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Purpose

We create value by seizing the limitless potential of bioeconomy.

Vision

We lead the forest-based bioindustry into a sustainable, innovation-driven, and exciting future.

Values

Trust and be trusted
Achieve together
Renew with courage

Limitless opportunities of bioeconomy

New middle class consumers in emerging economies and developing consumer behaviour globally will create significant new demand in the coming decades. This will raise the bar for businesses when it comes to responsibility, integrity and use of resources. Answering the consumer demand growth with sustainable and safe solutions provides limitless opportunities for UPM’s businesses today and in the future.
Biofore Company

UPM leads the forest-based bioindustry into a sustainable, innovation-driven, and exciting future across six business areas. We provide sustainable and safe solutions to the growing global consumer demand. Our products are made of renewable and biodegradable raw materials and are recyclable.

UPM Biorefining consists of pulp, timber and biofuels businesses. UPM Pulp offers versatile range of sustainably produced pulp grades suitable for a wide range of end-uses such as tissue, specialty paper, graphic papers and board. UPM Timber offers certified sawn timber for construction, joinery and furniture, for example. UPM Biofuels produces wood-based renewable diesel for all diesel engines and renewable naphtha that can be used as a biocomponent for gasoline or for replacing fossil raw materials in bioplastics.

UPM Energy creates value through cost competitive, low-emission electricity generation and through physical electricity, financial trading and optimisation services for industrial consumers.

UPM Raflatac manufactures self-adhesive label materials for product and information labelling in the food, beverage, personal care, pharmaceutical and retail segments, for example.

UPM Specialty Papers manufactures label papers, release liners, office papers and flexible packaging for labelling, packing, wrapping and printing.

UPM Paper ENA offers an extensive product range of graphic papers for advertising and publishing as well as home and office uses.

UPM Plywood offers plywood and veneer products, mainly for construction, vehicle flooring and LNG shipbuilding as well as other manufacturing industries.

Wood Sourcing and Forestry secures competitive wood and biomass for UPM businesses and manages UPM-owned and privately owned forests in North Europe. In addition, UPM offers forestry services to forest owners and forest investors. UPM Biochemicals and UPM Biocomposites business units are also included in Other operations.
Key performance indicators

Top performance
Compared EBIT
EUR 1,292m
+13%
Compared ROE
11.9%
+1.0pp

Strong cash flow
Operating cash flow
EUR 1,558m
+21%

Attractive dividend
Dividend (proposed)
EUR 613m
+21%

Focused investments
Capital expenditure
EUR 329m
attractive returns with
disciplined and effective
investments

Industry-leading balance sheet
Net debt reduction
EUR 957m
-85%
Net debt/EBITDA
0.11x

In brief
5/6
business areas achieved
their financial targets

Read more:
www.upm.com/investors

Global businesses – local presence

UPM’s sales by market 2017
EUR 10,010 million

13% North America
62% Europe
20% Asia
5% Rest of the world

54 production plants
in 12 countries
90,000 shareholders
in 35 countries
12,000 customers
in 120 countries
19,100 employees
in 46 countries
25,000 b-to-b suppliers
in 75 countries

EVENTS IN 2017

1 JANUARY
UPM renewed its long-term financial targets

27 MARCH
The paper machine 3 in Steyrermühl was permanently closed in Austria

17 MAY
UPM and FSC® signed a global strategic partnership

29 MAY
UPM Raflatac gained the world’s first FSC® certification for wood-based label stock

31 JUNE
UPM invests in efficiency and competitiveness of the UPM Kaskas pulp mill

28 JUNE
UPM tests brassica canova sequential cropping concept as part of biofuels future development

7 AUGUST
UPM Raflatac acquired the assets of Texas-based Southwest Label Stock distributing company

20 JUNE
UPM invests in efficiency and competitiveness of the UPM Kaukas pulp mill

28 JUNE
UPM tests Brassica canova sequential cropping concept as part of Biofuels future development

31 JULY
Sale of hydropower facilities in Austria and the US

NOVEMBER
UPM Kymi pulp mill investment completed

12 DECEMBER
UPM Rollins, expansion in Poland was completed

8 DECEMBER
UPM Biofuels won the Bioenergy Industry Leadership award

December
UPM and the Government of Uruguay signed an investment agreement to establish an operating platform for a possible new pulp mill in Uruguay

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% of active employees completed Code of Conduct training 98%

+1pp

The UPM Code of Conduct lays the foundation for responsible business operations and continuous improvement.

Share of certified wood 83%

+1pp

Forest certification is an excellent tool for ensuring sustainable forestry.

Share of certified wood 83%

+1pp

Creating climate solutions and working towards carbon neutrality.

CO2 emissions related to energy use 6.4 million t

-6%

Ensuring a safe working environment and safeguarding for employees and everyone working for UPM.

Total recordable injury frequency 8.2

-12%

Engaged, high-performing people implement the Biofore strategy and drive short- and long-term success.

Supplier Code qualified supplier spend 82%

+2pp

Transparent supplier requirements form the basis of responsible sourcing throughout the entire supply chain.

% of active employees completed Code of Conduct training 98%

+1pp

Employee engagement 71%

+2pp

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Forest certification is an excellent tool for ensuring sustainable forestry.
2017 was a record year for UPM. Once again, our business model, performance culture and effectiveness in capital expenditure delivered excellent results. Our comparable EBIT grew by EUR 149 million or 13% in 2017. Our cash flow was consistently strong, and we reduced our net debt by EUR 957 million over the course of the year, ending at a record low of EUR 174 million. We also made good progress in our non-financial performance – for example, our fossil CO₂ emissions decreased by 49,000 tonnes or 6%.

Our strategic guidance remained unchanged: Our portfolio consists of six competitive businesses with strong market positions and high barriers to entry. Performance, growth, innovation and responsibility continue to be the four cornerstones we build on. With such a strong foundation, we are now aiming higher. In 2017, we revised our purpose and vision statements. These statements crystallise the why and what of our company direction. Our purpose is to create value by seizing the limitless potential of bioeconomy. It means numerous profitable business opportunities, be it products or services, which are providing safe and sustainable solutions for growing global consumer demand.

We are building a more sustainable future by replacing oil-based and other non-renewable materials with renewable ones, by using them efficiently and creating entirely new kinds of products and services. Through innovation, we have the possibility to expand into completely new business areas.

Our people are what set UPM apart and enable our success. UPMers are accountable and performance-oriented. I have every reason to be proud of our employees. To reach the next level, we seek to be more outward looking and experimental in everyday matters, agile in our implementation and build on people’s diversity.

Foundation for the future growth
Going forward, we will maintain our focus on performance supported by our culture of continuous improvement and innovation. We will also continue to grow our businesses with attractive focused growth investments.

Furthermore, we are now well-positioned for new transformative projects. I am pleased that we have reached a cornerstone agreement with the Government of Uruguay, outlining the local prerequisites for a potential pulp mill investment. The infrastructure projects and the pre-engineering of the mill are in progress. For UPM’s pulp business, the potential mill would imply a change in business size and earnings.

Another opportunity for transformation comes with the emerging biomass-based businesses, biofuels and biochemicals. During the fourth quarter, we started a basic engineering study regarding a potential industrial-scale biochemical refinery in Germany. Biochemicals business could provide UPM with significant growth platform for decades to come.

Our objective is earnings growth, and we will therefore maintain our high standards when it comes to return requirements for growth investments.

Responsibility is good business
In the coming decades, changing consumer requirements and new consumers in Asian emerging economies will mean both significant new demand but also raised bar for businesses, when it comes to responsibility and integrity.

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

For the first time, the Report of UPM’s Board of Directors includes comprehensive non-financial report indicating our progress in the most material responsibility targets.

Over the course of the year, UPM received recognitions from several third parties. UPM was listed in the global Dow Jones Sustainability Index as an industry leader and was invited to the United Nations Global Compact LEAD forum as the only representative of forest industry, and the only Finnish participant.

Shareholder value at the core
Creating shareholder value is at the core of our strategy, and we believe this also benefits other stakeholders and society on the long term. Our transformation continued and the progress in financial and responsibility performance was reflected by a positive share price performance. Our share price increased by 11% during the year.

UPM’s Board of Directors has proposed a dividend of EUR 1.15 (0.95) per share for 2017, up 21% from last year.

Looking forward
UPM is in better standing than ever. Our renewed vision and purpose guide our ambition and what kind of a company we are aiming to be.

Over the next few years, we can allocate more capital to growing and transforming the company while simultaneously increasing the distribution to our shareholders and maintaining headroom in our strong balance sheet. We will also ensure that our employees have the competence, integrity and drive to make our strategy come true.

All in all, UPM is well-positioned for 2018 and beyond. UPM businesses provide sustainable and safe solutions for the growing global consumer demand, both today and in the future. Bioeconomy offers us limitless opportunities for value creation and growth.
UPM Strategy – Aiming higher

We create value by seizing …

… the limitless potential of bioeconomy

1 Performance
> Continuous improvement
  • Commercial excellence
  • Cost efficiency
  • High-performing people
  • Efficient use of assets and capital

2 Growth
> Earnings growth
  • Sustainable and safe solutions for growing global consumer demand
  • Growth projects with attractive and sustainable returns
  • Talent attraction

3 Innovation
> Growth and competitiveness
  • New businesses, products and technologies
  • Product, service and process development
  • Development of capabilities

4 Responsibility
> Continuous improvement
  • Renewable, recyclable and safe products
  • Responsible operations and value chain
  • Value-based leadership
  • Compliance

5 Portfolio
> Develop businesses with strong long-term fundamentals and sustainable competitive advantage
  • Transformative projects, synergistic M&A if opportunity and timing are right
  • Capitalise on corporate benefits and synergies
  • Disciplined and effective capital allocation and strong balance sheet
Moving forward

UPM aims higher with continued transformation and earnings growth.

Six strong business areas
UPM consists of six separate business areas. The business areas are competitive, with strong market positions and a leading financial and sustainability performance. Five of these business areas operate in healthy growing markets.

UPM corporate benefits
The UPM group creates value for its businesses and stakeholders with:
• Competitive and sustainable wood sourcing, forestry and plantation operations
• Value adding, efficient and responsible global functions
• Continuous improvement (Smurfit) programmes
• Technology and intellectual property rights
• A global platform to build on
• Disciplined and effective capital allocation
• Compliance with applicable laws and regulations and corporate policies

Decision-making at the right level
Each business area is responsible for executing its own strategy and achieving its own targets.

Group direction and support from global functions enable the businesses to reap the benefits from UPM’s brand, scale and integration while navigating a complex operating environment.

Capital allocation decisions are made at group level. Group direction and support from global functions enable the businesses to reap the benefits from UPM’s brand, scale and integration while navigating a complex operating environment.

Capital allocation decisions are made at group level.

Disciplined and effective capital allocation
Over the past five years (2013-2017), UPM generated cumulatively EUR 6.4 billion of operating cash flow. 30% of this was allocated to dividends, 30% to investments and 40% to debt reduction. The focused growth projects proved a great success, with returns exceeding the target returns. At the end of 2017, UPM had achieved a truly industry-leading balance sheet, with net debt / EBITDA ratio of 0.11. See page 14 for our return targets and leverage policy.

In the coming years, UPM can allocate more capital to growing and transforming the company while simultaneously increasing distribution to shareholders and maintaining headroom in the strong balance sheet. UPM invests in projects with attractive and sustainable returns, supported by a clear competitive advantage.

In brief

STRENGTHS
• UPM Biorefining
• UPM Raflatac
• UPM Specialty Papers
• UPM Plywood
• UPM Energy

FACILITIES
• Possible new pulp mill, Uruguay
• UPM and the Government of Uruguay signed an agreement on local prerequisites for a possible new pulp mill. Infrastructure projects an agreement on local prerequisites for a possible new pulp mill. Infrastructure projects and the pre-engineering of the mill in progress.
• Exploring next steps in biofuels

Read more:
www.upm.com/investors

UPM’s current investment portfolio for earnings growth

Focused growth projects
Completed by the end of 2017
• Kyma pulp mill expansion, Finland
• Raflatac expansion, Poland

Construction stage
• Kuokka pulp mill expansion, Finland
• Raflatac expansion, Finland
• Jämsänkoski label papers expansion, Finland
• Chudovo plywood mill expansion, Russia

Feasibility study
• Nordland PM2 conversion from fine papers to label papers, Germany

Transformative prospects
Possible new pulp mill, Uruguay
• UPM and the Government of Uruguay signed an agreement on local prerequisites for a possible new pulp mill. Infrastructure projects and the pre-engineering of the mill in progress.

Biomolecules businesses
• Basic engineering study started regarding a potential industrial-scale biochemicals refinery, Germany
• Exploring next steps in biofuels

INCREASING SHARE OF BUSINESSES WITH STRONG LONG-TERM FUNDAMENTALS FOR PROFITABILITY AND GROWTH

SUSTAINABLE GROWTH
• UPM Biorefining
• UPM Raflatac
• UPM Specialty Papers
• UPM Plywood
• UPM Energy

STRONG CASH FLOW
• UPM Paper ENA

5-year average delivery growth (CAGR) 2–6%

2013 16
15 17 14
13
12
11
10
9
8
7
6
5
4
3
2
1
0

New business: Biofuels
UPM aims higher with renewed long-term financial targets

UPM has consistently improved its financial performance since adopting the current business model of six separate businesses in 2013. With renewed long-term financial targets, UPM aims higher.

IN THE NEW TARGETS:
- the business area return targets and the comparable ROE target have been increased
- comparable EBIT growth has been introduced as a new group-level target
- a new financial policy on leverage based on net debt/EBITDA has been introduced
- the cash flow-based dividend policy remains unchanged

Business area long-term return targets increased

At the business area level, UPM targets top relative performance in their respective markets compared with peers. UPM has increased the long-term return targets (below) for five of the six business areas. The new return targets reflect UPM's increased ambition for business performance over both business and investment cycles.

Group earnings growth

On the group level, UPM introduced a new target. UPM aims to grow its businesses with strong long-term fundamentals. Earnings growth is prioritised over top-line growth. UPM will invest in projects with attractive and sustainable returns, supported by a clear competitive advantage. The company also aims to capture opportunities to develop its business and product mix and further improve its cost competitiveness.

Strong balance sheet and attractive return on equity

UPM aims to maintain a strong balance sheet. Investment grade rating is an important element in UPM’s financing strategy. UPM’s new financial policy on leverage is based on net debt/EBITDA ratio of approximately 2 times or less. At the end of 2017, net debt/EBITDA was 0.11 times.

The previous maximum gearing limit of 90% has been discontinued as redundant. At the end of 2017, gearing ratio was 2%. UPM has increased its ROE target, now aiming for a 10% return on equity. ROE also takes into account the financing, taxation and capital structure of the group. In 2017, comparable ROE was 11.9%.

The previous target was variable: 5 percentage points over a ten-year risk-free investment such as the Finnish government’s euro-denominated bonds.

UPM AIMS TO INCREASE LONG-TERM SHAREHOLDER VALUE

- Performance: UPM is committed to continuous improvement in its financial, social and environmental performance. At the business area level, UPM aims for top performance in its respective markets compared with peers.
- Growth: UPM invests to grow businesses with strong long-term fundamentals and sustainable competitive advantage. The company has clear long-term return targets for its businesses. Earnings growth is prioritised over top-line growth.
- Innovation: UPM's expertise in renewable and recyclable materials, low-emission energy and resource efficiency is the key to developing new, sustainable businesses with high added value and unique competitive advantage.
- Responsibility: UPM's responsible operations and value chain, and drive in finding new sustainable solutions mitigate risks, create competitive advantages, open new growth opportunities and help in answering some of the global challenges.
- Portfolio: Increasing the share of sustainable growth businesses improves the company’s long-term profitability and boosts the value of the shares.
In order to guide its responsibility activities, UPM has established a responsibility focus areas with targets and key performance indicators which are reviewed every year based on a materiality analysis (page 53). The focus areas cover economic, social and environmental responsibility.

Having successfully transformed its business model and improved its business performance, UPM renewed its long-term financial targets in January 2017. Targets for diversity and inclusion, continuous learning and development and responsibility leadership were also revised. New formulations reflect UPM’s ability to get more insight on best practices and responsible leadership were also revised. New targets are to manufacture all products in a way that they will be eligible for ecolabelling. In the area of economic responsibility, UPM’s focus areas are economic performance, good governance and responsible sourcing. Good governance helps UPM to avoid risks, enables growth and opens new business opportunities. Responsible sourcing not only minimises risks, but also creates extensive direct and indirect added value.

In the area of social responsibility, the focus is on the fulfilment of human rights, occupational health and safety, local stakeholder engagement and UPM’s role as a responsible employer. UPM is committed to respecting human rights. Being a responsible employer improves employee performance, engages people and creates a safe working environment. As a result of its significant local presence, UPM creates economic and societal value to surrounding communities. The company also strives to increase this value through stakeholder engagement.

Environmental responsibility covers sustainable products, the climate, the use of forests and water and waste reduction. Some of the targets are continuous and some have been extended to 2030. Targets are monitored annually.

UPM’s Biofore strategy guides the company in achieving its responsibility targets for 2030 and in contributing to UN Sustainability Development Goals (SDG).

**ECONOMIC**

**Profit**
- Creating value to shareholders
  - Comparable EBIT growth through focused top line growth and margin expansion
  - Comparable ROE: 10%  
  - Net debt/EBITDA: around 2 times or less

**Governance**
- Ensuring accountability and compliance
  - 100% coverage of participation to UPM Code of Conduct training (continuous)

**Responsible sourcing**
- Adding value through responsible business practices
  - 82% of UPM spend qualified against UPM Supplier and Third Party Code (continuous)
  - 100% of UPM raw material spend qualified against UPM Supplier and Third Party Code by 2030  
  - Continuous supplier auditing based on systematic risk assessment practices

**SOCIAL**

**Diversity and inclusion**
- Developing organisational culture and local conditions to ensure diverse and inclusive working environment for business success
  - People feel that UPM values and promotes diversity; people are treated fairly in their work environment and can advance regardless of personal background or characteristics. 95% favourable in Employee Engagement Survey Diversity and Inclusion index by 2030
  - Diversity and inclusion initiative (continuous)

**Continuous learning and development**
- Ensuring high performance for business success and continuous professional development for future employability
  - Good setting discussions are held and development plans are created for all employees, completion rate 100% by 2030
  - Employees perceive good opportunities for learning and development at UPM, 80% favourable in Employee Engagement Survey by 2030
  - 89% of employees had individual goal setting or annual discussion completed
  - Continuous supplier auditing based on systematic risk assessment practices

**Responsible leadership**
- Empowering value-based and inspiring leadership and integrity
  - Continuous development of working environment
  - Employee engagement and enablement indices with favourable score clearly above external high performance norm by 2030
  - Continuous sharing of best practices of stakeholder initiatives
  - UPM’s Biofore Share and Care programme brings significant added value

**ENVIRONMENTAL**

**Product stewardship**
- Taking care of the entire lifecycle
  - Environmental Management Systems in 100% use (continuous)
  - Environmental Product Declarations for all products (continuous)  
  - All applicable products eligible for ecolabelling by 2030

**Waste**
- Promoting material efficiency and circular economy – reduce, reuse and recycle
  - No process waste to landfills or incineration without energy recovery by 2030
  - 89% (88%) of UPM’s total process wastes was recovered or recycled. The total amount of waste to landfills decreased by 13% compared to 2016.

**Climate**
- Creating climate solutions and working towards carbon neutrality
  - 32% reduction in effluent load achieved since 2008 for the UPM average product
  - 30% reduction in wastewater volume achieved since 2008 for the UPM average product

**Water**
- Using water responsibly
  - Efficient load (COD) reduced 40% by 2030  
  - Wastewater volume reduced 30% by 2030  
  - 100% of nutrients used at effluent treatment from recycled sources by 2030

**Forests and biodiversity**
- Ensuring sustainable land use and keeping forests full of life
  - 100% coverage of chains of custody (continuous)
  - All fibre certified by 2030
  - Coverage is 100%
  - The share of certified fibre increased to 85% (84%)

**UPM TARGETS**

- Comparable EBIT increased by 13% to EUR 1,292 million (1,143 million)
- Comparable ROE was 11.9%
- Net debt/EBITDA was 0.11 times

**UPM 2030 FOLLOW-UP / 2017 RESULTS**

- 82% (81%) of supplier spend qualified against UPM Supplier and Third Party Code
- 96% (94%) of raw material spend qualified against UPM Supplier and Third Party Code
- Approx. 130 supplier audits were conducted based on identified risks and individual human rights topics. A human rights due diligence completed at all UPM sites

United Nations Sustainable Development Guiding UPM Targets
Responsibility is good business

UPM promotes responsible practices throughout the value chain and actively seeks sustainable solutions in co-operation with its customers, suppliers and partners. Creating value for society both as a company and through our products is an essential part of the Biofore strategy.

SIGNIFICANCE
• UPM builds a sustainable future by replacing non-renewable materials with renewable ones, by using them more efficiently and by creating completely new kinds of solutions.
• Responsibility is an integral part of UPM’s Biofore strategy and our operations and seen as a source of competitive advantage.

TARGET
• UPM leads the forest-based bioindustry into a sustainable, innovation-driven and exciting future.

OUR WAY
• UPM respects international agreements, such as the UN Declaration of Human Rights, the ILO Declaration on Fundamental Principles and Rights at Work and the OECD Guidelines for Multinational Enterprises
• UPM’s purpose and vision incorporate responsibility and the creation of value in society
• UPM’s Biofore strategy guides the company in achieving its responsibility targets for 2030 and in contributing to the UN Sustainable Development Goals
• Our Code of Conduct provides a foundation for responsible business conduct and continuous improvement
• The Board of Directors, Group Executive Team, and businesses and functions manage corporate responsibility

Commitment to the UN Sustainable Development Goals
UPM participates in the UN Global Compact initiative whose ten universal principles are derived from international agreements in the areas of human rights, labour standards, the environment and anti-corruption. In 2017, UPM continued to work as a member of the UN Global Compact LEAD forum as the only representative of the forest industry and the only Finnish participant. UPM promotes the Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development published by the UN. In addition to participating in global projects, UPM also works with several local expert organisations to promote and achieve the SDGs.

UPM has identified the goals where the company’s negative impact is largest or those where UPM can contribute most positively (other SDGs are also relevant to us, but to a lesser extent or only indirectly):
• Goal 3: Good Health and Wellbeing
• Goal 8: Decent Work and Economic Growth
• Goal 9: Industry, Innovation and Infrastructure
• Goal 12: Responsible Consumption and Production
• Goal 13: Climate Action
• Goal 15: Life on Land

In 2017, four UPM mills completed their environmental performance reports, providing locally relevant information on societal aspects and impacts, under the EU’s EMAS (Eco-Management and Audit Schemes). In 2018, UPM will broaden the scope to other pulp and paper mills to increase local transparency.

A more detailed description of UPM’s commitments, impacts and how corporate responsibility is managed can be read from the Report of the Board of Directors (pages 94–110).

Other responsibility focus areas in 2017
Another main theme was strengthening management of compliance-related issues at UPM. UPM launched an initiative to further ensure adherence to the Code of Conduct and implemented a corresponding policy management framework. Following the revision of the UPM Supplier and Third Party Code in late 2016, UPM carried out internal training and implemented the Code with suppliers in 2017. The process will continue in 2018.

Several targets related to social responsibility focus areas were revised in 2017. UPM continued human rights due diligence with a site-level human rights assessment focusing on working conditions at UPM sites, community relations and local sourcing (read more above). UPM considers the salient human rights issues within the company’s sphere of influence to be environmental pollution, occupational health and safety (OHS), working conditions, protection of children, and forced labour. In assessing human rights, the rights of the following vulnerable groups are especially taken into account: children, minorities, migrant workers and indigenous people.

The safety of employees and contractors remains an important focus area. One Safety, the global reporting tool, launched in 2016, was trained and implemented during 2017. The coverage of the tool has expanded to all UPM sites from the beginning of 2018. One Safety provides a standardised method of managing safety and environment-related operations within UPM.

To further enhance product stewardship, UPM’s businesses launched several new sustainable and safe solutions such as Wisa BioBond plywood gluing technology and BioNXT+ labels. UPM also contributed to the revision of the EU Ecolabel for paper products.

UPM signed a global partnership with FSC International to promote and widen the FSC certification, especially among private forest owners in Finland. At the same time, UPM’s operations at various logging sites in Finland caused concerns (page 60).

Work continued towards environmental 2030 targets. The Zero Solid Waste to Landfill project was successful and UPM Plywood and UPM Timber businesses and UPM Jämsä River and UPM Rauma paper mills in Finland have already reached zero waste level. The China More with Bioinfo research programme on environmental performance continued at the UPM Changshu paper mill. Tangible results are expected to be achieved in 2018. Emphasis is now being put on reducing UPM’s fossil CO2 emissions with the long-term aim of achieving carbon neutrality.

Read more: www.upm.com/responsibility
# Megatrends drive demand for sustainable and safe solutions

The global megatrends represent many long-term opportunities and challenges for UPM towards 2030 and beyond. They are also driving demand for sustainable and safe solutions, new technologies and responsible business practices.

## Megatrends

### Population Growth, Urbanisation and Demographic Change

- Global consumption growth
- Growing middle class in China and the emerging markets
- Higher living standards
- Changing consumer behaviours and preferences
- Impact on the environment, societies and human rights

### Resource Scarcity and Role of Renewables

- Competition for natural and fossil resources
- Biodegradability
- Land use change
- Threat of deforestation
- Threat of biodiversity loss
- Human rights

### Digitalisation

- Changing consumer behaviours and preferences
- Growing e-commerce
- Changing work
- Disruptive business models and technologies

### Climate Change

- Policies to mitigate climate change
- Direct and indirect impact of climate change

### Responsibility and Compliance

- Increasing regulation, subsidies
- Requirements for transparency
- Global trades and businesses – local impact
- Focus on human rights, environment and biodiversity

## Expressions

- Global consumption growth
- Growing middle class in China and the emerging markets
- Higher living standards
- Changing consumer behaviours and preferences
- Impact on the environment, societies and human rights

## Opportunities for UPM

- UPM Pulp
- UPM Biofuels
- UPM Raffiafilm
- UPM Specialty Papers
- UPM Paper ENA
- UPM Plywood
- UPM Timber
- UPM Biocomposites
- UPM Biochemicals

### UPM Pulp
- Growing demand for sustainable paper products

### UPM Biofuels
- Growing demand for renewable energy

### UPM Raffiafilm
- Growing demand for biodegradable and renewable materials

### UPM Specialty Papers
- New business opportunities replacing non-renewable materials

### UPM Paper ENA
- New technologies to improve resource efficiency and replace non-renewable materials

### UPM Plywood
- Healthy forests and safeguarded wood availability

### UPM Timber
- Responsible water use and safeguard the natural water cycle in forests

### UPM Biocomposites
- Increased forest growth in Northern Europe, sustainable plantations

### UPM Biochemicals
- Sustainable land use and ecosystem services

### UPM Energy
- Resource efficiency and circular economy offer a competitive advantage

### UPM Specialty Papers
- Healthy forests and safeguarded wood availability

## Challenges for UPM

- Fit of UPM’s product mix and geographical presence to the future growth outlook
- Unpredictable regulation and subsidies may distort markets

### UPM Paper ENA
- Declining graphic paper consumption

### UPM Biofuels
- Unpredictable regulation and subsidies may distort markets

### UPM Raffiafilm
- Cost of greenhouse gas emissions

### UPM Specialty Papers
- Political instability

### UPM Plywood
- Increasingly common and more severe storms, floods and droughts

### UPM Timber
- Unpredictable wood harvesting conditions

### UPM Biochemicals
- Unpredictable raw material costs and availability

### UPM Energy
- Competition for renewable raw materials

### UPM Specialty Papers
- Unpredictable regulation and subsidies may distort markets

### UPM Raffiafilm
- Competition for land use
The operating environment exposes UPM to a number of risks and opportunities. Many of them arise from general economic activity and global megatrends (see previous page). Execution of strategies exposes UPM and its business areas, functions and production plants to a number of risks and opportunities.

**RISK DESCRIPTION**

**IMPACT**

**MANAGEMENT**

**OPPORTUNITY**

**STRAategic FOCUS AREAS INVOLVED**

**GLOBAL ECONOMIC CYCLES**

Impacts the demand and sales prices of various UPM products and may create cost savings, as well as currency exchange rates. UPM’s main earnings sensitivities are presented on page 122.


UPM’s strong balance sheet, focus on competitiveness and sustainable competitive advantage.

1245

**Faster-than-expected decline in demand for graphic paper**

Increased pressure on UPM’s graphic paper deliveries and sales prices, scarcity of recycled fibre.

Continuous improvement in competitiveness. Focus on more efficient production capacity and higher value-added segments. Adjust production capacity to profitable customer demand. Business portfolio development.

UPM’s large paper production platform provides continuous opportunities for optimization. Reliable supplier of high-quality products and customer service meets customer loyalty.

15

**COUNTERACTIVITY IN SOME OF UPM’S PRODUCTS DUE TO CHANGES IN DEMAND OR SUPPLY**

Impacts prices and deliveries of the product in question.

Somewhat or significantly impacts the demand for UPM’s main export products is presented on page 148.

Continuous hedging of net currency exposure. Hedging the hedging the operational currency exposure in line with overall competitiveness of Waste-to-energy investments. Business portfolio development.

UPM’s diverse business portfolio and geographical presence focuses on competitiveness and strategic fit in many business opportunities for upmarket strategies. Continuous improvement in changing currency environment.

125

**SIGNIFICANT MOVES IN CURRENCY EXCHANGE RATES RELEVANT FOR UPM**

Impacts UPM’s earnings and cash flow directly and through changes in the demand for UPM’s products.


UPM’s diverse business portfolio and geographical presence focuses on competitiveness and strategic fit in many business opportunities for upmarket strategies. Continuous improvement in changing currency environment.

125

**AVAILABILITY AND PRICE OF MAJOR PRODUCTION INPUTS LIKE WOOD, FIBRE, CHEMICALS AND WATER**

Increased cost of raw materials and potential production interruptions. UPM’s cost structure is presented on page 123 and sensitivity to water prices on page 106.

Continuous improvement in resource efficiency. New technologies. Long-term supply contracts and relying on alternate suppliers. Selected ownership of forest land and long-term forest management contracts.

UPM’s continuous improvement in resource efficiency and circular economy mitigate risks and foster competitive advantage.

1345

**INTERNATIONAL TRADE BARRIERS, e.g. ANTIDUMPING DUTIES**

Impacts trade flows and short-term market balances and may directly or indirectly impact sales prices and deliveries of UPM’s products.


UPM’s diverse business portfolio, geographical presence and responsible business practices mitigate risks and may present opportunities for optimization in case of trade barriers in some products and locations.

1245

**CHANGES IN REGULATION, SUBSIDIES, TAXATION, e.g. RELATED TO CLIMATE POLICIES**

May distort markets, e.g. for energy or wood raw material. May change relative competitiveness of countries. May create additional competition for wood raw material. Direct and indirect impacts of climate change. UPM’s sensitivity to carbon pricing is presented on page 106.


UPM’s market growth for sustainable products and energy, e.g. renewable fuels, resource efficiency, circular economy and environmental sustainability are increasingly important sources of competitive advantage. In electricity markets, hydropower is an increasingly important form of power generation. Increased wood growth in northern hemisphere.

12345

**CONTINUOUS IMPROVEMENT IN COMPETITIVENESS**

Weakening relative competitiveness impacts profitability and increases risks related to the external business environment.


Increasing relative competitiveness improves profitability and mitigates risks related to the external business environment.

134

**SELECTION AND EXECUTION OF INVESTMENT PROJECTS**

Material cost overruns, Inadequate timing. Return on investment does not meet targets.

Disciplined selection planning, project management and follow-up processes. Investing in projects with attractive returns and sustainable advantage.

Cost-efficient and implemented growth projects improve UPM’s ROCE and grow its earnings. UPM’s financial targets are presented on page 14.

24

**DELAYS IN OIL SLUDGE NUCLEAR PROJECT COMPLETION AND START-UP**

Adverse impact on FY15’s business and financial position, the fair value of UPM’s energy holdings and the cost of energy sourced from OLS when completed.

Ensuring that contractual obligations are met by both parties. Arbitration proceedings have been initiated by both parties.

The investment provides a competitive, safe and carbon-free electricity supply for the long term.

24

**SELECTION AND EXECUTION OF M&A**

Cost of acquisition proves high and/or targets for strategic fit and value creation are not met. Return on investment does not meet targets. Damage to reputation.

Disciplined acquisition preparation to ensure the strategic fit, value creation and effective integration. Environmental and social impact assessments. Stakeholder engagement.

UPM’s strong balance sheet and cash flow allow very-safe enabling M&A with timing and opportunity are right. Societal value creation.

245

**DEVELOPING AND COMMERCIALIZING INNOVATIONS AND NEW BUSINESSES**

Return on investment does not meet targets. Opportunity. Return on investment does not meet targets. Loss opportunity.


Existing products and services redesigned to bring more value. New value added products to replace declining businesses. May be a significant source of value creation and growth for UPM.

1234

**COMPLIANCE RISKS, COMPETITION LAW, ANTI-CORRUPTION, HUMAN RIGHTS, SECURITIES REGULATION, TAXATION**

Damage to reputation. Loss of business. Fines and damages. May impact the value of the company.

Governance, compliance procedures, UPM Code of Conduct, UPM Supplier and Third Party Code, audits, whistleblowers.

Good governance mitigates risks and promotes best practices. High responsibility standards and transparency are a differentiating factor and create long-term value.

1245

**SUPPLY CHAIN AND THIRD-PARTY REPUTATION RISKS**

Damage to reputation. Loss of business. Loss of competitive position. May impact the value of the company.


Good governance and responsible sourcing practices mitigate risks and provide competitive advantage.

1245

**ENVIRONMENTAL RISKS, A LEAK OR SPILL DUE TO MALFUNCTION OR HUMAN ERROR**

Damage to reputation. Sanctions. Direct costs to clean up and repair potential damages to production plant and loss of production.

Best available techniques (BAT), minimization, internal controls and compliance, certified environmental management system (ISO 14001, EMS).

Industry-leading environmental performance provides competitive advantage, including efficiency gains.

12345

**PHYSICAL DAMAGE TO THE PEOPLE OR PROPERTY**

Harm to employees or contractors and damage to reputation. May impact the value of the company. May distort markets, e.g. for energy or wood raw material. Damage to reputation.

UPM Code of Conduct, UPM Supplier and Third Party Code, audits, whistleblowers.

Good governance and responsible sourcing practices mitigate risks and promote competitive advantage.

1245

**ABILITY TO RECRUIT AND RETAIN DIVERSELY SKILLED EMPLOYEES**

Continuous improvement in resource efficiency. New technologies. Long-term supply contracts and relying on alternate suppliers. Selected ownership of forest land and long-term forest management contracts.

UPM’s continuous improvement in resource efficiency and circular economy mitigate risks and foster competitive advantage.

1345

**AVAILABILITY AND SECURITY OF INFORMATION SYSTEMS, MALWARE**

Interruptions in critical information systems cause a major interruption to UPM’s business. Damage to reputation. Loss of business.

Continuous improvement in resource efficiency. New technologies. Long-term supply contracts and relying on alternate suppliers. Selected ownership of forest land and long-term forest management contracts.

UPM’s continuous improvement in resource efficiency and circular economy mitigate risks and foster competitive advantage.

1345

In brief

**Businesses**

Stakeholders

Governance

Accounts

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### Business Area

**UPM Group and All Businesses**
- Continuous improvement of financial, social and environmental performance
- Maintain strong balance sheet and capacity for future opportunities
- Developing winning culture for business success
- Compliance with laws and regulation
- Mitigate risks and capture opportunities
- Enhance competitiveness

**UPM Biofinning**
- Grow as a responsible and cost-efficient pulp producer with the most variable product offering
- Provide sustainable, advanced biofuels, achieve top performance and evaluate opportunities for scaling up biofuels business
- Enhance profitability through effective use of wood supply, integrated full production and focused commercial strategy

**UPM Energy**
- Create value in electricity generation and physical and financial markets
- Ensure competitiveness through cost efficiency and high asset utilization rate in hydro and nuclear
- Profitable growth on the Nordic electricity market with CO₂ emission-free generation

**UPM Raflatac**
- Profitable organic growth, potentially complemented with acquisitions
- Widen product portfolio especially in high value-added products
- Expand customer reach through increased distribution, sales and service coverage

**UPM Specialty Papers**
- Growth to maintain global leadership positioning in labelling materials
- Growth as one of the most preferred office paper suppliers in Asia
- Widen product offering in specialties and through new product development

**UPM Paper Ena**
- Maximise cash flow and leverage optimisation opportunities in extensive, highly performing operations
- Strengthen market position through differentiated commercial strategies, business development and targeted product development
- Increase efficiency of operations and faster digitisation and robotics

**UPM Plywood**
- Profitable growth through superior customer experience and operational excellence
- Strengthen market position in selected businesses by increasing value and service offering

**Wood Sourcing and Forestry**
- Secure competitive wood sustainably
- Sold 73,000 hectares of forest land in Finland
- Global partnership with FSC International

**UPM Biochemicals**
- Further application development and piloting, product commercialisation

**UPM BioComposites**
- Business creation and continued growth

### Strategic Targets

<table>
<thead>
<tr>
<th>STRATEGIC TARGETS</th>
<th>ACTIONS IN 2017</th>
<th>ACTIONS PLANNED FOR 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>STRATEGIC TARGETS</td>
<td>ACTIONS IN 2017</td>
<td>ACTIONS PLANNED FOR 2018</td>
</tr>
<tr>
<td>Continuous improvement programmes on safety, environment, variable costs, working capital, site optimisation, maintenance and commercial strategies in all businesses</td>
<td>1 1 4</td>
<td>Continuous improvement programmes</td>
</tr>
<tr>
<td>Disciplined capital allocation, debt reduction</td>
<td>1 2 4 5</td>
<td>Disciplined and effective capital allocation</td>
</tr>
<tr>
<td>Renewed purpose and vision and aiming higher culture</td>
<td>1 2 3 4 5</td>
<td>Continue change in the corporate culture</td>
</tr>
<tr>
<td>Renewed financial targets and revised several other targets</td>
<td>1 2 4 5</td>
<td>Actions to reach targets and materiality analysis to keep the responsibility targets up-to-date</td>
</tr>
<tr>
<td>Strengthening of compliance framework</td>
<td>1 4</td>
<td>Further steps in compliance management</td>
</tr>
<tr>
<td>Human rights due diligence</td>
<td>1 4</td>
<td>Implementation of the findings</td>
</tr>
<tr>
<td>Continuous improvement programmes</td>
<td>1 4</td>
<td></td>
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<tr>
<td>Disciplined and effective capital allocation</td>
<td>1 2 4 5</td>
<td></td>
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<td></td>
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<tr>
<td>Implementation of the findings</td>
<td>1 4</td>
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</tbody>
</table>

### Performance Improvement and Transformation Continued in 2017

#### Performance

1. **Performance**
2. **Growth**
3. **Innovation**
4. **Responsibility**
5. **Portfolio**

#### Key Actions Continued

- Capture benefits of pulp capacity expansions
- Complete UPM Kaukas pulp mill investment
- Engineering study and permitting process for a possible new pulp mill in Uruguay
- Evaluate growth opportunities and feedstocks in biofuels
- An environmental impact assessment (EIA) for a possible biorefinery in Kafka, Finland
- Continue OCL project
- Developing the service offering further
- Capture growth opportunities and develop product portfolio
- Complete specialty label investment in Tampere, Finland
- Expand distribution coverage in attractive markets
- Open a new terminal in Santiago, Chile
- Expand release liner capacity at UPM Jämjönasinko, Finland
- Feasibility study on Nordland PM2 conversion from few papers to release liners in Germany
- Develop new value added specialty products segments
- China More with Biofore research programme
- Capture opportunities in certain end uses and segments
- Implement new sustainability agenda
- Complete optimisation at UPM Nordland Paper, Germany
- Implement digitisation roadmap
- Production optimisation at Otepää mill in Estonia
- Proceed with Chudovo mill expansion in Russia
- Enhancement in-depth understanding of the market drivers in selected businesses
- Strengthening the supply chain service models
- Continue forest land sales
- Continue cost efficiency improvement
- Study availability and quality of competitive wood for UPM's growth projects
- Proceed with the engineering study to verify attractiveness of the potential biochemicals refinery
- Develop new UPM ProFi products
- Continue to commercialise UPM Formi
UPM Biorefining

Sustainable growth

Our Direction

- In pulp: Provide customers with direct access to the most versatile pulp range and advanced technical service. Maintain cost competitiveness through continuous operational improvement. Grow as a responsible and cost-efficient pulp supplier.
- In biofuels: Provide unique, sustainable, advanced biofuels in various markets and segments, achieve top performance, evaluate opportunities for scaling up biofuels business.
- In timber: Enhance profitability through efficient use of wood supply, integrated full-production and focused commercial strategy. A streamlined business model to secure position in chosen key markets and end-use segments.

Our Strengths

- Versatile range of sustainably produced pulp grades suitable for a wide range of end uses
- Modern, efficient mills and business committed to growth
- Responsibility integrated in all operations from wood sourcing to logistics
- Established producer of advanced renewable diesel and naphtha
- Competitive sawmills with skilled own global sales and logistics network
- Synergistic supply chain of wood for sawn timber, pulp and renewable fuels

Growth Drivers

Pulp and timber
- Demand growth of consumer goods
- Population growth, increasing income levels
- Growth of e-commerce
- Urban lifestyle
- Demographic change
- Environmental consciousness
- Decreasing supply of white recycled fibre

Advanced biofuels
- Climate change mitigation
- Sustainability
- Pressure to replace fossil fuels with renewables
- Low carbon mobility
- Pressure to reduce greenhouse gas and tailpipe emissions in transport
- Increasing the EU’s self-sufficiency in energy

Strong performance improvement
Profitability increased clearly due to higher pulp sales prices, pulp deliveries and increased operational efficiency. Production efficiency improved significantly at the Lappeenranta Bio-refinery and market fundamentals remained favorable for the biofuels business. Delivery volumes and production efficiency in sawmill operations improved.

Pulp market balance tightened due to persistent, strong demand in 2017. Supply was restricted due to delayed start-up of new capacity and large production outages in the industry. Chinese regulatory efforts to clean up the inflow of mixed imported recycled paper tightened the fibre market during the second half of the year. Pulp prices increased during the course of the year.

In 2017, activity in the Finnish wood market increased as a result of expanded pulp production capacity and increasing sawn timber demand. New digital services for forest owners were launched during the year (read more on page 42).

Focused growth investments deliver
UPM pulp has been able to respond to growing demand from customers in tissue, specialty papers and packaging due to increased production capacity.

Over recent years, UPM has made focused investments to expand production at all four pulp mills. Total pulp production capacity has increased by nearly 600,000 tonnes since 2013 with investments of approximately EUR 400 million. Simultaneously, operational efficiency has improved at all mills.

In 2017, investment was completed at the UPM Kymi pulp mill and the maintenance cycle at the UPM Fray Bentos mill was rescheduled. New pulp production records enabled growth in UPM pulp deliveries of 5%.

Key Figures

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales, EURm</td>
<td>3,531</td>
<td>2,206</td>
</tr>
<tr>
<td>Comparable EBIT, EURm</td>
<td>587</td>
<td>406</td>
</tr>
<tr>
<td>Capital employed (average), EURm</td>
<td>3,225</td>
<td>3,231</td>
</tr>
<tr>
<td>Comparable ROCE, %</td>
<td>18.2</td>
<td>12.6</td>
</tr>
<tr>
<td>Personnel on 31 Dec.</td>
<td>2,628</td>
<td>2,630</td>
</tr>
</tbody>
</table>

Capital

- Capital-intensive process industry
- Sustainable wood from certified sources
- State-of-the-art production technology
- Community engagement
- Engaged, high-performing people
- Reliable, well-functioning supply chain

Customers

Pulp
- Tissue, board, specialty and graphic paper producers

Timber
- Furniture, joinery, industries, construction, planning and packaging

Outcomes

- Sustainable and safe products that store carbon
- Employment, work safety
- Community wellbeing
- Sustainable forest management and biodiversity
- Renewable energy
- Low emissions
- ROCE
- Growth

Ten Years of Growth

2017 marks the 10th anniversary of the Fray Bentos pulp mill, still considered one of the best in the world to this day. The mill has produced over 11 million tonnes of eucalyptus pulp for global markets.

The economic impact of the mill is significant. It creates jobs, increases people’s purchase power and enhances the well-being of the surrounding community. Nearly 800 people, including UPM’s direct employees, suppliers and subcontractors, enter the mill site daily to work on different operations from production and maintenance to logistics.

Uruguay has a large reserve of wood raw material and a well-trained and skilled workforce. UPM Fray Bentos uses approximately 4.5 million cubic metres of wood every year and generates approx. 8% of the Uruguayan energy supply. The mill generates bio-based energy and electricity, which is then sold to the national grid. UPM sponsored the establishment of the regional technological university in Fray Bentos, at which students can study mechatronics, renewable energy, transport and logistics.

“In terms of GDP, the forest industry has emerged as the most important value chain for the national economy of Uruguay, and pulp has become the second most valuable export item. The forestry sector has flourished over the past decade, and its future prospects look promising,” sums up Alfonso Capurro, Senior Director of the Economic Department from CPA Ferrere consultancy.

Read more: www.upmpulp.com
In June 2017, UPM announced it would further improve the efficiency and competitiveness of the UPM Kuokka pulp mill with a EUR 30 million investment, increasing annual production capacity by 30,000 tonnes to 770,000 tonnes in 2019. As an integral part of the value chain, efforts to enhance wood supply continued in 2017. A new production record was achieved through several efficiency-improving investments in the sawn timber operation. UPM is seeking further improvement in the wood sourcing value chain in Finland.

Long-term growth opportunity in Uruguay

In November, UPM and the Government of Uruguay signed an investment agreement to establish a competitive operating platform for a possible new pulp mill in Uruguay. The site of the mill would be close to the city of Paso de los Toros, in the department of Durazno in central Uruguay. The agreement brings UPM into the pre-engineering and permitting phase, which is expected to take 1.5 to 2 years. Achieving significant progress in the implementation of the infrastructure initiatives is critically important for the final investment decision. UPM is carrying out an engineering study and permit process for a pulp mill with an annual capacity of about 2 million tonnes of eucalyptus market pulp. The preliminary estimate for a pulp mill investment is approximately EUR 2 billion. In addition, a successful project requires off-site investments in plantation land and forestry, road network and nursery capacity, harvesting and transport equipment, rolling stock for the rail network, export facilities and training. UPM has consistently increased its plantation base in Uruguay.

In operation, the mill, forestry and related activities would employ 8,000 additional people in its full-value chain. The operations would also have a significant positive impact on the central and northern regions.

The global megatrends support a strong growth of the market pulp demand. UPM’s customers value the stable quality of the Uruguayan eucalyptus pulp. The possible new capacity in Uruguay would support UPM’s multifibre strategy: to serve customers in growing hygiene, packaging and specialty, as well as printing and writing paper end-use segments.

The first significant biofuel investment at design capacity

UPM has been producing UPM BioVerno renewable diesel and naphtha from wood-based residues since early 2015. UPM BioVerno drop-in diesel is a unique and competitive alternative to fossil fuels or first-generation biofuels, and is well positioned among the few existing advanced biofuel alternatives available on the market. UPM’s renewable naphtha can be used as a biocomponent for gasoline or for replacing fossil raw materials in bioplastics (read more on page 43). UPM BioVerno significantly reduces greenhouse gas and tailpipe emissions.

Future demand for sustainable, high-quality advanced biofuels is predicted to be strong, driven by sustainability and stricter environmental standards.

In 2017, the UPM Lappeenranta Bio refinery reached its design capacity and generated a good financial return. Successful field tests with dedicated fleets, public transportation and shipping enabled UPM Biofuels to expand its renewable diesel customer base in the Nordics and selected EU countries. The first commercial deliveries of renewable naphtha as feedstock for producing bioplastics were launched in 2015. UPM Biofuels was chosen as the Bioenergy Industry Value Chain in Finland.

The UPM Lappeenranta Bio refinery is the first significant investment in a new and innovative production facility. Having proven that the technology and business case work, UPM is evaluating future growth opportunities.

The planning includes new alternatives in sustainable liquid feedstocks, wood and residue, as well as wood-based feedstocks for low carbon biofuels. New markets and customer segments, as well as applications and product development are also being pursued.

In February 2018, UPM announced that it is starting an environmental impact assessment (EIA) for a possible biorefinery in Kotka, Finland. UPM continues to develop new process technologies using solid wood biomass. Alongside the planning, UPM is closely monitoring and striving to influence the future prerequisite for the advanced renewable fuels market.

In June, UPM Biofuels announced it is developing a new feedstock concept by growing Brassica carinata as a sequential crop in South America. The carinata crop produces non-edible oil suitable for biofuel feedstock and protein for animal feed. The sequential cropping concept enables contract farmers to take agricultural land into use outside the main cultivation period – i.e. in winter time – without compromising existing food production. It does not cause any land use change, prevents erosion and improves soil quality. Carinata will provide additional income to local farmers, who do not normally have their fields in productive use during winter.

Sustainability offers competitive advantages and growth opportunities

Sustainability is growing in importance in the pulp and biofuels industry, a trend that is benefiting UPM with its leading competences both in forestry and industrial operations as well as in environmental and social responsibility.

UPM’s modern pulp mills have all main management systems certified and the production technology enables efficient use of raw materials, chemicals, energy and water. In wood sourcing, UPM only uses wood from sustainable sources. UPM plays an active role in the local communities in which it operates as a significant employer and as a business partner, bringing prosperity to the surrounding area. UPM is also actively collaborating with local educational institutes.

The pulp and biofuels industries globally must meet the standards of responsible business in raw material sourcing, mill technologies and processes, as well as business practices in general. Increasing consumer awareness requires brand owners to be selective when it comes to choosing their pulp suppliers to assure that responsible practices are followed throughout the supply chain. As an example of governmental impact on setting stricter environmental criteria, the Chinese regulatory efforts to clean up the infor of mixed imported recycled paper is an attempt to protect the environment.

UPM continues to engage with its customers to promote sustainability and drive transparent business practices across the value chain.

AIMING FOR IMPROVED AIR QUALITY

UPM has been testing its wood-based renewable diesel UPM BioVerno on buses in the Helsinki metropolitan area, Finland, since 2015. The tests showed that UPM BioVerno performed as well as the highest-grade diesel in heavy-duty city traffic.

In 2017, the project continued with the launch of BioSant, an initiative, where buses and the majority of the city’s machinery and trucks are switching to waste- and residue-based biofuels. In addition to UPM Biofuels, HSL (Helsinki Regional Transport Authority), J. Store, the Ministry of Economic Affairs and Employment, the Finnish Petroleum and Biofuels Association, the VTT Technical Research Centre of Finland and several energy companies operating in Finland are involved in the project.

HSL aims to have buses operating within the Helsinki area using 100% renewable fuels by the year 2020. With the use of renewable fuel, harmful tailpipe emissions, such as nitrogen oxide and particles, can be reduced too. The effects can be seen in the air quality of Helsinki city centre, in particular.

Read more on www.umpbiofuels.com
Top-line decline affected profitability
Profitability decreased mainly due to lower average sales prices and lower power generation volumes. Power generation in the first half of the year was affected by the weaker hydrological situation and low maintenance at the Olkiluoto nuclear power plant. Hydrology improved during the latter part of the year, which improved hydro production volume and supported profitability. For the full year, the average Finnish spot price was EUR 32.2/MWh, 2% higher than in 2016 (EUR 32.1/MWh). Power consumption overall has shown a slight increase in the Nordics.

Challenging operating environment
The Nordic electricity market remained challenging. Supply of subsidised renewable electricity, wind power in particular, continued to increase and the market price of electricity remained low. The market remained distorted due to factors such as regulation, taxes and support schemes, benefiting some renewable energy generation forms such as wind power while selectively harming others such as hydropower. Hydropower is an efficient way to produce balancing power and operators have invested in growing capacity and improving performance. The high tax burden on CO₂ emission-free hydro-power is harming its economic sustainability.

New service offering for industrial-scale power consumers
In 2017, UPM Energy launched a new service offering for industrial-scale power consumers to optimise their consumption in a market-agile way. Up to now, power generators have been responsible for the power grid balancing. In the future with more wind and solar power generation, power consumers increasingly need to take on the balancing role. One example of that role is demand response from industrial-scale consumers.

Investing in CO₂ emission-free generation
UPM Energy is investing in emission-free power generation capacity with part-owned hydro and nuclear companies and own hydropower assets. The largest ongoing project is taking place at Telšiškiai Zirmas Voima Oy (TVYO), which involves building a new EPR-type (European Pressurized Water Reactor) nuclear power unit, known as OLS EPR, at Olkiluoto, Finland. Through Pohjolan Voima Oyj (PVO), UPM is entitled to approximately 500 MW of its capacity. At Olkiluoto 3 EPR, the installation works and process system tests continued. According to the plant supplier’s reviewed schedule, regular electricity production is scheduled to start in May 2019.

UPM Energy participated in the expansion of the Läänisuo Voima Oy’s Harjavalta hydropower plant in Finland. A new machine unit was brought into use in 2016, and refurbishment of the existing two turbines was completed in December 2017. The project improved the efficiency, control and environmental safety of the plant, while also responding to the increasing demand for flexible capacity. The annual output of the Harjavalta plant on an average hydrological year is expected to increase from the current 390 GWh to 430 GWh.

Low-emission power generation mitigates climate change
UPM Energy assets play an important part in providing security of power supply for the society, responding to national economic and social needs. UPM Energy’s low-emission generation assets are well-positioned to mitigate climate change and support political energy and climate objectives. Hydropower is a form of generation that is efficient in handling grid power stability, a task that is becoming increasingly challenging due to the growing share of wind and solar power generation.

The environmental impact of hydropower generation is local and is mitigated through collaboration between plant operators and local authorities. Hydropower plants also play a major role in seasonal flooding management.
Performance driven by demand growth


UPM Raflatac was able to respond to the improved demand due to its globally competitive production platform and efficient distribution. New product launches and expanded market presence further supported the commercial success. Profitability improved mainly due to higher delivery volumes. Sales price increases were gradually implemented to mitigate the negative impact of input cost inflation. Fixed costs increased in response to the larger operating platform, partly relating to capability building for future growth.

Expanding commercial footprint

In August, UPM Raflatac acquired Texas-based Southwest Label Stock to expand its customer reach and improve its service offering through a wider high-quality product range.

In January 2018, UPM Raflatac opened a new slitting and distribution terminal in Santiago, Chile. The new terminal allows UPM Raflatac to improve its service capabilities and offer an expanded product range in the Chilean market, particularly in the wine and craft beverage segments.

Leveraging from scale

Reliable high-volume supply is a competitive edge in the label stock business. UPM Raflatac commenced production at the new coating line at the Wroclaw, Poland, label stock factory ahead of schedule. The expansion further strengthens UPM Raflatac’s position in high-volume standard products for e-commerce and packaged food end-uses. Combining the latest technology with a low-cost location improves operational efficiency and cost competitiveness, and strengthens UPM Raflatac’s world-class operating platform.

Innovative labeling solutions

The capability to generate innovative and sustainable solutions drives growth in the label stock business. Eco-designed solutions are important for reaching sustainability targets throughout the value chain. In 2017, UPM Raflatac launched several sustainably designed products in film and paper labels. Good examples of these are RAFNX+™ and Raflo® products. Bio-based materials provide a sustainable alternative to fossil-based films for a wide variety of end uses.

RafCycle™, an innovative recycling concept, was launched in China at the end of 2017 and has now 100 partners globally.

UPM Raflatac’s close partnerships with label printers and brand owners are an elementary part of building brand and product appeal in end-use markets. Developments in adhesive technologies and product constructions enhance functional performance and provide growth opportunities.

In April, UPM Raflatac decided to invest in a new special products production line in Tampere, Finland. The investment strengthens UPM Raflatac’s position in the high-value-added labels market.

The industry sustainability leader

UPM Raflatac is well positioned to drive the key sustainability issues related to circular economy and product safety together with brand owners, converters and raw material suppliers as well as other stakeholders.

In 2017, UPM Raflatac started piloting the Biofore Site™ concept. It is a framework designed to advance the culture of sustainability in factories and terminals, and provide a platform for continuous improvement towards meeting UPM’s 2030 responsibility targets (page 17). Each location will engage its employees and build a roadmap to meet the local Biofore Site targets.
UPM Specialty Papers
Confidence delivered

Sales price and volume-driven profit improvement
Profitability improved mainly due to higher sales prices, an improved product mix and higher release liner volumes, supported by the ramping up of the new production line at UPM Changshu, China. Pulp costs increased significantly but it was partly mitigated by continuous variable cost saving measures. Label and release paper demand increased globally, particularly in Asia. Growth picked up in office paper demand.

Benefitting from local presence and global reach
The new specialty paper machine at UPM Changshu, China, has strengthened UPM’s labelling materials positioning in the Asia-Pacific region. Shorter lead times, improved local cost efficiency, consistency in the quality of the products and services, and reliability of customer deliveries have allowed UPM to take a significant share of the fast-growing Asian labelling materials market. The new line provides a competitive platform for strengthening partnerships with customers further. New line has also improved the production flexibility and enabled growth in the European and North American markets.

The brand promise ‘Confidence delivered’ represents UPM Specialty Papers’ consistency in the quality of its products, services and performance.

Several opportunities for future growth
UPM Specialty Papers has attractive growth opportunities through its existing product offering and production assets. The plan is to develop the more value-added specialty product segments while allowing for a more selective approach in slow growth segments where competition is intense.

UPM Specialty Papers seeks growth in labelling materials by reinforcing its position in a wider range of end uses. With a broader product offering and through new product development there are attractive growth opportunities in converting applications and packaging papers. Demand for office paper in Asia continues to grow.

In January 2018, UPM announced that it will expand release base paper capacity by rebuilding a calender at UPM Jämsänkoski mill in Finland. The additional capacity of approximately 40,000 tonnes will be available in the fourth quarter of 2018.

In addition, UPM will conduct a feasibility study on the conversion of the fine paper machine PM2 at Nordland Papier in Germany into release liner production. The study is planned to be completed during the first half of 2018.

Recognised industry leader in sustainability
UPM Specialty Papers’ products comply with the most demanding responsibility criteria in the industry, including ethical and social aspects. Thanks to its environmental excellence at the UPM Changshu mill, UPM enjoys a high level of recognition in China.

UPM is committed to only sourcing raw materials from suppliers who demonstrate high standards of responsibility. UPM’s paper is safe to use throughout its entire product lifecycle.

In 2017, UPM developed high-quality release liner made partly of recycled fibres to meet customers’ demands. The company expanded its offering to include labelling and release paper products from its Changshu mill in China.

In 2017, UPM Specialty Papers introduced UPM’s Responsible Fibre™ trademark to Asian markets. The trademark combines UPM’s environmental and social responsibility criteria into one entity which is adhered to throughout the product lifecycle.

GROWTH DRIVERS
Labelling materials
- Economic growth
- Increased business services
- Urbanisation
- Establishment of new enterprises

Labelling materials
- Economic growth
- Increased business services
- Urbanisation
- Establishment of new enterprises
**UPM Paper ENA**

**Long-term commitment**

**Strong performance continued**

UPM Paper ENA strengthened its position by continuing a consistent level of performance management. Capacity management stayed stringent, cost-reduction measures were implemented and the commercial strategy progressed well.

Profitability remained solid, albeit decreased from the previous year’s high level mainly due to significantly higher fibre costs.

UPM Paper ENA improved commercial footprint and high reliability of supply paid off. Deliveries decreased 2%, less than the overall market demand. The key financial metric—free cash flow—remained strong due to the good profitability level, the further reduction in working capital and the sale of hydroelectric facilities.

**Long-term commitment – steps for future success**

In 2017, UPM Paper ENA launched new paper products, strengthening customer relationships and benefiting customers’ businesses. The improved offering enables commercial printers to grow their business and increase press utilisation, while allowing UPM Paper ENA to enter new profitable end-uses. Print quality was also improved and new fibre alternatives were introduced to meet varied customer needs. The differentiated commercial strategies allowed UPM Paper ENA to successfully reach out to new customers.

UPM Paper ENA continues to strengthen its operations and customer interface with targeted innovations. The eOrder service, a new innovative digital ordering solution, was launched in 2017. The service is a groundbreaking online tool enabling speedy, transparent round-the-clock order fulfilment (read more on the next page). Furthermore, innovative approaches to maintenance were introduced in order to maintain high level of operational efficiency in the future.

**Maintaining cost competitiveness**

UPM Paper ENA adjusts its operations to prospective customer demand with timely capacity adjustments and cost reduction. Machine closures in 2016 and further actions in 2017 supported high asset utilisation rates. UPM closed 300,000 tons of magazine paper capacity in Europe and contract manufacturing ceased at the dissolved Schwedt newspaper mill in Germany.

In December, UPM closed 128,000 tons of magazine paper capacity at the UPM Flintham mill in Minnesota, USA. In November, UPM announced a plan to streamline internal processes and invest in automation at UPM Nordland Paper and UPM NorService in Germany. Variable cost reduction measures targeted in particular fibre, energy and logistics costs. UPM Paper ENA also proceeded with targeted investments in maintenance development.

**Paper is a true Biofore product**

Paper is a renewable material and can be recycled efficiently. Products are sustainable over their entire lifecycle, from forest to recycling. The wood raw material is sourced from sustainably managed forests and the production process complies with the occupational health and product safety requirements, and minimises impact, waste and consumption of water and energy. UPM Paper ENA provides customers with EU Ecolabel-awarded products from all its European mills, having the most comprehensive offering of papers carrying the EU Ecolabel mark in the industry.

UPM Paper ENA is committed to responsible sourcing standards and actively fosters employee development and diversity.

**EU Ecolabel mark in the industry. UPM Paper ENA is committed to responsible operations, strong ethical values and supply chain transparency.**

**ONLY A FEW CLICKS AWAY**

UPM Paper ENA strives to increase efficiency and capture the many potentials of digitalisation to give room for innovation and business development.

A good example of this is UPM’s new eOrder service, launched in 2017. The customer logs in, browses the digital catalogue, chooses the paper product, selects the desired quality and delivery date and submits the order. The order is then processed instantaneously as the eOrder online tool is integrated into the production process. The tool provides reliable real-time feedback on UPM’s order fulfilment capabilities.

Furthermore, UPM’s Customer Online digital portal offers functionalities that are uniquely tailored to the individual customer’s needs. This easy-to-use portal provides paper customers with full access to their inventory, account history, invoicing and order status.

Read more: [www.upmpaper.com/cal](http://www.upmpaper.com/cal)
UPM Plywood

Efficiency made easy

Top performance continued
The market environment was favourable in Europe and demand increased from the previous year. Spruce plywood demand strengthened due to further improvement in the building and construction industry. Demand in birch plywood-related industrial applications such as furniture and LNC carrier insulation material was good. The favourable economic environment caused input cost inflation, to which UPM Plywood responded by implementing sales price increases. The completion of the UPM Oruga mill expansion in Estonia at the end of 2016 supported growth in deliveries of 5% in 2017.

Following successful growth investments and consistent improvement in profitability in past years, UPM Plywood decided to expand its Chudovo plywood mill capacity in Russia. The EUR 50 million investment will increase the mill’s birch plywood production capacity by 45,000 to 155,000 cubic metres while also broadening the mill’s product portfolio. The expansion of cost competitive capacity at the Chudovo mill is another important step in executing UPM Plywood’s strategy to strengthen its position in priority end-use segments. The project is estimated to be completed by the end of 2019.

The completion of the peeling investment at the UPM Kalso-veneer mill improved quality and production efficiency in spruce veneer production.

Building and construction
UPM Plywood is the leading supplier in the high-end and mid-range segments in Europe thanks to an established distribution and customer service network. After years of low construction activity in Europe, the recovery continued in 2017. New innovative and sustainable solutions are further strengthening UPM Plywood’s offering for construction applications.

Vehicle flooring
In transportation equipment, UPM Plywood provides expertise and solutions for customers’ product and process development. Fleet replacement need is levelling off while improving economic activity is supporting trailer demand in Europe. Growing e-commerce volumes are driving growth in light vehicles by increasing parcel deliveries from terminals to consumers and thus increasing demand for flexible deliveries in urban areas. UPM Plywood seeks growth by expanding to new markets and end-use segments.

LNG carriers
UPM Plywood has seen solid growth in the LNG (liquefied natural gas) segment in recent years. WISA birch plywood is ideal material for insulation in LNG vessels due to its strength and stability at extremely low temperatures. UPM Plywood provides on-time deliveries of certified quality through long-term partnerships. UPM Plywood secures its leading position and scales growth through extending its offering into related applications with same technology.

Unique innovations in 2017
UPM Plywood started using a new sustainable lignin-based WISA BioBond gluing technology in plywood manufacturing (read more on the next page). UPM Plywood introduced a new fire-retardant structural plywood for building and construction end uses. The fire-retardant treatment saves time, material and costs when applied on panels during manufacturing.

Plywood from sustainably managed forests
Forest certificates guarantee that the wood raw material comes from sustainably managed forests with legal logging operations. All wood raw material is used either in plywood production, as raw material to other products or in energy generation. Plywood is increasingly used because it is a cost-efficient material, a renewable resource and carbon storing product.
Innovations and R&D programmes are essential in the development of new products. These development programmes aim to create new technologies and products and to ensure the competitiveness of UPM’s businesses.

In 2017, UPM spent EUR 58 million (46 million) on research and development, making up approximately 3.7% (2.7%) of UPM’s operating cash flow. The focus was on new technologies and developing businesses.

On top of the direct R&D expenditure of approximately EUR 51 million (40 million), the figures include negative operating cash flow and capital expenditure in developing businesses. A global network of research centres supports UPM’s new and existing businesses.

Progress in sustainable biochemical business

UPM Biochemicals focuses on three product categories: biochemicals, biocombustibles and lignin products.

Biochemicals can replace oil-based chemicals. The products using UPM’s biochemicals can be converted into various industrial products and everyday consumer goods. In 2017, UPM announced that it was going to evaluate the potential of building a biorefinery in the Frankfurt-Höchst Chemical Park in Germany. This brand new industrial-scale biorefinery would produce 150,000 tons of bMEG (bio-monoethylene glycol), bMPG (bio-monopropylene glycol) and lignin from hardwood (page 41).

Application areas for bio-monoethylene glycol include textiles, bottles, packaging and de-icing fluids. Bio-monopropylene glycol is used, for example, in composites, pharmaceutical products, cosmetics and detergents. Lignin can be used, for example, in wood resins, plastics, foams and coatings (see below).

UPM will now proceed with both a detailed commercial study and a basic engineering study to verify the attractiveness of the business opportunity if all preparation phases are concluded successfully. UPM will initiate the company’s standard procedure of analysing and preparing an investment decision.

BIOCHEMICALS PRODUCTS ARE SUSTAINABLE AND COMPETITIVE DROP-IN ALTERNATIVES

WOOD COMPONENTS

<table>
<thead>
<tr>
<th>Content</th>
<th>Monopropylene Glycol</th>
<th>Monopropylene Glycol</th>
<th>Lignin</th>
</tr>
</thead>
<tbody>
<tr>
<td>40% Cellulose</td>
<td>Existing fossil-based market</td>
<td>Market demand &gt;2 mio tons</td>
<td>Annual growth (CAGR) &gt;3%</td>
</tr>
<tr>
<td>30% Hemicellulose</td>
<td>Existing fossil-based market</td>
<td>Market demand &gt;2 mio tons</td>
<td>Annual growth (CAGR) &gt;5%</td>
</tr>
<tr>
<td>25% Lignin</td>
<td>Performance chemical Application driven</td>
<td>Strong IP position</td>
<td></td>
</tr>
</tbody>
</table>

APPLICATION EXAMPLES:

- Textiles
- Bottles & Packaging
- Wood resins
- Battery fluids
- Detergents
- Foams & Coatings
- Composites
- Pharma & Cosmetics

UPM EVALUATES BUILDING A BIOREFINERY IN GERMANY

In 2018, UPM will evaluate the potential of building a biorefinery in the Frankfurt-Höchst Chemical Park in Germany. This brand new bioeconomy would combine novel technologies and utilise sustainable wood raw material in an innovative way. This opportunity is the outcome of more than five years of extensive technology development and piloting.

Production would be based on hardwood from sustainably managed forests in Central Europe. If executed, the bioeconomy’s renewable bio-based products would replace fossil-based materials and would enable significant reduction of the CO2 footprint compared to fossil-based products.

Application areas for bio-monopropylene glycol include textiles, bottles, packaging and de-icing fluids. Bio-monopropylene glycol is used, for example, in composites, pharmaceutical products, cosmetics and detergents. Lignin can be used, for example, in wood resins, plastics, foams and coatings (see below).

UPM will now proceed with both a detailed commercial study and a basic engineering study to verify the attractiveness of the business opportunity if all preparation phases are concluded successfully. UPM will initiate the company’s standard procedure of analysing and preparing an investment decision.
UPM continues to develop bio-based products in collaboration with researchers at Biomedicum in Helsinki, Finland. GrowDex biodegradable is suitable for cell culturing, and medical research is finding more applications for it. One example is a new wound dressing product that is expected to be launched soon.

Lignin can be used in resins employed as binders in wood-based products, as well as in plastics, foams and coatings. In 2017, UPM launched WISA BioBond, a gluing technology for plywood manufacturing where fossil-based phenol is replaced with lignin (read more on page 39). Formed as a side stream in the pulp production process, lignin has traditionally been burned to generate energy, but the new technology turns it into a high-quality product that can replace fossil raw materials. The gluing technology is based on lignin technology developed and patented by UPM Biochemicals.

Developing new end uses and feedstocks in biofuels

Made from a renewable raw material, crude tall oil, UPM BioVerno naphtha is an excellent biocomponent for gasoline. It also works exceptionally well as a raw material for producing biofuels (read more on the next page).

UPM Biofuels announced that it is testing a sequential crop of Brussica carinata in Uruguay and Brazil as part of biofuels future development. Carinata is an oleo crop specially developed for sustainable production of biofuels.

New bio-composite materials for indoor and outdoor uses

UPM BioComposites develops innovative and sustainable composite products for various outdoor uses and consumer products.

The patented UPM ProFi production process is a good example of circular economy: cellulosic fibres and polymers from self-adhesive label waste is used to create high-quality deck-building systems.

UPM Formi is a completely new material, made from cellulose fibres and polymers, is suitable for a variety of applications from furniture to consumer electronics. UPM Formi complies with the requirements set by the EU for reinforced plastics in relation to circular economy, and its carbon footprint is up to 50% lower compared to traditional plastics.

Advanced analytics for efficient decision-making

UPM utilises advanced analytics to significantly improve the optimisation of sales, production, logistics and inventory management, as well as risk management. Analytics provides a competitive edge and added value quickly and cost-efficiently.

UPM set up an advanced analytics team in 2017 to develop modern tools based on applied mathematics, both to support decision-making in UPM businesses and for use across the company. UPM Forecasting Platform, launched in 2017, made top-level algorithmic forecasting available throughout the company. The analytics team offers data science training for UPM employees and is involved in academic collaboration with UPM’s external networks.

Solid patent portfolio

UPM actively protects innovations and brands with intellectual property rights, and manages and licenses its patents, trademarks and other intellectual property rights worldwide. Protected innovations and high-level risk management are an integral part of UPM’s business model. UPM is also actively seeking partners and licensing opportunities to develop new technologies and solutions for its customers.

The significance of the patents and intellectual property rights protecting UPM’s innovations is even more pronounced in new businesses. A solid patent portfolio boosts UPM’s competitive edge and also provides an excellent basis for value creation in the future. UPM files approximately 360 patent applications worldwide every year.

Technical solutions and innovations that use wood, chemicals, energy and water more efficiently are being patented also in existing businesses like pulp and paper production.

Research projects to enhance circular economy

UPM’s research into the side streams of pulp and paper mill integrates aims to find more efficient ways to utilise side streams such as sludge, ash, green liquor dregs and waste heat.

A joint project with fertilizer manufacturer Yara develops recycled fertilizers for crops from sludge. Research projects have investigated selling solutions for the use of green liquor dregs and ash, and some more promising development projects are currently underway in the construction sector (read more on page 70).

UPM also applies the positive results in its Zero Solid Waste project, aiming to develop intelligent and sustainable solutions for recycling surplus materials to ensure they produce added value.

The China More with Biofuel research programme is looking for technical solutions for UPM Changshu paper mill to decrease water consumption and emissions, save energy and utilise solid waste, for example. The mill’s water consumption and energy efficiency are already at a good level and among the best in the world, and their sulphur dioxide, nitrogen oxide and dust emissions are clearly lower than China’s most stringent limits.

Aiming for bioeconomy

The bioeconomy is based on the sustainable use of renewable resources. UPM’s bio-based products can reduce the use of fossil raw materials and replace non-renewable materials with renewables. The bioeconomy utilises the best available technologies to conserve and recycle natural resources and materials efficiently. Biodiversity forms the basis for a sustainable bioeconomy.

One example of a research project exploring opportunities of bioeconomy is UPM’s Sustainable Fibre Materials programme, which examines new ways to utilise fibre-based, value-added products and materials. The aim is to find sustainable and safe solutions that replace fossil alternatives and are environmentally sound and versatile. The starting point for the development work is UPM’s biocatalysis design, covering the impacts of the entire lifestyle. Special attention is paid to the biodegradability of products. Business Finland supports this programme.

Fibre-based materials are being developed for growing end-uses such as tissue, hygiene, nonwovens, flexible packaging, labels and biocomposites. New solutions will be developed in collaboration with UPM’s businesses, research organisations and customers.

Extensive partner network

UPM’s extensive partner network comprises universities, research institutes, suppliers and start-up companies. Collaboration speeds up the development and launch of new solutions, particularly for new businesses.

UPM is involved in the European Joint Undertaking on Bio-based Industries, BBI. The partnership programme focuses on the development of bioeconomy, bio-based products and their production, as well as on strengthening their competitiveness in Europe. The members of the programme represent several industries.

UPM is a shareholder in the Finnish CLIC Innovation company whose research programmes focus on bioeconomy and cleantech research, as well as energy and environmental research, thus supporting UPM’s own R&D efforts.


INNOVATION NEEDS DIFFER

MATURE

NEW

RENEWABLE RAW MATERIALS FOR PLASTIC INDUSTRY

Packaging industry strives to enhance the usage of renewable raw materials, also in plastics. UPM aims to offer high-quality alternatives to non-renewable materials.

UPM BioVerno naphtha produced from crude tall oil, a residue of pulp production, is an excellent biocomponent in petrol. It also works exceptionally well as a raw material for producing biofuels, polymers and pharmaceuticals. The product is suitable for use in both fuel and chemical applications.

The bioeconomy is based on the sustainable use of renewable resources. UPM’s bio-based products can reduce the use of fossil raw materials and replace non-renewable materials with renewables. The bioeconomy utilises the best available technologies to conserve and recycle natural resources and materials efficiently. Biodiversity forms the basis for a sustainable bioeconomy.

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Read more: www.upmbiofuels.com

Opportunities of bioeconomy

BIOFUELS

• Significantly decrease both fossil greenhouse gas emissions and tailpipe emissions.
• Renewable diesel fuel suitable for all diesel engines.
• Renewable naphtha that can be used as a bio-component for gasoline and as a raw material for bioplastics.

BIOCHEMICALS

• Biochemicals replace oil-based products and can be used in, e.g., textiles, lubes, packaging, deicing products, composites, cosmetics, pharmaceutical products and detergents.
• Medical products, such as wood-based hydrogel GrowDec, for 3D cell culturing and other biomedical applications.
• Lignin products replace oil-based products and can be used, e.g., in resins, plastics, foams and coatings.

BIOCOMPOSITES

• Bio-composites are recyclable materials that reduce the amount of solid waste and carbon footprint.
• UPM Formi composite materials for decking boards for terraces and fences.
• UPM Formi composite material for various end uses targeting at consumer electronics.

RENEWABLE RAW MATERIALS FOR PLASTIC INDUSTRY
Promoting a culture of aiming higher

Based on internal surveys and discussions in management teams, UPM defined aspirational mindsets, encouraging a culture of aiming higher and supporting each other in doing so.

UPM employees have clear goal setting. UPM has a systematic process for goal setting and manager-employee dialogue on performance. The UPM Employee Engagement Survey (EES) results on enablement, 73% favourable, are well above the external high performing norm. Enablement refers to employee skills and abilities being fully utilised in their roles.

In 2017, UPM reviewed its performance management and created new ways of leading and enabling performance. To aim higher, the change focuses mainly on active manager-employee relationships and will include more regular, forward-looking manager-employee discussions, agile goal-setting and more regular feedback.

Engaging employees to develop the workplace

The UPM Employee Engagement Survey invites all employees across the company to evaluate different aspects of their working environment every year. In 2017, 85% of UPM employees responded to the survey, which shows a high level of willingness to participate in developing the workplace.

UPM renewed the survey in 2017. The new survey measures the development of both engagement and enablement. In addition, factors that are important to UPM, such as safety, team work and diversity and inclusion are also measured. The engagement index at UPM has shown consistent improvement. From 2016, the engagement index rose by 2 percentage points to 71% in 2017.

Team effectiveness at UPM scored 5 percentage points higher than the global norm, and when employees were asked what is best about working at UPM, the number one theme was teamwork.

The EES provides an opportunity to monitor long-term trends and the progress of agreed development activities annually. This progress is followed up and evaluated to enable continuous development of the workplace at both organisational and team levels.

The three global focus areas for development at UPM are: encouraging sharing of ideas and resources, respect and recognition; and valuing diversity.

Encouraging learning

Ensuring high performance for business success, and continuous professional development of employees is UPM’s long-term targets. UPM aims for all employees to have an individual development plan. In 2017, 62% of employees had such a plan. UPM applies the learning and development framework 70-20-10, where of 70% of the learning takes place on the job, 20% comes from learning from others and 10% comes from off-the-job training. While most of learning takes place on the job, 20% comes from learning from others and 10% comes from off-the-job training. Most of learning happens outside the classroom, UPM tracks the training hours.

To support learning from others and real-life experiences, UPM invested in a new learning platform, Our.Workday, in 2017. UPM employees can now create digital learning content and share and consume it flexibly.

In the changing and complex business environment, ensuring employees’
AIMING HIGHER SETS THE TONE

Aiming higher is an aspirational call-to-action for all UPM employees to further develop and improve every aspect of their performance — both as individuals and as a company. We started the journey towards achieving this by introducing new, more ambitious long-term financial targets.

Since a winning culture is a prerequisite for high performance, we introduced a company-wide initiative for developing selected key mindsets which, together with our current strengths, will support UPM’s future success.

The chosen mindsets were co-created through online dialogue and team discussions where several thousands of UPMers were invited to join and share their views on UPM’s strengths and development areas for our future culture. As a result, the most important Aiming higher mindsets were identified. Discussions and plans for strengthening these mindsets were started in teams and one-on-ones.

To support the development of the Aiming higher mindsets, UPM also introduced a new performance enablement model for salaried employees to complement current strengths such as clarity of strategic direction and financial target setting. The new model places emphasis on regular manager-employee discussions, agile goal-setting and regular feedback.

Each business and function also received feedback on its status of organisational health. Management teams did a self-assessment to highlight areas of strength and opportunities for improvement, which will guide the development of the performance enablement model.

Enabling leadership

UPM strived to lead by example, in accordance with UPM’s values and with integrity. UPM’s values — trust and be trusted, achieve together, renew with courage — guide and support employees in their daily actions.

UPM continuously invests in developing leadership capabilities and management teams. The development programmes support the three cornerstones of leadership: leading oneself, people and business. Dealing with complexity, coaching capabilities and promoting inspiring leadership have been the key areas of development in recent years.

Leadership development solutions are continuously reviewed. Based on the development, evaluated in 2017, UPM will further focus on improving the performance and motivation of people in 2018. Coaching capabilities and giving feedback will continue to be focused on.

UPM continues to emphasise the development of front-line managers, as most of the UPM employees are led by them. UPM aims to have world-class management teams. In 2017, all key management teams conducted a self-assessment, planning and implementing development actions accordingly.

Engaging leadership

UPM aims to develop its working environment so that it is diverse and inclusive. It is important to employ people with different competences, backgrounds and experiences and of different genders, ages and nationalities, in order to bring together multiple views and improve decision-making and business success.

In 2017, promoting diversity and an inclusive leadership culture continued to be a primary focus. UPM regularly reviews its diversity status and defines intent for each business function. Diversity and inclusion are included in the regular management team self-assessments. Inclusive behaviour is integrated into key UPM leadership development programmes and emphasised also in UPM Code of Conduct training.

UPM is committed to developing a diverse and inclusive workplace through the Finnish Diversity Charter.

Promoting active participation

As a multinational company, UPM complies with international, national and local laws and regulations, and respects international agreements concerning human and labour rights and freedom of association. UPM abide by legally binding collective agreements. UPM does not collect information or report on its employees’ union membership at a global level due to differences in national legislation in the various countries. The estimated percentage of employees covered by collective agreement mechanisms was 69% in 2017.

UPM promotes active employee participation and consultation, organised in accordance with international and national rules and regulations.

UPM respects the privacy of employees and promotes equal opportunities andobjectivity in employment and career development.

To encourage an open, international dialogue, UPM has a co-operative body, the UPM European Forum, which focuses on issues related to changes within the company and the business environment in general. The forum organises regular meetings for employee representatives from business units operating in Europe.

Rewarding and recognising good performance

UPM rewards and recognises high performance. UPM has a total compensation approach, consisting of a base salary, benefits and incentives, which are determined by UPM’s global rules, local legislation, general agreements, local market practice, the level of position and individual performance. Gender, age, ethnic origin and nationality have no role in the definition of salaries and wages.

The differences between male and female average salaries do not vary a lot and in both directions, as assessed in UPM’s main countries of operations of salaried employees. Intangible recognition is included in the total reward portfolio, which means that UPM provides, for instance, a safe and healthy working environment, interesting and meaningful work and good leadership and career opportunities. Individual, team and business performance are criteria for compensation planning and decisions.

All UPM employees belong to a unified Annual Short Term Incentive (STI) scheme. The plan includes group- and business-level targets and personal and/or team performance targets.

EBITDA is one of the key financial indicators for the group- and business-level targets. The annual incentives paid in 2017 for the 2016 STI plan were EUR 65 million and the estimated amount of annual incentives for the 2017 STI plan was EUR 57 million. For significant individual or team successes, there is a separate Achievement Award system in place.

UPM has two long-term incentive plans: a Performance Share Plan (PSP) for senior employees and a Deferred Bonus Plan (DBP) for key employees. Since 2011, the plans have been launched annually and approximately 700 employees have been covered by the plans. In both plans, the earning of shares is independent of achievement of predetermined financial targets. Under the plans, UPM shares are awarded based either on group/business area-level performance or total shareholder return. More information about long-term incentives can be found on www.upm.com in the Investors section, under Governance, in the Remuneration Statement.

Changes in 2017

At the end of 2017, UPM had 10,111 employees working in 46 countries. In March, UPM permanently closed two paper machines in Austria and Germany, based on a plan announced in November 2016. In June, UPM Restructured Paper ENS Supply, customer service and sales organisations in Europe. In October, UPM announced plans to permanently close one paper machine at UPM Blandin in the US, closed in December, and optimise operations at the UPM Nordland Paper and UPNorse units in Germany. As a consequence of these measures, the number of UPM personnel was reduced by approximately 650 people by the end of 2017.

During the year, UPM RaffiGas acquired a Texas-based Southwest Label Stock and opened a new terminal in Chile. UPM’s invoice and business development, in biochemicals for example, increased the number of employees by approximately 300 people.

UPM BIOFORCE GRADUATE TRAINEES SEIZE THEIR OPPORTUNITY

Enthusiastic young professionals from various backgrounds and of several nationalities began the 18-month UPM Bioforce graduate training programme at a two-day boot camp in September.

Aspiring trainees applied directly for specific positions in China, Finland, Germany, Russia and Uruguay, and Uruguayan candidates accepted for the new pilot programme going through a thorough recruitment process involving detailed forms, psychological tests, video interviews and problem-solving team assignments during the assessment day.

Besides their own role and business area, all trainees will work on three modules outside of their own area. These tailored modules can be in other business areas or in global functions, and working abroad is obligatory.

“Applying for the programme introduced me to new recruitment processes, especially the individual and team assignments,” says Juanita Roque from Uruguay. Juanita heard about the programme from the Universidad de Montevideo, where she studied International Business. During the programme, Juanita will work in Uruguay and Finland in a Stakeholder Relations role.

Read more: www.upm.com/careers www.upmbioforce.com

Employees engagement index favourable

CONTENTS

UPM PERSONNEL IN FIGURES 2017 2016 2015

Turnover % 9.2 9.0 10.5

Turnover % (voluntary) 3.9 3.2 3.3

Average age of personnel 44.5 43.7 43.4

People development

Average training hours1) 13 13 14

OHS figures, UPM workforce

Lost-time accident frequency 3.3 3.7 3.9

Total recordable injury frequency 8.2 9.3 10.6

Absence rate % 3.8 3.4 3.7

Number of occupational diseases 17 12 6

OHS figures, contractors

Lost-time accident frequency 7.0 6.2 5.5

Total recordable injury frequency 9.4 7.5 n/a

1) Reflects active employees

2) Figures for last 9 months at the year, excl. Germany and Austria

3) Reflects own employees

2017 2016 2015

97% 99% 100%

97% 99% 100%

97% 99% 100%

97% 99% 100%

97% 99% 100%

97% 99% 100%

97% 99% 100%

97% 99% 100%

97% 99% 100%

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97% 99% 100%
Driving continuous safety improvements

SIGNIFICANCE
- People are at the core of business. Ensuring the health and safety of employees, visitors and all other people impacted by our operations is of paramount importance.
- Employees' wellbeing is built on supportive working environment, healthy lifestyle and work-life balance.
- Safety and wellbeing have a direct impact on employee engagement and UPM's business success.

TARGET
- Ensure safe and healthy working environment and wellbeing of employees and contractors.

OUR WAY
- Development of preventive safety culture.
- Training of personnel and contractors on safe working practices and safety requirements.
- Regular audits and evaluations of all safety processes.
- Correcting identified safety issues or vulnerabilities quickly.
- One Safety — a global UPM reporting tool.
- Close co-operation with employees and external occupational health organisations.
- Quarterly health-related themes.
- Focus on 2030 targets on preventive safety culture, LIAT, TRIF and absenteeism rate.

In 2017, UPM's lost-time accident frequency (LTAF, the number of lost-time work accidents per one million hours of work) was 3.3 (3.7). Total recordable injury frequency (TRIF) improved, reaching 8.2 (9.3). The TRIF includes LIA cases as well as modified duty cases and accidents requiring medical treatment. The safety of the external workforce also improved. The frequency of accidents including UPM's contractors was 4.3 (LTAF) and 8.5 (TRIF) in 2017.

Despite UPM's efforts, there were eight serious accidents and three fatal contractor accidents in 2017: two accidents in Wood sourcing and Forestry in Finland and one fatal accident at Shotton paper mill in the UK. Thorough root cause analyses have been conducted and key learning points have been shared to avoid any serious accidents in the future, with a view to achieving UPM's permanent target of zero accidents.

Good safety performance is recognised with company-wide safety awards. The 2017 UPM Safety Award for the most improvement was given to UPM Kymi integrated pulp and paper mill in Finland.

UPM's management system, enforced through the “Step Change in Safety 2012–2014” initiative, provides a solid foundation and a systematic approach. Audit results and findings are an integral part of UPM's continuous safety improvements. OHS focus areas in 2017 were risk management, process safety and the implementation of six life-saving standards.

At the beginning of 2017, UPM introduced six life-saving standards, considered to be the most effective in preventing serious accidents. The standards help UPM employees and contractors to stay safe while performing certain duties with higher risk, including working at height, permission to work, mobile equipment and cranes as well as the isolation of energised equipment.

Global UPM safety reporting
All UPM employees and contractors are encouraged to report all near misses and to make safety and environment observations. This information is available for sharing and learning in One Safety, UPM's global reporting tool, which was introduced in 2016. It covers environment, health and safety, product and process safety and security. Since the beginning of 2018, all UPM sites have had access to the tool. External contractors working on UPM premises can also record their observations using the system.

The main uses of the tool are the recording of observations, near-miss situations and accidents, managing investigations and corrective actions for incidents, preparing risk assessments and reliable reporting. Proactive observation is also promoted during regular safety walks.

Promoting employees’ health and wellbeing
To support the wellbeing of its personnel, UPM is working closely with employees and external occupational health organisations. 71% of UPM employees are represented by a well-balanced, formal management-worker health- and safety committees. The aim of these location-specific committees is to monitor and advise on occupational health, health and safety issues and programmes.

In 2017, UPM continued with its quarterly global health and safety themes. The aim is to support the continuous improvement of employees' health, quality of life and ability to perform. In 2017, themes included organisational climate, travelling, as well as health and a hectic life.

Additionally, several health and wellbeing initiatives were launched at various UPM sites and businesses based on local needs and those produced positive results. Activities covered topics from physical and mental wellbeing to health and nutrition. In Finland, for example, more than 1,500 employees 20% of UPM personnel in Finland) participated in different types of health and wellbeing programmes in 2017.
In November, UPM signed an agreement with the Government of Uruguay on infrastructure development and other local prerequisites for a potential pulp mill investment in the country. This signing was followed by a handshake and press conference in Montevideo.

Stakeholder engagement brings stability to operations
As stakeholders view UPM primarily as an economic operator, financial success, stability, future outlook and growth are key themes for most stakeholders. In addition, UPM’s environmental performance and social responsibility play a significant role in UPM’s licence to operate and affect the long-term success of its businesses.

UPM aims to provide a balanced view of the economic, environmental and social aspects of its business activities, recognising, however, that expectations vary between stakeholders.

Stakeholder engagement is part of the strategy process
For all businesses, stakeholder mapping is an essential part of stakeholder relations, along with the systematic gathering of feedback and views from different sources.

UPM’s materiality analysis highlights the most important issues for UPM and its stakeholders. The analysis is based on stakeholder feedback and the company’s risk mapping.

UPM’s most important stakeholders are customers, investors and financiers, employees, suppliers, local communities, authorities and decision makers, the media and non-governmental organisations. The approach for each stakeholder varies depending on business focus, region and individual stakeholder groups. Best practices are regularly shared.

The UPM Code of Conduct sets the standards for responsible behaviour towards stakeholders for each and every UPM employee. The standards cover topics relating to legal compliance and disclosure, interests of investors, anti-corruption and anti-bribery, HR practices, human rights questions and environmental matters.

The level of stakeholder engagement is measured by several indicators, such as customer enquiries, contact with the mills, forest department or investor relations, number of job applications and share-price development.

Activity in 2017
UPM carried out a materiality analysis based on several surveys, customer enquiries and feedback from an anonymous web-based tool. A detailed description of the analysis is available on page 53.

Implementation of the Code of Conduct, renewed in 2016, continued. Targeted training sessions were organised for specific employee groups (read more on page 77). By the end of the year, 96% of active UPM employees had completed a Code of Conduct training session.

Sustainable forestry issues were highlighted during the year and discussions on forestry were carried out with environmental organisations, certification bodies, authorities and decision makers (read more on page 63).

Customer enquiries focused on topics such as product safety, ecotags and the origin of raw materials. The majority of direct feedback from stakeholders focused on the local effects of UPM’s operations, such as odours or visual impact of forest logging.

UPM provided further information relating to each topic. In addition, some UPM sites, UPM Kaikas for example, introduced community evenings to share information and receive feedback.

Competitiveness at the forefront of public affairs
Through public affairs work, UPM aimed to foster the necessary prerequisites for operations, particularly in Finland, Uruguay, Germany and China. UPM co-operated with a number of trade associations on those topics, the most important of these being the Finnish Forest Industries Federation (FFIF) and the Confederation of European Paper Industries (CEPI).

To ensure long-term engagement, UPM works consistently with its diverse range of stakeholders to understand their specific expectations. It is equally important to communicate and discuss the company’s targets, operating principles, values and the challenges it faces within the operating environment.

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To ensure long-term engagement, UPM works consistently with its diverse range of stakeholders to understand their specific expectations. It is equally important to communicate and discuss the company’s targets, operating principles, values and the challenges it faces within the operating environment.
Within the EU, UPM promoted the competitive and consistent regulation of energy and climate policy. The discussion on the impact of forests on climate was especially relevant as the EU made a legislative proposal on land use, land use change and forestry regulation (LELUCF). Influencing the future priorities and markets within the advanced renewable fuels sector, as well as sustainability criteria for forest-based biomass, were the key themes of the revision to the Renewable Energy Directive for the years 2021-2030.

In Finland, UPM contributed to discussions on the Finnish operating environment that impact the competitiveness of the forest industry in Finland. One Finnish discussion topic during the year related to different public subsidies and existing tax mechanisms, for example, to promote renewable energy generation or the competitiveness of industries exposed to international competition.

UPM was actively involved in the stakeholder processes related to sustainable forestry. The round-table forum initiated by the Ministry of the Environment and FITF’s “Forest Environment” programme focuses on maintaining the biodiversity of forests as part of sustainable forestry practices. For its part, UPM promoted means to increase the amount of wood on the Finnish markets. The act on forest inventory data, which makes forest data public information, will be introduced in 2018. Together with the launch of Kiuutii, an electronic wood-trade portal, this will facilitate modern wood-trade services and activate the wood market.

In Uruguay, UPM concluded discussions with the Government of Uruguay regarding the development of a logistics infrastructure and other local prerequisites for a potential pulp investment in the country. An agreement on local prerequisites was signed in November. Rail and road connections are a critical challenge for establishing a large-scale industrial operation in the Uruguayan inland and connecting it to a deep sea port (read more on page 60).

Co-operation on responsibility issues helps secure operations

For environmental and responsibility issues, UPM’s stakeholders engagement activity concentrated on promoting and improving UPM’s performance, along with securing the prerequisites for future activities. Globally, UPM continued its active co-operation with local permit authorities.

UPM participated in the UN Global Compact LEAD group, which represents the world’s leading companies to promote sustainability through innovation and actions.

Co-operation also continued on a voluntary basis with a wide range of stakeholders relating to ecolabels, standards and standardisation frameworks, as well as nature conservation. UPM entered into a two-year cooperation agreement with Forest Stewardship Council FSC® and significantly increased the share of FSC® certified wood in Finland (read more on page 63).

Biofore Share and Care programme supports company strategy

UPM’s Biofore “Share and Care” programme demonstrates the company’s dedication to a sustainable and innovative future through sponsorships and donations. UPM shares its resources with causes that respect sustainable development and work in line with the company strategy.

The company’s rules, partnerships and donations were revised during the year to ensure appropriate decision making. Rules for employee volunteering were also outlined. UPM directs support to reading and learning projects, water initiatives, bio-innovations and community engagement. UPM does not financially support political parties or individual candidates.

The focus of the local sponsorship is on supporting the vitality of UPM employees, NGOs, customers, suppliers, government and regulators, investors and media.

UPM’s materiality analysis 2017

The materiality analysis below of the company’s responsibility issues covers topics that directly or indirectly influence the ability to create, maintain or acquire economic, environmental or social value for UPM, its stakeholders and society.

UPM’s most important stakeholders

UPM’s Biofore strategy forms the foundation of UPM’s stakeholder dialogue. The key focus areas and activities vary locally and according to stakeholder needs.

All customer questions and stakeholder concerns received during the year are taken into consideration. Additionally, UPM conducts a specific stakeholder survey using a web-based tool that enables stakeholders to answer anonymously.

Results of the survey are gathered and analysed by an independent third party and used to support UPM’s wider evaluation. Most material economic, environmental and social responsibility topics identified in UPM’s analysis are presented on the right. UPM’s responsibility focus areas and targets (p. 16-17) reflect these material aspects. UPM does not distinguish between topics within the section and considers them all equally material.
COMMUNITIES: Co-operation with universities
Open door events at several mills.
Participation in Nordic Energy Forum

MEDIA: boosting bioinnovations.
reading and learning, engaging with
ability in business operations and stakeholder
UPM’s mill locations. The Mini Challenge
challenged university students to find solutions
send study results to their teachers. UPM has
related to water and then use smart phones to
primary school students carry out assignments
continued throughout the year at UPM’s paper
acknowledging the students’ own interests.
practical approach to reading skills,
during the project. The workshops took a
schools participated in the literacy workshops
– school visits and public events across Finland.
UPM also reached out to students through the
UPM’s workshop on sustainability in business.
entrepreneurship skills. A total of 300
high-school students from around the Nordic
The third one-day Slush Youth event welcomed
UPM’s Zero Solid Waste to Landfill initiative received the Gold Award in the
Midwest Region Sustainability competition.
Water Efficiency Frontrunner: UPM has been recognised as a Water Efficiency Frontrunner in China, in one of the key initiatives launched by the government to reduce industrial emissions.

INDUSTRY LEADER
Our consistent efforts regarding responsibility issues have received recognition from several third parties and have made us one of the industry leaders in several fields.

UN Global Compact LEAD: UPM is the only forest-industry company and Finnish company participating in the UN Global Compact LEAD.

Dow Jones Sustainability Index: UPM has been listed as the industry leader in the forest and paper sector in the Dow Jones Sustainability World and Europe Indices (ESG) for 2017-2018.

CDP Programs: UPM has been recognised with a global leadership position in the 2017 Forest A List and Water A List. UPM received an A+ leadership position in the CDP Climate programme.

Biopools was the Industry Leadership category in Bioenergy at the 2017 Platgs Global Energy Awards — often described as the Oscars of the energy industry.

The Nordic Bioeconomy Panel included UPM BioVerno renewable diesel and GrowDox® 3D cell hydrogel in the Nordic Bioeconomy 25 Cases for Sustainable Change catalogue.

UPM’s Zero Solid Waste to Landfill initiative received the Gold Award in the Midwest Region Sustainability competition.

Water Efficiency Frontrunner: UPM has been recognised as a Water Efficiency Frontrunner in China, in one of the key initiatives launched by the government to reduce industrial emissions.

In addition to the group-wide focus areas, UPM’s businesses had their additional focus areas in stakeholder dialogue in 2017. Customer collaboration is presented on pages 56-57, employee activities on pages 44-49.
Upjohn's businesses vary in the products and services that they offer. Each business has its own customer relationship management process and way of interacting with customers. A comprehensive understanding of the markets, knowledge of end uses and an appreciation of customers' needs form the basis of UPM's customer relationship management.

Opportunities of bioeconomy

Trends in the consumer marketplace have a significant impact on the demand for forest industry products. As the population grows and consumption along with it, the use of renewable raw materials and recycling must be increased. More renewable raw materials will have to be used in production to replace fossil materials and other non-renewable natural resources. Biomass and biomaterials will play an increasingly important role in the circular economy and the innovations related to it. Upjohn actively develops solutions based on the circular economy model, in which materials and value circuits and added value is generated by services and smart operations. The target is to provide customers with solutions that improve customers' business performance, in particular a special focus on creating mutual benefits and investigating new business opportunities.

Continuous dialogue and collaboration

Upjohn's interaction with customers is based on continuous dialogue and regular customer satisfaction surveys. In addition to a continuous working dialogue, Upjohn is engaged in various development projects with customers.

Customer satisfaction is measured regularly in most businesses through customer satisfaction surveys. Based on results from various customer satisfaction surveys, the overall total satisfaction with Upjohn as a supplier is 86% (86%). These surveys act as a tool for further development, and bring an important customer dimension.

Customers value Upjohn's comprehensive high-quality product range, reliability and excellent environmental performance. Product safety, forest certification, chains of custody, resource efficiency and recyclability are among the most important factors for customers.

Upjohn offers product declarations and environmental data for most products as a tool to provide customers with information on the sustainability of products and the supply chain.
UPM’s value creation also generates tax revenues

SIGNIFICANCE
• UPM's continuous improvement in its financial performance also generates higher tax revenues.
• UPM is strongly committed to continuously improving its economic and social performance, where the company’s income tax payments mainly in countries of production or service operations, play a major role.

OUR WAY
• Based on the standards of the UPM Code of Conduct, UPM’s Tax Policy describes the main principles and guidelines of UPM’s taxation.
• In accordance with UPM’s tax policy, UPM pays its corporate income taxes on taxable profits mainly in countries where production activity takes place and in the countries where innovations are developed. In the table on the next page, the corporate income tax figures are reported on a cash basis and thus include some taxes of previous years as well but exclude deferred taxes as they may not be paid.

In Finland, UPM has significant production operations through all of its six business areas, as well as research and development operations. Due to these factors, UPM is also one of the biggest taxpayers in Finland.

In Uruguay, the government has granted UPM’s pulp mill with a permit to operate in a special economic zone, whereby taxes in Uruguay mainly consist of property/real estate taxes and annual tax-like charges paid to the government for the development of the special economic zone.

In China, with regard to fine paper production, UPM qualifies as a high-tech enterprise with a reduced corporate income tax rate of 15%. In those countries where UPM’s companies are using tax losses from previous years to offset the tax liability of the year in question, such as Germany, there are no or only limited corporate income taxes paid.

Energy taxation at various levels of the value chain

Taxation of end products
In addition to the taxes on income, UPM’s various production inputs and outputs are also subject to taxation. These taxes may either be paid by UPM or collected by UPM from the customers and remitted to the local authorities.

Energy taxation is especially relevant for UPM in various countries and it refers to excise taxes of liquid fuels as well as electricity and certain other fuels. Energy taxation is subject to detailed regulation not only at country level but also at EU level.

The majority of UPM’s own electricity production is hydropower or combined heat and power (CHP) production at mill sites, where the majority of the fuels used in energy production are from renewable sources. The electricity produced by UPM is subject to electricity taxation regardless of which sources are used.

The renewable UPM BioVerno-diesel and naphtha which are produced from crude tall oil, a residue of the pulp production, are also subject to energy taxation. The taxes are charged by fuel distributors to their customers based on the environmental goals of taxation of transport fuels directly impact the business. The energy taxes of transport fuels from renewable sources like UPM BioVerno are lower than those of fossil fuels due to their lower carbon dioxide emissions.

Taxation of raw materials and other inputs
UPM is also a significant energy consumer, especially for the paper production. Most of the energy used in the production processes is subject to energy taxes, though there are different tax rates or even exemptions depending on the type of use.

UPM pays a significant amount of energy tax also on fuels as part of logistics costs, especially for road transportation.

Compensation of paid energy taxes for global cost-competitiveness
Within the EU, the energy taxation legislation allows member states to compensate paid taxes or apply lower tax rates for industrial production or activities which are considered energy intensive. Many of the main UPM production countries, e.g. Finland and Germany, apply such tax relief because the level of energy taxation has increased significantly in recent years.

In Finland, electricity is taxed at a lower tax rate when used in industrial production. Energy-intensive industries get a retroactive refund of paid energy taxes based on a separate application, if the amount of energy tax paid exceeds a certain threshold dependent on the company’s added value.

A similar retroactive energy tax refund can be applied for in Austria while in the UK and France, relief is granted upfront in the form of lower tax rates for energy-intensive industrial users that fulfill the requirements. In Germany, there are certain energy tax reliefs that companies may apply for in advance and some that are applied for retroactively if the company fulfills various eligibility criteria. Energy tax reliefs are also subject to detailed regulation not only at national level but also at EU level.

Regarding transportation, UPM benefits from some subsidy schemes and feed-in tariffs related to renewable energy production, such as KEG (Energiesystem Gretzenbeuren) in Germany and operating aid for wood fuel power plants in Finland.

Read more: UPM’s assets and capital expenditure by country on page 121.

UPM’s tax policy is available on the corporate website under www.upm.com/governance.

Read more: UPM’s project to provide locally relevant information on societal impacts under EMAS environmental performance reports on page 19.
Ecolabels and product declarations as a sign of transparency

UPM provides product declarations to grant customers easy access to information concerning the responsibility of products and the supply chain. They are developed for various customer needs, for instance, to verify that products do not contain harmful chemicals.

Ecolabels help customers make responsible choices and provide stakeholders with important information. UPM is globally the largest producer of EU ecocertified newsprint, office papers and graphic papers and as of 2017, the EU Ecocert has been available for all UPM graphic papers in Europe. UPM also provides its customers with the opportunity to use well-known local ecocertifications, such as the German Blue Angel or Nordic Ecolabel. All UPM businesses have FSC® and PEFC™-chain of custody certification.

In 2017, UPM Biofuels received a RSB (The Roundtable on Sustainable Biomaterials) certificate for both UPM BioVerno renewable diesel and naphtha, as well as production-side streams turbine oil and pitch. RSB verifies the sustainability and reliability of feedstock sourcing and production.

UPM Specialty Papers introduced UPM’s Responsible Fibers™ concept to Asian markets. The trademark combines environmental and social responsibility criteria into one entity.

UPM products create societal value

Most of UPM’s businesses today and in the future are based on efficient use of sustainably sourced, renewable forest biomass. The fact that UPM’s products replace products made of non-renewable raw materials adds to their value.

Wood is a versatile construction material with many beneficial properties. The excellent indoor air quality of wood buildings is due to the natural ‘breathability’ of timber walls and the acoustic properties are also of high quality. In addition, wood has been proven to have positive effects on wellbeing and is an outstanding material to mitigate climate change, because it stores a large amount of carbon.

In 2017, UPM Plywood introduced WISA BioBond, a new lignin-based gluing technology in plywood manufacturing. With the new technology, 50% of the fossil-based phenol can be replaced with lignin obtained as a by-product of chemical pulp production.

UPM Biofuels is developing a new feedstock concept by growing Brassica carinata as a sequential crop in South America. The Carinata crop produces non-edible oil suitable for biofuel’s feedstock and protein for animal feed. Carinata will provide additional income to local farmers, who do not normally have their fields in productive use during winter.

UPM Raflatac launched new labels for authenticating products and preventing counterfeit products from entering the market in order to ensure consumer safety. During the year, UPM Raflatac also extended its range of film face materials for the European market, providing a sustainable alternative to fossil-based films for a wide variety of end-uses.

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UPM Paper businesses continue to develop lightweight papers where less material is used to produce the same printing area.

The Nordic Bioeconomy Panel under The Nordic Council of Ministers chose two UPM products (UPM BioVerno and GrowDex®) for the “Nordic bioeconomy – 25 cases for sustainable change” catalogue, as products that create a large amount of societal value and promote the Sustainable Development Goals of the UN.
Committed to sustainable forestry

SIGNSIFICANCE
- Forests and wood-based products have a unique role in climate change mitigation.
- Biodiversity loss and deforestation are of concern, especially in the tropics.
- Forest area increases in Europe.
- Renewable wood is UPM's most important raw material.

TARGET
- Ensure sustainable land use and keep forests full of life.

OUR WAY
- Sustainable forest management with credible certification systems for all our own forests.
- Third-party verified chain of custody systems to ensure 100% traceability of wood.
- Global biodiversity programme.
- We do not use wood from tropical rainforests or accept wood from forest plantations that have been established by destroying rainforests.
- No operations in areas where the rights of indigenous peoples are threatened or endangered.
- Focus on 2030 target: all fibre certified.

As a responsible forest owner and wood user, UPM ensures that the wood it receives is legally sourced from sustainably managed forests.

At the end of 2017, UPM owned 570,000 hectares of forest in Finland and 75,000 hectares of forest in the United States. Additionally, the company has 255,000 hectares of forest plantations in Uruguay. Forests owned by UPM house around 45,000 protected sites with a total area of 325,000 hectares. The company is also responsible for managing approximately 960,000 hectares of forests and forest plantations owned by private forest owners.

UPM continued to sell forest land that is remote from its production sites. In Finland, UPM and the Ministry of the Environment agreed on the establishment of several private conservation areas on UPM land.

Co-operation with stakeholders
The growing need for food production and wood causes deforestation, especially in the tropics, which is an important concern for the entire forest industry. UPM recognises this challenge and has reacted by taking action in its own operations and by actively participating in international co-operation networks.

Forest certification is based on standards that have been defined in an open stakeholder process, and compliance with these standards is monitored by an independent third party. All UPM-owned forests are certified. To promote the certification of privately owned forests in Finland, UPM has established FSC® and PEFC™ group certification schemes. In 2017, UPM's Finnish FSC group certification scheme grew to cover over 300,000 hectares of forest.

UPM and the Forest Stewardship Council® (FSC) signed the partnership agreement in 2017. The partnership aims to deliver benefits to forest owners through FSC certification and to increase the FSC certified wood supply.

In 2017, the CDP Forest Program listed UPM as one of the six global leaders on the 2017 Forest A List for timber and timber-based products. Companies on the A List are recognised as having responded to market demand for environmental accountability and taken action to prevent deforestation.

Active forestry-related research and development in UPM forests
Forest biodiversity is one of the key factors in UPM’s forest operations. The aim of UPM’s global biodiversity programme is to maintain biodiversity in forests, to promote best practice in sustainable forestry and to emphasise the role of ecosystem services. The company is involved in several biodiversity projects in collaboration with various stakeholders.

The Finnish Government’s bioeconomy strategy raised conflicting opinions due to the increasing demand for wood and its impacts on biodiversity. UPM continued to participate actively in a roundtable process coordinated by the Ministry of the Environment and the Ministry of Agriculture and Forestry. The process involves forest owners, forest and environmental organisations and representatives from industry, research and public administration. The common goal is to find ways to safeguard forest biodiversity.

Biodiversity-related project continued into its 12th year at UPM’s forest in Harvia in Finland. Controlled burning is used to increase biodiversity, but in the research project, burned trees have been combined with another key habitat, decaying wood. The aim of the long-term research project is to find practices that can be used to increase biodiversity as part of normal forestry operations.

UPM has also systematically developed methods for maintaining biodiversity in its eucalyptus plantations in Uruguay. In the first phase, UPM conducted a biological survey at the beginning of the 1990s to discover and classify species in the regions where it was going to operate. Mafalda was found to have very special flora, fauna and ecosystems. Therefore, a valuable part of the site was saved from planting and since then, this has been an important part of our biodiversity work in Uruguay. It demonstrates that it is possible to enhance biodiversity and run forest operations in the same area. Currently UPM is developing the infrastructure of the site to allow visitors such as locals, students, authorities and experts to research and enjoy the nature of the region.

UPM signed a global partnership with FSC International
UPM’s global partnership with FSC International, signed in spring 2017, is aimed at developing the FSC forest certification scheme to better suit the northern boreal forest zone and operating environment, where a significant proportion of sourced wood comes from small private forest owners. Other areas of co-operation are the general strategic development of standardisation and development work on ecosystem services.

UPM has extensive experience of sourcing FSC certified wood. All wood sourced by UPM is FSC certified. UPM’s plantations in Uruguay and the majority of UPM’s forests in Finland are FSC certified. In these countries, UPM is also responsible for managing FSC group certification, which is a way of offering FSC as a forest service to interested forest owners.

Major environmental organisations are also committed to the FSC forest certification scheme. FSC emphasises the environmental issues of forestry, stakeholder engagement and the transparency of operations.

UPM’s FSC operations received a lot of public attention in Finland in 2017. The discussion focused particularly on the protection of endangered species in connection with forest management. Finland has the highest levels of knowledge in the world about forest species and their habitat requirements. UPM participates in a national development group that aims to improve the protection of species as part of FSC certification.

Compliance with standards is assessed by an independent auditor in an annual audit. In 2017, UPM achieved the best results so far in the external FSC audits carried out in Finland. FSC forestry audits have been conducted since 2011, when the certification scheme was established.
Co-operation with suppliers is the basis of a responsible supply chain

**SIGNIFICANCE**
- An effective supply chain guarantees the availability and production of commodities, even in exceptional circumstances.
- Suppliers are an essential part of UPM's value creation.

**TARGETS**
- UPM is a reliable and future-oriented business partner and sets clear requirements and expectations for its suppliers.
- Together with its suppliers, UPM uses cost leadership, innovation, continuous development and proactive risk management to generate competitiveness.

**OUR WAY**
- Focus on long-term co-operative relationships.
- Continuous monitoring of suppliers' performance and improvement of processes in co-operation with key suppliers.
- Responsible and ethical practices in the supply chain create long-term value for UPM and its stakeholders.
- The UPM Supplier and Third Party Code sets transparent requirements.
- Focus on 2030 targets.

**Suppliers are an essential part of UPM's value chain. Continuous development work with the suppliers ensures the efficiency, transparency and responsibility of the whole supply chain.**

Globally, UPM has over 25,000 material and service suppliers. The company's sourcing network includes suppliers from private forest owners to international corporations.

UPM buys numerous different products, materials and services. The main sourcing groups are fibre, raw materials, other approved material purchases and services, logistics and energy. UPM's co-operation with its suppliers is based on mutual commitment and openness. The aim is to ensure productivity, quality, innovative development and systematic performance improvement.

All new suppliers are evaluated and they must meet the requirements set by UPM's suppliers and third parties.

**Cost efficiency and responsibility as principles**

UPM aims to ensure that suppliers are able to provide responsibly produced, cost-competitive and innovative materials and services for UPM's business units globally -- in all market situations.

Long-term reliable deliveries, product and service quality, suppliers' financial stability, social and environmental responsibility, product safety and occupational health and safety are taken into consideration when selecting suppliers.

The UPM Supplier and Third Party Code guarantees global common rules.

UPM is committed to responsible sourcing practices in the company's Code of Conduct. All the minimum requirements for suppliers are defined in the UPM Supplier and Third Party Code. UPM requires that the suppliers promote such requirements in their own supply chains in order to maintain UPM's reputation.

In 2017, 82% (80%) of UPM's spend was qualified against the UPM Supplier and Third Party Code. For the first time, energy sourcing was included in the KPI. Despite the increase, the share of qualified suppliers grew from the previous year, so the relative improvement is excellent. The qualified suppliers are committed to complying with UPM's responsibility criteria, including occupational health and safety.

All suppliers working in UPM's production plants must be aware of UPM's safety requirements. Various additional requirements are applied to wood, chemicals, pulp, paper and products, safety and logistics.

All UPM's pulp, wood and recovered paper suppliers are continuously evaluated in regard to environmental issues, occupational policy, supply and responsibility related risks. Country of origin, sourced commodity and complexity of supply chain are used to determine responsibility risks.

UPM's risk assessment includes supplier-specific financial quality and supply and responsibility related risks. Country of origin, sourced commodity and complexity of supply chain are used to determine responsibility risks.

Based on the risk assessment, selected suppliers' activities are evaluated in more detail through annual surveys, supplier audits and joint development plans. Audits are carried out by both UPM's own auditors and external auditors. Human rights are one of the main focus areas of these audits. In 2017, UPM organised extensive audit training for key personnel regularly visiting suppliers' production facilities. UPM also conducted several audits that included every layer of the supply chain.

When non-conformities are discovered, the supplier is required to take corrective measures. UPM monitors the implementation of these measures and provides support for improving the suppliers' operations if needed. Despite corrective measures, some contracts had to be discontinued due to insufficient measures or the severity of UPM’s findings.

A prominent user of wood and recovered paper

UPM is both a major forest owner and purchaser of wood. Wood is a valuable raw material and UPM ensures its optimal utilisation by acquiring all types of wood. In 2017, UPM sourced 27.4 (27.8) million cubic metres of wood worldwide.

UPM is also the world's leading user of recovered paper for the production of graphic paper. In 2017, the company used a total of approximately 2.6 (2.8) million tonnes of recovered paper. The share of recycled fibre represents approximately 30% of all fibre raw materials used in UPM’s paper production.

Tracing the origin of wood is an essential prerequisite

All the wood used to produce UPM products is legally harvested and comes from sustainably managed forests. UPM does not use wood harvested from tropical rainforests or accept wood from plantations that have been established by converting natural forests. UPM does not accept wood from regions that do not respect the rights of indigenous peoples. All of UPM's wood supplies are covered by third-party-verified, FSC® and PEFC™ certified chains of custody.

UPM ensures that the wood supplied to its mills is compliant with the EU Timber Regulation, the U.S. Lacey Act and other regional requirements.

Continuous improvement together with raw material suppliers

UPM buys approximately 1.8 million tonnes of pulp from external suppliers. Pulp suppliers have special requirements for environmental performance, social responsibility, forestry, wood sourcing and reporting. Collecting and analysing data on pulp and chemical suppliers' environmental and social responsibility is an integral part of supplier and risk management. UPM creates development plans together with the suppliers based on these analyses.

UPM also monitors the performance of other raw material suppliers by performing various surveys. Over the past few years, UPM has organised responsibility-focused Supplier Days and competitions, and has granted awards to its best-performing suppliers. The aim of these awards is to encourage suppliers to improve their performance.

In 2017, UPM organised a Supplier Day for partnerships and key suppliers in China. The goal was to provide information on the UPM Changshu mill development projects, bolster collaboration with suppliers, form networks, give recognition to the suppliers and encourage them to perform even better.
Resource-efficient production

UPM uses raw materials, water, energy and other resources in a responsible manner and continuously improves its energy, resource and cost efficiency.

**MULTISITE BRINGS TRANSPARENCY AND EFFICIENCY**

UPM’s Finnish paper mills have moved to a shared management system certification. This covers the activities, methods and guidelines shared by the two businesses and complies with the requirements of assured occupational health and safety, energy efficiency, quality and environmental standards.

The multisite audit of the paper mills’ new way of working and the mill audits were conducted in autumn, to ensure they met the requirements. The project required close collaboration between the mill and function representatives.

The most significant change is that the descriptions and guidelines for shared functions have been centralised. This change makes it easier to learn from one another and share best practices. This new way of working improves efficiency and also reduces costs.

**SIGNIFICANCE**

- Global megatrends such as population growth lead to resource scarcity and competition for natural resources
- Resource efficiency eases the pressure on resources and brings competitive advantages and growth opportunities

**TARGETS**

- Continuous improvement of efficiency
- Excellent environmental performance
- Accountability and compliance
- Minimise possible negative impacts of operations

**OUR WAY**

- Certified management systems
- UPM’s Clean Run programme aims to improve environmental performance and awareness
- Best available techniques (BAT) in use
- Reliable, available and transparent reporting
- Focus on 2030 targets

Almost all of UPM’s production plants, as well as its wood sourcing operations, are certified with the ISO 9001, ISO 14001 and OHSAS 18001 standards. UPM is a member of the EU Eco-Management and Audit Scheme (EMAS) and holds certificates for all of its operations.

In brief

- **Focus on 2030 targets**
- **Reportable environmental non-conformances**
- **Energy efficiency and cost savings**
- **Sustainable sourcing operations**
- **Environmental performance**

**INVESTMENTS IN ENVIRONMENTAL PERFORMANCE**

UPM’s investments in environmental performance are part of the Group’s investment programme. In 2017, the company’s environmental investments totalled EUR 21 (22) million. The single largest investment was effluent treatment plant improvements at the UPM Fray Bentos pulp mill. UPM’s environmental costs, which are mainly attributable to effluent treatment and waste management, totalled EUR 225 (220) million, including depreciation. The main cost items were effluent treatment with EUR 49 (48) million, waste management with EUR 26 (28) million, and air pollution control with EUR 6 (5) million.

**STEADY DECLINE IN NUMBER OF ENVIRONMENTAL NON-COMPLIANCES**

There has been a significant decrease in the number of environmental non-conformities since UPM’s internal Clean Run programme was launched in 2012. No major environmental incidents occurred at UPM production plants in 2017 and UPM was not required to pay any significant fines due to non-conformities. However, a total of 33 (35) temporary deviations from permit limits or major deviations from the environmental limits set by UPM occurred at the company’s mills over the course of the year.

The most serious single incident was related to the rupture of a wastewater pipeline at the UPM Kaipola paper mill. The rupture led to a short-term leak of untreated wastewater into Lake Päijänne. No harmful impacts were identified afterwards in studies completed in cooperation with the local authorities. Occasional odours from pulp mills have caused some criticism. UPM responded to stakeholder feedback locally and organised feedback meetings for the surrounding community, for example, in Lappeenranta, Finland. In all cases, UPM immediately reported deviations to relevant stakeholders and undertook corrective measures. The global One Safety reporting tool supports a common, UPM way of managing and reporting safety and environment-related operations. In 2017, nearly 2,600 (2,300) preventative environmental observations were reported.

The goal of this reporting is to improve environmental performance, share best practices and promote environmental awareness.

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**GROWTH LEADS TO RESOURCE SCARCEITY**

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**STAKEHOLDERS’ ENGAGEMENT**

In 2017, over 2,600 environmental observations were reported, preventing any potential impacts. For example, in Lappeenranta, Finland, the UPM Fray Bentos pulp mill in Uruguay and the UPM Changshu paper mill in China in accordance with the EU Eco-Management and Audit Scheme (EMAS). In 2017, four of the company’s mills completed their EMAS Environmental Performance reports with locally relevant information on societal aspects and impacts. After piloting the approach, the scope will be expanded in 2018.

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- Continuous improvement of efficiency
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- Minimise possible negative impacts of operations

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Responsible water use

Water flows through every part of our business. It flows in and out of our production processes, it passes through our forests which help to purify and regulate its movement, and we even leverage its flow to create an important source of renewable energy.

UPM uses water responsibly in terms of the company's water consumption and effluent quality. This has also been acknowledged by the CDP Water Program which has rated UPM as one of the leaders on the 2017 A List for water. CDP's Water Program annually identifies companies that have proven their leadership in the sustainable management of water through specific actions. UPM is a signatory of CEO Water Mandate by the UN Global Compact.

Responsibility targets for 2030 encourage forward thinking Using less water also means using less electricity, chemicals and thermal energy. The water used in different processes is recycled as much as possible and returned to waterways. All of UPM's pulp and paper mills are required to have both a mechanical and a biological effluent treatment process. In order to ensure the best possible treatment result and to share best practices, UPM operates a global specialist network. The results have been positive and the number of incidents has decreased steadily.

UPM's COD load and AOX load per tonne of bleached chemical pulp

<table>
<thead>
<tr>
<th>Per tonne of chemical pulp</th>
<th>Per tonne of paper</th>
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<td>20</td>
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The COD load has decreased by 32% per tonne of paper, and by 37% per tonne of chemical pulp, over the last ten years.

UPM's AOX load per tonne of bleached chemical pulp

<table>
<thead>
<tr>
<th>Per tonne of chemical pulp</th>
<th>Per tonne of paper</th>
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<tbody>
<tr>
<td>0.20</td>
<td>0.15</td>
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<td>0.15</td>
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<td>0.10</td>
<td>0.05</td>
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<tr>
<td>0.05</td>
<td>0.02</td>
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</table>

AOX indicates the amount of halogens bound to the organic compounds present in the effluent. The AOX load per tonne of bleached chemical pulp has decreased by 48% over the last ten years.

UPM's process wastewater volumes

<table>
<thead>
<tr>
<th>Per tonne of chemical pulp</th>
<th>Per tonne of paper</th>
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<tr>
<td>50</td>
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UPM has reduced wastewater volumes per tonne of paper by 10% and per tonne of chemical pulp by 21% over the last ten years.

UPM has reduced its COD load by 32% since 2008.

In brief

- Water resources around the world are under increasing pressure, but each watershed is unique.
- Forests have a crucial role in the water cycle.
- Water is an essential resource for production and is also needed for cooling machinery.

TARGET

- Minimise the negative impacts of operations on water resources

OUR WAY

- Operations in areas with sufficient water resources
- Efficient water use with suitable recycling techniques
- Treatment of used water with best available techniques
- Water returned to original watersheds always when possible
- Local co-operation to minimise negative impacts and ensure water availability to all
- Focus on 2030 targets

UPM adds value to the information in the annual report by providing detailed data and charts to illustrate its water management practices and performance. This not only demonstrates its commitment to responsible water use but also enhances transparency and accountability in its reporting.
Climate actions and energy efficiency

**SIGNIFICANCE**
- Climate change is a global megatrend, bringing with it both risks and opportunities and requires action.
- The global climate agreement aims to keep the average temperature rise at a level that does not threaten nature and society.
- Forests which act as carbon sinks and wood-based products have a unique role in climate change mitigation.
- UPM is both a significant energy producer as well as a user of energy.

**TARGET**
- Create climate solutions and working towards carbon neutrality.

**OUR WAY**
- Ensure wood supply from sustainably managed forests.
- UPM’s biodiversity programme is making forest ecosystems less vulnerable to the impacts of climate change.
- Renewable and recyclable products that replace fossil-based materials.
- Efficient use and increasing share of renewable and low-emission energy.
- Continuous improvement of energy efficiency.
- Best Available Techniques (BAT).
- Focus on 2030 targets.

**UPM favours the use of renewable and other carbon-neutral energy sources and the use of natural gas. UPM’s Biofore strategy meets the challenge set by climate change, as the transition to a low-carbon economy is expected to bring business opportunities for UPM’s renewable and recyclable products.**

Biomass-based fuels account for 69% (69%) of the fuel usage. UPM is the second-largest generator of biomass-based electricity in Europe.

As the use of weather-dependent energy sources increases, the need for balancing power in energy systems will also grow. In Finland, UPM is investing in hydropower, the most effective and sustainable method of producing balancing power. In 2017, refurbishment of the Harjavalta hydropower plant was completed.

Paper and pulp mills, which use power and heat in their production processes, represent the majority of UPM’s total energy consumption. Most of the energy is consumed in the manufacture of mechanical pulp, pumping and paper drying. Steam and electricity are generated simultaneously by combined heat and power (CHP) plants at all pulp and paper mills. At some mills, all or part of the energy is produced by external and co-owned power plant companies.

**Energy efficiency improvement as one of UPM’s climate actions**
- UPM strives to continuously improve energy efficiency across all its operations.
- With the help of energy audits, innovations and internal campaigns, energy efficiency in production has improved. Electricity consumption per tonne of paper has decreased by 13% over the past 10 years, and UPM reached its annual energy efficiency target of 1% in 2017.
- As a result of the energy-saving actions carried out in 2017, UPM reduced its energy costs by EUR 3.0 (1.9) million, avoided 39,000 (18,000) tonnes of CO₂ emissions, and achieved a 92,000 (80,000) MWh reduction in energy consumption. The annual savings were EUR 5.1 (2.0) million, 61,000 (37,000) tonnes of CO₂ and 143,000 (92,000) MWh.
- A climate actions project was established in 2017 with UPM experts from different areas, to ensure that UPM is able to reduce its fossil CO₂ emissions and to achieve its 30% reduction target by 2030. In 2017, UPM received an A-Leadership listing in the CDP Climate Program.

**REDDUCING CO₂ EMISSIONS ON SEVERAL FRONTS**
- In 2017, the first full year of the China More with Biofore research programme, which aims to improve the energy efficiency and environmental performance of the UPM Changshu paper mill.
- The ongoing projects are aiming to reduce the paper machines’ unit energy consumption by 25%, and to maximise the combined heat and power by achieving 70% thermal efficiency at the site.
- UPM co-operates with suppliers to find viable technologies that may further reduce the mills’ CO₂ emissions. UPM is also working with leading Chinese energy research institutes to explore renewable energy solutions.
- In Germany, the installation of a new 80 MW biomass boiler at the UPM Harth paper mill is one of the most tangible examples of reducing CO₂ emissions in practice. The boiler from the former Myllykoski paper mill in Finland will be transferred to Harth, and is expected to be in use at the beginning of 2019.
- UPM’s German paper mills also aim to find new power supply partners which have lower CO₂ emissions in power production.

In Russia, UPM is expanding its Chudovo plywood mill and investing in a new 19 MW biomass boiler which will decrease fossil fuel consumption. Most of the mill’s heat energy will be generated using wood-based by-products from plywood production such as bark, chips and dust. The project is estimated to be completed by the end of 2019.

**UPM BIOSFUELS**
- UPM’s fossil carbon dioxide emissions
- UPM’s acidifying flue gases

**CAPACITY TO GENERATE POWER THROUGH OWN POWER PLANTS AND SHAREHOLDINGS**

**ELECTRICITY GENERATION THROUGH OWN POWER PLANTS AND SHAREHOLDINGS**

**FUELS USED FOR HEAT GENERATION**

**Read more:** www.upm.com/responsibility
Circular economy at UPM

Many of UPM’s current and new products are made from side streams and waste from traditional production processes. New technologies give UPM new ways to create innovative solutions.

SIGNIFICANCE
• Circular economy addresses two central global challenges: climate change and resource scarcity
• Growing demand and competition for raw materials
• Circular economy improves efficient use of materials and brings a competitive advantage

TARGET
• Promote material efficiency and circular economy – reduce, reuse and recycle

OUR WAY
• Reuse materials and products several times and create value through smart solutions
• Recycle and reuse production waste and utilise by-products
• Sustainable and innovative new businesses and solutions for future needs
• Focus on 2030 target: no process waste to landfills

Recycling is part of a circular economy
UPM has developed innovative ways to reduce its own waste and residues and to recycle waste in new products. Good examples of the company’s efforts in promoting circular economy include the following:

• UPM is the world’s largest user of recovered paper for the production of its graphic papers, consuming 2.6 (2.8) million tonnes of recovered paper in 2017, while recycled fibre represents approximately 30% of all fibre raw materials used in UPM’s paper production
• UPM’s renewable diesel and naphtha, UPM BioVerno, are produced from crushed tall oil, a residue of pulp production
• Celebrating its tenth anniversary, UPM Profi’s biocomposite utilises the cellulose fibres and plastic polymers that are manufacturing surplus from self-adhesive label materials production
• A new sustainable lignin-based WISA BioBond gluing technology in plywood manufacturing using a lignin by-product from pulp production
• The RaflCycle® recycling solution enables UPM Raflatac’s customers to reduce their waste flows
• Increasing use of recycled nutrients at UPM’s effluent treatment plants

UPM’s target of no process waste has already been achieved at most of the paper mills in Central Europe. In Finland, UPM implemented a Zero Solid Waste project which aims to find the best practice for recycling ash, sludge, dregs, wood-based waste and landfill waste. In 2017, UPM Timber zemills and UPM Plywood mills in Finland as well as UPM Jämsä River and Rauuma paper mills reached the zero solid waste status.

In 2017, the UPM Raflatac’s RaflCycle recycling solution was expanded to China. The paper liner waste generated by the RaflCycle partners in China is delivered to a partner where the paper liner waste can be recycled back into pulp and paper. UPM Raflatac has now 100 RaflCycle partners globally.

Nearly all organic production residues, including bark and wood residues as well as fibre-containing solids from drinking and effluent treatment, are used in energy generation at mill sites. Ash originating from bioenergy production forms the most significant proportion of UPM’s solid waste. Ash is used on a large scale in applications ranging from landscaping to road building.

CLOSING THE LOOP
UPM Specialty Papers is taking a step towards a circular economy by developing a high-quality release base paper made partly of recycled fibres.

Silicone is removed from the collected release base papers in the deinking process and the pulp is reused for papermaking.

Currently only approximately 10% of release base papers are collected and recycled, so there is plenty of raw material available. UPM is reusing materials collected from its end users, and has launched a new release base paper product family.

Recycling release base papers provide high-strength fibres that can replace virgin fibres. The product has also received Food Safety approval so it can be used for food packaging.

By recycling waste to make new valuable products, UPM aims to improve resource efficiency further and respond to the increasing demands to develop products made of recycled raw materials.

NO GREEN LIQUOR DREGS TO LANDFILLS
Green liquor dregs are one of the most challenging side streams of UPM’s pulp production. For several decades, efforts have been made to find a cost-efficient and sustainable alternative to landfill disposal. To reach the company’s global target of zero solid waste to landfill by 2030, UPM took an even more active approach in 2017 to the challenge posed by green liquor dregs.

UPM’s Research and Development centre in Lappeenranta has been working together with the company’s Finnish mills, which generate green liquor dregs, to find new processing methods and end uses for productionst materials based on green liquor dregs. A new product innovation is currently being tested together with partners, and initial results have been promising. A possible breakthrough would significantly reduce the amount of waste from pulp mills in Finland in the near future.

Read more:
www.upm.com/circulareconomy
Diving deeper into the societal impacts

Our activities and products have impacts on society. Understanding these impacts is a prerequisite to develop our operations. The evaluation covers our value creation from economic, social and environmental perspective.

Indirect inputs and outputs provide a more comprehensive picture of the value chain. Together with the direct inputs and outputs they form the basis for impact evaluation.

Impact evaluation is a continuous process for UPM. In 2017, UPM initiated a pilot study to assess the monetary value of certain impacts. This study provided us with examples shown on the right.

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**UPM**

34 production sites in 12 countries

900,000 ha forests and plantations

19,100 employees

Approx. 90,000 shareholders

Approx. 70 million Seedlings planted

12,000 Forests available for free recreation use

645,000 ha Ecosystem services

EUR 390m

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**RAW MATERIALS**

- Wood 27.4 m³
- Purchased paper for converting 0.5 m³
- Market pulp 1.8 m³
- Sawdust 0.2 m³
- Recovered paper 2.6 m³
- Minerals 2.3 m³
- Co-mingled domestic waste 0.2 m³

---

**WATER UPTAKE**

- Surface water 450 m³
- Ground water 17 m³
- Communal water 4 m³

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**ENERGY**

- Renewable fuels 28.0 GWh
- Fossil fuels 12.0 GWh
- Purchased electricity and heat 13.0 GWh

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**EMISSIONS TO AIR**

- Nitrogen oxides 9,000 t
- Sulphur dioxide 1,000 t
- Particulates 670 t

---

**MATERIALS**

- Market pulp 3.6 m³
- Chemical pulp 3.6 m³
- Paper 9.2 m³
- Converted materials 0.6 m³
- Plywood and veneer 0.8 m³
- Sawn timber 1.7 m³

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**OUTCOME & IMPACTS**

- Vitality and prosperity for spheres of influence
- Health impact on employees and contractors
- Employee skills enhanced
- Climate change mitigation through UPM’s climate actions
- Biodiversity enhanced
- Impact valuation of ash used as raw material EUR 20 m³
- Impact valuation of landfilled waste EUR –16 m³

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**Read more: www.upm.com**
Our decision making, management and operations are guided by our values and the UPM Code of Conduct. Our leading principle is that we do not compromise our standards of integrity under any circumstances.

Governance

We also aim higher in our governance. We are committed to good governance and compliance with the guiding principles contained in the UPM Code of Conduct and compliance with applicable laws and regulations. We trust that our governance structure supports good governance, responsible business operations and compliance at all levels with clear responsibilities and reporting lines. Our governance structure is presented on the corporate website and in the Corporate Governance Statement 2017 which is also available on the corporate website www.upm.com/governance.

Compliance trainings are arranged for specific target groups, which are defined based on risk assessments. Compliance training “Every choice matters” at the end of 2017 completed the UPM Code of Conduct training. The number of active employees had reported cases related to UPM Report Misconduct channel is available on the corporate website www.upm.com/governance.

Governance of compliance

Our compliance system is embedded in our governance model and is designed to support company performance and a culture of integrity at all levels. The main emphasis of the system is on preventive actions, which are based on the annual risk management cycle and risk assessments conducted in all businesses and operations. UPM’s compliance system and actions within this system are presented in the illustration on the right. The risk management process is described in the Corporate Governance Statement 2017.

Responsibility for compliance extends from the Board of Directors to every UPM employee, as described in the table below. We strive to ensure compliance with our values and commitments by training employees, by raising awareness through active communication and by developing our risk management, monitoring and reporting processes.

Compliance trainings are arranged for specific target groups, which are defined based on risk assessments.

Our principles under UPM Code of Conduct

We are committed to integrity
We respect people and human rights
We take care of our environmental impact and product safety
We have zero tolerance for corruption and bribery
We know with whom we trade
We comply with competition law
We protect our assets and information
We source responsibly
We engage with our stakeholders and society
We voice our concerns

UPM Annual Report 2017
General meeting of shareholders
The Annual General Meeting of UPM-Kymmene Corporation took place in Helsinki, Finland on 29 March 2017. A total of 3,249 shareholders were present or represented at the meeting, representing 49.9% of registered shares and votes. The AGM approved all Board proposals and all decisions were taken without voting. Information on these decisions is available on the corporate website www.upm.com/governance.

Board of Directors
The primary role of the Board is to be responsible for the governance of the company, with the focus on overseeing the long-term value creation of UPM. In pursuing this goal, the directors have a duty to act on an informed basis with due care and in the best interests of the company consistent with their other statutory duties.

To fulfil its role effectively, the Board sets the company’s strategic objectives, reviews and approves financial and capital plans relevant to the achievement of these objectives, and reviews the performance of management in meeting those objectives.

The Board is also the company’s ultimate authority regarding the allocation of resources, including capital, financial reporting, effectiveness of internal control and risk management systems, and investment, remuneration, succession and succession planning of the senior management of the company.

Board composition and diversity
Following the Nomination and Governance Committee’s evaluation of the Board performance and review of the Board composition, competences, diversity and qualifications in relation to UPM’s strategy, operations and governance needs, the committee found that the Board’s competence base was broad and relevant to UPM’s needs and that its structure was well-balanced also in terms of other factors that contribute to appropriate diversity. Since no obvious development needs were identified, no changes in the Board composition were proposed to the Annual General Meeting (AGM) in 2017.

As proposed, the AGM elected all incumbent directors to the Board for a term that will end upon closure of the AGM 2018. Composition of the Board is presented in the table below.

The Board diversity aspects are defined in its Diversity Policy and include relevant professional experience and education, gender, age, nationality and length of tenure. Information on the directors’ professional backgrounds and other significant positions is available on pages 86–87 of this report. Information on the other aspects of Board diversity is available in the enclosed charts and in the table below. More information on Board diversity, related objectives and results is included in the Corporate Governance Statement 2017.

Director independence
Evaluation of director candidate independence is an important factor when choosing executive directors for more than ten consecutive years. Based on the Board’s overall evaluation of these directors’ independence and availability for Board work, and reports to the Board on the outcomes of such assessments. According to the committee’s assessment, the few changes that took place in 2017 had no effect on the directors’ independence or availability for Board work.

Directors’ independence is assessed overall and in relation to UPM when proposing new directors to the Board. Directors’ commitment and availability for Board and committee work is evidenced by the high attendance rates.

The directors’ average attendance at the Board meetings was 96.7% (96%) and at the committee meetings 100% (100%). Directors’ personal attendance rates are presented in the table below.

Strategic focus areas in 2017
In line with its main duties and responsibilities, the Board focused on strategic considerations and closely monitored the implementation of the group and business strategies. The Board reviewed and approved updated strategic plans in its strategy session in May. The main elements of UPM Biofore strategy are performance, growth, innovation, responsibility and portfolio development as presented in page 10–11 of this report.

An essential part of the Board’s annual strategy work is reviewing and considering the strategic and operational risks and opportunities. These risks and opportunities and their impact on operations and strategy are described on pages 22–23 of this report.

In 2017, the Board’s strategic considerations focused on the operating platform development in Uruguay. This development plan was initiated in 2015 and continued discussions on logistical infrastructure and operating environment with the government of Uruguay in July 2015. The Board was updated on the latest due diligence work and an investment proposal for Board approval in late 2018 at the earliest. (Board page on page 4).

The third nuclear power plant unit in Olkiluoto has been a matter of concern for the Board due to the impact on energy supply and its impact on the pulp market. UPM sees a risk of costs and delays in completion of the Olkiluoto platform development which will affect the Group’s profitability in the long term.

Board work in 2017
The Board held nine meetings in 2017. There is no minimum attendance requirement for directors’ attendance at the meetings but directors are expected to attend all meetings unless there is a valid reason for non-attendance. Directors’ commitment and availability for Board and committee work is evidenced by the high attendance rates.

The directors’ average attendance at the Board meetings was 96.7% (96%) and at the committee meetings 100% (100%). Directors’ personal attendance rates are presented in the table below.

Strategic focus areas in 2018
In 2018, the Board will continue to follow the progress of the infrastructure initiatives in Uruguay closely. The second preparation phase of the operating platform development is expected to take some 1.5 to 2 years which means that the investment decision, if any, can be expected in 2019 at the latest.

The Board will also follow closely the ongoing strategic business opportunity relating to the company’s biochemicals business and potential construction of an industrial scale bio refinery in Germany. The company is proceeding with a detailed commercial and basic engineering study to verify the attractiveness of the bio refinery that was announced in October 2017. If all preparation phases of this business platform opportunity are concluded successfully, the company will initiate its standard analysis procedure and consider an investment proposal for Board approval in late 2018 at the earliest. (Board page on page 4).

The third nuclear power plant unit in Olkiluoto has been a matter of concern for the Board due to the impact on energy supply and its impact on the pulp market. UPM sees a risk of costs and delays in completion of the Olkiluoto platform development which will affect the Group’s profitability in the long term.

Mutual understanding on the establishment of a competitive operating platform was reached in November 2017 when UPM and the government of Uruguay signed a memorandum of understanding detailing the roles, commitments and time-frame for both parties, as well as relevant items to be agreed on prior to the investment decision.

This decision remains at the sole discretion of the Board and is subject to significant progress in the implementation of the agreed infrastructure initiatives. More information on these initiatives and on the planned strategic investment accounting to approximately EUR 2 billion is available on the following page and on page 28 of this report.

Strategic focus areas in 2018
In 2018, the Board will continue to follow the progress of the infrastructure initiatives in Uruguay closely. The second preparation phase of the operating platform development is expected to take some 1.5 to 2 years which means that the investment decision, if any, can be expected in 2019 at the latest.

The Board will also follow closely the ongoing strategic business opportunity relating to the company’s biocemicals business and potential construction of an industrial scale bio refinery in Germany. The company is proceeding with a detailed commercial and basic engineering study to verify the attractiveness of the bio refinery that was announced in October 2017. If all preparation phases of this business platform opportunity are concluded successfully, the company will initiate its standard analysis procedure and consider an investment proposal for Board approval in late 2018 at the earliest. (Board page on page 4).

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This decision remains at the sole discretion of the Board and is subject to significant progress in the implementation of the agreed infrastructure initiatives. More information on these initiatives and on the planned strategic investment accounting to approximately EUR 2 billion is available on the following page and on page 28 of this report.
INFRASTRUCTURE DEVELOPMENT KEY ENABLER FOR URUGUAYAN OPERATING PLATFORM

UPM has agreed with the Uruguayan government on the local prerequisites for industrial investment as well as initiatives for infrastructure development for a possible world-class pulp mill investment. A long-term industrial operation requires stable and predictable operational environment. This will be supported by several measures in the areas of regional development, environment, forestry and land planning as well as labour and energy conditions.

The government will develop the rail and road network by tendering the construction and long-term maintenance of the network. The total investment by the Uruguayan government is reportedly around USD 1 billion. This investment is necessary to establish efficient logistic infrastructure for inland Uruguay. The Government will also promote concession for a terminal in the Montevideo port with rail access.

Once the permitting requirements are fulfilled, the government will grant the mill free trade zone status, which is necessary to ensure competitiveness on international markets. For UPM, the pre-engineering of the mill is in progress. The preliminary estimate for a pulp mill investment on site is approximately EUR 2 billion. In addition, a successful project requires off-site investments in plantation land and forestry, road network and nursery capacity, harvesting and transport equipment, rolling stock for rail, export facilities and training. If all preparation phases are concluded successfully, UPM will initiate the company’s regular process of analysing and preparing an investment proposal for Board approval.

Board evaluation

As stipulated in its charter, the Board conducts an annual evaluation of its performance and working methods including the evaluation of the performance and working methods of its committees. In addition, the committee evaluates their performance and working methods annually. The Nomination and Governance Committee assists the Board in the annual evaluation and in the review of the survey results and takes the results into consideration when preparing the Board’s proposal for the composition of the Board to the Annual General Meeting.

In 2017, the evaluation was conducted as a self-assessment and its results were reviewed and discussed at the Board meeting in December. The survey included some amended questions related to the Board and committee duties and responsibilities and some new questions related to increased importance of committee work as a result of changes in the regulatory framework and subsequent charter amendments. Directors evaluated the Board’s and the committee’s performance of their duties and responsibilities, Board and committee composition and structure, Board culture, effectiveness of Board and committee meetings, individual director contribution, and performance of the Chairman of the Board.

The overall results of the 2017 self-evaluation survey were very favourable and indicated that the Board, Chairman of the Board and the Board and the committee are functioning very effectively and focus on right issues. The Board composition and structure also received very high scores. In 2017, the Board allocated more time to the company’s talent review processes and succession planning, and the survey results indicated clear improvement in this area.

In 2018, the Board will allocate more time to the oversight of the assessment and management of strategic and operational risks.

Board committees

The committees assist the Board of Directors by preparing matters to be decided by the Board. In addition, the committees assist the Board in its oversight and monitoring responsibilities. The Board is responsible for the performance of any duties assigned to the committees. According to Board evaluation results 2017, the distribution of tasks between the full Board and its committees is deemed appropriate and the committees contribute effectively to the Board’s work.

The Nomination and Governance Committee assisted the Board in the review of the composition, qualification criteria and duties of the Board committees, and made a proposal to the Board for the appointment of committee members and chairmen. The directors appointed to the Board committees in the Board’s constitutive meeting on 29 March 2017 are shown in the table below. Neither the President and CEO nor other company executives may be members of any Board committees.

The written committee charters approved by the Board of Directors set forth the purposes, composition, operations and duties of each committee, as well as qualifications for committee membership. The charters are available on the corporate website. Each committee is responsible for carrying out the duties assigned to it in its charter. The committees hold their meetings prior to Board meetings in order to prepare matters to be decided on by the Board. In the Board meeting following the committee meetings, the Committee Chairmen report to the Board on matters decided and actions taken by the committees. In addition, minutes are kept for the committee meetings and submitted to the Board members for their information.
Remuneration Committee

Duties and responsibilities of the Remuneration Committee are related to the remuneration of the President and CEO and senior executives who report directly to the President and CEO, and to the review of the company's talent and succession planning procedures for senior management.

The annual and other topics reviewed and considered by the committee to perform its duties are presented in the enclosed table. In 2017, the committee paid special attention to the company’s remuneration and succession planning procedures and reported to the Board on these matters.

Nomination and Governance Committee

Duties and responsibilities of the Nomination and Governance Committee are related to the composition, diversity and remuneration of the Board of Directors and to corporate governance. When needed, the committee also identifies individuals qualified to serve as the President and CEO.

The annual and other topics reviewed and considered by the committee to perform its duties are presented in the enclosed table. In 2017, the committee was occupied with a search of new director candidates and preparation of amendments to the company’s Articles of Association.

### Remuneration Committee work in 2017

**ANNUAL TOPICS**
- Design of short-term incentive (STI) plan and achievement award
- STI earning criteria and target setting
- STI plan and achievement award
- STI awards
- Executive compensation in peer companies
- Compensation and benefits of the President and CEO
- Compensation and benefits of the GET members and other CEO reports
- Talent review process
- GET performance review and succession plan
- Business area management team talent review and succession plan

**ADDITIONAL INFORMATION**
- EU Shareholders’ Rights Directive
- Upcoming changes in regulatory environment

### Nomination and Governance Committee work in 2017

**ANNUAL TOPICS**
- Director evaluation and nomination process
- Size and composition of the Board
- Relevant director qualifications, skills, and experience
- Committee independence and expertise requirements
- Evaluation of director nominees’ independence
- Board and committee annual fees
- Payment mechanism of Board remuneration
- Number of directors (proposals to the AGM)
- Board evaluation survey

**ADDITIONAL INFORMATION**
- Director independence and use of time
- Changes in directors’ commitments
- Amendments to UPM Articles of Association
- Board performance
- Board diversity
- Overall evaluation of director candidates’ independence
- Composition of the Board committees
- Biographical details of director nominees
- Non-executive director remuneration in peer companies
- Board remuneration (proposals to the AGM)
- Composition of the Board (proposals to the AGM)
- Board self-evaluation results

### Board remuneration

The AGM 2017 decided to raise the annual Board fees, which had remained the same since 2007. It also adopted annual committee fees, which had not been paid earlier. The Nomination and Governance Committee proposed the adjustment of the fees due to the increased workload of the Board and its committees – as a result of expansive regulatory requirements and UPM’s ongoing transformation – combined with the need to enhance the Board’s ability to attract competent and diverse talent.

The adjusted fees and each director’s annual remuneration and the number of purchased shares are presented in the tables below. No annual fees are paid to the President and CEO for his role as a member of the Board.

### Board remuneration and payment mechanism

<table>
<thead>
<tr>
<th>ANNUAL BASE FEE (EUR)</th>
<th>2017</th>
<th>2016</th>
<th>PAYMENT MECHANISM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chairman</td>
<td>190,000</td>
<td>175,000</td>
<td>40% in company shares, 60% in cash to cover taxes</td>
</tr>
<tr>
<td>Deputy Chairman</td>
<td>135,000</td>
<td>120,000</td>
<td>Two-year lock-up period</td>
</tr>
<tr>
<td>Audit Committee Chairman</td>
<td>–</td>
<td>120,000</td>
<td></td>
</tr>
<tr>
<td>Members</td>
<td>110,000</td>
<td>95,000</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ANNUAL COMMITTEE FEES 2017</th>
<th>CHAIRMAN</th>
<th>MEMBERS</th>
<th>PAYMENT MECHANISM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audit Committees</td>
<td>35,000</td>
<td>15,000</td>
<td>Cash</td>
</tr>
<tr>
<td>Remuneration Committee</td>
<td>20,000</td>
<td>10,000</td>
<td></td>
</tr>
<tr>
<td>Nomination and Governance</td>
<td>20,000</td>
<td>10,000</td>
<td></td>
</tr>
</tbody>
</table>

### Board remuneration in 2017

<table>
<thead>
<tr>
<th>DIRECTOR</th>
<th>ANNUAL BASE FEE (EUR)</th>
<th>40% FOR SHARES (EUR)</th>
<th>40% IN CASH (EUR)</th>
<th>ANNUAL COMMITTEE FEE</th>
<th>NO. OF PURCHASED SHARES</th>
<th>UPM SHARES 31 DEC. 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bjørn Molchan</td>
<td>110,000</td>
<td>74,000</td>
<td>17,000</td>
<td>2,000</td>
<td>3,067</td>
<td>1,776</td>
</tr>
<tr>
<td>Bernhard Brünow</td>
<td>135,000</td>
<td>94,000</td>
<td>20,000</td>
<td>2,179</td>
<td>2,179</td>
<td>1,776</td>
</tr>
<tr>
<td>Henrik Ehrensvärd</td>
<td>110,000</td>
<td>66,000</td>
<td>10,000</td>
<td>1,776</td>
<td>1,776</td>
<td>1,776</td>
</tr>
<tr>
<td>Pia-Maria Kauki</td>
<td>110,000</td>
<td>66,000</td>
<td>10,000</td>
<td>1,776</td>
<td>1,776</td>
<td>1,776</td>
</tr>
<tr>
<td>Wendy T. Luo</td>
<td>110,000</td>
<td>66,000</td>
<td>10,000</td>
<td>1,776</td>
<td>1,776</td>
<td>1,776</td>
</tr>
<tr>
<td>Jouko Piironen</td>
<td>110,000</td>
<td>66,000</td>
<td>10,000</td>
<td>1,776</td>
<td>1,776</td>
<td>1,776</td>
</tr>
<tr>
<td>Ari Puhakainen</td>
<td>110,000</td>
<td>66,000</td>
<td>10,000</td>
<td>1,776</td>
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<td>1,776</td>
</tr>
<tr>
<td>Val-Matti Rämöaho</td>
<td>110,000</td>
<td>66,000</td>
<td>10,000</td>
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<td>1,776</td>
<td>1,776</td>
</tr>
<tr>
<td>Susanne Thoma</td>
<td>110,000</td>
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<td>10,000</td>
<td>1,776</td>
<td>1,776</td>
<td>1,776</td>
</tr>
<tr>
<td>Kim Wahl</td>
<td>110,000</td>
<td>66,000</td>
<td>10,000</td>
<td>1,776</td>
<td>1,776</td>
<td>1,776</td>
</tr>
</tbody>
</table>

Total: 1,095,000 438,000 657,000 145,000 17,678 1,055,532
Executive management

Jussi Pesonen has been the President and Chief Executive Officer of UPM-Kymmene Corporation since January 2004. He has also been a member of the company’s Board of Directors since March 2007. In the operating management of the company, the President and CEO is assisted by the Group Executive Team, the Business Area Boards and the Strategy Team. The Group Executive Team consists of the executives heading the business areas and the global functions and assists the President and CEO in approving and executing group-level guidelines and procedures. The President and CEO chairs the Group Executive Team.

Members of the Group Executive Team

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Jussi Pesonen</td>
<td>President and CEO</td>
<td>3,152,491</td>
<td>3,046,064</td>
</tr>
<tr>
<td>Tapio Korpeinen</td>
<td>CFO, Executive Vice President, UPM Energy</td>
<td>107,103</td>
<td>85,355</td>
</tr>
<tr>
<td>Bernd Eikens</td>
<td>Executive Vice President, UPM Specialty Papers</td>
<td>47,050</td>
<td>26,486</td>
</tr>
<tr>
<td>Pekka Hämäläinen</td>
<td>Executive Vice President, Stakeholder Relations</td>
<td>69,949</td>
<td>58,087</td>
</tr>
<tr>
<td>Antti Jääskeläinen</td>
<td>Executive Vice President, UPM Rofinatc</td>
<td>6,920</td>
<td>–</td>
</tr>
<tr>
<td>Juha Mäkelä</td>
<td>General Counsel</td>
<td>51,379</td>
<td>39,717</td>
</tr>
<tr>
<td>Jyrki Onerva</td>
<td>Executive Vice President, Technology</td>
<td>76,739</td>
<td>64,877</td>
</tr>
<tr>
<td>Ritta Savonlähden</td>
<td>Executive Vice President, Human Resources</td>
<td>13,420</td>
<td>15,420</td>
</tr>
<tr>
<td>Minna Schaur</td>
<td>Executive Vice President, UPM Paper ENA</td>
<td>13,695</td>
<td>12,322</td>
</tr>
<tr>
<td>Mika Sillanpää</td>
<td>Executive Vice President, UPM Plywood</td>
<td>26,685</td>
<td>12,845</td>
</tr>
<tr>
<td>Karl Ståhlberg</td>
<td>Executive Vice President, Strategy</td>
<td>19,656</td>
<td>16,794</td>
</tr>
<tr>
<td>Heikki Vappula</td>
<td>Executive Vice President, UPM Biorefining</td>
<td>37,841</td>
<td>40,067</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>812,148</td>
<td>640,318</td>
</tr>
</tbody>
</table>

Management responsibilities

Members of the Group Executive Team carry the main responsibility for the business areas and global functions that they lead. These responsibility areas are shown in the illustration below.

In addition to the President and CEO who chairs the boards, the Business Area Boards comprise the EVPs of the global functions and the EVP of the business area in question. The Business Area Boards assist the President and CEO in matters pertaining to the preparation of group strategies, strategic projects, capital expenditure, M&A and other strategic development initiatives for approval by the Board of Directors.

Business area’s strategy, budget, business performance, operating investments, commercial strategies, business development plans, business and strategic risks, strategic and organisational changes, and HR matters.

The Strategy Team is chaired by the President and CEO. Its members are the EVPs and the heads of the strategy, technology and legal functions. The team assists the President and CEO in matters pertaining to the preparation of group strategies, strategic projects, capital expenditure, M&A and other strategic development initiatives for approval by the Board of Directors.

Responsibility areas of the members of the Group Executive Team

<table>
<thead>
<tr>
<th>President and CEO, Jussi Pesonen</th>
<th>CFO</th>
<th>General Counsel</th>
<th>Strategy</th>
<th>Technology &amp; Research</th>
<th>Human Resources</th>
<th>Stakeholders Relations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tapio Korpeinen</td>
<td></td>
<td>Jussi Mäkelä</td>
<td>Kari Ståhlberg</td>
<td>Jyrki Onerva</td>
<td>Ritta Savonlähden</td>
<td>Pekka Hämäläinen</td>
</tr>
<tr>
<td>Heikki Vappula</td>
<td>UPM Biorefining</td>
<td>UPM Energy</td>
<td>UPM Rofinatc</td>
<td>UPM Specialty Papers</td>
<td>UPM Paper ENA</td>
<td>Mika Sillanpää UPM Plywood</td>
</tr>
</tbody>
</table>

Components of management remuneration

<table>
<thead>
<tr>
<th>Component</th>
<th>Payable in</th>
<th>Basis of Payment</th>
<th>Time of Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base salary</td>
<td>Cash</td>
<td>Executive contract</td>
<td>Monthly</td>
</tr>
<tr>
<td>Fringe benefits</td>
<td>E.g. company car and phone</td>
<td>Executive contract</td>
<td>Monthly</td>
</tr>
<tr>
<td>Short-term incentives</td>
<td>Cash</td>
<td>Short-term Incentives</td>
<td>Annually</td>
</tr>
<tr>
<td>Long-term incentives</td>
<td>Shares</td>
<td>Performance Share Plan</td>
<td>Annually following a three-year earning period</td>
</tr>
</tbody>
</table>

Remuneration of the President and CEO in 2017

<table>
<thead>
<tr>
<th>Salaries and Benefits (EUR 1,000)</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salary</td>
<td>1,049</td>
<td>1,049</td>
</tr>
<tr>
<td>Short-term incentives</td>
<td>1,119</td>
<td>888</td>
</tr>
<tr>
<td>Share rewards</td>
<td>6,566</td>
<td>3,098</td>
</tr>
<tr>
<td>Benefits</td>
<td>31</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
<td>4,854</td>
<td>3,063</td>
</tr>
<tr>
<td>Income tax withholding (*)</td>
<td>2,380</td>
<td>2,592</td>
</tr>
</tbody>
</table>

*) Income taxes withheld from salaries and benefits and remitted to tax authorities by UPM.

Remuneration of the Group Executive Team in 2017 (excluding the President and CEO)

<table>
<thead>
<tr>
<th>Salaries and Benefits (EUR 1,000)</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries</td>
<td>3,936</td>
<td>3,564</td>
</tr>
<tr>
<td>Short-term incentives</td>
<td>2,088</td>
<td>1,779</td>
</tr>
<tr>
<td>Share rewards</td>
<td>8,174</td>
<td>6,249</td>
</tr>
<tr>
<td>Benefits</td>
<td>251</td>
<td>231</td>
</tr>
<tr>
<td>Total</td>
<td>14,446</td>
<td>11,843</td>
</tr>
</tbody>
</table>

Auditor and auditor remuneration

The Audit Committee prepared the Board’s proposal to the AGM 2017 for the election and remuneration of the auditor. Together with corporate management, the committee evaluated the qualifications and independence of the auditor, and the auditor’s provision of audit-related and non-audit services. The evaluation included an assessment of the effectiveness of the audit process, quality of audit, performance of the lead auditor and the audit team, and co-operation with the auditor’s international audit network. As a result of this evaluation, the committee recommended to the Board the re-election of PricewaterhouseCoopers Oy as the company’s auditor. The AGM further resolved that the audit fee would be paid against invoices approved by the Board of Directors’ Audit Committee. The amounts paid to the auditor, as approved by the Audit Committee, are shown in the following table.

Auditor’s remuneration

<table>
<thead>
<tr>
<th>EUR MILLION</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audit fee</td>
<td>2.3</td>
<td>2.3</td>
</tr>
<tr>
<td>Audit-related services</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Tax services</td>
<td>0.3</td>
<td>0.7</td>
</tr>
<tr>
<td>Other services</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Total</td>
<td>3.2</td>
<td>3.8</td>
</tr>
</tbody>
</table>

Governing principles

Read more on UPM’s decision-making and management principles on pages 18–19 and 104–106 of this report. More information on our governance is available on the corporate website and in the following statements, charters and policies, all available on www.upm.com/governance:

• Corporate Governance Statement 2017
• Remuneration Statement 28 February 2018
• Board and Committee Charters
• Diversity Policy of the Board of Directors
• Director independence criteria

UPM complies with all recommendations of the Finnish Corporate Governance Code issued by the Securities Market Association. This Code available on the Securities Market Association’s website at www.cgfinland.fi
Board of Directors

Björn Wahlroos
Chairman
Chairman and member since 2006
Chairman of the Nomination and Governance Committee
Independent of the company and significant shareholders
Born 1952, Finnish citizen
Ph.D. (Econ.)

Berndt Brunow
Deputy Chairman
Member since 2002, Deputy Chairman since 2005
Member of the Nomination and Governance Committee
Independent of the company and significant shareholders
Born 1950, Finnish citizen
M.Sc. (Econ.)

Henni Ehrnrooth
Member since 2015
Member of the Remuneration Committee
Independent of the company and significant shareholders
Born 1969, Finnish citizen
Independent of the company and significant shareholders
Member since 2012
Member of the EBF Executive Committee.

Pia-Noora Kauppi
Member since 2013
Chairman of the Audit Committee
Independent of the company and significant shareholders
Born 1975, Finnish citizen
LL.M.

Wendy E. Lane
Member since 2005
Member of the Audit Committee
Independent of the company and significant shareholders
Born 1953, US citizen
MBA (Harvard)

Jussi Pesonen
Member since 2007
Independent of significant shareholders, non-independent of the company.
Born 1961, Finnish citizen
M.Sc. (Eng.)

Ari Puheloinen
Member since 2014
Member of the Nomination and Governance Committee
Independent of the company and significant shareholders
Born 1951, Finnish citizen
General Staff Officer, General (ret.)
Board member of Patria Plc and the Association for the New Children’s Hospital 2017.

Vali-Matti Reinikkala
Member since 2007
Chairman of the Remuneration Committee
Independent of the company and significant shareholders
Born 1957, Finnish citizen
eMBA

Suzanne Thoma
Member since 2015
Member of the Remuneration Committee
Independent of the company and significant shareholders
Born 1962, Swiss citizen
Ph.D. (Chem. Eng.), BA (Business Admin.)

Kim Wahl
Member since 2012
Member of the Audit Committee
Independent of the company and significant shareholders
Born 1961, Norwegian citizen
MBA (Harvard)
BA (Business Econ.)
Group Executive Team

Jussi Pesonen
President and CEO
M.Sc. (Eng.)
Born 1960, Finnish citizen
Member of the Group Executive Team since 2001.
Employed by UPM Group since 1997.
CEO of the Paper Division and Deputy to the President and CEO 2001–2004. President and CEO since 2004.
Chairman of the Board of the Finland Chamber of Commerce and ICC Finland. Deputy Chairman of the Board of the Finnish Forest Industries Federation (FFIF). Board member of the Confederation of European Paper Industries (CEPI) and the East Office of Finnish Industry Oy.

Topio Karpeinen
Chief Financial Officer;
UPM-Kymmene Corporation and Executive Vice President, UPM Energy
M.Sc. (Tech.), MBA
Born 1963, Finnish citizen
Member of the Group Executive Team since 2008.
Employed by UPM Group since 2005.
Chairman of the Board of Pohjolan Voima Oy. Vice Chair of the Board of Kemijoki Oy. Board member of Telkkiä-Voina Oy. Supervisory Board member of Uusi Mutual Pension Insurance Company.

Bernd Eikens
Executive Vice President, UPM Specialty Papers
Ph.D. (Eng.)
Born 1961, German citizen
Member of the Group Executive Team since 2010.
Employed by UPM Group since 1998.
Chairman of the Board of Pohjolan Voima Oy. Vice Chair of the Board of Kemijoki Oy. Board member of Telkkiä-Voina Oy. Supervisory Board member of Uusi Mutual Pension Insurance Company.

Pirkko Harrela
Executive Vice President, Stakeholder Relations
M.A.
Born 1960, Finnish citizen
Member of the Group Executive Team since 2004.
Employed by UPM Group since 1995.
Member of S-Group’s CM Advisory Group. Supervisory Board member of WWF Finland. Board member of Seudun Pensions Fondue. Handelskammer, Satalinna Foundation and UPM-Kymmene Cultural Foundation. Member of the Board of Governors of the Association for Finnish Work.

Anti Jääskeläinen
Executive Vice President, UPM Raflatac
M.Sc. (Eng.), M.Sc. (Econ.), MBA
Born 1972, Finnish citizen
Member of the Group Executive Team since 2010.
Employed by UPM Group since 2014.

Juha Mäkelä
General Counsel
LL.M
Born 1962, Finnish citizen
Member of the Group Executive Team since 2004.
Employed by UPM Group since 2005.
Supervisory Board member of Kemijoki Oy.

Governance

Jyrki Ovaska
Executive Vice President, Technology Group
M.Sc. (Eng.)
Born 1954, Finnish citizen
Member of the Group Executive Team since 2002.
Employed by UPM Group since 1984.
Chairman of the Board of CLIC Innovation Oy. Member of the Finnish Research and Innovation Council. Vice Chairman of AMCHAM Finland (The American Chamber of Commerce in Finland).

Winfried Schaur
Executive Vice President, Human Resources
M.Sc. (Econ.)
Born 1964, Finnish citizen
Member of the Group Executive Team since 2004.
Employed by UPM Group since 2002.

Mika Sillanpää
Executive Vice President, UPM Paper ENS
Dipl. Ing. (FIN)
Born 1965, German citizen
Member of the Group Executive Team since 2016.
Employed by UPM Group since 2001.
Chairman of the Board of the German Pulp and Paper Association (VUP). Vice Chairman of the Board of the Bavarian Industry Association (vbw). Board member of EURO-GIPAM (lhm) the European Association of Graphic Paper Producers, and the Confederation of European Paper Industries (CEPI).

Kari Ståhlberg
Executive Vice President, Strategy
M.Sc. (Eng.)
Born 1971, Finnish citizen
Member of the Group Executive Team since 2013.
Employed by UPM Group since 2007.

Heikki Vappula
Executive Vice President, UPM BioRefining
M.Sc. (Eng.)
Born 1967, Finnish citizen
Member of the Group Executive Team since 2013.
Employed by UPM Group since 2006.

Accounts

Jyrki Ovaska
Executive Vice President, Human Resources
M.Sc. (Econ.)
Born 1964, Finnish citizen
Member of the Group Executive Team since 2004.
Employed by UPM Group since 2002.

Winfried Schaur
Executive Vice President, Human Resources
M.Sc. (Econ.)
Born 1964, Finnish citizen
Member of the Group Executive Team since 2004.
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Executive Vice President, Strategy
M.Sc. (Eng.)
Born 1971, Finnish citizen
Member of the Group Executive Team since 2013.
Employed by UPM Group since 2007.

Heikki Vappula
Executive Vice President, UPM BioRefining
M.Sc. (Eng.)
Born 1967, Finnish citizen
Member of the Group Executive Team since 2013.
Employed by UPM Group since 2006.
Independent Practitioner’s Assurance Report

To the Management of UPM-Kymmene Corporation

We have been engaged by the Management of UPM-Kymmene Corporation (hereinafter also “the Company”) to perform a limited assurance engagement on selected corporate responsibility information for the reporting period 1 January 2017 to 31 December 2017, disclosed in UPM-Kymmene Corporation’s Annual Report 2017 and on its website under “Corporate Responsibility” (hereinafter “the CR Reporting”). The assured information is set out in the Company’s reporting instructions and the Global Reporting Initiative (GRI) Content Index 2017 on the Company’s website.

Furthermore, the assurance engagement has covered UPM-Kymmene Corporation’s adherence to the AA1000 Accountability Principles with moderate (limited) level of assurance.

Management’s responsibility

The Management of UPM-Kymmene Corporation is responsible for preparing the CR Reporting in accordance with the Reporting criteria as set out in the Company’s reporting instructions and the GRI Standards. Reporting Guidelines of the Global Reporting Initiative. The Management of UPM-Kymmene Corporation is also responsible for the Company’s adherence to the AA1000 Accountability Principles as set out in the AA1000 Accountability Principles Standard 2008.

Practitioner’s responsibility

Our responsibility is to express a limited assurance conclusion on the CR Reporting and on the Company’s adherence to the AA1000 Accountability Principles based on the procedures we have performed and the evidence we have obtained. We conducted our limited assurance engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000 (Revised) “Assurance Engagements Other Than Audits or Reviews of Historical Financial Information”. That Standard requires that we plan and perform the engagement to obtain limited assurance about whether the CR Reporting is free from material misstatement.

In addition, we have conducted our work in accordance with the AA1000 Assurance Standard 2008. For conducting a Type 2 assurance engagement as agreed with the Company, the AA1000AS (2008) requires planning and performing of the assurance engagement to obtain moderate (limited) assurance on whether any matters come to our attention that cause us to believe that UPM-Kymmene Corporation does not adhere, in all material respects, to the AA1000 Accountability Principles.

Furthermore, nothing has come to our attention that causes us to believe that UPM-Kymmene Corporation does not adhere, in all material respects, to the AA1000 Accountability Principles and that the CR Reporting is not reliable, in all material respects, based on the Reporting criteria.

In a limited assurance engagement the evidence-gathering procedures are more limited than for a reasonable assurance engagement, and therefore less assurance is obtained than in a reasonable assurance engagement. An assurance engagement involves performing procedures to obtain evidence about the amounts and other disclosures in the CR Reporting, and about the Company’s adherence to the AA1000 Accountability Principles. The procedures selected depend on the practitioner’s judgement, including an assessment of the risks of material misstatement of the CR Reporting and an assessment of the risks of the Company’s material nonadherence to the AA1000 Accountability Principles.

Our work consisted of, amongst others, the following procedures:

• Interviewing senior management of the Company.
• Interviewing employees from various organisational levels of the Company with regards to materiality, stakeholder expectations, meeting of those expectations, as well as stakeholder engagement.
• Assessing stakeholder inclusivity and responsiveness based on the Company’s documentation and internal communication.
• Assessing the Company’s defined material corporate responsibility topics as well as assessing the CR Reporting based on those topics.
• Visiting the Company’s Head Office and conducting web conferences with two sites in Finland and one site in Uruguay.
• Interviewing employees responsible for collecting and reporting the information considered important in the CR Reporting at the group level as well as at the site level.
• Assessing how group employees apply the reporting instructions and procedures of the Company.
• Testing the accuracy and completeness of the information from original documents and systems on a sample basis.
• Testing the consolidation of information and performing recalculations on a sample basis.

Limited assurance conclusion

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that UPM-Kymmene Corporation does not adhere, in all material respects, to the AA1000 Accountability Principles.

Furthermore, nothing has come to our attention that causes us to believe that UPM-Kymmene Corporation does not adhere, in all material respects, to the AA1000 Accountability Principles and that the CR Reporting is not reliable, in all material respects, based on the Reporting criteria. When reading our assurance report, the inherent limitations to the accuracy and completeness of sustainability information should be taken into consideration.

Our assurance report has been prepared in accordance with the terms of our engagement. We do not accept, or assume responsibility to anyone else, except to UPM-Kymmene Corporation for our work, for this report, or for the conclusions that we have reached.

Observations and recommendations

Based on the procedures we have performed and the evidence we have obtained, we provide the following observations and recommendations in relation to UPM-Kymmene Corporation’s adherence to the AA1000 Accountability Principles. These observations and recommendations do not affect the conclusions presented earlier.

Regarding Inclusivity: UPM-Kymmene Corporation has processes in place for stakeholder inclusivity and engagement. Stakeholder relations coordinate stakeholder engagement at the group level, while businesses are responsible for local activity. We recommend that the Company continues to enhance internal collaboration and knowledge sharing within the group in the stakeholder engagement.

Regarding Materiality: UPM-Kymmene Corporation has a systematic process in place to evaluate and determine the materiality of corporate responsibility topics. Materiality analysis is updated annually. We recommend that the Company continues to enhance the use of different methods for obtaining stakeholder feedback on the materiality analysis as well as on the responsibility focus areas, performance and results.

Regarding Responsiveness: UPM-Kymmene Corporation has processes in place for responding to stakeholder needs and concerns. We recommend that the Company continues to enhance the use of social media in its stakeholder engagement.

Practitioner’s independence, qualifications and quality control

We have complied with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

Our multi-disciplinary team of corporate responsibility and assurance specialists possess the requisite skills and experience within relevant industry knowledge, to undertake this assurance engagement.

PricewaterhouseCoopers Oy applies International Standard on Quality Control 1 and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Helsinki 19 February 2018

PricewaterhouseCoopers Oy

Sirpa Juntunen

Partner

Sustainability & Climate Change

PricewaterhouseCoopers Oy

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Report of the Board of Directors

UPM introduction and business model
UPM leads the forest-based bioeconomy into a sustainable and innovation-driven future across six business areas: UPM Biofuelling, UPM Energy, UPM Raflatac, UPM Specialty Papers, UPM Paper ENA and UPM Plywood. The business areas are competitive, with strong market positions. Five of them are operating in healthy growing markets. UPM provides sustainable and safe solutions to the growing global consumer demand. Products are made of renewable materials and they are recyclable.

UPM group creates value to its stakeholders by operating separate businesses with a focus on:
- Competitive and sustainable wood sourcing, forestry and plantation operations
- Value adding, efficient and responsible global functions
- Continuous improvement (Smart) programmes
- Technology and intellectual property rights
- A global platform to build on
- Disciplined and effective capital allocation

Compliance with applicable laws and regulations, UPM Code of Conduct and corporate policies

Market environment in 2017
A synchronised global growth was underway in 2017. Global economic growth accelerated in both advanced economies and emerging markets, compared with the previous year. In Europe, growth was broad-based, supported by robust private consumption, higher global demand and decreasing unemployment. In addition, investment activity also improved. Growth accelerated in the US, whereas solid growth continued in China. Improving growth prospects and anticipation of slowing monetary stimulus strengthened the euro against the US dollar, which was also impacted by the uncertainty about fiscal policy following the US presidential election. The British pound weakened as economic momentum slowed and the UK continued with the Brexit negotiations. The euro also strengthened against the Japanese yen.
In spite of robust global economic growth and continued loose monetary policy, overall inflation showed only modest signs of picking up in 2017. However, prices of many commodities increased during the year, e.g. the price of oil. Costs for UPM's main inputs, such as wood, recycled fibre, chemicals, adhesives, films and logistics increased in comparison to 2016.

For UPM's businesses and products, the market environment was mostly favourable in 2017. Good market demand enabled healthy growth in UPM's delivery volumes. Furthermore, sales prices increased in many businesses over the course of the year.
The pulp market balance tightened due to the delayed startup of new capacity and significant production outages in the industry. Pulp prices increased significantly throughout the year. Demand for advanced biofuels continued to be strong, driven by sustainability ambitions and environmental standards. Electricity consumption in Finland increased slightly, mainly due to increased commercial and industrial activity. Hydrological balance in the Nordic market started the year below normal levels and ended the year above normal levels. Electricity market prices in Finland increased slightly compared to the previous year. Demand for both self-adhesive label materials and label and release paper increased, particularly in Asia. Demand growth remained stable in Europe and North America. Office paper demand continued to grow in Asia and prices increased.
In Europe, demand for graphic paper grades was 3% lower than in the previous year. The strengthened economic activity in Europe lessened the decline in demand to an extent. Fine paper prices increased during the year, whereas publication paper prices remained slightly lower than in 2016.
The market environment for plywood was favourable in Europe. Demand growth was driven by further improvements in the building and construction industry. Demand for plywood-related industrial applications such as vehicle floors and LNG carrier insulation material was good. In addition, demand for construction driven sawn timber was good.

Results
2017 compared with 2016
2017 sales were EUR 10,010 million, 3% higher than the 2016 total of EUR 9,812 million. Sales grew in UPM Biofuelling, UPM Raflatac, UPM Specialty Papers and UPM Plywood, but decreased in UPM Paper ENA and UPM Energy. Comparable EBIT increased by 13% to EUR 1,292 million, 12.9% of sales (1,143 million, 11.6%). Comparable EBIT increased mainly due to higher delivery volumes and lower depreciation. Changes in sales prices in UPM's product range had a clear positive net impact on the comparable EBIT. Variable costs, including the impact of UPM's cost efficiency measures, increased by similar magnitude. Fixed costs were slightly lower. Changes in currencies had a negative impact on comparable EBIT.
Depreciation, excluding items affecting comparability, totalled EUR 447 million (510 million). The increase in the fair value of forest assets net of wood harvested was EUR 103 million (88 million).
Operating profit totalled EUR 1,259 million (1,135 million). Items affecting comparability in operating profit totalled charges of EUR 33 million (charges of EUR 7 million). This included gains of EUR 33 million from selling hydropower facilities in Austria and the US, net restructuring charges of EUR 38 million related to UPM Pulp & Energy, a gain of EUR 30 million related to reorganisation of pension schemes in UPM Biofuelling.
Net interest and other finance costs were EUR 57 million (49 million). The exchange rate and fair value gains and losses resulted in a loss of EUR 12 million (loss of EUR 7 million). Income taxes decreased totalled EUR 212 million (200 million). Items affecting comparability in taxes totalled EUR 2 million (11 million).
Profit for 2017 was EUR 974 million (880 million) and comparable profit was EUR 1,004 million (879 million).

Financing and cash flow
In 2017, cash flow from operating activities before capital expenditure and financing totalled EUR 1,558 million (1,686 million). Working capital decreased by EUR 91 million (decreased by EUR 195 million) during the period. A dividend of EUR 0.95 per share (totaling EUR 507 million) was paid on 12 April 2017, for the 2016 financial year.
UPM prepaid EUR 523 million of its debt in Q4 2017 and EUR 40 million in Q2 2017 due to good liquidity situation. Net debt decreased by EUR 174 million at the end of the period (1,121 million). The gearing ratio as of 31 December 2017 was 2% (14%). Net debt to EBITDA ratio, based on the latest 12 months’ EBITDA, was 0.11 at the end of the period (0.73).
On 31 December 2017, UPM’s cash funds and unused committed credit facilities totalled EUR 1.4 billion.

Capital expenditure
In 2017, capital expenditure totalled EUR 329 million, 3.3% of sales (325 million, 3.3% of sales), or EUR 303 million (225 million) excluding investment in shares. Total capital expenditure in 2018, excluding investments in shares, is estimated to be approximately EUR 350 million.
In July 2016, UPM announced it was to invest EUR 98 million in UPM Kymi pulp mill in Finland to further strengthen its position as a supplier of bleached chemical pulp for growing consumer and industrial end-use segments like tissue and specialty paper as well as packaging papers and board. The investment was completed in Q4 2017 and it increased Kymi’s annual pulp production capacity to 870,000 tonnes of bleached northern softwood and birch pulp. The investment will further improve UPM Kymi’s cost competitiveness and environmental performance.
In October 2016, UPM announced that it will build a new coating line at its label stock factory in工委, Poland. By introducing a new coating line together with related real handling and slitting capacity additions, UPM Rallicates aims to meet the increasing demand for self-adhesive label stock in Europe. Production of the new line started in December 2017, ahead of schedule. The investment totalled EUR 34 million.

In April 2017, UPM announced that it will strengthen its position in the label market and invest approximately EUR 6 million in special label capacity in Tempepa, Finland. A new special label product line will be built, focusing on small series of production runs. In addition, internal logistics will be utilised more efficiently. The new product line is expected to be completed by the end of the first quarter of 2018.

In June 2017, UPM announced it will further improve the efficiency and competitiveness of its UPM Kaukas pulp mill with a EUR 30 million investment, upgrading the mill’s fibre lines, recovery boiler, evaporation, boiling and wood-handling. Execution of the main equipment and startup are scheduled for the spring of 2018. After this new project, annual production capacity of the UPM Kaukas pulp mill will increase by 30,000 tonnes to 770,000 tonnes of softwood and birch pulp in 2019.

In June 2013, UPM announced that it was participating in the share issue from Pohjolan Ylioma Oy to finance the Olkiluoto 3 nuclear power plant project. UPM’s share of the issue is EUR 119 million, of which EUR 26 million was paid in Q3 2017 and EUR 93 million has been paid over previous years.

In October 2017, UPM announced plans to expand its Chudovo businesses in 2018, while modest demand decline is expected to continue in most of UPM’s businesses, compared with 2017.

Outlook for 2018

UPM reached record earnings in 2017. Fundamentals for UPM businesses in 2018 continue to be favourable. Healthy demand growth is expected to continue for most of UPM’s businesses in 2018, while modest demand decline is expected to continue for UPM Paper ENA. Sales prices are expected to increase in most of UPM’s businesses, compared with 2017.

Input costs expected to continue increasing in 2018, compared with 2017. UPM will continue measures to reduce fixed and variable costs. 2018 starts with less favourable currencies than 2017.

Q1 2018 results are expected to be impacted by temporary wood harvesting limitations in Northern Europe caused by unusually warm and wet weather in late 2017 and the beginning of 2018.

Business area reviews

UPM Biofinning

UPM Biofinning consists of pulp, timber and biofuels businesses. UPM has three pulp mills in Finland and one mill and plantation operation in Uruguay. UPM operates four sawmills in Finland. UPM’s biofinning produces wood-based renewable diesel started up in early 2015. The main customers of UPM Biofinning are tissue, specialty paper and board producers in the pulp industry, fuel distributors in the biofuel industry and construction and joinery industries in the timber sector.

Events during 2017

On 30 March, UPM announced it had signed an agreement on the sale of its hydropower facilities in Steyrermühl, Austria to Energie AG. The transaction was completed in Q3 2017.

On 18 April, UPM announced that Madison Paper Industries, a partnership of UPM and Northern SC Paper Corp., a subsidiary of The New York Times Company, has signed an agreement on the sale of its hydropower facilities to Eagle Creek Renewable Energy, LLC. The transaction was completed in Q3 2017.

On 24 October, UPM announced it evaluates potential of building a biofuel refinery in FrankfurtHochst Chemical Park in Germany. UPM proceeds with detailed commercial and basic engineering study to confirm the attractiveness of the business opportunity.

On 20 November, UPM announced plans to reduce graphic paper capacity and optimise operations to increase competitiveness in UPM Paper ENA. As part of the plans, paper machine 3 at UPM Blinds in Minnesota, the US, was permanently closed in December 2017. This reduced UPM’s coated magazine paper capacity by 128,000 tonnes and affected 148 employees. The plans also include optimising operations at UPM Nordland Papier and UPM NorService units in Dörpen, Germany. In total 223 positions are estimated to be affected by the plans in Dörpen. UPM recognised restructuring and impairment charges of EUR 38 million in Q4 2017 as items affecting comparability. The long-term actions are expected to result in annual savings of approximately EUR 30 million.

On 8 November 8, UPM announced it had signed an investment agreement with the Government of Uruguay to establish a competitive operating platform for a possible new pulp mill in Uruguay. The agreement outlines the local prerequisites for a potential pulp mill investment.

In brief

On 2 February, UPM announced that it was permanently closing its Chudovo businesses. UPM will continue measures to reduce fixed and variable costs and optimise operations to increase competitiveness in UPM Kaukas pulp mill. On 31 January, UPM announced its renewed long-term financial targets. The longer maintenance shutdown at Olkiluoto nuclear power plant project. UPM’s share of the issue is EUR 119 million, of which EUR 26 million was paid in Q3 2017 and EUR 93 million has been paid over previous years.

On 16 September, UPM announced that it had signed an agreement on the sale of its hydropower facilities in Steyrermühl, Austria to Energie AG. The transaction was completed in Q3 2017. In brief

In 2017, UPM had an average of 19,489 employees (19,858). At the beginning of the year, the number of employees was 19,310 and at the end of Q4 2017 it was 19,111.

Further information [available] about personnel is available in the Stakeholders section in UPM Annual Report 2017.
In brief

**UPM Raflatac**

UPM Raflatac manufactures self-adhesive label materials for product and information labelling for label printers and brand owners in the food, personal care, pharmaceutical and retail segments, for example. UPM Raflatac is the second-largest producer of self-adhesive label materials worldwide.

**UPM Specialty Papers**

UPM Specialty Papers serves growing global markets with label papers and release liners, fine papers in Asia and flexible packaging in Europe. The operations consist of the UPM Changshu and UPM Tervasaari mills in China and Finland, as well as label and packaging papers production lines at the UPM Jämäskoski mill in Finland. The main customers are retailers, printers, publishers, distributors and paper converters.

**UPM Paper ENA**

UPM Paper ENA offers graphic papers for advertising, magazines, newspapers and home and office. The business has extensive low-cost operations consisting of 15 efficient paper mills in Europe and the United States, a global sales network and an efficient logistic system. The main customers are publishers, cataloguers, retailers, printers and merchants.

### Comparable EBIT

<table>
<thead>
<tr>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales, EURm</td>
<td>1,495</td>
</tr>
<tr>
<td>Comparable EBITDA, EURm</td>
<td>1,336</td>
</tr>
<tr>
<td>% of sales</td>
<td>9.1</td>
</tr>
<tr>
<td>Depreciation, amortisation and impairment charges, EURm</td>
<td>136</td>
</tr>
<tr>
<td>% of sales</td>
<td>9.1</td>
</tr>
<tr>
<td>Operating profit, EURm</td>
<td>132</td>
</tr>
<tr>
<td>% of sales</td>
<td>9.1</td>
</tr>
<tr>
<td>Capital employed (average), EURm</td>
<td>885</td>
</tr>
<tr>
<td>Comparable ROCE, %</td>
<td>12.2</td>
</tr>
<tr>
<td>Paper deliveries, 1,000 t</td>
<td>1,573</td>
</tr>
</tbody>
</table>

### Comparable EBIT

<table>
<thead>
<tr>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales, EURm</td>
<td>4,615</td>
</tr>
<tr>
<td>Comparable EBITDA, EURm</td>
<td>356</td>
</tr>
<tr>
<td>% of sales</td>
<td>7.7</td>
</tr>
<tr>
<td>Share of results of associates and joint ventures, EURm</td>
<td>1</td>
</tr>
<tr>
<td>Depreciation, amortisation and impairment charges, EURm</td>
<td>(130)</td>
</tr>
<tr>
<td>Operating profit, EURm</td>
<td>247</td>
</tr>
<tr>
<td>% of sales</td>
<td>5.4</td>
</tr>
<tr>
<td>Items affecting comparability in operating profit, EURm</td>
<td>16</td>
</tr>
<tr>
<td>Comparable EBIT, EURm</td>
<td>231</td>
</tr>
<tr>
<td>% of sales</td>
<td>5.0</td>
</tr>
<tr>
<td>Capital employed (average), EURm</td>
<td>1,702</td>
</tr>
<tr>
<td>Comparable ROCE, %</td>
<td>13.6</td>
</tr>
<tr>
<td>Paper deliveries, 1,000 t</td>
<td>7,856</td>
</tr>
</tbody>
</table>

2017 compared with 2016

Comparable EBIT for UPM Raflatac increased. The positive impact of higher delivery volumes more than offset the impact of lower sales margin. The fixed costs increased.

**Market environment**


2017 compared with 2016

Comparable EBIT for UPM Specialty Papers increased mainly due to higher sales prices, an improved product mix and higher release liner volumes. Pulp costs increased significantly but it was partly mitigated by continuous variable cost saving measures.

**Market environment**

In 2017, office paper demand increased and the average price was higher than in 2016. In 2017, label and release paper demand increased globally, particularly in Asia. Price development varied between the regions. In China, prices continued to increase.

2017 compared with 2016

Comparable EBIT decreased for UPM Paper ENA mainly due to higher fibre and logistics costs. The negative impact of lower delivery volumes and sales prices was offset by decreased fixed costs. The average price for UPM’s paper deliveries in euro decreased by 2% partly due to an unfavourable currency impact on export prices.

**Market environment**

In 2017, demand for graphic papers in Europe was 3% lower than in 2016. Newsprint demand decreased by 2%, magazine paper by 2% and fine paper by 1% compared with the previous year.

In 2017, publication paper prices were on average 1% lower than in 2016. In 2017, fine paper prices were 2% higher on average than in 2016.

In 2017, demand for magazine papers in North America decreased by 7% compared with the previous year. The average US dollar price for magazine papers in 2017 was 1% lower than in 2016.
UPM Plywood

UPM Plywood offers plywood and veneer products, mainly for construction, vehicle flooring and LNG shipbuilding, as well as other manufacturing industries. Production facilities are located in Finland, Estonia and Russia.

2017 compared with 2016

Comparable EBIT for UPM Plywood increased due to higher delivery volumes and higher sales prices, which more than offset the negative impact of higher costs.

Market environment

In 2017, the market environment was favourable in Europe, and demand increased from the previous year. Spruce plywood demand growth was driven by increased activity in the building and construction industry. Demand in birch plywood-related industrial applications such as vehicle floors and LNG carrier insulation material was good.

2017 compared with 2016

Comparable EBIT for Other operations increased. The increase in the fair value of forest assets net of wood harvested was EUR 69 million (54 million). The increase in the fair value of forest assets was EUR 132 million (113 million), including gains on forest sales. The cost of wood harvested from UPM forests was EUR 63 million (54 million).

In 2017, UPM sold a total of 73,000 (63,113) hectares of forests.

Shares

UPM has one class of shares. Each share entitles the holder to one vote at the Annual General Meeting of UPM.

On 31 December 2017, the total number of UPM shares was 533,735,699. Through the issuance authorisation described below, the number of shares may increase to a maximum of 558,735,699.

On 31 December 2017, UPM held 411,653 treasury shares, representing approximately 0.08% of the total number of UPM shares and voting rights. There are no specific terms related to the shares except for the redemption clause described below.

In 2017, UPM shares worth a total of EUR 8,460 million (6,749 million) were traded on the NASDAQ Helsinki stock exchange. This is estimated to represent approximately two-thirds of all trading volumes in UPM shares. The highest listing was EUR 26.69 in December and the lowest was EUR 20.82 in January.

The company’s ADSs are traded on the US over-the-counter (OTC) market under a Level 1-sponsored American Depositary Receipt programme.

Information on the major shareholders, breakdown by shareholders category and size as well as share related indicators are available in section » Information on shares in UPM Annual report 2017.

Redemption clause

Under § 12 of UPM-Kymmene Corporation’s Articles of Association, a shareholder who, alone or jointly with another shareholder owns 33 1/3 percent or 50 percent or more of all the company’s shares or their associated voting rights shall, at the request of other shareholders, be liable to redeem their shares and any securities that, under the Companies Act, carry the right to such shares, in the manner prescribed in § 12.

A resolution of a general meeting of shareholders to amend or delete this redemption clause must be carried by shareholders representing not less than three-quarters of the votes cast and shares represented at the meeting.

Authorisations held by the Board of Directors

The Annual General Meeting held on 29 March 2017 authorised the Board of Directors to decide on the repurchase of a maximum of 50,000,000 of the Company’s own shares. The authorisation will be valid for 18 months from the date of the AGM resolution.

The Annual General Meeting held on 7 April 2016 authorised the Board of Directors to decide on the issuance of new shares, transfer of treasury shares and issuance of special rights entitling to shares in proportion to the shareholders’ existing holdings in the company, or in a directed share issue, deviating from the shareholders’ preemptive subscription rights. The Board of Directors may also decide on a share issue without payment to the company itself. The aggregate maximum number of new shares that may be issued and treasury shares that may be transferred is 25,000,000, including also the number of shares that can be received on the basis of the special rights. The authorisation will be valid for three years from the date of the AGM resolution.

Aside from the above, the Board of Directors has no current authorisation to issue shares, convertible bonds or share options.
Risks

UPM regards risk management as a systematic and proactive means to analyse and manage opportunities and threats related to its business operations. This includes also risks avoided by careful planning and evaluation of future projects and business environment.

UPM seeks to transfer insurable risks through insurance arrangements if the risks exceed acceptable levels. UPM strives to ensure compliance with the UPM Code of Conduct and other corporate policies. To enhance compliance and mitigate risks, UPM performs risk assessments, training and monitoring at regular intervals.

The main risk factors that can materially affect the company's business, financial results and non-financial performance are set out below. They have been classified as strategic risks, operational risks, financial risks and hazard risks. Risks may also arise from legal proceedings incidental to UPM's operations.

Strategic risks

<table>
<thead>
<tr>
<th>TYPE OF RISK</th>
<th>RISK DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competition, markets, customers and products</td>
<td>Energy, pulp, timber, paper, label, plywood and biofuels markets are cyclical and highly competitive. In all of these markets, the price level is determined as a combination of demand and supply, and shocks to either demand (decrease/increase in use demand, change in customer preferences, etc.) or supply (e.g. new production capacity entering the market or old capacity being closed) may impact both the volumes and price level. Also competitor behaviour influences the market price development. UPM's performance is also impacted by the performance of substitute or alternative products. Most notably, the demand in graphical papers in the mature markets is forecasted to continue to decline, due to the shift away from print media to digital media. Similarly, several raw materials used by UPM have competing end uses. Consumers' environmental awareness has also increased, and depending on the product area this may have either a positive or negative impact on the consumption of UPM's products and may impose further requirements for those products. UPM sells a proportion of its products to several major customers. The largest customer in terms of sales represents approximately 3% of UPM's sales in 2017, and the ten largest customers represented approximately 15% of such sales.</td>
</tr>
<tr>
<td>M&amp;A and changes in the business portfolio</td>
<td>UPM's strategic direction is to grow in businesses with strong long term fundamentals and sustainable competitive advantage. This may result in acquisitions of new businesses or divestments of existing businesses. Participation in M&amp;A involves risks relating to successful implementation of a divestment and the ability to integrate and manage acquired operations and personnel successfully, as well as to achieve the economic targets set for an acquisition/divestment.</td>
</tr>
<tr>
<td>Regulatory changes</td>
<td>UPM is exposed to a wide range of laws and regulations globally. The performance of UPM's businesses, for example the biofuels business, the paper businesses and the energy business, are to a high degree dependent on the current regulatory framework, and changes in regulation, direct and indirect taxation or subsidies would have a direct impact on the performance of UPM and its relative competitiveness. In addition, regulation may structurally restrict or exacerbate UPM's ability to compete for raw material.</td>
</tr>
<tr>
<td>Political and economical risks</td>
<td>UPM has significant production locations in Finland, Germany, the UK, France, Poland and the US. In these countries, the slow development of the individual economies and/or of Europe as a whole may influence adversely UPM's performance. Furthermore, policies (on European and/or national level) that hamper economic growth or lower the competitiveness of UPM (for example through adverse regulation or increase in direct or indirect taxation) may have an adverse impact on UPM's performance. In the developed countries, the unpredictability of regulation may lead to an increasing uncertainty and risk level when investing in or operating in these countries. UPM has significant production operations also in a number of developing economies, such as China, Uruguay and Russia. In these countries, the lack of transparency and predictability of the political, economic and legal systems may lead to an increasing uncertainty and risk level when investing in or operating in these countries. These uncertainties may materialize as unforeseen taxation treatment, trade restrictions, inflation, currency fluctuations and nationalisation of assets.</td>
</tr>
</tbody>
</table>

Shareholdings

Toolfactori Virona Oy (TVO) is in the process of constructing a third nuclear power plant unit, OL3, at the Olkiluoto site (OL3). UPM participates in OL3 through its shareholding in Polytelin Virona Oy (PVO), which is the majority shareholder in TVO. PVO's indirect share of OL3 is approximately 31%. The OL3 plant supplier, a consortium consisting of AREVA GmbH, Siemens AG and Siemens AG (the Supplier), is constructing OL3 as a turnkey project.

The start of regular electricity production, originally scheduled for April 2009, has been revised several times by the Supplier. Accordingly, to a public statement by TVO in October 2017, TVO received information on the Supplier's schedule rebaseline review for OL3 project completion, according to which the start of regular electricity production at OL3 will take place in May 2019. Furthermore, TVO has expressed concerns regarding the pending readmission of AREVA Group, involving a transfer of the operations of AREVA NP to a new company, the majority owner of which is going to be EDF, and the potential consequences for the performance of the OL3 contract.

According to public statements by TVO, no assurance can be given that further delays, which could have a material adverse effect on TVO's business and financial position, will not occur prior to completion of the OL3 project. As a consequence, further delays could have an adverse impact on PVO's business and financial position, the bar value of TVO's energy shareholdings in PVO and/or the cost of energy sourced from OL3 when completed. It is possible that the cost of energy sourced from OL3 at the time when it starts regular electricity production will be higher than the market price of electricity at that time.

Operational risks

<table>
<thead>
<tr>
<th>TYPE OF RISK</th>
<th>RISK DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earnings uncertainty</td>
<td>The main short-term uncertainties in UPM's earnings relate to sales prices and delivery volumes of the group's products, as well as changes to the main input cost items and exchange rates. Most of these items are dependent on general economic developments.</td>
</tr>
<tr>
<td>Supply chain management, availability and price of major inputs</td>
<td>UPM's business operations depend on a large number of suppliers and contractors. Majority of UPM's need of wood is covered by suppliers. Other production inputs, such as chemicals, fibres and recovered paper, are obtained from suppliers. Disruptions in the supply of key inputs would impact upon manufacturing operations, for example, by interrupting or resulting in the deactivation of production or a change in the product mix. They could also cause price increases for critical inputs or shifts in the availability and price of wood. It is also uncertain how the EU energy policies may impact upon the availability and cost of fibre and energy.</td>
</tr>
<tr>
<td>Project execution</td>
<td>Investment projects in UPM's businesses such as energy, pulp, paper or biofuels are often large and take one or more years to complete. UPM has experience in such projects in various businesses and locations around the world, and applies vigorous planning, project management and follow-up processes. Participation in large projects involves risks such as cost overruns or delays, as well as non-achievement of the economic targets set for the investment.</td>
</tr>
<tr>
<td>Partnerships</td>
<td>UPM currently works together with many partners without control over strategic direction and operational control. The highly competitive market situation and, for example, new developments in biofuels, bioenergy or biochemicals are likely to increase the importance of partnerships in the search for higher efficiency in new products and businesses. Partnerships, however, may create risks to the profitability, for example, through changes occurring within the partner entity or changes in how the partnership operates.</td>
</tr>
<tr>
<td>Ability to recruit and retain diversely skilled employees</td>
<td>UPM's success requires a skilled workforce and diversity in thinking. UPM is continuously developing its leadership culture, evaluating its recruitment, compensation policies and career development opportunities and taking measures to attract and retain diversely skilled personnel, thereby seeking to avoid shortages of appropriately competent and diverse personnel in the future.</td>
</tr>
<tr>
<td>Availability and security of information systems</td>
<td>UPM's production and business operations depend on the availability of supporting information system and network services. Unplanned interruptions in critical information system services can potentially cause a major damage in UPM's businesses. UPM has implemented numerous administrative and technical improvements to mitigate the availability and security risks and to reduce the service interruption related recovery time to acceptable level.</td>
</tr>
<tr>
<td>Climate change</td>
<td>Climate change exposes UPM to variety of risks. Unpredictable regulation and subsidies may distort raw material and final product markets, and costs of greenhouse gas emissions may influence UPM's financial performance. It may cause exceptional weather conditions and more severe storms, floods and droughts resulting in, e.g. unpredictable wood harvesting conditions. However, transition to low-carbon economy should bring business opportunities to UPM's renewable and recyclable products.</td>
</tr>
<tr>
<td>Risks related to non-compliance in own operations and supply chain</td>
<td>Breach of applicable laws and regulations or corporate policies by UPM employees may lead to legal processes or serious reputational damages impacting the value of the company. The UPM Code of Conduct has the standards of responsible behaviour. These standards apply to every UPM employee. The Code covers topics relating to legal compliance and disclosures, anti-corruption, competition law, HR practices, human rights, responsible sourcing and environmental matters. UPM's environmental, social and human rights policies have an important role in UPM's ability to operate and influence the long-term success of its businesses. UPM strives to ensure that employees are aware of the legal requirements, the Code and corporate policies by regular trainings and communication. The company maintains a Report Misconduct channel on its website. Non-compliance in the supply chain may also lead to legal processes or serious reputational damages impacting the value of the company. The UPM Supplier and Third Party Code defines the minimum level of performance that UPM requires from its suppliers and third party intermediaries. UPM performs due diligence on third party intermediaries and carries out regular audits in its supply chain.</td>
</tr>
</tbody>
</table>
Non-financial information

Global megatrends represent many long-term opportunities and challenges for UPM towards 2030 and beyond. They are also demanding in their sustainability, growth, and development. In order to address these megatrends and the responsibility towards all stakeholders, UPM has established a set of responsibilities focusing on key areas and key performance indicators. These indicators are reviewed every year based on a materiality analysis. Non-financial risks include risks related to economic, social, and environmental responsibilities.

Based on international frameworks and commitments UPM respects international human rights agreements and agreements concerning labour rights, including the UN Declaration of Human Rights. The OECD Guidelines on Corporate Governance of Multinational Enterprises. The UN is a signatory to the Global Compact, whose ten universal principles are derived from international agreements in the areas of human rights, labour standards, and environmental responsibility. UPM's code of conduct underlines the company's zero tolerance towards corruption and bribery in any form. UPM Anti-Bribery Rules define in detail prohibited conduct and expected ethical behaviour.

UPM's strategy guides the company in achieving its environmental, social, and economic responsibilities and agreements concerning labour rights, including the UN Declaration of Human Rights, the OECD Declaration on Fundamental Principles and Rights at Work, and the OECD Guidelines for Multinational Enterprises. UPM is a signatory to the Global Compact LEAD Forum as the only representative of the forest industry and the only Finnish participant.

UPM is committed to respecting human rights. UPM has mapped its responsible business operations and has issued the UPM Human Rights Report. The report documents UPM's efforts to implement the UN Guiding Principles on Business and Human Rights. The report covers all white-collar employees. UPM also launched an initiative to further enhance due diligence procedures, implemented a new policy management framework and performed risk-based compliance reviews in selected jurisdictions and operations.

UPM is committed to respecting human rights. UPM has mapped its operations and activities and identified the potential human rights issues and impacts. In considering both the severity and likelihood of these potential issues and impacts UPM considers the salient human rights issues in the company's sphere of influence to be environmental pollution, occupational health and safety (OHS), working conditions, protection of children, and forced labour.

UPM's anti-bribery training was extended to all employees in 2017.

UPM uses the GRI Standards reporting guidelines published by the Global Reporting Initiative to measure and report on corporate responsibility at group level. UPM's corporate responsibility reporting has been compiled in accordance with the GRI Standards.

Committed to anti-corruption

The UPM Code of Conduct underlines the company's zero tolerance towards corruption and bribery in any form. UPM Anti-Bribery Rules explain in detail prohibited conduct and expected ethical behaviour. UPM performs anti-corruption risk assessment on a regular basis. The annual risk assessment process includes a top-down risk assessment with the management of each business area. All UPM group entities are also assessed on the basis of country risk and complexity of operations. UPM operates globally and has significant manufacturing operations in several emerging market countries. Such operations require a number of permits and other licenses from authorities. Some of the countries where UPM operates are perceived as highly corrupted or corrupted according to Transparency International. In these countries, there is an increased risk of corruption for third-party companies. UPM works within the framework of the Anti-bribery programme. UPM has put in place a number of procedures to prevent corruption and bribery in any form. UPM has a zero-tolerance policy on bribery and corruption. UPM requires that due diligence is performed before entering into or renewing any contract with a third party which meets specified criteria. UPM requires anti-bribery contract terms to be included in agreements with all third parties outlining the third party's commitment to compliance with applicable anti-bribery laws and UPM's right to audit the third party to verify compliance with these terms. UPM has put in place a number of due diligence procedures for joint ventures, including mergers and acquisitions. In 2017, the company's anti-bribery training was extended to cover all employees and launched an initiative to further enhance due diligence procedures, implemented a new policy management framework and performed risk-based compliance reviews in selected jurisdictions and operations.

Respect for human rights

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UPM's anti-bribery training was extended to all employees in 2017.
UPM is committed to respecting human rights based on its Code of Conduct. UPM has a process for assessing human rights at UPM site level, including community relations and local sourcing as well as for risk assessments and audits for suppliers.

Human rights

UPM is committed to respecting human rights based on its Code of Conduct. UPM has a process for assessing human rights at UPM site level, including community relations and local sourcing as well as for risk assessments and audits for suppliers.

Human rights

Continuous supplier auditing based on systematic risk assessment practices

100% coverage of participation in UPM Code of Conduct training (continuous)

98% (97%) of all suppliers and 86% (85%) of all suppliers also conducting audits of human rights due diligence and including human rights topics. UPM conducted a human rights due diligence and including human rights topics.

100% of supplier spend qualified against UPM Supplier and Third Party Code.

82% (306%) of supplier spend qualified against UPM Supplier and Third Party Code.

Employee engagement index 71% favourable. This is 2 percentage points below external high performing norm. Employee engagement index 75% favourable. This is 1 percentage point above external high performing norm.

Target setting discussions are held and development plans created for all employees, completion rate 100% by 2030.

89% of employees had individual goal setting or annual discussion completed and 62% had a development plan documented.

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89% of employees had individual goal setting or annual discussion completed and 62% had a development plan documented.

No fatalities or serious accidents in UPM operations. Total lost-time injury frequency (TRIF) <2 levels permanently reached including contractors.

These fatal contractor accidents (two fatal accidents).

TRIF was 8.2 for workforce and 8.1 for contractors.

TRIF was 8.2 for workforce and 8.1 for contractors.

95% favourable in Employee Engagement Survey’s Diversity and Inclusion index by 2030.

67% favourable in Employee Engagement Survey’s Diversity and Inclusion Index.

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67% favourable in Employee Engagement Survey’s Diversity and Inclusion Index.

UPM wants to develop organisational cultures and local conditions to ensure inclusion and diverse working environment. UPM promotes health and safety audits and on safety-related near-misses and safety observations.

Diversity

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Diversity

UPM promotes health and safety audits and on safety-
Research and development

Growth and competitive edge

Innovations and R&D programmes are essential in the development of new products. These development programmes aim to create new technologies and products and to ensure the competitiveness of UPM’s businesses.

In 2017, UPM spent EUR 58 million (46 million) on research and development, making up approximately 2% (2.7%) of UPM’s operating cash flow. The focus was on new technologies and developing businesses.

On top of the direct R&D expenditure of approximately EUR 51 million (40 million), the figures include negative operating cash flow and capital expenditure in developing businesses. A global network of research centres supports UPM’s new and existing businesses.

Progress in sustainable bioeconomy business

UPM Biochemicals focuses on three product categories: biochemicals, biomedical products and lignin products.

Biochemicals include industrial chemicals. The products using UPM’s biochemicals can be converted into various industrial products and everyday consumer goods.

In 2017, UPM announced that it was going to evaluate the potential of building a biorefinery in the Frankfurt-Höchst Chemical Park in Germany. This brand new industrial-scale biorefinery would produce 150,000 tons of IMEG (bio-monomethylene glycol), IAMPS (bio-monomonopylene glycol) and lignin from hardwood.

UPM continues to develop biomedicinal products in collaboration with researchers at Biomedical in Helsinki, Finland. Gluon® hydrogel is suitable for cell culturing, and medical research is finding more new applications for it. One example is Biofil®, a new wound dressing material that releases naphtha.

Lignin can be used in resins employed as binders in wood-based products, such as tissue, hygiene, nonwovens, flexible packaging, labels and related products, as well as in plastics, foams and coatings. In 2017, UPM Biochemicals announced that it was testing a sequential crop of the Brassica Carinata crop in winter in South America, outside of its main cultivation period. The Carinata crop produces non-edible oil suitable for biofuels’ production assets and developing competencies and business operations related to the optimisation of industrial power production and demand side management. UPM Energy participated in several research programmes and undertook development work with the aim of improving UPM’s operations relating to energy generation and consumption in a changing energy market.

New building and new uses and feedstocks in biofuels

Made from a renewable raw material, crude tall oil, UPM BioVerno® napthapha is an excellent bio-component for gasoline. It also works exceptionally well in diesel engines and as a heating fuel.

Lignin can be derived from residual materials, for example, from the pulp and paper production process, lignin has traditionally been burned to generate energy, but the new technology turns it into a high-quality product that can replace fossil raw materials. The gluing technology is based on lignin technology developed and patented by UPM Biochemicals.

Developing new uses and feedstocks in biofuels

Biofuels

Biofuels are developed in collaboration with research institutes, suppliers and start-up companies. UPM’s successful expansion of its product portfolio and distribution network, coupled with the opening of new production facilities in 2017, have increased the sales of BioVerno diesel and naphtha.

Research projects to enhance circular economy

UPM’s research into the side streams of pulp and paper mill integrates aims to find more efficient ways to utilise side streams such as sludge, ash, green liquor, and waste water.

A joint project with fertilizer manufacturer Yara develops recycled fertilizer solutions for crops from sludge, ash, green liquor and waste water.

Research is also underway to find ways to utilise sludge, ash and waste water more efficiently, and to use them as energy sources.

A project with the Technical University of Denmark (DTU) has developed an intelligent technology for automatic monitoring of the fermentation process, which makes it possible to predict the time to the start of fermentation.

Technological solutions and innovations that use wood, chemicals, energy and water more efficiently are being patented also in existing businesses like pulp and paper production.

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Technological solutions and innovations that use wood, chemicals, energy and water more efficiently are being patented also in existing businesses like pulp and paper production.
Board of Director’s proposal for the distribution of profits

The Board of Directors proposes to the Annual General Meeting of UPM-Kymmene Corporation to be held on 5 April 2018 that a dividend of EUR 1.15 per share be paid based on the balance sheet to be adopted for the financial year ending 31 December 2017 and that the remaining portion of the distributable funds be retained in the Company’s unrestricted shareholders’ equity.

The dividend will be paid to a shareholder who is registered in the Company’s shareholders’ register held by Euroclear Finland Ltd on the dividend record date of 9 April 2018. The Board of Directors proposes that the dividend be paid on 19 April 2018.

On the date of the dividend proposal, 31 January 2018, the Company’s registered number of shares is 533,715,699. The aforementioned number of shares includes 411,653 treasury shares which are not entitled to dividend. As a result, the proposed dividend would total EUR 613.3 million. On 31 December 2017, the distributable funds of the parent company were EUR 3,739,614,044.37 including EUR 859,161,250.56 profit for the period. No material changes have taken place in respect of the Company’s financial position after the balance sheet date. In the opinion of the Board of Directors, the proposed distribution of profits does not risk the solvency of the Company.

Consolidated financial statements, IFRS

Consolidated income statement

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>21,22</td>
<td>10,010, 9,812</td>
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<tr>
<td>Other operating income</td>
<td>23</td>
<td>83</td>
</tr>
<tr>
<td>Costs and expenses</td>
<td>26</td>
<td>8,492</td>
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<tr>
<td>Change in fair value of forest assets and wood harvested</td>
<td>42</td>
<td>103</td>
</tr>
<tr>
<td>Share of results of associates and joint ventures</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Depreciation, amortisation and impairment charges</td>
<td>23</td>
<td>41, -4, 44</td>
</tr>
<tr>
<td>Operating profit</td>
<td>1,239</td>
<td>1,133</td>
</tr>
<tr>
<td>Gains on sale of energy shareholdings, net</td>
<td>4,3</td>
<td>-3</td>
</tr>
<tr>
<td>Exchange rate and fair value gains and losses</td>
<td>5,4</td>
<td>-12</td>
</tr>
<tr>
<td>Interest and other finance costs</td>
<td>5,4</td>
<td>-17</td>
</tr>
<tr>
<td>Profit before tax</td>
<td>1,186</td>
<td>1,080</td>
</tr>
<tr>
<td>Income taxes</td>
<td>71</td>
<td>-302</td>
</tr>
<tr>
<td>Profit for the period</td>
<td>974</td>
<td>880</td>
</tr>
</tbody>
</table>

Attributable to:

- Owners of the parent company | 973 | 879 |
- Non-controlling interests | 1 | 1 |
- Total | 974 | 880 |

Earnings per share for profit attributable to owners of the parent company

- Basic earnings per share, EUR | 2,4 | 1,82 | 1,65 |
- Diluted earnings per share, EUR | 2,4 | 1,82 | 1,65 |

Consolidated statement of comprehensive income

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profit for the period</td>
<td>974</td>
<td>880</td>
</tr>
<tr>
<td>Other comprehensive income for the period, net of tax</td>
<td>( -7 )</td>
<td>( -87 )</td>
</tr>
<tr>
<td>Items that will not be reclassified to the income statement:</td>
<td>( -66 )</td>
<td>( -97 )</td>
</tr>
<tr>
<td>Actuarial gains and losses on defined benefit plans</td>
<td>( -270 )</td>
<td>( -14 )</td>
</tr>
<tr>
<td>Translation differences</td>
<td>( 20 )</td>
<td>( -4 )</td>
</tr>
<tr>
<td>Net investment hedge</td>
<td>122</td>
<td>73</td>
</tr>
<tr>
<td>Cash flow hedges</td>
<td>( -24 )</td>
<td>( -144 )</td>
</tr>
<tr>
<td>Gains and losses on energy shareholdings</td>
<td>( -102 )</td>
<td>( -87 )</td>
</tr>
<tr>
<td>Other comprehensive income for the period, net of tax</td>
<td>72</td>
<td>-37</td>
</tr>
<tr>
<td>Total comprehensive income for the period</td>
<td>937</td>
<td>695</td>
</tr>
</tbody>
</table>

Attributable to:

- Owners of the parent company | 937 | 695 |
- Non-controlling interests | 1 | 1 |
- Total | 937 | 695 |

The notes are integral part of these consolidated financial statements.
## Consolidated balance sheet

<table>
<thead>
<tr>
<th>ASSETS</th>
<th>NOTE</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goodwill</td>
<td>4.4</td>
<td>231</td>
<td>245</td>
</tr>
<tr>
<td>Other intangible assets</td>
<td>4.4</td>
<td>294</td>
<td>301</td>
</tr>
<tr>
<td>Property, plant and equipment</td>
<td>4.1</td>
<td>4,281</td>
<td>4,657</td>
</tr>
<tr>
<td>Forest assets</td>
<td>4.2</td>
<td>1,600</td>
<td>1,734</td>
</tr>
<tr>
<td>Energy shareholdings</td>
<td>4.3</td>
<td>1,978</td>
<td>1,932</td>
</tr>
<tr>
<td>Other non-current financial assets</td>
<td>5.3</td>
<td>192</td>
<td>255</td>
</tr>
<tr>
<td>Deferred tax assets</td>
<td>7.2</td>
<td>423</td>
<td>446</td>
</tr>
<tr>
<td>Net retirement benefit assets</td>
<td>3.4</td>
<td>84</td>
<td>71</td>
</tr>
<tr>
<td>Investments in associates and joint ventures</td>
<td></td>
<td>29</td>
<td>29</td>
</tr>
<tr>
<td>Other non-current assets</td>
<td></td>
<td>37</td>
<td>47</td>
</tr>
<tr>
<td><em>Non-current assets</em></td>
<td></td>
<td>7,144</td>
<td>7,172</td>
</tr>
<tr>
<td>Inventories</td>
<td>4.6</td>
<td>1,311</td>
<td>1,346</td>
</tr>
<tr>
<td>Trade and other receivables</td>
<td>4.6, 5.3</td>
<td>1,783</td>
<td>1,726</td>
</tr>
<tr>
<td>Other current financial assets</td>
<td>2.3</td>
<td>92</td>
<td>109</td>
</tr>
<tr>
<td>Income tax receivables</td>
<td></td>
<td>20</td>
<td>14</td>
</tr>
<tr>
<td>Cash and cash equivalents</td>
<td>5.1</td>
<td>716</td>
<td>993</td>
</tr>
<tr>
<td><em>Current assets</em></td>
<td></td>
<td>3,522</td>
<td>4,187</td>
</tr>
<tr>
<td>Assets classified as held for sale</td>
<td></td>
<td>1</td>
<td>8</td>
</tr>
</tbody>
</table>

| _EQUITY AND LIABILITIES_ | | 13,067 | 13,910 |
| NOTE | 2017 | 2016 |
| Share capital | 5.5 | 890 | 890 |
| Treasury shares | | 2 | 2 |
| Translation reserve | | 184 | 433 |
| Other reserves | 5.5 | 1,564 | 1,416 |
| Reserve for invested non-restricted equity | 5.5 | 1,273 | 1,273 |
| Retained earnings | | 4,752 | 4,225 |
| _Equity attributable to owners of the parent company_ | | 8,860 | 8,234 |
| Other comprehensive income | | 8,863 | 8,237 |
| _Equity_ | | 17,723 | 16,461 |
| Deferred tax liabilities | 7.3 | 458 | 457 |
| Net retirement benefit liabilities | 3.4 | 736 | 817 |
| Provisions | 4.5 | 177 | 145 |
| Non-current debt | 5.2, 5.3 | 789 | 1,838 |
| Other non-current financial liabilities | 5.3 | 96 | 110 |
| _Non-current liabilities_ | | 2,254 | 2,364 |
| Current debt | 5.2, 5.3 | 324 | 584 |
| Trade and other payables | 4.6, 5.3 | 1,765 | 1,594 |
| Other current financial liabilities | 5.3 | 34 | 116 |
| Income tax payables | | 26 | 16 |
| _Current liabilities_ | | 2,130 | 2,309 |
| _Liabilities_ | | 6,404 | 6,574 |
| _Equity and liabilities_ | | 13,067 | 13,910 |

The notes are an integral part of these consolidated financial statements.

## Consolidated statement of changes in equity

<table>
<thead>
<tr>
<th><em>Euron</em></th>
<th>SHARE CAPITAL</th>
<th>TREASURY SHARES</th>
<th>TRANSLATION RESERVE</th>
<th>OTHER RESERVES</th>
<th>RESERVE FOR INVESTED NON-RESTRICTED EQUITY</th>
<th>RETAINED EARNINGS</th>
<th>EQUITY ATTRIBUTABLE TO OWNERS OF THE PARENT COMPANY</th>
<th>NON-CONTROLLING INTERESTS</th>
<th>TOTAL EQUITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value, at 1 January 2017</td>
<td>890</td>
<td>-2</td>
<td>433</td>
<td>1,416</td>
<td>1,273</td>
<td>4,225</td>
<td>8,234</td>
<td>3</td>
<td>8,237</td>
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<tr>
<td>Profit for the period</td>
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<tr>
<td>Translation differences</td>
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<tr>
<td>Cash flow hedges – reclassified to income statement, net of tax</td>
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<tr>
<td>Cash flow hedges – changes in fair value, net of tax</td>
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<td>Net investment hedge, net of tax</td>
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<td>Energy shareholdings – changes in fair value, net of tax</td>
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<td>Actuarial gains and losses on defined benefit plans, net of tax</td>
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<td><em>Total comprehensive income for the period</em></td>
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<tr>
<td>Share-based payments, net of tax</td>
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<td>Dividend distribution</td>
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<tr>
<td><em>Total transactions with owners for the period</em></td>
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<tr>
<td>Total equity at 31 December 2017</td>
<td>890</td>
<td>-2</td>
<td>184</td>
<td>1,564</td>
<td>1,273</td>
<td>4,752</td>
<td>8,640</td>
<td>4</td>
<td>8,643</td>
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<tr>
<td>Value, at 1 January 2016</td>
<td>890</td>
<td>-2</td>
<td>449</td>
<td>1,486</td>
<td>1,273</td>
<td>3,866</td>
<td>7,942</td>
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<td>7,944</td>
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<tr>
<td>Profit for the period</td>
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<td>1,273</td>
<td>4,225</td>
<td>8,234</td>
<td>3</td>
<td>8,237</td>
</tr>
</tbody>
</table>

> Refer Note 5.5 Share capital and reserves, for further information.
## Consolidated cash flow statement

<table>
<thead>
<tr>
<th>Statement area</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash flows from operating activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Profit for the period</td>
<td>914</td>
<td>880</td>
</tr>
<tr>
<td>Adjustments</td>
<td>779</td>
<td>778</td>
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<tr>
<td>Interest received</td>
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<td>6</td>
</tr>
<tr>
<td>Interest paid</td>
<td>-32</td>
<td>-40</td>
</tr>
<tr>
<td>Dividends received</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>Other financial items, net</td>
<td>-51</td>
<td>8</td>
</tr>
<tr>
<td>Income taxes paid</td>
<td>-216</td>
<td>-145</td>
</tr>
<tr>
<td>Change in working capital</td>
<td>91</td>
<td>195</td>
</tr>
<tr>
<td>Operating cash flow</td>
<td>1,558</td>
<td>1,684</td>
</tr>
<tr>
<td>Cash flows from investing activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital expenditure</td>
<td>-305</td>
<td>-351</td>
</tr>
<tr>
<td>Acquisition of businesses and subsidiaries, net of cash acquired</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Acquisition of energy shareholdings</td>
<td>-25</td>
<td>-</td>
</tr>
<tr>
<td>Proceeds from sale of property, plant and equipment and intangible assets</td>
<td>106</td>
<td>93</td>
</tr>
<tr>
<td>Proceeds from disposal of shares in associates and joint ventures</td>
<td>3</td>
<td>-</td>
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<tr>
<td>Proceeds from disposal of energy shareholdings</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Net cash flows from net investment hedges</td>
<td>-3</td>
<td>-8</td>
</tr>
<tr>
<td>Change in other non-current assets</td>
<td>-3</td>
<td>-8</td>
</tr>
<tr>
<td>Investing cash flow</td>
<td>-222</td>
<td>-262</td>
</tr>
<tr>
<td>Cash flows from financing activities</td>
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<td></td>
</tr>
<tr>
<td>Proceeds from non-current debt</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Payments of non-current debt</td>
<td>-964</td>
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<tr>
<td>Change in current liabilities</td>
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<td>-77</td>
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<tr>
<td>Net cash flows from derivatives</td>
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<td>-22</td>
</tr>
<tr>
<td>Dividends paid</td>
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<td>-400</td>
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<tr>
<td>Other financing cash flow</td>
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<td>19</td>
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<tr>
<td>Financing cash flow</td>
<td>-1,604</td>
<td>-1,057</td>
</tr>
<tr>
<td>Change in cash and cash equivalents</td>
<td>-268</td>
<td>-367</td>
</tr>
<tr>
<td>Cash and cash equivalents at beginning of period</td>
<td>992</td>
<td>626</td>
</tr>
<tr>
<td>Exchange rate affect on cash and cash equivalents</td>
<td>-7</td>
<td>5</td>
</tr>
<tr>
<td>Change in cash and cash equivalents</td>
<td>-268</td>
<td>-367</td>
</tr>
<tr>
<td>Cash and cash equivalents at end of period</td>
<td>716</td>
<td>262</td>
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**Adjustments**

<table>
<thead>
<tr>
<th>Statement area</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in fair value of forest assets and wood harvested</td>
<td>-103</td>
<td>-88</td>
</tr>
<tr>
<td>Share of results of associates and joint ventures</td>
<td>-5</td>
<td>-5</td>
</tr>
<tr>
<td>Depreciation, amortisation and impairment charges</td>
<td>450</td>
<td>545</td>
</tr>
<tr>
<td>Capital gains and losses on sale of non-current assets</td>
<td>-53</td>
<td>-55</td>
</tr>
<tr>
<td>Financial income and expenses</td>
<td>70</td>
<td>56</td>
</tr>
<tr>
<td>Income taxes</td>
<td>212</td>
<td>200</td>
</tr>
<tr>
<td>Utilised provisions</td>
<td>-45</td>
<td>-47</td>
</tr>
<tr>
<td>Non-cash changes in provisions</td>
<td>37</td>
<td>44</td>
</tr>
<tr>
<td>Other adjustments</td>
<td>216</td>
<td>128</td>
</tr>
<tr>
<td>Total</td>
<td>779</td>
<td>776</td>
</tr>
</tbody>
</table>

**Change in working capital**

<table>
<thead>
<tr>
<th>Statement area</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inventories</td>
<td>-26</td>
<td>41</td>
</tr>
<tr>
<td>Receivables included in working capital</td>
<td>-48</td>
<td>22</td>
</tr>
<tr>
<td>Liabilities included in working capital</td>
<td>184</td>
<td>132</td>
</tr>
<tr>
<td>Total</td>
<td>91</td>
<td>195</td>
</tr>
</tbody>
</table>

### Notes to the consolidated financial statements

The notes to the consolidated financial statements are grouped into sections based on their nature. The notes contain relevant financial information as well as a description of accounting policy and key estimates and judgements applied for the topics of the individual notes. All amounts are shown in millions of euros unless otherwise stated.

1. **Basis for reporting**
   1.1 **Corporate information**

   UPM-Kymmene Corporation ("the parent company" or "the company") together with its consolidated subsidiaries ("UPM" or "the group") is a global forest-based biobased industry group. UPM large product range covers pulp, graphic and specialty papers, self-adhesive labels, wood-based renewable diesel, electricity as well as plywood and timber products.

   UPM-Kymmene Corporation is a Finnish limited liability company domiciled in Helsinki in the Republic of Finland. The address of the company’s registered office is Alvar Aallon katu 1, 00100 Helsinki, where a copy of the consolidated financial statements can be obtained.

   The parent company’s shares are publicly traded on the Nasdaq Helsinki Main Market.

   These group consolidated financial statements were authorised for issue by the Board of Directors on 31 January 2018. According to the Finnish Companies Act, the General Meeting of Shareholders is entitled to decide on the adoption of the company’s financial statements.

1.2 **Basis of preparation**

   UPM’s consolidated financial statements are prepared in accordance with International Financial Reporting Standards as adopted by the European Union (IFRS as adopted by the EU) and IFRIC Interpretations.

   The consolidated financial statements have been prepared under the historical cost convention, except for forest assets, energy shareholdings and certain other financial assets and financial liabilities, defined benefit plan assets and obligations and share-based payment arrangements which are measured at fair value.

   The consolidated financial statements are presented in millions of euros, which is the functional and presentation currency of the parent company. Items included in the financial statements of each group subsidiary are measured using the currency of the primary economic environment in which the subsidiary operates ("the functional currency").

   The amounts within parentheses refer to the preceding year. Figures presented in these financial statements are rounded and therefore the sum of individual figures might deviate from the presented total figure.

### Accounting policies

The accounting policies applied to the consolidated financial statements as a whole are described in this section, while the remaining accounting policies are described in the notes to which they relate as UPM aims to provide enhanced understanding of each financial statement area. Further, to provide a better understanding, the accounting choices made within the framework of the prevailing IFRS are described together with the policy.

### Key estimates and judgements

In the process of applying the group’s accounting policies, management has made a number of judgements and applied estimates of future events that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting periods. Although these estimates are based on management’s best knowledge, actual results and timing may ultimately differ from previously made estimates.

Key estimates and judgement which are material to the reported results and financial position are presented in the following notes:

---

**Items marked with this symbol** describe the accounting principle applied by UPM to the specific financial statement area.

**Items marked with this symbol** indicate that the accounting area involves estimates and judgement which are described separately.

**Risks related disclosures,** whether they are financial, actuarial, credit or counterparty in nature, can be found in sections marked with this symbol.
**4.1 Property, plant and equipment**

- Fair value determination of energy shareholdings
- Impairment of goodwill and other intangible assets
- Impairment of property, plant and equipment
- Pension and other post-employment benefits
- Income taxes
- Environmental provisions
- Legal contingencies

**4.5 Provisions**

- Income tax
- Legal contingencies

**4.6 Working capital**

- Income tax
- Legal contingencies

**5.1 Capital management**

- Income tax
- Legal contingencies

**6.1 Financial risk management**

- Credit risk
- Liquidity and refinancing risk
- Interest rate risk
- Foreign exchange risk
- Credit counterparty risk
- Interest rate risk
- Liquidity and refinancing risk
- Credit risk

**3.4 Retirement benefit obligations**

- Pension and other post-employment benefits
- Income taxes
- Environmental provisions
- Legal contingencies

**2. Business performance**

<table>
<thead>
<tr>
<th>Accounts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales (EUR)</td>
</tr>
<tr>
<td>Comparable EBIT (EUR)</td>
</tr>
<tr>
<td>Comparable ROE</td>
</tr>
</tbody>
</table>

**2.1 Business areas**

- UPM business portfolio consists of six competitive businesses with strong market positions. UPM reports financial information for the following business areas (segments): UPM Biorefining, UPM Energy, UPM Raflatac, UPM Specialty Papers, UPM Paper ENA, UPM Plywood, and Other operations. UPM has production plants in 12 countries. The group’s most important markets are Europe, North America, and Asia.

**Key financial estimates and judgments**

<table>
<thead>
<tr>
<th>Key Estimates and Judgments</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valuation of forest assets</td>
<td>4.2 Forest assets</td>
</tr>
<tr>
<td>Fair value determination of energy shareholdings</td>
<td>4.3 Energy shareholdings</td>
</tr>
<tr>
<td>Impairment of property, plant and equipment</td>
<td>4.4 Property, plant and equipment</td>
</tr>
<tr>
<td>Impairment of goodwill and other intangible assets</td>
<td>4.4 Goodwill and other intangible assets</td>
</tr>
<tr>
<td>Pension and other post-employment benefits</td>
<td>3.4 Retirement benefit obligations</td>
</tr>
<tr>
<td>Income taxes</td>
<td>7. Income tax</td>
</tr>
<tr>
<td>Environmental provisions</td>
<td>6.5 Provisions</td>
</tr>
<tr>
<td>Legal contingencies</td>
<td>9.2 Legal contingencies</td>
</tr>
</tbody>
</table>

**Financial risks**

UPM is exposed to a variety of financial risks as a result of its business activities including currency risk, interest rate risk, commodity price risk, credit risk, capital risk and liquidity risk. Risk management related to financial activities is carried out by UPM’s central treasury department, Treasury and Risk Management, under policies approved by the Board of Directors. Financial risks are described in the relevant notes as described below:

<table>
<thead>
<tr>
<th>Financial Risks</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit risk</td>
<td>4.6 Working capital</td>
</tr>
<tr>
<td>Liquidity and refinancing risk</td>
<td>5.1 Capital management</td>
</tr>
<tr>
<td>Interest rate risk</td>
<td>6.1 Financial risk management</td>
</tr>
<tr>
<td>Foreign exchange risk</td>
<td>6.1 Financial risk management</td>
</tr>
<tr>
<td>Electricity price risk</td>
<td>6.1 Financial risk management</td>
</tr>
<tr>
<td>Financial counterparty risk</td>
<td>6.2 Derivatives and hedge accounting</td>
</tr>
</tbody>
</table>

**IMPACT**

The profit or loss attributable to owners of the parent company is partially disposed of, sold or liquidated, translation differences arising from the translation of net investment in foreign operations and other currency instruments designated as hedges of such investments, are recognised in other comprehensive income. When a foreign entity is partially disposed of, sold or liquidated, translation differences accrued in equity are recognised in the income statement as part of the gain or loss on sale/liquidation.
DESCRIPTION AND PRODUCTS

UPM Biorefining consists of UPM Pulp, UPM Biofuels and UPM Timber business units. UPM has three pulp mills in Finland, one pulp mill and plantation operations in Uruguay, four saw mills in Finland and one biorefinery in Finland. UPM Plywood serves the global market with a comprehensive assortment of sustainably produced eucalyptus, birch and softwood pulp grades for a variety of tissue, specialty paper, board, printing and writing paper and other applications. UPM Biofuels produces innovative, advanced biomass for transport. UPM Timber manufactures certified sawn timber from Nordic pine and spruce to joinery, packaging, distribution and construction industries.

UPM Energy produces low emission electricity to the Nordic market. UPM Energy is the second largest electricity producer in Finland. UPM Energy operations include electricity generation, and operations in both physical electricity and financial portfolio management. UPM Energy assets consist of hydro power assets in Finland and shareholdings in energy companies.

UPM Raflatac supplies high-quality film and paper label stock for consumer product and industrial labelling.

UPM Paper ENA (Europe & North America) is the world’s leading producer of graphics papers.

UPM Specialty Papers combines cellulose fibres and polymers into new high performance products and materials. UPM Biochemicals offers truly sustainable, recyclable UPM products. UPM Biocomposites combines cellulose fibres and polymers into new high performance papers are manufactured in China and Finland.

Other operations include wood sourcing and forestry, UPM Biocomposites, UPM Biochemicals business units and group services. Wood sourcing operations source wood raw material for sustainable and recyclable UPM products. UPM Biocomposites combines cellulose fibres and polymers into new high performance products and materials. UPM Biochemicals offers truly sustainable, competitive and high quality solutions for various industries and applications.

Key performance indicators and financial targets

UPM aims to grow its comparable EBIT over the long term. The Group has a portfolio of five businesses that operate on growing markets and one business that faces declining demand. All of UPM businesses are competitive and have strong market positions. Financial target setting, follow up and allocation of resources in the group’s performance management process is mainly based on the business area comparable EBIT and comparable ROCE.

UPM presents comparable performance measures to reflect the underlying business performance and to enhance comparability from period to period. However the comparable performance measures used by management should not be considered in isolation as a substitute for measures of performance in accordance with IFRS. Business area information including description of items affecting comparability is presented below.
Business area information for the year ended 31 December 2016

<table>
<thead>
<tr>
<th>Business area</th>
<th>UPM</th>
<th>UPM</th>
<th>UPM</th>
<th>UPM</th>
<th>UPM</th>
<th>UPM</th>
<th>UPM</th>
<th>OTHER</th>
<th>ELMINATIONS</th>
<th>AND RECONCILIATIONS</th>
<th>GROUP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ON</td>
<td>ENERGY</td>
<td>RAFLATAC</td>
<td>SPECIALTY</td>
<td>PAPERS</td>
<td>PAPER</td>
<td>ENA</td>
<td>OPERATIONS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EBIT or EBITA</td>
<td>EUROS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>External sales</td>
<td>1,663</td>
<td>170</td>
<td>1,437</td>
<td>1,067</td>
<td>4,797</td>
<td>426</td>
<td>275</td>
<td>-22</td>
<td>9,812</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal sales</td>
<td>542</td>
<td>187</td>
<td>-</td>
<td>206</td>
<td>21</td>
<td>20</td>
<td>11</td>
<td>-987</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total sales</td>
<td>2,206</td>
<td>357</td>
<td>1,437</td>
<td>1,273</td>
<td>4,818</td>
<td>444</td>
<td>285</td>
<td>-1,009</td>
<td>9,812</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comparable EBIT</td>
<td>406</td>
<td>116</td>
<td>133</td>
<td>123</td>
<td>280</td>
<td>58</td>
<td>14</td>
<td>12</td>
<td>1,143</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Items affecting comparability in operating profit</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Operating profit</td>
<td>406</td>
<td>116</td>
<td>133</td>
<td>123</td>
<td>280</td>
<td>58</td>
<td>14</td>
<td>12</td>
<td>1,143</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finance costs, net</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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</tr>
<tr>
<td>Income taxes</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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</tr>
<tr>
<td>Profit for the period</td>
<td>883</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td>Operating assets</td>
<td>3,586</td>
<td>2,283</td>
<td>666</td>
<td>1,121</td>
<td>2,287</td>
<td>304</td>
<td>1,691</td>
<td>-326</td>
<td>11,612</td>
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<td>Deferred tax assets</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Other non-operating assets</td>
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<td>Other financial assets</td>
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<tr>
<td>Total assets</td>
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<td></td>
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</tr>
<tr>
<td>Operating liabilities</td>
<td>245</td>
<td>34</td>
<td>165</td>
<td>137</td>
<td>505</td>
<td>43</td>
<td>179</td>
<td>-295</td>
<td>1,013</td>
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<td></td>
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<tr>
<td>Deferred tax liabilities</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other liabilities</td>
<td>978</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<td>Other financial liabilities</td>
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<tr>
<td>Total liabilities</td>
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<td></td>
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<td></td>
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</tbody>
</table>

Other items

<table>
<thead>
<tr>
<th>Description</th>
<th>2016 EUR m</th>
<th>Change EUR m</th>
<th>EUR %</th>
<th>Description</th>
<th>2016 EUR m</th>
<th>Change EUR m</th>
<th>EUR %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in fair value of forest assets and wood harvested</td>
<td>29</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>59</td>
<td>-</td>
<td>-88</td>
</tr>
<tr>
<td>Share of results of associates and joint ventures</td>
<td>-1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>-3</td>
</tr>
<tr>
<td>Depreciation and amortisation</td>
<td>-171</td>
<td>-9</td>
<td>-33</td>
<td>-91</td>
<td>-54</td>
<td>-22</td>
<td>-14</td>
</tr>
<tr>
<td>Impairment charges</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-49</td>
<td>-</td>
<td>-10</td>
</tr>
<tr>
<td>Capital employed, 31 December</td>
<td>3,341</td>
<td>2,249</td>
<td>501</td>
<td>984</td>
<td>1,782</td>
<td>261</td>
<td>1,512</td>
</tr>
<tr>
<td>Average capital employed</td>
<td>3,231</td>
<td>2,340</td>
<td>524</td>
<td>1,012</td>
<td>1,964</td>
<td>239</td>
<td>1,541</td>
</tr>
<tr>
<td>Capital expenditure</td>
<td>188</td>
<td>1</td>
<td>19</td>
<td>15</td>
<td>49</td>
<td>45</td>
<td>9</td>
</tr>
<tr>
<td>Capital expenditure, excluding acquisitions and share buy-outs</td>
<td>188</td>
<td>1</td>
<td>19</td>
<td>15</td>
<td>49</td>
<td>45</td>
<td>9</td>
</tr>
<tr>
<td>Comparable ROCE, %</td>
<td>12.6</td>
<td>5.0</td>
<td>25.5</td>
<td>12.1</td>
<td>14.3</td>
<td>22.6</td>
<td>0.9</td>
</tr>
</tbody>
</table>

1) Business area’s operating assets include goodwill, other intangible assets, property, plant and equipment, forest assets, energy shareholdings, investments in associates and joint-ventures, inventories and trade receivables. Operating liabilities include trade payables and advances received.

2) Eliminations and reconciliations include the elimination of internal sales and internal inventory margin and the consolidation of PAP’s joint operations. In addition the changes in fair value of realised cash flow and commodity hedges that are not allocated to segments are included in reconciliations.

Items affecting comparability

<table>
<thead>
<tr>
<th>Description</th>
<th>2017 EUR m</th>
<th>2016 EUR m</th>
<th>Change EUR m</th>
<th>Change EUR %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impairment charges</td>
<td>-3</td>
<td>-5</td>
<td>-2</td>
<td>-40</td>
</tr>
<tr>
<td>Restructuring charges</td>
<td>-67</td>
<td>-48</td>
<td>-19</td>
<td>-40</td>
</tr>
<tr>
<td>Change in fair value of unrealised cash flow and commodity hedges</td>
<td>2</td>
<td>27</td>
<td>25</td>
<td>1,000</td>
</tr>
<tr>
<td>Capital gains and losses on sale of non-current assets</td>
<td>35</td>
<td>49</td>
<td>14</td>
<td>28</td>
</tr>
<tr>
<td>Total items affecting comparability</td>
<td>-33</td>
<td>-7</td>
<td>-26</td>
<td>-71</td>
</tr>
<tr>
<td>In finance costs;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gains and losses on sale of associates and joint ventures</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>50</td>
</tr>
<tr>
<td>Total</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>50</td>
</tr>
<tr>
<td>In income taxes;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taxes related to items affecting comparability</td>
<td>7</td>
<td>7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Changes in tax rates</td>
<td>-5</td>
<td>4</td>
<td>-9</td>
<td>-180</td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
<td>10</td>
<td>8</td>
<td>160</td>
</tr>
<tr>
<td>In total for the period</td>
<td>-30</td>
<td>1</td>
<td>-31</td>
<td>-98</td>
</tr>
</tbody>
</table>

Total assets and capital expenditure by country

<table>
<thead>
<tr>
<th>Assets Capital expenditure</th>
<th>2017 EUR m</th>
<th>2016 EUR m</th>
<th>2017 EUR m</th>
<th>2016 EUR m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finland</td>
<td>8,108</td>
<td>8,566</td>
<td>183</td>
<td>157</td>
</tr>
<tr>
<td>Germany</td>
<td>946</td>
<td>1,008</td>
<td>25</td>
<td>18</td>
</tr>
<tr>
<td>United States</td>
<td>361</td>
<td>437</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>161</td>
<td>185</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>China</td>
<td>799</td>
<td>879</td>
<td>16</td>
<td>13</td>
</tr>
<tr>
<td>France</td>
<td>68</td>
<td>71</td>
<td>-1</td>
<td>3</td>
</tr>
<tr>
<td>Uruguay</td>
<td>1,766</td>
<td>2,010</td>
<td>19</td>
<td>84</td>
</tr>
<tr>
<td>Other EU countries</td>
<td>338</td>
<td>325</td>
<td>42</td>
<td>33</td>
</tr>
<tr>
<td>Other European countries</td>
<td>116</td>
<td>91</td>
<td>25</td>
<td>16</td>
</tr>
<tr>
<td>Rest of world</td>
<td>14</td>
<td>14</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>13,067</td>
<td>13,911</td>
<td>303</td>
<td>325</td>
</tr>
</tbody>
</table>

Sales by country

<table>
<thead>
<tr>
<th>Description</th>
<th>2017 EUR m</th>
<th>2016 EUR m</th>
<th>2017 EUR m</th>
<th>2016 EUR m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finland</td>
<td>835</td>
<td>886</td>
<td>829</td>
<td>886</td>
</tr>
<tr>
<td>Germany</td>
<td>1,650</td>
<td>1,699</td>
<td>1,552</td>
<td>1,690</td>
</tr>
<tr>
<td>United States</td>
<td>1,160</td>
<td>1,217</td>
<td>1,138</td>
<td>1,217</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>645</td>
<td>713</td>
<td>666</td>
<td>713</td>
</tr>
<tr>
<td>China</td>
<td>1,079</td>
<td>860</td>
<td>1,042</td>
<td>858</td>
</tr>
<tr>
<td>France</td>
<td>411</td>
<td>434</td>
<td>411</td>
<td>434</td>
</tr>
<tr>
<td>Uruguay</td>
<td>85</td>
<td>49</td>
<td>90</td>
<td>49</td>
</tr>
<tr>
<td>Other EU countries</td>
<td>2,235</td>
<td>2,099</td>
<td>2,235</td>
<td>2,099</td>
</tr>
<tr>
<td>Other European countries</td>
<td>434</td>
<td>383</td>
<td>434</td>
<td>383</td>
</tr>
<tr>
<td>Rest of world</td>
<td>1,516</td>
<td>1,472</td>
<td>1,516</td>
<td>1,472</td>
</tr>
<tr>
<td>Total</td>
<td>10,010</td>
<td>9,812</td>
<td>10,010</td>
<td>9,812</td>
</tr>
</tbody>
</table>
2.2 Sales

UPM generates revenue mainly from the sale of several types of products.

UPM sells a proportion of its products to several major customers. The largest customer in terms of sales represented approximately 3% of UPM’s sales in 2017 and 2016, and the ten largest customers represented approximately 15% (16%) of such sales.

» Refer Note 2.1 Business areas for information on UPM products.

Sales by business area

<table>
<thead>
<tr>
<th>Business Area</th>
<th>2017</th>
<th>2016</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPMP Biorefining</td>
<td>2,531</td>
<td>2,206</td>
<td>15%</td>
</tr>
<tr>
<td>UPMP Energy</td>
<td>317</td>
<td>357</td>
<td>-11%</td>
</tr>
<tr>
<td>UPMP Raffiata</td>
<td>1,495</td>
<td>1,437</td>
<td>4%</td>
</tr>
<tr>
<td>UPMP Specialty Pulp</td>
<td>1,336</td>
<td>1,273</td>
<td>5%</td>
</tr>
<tr>
<td>UPMP Paper ENA</td>
<td>4,615</td>
<td>4,818</td>
<td>-4%</td>
</tr>
<tr>
<td>UPMP Plywood</td>
<td>454</td>
<td>444</td>
<td>9%</td>
</tr>
<tr>
<td>Other operations</td>
<td>1,048</td>
<td>1,029</td>
<td>-1%</td>
</tr>
<tr>
<td>Eliminations</td>
<td>-1,048</td>
<td>-1,029</td>
<td>-2%</td>
</tr>
<tr>
<td>Total</td>
<td>8,492</td>
<td>8,365</td>
<td>-1%</td>
</tr>
</tbody>
</table>

Effect of a 10% change in prices on operating profit for the year

<table>
<thead>
<tr>
<th>Effect</th>
<th>2017</th>
<th>2016</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulp in UPM Paper ENA</td>
<td>4,615</td>
<td>4,818</td>
<td>-4%</td>
</tr>
<tr>
<td>Fine and specialty papers in UPM Specialty Papers</td>
<td>110</td>
<td>106</td>
<td>-4%</td>
</tr>
<tr>
<td>Label materials in UPM Raffiata</td>
<td>149</td>
<td>144</td>
<td>-4%</td>
</tr>
<tr>
<td>Plywood</td>
<td>44</td>
<td>41</td>
<td>-7%</td>
</tr>
<tr>
<td>Sawn timber</td>
<td>31</td>
<td>30</td>
<td>-3%</td>
</tr>
<tr>
<td>Chemical pulp (net effect)</td>
<td>32</td>
<td>33</td>
<td>-3%</td>
</tr>
</tbody>
</table>

The biggest factor affecting UPM’s financial results is the sales price of paper. A change in the volume delivered has less than half of the effect of the same percentage change in sales prices.

Accounting policies

Revenue from UPM’s product sales is recognised when the customer takes title and assumes the risks and rewards of ownership. The timing of revenue recognition is largely dependent on delivery terms. Group terms of delivery are based on Incoterms 2010, the official rules for interpretation of trade terms issued by the International Chamber of Commerce. Revenue is recorded when the product is delivered to the destination point for terms designated Delivered Duty Paid (“DDP”) or Delivered at Place (“DAP”). For sales transactions designated Free on Carrier (“FCA”), Carriage paid to (“CPT”) or Carriage and Insurance Paid to (“CIP”), revenue is recorded at the time of shipment.

UPM sells energy to NordPool electricity market. Revenue is recognised when electricity is transmitted.

UPM provides forest expertise and contracting services to woodland and forestry owners. Revenues from services are recorded when the service has been performed.

Sales are recognised net of indirect sales taxes, discounts, rebates and cash flow hedging results of sales in foreign currency as well as hedges of energy sales.

2.3 Operating expenses and other operating income

Operating expenses

Operating expenses excluding forest assets fair value change, wood harvested and share of results of associates and joint ventures are presented below.

<table>
<thead>
<tr>
<th>Operating Expenses</th>
<th>2017</th>
<th>2016</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw materials, consumables and goods</td>
<td>5,471</td>
<td>5,376</td>
<td>2%</td>
</tr>
<tr>
<td>Employee costs 1)</td>
<td>1,265</td>
<td>1,346</td>
<td>-6%</td>
</tr>
<tr>
<td>Other operating costs and expenses 2)</td>
<td>1,069</td>
<td>884</td>
<td>2%</td>
</tr>
<tr>
<td>Total</td>
<td>8,492</td>
<td>8,365</td>
<td>-1%</td>
</tr>
</tbody>
</table>

1) Refer Note 2.3 Employee rewards, for further information.

2) Distribution of other operating costs and expenses

<table>
<thead>
<tr>
<th>Operating Expenses</th>
<th>2017</th>
<th>2016</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rents and lease expenses</td>
<td>42</td>
<td>48</td>
<td>-14%</td>
</tr>
<tr>
<td>Emission expenses</td>
<td>4</td>
<td>9</td>
<td>-54%</td>
</tr>
<tr>
<td>Losses on sale of non-current assets</td>
<td>2</td>
<td>3</td>
<td>-33%</td>
</tr>
<tr>
<td>Credit losses</td>
<td>-</td>
<td>10</td>
<td>-100%</td>
</tr>
<tr>
<td>Maintenance and other operating expenses 1)</td>
<td>520</td>
<td>615</td>
<td>-15%</td>
</tr>
<tr>
<td>Total</td>
<td>8,492</td>
<td>8,365</td>
<td>-1%</td>
</tr>
</tbody>
</table>

1) Other operating expenses include, among others, energy as well as expenses related to services and group’s administration.

Research and development costs

The research and development costs included in operating expenses were EUR 51 million (40 million) in 2017. The focus was on new technologies and developing businesses.

Government grants

In 2017, government grants recognised as deduction of operating expenses totalled to EUR 6 million (8 million) of which EUR 5 million (6 million) relates to Finland, EUR 1 million (2 million) to UK and China. In addition, the group received emission rights from governments amounting to EUR 14 million (16 million) of which EUR 7 million (8 million) relates to Finland, EUR 5 million (6 million) to Germany, EUR 1 million (1 million) to Austria and EUR 1 million (1 million) to UK.

Other operating income

Gains on sale of non-current assets EUR 65 million (59 million) to other operating income.

Emission rights

The group has recognised in Other operating income of EUR 14 million (16 million) income and under Other operating costs and expenses of EUR 4 million (9 million) expenses relating to CO2 emissions. The liability to cover the obligation to return emission rights amounted to EUR 9 million (9 million) and is recognised in provisions. The emission rights recognised in intangible assets are specified below.

Accountant’s fees

<table>
<thead>
<tr>
<th>Accountant’s fees</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audit fee</td>
<td>2.3</td>
<td>2.3</td>
</tr>
<tr>
<td>Audit related services</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Tax services</td>
<td>0.7</td>
<td>0.7</td>
</tr>
<tr>
<td>Other services</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Total</td>
<td>3.2</td>
<td>3.6</td>
</tr>
</tbody>
</table>

In 2017, auditor’s fees include EUR 0.2 million related to tax services and EUR 0.3 million related to other services paid to PwC Oy.
Emission rights
The group participates in the European Emissions Trading Scheme aimed at reducing greenhouse gas emissions. Emission rights received from governments free of charge to emit a fixed tonnage of carbon dioxide in a fixed period of time give rise to an intangible asset for the emission rights. Government grant and a liability for the obligation to deliver emission rights equal to the emissions that have been made during the compliance period. Emission rights are initially recognised as intangible assets based on market value at the date of initial recognition. Emission rights are not amortised. If the market price of emission rights at the balance sheet date is less than the recognised costs, any surplus emission rights that are not required to cover actual and estimated emissions during the financial year, are impaired to the market price.

Government grants are recognised as deferred income in the balance sheet at the same time as emission rights and are recognised in other operating income in the income statement, systematically, over the compliance period to which the corresponding emission rights relate. The liability to deliver emission rights is recognised based on actual emissions. The emission realised are expensed under other operating costs and expenses in the income statement and presented as a provision in the balance sheet. The liability is settled using emission rights on hand, measured at the carrying amount of those emission rights. Emission rights and associated provisions are derecognised when disposed. Any gain or loss represents the costs of purchasing additional rights to cover excess emissions, the sale of unused rights in the case realised emission are under emission rights received free of charge or the impairment of unused emission rights.

2.4 Earnings per share and dividend
According to UPM dividend policy, the company aims to pay an attractive dividend amounting to 30-40% of the group operating cash flow per share.

The dividend paid in 2017 were EUR 507 million (EUR 0.95 per share) which is 30% of the operating cash flow per share and in 2016 EUR 400 million (EUR 0.75 per share). The Board of Directors proposes to the Annual General Meeting that a dividend of EUR 413.3 million, EUR 1.15 per share, will be paid in respect of 2017. The proposed dividend represents 39% of UPM’s operating cash flow per share for the year 2017.
of the Group Executive Team. For the President and CEO the maximum annual incentive amounts to 150% of the annual base salary.

The expenses recognised in income statement in respect of share-based payments for the Group Executive Team were EUR 7.8 million (9.0 million). In accordance with the executive contract, the retirement age of the President and CEO Jussi Pesonen is 60. For the President and CEO, the target pension is 60% of the average indexed earnings from the last ten years of employment calculated according to the Finnish statutory pension scheme. The cost of lowering the retirement age to 60 is covered by supplementing the statutory pension with a voluntary defined benefit pension plan. Should the President and CEO leave the company before reaching the age of 60, an immediate vesting right corresponding to 100% of the earned pension (pro rata) will be applied. The expenses of the President and CEO’s defined benefit pension plan in 2017 were EUR 0.6 million (0.5 million). The plan assets amounted to EUR 10.9 million (2.6 million) and the obligation amounted to EUR 10.4 million (1.8 million).

### 3.3 Share-based payments

UPM offers rewards and recognition with an emphasis on high performance. All UPM’s employees belong to a unified annual Short Term Incentive (STI) scheme. In addition, UPM has two long-term incentive plans: the Performance Share Plan (PSP) for senior executives and the Deferred Bonus Plan (DBP) for other key employees.

#### Performance Share Plan

The Performance Share Plan (PSP) is targeted at Group Executive Team (GET) members and other selected members of the management. Under the ongoing plans the UPM shares are awarded based on the total shareholder return during a three-year earning period. The earned share delivery, the share rewards earned are adjusted with dividends and paid dividends.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of participants at 31 December 2017</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>26</td>
</tr>
<tr>
<td>Actual achievement</td>
<td>100%</td>
<td>100%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Max no. of shares to be delivered</td>
<td>116,785</td>
<td>107,196</td>
<td>112,500</td>
<td>92,500</td>
</tr>
<tr>
<td>to the President and CEO</td>
<td>352,689</td>
<td>325,878</td>
<td>340,000</td>
<td>308,500</td>
</tr>
<tr>
<td>to other members of GET</td>
<td>280,284</td>
<td>252,990</td>
<td>263,000</td>
<td>240,000</td>
</tr>
<tr>
<td>Total max no. of shares to be delivered</td>
<td>749,758</td>
<td>686,052</td>
<td>735,500</td>
<td>641,000</td>
</tr>
<tr>
<td>Share delivery year</td>
<td>2017</td>
<td>2018</td>
<td>2019</td>
<td>2020</td>
</tr>
<tr>
<td>Earning criteria (weighting)</td>
<td>Total shareholder return (100%)</td>
<td>Total shareholder return (100%)</td>
<td>Total shareholder return (100%)</td>
<td>Total shareholder return (100%)</td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

#### Deferred Bonus Plan

The Deferred Bonus Plan (DBP) is targeted at other selected key employees of the group and it consists of two-year recurring cash payments. Each plan consists of a one-year earning period and a two-year restriction period. UPM shares are awarded based on achievement of group or group and business area EBITDA targets. Prior to share delivery, the share rewards earned are adjusted with dividends and other capital distributions, if any, paid to all shareholders during the restriction period.

<table>
<thead>
<tr>
<th>DEFERRED BONUS PLAN</th>
<th>DBP 2014</th>
<th>DBP 2015</th>
<th>DBP 2016</th>
<th>DBP 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>No of participants (at grant)</td>
<td>38</td>
<td>37</td>
<td>36</td>
<td>36</td>
</tr>
<tr>
<td>No. of participants (at 31 December 2017)</td>
<td>367</td>
<td>321</td>
<td>323</td>
<td>330</td>
</tr>
<tr>
<td>Max no. of shares to be delivered (at grant)</td>
<td>950,000</td>
<td>800,000</td>
<td>770,000</td>
<td>523,000</td>
</tr>
<tr>
<td>Estimated no. of shares to be delivered at 31 December 2017</td>
<td>327,125</td>
<td>382,493</td>
<td>363,851</td>
<td>334,986</td>
</tr>
<tr>
<td>Share delivery year</td>
<td>2017</td>
<td>2018</td>
<td>2019</td>
<td>2020</td>
</tr>
<tr>
<td>Earning criteria</td>
<td>Group/Business area EBITDA</td>
<td>Group/Business area EBITDA</td>
<td>Group/Business area EBITDA</td>
<td>Group/Business area EBITDA</td>
</tr>
</tbody>
</table>

#### Accounting policies

The group’s long-term share incentive plans are recognised as equity-settled or cash-settled share-based payment transactions depending on the settlement. Shares are valued using the market rate on the grant date. The settlement is a combination of shares and cash. The group may obtain the necessary shares by using its treasury shares or may purchase shares from the market. PSP and DBP share deliveries are executed by using already existing shares and the plans, therefore, have no dilutive effect.

### 3.4 Retirement benefit obligations

The group operates various pension schemes in accordance with local conditions and practices in the countries of operations. Retirement benefits are employee benefits that are payable usually after the termination of employment, such as pensions and post-employment medical care. The pension plans are generally funded through payments to insurance companies or to trustee-administered funds or foundations and classified as defined contribution plans or defined benefit plans.

Defined benefit assets and liabilities recognised in the balance sheet are presented below:

<table>
<thead>
<tr>
<th>COUNTRIES</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>FINLAND</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OTHER/</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FINLAND</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OTHER/</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EURm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net defined benefit liability (or asset)</td>
<td>-83</td>
<td>557</td>
</tr>
<tr>
<td>Net retirement benefit liability in the balance sheet</td>
<td>-83</td>
<td>557</td>
</tr>
<tr>
<td>Net retirement benefit liability in the balance sheet</td>
<td>-83</td>
<td>557</td>
</tr>
</tbody>
</table>

*For PSP 2014-2016 and PSP 2015-2017, the gross number of shares actually earned.

About 95% of the group’s defined benefit arrangements exist in Finland, in the UK and in Germany. The group has defined benefit obligations also in Austria, Holland, France, Canada and in the US. Approximately a quarter of UPM’s employees are active members of defined benefit arrangement plans.

#### Finland

In Finland employers are obliged to insure their employees for statutory benefits, as determined in Employee’s Pension Act (TyEL). TyEL provides the employee with insurance protection for old age, disability and death. The benefits can be insured with an insurance company or the employer can establish a fund or a foundation to manage the statutory benefits. Approximately 82% (90%) of group’s Finnish employees are insured with an insurance company and these arrangements qualify as defined contribution plans. Approximately 18% (10%) of employees is insured with TyEL Foundation (Kymen eläkesäätiö). The TyEL foundation is administered by the representatives of both the employer and the employees. The foundation has an authorized representative to take care of its regular operations. The plan is supervised by Financial Supervisory Authority. The foundation is classified as a defined benefit plan for the benefits that must be funded nationally and is the most significant defined benefit pension plan in Finland for UPM.

#### UK

In the UK, the group operates a legacy defined benefit scheme providing benefits that are linked to the salary level near retirement age or an earlier date of leaving service. The scheme is closed both for new members and future accrual for old members. Part of the scheme is a defined contribution plan and is open to all current employees. The UK pension scheme operates under a single trust which is independent from the group.

#### Germany

In Germany employees within defined benefit arrangements are entitled to annual pensions on retirement based on their service and final salary. All significant defined benefit plans are closed for new employees.
In brief
Consumer Price Index.

In Germany the pensions have to be adjusted in accordance with the 0.5% in indexes will increase the liabilities by some EUR 35 million.

In the UK, the pensions in payment are tied to Retail Price Index whilst in other countries the inflation risk is not significant as changes in salary levels have no impact on the funding position as all defined benefit arrangements in the UK are closed to future accrual. In Germany, an increase of 0.5% in expected future salaries would increase the obligation by EUR 18 million.

The present value of the net retirement benefit assets and liabilities is calculated by reference to the expected future salaries of plan participants. An increase in the salary of the plan participants would increase the plan liabilities. In Finland, the salary risk is minor as well as in the UK, where the changes in salary levels have no impact on the funding position as all defined benefit arrangements in the UK are closed to future accrual. In Germany, an increase of 0.5% in expected future salaries would increase the obligation by EUR 18 million.

In 2018 contributions of EUR 40 million are expected to be paid to group’s defined benefit plans. In 2017 contributions of EUR 61 million were paid to group’s defined benefit plans.

In the Finnish plan, the inflation risk is not significant as changes in the inflation assumption are mainly covered by the Tystöpool system. In the UK, the pensions in payment are tied to Retail Price Index whilst being tied to Consumer Price Index during deferment. An increase of 0.5% in indexes will increase the liabilities by some EUR 35 million. In Germany the pensions have to be adjusted in accordance with the Consumer Price Index.

### Actuarial risks

Defined benefit plans typically expose the group to the following actuarial risks:

#### Investment risk (asset volatility)

The group is exposed to changes in assets’ values especially in the investments of the foundations and schemes in Finland and in the UK.

The asset values of these arrangements constitute 98% of total asset values in defined benefit plans within group.

#### Interest risk

Discount rates used in calculations are based on high-quality corporate bond yield curves in currency in which the benefits are paid. A decrease in the discount rate would increase the plan liabilities. The maturities of yields are reflecting the durations of the underlying obligations. The weighted average duration of group’s defined benefit obligation is 16 years (17 years) at the end of 2017.

#### Inflation risk

In the Finnish plan, the inflation risk is not significant as changes in the inflation assumption are mainly covered by the Tystöpool system. In the UK, the pensions in payment are tied to Retail Price Index whilst being tied to Consumer Price Index during deferment. An increase of 0.5% in indexes will increase the liabilities by some EUR 35 million. In Germany the pensions have to be adjusted in accordance with the Consumer Price Index.

#### Salary risk

The present value of the net retirement benefit assets and liabilities is calculated by reference to the expected future salaries of plan participants. An increase in the salary of the plan participants would increase the plan liabilities. In Finland, the salary risk is minor as well as in the UK, where the changes in salary levels have no impact on the funding position as all defined benefit arrangements in the UK are closed to future accrual. In Germany, an increase of 0.5% in expected future salaries would increase the obligation by EUR 18 million.

### Life expectancy

Adjustments in mortality assumption have an impact on group’s defined benefit obligation. An increase in life expectancy by one year will increase the obligation in Finland by EUR 18 million, in the UK by EUR 16 million and in Germany by EUR 25 million.

### Sensitivity analysis of defined benefit obligations

The sensitivity analysis shows the effect of the change in assumption. The analysis assume that all other assumptions remain unchanged. The projected unit credit method has been applied when calculating the obligation as well as these sensitivities.

Plan assets by categories 2017

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Money market</td>
<td>57</td>
<td>71</td>
</tr>
<tr>
<td>Debt instruments</td>
<td>338</td>
<td>267</td>
</tr>
<tr>
<td>Equity instruments</td>
<td>439</td>
<td>410</td>
</tr>
<tr>
<td>Property</td>
<td>48</td>
<td>36</td>
</tr>
<tr>
<td>Assets held by insurance companies</td>
<td>57</td>
<td>64</td>
</tr>
<tr>
<td>Other assets</td>
<td>30</td>
<td>35</td>
</tr>
<tr>
<td>Total</td>
<td>892</td>
<td>726</td>
</tr>
</tbody>
</table>

Plan assets include the company’s ordinary shares with a fair value of EUR 1 million (1 million).

In 2018 contributions of EUR 40 million are expected to be paid to group’s defined benefit plans. In 2017 contributions of EUR 61 million were paid to group’s defined benefit plans.

### Key estimates and judgements

Several actuarial assumptions are used in calculating the expense and liability related to the defined benefit plans. Statistical information used may differ materially from actual results due to, among others, changing market and economic conditions, or changes in service period of plan participants. Significant differences in actual experience or significant changes in assumptions may affect the future amounts of the defined benefit obligation and future expense.
4. Capital employed

UPM’s capital employed primarily relates to its production facilities and both forest and energy assets. UPM aims to capture growth opportunities in its existing business portfolio and invest in projects with attractive and sustainable returns.

<table>
<thead>
<tr>
<th>Capital employed</th>
<th>€mln</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property, plant and equipment</td>
<td>4,281</td>
<td>4,657</td>
<td></td>
</tr>
<tr>
<td>Forest assets</td>
<td>1,600</td>
<td>1,734</td>
<td></td>
</tr>
<tr>
<td>Energy shareholdings</td>
<td>1,976</td>
<td>1,932</td>
<td></td>
</tr>
<tr>
<td>Goodwill and other intangible assets</td>
<td>525</td>
<td>545</td>
<td></td>
</tr>
<tr>
<td>Operating working capital</td>
<td>1,552</td>
<td>1,694</td>
<td></td>
</tr>
<tr>
<td>Provisions</td>
<td>-177</td>
<td>-145</td>
<td></td>
</tr>
<tr>
<td>Net retirement benefit assets and liabilities</td>
<td>-652</td>
<td>-746</td>
<td></td>
</tr>
<tr>
<td>Cash and cash equivalents</td>
<td>716</td>
<td>992</td>
<td></td>
</tr>
<tr>
<td>Other assets and liabilities</td>
<td>-9</td>
<td>-3</td>
<td></td>
</tr>
<tr>
<td>Net deferred tax assets and liabilities</td>
<td>-36</td>
<td>-11</td>
<td></td>
</tr>
<tr>
<td>Assets classified as held for sale</td>
<td>1</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9,777</strong></td>
<td><strong>10,657</strong></td>
<td></td>
</tr>
</tbody>
</table>

Capitalised borrowing costs In 2017, the borrowing costs capitalised as part of non-current assets amounted to EUR 1 million (1 million). Amortisation of capitalised borrowing costs was EUR 2 million (4 million) and the average interest rate used 2.40% (1.55%), which represents the average costs to finance the projects.

Capital expenditure Capital expenditure, excluding acquisitions and shares, amounted to EUR 303 million (325 million) in 2017. Following UPM plywood business area growth investments in Finland and Estonia over the past few years, UPM announced in October 2017 it will expand its Chudovo plywood mill in Russia by EUR 30 million in 2018. The expansion of the Otepää plywood mill in Estonia and modernising UPM Kaukas pulp mill in Finland were finalised in 2016. In July 2016, UPM announced it will invest EUR 98 million in UPM Kymi pulp mill in Finland to further strengthen its position as a supplier of bleached chemical pulp for growing consumer and industrial end-use segments. The investment was completed in 2017. In October 2016, UPM announced a EUR 35 million investment in UPM Boffat factory in Poland to meet the increasing label stock demand in Europe. The investment was completed in 2017.

Capitalised borrowing costs

<table>
<thead>
<tr>
<th>€mln</th>
<th>LAND AND WATER AREAS</th>
<th>BUILDINGS</th>
<th>MACHINERY AND EQUIPMENT</th>
<th>OTHER TANGIBLE ASSETS</th>
<th>CONSTRUCTION IN PROGRESS</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2017</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accumulated costs</td>
<td>759</td>
<td>3,577</td>
<td>14,150</td>
<td>883</td>
<td>21</td>
<td>88</td>
</tr>
<tr>
<td>Accumulated depreciation and impairments</td>
<td>-27</td>
<td>-2,532</td>
<td>-11,855</td>
<td>-783</td>
<td>31</td>
<td>-6</td>
</tr>
<tr>
<td><strong>Carrying value, at 31 December</strong></td>
<td>724</td>
<td>1044</td>
<td>2,295</td>
<td>130</td>
<td>88</td>
<td>8</td>
</tr>
<tr>
<td><strong>Carrying value, at 31 December</strong></td>
<td>801</td>
<td>1,131</td>
<td>2,502</td>
<td>133</td>
<td>89</td>
<td>8</td>
</tr>
<tr>
<td>Accumulated depreciation and impairments</td>
<td>-34</td>
<td>-2,506</td>
<td>-11,824</td>
<td>-748</td>
<td>42</td>
<td>-7</td>
</tr>
<tr>
<td><strong>Carrying value, at 31 December</strong></td>
<td>724</td>
<td>1,213</td>
<td>2,764</td>
<td>134</td>
<td>80</td>
<td>8</td>
</tr>
</tbody>
</table>

| **2016** | | | | | | |
| Accumulated costs | 836 | 3,638 | 14,326 | 881 | 9 | 89 | 19,770 |
| Accumulated depreciation and impairments | -24 | -2,506 | -11,824 | -748 | 42 | -6 | -15,176 |
| **Carrying value, at 31 December** | 801 | 1,131 | 2,502 | 133 | 89 | 8 | 4,657 |
| Accumulated depreciation and impairments | -34 | -2,506 | -11,824 | -748 | 42 | -7 | -15,176 |
| **Carrying value, at 31 December** | 724 | 1,213 | 2,764 | 134 | 80 | 8 | 4,890 |

4.1 Property, plant and equipment

Capital expenditure

- In 2017, the capital expenditure on property, plant and equipment amounted to EUR 1,932 (1,213) million.
- The capital expenditure was financed through internal funds and external financing.
- The capital expenditure related to the construction of the following projects:
  - Chudovo plywood mill in Russia
  - Kymi pulp mill in Finland
  - Otepää plywood mill in Estonia
  - Modernisation of Kaukas pulp mill in Finland
  - Debottlenecking of Kaukas pulp mill in Estonia
  - Debottlenecking of UPM plywood business area in Finland
  - Debottlenecking of UPM plywood business area in Estonia
  - Debottlenecking of UPM plywood business area in Russia

Impairment losses

- In December 2017, UPM recognised impairment charges of EUR 23 million (2 million) in UPM Paper ENA business area.
- In March 2016, UPM recognised impairment charges of EUR 9 million (2 million) in UPM Paper ENA business area.
- In November 2016, UPM recognised impairment charges of EUR 6 million (2 million) in UPM Paper ENA business area.

Major capital commitments at 31 December

<table>
<thead>
<tr>
<th>€mln</th>
<th>LAND AND WATER AREAS</th>
<th>BUILDINGS</th>
<th>MACHINERY AND EQUIPMENT</th>
<th>OTHER TANGIBLE ASSETS</th>
<th>CONSTRUCTION IN PROGRESS</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2017</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capacity increase / Chudovo plywood mill</td>
<td>42</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Debottlenecking / Kaukas pulp mill</td>
<td>21</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capacity increase / Kymi pulp mill</td>
<td>-80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capacity increase / Russian pulp mill</td>
<td>43</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In brief

- UPM’s capital employed primarily relates to its production facilities and both forest and energy assets. UPM aims to capture growth opportunities in its existing business portfolio and invest in projects with attractive and sustainable returns.
- Defined benefit pension plans Plan benefits depend on salary and length of service. The defined benefit obligations are calculated annually by independent actuaries using the projected unit credit method. The present value of the defined benefit obligation is determined by discounting the estimated future cash outflows using interest rates of high-quality corporate bonds that are denominated in the currency in which the benefits will be paid and that have terms to maturity approximating the term of the related pension liability. The liability recognised in the balance sheet in respect of defined benefit pension plans is the present value of the defined benefit obligation at the balance sheet date less the fair value of plan assets. The cost of providing pensions is charged to the income statement as employee costs so as to spread the cost over the service lives of employees. Changes in actuarial assumptions and actuarial gains and losses arising from experience adjustments are charged or credited in other comprehensive income in the period in which they arise. Past service costs and gains or losses on settlement are recognised immediately in income when they occur.
4.2 Forest assets

UPM is both a major forest owner and a purchaser of wood. Wood is a renewable material and the most important raw material for UPM’s businesses. At the end of 2017, UPM owned 570,000 hectares of forest in Finland and 75,000 hectares of forest in the United States. The company additionally has 255,000 hectares of forest plantations in Uruguay. The value of forest assets, i.e. standing trees, amounted to EUR 1,600 million (1,734 million) at the end of 2017. In 2017, UPM sourced 274 (278) million cubic meters of wood from around the world.

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carrying value, at 1 January</td>
<td>1,734</td>
<td>1,738</td>
</tr>
<tr>
<td>Additions</td>
<td>3</td>
<td>26</td>
</tr>
<tr>
<td>Disposals</td>
<td>-97</td>
<td>-72</td>
</tr>
<tr>
<td>Wood harvested</td>
<td>-117</td>
<td>-106</td>
</tr>
<tr>
<td>Net change in fair value</td>
<td>137</td>
<td>133</td>
</tr>
<tr>
<td>Revaluations</td>
<td>-</td>
<td>-1</td>
</tr>
<tr>
<td>Translation differences</td>
<td>-59</td>
<td>15</td>
</tr>
<tr>
<td>Carrying value, at 31 December</td>
<td>1,680</td>
<td>1,754</td>
</tr>
</tbody>
</table>

Change in fair value, change due to harvesting and gains or losses on sale of forest assets are recognised in the income statement as a net amount totalling to EUR 103 million (88 million) in 2017.

Fair valuation

The valuation process of forest assets is complex and requires management estimates and judgment on assumptions that have a significant impact on the valuation of the group’s forest assets.

Main factors used in the fair valuation of forest assets are estimates for growth and wood harvested, stumpage prices and discount rates. Stumpage price forecasts are based on the current prices adjusted by the management’s estimates for the full remaining productive lives of the trees, up to 100 years for forests in Finland and in the US and up to 10 years for plantations in Uruguay. The cash flows are adjusted by selling costs and risks related to the future growth. Selling revenues and maintenance costs are estimated on the basis of actual costs and prices, taking into account the group’s projection of future price and costs development. In addition, calculations take into account environmental restrictions.

The pre-tax discount rate used to determine the fair value of the Finnish forests in 2017 was 7.0% (7.0%) and for Uruguay’s plantations 9.5% (10.0%). A decrease (increase) of one percentage point in discount rate would increase (decrease) the fair value of forest assets by approximately EUR 220 million (240 million).

4.3 Energy shareholdings

UPM is both a significant purchaser and producer of energy. The majority of electrical and thermal energy is consumed at the group’s pulp and paper production. The production is mainly carried out by energy companies in which UPM has energy shareholdings. Energy shareholdings are unlisted equity investments. UPM does not have control or joint control of or significant influence in the said energy companies.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th>Carrying value, EURm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of shares</td>
<td>Group holding %</td>
<td>2017</td>
<td>2016</td>
</tr>
<tr>
<td>Polyotjan Virmas Oy, A series</td>
<td>8,176,191</td>
<td>67.24</td>
<td>343</td>
</tr>
<tr>
<td>Polyotjan Virmas Oy, B series</td>
<td>4,140,132</td>
<td>58.11</td>
<td>1,064</td>
</tr>
<tr>
<td>Polyotjan Virmas Oy, B2 series</td>
<td>2,869,819</td>
<td>51.22</td>
<td>181</td>
</tr>
<tr>
<td>Kemiöl Oy</td>
<td>179,189</td>
<td>7.33</td>
<td>278</td>
</tr>
<tr>
<td>Länsi-Suomen Virmas Oy</td>
<td>10,220</td>
<td>51.10</td>
<td>102</td>
</tr>
<tr>
<td>Other</td>
<td>–</td>
<td>–</td>
<td>9</td>
</tr>
<tr>
<td>Carrying value, at 31 December</td>
<td></td>
<td></td>
<td>1,974</td>
</tr>
</tbody>
</table>

The value of energy shareholdings amounted to EUR 1,974 million (1,932 million) at the end of 2017. These energy companies supply energy or both energy and heat to their shareholders on a cost-price principle (Markatalo-principle) which is widely applied in the Finnish energy industry. Under the Markatalo-principle energy and/or heat is supplied to the shareholders in proportion to their ownership and each shareholder is, pursuant to the specific stipulations of the respective articles of association, severally responsible for its respective share of the production costs of the energy company concerned.
The group’s goodwill mainly relates to pulp operations in Finland and Uruguay belonging to UPM Biorefining business area.  

<table>
<thead>
<tr>
<th>Goodwill by business area</th>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPM Biorefining 3</td>
<td>210</td>
<td>223</td>
<td></td>
</tr>
<tr>
<td>UPM Raflatac</td>
<td>7</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>UPM Plywood</td>
<td>13</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Other operations</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>231</strong></td>
<td><strong>243</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Sensitivity analyses**

The sensitivity analyses of goodwill impairment tests indicate that no reasonable change in key assumptions would result in recognition of impairment loss against goodwill. In pulp operations the recoverable amount is most sensitive to pulp sales prices and the cost of wood raw material.  

As at 31 December 2017, for pulp operations Finland, a decrease of more than 19.6% in pulp prices would result in recognition of impairment loss against goodwill. The group believes that no reasonable change in wood cost would cause the aggregate carrying amount to exceed the recoverable amount. For pulp operations Uruguay, a decrease of more than 6.4% in pulp prices or an increase of more than 18.5% in wood cost would result in recognition of impairment loss against goodwill. A decrease of more than 8.1% in pulp prices or an increase of more than 23.7% inwood cost would result in a writedown of the entire goodwill.
Key estimates and judgements
The group’s assessment of the carrying value of goodwill and indefinite life assets requires significant judgement.

While management believes that estimates of future cash flows are reasonable, different assumptions are subject to change as a result of changing economic and operational conditions. Actual cash flows could therefore vary from estimated discounted future cash flows and could result in changes in the recognition of impairment charges in future periods.

Future cash flows
The review of recoverable amount for goodwill and indefinite life assets is based on a calculation of value in use, using management projections of future cash flows. The most important assumptions and assumptions needed in calculations are forecasts for future growth rates for the business in question, product prices, cost development and the discount rates applied. The group is using key-year forecasts in calculations as the nature of the group’s business is long-term, due to its capital intensity, and is exposed to cyclical changes. In estimates of product prices and cost development, forecasts prepared by management for the next three years and estimates made for the following seven years are taken into consideration. In addition, consideration is given to the investment decisions made by the group as well as the profitability programmes that the group has implemented and the views of knowledgeable industry experts on the long-term development of demand and prices. In the projection of cash flows, UPM uses EBITDA adjusted with cash flows not captured within EBITDA, including working capital movements and capital expenditures.

Discount rate
The discount rate is estimated using the weighted average cost of capital (WACC) on the calculation date adjusted for risks specific to the business in question. The adjusted after-tax discount rate is translated to a pretax rate for each cash-generating unit (CGU) based on the specific tax rate applicable to where the CGU operates.

Impairment testing
Goodwill and other intangible assets that are deemed to have an indefinite life are tested at least annually for impairment. For goodwill impairment testing purposes the group identifies its cash-generating units (CGUs), which is the smallest identifiable group of assets that generate cash inflows largely independent of the cash inflows of other assets or other groups of assets. Each CGU is no larger than a business area. The carrying amount for the CGU includes goodwill, non-current assets and working capital. If the balance sheet carrying amount of the CGU unit exceeds its recoverable amount, an impairment loss is recognised. Impairment loss is calculated at a straight-line method over their estimated useful lives ranging from 3 to 10 years.

Software and other intangible assets
Research expenditure is recognised as an expense as incurred. Costs incurred in acquiring software that will contribute to future period financial benefit are capitalized to software and systems. Other intangible assets are recognised at cost less accumulated amortisation and impairment. Amortisation is calculated using the straight-line method over their estimated useful lives ranging from 3 to 5 years.

Intangible rights
Intangible rights include water rights of hydropower plants, patents, licences, intellectual property and similar rights. Water rights are deemed to have an indefinite useful life as the company has a contractual right to exploit water resources in the energy production of power plants.

The values of water rights are tested annually for impairment based on expected future cash flows of each separate hydropower plant. Other intangible rights are recognised at cost less accumulated amortisation and impairment. Amortisation is calculated using the straight-line method over their estimated useful lives ranging from 5 to 10 years.

The group’s assessment of the carrying value of goodwill and indefinite life assets is based on a calculation of value in use, using management projections of future cash flows. The most important assumptions and assumptions needed in calculations are forecasts for future growth rates for the business in question, product prices, cost development and the discount rates applied. The group is using key-year forecasts in calculations as the nature of the group’s business is long-term, due to its capital intensity, and is exposed to cyclical changes. In estimates of product prices and cost development, forecasts prepared by management for the next three years and estimates made for the following seven years are taken into consideration. In addition, consideration is given to the investment decisions made by the group as well as the profitability programmes that the group has implemented and the views of knowledgeable industry experts on the long-term development of demand and prices. In the projection of cash flows, UPM uses EBITDA adjusted with cash flows not captured within EBITDA, including working capital movements and capital expenditures.

Goodwill
Goodwill arises in connection with business combinations where the consideration transferred exceeds the fair value of the acquired net assets. Goodwill is recognised at cost less accumulated impairment and is an intangible asset with an indefinite useful life. Goodwill is allocated to the cash generating units that are expected to benefit from the synergies from the business combination.

Intangible rights
Intangible rights include water rights of hydropower plants, patents, licences, intellectual property and similar rights. Water rights are deemed to have an indefinite useful life as the company has a contractual right to exploit water resources in the energy production of power plants.

The values of water rights are tested annually for impairment based on expected future cash flows of each separate hydropower plant. Other intangible rights are recognised at cost less accumulated amortisation and impairment. Amortisation is calculated using the straight-line method over their estimated useful lives ranging from 5 to 10 years.

Software and other intangible assets
Research expenditure is recognised as an expense as incurred. Costs incurred in acquiring software that will contribute to future period financial benefit are capitalized to software and systems. Other intangible assets are recognised at cost less accumulated amortisation and impairment. Amortisation is calculated using the straight-line method over their estimated useful lives ranging from 3 to 5 years.

Impairment testing
Goodwill and other intangible assets that are deemed to have an indefinite life are tested at least annually for impairment. For goodwill impairment testing purposes the group identifies its cash-generating units (CGUs), which is the smallest identifiable group of assets that generate cash inflows largely independent of the cash inflows of other assets or other groups of assets. Each CGU is no larger than a business area. The carrying amount for the CGU includes goodwill, non-current assets and working capital. If the balance sheet carrying amount of the CGU unit exceeds its recoverable amount, an impairment loss is recognised. Impairment loss is allocated first to reduce the carrying amount of any goodwill allocated to the unit and then to other assets of the unit. An impairment loss recognised for goodwill is not reversed in a subsequent period.

Other intangible assets with indefinite useful lives are impaired if the recoverable amount of the asset is less than the carrying amount. The carrying amount of the asset is then reduced to the recoverable amount which is the higher of the asset’s net selling price and its value in use.

4.5 Provisions

<table>
<thead>
<tr>
<th>Period</th>
<th>EBITDA</th>
<th>RESTRUCTURING</th>
<th>TERMINATION</th>
<th>ENVIRONMENTAL</th>
<th>EMISSIONS</th>
<th>OTHER</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provisions at 1 January</td>
<td>45</td>
<td>54</td>
<td>21</td>
<td>9</td>
<td>16</td>
<td>143</td>
<td></td>
</tr>
<tr>
<td>Provisions made during the year</td>
<td>5</td>
<td>42</td>
<td>2</td>
<td>8</td>
<td>42</td>
<td>99</td>
<td></td>
</tr>
<tr>
<td>Provisions utilised during the year</td>
<td>-7</td>
<td>-35</td>
<td>-1</td>
<td>-8</td>
<td>-1</td>
<td>-53</td>
<td></td>
</tr>
<tr>
<td>Unpaid provisions reversed</td>
<td>-1</td>
<td>-8</td>
<td>-1</td>
<td>-3</td>
<td>-1</td>
<td>-14</td>
<td></td>
</tr>
<tr>
<td>Redeliveries</td>
<td>1</td>
<td>-1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Translation differences</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Provisions at 31 December</td>
<td>42</td>
<td>52</td>
<td>20</td>
<td>9</td>
<td>53</td>
<td>177</td>
<td></td>
</tr>
<tr>
<td>Non-current</td>
<td>119</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>179</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Period</th>
<th>EBITDA</th>
<th>RESTRUCTURING</th>
<th>TERMINATION</th>
<th>ENVIRONMENTAL</th>
<th>EMISSIONS</th>
<th>OTHER</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provisions at 1 January</td>
<td>67</td>
<td>51</td>
<td>24</td>
<td>14</td>
<td>18</td>
<td>154</td>
<td></td>
</tr>
<tr>
<td>Provisions made during the year</td>
<td>16</td>
<td>36</td>
<td>5</td>
<td>9</td>
<td>4</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>Provisions utilised during the year</td>
<td>-12</td>
<td>-30</td>
<td>-1</td>
<td>-10</td>
<td>-4</td>
<td>-58</td>
<td></td>
</tr>
<tr>
<td>Unpaid provisions reversed</td>
<td>-1</td>
<td>-3</td>
<td>-1</td>
<td>-3</td>
<td>-2</td>
<td>-10</td>
<td></td>
</tr>
<tr>
<td>Provisions at 31 December</td>
<td>45</td>
<td>54</td>
<td>21</td>
<td>9</td>
<td>16</td>
<td>143</td>
<td></td>
</tr>
<tr>
<td>Non-current</td>
<td>90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current</td>
<td>56</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>146</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

UPM has undergone several restructurings in recent years including mill closures and profit improvement programs. Restructuring provisions recognised include various restructuring activities including dismantling costs. Termination provisions include severance payments, unemployment compensations or other arrangements for employees leaving the company. In Finland termination provisions include other unemployment arrangements and disability pensions. Unemployment provisions in Finland are recognised 2–3 years before the granting and settlement of the compensation. At 31 December 2017 and 2016, restructuring provisions and termination provisions relate mainly to capacity closures and optimisation of operations in UPM Paper ENA business area. In 2017, UPM has closed paper machine 5 at UPM Blandin mill in the United States, optimised operations at UPM Nordland Paper and UPM NorService units in Germany and in other European countries. The total termination and restructuring provisions made amounted to EUR 40 million in 2017.

In 2016, UPM has closed Madison paper mill in the US and announced plans to close Paper machine 3 at UPM Steyrermühl mill in Austria and paper machine 2 at UPM Augsburg mill in Germany were closed in 2017. Total provisions made relating to these closures amounted to EUR 53 million in 2016.

The group recognises provisions for normal environmental remediation costs expected to be incurred in a future period upon a removal of noncurrent assets and restoring industrial landfills where a legal or constructive obligation exists.

Other provisions are mainly attributable to onerous contracts and will be incurred over a period longer than one year.

Provisions for emissions include liability to cover the obligation to return emission rights. The group possesses emission rights amounting to EUR 44 million (45 million) as intangible assets.

* Refer Note 2.3 Operating expenses and other operating income, for further information on emission rights.
### Key estimates and judgements

#### Environmental provisions

Environmental provisions

The estimates used in determining the provisions are based on the expenses incurred for similar activities in the current reporting period. Taking into account the effect of inflation, cost-base development and discounting. Because actual outflows can differ from estimates due to changes in laws, regulations, public expectations, technology, prices and conditions, and can take place many years in the future, the carrying amounts of provisions are regularly reviewed and adjusted to take into account of any such changes. The discount rate applied is reviewed annually.

The group aims to operate in compliance with regulations related to the treatment of waste water, air emissions and landfill sites. However, expected events during production processes and waste treatment could cause material losses and additional costs in the group’s operations.

#### Legal contingencies

Management judgement is required in measurement and recognition of provisions related to pending litigation. Provisions are recorded when the group has a present legal or constructive obligation as a result of past event, an unfavourable outcome is probable and the amount of loss can be reasonably estimated. Due to inherent uncertainty nature of litigation, the actual losses may differ significantly from the originally estimated provision.

> Refer Note 9.2 Litigation for details of legal contingencies.

#### Restructuring and termination provisions

A restructuring is recognised when a detailed plan for the implementation of the measure is complete and when the plan has been communicated to those who are affected. Employee termination provisions are recognised when the group has communicated the plan to the employees.

#### Emission obligations

Environmental expenditures that relate to an existing condition caused by past operations that do not contribute to future earnings are expensed. The recognition of environmental provisions is based on current interpretations of environmental laws and regulations. Such provisions are recognised when the group has an obligation to dismantle and remove a facility or an item of plant and to restore the site on which it is located. The amount recognised is the present value of the estimated future expenditure determined in accordance with local conditions and requirements. A corresponding item of property, plant and equipment of an amount equivalent to the provision is also recognised and subsequently depreciated as part of the asset. Provisions do not include any third-party recoveries.

#### Emission provisions

Emission obligations are recognised in provisions based on realised emissions. The provision is measured at the carrying amount of the corresponding emission rights held, which are recognised as intangible assets. In case of deficit in emission rights, the shortage is valued at the market value at the balance sheet date.

### 4.6 Working capital

#### The group defines operating working capital as trade receivables, trade receivables and trade payables which are presented separately below.

UPM is focusing on working capital efficiency and targeting a sustainable and permanent reduction in operating working capital.

#### Operating working capital

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inventories</td>
<td>1,311</td>
<td>1,366</td>
</tr>
<tr>
<td>Trade receivables</td>
<td>1,447</td>
<td>1,360</td>
</tr>
<tr>
<td>Trade payables</td>
<td>-1,567</td>
<td>-994</td>
</tr>
<tr>
<td>Advances received</td>
<td>-39</td>
<td>-19</td>
</tr>
<tr>
<td>Total</td>
<td>1,552</td>
<td>1,074</td>
</tr>
</tbody>
</table>

#### Inventories

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw materials and consumables</td>
<td>617</td>
<td>625</td>
</tr>
<tr>
<td>Work in progress</td>
<td>58</td>
<td>54</td>
</tr>
<tr>
<td>Finished products and goods</td>
<td>617</td>
<td>645</td>
</tr>
<tr>
<td>Prepayments and accrued income</td>
<td>19</td>
<td>23</td>
</tr>
<tr>
<td>Total</td>
<td>1,301</td>
<td>1,346</td>
</tr>
</tbody>
</table>

#### Trade and other payables

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accrued expenses and deferred income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personnel expenses</td>
<td>209</td>
<td>212</td>
</tr>
<tr>
<td>Interest expenses</td>
<td>9</td>
<td>30</td>
</tr>
<tr>
<td>Indirect taxes</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Taxes and other items</td>
<td>197</td>
<td>205</td>
</tr>
<tr>
<td>Total accrued expenses and deferred income</td>
<td>419</td>
<td>431</td>
</tr>
<tr>
<td>Advances received</td>
<td>39</td>
<td>19</td>
</tr>
<tr>
<td>Trade payables</td>
<td>1,567</td>
<td>994</td>
</tr>
<tr>
<td>Other current liabilities</td>
<td>141</td>
<td>130</td>
</tr>
<tr>
<td>Total</td>
<td>1,765</td>
<td>1,094</td>
</tr>
</tbody>
</table>

#### Operational credit risk

Operational credit risk is defined as the risk where UPM is not able to collect the payments for its receivables. The group has a credit policy in place and the exposure to credit risk is monitored on an ongoing basis. Outstanding trade receivables, days of sales outstanding (DSO) and overdue trade receivables are followed on monthly basis. Potential concentrations of credit risk with respect to trade and other receivables are limited due to the large number and the geographic dispersion of customers. Customer credit limits are established and monitored, and ongoing evaluations of their financial condition is performed. Most of the receivables are covered by trade credit insurances. In certain market areas, including Asia and Northern Africa, measures to reduce credit risks include letters of credit, prepayments and bank guarantees. Maximum exposure to credit risk, without taking into account any credit enhancements, is the carrying amount of trade and other receivables.

UPM does not have significant concentration of customer credit risk. The ten largest customers accounted for approximately 19% (18%) of the trade receivables as of 31 December 2017 – i.e., approximately EUR 274 million (239 million).

In 2017, trade receivables amounting to EUR 0 million (10 million) on which impairment and the loss was recorded under other costs and expenses. Impairment is recognised when there is objective evidence that the group is not able to collect the amounts due. There are no indications that the debtors will not meet their payment obligations with regard to trade receivables that are not overdue or impaired at 31 December 2017.

### Trade and other receivables

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Due in 12 months or less</td>
<td>1,254</td>
<td>1,211</td>
</tr>
<tr>
<td>Due in 12 months or more</td>
<td>147</td>
<td>114</td>
</tr>
<tr>
<td>Trade receivables 31–90 days</td>
<td>32</td>
<td>17</td>
</tr>
<tr>
<td>Total trade receivables</td>
<td>1,447</td>
<td>1,360</td>
</tr>
</tbody>
</table>

#### Prepayments and accrued income

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal expenses</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Interest income</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Energy and other excise taxes</td>
<td>53</td>
<td>60</td>
</tr>
<tr>
<td>Other items</td>
<td>64</td>
<td>69</td>
</tr>
<tr>
<td>Total prepayments and accrued income</td>
<td>133</td>
<td>134</td>
</tr>
</tbody>
</table>

#### Other receivables

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAT and other indirect taxes receivable</td>
<td>166</td>
<td>170</td>
</tr>
<tr>
<td>Other</td>
<td>47</td>
<td>42</td>
</tr>
<tr>
<td>Total other receivables</td>
<td>213</td>
<td>237</td>
</tr>
<tr>
<td>Total</td>
<td>1,783</td>
<td>1,726</td>
</tr>
</tbody>
</table>
5. Capital structure

UPM has a strong cash flow and industry-leading balance sheet that mitigates risks and enables value-enhancing strategic actions.

<table>
<thead>
<tr>
<th>Net debt</th>
<th>Free cash flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>EUR 174m (EUR 1,121m)</td>
<td>EUR 1,336m (EUR 1,424m)</td>
</tr>
</tbody>
</table>

5.1 Capital management

UPM’s objective for managing capital comprising of net debt and total equity is to ensure maintenance of flexible capital structure to enable the ability to operate in capital markets and maintain optimal returns to shareholders. The group manages its financing activities, debt portfolio and financial resources via various policies that are designed to ensure optimum financing arrangements minimising simultaneously financial expenses and refinancing risk and optimising liquidity. Borrowing activities are centralised to the parent to the extent possible and cash resources are distributed within the group by the central treasury department.

UPM targets a net debt to EBITDA ratio of approximately 2 times or less.

Liquidity and refinancing risk

UPM seeks to maintain adequate liquidity under all circumstances by means of efficient cash management and restricting financial investments to investment types that can readily be converted into cash. Adequate liquidity is maintained by keeping sufficient amount of unused committed credit lines or cash as a reserve. Refinancing risks are minimised by ensuring a balanced loan portfolio maturing schedule and sufficiently long maturities. The average loan maturity at 31 December 2017 was 6.9 years (5.3 years).

UPM has some financial agreements which have gearing as a financial covenant whereby it should not exceed 110%.

Liquidity and refinancing

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity attributable to owners of the parent company</td>
<td>8,662</td>
<td>8,234</td>
</tr>
<tr>
<td>Non-controlling interest</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Total equity</td>
<td>8,663</td>
<td>8,237</td>
</tr>
<tr>
<td>Non-current debt</td>
<td>797</td>
<td>1,013</td>
</tr>
<tr>
<td>Current debt</td>
<td>324</td>
<td>585</td>
</tr>
<tr>
<td>Total debt</td>
<td>1,114</td>
<td>2,419</td>
</tr>
<tr>
<td>Total capitalisation</td>
<td>9,777</td>
<td>10,652</td>
</tr>
</tbody>
</table>

The most important financial programs in use are committed bilateral revolving credit lines.

Maturity table of debt at the end of 2017

<table>
<thead>
<tr>
<th>EURm</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2022+</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonds</td>
<td>208</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>313</td>
<td>521</td>
</tr>
<tr>
<td>Loans from financial institutions</td>
<td>14</td>
<td>18</td>
<td>26</td>
<td>10</td>
<td>8</td>
<td>13</td>
<td>91</td>
</tr>
<tr>
<td>Pension loans</td>
<td>74</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>74</td>
</tr>
<tr>
<td>Finance leases</td>
<td>7</td>
<td>7</td>
<td>49</td>
<td>5</td>
<td>5</td>
<td>31</td>
<td>105</td>
</tr>
<tr>
<td>Other loans</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>–</td>
<td>15</td>
<td>165</td>
</tr>
<tr>
<td>Current loans</td>
<td>5</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>5</td>
</tr>
<tr>
<td>Principal payments</td>
<td>310</td>
<td>29</td>
<td>76</td>
<td>17</td>
<td>15</td>
<td>315</td>
<td>191</td>
</tr>
<tr>
<td>Interest payments</td>
<td>39</td>
<td>25</td>
<td>31</td>
<td>31</td>
<td>31</td>
<td>102</td>
<td>202</td>
</tr>
</tbody>
</table>

The difference between the above nominal values and carrying value of total debt arise from fair value adjustments increasing carrying value by EUR 131 million and other non-cash adjustments decreasing carrying value by EUR 11 million.

Maturity table of debt at the end of 2016

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022+</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonds</td>
<td>292</td>
<td>237</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>356</td>
<td>885</td>
</tr>
<tr>
<td>Loans from financial institutions</td>
<td>21</td>
<td>305</td>
<td>320</td>
<td>16</td>
<td>10</td>
<td>14</td>
<td>685</td>
</tr>
<tr>
<td>Pension loans</td>
<td>74</td>
<td>74</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>148</td>
</tr>
<tr>
<td>Finance leases</td>
<td>88</td>
<td>7</td>
<td>8</td>
<td>49</td>
<td>5</td>
<td>57</td>
<td>195</td>
</tr>
<tr>
<td>Other loans</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>–</td>
<td>173</td>
<td>180</td>
</tr>
<tr>
<td>Current loans</td>
<td>26</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>26</td>
</tr>
<tr>
<td>Principal payments</td>
<td>352</td>
<td>628</td>
<td>328</td>
<td>65</td>
<td>15</td>
<td>581</td>
<td>2,118</td>
</tr>
<tr>
<td>Interest payments</td>
<td>88</td>
<td>50</td>
<td>41</td>
<td>36</td>
<td>35</td>
<td>218</td>
<td>468</td>
</tr>
</tbody>
</table>

The difference between the above nominal values and carrying value of total debt arise from fair value adjustments increasing carrying value by EUR 202 million and other non-cash adjustments decreasing carrying value by EUR 18 million.

Maturity table of derivatives and guarantees at the end of 2017

<table>
<thead>
<tr>
<th>EURm</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2022+</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net settled interest rate swaps</td>
<td>21</td>
<td>12</td>
<td>11</td>
<td>11</td>
<td>33</td>
<td>53</td>
<td>119</td>
</tr>
<tr>
<td>Net outflow</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Gross settled derivatives</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Gross currency swaps</td>
<td>89</td>
<td>8</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>198</td>
<td>316</td>
</tr>
<tr>
<td>Total inflow</td>
<td>89</td>
<td>8</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>198</td>
<td>316</td>
</tr>
<tr>
<td>Total outflow</td>
<td>–8</td>
<td>–1</td>
<td>–2</td>
<td>–2</td>
<td>–3</td>
<td>–192</td>
<td>–273</td>
</tr>
<tr>
<td>Forward foreign exchange contracts</td>
<td>356</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>356</td>
</tr>
<tr>
<td>Total inflow</td>
<td>356</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>356</td>
</tr>
<tr>
<td>Total outflow</td>
<td>–356</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–356</td>
</tr>
<tr>
<td>Guarantees</td>
<td>2</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>2</td>
</tr>
</tbody>
</table>

Maturity table of derivatives and guarantees at the end of 2016

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022+</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net settled interest rate swaps</td>
<td>52</td>
<td>23</td>
<td>14</td>
<td>13</td>
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<td>66</td>
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<td>Net outflow</td>
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<td>–7</td>
<td>–8</td>
<td>–6</td>
<td>–5</td>
<td>–4</td>
<td>–38</td>
</tr>
<tr>
<td>Gross settled derivatives</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Gross currency swaps</td>
<td>302</td>
<td>101</td>
<td>9</td>
<td>7</td>
<td>7</td>
<td>226</td>
<td>652</td>
</tr>
<tr>
<td>Total inflow</td>
<td>302</td>
<td>101</td>
<td>9</td>
<td>7</td>
<td>7</td>
<td>226</td>
<td>652</td>
</tr>
<tr>
<td>Forward foreign exchange contracts</td>
<td>369</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>369</td>
</tr>
<tr>
<td>Total inflow</td>
<td>369</td>
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<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>369</td>
</tr>
<tr>
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<td>–368</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–368</td>
</tr>
<tr>
<td>Guarantees</td>
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<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>2</td>
</tr>
</tbody>
</table>
5.2 Net debt

Net debt is defined as the total of current and non-current debt less cash and cash equivalents and interest-bearing current and non-current financial assets. Net debt totalled EUR 174 million at the end of 2017 (1,131 million). Following the strong cash flow during 2017, the group was able to reduce net debt by EUR 957 million.

### Net debt

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonds</td>
<td>405</td>
<td>717</td>
</tr>
<tr>
<td>Loans from financial institutions</td>
<td>78</td>
<td>664</td>
</tr>
<tr>
<td>Pension loans</td>
<td>-</td>
<td>77</td>
</tr>
<tr>
<td>Finance leases</td>
<td>97</td>
<td>106</td>
</tr>
<tr>
<td>Derivatives</td>
<td>-</td>
<td>34</td>
</tr>
<tr>
<td>Other loans</td>
<td>209</td>
<td>236</td>
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<tr>
<td>Non-current debt</td>
<td>789</td>
<td>1,835</td>
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<tr>
<td>Repayments of non-current debt</td>
<td>304</td>
<td>477</td>
</tr>
<tr>
<td>Derivatives</td>
<td>13</td>
<td>82</td>
</tr>
<tr>
<td>Other liabilities</td>
<td>5</td>
<td>26</td>
</tr>
<tr>
<td>Current debt</td>
<td>324</td>
<td>585</td>
</tr>
<tr>
<td>Total debt</td>
<td>1,114</td>
<td>2,082</td>
</tr>
</tbody>
</table>

- **Loan receivables**: 7 11
- **Derivatives**: 148 216
- **Other receivables**: 34 32

#### Non-current interest-bearing assets

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loans receivables</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Derivatives</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>Other receivables</td>
<td>21</td>
<td>19</td>
</tr>
<tr>
<td>Cash and cash equivalents</td>
<td>716</td>
<td>992</td>
</tr>
</tbody>
</table>

| Current interest-bearing assets | 731 | 1,030 |
| Total interest-bearing assets | 940 | 1,289 |
| Net debt | 1,114 | 2,082 |

### Accounting policies

#### Debt

Debt comprising of bonds, bank and pension loans and other loans is recognised initially at face value, net of transaction costs and subsequently measured at amortised cost using the effective interest method. Any difference between proceeds (net of transaction costs) and the redemption value is recognised in the income statement over the estimated life of the borrowing. UPM classifies debt as non-current unless due for settlement within a year. Most of the debt is hedged in a fair value hedge relationship as described in > Note 6.1 Financial risk management.

### Change in net debt 2017

#### Reported in financing activities in cash flow statement

<table>
<thead>
<tr>
<th>EURm</th>
<th>NON-CURRENT LOANS INCL. REPAYMENTS</th>
<th>FINANCE LEASES</th>
<th>CURRENT LOANS</th>
<th>NET DERIVATIVES</th>
<th>OTHER FINANCIAL ASSETS</th>
<th>CASH AND CASH EQUIVALENTS</th>
<th>NET DEBT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in net debt, cash:</td>
<td>-2,082</td>
<td>-195</td>
<td>-26</td>
<td>112</td>
<td>68</td>
<td>992</td>
<td>-1,131</td>
</tr>
<tr>
<td>Proceeds from non-current debt</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Payments of non-current debt</td>
<td>957</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>964</td>
</tr>
<tr>
<td>Change in current liabilities</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Net cash flows from derivatives</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>97</td>
</tr>
<tr>
<td>Change in other financial assets in operating cash flow</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Change in cash and cash equivalents</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Closing net debt</td>
<td>-1,131</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Change in net debt, non-cash:

- **Fair value gains and losses**: -78 |
- **Other non-cash changes**: -105 |

### Change in net debt 2016

#### Reported in financing activities in cash flow statement

<table>
<thead>
<tr>
<th>EURm</th>
<th>NON-CURRENT LOANS INCL. REPAYMENTS</th>
<th>FINANCE LEASES</th>
<th>CURRENT LOANS</th>
<th>NET DERIVATIVES</th>
<th>OTHER FINANCIAL ASSETS</th>
<th>CASH AND CASH EQUIVALENTS</th>
<th>NET DEBT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carrying value, at 1 January</td>
<td>-2,672</td>
<td>-198</td>
<td>-104</td>
<td>195</td>
<td>53</td>
<td>626</td>
<td>-2,100</td>
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<tr>
<td>Change in net debt, cash:</td>
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<td>-</td>
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</tr>
<tr>
<td>Proceeds from non-current debt</td>
<td>-1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-1</td>
</tr>
<tr>
<td>Payments of non-current debt</td>
<td>533</td>
<td>7</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>540</td>
</tr>
<tr>
<td>Change in current liabilities</td>
<td>-</td>
<td>77</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>77</td>
</tr>
<tr>
<td>Net cash flows from derivatives</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>22</td>
</tr>
<tr>
<td>Change in other financial assets in operating cash flow</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>13</td>
</tr>
<tr>
<td>Change in other financial assets in investing cash flow</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
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<tr>
<td>Change in cash and cash equivalents</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>367</td>
</tr>
<tr>
<td>Carrying value, at 31 December</td>
<td>-2,082</td>
<td>-195</td>
<td>-26</td>
<td>112</td>
<td>68</td>
<td>992</td>
<td>-1,131</td>
</tr>
</tbody>
</table>

### Change in net debt, non-cash:

- **Fair value gains and losses**: 56 |
- **Other non-cash changes**: -7 |

### Free cash flow

Free cash flow is primarily a liquidity measure. It is an important indicator of UPM's overall operational performance as it reflects the cash generated from operations after investing activities. UPM's free cash flow has enabled payment of dividends as well as repayments of debt reducing net debt significantly.

#### Reported in financing activities in cash flow statement

<table>
<thead>
<tr>
<th>EURm</th>
<th>NON-CURRENT LOANS INCL. REPAYMENTS</th>
<th>FINANCE LEASES</th>
<th>CURRENT LOANS</th>
<th>NET DERIVATIVES</th>
<th>OTHER FINANCIAL ASSETS</th>
<th>CASH AND CASH EQUIVALENTS</th>
<th>NET DEBT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in net debt, cash:</td>
<td>1,336</td>
<td>1,424</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Dividends paid</td>
<td>-507</td>
<td>-400</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Other financing cash flow</td>
<td>-17</td>
<td>-19</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Change in other financial assets in operating cash flow</td>
<td>2</td>
<td>13</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Change in other financial assets in investing cash flow</td>
<td>-5</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Change in net debt, cash</td>
<td>810</td>
<td>1,020</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Change in net debt, non-cash</td>
<td>148</td>
<td>-51</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Decrease in net debt</td>
<td>957</td>
<td>969</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Operating net debt</td>
<td>-1,336</td>
<td>-2,100</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Closing net debt</td>
<td>-1,131</td>
<td>-1,131</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Bonds

<table>
<thead>
<tr>
<th>FIXED RATE PERIOD</th>
<th>INTEREST RATE, %</th>
<th>CURRENCY</th>
<th>NOMINAL VALUE (USD, MILLION)</th>
<th>CARRYING VALUE 2017</th>
<th>CARRYING VALUE 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997-2027</td>
<td>7.450</td>
<td>USD</td>
<td>375</td>
<td>405</td>
<td>471</td>
</tr>
<tr>
<td>2002-2017</td>
<td>6.625</td>
<td>GBP</td>
<td>250</td>
<td>293</td>
<td>293</td>
</tr>
<tr>
<td>2003-2018</td>
<td>5.500</td>
<td>USD</td>
<td>250</td>
<td>208</td>
<td>246</td>
</tr>
</tbody>
</table>

#### Value, at 31 December

- **Current portion**: 613 |
- **Non-current portion**: 1,070 |

- **Current portion**: 208 |
- **Non-current portion**: 405 |
Leases
UPM has three finance lease agreements regarding power plant machinery outstanding at the end of 2017. The group uses the energy generated by these plants for its own production. The group also has a finance lease arrangement over the usage of a waste water treatment plant. In addition, the group leases certain production assets and buildings under long term lease arrangements.

Leased assets included in property, plant and equipment

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accumulated costs</td>
<td>152</td>
<td>154</td>
</tr>
<tr>
<td>Accumulated depreciation</td>
<td>58</td>
<td>59</td>
</tr>
<tr>
<td>Carrying value, at 31 December</td>
<td>94</td>
<td>95</td>
</tr>
</tbody>
</table>

The group also leases office, manufacturing and warehouse space through various non-cancellable operating leases. Certain contracts contain renewal options for various periods of time.

Future minimum lease payments

| | Finance leases | Operating leases |
| Within 1 year | 8 | 94 | 77 | 74 |
| Between 1 and 5 years | 69 | 73 | 203 | 189 |
| Longer than 5 years | 32 | 40 | 183 | 185 |
| Total | 110 | 207 | 463 | 448 |
| Of which interest | -6 | -12 | - | - |
| Present value of future minimum lease payments | 105 | 195 | - | - |

Financial assets and liabilities by category at the end of 2017

<table>
<thead>
<tr>
<th>EURm</th>
<th>Fair Value through Profit and Loss</th>
<th>Available for Sale Financial Assets</th>
<th>Loans and Receivables</th>
<th>Derivatives Used for Hedging</th>
<th>Financial Liabilities at Amortised Cost</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy shareholdings</td>
<td>-</td>
<td>1,976</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1,976</td>
</tr>
<tr>
<td>Other non-current financial assets</td>
<td>-</td>
<td>-</td>
<td>16</td>
<td>-</td>
<td>-</td>
<td>16</td>
</tr>
<tr>
<td>Derivatives</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>175</td>
<td>-</td>
<td>176</td>
</tr>
<tr>
<td>Trade and other receivables</td>
<td>-</td>
<td>-</td>
<td>1,783</td>
<td>-</td>
<td>-</td>
<td>1,783</td>
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<tr>
<td>Other current financial assets</td>
<td>-</td>
<td>-</td>
<td>5</td>
<td>-</td>
<td>-</td>
<td>5</td>
</tr>
<tr>
<td>Derivatives</td>
<td>21</td>
<td>-</td>
<td>-</td>
<td>66</td>
<td>-</td>
<td>87</td>
</tr>
<tr>
<td>Total financial assets</td>
<td>23</td>
<td>1,976</td>
<td>1,803</td>
<td>240</td>
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<td>4,048</td>
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<td>-</td>
<td>-</td>
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<td>Loans</td>
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<tr>
<td>Derivatives</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>-</td>
<td>-</td>
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<tr>
<td>Other non-current financial liabilities</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Other liabilities</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Derivatives</td>
<td>9</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>9</td>
</tr>
<tr>
<td>Current debt</td>
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<td>-</td>
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</tr>
<tr>
<td>Loans</td>
<td>-</td>
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<tr>
<td>Derivatives</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>311</td>
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<tr>
<td>Other non-current financial liabilities</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Other liabilities</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Derivatives</td>
<td>13</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>13</td>
</tr>
<tr>
<td>Trade and other payables</td>
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<td>-</td>
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<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Other current financial liabilities</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Derivatives</td>
<td>34</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>34</td>
</tr>
<tr>
<td>Total financial liabilities</td>
<td>36</td>
<td>-</td>
<td>-</td>
<td>20</td>
<td>-</td>
<td>2,931</td>
</tr>
</tbody>
</table>

Financial assets and liabilities by category at the end of 2016

<table>
<thead>
<tr>
<th>EURm</th>
<th>Fair Value through Profit and Loss</th>
<th>Available for Sale Financial Assets</th>
<th>Loans and Receivables</th>
<th>Derivatives Used for Hedging</th>
<th>Financial Liabilities at Amortised Cost</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy shareholdings</td>
<td>-</td>
<td>1,932</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1,932</td>
</tr>
<tr>
<td>Other non-current financial assets</td>
<td>-</td>
<td>-</td>
<td>19</td>
<td>-</td>
<td>-</td>
<td>19</td>
</tr>
<tr>
<td>Derivatives</td>
<td>18</td>
<td>-</td>
<td>-</td>
<td>218</td>
<td>-</td>
<td>236</td>
</tr>
<tr>
<td>Trade and other receivables</td>
<td>-</td>
<td>-</td>
<td>1,726</td>
<td>-</td>
<td>-</td>
<td>1,726</td>
</tr>
<tr>
<td>Other current financial assets</td>
<td>-</td>
<td>-</td>
<td>6</td>
<td>-</td>
<td>-</td>
<td>6</td>
</tr>
<tr>
<td>Derivatives</td>
<td>47</td>
<td>-</td>
<td>-</td>
<td>56</td>
<td>-</td>
<td>103</td>
</tr>
<tr>
<td>Total financial assets</td>
<td>65</td>
<td>1,932</td>
<td>1,751</td>
<td>274</td>
<td>-</td>
<td>4,022</td>
</tr>
<tr>
<td>Non-current debt</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Loans</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Derivatives</td>
<td>1,800</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1,800</td>
</tr>
<tr>
<td>Other non-current financial liabilities</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Other liabilities</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Derivatives</td>
<td>94</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>94</td>
</tr>
<tr>
<td>Current debt</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Loans</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Derivatives</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>6</td>
<td>-</td>
<td>16</td>
</tr>
<tr>
<td>Trade and other payables</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Other current financial liabilities</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Derivatives</td>
<td>502</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>502</td>
</tr>
<tr>
<td>Total financial liabilities</td>
<td>115</td>
<td>-</td>
<td>-</td>
<td>136</td>
<td>-</td>
<td>3,990</td>
</tr>
</tbody>
</table>

5.3 Financial assets and liabilities by category

Financial assets and liabilities recognised in the balance sheet include cash and cash equivalents, loans and other financial receivables, investments in securities, trade receivables, trade payables, loans and derivatives.

Classification of financial assets into different measurement categories depends on the purpose for which the financial assets were initially acquired and is determined at the acquisition date. Financial assets and liabilities are offset and the net amount reported in the balance sheet when there is a legally enforceable right to offset the recognised amounts and there is an intention to settle on a net basis or realise the asset and settle the liability simultaneously.

5.3.1 Leases

Leases of property, plant and equipment where the group, as a lessee, has substantially all the risks and rewards of ownership are classified as finance leases. Finance leases are recognised as assets and liabilities in the balance sheet at the commencement of lease term at the lower of the fair value of the leased property and the present value of the minimum lease payments.

Each lease payment is allocated between the liability and finance charges. The corresponding rental obligations, net of finance charges, are included in other non-current debt. The interest element of the finance cost is charged to the income statement over the lease period so as to produce a constant periodic rate of interest on the remaining balance of the liability for each period. Property, plant and equipment acquired under finance leases are depreciated over the shorter of the asset’s useful life and the lease term.

Leases where the lessor retains substantially all the risks and rewards of ownership are classified as operating leases. Payments made as a lease under operating leases are charged to the income statement on a straight-line basis over the period of the lease.

5.3.2 Other financial instruments

Financial assets and liabilities are presented in the balance sheet by category. Financial assets and liabilities are classified into different measurement categories in accordance with the measurement attribute of the underlying financial instruments and their classification depends on the purpose for which the financial assets were initially acquired. Financial assets and liabilities are offset and the net amount reported in the balance sheet when there is a legally enforceable right to offset the recognised amounts and there is an intention to settle on a net basis or realise the asset and settle the liability simultaneously.

5.3.2.1 Financial assets

Financial assets at fair value through profit or loss

5.3.2.2 Financial liabilities

Financial liabilities at fair value through profit or loss

5.3.3 Leasing

Leasing arrangements are classified as either finance leases or operating leases. Finance leases are identified by the transfer of all substantially all the risks and rewards of ownership to the group, while operating leases are identified by a short-term lease or by lease arrangements that do not transfer all substantially all the risks and rewards of ownership. The group has, on occasion, also entered into non-cancellable operating lease agreements with third parties. Lease payments made under these agreements are classified as operating expenses in the income statement.

Leasing arrangements are classified as either finance leases or operating leases. Finance leases are identified by the transfer of all substantially all the risks and rewards of ownership to the group, while operating leases are identified by a short-term lease or by lease arrangements that do not transfer all substantially all the risks and rewards of ownership.
The carrying amounts of financial assets and financial liabilities except for non-current loans approximate their fair value. The fair value of non-current loans amounted to EUR 801 million (1,804 million) at the end of 2017. For quoted bonds, the fair values are based on the quoted market value as of 31 December. At the end of 2017, all bonds were quoted. For other non-current borrowings fair values are estimated using the expected contractual future payments discounted at market interest rates and are categorised within level 2 of the fair value hierarchy.

Fair value measurement hierarchy for financial assets and liabilities

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>Level 2</td>
<td>Level 3</td>
</tr>
<tr>
<td>Financial assets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Derivatives, non-qualifying hedges</td>
<td>4</td>
<td>19</td>
</tr>
<tr>
<td>Derivatives used for hedging</td>
<td>42</td>
<td>198</td>
</tr>
<tr>
<td>Energy shareholdings</td>
<td>–</td>
<td>1,974</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>217</td>
</tr>
<tr>
<td>Financial liabilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Derivatives, non-qualifying hedges</td>
<td>17</td>
<td>19</td>
</tr>
<tr>
<td>Derivatives used for hedging</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>27</td>
</tr>
</tbody>
</table>

There have been no transfers between levels in 2017 and 2016.

Fair value through profit or loss

This category includes derivatives that don’t qualify hedge accounting. They are measured at fair value and any gains or losses from subsequent measurement are recognised in the income statement.

Available-for-sale financial assets

This category includes mainly UPM’s energy shareholdings. These assets are measured at fair value through other comprehensive income.

Loans and receivables

This category comprises loan receivables with fixed or determinable payments that are not in an active market, as well as trade and other receivables. They are included in non-current assets unless they mature within 12 months of the balance sheet date. Loan receivables that have a fixed maturity are measured at amortised cost using the effective interest method. Loan receivables without fixed maturity date are measured at amortised cost. Loan receivables are impaired if the carrying amount is greater than the estimated recoverable amount.

Derivatives used for hedging

All derivatives are initially and continuously recognised at fair value in the balance sheet. Gains and losses on remeasurement of derivatives used for hedging purposes are recognised in accordance with the accounting principles described in Note 5.2 Derivatives and hedge accounting.

Financial liabilities measured at amortised cost

This category includes debt, trade payables and other financial liabilities. Refer Note 5.2 Non-debt, for further information.

The different levels of fair value hierarchy used in fair value estimation are defined as follows:

- Fair values under level 1
- Fair values under level 2
- Fair values under level 3

5.4 Financial income and expenses

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exchange rate and fair value gains and losses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Derivatives, non-qualifying hedges</td>
<td>–46</td>
<td>–47</td>
</tr>
<tr>
<td>Fair value gains and losses on derivatives</td>
<td>–54</td>
<td>–64</td>
</tr>
<tr>
<td>designated as fair value hedges</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fair value adjustment of debt attributable to interest rate risk</td>
<td>50</td>
<td>55</td>
</tr>
<tr>
<td>Exchange gains and losses on financial liabilities measured at amortised costs</td>
<td>89</td>
<td>13</td>
</tr>
<tr>
<td>Exchange gains and losses on loans and receivables</td>
<td>–51</td>
<td>36</td>
</tr>
<tr>
<td>Interest and other financial costs, net</td>
<td>–12</td>
<td>–7</td>
</tr>
<tr>
<td>Interest expense on financial liabilities measured at amortised cost</td>
<td>–76</td>
<td>–111</td>
</tr>
<tr>
<td>Interest income on derivatives</td>
<td>35</td>
<td>60</td>
</tr>
<tr>
<td>Interest income on loans and receivables</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Dividend income from energy shareholdings</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Losses on sale of associates and joint ventures</td>
<td>–1</td>
<td>–4</td>
</tr>
<tr>
<td>Other financial expenses, net</td>
<td>–24</td>
<td>–49</td>
</tr>
<tr>
<td>Total</td>
<td>–70</td>
<td>–56</td>
</tr>
</tbody>
</table>

Foreign exchange gains and losses in the income statement excluding non-qualifying hedges

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total other reserves</td>
<td>1,564</td>
<td>1,166</td>
</tr>
<tr>
<td>Reserves for foreign currency translation</td>
<td>1,287</td>
<td>1,287</td>
</tr>
<tr>
<td>Total reserves</td>
<td>3,021</td>
<td>3,122</td>
</tr>
</tbody>
</table>

5.5 Share capital and reserves

The company has one series of shares and each share carries one vote. There are no specific terms related to the shares except for the redemption clause as discussed under Share section in the Report of the Board of Directors. At 31 December 2017, the number of the company’s shares was 533,735,699. The shares do not have any nominal counter value. The shares are included within the book entry system for securities.

Share capital

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of shares (1,000)</td>
<td>533,736</td>
<td>533,736</td>
</tr>
<tr>
<td>Share capital, EURm</td>
<td>890</td>
<td>890</td>
</tr>
</tbody>
</table>

Treasurer shares

At 31 December 2017, the company held 411,663 (330,737) of its own shares, 0.08% (0.04%) of the total number of shares.

Reserves

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fair value reserve</td>
<td>1,462</td>
<td>1,438</td>
</tr>
<tr>
<td>Hedging reserves</td>
<td>91</td>
<td>31</td>
</tr>
<tr>
<td>Share-based payments reserve</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>Total other reserves</td>
<td>1,564</td>
<td>1,166</td>
</tr>
<tr>
<td>Reserves for foreign currency translation</td>
<td>1,287</td>
<td>1,287</td>
</tr>
<tr>
<td>Total reserves</td>
<td>3,021</td>
<td>3,122</td>
</tr>
</tbody>
</table>

5.6 Share capital and reserves

For invested non-restricted equity

Reserves for invested non-restricted equity, under the Companies’ Act, the exercise value of shareholders’ investments in the company unless otherwise decided by the company.

Translation reserve

This reserve includes the foreign currency differences arising from the translation of foreign operations, and the effective result of transactions that hedge the group’s net investments in foreign operations.

Hedging reserve

This reserve comprises the cumulative net change in the fair value of the effective portion of cash flow hedging instruments related to hedged transactions that have not yet occurred. Amounts are recognised in profit or loss when the associated hedged transactions affect profit or loss or as part of the acquisition cost of property, plant and equipment.

Fair value reserve

This reserve represents the cumulative net change in the fair value of investments in equity securities comprising mainly of the fair value change of the energy shareholdings. Amounts are recognised in profit or loss if 31 December is before acquisition or impairment.

Share-based payments reserve

The share-based payments reserve is used to recognise the fair value of the share incentive plans, Performance Share Plan and Deferred Bonus Plan, over their vesting period.

Accounting policies

Transaction costs directly relating to the issue of new shares are recognised, net of tax, in equity as a reduction in the proceeds. Where any group company purchases the parent company’s shares (treasury shares), the consideration paid, including any directly attributable incremental costs (net of tax), is deducted from equity attributable to the owners of the parent company until the shares are cancelled or reissued. Where such shares are subsequently reissued, any consideration received, net of any directly attributable incremental transaction costs and the related income tax effects, is included in equity attributable to the owners of the parent company.
6. Risk management

6.1 Financial risk management

The objective of financial risk management is to protect the group from unfavourable changes in financial markets and thus help to secure profitability. The objectives and limits for financing activities are defined in the Group Treasury Policy approved by the Board of Directors. In financial risk management various financial instruments are used within the limits specified in the Group Treasury Policy. Only such instruments whose market value and risk profile can be continuously and reliably monitored are used for this purpose.

Financing services are provided to the group entities and financial risk management carried out by the central treasury department, Treasury and Risk Management. The centralisation of treasury functions enables efficient financial risk management, cost-efficiency and efficient cash management.

Foreign exchange risk

The group is exposed to foreign exchange risk arising from various currency exposures, primarily with respect to USD, GBP and JPY.

Foreign exchange risk arises from contracted and expected commercial future payment flows (transaction exposure), from changes in value of recognised assets and liabilities denominated in foreign currency and from changes in the value of assets and liabilities in foreign subsidiaries (translation exposure). The objective of foreign exchange risk management is to limit the uncertainty created by changes in foreign exchange rates on the future value of cash flows and earnings as well as in the group’s balance sheet by hedging foreign exchange risk in forecast cash flows and balance sheet exposures.

Changing exchange rates can also have indirect effects, such as change in relative competitiveness between currency regions.

Translation exposure

The group hedges translation exposure related to highly probable future commercial foreign currency cash flows on a rolling basis over the next 12-month period based on forecasts by the respective business areas. The group’s policy is to hedge an average of 50% of its estimated net risk currency flow. Some highly probable cash flows have been hedged for longer than 12 months ahead while hedging from the risk-neutral hedging level at the same time. At 31 December 2017, 50% (50%) of the forecast 12-month currency flow was hedged.

External forwards are designated at group level as hedges of foreign exchange risk of specific future foreign currency sales. Cash flow hedge accounting is applied when possible. If hedge accounting is not possible, fair value changes of the hedging instrument are recognised through profit and loss immediately.

Foreign exchange risk sensitivity

The following assumptions were made when calculating the sensitivity to changes in the foreign exchange risk:

- Major part of non-derivative financial instruments (such as cash and cash equivalents, trade receivables, debt and trade payables) are either directly denominated in the functional currency or are transferred to the functional currency through the use of derivatives i.e. the balance sheet position is close to zero. Exchange rate fluctuations have therefore minor or no effects on profit or loss.
- The table indicates foreign currency forward contracts that are part of the effective cash flow hedge having an effect on equity.
- The position includes also foreign currency forward contracts that are not part of the effective cash flow hedge having an effect on profit.
- The position excludes foreign currency denominated future cash flows and effects of translation exposure and related hedges.

6.2 Interest rate risk

The interest-bearing liabilities and assets expose the group to interest rate risk, namely repricing and fair value interest rate risk caused by interest rate movements. According to the Group Treasury Policy the interest rate exposure is defined as the difference in interest rate sensitivity between assets and liabilities compared to a benchmark portfolio with a 6-month duration.

The total interest rate exposure is a net debt portfolio which includes all interest bearing assets and liabilities and derivatives that are used to hedge the aforementioned balance sheet items. The policy sets risk limits and allowed deviation from target net debt duration level. The group uses interest rate derivatives to change the duration of the net debt. At 31 December 2017 the average duration was 0.6 years (3.1 years).

The table below shows the nominal value of interest rate position expressed to interest rate risk in each significant currency. The position includes all cash balances, interest-bearing liabilities and assets and currency derivatives used to hedge these items. The positive/negative position indicates a net liability/asset position by currency and that the group is exposed to repricing and/or fair value interest risk by interest rate movements in that currency.

<table>
<thead>
<tr>
<th>Nominal values of the group’s net debt by currency including derivatives</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>EUR</td>
<td>0.3</td>
<td>0.1</td>
</tr>
<tr>
<td>USD</td>
<td>0.2</td>
<td>0.4</td>
</tr>
<tr>
<td>GBP</td>
<td>-0.1</td>
<td>-0.1</td>
</tr>
<tr>
<td>Others</td>
<td>-0.1</td>
<td>-0.1</td>
</tr>
<tr>
<td>Total</td>
<td>0.2</td>
<td>1.7</td>
</tr>
</tbody>
</table>

Most of the long-term loans and the related interest rate derivatives must hedge accounting requirements, both fair value and cash flow hedge accounting is applied.

Interest rate risk sensitivity

The following assumptions were made when calculating the sensitivity to changes in interest rates:

- The variation of interest rate is assumed to be 100 basis points parallel shift in applicable interest rate curves.
- In the case of fair value hedges designated for hedging interest rate risk, the changes in the fair values of the hedged items and the hedging instruments attributable to the interest rate movements balance out almost completely in the income statement in the same period. However, the possible lack of effectiveness has an effect on the profit of the year.
- Fixed rate debt that is measured at amortised cost and is not designated to fair value hedge relationship is not subject to interest rate risk sensitivity.
- In case of variable to fixed interest rate swaps which are included in cash flow hedge accounting, fair value changes of hedging swaps are booked to equity.
- Floating rate debt that are measured at amortised cost and not designated as hedged items are included in interest rate sensitivity analysis.
- Changes in the market interest rate of interest rate derivatives (interest rate futures, swaps and cross currency swaps) that are not designated as hedging instruments in hedge accounting affect the financial income or expenses (net gains or losses from re-measurement of the financial assets and liabilities to fair value) and are therefore included in the income-related sensitivity analysis.

Electricity price risk

UPM is hedging both sales of power production and power purchases consumed at daily business. The group’s sensitivity to electricity market price is dependent on the electricity production and consumption levels and the hedging levels. In the Nordic and Central European market areas the operative risk management is done by entering into electricity derivatives contracts.

In addition to hedging, the group is also trading electricity forwards and futures. As well as hedging, proprietary trading risks are monitored on a daily basis. Value-at-Risk limits are set to limit the maximum risk at any given time. Cumulative maximum loss is limited by stop-loss limits.

Electricity derivatives price sensitivity

Sensitivity analysis for financial electricity derivatives is based on position at the end of the financial year. Sensitivities change over time as the overall hedging and trading positions change. Underlying physical positions are not included in the sensitivity analysis. Sensitivity analysis is calculated separately for the hedged and non-hedged accounted values. In the analysis it is assumed that forward quotation in NASDAQ Commodities and EEX would change EUR 5/MWh throughout the period UPM has forward derivatives. EUR 5/MWh price sensitivity is estimated from historical market price movements in NASDAQ and EEX markets.

<table>
<thead>
<tr>
<th>EUR/ton MWh</th>
<th>EFFECT 2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effect on equity</td>
<td>+/– 43.6</td>
<td>45.1</td>
</tr>
<tr>
<td>Effect on cost</td>
<td>+/– 35.9</td>
<td>36.7</td>
</tr>
</tbody>
</table>
6.2 Derivatives and hedge accounting

The group uses financial derivatives to manage currency, interest rate and commodity price risks.

> Refer Note 6.1 Financial risk management.

Accounting policies

All derivatives are initially and continuously recognised at fair value in the balance sheet. The fair value gain or loss is recognised through the income statement or other comprehensive income depending on whether the derivative is designated as a hedging instrument, and on the nature of the item being hedged. Certain derivatives are designated at inception either hedges of the fair value of a recognised asset or liabilities or a firm commitment (fair value hedge), hedges of highly probable forecasted transactions or cash flow variability in functional currency (cash flow hedge), or hedges of net investments in foreign subsidiaries with other than the EUR as their functional currency (net investment hedge). Derivative fair values on the balance sheet are classified as non-current when the remaining maturity is more than 12 months and as current when the remaining maturity is less than 12 months.

For hedge accounting purposes, UPM documents the relationship between the hedging instruments and hedged items, as well as the risk management objective and strategy for undertaking various hedge transactions at the inception date. The process includes linking all derivatives designated as hedges to specific assets and liabilities or to specific firm commitments or forecast transactions. The group also documents its assessment, both at the hedge inception and on an ongoing basis, as to whether the hedge is highly effective in offsetting changes in fair values or cash flows of the hedged items. Certain derivatives, while considered to be economical hedges for UPM’s financial risk management purposes, do not qualify for hedge accounting. Such derivatives are recognised at fair value through the income statement in other operating income or under financial items.

Cash flow hedges

The effective portion of changes in the fair value of derivatives that are designated and qualify as cash flow hedges is recognised in other comprehensive income. Amounts deferred in equity are transferred to the income statement and classified as income or expense in the same period as that in which the hedged item affects the income statement (for example, when the forecast external sale to the group that is hedged takes place). The period when the hedging reserve is released to income after each derivative has matured is approximately one month. The gain or loss relating to the effective portion of interest rate swaps hedging variable rate borrowings is recognised in the income statement within finance costs. When the forecasted transaction that is hedged results in the recognition of a fixed asset, gains and losses previously deferred in equity are transferred from equity and included in the initial measurement of the acquisition cost and depreciated over the useful lives of the assets.

When a hedging instrument expires or is sold, or when a hedge no longer meets hedge accounting criteria, any cumulative gain or loss existing in equity at that time remains in equity and is recognised when the committed or forecasted transaction is ultimately recognised in the income statement. However, if a forecasted transaction is no longer expected to occur, the cumulative gain or loss that was reported in equity is immediately recognised in the income statement.

Hedges of net investments in foreign subsidiaries

The fair value changes of forward exchange contracts used in hedging net investments that reflect the change in spot exchange rates are recognised in other comprehensive income within translation reserve. Any gain or loss relating to the interest portion of forward exchange contracts is recognised immediately in the income statement under financial items. Gains and losses accumulated in equity are included in the income statement when the foreign operation is partially disposed of or sold.

Fair value hedges

The group applies fair value hedge accounting for hedging fixed interest risk on debt. Changes in the fair value of derivatives that are designated and qualified as fair value hedges and that are highly effective both prospectively and retrospectively are recorded in the income statement under financial items, along with any changes in the fair value of the hedged asset or liabilities that are attributable to the hedged risk.

The carrying amounts of hedged items and the fair values of hedging instruments are included in interest-bearing assets or liabilities. Derivatives that are designated and qualify as fair value hedges mature at the same time as hedged items. If the hedge no longer meets the criteria for hedge accounting, the adjustment to the carrying amount of a hedged item for which the effective interest method is used is amortised to profit or loss over the expected period to maturity.

Financial counterparty risk

The financial institutions the group has agreed with banks and financial institutions contain an element of risk of the counterparties being unable to meet their obligations. According to the Group Treasury Policy, derivative instruments and investments of cash funds may be made only with counterparties meeting certain creditworthiness criteria. The group minimises counterparty risk also by using a number of major banks and financial institutions. Creditworthiness of counterparties is constantly monitored by Treasury and Risk Management.

Net fair values of derivatives

<table>
<thead>
<tr>
<th>Category</th>
<th>2017</th>
<th>2016</th>
</tr>
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National amounts of derivatives

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Net fair values of derivatives calculated by counterparty

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Cash collateral pledged for derivative contracts totalled EUR 21 million of which EUR 20 million relate to commodity contracts and EUR 1 million to interest rate forward contracts.
7. Income tax

7.1 Tax on profit for the year

Income tax

In 2017, tax on profit for the year amounted to EUR 212 million (200 million). The effective tax rate was 17.9% (18.5%). In 2017 and 2016, the effective tax rate was affected by the income not subject to tax from subsidiaries operating in tax free zones. In 2017, accrued and paid withholding taxes relating to dividend payments of subsidiaries amounted to EUR 19 million (EUR 9 million). Changes in the United States tax legislation resulted in recognition of EUR 3 million tax expense relating to reassertment of deferred tax assets and liabilities. Change of recoverability of deferred tax assets includes EUR 8 million income tax related to reassessment of deferred tax assets on capital losses in the United States.

Income tax

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Deferred tax

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<td>Deferred tax assets (Intangible assets and property, plant and equipment)</td>
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<tr>
<td>Inventories</td>
<td>41</td>
<td>42</td>
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<tr>
<td>Retirement benefit liabilities and provisions</td>
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<td>145</td>
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<tr>
<td>Other temporary differences</td>
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<td>23</td>
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<td>Tax losses and tax credits carried forward</td>
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<td>226</td>
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<td>Offset against liabilities</td>
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<td>Total</td>
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7.2 Deferred tax

Deferred tax liabilities

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<td>Intangible assets and property, plant and equipment</td>
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<td>Forest assets</td>
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<td>Retirement benefit assets</td>
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<td>Other temporary differences</td>
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<tr>
<td>Offset against assets</td>
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<tr>
<td>Total</td>
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<td>-547</td>
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Net deferred tax assets (liabilities) | -36 | -11 |

Deferred income tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets against current tax liabilities and when the deferred income taxes relate to the same fiscal authority.

8. Group structure

8.1 Business acquisitions and disposals

In 2017, UPM made a minor business acquisition by acquiring the assets of Southwest Label Stock in the United States. In 2016, no business acquisitions were made. In 2017 and 2016 no business disposals were made.

Accounting policies

UPM consolidates acquired entities at the acquisition date which is considered the fair value of the assets transferred, the liabilities incurred and equity instruments issued including the fair value of any contingent consideration. Acquisition related transaction costs are expensed as incurred. Identifiable assets acquired and liabilities and contingent liabilities assumed are measured initially at fair value at the acquisition date. The group measures any non-controlling interest in the acquiree either at fair value or at the non-controlling interest’s proportionate share of the acquiree’s net assets. The excess of the consideration transferred, the amount of any non-controlling interest in the acquiree and the acquisition-date fair value of any previous equity interest in the acquiree over the fair value of the identifiable net assets of the subsidiary acquired is recorded as goodwill.

Accounting policies

Deferred tax is calculated based on temporary differences between the carrying amounts and the taxable values of assets and liabilities and for tax loss carry-forwards to the extent that it is probable that these can be utilised against future taxable profits. Deferred income tax is provided on temporary differences arising on investments in subsidiaries, associates and joint ventures, except where the timing of the reversal of the temporary difference is controlled by the group and it is probable that the temporary difference will not reverse in the foreseeable future. Deferred tax assets and liabilities are recognised net where there is a legal right to setoff and on intention to settle on a net basis.

Key estimates and judgements

The group is subject to income taxes in numerous jurisdictions and the calculation of the group’s tax expense and income tax liabilities involves a degree of estimation and judgement. Tax balances reflect a current understanding and evaluation of existing tax laws. Management periodically evaluates positions taken in tax returns with respect to situations in which applicable tax regulation is subject to interpretation and adjusts income tax liabilities where appropriate.

Key estimates and judgements

The assumptions regarding future realisation of the tax assets and, therefore the recognition of deferred tax assets, may change due to future operating performance of the group, as well as other factors, some of which are outside of the control of the group. Unrecognised deferred tax assets and liabilities

The net operating loss carry-forwards for which no deferred tax is recognised due to uncertainty of their utilisation amounted to EUR 821 million (842 million) in 2017. These net operating loss carry-forwards are mainly attributable to certain German and French subsidiaries. In addition, the group has not recognised deferred tax assets on loss carry-forwards amounting to EUR 426 (450 million) which relate to closed1 Miramichi paper mill in Canada. The group has not recognised deferred tax liability in respect of unutilised earnings of non-Finnish subsidiaries to the extent that it is probable that the temporary differences will not reverse in the foreseeable future. In addition, the group has not recognised deferred tax liability for the undistributed earnings of Finnish subsidiaries and associates as such earnings can be distributed without any tax consequences.

Tax charge to other comprehensive income

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<thead>
<tr>
<th>EURm</th>
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<tr>
<td>Before tax</td>
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<td>Tax</td>
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<tr>
<td>After tax</td>
<td>65</td>
<td>48</td>
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</tbody>
</table>

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UPM Annual Report 2017

In brief

UPM Annual Report 2017

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Businesses

Stakeholders

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Accounts
8.2 Principal subsidiaries and joint operations

<table>
<thead>
<tr>
<th>SUBSIDIARIES</th>
<th>COUNTRY OF INCORPORATION</th>
<th>HOLDING % 2017</th>
<th>HOLDING % 2016</th>
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<td>Willebo Insurance Company Ltd</td>
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</tr>
</tbody>
</table>

8.3 Related party transactions

The Board of Directors and the Group Executive Team

There have not been any material transactions between UPM and its members of the Board of Directors or the Group Executive Team (key management personnel) or persons closely associated with these members or organisations in which these individuals have control or significant influence. There are no loans granted to any members of the Board of Directors or the Group Executive Team at 31 December 2017 and 2016.

For information concerning shares held by members of the Board of Directors and members of the Group Executive Team, as well as remuneration to members of the Board of Directors and the Group Executive Team are disclosed in Note 3.2. Key management personnel.

Associates and joint ventures

In Finland, the group organises its producer’s responsibility of recovered paper collection through Paperiyritysyöry Oy. Austria Paper Recycling GmbH purchases recovered paper in Austria and L.C.I s.r.l. in Italy. ASD Altpapier Sortierung Dachau GmbH is a German recovered paper collection company. The purchases of those four companies represented approximately 71% (97%) of total recovered paper purchase amount from associates and joint ventures.

Transactions with associates and joint ventures are presented in the table below. The group has no individually material associates or joint ventures.

<table>
<thead>
<tr>
<th>Joint operations</th>
<th>COUNTRY OF INCORPORATION</th>
<th>HOLDING % 2017</th>
<th>HOLDING % 2016</th>
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<td>71.95</td>
</tr>
</tbody>
</table>

8.4 Assets held for sale

Assets classified as held for sale at the end of 2017 amounting to EUR 1 million include hydro power assets located in Schongau and Ettingshausen and hydro power assets located in the mill site at Madison Paper Industries in the United States amounting to EUR 8 million.

Accounting policies

Non-current assets (or disposal group) are classified as assets held for sale and stated at the lower of carrying amount and fair value less costs to sell, if UPM will recover their carrying amount through a sale transaction which is considered highly probable. Non-current assets classified as held for sale, or included within a disposal group that is classified as held for sale, are not depreciated after the classification.
9. Unrecognised items

9.1 Commitments and contingencies

In the normal course of business, UPM enters into various agreements providing financial or performance assurance to third parties. The maximum amounts of future payments for which UPM is liable is disclosed in the table below under "Other commitments". Property under mortgages given as collateral for own commitments include property, plant and equipment, industrial estates and forest land.

9.2 Litigation

Group companies

In Finland, UPM is participating in a project to construct a new nuclear power plant unit Olkiluoto 3 EPR (OL3) through its shareholdings in Pohjolan Voima Oyj, Pohjolan Voima Oyj is a majority shareholder of Teollisuus Voima Oyj (TOV), holding 58.5% of its shares. UPM’s indirect share of OL3 is approximately 31%. Originally the commercial electricity production of the OL3 plant unit was scheduled to start in April 2009. The completion of the project, however, has been delayed. In September 2014 TVO announced that it had received additional information about the schedule for the OL3 project from the supplier, a consortium formed by AREVA GmbH, AREVA NP SAS and Siemens AG (Supplier), which is constructing OL3 as a fixed-price turnkey project. According to this information, the start of regular electricity production of the plant unit was to take place in late 2018. According to TVO, in October 2017 TVO received information on the Supplier’s schedule re-baseline review for OL3 project completion. According to the information the start of regular electricity production at OL3 will take place in May 2019.

In 2012, UPM commenced arbitration proceedings against Metallitilo Cooperative and Metallitilo Board Corporation due to their breaches of UPM’s tagging right under the shareholders’ agreement concerning Metallitilo Fibre Oy in connection with the sale of shares in Metallitilo Fibre to Itochu Corporation. UPM claimed jointly from Metallitilo and Metallitilo Board a capital amount of EUR 58.5 million. Metallitilo and Metallitilo Board had sold a 24.9% holding in Metallitilo Fibre to Itochu Corporation for EUR 472 million. In connection with the transaction with Itochu, Metallitilo had exercised a call option to purchase UPM’s remaining 31.1% therein in Metallitilo Fibre for EUR 150 million. The arbitral tribunal rendered its final decision (arbitral award) in February 2014 and ordered Metallitilo and Metallitilo Board to pay UPM the capital amount of EUR 58.5 million and penalty interest and compensate UPM for its legal fees.

As a result, UPM recorded an income of EUR 6.7 million as item affecting comparability in Q1 2014. In May 2014 Metallitilo and Metallitilo Board commenced litigation proceedings in the Helsinki District Court challenging the arbitral award and requesting the District Court to set aside the arbitral award or to declare it null and void. In June 2015 the District Court rejected the actions by Metallitilo and Metallitilo Board and following an appeal the Helsinki Court of Appeal rejected the actions by Metallitilo and Metallitilo Board in October 2016. Metallitilo and Metallitilo Board have filed a request for leave of appeal with the Supreme Court.

Other shareholdings

In Finland, UPM is participating in a project to construct a new nuclear power plant unit Olkiluoto 3 EPR (OL3) through its shareholdings in Pohjolan Voima Oyj, Pohjolan Voima Oyj is a majority shareholder of Teollisuus Voima Oyj (TOV), holding 58.5% of its shares. UPM’s indirect share of OL3 is approximately 31%. Originally the commercial electricity production of the OL3 plant unit was scheduled to start in April 2009. The completion of the project, however, has been delayed. In September 2014 TVO announced that it had received additional information about the schedule for the OL3 project from the supplier, a consortium formed by AREVA GmbH, AREVA NP SAS and Siemens AG (Supplier), which is constructing OL3 as a fixed-price turnkey project. According to this information, the start of regular electricity production of the plant unit was to take place in late 2018. According to TVO, in October 2017 TVO received information on the Supplier’s schedule re-baseline review for OL3 project completion. According to the information the start of regular electricity production at OL3 will take place in May 2019.

In December 2008 the Supplier initiated the International Chamber of Commerce (ICC) arbitration proceedings (ICC Arbitration) and submitted a claim concerning the delay and ensuing costs incurred at the OL3 project. According to TVO, the Supplier’s main claim, as updated in April 2017 is in total approximately EUR 3.59 billion. The sum is based on the Supplier’s updated analysis of events occurred through September 2014, with certain claims quantified at December 31, 2014. The sum includes penalty interest (calculated to June 30, 2017) and payments allegedly delayed by TVO under the plant contract amounting to a combined total of approximately EUR 1.58 billion, as well as approximately EUR 132 million in alleged loss of profit.

According to TVO, the quantitative estimate of its costs and losses related to its claim against the Supplier in the ICC Arbitration is approximately EUR 2.6 billion until the end of 2018, which was the estimated start of regular electricity production of OL3 according to the schedule submitted by the Supplier in 2014. TVO’s current estimate was submitted to the ICC Tribunal in July 2015.

TVO announced in November 2017 that it had received a final and binding partial award in the ongoing ICC Arbitration. In this partial award the ICC Tribunal has addressed the execution of the construction work on the OL3 project. This comprises many facts and matters that TVO relies upon in its claims against the Supplier, as well as certain matters that the Supplier relies upon in its claims against TVO. The partial award finally resolves many of the facts and matters concerning the execution of the construction works in favour of TVO and notably defers many of the issues raised by TVO including the Supplier’s project management for determination in a subsequent award.

According to TVO, this is the third significant final and binding award issued by the ICC tribunal. In July 2017 TVO announced it had received a final and binding award in the ongoing ICC arbitration where the ICC Tribunal has addressed the preparation, review, submission, and approval of design and licensing documents on the OL3 project. This comprises the key facts and matters that the Supplier relies upon in its main claim against TVO, as well as certain matters that TVO relies upon in its claims against the Supplier. In doing so, the partial award has finally resolved the great majority of these facts and matters in favour of TVO. Conversely, it has also rejected the great majority of the Supplier’s contentions in this regard. Although the partial award does not take a position on the claimed monetary amounts, it has conclusively rejected the analytical methodology used by the Supplier to support its principal monetary claims against TVO. A previous partial award, which addressed the early periods of the project in relation to the time schedule, licensing and licensability, and system design, likewise favorable to TVO, was granted in November 2016. The arbitration proceeding is still going on and it now proceeds towards the final award where the Tribunal will declare the liabilities of the parties to pay compensation. TVO considers its claims to be well-founded and has considered and found the claims of the Supplier to be without merit. According to TVO the three significant partial awards confirm this position, and following receipt of the final award, TVO remains of the view that the balance of the claims is in TVO’s favour.

According to TVO, Areva Group announced in 2016 a restructuring of all its business. The restructuring involves a transfer of the operations of Areva NP to a new company (Merger), called New NP, the majority owner of which is going to be EDF. According to TVO, the OL3 project and the means required to complete it, as well as certain other liabilities will remain with Areva NP, within the scope of Areva SA. In January 2018 Framatome released that on 31 December 2017 Areva NP sold the shares of New NP to EDF, a new majority shareholder with 75.5% of the capital, and to Mitsubishi Heavy Industries (MHI) and Asyatek, with respectively 19.5% and 5% of the shares of New NP, which was renamed Framatome.

In January 2017, the EU Commission made a decision on the state aid, and in May, 2017, the EU Commission accepted the Merger. According to TVO, in September 2017 TVO filed an appeal to the General Court of the EU against the EU Commission decision on the French state aid to Areva Group. TVO requires that the restructuring of the French nuclear industry will not compromise the completion of the OL3 project and the means required to complete it, and that all liabilities of the plant contract are honored.

According to TVO, TVO summoned Areva in an urgent interim procedure before a French court in order to obtain information about the restructuring of French nuclear industry and the potential consequences on the performance of the OL3 project. According to TVO, the discussions between the parties enabled TVO to withdraw from this action in May 2017 and that the continuation of discussions is expected to favor completion of the OL3 project and the startup of the plant.

The Supplier consortium companies are jointly and severally liable for the plant contract obligations. No severabilities or provisions may have been recorded by TVO on the basis of claims presented in the arbitration proceedings.

9.3 Events after the balance sheet date

The group’s management is not aware of any significant events occurring after 31 December 2017.
10. Other notes

10.1 New standards and amendments – forthcoming requirements

UPM will adopt two new IFRS standards in 2018, IFRS 15 Revenue from contracts with customers and IFRS 9 Financial instruments as well as the amendment to IFRS 2 Share-based payments. IFRS 16 Leases will be adopted in 2019. Description of effects of implementation is reserved below.

IFRS 15 Revenue from contracts with customers

IFRS 15 Revenue from contracts with customers specifies how and when revenue is recognised in accordance with new requirements. Revenue is recognised when control of the good or service is transferred to the customer. When there are separate performance obligations, the transaction price is allocated to each. When there is multiple performance obligations, the transaction price is allocated to each on the basis of objective stand-alone prices. The group has determined the components of transaction price that are contingent on the outcome of future events and need to be estimated when recognising revenue.

Consignment stock agreements

According to the new requirements, revenue is recognised when the customer obtains control of the goods. Sales agreements assessment indicated that the group has some pulp products sales agreements labelled as consignment stock agreements, that under new requirements may not qualify as contract stock agreements. Consequently, the revenue has to be recognised earlier than under current practice.

Sales of services

Revenue comprises mainly of sales of energy, biofuels, sawn timber comes from sales of graphic and specialty papers to publishers, customer contracts and orders. Approximately 59% of UPM revenue is from the rebates is a significant component of sales price in regard of sales to consumers. The cumulative effect of the adoption is shown as an adjustment to retained earnings in the period of the initial application, 1 January 2018 without restating comparative information.

IFRS 9 Financial instruments

IFRS 9 replaces IAS 39 and addresses the classification, measurement and recognition of financial assets and financial liabilities, introduces new rules for hedge accounting and a new impairment model for financial assets. The changes that have an impact on group’s financial statements are described below.

Classification of financial assets

Energy shareholdings categorised as available-for-sale under IFRS 39 represent investments that group intends to hold for the long term. The group classifies these investments at the date of initial application 1 January 2018 as measured at fair value through other comprehensive income (FVOCI). Under this new FVOCI category, fair value changes are recognised in fair value reserve in OCI while dividend income and gains or losses, including any gains or losses on sale, are never reclassified from equity to the income statement. Despite the fact that the election is to be adopted retrospectively, comparatives are not restated on initial application.

Impairment of financial assets

The group has developed a simplified expected credit loss model for trade receivables, whereby expected credit losses are recognised based on ageing categories of trade receivables. UPM has historically managed risk of realised bad debts in trade receivables due to changes in credit policies and use of trade credit insurance. The expected loss model resulted in a decrease of bad debt provisions by EUR 1 million and is shown as an adjustment to retained earnings in the period of the initial application, 1 January 2018, without restating comparative information.

Commodity hedges

Under IFRS 9, more group’s risk management strategies qualify for hedge accounting. Energy price hedging benefits from the possibility to apply hedge accounting for one or several risk components separately or in aggregation. This change will reduce the group’s profit and loss volatility as the fair value changes of unrealised derivatives are recognised in OCI. The change in accounting for derivatives will reduce the group’s profit and loss volatility, but the anticipated effect is relatively small. The change is implemented prospectively without restatement of comparatives.

Cost of hedging

In cash flow hedge accounting, the group designates only the spot element of a forward contract to offset the changes in the spot foreign exchange rates. Under IAS 39, the changes in the fair value of the forward points are recognised directly in profit or loss. Under IFRS 9, on designation of the spot element in a cash flow hedge, the change in the fair value of the forward element may be recognised in OCI and accumulated in a separate component of equity. Group applies this in transaction related cash flow hedges. Forward element that is accumulated in OCI is recognised in profit or loss when the hedged transaction affects profit or loss. This change in accounting will reduce the group’s profit and loss volatility, but the anticipated effect is relatively small. The change is implemented prospectively without restatement of comparatives.

Amendment to IFRS 2 Share-based Payments

Amendment to IFRS 2 clarifies the accounting for equity-settled share-based payments with net settlement features for withholding tax obligations. UPM has share-based arrangements with net settlement features in several countries. Tax laws and regulations obligate UPM to withhold an amount for an employee’s obligation in respect of taxes associated with share-based payments and to pay this amount to tax authorities. In such cases, the group will reduce the fair value of the transaction in cash has resulted in such transactions being classified previously as cash-settled. According to new requirements, the group classifies the transaction as share-based payments with net settlement features for withholding tax obligations. The change will reduce profit and loss volatility and is implemented prospectively without restatement of comparatives in 2018.

IFRS 16 Leases

IFRS 16 sets out the principles for the recognition, measurement, presentation and disclosure of leases. It will result in almost all leases being recognised on the balance sheet, as the distinction between operating and finance leases is removed. Under the new standard, an asset (the right to use the leased item) and a financial liability to pay rentals are recognised. The only exceptions are short-term and low-value leases. The group has started the implementation phase in 2017 and will present more information on impact of the new standard and estimated cumulative effect on transition in 2018 interim financial statements. The group does not intend to adopt the standard before its effective date 1 January 2019.
10.2 Alternative performance measures

UPM presents certain performance measures of historical performance, financial position and cash flows, which, in accordance with the “Alternative Performance Measures” guidance issued by the European Securities and Markets Authority (ESMA) are not accounting measures defined or specified in IFRS and are therefore considered as alternative performance measures. These alternative performance measures are described below:

### ALTERNATIVE PERFORMANCE MEASURE

<table>
<thead>
<tr>
<th>Description</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating profit</td>
<td>Profit before income tax expense, finance expenses and finance income and net gains on sale of equity shareholdings as presented on the face of the IFRS income statement.</td>
</tr>
<tr>
<td>Comparable EBIT</td>
<td>Operating profit adjusted for items affecting comparability.</td>
</tr>
<tr>
<td>Comparable EBITDA</td>
<td>Operating profit before depreciation, amortisation and impairments, change in fair value of forest assets and wood harvested, share of results of associates and joint ventures and items affecting comparability.</td>
</tr>
<tr>
<td>Comparable profit before tax</td>
<td>Profit before income tax expense excluding items affecting comparability.</td>
</tr>
<tr>
<td>Comparable profit for the period</td>
<td>Profit for the period excluding items affecting comparability and their tax impact.</td>
</tr>
<tr>
<td>Comparable EPS, EUR</td>
<td>Earnings per share calculated in accordance with IFRS excluding items affecting comparability and their tax impact.</td>
</tr>
<tr>
<td>Net debt</td>
<td>Total of current and non-current debt less cash and cash equivalents and internal borrowing current and non-current financial assets.</td>
</tr>
<tr>
<td>Items affecting comparability</td>
<td>Certain non-operational or non-cash valuation transactions with significant income statement impact are considered as items affecting comparability, if they arise from asset impairments, restructuring measures, asset sales, fair value changes of forest assets resulting from changes in valuation parameters or estimates, or changes in legislation or legal proceedings. In addition, the changes in fair value of unrealised cash flow and commodity hedges are classified as items affecting comparability. Numerical threshold for items to be considered as significant in UPM’s business areas UPM Biomass, UPM Specialty Papers and UPM Paper ENA is determined as one cent (EUR 0.01) after tax per share or more. In other business areas, the impact is considered to be significant if the item exceeds EUR 1 million before tax.</td>
</tr>
<tr>
<td>Free cash flow</td>
<td>Cash generated from operations after cash used for investing activities.</td>
</tr>
<tr>
<td>Return on equity (ROE), %</td>
<td>Profit for the period as a percentage of average equity.</td>
</tr>
<tr>
<td>Comparable ROE, %</td>
<td>Return on equity (ROE) excluding items affecting comparability.</td>
</tr>
<tr>
<td>Return on capital employed (ROCE), %</td>
<td>Return before taxes, interest expenses and other financial expenses as a percentage of average capital employed.</td>
</tr>
<tr>
<td>Comparable ROCE, %</td>
<td>Return on capital employed (ROCE) excluding items affecting comparability.</td>
</tr>
<tr>
<td>Capital employed</td>
<td>Group total equity and total debt.</td>
</tr>
<tr>
<td>Business area’s comparable ROCE, %</td>
<td>Business area’s operating profit adjusted for items affecting comparability as a percentage of business area’s average capital employed.</td>
</tr>
<tr>
<td>Business area’s capital employed</td>
<td>Business area’s operating assets less its operating liabilities. Operating assets include goodwill, other intangible assets, property, plant and equipment, forest assets, energy shareholdings, investments in associates and joint ventures, inventories and trade receivables. Operating liabilities include trade payables and advances received.</td>
</tr>
<tr>
<td>Capital expenditure</td>
<td>Capitalised investments in property, plant and equipment, intangible assets including goodwill arising from business combinations, energy shareholdings and other shares, associates and joint ventures.</td>
</tr>
<tr>
<td>Capital expenditure excluding acquisitions and shares</td>
<td>Capital expenditure excluding investments in shares and participations.</td>
</tr>
<tr>
<td>Operating cash flow per share, EUR</td>
<td>Operating cash flow divided by adjusted average number of shares during the period excluding treasury shares.</td>
</tr>
<tr>
<td>Gearing ratio, %</td>
<td>Net debt as a percentage of total equity.</td>
</tr>
<tr>
<td>Net debt to EBITDA</td>
<td>Net debt divided by EBITDA.</td>
</tr>
<tr>
<td>Equity to assets ratio, %</td>
<td>Equity expressed as a percentage of total assets less advances received.</td>
</tr>
</tbody>
</table>

For a complete reconciliation of these alternative performance measures to IFRS, please refer to the annual report.
## Income statement

<table>
<thead>
<tr>
<th>EURm</th>
<th>NOTE</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>1</td>
<td>2,217</td>
<td>2,811</td>
</tr>
<tr>
<td>Change in inventories of finished goods and work in progress</td>
<td></td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Production for own use</td>
<td>4</td>
<td>208</td>
<td>152</td>
</tr>
<tr>
<td>Other operating income</td>
<td>3</td>
<td>-1,301</td>
<td>-1,901</td>
</tr>
<tr>
<td>Materials and services</td>
<td>4</td>
<td>-237</td>
<td>-343</td>
</tr>
<tr>
<td>Personnel expenses</td>
<td>5</td>
<td>-118</td>
<td>-172</td>
</tr>
<tr>
<td>Depreciation, amortisation and impairment charges</td>
<td>6</td>
<td>-164</td>
<td>-178</td>
</tr>
<tr>
<td>Operating profit</td>
<td></td>
<td>614</td>
<td>373</td>
</tr>
<tr>
<td>Financial income and expenses</td>
<td>7</td>
<td>354</td>
<td>6</td>
</tr>
<tr>
<td>Profit before closing entries and tax</td>
<td>8</td>
<td>968</td>
<td>379</td>
</tr>
<tr>
<td>Closing entries</td>
<td></td>
<td>1</td>
<td>-42</td>
</tr>
<tr>
<td>Income taxes</td>
<td>10</td>
<td>-108</td>
<td>-81</td>
</tr>
<tr>
<td>Profit for the period</td>
<td></td>
<td>859</td>
<td>255</td>
</tr>
</tbody>
</table>

## Balance sheet

<table>
<thead>
<tr>
<th>EURm</th>
<th>NOTE</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASSETS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intangible assets</td>
<td>10</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>Tangible assets</td>
<td>11</td>
<td>1,726</td>
<td>1,766</td>
</tr>
<tr>
<td>Holdings in group companies</td>
<td>12</td>
<td>4,363</td>
<td>4,365</td>
</tr>
<tr>
<td>Holdings in participating interest companies</td>
<td>13</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Other shares and holdings</td>
<td>14</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Receivables from group companies</td>
<td>15</td>
<td>699</td>
<td>756</td>
</tr>
<tr>
<td>Receivables from participating interest companies</td>
<td>16</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Other non-current receivables</td>
<td>17</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Non-current assets</td>
<td></td>
<td>6,842</td>
<td>6,944</td>
</tr>
<tr>
<td>Inventories</td>
<td>18</td>
<td>208</td>
<td>292</td>
</tr>
<tr>
<td>Trade receivables</td>
<td>19</td>
<td>225</td>
<td>211</td>
</tr>
<tr>
<td>Payables to group companies</td>
<td>20</td>
<td>1,832</td>
<td>1,903</td>
</tr>
<tr>
<td>Payables to participating interest companies</td>
<td>21</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Other current liabilities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>EQUITY AND LIABILITIES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Share capital</td>
<td>22</td>
<td>890</td>
<td>890</td>
</tr>
<tr>
<td>Revaluation reserve</td>
<td>23</td>
<td>165</td>
<td>206</td>
</tr>
<tr>
<td>Reserve for invested non-restricted equity</td>
<td>24</td>
<td>1,273</td>
<td>1,273</td>
</tr>
<tr>
<td>Retained earnings</td>
<td>25</td>
<td>1,608</td>
<td>1,840</td>
</tr>
<tr>
<td>Profit for the period</td>
<td></td>
<td>859</td>
<td>255</td>
</tr>
<tr>
<td>Equity</td>
<td></td>
<td>4,794</td>
<td>4,483</td>
</tr>
<tr>
<td>Accumulated depreciation difference</td>
<td></td>
<td>454</td>
<td>455</td>
</tr>
<tr>
<td>Provisions</td>
<td>26</td>
<td>65</td>
<td>170</td>
</tr>
<tr>
<td>Bonds</td>
<td>27</td>
<td>313</td>
<td>593</td>
</tr>
<tr>
<td>Loans from financial institutions</td>
<td>28</td>
<td>568</td>
<td></td>
</tr>
<tr>
<td>Pension loans</td>
<td>29</td>
<td>68</td>
<td></td>
</tr>
<tr>
<td>Payables to group companies</td>
<td>30</td>
<td>314</td>
<td></td>
</tr>
<tr>
<td>Other non-current liabilities</td>
<td>31</td>
<td>156</td>
<td>170</td>
</tr>
<tr>
<td>Non-current liabilities</td>
<td></td>
<td>855</td>
<td>1,715</td>
</tr>
<tr>
<td>Bonds</td>
<td>32</td>
<td>208</td>
<td>292</td>
</tr>
<tr>
<td>Loans from financial institutions</td>
<td>33</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Pension loans</td>
<td>34</td>
<td>68</td>
<td>68</td>
</tr>
<tr>
<td>Trade payables</td>
<td>35</td>
<td>225</td>
<td>211</td>
</tr>
<tr>
<td>Payables to group companies</td>
<td>36</td>
<td>1,832</td>
<td>1,902</td>
</tr>
<tr>
<td>Payables to participating interest companies</td>
<td>37</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Other current liabilities</td>
<td></td>
<td>193</td>
<td>266</td>
</tr>
<tr>
<td>Current liabilities</td>
<td></td>
<td>2,327</td>
<td>2,746</td>
</tr>
<tr>
<td>Liabilities</td>
<td></td>
<td>3,380</td>
<td>4,456</td>
</tr>
<tr>
<td>Equity and liabilities</td>
<td></td>
<td>8,694</td>
<td>9,565</td>
</tr>
</tbody>
</table>
### Cash flow statement

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash flow from operating activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Profit before closing entries and tax</td>
<td>968</td>
<td>379</td>
</tr>
<tr>
<td>Financial income and expenses</td>
<td>-334</td>
<td>-6</td>
</tr>
<tr>
<td>Adjustments to operating profit</td>
<td>-137</td>
<td>42</td>
</tr>
<tr>
<td>Change in working capital</td>
<td>455</td>
<td>-219</td>
</tr>
<tr>
<td>Interest received</td>
<td>33</td>
<td>24</td>
</tr>
<tr>
<td>Interest paid</td>
<td>-35</td>
<td>-52</td>
</tr>
<tr>
<td>Dividends received</td>
<td>328</td>
<td>81</td>
</tr>
<tr>
<td>Other financial items</td>
<td>-193</td>
<td>9</td>
</tr>
<tr>
<td>Income taxes paid</td>
<td>-67</td>
<td>-17</td>
</tr>
<tr>
<td>Operating cash flow</td>
<td>989</td>
<td>249</td>
</tr>
<tr>
<td>Cash flow from investing activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investments in tangible and intangible assets</td>
<td>-141</td>
<td>-137</td>
</tr>
<tr>
<td>Proceeds from sale of intangible and tangible assets</td>
<td>172</td>
<td>130</td>
</tr>
<tr>
<td>Proceeds from disposal of shareholdings</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Change in other non-current receivables</td>
<td>58</td>
<td>406</td>
</tr>
<tr>
<td>Investing cash flow</td>
<td>86</td>
<td>463</td>
</tr>
<tr>
<td>Cash flow from financing activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proceeds from non-current liabilities</td>
<td>71</td>
<td>-</td>
</tr>
<tr>
<td>Payments of non-current liabilities</td>
<td>-926</td>
<td>-505</td>
</tr>
<tr>
<td>Change in current liabilities</td>
<td>-16</td>
<td>-873</td>
</tr>
<tr>
<td>Dividends paid</td>
<td>-507</td>
<td>-600</td>
</tr>
<tr>
<td>Group contributions, net</td>
<td>-32</td>
<td>-2</td>
</tr>
<tr>
<td>Financing cash flow</td>
<td>-1,456</td>
<td>-214</td>
</tr>
<tr>
<td>Change in cash and cash equivalents</td>
<td>-320</td>
<td>431</td>
</tr>
<tr>
<td>Cash and cash equivalents at the beginning of period</td>
<td>908</td>
<td>477</td>
</tr>
<tr>
<td>Change in cash and cash equivalents</td>
<td>-320</td>
<td>431</td>
</tr>
<tr>
<td>Cash and cash equivalents at the end of period</td>
<td>588</td>
<td>908</td>
</tr>
</tbody>
</table>

### Adjustments to operating profit

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depreciation, amortisation and impairment charges</td>
<td>118</td>
<td>172</td>
</tr>
<tr>
<td>Capital gains on sale of non-current assets, net</td>
<td>-186</td>
<td>-124</td>
</tr>
<tr>
<td>Change in provisions</td>
<td>-70</td>
<td>-7</td>
</tr>
<tr>
<td>Total</td>
<td>-137</td>
<td>42</td>
</tr>
</tbody>
</table>

### Change in working capital

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inventories</td>
<td>31</td>
<td>27</td>
</tr>
<tr>
<td>Current receivables</td>
<td>413</td>
<td>-361</td>
</tr>
<tr>
<td>Current non-interest-bearing liabilities</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>455</td>
<td>-219</td>
</tr>
</tbody>
</table>

### Notes to the parent company financial statements

#### Accounting policies

The financial statements of the parent company are prepared in accordance with Finnish Accounting Standards, FAS. The main differences in accounting policies of the group and the parent company relate to the measurement of forest assets and financial derivatives and recognition of defined benefit obligations and deferred income taxes. The financial statements are presented in millions of euros and rounded and therefore the sum of individual figures might deviate from the presented total figure.

#### Sales

**Sales by business area**

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPM Biofuels</td>
<td>1,723</td>
<td>1,560</td>
</tr>
<tr>
<td>UPM Energy</td>
<td>-</td>
<td>-135</td>
</tr>
<tr>
<td>UPM Specialty Papers</td>
<td>-</td>
<td>-540</td>
</tr>
<tr>
<td>UPM Paper ENA</td>
<td>-</td>
<td>-468</td>
</tr>
<tr>
<td>Other operations and eliminations</td>
<td>492</td>
<td>208</td>
</tr>
<tr>
<td>Total</td>
<td>2,217</td>
<td>2,811</td>
</tr>
</tbody>
</table>

#### Personnel expenses

**Salaries, fees and other personnel expenses**

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries and fees of the President and CEO, and members of the Board of Directors</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Other salaries and fees</td>
<td>190</td>
<td>273</td>
</tr>
<tr>
<td>Pension costs</td>
<td>32</td>
<td>47</td>
</tr>
<tr>
<td>Other indirect employees costs</td>
<td>8</td>
<td>17</td>
</tr>
<tr>
<td>Total</td>
<td>237</td>
<td>343</td>
</tr>
</tbody>
</table>

#### Other operating expenses

**Depreciation, amortisation and impairment charges**

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intangible rights</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Other intangible assets</td>
<td>12</td>
<td>19</td>
</tr>
<tr>
<td>Land areas</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Buildings</td>
<td>20</td>
<td>26</td>
</tr>
<tr>
<td>Machinery and equipment</td>
<td>79</td>
<td>119</td>
</tr>
<tr>
<td>Other tangible assets</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>118</td>
<td>172</td>
</tr>
</tbody>
</table>

#### Other operating expenses

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rents and lease expenses</td>
<td>11</td>
<td>17</td>
</tr>
<tr>
<td>Losses on sale of non-current assets</td>
<td>-</td>
<td>-4</td>
</tr>
<tr>
<td>Maintenance expenses</td>
<td>75</td>
<td>99</td>
</tr>
<tr>
<td>Other operating expenses</td>
<td>77</td>
<td>58</td>
</tr>
<tr>
<td>Total</td>
<td>164</td>
<td>179</td>
</tr>
</tbody>
</table>

1) The research and development costs in operating expenses were EUR 10 million (10 million) and auditor's fee EUR 0.8 million (0.8 million). In personnel expenses the research and development costs were 20 million (14 million).
### 7. Financial income and expenses

**Table:**

<table>
<thead>
<tr>
<th>Description</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income on non-current assets</td>
<td>EURm</td>
<td>EURm</td>
</tr>
<tr>
<td>Dividend income from group companies</td>
<td>328</td>
<td>80</td>
</tr>
<tr>
<td>Dividend income from other companies</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Interest income from group companies</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Other interest and financial income</td>
<td>337</td>
<td>84</td>
</tr>
<tr>
<td>Total</td>
<td>1,852</td>
<td>26</td>
</tr>
</tbody>
</table>

### 8. Closing entries

**Table:**

<table>
<thead>
<tr>
<th>Description</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in accumulated depreciation difference</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Group contributions received</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Group contributions granted</td>
<td>1</td>
<td>32</td>
</tr>
<tr>
<td>Losses from mergers</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>-54</td>
<td>6</td>
</tr>
</tbody>
</table>

### 9. Income taxes

**Table:**

<table>
<thead>
<tr>
<th>Description</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tax expense for the period</td>
<td>EURm</td>
<td>EURm</td>
</tr>
<tr>
<td>Total</td>
<td>168</td>
<td>81</td>
</tr>
</tbody>
</table>

### 10. Intangible assets

**Table:**

<table>
<thead>
<tr>
<th>Description</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accumulated amortisation and impairments</td>
<td>EURm</td>
<td>EURm</td>
</tr>
<tr>
<td>Carrying value, at 1 January</td>
<td>-10</td>
<td>-22</td>
</tr>
<tr>
<td>Additions</td>
<td>5</td>
<td>23</td>
</tr>
<tr>
<td>Impairment</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>-5</td>
<td>8</td>
</tr>
</tbody>
</table>

### 11. Tangible assets

**Table:**

<table>
<thead>
<tr>
<th>Description</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accumulated costs</td>
<td>EURm</td>
<td>EURm</td>
</tr>
<tr>
<td>Carrying value, at 1 January</td>
<td>4,363</td>
<td>3,984</td>
</tr>
<tr>
<td>Additions</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Impairment</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>-3</td>
<td>-</td>
</tr>
</tbody>
</table>

### 12. Other non-current assets

**Table:**

<table>
<thead>
<tr>
<th>Description</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accumulated costs</td>
<td>EURm</td>
<td>EURm</td>
</tr>
<tr>
<td>Carrying value, at 1 January</td>
<td>4,365</td>
<td>3,984</td>
</tr>
<tr>
<td>Additions</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Impairment</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>-3</td>
<td>-</td>
</tr>
</tbody>
</table>

---

1. **Notes:**

- **Deferred tax assets and liabilities:**
  - **Provisions:**
    - EURm 13, 34
  - **Deferred tax liabilities:**
    - Accumulated depreciation difference: EURm -91
    - Revaluations of the land areas: EURm -65

- **Intangible assets:**
  - **Revaluations of the land areas:**
    - Accumulated depreciation difference: EURm -91
    - Revaluations of the land areas: EURm -65

- **Other financial expenses:**
  - EURm 91

- **Deferred tax assets:**
  - Provisions: EURm 13, 34
  - Share-based payments: EURm 3, 3

- **Deferred tax liabilities:**
  - Accumulated depreciation difference: EURm -91

- **Revaluations of the land areas:**
  - Accumulated depreciation difference: EURm -91
  - Revaluations of the land areas: EURm -65

- **Deferred tax assets:**
  - Provisions: EURm 13, 34
  - Share-based payments: EURm 3, 3

- **Deferred tax liabilities:**
  - Accumulated depreciation difference: EURm -91
  - Revaluations of the land areas: EURm -65

- **Deferred tax assets:**
  - Provisions: EURm 13, 34
  - Share-based payments: EURm 3, 3

- **Deferred tax liabilities:**
  - Accumulated depreciation difference: EURm -91
  - Revaluations of the land areas: EURm -65

1. The parent company has not recognised deferred tax assets and liabilities in the balance sheet. Deferred tax assets and liabilities were calculated based on temporary differences between the carrying and taxable values of assets and liabilities.

2. **Deferred tax assets and liabilities:**

- **Provisions:**
  - EURm 13, 34
- **Deferred tax liabilities:**
  - Accumulated depreciation difference: EURm -91
  - Revaluations of the land areas: EURm -65

3. **Deferred tax assets:**

- **Provisions:**
  - EURm 13, 34
- **Deferred tax liabilities:**
  - Accumulated depreciation difference: EURm -91
  - Revaluations of the land areas: EURm -65

4. **Deferred tax assets:**

- **Provisions:**
  - EURm 13, 34
- **Deferred tax liabilities:**
  - Accumulated depreciation difference: EURm -91
  - Revaluations of the land areas: EURm -65

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**Content:**

- **Strategy**
- **Businesses**
- **Stakeholders**
- **Governance**
- **Accounts**

---

**Accounting:**

- **UPM Annual Report 2017**

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**Publication:**

- **UPM Annual Report 2017**

---
## Inventories

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw materials and consumables</td>
<td>100</td>
<td>132</td>
</tr>
<tr>
<td>Finished products and goods</td>
<td>27</td>
<td>22</td>
</tr>
<tr>
<td>Advance payments</td>
<td>15</td>
<td>19</td>
</tr>
<tr>
<td><strong>Carrying value, at 31 December</strong></td>
<td>143</td>
<td>174</td>
</tr>
</tbody>
</table>

## Current receivables

<table>
<thead>
<tr>
<th>EURm</th>
<th>RECEIVABLES FROM GROUP COMPANIES</th>
<th>INTEREST COMPANIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>Trade receivables</td>
<td>EURm</td>
</tr>
<tr>
<td>finished products and goods</td>
<td>479</td>
<td>444</td>
</tr>
<tr>
<td>Loan receivables</td>
<td>571</td>
<td>60</td>
</tr>
<tr>
<td>Prepayments and accrued income</td>
<td>48</td>
<td>1</td>
</tr>
<tr>
<td><strong>Carrying value, at 31 December</strong></td>
<td>1,120</td>
<td>1,016</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EURm</th>
<th>RECEIVABLES FROM GROUP COMPANIES</th>
<th>2016</th>
<th>2017</th>
<th>INTEREST COMPANIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade receivables</td>
<td>437</td>
<td>400</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Loan receivables</td>
<td>994</td>
<td>994</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Prepayments and accrued income</td>
<td>66</td>
<td>66</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Other current receivables</td>
<td>42</td>
<td>42</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td><strong>Carrying value, at 31 December</strong></td>
<td>1,539</td>
<td>1,460</td>
<td>12</td>
<td>–</td>
</tr>
</tbody>
</table>

1. There were no loans granted to the company’s President and CEO and members of the Board of Directors at 31 December 2017 and 2016.

## Equity

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share capital</td>
<td>EURm</td>
<td>2017</td>
</tr>
<tr>
<td>Revaluation reserve</td>
<td>EURm</td>
<td>1,273</td>
</tr>
<tr>
<td>Retained earnings</td>
<td>EURm</td>
<td>2,115</td>
</tr>
<tr>
<td><strong>Total shareholder’s equity</strong></td>
<td>EURm</td>
<td>4,618</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carrying value, at 1 January</td>
<td>EURm</td>
<td>890</td>
</tr>
<tr>
<td>Profit for period</td>
<td>EURm</td>
<td>–</td>
</tr>
<tr>
<td>Dividend distribution</td>
<td>EURm</td>
<td>–</td>
</tr>
<tr>
<td>Changes in revaluations</td>
<td>EURm</td>
<td>–</td>
</tr>
<tr>
<td><strong>Carrying value, at 31 December</strong></td>
<td>EURm</td>
<td>890</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EURm</th>
<th>2016</th>
<th>2017</th>
<th>EURm</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carrying value, at 1 January</td>
<td>EURm</td>
<td>890</td>
<td>427</td>
<td>1,273</td>
<td>2,259</td>
</tr>
<tr>
<td>Profit for period</td>
<td>EURm</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>255</td>
</tr>
<tr>
<td>Dividend distribution</td>
<td>EURm</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Changes in revaluations</td>
<td>EURm</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td><strong>Carrying value, at 31 December</strong></td>
<td>EURm</td>
<td>890</td>
<td>206</td>
<td>1,273</td>
<td>2,115</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distributable funds</td>
<td>EURm</td>
<td>1,273</td>
</tr>
<tr>
<td>Reserve for invested non-restricted equity</td>
<td>EURm</td>
<td>1,273</td>
</tr>
<tr>
<td>Retained earnings from previous years</td>
<td>EURm</td>
<td>1,608</td>
</tr>
<tr>
<td>Profit for the period</td>
<td>EURm</td>
<td>859</td>
</tr>
<tr>
<td><strong>Total distributable funds at 31 December</strong></td>
<td>EURm</td>
<td>3,760</td>
</tr>
</tbody>
</table>

## Provisions

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Restructuring</strong></td>
<td>EURm</td>
<td>3</td>
</tr>
<tr>
<td><strong>Termination</strong></td>
<td>EURm</td>
<td>9</td>
</tr>
<tr>
<td><strong>Environmental</strong></td>
<td>EURm</td>
<td>170</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td>EURm</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>EURm</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EURm</th>
<th>2016</th>
<th>2017</th>
<th>EURm</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provisions at 1 January</td>
<td>EURm</td>
<td>15</td>
<td>13</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td>Provisions made during the year</td>
<td>EURm</td>
<td>–</td>
<td>1</td>
<td>–</td>
<td>154</td>
</tr>
<tr>
<td>Provisions utilized during the year</td>
<td>EURm</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Unpaid provisions reversed</td>
<td>EURm</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Changes due to restructurings</td>
<td>EURm</td>
<td>–10</td>
<td>–6</td>
<td>–2</td>
<td>–3</td>
</tr>
<tr>
<td><strong>Carrying value, at 31 December</strong></td>
<td>EURm</td>
<td>3</td>
<td>9</td>
<td>153</td>
<td>170</td>
</tr>
</tbody>
</table>

1. Other provisions are attributable to onerous contracts and fair value losses of financial derivatives. At the end of 2017 the fair value loss in other provisions of EUR 12 million (11 million) was attributable to one group internal cross currency swap with nominal value of EUR 104 million (104 million) and maturity in 2027 (2027). Changes in provisions are recognized in sales, materials, personnel or other operating expenses or financial expenses.

## Non-current liabilities

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonds</td>
<td>EURm</td>
<td>313</td>
</tr>
<tr>
<td>Loans from financial institutions</td>
<td>EURm</td>
<td>–</td>
</tr>
<tr>
<td>Pension loans</td>
<td>EURm</td>
<td>–</td>
</tr>
<tr>
<td>Payables to group companies</td>
<td>EURm</td>
<td>385</td>
</tr>
<tr>
<td>Other non-current liabilities</td>
<td>EURm</td>
<td>156</td>
</tr>
<tr>
<td><strong>Carrying value, at 31 December</strong></td>
<td>EURm</td>
<td>853</td>
</tr>
</tbody>
</table>

### Maturity in 2023 or later (in 2022 or later)

<table>
<thead>
<tr>
<th>EURm</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonds</td>
<td>EURm</td>
<td>313</td>
</tr>
<tr>
<td>Other non-current liabilities</td>
<td>EURm</td>
<td>156</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>EURm</td>
<td>468</td>
</tr>
</tbody>
</table>

## Bonds

<table>
<thead>
<tr>
<th>Fixed rate period</th>
<th>Interest rate, %</th>
<th>Currency</th>
<th>Nominal value issued, million EURm</th>
<th>Carrying value, 2017 EURm</th>
<th>Carrying value, 2016 EURm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997-2002</td>
<td>7.450</td>
<td>USD</td>
<td>375</td>
<td>313</td>
<td>356</td>
</tr>
<tr>
<td>2002-2007</td>
<td>6.625</td>
<td>GBP</td>
<td>250</td>
<td>292</td>
<td>292</td>
</tr>
<tr>
<td>2007-2012</td>
<td>5.500</td>
<td>USD</td>
<td>208</td>
<td>237</td>
<td>237</td>
</tr>
<tr>
<td>2013-2018</td>
<td></td>
<td></td>
<td>208</td>
<td>292</td>
<td>313</td>
</tr>
<tr>
<td><strong>Current portion</strong></td>
<td></td>
<td></td>
<td>208</td>
<td>292</td>
<td>313</td>
</tr>
<tr>
<td><strong>Non-current portion</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In brief

- **Inventories**: Showed a decrease in raw materials and consumables, finished products and goods, and advance payments.

- **Current receivables**: Total receivables from group companies increased from 1,016 EURm to 1,120 EURm.

- **Equity**: Share capital remained constant, with retained earnings increasing.

- **Provisions**: There was a decrease in provisions at 31 December 2017 compared to 2016.

- **Non-current liabilities**: Total non-current liabilities increased in 2017.

- **Bonds**: Maturity in 2023 or later increased from 2016 to 2017.

- **Governance**: No loans were granted to the company’s President and CEO and members of the Board of Directors at 31 December 2017 and 2016.
18. Current liabilities

<table>
<thead>
<tr>
<th>Euros</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Carrying value, at 31 December</strong></td>
<td>EUR 2,327</td>
<td>EUR 1,832</td>
</tr>
</tbody>
</table>

**Notes**

1. Pension loans include a EUR 0.2 million (2016: EUR 0.5 million) asset correction.
2. Accruals and deferred income includes EUR 0.2 million (2016: EUR 0.2 million) in accrued employee benefits.
3. Net current assets include EUR 0.9 million (2016: EUR 0.4 million) in investment-related receivables.

19. Commitments

Pension commitments of the President and CEO and the members of the Group Executive Team

- Refer Note 3.2 Key management personnel.

Related party transactions

- Refer Note 8.3 Related party transactions.

Derivatives

All financial derivative contracts of the group were made by the parent company. All contracts were made with external counterparties except for one cross currency swap used in managing foreign currency risk of the group internal assets. Hedge accounting was not applied. Derivatives were initially recognized at cost in the balance sheet. The fair value losses of financial derivatives were recognized through the income statement and presented as a provision in the balance sheet.

Financial risks, fair values and maturities of the group external derivatives are disclosed in Note 6.2 Derivatives and hedge accounting and the group internal financial derivative in Note 16. Provisions of the parent company.

**Auditor’s report**

(Translation from the Finnish Original)

Report on the Audit of the Financial Statements

Opinion

In our opinion,

- the consolidated financial statements give a true and fair view of the group’s financial performance and financial position in accordance with International Financial Reporting Standards (IFRS) as adopted by the EU;
- the financial statements give a true and fair view of the parent company’s financial performance and financial position in accordance with the laws and regulations governing the preparation of the financial statements in Finland and comply with statutory requirements.

Our opinion is consistent with the additional report to the Audit Committee.

Basis for opinion

We conducted our audit in accordance with good auditing practice in Finland. Our responsibilities under good auditing practice are further described in the Auditor’s Responsibilities for the Audit of the Financial Statements section of our report.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Independence

We are independent of the parent company and of the group companies in accordance with the ethical requirements that are applicable in Finland and are relevant to our audit, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

To the best of our knowledge and belief, the non-audit services that we have provided to the parent company and to the group companies are in accordance with the applicable law and regulations in Finland and we have not provided non-audit services that are prohibited under Article 5(1) of Regulation (EU) No 537/2014. The non-audit services that we have provided are disclosed in note 2.3 to the Financial Statements.

Our audit approach

**Overview**

- Materiality: Overall group materiality: EUR 54 million, which represents 5% of profit before tax.
- Group scope: The group audit scope encompassed all significant group companies, as well as a number of smaller group companies in Europe, Asia, North America and South America covering the vast majority of revenue, assets and liabilities.
- Key audit matters: Valuation of forest assets, Valuation of energy shareholdings, Recoverability of deferred tax assets, Litigations.

**Materiality**

The scope of our audit was influenced by our application of materiality. An audit is designed to obtain reasonable assurance whether the financial statements are free from material misstatement. Materiality may arise due to fraud or error. They are considered material if individually or in aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

Based on our professional judgement, we determined certain quantitative thresholds for materiality, including the overall group materiality for the consolidated financial statements as set out in the table below. These, together with qualitative considerations, helped us to determine the scope of our audit and the nature, timing and extent of our audit procedures and to evaluate the effect of misstatements on the financial statements as a whole.

As part of designing our audit, we determined materiality and assessed the risks of material misstatement in the financial statements. In particular, we considered where management made subjective judgements, for example, in respect of significant accounting estimates that involved making assumptions and considering future events that are inherently uncertain.
MATERIALITY

Overall group materiality EUR 54 million (54 million).

How we determined it

5% of profit before tax.

Rationale for the materiality benchmark applied

We chose profit before taxes as the benchmark because, in our view, it is the benchmark against which the performance of the group is commonly measured by users, and it is generally accepted benchmark. We chose 5% which is within the range of acceptable quantitative materiality thresholds in auditing standards.

How we tailored our group audit scope

We tailored the scope of our audit, taking into account the structure of the UPM group, the accounting processes and controls, and the industry in which the group operates.

We determined the type of work that needed to be performed at group companies by us, as the group engagement team, or by auditors from other PwC network firms operating under our instruction. Audits were performed in group companies which were considered significant either because of their individual financial significance or due to specific factors such as their specific nature, covering the majority of revenue, assets and liabilities of the group. Selected specified procedures as well as analytical procedures were performed to cover the remaining group companies.

Key audit matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the financial statements of the current period. These matters were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

In all of our audits, we also addressed the risk of management override of internal controls, including among other matters consideration of whether there was evidence of bias that represented a risk of material misstatement due to fraud.

Valuation of forest assets

The group owns about 0.9 million hectares of forests and plantations in Finland, the United States and Uruguay valued at EUR 1,650 million at 31 December 2017. Forest assets are measured at fair value less cost to sell. The fair value is calculated on the basis of discounted future expected cash flows as there is a lack of a liquid market. Young saplings are valued at cost. Intangible assets in the valuation are estimated for growth and wood harvested, stumpage prices and discount rates.

We focused on this area as the assets are material, the valuation process is complex and judgmental and is based on assumptions that are affected by expected future market or economic conditions.

Valuation of energy shareholdings

The energy shareholdings amounted to EUR 1,974 million at 31 December 2017. The energy shareholdings are unlisted equity investments in energy companies and are valued at fair value through other comprehensive income, net of tax if applicable. The fair value is determined on a discounted cash flow basis. The main factors impacting the future cash flows include future electricity prices, price trends, discount rates and the start-up schedule of the nuclear power plant unit.

We focused on this area as the assets are material, the valuation process is complex and judgmental and is based on assumptions that are affected by expected future market or economic conditions.

KEY AUDIT MATTER IN THE AUDIT OF THE GROUP

Recoverability of deferred tax assets

The group has recognised deferred tax assets of EUR 222 million on net operating loss carry-forwards, of which most relates to German subsidiaries. In Germany the net operating loss carry-forwards do not expire. We focused on this area because the recognition of deferred tax assets relies on the significant application of judgement by the management in respect of assessing the probability and sufficiency of future taxable profits.

Liquidity

We evaluated the group’s assessment of the nature and status of litigations and claims and discussed them with group management including in house counsel for significant cases.

We examined the group’s conclusions with respect to the disclosures made for significant cases, both considering the correspondence between the group and external legal counsel and independently communicating with certain of those external legal counsel.

As set out in the financial statements, the outcome of such cases is dependent on the future outcome of current legal processes and consequently the disclosures are subject to inherent uncertainty.

We have no key audit matters to report with respect to our audit of the parent company financial statements.

There are no significant risks of material misstatement referred to in Article 10(2c) of Regulation (EU) No 537/2014 with respect to the consolidated financial statements or the parent company financial statements.

Responsibilities of the Board of Directors and the Managing Director for the Financial Statements

The Board of Directors and the Managing Director are responsible for the preparation of consolidated financial statements that give a true and fair view in accordance with International Financial Reporting Standards (IFRS) as adopted by the EU, and of financial statements that give a true and fair view in accordance with the laws and regulations governing the preparation of financial statements in Finland and comply with statutory requirements. The Board of Directors and the Managing Director are also responsible for such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Board of Directors and the Managing Director are responsible for assessing the parent company’s and the group’s ability to continue as going concern, disclosing, as applicable, matters relating to going concern and using the going concern basis of accounting. The financial statements are prepared using the going concern basis of accounting unless there is an intention to liquidate the parent company or the group or cease operations, or there is no realistic alternative to do so.

Auditor’s Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance on whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor’s report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with good auditing practice will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with good auditing practice, we must also evaluate the risks of material misstatement and plan the audit procedures to respond to those risks.

• Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

• Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the parent company’s or the group’s internal control.
Other reporting requirements

Appointment

We have been acting as auditors appointed by the annual general meeting since 30 April 1996. Our appointment represents a total period of uninterrupted engagement of 22 years. The Company arranged the latest audit tendering process in 2013. Authorised Public Accountant (KHT) Merja Lindh has acted as the responsible auditor since 8 April 2014, representing a total uninterrupted period of four years.

Other information

The Board of Directors and the Managing Director are responsible for the other information. The other information comprises information included in the report of the Board of Directors and in the Annual Report, but does not include the financial statements and our auditor’s report thereon.

Our opinion on the financial statements does not cover the other information.

In connection with our audit of the financial statements, our responsibility is to read the other information identified above and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. With respect to the report of the Board of Directors, our responsibility also includes considering whether the report of the Board of Directors has been prepared in accordance with the applicable laws and regulations.

In our opinion:

• the information in the report of the Board of Directors is consistent with the information in the financial statements.
• the report of the Board of Directors has been prepared in accordance with the applicable laws and regulations.

If, based on the work we have performed, we conclude that there is a material misstatement of the other information, we are required to report that fact. We have nothing to report in this regard.

Other Statements

We support the proposal that the financial statements are adopted. The proposal by the Board of Directors regarding the distribution of profits is in compliance with the Limited Liability Companies Act. We support that the members of the Board of Directors and the Managing Director of the parent company should be discharged from liability for the financial period audited by us.

All remaining financial information can be found online at www.upm.com/.

Helsinki 15 February 2018

PricewaterhouseCoopers Oy
Authorised Public Accountants

Merja Lindh
Authorised Public Accountant (KHT)
### Financial information 2008–2017

**Euros, OR AS INDICATED**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>10,010</td>
<td>9,812</td>
<td>10,138</td>
<td>9,868</td>
<td>10,054</td>
<td>10,492</td>
<td>10,068</td>
<td>8,924</td>
<td>7,719</td>
</tr>
<tr>
<td>Comparable EBITDA</td>
<td>1,631</td>
<td>1,560</td>
<td>1,350</td>
<td>1,306</td>
<td>1,161</td>
<td>1,325</td>
<td>1,383</td>
<td>1,343</td>
<td>1,126</td>
</tr>
<tr>
<td>Earnings per share</td>
<td>1.92</td>
<td>1.88</td>
<td>1.88</td>
<td>1.91</td>
<td>0.91</td>
<td>0.74</td>
<td>0.93</td>
<td>0.99</td>
<td>0.42</td>
</tr>
<tr>
<td>Equity per share</td>
<td>16.24</td>
<td>15.43</td>
<td>14.89</td>
<td>14.02</td>
<td>14.08</td>
<td>14.18</td>
<td>14.22</td>
<td>13.64</td>
<td>12.71</td>
</tr>
<tr>
<td>Dividend per share</td>
<td>0.95</td>
<td>0.75</td>
<td>0.70</td>
<td>0.60</td>
<td>0.60</td>
<td>0.60</td>
<td>0.55</td>
<td>0.45</td>
<td>0.40</td>
</tr>
<tr>
<td>Dividend to operating cash flow ratio</td>
<td>15.0</td>
<td>19.9</td>
<td>18.0</td>
<td>11.6</td>
<td>11.5</td>
<td>12.6</td>
<td>13.3</td>
<td>17.0</td>
<td>13.8</td>
</tr>
</tbody>
</table>

**Income statement**

- Sales: €10,010 million
- Comparable EBITDA: €1,631 million
- Earnings per share: €1.92
- Equity per share: €16.24
- Dividend per share: €0.95
- Dividend to operating cash flow ratio: 15.0%

**Share price at the end of period**

- Number of shares at the end of period: 1.000
- Number of shares, average: 1.000
- Trading on the Nasdaq Helsinki Main Market. Treasury shares bought by the company are included in shares traded.

**Comparable ROE**

- Comparable ROE: 1.92%
- Comparable ROE: 1.88%
- Comparable ROE: 1.88%
- Comparable ROE: 1.91%
- Comparable ROE: 0.91%
- Comparable ROE: 0.74%
- Comparable ROE: 0.93%
- Comparable ROE: 0.99%
- Comparable ROE: 0.42%

**Key figures**

- Return on capital employed (ROCE): 12.5%
- Comparable ROCE: 12.8%
- Return on equity (ROE): 11.5%
- Comparable ROE: 11.9%
- Operating margin: 6.2%
- Net debt to EBITDA: 0.11%
- Equity to assets ratio: 66.6%

**Financial highlights**

- Adjusted share related indicators
  - Earnings per share, EPS: €1.92
  - Comparable EPS: €1.631
  - Equity attributable to the owners of the parent company: €16.24
  - Diluted earnings per share: €1.92
  - Earnings per share, EPS: €1.92
  - Comparable EPS: €1.631
  - Equity attributable to the owners of the parent company: €16.24
  - Diluted earnings per share: €1.92

---

1. Proposal
2. Trading on the Nasdaq Helsinki Main Market. Treasury shares bought by the company are included in shares traded.

**Alternative performance measures, for definitions of key figures.**

---

**UPM Annual Report 2017**
Financial information 2008–2017

In 2016 UPM has relabeled the previously referenced “excluding special items” non-GAAP financial measures with “comparable” performance measures. Corresponding 2014 and 2015 group measures have been revised accordingly.
More on responsibility

Employees' years of service with UPM

UPM employees by region

Age structure of UPM employees 2017

Wood deliveries to UPM mills

UPM’s solid waste to landfills per tonne of converted product

The amount of solid waste sent to landfills per paper tonne has decreased by 55% over the last ten years. However, from 2012 to 2013, the amount increased significantly. This is due to the fact that former reuse possibilities for ash ceased at one of UPM’s paper mills. Starting from 2014, new methods of recycling were established.

Sources of UPM’s greenhouse gas emissions*, 2017

Wood deliveries to UPM mills

UPM’s fossil carbon dioxide emissions per tonne of paper

The ratio is calculated by comparing weighted average of basic salaries of women to men on the same job grades, for the nine biggest countries in terms of salaried employees. These countries cover 89% of UPM’s total number of salaried employees.

Lost-time accident frequency, UPM workforce

UPM’s sales eligible for ecolabelling*

The lost-time accident frequency (LTAF) is the number of lost-time accidents per one million hours of work. LTAF improved significantly over the last ten years.

UPM’s sales eligible for ecolabelling*

Other sales eligible for ecolabelling (FSC and PEFC)

Sales non-eligible for ecolabelling

UPM’s greenhouse gas emissions*, 2017

Indirect emissions from purchased power

Stationary fuel combustion

Indirect emissions from supply chain

* incl. Paper, Pulp, Plywood, label material, Timber and Biocomposites

* measured in CO2 equivalents

According to the calculation, approximately 65% of the direct and indirect greenhouse gas emissions are related to UPM’s energy use, but raw materials, transportation and processing of solid products have also a significant impact. GHG emissions related to energy use reduced by 65% in 2017. More details are available at www.upm.com/responsibility.

UPM’s fossil carbon dioxide emissions per tonne of paper

In 2017, 85% (86%) of UPM’s overall sales of paper, chemical pulp, plywood, label material, timber and biocomposite products was eligible for ecolabelling. This figure includes FSC, PEFC and EU Ecolabels, and national ecolabels.

In 2017, 85% (86%) of UPM’s overall sales of paper, chemical pulp, plywood, label material, timber and biocomposite products was eligible for ecolabelling. This figure includes FSC, PEFC and EU Ecolabels, and national ecolabels.

More on responsibility
Competitive businesses, strong market positions

Our 19,100 people work in 46 countries across six continents. With head office in Finland, our most important markets are in Europe, Asia, and North America.
Annual General Meeting

UPM-Kymmene Corporation will hold its Annual General Meeting on Thursday 5 April 2018 at 14:00 (EET), at Messukeskus, Messuaukio 1, 00520 Helsinki, Finland. Instructions for those wishing to attend are given in the notice to the meeting, which is available on the company’s website at www.upm.com/agm2018.

Dividend

The Board of Directors proposes to the Annual General Meeting that a dividend of EUR 1.15 per share be paid for the 2017 financial year. The dividend will be paid to the shareholders who are registered in the company’s shareholders’ register held by Euroclear Finland Ltd on the dividend record date 9 April 2018. The Board of Directors proposes that the dividend be paid on 19 April 2018.

Financial information in 2018

UPM will publish the financial reports in 2018 as follows:

- UPM Interim Report for January–March (Q1) on 26 April 2018
- UPM Half Year Financial Report for January–June (H1) on 24 July 2018
- UPM Interim Report for January–September (Q3) on 24 October 2018

Accounts for 2017

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