<table>
<thead>
<tr>
<th>UPM BIOREFINING</th>
<th>UPM ENERGY</th>
<th>UPM RAFLATAC</th>
<th>UPM SPECIALTY PAPERS</th>
<th>UPM PAPER ENA</th>
<th>UPM PLYWOOD</th>
<th>UPM BIOCOMPOSITES</th>
<th>UPM BIOCHEMICALS</th>
<th>WOOD SOURCING AND FORESTRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulp</td>
<td>Electricity generation and trading</td>
<td>Label materials for product and information labelling</td>
<td>Label papers, release liners, office papers and flexible packaging</td>
<td>Magazine papers, newsprint and fine papers</td>
<td>Plywood and veneer products</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biofuels</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Timber</td>
<td></td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>
Global businesses – local presence

UPM’s sales by market 2016
EUR 9,812 million

- 13% North America
- 63% Europe
- 18% Asia
- 6% Rest of the world

12,000 customers in 120 countries
85,000 shareholders in 40 countries
55,000 suppliers in 70 countries

54 production plants in 12 countries
19,300 employees in 45 countries
## UPM in transformation

### Operating model
Promotes value creation

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

<table>
<thead>
<tr>
<th>Sales</th>
<th>2008</th>
<th>2016</th>
<th>Operating model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper</td>
<td>EUR 9.5bn</td>
<td>EUR 9.8bn</td>
<td></td>
</tr>
<tr>
<td>Plywood</td>
<td>EUR 513m</td>
<td>EUR 1,143m</td>
<td></td>
</tr>
<tr>
<td>Raflatac</td>
<td>3.5%</td>
<td>10.9%</td>
<td></td>
</tr>
<tr>
<td>Sawmilling</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Sales**
- **EBIT**
- **ROE**

### Business performance
Continuous improvement in financial, social and environmental performance

<table>
<thead>
<tr>
<th>Net debt</th>
<th>2008</th>
<th>2016</th>
<th>Disciplined capital allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>EUR 4.3bn</td>
<td>EUR 1.1bn</td>
<td>EUR 12.5bn</td>
<td></td>
</tr>
</tbody>
</table>

**Disciplined capital allocation**
Driving value creation

---

*excluding special items for 2008, comparable figures for 2016*
Competitive businesses with strong market positions
Operating on healthily growing markets

Growth drivers:
- Private consumption
- Sustainability
- Population growth
- Urbanisation
- E-commerce
- Construction
- Transportation

UPM PLYWOOD
Plywood, veneer ~3%

UPM PAPER ENA
Graphic papers ~ -4%

UPM Specialty Papers
Label papers ~4%
High-end office papers ~4%

UPM RAFLATAC
Self-adhesive labels ~4%

UPM BIOREFINING
- Pulp ~3%
- Biofuels strong
- Timber ~2%

UPM ENERGY
Electricity ~1%

By comparable EBIT 2016
Demand trend growth, % pa
Increasing share of businesses with strong long-term fundamentals for profitability and growth

Sales 2016

- Sustainable growth
- UPM Biorefining
- UPM Raflatac
- UPM Specialty Papers
- UPM Plywood
- UPM Energy
- Maintaining strong cash flow
- UPM Paper ENA

Focused Investments

- Pulp +70,000t
- Pulp +100,000t
- Pulp +170,000t
- Label stock expansions
- Renewable diesel +120m litres
- Specialty papers +360,000t
- Pulp mill efficiency improvement
- Plywood +40,000 m³
- Label stock expansion

Capacity Closures and Divestments

- 420,000t magazine
- 460,000t magazine
- 280,000t news
- 305,000t magazine
- 160,000t fine
- 345,000t news
Value creation through sustainable growth and cash generation

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

Maintain strong cash flow
- Commercial success
- Cost efficiency
- Efficient use of assets, including restructuring

**UPM Biorefining**
- 2013: 600 EURm
- 2014: 600 EURm
- 2015: 800 EURm
- 2016: 800 EURm

**UPM Raflatac**
- 2013: 200 EURm
- 2014: 300 EURm
- 2015: 300 EURm
- 2016: 400 EURm

**UPM Specialty Papers**
- 2013: 500 EURm
- 2014: 500 EURm
- 2015: 600 EURm
- 2016: 600 EURm

**UPM Plywood**
- 2013: 400 EURm
- 2014: 400 EURm
- 2015: 400 EURm
- 2016: 400 EURm

**UPM Energy**
- 2013: 300 EURm
- 2014: 300 EURm
- 2015: 300 EURm
- 2016: 300 EURm

**UPM Paper ENA**
- 2013: 100 EURm
- 2014: 200 EURm
- 2015: 100 EURm
- 2016: 500 EURm

**Sales 2016**
- 100%
- 75%
- 50%
- 25%
- 0%

**Operating cash flow**
- 2013: 100 EURm
- 2014: 200 EURm
- 2015: 100 EURm
- 2016: 500 EURm

**Comparable EBIT**
- 2013: 20 EURm
- 2014: 20 EURm
- 2015: 40 EURm
- 2016: 60 EURm

**% of sales**
- 2013: 8%
- 2014: 12%
- 2015: 16%
- 2016: 16%
Serving the increasing customer demand with the help of the growth initiatives

Fully contributing
- Pietarsaari pulp mill expansion
- Fray Bentos pulp mill expansion
- Kymi pulp mill expansion
- Raflatac expansion in APAC, Poland
- Kaukas pulp mill efficiency

Contributing well in Q1 2017
- Lappeenranta biorefinery
- Changshu speciality paper machine
- Otepää plywood mill expansion

Under construction
- Kymi pulp mill expansion
- Raflatac expansion in Poland
Focused investments are delivering growth

<table>
<thead>
<tr>
<th>Sales 2016</th>
<th>UPM Biorefining</th>
<th>Pulp</th>
<th>Biofuels</th>
<th>CAGR +3%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>UPM Raflatac</td>
<td>Standard products</td>
<td>Films and specials</td>
<td>CAGR +4%</td>
</tr>
<tr>
<td></td>
<td>UPM Specialty Papers</td>
<td>Label materials</td>
<td>Cut-size</td>
<td>CAGR +8%</td>
</tr>
<tr>
<td></td>
<td>UPM Plywood</td>
<td>Plywood</td>
<td></td>
<td>CAGR +3%</td>
</tr>
</tbody>
</table>

Average delivery growth 2011 – 2016
Business area long-term targets compared with realised returns

- **UPM Energy**
  - ROCE %
  - Shareholdings in UPM Energy valued at fair value

- **UPM Biorefining**
  - ROCE %

- **UPM Specialty Papers**
  - ROCE %

- **UPM Paper ENA**
  - FCF/CE %

- **UPM Plywood**
  - ROCE %

- **UPM Rafilatac**
  - ROCE %

*Shareholdings in UPM Energy valued at fair value*
Group financial performance

Comparable EBIT

Comparative ROE

Net debt and leverage

Target: EBIT growth

Target: 10%

Comparable figures for 2014 - Q1 2017, excluding special items for earlier years
Direction: grow businesses with strong long-term fundamentals and sustainable competitive advantage

Operating model
→ Better than sum of parts
- Separate businesses
- Top performance
- Corporate benefits

Performance
→ Continuous improvement
- Profit focus
- High performing people
- Value-based leadership and responsibility
- Innovation

Capability
→ Foundation for opportunities
- Strong cash flow
- Strong balance sheet
- Corporate structure

Capital allocation
→ Attractive returns
- Attractive dividend
- Focused growth investments
- Selected larger investments
- Synergistic M&A

Growth
→ Earnings growth and valuation
- Current growing businesses
- New bio-based businesses
Financial performance in 2016 – disciplined capital allocation in action

Top performance
Comparable EBIT
EUR 1,143m
+25%

Comparable ROE
10.9%
+1.4%pp

Strong cash flow
Operating cash flow
EUR 1,686m
+42%

Attractive dividend
Dividend
EUR 507m
+27%

Focused investments
Capital expenditure
EUR 325m
Attractive returns
reached 80% of the EUR 200m EBITDA target set for the first wave of growth projects

Net debt reduction
EUR 969m, –46%

Industry-leading balance sheet
Net debt/EBITDA 0.73x

5/6 business areas achieved their financial targets
Strong cash flow and balance sheet

Operating cash flow

- Q1/17 operating cash flow EUR 396m
- Working capital decreased by EUR 36m

Net debt

- Net debt / EBITDA (trailing12 months)
  - 2011: 4.0
  - 2012: 3.5
  - 2013: 3.0
  - 2014: 2.5
  - 2015: 2.0
  - 2016: 1.5
  - Q1/17 LTM: 0.52x
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 of EUR 1,686m
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
UPM businesses delivered a strong Q1 2017

- Comparable EBIT increased by 8% to EUR 305m (281m)
- Operating cash flow was strong at EUR 396m (341m)
- Net debt decreased to EUR 807m (1,873m), net debt/EBITDA to 0.52x (1.31x)
- Comparable ROE (LTM) increased to 11.1% (10.0%)
- Operating cash flow (LTM) was EUR 1,741m, EUR 3.26 per share
Q1 2017 – strong operational efficiency and good growth in deliveries

**UPM BIOREFINING**
- Record production in Pulp, Biofuels and Timber
- Pulp deliveries +8%
- Good demand growth, particularly in China

**UPM PAPER ENA**
- Another good quarter
- Sale agreements of hydropower assets
- Closed 305,000t of capacity
- Graphic paper deliveries –2%

**UPM ENERGY**
- Hydropower generation below long-term average
- Market prices depressed by mild weather conditions

**UPM SPECIALTY PAPERS**
- Record profits
- Good progress in product mix
- Deliveries +3%
- Good demand growth, particularly in Asia

**UPM RAFLATAÇ**
- Record profits
- Deliveries +6%
- Good demand growth, particularly in Asia

**UPM PLYWOOD**
- Record profits
- Deliveries +7%, favourable product mix
- Good demand, activity in construction improved further
Comparable EBIT by business area

- **UPM Biorefining**
  - EURm: 150
  - % of sales: 25

- **UPM Specialty Papers**
  - EURm: 50
  - % of sales: 12.5

- **UPM Energy**
  - EURm: 120
  - % of sales: 60

- **UPM Raflatac**
  - EURm: 50
  - % of sales: 12.5

- **UPM Paper ENA**
  - EURm: 120
  - % of sales: 12

- **UPM Plywood**
  - EURm: 25
  - % of sales: 20

- **UPM Energy**
  - EURm: 120
  - % of sales: 60

- **UPM Raflatac**
  - EURm: 50
  - % of sales: 12.5
Comparable EBIT in Q1 2017 vs. Q1 2016


Outlook for 2017

• UPM’s profitability improved significantly in 2016 and is expected to remain on a good level in 2017.

• 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 gradually 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.

• In Q2 2017, UPM’s performance will be impacted by higher maintenance activity, especially in UPM Biorefining, UPM Paper ENA and UPM Energy, compared with Q1 2017.
Responsibility is good business

"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."

UPM Annual Report 2015
Creating competitive advantage and long-term value by engagement

Safety

Lost-time accident frequency

5-year change: -76%

Employee engagement

Manager effectiveness

Employee engagement

5-year change: +9

Productivity

Sales per employee

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)

COD in effluent: -75% (Per tonne of paper)
SO₂ emission: -90% (Per tonne of paper)

Source: UPM
Consistent long-term work receives external recognition

UPM in sustainability indices

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

Source: Nasdaq, September 2016
Market pulp consumed in growing end-uses – supply of alternative white fibres declines

Global paper and board production

- Stressed supply of white recycled fibre
- Mixed collection crowding out white recycled fibre
- Market pulp consumption in growing end-uses
Case: Market pulp consumption in growing end-uses

Fibre consumption in tissue, cartonboard and specialty end-uses

- White integrated pulp: 10
- White market pulp: 30
- Other fibres (RCP, mechanical pulps…): 85

5% demand increase in tissue, cartonboard and specialty end-uses

Increase in market pulp consumption

Source: Pöyry, Hawkins Wright, UPM
UPM Biorefining
Case: Stressed supply of white recycled paper

- 5% fall in global graphic paper production
- 125 Million tonnes

-2

Fall in market pulp demand

+3

Market pulp to replace fall in white recycled paper supply

+1

Net increase in market pulp demand

Source: Pöyry, UPM
Case: Mixed collection crowding out white recycled fibre

White RCP grades 75
Mixed RCP 49
Old corrugated boxes 135

5%-point increase in mixed collection share

Market pulp to replace fall in white recycled paper

Million tonnes

Source: Pöyry, UPM
UPM Biorefining

Summary of pulp demand outlook

Increase in end use …

Mt
600
500
400
300
200
100
0

2010 2020 2030

Decline in Graphic papers
Healthy growth in other White Papers & Boards
Strong growth in Containerboards (brown fibre)

… will drive fibre demand in coming decades

Mt
600
500
400
300
200
100
0

2010 2020 2030

Growth in Market pulp vs. decline in Integrated pulp
Declining White RCP
Demand of Brown fibre may overwhelm the supply

Source: UPM, Pöyry, RISI
White fibres in different stages of life-cycle; 64 Mt capacity closed within 2000–2015

- **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.

Note: Including both market and integrated pulp

Source: Pöyry
UPM Biorefining

Chemical pulp market

Q1 NBSK pulp price increased by 1% from Q4
Q1 BHKP pulp price increased by 4% from Q4

Source: FOEX Indexes Ltd.

Pulp inventories

Source: PPC World-20 statistics
Potential pulp mill in Uruguay could be a competitive alternative – time schedule is several years

- Phase I: Conversation with Government of Uruguay on local prerequisites
- Phase II: Development of infrastructure and permitting (est. 1.5 – 2 years)
- Phase III: Investment project development of infrastructure (est. 2.5 years)
- Potential UPM investment decision
UPM Biorefining

UPM Biofuels in existing and future end-use

Fuel retail

Dedicated green fleets

Marine/Aviation
UPM Biorefining

UPM Biofuels business evolving

- UPM enters Biofuels
- Evaluate technologies, define business case
- Investment decision 2012
- Build Lappeenranta Biorefinery and Biofuels organization
- Establish Bioverno as a benchmark product and brand in biofuels
- Technology and Business case proven
- Commercial start 2015
- Start evaluation of future growth opportunities

2010 - 2020
EU’s greenhouse gas reduction targets cannot be met without significant emission cuts in transport – actions needed in all sectors.

- 80% by 2050
- 60% by 2040
- 40% by 2030

25% of total emissions in Europe from transport

Transport emissions by sector

- Marine 14%
- Aviation 13%
- Road transport, heavy-duty 18%
- Road transport, light-duty 55%

Drop-in biofuels are a solution for GHG reduction in all transport sectors

Electric vehicles can be applied in light-duty road transport
Decarbonizing European transport requires effective use of all energy and technology options – renewable drop-in fuels a fast-lane solution

- 40% reduction in road transport emissions vs. reference year 2005

** Calculated based on “Global EV sales outlook to 2040” by Bloomberg New Energy Finance
* Assuming EV’s represent 38% of new car sales in Europe by 2040 + EV’s are fully emission free
** Assuming annual energy efficiency improvement of 2% in light-duty, 0.5% in heavy-duty
UPM Energy

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

Cost efficient generation enables robust profitability also in challenging market environment

<table>
<thead>
<tr>
<th>UPM Energy profitability</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>Q117</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comparable EBIT, EURm</td>
<td>217</td>
<td>186</td>
<td>202</td>
<td>181</td>
<td>116</td>
<td>22</td>
</tr>
<tr>
<td>% of sales</td>
<td>45.0</td>
<td>39.9</td>
<td>43.5</td>
<td>43.6</td>
<td>32.7</td>
<td>27.5</td>
</tr>
</tbody>
</table>
UPM Raflatac

Self-adhesive labels in end-use
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
- EMEIA: 75% (25%), 25%
- Americas: 85% (15%), 15%
- APAC: 90% (10%), 10%
UPM Raflatac

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
UPM Specialty Papers

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

Our end use markets are growing

**LABELING MATERIAL**

CASE: Siliconized release liner market, 44 Bn m²

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
<th>2020E</th>
</tr>
</thead>
<tbody>
<tr>
<td>44</td>
<td>60</td>
<td></td>
</tr>
</tbody>
</table>

CAGR 5%

**PACKAGING**

Paper flexpack, k tonnes

<table>
<thead>
<tr>
<th>2015</th>
<th>2020E</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,370</td>
<td>2,702</td>
</tr>
</tbody>
</table>

CAGR 2%

**OFFICE PAPER ASIA**

Asian cut size market, million tonnes

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2020E</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

CAGR 2.5%

~$12 Bn

~$58 Bn

~$4 Bn

Mkt value

- Asia
- North America
- Europe
- South America
- MEA

2014: 44
2020E: 60
CAGR 5%

2015: 2,370
2020E: 2,702
CAGR 2%

2015: 4
2020E: 6
CAGR 2.5%
UPM Specialty Papers

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

Source: AWA
UPM Specialty Papers

Changshu mill: focus on growing end uses with a flexible swing production line

**Business plan**

- Accelerate growth of glassine
- Invest in the development of specialty grades – end-use segments in packaging
- Service existing long-term customers with graphic paper grades (WFU and WFC)
- Continue to grow in the “quality” copy paper segment primarily in China

**Illustration: UPM Changshu Mill Quarterly Capacity**

- WFU: wood free uncoated
- WFC: wood free coated

Source: UPM
Paper demand by end use – different trends

- 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.

Source: Euro-Graph
What does it take to perform in challenging markets?

1. Assets
   - Stringent capacity management

2. Sales
   - Profound customer- and market understanding

3. Cost base
   - Smart initiatives in push mode

4. Cash flow
   - Performance management and discipline
Demand-supply balance in European graphic paper is visible in margins

Sources: PPI, RISI, Pöyry
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
Selected focus end-uses provide further growth potential

- The recovery of the European construction sector is driving demand (annual growth 2–3% p.a.)
- The financial crisis created a backlog for trailers driving the current replacement need (average growth 4% p.a.)
- The LNG market is expected to remain solid as countries secure energy availability, thereby supporting the demand for LNG vessels (existing order book for plywood based LNGC ~90 vessels)

Sources: Euroconstruct, West European trailer registrations for Big 7 Countries (1985–2016), LNG World Shipping
New business opportunities for UPM

**Biofuels**
- High volume products
- Economies of scale
- Drop-in applications

**Biochemicals**
- Life science prod. e.g. cell culturing and medical care
- Performance chemicals e.g. resin for plywood manufacturing

**Biorefinery Chemicals**

**Biofibrils**

**Lignin**

**Biocomposites**
- Terrace materials
- New applications, e.g. acoustics pr.

- Market entry
- Scale up

- 100 kt renewable diesel
New separation technologies ensure best overall value capture.
Partial overlap with fossil-based value chains in chemicals

- **Feedstocks**
  - Oil
  - Gas
  - Coal
  - Biomass

- **Key Intermediates**
  - C1: Syngas
  - C2: Ethylene
  - C3: Propylene
  - C4: Butadiene
  - C5: Xylose
  - C6: Benzene
  - C7: Toluene
  - C8: Xylene

- **Chemical Building Blocks**
  - 600 Mtons

- **Final products**
  - 10 Mtons