



UPM

The Biofore
Company



**AIMING
HIGHER
WITH
BIOFORE**

UPM
The Biofore Company

Investor Presentation
July 2018



The Biofore
Company

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



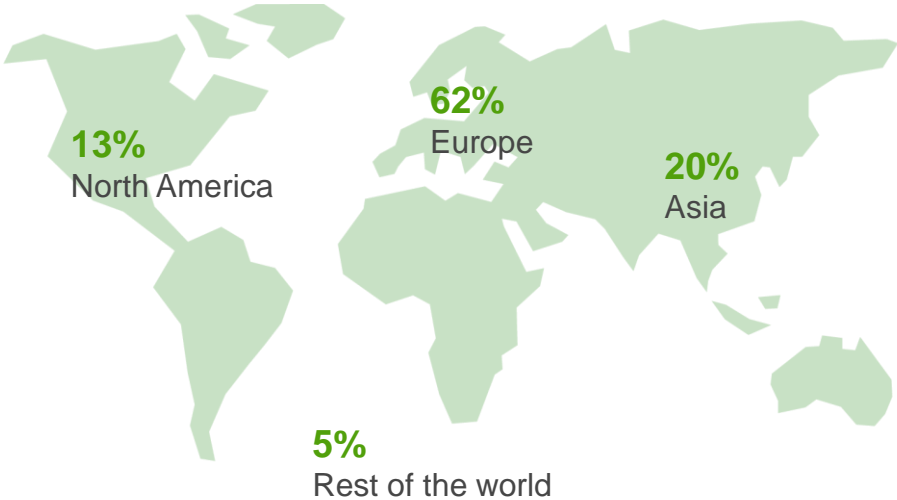
UPM

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Global businesses – local presence

UPM's sales by market 2017

EUR 10,010 million



54
production plants
in **12** countries



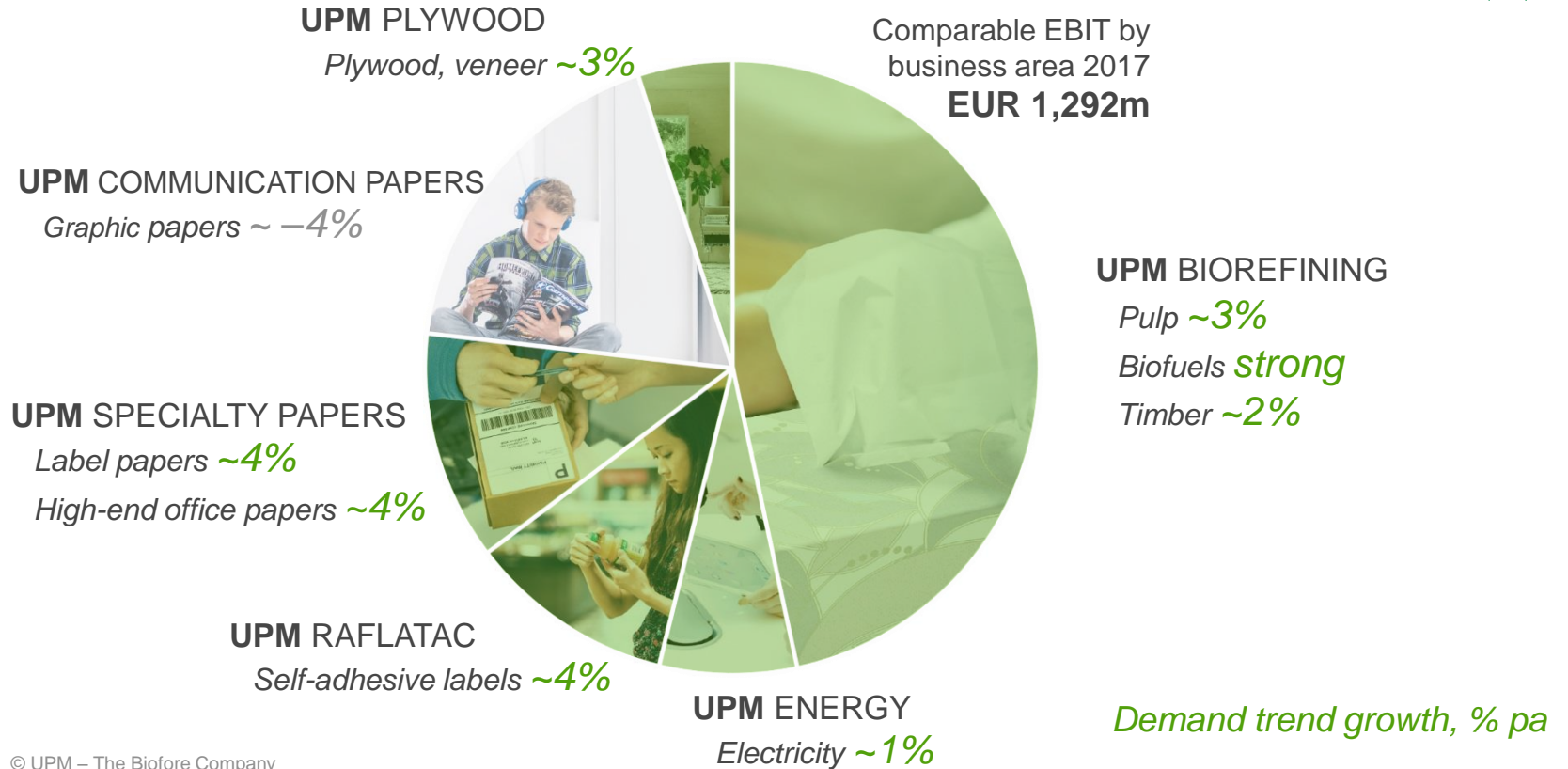
19,100
employees
in **46** countries

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**

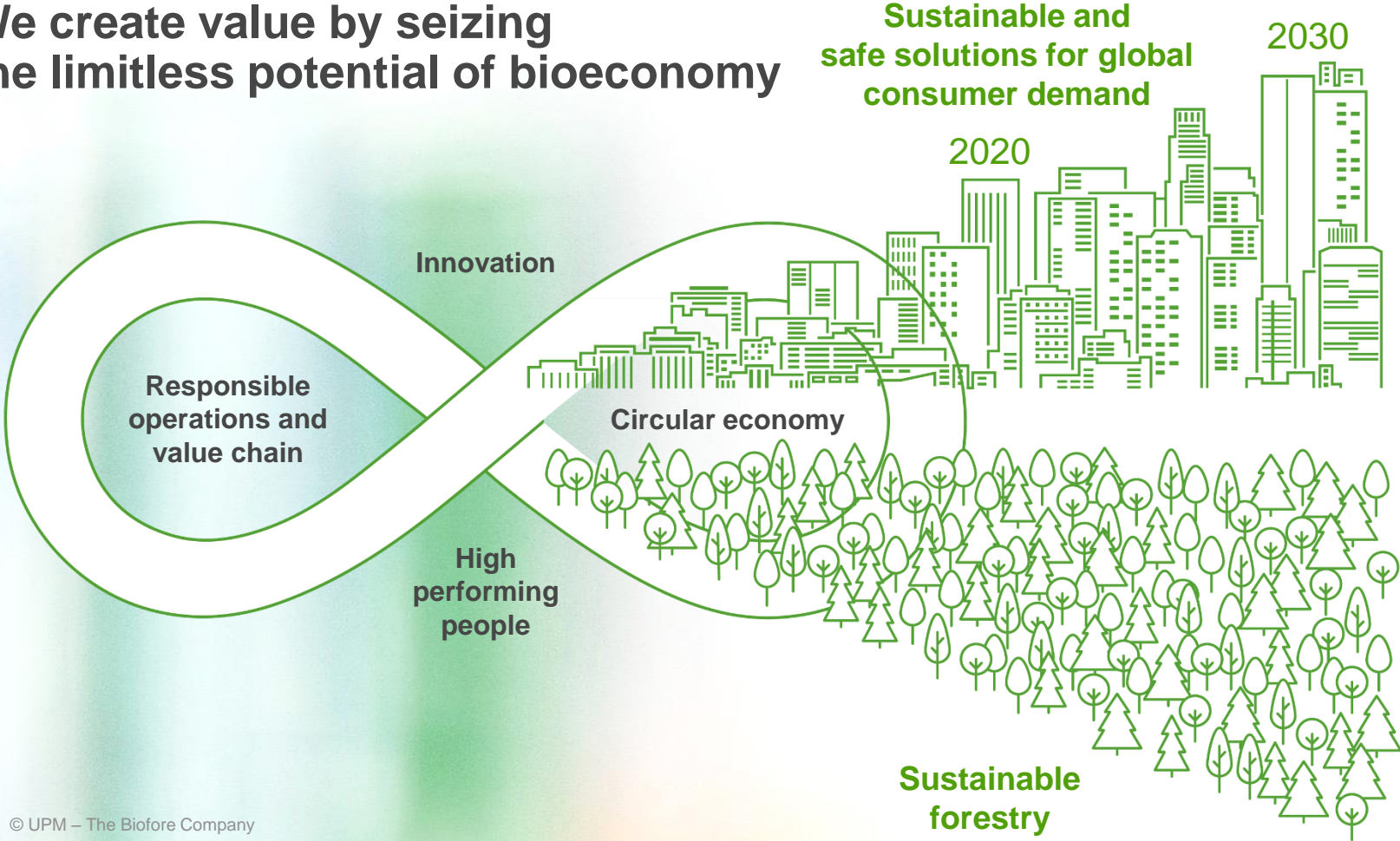
for construction
and design
features

OFFICE PAPERS
for printing

WOOD MATERIALS
for furniture and the home

LABELS
for food products

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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How to achieve the shareholder returns

AIMING HIGHER

WITH BIOFORE





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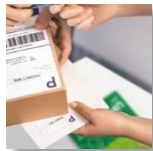
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Spearheads for growth

Specialty packaging materials



Raflatac



Specialty papers

High value fibre



Forests

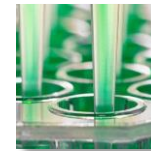


Pulp

Molecular bioproducts



Biofuels



Biochemicals

Communication papers



Plywood



Energy



UPM in transformation

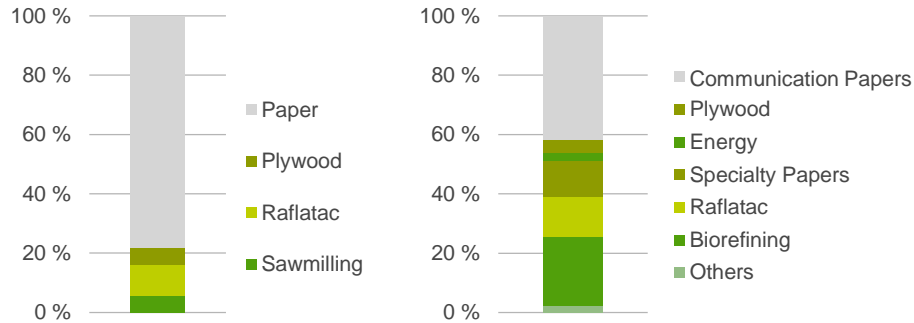
2008
vertically integrated
paper company

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^{*)} EUR 513m
ROE^{*)} 3.5%

Sales EUR 10.0bn
EBIT^{*)} EUR 1,292m
ROE^{*)} 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

^{*)} 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 m³ 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

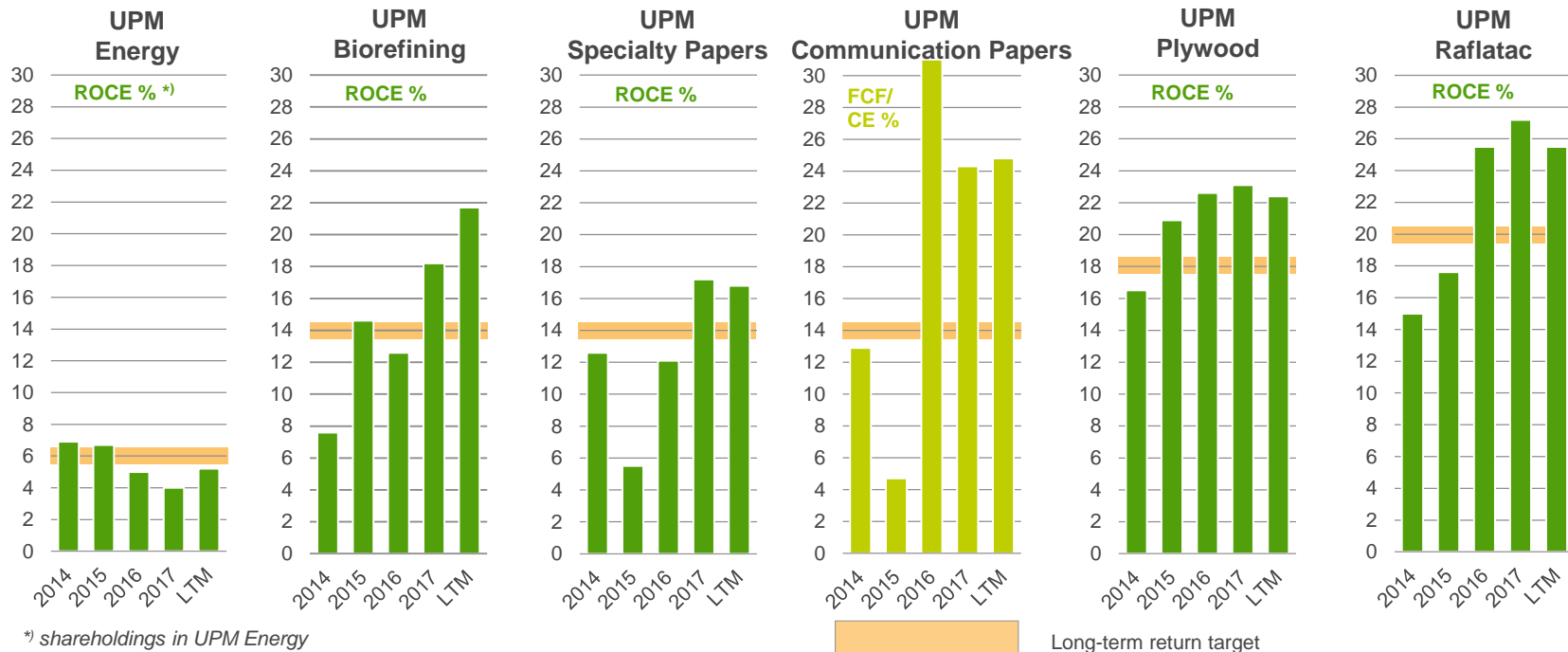
Transformative prospects

- Possible new 2mt pulp mill, Uruguay
 - Second preparation phase:
The permitting processes for the mill, rail and port, as well as rail tendering are proceeding as agreed
- Molecular bioproducts, possible biorefineries
 - Basic engineering work regarding a potential 150kt biochemicals refinery, Germany
 - Exploring next steps in biofuels, environmental impact study for a potential 500kt biorefinery, Finland



The Biofore Company

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

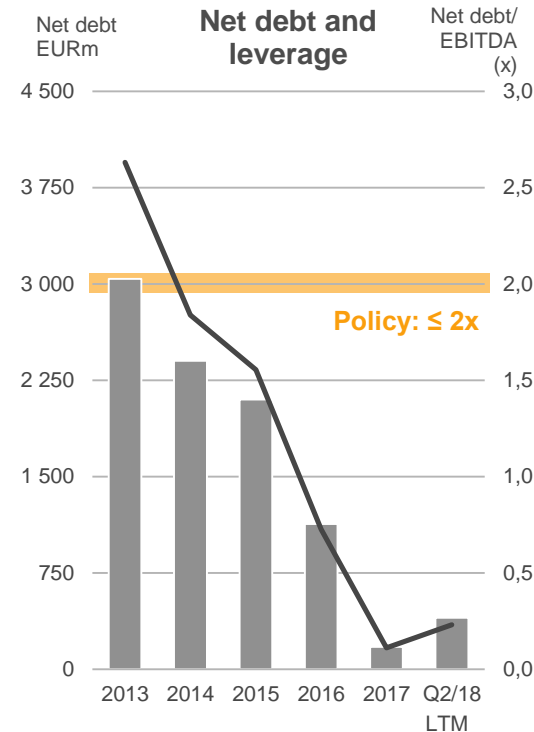
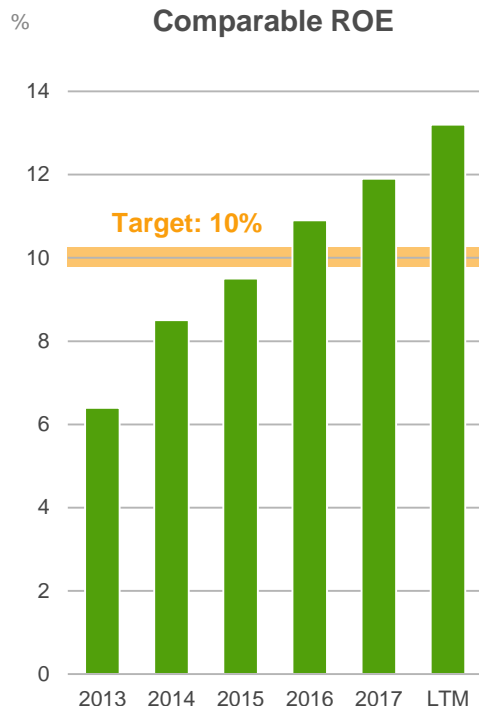
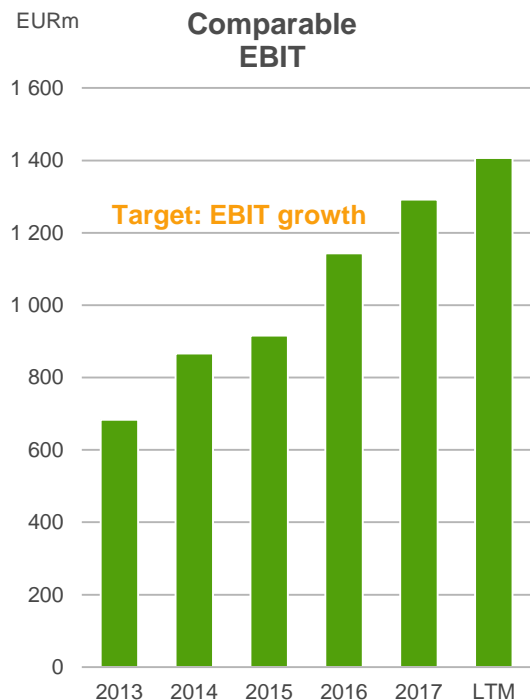


*) shareholdings in UPM Energy valued at fair value



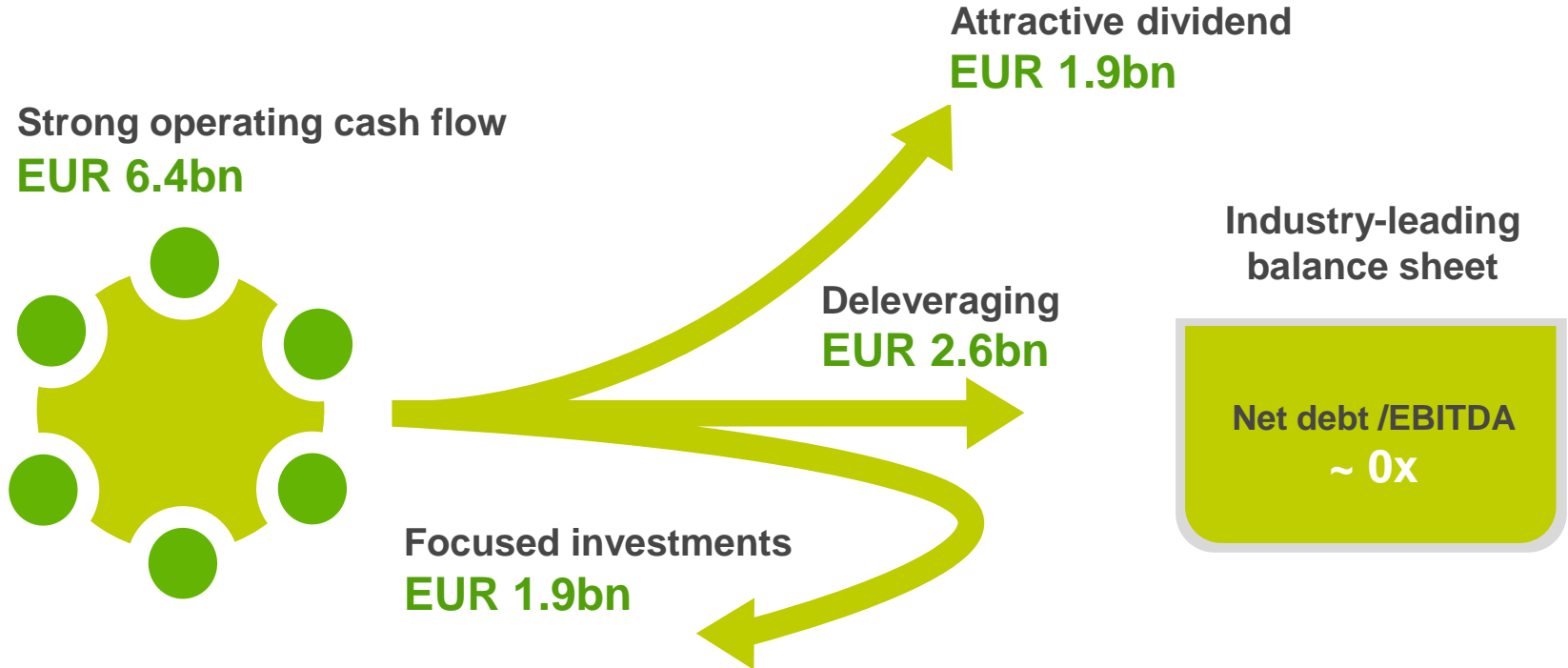
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Group financial targets and leverage policy



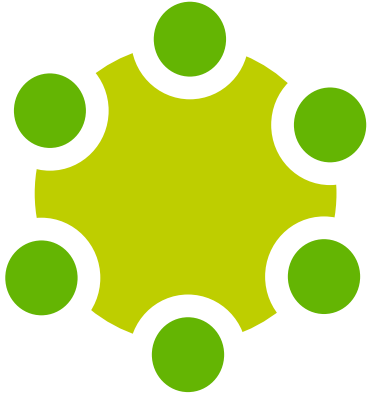
Comparable figures for 2014 – 2018,
excluding special items for earlier years

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



Illustrative capital allocation^{*)} 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

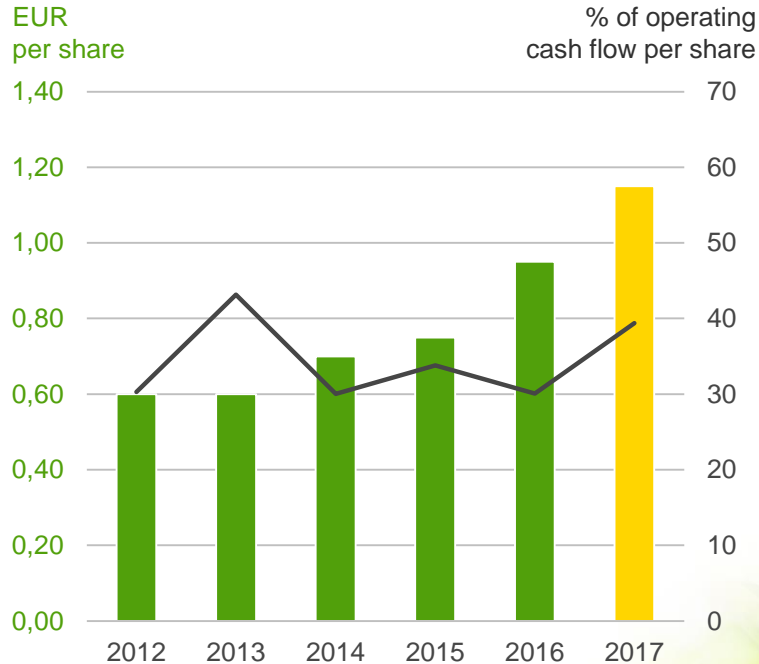
Industry-leading
balance sheet



Maintain headroom

^{*)} This is not a forecast

Dividend



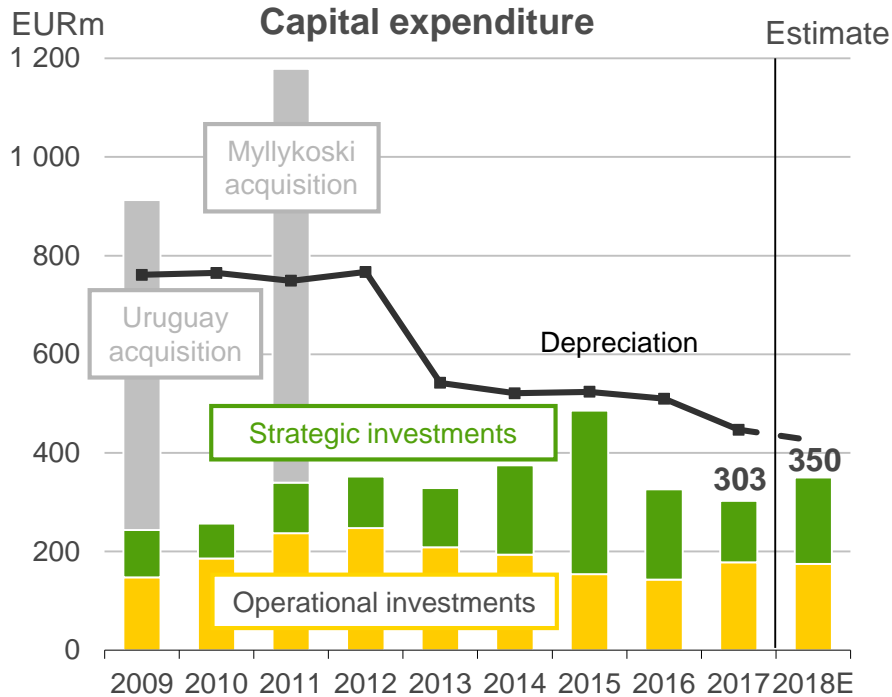
Dividend policy

- 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**

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

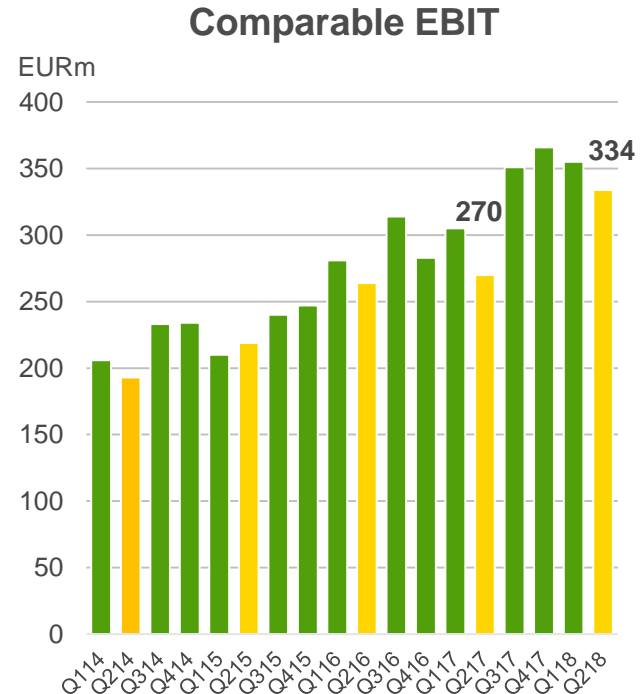


MEMBER OF
**Dow Jones
Sustainability Indices**
In Collaboration with RobecoSAM



Q2 2018: Commercial success drives growth in sales and earnings – strong outlook for H2 2018

- Sales grew by 5% to EUR 2,589m (2,464m in Q2 2017)
- Comparable EBIT increased by 24% to EUR 334m (270m)
- Sales margins improved, as prices increased in all business areas, outweighing the impact of higher input costs
- Q2 performance was held back by several significant scheduled maintenance shutdowns
- Operating cash flow was EUR 329m (269m)



Q2 2018: Sales prices increased in all business areas, outweighing the impact of higher input costs

UPM BIOREFINING

- Good market demand. Pulp deliveries -8%, production impacted by scheduled maintenance shutdowns
- Kaukas pulp mill expansion completed
- Pulp prices significantly higher

UPM COMMUNICATION PAPERS

- Tight market, deliveries -3%
- Price increases more than offset the variable costs increases

UPM ENERGY

- Electricity deliveries +15%
- Higher electricity market prices
- Power generation impacted by maintenance shutdown at the Olkiluoto power plant

UPM SPECIALTY PAPERS

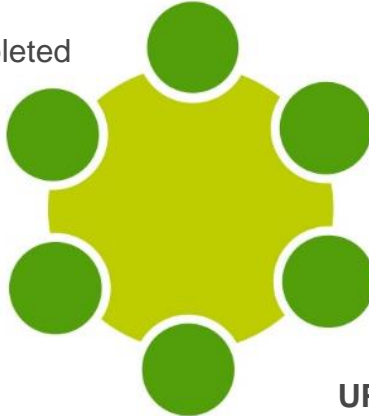
- Good demand, deliveries -3%
- Price increases offset part of the variable costs increases
- Two new focused growth projects announced

UPM RAFLATAC

- Good demand, deliveries -2%
- Price increases more than offset input costs increases

UPM PLYWOOD

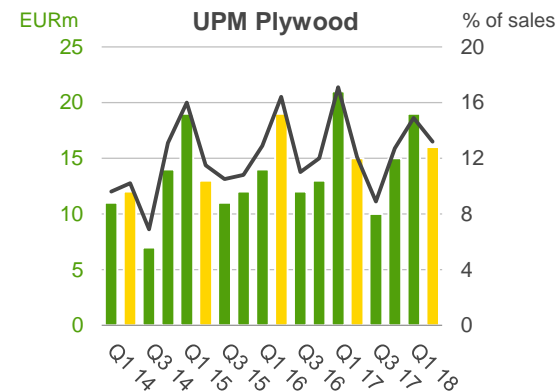
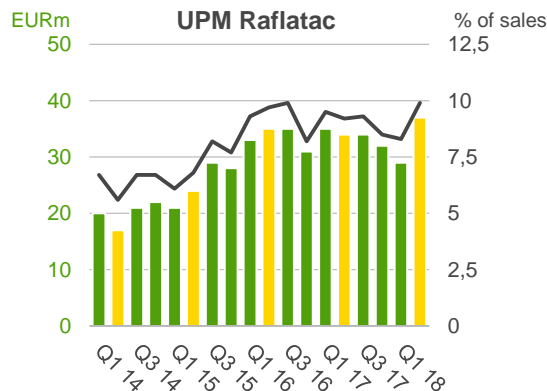
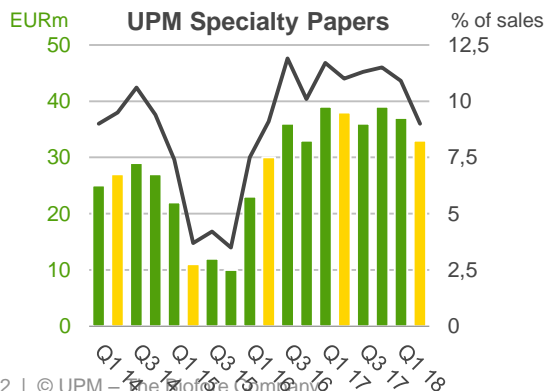
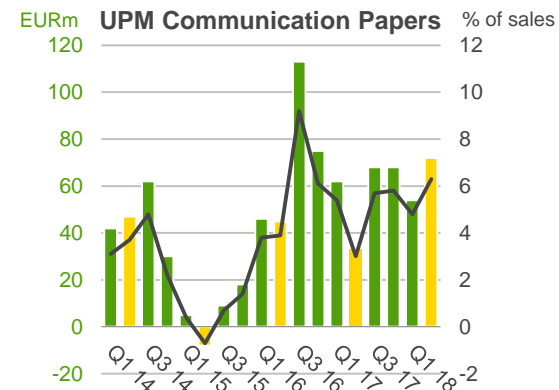
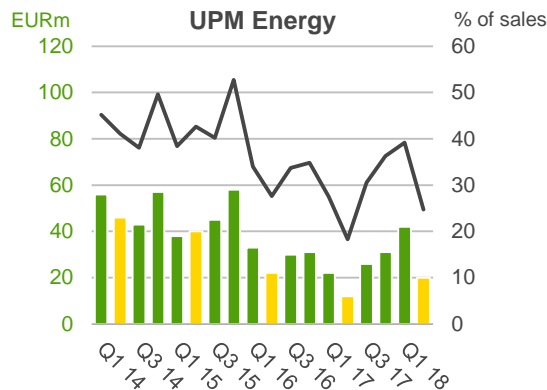
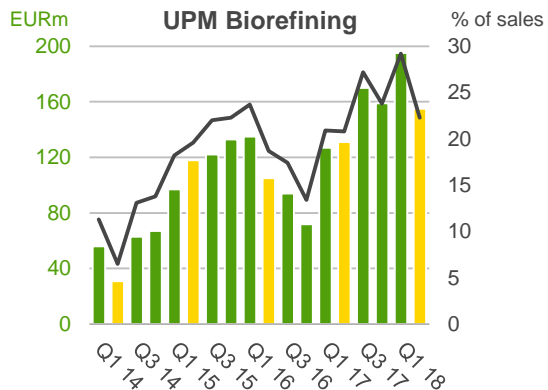
- Good demand, deliveries -4%
- Price increases more than offset the variable costs increases





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Comparable EBIT by business area





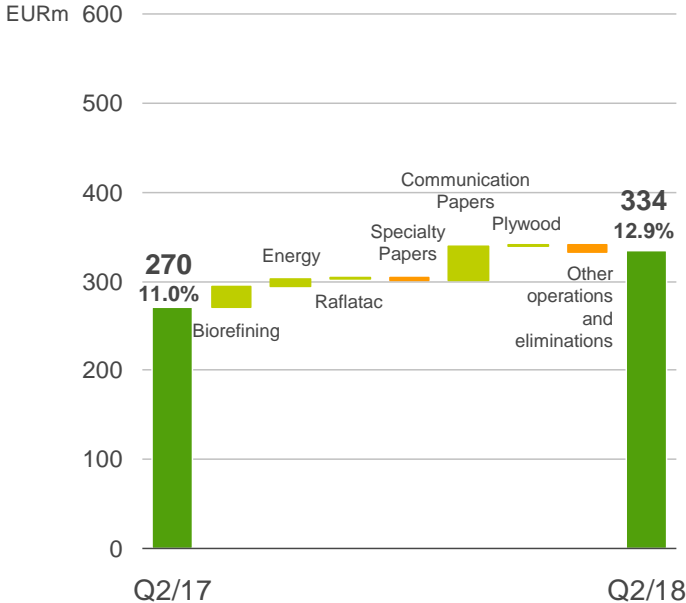
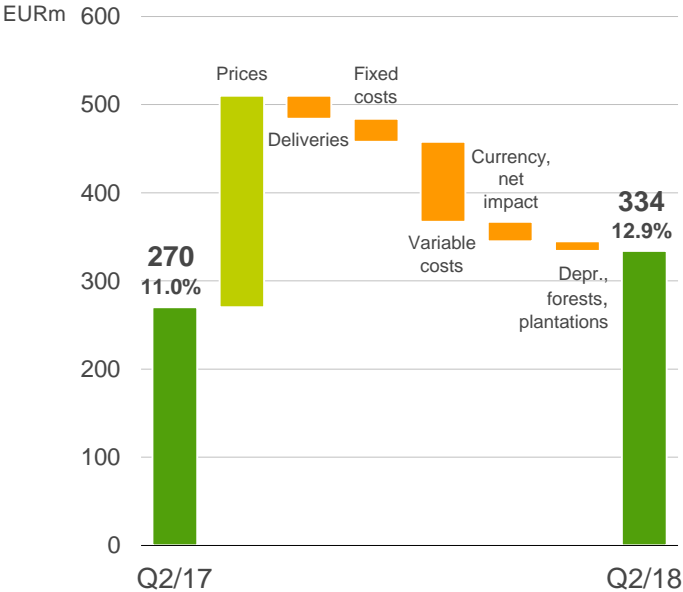
UPM

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Comparable EBIT in Q2 2018 vs. Q2 2017

Increased prices in all businesses, higher input costs
Fixed costs higher and production lower mainly due to several scheduled maintenance shutdowns

Improvement in Biorefining, Energy, Raflatac, Communication Papers and Plywood





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Outlook for 2018

- 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.
- H1 2018 results were impacted by four significant maintenance shutdowns and weather-related wood harvesting limitations. H2 2018 is scheduled to have one significant maintenance shutdown.

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



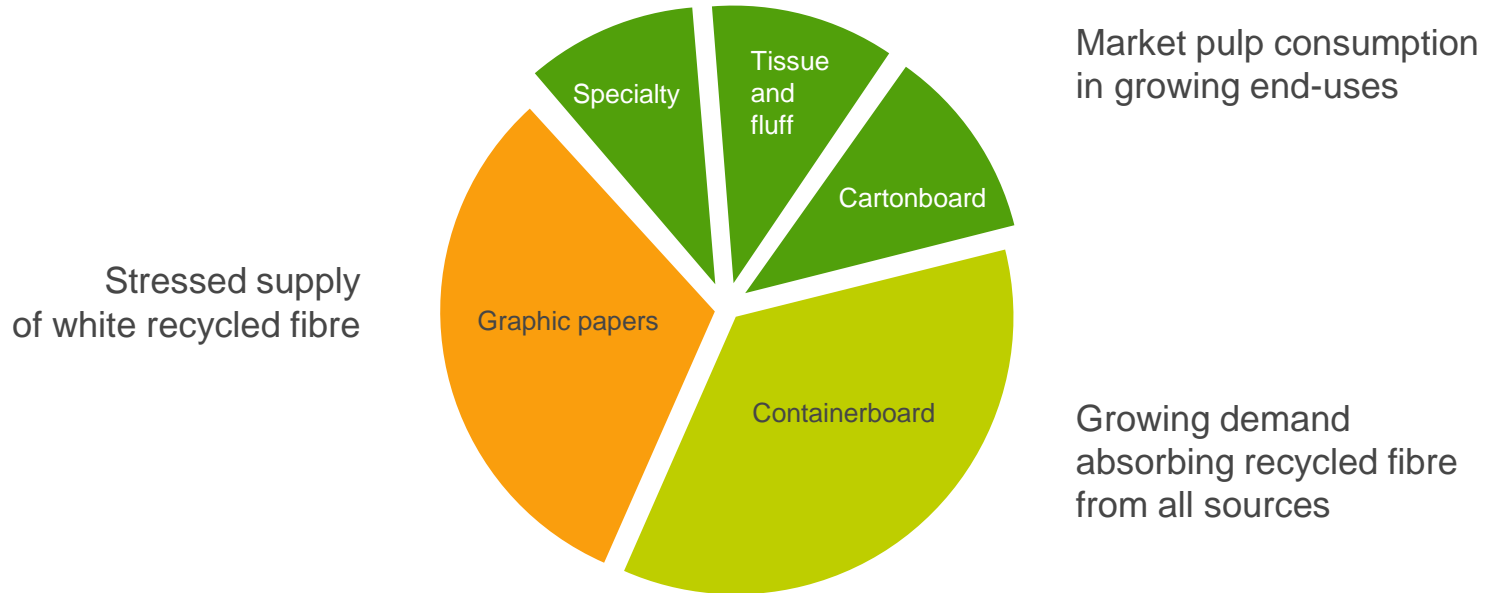
UPM forests and plantations

	2008	2017	Area distribution	
Forest and plantation land (own and rented) (1,000 ha)	1,012	970	8%	US
Forest growth (million m ³)	4.3	8.6	90%	Finland
Wood sourced from UPM forests and plantations (million m ³)	2.2	4.7	59%	Uruguay
% of UPM wood sourcing	9%	17%	33%	
Value of forests and plantations, including land (EURm)	1,270	2,149		

UPM Biorefining

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

Global paper and board production



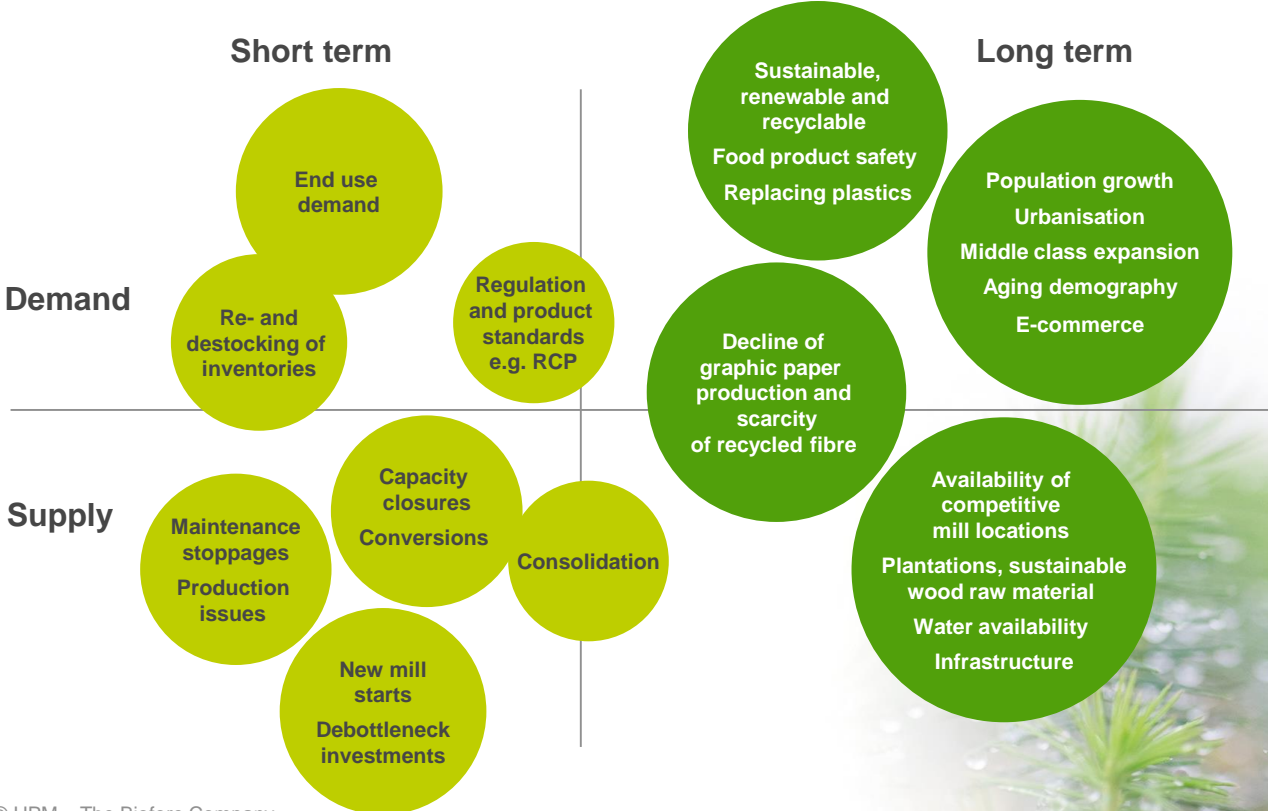


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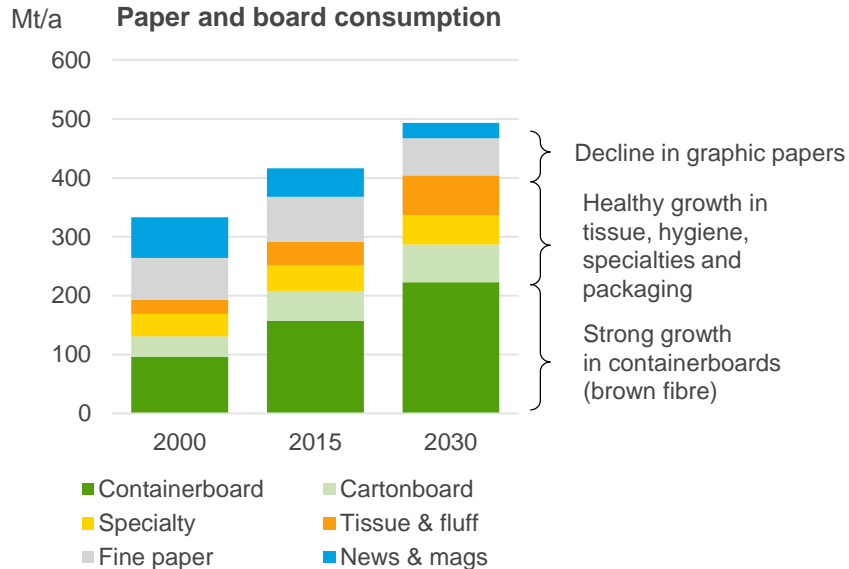
UPM Biorefining

Demand-supply drivers of pulp market

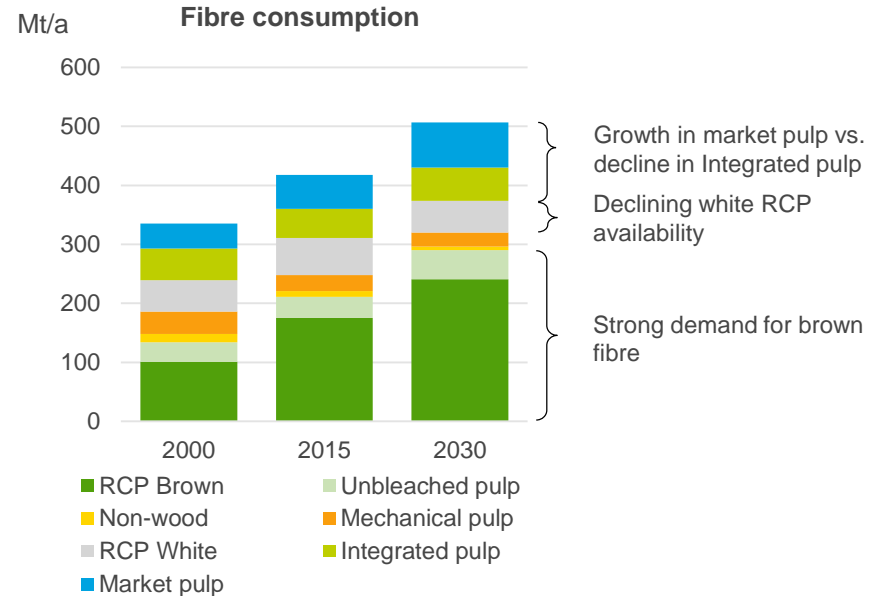


UPM Biorefining Pulp demand outlook

Increase in end use ...



... will drive fibre demand



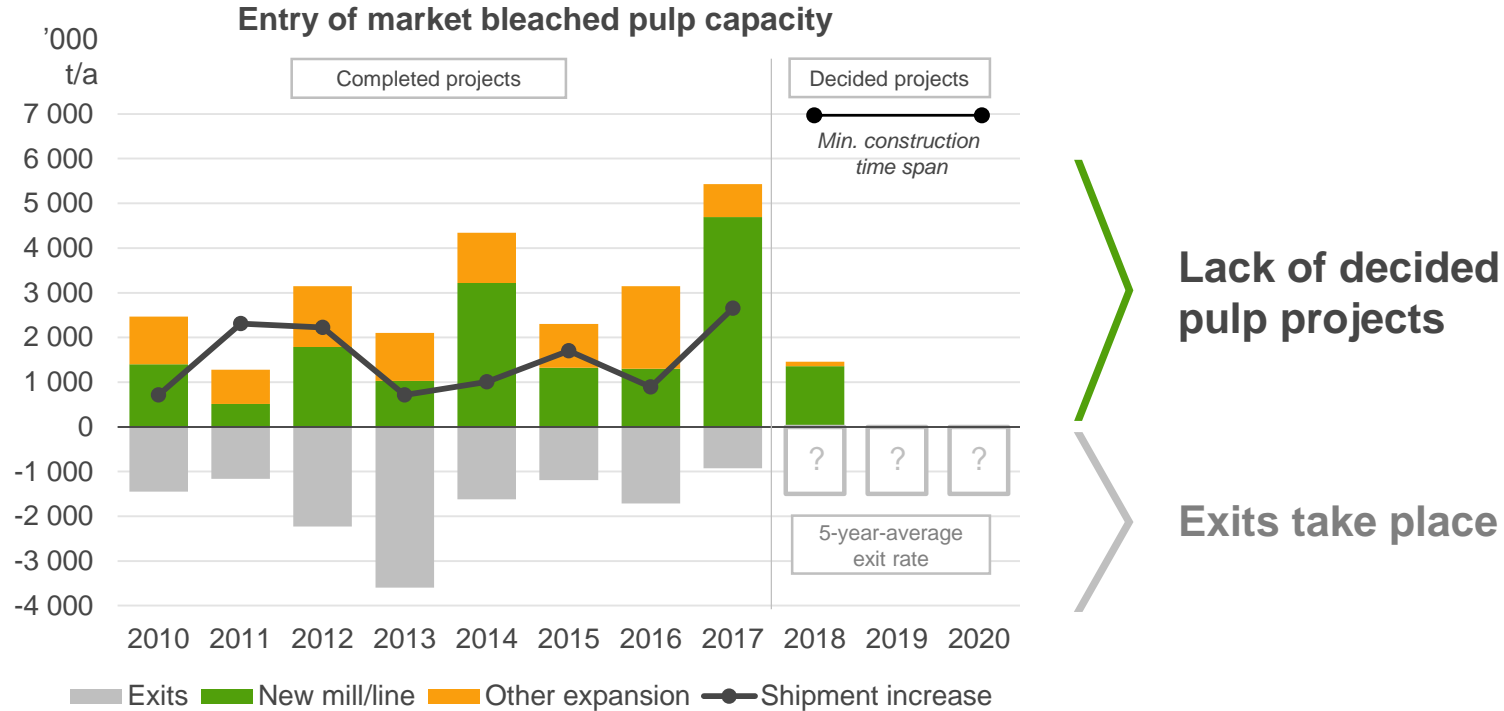
Source: UPM, Pöyry, RISI



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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

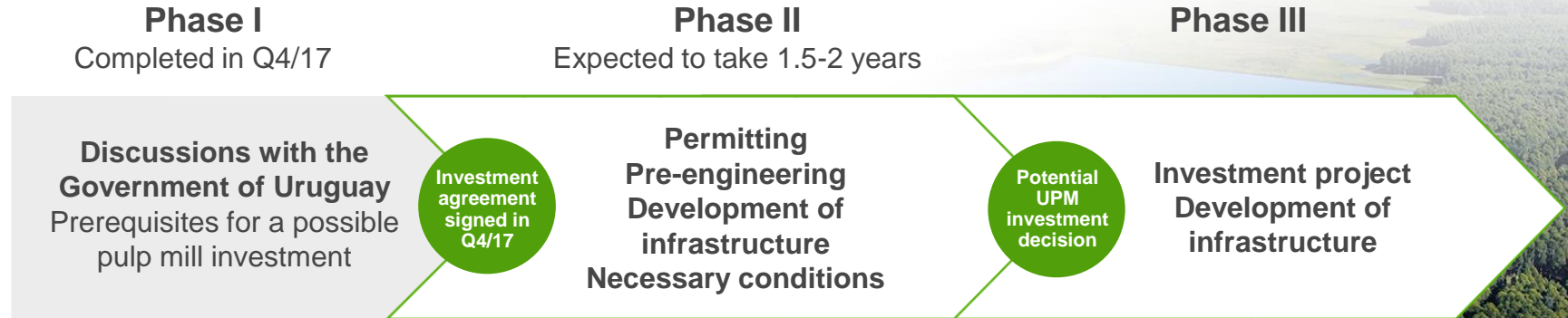


Uruguay prospect

- 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:

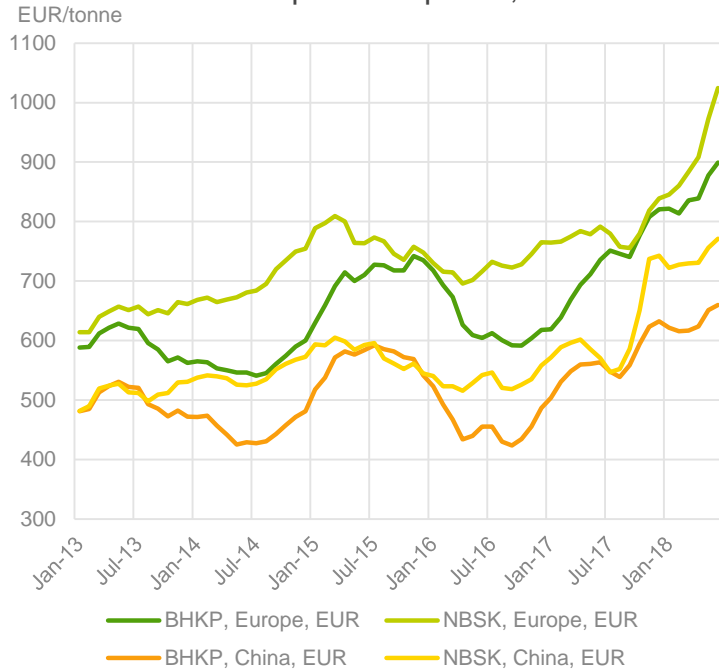
- Mill permitting, pre-engineering
- Rail permitting, tendering, start construction
- Port permitting, tendering, concession
- Roads
- Labour protocols, regulation
- Investment regimes
- Regional planning and development
- Energy and complementary items

UPM Biorefining

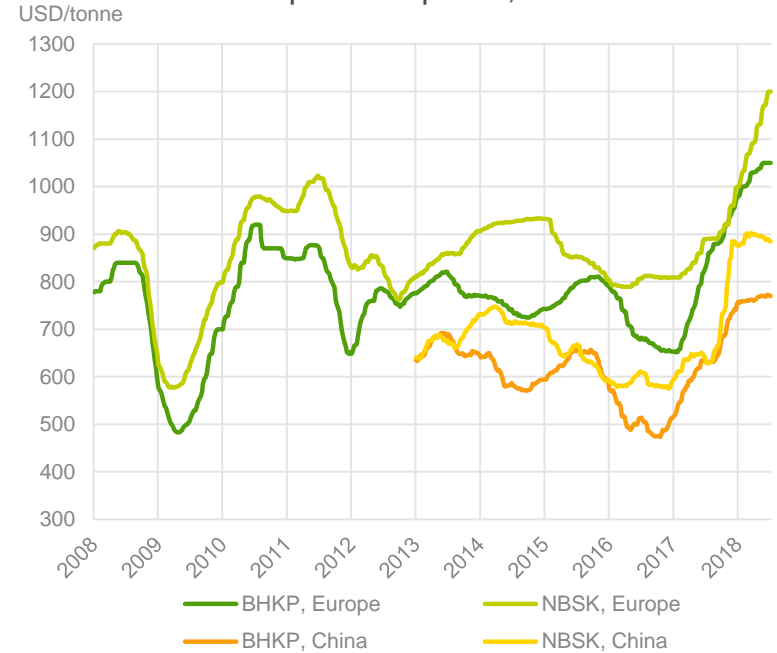
Chemical pulp market prices



Pulp market prices, EUR



Pulp market prices, USD

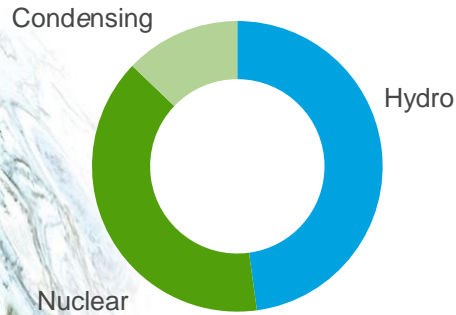


Sources: FOEX Indexes Ltd, ECB

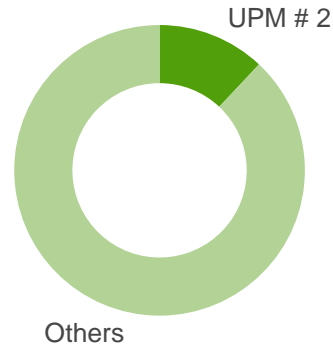
UPM's power generation – competitive in all market conditions



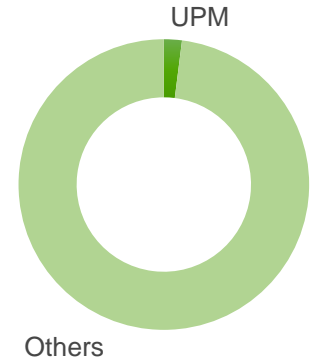
UPM's power generation assets



UPM in Finland



UPM in Nordics

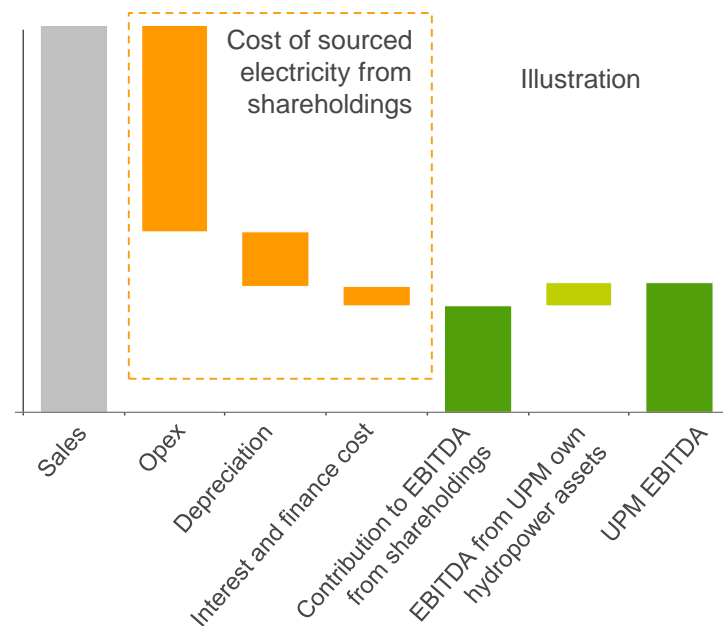


UPM Energy

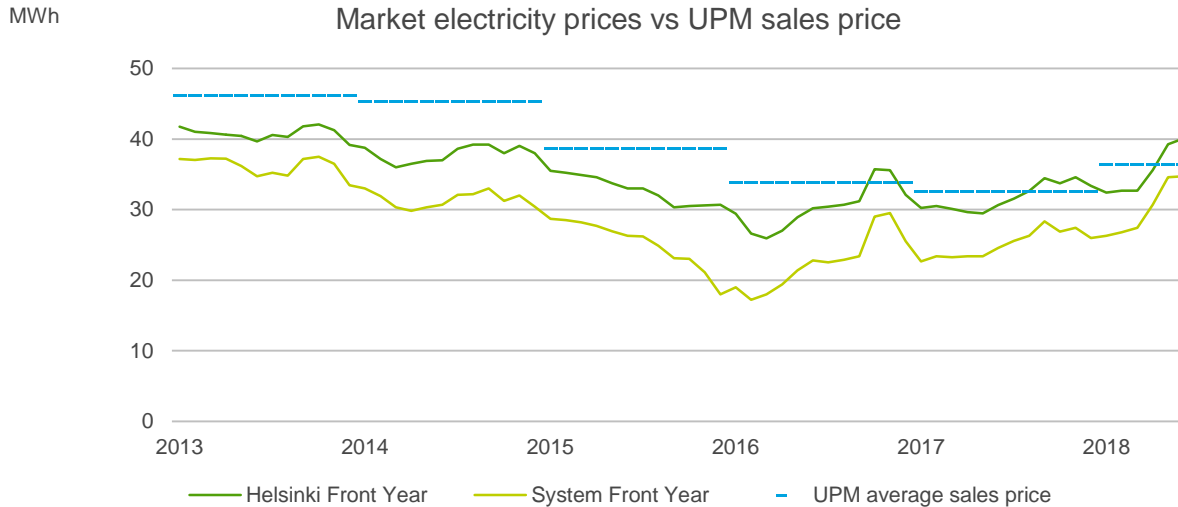
UPM Energy

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

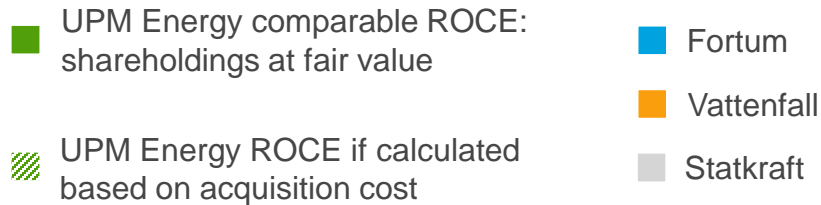


UPM Energy profitability	2013	2014	2015	2016	2017	H1/18
Comparable EBIT, EURm	186	202	181	116	91	63
% of sales	39.9	43.5	43.6	32.7	28.8	32.8

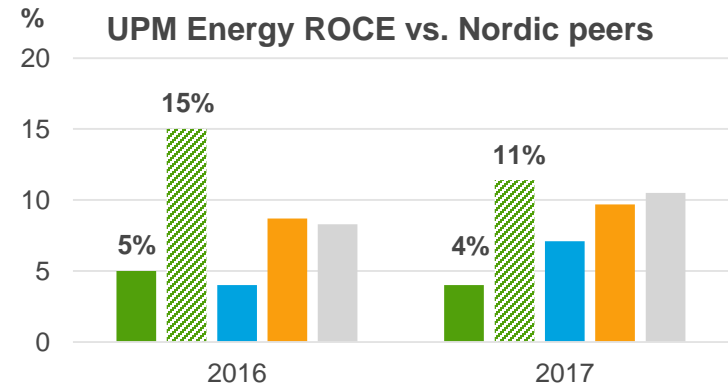
UPM Energy

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



The Biofore Company



PHARMACEUTICALS



WINE, SPIRITS & CRAFT BEVERAGE



FOOD



HOME & PERSONAL CARE



DURABLES



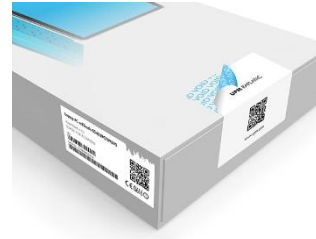
TRANSPORT & LOGISTICS



RETAIL, OIL & INDUSTRIAL



A4 & CUT-SIZE



SECURITY & BRAND PROTECTION



TYRE

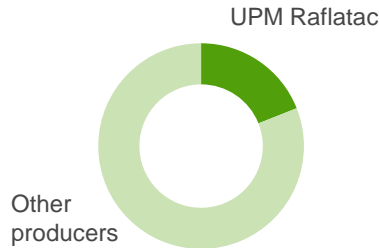
UPM Raflatac

The self-adhesive labelstock market

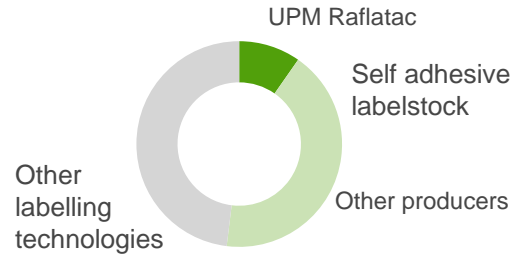
- >EUR 8bn global market
- ~4% p.a. growth
- Private consumption driven
- Largest of the labelling technologies
- ~1/5 of total self adhesive materials markets



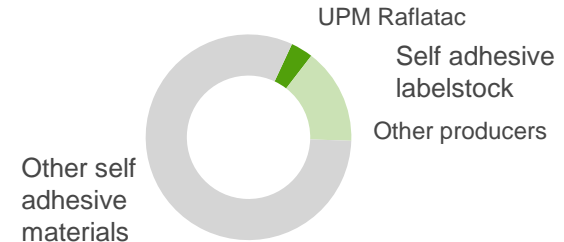
Self-adhesive labelstock market



All labelling technologies



All self adhesive materials



UPM Raflatac

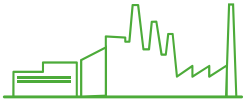
Strategy for profitable growth



Increased customer reach



Wider product portfolio



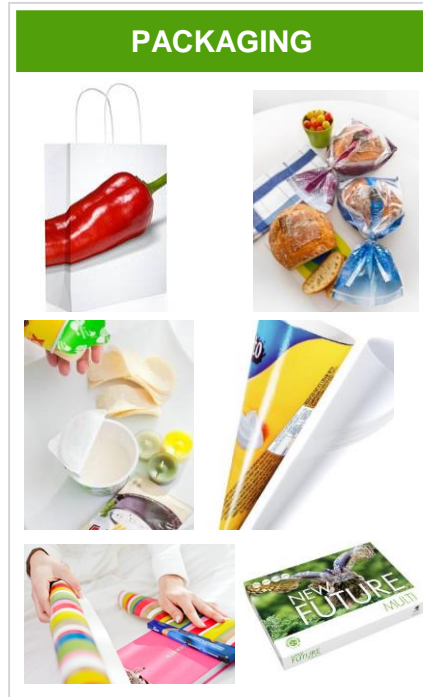
Winning operations



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





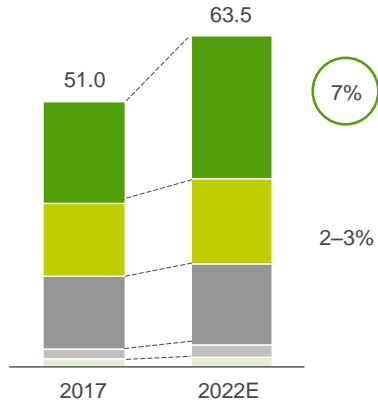
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UPM Specialty Papers Strong position in growing end use markets

LEADERSHIP POSITION IN LABELLING MATERIALS

CASE: Siliconized release liner market, 51 Bn m²

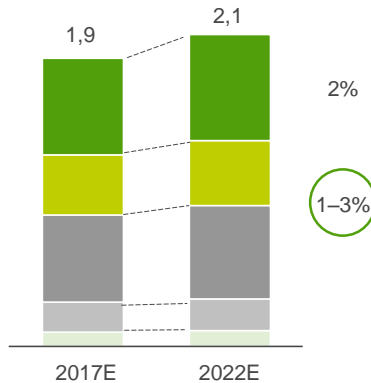
CAGR
5%



NICHE PLAYER IN CONSUMER PACKAGING

Paper flexpack, million tonnes

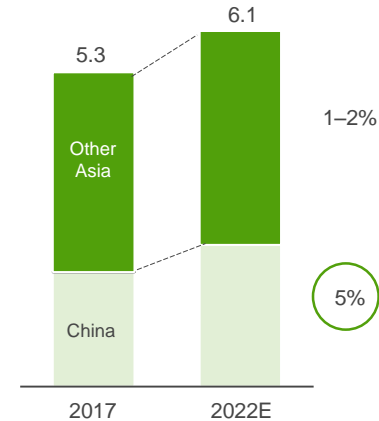
CAGR
2%



MAJOR SUPPLIER OF OFFICE PAPER IN ASIA

Asian cutsize market, million tonnes

CAGR
2-3%



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

Source: AWA; Pira, UPM



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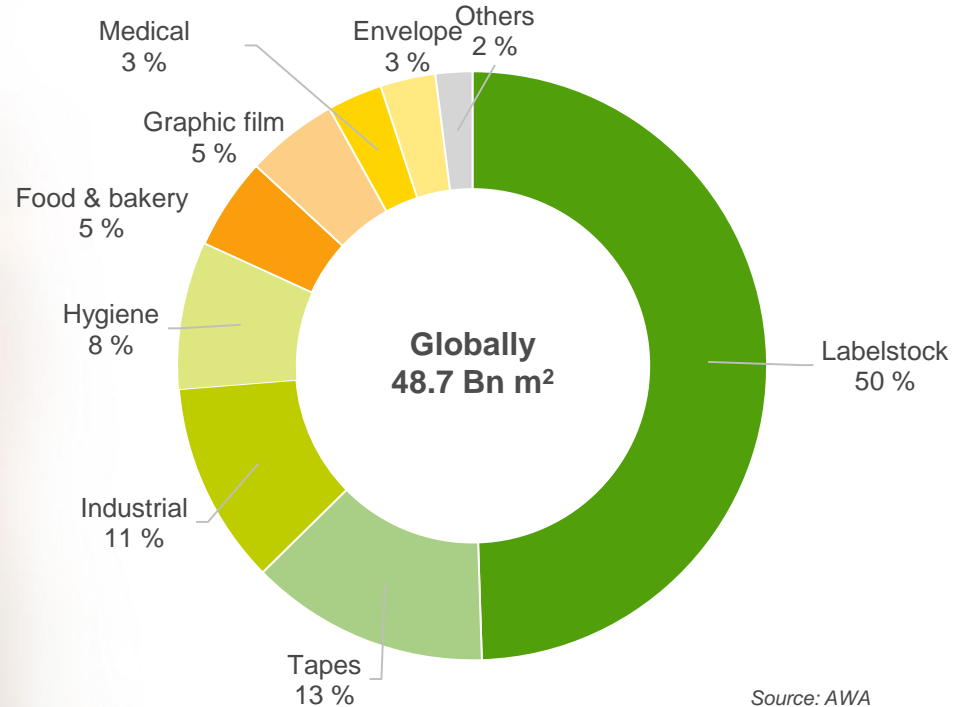
UPM Specialty Papers

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

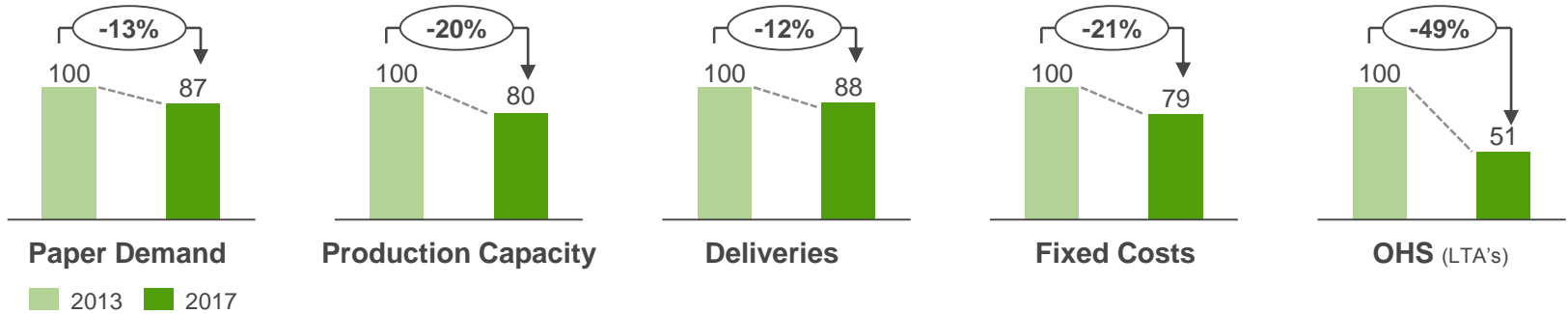


UPM Communication Papers

Delivering according to our strategy



The Biofore Company



... 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



The Biofore
Company

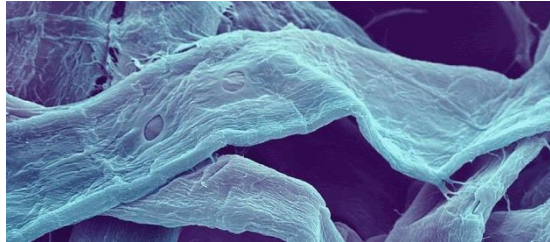
1 Uncompromising performance



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

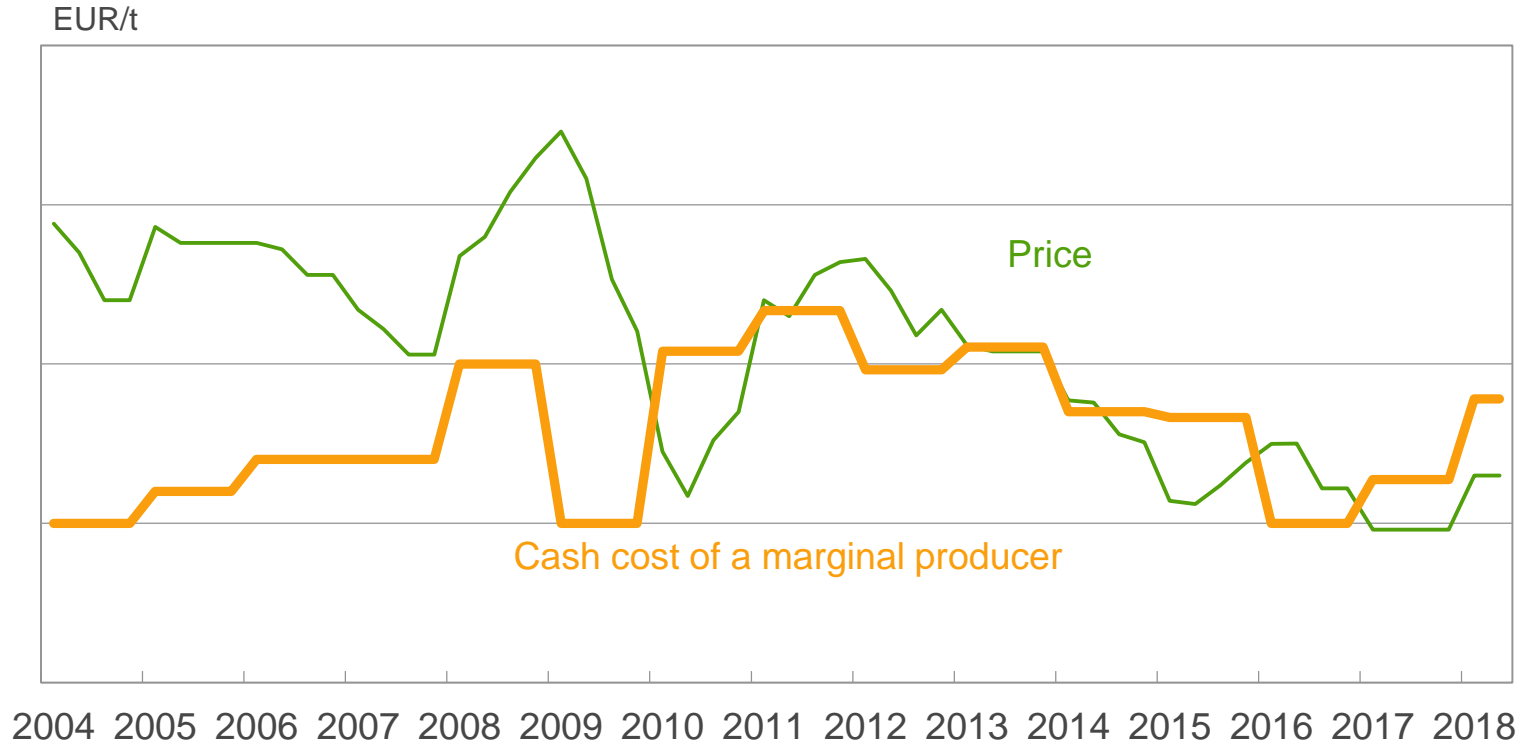


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UPM Communication Papers

Paper price vs. cash cost of marginal cost producer





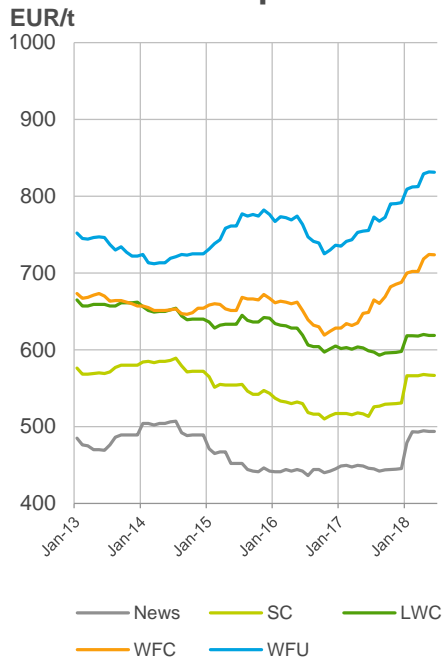
UPM

The Biofore Company

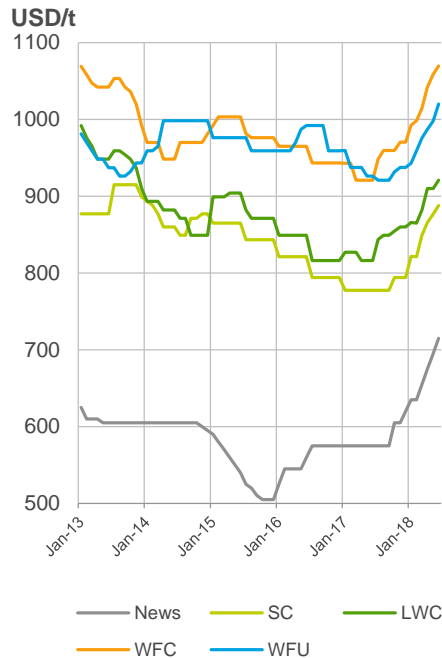
UPM Communication Papers

Graphic paper prices

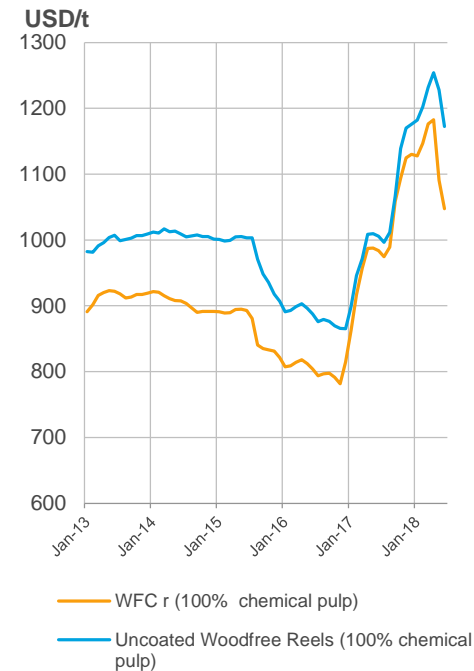
Europe



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

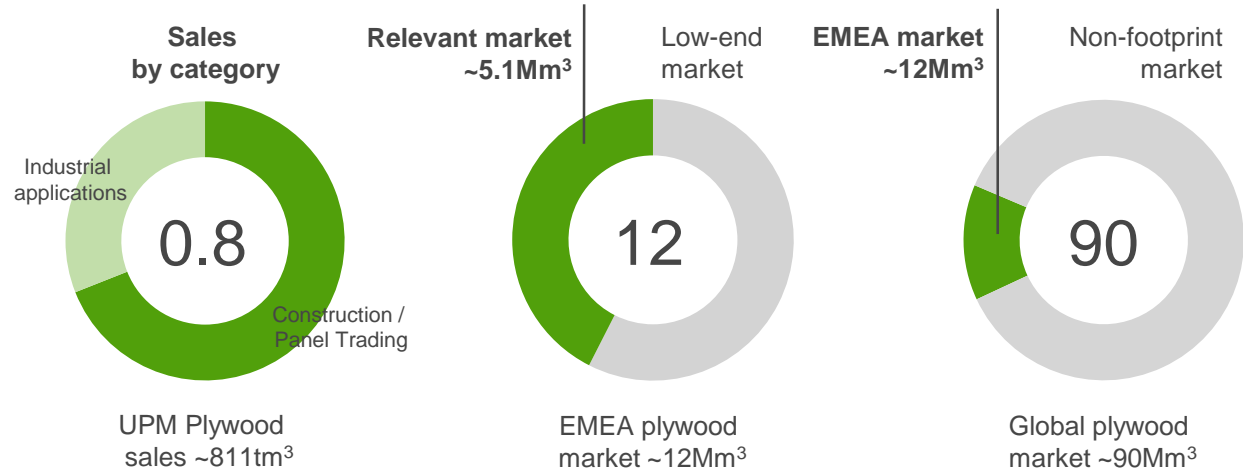
- Global leader in LNG plywood
- Competitive edge based on right quality and accurate on-time deliveries
- Long term commitment and benchmark service level
- Focus to secure leading position in LNG carriers and to extend offering into related applications using the same technologies (e.g. land storage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



New horizons in bioeconomy



Biomolecules

Biofuels
Biochemicals



Fibres

Pulp
Paper
Packaging
Tissue
Labelling materials
Biocomposites



Logs

Sawn timber
Plywood

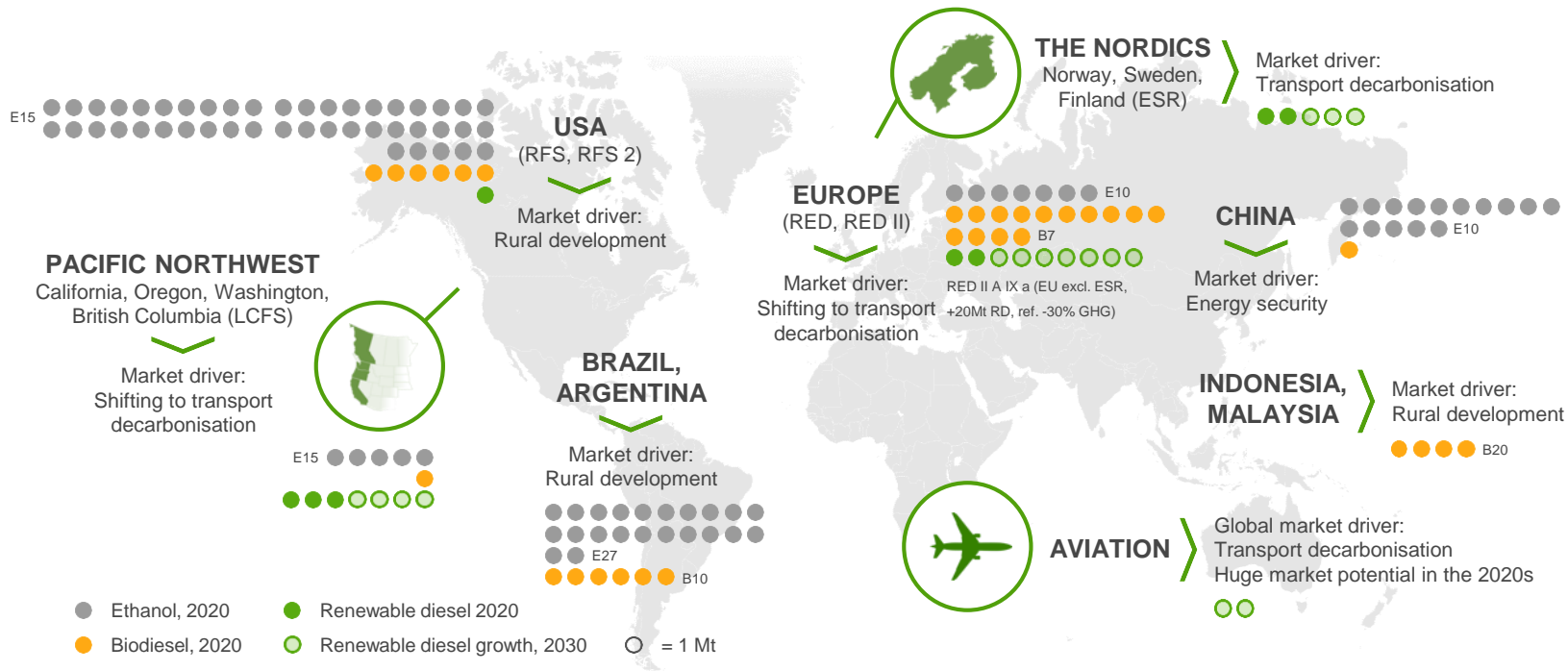


Trees

Energy

UPM Biofuels

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

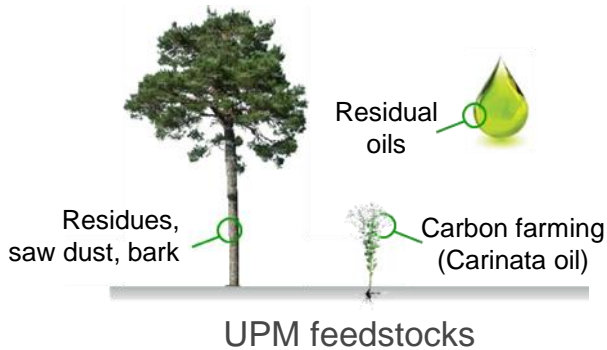


Source: UPM

UPM Biofuels

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

- ✓ Competitive and sustainable feedstocks



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

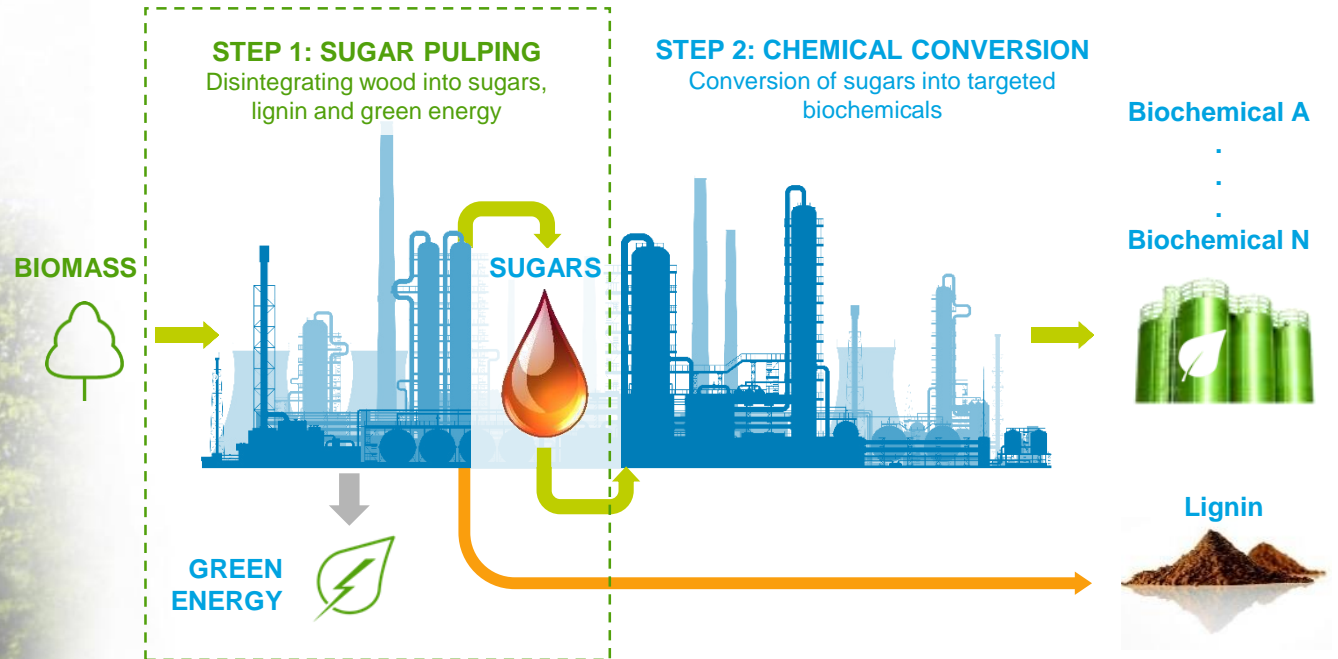


The Biofore Company

BIOREFINERY PROCESS

FIXED TECHNOLOGY PLATFORM

VARIABLE FOR EACH BIOREFINERY

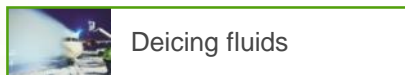
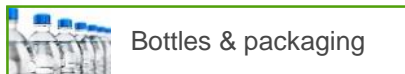
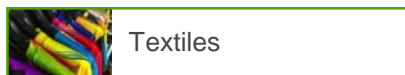


Biochemicals biorefinery targeting to produce bio-MEG, bio-MPG and lignin from hardwood



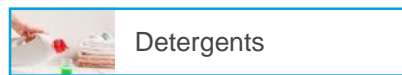
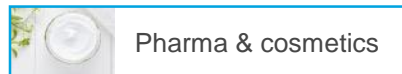
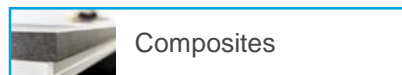
Monoethylene glycol

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



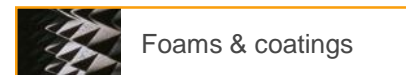
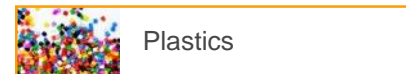
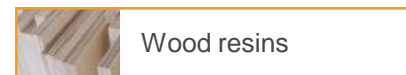
Monopropylene glycol

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



Biorefinery lignin

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





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