

UPM – THE BIOFORE COMPANY

AIMING HIGHER WITH BIOFORE

Investor presentation
November 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

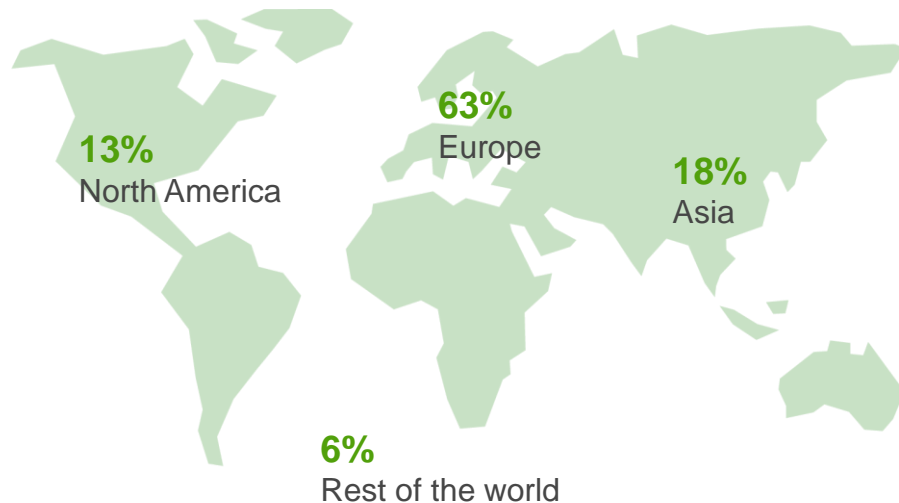
UPM
BIOCHEMICALS

**WOOD SOURCING
AND FORESTRY**

Global businesses – local presence

UPM's sales by market 2016

EUR 9,812 million



54
production plants
in **12** countries



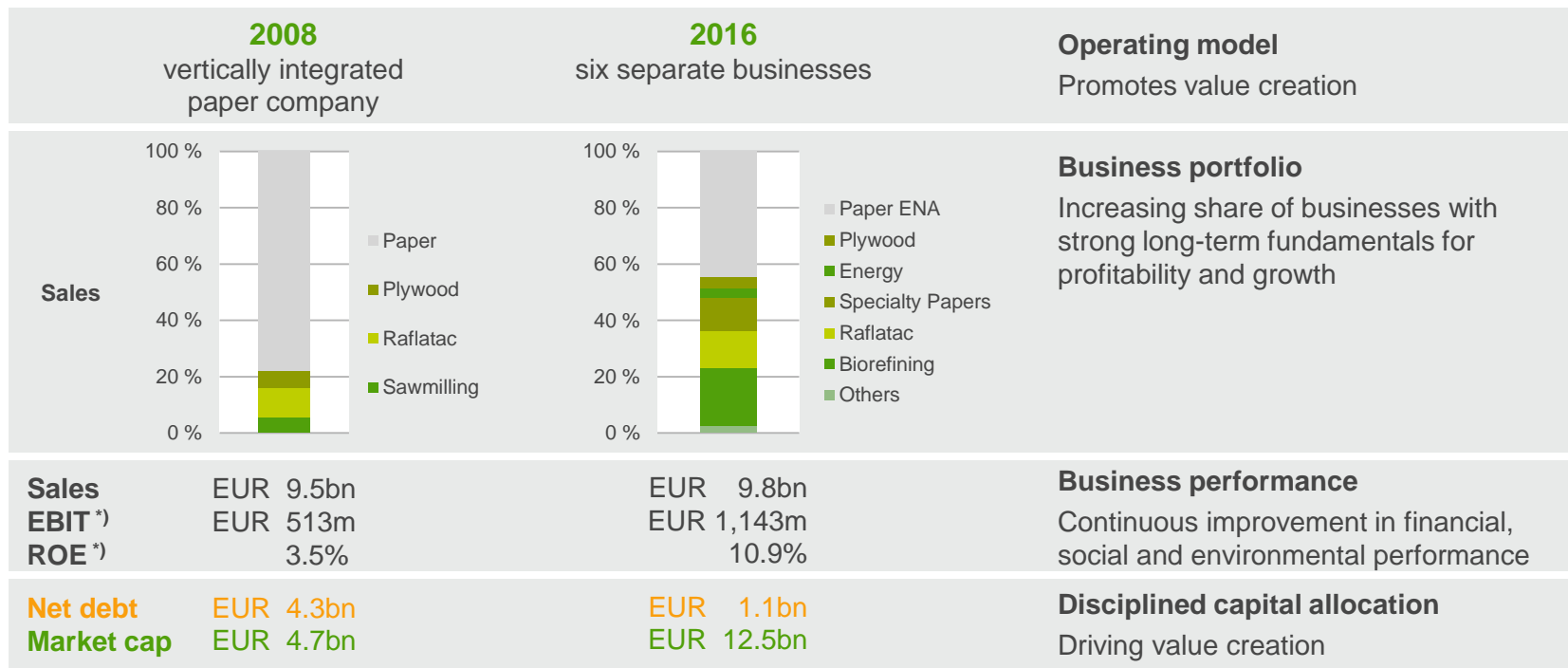
19,300
employees
in **45** countries

12,000
customers
in **120** countries

85,000
shareholders
in **40** countries

55,000
suppliers
in **70** countries

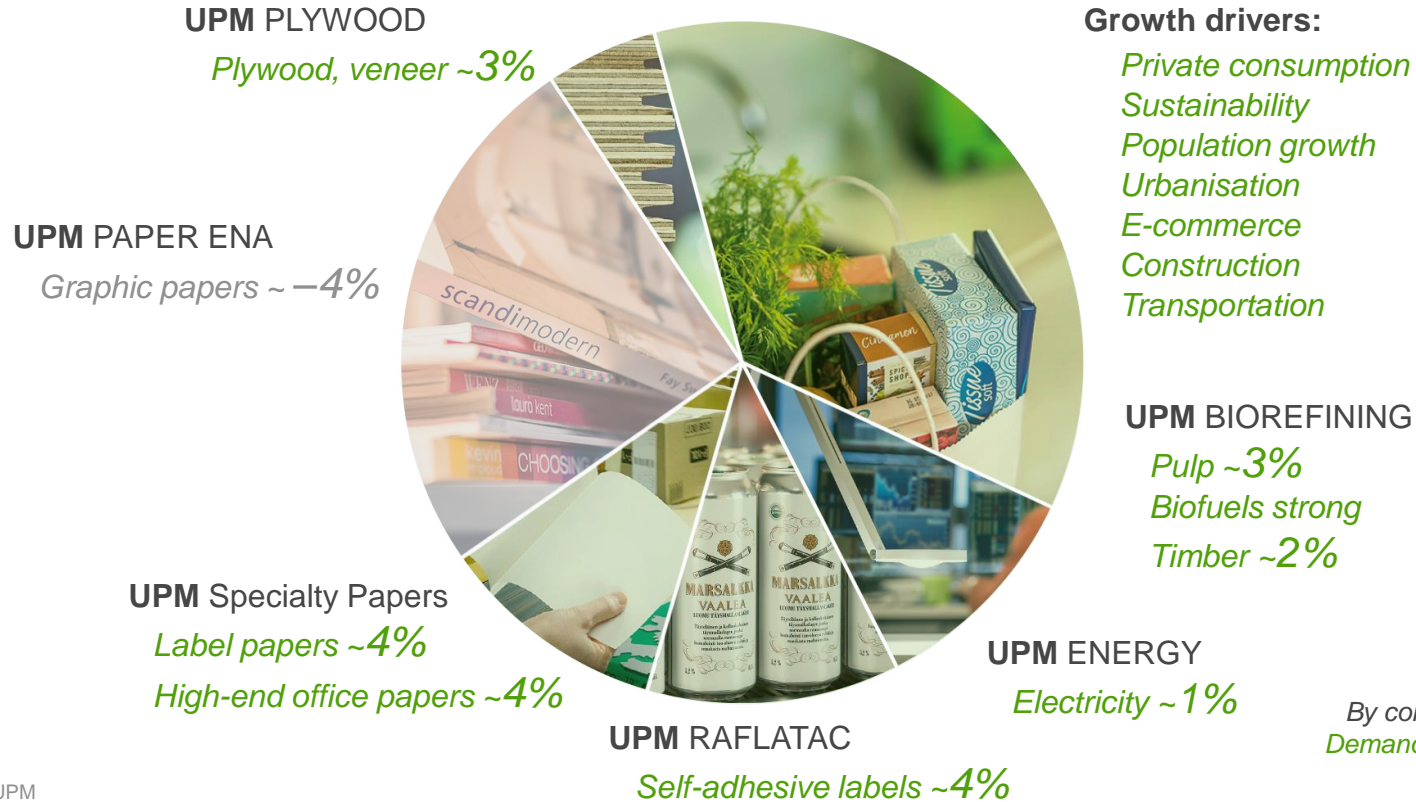
UPM in transformation



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

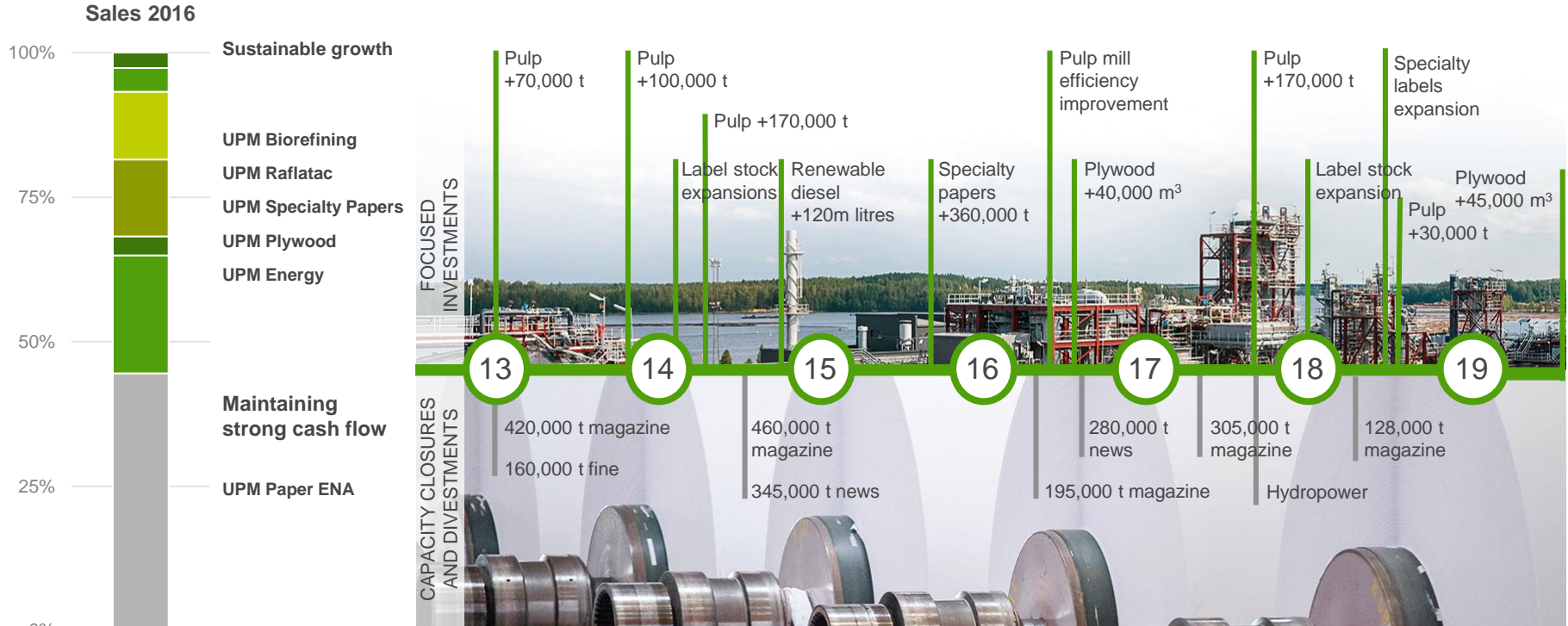
Competitive businesses with strong market positions

Operating on healthily growing markets

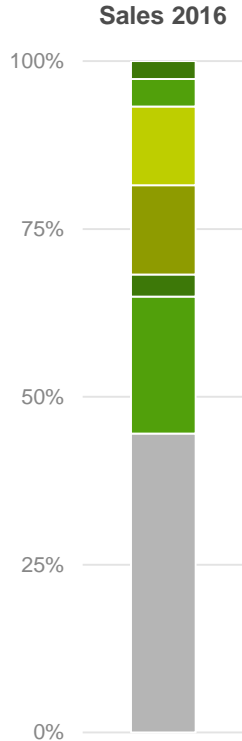


*By comparable EBIT 2016
Demand trend growth, % pa*

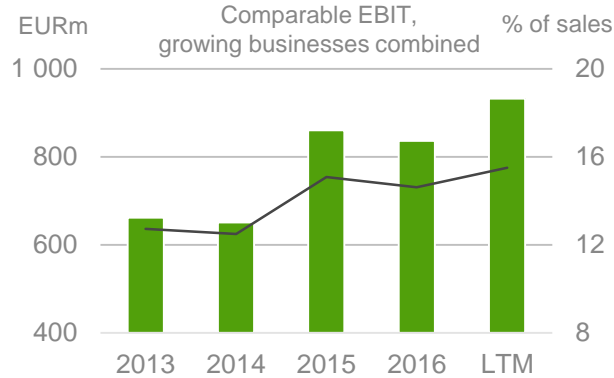
Increasing share of businesses with strong long-term fundamentals for profitability and growth



Value creation through sustainable growth and cash generation



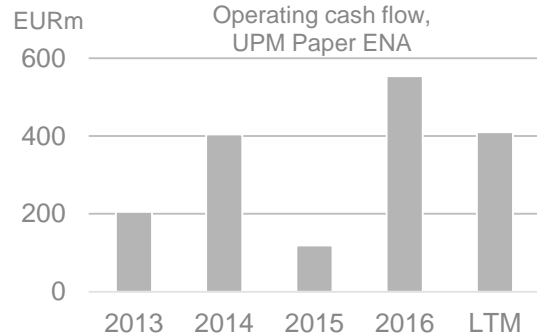
UPM Biorefining
UPM Raflatac
UPM Specialty Papers
UPM Plywood
UPM Energy



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

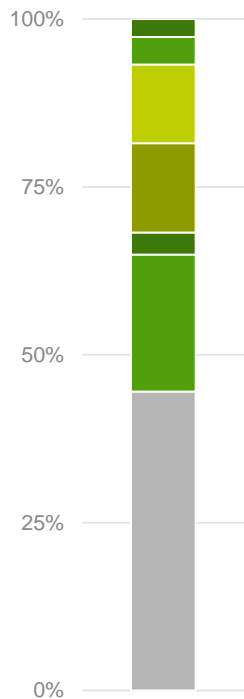


New biomolecule businesses

- 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%**

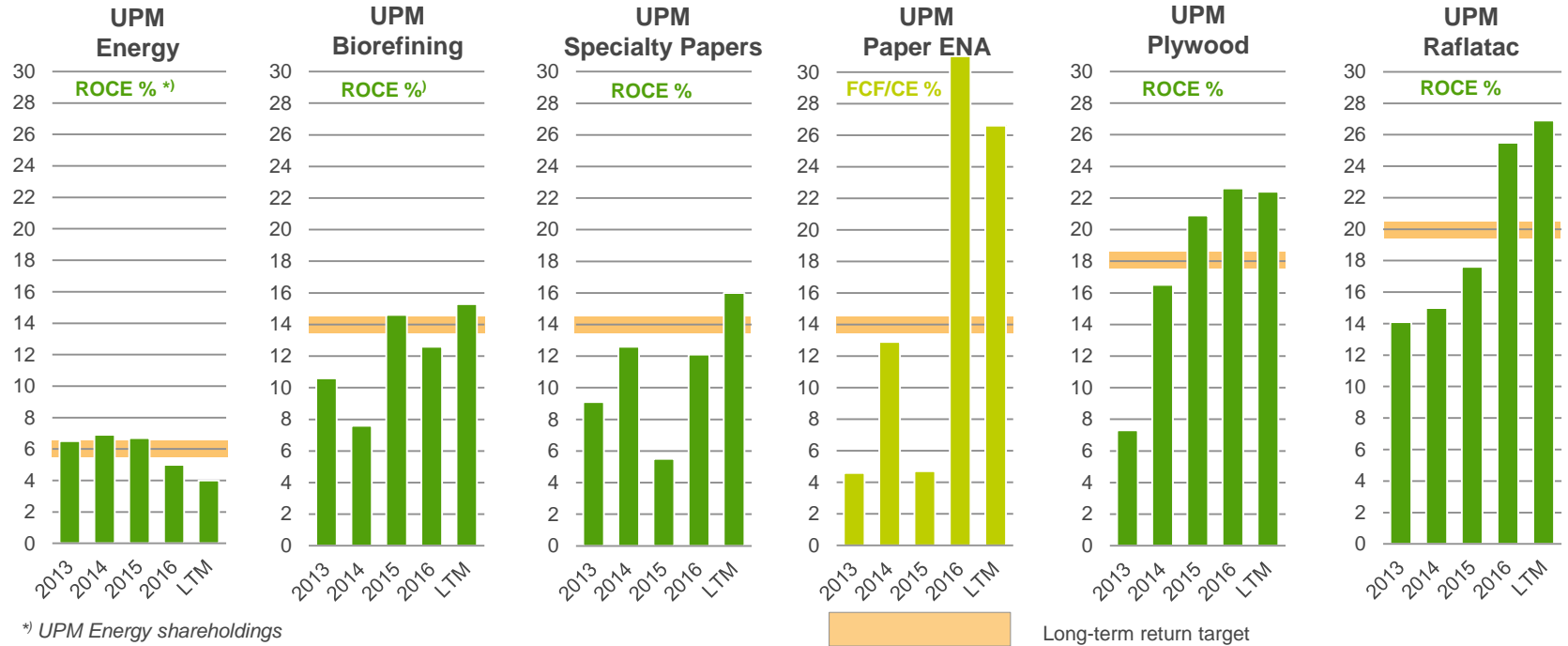
UPM Plywood

Plywood

CAGR **+3%**

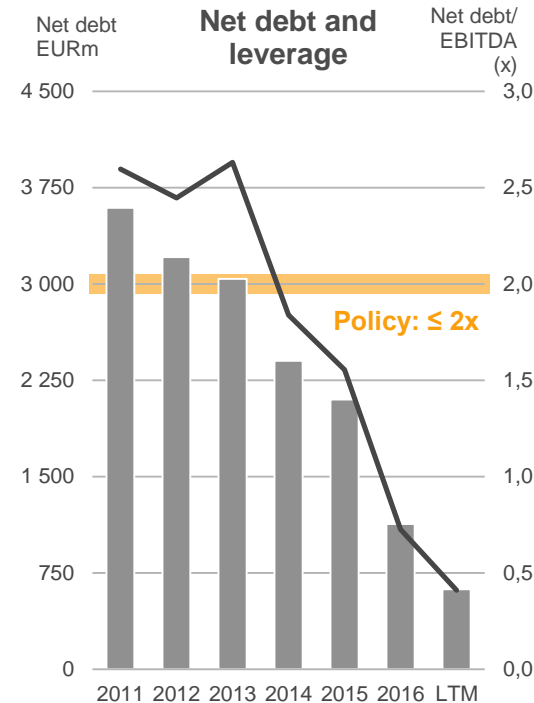
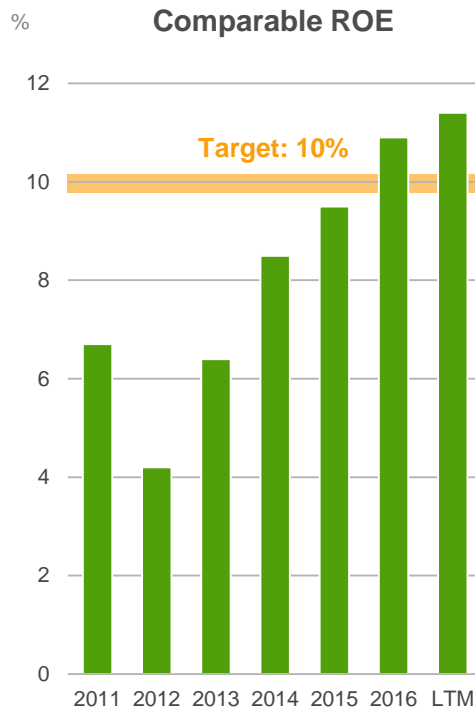
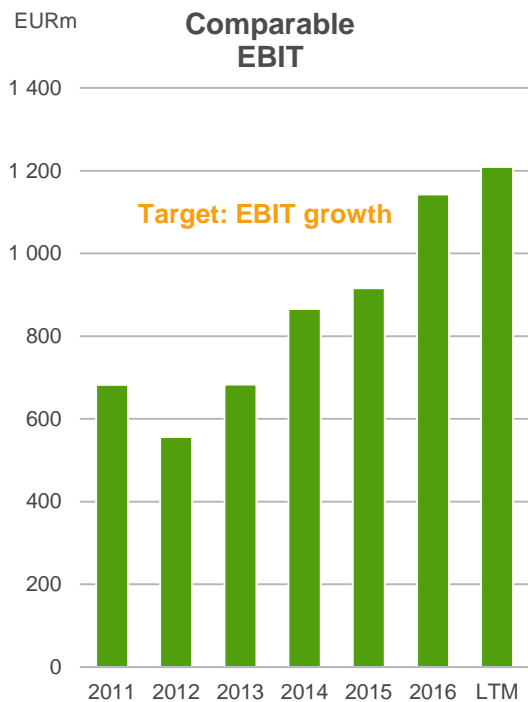


Business area long-term targets compared with realised returns



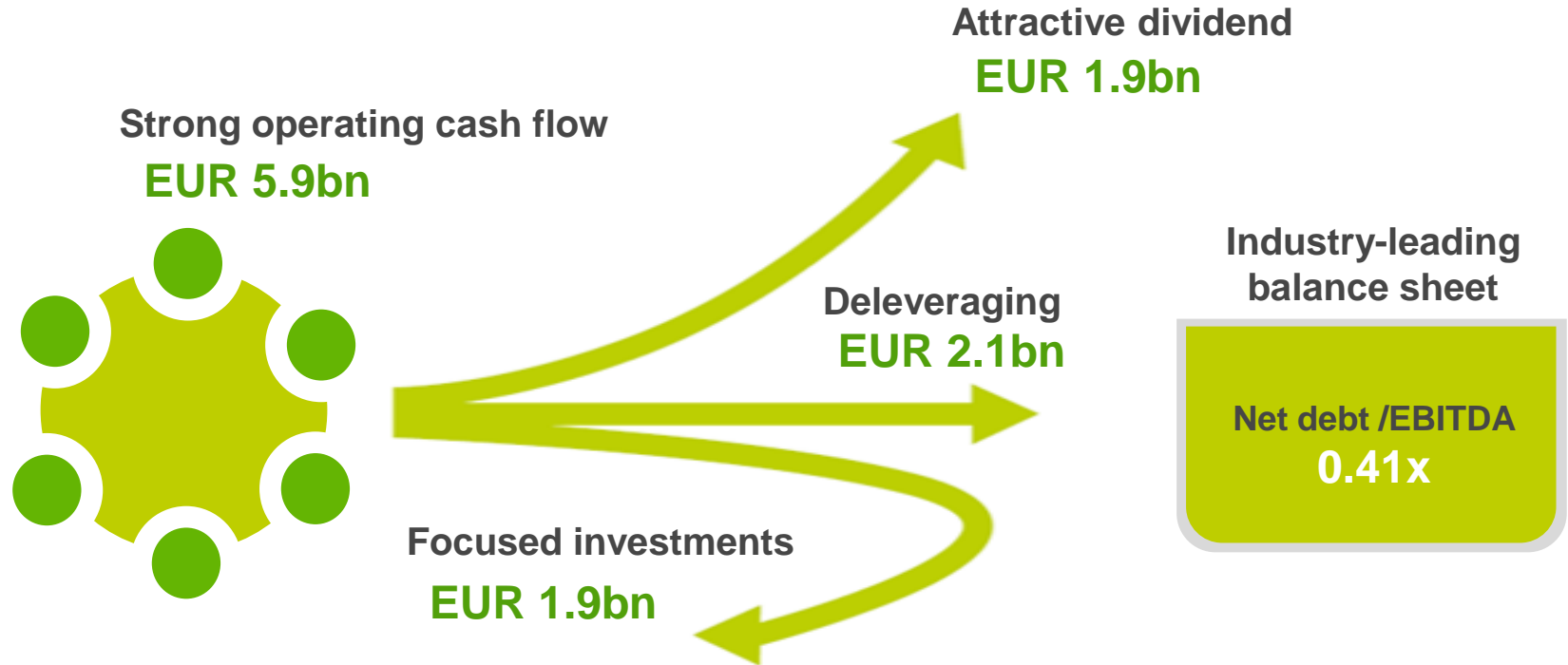
*) UPM Energy shareholdings valued at fair value

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.

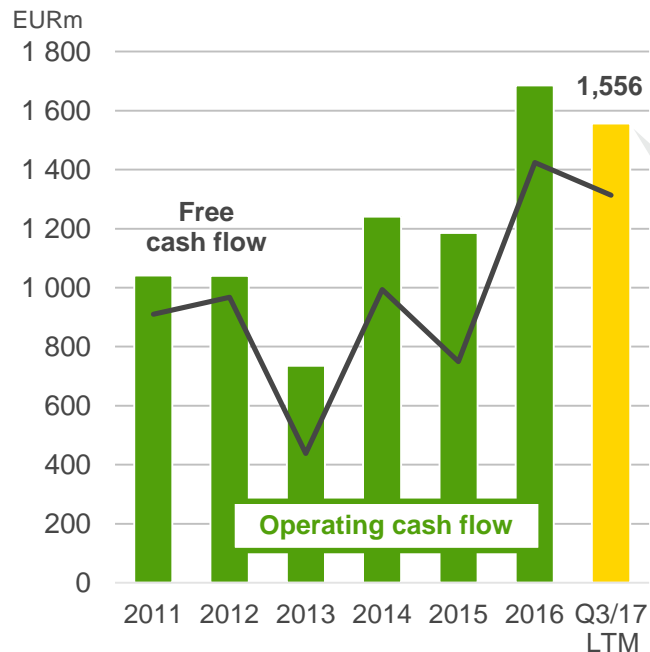
Capex in attractive larger growth opportunities
IRR exceeds ROCE targets
M&A, if the opportunity and timing are right
IRR exceeds ROCE targets

4.

Additional shareholder distribution selectively
balance long term free cash flow cycles

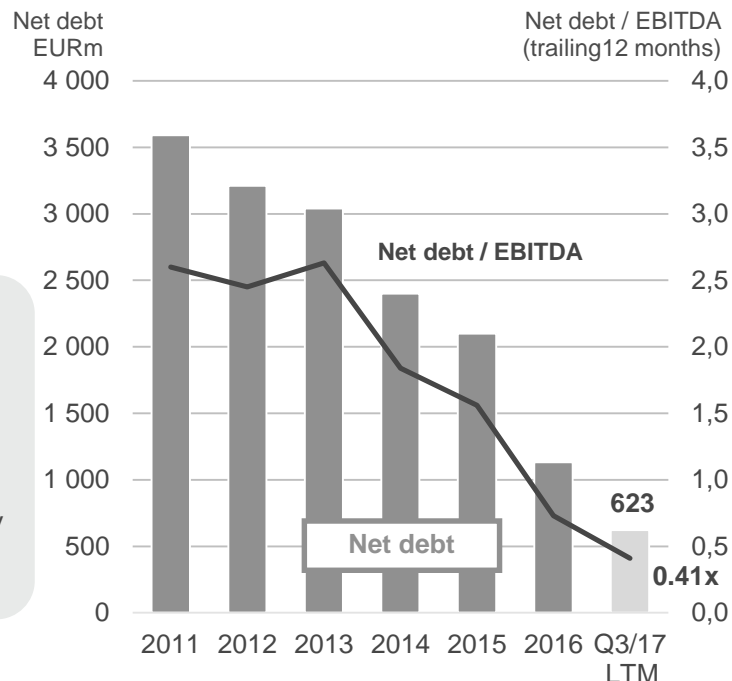
Strong cash flow and balance sheet

Operating cash flow

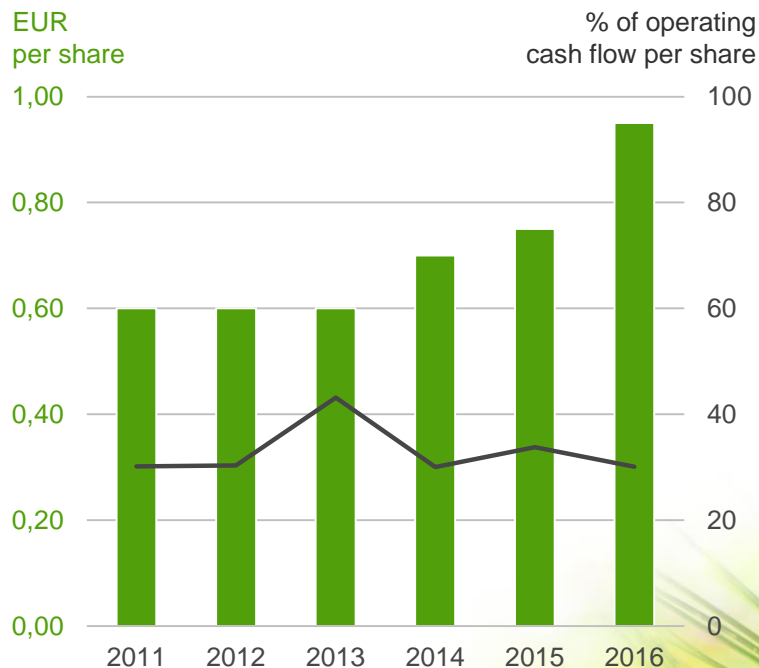


Q3/17 operating cash flow EUR 486m
Working capital decreased by EUR 54m

Net debt



Dividend



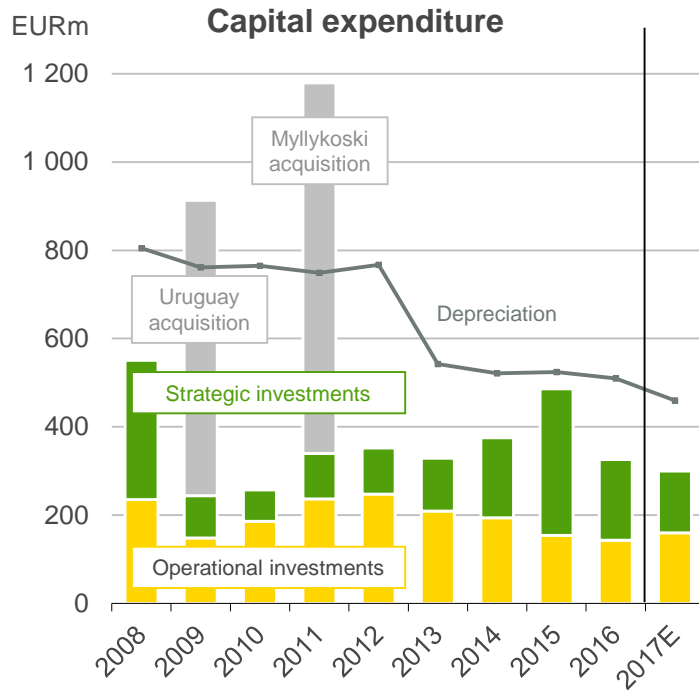
Dividend policy

- 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

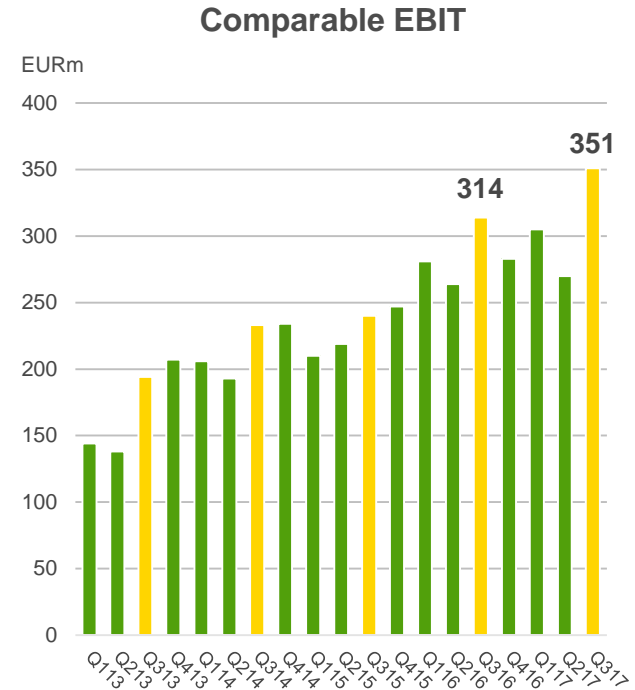
Low replacement investments

- ✓ 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

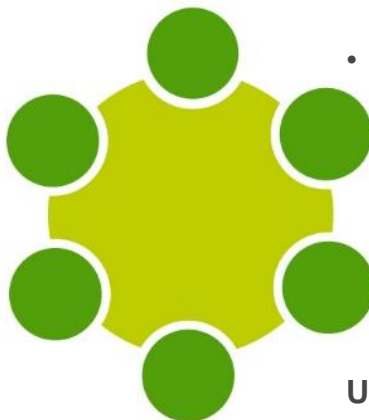
- Good demand, deliveries +3%
- Significant progress in product mix, higher release liner deliveries
- Input cost inflation mitigated

UPM RAFLATAC

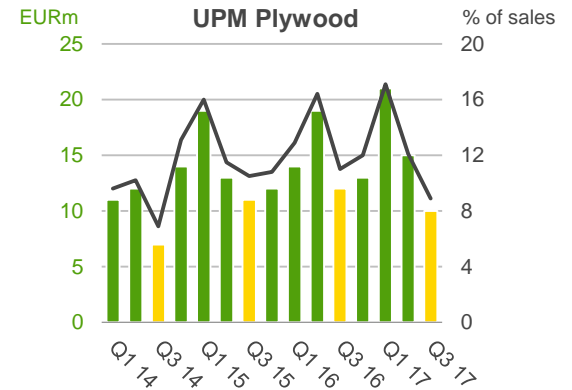
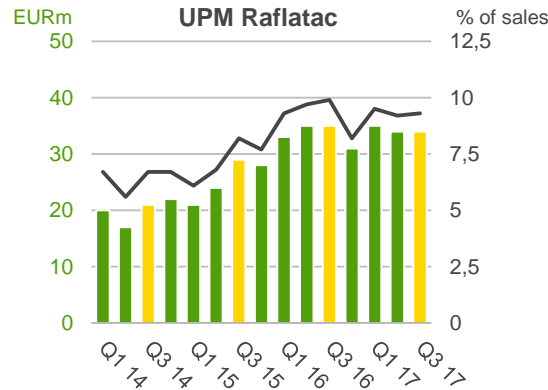
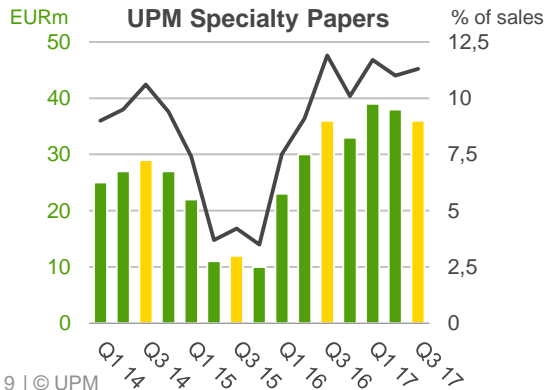
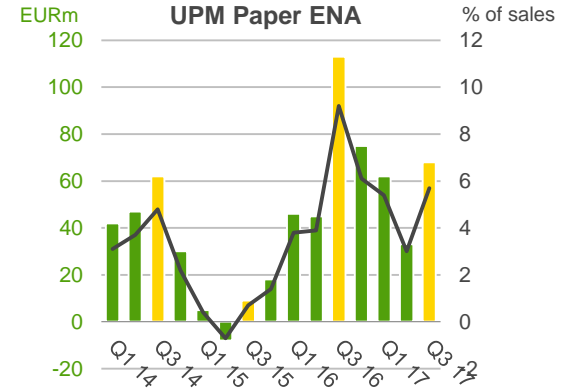
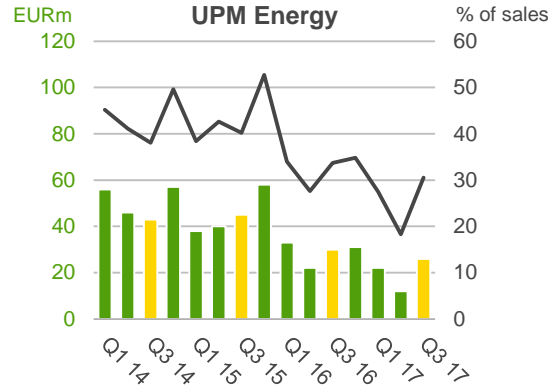
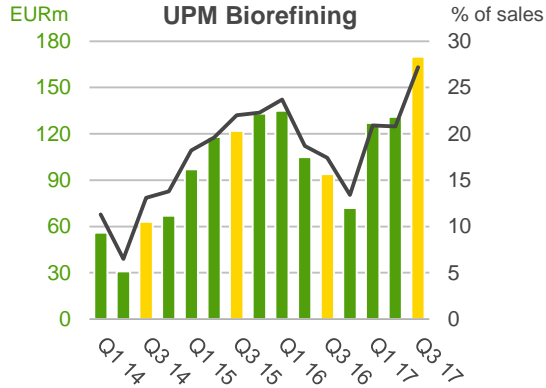
- Good demand globally, deliveries +9% driven in particular by developing markets
- Input cost inflation in sales margins

UPM PLYWOOD

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

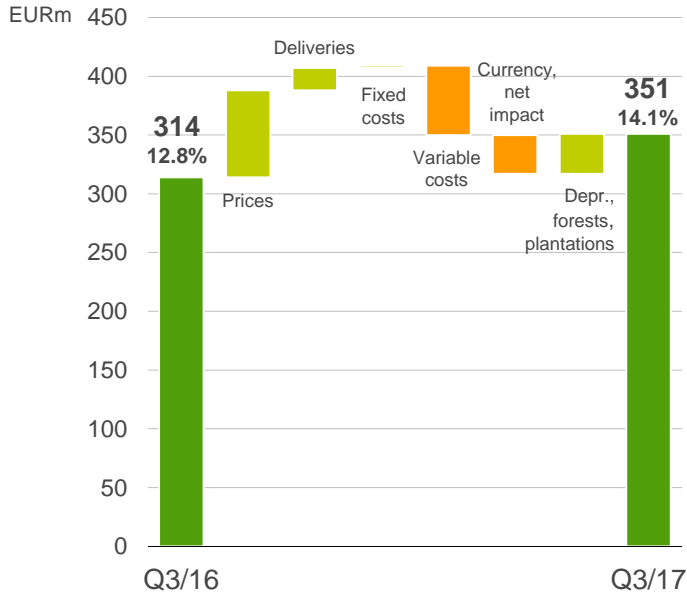


Comparable EBIT by business area

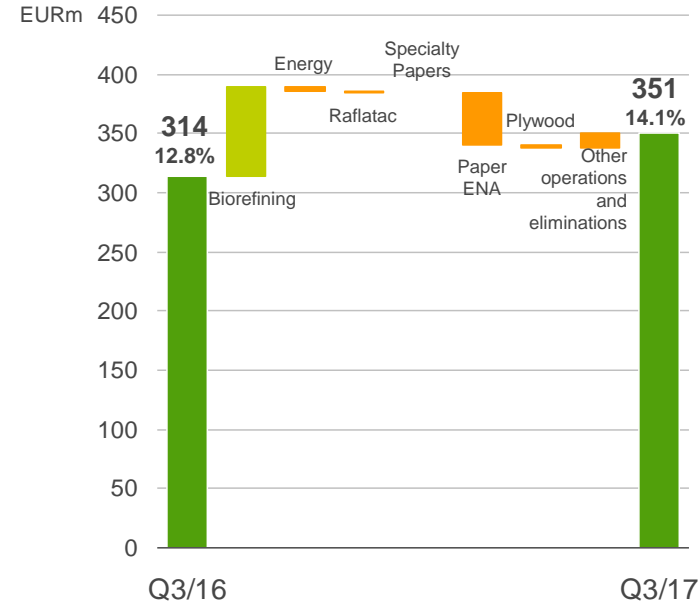


Comparable EBIT in Q3 2017 vs. Q3 2016

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



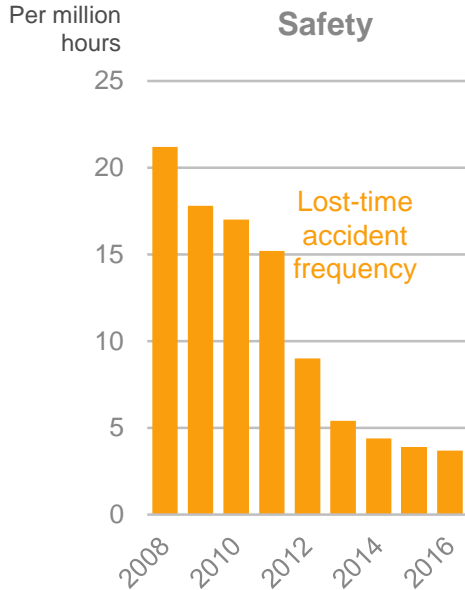
Creating competitive advantage
and long-term value by efficiency



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."

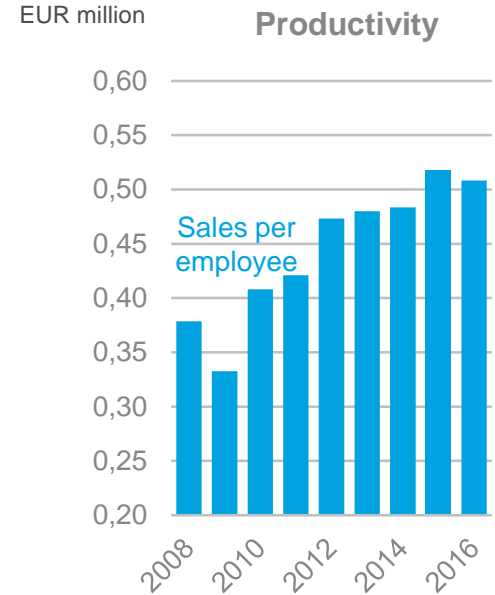
Creating competitive advantage and long-term value by engagement



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



SO₂ emission

-90%

Per tonne of paper

water intake



water discharge



Consistent long-term work receives external recognition



UPM in sustainability indices

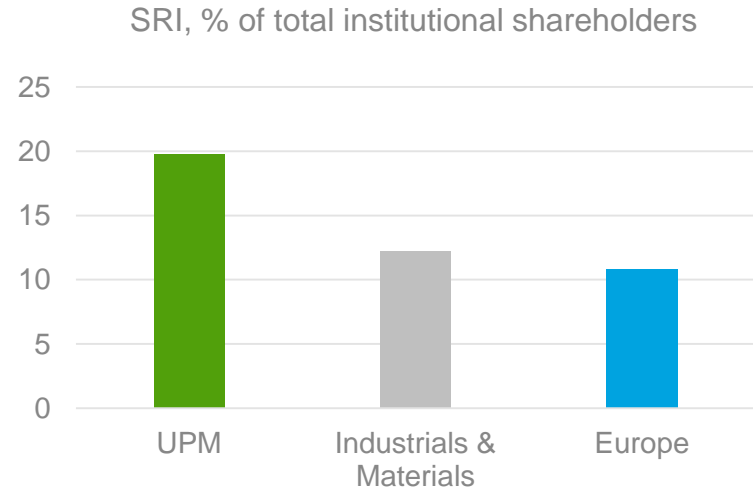


MEMBER OF
**Dow Jones
Sustainability Indices**
In Collaboration with RobecoSAM



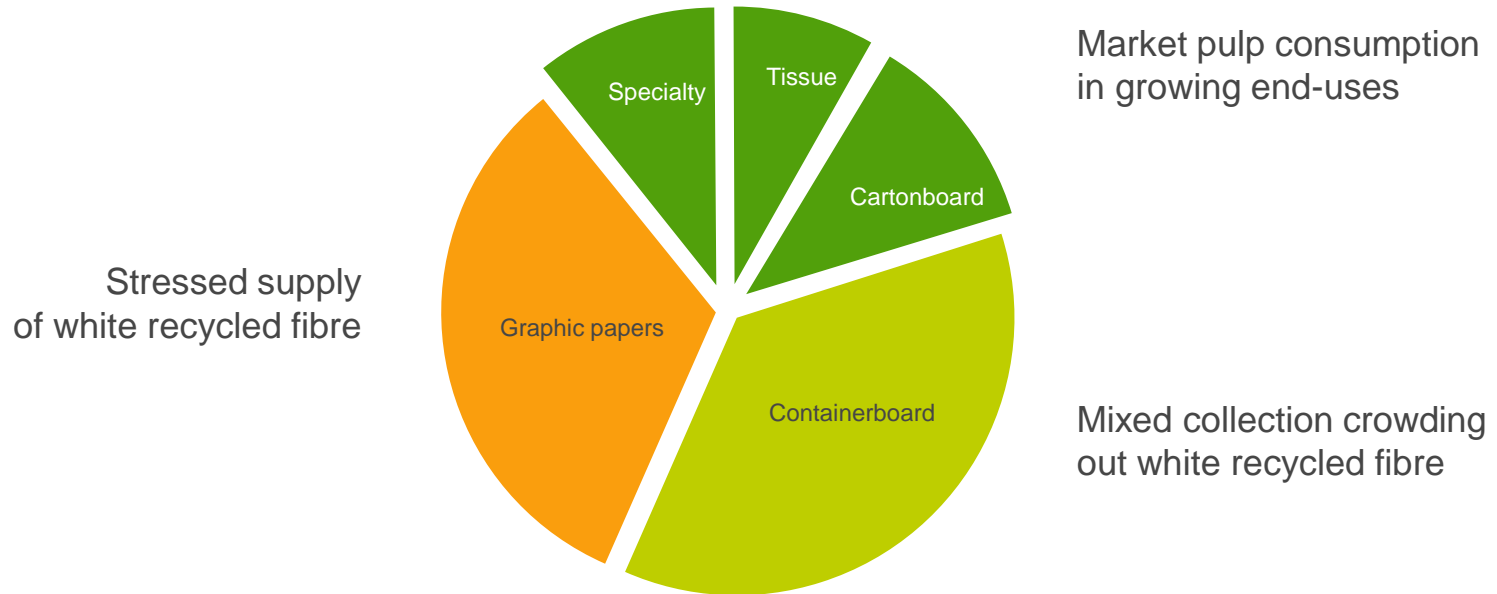
CDP's Climate Change Program: A- score

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

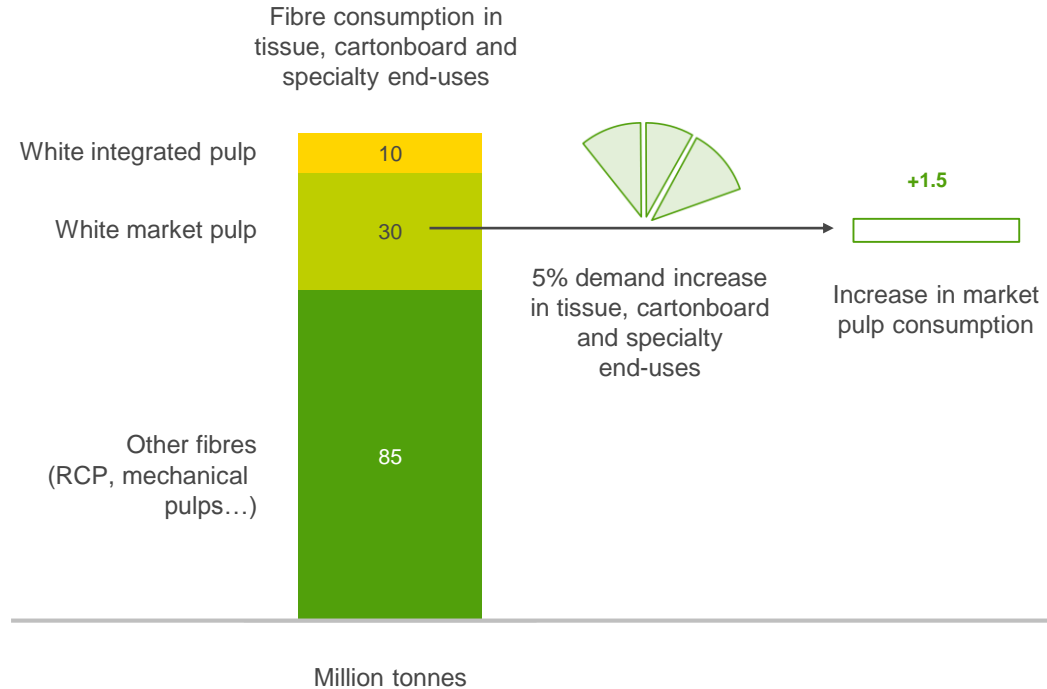


Market pulp consumed in growing end-uses – supply of alternative white fibres declines

Global paper and board production

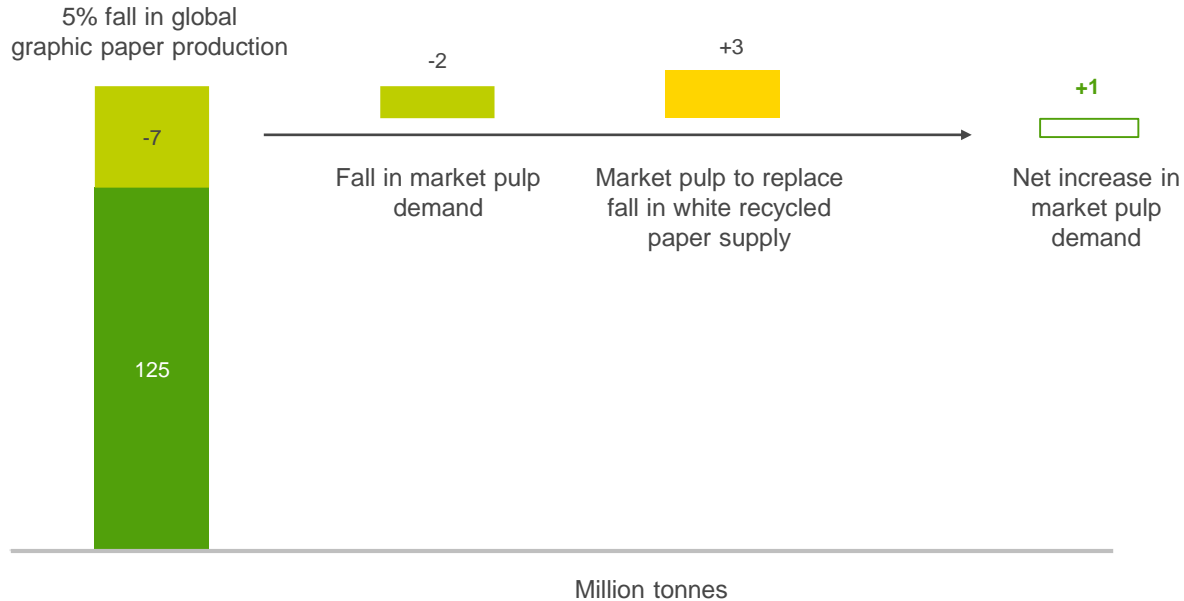


Case: Market pulp consumption in growing end-uses



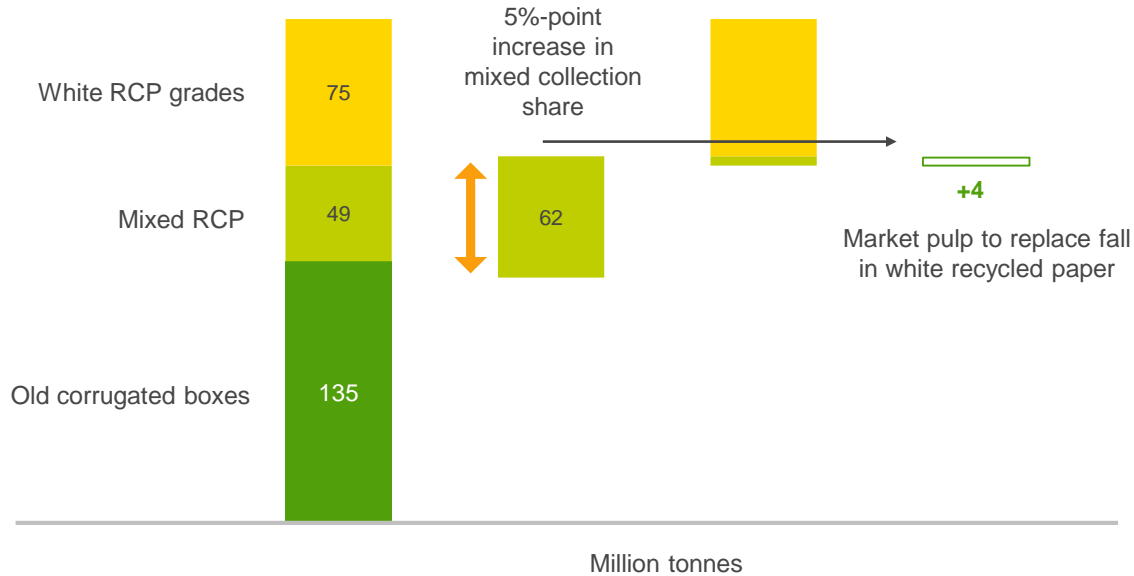
Source: Pöyry, Hawkins Wright, UPM

Case: Stressed supply of white recycled paper



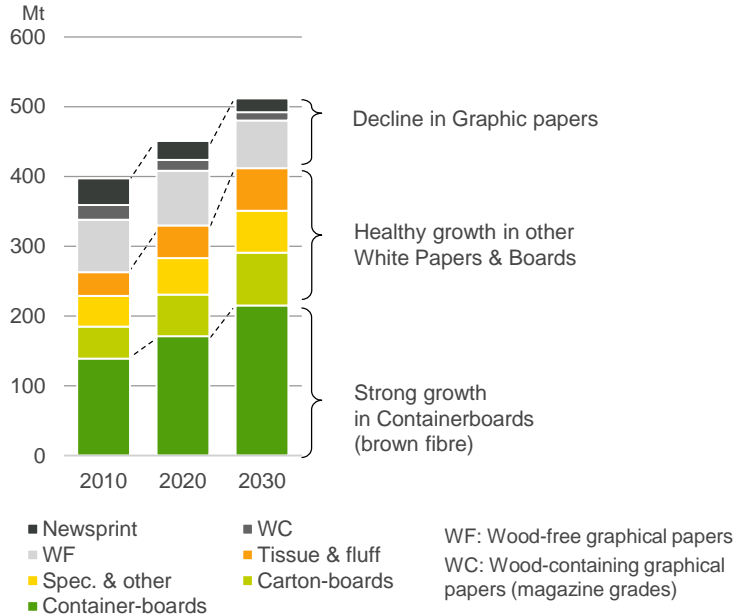
Source: Pöyry, UPM

Case: Mixed collection crowding out white recycled fibre

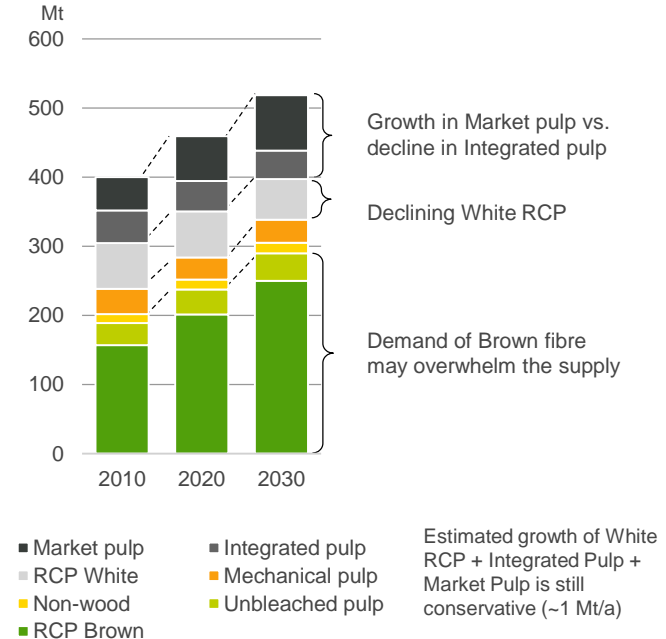


Summary of pulp demand outlook

Increase in end use ...

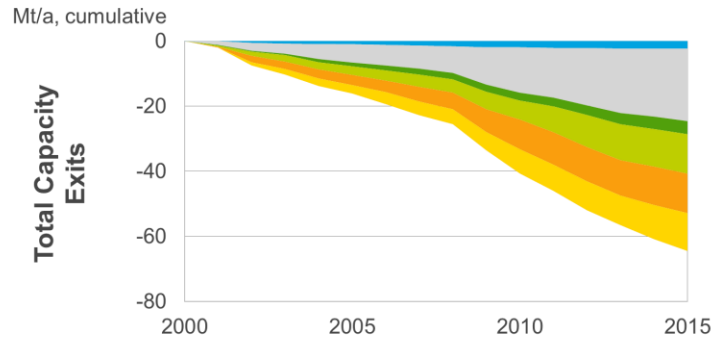
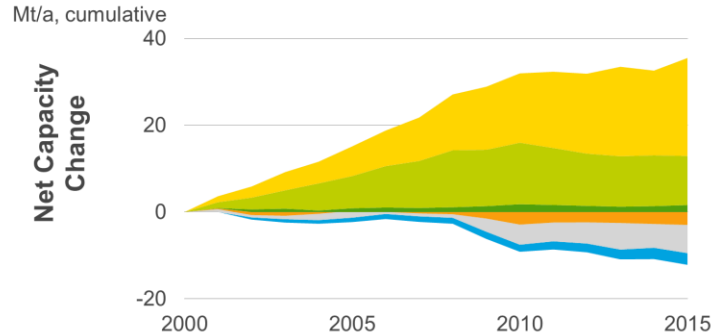


... will drive fibre demand in coming decades



Source: UPM, Pöyry, RISI

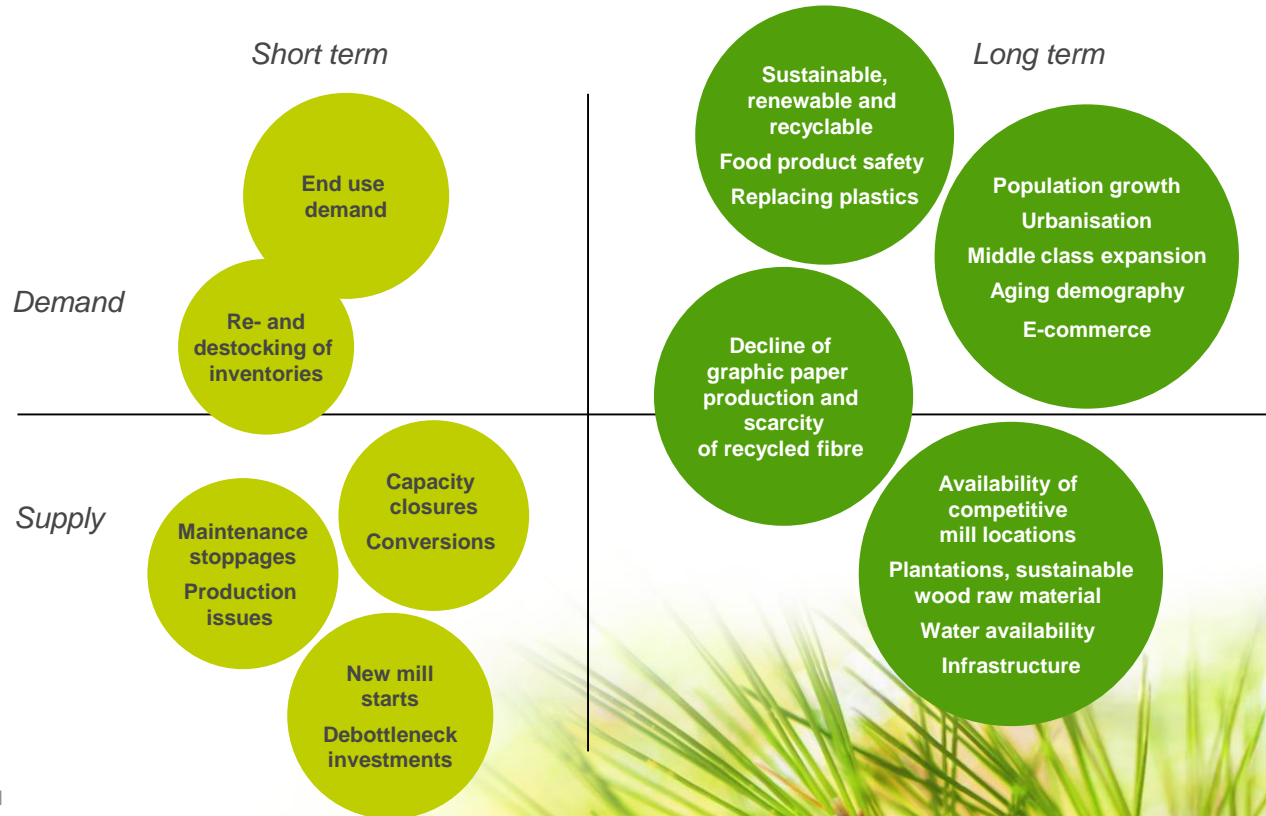
White fibres in different stages of life-cycle; 64 Mt capacity closed within 2000–2015



Note: Including both market and integrated pulp

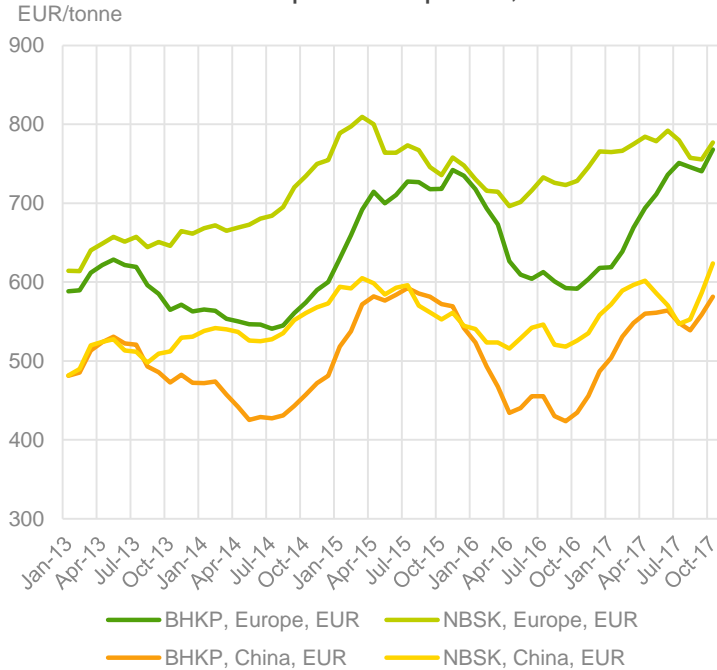
- **Hardwood pulp** capacity has experienced strong net growth after 2000 and is expected to continue growing.
- **Softwood** has faced closures as much as hardwood. New demand in China is turning decline into a slow growth.
- **White RCP** was the fastest-growing fibre in Europe and NA in early 1990's. 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

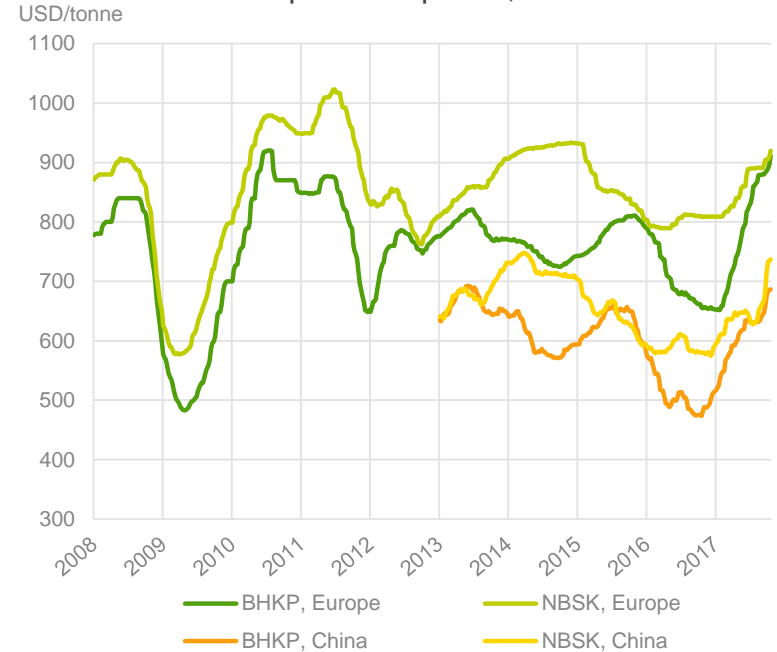


Chemical pulp market prices

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



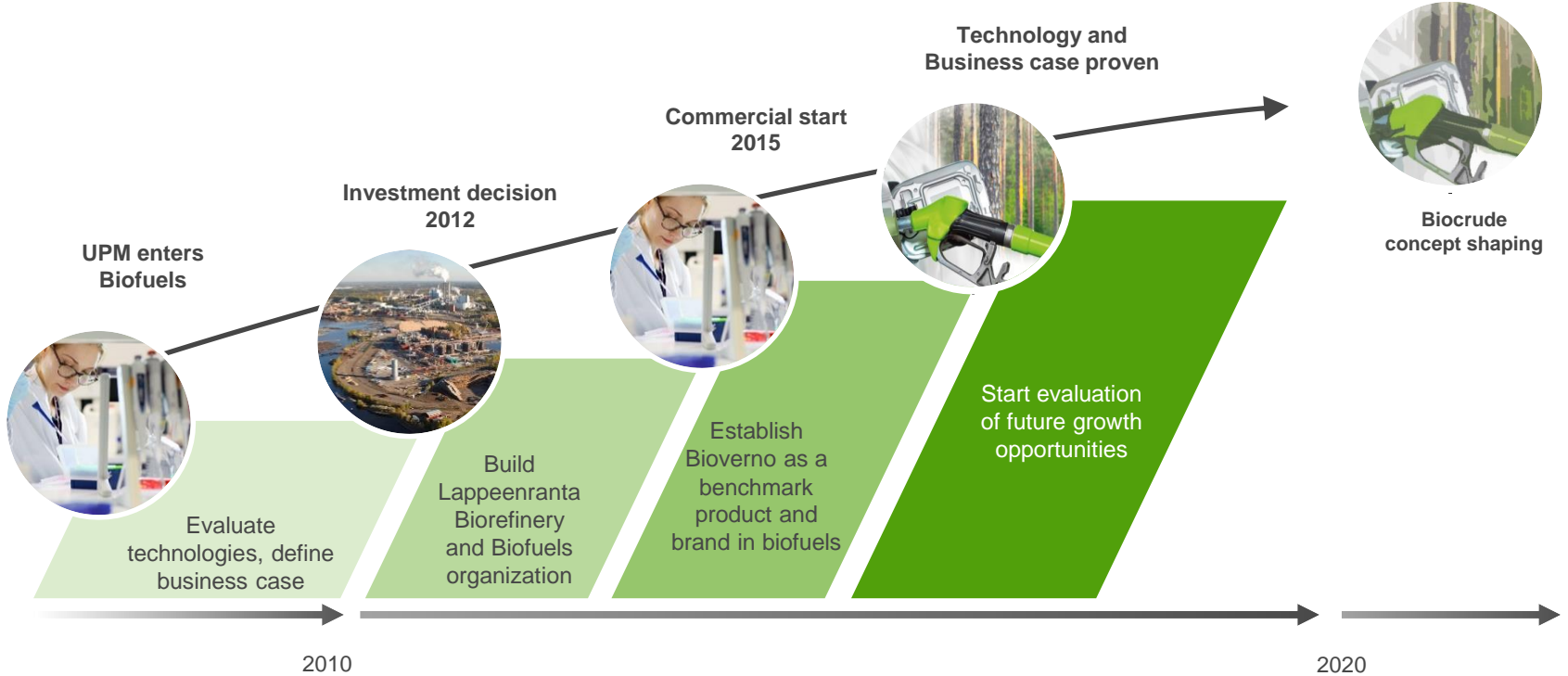
Dedicated green fleets



Marine/Aviation

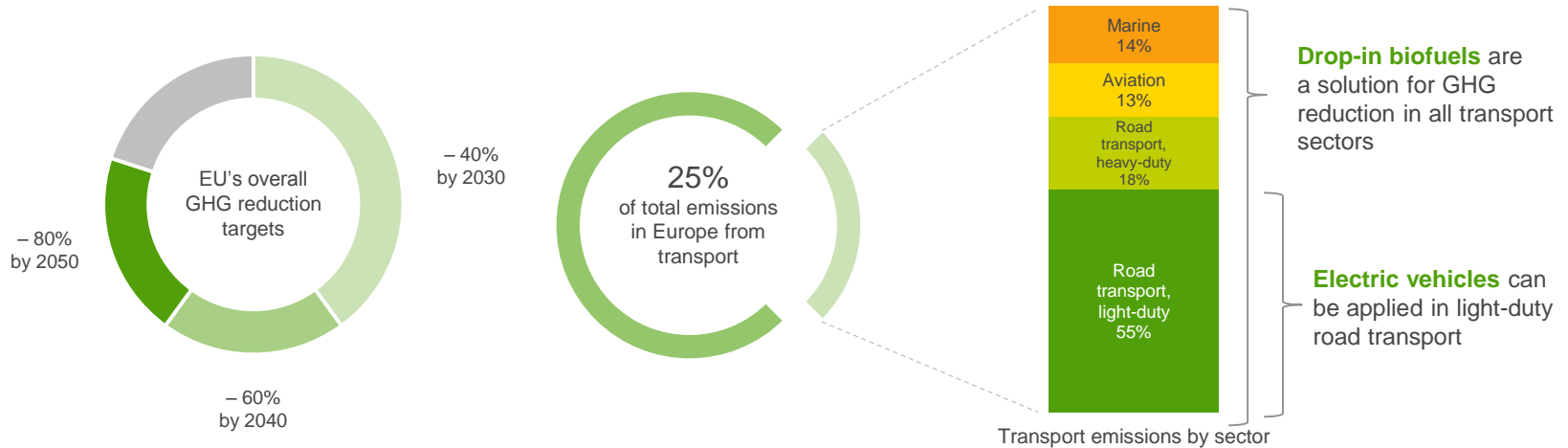


UPM Biofuels business evolving



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

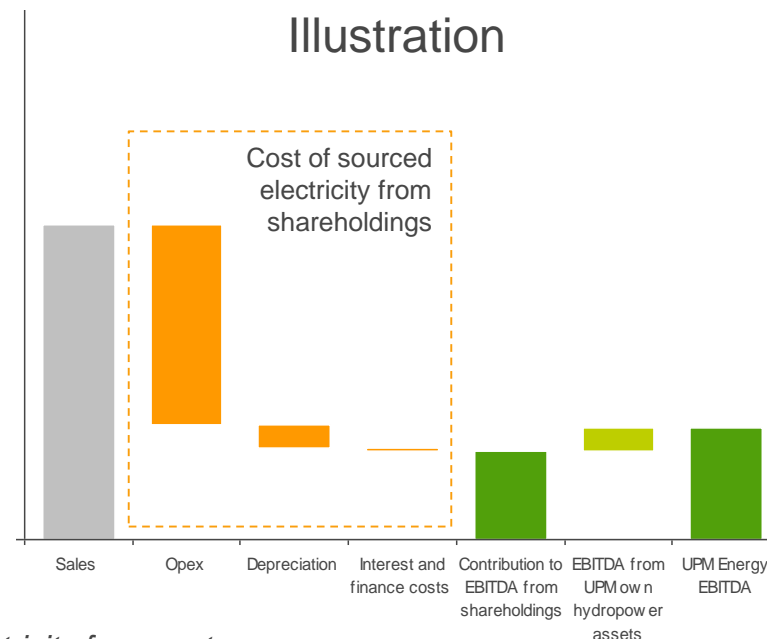
Flexible hydro
production with
optimisation
opportunities



Nuclear as
reliable base
load with world-
class
availability
performance

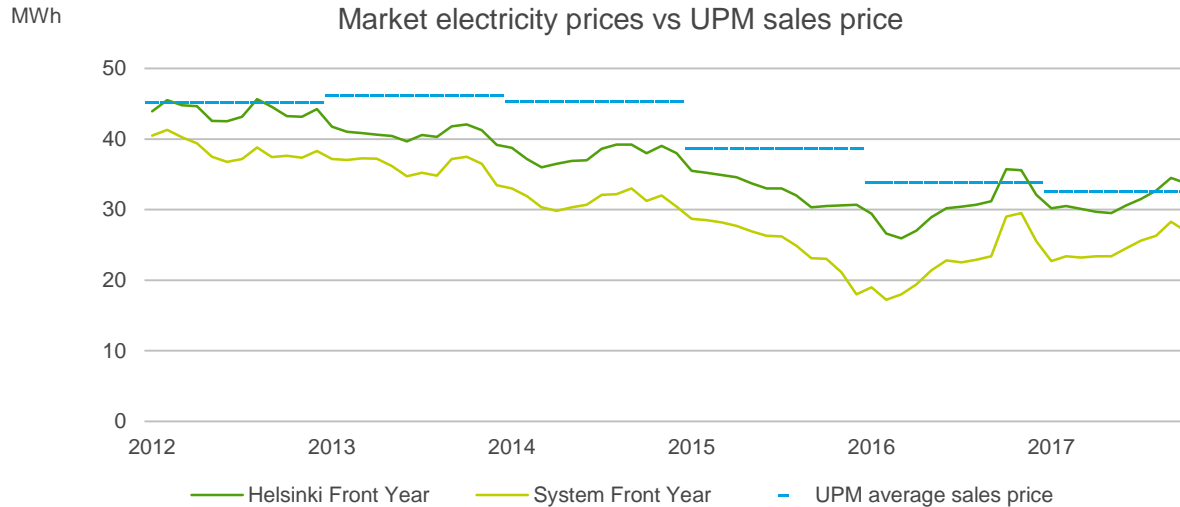
UPM Energy power generation assets

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

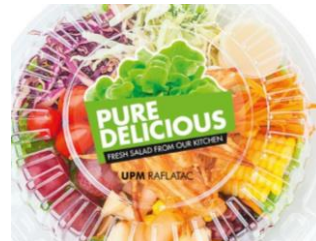
Self-adhesive labels in end-use



PHARMACEUTICALS



WINE, SPIRITS & CRAFT BEVERAGE



FOOD



HOME & PERSONAL CARE



DURABLES



TRANSPORT & LOGISTICS



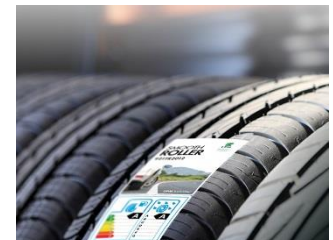
RETAIL, OIL & INDUSTRIAL



A4 & CUT-SIZE



SECURITY & BRAND PROTECTION



TYRE

Leading position in a growing market

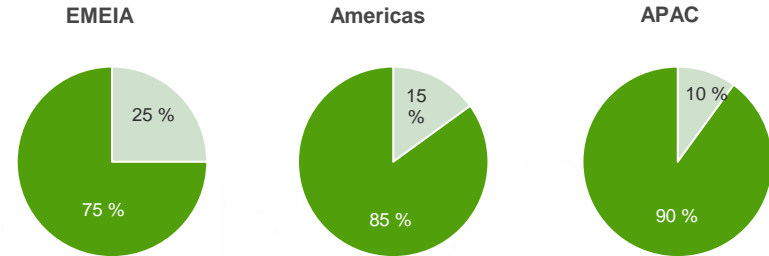
The self adhesive labelstock market

- > 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

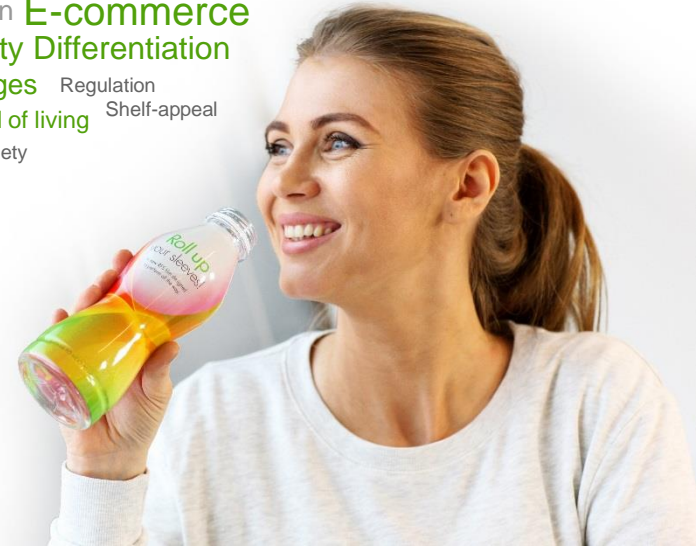


Continuing growth

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

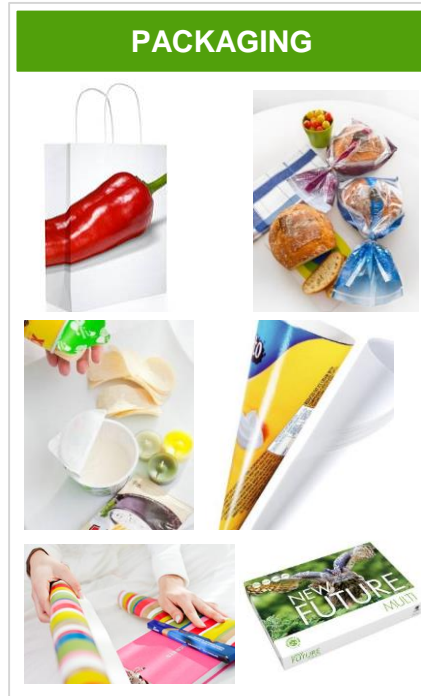
Enabled by scalable operating platform & efficient investments

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

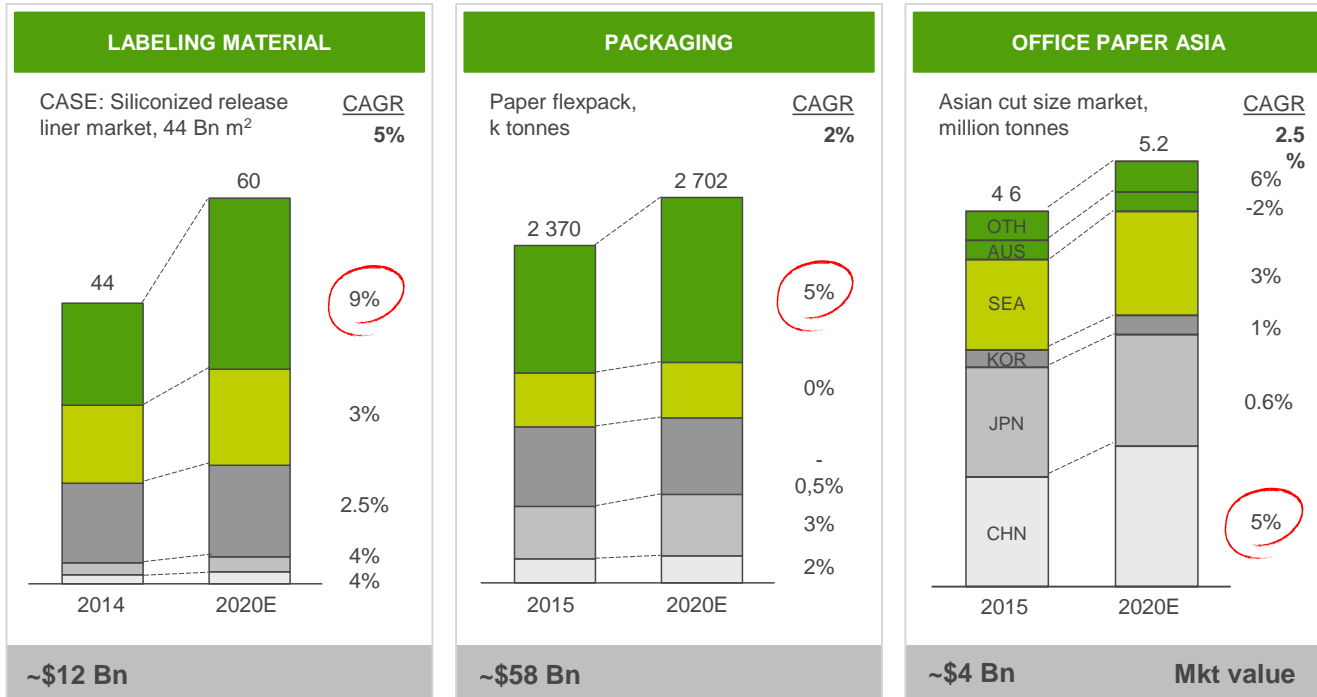


UPM Specialty Papers

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

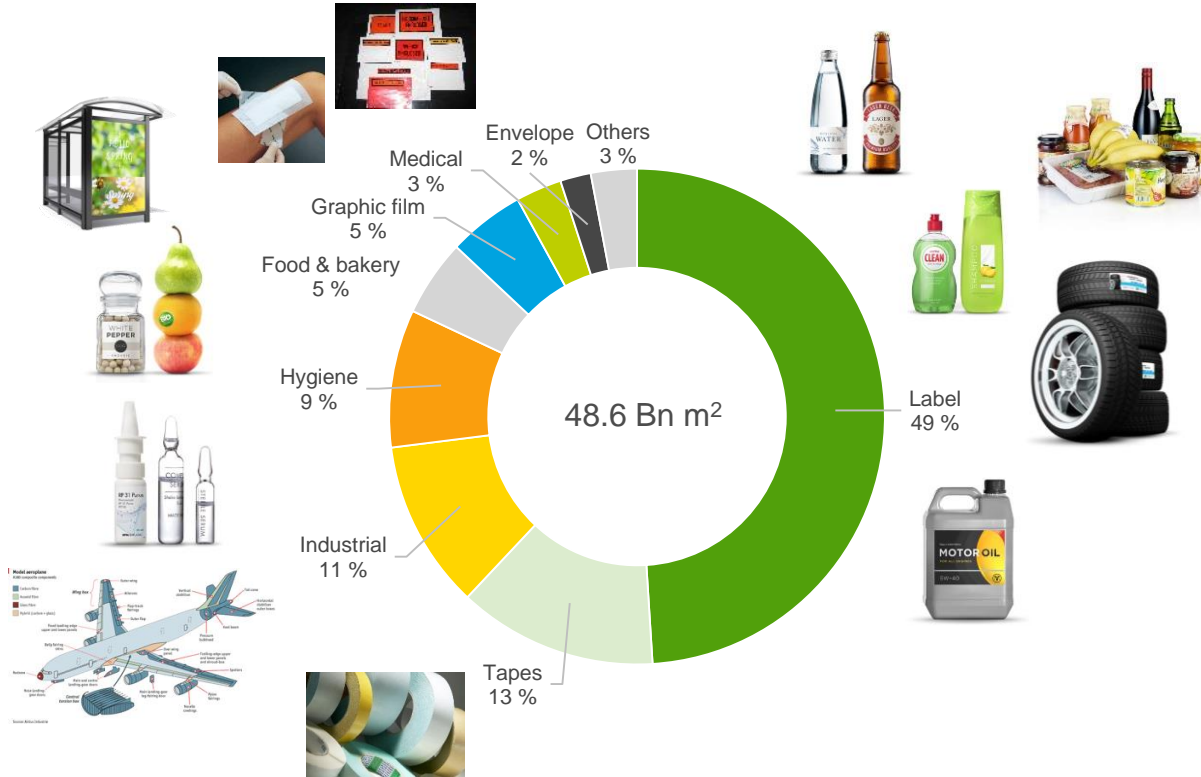


Our end use markets are growing



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



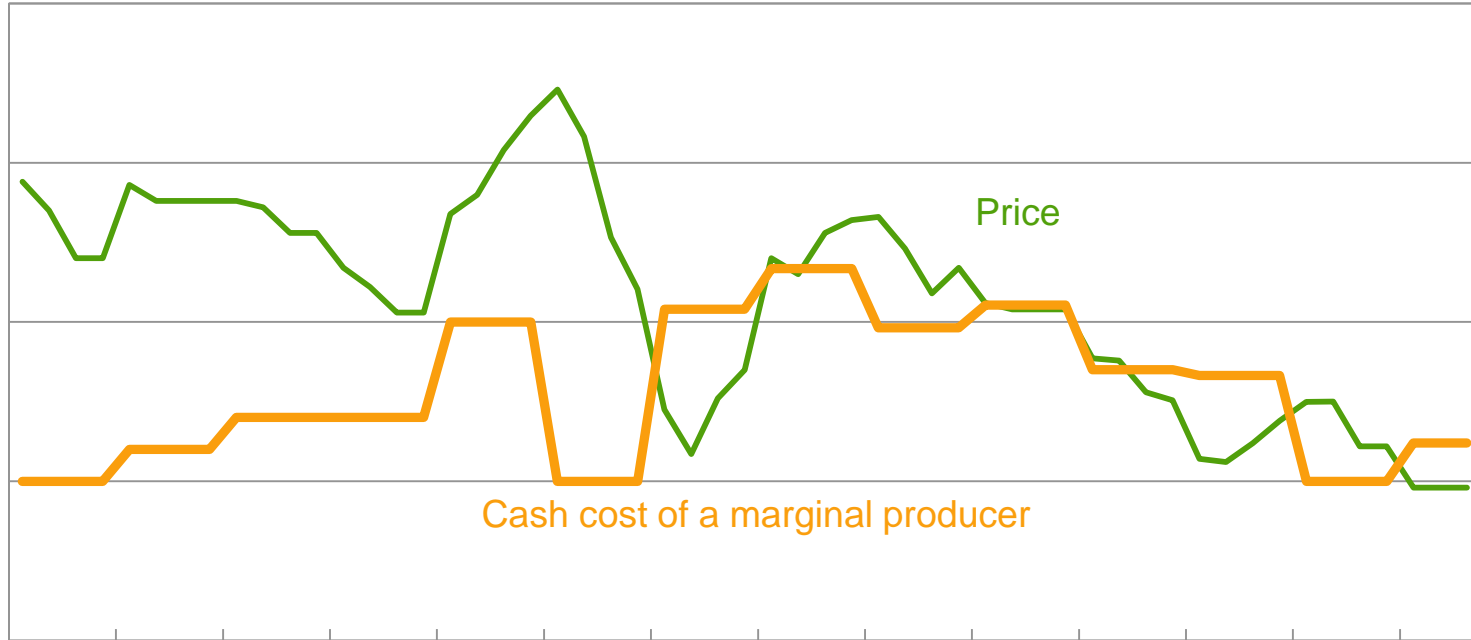
Source: Euro-Graph

- 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

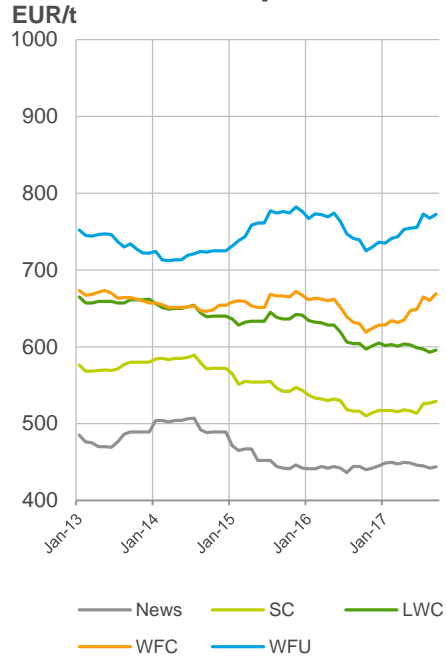


EUR/t



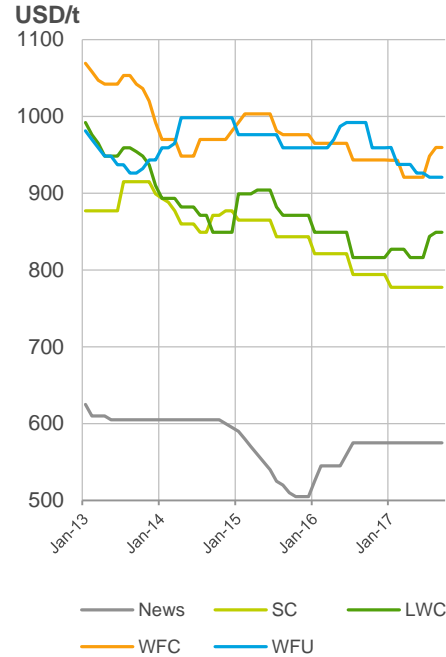
Graphic paper prices

Europe

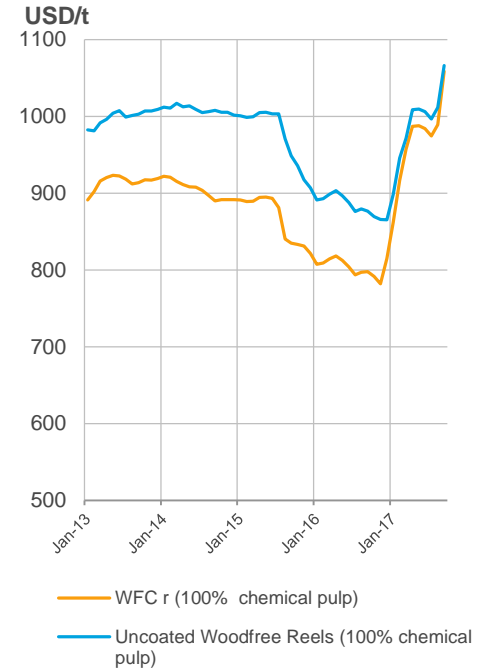


Sources: PPI, RISI

North America



China



UPM Plywood in end-use

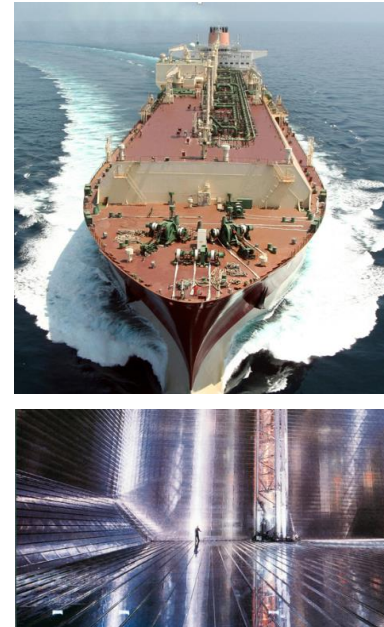
Construction



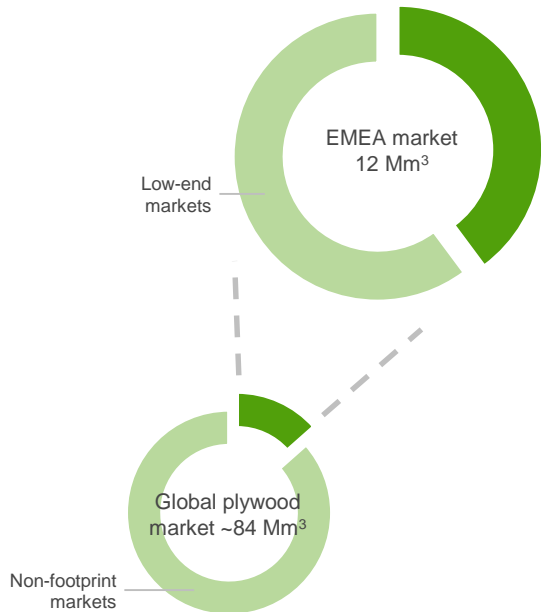
Vehicle flooring



LNG shipbuilding



Relevant high-end market offers meaningful growth potential



Relevant market ~5 million m³

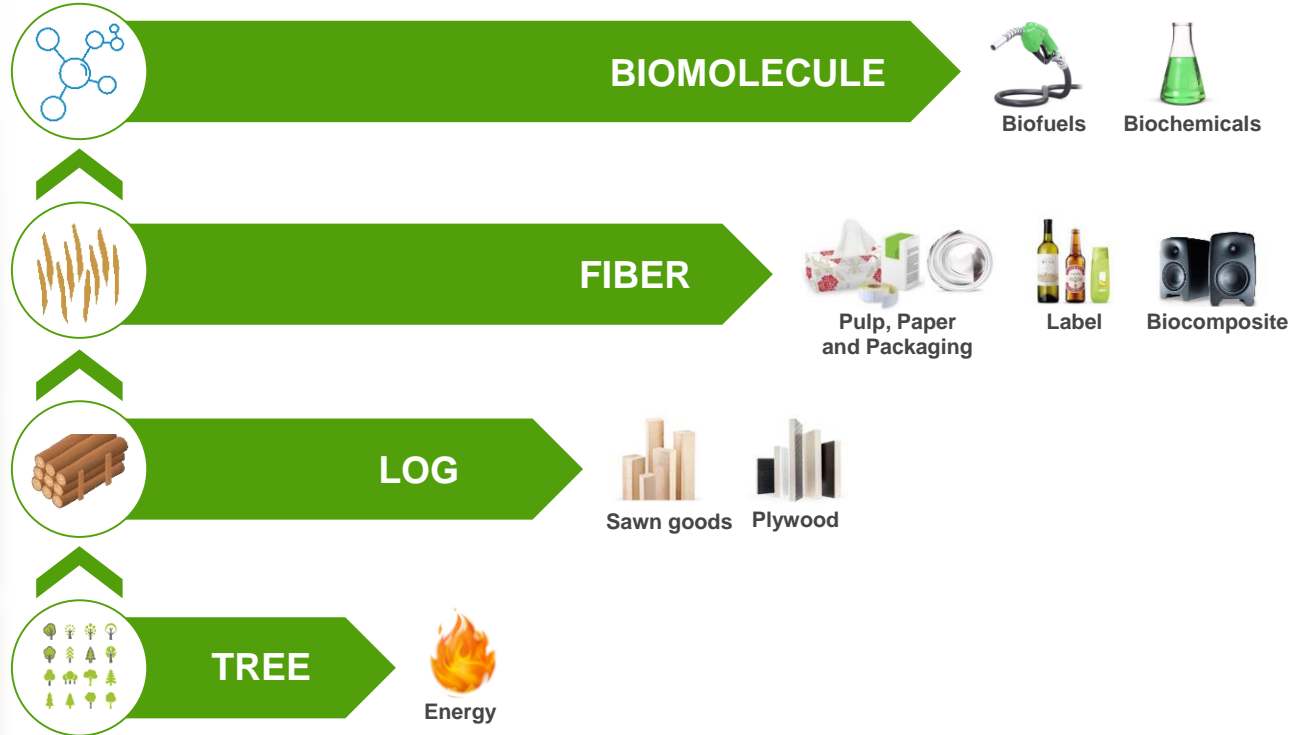
- High-end demanding applications & customers
- Medium range standard products
- EMEA region
- Global LNG business

- 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

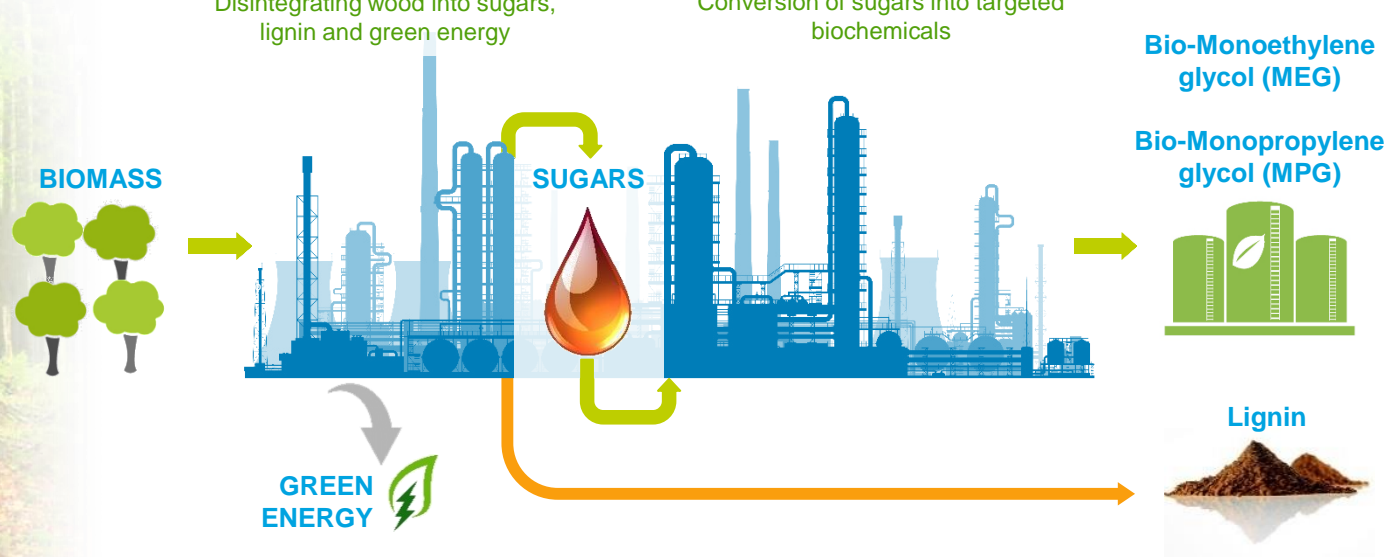
BIOREFINERY PROCESS

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

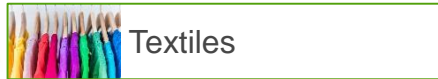
25%
Lignin

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



Mono Ethylene Glycol

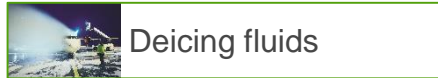
- Existing fossil-based market
- Market demand > 26 mio tons
- CAGR >3%
- Application examples:



Textiles



Bottles & Packaging

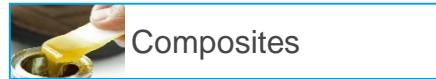


Deicing fluids

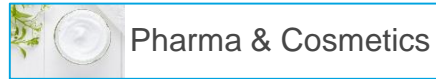


Mono Propylene Glycol

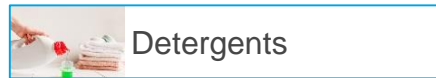
- Existing fossil-based market
- Market demand >2 mio tons
- CAGR >5%
- Application examples:



Composites



Pharma & Cosmetics

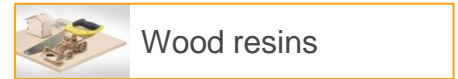


Detergents



Lignin

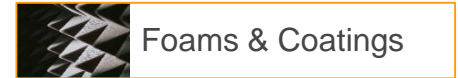
- Performance chemical
- Application driven
- Strong IP position
- Application examples:



Wood resins



Plastics



Foams & Coatings



UPM

The Biofore
Company