



**UPM**

The Biofore  
Company



**AIMING  
HIGHER  
WITH  
BIOFORE**

**UPM**  
**The Biofore Company**

Investor Presentation  
October 2018



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# Competitive businesses with strong market positions



## 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 COMMUNICA- TION PAPERS

Magazine  
papers,  
newsprint and  
fine papers



## UPM PLYWOOD

Plywood  
and veneer  
products



## BIOCHEMICALS BIOCOMPOSITES

## WOOD SOURCING AND FORESTRY



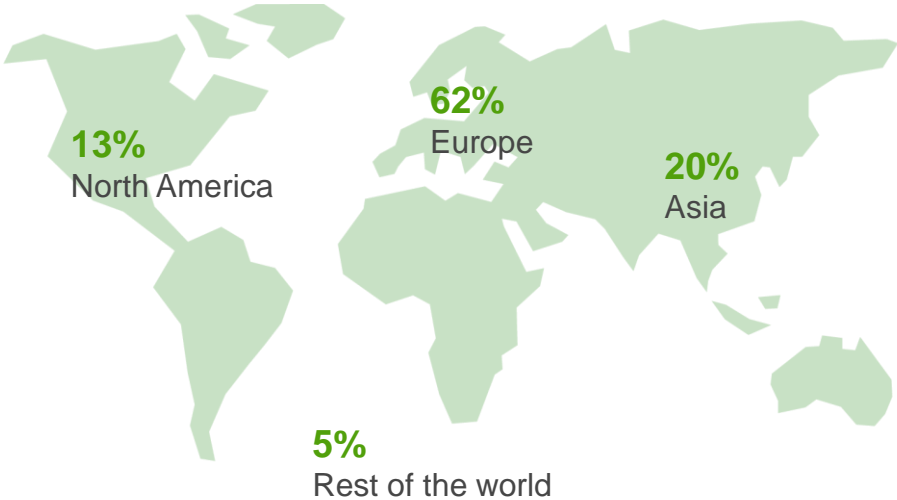
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# Global businesses – local presence

UPM's sales by market 2017

**EUR 10,010 million**



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



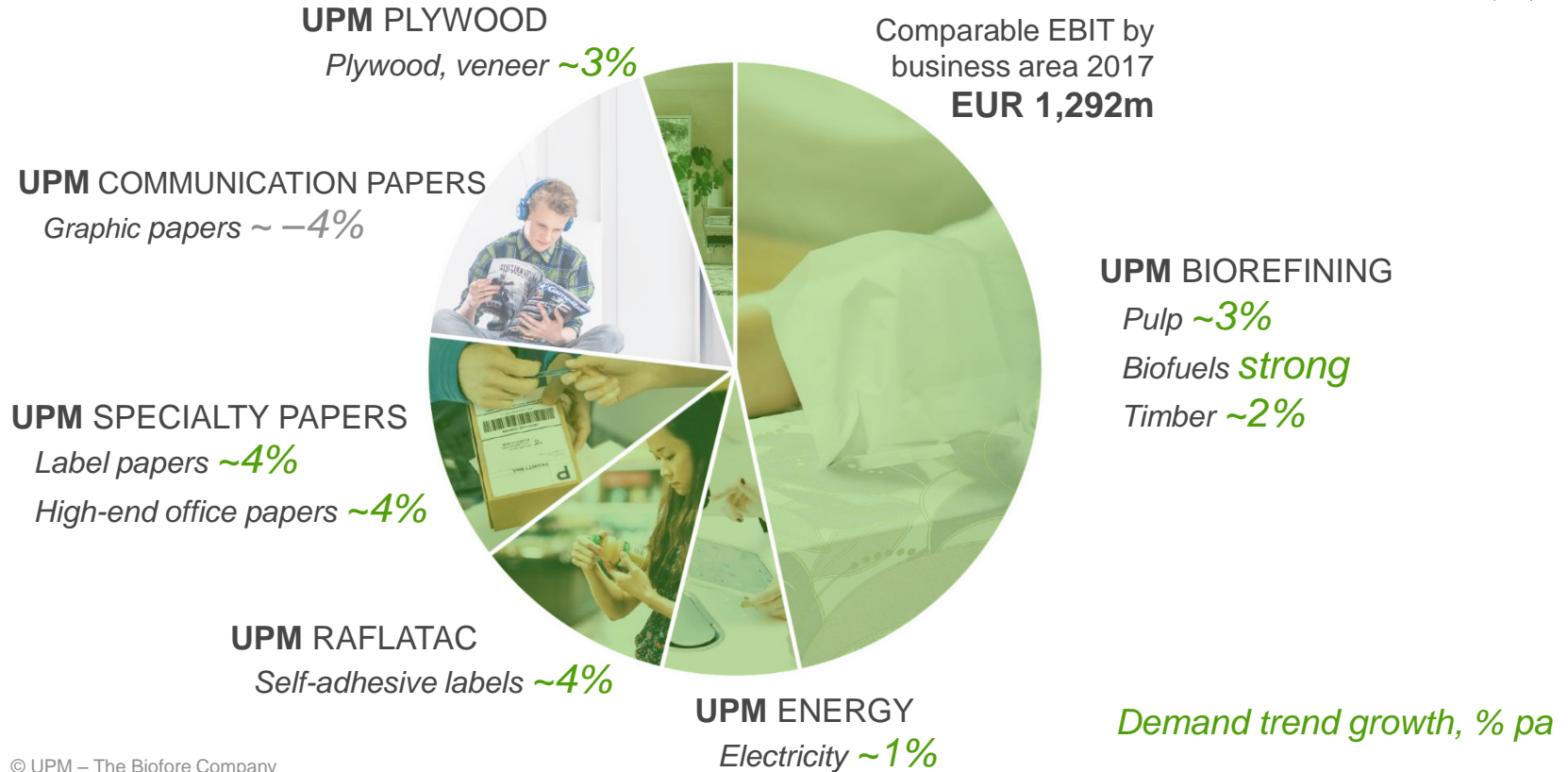
**19,100**  
employees  
in **46** countries

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

**90,000**  
shareholders  
in **35** countries

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

# Operating on healthily growing markets





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# Sustainable and safe products for everyday use

**ELECTRICITY**  
everywhere

**PULP-BASED  
MATERIALS**

for packaging,  
transport,  
storage and  
hygiene products

**PUBLICATION  
PAPERS**

for reading and  
advertising

**LABEL MATERIALS**

for food packaging,  
drinks bottles and  
for communicating  
information

**SPECIALTY  
PAPERS**

for food packaging

**WOOD  
MATERIALS**

for construction  
and design  
features

**OFFICE PAPERS**  
for printing

**WOOD MATERIALS**  
for furniture and the home

**LABELS**  
for food products

# UPM **BIOFORE** BEYOND FOSSILS

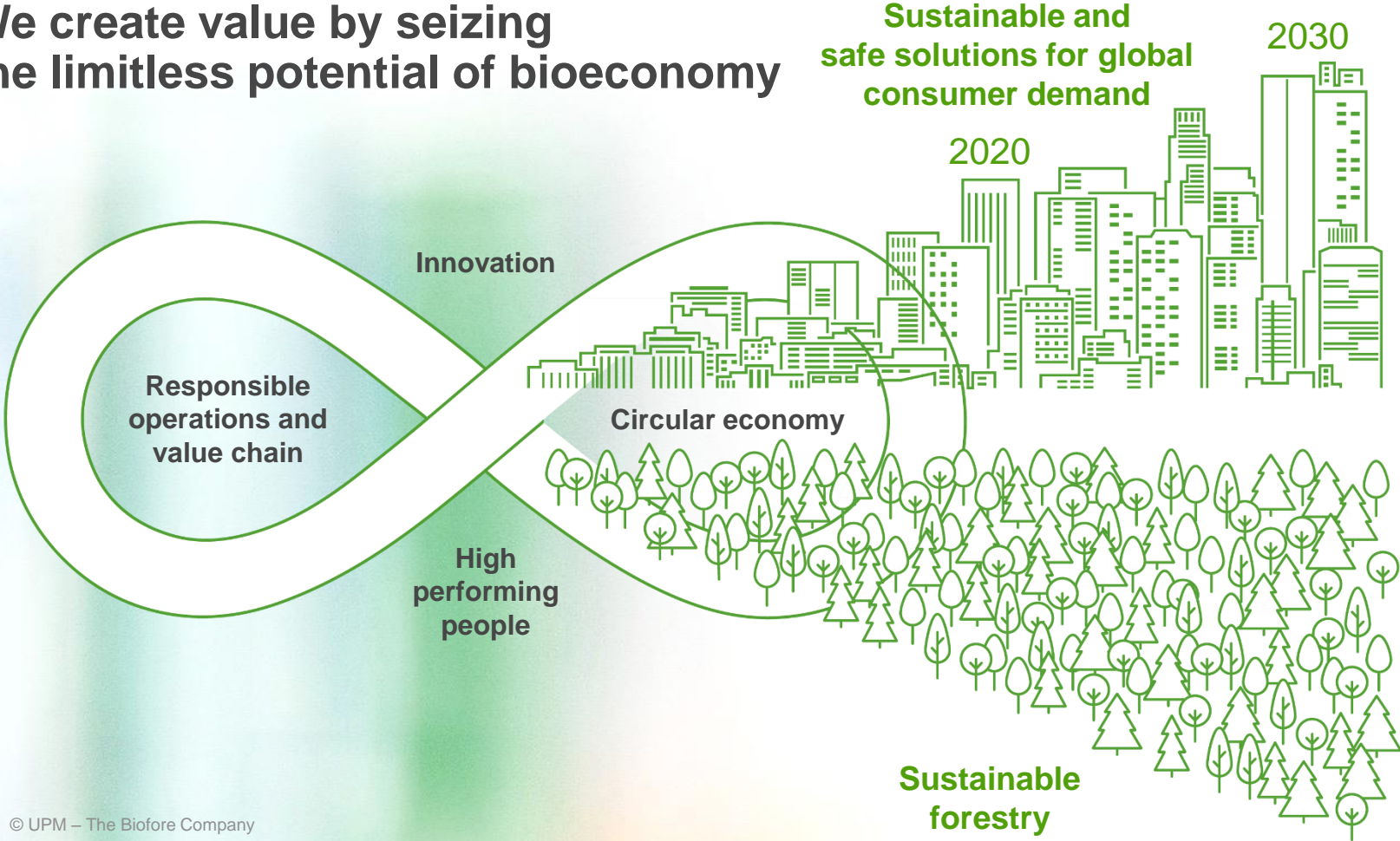


Inspired by the  
limitless opportunities  
of bioeconomy

Delivering renewable  
and responsible  
solutions

Innovating for  
a future beyond  
fossils

# We create value by seizing the limitless potential of bioeconomy





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# UPM strategic focus areas

*We create value by seizing...*

*...the limitless potential of bioeconomy*

# 1

## Performance

- > Continuous improvement

# 2

## Growth

- > Earnings growth

# 3

## Innovation

- > Growth and competitiveness

# 4

## Responsibility

- > Continuous improvement

# 5

## Portfolio

- > Develop businesses with strong long-term fundamentals and sustainable competitive advantage





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# Spearheads for growth

## *Specialty packaging materials*



Raflatac



Specialty papers

## *High value fibre*



Forests



Pulp

## *Molecular bioproducts*



Biofuels



Biochemicals

## *Communication papers*



## *Plywood*



## *Energy*



# UPM in transformation

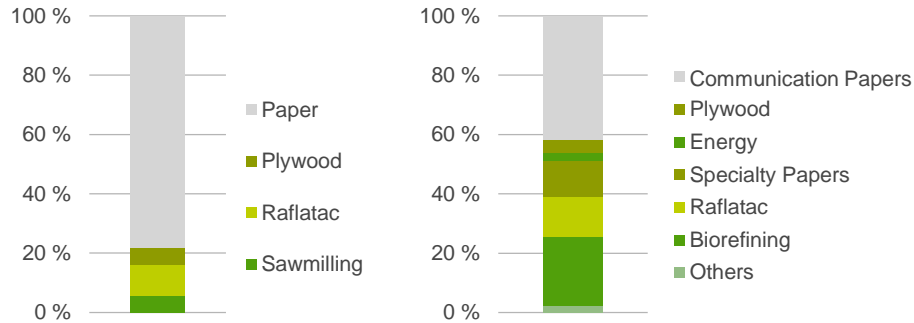
**2008**  
vertically integrated  
paper company

**2017**  
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 10.0bn  
**EBIT<sup>\*)</sup>** EUR 1,292m  
**ROE<sup>\*)</sup>** 11.9%

## Business performance

Continuous improvement in financial, social and environmental performance

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

**Net debt** EUR 0.2bn  
**Market cap** EUR 13.8bn

## Disciplined capital allocation

Driving value creation

<sup>\*)</sup> excluding special items for 2008, comparable figures for 2017

# UPM current investment portfolio for earnings growth

## Focused growth projects

- Raflatac speciality label expansion, in Q4 2018, Finland
- Chudovo plywood mill expansion, +45k m<sup>3</sup> in Q3 2019, Russia
- Jämsänkoski release liner expansion, +40kt in Q4 2018, Finland
- Nordland PM2 conversion to release liner, +110kt in Q4 2019, Germany
- Changshu release liner expansion, +40kt in Q1 2020, China

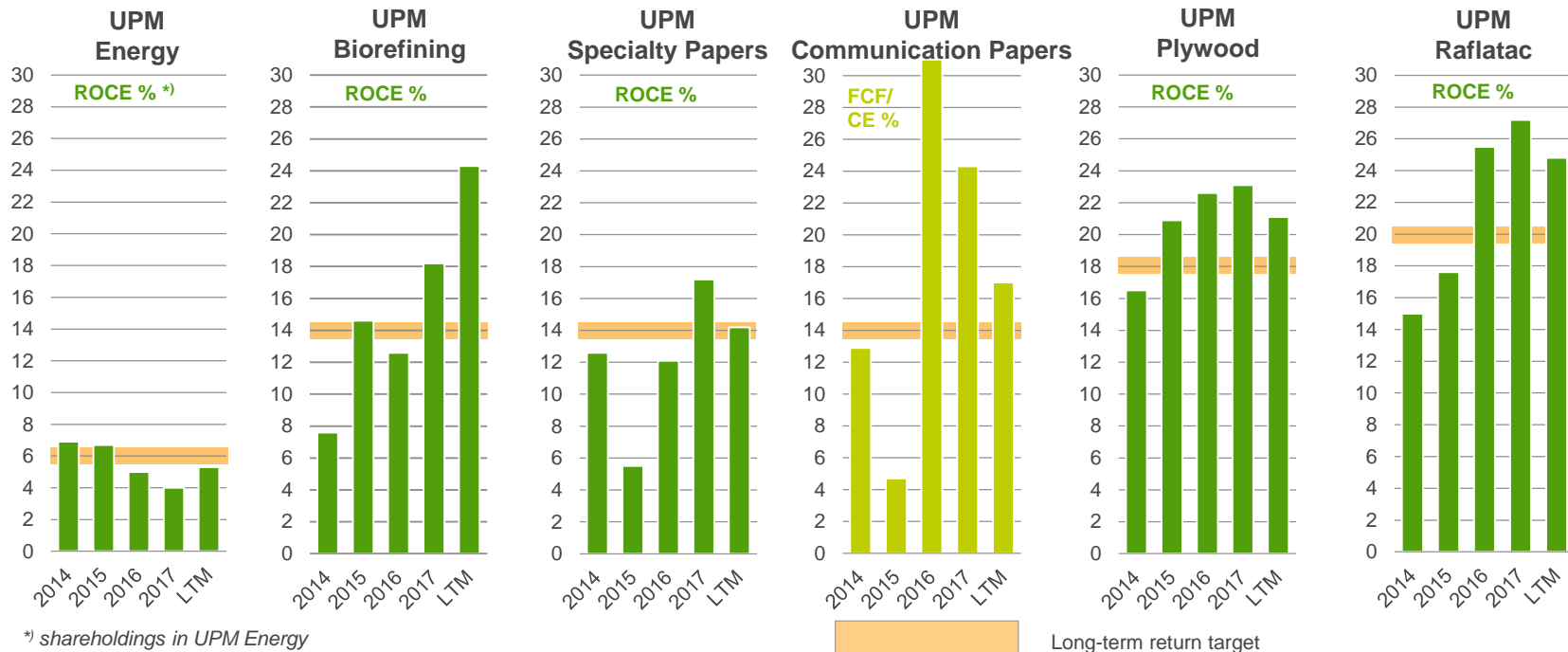
## Transformative prospects

- Possible new 2mt pulp mill, Uruguay
  - Second preparation phase proceeding: The rail tendering process in final stages, port concession tendering started. Environmental and social impact study for the mill submitted.
- Molecular bioproducts, possible biorefineries
  - Basic engineering work continues regarding a potential 150kt biochemicals refinery, Germany
  - Exploring next steps in biofuels, environmental impact study submitted for a potential 500kt biorefinery, Finland



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# Business area long-term return targets apply over investment and business cycles

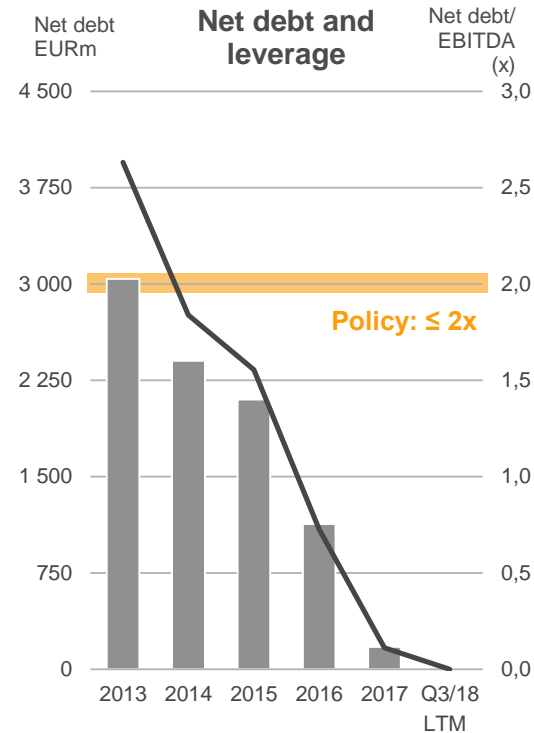
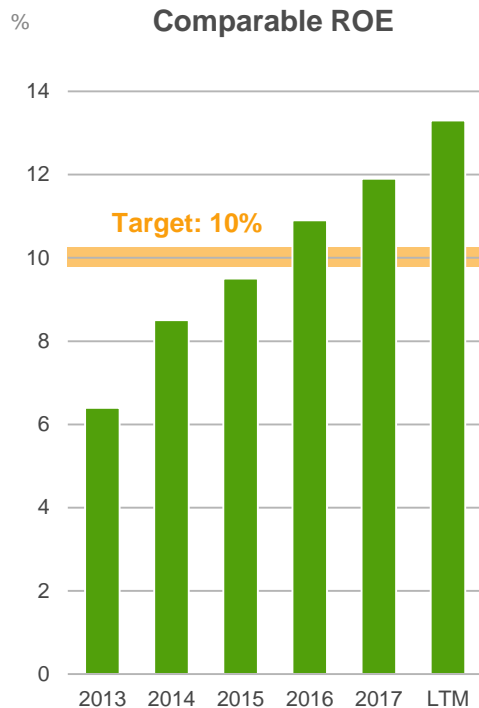
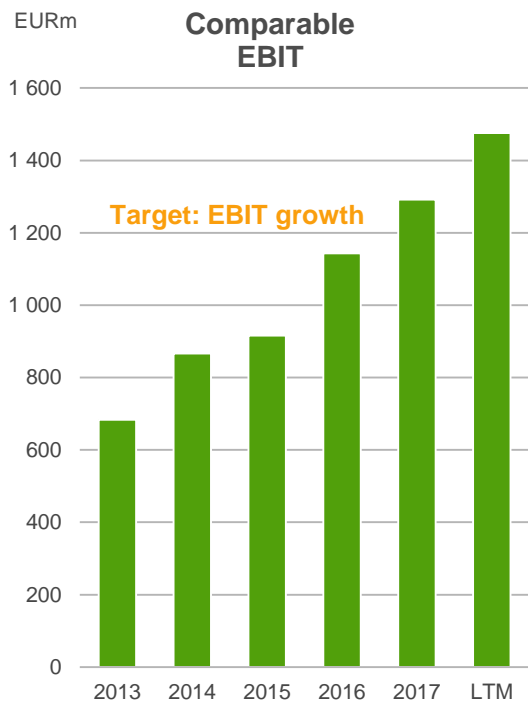


\*) shareholdings in UPM Energy valued at fair value

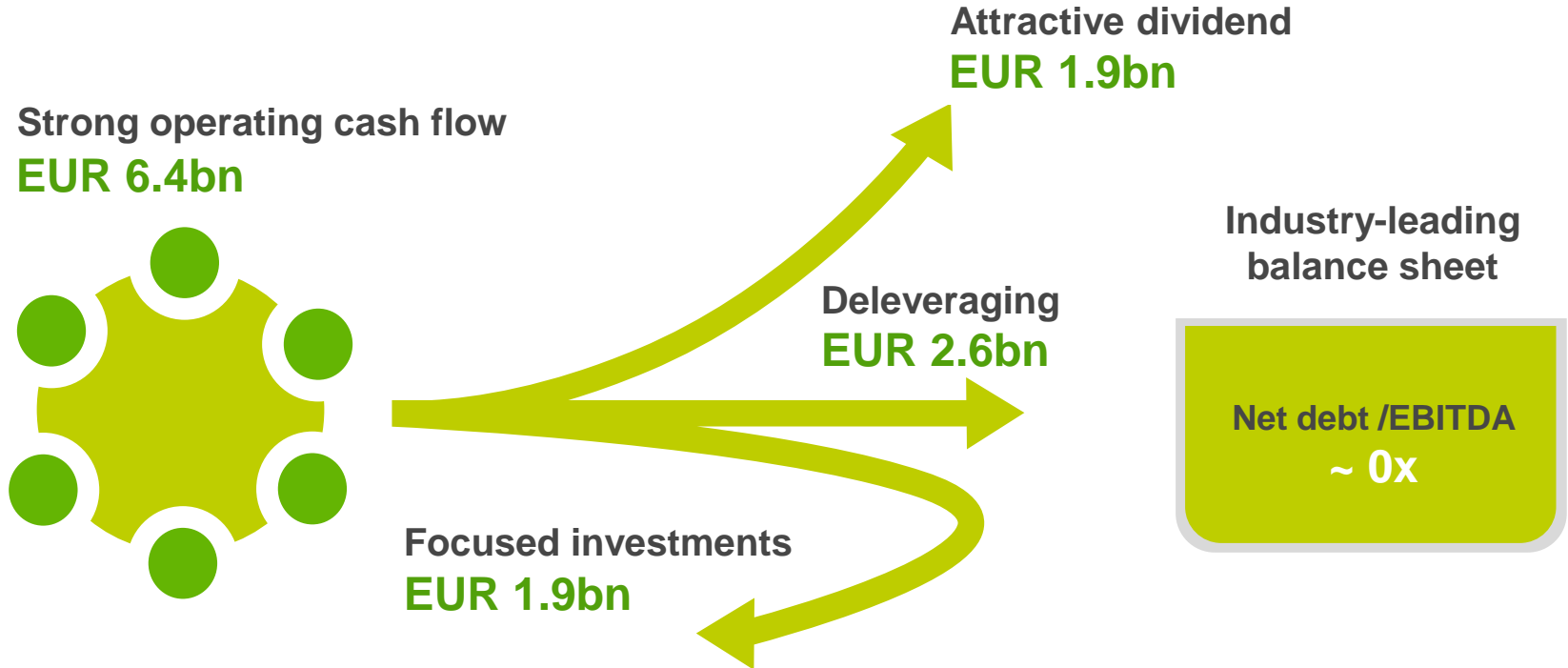


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# Group financial performance

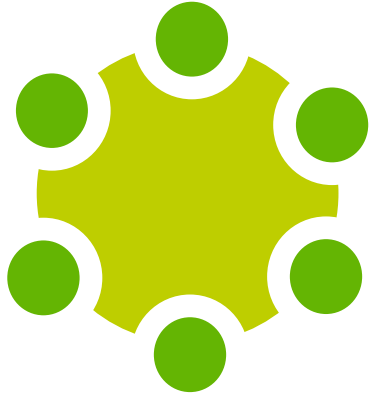


# 5-year cumulative cash flow (2013–2017) – disciplined capital allocation in action



# Illustrative capital allocation<sup>\*)</sup> for next 5 years, assuming the Uruguay pulp mill investment

Performance focus  
**Strong cash flow**



Attractive dividend  
**EUR ~3–4bn**



High return  
investments  
**EUR ~3–4bn**

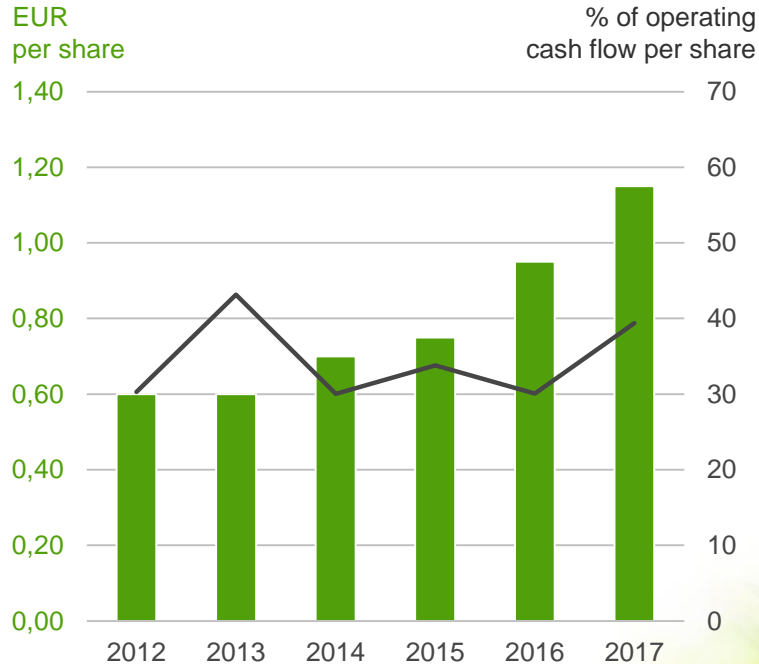
Industry-leading  
balance sheet



**Maintain headroom**

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

# Dividend



## Dividend policy

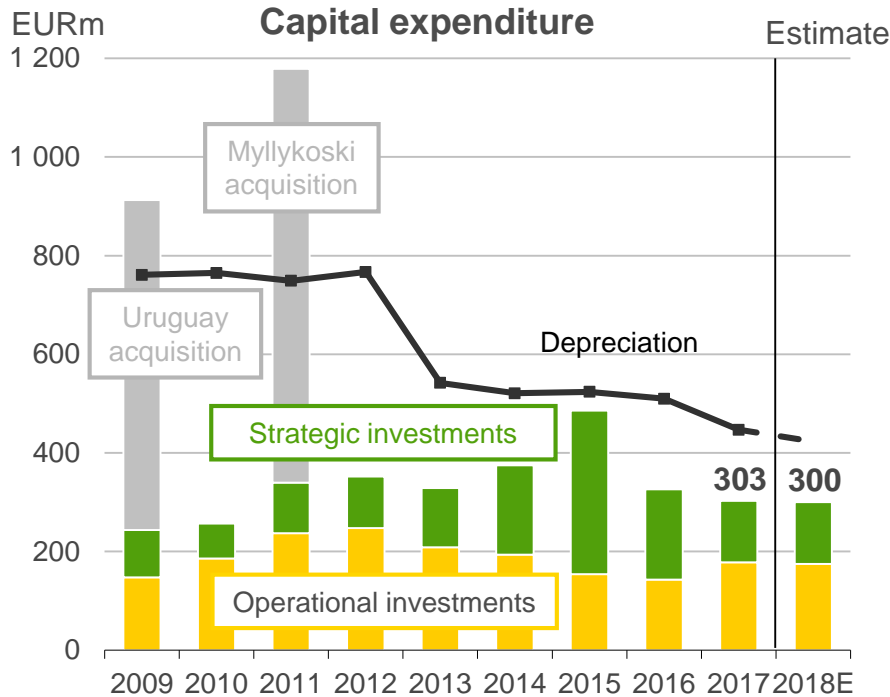
- UPM aims to pay an attractive dividend, 30–40% of operating cash flow per share

## Dividend for 2017

- EUR 1.15 (0.95) per share, totalling EUR 613m
- 39% of 2017 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**



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# Value from responsibility

*We create value by seizing...*

*...the limitless potential of bioeconomy*

## Renewable, recyclable and safe products

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

## Responsible operations and value chain

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

## Value based leadership

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

## Compliance

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



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# Industry leader in responsibility



MEMBER OF  
**Dow Jones  
Sustainability Indices**  
In Collaboration with RobecoSAM



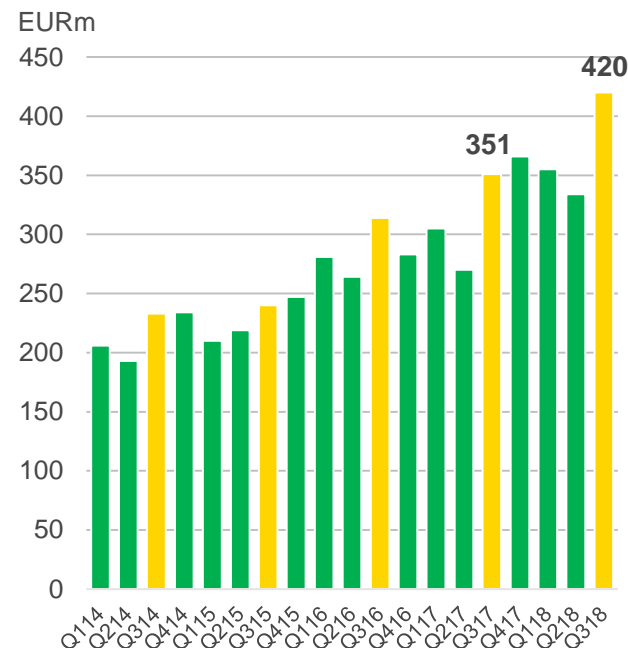


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## Q3 2018: strong quarter sets a new benchmark for UPM's performance

- Sales grew by 6% to EUR 2,650 million (2,493m)
- Comparable EBIT increased by 20% to EUR 420m (351m)
- Sales prices increased in all business areas, outweighing the impact of higher input costs
- Temporary operational issues in UPM Communication Papers and UPM Biorefining had a EUR 30 million negative impact
- Operating cash flow was EUR 434m (486m), net debt decreased to EUR 4m (623m)

### Comparable EBIT



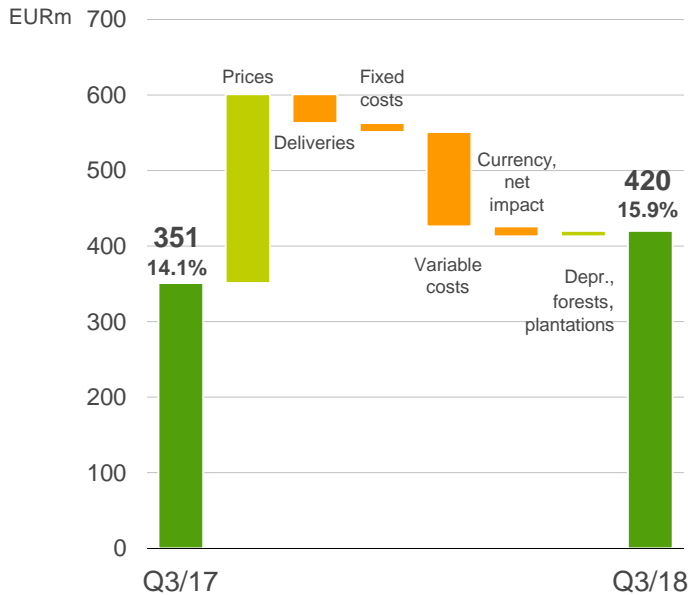


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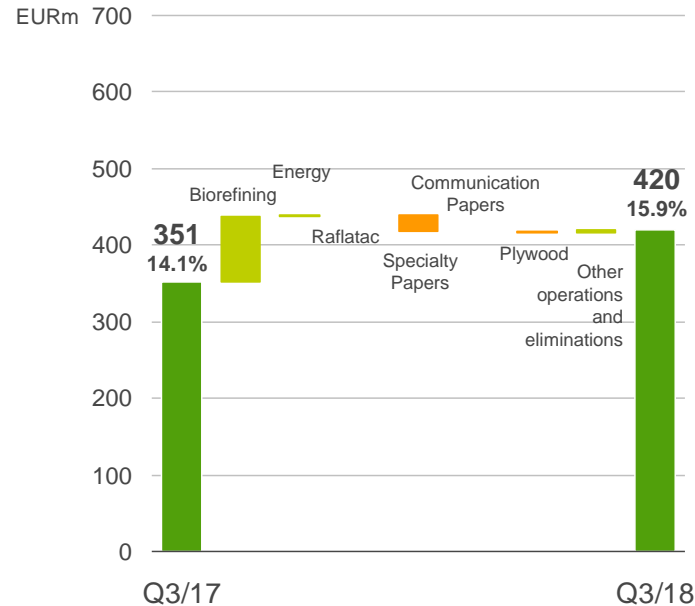
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# Comparable EBIT in Q3 2018 vs. Q3 2017

Prices increased in all businesses, input costs higher  
Deliveries impacted by temporary production issues



Record quarter in Biorefining, improvement  
in Energy and Communication Papers.  
Specialty Papers weaker.



# Q3 2018: Sales prices increased in all business areas, outweighing the impact of higher input costs

## UPM BIOREFINING

- Average pulp prices in euros +27%
- Pulp deliveries -2%, held back by temporary production issues at UPM Fray Bentos
- New production level in Biofuels

## UPM SPECIALTY PAPERS

- Price increases offset only part of the variable costs increases
- Solid demand, deliveries +1%

## UPM COMMUNICATION PAPERS

- Average paper price +10%, more than offset the higher variable costs
- Tight market sentiment, deliveries -8%
- Turbine damage in UPM Plattling

## UPM RAFLATAC

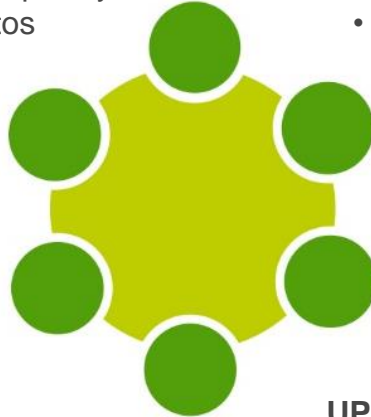
- Price increases more than offset the higher variable costs
- Stable demand growth, deliveries -3%

## UPM ENERGY

- Average electricity sales price +19%
- Electricity deliveries +2%
- Dry weather limited hydropower generation

## UPM PLYWOOD

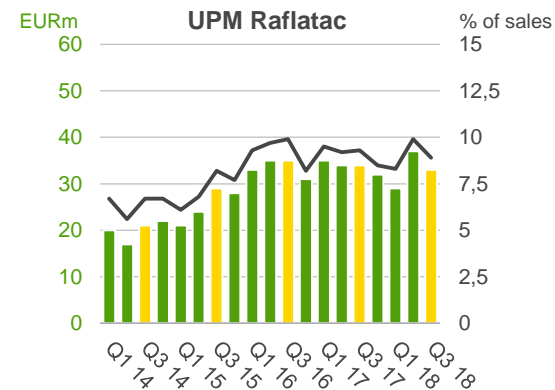
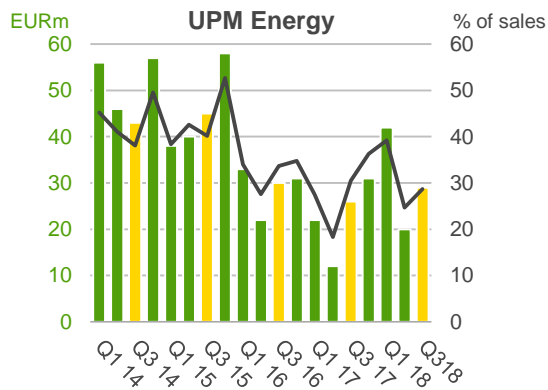
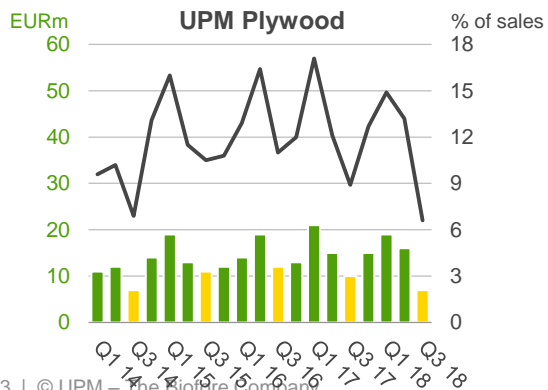
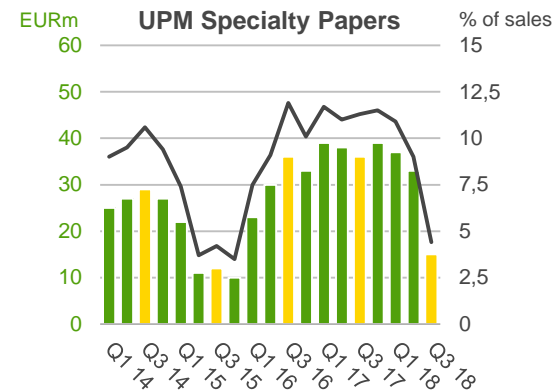
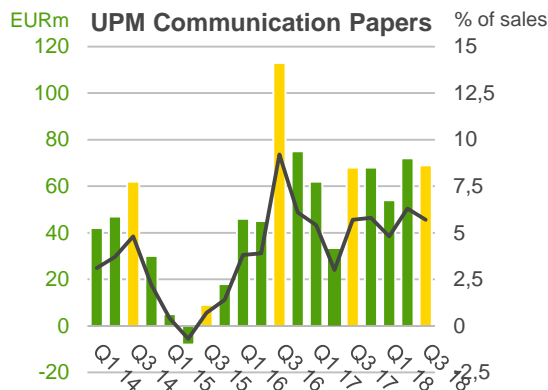
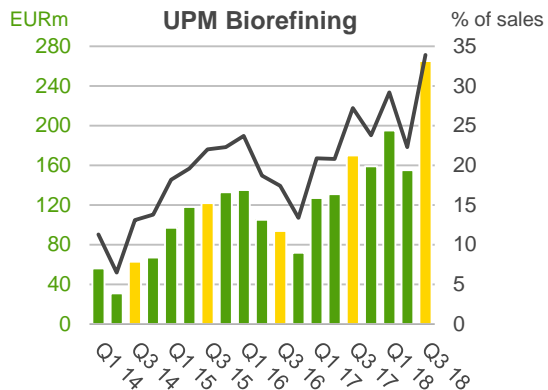
- Price increases offset the higher variable costs
- Good demand, deliveries -2%





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# Comparable EBIT by business area





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## Outlook for 2018 unchanged

- UPM's comparable EBIT is expected to continue growing in 2018 compared with 2017. H2 2018 comparable EBIT is expected to be significantly higher compared with H1 2018.
- The fundamentals for UPM businesses in 2018 are favourable. Sales price increases in 2018 are expected to outweigh the increase in variable cost, compared with 2017.





# Developing our forest assets

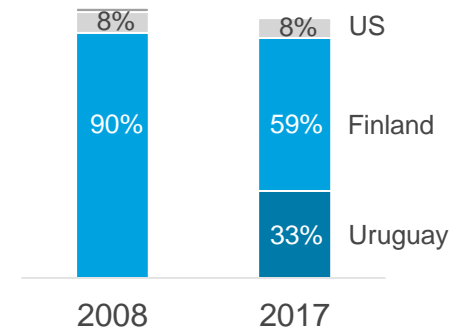
- Investing in strategic forest assets, e.g. in Uruguay
- Releasing capital from forests far from our mills
- Productivity with active management and nurseries
- Strong commitment to sustainability



## UPM forests and plantations

	2008	2017
Forest and plantation land (own and rented) (1,000 ha)	1,012	970
Forest growth (million m <sup>3</sup> )	4.3	8.6
Wood sourced from UPM forests and plantations (million m <sup>3</sup> )	2.2	4.7
% of UPM wood sourcing	9%	17%
Value of forests and plantations, including land (EURm)	1,270	2,149

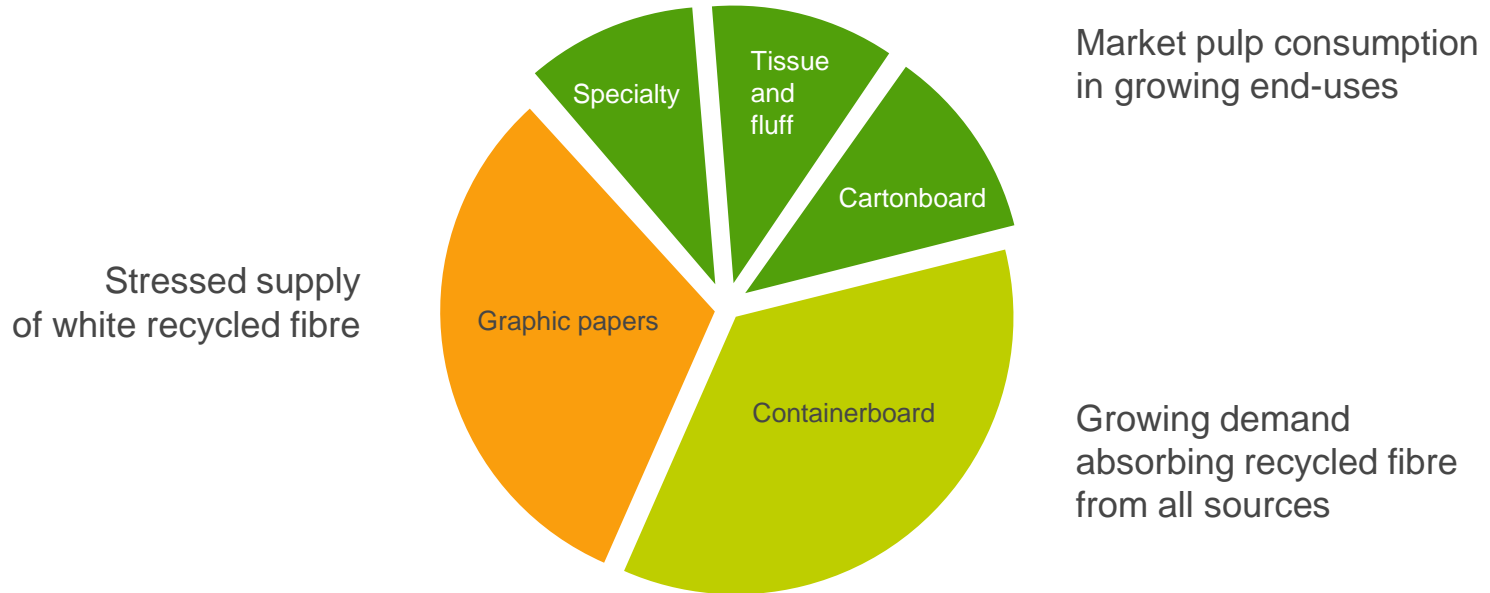
## Area distribution



UPM Biorefining

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

## Global paper and board production



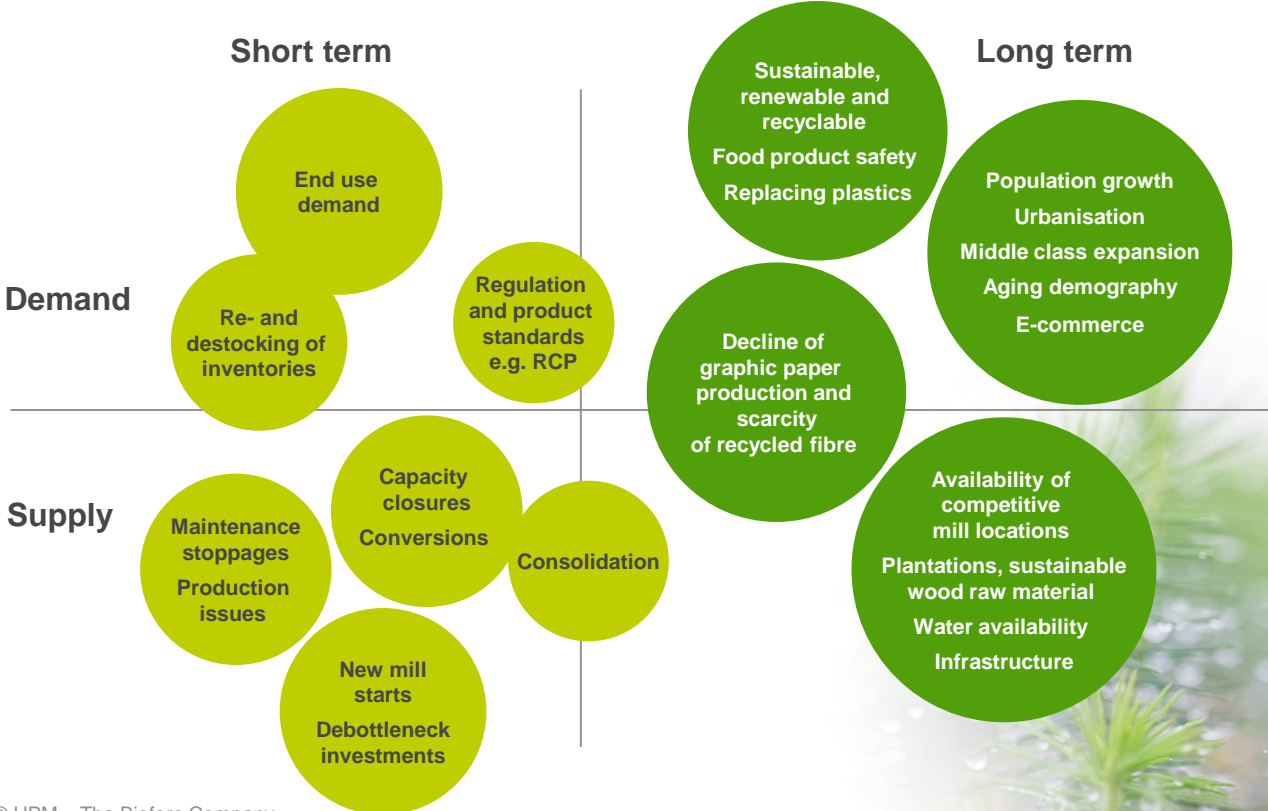


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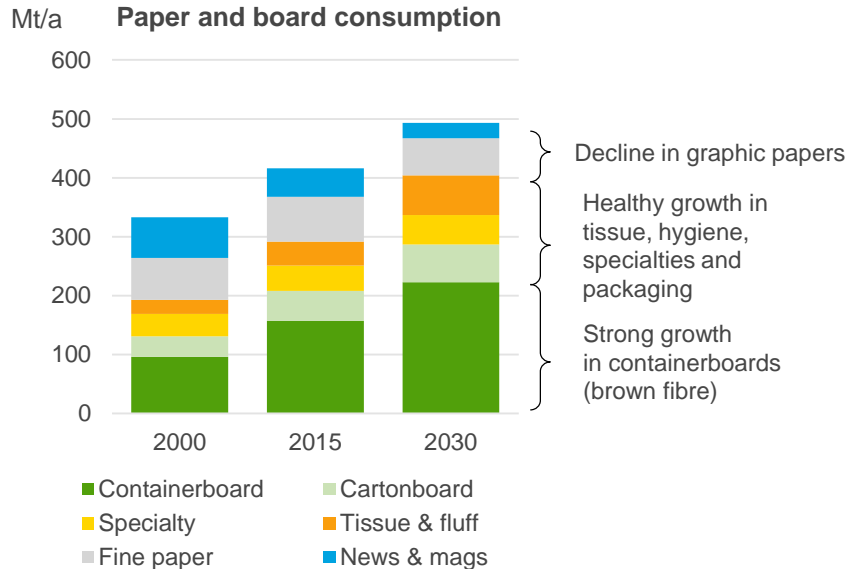
# UPM Biorefining

## Demand-supply drivers of pulp market

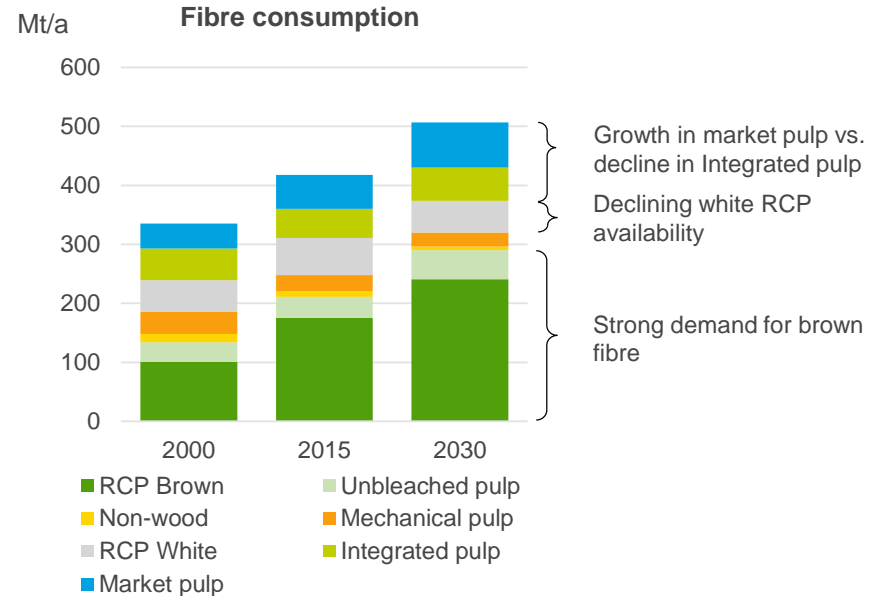


# UPM Biorefining Pulp demand outlook

## Increase in end use ...



## ... will drive fibre demand



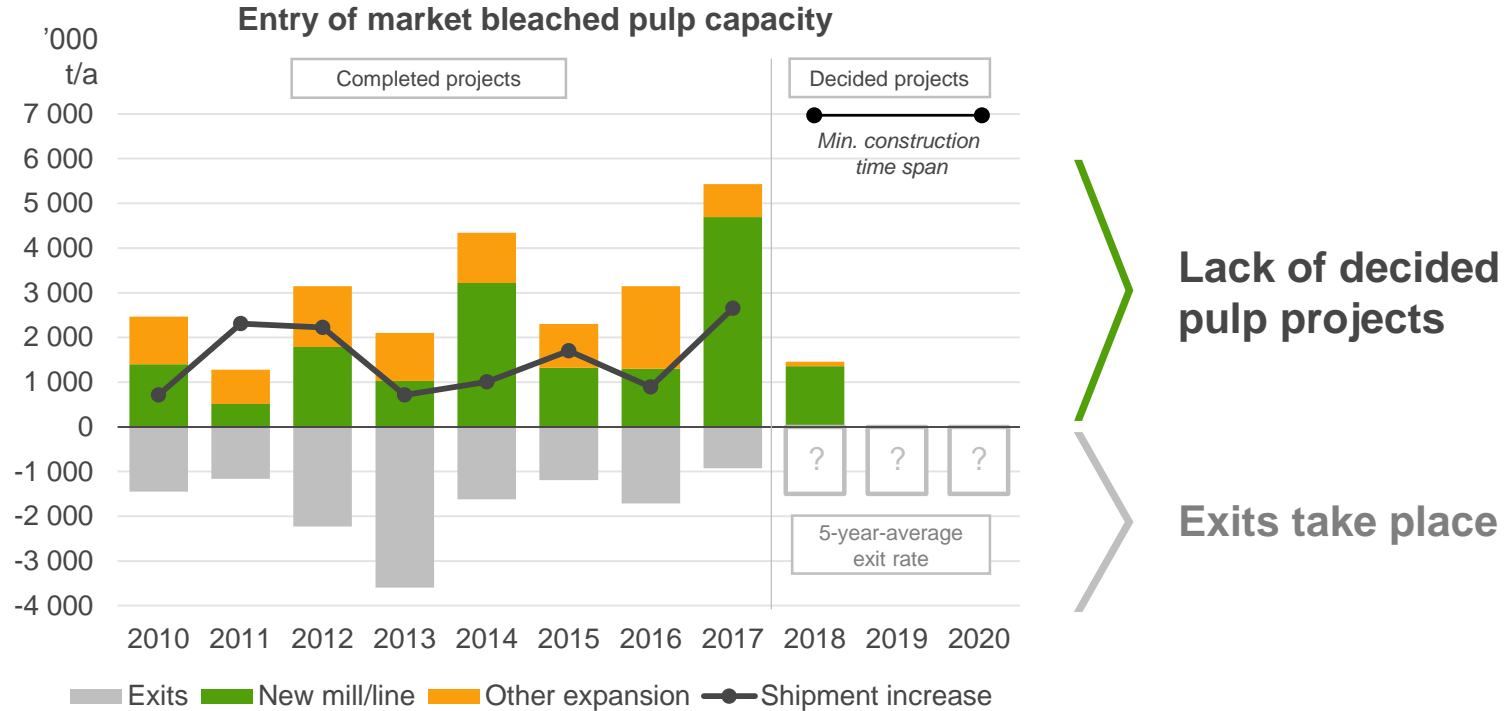
Source: UPM, Pöyry, RISI



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## UPM Biorefining

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



Note: including BHKP, BSKP, PG-sulfites and non-wood grades, excluding fluff and dissolving

Source: UPM, Pöyry

## UPM Biorefining

# Establishing a competitive operating platform in Uruguay – we are now in preparation phase II

### Current operations

- Plantation base in West Uruguay
- 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

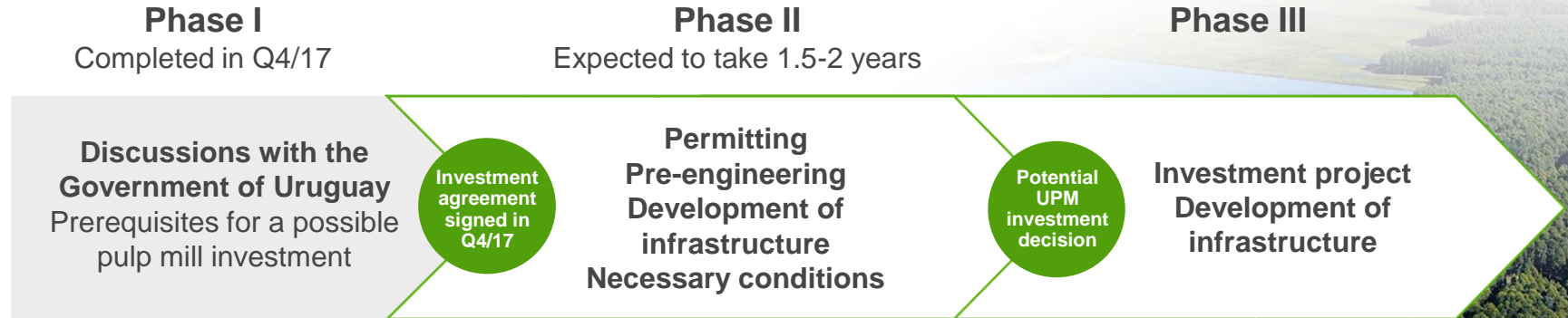


### Uruguay prospect

- Plantation base in Central and North Eastern Uruguay
- Potential new pulp mill about 2 million tonnes, on-site investment estimate EUR 2bn
- Railway with high technical standards
- Deep sea port in Montevideo loading full vessels
- Ocean vessels to pulp markets

# UPM Biorefining

## Second preparation phase for the potential new pulp mill in Uruguay proceeding



### Main items in preparation phase II:

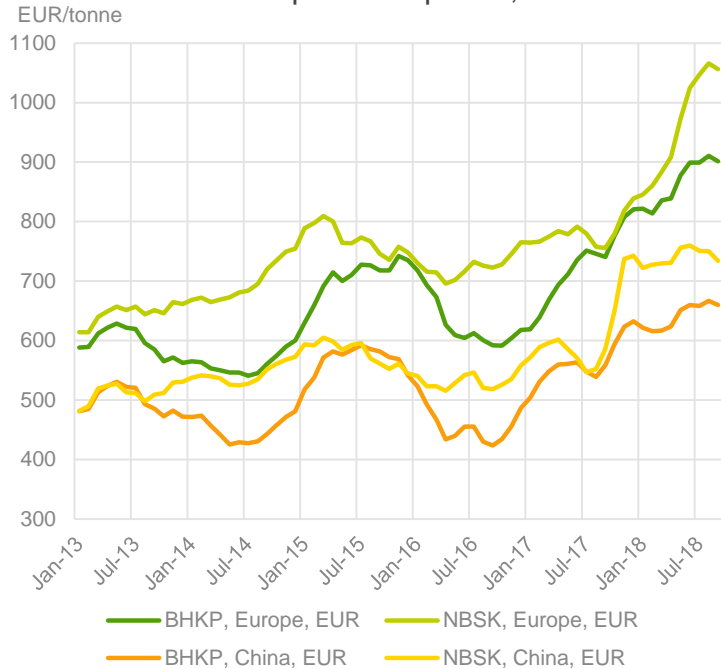
- Mill permitting, pre-engineering
- Rail permitting, tendering, start construction
- Port permitting, tendering, concession
- Roads
- Labour protocols, regulation
- Investment regimes
- Regional planning and development
- Energy and complementary items

# UPM Biorefining

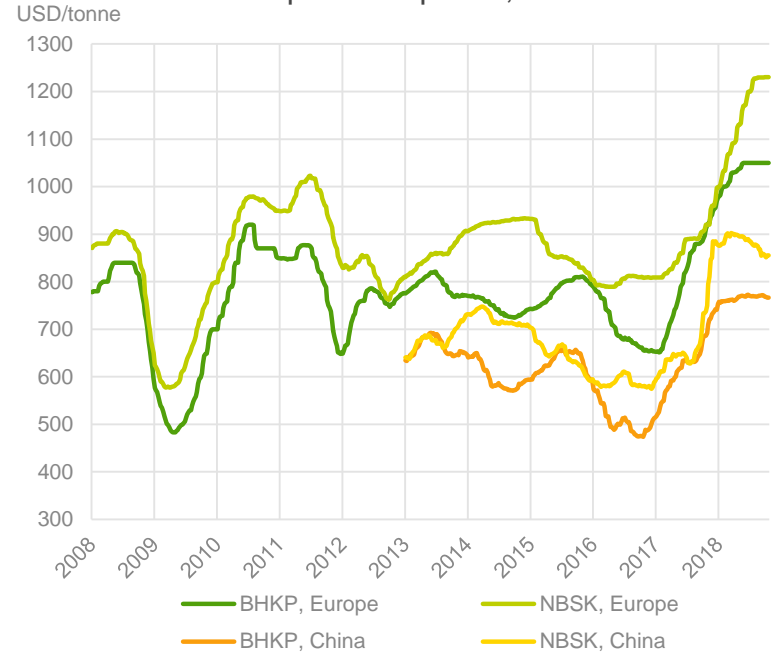
## Chemical pulp market prices



Pulp market prices, EUR



Pulp market prices, USD



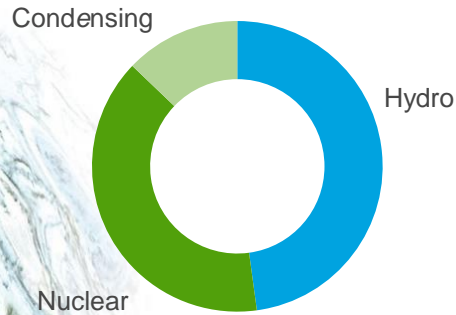
Sources: FOEX Indexes Ltd, ECB



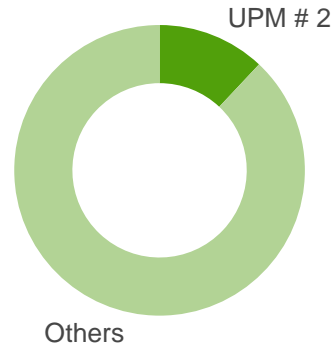
# UPM's power generation – competitive in all market conditions



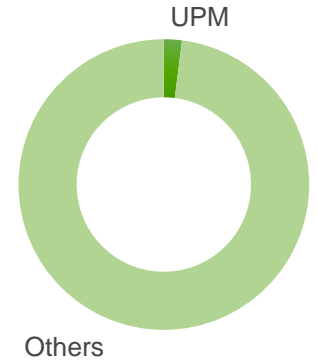
UPM's power generation assets



UPM in Finland



UPM in Nordics

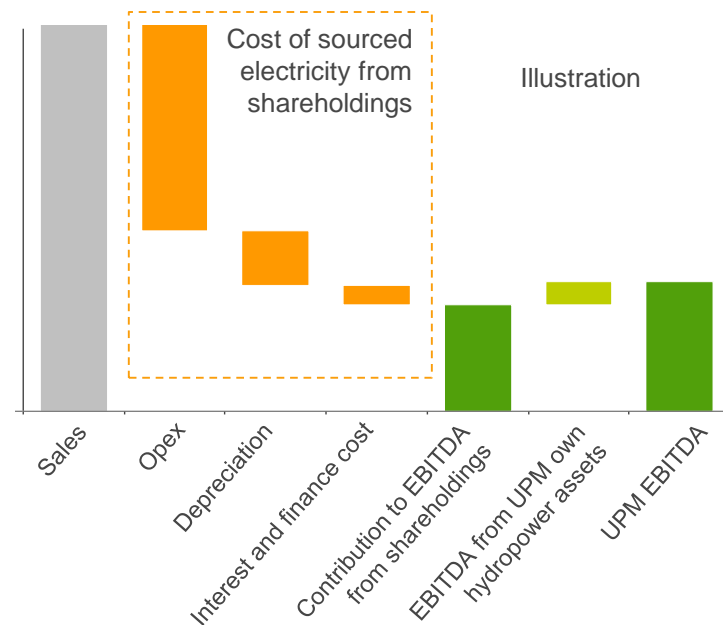


# UPM Energy

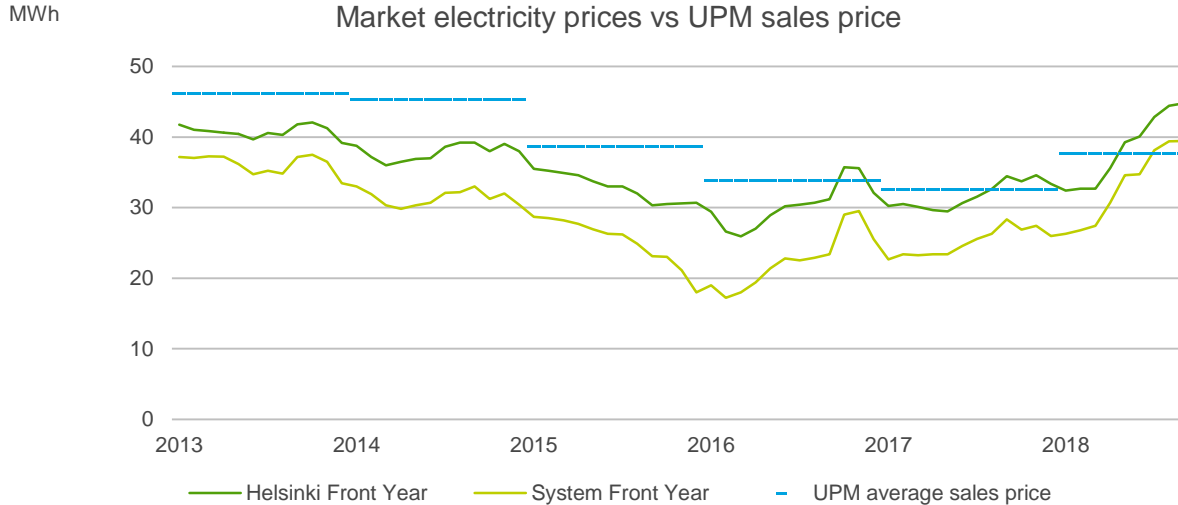
## UPM Energy

UPM Energy's power generation	MW	EURm
Hydropower holdings	551	705
Nuclear power OL1 and OL2	584	1,082
Nuclear power OL3 under construction	(494)	215
Condensing power	191	2
UPM Energy's shareholdings in total, valued at fair value	1,327	2,004
UPM own hydropower assets	160	
UPM Energy's in total (excl. OL3)	1,487	
UPM Energy capital employed		2,322

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



# Cost efficient generation enables robust profitability in challenging market environment

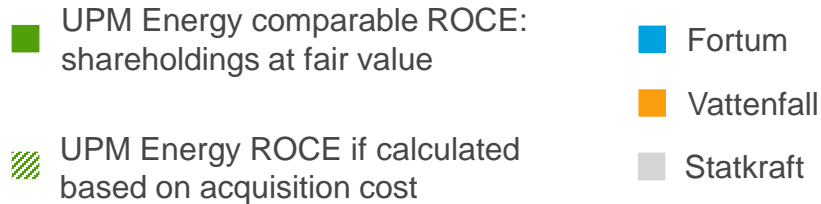


UPM Energy profitability	2013	2014	2015	2016	2017	9M/18
Comparable EBIT, EURm	186	202	181	116	91	91
% of sales	39.9	43.5	43.6	32.7	28.8	31.4

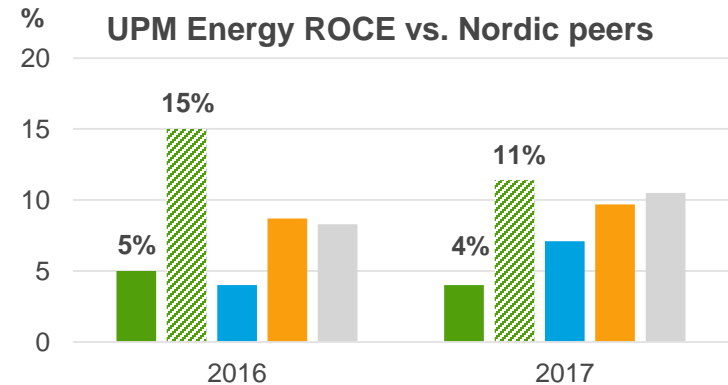
# UPM Energy

## 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



Source: Companies' financial reports, UPM



# UPM Raflatac Self-adhesive labels in end-use



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PHARMACEUTICALS



WINE, SPIRITS & CRAFT BEVERAGE



FOOD



HOME & PERSONAL CARE



DURABLES



TRANSPORT & LOGISTICS



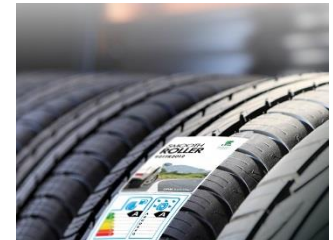
RETAIL, OIL & INDUSTRIAL



A4 & CUT-SIZE



SECURITY & BRAND PROTECTION



TYRE

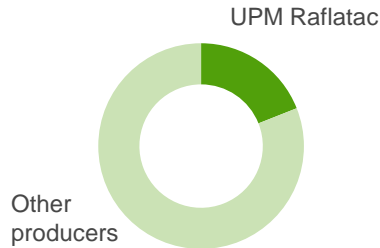
# UPM Raflatac

## The self-adhesive labelstock market

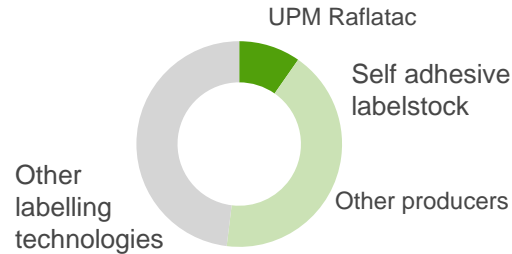
- >EUR 8bn global market
- ~4% p.a. growth
- Private consumption driven
- Largest of the labelling technologies
- ~1/5 of total self adhesive materials markets



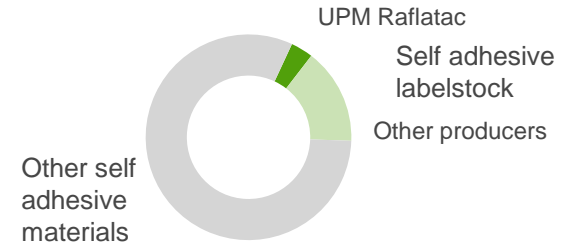
**Self-adhesive labelstock market**



**All labelling technologies**



**All self adhesive materials**



# UPM Raflatac

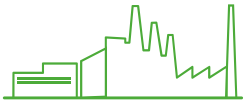
## Strategy for profitable growth



Increased customer reach



Wider product portfolio



Winning operations



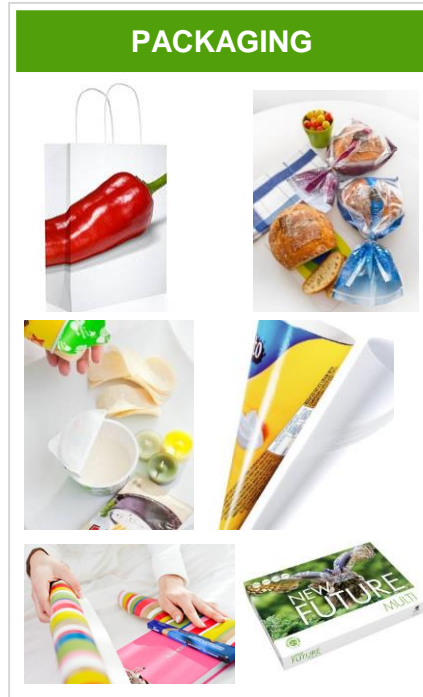
**Enabled by strong common capabilities and global operating model**  
**Potentially accelerated with M&A if feasible**

# UPM Specialty Papers

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



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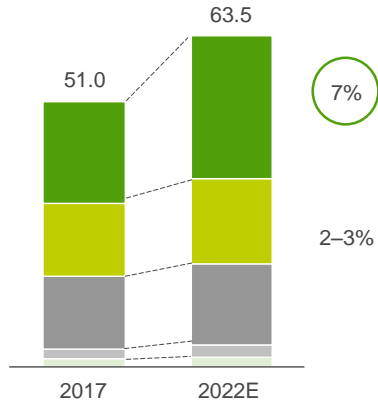
# UPM Specialty Papers

## 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%

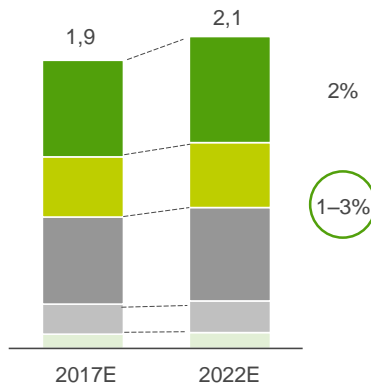


■ Asia 
 ■ North America 
 ■ Europe 
 ■ South America 
 ■ MEA

### NICHE PLAYER IN CONSUMER PACKAGING

Paper flexpack, million tonnes

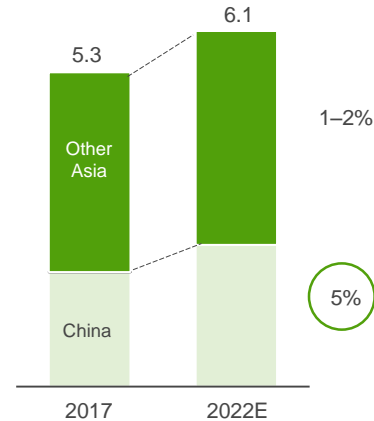
CAGR  
2%



### MAJOR SUPPLIER OF OFFICE PAPER IN ASIA

Asian cutsize market, million tonnes

CAGR  
2-3%



Source: AWA; Pira, UPM



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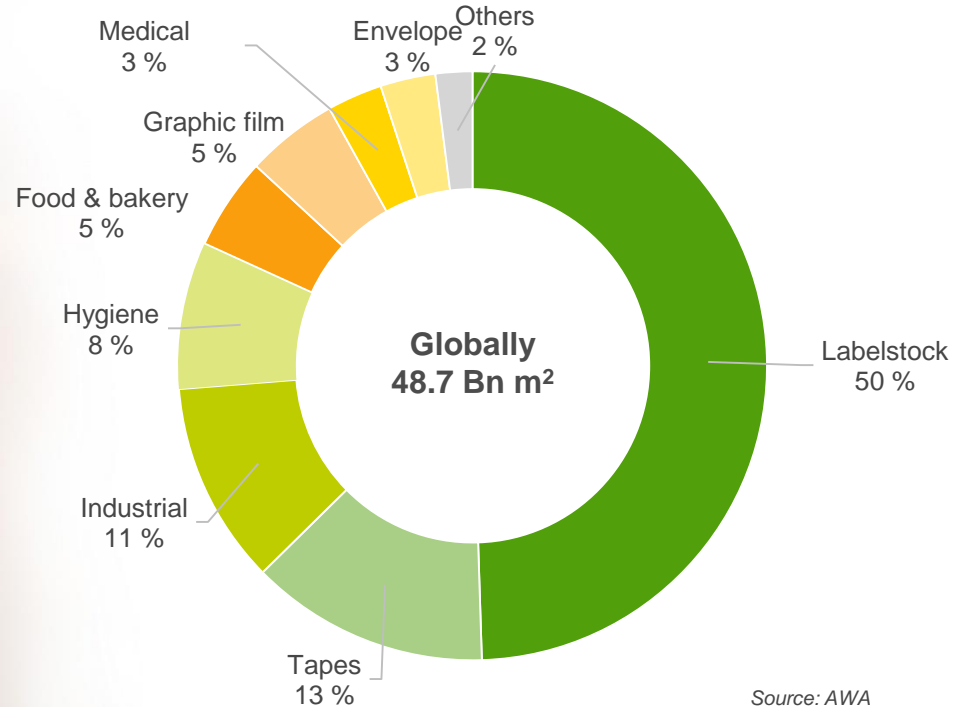
## UPM Specialty Papers

# Release liner opportunities in labelstock & other applications

### Product functions:

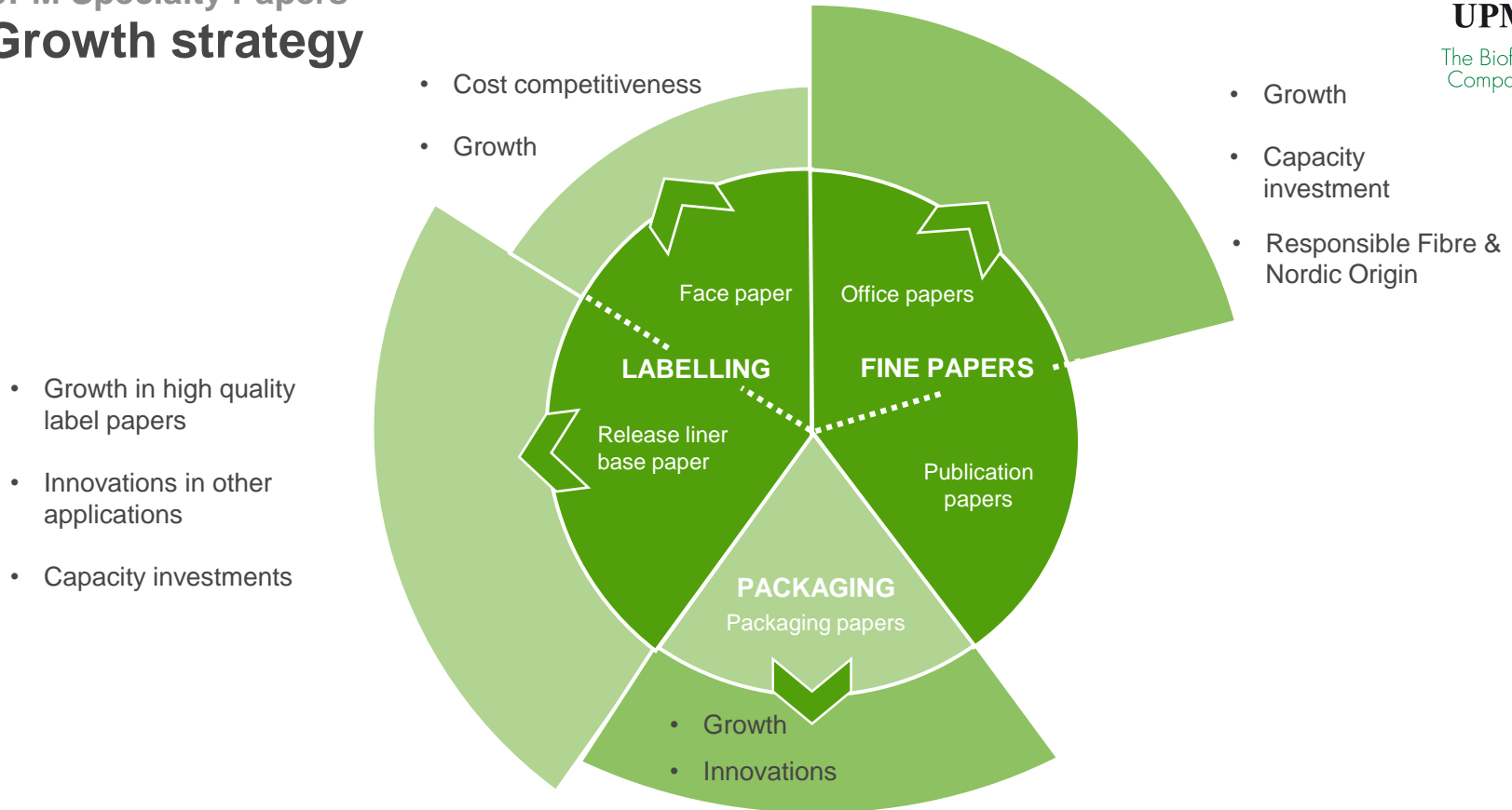
Release liner carries the adhesive and face material:

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



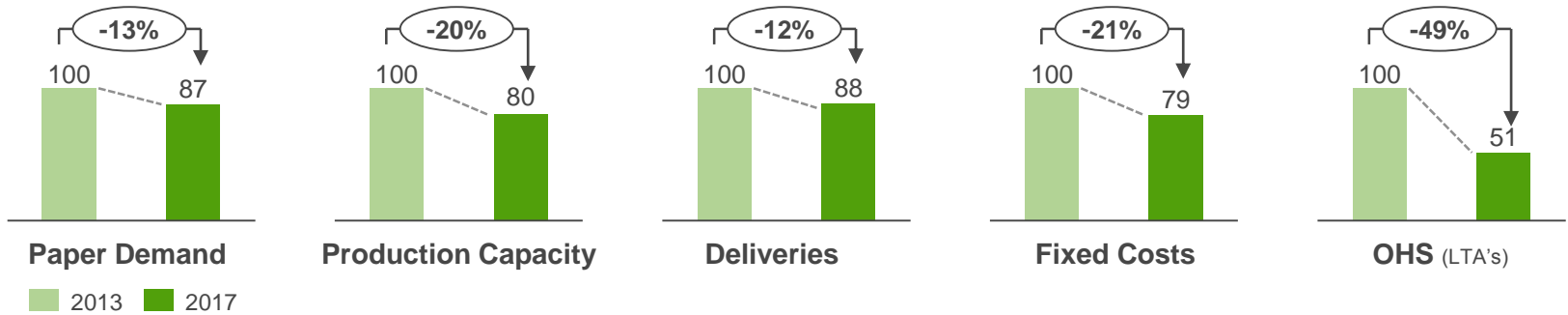
Source: AWA

# UPM Specialty Papers Growth strategy



# UPM Communication Papers

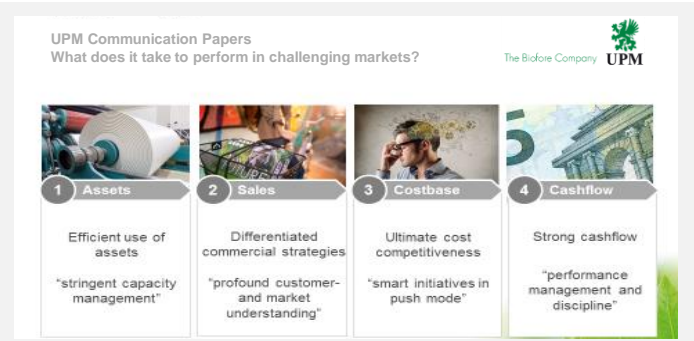
## Delivering according to our strategy



### ... building the basis for continued profitable performance

- ✓ Efficient and modern assets
- ✓ Tight grip on costs
- ✓ Broad portfolio
- ✓ Strong geographical footprint
- ✓ Well-defended market position

UPM Communication Papers  
What does it take to perform in challenging markets?



1 Assets	2 Sales	3 Costbase	4 Cashflow
Efficient use of assets	Differentiated commercial strategies	Ultimate cost competitiveness	Strong cashflow
"stringent capacity management"	"profound customer- and market understanding"	"smart initiatives in push mode"	"performance management and discipline"

Source: UPM, Euro-Graph, Pöyry

## UPM Communication Papers

# We expect a predictable market development in an economically stable environment

### We do not anticipate disruptive changes, but accept market reality:

- **Direct Marketing** continues to develop with variations from market to market, e.g. increasing in Germany while dropping in the UK
- **Catalogues** remain a means of consumer activation, cases of pure online-retailers and specialist stores investing in printed catalogues increase
- **Magazine** publishers continue to build on printed editions, decreasing circulations are partly offset by a continuous flow of new titles in niche segments
- **Newspaper** circulation is declining fast in main markets, with Germany being relatively resilient
- **Fine papers** continue playing an important role in private and office uses resulting in a relatively slow decline, regulatory changes remain a risk-factor.



# Our focus: Strengthen industry leadership role



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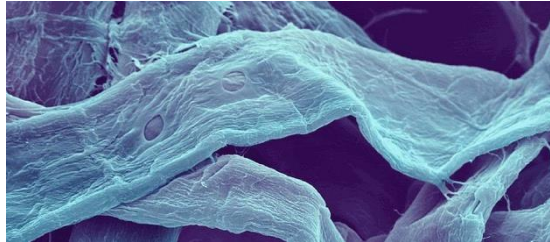
## 1 Uncompromising performance



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**



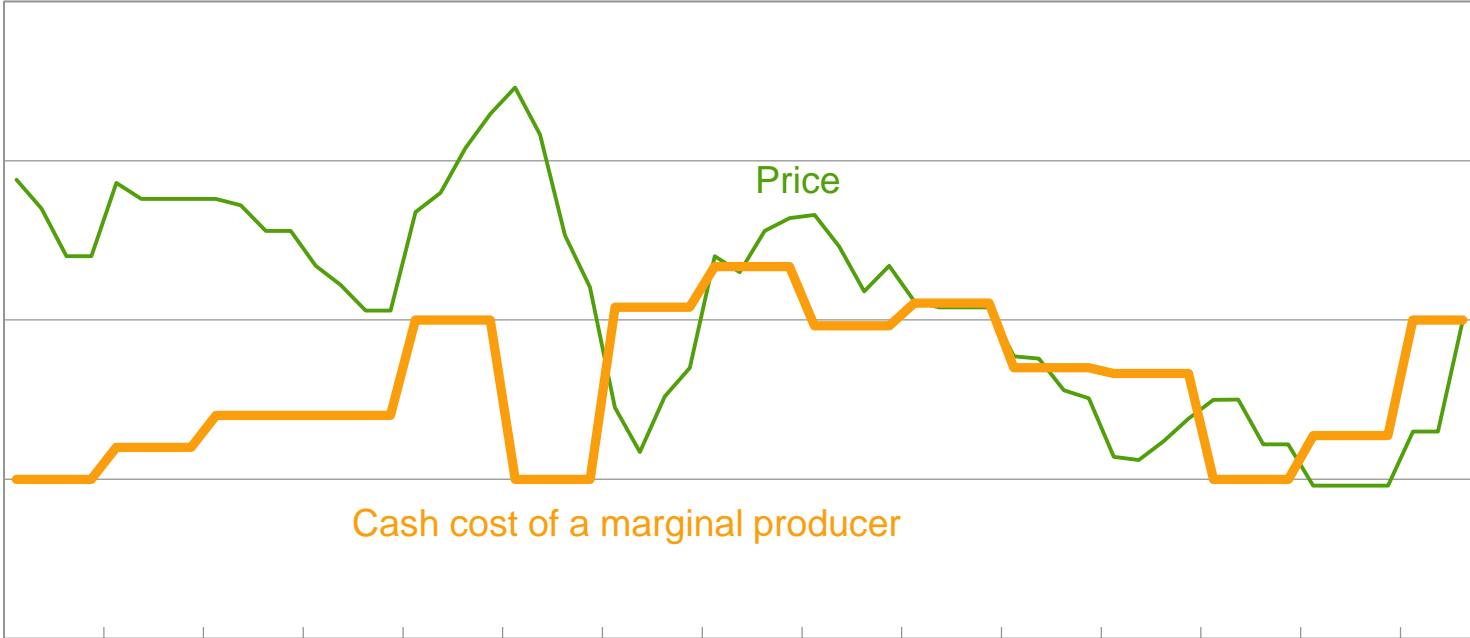
UPM

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# UPM Communication Papers

## Paper price vs. cash cost of marginal cost producer

EUR/t



2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018



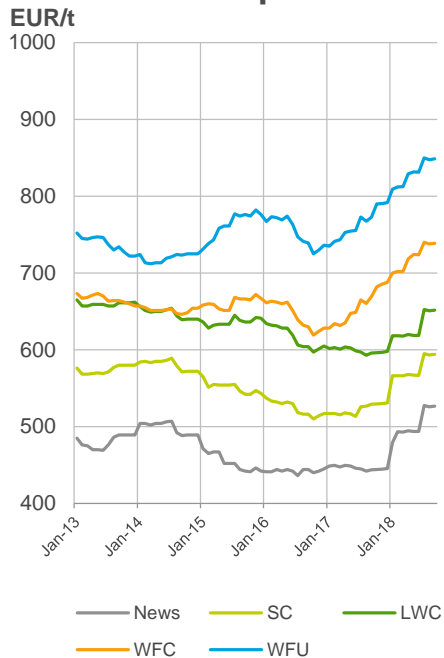
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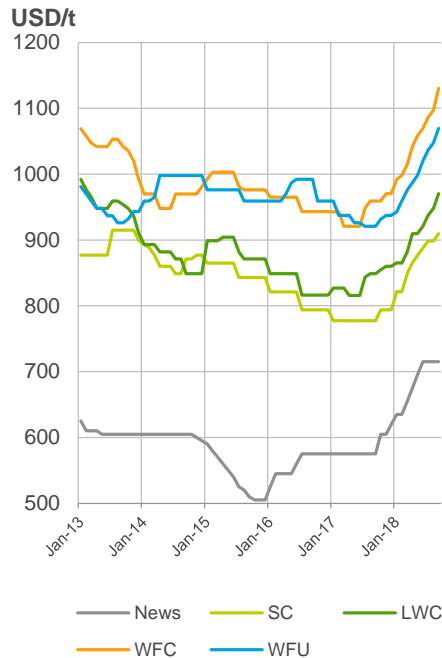
# UPM Communication Papers

## Graphic paper prices

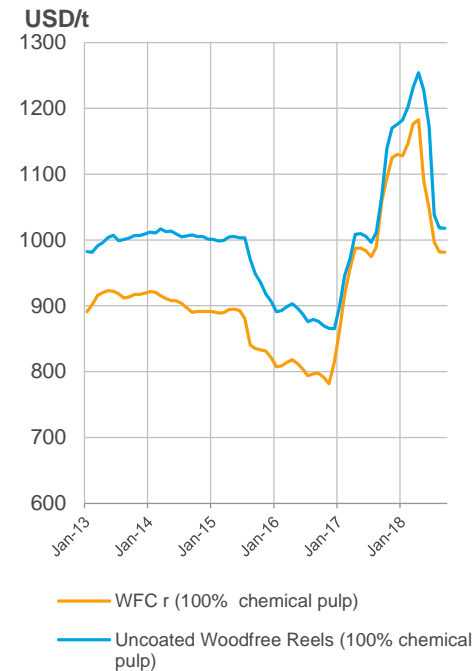
### Europe



### North America



### China



Sources: PPI, RISI



UPM Plywood

# 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

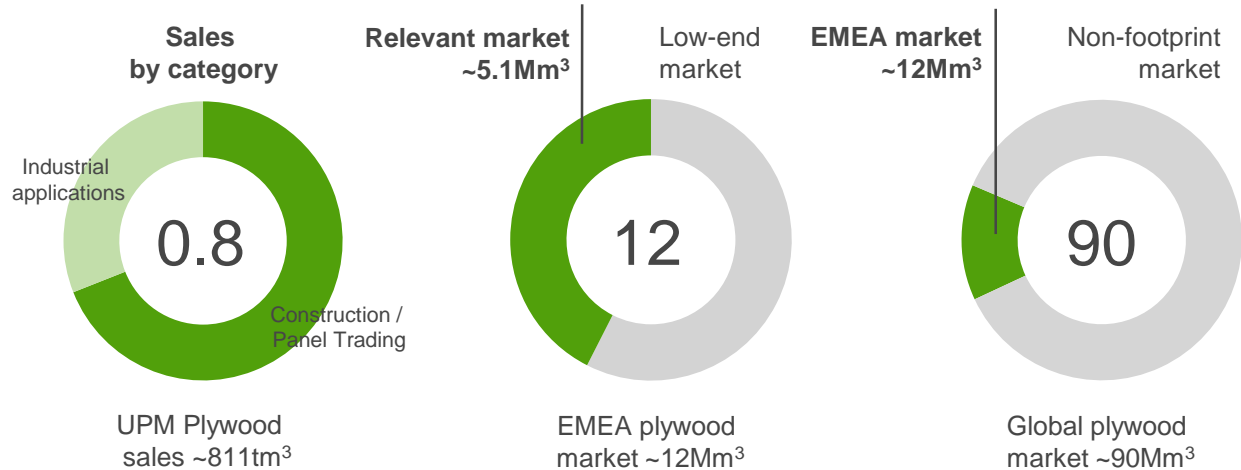
- Global leader in LNG plywood
- Competitive edge based on right quality and accurate on-time deliveries
- Long term commitment and benchmark service level
- Focus to secure leading position in LNG carriers and to extend offering into related applications using the same technologies (e.g. land storage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

## UPM Plywood

# 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





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# New horizons in bioeconomy



## Biomolecules

Biofuels  
Biochemicals



## Fibres

Pulp  
Paper  
Packaging  
Tissue  
Labelling materials  
Biocomposites



## Logs

Sawn timber  
Plywood



## Trees

Energy

# UPM Biofuels

## Strong renewable diesel demand growth, as markets evolve from rural development to decarbonisation

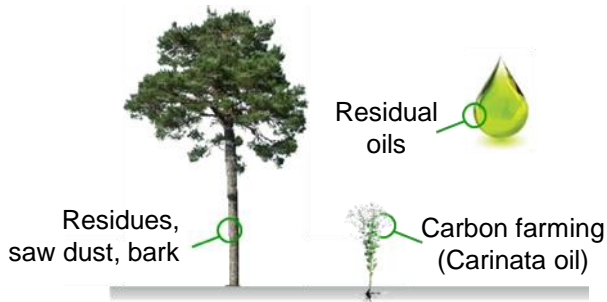


Source: UPM

## UPM Biofuels

# 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

UPM Biochemicals

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

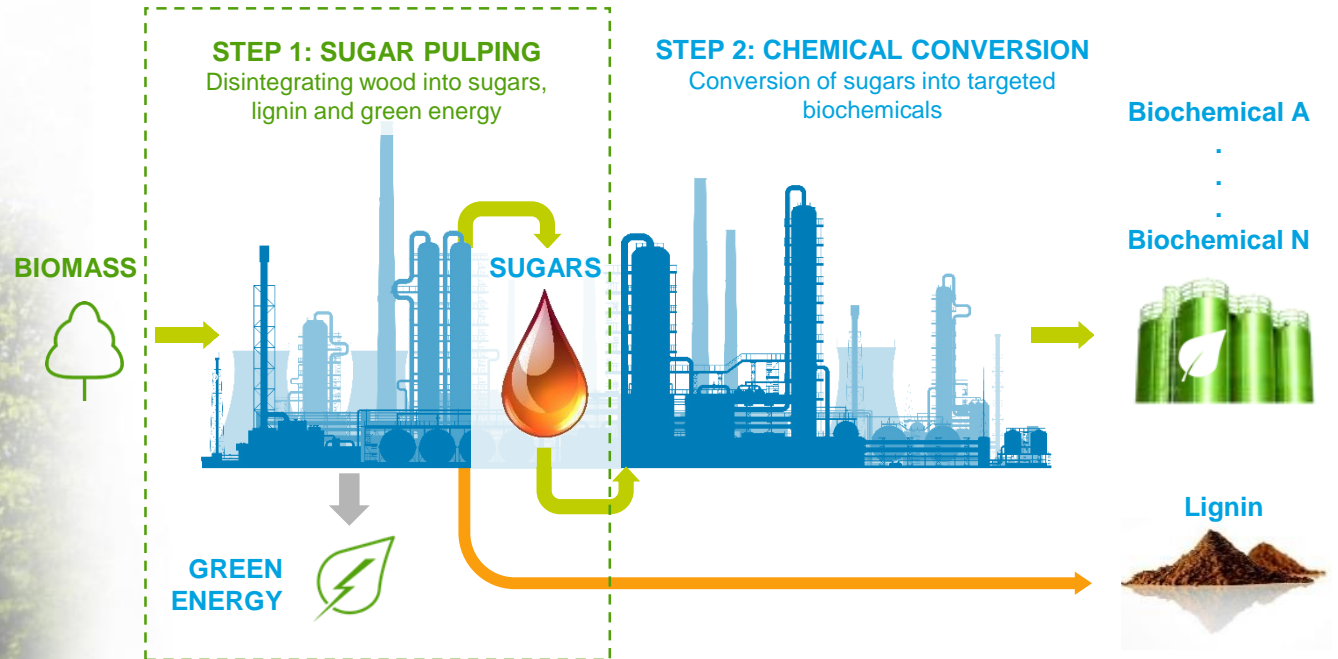


The Biofore Company

## BIOREFINERY PROCESS

FIXED TECHNOLOGY PLATFORM

VARIABLE FOR EACH BIOREFINERY



# 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**

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