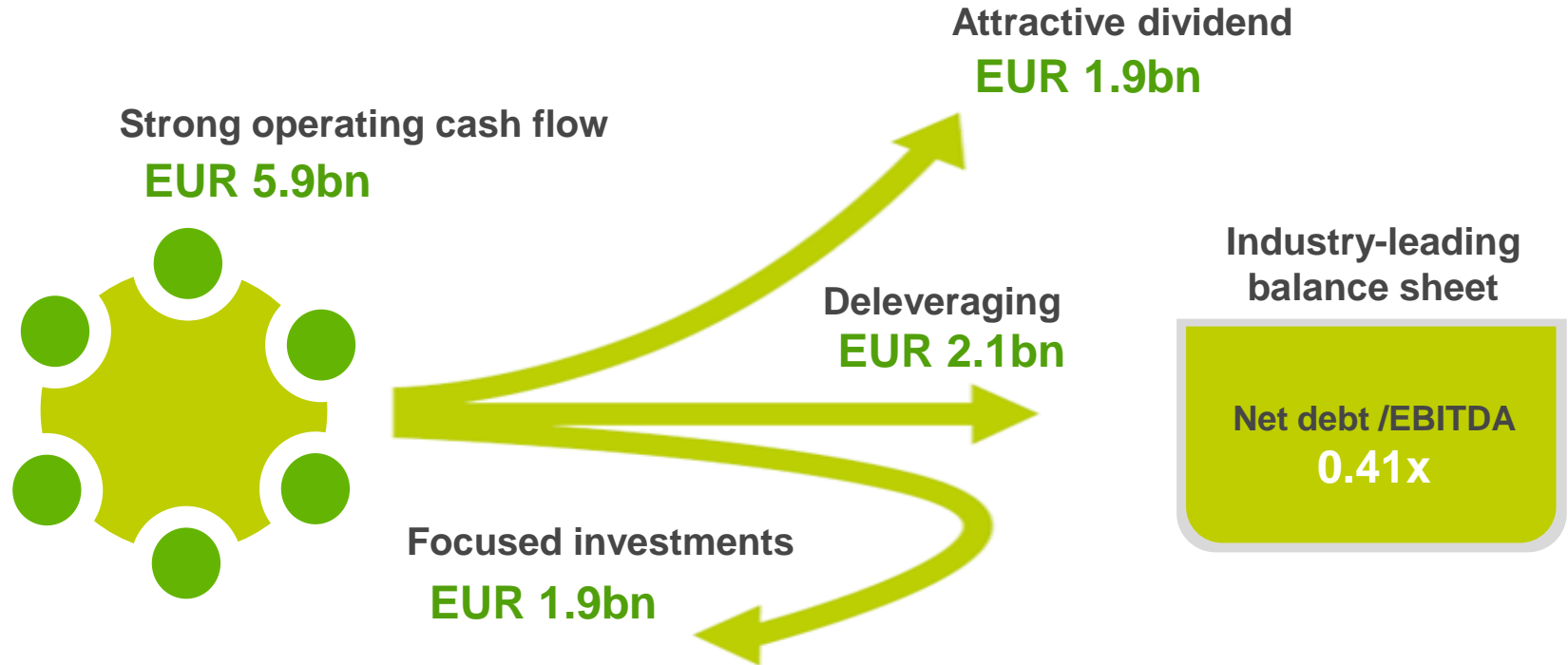
\*) UPM Energy shareholdings valued at fair value

# Group financial performance



Comparable figures for 2014 – 2017, excluding special items for earlier years

# 5-year cumulative cash flow – disciplined capital allocation in action



# Capital allocation

## – maintaining capability for future opportunities

1.

Maintain strong  
balance sheet,  
investment grade  
metrics  
*Net debt/EBITDA*  
*2x or less*

2.

Attractive dividend  
*30-40% of operating cash flow per share*  
Capex in attractive focused growth projects  
*IRR exceeds ROCE targets*

3.

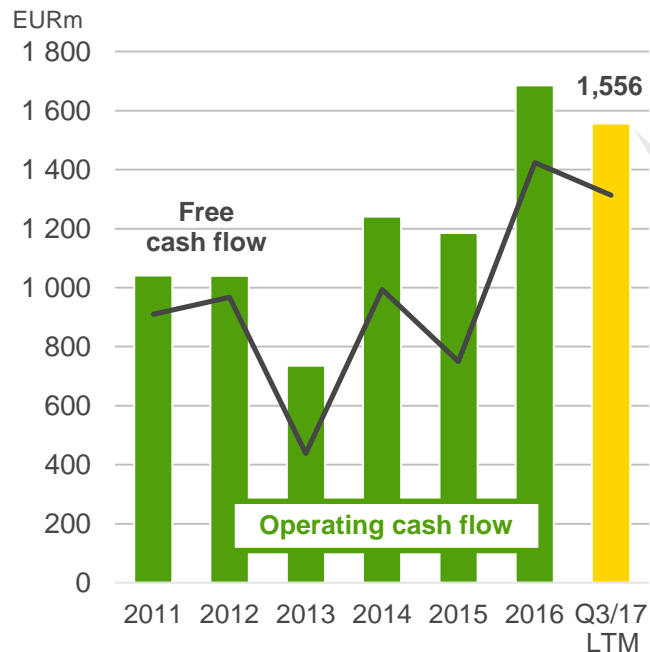
Capex in attractive larger growth opportunities  
*IRR exceeds ROCE targets*  
M&A, if the opportunity and timing are right  
*IRR exceeds ROCE targets*

4.

Additional shareholder distribution selectively  
*balance long term free cash flow cycles*

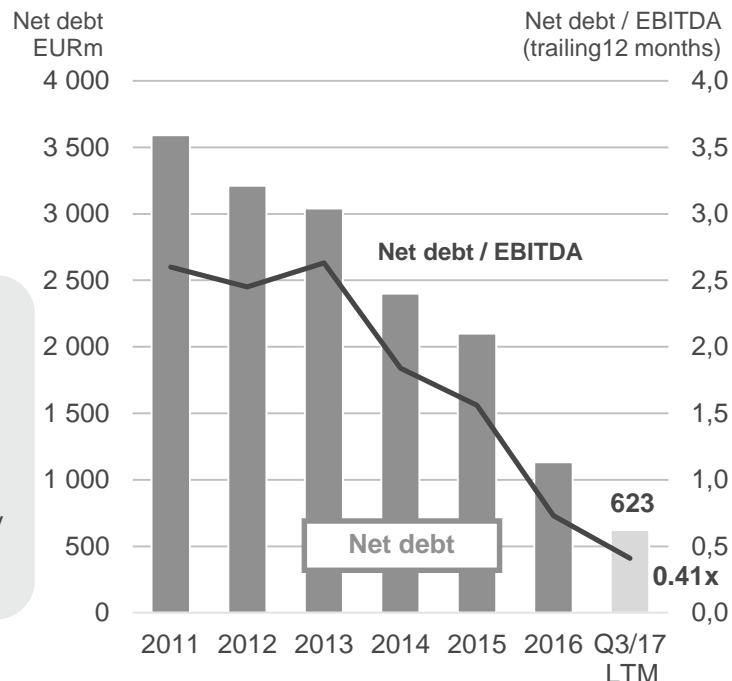
# Strong cash flow and balance sheet

## Operating cash flow

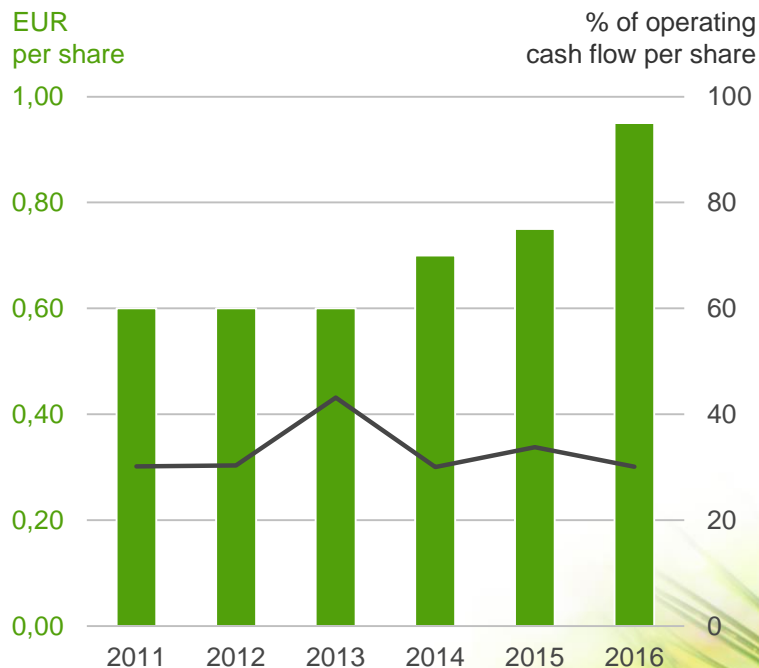


Q3/17 operating cash flow EUR 486m  
Working capital decreased by EUR 54m

## Net debt



# Dividend



## Dividend policy

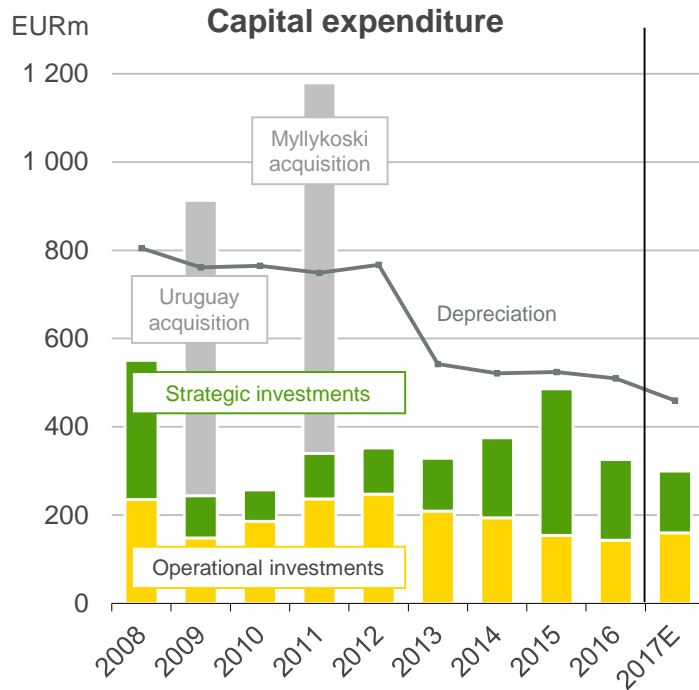
- UPM aims to pay an attractive dividend, 30–40% of operating cash flow per share

## Dividend for 2016

- EUR 0.95 (0.75) per share, totalling EUR 507m
- 30% of 2016 operating cash flow



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



## Focused growth investments

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

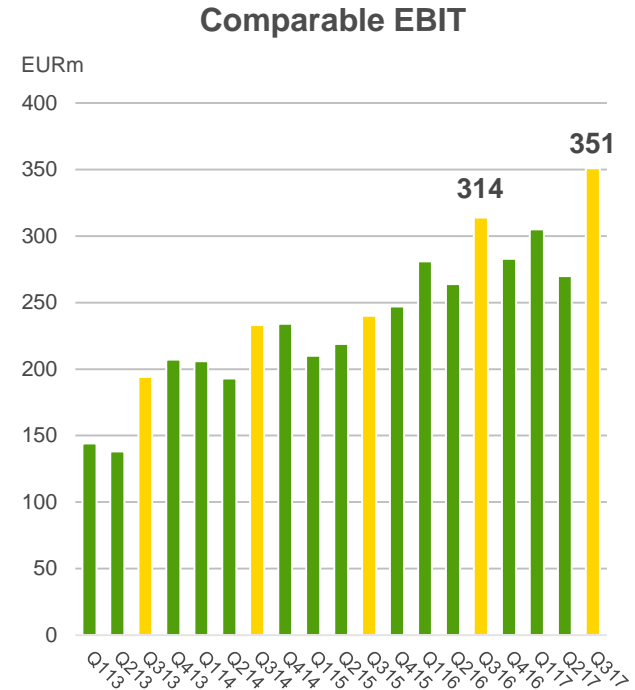
## Low replacement investments

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

► **Modest total capex and attractive returns**

# Q3 2017 – excellent quarter and further steps in transformation

- Comparable EBIT increased by 12% to EUR 351m (314m)
- Good growth in deliveries and strong operational efficiency with no significant maintenance activity
- Operating cash flow was EUR 486m (506m), net debt decreased to EUR 623m (1,479m)
- UPM transformation continues with new initiatives for future growth



# Q3 2017 – Good market demand

## UPM BIOREFINING

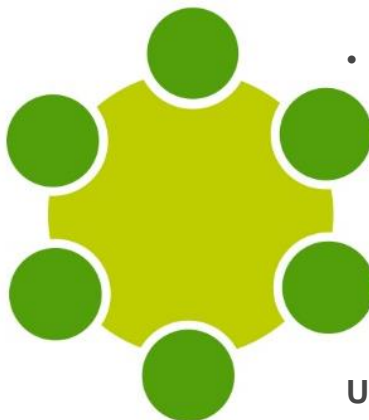
- Good demand, pulp deliveries +5%, strong growth in biofuels
- Pulp prices higher
- No significant maintenance

## UPM PAPER ENA

- Graphic paper deliveries –1%
- Seasonally low fixed costs, including maintenance
- Fibre costs higher

## UPM ENERGY

- Electricity deliveries –7%
- Hydropower generation recovered to normal level, below last year's high level



## UPM SPECIALTY PAPERS

- Good demand, deliveries +3%
- Significant progress in product mix, higher release liner deliveries
- Input cost inflation mitigated

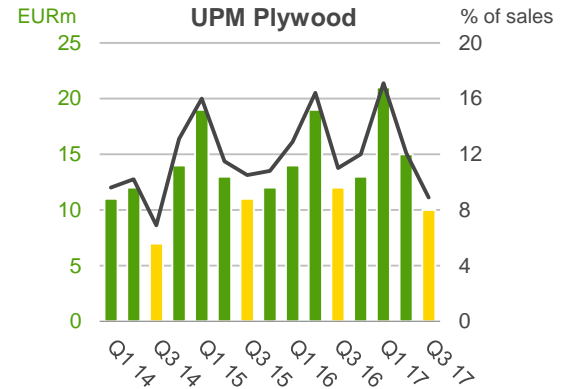
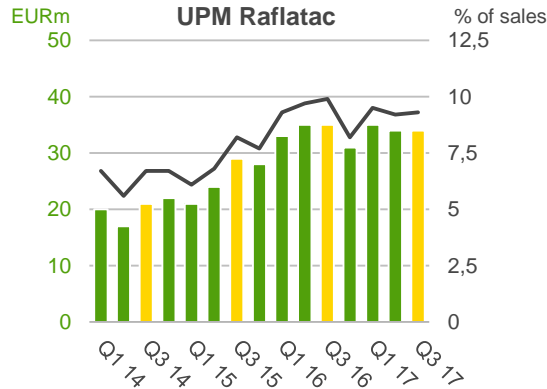
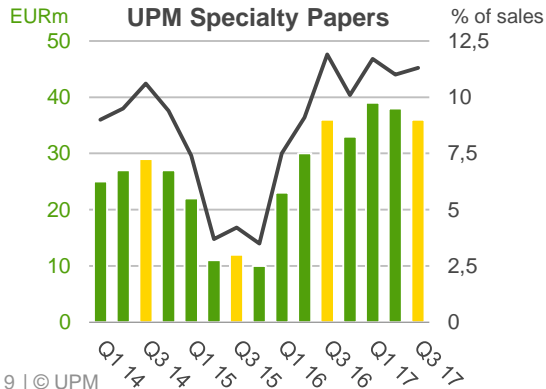
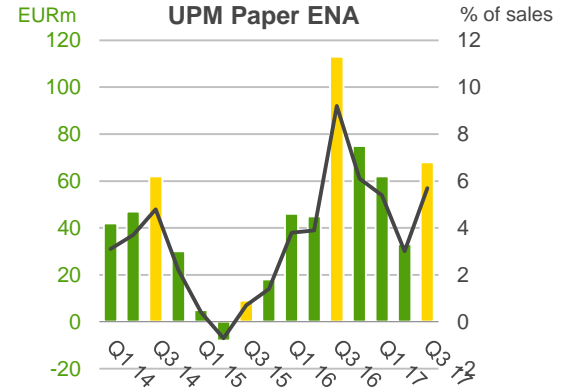
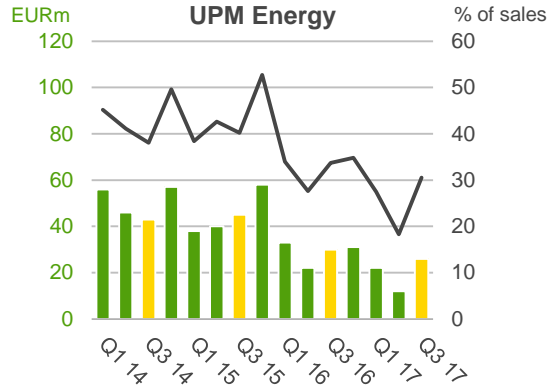
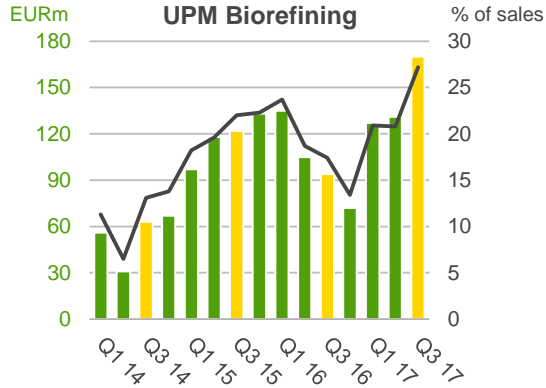
## UPM RAFLATAC

- Good demand globally, deliveries +9% driven in particular by developing markets
- Input cost inflation in sales margins

## UPM PLYWOOD

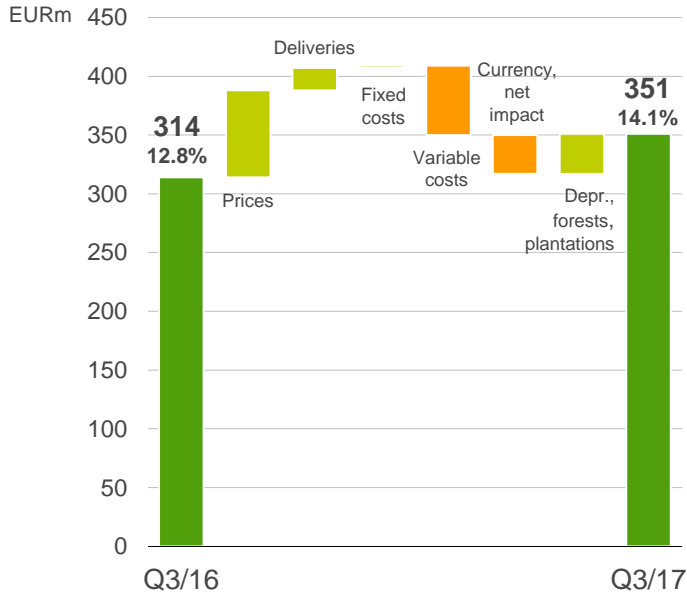
- Good demand, deliveries +4%
- Modest input cost inflation in sales margins

# Comparable EBIT by business area

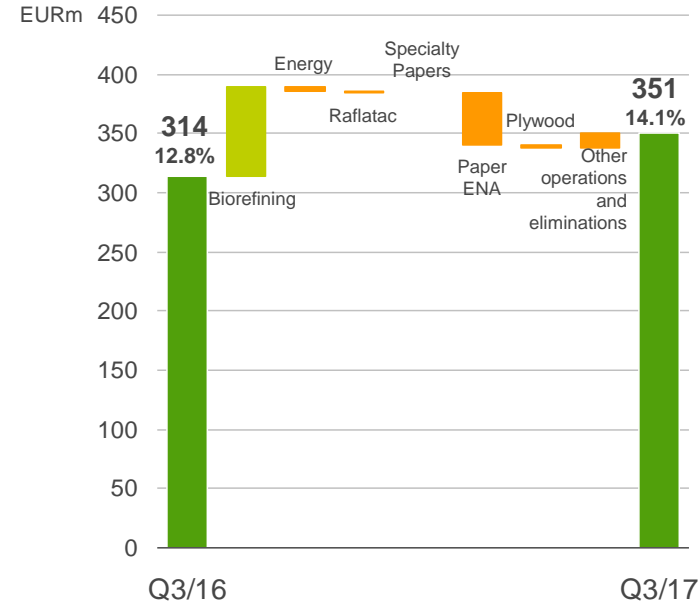


# Comparable EBIT in Q3 2017 vs. Q3 2016

Prices increased more than variable costs.  
Growth in deliveries continued.  
Currencies had a negative impact.



Growth in deliveries in Biorefining,  
Raflatac, Specialty Papers and Plywood.  
Pulp prices increased.



# Outlook for 2017

- UPM's profitability improved significantly in 2016 and is expected to continue on a good level in 2017. Comparable EBIT is expected to increase in 2017 compared with 2016.
- Demand growth is expected to continue for most of UPM's businesses, while demand decline is expected to continue for UPM Paper ENA. The focused growth projects continue to contribute to UPM's performance.
- Following a deflationary environment in recent years, 2017 is expected to show modest input cost inflation. UPM will continue measures to reduce fixed and variable costs to mitigate this.
- Q4 2017 is expected to include more maintenance activity than Q3 2017 in UPM Biorefining and UPM Paper ENA.

# Responsibility is good business

## MORE WITH BIOFORE



Creating value through  
products and innovation



Creating competitive advantage  
and long-term value by efficiency

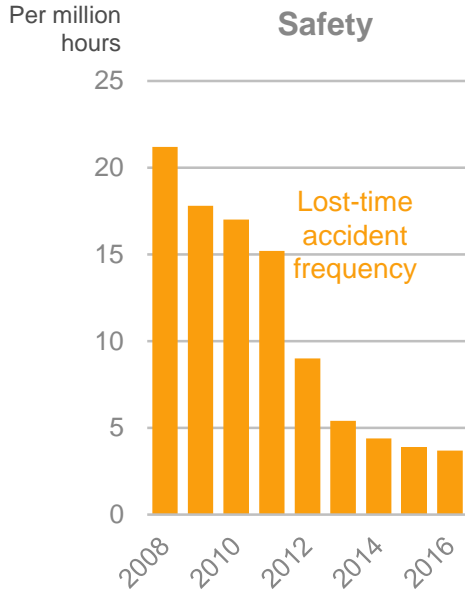


Risk mitigation by responsible  
value chain and production

**"We believe that customers, investors and other stakeholders value responsible operations that keep risks under control and add to our business opportunities, thereby increasing the company value."**



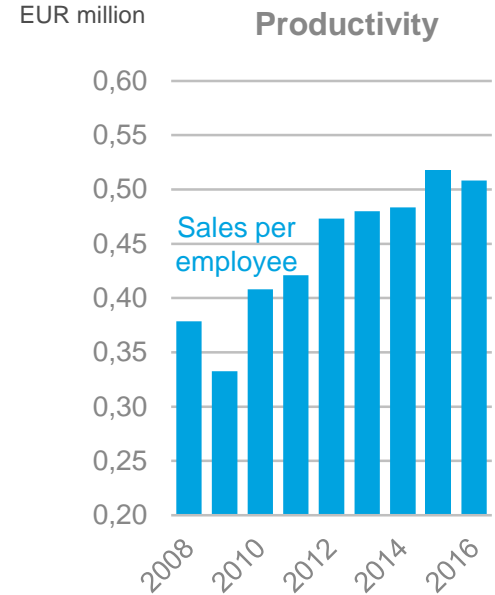
# Creating competitive advantage and long-term value by engagement



5-year change:  
**-76%**



5-year change:  
**+9**



5-year CAGR:  
**+4% pa**

# Creating competitive advantage and long-term value by efficiency

Case: UPM Changshu mill in China



Water

**-60%**

Per tonne of paper



Energy

**-30%**

Per tonne of paper



Waste to landfill

**-60%**

Per tonne of paper



Certified fibre

**85%**

In 2015

2015 compared to 2005



COD in effluent

**-75%**

Per tonne of paper



SO<sub>2</sub> emission

**-90%**

Per tonne of paper

water intake



water discharge



# Consistent long-term work receives external recognition

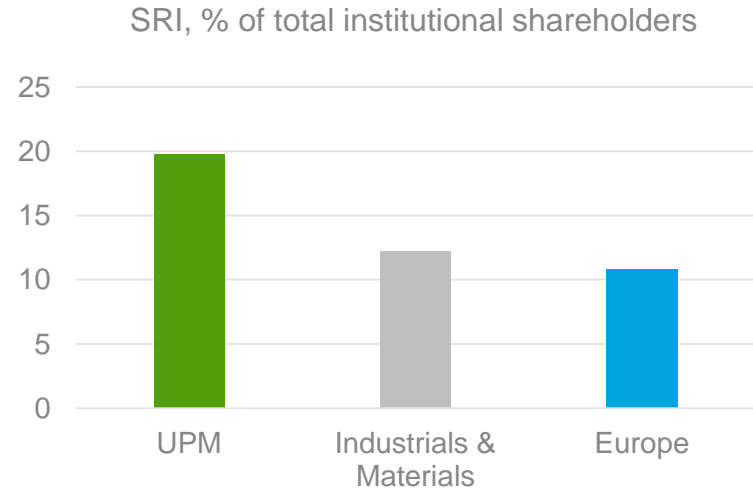


## UPM in sustainability indices



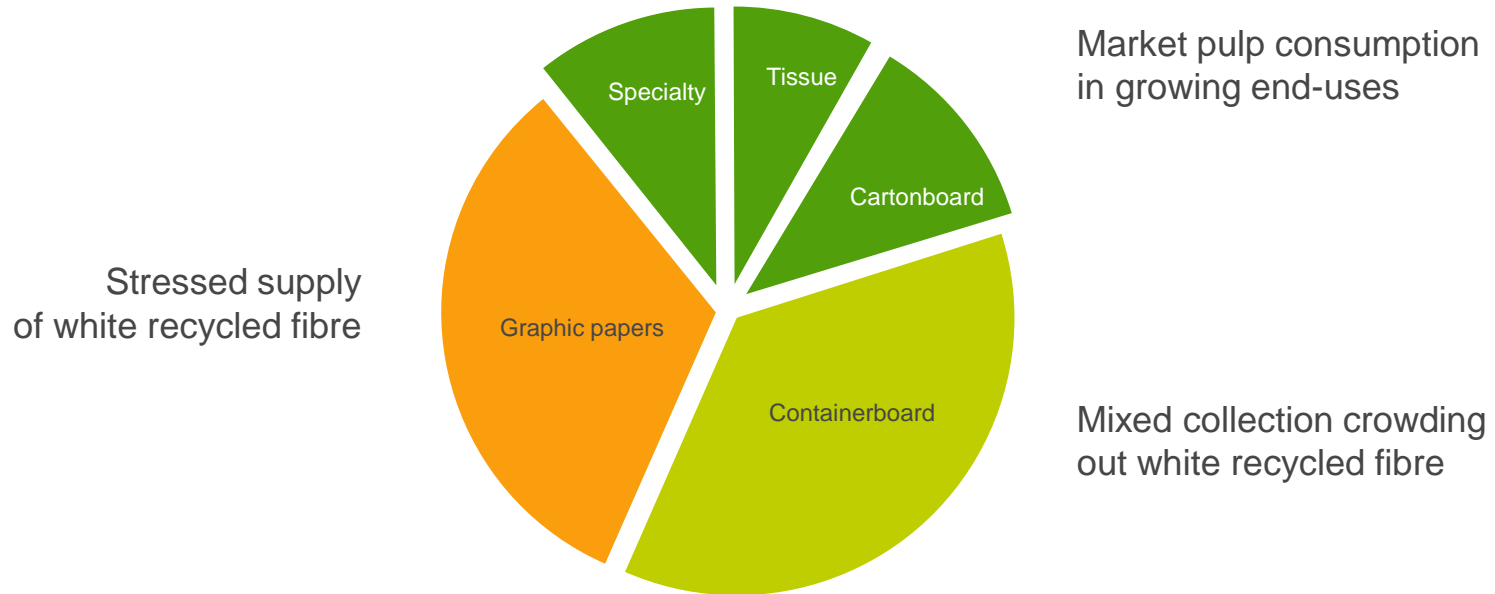
CDP's Climate Change Program: A- score

## Sustainable and Responsible (SRI) investors form a significant part of UPM's shareholders

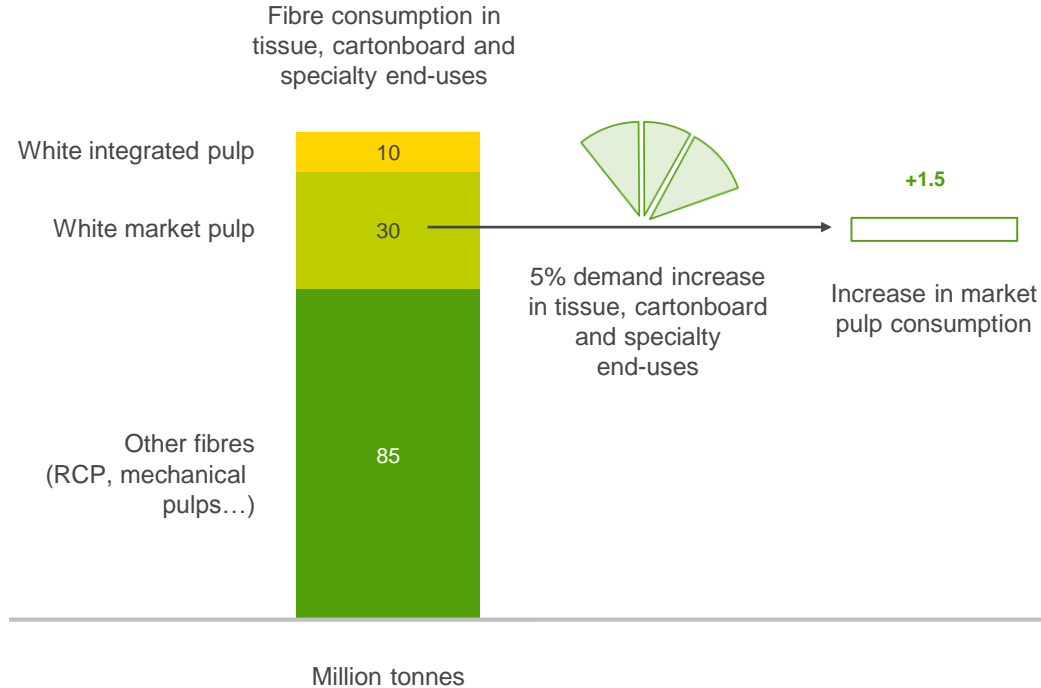


# Market pulp consumed in growing end-uses – supply of alternative white fibres declines

## Global paper and board production

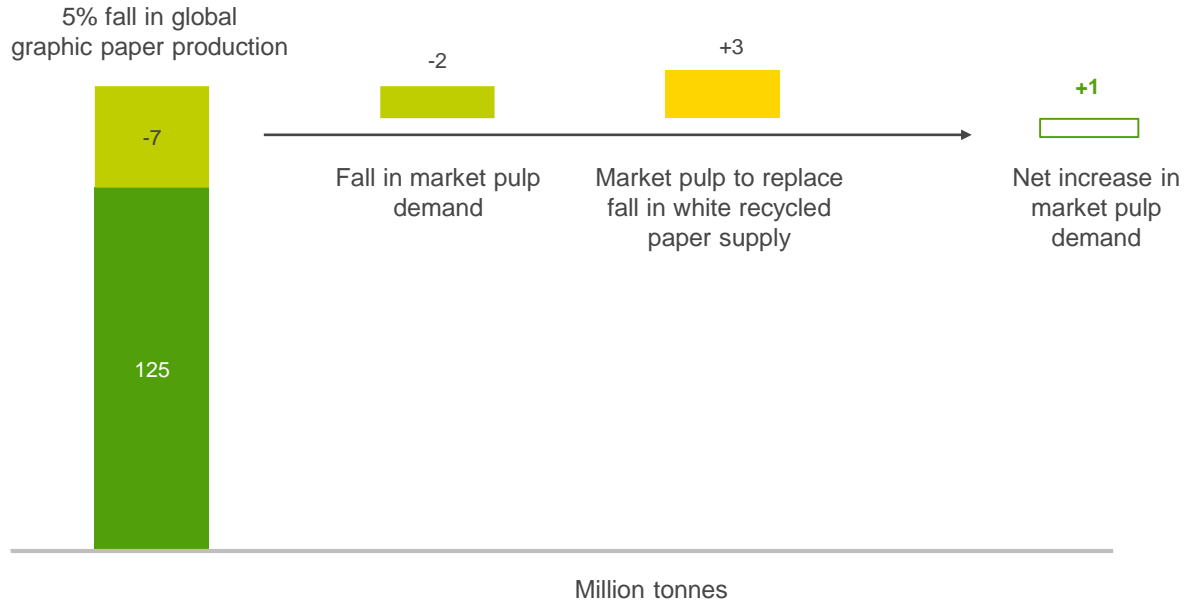


# Case: Market pulp consumption in growing end-uses

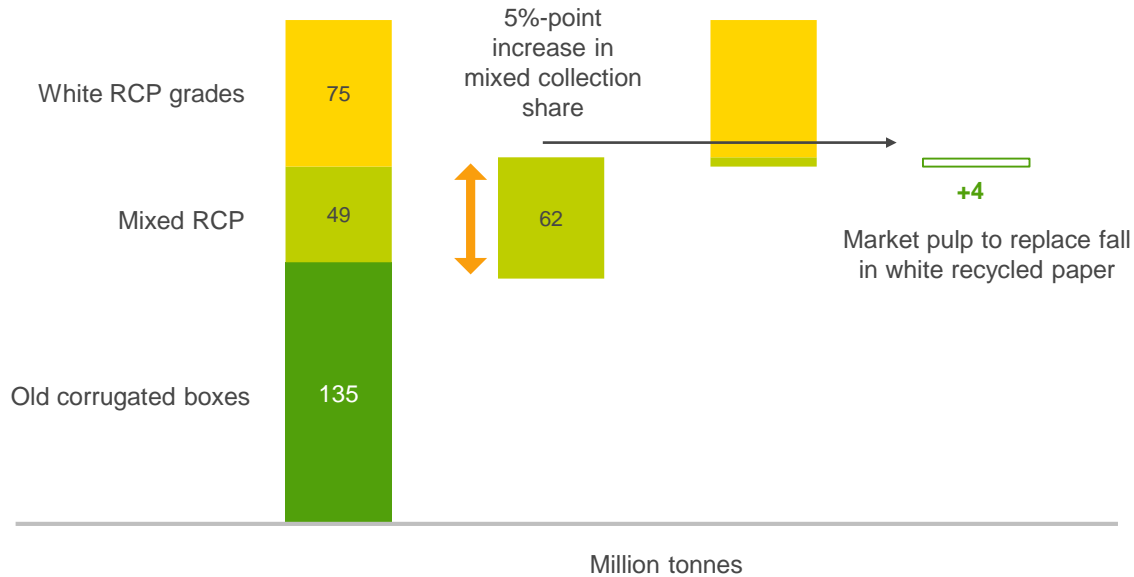


Source: Pöyry, Hawkins Wright, UPM

# Case: Stressed supply of white recycled paper



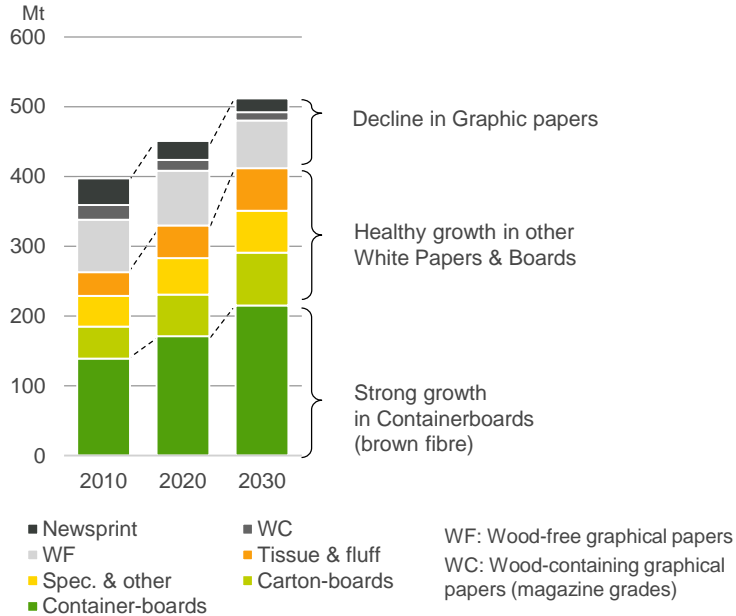
# Case: Mixed collection crowding out white recycled fibre



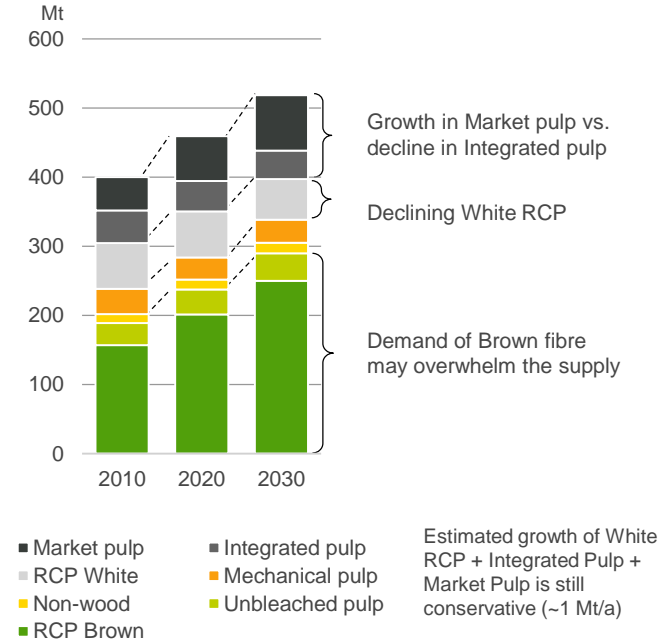


# Summary of pulp demand outlook

## Increase in end use ...

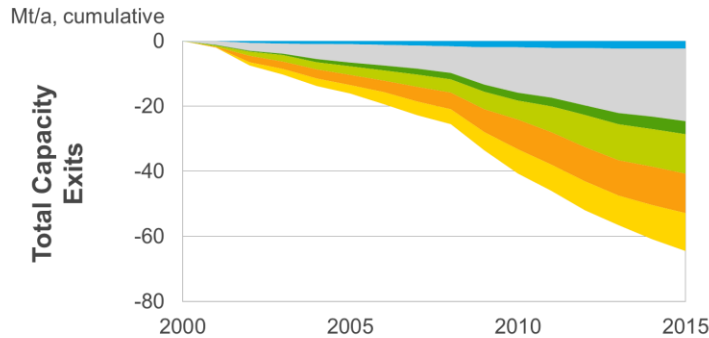
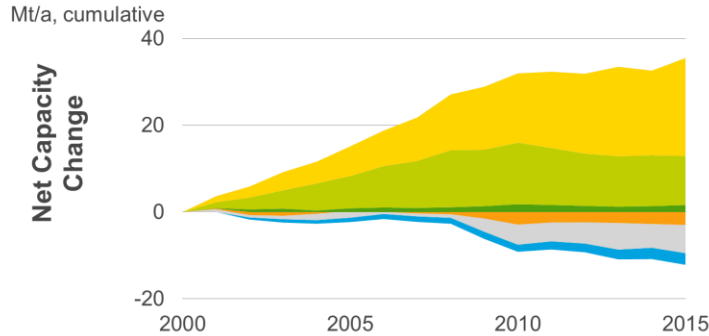


## ... will drive fibre demand in coming decades



Source: UPM, Pöyry, RISI

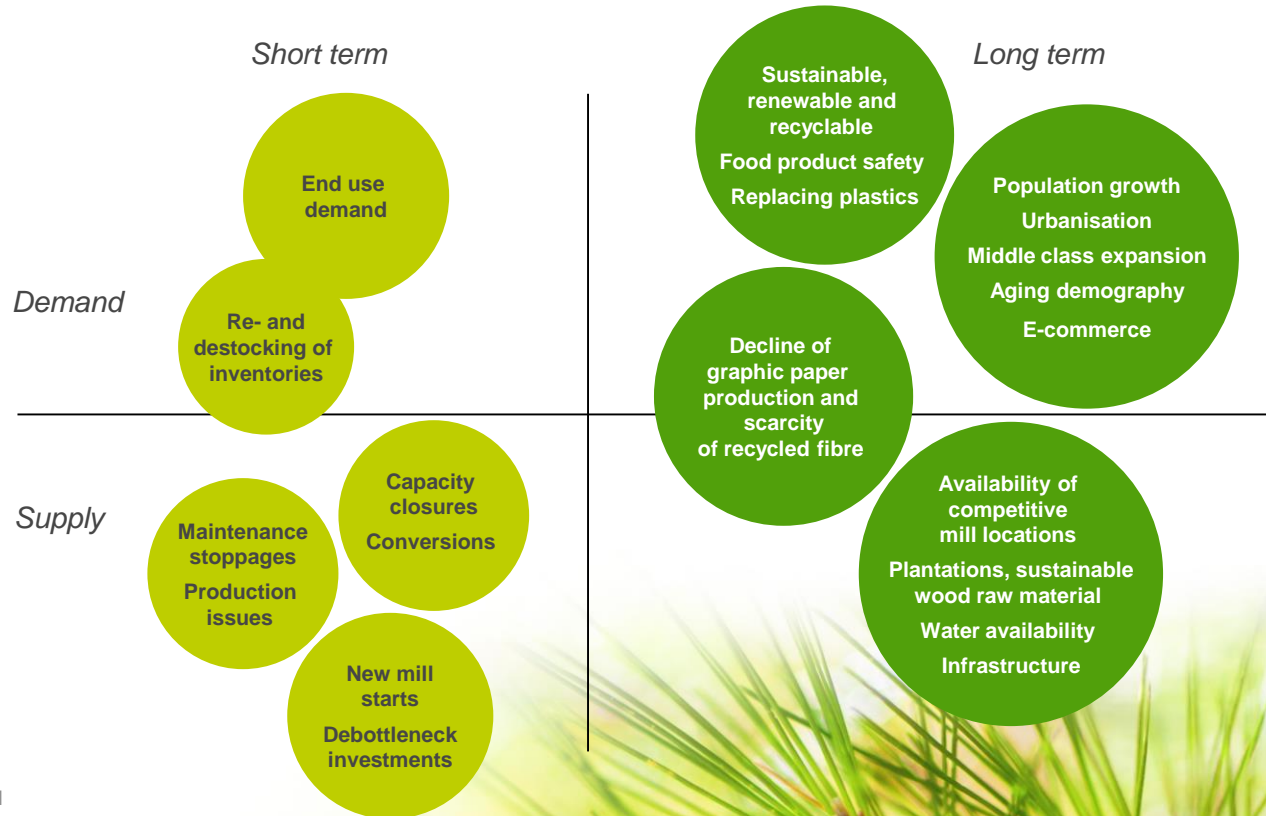
# White fibres in different stages of life-cycle; 64 Mt capacity closed within 2000–2015



Note: Including both market and integrated pulp

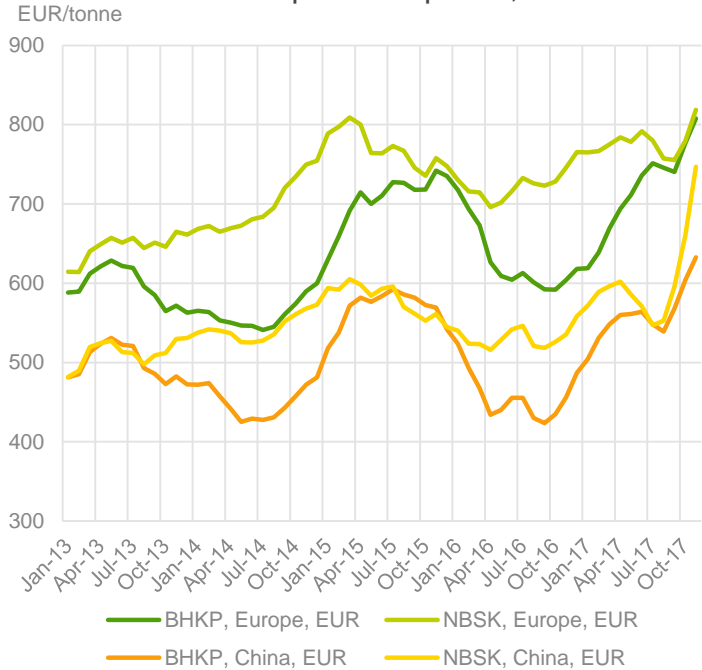
- **Hardwood pulp** capacity has experienced strong net growth after 2000 and is expected to continue growing.
- **Softwood** has faced closures as much as hardwood. New demand in China is turning decline into a slow growth.
- **White RCP** was the fastest-growing fibre in Europe and NA in early 1990's. After recession capacity has been in decline due to very high collection rates and diminishing supply of graphic paper.
- **Mechanical pulp** continues to decline along with graphic papers.
- **Non-wood pulps** consumed mostly in China are under pressure due to environmental reasons.
- **Sulphite** has been in decline for decades.

# Demand-supply drivers of pulp market

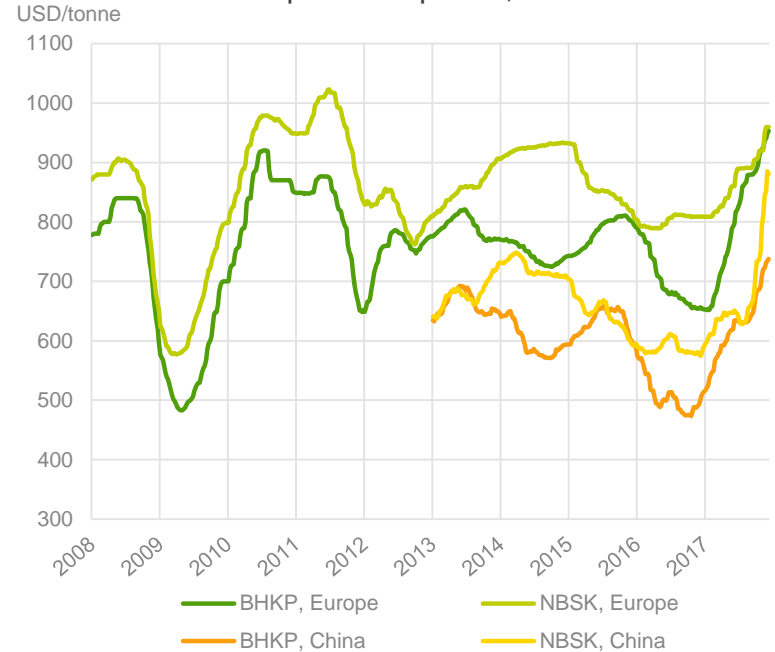


# Chemical pulp market prices

Pulp market prices, EUR



Pulp market prices, USD



Source: FOEX Indexes Ltd, ECB

# Potential pulp mill in Uruguay could be a competitive alternative – time schedule is several years



# Establishing a competitive operating platform in Uruguay

## Current operations

Plantation base at the littoral



Fray Bentos pulp mill  
1.3 million tonnes



~100 km of river barging  
for outbound logistics



Sea port in Nueva Palmira  
loading half vessels



Ocean vessels to pulp markets



## Uruguay prospect

Plantation base at  
Rio Negro basin



Potential new pulp mill  
about 2 million tonnes



Railway with high  
technical standards



Deep sea port in Montevideo  
loading full vessels



Ocean vessels to pulp markets





# UPM Biofuels in existing and future end-use



Fuel retail



Dedicated green fleets

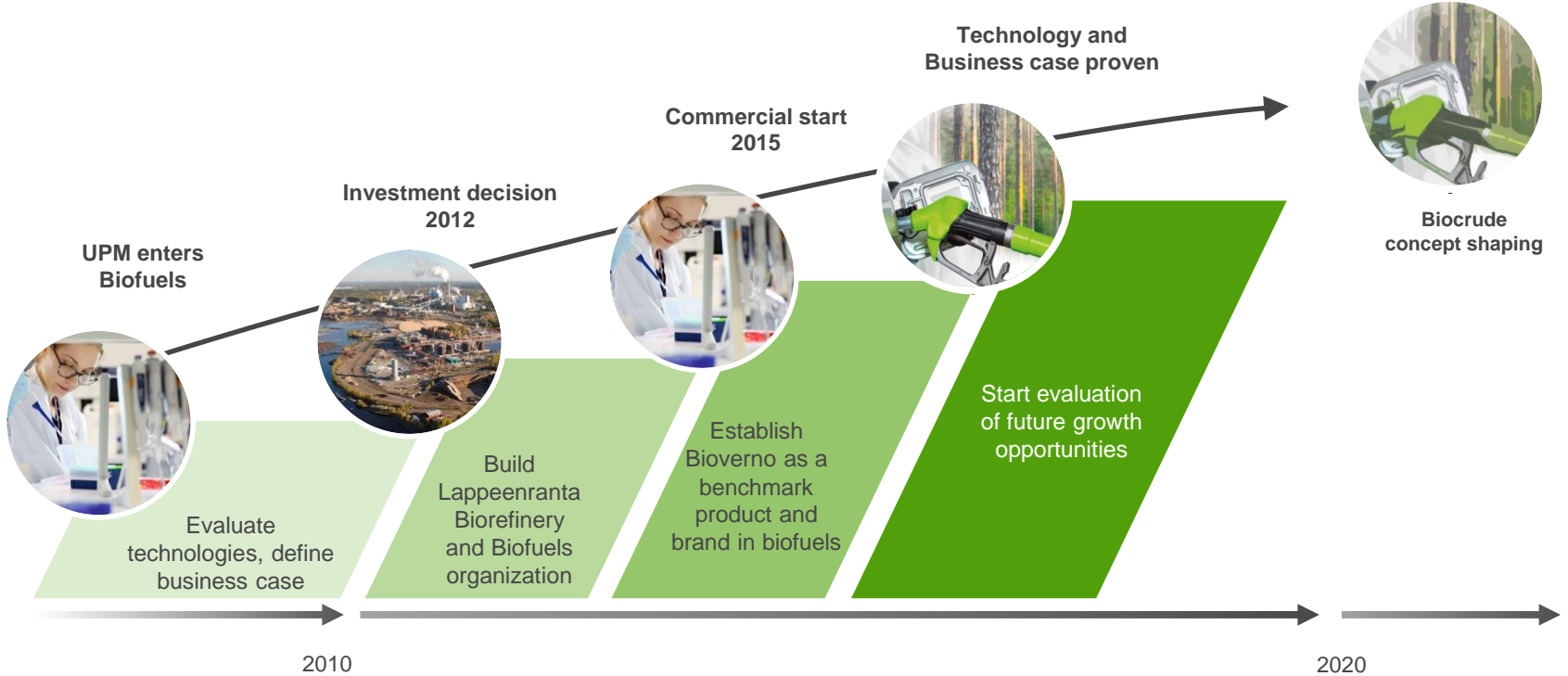


Marine/Aviation



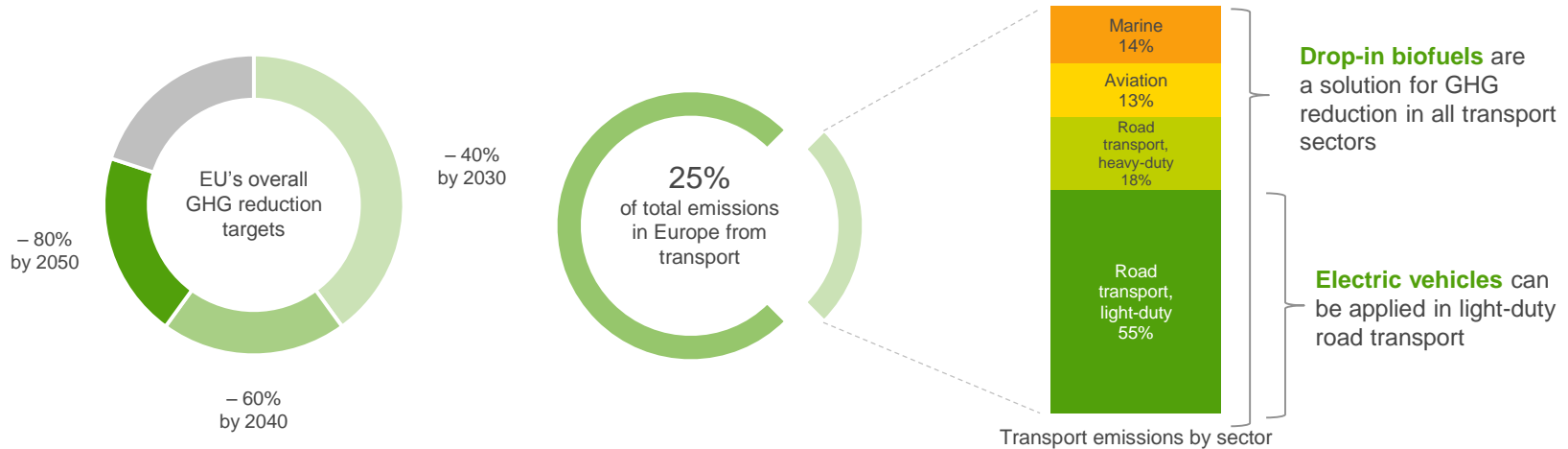


# UPM Biofuels business evolving



# Significant emission cuts needed in transportation sector

EU's greenhouse gas reduction targets cannot be met without significant emission cuts in transport – actions needed in all sectors



# Cost competitive and flexible asset base

## Power generation breakdown

Condensing power

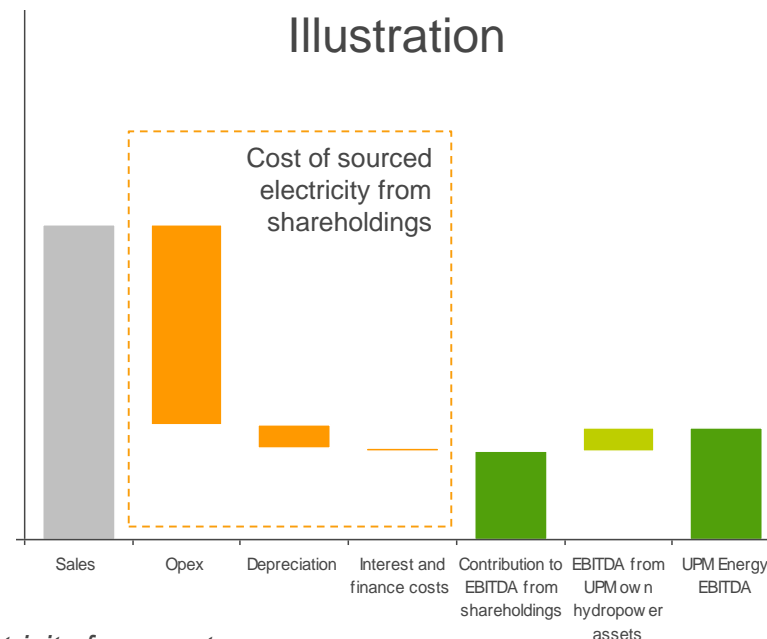
Flexible hydro  
production with  
optimisation  
opportunities



Nuclear as  
reliable base  
load with world-  
class  
availability  
performance

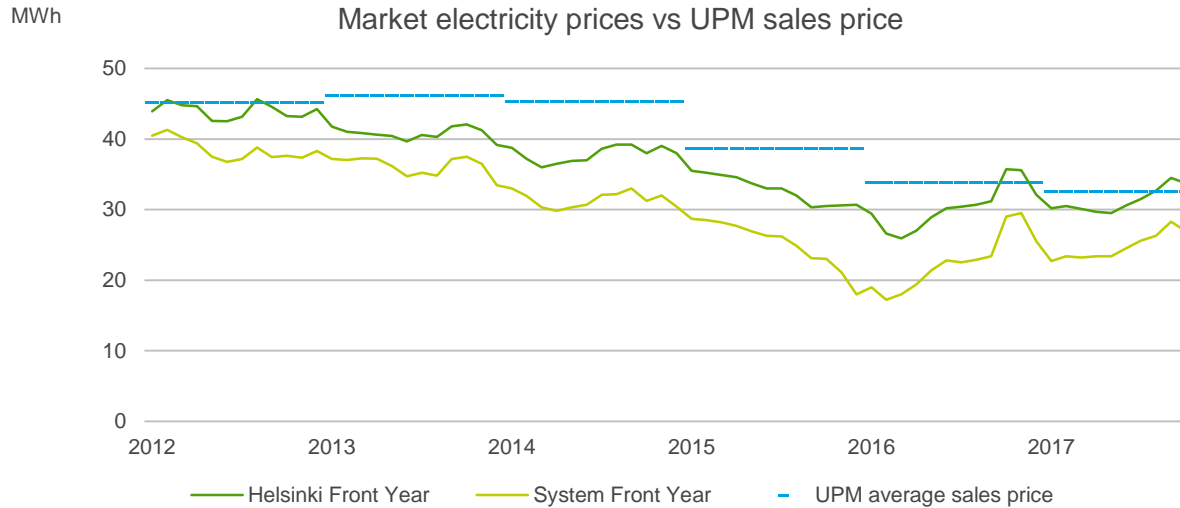
# UPM Energy power generation assets

UPM Energy's power generation	MW	EURm
Hydropower holdings	565	723
Nuclear power OL1 and OL2	580	1,031
Nuclear power OL3 under construction	(500)	178
Condensing power	190	8
UPM Energy's shareholdings in total, valued at fair value	1,335	1,940
UPM own hydropower assets	160	
UPM Energy's in total (excl. OL3)	1,495	
UPM Energy capital employed		2,267



*In addition to its own power generation, UPM Energy sources electricity from part owned energy companies at full cost (cost-price principle)*

# Cost efficient generation enables robust profitability also in challenging market environment



UPM Energy profitability	2012	2013	2014	2015	2016	Q117	Q217	Q317
Comparable EBIT, EURm	217	186	202	181	116	22	12	26
% of sales	45.0	39.9	43.5	43.6	32.7	27.5	18.3	30.5

UPM Raflatac

# Self-adhesive labels in end-use



PHARMACEUTICALS



WINE, SPIRITS & CRAFT BEVERAGE



FOOD



HOME & PERSONAL CARE



DURABLES



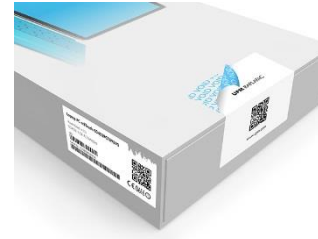
TRANSPORT & LOGISTICS



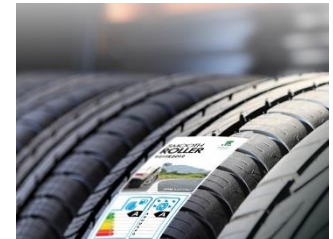
RETAIL, OIL & INDUSTRIAL



A4 & CUT-SIZE



SECURITY & BRAND PROTECTION



TYRE

# Leading position in a growing market

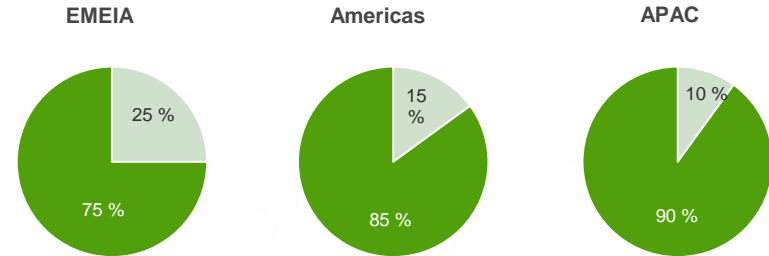
## The self adhesive labelstock market

- > EUR 8bn global market
- ~ 4% p.a. growth
- Private consumption driven

## UPM Raflatac

- #2 globally
- Business in 120 countries
- > 8,000 customers
- 3,000 people in six continents

## UPM Raflatac market shares

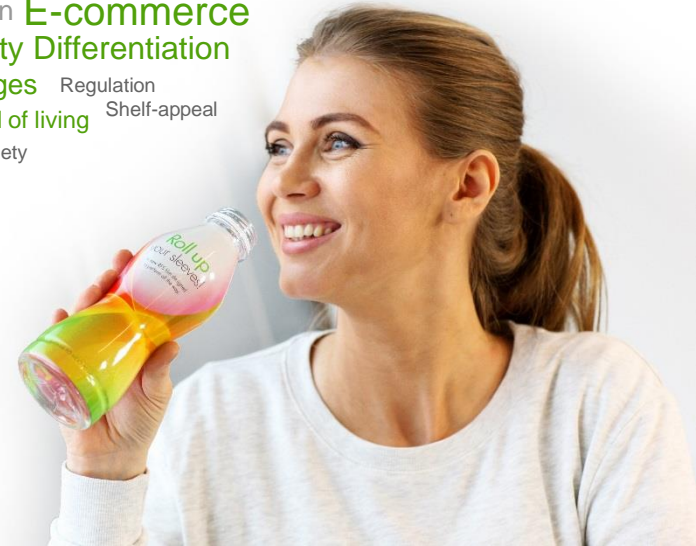


# Continuing growth

1. Capturing the market growth in the current markets and product areas
2. Increased distribution coverage and customer reach
3. Wider product portfolio
4. M&A when opportunities emerge

Enabled by scalable operating platform & efficient investments

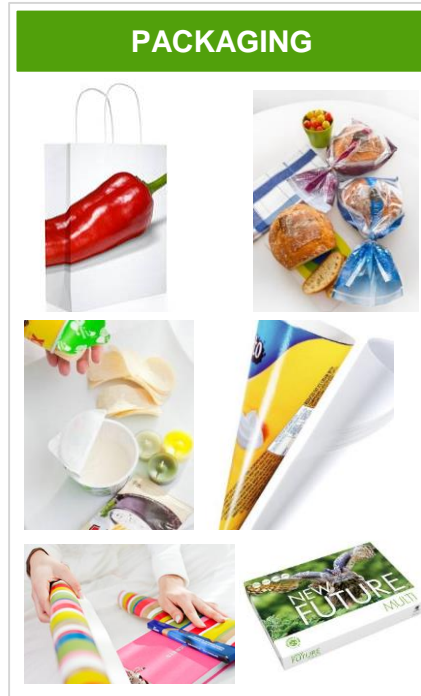
Tailored marketing  
Productivity Population growth  
Single households Consumerism  
Reliability Packaged food Ease of use  
Private consumption  
Label demand  
Urbanisation E-commerce  
Sustainability Differentiation  
Retailing changes Regulation  
Higher standard of living Shelf-appeal  
Product safety



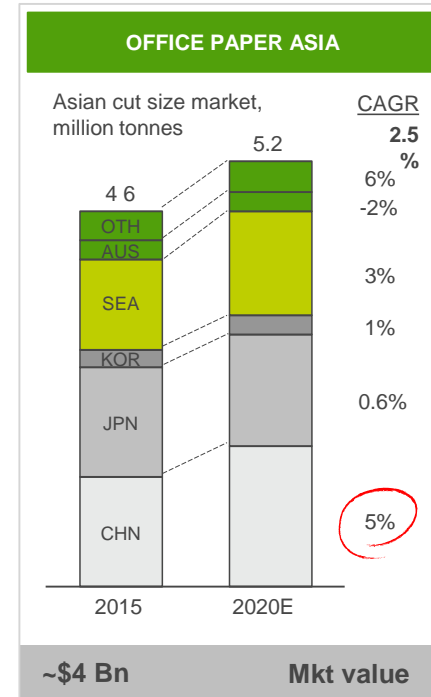
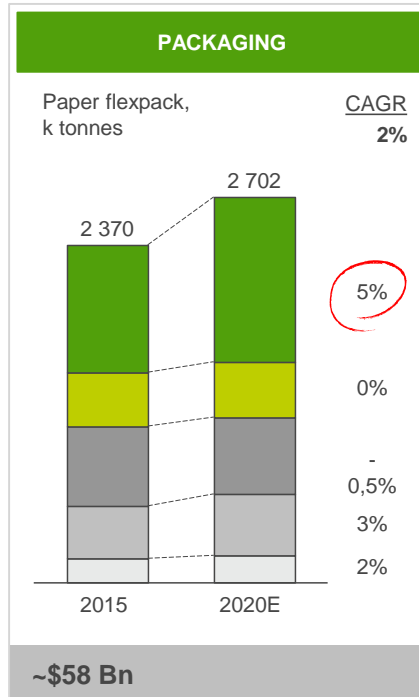
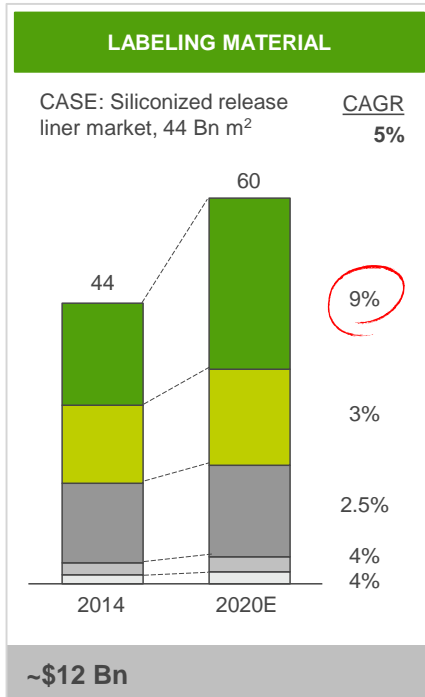


## UPM Specialty Papers

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

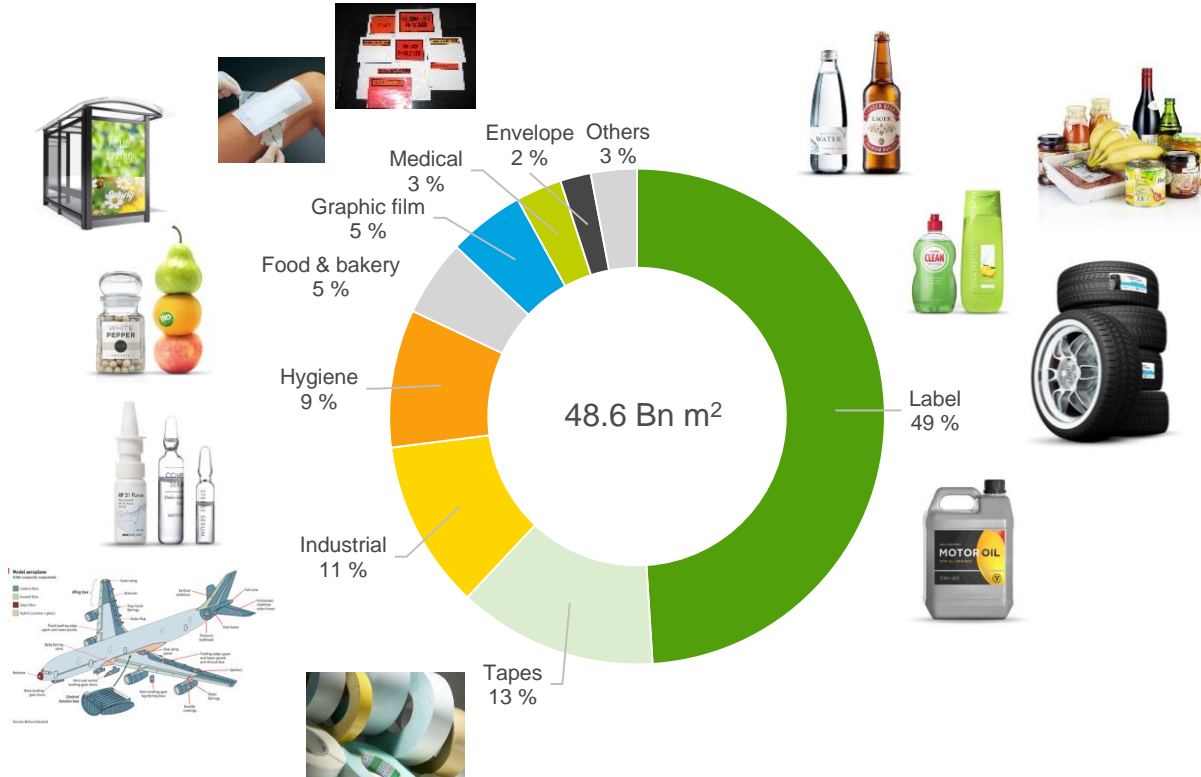


# Our end use markets are growing



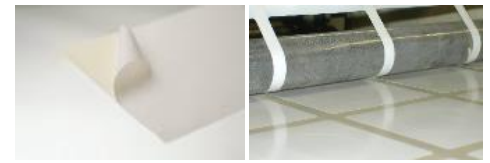
■ Asia 
 ■ North America 
 ■ Europe 
 ■ South America 
 ■ MEA

# Global release liner market: 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



# Paper demand by end use – different trends



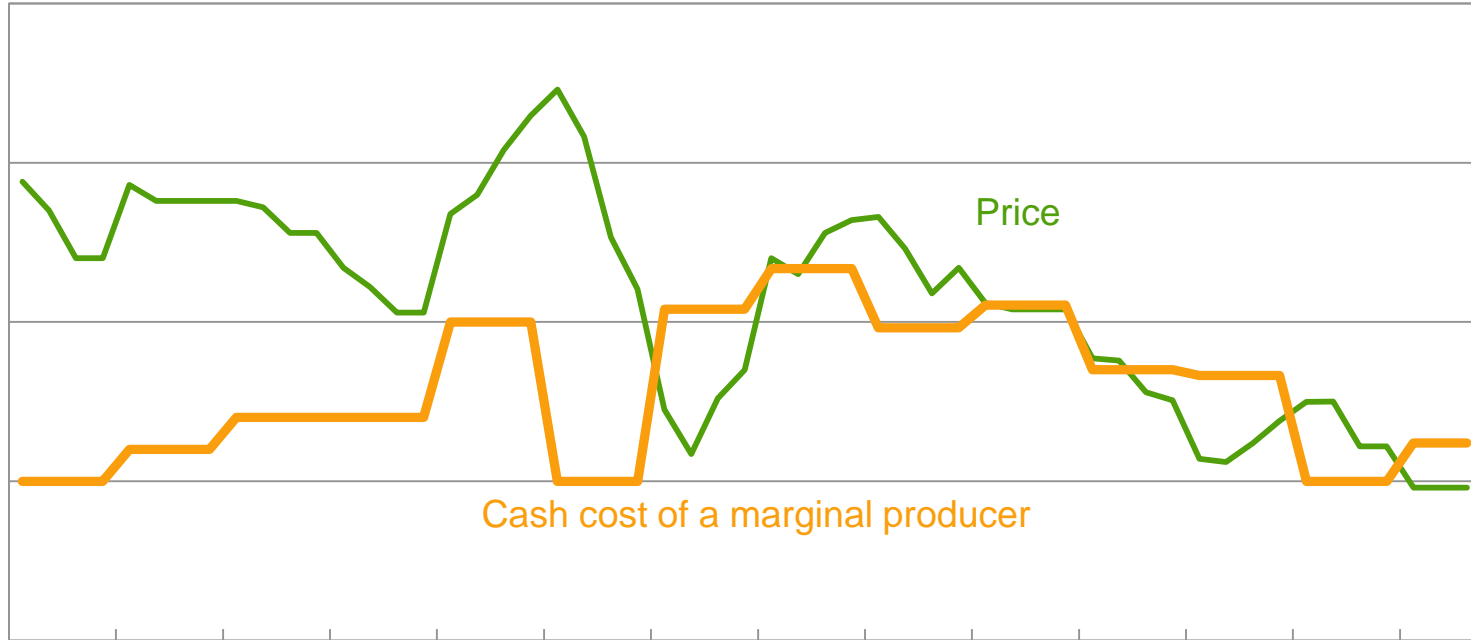
Source: Euro-Graph

- Historically Home & Office end-use has been the **most resilient** to structural changes
- Despite the digital alternatives personal preferences (way of working and learning), regulation (archiving) and lack of common standards have mitigated the change
- **A moderate decline** has taken place in Direct marketing end-use
- Paper based marketing is still recognized to be the **most effective medium** for retailers and cataloguers
- **Steady decline** in Magazine Publishing circulation and pagination, however number of titles increasing
- Publishers still **rely heavily on the revenues** from print
- Newspaper publishing being historically the **most vulnerable** to structural changes but remarkable differences between countries
- **Monetizing digital circulation for Magazines and Newspapers continue to be challenging**

# Paper price vs. cash cost of marginal cost producer

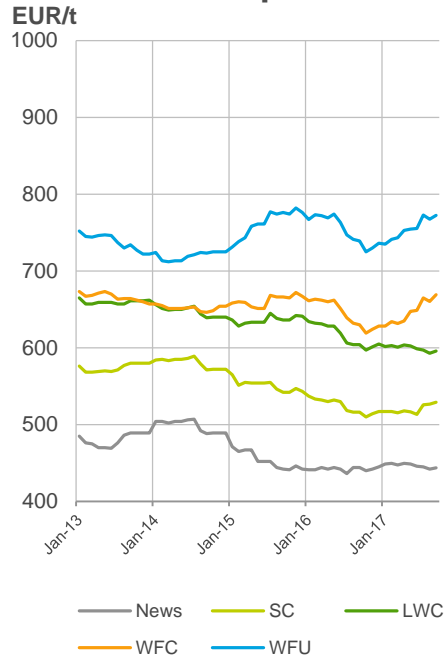


EUR/t



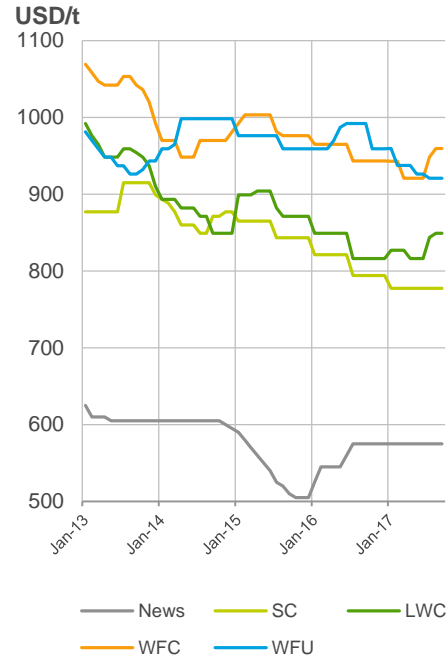
# Graphic paper prices

## Europe

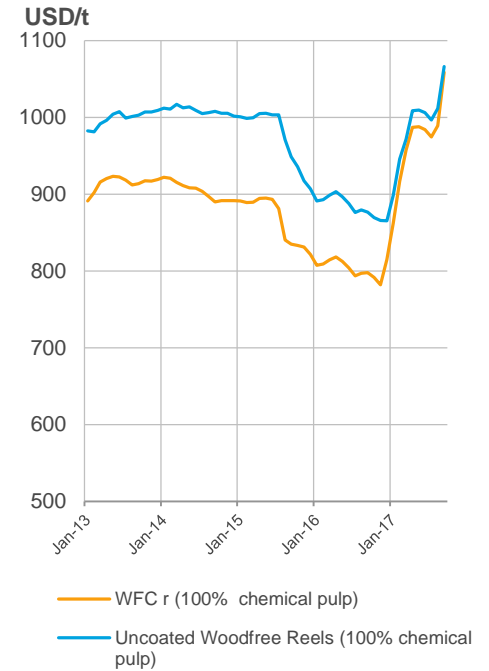


Sources: PPI, RISI

## North America



## China



# UPM Plywood in end-use

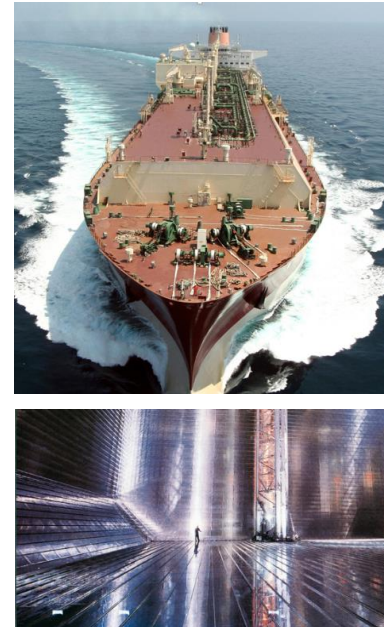
Construction



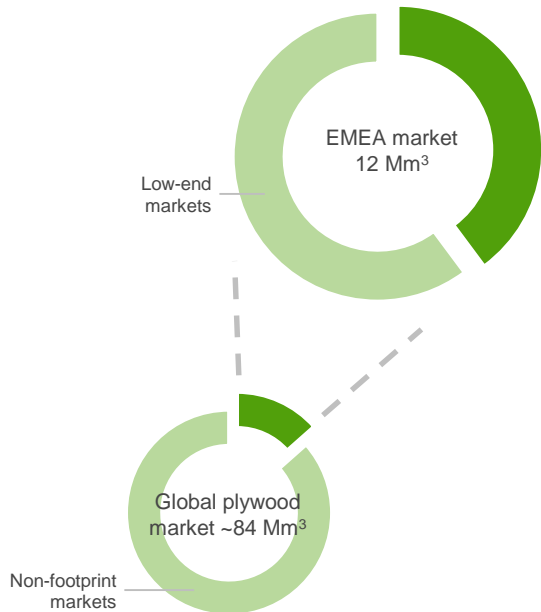
Vehicle flooring



LNG shipbuilding



# Relevant high-end market offers meaningful growth potential



## Relevant market ~5 million m<sup>3</sup>

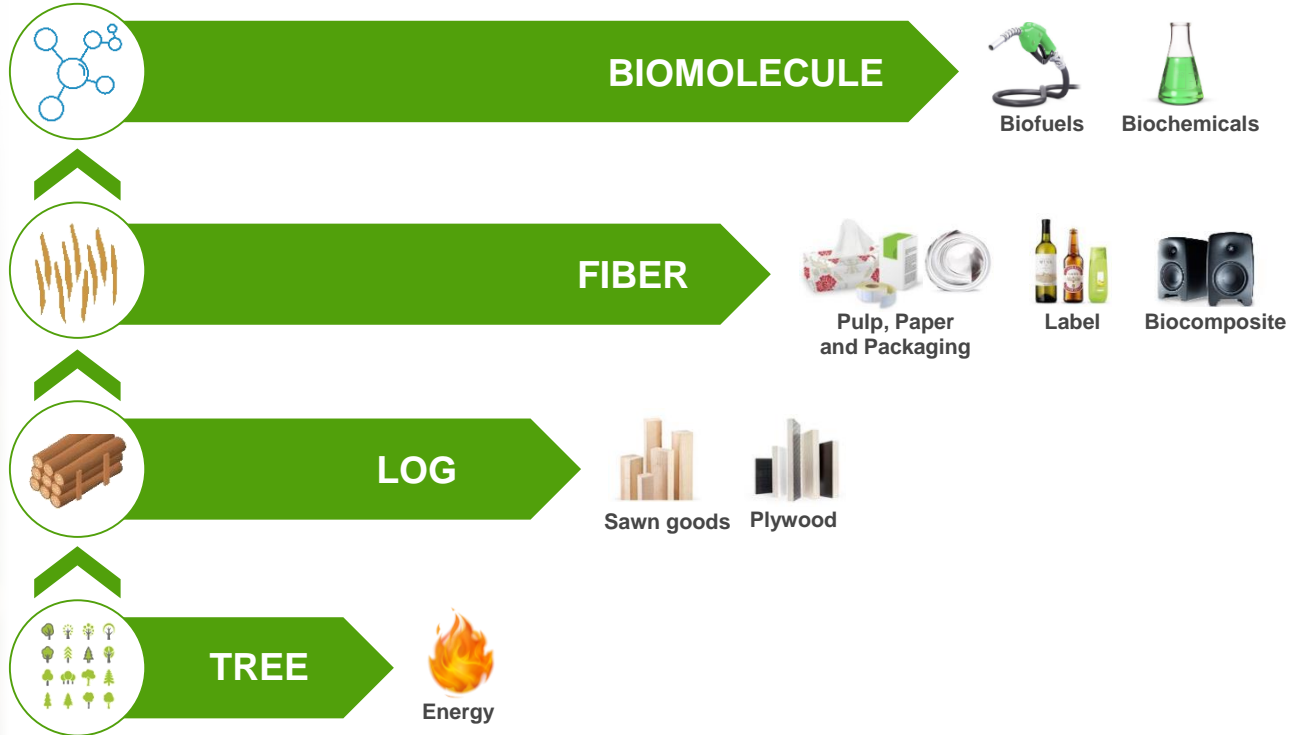
- High-end demanding applications & customers
- Medium range standard products
- EMEA region
- Global LNG business
  
- Europe is net importer of plywood
- Imports focus mainly on standard products in mid-low ranges

Source: FEIC; FAOSTAT; UPM



# Biofuels and biochemicals are natural evolutionary steps in wood based value creation

EVOLUTION OF WOOD USAGE



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

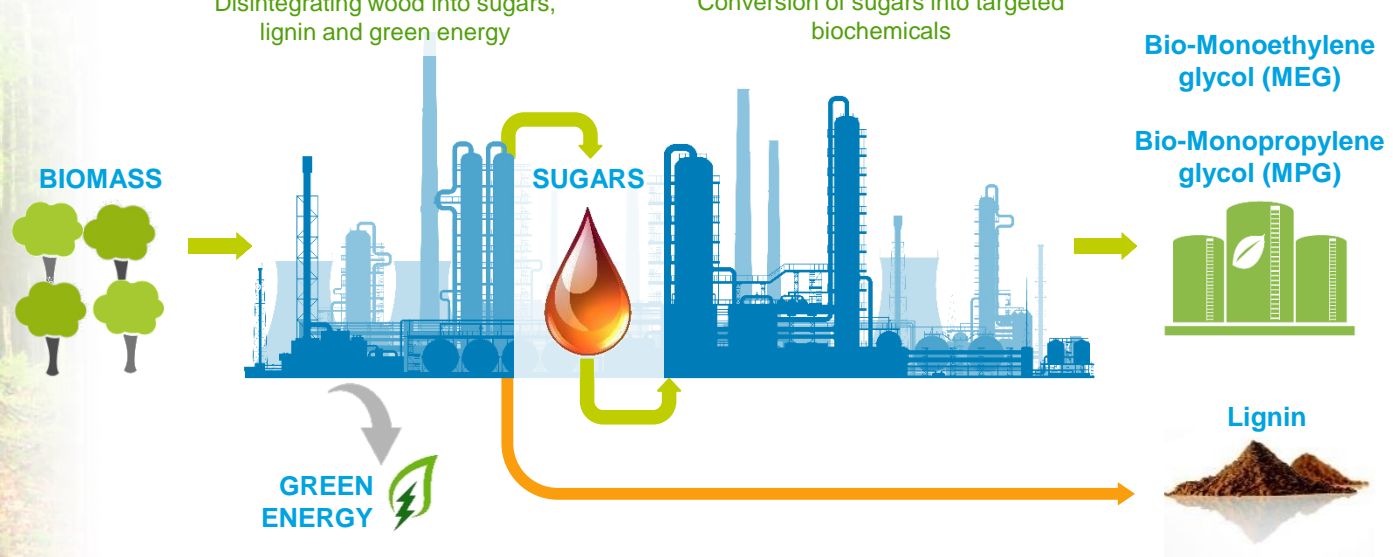
## BIOREFINERY PROCESS

### STEP 1: SUGAR PULPING

Disintegrating wood into sugars, lignin and green energy

### STEP 2: CHEMICAL CONVERSION

Conversion of sugars into targeted biochemicals



40%  
Cellulose

30%  
Hemi-cellulose

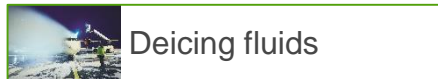
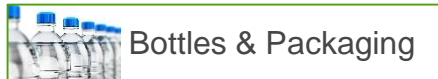
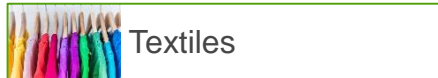
25%  
Lignin

# Biochemicals products are sustainable and competitive drop-in alternatives for brand owners



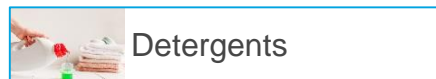
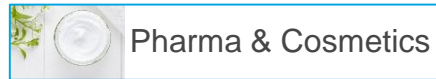
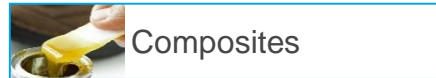
## Mono Ethylene Glycol

- Existing fossil-based market
- Market demand > 26 mio tons
- CAGR >3%
- Application examples:



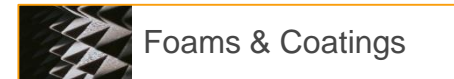
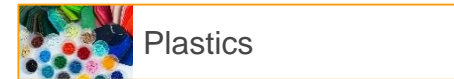
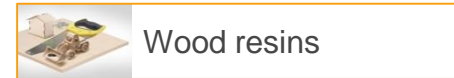
## Mono Propylene Glycol

- Existing fossil-based market
- Market demand >2 mio tons
- CAGR >5%
- Application examples:



## Lignin

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





**UPM**

The Biofore  
Company