CREATING A POSITIVE IMPACT

ANNUAL REPORT 2021
The size of the global activewear market was about USD 354 billion in 2020 and it is expected to grow by 25% by 2026. From 2019 to 2020, sustainable activewear in the US and the UK grew by 45-65%, depending on the category. We innovate unique and responsible biochemicals from wood-based biomass that can be used in polyester textiles and training shoes, for example.

Read more about our positive impact on UPM’s website (Source: Statista)
CREATING A SUSTAINABLE FUTURE

2021 was a strong year for UPM. We successfully managed to navigate an exceptionally fast changing operating environment, delivering performance that exceeded UPM’s financial targets.

The world economy recovered quickly from the previous year’s deep slowdown. Demand for our products was strong in all business areas. Our earnings returned to strong pre-pandemic levels, and free out of our six business areas surpassed their long-term financial targets. We improved our margins, despite significant raw material and energy cost increases. The year ended with a solid Q4.

Overall, the year was excellent. Our sales increased by 14% and our comparable EBIT by 55% from the previous year. Delivery volumes increased in all business areas. Sales prices also increased in all of our business areas except for graphic papers. Operating cash flow strengthened further.

In February 2021, we joined the Climate Pledge, which aims for climate-neutrality by 2040 and to reach the targets of the Paris Agreement 10 years in advance. In 2021, our energy-related CO2 emissions decreased by 8%. As part of our journey towards carbon neutrality, our goal is stop using coal energy by 2030.

In 2021, we again received several recognitions for our sustainability work. Our ambitions responsibility targets will continue to steer us in the right direction.

Progress in strategic growth projects

The year 2021 was significant in our strategic growth projects, which was reflected in investments of nearly EUR 1.5 billion. Our investment projects have taken place in an exceptional period when the pandemic and disturbances in the global supply chains have caused unpredictable challenges. Given the circumstances, the projects have progressed well.

The construction of the Paso de los Toros pulp mill is now at a point where the most material uncertainties have been resolved and we can fine-tune the project’s completion plan. The mill will start production by the end of Q1 2023, with a 10% increase in the updated investment estimate. Most importantly, the investment case remains strong because of the cash cost level of approximately USD 280 per delivered tonne of pulp.

Business preparation at UPM Biochemicals is proceeding at good pace and the long-term business opportunities for the project are excellent. There is keen interest in wood-based biochemicals. However, the pandemic and disruptions to global supply chains have affected the progress of the project. We estimate that the start-up will take place by the end of 2023.

At the beginning of 2021, we started the basic engineering phase of a next generation biofuels biorefinery. The potential investment would take place in Rotterdam. The current investment environment is very challenging for new major projects so we are not planning to make further decisions before the end of 2022.

These strategic investments remain our focus area also this year. We will do our best to ensure that they proceed successfully and safely.

Before strategy unchanged

Global megatrends are increasing demand for many of our products. The drive for more sustainable consumption affects customer and consumer behaviour. More and more people want to make responsible purchasing decisions.

Our purpose is to create a future beyond fossils. We offer our customers and consumers sustainable choices: renewable and recyclable materials and low-emission energy.

Our strategy remains unchanged. We seek sustainable growth in businesses with strong long-term market fundamentals. We have defined our spearheads for growth load and clear: fibre products, specialty packaging materials and biorefining. Performance, innovation and responsibility continue to be the cornerstones we build on.

Responsibility is an integral part of our Biofore strategy. We source our raw materials from sustainably managed forests and we foster biodiversity. We develop climate-positive products that replace fossil-based products. We also have ambitious and science-based emission reduction targets.

Strong financial position

Increasing shareholder value continues to be our long-term goal. We believe that this also benefits other stakeholders and society in the long term. UPM’s Board of Directors is proposing an unchanged dividend of EUR 1.30 per share for 2021. The proposal reflects UPM’s strong financial position and confidence in UPM’s future success.

I believe that 2022 will be another good year for UPM. Good demand is expected to continue for most products and sales prices for many products are expected to develop favourably. There are uncertainties in the operating environment also in 2022. However, we have demonstrated our ability to perform in a volatile environment and our long-term strategy is solid.

I warmly thank all UPM employees, stakeholders and shareholders for an excellent year 2021! I also look to the future with confidence. The world needs responsible solutions. Together, we will create a future beyond fossils.

Jussi Pesonen
President and CEO
As a frontrunner in the forest industry, we provide renewable solutions for various end uses. We invest in sustainable growth and innovate for a future beyond fossils. Responsibility is at the core of everything we do.

**OUR BUSINESSES**

**UPM Fibres**
UPM Fibres consists of pulp and timber businesses. UPM Pulp offers a range of pulp grades suitable for various end uses such as tissue, specialty and packaging papers, graphic papers and boards. UPM Timber offers certified sawn timber for joinery, packaging, furniture, planning and construction and use segments.

**UPM Energy**
UPM Energy generates cost-competitive, zero-carbon electricity. Operations also include physical electricity and financial portfolio management as well as services to industrial electricity consumers and producers.

**UPM Raflatac**
UPM Raflatac offers self-adhesive label materials for branding and promotion, information and functional labelling in the food, beverage, personal care, pharmaceutical and logistics segments, for example.

**UPM Specialty Papers**
UPM Specialty Papers offers labelling and packaging materials as well as office and graphic papers for labelling, commercial aluminiing, packaging, office use and printing.

**UPM Communication Papers**
UPM Communication Papers offers an extensive product range of graphic papers for advertising and publishing as well as home and office uses.

**UPM Plywood**
UPM Plywood offers high-quality WISA® plywood and veneer products for construction, vehicle flooring, LNG shipbuilding, parquet manufacturing and other industrial applications.

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**Other Operations**

**UpM Forest**
UpM Forest 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 Biofuels**
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 the petrochemical industry.

**UpM Biomedicals**
UpM Biomedicals develops and supplies wood-based biomedical products for a variety of uses. The main ingredient of our high-quality products is nanocellulose, extracted from birch.

**UpM Biocomposites**
UpM Biocomposites offers composite decking materials based on both recycled consumer and industrial waste. The product range also includes composite materials made from renewable fibres and polymers to replace fossil-based plastics.

**UpM Biochemicals**
UpM Biochemicals offers wood-based biochemicals for replacing fossil-based raw materials in various applications such as textiles, PET bottles, packaging, cosmetics, pharmaceuticals, detergents, rubbers and resins.
IT’S A MATERIAL WORLD

With higher living standards and an ageing population, a growing number of urban, middle-class people are consuming more and for longer. At the same time, the world is still highly dependent on fossil raw materials and energy sources that cause climate change. Consumers, businesses and regulators alike are seeking solutions that allow a more sustainable, modern way of life. Our solutions meet these challenges caused by the megatrends now and in the future.

WHAT WE OFFER

Customers and consumers need alternatives to fossil-based products to make sustainable choices. We provide a wide range of solutions so that consumers and businesses can switch to renewable raw materials and energy and reduce their carbon footprint.

- Materials for various consumer products like textiles, PET bottles, packaging, cosmetics and pharmaceuticals
- Replacing fossil-based plastics
- Decarbonising traffic

A SUSTAINABLE AND HEALTHY LIFESTYLE – MEETING DAILY CONSUMER NEEDS

Health and wellbeing depends, to a large extent, on safe hygiene products, both in personal care and medical use. Sustainable packaging and reliable information provide a foundation for everyday life.

- Fibres for hygiene and tissue products
- Safe food packaging
- Information labelling and sustainable packaging for e-commerce
- Papers for communication
- Personalised medicine

INNOVATION FOR A BETTER FUTURE – REPLACING FOSSIL FUELS AND MATERIALS

We make living spaces better by providing renewable, healthy and naturally beautiful construction materials. Carbon-neutral processes and renewable raw materials maximise sustainability.

- Renewable construction materials
- Carbon-storing buildings
- Lighter transportation equipment

BUILDING BETTER – LOW-CARBON CONSTRUCTION

Fossil-based energy forms about 64% of the world’s CO₂ emissions. The transition to a low-carbon economy requires our energy sources to be fossil-free as soon as possible.

- CO₂-free electricity
- Renewable energy
- Reliable and adjustable energy

DRIVING THE TRANSITION – LOW-EMISSION ENERGY

Fibres for hygiene and tissue products
Safe food packaging
Information labelling and sustainable packaging for e-commerce
Papers for communication
Personalised medicine

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DRIVING THE TRANSITION – LOW-EMISSION ENERGY

- CO₂-free electricity
- Renewable energy
- Reliable and adjustable energy
SUSTAINABLE CHOICES

Forests provide a renewable source of raw materials for a broad range of products, from everyday necessities to ground-breaking innovations and alternatives to fossil-based materials. Growing forests are also one of the biggest absorbers of carbon on the planet, second only to oceans. They are critical to biodiversity and they protect water systems. For many, they provide a livelihood and are a source of wellbeing and recreation. Today, they’re more important than ever.

HOW WE MAKE A POSITIVE IMPACT

We’re committed to the UN’s 1.5 °C climate target and to science-based measures to mitigate climate change. We’re also committed to being net-zero by 2040, ten years ahead of the Paris Agreement. We practise climate-positive forestry wherever we operate.

- Our forests absorb CO₂ from the air as they grow
- We aim to reduce our own emissions by 65% and supply chain emissions by 30% by 2030
- Our products replace fossils in various end-uses
- We innovate climate-positive products

IMPROVING BIODIVERSITY

Forests are critical to biodiversity. We want to ensure forests are full of life and continue to grow for generations to come. Safeguarding biodiversity makes forests more resilient to climate change, thereby also benefiting our business.

- Global biodiversity programme, established in 1998
- Science-based biodiversity indicators
- Stringent sustainability criteria for our own work and for our supply chain
- Sustainable forestry provides prosperity for local communities

ADVANCING A CIRCULAR BIOECONOMY

We promote the efficient use of all raw material streams and reduce, reuse and recycle whenever possible. Cross-industry collaboration provides a greater impact.

- Products made from side streams, residues and recovered materials
- Recyclability as an integral element of sustainable product design
- Efficient use of different resources
- Leading recycler in paper manufacturing

ENABLING SUSTAINABLE CONSUMER CHOICES

Consumers make important purchasing decisions, and we play a role in enabling sustainable choices. Responsible alternatives with credible information assist better choices. We provide sustainable solutions and create a future beyond fossils.

- Renewable and recyclable materials
- Sustainable product design
- Responsibility across product lifecycle
- Eco-labelled products

MITIGATING CLIMATE CHANGE

We’re committed to the UN’s 1.5 °C climate target and to science-based measures to mitigate climate change. We’re also committed to being net-zero by 2040, ten years ahead of the Paris Agreement. We practise climate-positive forestry wherever we operate.

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### KEY FIGURES 2021

| **SALES 2021** | EUR | 9.8bn | +14% |
| **ATTRACTIVE DIVIDEND** | Dividend (proposal), EUR | 693m | +0% |
| **INDUSTRY-LEADING BALANCE SHEET** | Net debt, EUR | 647m | Net debt/EBITDA ratio 0.35 |
| **PERFORMANCE** | Comparable EBIT, EUR | 1,471m | +55% |
| **FOCUSED INVESTMENTS** | Capital expenditure, EUR | 1,483m | +64% |
| **CASH FLOW** | Operating cash flow, EUR | 1,250m | +24% |
| **PERFORMANCE** | Comparable ROE | 11.7% | +4.2pp |
| **CASH FUNDS** and unused credit facilities, EUR | 2.5bn |
| **BUSINESS AREAS** | Business areas achieved their financial targets | 5/6 |

**SALES BY MARKET**

- **NORTH AMERICA**: 12%
- **EUROPE**: 63%
- **ASIA**: 19%
- **REST OF THE WORLD**: 6%

**AIMING FOR CONTINUOUS IMPROVEMENT**

- **ACTIVE EMPLOYEES COMPLETED CODE OF CONDUCT TRAINING**: 98%
  - 1pp
  - The UPM Code of Conduct lays the foundation for responsible business operations and continuous improvement.

- **EMPLOYEE ENGAGEMENT SCORE**: 68*
  - 9 points below global benchmark
  - Engaged, high-performing people drive short- and long-term success.

- **FOSSIL CO₂ EMISSIONS (SCOPE 1 AND 2)**: 5.0m t
  - 8%
  - Creating climate solutions and working towards carbon neutrality.

- **SHARE OF SPEND COVERED BY OUR SUPPLIER CODE**: 86%
  - 2pp
  - Transparent supplier requirements form the basis of responsible sourcing throughout the entire supply chain.

- **SHARE OF CERTIFIED WOOD**: 84%
  - 1pp
  - Forest certification is an excellent tool for ensuring sustainable forestry. Chain-of-Custody requirements ensure 100% supply from controlled sources.

- **TOTAL RECORDABLE INJURY FREQUENCY**: 7.2
  - 16%
  - Ensuring a safe working environment for employees and everyone working for UPM.

* Results not comparable to previous year due to change in method.
EVENTS 2021

JANUARY
19 UPM Raflatac scales up its linerless business and builds a new production line in Nowa Wieś, Poland

FEBRUARY
17 UPM joins The Climate Pledge

MARCH
15 UPM issues a green bond of EUR 500 million

APRIL
14 UPM announces it will close unexplained gaps in pay

MAY
7 UPM announces the sale of Shotton paper mill in the UK to Eren Paper Ltd. and newsprint production ends in September
20 Winfried Schaur is appointed Executive Vice President, Technology, and Mika Kekki is appointed Executive Vice President, UPM Plywood

JUNE
3 German Federal President Frank-Walter Steinmeier visits the UPM Biochemicals project site in Leuna
22 UPM announces its sawmills are powered entirely by renewable energy

JULY
20 The UN recognizes UPM as the only forest industry representative and the only Finnish company in the Global Compact LEAD network

AUGUST
23 Massimo Reynaudo is appointed Executive Vice President, UPM Communication Papers
28 UPM Raflatac introduces RAFNXT® as the world’s first label material to be certified as a CarbonNeutral® product

SEPTEMBER
12 European Commission’s competition authorities conduct an unannounced inspection at UPM’s premises concerning companies in the wood pulp sector

OCTOBER
14 UPM launches UPM BioMotion™ renewable functional fillers to significantly reduce CO₂ footprint and weight of rubber and plastics applications

NOVEMBER
15 UPM is listed in the Dow Jones European and World Sustainability Indices (DJSI) for 2021-2022 as the only company in its industry

DECEMBER
10 UPM Plywood and UPM Timber sign collective labour agreement with the Industrial Union
13 UPM Plywood announces a EUR 10 million investment in the Joensuu plywood mill
14 The Paperworkers’ Union issues a strike announcement for several UPM businesses in Finland, the strike starts at the mills on 1 January 2022

LEADER IN RESPONSIBILITY

Our consistent responsibility efforts have received recognition from several third parties.

UN Global Compact LEAD: A Global Compact LEAD company for demonstrating world-class commitment to corporate responsibility. We are one of 37 companies globally—the only forest-industry company and Finnish company participating.

Dow Jones Sustainability Index: The only company in the forest and paper industry in the Dow Jones European and World Sustainability Indices (DJSI) for 2021-2022.

MSCI ESG ratings: An AAA rating in the assessment. MSCI ESG Research provides MSCI ESG ratings on global public companies, according to each company’s exposure to industry-specific ESG risks and its ability to manage those risks relative to its peers.

CDP Programme: Leadership position in CDP forests for preventing deforestation and CDP Water for water security. A good score in climate change category.

S&P Global’s Sustainability Yearbook: Gold Class distinction in The Sustainability Yearbook 2022 by S&P Global as one of the top-scoring companies in our industry.

EcoVadis: The highest possible Platinum level for our responsible performance for which only 1% of over 75,000 companies assessed globally attain.

Bloomberg Gender-Equality Index (GEI): UPM is among the 418 public companies globally and one of the two Finnish companies in this index. The GEI lists the companies most committed to transparency in gender reporting and advancing women’s equality.
Top performance enables investments in growth, innovation and responsibility

We aim for continuous improvement in our financial performance. We make good use of commercial strategies, tight cost control, materials and energy efficiency, effective capital allocation and efficient use of assets. We capture opportunities provided by our agile operating model, while capitalising on corporate synergies.

Value-enhancing growth

Consumer megatrends drive the demand growth for most of our products. This is further supported by the rapidly increasing need for sustainable alternatives to fossil-based materials and energy. We grow businesses with strong long-term demand fundamentals, where we have a clear competitive advantage. This underpins attractive returns on invested capital.

Responsibility is good business

Sustainability is an important driver for growth and competitiveness for us. We capture the opportunities presented by increasingly responsible consumer choices and tightening regulations for mitigating climate change and answering the plastics challenge, for example. Responsible operations and value chains help to mitigate risks.

Innovating for a future beyond fossils

We innovate new growth businesses with a unique competitive position in biochemicals, biofuels, biomedicals and speciality packaging materials, for example. The successful commercialisation and scale-up of the businesses is a significant size are important. We protect our intellectual property.

An improving business portfolio drives profitability and valuation

Increasing our share of sustainability-driven higher-margin growth businesses improves our long-term profitability and boosts the value of our shares. On average, UPM’s growth businesses have more than three times higher EBIT margins than the mature graphic paper business.

Industry-leading balance sheet

Our industry-leading balance sheet mitigates risks and enables us to implement our growth projects even during uncertain times, such as during the pandemic in 2020–2022.

Attractive dividends

We aim to pay attractive dividends. A growth in earnings enables us to pay increasing dividends in the long term. Our dividend policy is based on cash flow, targeting a dividend of 30–40% of the company’s annual operating cash flow per share.

DRIVING LONG-TERM VALUE CREATION

CREATING SHAREHOLDER VALUE

Making more sustainable choices increases demand for our products and attracts interest from investors. Our goal is to significantly increase our earnings and valuation in the coming years, while offering an attractive dividend to our shareholders.

**+9.8%**

Share price 2021

Dividend proposal EUR

1.30

per share

47%

Share of ESG-focused investors of all institutional shareholders

<table>
<thead>
<tr>
<th>Enterprise value and cumulative dividends</th>
<th>Cash flow-based dividend</th>
</tr>
</thead>
<tbody>
<tr>
<td>$Bls</td>
<td>EUR per share</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>10,000</td>
<td>0.2</td>
</tr>
<tr>
<td>20,000</td>
<td>0.6</td>
</tr>
<tr>
<td>30,000</td>
<td>1.0</td>
</tr>
<tr>
<td>40,000</td>
<td>1.4</td>
</tr>
</tbody>
</table>

% of operating cash flow per share

2021: Board’s proposal

5-YEAR SHARE PERFORMANCE AND VALUATION MULTIPLES

<table>
<thead>
<tr>
<th>2021</th>
<th>2020</th>
<th>2019</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share price at 31 Dec, EUR</td>
<td>33.46</td>
<td>30.47</td>
<td>30.91</td>
<td>22.15</td>
</tr>
<tr>
<td>Comparable EPS, EUR</td>
<td>2.22</td>
<td>1.37</td>
<td>2.07</td>
<td>2.34</td>
</tr>
<tr>
<td>Dividend per share, EUR</td>
<td>1.30*</td>
<td>1.30</td>
<td>1.30</td>
<td>1.30</td>
</tr>
<tr>
<td>Operating cash flow per share, EUR</td>
<td>2.34</td>
<td>1.89</td>
<td>3.46</td>
<td>2.49</td>
</tr>
<tr>
<td>Effective dividend yield, %</td>
<td>3.9</td>
<td>4.3</td>
<td>4.2</td>
<td>3.9</td>
</tr>
<tr>
<td>P/E ratio</td>
<td>13.9</td>
<td>29.0</td>
<td>15.3</td>
<td>7.9</td>
</tr>
<tr>
<td>P/CF ratio**</td>
<td>1.65</td>
<td>1.74</td>
<td>1.64</td>
<td>1.21</td>
</tr>
<tr>
<td>EV/EBITDA ratio**</td>
<td>10.2</td>
<td>11.3</td>
<td>8.7</td>
<td>6.3</td>
</tr>
<tr>
<td>Market capitalisation, EUR million</td>
<td>17,845</td>
<td>16,250</td>
<td>16,483</td>
<td>11,813</td>
</tr>
</tbody>
</table>

*2021: Board’s proposal

**P/CF ratio = Share price at 31 Dec / EBITDA per share

EV/EBITDA ratio = (Market capitalisation + Net debt) / EBITDA
Our investments in 2021 amounted to nearly EUR 1.5bn or 15% of sales. Customers, investors and an increased network of suppliers benefit from our strategic growth project in Uruguay. The pulp mill also creates significant opportunities for the residents of the surrounding areas and for regional development. Permanent jobs increase wages, tax revenues and benefit the vitality of local communities.

Read more about our positive impact on UPM’s website.
Our transformation has been ongoing for more than 10 years, at an increasingly fast pace. We have an agile operating model and nurture a culture of high performance and integrity. Through effective capital allocation we have achieved a nearly debt-free balance sheet and improved our business portfolio.

We are a world-leading company in responsibility. Our visionary purpose and values guide and inspire us in creating a positive impact for society and value for our shareholders.

Our renewable and recyclable products meet the everyday needs of consumers at the same time as addressing many global challenges such as climate change and resource scarcity. Many of our products offer sustainable alternatives for fossil raw materials and energy, for example replacing fossil plastics in consumer products, steel and cement in construction or fossil fuels in traffic, aviation and electricity markets. Furthermore, we provide our customers completely new solutions, creating new innovative growth businesses.

We are currently in an intensive growth phase building a world-class pulp mill in Uruguay and a next generation biochemicals refinery in Germany. We are also conducting the basic engineering of a potential new biofuels refinery that would scale up our successful biofuels business. These transformative growth projects represent significant future earnings growth for us. They are set to further improve our business mix with higher-margin, higher-value businesses.

Biofore strategy drives our transformation and enables our bioeconomy frontrunner. We seek sustainable growth by enabling our customers and consumers to make more sustainable choices. High performance, innovations and world-leading responsibility are the cornerstones of our strategy. We create a future beyond fossils.
SPEARHEADS FOR GROWTH

Our transformation is in an intensive phase, with growth investments totalling EUR 3.6 billion scheduled to be completed by the end of 2023.

We have a well-balanced business portfolio, with most of the businesses in the growth phase of their lifecycle, generating attractive returns. We have also created a number of innovative new businesses, with large growth and value creation potential. Our graphic paper business is operating in a declining market and is managed to generate consistent free cash flow. We have selected three spearheads for significant growth in the coming years. They are based on our long-term R&D work, deep know-how and high barriers to entry.

IMPACT
• We create a future beyond fossils
• We enable our customers and consumers to make more sustainable choices

TARGETS
• Earnings growth
• Attractive returns
• Successful commercialisation

OUR WAY
• Sustainable and safe solutions
• Strong long-term fundamentals for demand growth
• High barriers to entry and a UPM competitive advantage
• Strict return requirements
• Talent attraction

Global consumer megatrends and the need to find more sustainable alternatives for fossil-based materials support the demand growth for market pulp. The requirements for competitive greenfield pulp operations are difficult to meet and provide a lasting competitive advantage. The production in our world-class pulp mill in Paso de los Teros in Uruguay and deliveries from a highly efficient pulp mill at the port of Montevideo are scheduled to start up by the end of Q3 in 2023. The project and related plantation operations and logistics solutions have been carefully designed and prepared over the past decade to ensure that the pulp operation is competitive and sustainable, as well as in order to mitigate risks.

Sustainable alternatives for fossil-based chemicals in consumer products and decontaminating traffic and aviation with renewable fuels create significant new business opportunities. Access to sustainable feedstocks, proprietary technology concepts and high-quality products are expected to provide a lasting competitive advantage.

UPM Biochemicals is preparing for a commercial-scale market entry. Our next generation biorefinery, Lappeenranta Biofactory, has proven its proprietary technology, product quality and sustainability, and has achieved commercial success. In January 2021, we proceeded into the basic engineering phase to scale up the business. In 2021, demand for our speciality papers continued to grow rapidly, supported by e-commerce and changes in consumer behaviour during the pandemic. UPM Raflatac’s investment in a new innovative linerless label production line was completed at the end of year. UPM Specialty Papers’ converted paper machine 2 at UPM Nordland, Germany reached good production during 2021.

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The construction of the mill was in its most intensive phase throughout 2021 and into early 2022. The mill will have an annual capacity of 2.1 million tonnes of eucalyptus market pulp. The USD 3.47 billion investment will raise our pulp production capacity by more than 50%. Given the expected highly competitive cash costs and the large scale of the mill, the investment is expected to significantly contribute to our future earnings.

GLOBAL BIOREFINERY IN URUGUAY

The UPM Biofactory, UPM’s next generation biorefinery in Montevideo, Uruguay, is expected to be completed by the end of 2023. The biofactory will have an annual capacity of 220,000 tonnes of wood-based biochemicals. The EUR 550 million investment is expected to meet our ROCE target of 14% once fully ramped up. UPM Biochemicals is also proceeding in commercialising its products. As an example, we develop wood-based recyclable PET bottles in co-operation with the Coca-Cola Company. We also launched UPM BioMotion™, the renewable functional fillers to significantly reduce the CO2 footprint and weight of rubber and plastic applications.

Currently, UPM Biofuels already supplies the markets with UPM Biokemi advanced renewable diesel and naphtha. The Lappeenranta Biofactory has proven its proprietary technology, product quality and sustainability, and has achieved commercial success. In January 2021, we proceeded into the basic engineering phase of a potential larger next generation biofactory to scale up the business.

TOWARDS A FUTURE BEYOND FOSSILS

NEW SOLUTIONS
R&D \(\text{BIOREFINING} \quad \text{SPECIALTY PACKAGING MATERIALS} \quad \text{FIBRES} \quad \text{CO}_2\)-free energy

CURRENT AND DEVELOPING SOLUTIONS

ENABLER

Graphic papers

CIRCULAR BIOECONOMY – CLIMATE-POSITIVE FORESTRY – INCREASING BIODIVERSITY

FIBRES: A STRATEGIC GROWTH PROJECT IN URUGUAY

SPEcialty PACKAGING MATERIALS: GROWTH AND PRODUCT INNOVATION

GLOBAL CONSUMER MEGATRENDS

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ENSURING PERFORMANCE
We aim for continuous improvement in financial performance through the agile operating model, performance culture, continuous improvement programmes and effective capital allocation. In 2021, our comparable EBIT grew by 5.5%.

With regards to the global economy, there was a clear recovery in 2021 from the deep downturn caused by the COVID-19 pandemic in 2020. Demand for most of UPM’s products was strong and sales prices of our products increased across the board. Variable costs increased rapidly as well, as our maintained market position increased across the board. 

We continued to implement measures to ensure performance during such an uncertain business environment. We achieved an annualised fixed cost savings impact of EUR 160 million by the end of 2021.

In 2021, our comparable EBIT grew by 5.5% to EUR 1,471 million (948 million). We also succeeded in maintaining progress in the transformative growth projects in Uruguay and Germany.

The agile operating model
Our businesses in various parts of the bio and forest industry value chain operate as separate market-facing businesses, both in terms of customers and suppliers. Our model offers several benefits:

- Transparency and accountability: target setting, incentives, commercial strategies and benchmarking
- Cost-competitiveness: agility, efficiency and optimal sourcing
- Growth and mix: wider business opportunities

At the business area level, we are targeting top performance in the respective markets. We have also set long-term return targets (ROCE %, on the left) for the six business areas. The return targets apply over business and investment cycles. In 2021, five out of six business areas exceeded the targeted returns.

Capturing corporate synergies
We build on corporate synergies, adding value to our businesses and stakeholders with:

- Competitive and sustainable wood sourcing, forestry and plantation operations
- Value-adding, efficient and responsible global functions
- Group-wide continuous improvement programmes in commercial strategies, variable costs, working capital, site and maintenance costs, safety and environmental performance
- Technology development and intellectual property rights

Global business platform
- Disciplined and effective capital allocation
- Compliance, UPM Code of Conduct and strong UPM brand

Effective capital allocation
Capital allocation is key to attractive long-term returns, as well as developing the business portfolio in areas with the best long-term value creation potential. At UPM, capital allocation decisions take place at the corporate level.

We invest in sustainable businesses with strong long-term fundamentals for demand growth and a clear competitive advantage or high barriers to entry. With careful preparation, we aim to secure attractive returns that meet our targets both in the short and long term.

Over the past five years, our investments have offered attractive returns. In addition, our growing businesses have on average offered more than three times higher comparable EBIT margins than the mature communication paper business over the same period.

BUSINESS AREA RETURNS AND LONG-TERM TARGETS

*ROCE % = Return of capital employed excluding items affecting comparability.
**Shareholdings in UPM Energy valued at fair value.

** RoCE % = Return of capital employed excluding items affecting comparability.
UPM’s Biofore Base research centres in Lappeenranta, Finland and Changzhou, China are accelerating the development of new bio-based products and their launch to the market. The Leuna Biofore Base in Germany was established at the end of the year. It works in connection with the upstream biocarbon refining and specialists in developing new biocellular products. The Biofore Base research centres unite our various technologies with globally accumulated experience and expertise in the new and existing businesses. The centres also focus on piloting and analytics enabling seamless collaboration with customers, value chain partners and research organisations such as universities. The research centres work closely with UPM businesses and their research centres in various countries.

IMPACT
• Respond to global megatrends and growing demand for renewable products
• Replace fossil raw materials with bio-based materials
• Provide more sustainable choices for customers and consumers

TARGETS
• Developing products that replace fossil-based solutions and create added value and growth
• Accelerating the commercialisation of bio-based solutions into viable industrial processes
• Creating new business and a competitive advantage

OUR WAY
• In-depth expertise in forest biomass processing
• Responsibility and circular bioeconomy
• Sustainable product design
• Technological development and intellectual property rights
• Innovation culture, current and future competences
• Extensive partner network

INNOVATING FOR THE FUTURE

We innovate climate-positive products and turn them into growing businesses.

Our products offer solutions to mitigating climate change as they replace fossil raw materials with bio-based renewable alternatives. The products store carbon for the entire duration of their lifecycle, especially when recycled multiple times. New solutions are developed in collaboration with our business partners, technology partners and customers.

Innovation and R&D programmes are essential in the development of new products and technologies. Research and development expenses cover the development of new technologies, businesses and processes. In 2021, UPM spent EUR 266 million (EUR 189 million) on research and development, making up 20.3% (18.8%) of UPM’s operating cash flow.

The patents, trademarks and intellectual property rights protecting our innovations support the journey from innovation to business. We have nearly 5,000 patents and patent applications, and nearly 1,400 trademarks globally.

Licensing innovations and technologies provides an excellent basis for value creation with customers and technology partners. As an example, at the end of 2021, UPM Biochemicals owned 160 patents and patent applications, and another 353 patents and patent applications were held by partners, covering technology and products throughout the value chain.

Our close-knit global partner network consists of customers, universities, research organisations, suppliers and start-up companies. Collaboration speeds up the development and launch of new business solutions.

Our network include the European Joint Undertaking on Bio-based Industries (BBI) and the European Chemical Industry Joint Undertaking (BCC). We joined the Renewable Carbon Initiative (RCI) as well as 4evergreen Alliance, an initiative by CEPI to achieve greater impact from the digital and data-driven solutions both on a corporate and a business level. The development projects common to several businesses include digital customer experience and pricing, digital supply chain and intelligent logistics. The implementation of the strategy and development projects will start in 2022.

INNOVATING CLIMATE-POSITIVE PRODUCTS

Our biobased biorefinery under construction in Leuna, Germany, will enable a switch from fossil raw materials to wood-based sustainable alternatives in textiles, plastics, PET bottles, packaging and pharma or cosmetics products.

The basic engineering phase of a next-generation biobased biorefinery is proceeding. The potential biorefinery would produce high-quality renewable fuels, including sustainable jet fuel. The products would significantly reduce the carbon footprint of road transport and aviation, as well as replace fossil raw materials with chemical and plastic alternatives from renewable sources.

We are also examining new ways to utilise renewable fibre-based materials that are being developed for textiles, nonwovens, hygiene products, labels and flexible packaging, amongst other applications.

Our product development concept consists of an innovation-driven innovation culture that is integrated into our R&D activities and product development. We want our products to create value for our stakeholders throughout the whole product lifecycle. In 2021, we further developed our Sustainable Product Design concept, the methodology that is based on design thinking. Our approach applies lifecycle thinking and lifecycle assessment data, both incorporated in sustainable product design practices. We piloted the new concept with packaging and bio-based composites. Testing will continue in 2022 and the new concept will be gradually adapted in all businesses.

Our 2030 responsibility targets and our contribution to the UN SDGs are integrated into our R&D activities and product development. We want our products to create value for our stakeholders during the whole product lifecycle.

In 2021, we further developed our Sustainable Product Design concept, the methodology that is based on design thinking. Our approach applies lifecycle thinking and lifecycle assessment data, both incorporated in sustainable product design practices. We piloted the new concept with packaging and bio-based composites. Testing will continue in 2022 and the new concept will be gradually adapted in all businesses.

Our development strategy is comprised of various technologies with globally accumulated experience and expertise in the new and existing businesses. The centres also focus on piloting and analytics enabling seamless collaboration with customers, value chain partners and research organisations such as universities. The research centres work closely with UPM businesses and their research centres in various countries.

EXPANDING THE INFRASTRUCTURE

UPM’s Biofore Base research centres in Lappeenranta, Finland and Changzhou, China are accelerating the development of new bio-based products and their launch to the market. The Leuna Biofore Base in Germany was established at the end of the year. It works in connection with the upstream biocarbon refining and specialists in developing new biocellular products. The Biofore Base research centres unite our various technologies with globally accumulated experience and expertise in the new and existing businesses. The centres also focus on piloting and analytics enabling seamless collaboration with customers, value chain partners and research organisations such as universities. The research centres work closely with UPM businesses and their research centres in various countries.
VALUE FROM RESPONSIBILITY

Creating value for society—both as a responsible company and through our renewable and sustainable solutions—is an integral part of our strategy.

Our Biofore strategy guides us in achieving our responsibility targets for 2030 and in contributing to the UN Sustainable Development Goals (SDG). We have connected our sustainability performance also to our financing. Our revolving credit facility is tied to UPM’s long-term incentive plan. The distinct performance measures are based on the company’s targets for fossil CO₂ emission reduction, positive impact on biodiversity and ensuring gender pay equity.

Our 2030 social responsibility targets renewed

We have strengthened our commitments to ensure fair, equitable and competitive rewarding for employees and introduced new targets for living wage and gender pay equity. Our new target on diversity further demonstrates our drive in building diversity and inclusion into the workplace.

Empowering our people with continuous professional development and ensuring future employability remains one of our priori-
ties. Consequently, our work continues towards having development plans in place for all our employees by 2030 and reaching a perception of good opportunities to learn and grow at UPM. We continue to focus on achieving a level of employee engagement that is clearly above the benchmark by 2030 and in 2021 respectively.

As of January 2022, responsibility-related measures are included in UPM’s long-term incentive plan. The distinct performance measures are based on the company’s targets for fossil CO₂ emission reduction, positive impact on biodiversity and ensuring gender pay equity.

We are committed to the UN’s Business Ambition for 1.5 °C in a promise to pursue science-based measures to limit global temperature rise. We act through forests, reducing emissions and innovating products. In 2021, we developed a method to measure soil carbon in Uruguay and a tool that enables us to steer CO₂ emissions on a monthly basis. A study on climate-related substitution and the carbon storage effects of our products continued with two research institutes, the German IFEU and the Finnish SYKE. In 2021, we also set a new target to stop using coal and peat in our on-site energy generation by 2030. There’s currently no science-based calculation system to combine all climate related impacts of UPM, but we are contributing to the method development and working towards net-zero emissions.

We act through forests

We act through emissions

We act through products

Carbon storage Long-term storage of CO₂ in trees and soil

Carbon storage Carbon stored in wood-based products, biofuels

Carbon substitution Avoided emissions by replacing fossil-based products

Carbon substitution Avoided emissions by replacing fossil-based products

Examples of responsibility in different sections of the report

Our Green Bond Report 2021 is available on www.upm.com/investors/upm-de-investirarid/ebt/

www.upm.com/responsibility

TOWARDS NET-ZERO EMISSIONS

WE ACT THROUGH FORESTS

WE ACT THROUGH EMISSIONS

WE ACT THROUGH PRODUCTS

- Ours 2030 responsibility targets and how we did in 2021 on pages 32-33
- Our responsible way of operating on pages 62-99
- Sustainable forestry on page 84
- Development of Scope 1-3 emissions on page 92

Carbon storage Long-term storage systems and soils

Carbon storage Carbon stored in wood-based products, biofuels

Carbon substitution Avoided emissions by replacing fossil-based products

Carbon substitution Avoided emissions by replacing fossil-based products

3.8 MT CO₂e Carbon sink Carbon absorbed in trees and soil

5.0 MT CO₂e Scope 1 and 2 emissions from own energy generation and purchased energy

6.3 MT CO₂e Scope 3 emissions from value chain (potentially, services, logistics, etc.)
OUR RESPONSIBILITY TARGETS FOR 2030

2030 TARGETS

**ECONOMIC**

- Compliant EBIT growth through focused top-line growth and margin expansion
- Compliant ROE 10%
- Net debt/EBITDA 2 times or less

**UPM FOREST**

- 100% participation to UPM Code of Conduct training (continuous)

**SOCIAL**

- 80% of UPM spend covered by UPM Supplier and Third-Party Code (continuous)
- 100% of UPM raw material spend covered by UPM Supplier and Third-Party Code by 2030

**ENVIRONMENTAL**

- No fatalities or serious accidents
- Fossil CO2 emissions reduced by 27% compared to 2015 and by 8% compared to 2020
- 20% of renewables used in our own energy generation by 2030
- Continuous improvement in the female representation in professional and managerial roles, 40% by 2030

**REVENUE**

- Average score of 60 on UPM’s Employee Engagement Survey: This is 10 points below the benchmark of top 10 companies.
- No new target

**QUALITY**

- Total recordable injury frequency (TRIF) 6.3 (5.3) for UPM workforce and 7.2 (6.2) including contractors
- No (no) fatal accidents, 3(2) serious accidents
- New target

**RESOURCES**

- 70% (72%) share reached in the use of renewable fuels
- New target

**RISK**

- No unexplained pay gaps related to gender
- New target

**EFFICIENCY**

- 70% (72%) share of renewable fuels reached in the use of renewable fuels
- 20% reduction of acidifying flue gases by 2030 (NOX/ SO2)
- New target

**PRODUCTS & SERVICES**

- 50% reduction of CO2 emissions from materials and logistics (Scope 3)
- New target

**UPM’s Biofore strategy guides us in achieving our responsibility targets for 2030 and contributes positively to achieving the UN Sustainable Development Goals (SDGs). We have selected six goals and, thereafter, 12 targets that are the most relevant for us based on where we can have the greatest effect, either by minimising our negative impacts or by increasing our positive impacts on people, societies and the environment. These are others that are also relevant to us, but to a lesser extent. In 2021, we reviewed and renewed our social responsibility targets (see pages 30, 74, 77). We also replaced the earlier target on business benefits from O&M with a new target on ending the use of coal and peat.**
RISKS AND OPPORTUNITIES

The operating environment exposes UPM to a number of risks and opportunities. Many of them arise from general economic activity and global megatrends.

- **Cyclical and competitive business environment**
  - UPM’s current product offering competes in markets where there are competing alternatives for consumers and the effects of supply and demand can result in considerable and continuous price changes. Changes in production capacity, new product development, new technologies, trends in the price levels for our products and cost demand fluctuations. Rapid acceleration in digitalization and automation may exacerbate the bias in demand for graphic papers and simultaneously increase demand for sustainable packaging solutions.
  - **Opportunity**: Growing need and consumer preference for renewable and recyclable solutions create business opportunities and drive demand growth.

- **Climate change**
  - The transition to a low-carbon economy can cause policy changes and shifts in market preferences, standards and technologies, which in turn may result in changes to cost structures or the commercial opportunities of businesses and change the competitiveness of products, raw materials, industries, and countries. The physical impacts of climate change include more frequent and severe extreme weather conditions, which can increase droughts and forest fires and cause uncertainties in business operations. Damage caused by insects and tree diseases can become increasingly frequent.
  - **Management**: Long-term targets and science-based measures to mitigate global warming through sustainable forestry, emissions reductions and innovating novel products. Enhancing bioeconomy.
  - **Opportunity**: Transition opportunities associated with those driven by resource efficiency and the development of new technologies, products and services that could bring new markets, customers, sources of funding and competitive advantage for us. Longer forest growing season in northern hemisphere.

- **Geopolitical and economic uncertainty**
  - The rising protectionism in Europe, global trade tensions between major economies, e.g. the US and China, as well as political uncertainties in several countries could result in political, economic, growth, tax-of-fuel challenge competitiveness and predictability for companies with international sales and operations in several countries. The tender relationships between businesses, governments and society, and the changing pandemic containment measures may continue to stress the economic and political environment and cause local challenges to our operations or influence demand for our products.
  - **Opportunity**: Diverse business portfolio, geographical presence and responsible business practices may present opportunities for supply chain optimization or strategic opportunities (incl. M&A) in an economic downturn.

CHANGES IN POLICIES, LEGISLATION AND STAKEHOLDER EXPECTATIONS

The rising social inequality and strain on our natural ecosystem have intensified the expectations for companies to deliver economic, social and environmental benefits and coordinate actions being taken by governments. Changes in regulation, taxation or subsidies could have an effect on our performance, competitiveness and the costs and availability of raw materials. Environmental regulations may continue to become more stringent. As policies, legislation or stakeholder expectations, or the application of fines, change, additional costs in complying with more stringent requirements may be imposed on us.

- **Management**: Responsible operations in the value chain enhance the ability to operate and influence long-term business success, including tax may result in changes to cost structures or the commercial opportunities of businesses and change the competitiveness of products, raw materials, industries, and countries. The physical impacts of climate change include more frequent and severe extreme weather conditions, which can increase droughts and forest fires and cause uncertainties in business operations. Damage caused by insects and tree diseases can become increasingly frequent.
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FINANCIAL RISKS

Financial risks include foreign exchange and interest rate fluctuations, challenges in refinancing, counterparty or credit risks or changes in taxes. Changes to the regulatory policies of major central banks may significantly impact interest rates and create new risks that directly or indirectly affect UPM. Our foreign exchange risk profile is primarily exposed to the US dollar, British pound sterling and Japanese yen.

  - **Opportunity**: Diverse business portfolio and geographical presence, focus on competitiveness and strong balance sheet may present strategic opportunities in a changing currency environment.

EMERGING RISKS

Decisive carbon removal policies may require a rapid growth in carbon removal technology solutions, but could accelerate the tendency to optimize short-term actions and lead to restrictions on wood.

- **Management and opportunity**: Sustainable forest management and expansion of forested areas. A widening digital gap and accelerated economic development can worsen societal fractures and recovery from the pandemic.
  - **Management and opportunity**: Economic activities and creating incremental value in remote areas especially related to forests.

EXECUTION OF STRATEGIC INVESTMENT PROJECTS

We invest in selective strategic projects to enable profitable growth. Investment projects are new large and may take several years to complete. They may also involve strategic, technical and operational risks. Our large pulp mill project in Uruguay consists of several subprojects. The biotechnical refinery project in Germany involves new technology and opens new markets for us. The Oy Päijänne power plant project may impact energy costs or the fair value of our energy shareholdings. The COVID-19 pandemic and the required additional health and safety measures as well as both the effects of the rapid acceleration in digitalization and automation may exacerbate the bias in demand for graphic papers and simultaneously increase demand for sustainable packaging solutions.

- **Management**: Strategic and continuous operational planning, steering and supervision, quality control, risk procurement, scheduling as well as resource and cost monitoring. Environmental, health, safety and social impact assessments and protocols, stakeholder engagement.
  - **Opportunity**: Costally selected and implemented growth projects improve our earnings and returns, and change the positioning of the company.

INFORMATION TECHNOLOGY AVAILABILITY AND CYBER SECURITY ACTIVITY

Our business operations depend on the availability of supporting information systems and network services. Unplanned interruptions in critical information system services can cause disruptions to the continuity of operations. The information systems may be exposed to a cyber-intrusion that could cause loss of sensitive information, violation of data privacy regulations, theft of intellectual property, production outages or damage to reputation.

- **Management**: Systematically maintain and further develop our measures for cybersecurity protection.
  - **Opportunity**: Sophisticated IT systems enable efficient operations and optimized performance, as well as new customer services and data security.

OPERATIONAL HAZARDS, HEALTH AND SAFETY ISSUES AND BUSINESS INTERRUPTION

Our operations are exposed to risks arising from the environment, fire, natural events, site security and operational health and safety. A major accident at a UPM site or a critical part of the supply chain could cause a shutdown or halted production. Any failure to maintain high levels of safety management could also result in physical injury, address or liability to employees, contractors or third parties.

- **Management**: We systematically maintain and further develop our management, health and safety performance programmes as well as insurance protection and business continuity.
OUR BUSINESSES

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CREATING A POSITIVE IMPACT IN E-COMMERCE

About 900 million kilograms of plastic packaging waste is produced globally in the e-commerce industry each year. Four in ten e-commerce decision-makers plan to make plastic-free packaging available to their consumers. Over 40% of online shoppers would choose brands based on sustainable packaging according to a US survey. We create a positive impact by offering a wide range of sustainable packaging and label materials.

Read more about our positive impact on UPM’s website (Source: Statista)
FIBRES FOR THE FUTURE

Versatile, renewable and recyclable — pulp and timber are the fuel of the modern bioeconomy.

OUR DIRECTION
• For pulp to grow with our customers. To provide the most versatile pulp range, advanced technical service and a reliable long-term supply with undiminished commitment to sustainability. To maintain cost-competitiveness through continuous operational improvement.
• For timber: to enhance profitability through efficient wood supply, integrated full-production and focused commercial strategy. To have a streamlined business model that secures our position in chosen key markets and end-use segments.

OUR STRENGTHS
• Broad selection of sustainably produced pulp grades for a wide range of end uses
• Modern, efficient pulp mills and expert teams committed to grow with customers
• Industry-leading forest management and sustainable eucalyptus plantations
• Fossil-free timber production with a dedicated global sales and logistics network

Pulp is a material that perfectly matches the growing global demand for responsible and renewable products. We serve our customers with sustainably produced eucalyptus, birch and softwood pulp grades for a wide range of end uses such as tissue, specialty papers, graphic papers, board and packaging. In addition to high-quality pulp, our modern pulp mills produce renewable energy, and by-products and residues, which are used for innovative bioproducts.

In our timber business, we serve our industrial customers in the furniture, joinery, planning, construction and packaging sectors.

Capturing benefits from efficient operations
In 2021, the strong demand for tissue and hygiene products as well as for packaging and specialty paper products supported the global pulp demand. Pulp consumption in graphic paper end-use segment recovered from 2020. In China, pulp demand growth slowed down due to lower economic activity, customers’ temporary capacity curtailments and inventory reduction in the customer value chain. In Europe, the overall markets remained strong with high demand and a tight demand and supply balance. Pulp sales prices increased to record levels in the first half of the year until the summer in both main markets, after which sales prices decreased in China while remaining at high level in Europe.

UPM Timber benefitted from improved economic activity and a high demand of wood-based construction materials. Strong demand of sawn timber raised the market prices to a high level. Our committed and experienced team successfully managed to secure our customer deliveries in the thriving markets.

Thanks to the strong markets and excellent operational efficiency, UPM Fibres had a strong financial performance in 2021. The scheduled maintenance shutdowns at the pulp mills in Uruguay and Finland were successfully carried out with strict COVID-19 protocols. In addition to the preventive COVID-19 measures, continuous improvement of safety measures continued in all operations.

Strong fundamentals for growth
Long-term demand for pulp remains strong, driven by global megatrends. Growth in demand is strongest in China and the rest of the Asia-Pacific region. The increasing Asian middle-class and rise

Comparable EBIT increased due to significantly higher pulp and timber sales prices. In China, chemical pulp demand growth was slowing down in 2021 due to some improvement at the end of the year. In Europe, demand was good. Demand for advanced renewable diesel and naphtha was strong. Also, demand for sawn timber was strong. The figures include UPM Biofuels business until the end of 2021.

Case

China drives growth
China is the strongest growing market for pulp and one of UPM pulp’s main markets. The growing Chinese middle-class and the increasing use of paper packaging materials, tissue paper and specialty paper push the demand for pulp.

We have gained a strong foothold in the Chinese and European pulp markets and have a good reputation, especially in sustainability. The importance of the Chinese market will continue to grow for years to come as the new pulp mill in Paso del los Toros will be completed by the end of Q1 2023.

UPM Pulp’s Asia Pacific (APAC) sales team has been operating in China for 10 years and has broken many sales volume records. Currently, the team employs 15 professionals. Our pulp production capacity will grow by more than 50%, which means a significant increase in delivery volumes and the strengthening of the Asian sales team.

Along with the growth we will take a more leading role as a pulp supplier in the market. The prerequisites for success include the right sales strategy and solid customer relationships. This means trust in the products, delivery reliability, sustainability promises and trust in the organisation and the people in it.

Co-operation with customers, especially in technical and sustainability projects has also contributed to the sustainable development of the paper industry in China.

www.upmpulp.com
in the use of paper packaging materials, tissue and hygiene papers, and specialty papers is pushing the demand for pulp. In 2021, we continued to implement our growth strategy for pulp. Constructions of our new pulp mill in Uruguay proceeded intensively in all main areas (page 42).

Our commercial strategy focused on further strengthening our commercial capability and scaling our business processes to profitably serve the current and future markets with six million tonnes of pulp in 2023. At the same time, continuous improvement and the efficiency measures implemented in Finnish operations yielded results in productivity. In terms of timber, the demand for responsible construction material is driving future growth. We are continuously seeking to improve our customer value creation. We are also working to develop our customers’ businesses within our long-term co-operations and to improve our environmental footprint throughout the value chain. Our operating model has been revamped since 2020 to improve our internal operations so that they are even more effective.

The growth and competitiveness of our business is enabled by the strong forestry operations in Finland and Uruguay (page 84). Efforts in operational excellence and productivity continued in 2021, with a specific focus on the plantation expansion in Uruguay and cost efficiency and sustainability in Finland.

Replacing fossil-based products
As a sustainable, renewable, recyclable, and biodegradable raw material, pulp responds to the growing need for responsible alternatives to replace fossil-based materials. Pulp is already being used as an alternative to plastic packaging and it uses as a textile fibre, composite material and material for the chemical industry is currently being researched.

Pulp is produced in energy-efficient mills. Sustainability and circular economy are integrated in all our operations from the sustainably managed commercial forests and eucalyptus plantations to the use of residues and side streams as well as the recyclability of most end products in the paper and board segments.

The global construction industry is estimated to account for nearly 40% of energy-related CO2 emissions. Replacing non-renewable raw materials in construction with responsibly produced timber is an effective solution for emission reduction. All of our sawmills run with 100% renewable energy and our timber products sequester carbon throughout their lifespan. We can offer wood products with the lowest possible carbon footprint to our customers. We also have a long track record on responsible business practices.

Collective agreement renewed in collaboration with all parties
UPM Timber and the Finnish Industrial Union signed a business-specific three-year collective agreement in December 2021. The new agreement enables increased flexibility to meet the needs of both timber producers and production. It also creates better conditions for sawmills to increase production and hire new labour on more flexible terms.

The agreement also allows a faster, cost-effective response to market fluctuations with a working time range instead of a fixed number of hours, which was the case previously. UPM Timber’s payroll structures were also renewed, creating more incentives for individuals and teams.

www.upmtimber.com

UPM Timber’s business management, sawmill directors, employee representatives from each sawmill and representatives of the Industrial Union were involved in the negotiations. The allowed diverse points of view to be expressed during the discussions and made it possible to take into account the wishes of the personnel as well as the specific needs of the sawmill business.

All parties will see benefits from the new agreement. The solution will ensure that employees’ purchasing power is strengthened and the collective agreement will continue to determine the minimum working conditions for employees. In turn, UPM Timber can develop its business well into the future.
In Uruguay, the UPM Paso de los Toros pulp mill project was progressing intensively in all main areas.

We are currently constructing a new world-class pulp mill near Paso de los Toros in Uruguay and an efficient pulp terminal in the port of Montevideo. The new pulp mill will be a significant step for UPM's future earnings and shareholder value. When operational, the UPM Paso de los Toros pulp mill, together with forestry, wood and pulp logistics and other related activities, will create around 10,000 new permanent jobs, of which 4,000 will be directly employed by UPM and its subcontractors.

Project highlights in 2021
• More than 6,000 people have been working on the most intensive phase at the various construction sites under strict COVID-19 protocols.
• The assembly phase, with mechanical erection, continued to progress in all main process areas at the pulp mill site in Paso de los Toros. Majority of large civil work was completed. Commissioning works have started.
• Temporary and permanent housing for the mill construction workers in the nearby communities are in use.
• The structure and roof and of the pulp warehouse were completed. The unloading line for the railway was also completed at the pulp terminal in the port of Montevideo. Piping, pipe bridge, auxiliary machinery and tank installation work continues on the port basin.
• Works on the Central Railway by Uruguay government proceeded, but the overall rail project is delayed.
• Works related to road infrastructure improvement in central and west Uruguay continued.
• Annual production capacity of 2.1 million tonnes of eucalyptus pulp.
• The total investment estimate is USD 3.47 billion.
• Investments in port operations in Montevideo and local facilities in Paso de los Toros.
• Expected cash cost level of USD 280 per delivered tonne of pulp.
• Competitive wood supply, best available techniques and efficient logistics.
• Highest safety and sustainability standards.
• Scheduled start-up by the end of Q1 2023.

Annual production and operational results
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• Competitive wood supply, best available techniques and efficient logistics.
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Role of plantations
Eucalyptus availability for the mill is secured through our own and leased plantations, as well as through wood sourcing agreements with private partners. Our plantation areas in Uruguay cover 466,000 hectares of UPM's own and leased land. Sustainably managed plantations are highly productive, acting as a carbon sink while taking care of biodiversity. Eucalyptus’s fast growth rate and rotation time of 10 years make it the preferred plantation tree. We have created a permanent carbon storage of 55 million tonnes of CO2-equivalent in 30 years. Our biodiversity programme has been implemented in plantations since the early 1990s.

In 2020, we defined the biodiversity indicators for our land as part of the global biodiversity programme. In 2021, we implemented an upgraded biodiversity strategy for biodiversity conservation. At present, the network of formal conservation areas covers nearly 16,000 hectares. The aim is to increase those protected areas under UPM's clearly defined conservation categories and to continue with the long-term biodiversity programme (right).

Our plantation operations are also strengthening rural regions and communities through increased opportunities for education and employment, as well as through developing services and infrastructure.

Uruguay’s native forests are all protected. The country is located within a temperate climate zone so there are no rain forests. Plantations are established on former grazing lands classified for commercial forests. The Forestry Act sets strict rules for plantation design and structure. This includes location, tree types and identifying suitable forestry soils for plantation development, as well as safe zones around roads, native forests and waterways.

www.upmpasodelostoros.com
www.upmpulp.com
www.upm.com/biodiversity

RAISING LOCAL COMPETENCE
The pulp mill project brings new opportunities for residents of Paso de los Toros and the surrounding area. We want to improve access to education and strengthen the entrepreneurial spirit in young people and women and local business networks. In 2021, we organized various training courses with expert organisations to help the locals to benefit from the economic growth boosted by the project. People in the commercial sector are one key target group as the demand for services will increase.

English language courses are popular because language skills give locals an edge on the job market. Of the nearly 100 people who have received English training, the majority have also received customer services training at other educational institutes. The training included studies on sales and customer service - for example, what to say in everyday situations in a grocery store or restaurant.

We have also provided training in IT services and entrepreneurship and distributed 20 scholarships for students to carry out tertiary studies in mechanics, electrical, chemistry and mechanics. Road safety training with the Automovil Club de Uruguay has also been organised in the community and at schools, with special attention on young motorists.

We also want to detect concerns, needs and opportunities that arise from the local community and address these by launching projects in cooperation with partners.
The availability of carbon-free electricity is central in mitigating climate change.

In August, we announced an investment in an ultracapacitor for hydropower plants in Kuhmo and Raivaksu in Finland. The investment will increase our ability to produce more and faster reserve power from hydropower plants. The industrial-scale project will pilot innovative technology to meet the changing needs of the electricity market and enable more renewable energy in the grid.

We continued the extensive renovation and modernisation of the Kuusankoski hydropower plant. The phased project will be fully completed during the first quarter of 2023. The plant’s average annual energy production is expected to increase from the current 180 GWh to 195 GWh. Modern hydropower technologies are not only more efficient but also better for the environment.

Market-oriented solutions are contributing to the transformation of the energy system and new transmission connections are increasingly linking the Nordic electricity market to the continental European market. Electrification will play an important role in moving society away from fossil-based energy. While hydropower is a cost-effective, renewable and emission-free way to generate electricity, it can also have adverse impacts on water bodies and their ecosystems. We are working closely with authorities and other stakeholders to minimise these impacts. In addition to the regulatory fishery fees required by the permit conditions, we protect and restore migratory fish stocks through our own migratory fish programme. The programme involves dismantling migratory barriers and testing new ways to rebuild fish stocks in different parts of Finland.

The migratory fish programme was also promoted in 2021. UPM submitted an application for a permit to dismantle the dam structures of a disused water intake in Arvajankoski, Jämsä, and to carry out a fish-eries rehabilitation in Arvajankoski. We are actively looking for new potential sites for the removal of migration barriers and new innovative ways to promote fish migration in co-operation with stakeholders.

Measures for the recovery of migratory fish stocks

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key figures

<table>
<thead>
<tr>
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<th>2021</th>
<th>2020</th>
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<tbody>
<tr>
<td>Sales, EURm</td>
<td>526,379</td>
<td>466,073</td>
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<tr>
<td>Comparable EBIT, EURm</td>
<td>270,171</td>
<td>214,179</td>
</tr>
<tr>
<td>Capital employed (average), EURm</td>
<td>2,373,569</td>
<td>2,313,036</td>
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<tr>
<td>Comparable ROCE, %</td>
<td>11.4</td>
<td>7.4</td>
</tr>
<tr>
<td>Personnel on 31 Dec.</td>
<td>7,274</td>
<td>7,000</td>
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</tbody>
</table>

Comparative EBIT increased due to higher electricity sales prices. The Nordic hydrological balance was below normal at the end of December. In Finland, the hydrological situation was close to normal.

CASE

MORE BALANCING POWER FROM AN ULTRACAPACITOR

UPM is now the first energy company to pilot energy storage with an ultracapacitor in a system comprising two hydropower plants. The power plants are in Kuhmo and Kallioinen in Sotkamo, both located along the Onto River in Finland.

Ultracapacitors are electrostatic devices that can quickly discharge or charge large amounts of electrical power. Combined with a hydropower plant, an ultracapacitor can react in milliseconds to meet the rapid demand for power. It acts as the fast-responding part of the grid, responding to power demand in first minutes, after which hydropower takes the lead and continues to balance the electricity system.

As the amount of renewable energy is predicted to grow in the future, more balancing power capability will be needed to quickly rebalance the grid when needed. Innovations like this are a prerequisite for adding renewable energy to the system. We are using it as a system to bring new reserves to the market and to enable more renewable energy in the grid.

The addition of an ultracapacitor to a hydropower plant will reduce the need for rapid response control of the plant and allows smooth power generation control. It will have no impact on dam safety, water use or the aquatic environment.

Construction started in autumn 2021, and the ultracapacitor is expected to be connected to the power plants in the second quarter of 2022.
LABELLING A SMART FUTURE

We respond to the accelerating need for sustainable labelling solutions and aim to be the first label materials company beyond fossils.

OUR DIRECTION

- Profitable organic growth, potentially complemented by acquisitions
- Expanding customer reach through commercial excellence
- Widening product portfolio, especially through innovation of high-value-added and sustainable products
- Productivity improvement in everything we do

OUR STRENGTHS

- End-user-focused product offering
- Sustainability and product safety leadership
- Global customer reach, delivery network and efficient supply chain
- Global-scale R&D and technical expertise
- Modern, strategically located production assets

WE CONTINUE TO INVEST IN OUR FUTURE.

- Our drive to improve efficiency and productivity supports our growth. Our three-year programme Step Change in Productivity, launched in 2019, drives significant productivity growth across our production sites.
- The first label materials company beyond fossils

UPM Raflatac’s aim is to be the world’s first label materials company to move beyond fossils, designing more sustainable solutions for the packaging industry. To reach this target, we launched several label solutions supporting brand owners’ goals to reduce, recycle, renew and reuse packaging materials. We also received several recognitions for our products’ enabling of recyclability.

Packaging recyclability and climate continued to be the main trends in sustainability. We are committed to positive climate actions in line with UPM’s commitment to pursue science-based measures limiting the global temperature rise to 1.5 °C and to uphold the Climate Pledge. For example, we introduced RAFNX+, the world’s first CarbonNeutral®-certified label material issued by Natural Capital Partners. It allows companies to compensate their unavoidable emissions by supporting certified emission compensation projects, which helps them reduce their climate impact in a way that can be taken into account when calculating their carbon footprint.

We currently operate four carbon offsetting projects that can be linked to UPM’s carbon footprint. Together, these projects help ensure that the investments are going to the right place and that the reduction in carbon emissions is both quantifiable and verifiable.

World First Carbon Neutral Label Material

Global consumer brands are facing increasing pressure to reduce the footprint of packaging. It can mean using less raw materials, increasing the use of renewable and recycled materials, as well as making it easier to recycle products.

Alongside the label material verified by the Carbon Trust in 2019, we have now introduced thinner and lighter RAFNX+, the world’s first CarbonNeutral®-certified label material issued by Natural Capital Partners. It allows companies to compensate their unavoidable emissions by supporting certified emission compensation projects, which helps them reduce their climate impact in a way that can be taken into account when calculating their carbon footprint.

We currently operate four carbon offsetting compensation projects that can be linked to UPM’s carbon footprint. These projects are grassland conservation in the US, improved water construction in Africa and cleaner cooking solutions in Bangladesh and China. Additional compensation projects will be initiated in the coming years.

UPM Raflatac is in a good position to grasp the growth opportunities as the leading supplier of linerless labelstock market driven by sustainability and the need for increased efficiency.

We continued developing our digital customer experience through MyRAF-LATAC. This portal provides customers an unparalleled order-to-delivery experience 24/7. The tool’s geographical roll-out will continue covering all regions and customer take-up is accelerating. Our RaCycle™ recycling service was further expanded to over 250 partners globally. We achieved strong financial results amid the challenging conditions. Thanks to the capability and grit of our employees, we have ensured business continuity by sustaining our operations and excellent customer service. We took firm actions to mitigate increasing input costs and raw material shortages.

Solid long-term growth

The long-term outlook for pressure-sensitive label materials remains solid. UPM Raflatac is in a good position to grasp the growth opportunities as the leading supplier with solutions covering most industries and label applications. Our global supply chain and customer reach provides our customers with an unparalleled service level in all markets.

New growth segments such as linerless and print on demand are creating new business opportunities for us. We are also proactively following changes in the packaging industry to adjust our product portfolio accordingly.

Our drive to improve efficiency and productivity supports our growth. Our three-year programme Step Change in Productivity, launched in 2019, drives significant productivity growth across our production sites.

The demand for sustainable label solutions continues on a high level. During the year, we further developed our product portfolio and service offering like RafCycle and Label Life lifecycle assessment to meet these needs. Currently, six of our ten production sites use 100% renewable electricity.

We create unique value to customers and brand owners with innovative and sustainable label materials products beyond fossils. To meet these needs, we are continuously investing in new production and converting sites. We scaled up our linerless production capacity and invested in a new production line in Nowa Wies, Poland. The new production line strengthens our position in the fast-growing linerless labelstock market driven by sustainability and invested in a new production line in Nowa Wies, Poland. The new production line strengthens our position in the fast-growing linerless labelstock market driven by sustainability.

We made significant progress in our strategy with a clear focus on growth and customers. We continued healthy in 2021. Variable costs were higher. Global demand for self-adhesive label materials continued strong long-term growth opportunities as the leading supplier of linerless labelstock market driven by sustainability and our voice in the value chain.

The first label materials company beyond fossils

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Packaging recyclability and climate continued to be the main trends in sustainability. We are committed to positive climate actions in line with UPM’s commitment to pursue science-based measures limiting the global temperature rise to 1.5 °C and to uphold the Climate Pledge. For example, we introduced RAFNX+, the world’s first CarbonNeutral®-certified label material (right).

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**UPM SPECIALTY PAPERS**

**SPECIAL BY NATURE**

We are co-creating a future beyond fossils with renewable and recyclable fibre-based label, packaging and fine papers.

**OUR DIRECTION**
- A global leader in labelling materials
- The preferred partner for fine papers in the Asia-Pacific region
- Growth in selected flexible packaging applications

**OUR STRENGTHS**
- Sustainable alternatives to fossil-based materials
- Extensive expertise in technically demanding papers
- Recognized graphic papers available in all regions
- The ability to serve customers on a global scale

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- The ability to serve customers on a global scale

**UPM Specialty Papers** responds to the world’s need for sustainable products with high-performing, fibre-based materials for labelling and packaging. It also produces sustainable office and graphic papers. It is well-positioned to meet the growing demand for sustainable and recyclable fibre-based alternatives to non-renewable raw materials. Our flexible packaging papers can help meet these targets, providing us with co-creation opportunities to develop new solutions for fibre-based packaging.

In China, we have a proven track record for being leaders in sustainable operations. In 2021, the UPM Changshu paper mill was recognised as a frontrunner in sustainable development within the Jiangsu province. The mill’s water management and pollution control were the particular processes for which this recognition was received.

**KEY FIGURES 2021 VS 2020**
- Sales, EURm: 1,482/1,324
- Comparable EBIT, EURm: 133/199
- Capital employed, (average), EURm: 864/897
- Comparable ROCE, %: 15.6/22.2
- Permised on 21 Dec.: 1,918/1,922

Comparable EBIT decreased due to higher input costs. Sales prices increased and delivery volumes were higher. Global demand for label, release and packaging paper was good in 2021. Demand was driven by fast-moving consumer goods and e-commerce.

Customer value from sustainability
Many megatrends that are driving the market demand for our products are strongly linked to sustainability. Global brand owners have set ambitious targets to increase the share of packaging that is both recyclable and made using renewable raw materials. Our flexible packaging papers can help meet these targets, providing us with co-creation opportunities to develop new solutions for fibre-based packaging.

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**Megatrends drive demand**
Megatrends support our business and healthy market demand is expected to continue. Certain trends driven by consumer behaviour have even grown during the COVID-19 pandemic, but volatility and unpredictability have also increased.

- At the global market level, in release papers and label papers, and as a well-positioned player in the growing packaging and Asian fine paper markets, we are well prepared for growth.
- The co-creation of our packaging papers and services continues to be one of the cornerstones of our strategy. We aim to strengthen value chain synergy through co-operation and innovation. We offer recyclable fibre-based alternatives to non-renewable materials. We have several new product development projects ongoing with our customers and we are also continuously developing our understanding of end uses with growth potential.

**CONSUMER CHOICES HAVE A BIG IMPACT**

**CASE**

**Consumer Choices Have a Big Impact**

Changes in consumer behaviour, such as the growth of e-commerce and growing awareness of sustainability, have a positive impact on the demand for specialty papers, also after the pandemic.

In 2020, 1.3 billion e-commerce parcels shipped worldwide but forecasts estimate that this number will exceed 2.7 billion by 2026. E-commerce was a popular way to shop in China even before the pandemic, but COVID-19 has boosted e-commerce growth even more, especially in Europe and in the USA.

E-commerce accounted for 18% of global retail sales in 2020, nearly doubling the growth potential.

The growth of e-commerce has an impact on the need for both packaging material and logistics labels.

The packaging business is mainly driven by the growth of the middle class, and urbanization resulting in smaller households and growing consumer spending power. It is particularly a trend in strong developing markets, such as many Asian countries. The Chinese consumer market alone is expected to double by 2030.

When people move to cities, their consumption habits also change. In China, for example, it is estimated that more than 60% of food is sold at markets, mostly without packaging. This is rapidly changing. Packaged food increases the need for packaging material and labels. As the demand for packaging grows, fibre-based materials offer easy-to-recycle packaging based on renewable raw materials.
OUR DIRECTION

- Maintain a profitable leading market position while managing capacity
- Increase operating efficiency and ensure the quality of our products
- Focus on operational and supply chain optimisation and enhancing digital solutions at the customer interface
- Secure the future relevance of the paper business, focusing on sustainability

OUR STRENGTHS

- Long-term commitment to paper and the reliability of our supply
- The high quality of our products and services
- Extensive, thoroughly optimised production
- Responsible operators, strong ethical values and traceable supply chain

As the world’s leading producer of graphic papers, we are committed to the paper business and serving our customers. We offer an extensive product range of graphic papers for advertising and publishing, as well as for home and office use.

Good market demand and significant cost increases

In 2021, consumers spent more time with magazines, books and newspapers, and subscribed to a higher number of printed magazines, books and newspapers, and

In 2021, demand for graphic papers in Europe was 4% higher than 2020.

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UPM PLYWOOD
OFFERING RENEWAL

We offer high-quality WISA® plywood and veneer products and solutions, mainly for the construction and transport industries.

Plywood can replace many substances that are made from non-renewable raw materials, such as aluminium, concrete and steel. Plywood stores more carbon dioxide than it is released in its manufacturing process. Our products are long lasting, carbon storing and made from responsibly sourced wood.

Advantages of using WISA® plywood in building and construction include its structural strength, durability, and environmental certifications. Plywood is an excellent raw material for vehicle flooring due to its technical strength, durability, and environmental performance, responsibility for society and spacecraft structures. The satellite exposes the material over an extended period to extreme conditions of space such as heat, cold, vacuum and radiation.

To observe the behaviour and changes in the colouring of the plywood surface, the satellite is equipped with a suite of sensors and a camera mounted on a 3D-printed metal selfie stick. The satellite will be deployed by Rocket Lab’s Electron launch vehicle. In addition to UPM Plywood, the Finnish space companies Arctic Astronautics and Huld are involved in the joint project. Supported by the European Space Agency (ESA), the data from the mission will be used for further product development. Fixed materials such as carbon fibre can be replaced by renewable wood-based materials, also in demanding applications.

Sustainability makes us stand out
Our “Responsibility Made Easy” promise consists of six focus areas: responsibility as a business partner; responsibility for wood material; responsibility for society and environmental performance; responsibility towards our customers; and innovations. The proven climate benefits of our products are reflected in the Environmental Product Declarations.

We have also begun scaling up our WISA® BioBond gluing technology for spruce plywood products. This approach partly replaces fossil-based phenol with bio-based lignin in plywood manufacturing.

Our positive carbon footprint aligns with our continuous efforts to offer our customers clear sustainability benefits. In 2021, our decision to gradually shift to only using zero carbon electricity was an important step on our climate action path and the transition towards a low-carbon economy.

> www.wisaplywood.com

Seizing future growth potential
Our aim is to further strengthen our leading position in high- and medium-range standard products, and in demanding industrial applications.

Global megatrends and increasing environmental awareness support our commercial strategy and, together with application-specific customer requirements, continue to be the key drivers of our R&D activities. We are continuously evaluating different options to ensure further growth and aiming to strengthen our position in selected markets outside Europe.

In December, UPM Plywood reached a 3-year labour agreement with employees and the Industrial Union. This modern 3-year labour agreement enables mill capacity to be used more efficiently and flexibly to respond to changes in market demand. UPM Plywood also announced a EUR 10 million investment in the UPM Joensuu plywood mill.

In 2021, especially for chemicals, coatings andlogs. In spite of this, we managed to continue our services to stand out from the competition and to strengthen our positions in high- and medium-range standards, and in demanding industrial applications.

We offer high-quality WISA® plywood and veneer products and solutions, mainly for the construction and transport industries.

Key Figures

<table>
<thead>
<tr>
<th>2021</th>
<th>2020</th>
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<tbody>
<tr>
<td>Sales, EURm</td>
<td>492</td>
</tr>
<tr>
<td>Comparable EBIT, EURm</td>
<td>72</td>
</tr>
<tr>
<td>Capital employed (average), EURm</td>
<td>286</td>
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<tr>
<td>Comparable ROCE, %</td>
<td>25.1</td>
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<tr>
<td>Personnel on 31 Dec.</td>
<td>2,198</td>
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</table>

Comparable EBIT increased due to higher sales prices and delivery volumes. Variable and fixed costs were higher. In 2021, demand for spruce plywood was strong and demand for birch plywood was good.

Our Direction

We offer high-quality WISA® plywood and veneer products and solutions, mainly for the construction and transport industries.

Our Strengths

• End use, market and customer insight
• Leader in supply reliability with consistent high quality
• Delivering on our promise through operational excellence

Our Renewal

• Profitable growth through superior customer experience and operational excellence
• A strengthened market position by increasing sales and service packages
• Delivered on our promise through operational excellence

Our Renewal

• Profitable growth through superior customer experience and operational excellence
• A strengthened market position by increasing sales and service packages
• Delivered on our promise through operational excellence

Our Offering

We offer high-quality WISA® plywood and veneer products and solutions, mainly for the construction and transport industries.

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Our Offerings

We offer high-quality WISA® plywood and veneer products and solutions, mainly for the construction and transport industries.

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Our Offerings
UPM BIOFUELS

LOWER EMISSIONS WITH RENEWABLE FUELS

Strong market demand and attractive returns continued while moving ahead in biofuels growth plans.

Our operations are based on a circular economy and our raw material, crude tall oil, is a residue from pulp production. Our production process and development focus stresses further emission reductions and material efficiency.

Year of strong demand but disturbances in production

The biofuels market remained strong in 2021, with continuous demand growth driven by climate targets. Market prices were at a high level. The profitability of the UPM Biofuels business was strong and clearly above UPM’s average return targets. Production rates of the UPM Lappeenranta Biofinery were at a very high level, excluding the maintenance shutdowns and repair work time needed due to a fire in the summer. The scheduled maintenance break in Q1 was completed safely and successfully ahead of schedule despite the challenging COVID-19 situation. In May, a major incident occurred at the biofinery when the rupture of a process gas line caused an explosion and a fire. The fire spread to the cabling and the roof structures of a utility building. No one was injured and the fire was quickly extinguished. Production resumed in August.

We received great feedback from a customer survey, especially for our high professionalism in customer relationships. We aim to maximise the customer value added and started to develop ways of working based on the lean leadership principles in 2021. The personnel have practiced value stream mapping and coaching to improve the business agility and to enable continuous improvement.

Next generation biorefinery

Global demand for biofuels is expected to rise substantially by 2030. Advanced biofuels play an important role in UPM’s Biofore strategy (page 22) by offering innovative and sustainable alternatives to fossil-based products. In January, we moved forward with biofuel growth plans and started the basic engineering phase of a new generation biofuels biorefinery to define the business case, select the most innovative technology option and estimate the investment requirements.

The planned biorefinery would improve the long-term competitiveness and sustainability performance of UPM Biofuels by introducing several sustainable feedstocks. It would also enhance material efficiency with solutions based on the use of waste and residues without compromising global food production or biodiversity. The use of green hydrogen is studied as part of the technology concept. In 2021, we completed site assessments in Kotka and Rotterdam. Work continues in Rotterdam, in the Netherlands, where the operating environment is more favourable for the biofuels business.

Enabling green growth

Fossil substitution plays a key role in enabling the EU’s green growth. In the EU, an overall CO2 reduction of 55% is needed by 2030 to move towards a zero-carbon economy by 2050. UPM Biofuels facilitates the EU’s targets for greenhouse gas (GHG) reduction. UPM BioVerno reduces GHG emissions by over 80% compared to fossil diesel. It is a drop-in solution suitable for all diesel engines.

Predictable regulation is one of the key elements that enables green growth investments and transformation beyond fossils (page 67). We support the increased emission reduction targets in transport and the increased mandate for advanced biofuels as proposed in REDIII, while believing that even further ambition can be put on the role of sustainable biofuels. The inclusion of e-fuels, which are regulated by a separate mandate, opens new opportunities for effective climate change mitigation.

Our products comply with the most comprehensive sustainability criteria and certification including the RS2 and ISCC international sustainability standards.

www.upmbiofuels.com

UPM ANNUAL REPORT 2021
NEW BUSINESS IS COMING TO LIFE

The first-of-its-kind biorefinery in Leuna is taking shape, while a robust business platform is being built and customer engagement points to a promising commercial future.

OUR DIRECTION
• Establish renewable biochemicals as a premium category
• Enter the renewable materials market
• Open new end-use markets
• Successfully launch the business to scale

OUR STRENGTHS
• Unique and innovative technology concept
• Sustainable feedback
• High quality products for plastics, textile and rubber applications, as well as industrial liquids, with a sustainability footprint that sets us apart
• High brand appeal for many consumer products in packaging, automotive, textiles and various industrial segments
• A robust, scalable business platform

The first-of-its-kind biorefinery in Leuna is taking shape, while a robust business platform is being established. The EUR 550 million investment will open completely new markets for us, with large growth potential for the future. The biorefinery will produce a range of 100% wood-based biochemicals, the main products being bio-monoethylene glycol (BioMEG), bio-monopropylene glycol (BioMEP) and renewable functional fillers, with a total annual capacity of approximately 220,000 tonnes.

After the ground-breaking ceremony in October 2020, good progress was made in building the new-to-the-world biorefinery in Leuna, Germany, which will produce bio-chemicals from sustainably sourced wood. The EUR 550 million investment will open completely new markets for us, with large growth potential for the future. The biorefinery will produce a range of 100% wood-based biochemicals, the main products being bio-monoethylene glycol (BioMEG), bio-monopropylene glycol (BioMEP) and renewable functional fillers, with a total annual capacity of approximately 220,000 tonnes.

In 2021, detailed engineering, procurement and permit processes continued progressing well, and building at the site took off. However, the pandemic materially slowed down the completion of the detailed engineering. Disruptions to global supply chains affected both the availability and costs of critical construction materials. As a result, we estimate that the start-up will take place by the end of 2023. The capital expenditure estimate will also be updated.

At the same time, the business platform was further strengthened. We have continued building a team of international experts with a strong chemical industry background to further advance our research and development, build strong commercial operations, and then establish the service and supply infrastructure to meet our customers’ specific needs. We also started hiring and training the operations personnel for the biorefinery. The innovative digital twin of our biorefinery supports the establishment of robust production processes and a competent, well-trained team.

Market demand and customer interest confirmed

Consumers are pushing for sustainable products globally. Global brands have embraced ambitious CO2 reduction targets and are innovating their portfolio to offer sustainable choices for consumers.

While recycled materials have become the mainstream choice for sustainable materials, UPM’s biochemicals made from renewable raw materials will offer a missing link to achieve a sustainable circular bioeconomy: rubber and plastics based on renewable chemicals. Our glycols and Renewable Functional Fillers (RFF) work well in existing production and recycling processes, and will support the transition away from oil-, gas- and coal-based materials (right).

This distinct sustainability value add is reflected in the positive feedback we have received throughout our commercial engagement in 2021. We have made strong progress in opening sales channels in various glycol end-use industries, mainly in packaging, automotive and textile applications.

We have started joint product development with potential customers in various rubber applications to validate the technical performance of our RFFs and bring sustainable alternatives to CO2-heavy rubbers to the market. We also launched UPM BioMotion™, the renewable functional fillers set to significantly reduce the carbon footprint and weight of rubber and plastic applications.

The possibilities of our new biochemical products are endless. This was demonstrated by a co-operation announcement with the Coca-Cola Company, who have unveiled their new 100% plant-based recyclable bottle, highlighting UPM’s industrial-scale biorefinery as a breakthrough for the production of a new generation of biochemicals that will help produce the sustainable packaging of the future.

Our biorefinery project has also received positive external recognition. We were among the seven finalists of the prestigious German Sustainability Award and our contribution to the sustainability transformation was recognised by the jury. We were selected as a finalist in the Chemical Week’s Sustainability Awards 2021 and climbed up to 3rd place in the European Rubber Journal’s top 10 elastomers for sustainability ranking.

www.upmbiochemicals.com

RENEWABLE FUNCTIONAL FILLERS WILL BE A REAL GAME-CHANGER

Today, about 15 million tons of oil-based carbon black and also silicas are used annually to reinforce rubbers and plastics in tyres, hoses, sealing systems and other rubber and plastic products. Industries are intensively looking for more sustainable business alternatives.

The wood-based renewable functional fillers to be produced in the future biorefinery will have the same performance level as fossil-based fillers. When they enter the market, they will significantly reduce the carbon footprint of various rubber and plastic products. According to our calculations, RFFs have an over 90% lower CO2 footprint than industrial carbon black. When used in combination with bio-based rubbers and plasticisers, they enable final compounds to contain up to 85% renewable substances.

Wood-based fillers are also much lighter. Lightness in the automotive industry means better mileage, lower costs and a reduction of CO2 emissions.

Wood-based fillers are also much lighter. Lightness in the automotive industry means better mileage, lower costs and a reduction of CO2 emissions.

The market size for RFF is huge — carbon black is one of the top 10 petro-based products in the world. Industrial carbon black used in tyres contributes around one third of their component materials and profiles can account for up to half. For industrial use, the composition of each rubber compound must be carefully optimised. We aim to perfect our new customised product quickly and effectively through close customer collaboration.
OPENING NEW MARKETS

UPM Biomedicals is at the forefront of innovation and commercialisation, with a particular focus on personalised medicine.

UPM Biomedicals develops and supplies innovative and sustainable wood-based biomedical products for medical and life science applications. The main component in our products is high-quality nanocellulose, extracted from birch wood.

We actively collaborate with universities, research centres and key industrial partners in the fields of high-throughput drug screening, personalised medicine, advanced cell therapies, 3D bioprinting, tissue engineering and advanced wound care. More than 520 patents and patent applications protect our existing and future products.

In life science, our main products are GrowDex®, a range of hydrogels for 3D cell culturing, and GrowDase™, an enzyme to release the cells from the gel. The nanocellulose ensures excellent compatibility with even the most demanding cells, such as stem cells and patient-derived cells. Our gels are animal free and do not introduce animal DNA into the test results. In 2021, we entered into a global distribution agreement with PerkinElmer Health Sciences, Inc. for the UPM GrowDex® and GrowDase™ products (left).

GrowInk™ is a range of bioinks for 3D bioprinting, used in areas like cancer research, where models of tumours can be printed to test their response to different treatments. Launched in 2021, our collaboration with CELLINK will allow us to develop the technology to print organs or tissues that, in the future, could be transplanted into patients.

In the clinical field, FibDex® wound dressings were marketed and sold to healthcare professionals and hospitals in Finland, and work is ongoing to expand into other European markets.

UPM ProFi utilises post-consumer plastic waste and post-industrial label waste to manufacture high-quality composite decking. The label production side streams from UPM Raflatac and its customers are collected and delivered to Germany, where the composite decking is manufactured. Recycled plastic from European post-consumer waste and post-industrial label waste ranges consist of up to 75% recycled materials. UPM ProFi is a member of the EU Circular Plastics Alliance, which aims to boost the EU market for recycled plastics to 10 million tonnes by 2025.

In 2021, UPM ProFi achieved significant sales growth across many European markets with its renewed product portfolio. Thanks to its local European operations, operating efficiency and marketing capabilities, it also benefitted from the increase in home renovations during the COVID-19 lockdowns.

UPM Formi utilises post-consumer plastic waste and post-industrial label waste to manufacture high-quality composite decking. The label production side streams from UPM Raflatac and its customers are collected and delivered to Germany, where the composite decking is manufactured. Recycled plastic from European post-consumer waste and post-industrial label waste ranges consist of up to 75% recycled materials. UPM ProFi is a member of the EU Circular Plastics Alliance, which aims to boost the EU market for recycled plastics to 10 million tonnes by 2025.

In 2021, UPM ProFi achieved significant sales growth across many European markets with its renewed product portfolio. Thanks to its local European operations, operating efficiency and marketing capabilities, it also benefitted from the increase in home renovations during the COVID-19 lockdowns.

UPM Formi creates and manufactures wood-based biocomposites, which enables up to an 80% reduction in the carbon footprint of the end product, compared to similar products made from fossil-based materials. The composite materials are suitable for various end uses, including furniture, personal care and acoustic devices. The materials meet the highest quality standards, allowing the products to pass food standards or similar quality requirements.

In 2021, UPM Formi, in conjunction with key business-development partners, experienced volume growth among new and existing customers as a result of new end-use areas. Strong demand for UPM Formi EcoAce continued. UPM Formi’s customers were recognised with prestigious awards for using sustainable materials, such as the Red Dot Design Award and the if Gold Award.

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### HOW WE EXECUTE OUR STRATEGY

#### GROUP AND ALL BUSINESSES

**Actions 2021**  
Continuous improvement programmes  
Actions to secure business continuity and construction of transformative projects  
Study on climate-related substitute and the storage effects of products, joining The Climate Pledge  
ERT 300 million Green Bond issued  
Work to strengthen the engaging safety culture and global health concept  
Diversity and inclusion work  
Social responsibility targets renewed  
Giving the unexplained gender pay gap internal dialogue on purpose and values started  
UPM Experience programme initiated  
Development of the sustainable product design concept  

**Actions planned for 2022**  
Focus on continuous improvement programmes  
Disciplined and effective capital allocation  
Work towards climate neutrality  
Revise the Code of Conduct  
Strengthen the safety culture with special focus on process safety  
Continue diversity and inclusion work  
Implement UPM Experience programme excl. future ways of working, wellbeing and digital capabilities  

#### UPM FIBRES

**Actions 2021**  
Construction of the pulp mill in Paso de los Toros and in the port of Montevideo  
Construction of a third nursery in Uruguay.  
Implementation of an upgraded biodiversity strategy in Uruguay  
Actions to improve operational efficiency in Finnish pulp mills  
Actions to improve efficiency and environmental footprint for sawn timber  
UPM announcement that its outputs are powered entirely by renewable energy  
A 3-year collective labour agreement signed at UPM.  

**Actions planned for 2022**  
*Focus on operational excellence*  
*Strengthen the organisational capabilities to respond to increasing sales*  
*Focus on operational efficiency in Finnish pulp mills*  
*Continue actions to improve efficiency and environmental footprint for sawn timber*  

#### UPM ENERGY

**Actions 2021**  
Continued development of the service offering for industrial-scale electricity consumers  
Continued refurbishment of the Kasanloki hydropower plant  
Commissioning of OL3  
Ultrafiltration introduced for hydropower plants  

**Actions planned for 2023**  
*Continue the refurbishment of the Kasanloki hydropower plant*  
*Start up of regular electricity production of OL3*  

#### UPM RAFLATAc

**Actions 2021**  
Investment to scale-up the timeless labelstock business with a new production line in Poland  
Growth opportunities captured and product portfolio developed, commercial excellence and digitalisation  
Continued development of new concepts in sustainability and the circular bioeconomy  
Three-year productivity programme progressed as planned  
Introduce RAFLATAc® as the world’s first CarbonNeutral®-certified labelling material  

**Actions planned for 2023**  
*Capture growth opportunities and develop product portfolio and service offering*  
*Continue to improve productivity*  

#### UPM SPECIALTY PAPERS

**Actions 2021**  
Output of new capacity increased  
Growth in specialty grades thanks to product portfolio development and co-creation initiatives  
Actions to improve cost competitiveness and operational excellence  
Continuous improvement of safety and environmental performance  

**Actions planned for 2023**  
*Achieve targeted commercial success and prepare for future growth*  
*Co-create product portfolio and leverage flexible production platform*  
*Improve safety, cost competitiveness and efficiency*  

**Actions 2021**  
Continued development of sustainability strategy  
Actions to secure business continuity and construction of transformative projects  
Study on climate-related substitute and the storage effects of products, joining The Climate Pledge  
ERT 300 million Green Bond issued  
Work to strengthen the engaging safety culture and global health concept  
Diversity and inclusion work  
Social responsibility targets renewed  
Giving the unexplained gender pay gap internal dialogue on purpose and values started  
UPM Experience programme initiated  
Development of the sustainable product design concept  

**Actions planned for 2022**  
*Focus on continuous improvement programmes*  
*Disciplined and effective capital allocation*  
*Work towards climate neutrality*  
*Revise the Code of Conduct*  
*Strengthen the safety culture with special focus on process safety*  
*Continue diversity and inclusion work*  
*Implement UPM Experience programme excl. future ways of working, wellbeing and digital capabilities*  

#### UPM COMMUNICATION PAPERS

**Actions 2021**  
Actions to streamline organisation  
Strengthen position in new end-uses and markets  
Capture the opportunities in the paperboard business  
Assess the growth opportunities and new sustainable feedstocks  
Assess the growth opportunities and new sustainable feedstocks  

**Actions planned for 2023**  
*Continue improvements in cost efficiency*  
*Focus on customer interface and digitalisation*  
*Continue to reduce our environmental impact*  

**Actions 2021**  
Operational excellence and improved product offering  
Increased offering of Viscose Ballard to replace fossil-based phenol  
Further enhanced effective raw material usage and agile supply chain capabilities  
Actions to reduce our environmental impact  
New 3-year collective labour agreement signed  

**Actions planned for 2022**  
*Focus on operational excellence*  
*Strengthen the organisational capabilities to respond to increasing sales*  
*Focus on operational efficiency in Finnish pulp mills*  
*Continue actions to improve efficiency and environmental footprint for sawn timber*  

#### UPM FIBRES

**Actions 2021**  
Operational excellence and improved product offering  
Increased offering of Viskose Ballard to replace fossil-based phenol  
Further enhanced effective raw material usage and agile supply chain capabilities  
Actions to reduce our environmental impact  
New 3-year collective labour agreement signed  

**Actions planned for 2022**  
*Focus on operational excellence*  
*Strengthen the organisational capabilities to respond to increasing sales*  
*Focus on operational efficiency in Finnish pulp mills*  
*Continue actions to improve efficiency and environmental footprint for sawn timber*  

#### UPM PLYWOOD

**Actions 2021**  
Operational excellence and improved product offering  
Increased offering of Viskose Ballard to replace fossil-based phenol  
Further enhanced effective raw material usage and agile supply chain capabilities  
Actions to reduce our environmental impact  
New 3-year collective labour agreement signed  

**Actions planned for 2022**  
*Continue to reduce our environmental impact*  
*Enhance carbon footprint*  

#### UPM FOREST

**Actions 2021**  
Operational excellence and productivity, focus on the plantation expansion in Uruguay and cost efficiency and sustainability in Finland  
Enhanced activity in private wood trade  
Begin implementation of the new global forest programme  
Study on availability and quality of competitive wood for UPM’s growth projects  
Study on decaying wood to improve biodiversity  

**Actions planned for 2022**  
*Enhance carbon footprint*  
*Quality of competitive wood for UPM’s growth projects*  
*Enhance activity in private wood trade*  
*Further develop digital platforms*  
*Increase broad-based trees in Finnish forests*  
*Study on decaying wood to improve biodiversity continues*  

#### UPM BIOFUELS

**Actions 2021**  
Construction of the biochemical refinery producing 100% wood-based biofuels in Leuna, Germany  
Commercial preparations for entering the market  
Collaboration with the Coca-Cola Company introduced UPM BioMotion™ renewable functional fibres launched  

**Actions planned for 2023**  
*Control the biochemicals refinery in Leuna, Germany*  
*Planning business readiness for entering the market*  
*Assess the growth opportunities*  

#### UPM BIOMEDICALS

**Actions 2021**  
Actions planned to improve operational efficiency for sawn timber  
Capture the opportunities in the paperboard business  
Assess the growth opportunities and new sustainable feedstocks  
Assess the growth opportunities and new sustainable feedstocks  

**Actions planned for 2023**  
*Basic engineering and permitting continue in Rotterdam*  
*Assess the growth opportunities*  

#### UPM BIOCHEMICALS

**Actions 2021**  
Actions planned to improve operational efficiency for sawn timber  
Capture the opportunities in the paperboard business  
Assess the growth opportunities and new sustainable feedstocks  
Assess the growth opportunities and new sustainable feedstocks  

**Actions planned for 2023**  
*Enhance carbon footprint*  
*Quality of competitive wood for UPM’s growth projects*  
*Enhance activity in private wood trade*  
*Further develop digital platforms*  
*Increase broad-based trees in Finnish forests*  
*Study on decaying wood to improve biodiversity continues*  

#### UPM BIOCOMPOSITES

**Actions 2021**  
Increased offering of WISA® BioBond to replace fossil-based phenol  
Further enhance effective raw material usage and agile supply chain capabilities  
Investment in the competitiveness of the UPM Laurens plywood mill  

**Actions planned for 2022**  
*Conduct business readiness for entering the market*  
*Planning business readiness for entering the market*  
*Assess the growth opportunities*  

#### UPM BIODETIX

**Actions 2021**  
BioMotion™ renewable functional fillers launched  
Collaboration with The Coca-Cola Company introduced  
in Leuna, Germany  
Construction of biochemicals refinery producing 100% wood-based biochemicals in Leuna, Germany  
Commercial preparations for entering the market  
Collaboration with the Coca-Cola Company introduced UPM BioMotion™ renewable functional fibres launched  

**Actions planned for 2023**  
*Control the biochemicals refinery in Leuna, Germany*  
*Planning business readiness for entering the market*  
*Assess the growth opportunities*  

#### UPM BIOFUELS

**Actions 2021**  
Capture the opportunities in the paperboard business  
Assess the growth opportunities and new sustainable feedstocks  
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**Actions planned for 2023**  
*Basic engineering and permitting continue in Rotterdam*  
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*Enhance activity in private wood trade*  
*Further develop digital platforms*  
*Increase broad-based trees in Finnish forests*  
*Study on decaying wood to improve biodiversity continues*  

#### UPM BIODETIX

**Actions 2021**  
Investment in the competitiveness of the UPM Laurens plywood mill  

**Actions planned for 2022**  
*Continue to focus on operating efficiency and marketing capabilities*  
*Grow with renewed product portfolio in UPM Plyflext*  
*Grow in new end-use areas in UPM Plyflext*  
*Continue actions to reduce carbon footprint*  

*not a complete list*
OUR RESPONSIBLE WAY OF OPERATING

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CREATING A POSITIVE IMPACT IN FORESTS AS CARBON SINKS
After the use of fossil energy, deforestation is one of the main causes of increased CO₂ emissions. At UPM, we plant 50 million trees every year and manage our forests sustainably to maintain their health and ability to grow and absorb more carbon. Over the last five years, the annual average carbon sink of UPM’s own and leased forests in Finland and Uruguay amounted to 3.8 million tonnes of CO₂ equivalents.

Read more about our positive impact on UPM’s website
CREATING VALUE WITH PEOPLE

ACTIVE STAKEHOLDER ENGAGEMENT

Understanding the views and expectations of our stakeholders plays a crucial role in the success of our company and the acceptability of our operations.

The impact of UPM’s operations extends from the local level to wider society. We aim to provide a fact-based, balanced view of the economic, environmental and social aspects of our business activities. Active and open dialogue with our stakeholders provides valuable input for our development efforts.

Continuous dialogue with stakeholders
Our goal is to provide our stakeholders with a clear picture of what our future course is, how we implement our Biofore strategy and how we create long term value for our stakeholders. We disclose relevant and accurate information in accordance with market regulations.

In 2021, many stakeholder events were organised virtually. As many of our stakeholders view UPM primarily as an economic operator, financial success, stability, good governance, future outlook and growth were the key themes discussed. Stakeholder mapping, active dialogue and the systematic gathering of feedback play an essential role in our stakeholder relations work. We analyse the feedback carefully to understand the expectations of our stakeholders. Then, we take those expectations into consideration during our development work and decision-making. We received approximately 400 (350) enquiries or concerns from general public regarding our development work and decision-making processes.

For decision-makers and politicians, 2021 continued to be challenging because of the COVID-19 pandemic and the resulting lockdowns. Despite the need to prioritise measures related to the global pandemic, there was significant progress in several policy fields with impacts for UPM. We were active in discussions on the Finnish operating environment. We emphasised competitiveness, predictability, innovations and climate change solutions.

Climate change mitigation and our commitment to the UN’s 1.5-degree agenda garnered a lot of interest among our stakeholders. Discussions were carried out with environmental organisations, certification bodies, authorities and decision-makers. The climate impact of forests is linked to policies on land use, land-use change and forestry (LULUCF). We have highlighted the importance of sustainable forest management and manufacturing products from renewable raw materials that replace fossils as effective ways to mitigate climate change.

In July the EU Commission published the Fit for 55 package, which includes several initiatives to update the EU’s climate and energy legislation to be in line with EU’s climate targets. The process for finalising the proposals in EU institutions is expected to take a few years.

We actively promote the cost-competitive and consistent implementation of climate change policies. UPM calls for proportional regulation that enables green growth investments and further transformation beyond fossils. Therefore, EU policies, as well as the upcoming negotiations between the European Parliament and the EU member states, must ensure sustainable forest use and the availability of wood as a key resource for the circular bioeconomy and green growth.

Decarbonising traffic through renewable energy and biofuel policies continued. For us, it is very important to get recognition for advanced and residue-based biofuels with high GHG reduction.

For each UPM business, the products, markets and activities vary locally and according to stakeholders’ concerns. Our Biofore strategy forms the foundation of our stakeholder dialogue. The key focus areas and activities vary locally and according to stakeholders’ needs.

IMPACT

• Stakeholder engagement provides predictability and a competitive advantage
• Continuous dialogue improves the understanding of key risks, challenges and opportunities in the operating environment

TARGETS

• We understand the stakeholders’ needs for information and expectations for UPM, and consider them in strategic development and decision-making processes

OUR WAY

• We engage in active dialogue with our stakeholders to discuss our operations and targets
• The UPM Code of Conduct sets the standards for responsible behaviour and collaboration
• Stakeholder engagement is measured by several indicators
• Stakeholder relations are coordinated globally at Group level, while businesses are responsible for continuous dialogue with customers and business partners, as well as the local communities

Green recovery high on the policy agenda
Through public affairs work, we aim to foster the necessary prerequisites for our operations, particularly in Finland, Uruguay, Germany and China. Active influencing at the EU level is also important.

We co-operate with a number of trade associations, the most important being the Finnish Forest Industries Federation (PFIF) and the Confederation of European Paper Industries (CEPI). As we enter new businesses, we also need to find new ways and forums for co-operation. For example, UPM is a founding member of the Advanced Biofuels Coalition in the EU and also a member of the European Chemical Industry Council (CEFIC).

For decision-makers and politicians, after the Finnish Forest Industries Federation resigned from collective bargaining, the term of employment are agreed between forest products companies and trade unions. Our aim was to sign new business-specific agreements for the shopfloor employees before the previous agreements ended on 31 December 2021.

For each UPM business, the products, markets and operating environment differ significantly. The best result can be achieved for everyone by agreeing on ways of working, working hours and salaries, as well as competence development within businesses. We offer benefits that surpass the standards set in law and collective labour agreements.

In many respects, and they apply to all personnel in Finland regardless of the personnel group or collective labour agreement. They also ensure safety in varying life situations. As of 2022, the salaried employees’ terms of employment will be organised in the same way as for senior salaried employees.

UPM Plywood and UPM Timber signed a business-specific collective labour agreement in December 2021. The Paperworkers’ Union is the contractual party for five businesses. Since spring the businesses sought to enter business-specific agreements for the shopfloor employees before the previous agreements ended on 31 December 2021. For each UPM business, the products, markets and operating environment differ significantly. The best result can be achieved for everyone by agreeing on ways of working, working hours and salaries, as well as competence development within businesses. We offer benefits that surpass the standards set in law and collective labour agreements.

CASE

TOWARDS BUSINESS-SPECIFIC COLLECTIVE AGREEMENTS IN FINLAND

After the Finnish Forest Industries Federation resigned from collective bargaining, the term of employment are agreed between forest products companies and trade unions. Our aim was to sign new business-specific agreements for the shopfloor employees before the previous agreements ended on 31 December 2021.

For each UPM business, the products, markets and operating environment differ significantly. The best result can be achieved for everyone by agreeing on ways of working, working hours and salaries, as well as competence development within businesses. We offer benefits that surpass the standards set in law and collective labour agreements.

In many respects, and they apply to all personnel in Finland regardless of the personnel group or collective labour agreement. They also ensure safety in varying life situations. As of 2022, the salaried employees’ terms of employment will be organised in the same way as for senior salaried employees.

UPM Plywood and UPM Timber signed a business-specific collective labour agreement in December 2021. The Paperworkers’ Union is the contractual party for five businesses. Since spring the businesses sought to enter business-specific agreements for the shopfloor employees before the previous agreements ended on 31 December 2021. For each UPM business, the products, markets and operating environment differ significantly. The best result can be achieved for everyone by agreeing on ways of working, working hours and salaries, as well as competence development within businesses. We offer benefits that surpass the standards set in law and collective labour agreements.

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UPM’s Materiality Analysis 2021

Materiality analysis is carried out annually. The results highlight the sustainability topics UPM has a significant impact on, or which have a significant impact on the company. The analysis covers both positive and negative impacts on the economy, the environment and society.

The current sustainability impacts are assessed based on a follow-up of the interests and concerns of various stakeholder groups, employees, NGOs, customers, suppliers, government and regulators, investors, researchers and the media. The assessment is completed with an analysis of potential impacts that could occur, based on the signals from the stakeholders and potential future scenarios.

All customer questions and stakeholder concerns received during the year are taken into consideration. We also conduct specific stakeholder surveys regularly.

Most of the material economic, environmental and social responsibility topics identified in the analysis are presented below. UPM’s responsibility focus areas and targets (pages 32-33) reflect these material impacts. We do not distinguish between topics within the section and consider them all equally material.

ECONOMIC
- Risk and opportunity management
- Corruption and bribery
- Evidence, credentials and transparency
- Compliance, ethics and values
- Responsible sourcing
- Regulatory environment
- Climate change

ENVIRONMENTAL
- Sustainable land use
- Third-party verified management systems
- Greenhouse gas emissions
- Diversity and inclusion
- Responsible restructuring
- Health and safety

SOCIAL
- Local engagement
- People development and talent attraction
- Employee engagement
- Child and forced labour

Economic
Environmental
Social

Significance for UPM

HIGH
MEDIUM
LOW

Significance for stakeholders

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PERFORMANCE
ENABLING THE PERFORMANCE OF OUR PEOPLE

Our culture of Aiming Higher encourages all UPMers to grow, as individuals and as a company. Our values—Trust and be trusted, Achieve together and Renew with courage—guide us along the way.

We are determined to be a responsible and attractive employer now and in the future. Developing UPM Experience is an important focus area for the future. We want to make an impact that strengthens employees’ sense of belonging and the feeling that they are doing meaningful work; promotes productivity; increases engagement and wellbeing; and enables meaningful collaboration as well as diversity and inclusion.

According to the OHI (Organizational Health Index) survey, which measures overall organisational health, we are in the top decile of this global benchmark. The fact that our organisational health has been strengthened further since the last survey in 2017 is a sign of a job well done across the company. The OHI results also show that efforts put into people performance management have paid off.

Our values remain the foundation of who we are. Building a culture of Aiming Higher is essential to our success in today’s rapidly changing world. We are accountable and performance-driven, and we want to maintain those strengths while developing new ones. We have set the additional goal of becoming more human-centric and eager to learn and grow.

Our aim is to increase employee motivation to drive performance. We want to have fair compensation while differentiating and rewarding high performance. Our Enabling Performance approach encompasses frequent and forward-looking manager-employee discussions, agile goal setting and regular feedback from relevant stakeholders.

Engaging employees
We are committed to active employee participation and consultation, organised in accordance with international and national rules and regulations. We offer various forums to facilitate continuous dialogue between employees and business management, and there are new communication tools and channels that ease and enhance dialogue within and across teams.

Our co-operative body, the UPM Executive Forum, focuses on issues related to our business environment and changes within the company. The forum organises regular meetings for employee representatives from business units in Europe. There are also co-operative bodies in UPM countries, which operate in accordance with country-specific rules, regulations and company practices.

The aim is to promote employee participation and dialogue: dialogue between the business areas and country-level management, and between employee representatives and employees on a business unit level. After the Finnish Forest Industries Federation resigned from collective bargaining, the terms of employment are agreed between forest products companies and trade unions (page 65).

We measure our progress regularly. The annual Employee Engagement Survey (EES) has invited all employees across the company to evaluate different aspects of their work every year since 2007. The survey was renewed in 2021.

The high participation rate of 83% (83%) indicates that UPMers are keen to improve their workplace. The new average engagement score was 68. Aligned with the global trend, engagement decreased compared to the previous year. Outside Finland, it was close to the global benchmark of 77, while in Finland it was significantly lower.

Encouraging learning
In a changing and increasingly complex business environment, enhancing employees’ capabilities and wellbeing is important for both business success and sustained employability. Our long-term goal is to ensure high performance and continuous professional development.

We invest in the growth of our people and expect individuals to develop. All employees are encouraged to create an individual development plan and keep it up to date. In 2021, we distributed development plans for employees, contractors and relevant stakeholders.

 Casey
DIALOGUE ON PURPOSE AND VALUES ACROSS UPM

In early 2021, we redefined our visionary purpose to We create a future beyond fossils. It describes why we do our work and how we can create a unique, positive impact. All UPMers play an important role in making our purpose and values come to life. To ensure that everyone has a chance to make a personal connection with the company purpose and values, and to discuss these topics with colleagues, we launched a company-wide process to initiate a dialogue on the subject.

Every UPMer has received a personal guide on UPM’s purpose and values. To ensure inclusivity across UPM units and locations, the materials were produced in 18 languages. Team discussions started in late 2021 and will continue in 2022. Team leaders received training and support materials, including a digital workbook for running the team discussions, to help promote an inspiring and meaningful conversation. Furthermore, dozens of facilitators were trained in 2021.

The aim of the dialogue on company purpose and values is to create internal cohesion and a feeling of belonging by creating a stronger sense of meaningful work and value-based behaviours. In addition, we aim to strengthen the UPM community and the joy of working together. During 2022, we will share and highlight the experiences of both teams and individuals around the world. Progress will also be tracked in the 2022 employee engagement survey.
70% of employees had development plans. In the engagement survey, the result on the question about good opportunities to learn and grow at UPM was 62.

We apply the 70-20-10 learning and development framework: 70% of the learning takes place on the job; 20% comes from sharing with, and learning from, colleagues; and 10% comes from off-the-job training.

Digitalisation is enriching our ways of learning. As the global pandemic has changed our ways of working, we have introduced new e-learning content and programmes on an ongoing basis. These new materials provide support to leaders in managing their teams remotely and encourage individuals to strengthen their self-leadership skills and resilience. Employees can share digital learning materials on our learning platform. E-learning content is offered to develop skills in areas such as commerce, finance, compliance, safety and leadership.

Developing employee experience and enabling mobility

Our apprenticeship programmes are a way to ensure the required level of expertise for future employees. The programmes are typically targeted at those at the positions in production or maintenance. We run the programmes with regional vocational schools. In Finland and Germany, approximately 100 people join the programmes annually. Most of the graduates have been employed at UPM.

In 2020, we started to redefine our development programmes to ensure the required level of expertise for future employees. The programmes are designed to provide practical training and working experience in areas such as commerce, finance, compliance, safety and leadership.

Intangible remuneration and recognition consist of, for instance, a safe and healthy working environment, interesting and meaningful work, and good leadership and career opportunities. We have designed our reward policy to increase employee commitment to, and motivation for, high performance.

Each employee belongs to a unified annual Short Term Incentive (STI) scheme. The scheme covers group- and business-level targets, personal and team performance targets, and individual performance evaluation, to differentiate and reward high performance.

The annual incentives paid in 2021 for the 2020 STI plan amounted to EUR 58 million, and the estimated amount of annual incentives for the 2021 plan is EUR 60 million. We recognise significant individual or team success with a separate Achievement Award system. It is designed to support UPM’s high-performance culture and recognise individuals and teams for outstanding contribution, significant achievements and exceptional performance.

In addition to the Short Term Incentive scheme, we provide two long-term incentive plans: Performance Share Plan (PSP) for senior executives and Deferred Bonus Plan (DBP) for other key employees. Launched annually, the plans cover approximately 400 employees.

Restructuring to ensure cost competitiveness

In 2021, UPM closed the Kaipola paper mill in Finland, sold the Shotton paper mill in the UK and closed one log line at the Kaukas sawmill. UPM also reorganised activities in several businesses and global functions.

The closures, reorganising and streamlining of businesses and functions decreased the number of personnel by 884 in total. We provide support for employees who are affected by the redundancies. This includes outplacement services and training opportunities that support the affected employees in finding new jobs.

Our From Job to Job programme, run in conjunction with local authorities and partners, supports the affected employees in finding new jobs.

Our renewed social responsibility targets on page 32

CASE

WORKING CONDITIONS ASSESSED IN THE WOOD SUPPLY CHAIN

UPM Forest’s supply chain includes more than 100 logging and transport companies. As the supply chain becomes more international, we aim to gain greater visibility on recruitment, employment contracts, working hours, payment practices, travel and accommodation of employees and to ensure that they comply with the UPM Supplier Code.

A supply chain supplier audit project was launched in 2020 by training auditors and developing audit materials. The actual audits began in 2021, nearly 40% of managers had participated in the programme on achieving quality conversation skills and improved feedback.
We value diversity and strive for an inclusive culture and working environment. We respect the privacy of our employees and promote equal opportunities and objectivity in employment and career development. All UPM employees are treated as individuals regardless of gender, age, ethnic origin or nationality, and we welcome the talent of people with various skills and backgrounds to our global team. Promoting diversity and inclusion in the workplace is not only the right thing to do, but also a prerequisite for our business success. The richness of points of view improves decision-making and business success.

Diversity and inclusion is part of our Aiming Higher mindset and thus part of our cultural development plan. We also want to develop our future ways of working.

Three action areas

Our Diversity & Inclusion initiative consists of three action areas: commitment to diversity and inclusion, creating and leading an inclusive culture, and regular reviews of our data and processes.

We signed an EU Diversity charter in 2016. We have set social responsibility targets and we continuously follow up on them and the 2021 results are important strengths for us. We continued in 2020 and 2021 across the company. Very encouragingly, we found that annual salary reviews, promotions and also bonus decisions were free of any gender-related disparities.

Approximately 2.3% or 400 UPMers received a pay adjustment in 10 countries on 1 January 2022. Yet the work continues. We will monitor the situation annually using a rigorous process and take corrective actions if needed. We will also address the root cause by ensuring equitable starting salaries. Our long-standing efforts to balance gender representation and offer equal career opportunities continue.

This initiative is exceptional among our peer companies. It shows our strong commitment to the fair treatment of all UPM employees.

We also regularly report progress to several external indices. We have been included in the Bloomberg GEI (Gender-Equality Index) for a fourth consecutive year. The index awards the publicly traded companies that are most committed to discussing their efforts to support gender equality.

CASE

CLOSING THE UNEXPLAINED PAY GAP

One corner of our Aiming Higher mindset is to ensure a diverse and inclusive working environment. To live that mindset, we need to make sure that our employees are also fairly rewarded.

In 2021, we carried out a company-wide review in 2021, closing the gender pay gap that cannot be explained by the factors that typically determine a person’s salary and its development (right). We continue to monitor this development annually and make corrections if needed.

To further develop inclusive leadership and culture, we started a dialogue with management teams in 2019, and this work continued in 2020 and 2021 across the company. Over 1,400 people had participated in the dialogue by the end of 2021. Inclusive behaviours are integrated into our leadership development programmes and included in the UPM Code of Conduct training.

In 2021, we set a new target for the sense of belonging where we compare ourselves to the top 10% of benchmark companies. Our Employee Engagement Survey (EES) measures also authenticity, i.e. feeling comfortable being oneself, and fair treatment which are important strengths for us. We continuously follow up on them and the 2021 results are along the lines of the global benchmark.

Regular monitoring

We regularly review our diversity status and data. Our management teams conduct self-assessments that include diversity and inclusion. Managers and HR have dashboards with diversity data. Processes such as rewarding and recruitment are followed up regularly.

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CREATING VALUE WITH PEOPLE

STRENGTHENING SAFETY CULTURE

Our proactive safety culture is based on our values, the UPM Code of Conduct and UPM Safety Rules. Our safety work is based on long term planning, effective communications and leadership. Safety is integrated in all our new and ongoing projects, and proactive safety is well integrated in project plans and site practices. For us, good quality means thorough investigation and effective risk management, and this has played an important role in making our operations safe. We have also shared safety observations and best practice in our operations safe. We have also shared safety training sessions. The trainings also focused on the human factor of safety, the difference our daily decisions make and how they contribute to our safety. The same topics were also discussed at the Safety Forum 2021, which involved more than 70 safety personnel from all over the organisation.

In May, a major incident occurred at the UPM Lappeenranta Biorefinery when the rupture of a process gas line caused an explosion and fire. No one was injured, and the fire was quickly extinguished. The fire was thoroughly investigated both internally and with the authorities. To prevent similar events from reoccurring, a number of corrective actions were taken by the company and the affected business units to improve safety.

Our actions to ensure business continuity are based on long-term, continuous risk assessments. We have addressed both local and global markets. We have supported our employees’ wellbeing with a variety of health and safety measures globally, including support and tools for remote working, such as an individual for the internet and an application for taking breaks and boosting wellbeing at work. We also offer online training to build up resilience. We have distributed face masks for our employees to use at any given time and we offer in-house COVID-19 testing and voluntary screening (below).

We aim to have zero accidents. However, our safety results didn’t reach the previous year’s record good figures despite our broad proactive work. Long term progress of the safety results is still on the right track. We recognise exemplary safety performance with company-wide awards. The UPM Raflatac labelstock factory in Changshu, China, received the UPM Safety Award for continuous improvement in 2021.

ISO 45001 Occupational Health and Safety certification continued. In 2021, UPM Raflatac and UPM Timber businesses received their certifications in addition to the previously certified paper and pulp businesses. As this 2030 target on OHS management system is almost achieved, we replaced it with a new target in 2021.

We also developed remote audit concepts and e-learning to improve the quality of internal safety audits. Most internal safety audits were conducted remotely. A new auditing module was introduced, and training on it was provided in our OneSafety management tool. This module improves audit action follow-up.

Due to the pandemic, most of the safety trainings were conducted remotely. More than 150 UPMers attended a machinery safety training session. The trainings also focused on the human factor of safety, the difference our daily decisions make and how they contribute to our safety. The same topics were also discussed at the Safety Forum 2021, which involved more than 70 safety personnel from all over the organisation.

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In 2021, a total of

44,000

Safety-related near-miss and safety observation reports

31,000

safety walks and discussions

UPM WORKFORCE INCLUDING CONTRACTORS

2021

2020

2019

Total injuries per one million hours worked, TRIF
7.2
6.2
6.8
Lost-time accidents per one million hours worked, LTRF
3.5
3.3
3.3
Serious accidents
3
2
3
Fatalities
0
0
1

UPM WORKFORCE

2021

2020

2019

Total injuries per one million hours worked, TRIF
6.3
5.3
7.1
Lost-time accidents per one million hours worked, LTRF
3.1
2.8
2.9
Serious accidents
2
1
3
Fatalities
0
0
1
%

Occupational diseases
0.1

% absence hours from theoretical working time* (UNP workforce)
4.1
3.9
4.0
* Reflected own employees

7.2
achieved for total injuries per one million hours worked
4.1
achieved for % absence hours from theoretical working time*
RESPONSIBLE FOUNDATION OF OUR BUSINESS

COMPLIANCE UNDERPINS PERFORMANCE

Regardless of the location, circumstances or people involved, we are committed to complying with applicable laws and regulations, as well as our Code of Conduct.

IMPACT
- Committed and engaged employees
- Competitive business with no disruption
- Maintaining our reputation and the trust of business partners and other stakeholders

TARGETS
- Compliant operations and behaviour
- An engaging work environment where employees feel safe to voice their concerns
- Responsible value creation

Our Code of Conduct and our values help us make the right choices and guide our work in a changing business environment. This lays the foundations for long-term success.

We strive to ensure compliance with our values and commitments by implementing a company-wide compliance programme through our compliance system (right). The compliance system is embedded in our governance model and is designed to bolster company performance and a culture of integrity at all levels. We follow how this culture is developing with the help of favourable responses to an integrity-related question in our annual Employee Engagement Survey (EES). The EES was renewed in 2021 and the new integrity-related question is:

- People at UPM behave ethically (UPM overall: 74) (the external benchmark: 70).

Risk assessment
With the support of our compliance team, each business area, function and unit is responsible for identifying and managing compliance risks related to its own operations. The results of annual risk assessments are used to guide compliance activities and mitigation actions in businesses and functions. Risk assessments and mitigation actions are updated throughout the year to respond to changes in the risk environment. The progress of mitigation actions is reported to the Audit Committee of the Board of Directors and businesses on a quarterly basis.

Policies and procedures
Policies and procedures form the basis of our compliance programme and their update needs are reviewed annually in accordance with our policy management process. Based on this annual review in 2021, we updated our Risk Management Policy and Association Participation Rules. Our Code of Conduct is updated every three years. The next time will be in 2022 and the preparations have started in 2021.

Training and communication
Policies and procedures are implemented through training sessions and communication. In 2021 we updated our personal data protection training module and launched a new module (association participation) relating to our competition law programme. In April, we also launched new digital team discussion materials based on real-life cases to engage teams to discuss our culture of integrity and ethical dilemmas. By the end of the year more than 1,600 employees participated these discussions.

Available compliance e-learning with the target group and completion rates at year-end are listed in the table on page 79. Our e-learning modules are available on the same HR platform and are easily accessible to our employees. The completion of mandatory e-learning is as a prerequisite for short-term incentive payments. The e-learning modules are complemented with face-to-face and virtual compliance training with specific target groups, which are determined on the basis of risk assessments. The compliance training sessions are supported by active communication. We launched a microlearning video series concerning key compliance topics in 2021.

Monitoring
Our monitoring activities are aimed at ensuring compliance at all levels of the organisation. The activities are based on a group company risk matrix that considers the country risk and complexity and the extent of our operations in each country. Our compliance team has a three-year monitoring plan for its unit-specific compliance reviews that are based on this matrix. On top of these general reviews covering all business integrity topics, we conduct risk-based reviews around specific topics such as competition law or anti-corruption.

The reviews to be performed each year are agreed with the businesses during the annual risk assessment process and coordinated with the Internal Audit. The most important compliance review findings and recommendations are reported to the Audit Committee of the Board of Directors and businesses. These recommendations are then carried out in collaboration with said businesses.

In 2021, the compliance team conducted compliance reviews in 7 local units in South America, Asia, and Europe. Due to COVID-19 most reviews were conducted remotely. Another example of our compliance team’s monitoring activity is the counter-
party screening procedures demonstrated in the illustration on the right.

Voicing concerns
It is an important part of our culture of integrity that employees feel comfortable voicing any concerns they have and that they can trust UPM to take the appropriate action. If we are worried about anything, we must speak up and act. We do not tolerate retaliation against anyone who, in good faith, reports suspected misconduct or participates in an investigation to resolve suspected misconduct.

In 2021, we published our first internal Integrity Report, the purpose of which is to communicate to our employees examples of misconduct cases and how they have been handled within the company (right).

The table below summarises the number of cases recorded in our misconduct case management system in 2022 and provides examples of cases handled. The misconduct case management system was renewed in 2020 and the increase in number of reported cases seems to imply that the new system captures potential misconduct cases more efficiently. 18 cases led to disciplinary action, including warnings and terminations of employment. The misconduct investigations include a root cause analysis that aims to identify whether improvements of compliance programme are necessary.

Therefore, we published our first Integrity Report, the purpose of which is to communicate to our employees examples of misconduct cases and how they have been handled within the company (right).

One of the key messages in the UPM Integrity Report is “Speak up”. The updated Report Missconduct channel seems to have lowered the threshold of raising concerns.

www.upm.com/compliance
Throughout 2021, the OECD, G20 and European Union (EU) introduced solutions to address the tax challenges arising from the digitalisation and globalisation of economies. For example, these solutions are aimed for a minimum level of taxation of companies in the countries in which they operate (the OECD’s Statement on a Two-Pillar Solution), as well as for a standardized public tax reporting by companies (the EU’s public country-by-country reporting).

We have implemented our transparent and responsible Tax Strategy for several years. Therefore, we welcome any initiatives for more standardised global tax reporting by corporations, as well as for those fair and responsible tax payments in the countries where corporations operate. We will modify our tax reporting accordingly, as soon as the final definitions of these projects are available.

**Corporate income taxes vary by countries**

UPM’s taxable rate in 2021 was 15.5% (2019: 14.5%). Our effective tax rate in 2021 was 15.5%, as defined by the Council of the European Union directive. For example, these solutions are aimed for a minimum level of taxation of companies in the countries in which they operate (the OECD’s Statement on a Two-Pillar Solution), as well as for a standardized public tax reporting by companies (the EU’s public country-by-country reporting).

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Suppliers are an essential part of our value chain. We buy products, materials and services from about 210,000 suppliers globally. Our sourcing network includes suppliers from start-up companies to international corporations. We also buy wood from some 23,000 private forest owners. The main sourcing categories are fibre, chemicals, other raw materials, indirect purchases, logistics and energy. When selecting suppliers, our most important criteria include reliable long-term deliveries, product and service quality, suppliers’ financial stability, social and environmental responsibility and product safety.

Exceptional circumstances continued

Due to the continued COVID-19 pandemic, we adjusted our sourcing to ensure safe and efficient operations. We also prioritized business continuity for the most critical and essential suppliers. In 2021, we reviewed 124 (117) audits, based on identified risks, assessing business continuity and compliance. We monitor the implementation of these measures and provide support for improvements.

Know your supplier

We identify our supply chains with a high risk of potential negative environmental and social impacts. Collecting and analysing data on the environmental and social responsibility of our key suppliers is an integral part of our supply risk and performance management. We create development plans together with our suppliers based on these analyses. We also monitor the performance of our other raw material suppliers through various surveys. With the counterparty risk management tool, we can better evaluate counterparty-related risks through automated screening and support businesses in ethical and prudent decision-making. Effective third-party management plays an essential role in securing business continuity and compliance.

Global co-operation in sustainability

In 2021, our co-operation with Together for Sustainability (TfS), a chemical industry initiative continued. TfS promotes responsible practices within the supply chains of its members. The co-operation improves transparency and the efficiency of our assessments and audits. As a member of TfS, we have access to a wider pool of EcoVadis assessments and TfS audit reports. In 2021, we conducted some 340 (290) environmental and social risk assessments with EcoVadis. The number of on-site audits was limited due to COVID-19 restrictions; however, on-site audits were carried out at logging sites and at some mills. Last year, our own trained auditors and external auditors carried out 124 (117) audits, based on identified risks, including human rights, social and environmental topics. In addition, about 300 contract reviews were carried out in focus on working conditions were carried out.

Responsible sourcing is also an important theme in the UN Global Compact. We are an active member of the Action Platform, promoting decent work in global supply chains.

RESPONSIBLE FOUNDATION OF OUR BUSINESS

RESPONSIBLE SOURCING

An effective and responsible supply chain guarantees the availability of sustainably produced, cost-competitive and innovative materials and services globally in all market situations.

Impact

• Providing more sustainable choices to customers and consumers
• Enhancing positive brand perception for both UPM and our customers

Targets

• We are a trustworthy and future-oriented partner
• We ensure the efficiency, compliance and responsibility of the supply chain
• We create long-term business opportunities in the value chain in collaboration with our partners

Our way

• Focus on long-term, co-operative relationships and promoting methods for responsible sourcing
• Clear requirements and expectations for our suppliers
• Continuous monitoring and development of our suppliers’ performance
• Process development with key suppliers
• Responsible practices in the supply chain
• Focus on 2030 responsibility targets

Standards of integrity

We are committed to responsible sourcing practices, as per our Code of Conduct. All the minimum requirements for suppliers are defined in the UPM Supplier and Third-Party Code. We require suppliers to promote the same requirements in their own supply chains. In 2021, 88% (84%) of our total spend was with suppliers who are committed to the Code. All contractors working on our production sites must comply with UPM’s safety requirements. Various additional requirements are applied to wood, chemicals, pulp, packaging materials and logistics.

After our own risk management, the paper suppliers are continuously evaluated in regard to environmental issues, social responsibility and their involvement in the local community. These raw materials are either FSC™ (N003385) and PEFC (PEFC/02-44-43) certified or comply with the FSC Controlled Wood standard or Due Diligence requirements for PEFC.

Strict requirements for wood-based materials

All the wood we use is legally logged and comes from sustainably managed forests. We don’t use wood harvested from tropical rainforests or accept wood from plantations that have been established by converting natural forests. We don’t accept wood from regions that do not respect the rights of indigenous peoples.

In addition to third-party certification, we also verify that the wood supplied to our mills is compliant with the EU Timber Regulation, the US Lacey Act and other regional requirements. We source all wood assortments to ensure optimal utilisation of this valuable raw material. In 2022, we purchased 26.0 (24.9) million cubic metres of wood worldwide. We buy approximately 1.7 million tonnes of pulp from external suppliers annually. We set further requirements to pulp suppliers for environmental performance, social responsibility, forestry, wood sourcing and reporting. We are also one of the world’s leading users of recovered paper for the production of graphic paper. In 2022, we used approximately 17.6 (14.0) million tonnes of recovered paper. Recycled fibre accounted 22% (26%) of all fibre raw materials used in UPM’s paper production. The decrease is due to the closure of one newsprint mill and the sale of another.

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UPM ANNUAL REPORT 2021
SUSTAINABLE FORESTRY

Our business is based on sustainable forest management. We grow and harvest wood to produce renewable and sustainable materials and products.

Finland and Uruguay are UPM’s main wood sourcing regions. At the end of 2021, we owned approximately 900,000 hectares of forest land in Finland, Uruguay, and the USA. Most of this land is in Finland, totalling around 516,000 hectares. In Uruguay, we own about 310,000 hectares of eucalyptus plantations, grasslands and conservancy areas and in the USA 76,000 hectares of forest. We also lease about 160,000 hectares in Uruguay and manage about 1.3 million hectares of private forests in Finland. We apply the same strict sustainability standards everywhere we operate.

About 180,000 hectares (20%) of the land we own is protected. Protected areas include valuable habitats, natural forests, and other areas of high value.

UPM has three modern nurseries: one in Finland and two in Uruguay. A fourth nursery is under construction in central Uruguay to ensure sufficient wood supply for the new Paso de los Toros pulp mill.

There were uncommonly wide fires in Uruguay at the end of 2021, caused by exceptionally high temperatures and drought. The fires affected approximately 10,100 hectares of plantations owned and leased by UPM. We have supported partners in the area and operations continue as usual.

High-quality seedlings will ensure good growing conditions in the forests. We provide a significant basis for research.

In Finland, we also produce hardwood seedlings, which are used for our goal of doubling the number of deciduous trees in our forests. Vibrant mixed forests contribute to biodiversity, climate goals and forest well-being.

In 2021, we introduced our new global forest responsibility programme. The programme covers also sustainability criteria related to water, soil, economic and social contribution (page 30).

Forests and climate
We are committed to climate-positive forestry and improving biodiversity. Forests and forest diversity are beneficial for society and contribute (page 30).

Third-party verified supply chain
We always own the origin of our wood. We do not source wood from illegal sources or from areas where human rights or high conservation value forests are threatened. Our wood sourcing does not cause land-use change. We don’t use genetically modified trees.

Developments in calculation methods and accounting models for Uruguayan plantations, grasslands and conservation areas and in the USA 76,000 hectares of forest. We also lease about 160,000 hectares in Uruguay and manage about 1.3 million hectares of private forests in Finland. We apply the same strict sustainability standards everywhere we operate.

In 2021, quantitative indicators showed a positive trend, except protected areas and valuable habitats. Total restriction areas decreased due to the changes in external land use plans restrictions, however, strictly protected areas increased by 9% from the previous year. Valuable habitats decreased due to redefined calculation methods, which made the previous year’s results incomparable. We constantly review and develop indicators and their monitoring and calculation processes to provide more accurate and comprehensive information on biodiversity. For example, regular monitoring of the amount of decaying wood in Finnish forests is an important indicator for the future (right).

In the company-owned land in Uruguay, we implemented an upgraded biodiversity strategy to increase biodiversity in the long term (page 43).

Co-operation with stakeholders
We have a long history of working with research, academia, environmental organisations and other stakeholders to develop sustainable forest management.

The study started in autumn 2021 in co-operation with the Natural Resources Institute of Finland. We conducted 30-50 regeneration areas harvested in 2000-2018 in Southern Finland will be inventoried. In addition to species and structural inventories, we aim to create a reliable method for assessing the impact of forest management measures.

I nterpretation of how UPM’s conservation of reforestation and decaying trees in our own forests has affected the amount and species distribution of biodiversity important structural features (large decaying trees, coarse decaying wood).

We will also develop a list of indicator species based on three species groups to monitor the impact of natural management on species diversity.

We continued to participate in forest and environmental stakeholder forums. In Finland, we took part in biodiversity roundtables coordinated by the Ministry of Agriculture and Forestry. Active co-operation with the international FSC system, and engagement in the habitats of endangered species. We don’t use genetically modified trees. Compliance with these requirements is verified by an independent third party.

All UPM-owned forests are certified, or in the process of being certified if the site is new. We also promote forest certification for private forest owners and other customers. We have established the FSC group certification scheme. The forest area covered by UPM’s FSC group covered approximately 3,241,000 hectares in Finland and over 13,000 hectares in Uruguay in 2021.

CDP recognised UPM as a Forest A List company for its significant actions to mitigate climate change and prevent deforestation.

CASE DECAYING WOOD AS AN INDICATOR OF BIODIVERSITY

One clear difference between natural and commercial forests is the amount of decaying wood. More than half of Finland’s forest species depend on decaying wood at some point in their lives. Different species such as fungi and insects are best adapted to different parts of the decaying wood, and the species that live on or are influenced by the tree species, the size of the tree, the position of the decomposing wood and the stage of decay.

We will investigate the effects of nature management measures in commercial forests, such as silvicultural retention and decaying trees in regeneration fellings, on the structural features and species of forests that are important for biodiversity.

The study started in autumn 2021 in co-operation with the Natural Resources Institute of Finland. We conducted 30-50 regeneration areas harvested in 2000-2018 in Southern Finland will be inventoried. In addition to species and structural inventories, we aim to create a reliable method for assessing the impact of forest management measures.
Our products help to mitigate climate change by replacing fossil-based products with renewable alternatives.

The products store carbon for the entire duration of their lifecycle, especially when recycled much times. We actively develop solutions based on the circular bioeconomy model. Our target is also to provide solutions and concepts that improve our customers’ business processes and performance, creating mutual benefit and societal value. Our innovative and sustainable wood-based biomedical products, as well as our pharmaceutical and healthcare labelling solutions, are examples of where we create direct societal impact. Many of our products are made from side streams and residues or from materials recovered after product use, thus reducing environmental impact. Many of our products are made from side streams and residues or from materials recovered after product use, thus reducing environmental impact.

Continuous dialogue and collaboration with customers

UPM’s businesses offer a variety of products and services. Each business has its own customer relationship management process and way of interacting with customers. A comprehensive understanding of each market, as well as knowledge of the end use of products and the needs of our customers, underpins our successful interactions with customers.

We have a continuous dialogue with our customers and also engage in various product-related development projects with them. Our businesses conduct regular customer satisfaction surveys. Based on these results, overall satisfaction with UPM as a supplier is 86% (86%). They also help us to define our customers’ needs and challenges. We actively develop solutions based on the circular bioeconomy model. Our target is also to provide solutions and concepts that improve our customers’ business processes and performance, creating mutual benefit and societal value. Our innovative and sustainable wood-based biomedical products, as well as our pharmaceutical and healthcare labelling solutions, are examples of where we create direct societal impact. Many of our products are made from side streams and residues or from materials recovered after product use, thus reducing environmental impact.

Returning our products to the start of the production cycle are considered and that the new product concept to develop novel flexible packaging solutions and sustainable fibre-based hygiene products, for example. We will continue to explore the concept to develop new flexible packaging solutions and sustainable fibre-based hygiene products, for example. We will continue to explore the concept to develop new flexible packaging solutions and sustainable fibre-based hygiene products, for example.

The new sustainable product design concept and the complementing toolbox help businesses in their product development process and support collaboration with customers.
CIRCULAR BIOECONOMY AT UPM

We are using materials, energy and water efficiently, and many of our products are made from side streams, residues or recovered materials.

Our goal is to minimise waste, maximise the use of side streams and create added value through smart solutions. We are constantly looking for partners to co-create circular innovations linked to side stream use, product development and supply chain efficiency. In response to climate change, we are actively developing new solutions to accelerate the transition to a circular bioeconomy and aim to continuously reduce our environmental impact.

Our new sustainable product design concept includes circularity aspects throughout the product lifecycle (page 87). Our environmental 2030 targets ensure resource efficiency and contribute to the UN Sustainable Development Goals.

Our circularity targets
By 2030, we will not deposit any process waste at landfills, and no process waste will be incinerated without recovering the energy. On average in 2021, 89% (90%) of our process waste was recycled or recovered, of which 21% is energy recovery. 59% (57%) of our production sites use 100% of process waste already today. The total amount of waste to landfills decreased by 3% compared to 2020. This was partly due to the sale of UPM Shetton and partly due to improved recovery and recycling at production sites. We share best practices, research results and ideas throughout the company, and have several internal working groups focusing on the use and valorisation of side streams. Green liquor dregs is a side stream originating from pulp production and one of our most challenging residues to use. We are putting a lot of emphasis on developing ways to find sustainable use for it (page 91).

Our other circularity target is the use of 100% nutrients from recycled sources in our effluent treatment by 2030. In 2021, 35% (28%) was achieved (page 96).

CASE

4EVERGREEN PROMOTES THE RECYCLING OF FIBRE-BASED PACKAGING

The 4evergreen alliance involves nearly 90 different companies: pulp, paper and board manufacturers, packaging producers and converters, waste management companies, brand owners, recyclers, and retailers, including global brands such as Coca-Cola, Kellogg’s and Nestlé.

The alliance aims to achieve a 90% recycling rate of fibre-based packaging by 2030 throughout Europe. Member companies share best practices and jointly boost innovation, such as new kind of recycling technology. As a material supplier, UPM has been actively involved with the workstreams.

By collaborating we can achieve goals that no company would be able to reach on its own. The packaging material must be designed for the existing recycling streams. Therefore, it is important to test the components in the packaging. The factors preventing recycling in the packaging and those increasing recycling are analysed. Information is also gathered on how packaging is collected from the end users and how that loop works in different countries.

The alliance also addresses regulatory challenges as well as the adaptation of different packaging solutions to current recycling loops. The circularity-by-design guidelines help us design just the right kind of new materials for consumers.

CASE

RECYCLING BUDDIES TO THE RESCUE

When it comes to protecting our environment, there is such a thing as starting too early! The 32-page Recycling Buddies activity book contains a variety of creative tasks for preschoolers in Finland, and the accompanying teacher’s material provides practical tips for the classroom.

While the school curriculum in Finland includes themes such as circular economy and recycling, research showed that preschoolers and preschool teachers were lacking proper materials to address these themes. The book, developed according to the principles of the national board of education, is designed to both educate and awaken interest in the circular economy.

The book was distributed free of charge, and it has been a major success. The first 60,000 copies were distributed within four days, leading to a decision to make an additional 30,000 copies. The book was a joint effort by UPM, Arla Finland and grocery retailer K Group, and the material was produced by Sanoma Pro.

The survey Arla and UPM conducted indicated that almost every third Finnish family recycled more if their children were interested in recycling. Also, over 90% of respondents thought that companies should encourage consumers in recycling and provide information on the recyclability of product packaging. The project was a unique opportunity for the three companies to share knowledge and work towards a common goal.
Making use of residues, side streams and recovered materials

Most organic production residues, such as bark, wood residues and fibre-containing solids from drinking and effluent treatment, are used to generate energy for mill sites. The fibrous residues that are not incinerated are used in brick manufacturing or as soil amendment materials. Overall, ash originating from biomass-based energy generation makes up the largest share of our solid waste. In 2021, 96% of the ash was used in various applications, such as in soil stabilisation, road construction and the cement industry, or internally to replace caustic soda or as raw material for paper filler production. In particular, the UPM Caledonian paper mill in Scotland has significantly improved the use rate of their ash. The mill has experienced challenges due to changes in local regulation. During recent years, several recovery options were explored. Using ash in manufacturing of cement blocks is today the main end use and has resulted to good ash utilisation rate of 98% in 2021.

UPM BioVerno renewable diesel and naphttha are produced from crude tall oil, a residue from chemical pulp production. Lignin, a side stream of pulp production, is used in WISA BioBond gluing technology, replacing fossil-based phenol used in plywood manufacturing. The use widened in 2021 and will be further expanded in 2022. If lignin is not used as material its energy content is recovered. Lime is another side stream of pulp production which can be used as liming agent or for pH adjustment.

We are also actively enhancing circularity over the product lifecycle by using recovered materials. UPM Raflatac collects label waste from more than 250 partners globally and recycles it with its RaflCycle® service. The service takes the self-adhesive label waste and gives it new life as paper liner, magazine paper or biocomposite material. UPM Specialty Papers has developed UPM LinerLoop®, a unique concept where collected release liners are desiliconised and used to produce new high-performance release liner base papers. We also have a long history of using recovered paper to produce new graphic paper. In 2021, we used approximately 1.7 (1.8) million tonnes of recovered paper. Recycled fibre accounted for 22% (26%) of all fibre materials used in UPM’s paper production.

Active engagement with circular economy networks

We are a member of INGEOE (International Association of the Drinking Industry), and a shareholder of CLEC Innovation Ltd., a Finnish open innovation cluster with the aim of finding breakthrough solutions in biocconomy, circular economy and energy systems. We are also a member of fourgreen, a cross-industry alliance to promote low-carbon and circular fibre-based packaging (page 88). UPM Raflatac is an active member of the Ellen MacArthur Foundation, the global thought leader of the transition towards a circular economy. UPM Specialty Papers and UPM Raflatac are members of CELAR to further promote the development of a circular business model in the self-adhesive label industry.

Together with Pohjolan Voima, we are participating in the Finnish UUMA4 innovation programme targeting to enhance the use of secondary raw mateirals in earth construction. We are also active in several projects related to side stream use.

No process waste to landfills or to incineration without energy recovery

89% recycling or recovery achieved for our total process waste

100% of nutrients used in efficient treatment from recycled sources by 2030

35% achieved

Process waste to landfills
Reducing Energy Use and Emissions to Air

Our energy portfolio consists mostly of energy sources that do not cause fossil CO2 emissions. We use energy efficiently and increase the share of renewable and low-emission energy.

Impact
- Minimising the use of fossil fuels is the most important way to mitigate climate change

Targets
- Significantly cut fossil CO2 emissions across the whole supply chain and increase energy efficiency
- Minimise other air emissions in production and transportation

Our Way
- Committed to the UN Business Ambition for 1.5°C and The Climate Pledge
- Committed to continuous improvements in energy efficiency and an increased share of renewable and low-emission energy
- Scientific verification of our CO2 emission reduction targets
- Use of Best Available Techniques (BAT)
- Focus on 2030 responsibility targets

We are constantly seeking new solutions to minimise our environmental impact by selecting optimised energy sources and generation methods, as well as by improving energy efficiency. We favour the use of renewable and other carbon-neutral energy sources. Biomass-based fuels account for 70% (72%) of our fuel usage.

As the use of weather-dependent energy sources increases around the world, the need for balancing power within energy systems will grow. Hydropower is the most effective and sustainable method of producing balancing power and we have significant hydropower assets in Finland.

The majority of our energy consumption originates from the paper and pulp mills' production where electricity and heat are needed in mechanical pulping, pumping and drying. We generate steam and electricity through combined heat and power (CHP) plants at all of our pulp mills and at almost all of our paper mills. At some mills, all or part of this energy is produced by external or co-owned power plants.

Continuous improvement in energy efficiency
We are looking for ways to improve our energy efficiency across our operations with audits, innovations and investments. In 2021, we reached our annual target of increasing energy efficiency by 1%.

As a result of the energy-saving investments carried out in 2021, we reduced our energy costs by EUR 1.7 (0.3) million, avoided emitting 5,400 (2,400) tonnes of CO2 and achieved a 33,000 (13,000) MWh reduction in energy consumption. The annual savings are EUR 1.9 (0.8) million, 6,100 (6,600) tonnes of CO2 and 35,000 (44,000) MWh of energy.

Reducing emissions to air in production
In 2021, we decreased our fossil CO2 emissions from energy generation (Scope 1) and purchased electricity (Scope 2) by 8% compared to the previous year. This was possible due to an increase in electricity purchased from CO2 free sources and due to a paper mill closure in Finland and the sale of a paper mill in the UK.

At the UPM Nordland paper mill in Germany, we are building a natural gas-based combined heat and power (CHP) plant. At the UPM Hürth paper mill in Germany, we have partnered with R-ON to replace the fossil fuel-based steam supply with a biomass-fired boiler that will provide steam for the mill. Both projects are expected to be finalised in 2022. After completion, they will contribute to reaching our fossil CO2 emission reduction target for 2030.

UPM Energy is investing in CO2 free power generation. TVO’s Olkiluoto 3 EPR nuclear power plant unit in Finland is scheduled to commence regular electricity production in July 2022. The extensive modernisation project at our hydropower plant in Kuusankoski, Finland will also be finalised in the first quarter of 2023 (page 44).

The UPM Changshu paper mill in China has actively participated in the newly opened green electricity market in China by signing a contract for 14 GWh of solar power for 2021 with the first batch of companies. This is a step forward for the mill in using renewable energy.

UPM Timber became the first business to use only renewable energy in production in 2020. In 2021, UPM Plywood decided to gradually shift to using zero-carbon electricity. Currently, six of UPM Raflatac’s ten factories use 100% renewable electricity. In 2021, we set a new target to stop using coal and peat in on-site energy genera-
ticles but also CO₂, will be reduced thanks to UPM in early 2022 and the rest of the fleet network with environmentally smart vessels. The first vessel is planned to be delivered to the company to upgrade its transportation as China clay, woodchips and pulpwood bound routes will see raw materials such as purchased materials, transportation and the processing of sold products, such as pulp, pigments, chemicals and paper. We are collaborating with Together for Sustainability (TFS), a chemical industry initiative, to create standardised ways of reporting emissions from purchased products, raw materials and transportation. In 2023, we continued to work closely with several suppliers about their CO₂ emissions reporting. We aim to receive more actual data from our suppliers instead of using average CO₂ factors from databases. For example, already 64% of our pigment suppliers were able to provide us their CO₂ emission data in 2021 and about 60% of our maritime deliveries are calculated with supplier data. Close co-operation with suppliers is needed to achieve the reduction target. In 2022, a group-wide programme to manage supply chain emissions will be started. Another positive development is the emission reduction of maritime transport with an investment in modern vessels (left).\

\[ Climate change on page 31\]
\[ Responsible sourcing on page 82\]
\[ Clean Run concept on page 138\]

\[ CASE\]
\[ STATE-OF-THE-ART VESSELS FOR SUSTAINABLE SEA TRANSPORTATION\]

Nearly 11 billion tonnes of cargo are transported by ship each year. UPM is dependent on shipping to get its products to customers across the world. It provides shipping services to other companies. The whole sector is scrambling to rapidly reduce emissions by investing in energy-efficient vessels with new technologies and cleaner fuels.

We have invested in a fleet of seven new vessels built and owned by Fincantieri and Wärtsilä. The new UPM Emissions, mainly NOx, SO₂, and NOx particles but also CO₂, will be reduced thanks to LNG fuel. The new vessels replacing the current ones are more fuel efficient and they can be transformed to use biofuels in the future.

The vessels will sail from Finland to Poland, Sweden, Germany, the Netherlands, the UK, France and Spain. Cargoes with our Clean Run approach, we invested in modern vessels (left). In early 2020, we set a target to reduce the fossil CO₂ emissions of our supply chain by 30% by 2030 (from 2018 levels). Our focus is on reducing emissions from logistics and the most relevant raw materials such as pulp, pigments, chemicals and paper. We are collaborating with Together for Sustainability (TFS), a chemical industry initiative, to create standardised ways of reporting emissions from purchased products, raw materials and transportation. In 2023, we continued to work closely with several suppliers about their CO₂ emissions reporting. We aim to receive more actual data from our suppliers instead of using average CO₂ factors from databases. For example, already 64% of our pigment

\[ CASE\]
\[ NEW CO₂ REPORTING TOOL HELPS US REACH OUR TARGET OF REDUCING EMISSIONS BY 65%\]

All mills report their energy consumption (fuels, heat, and electricity) and tonnes of emitted CO₂ monthly in our new reporting tool, introduced in 2020. Our goal is to reduce CO₂ emissions from fuels and purchased electricity by 65% by 2030. The development is compared to 2015, and the corresponding data has been uploaded to the tool retrospectively. The progress of the emission reduction target can thus be monitored comprehensively and transparently.
As a signatory of the UN Global Compact’s CEO Water Mandate, we follow recognised principles in water stewardship. We aim to use water in a way that is environmentally sustainable, socially equitable and economically beneficial. CDP recognised UPM as an A-score for its significant actions to enhance water stewardship.

Continuous improvement in water management

The water we need for our pulp and paper production processes is circulated and reused as much as possible. 98% of the water we use in our pulp and paper mill processes is internally recirculated. We aim to use only a small fraction eventually leaves the process as effluent and needs to be replaced with fresh water. Using less water also means using less electricity, fewer chemicals and less thermal energy. All effluents from our pulp and paper mills are cleaned in both mechanical and biological effluent treatment processes. Our responsible water use highlights the importance of water resources and good water management all over the world. In 2021, UPM joined a two-year project “Circular Economy of Water in Industrial Processes” together with several industrial and academic partners. The project was initiated by the Finnish innovation cluster CLIC.

In Uruguay, UPM supports the Bio Negro Initiative to improve the status of the river. UPM is also funding the improvement of the municipal wastewater treatment plant and sewer systems in Paso de los Toros and neighboring towns where temporary and permanent housing facilities have been installed.

Minimising the impact of hydropower facilities

UPM Energy is the second-largest electricity producer in Finland and has been a hydropower producer for over a century. While hydropower is a cost-effective, renewable and CO₂-free way to generate electricity, it can also have an adverse impact on watercourses and their surroundings. In order to minimise these impacts, we work closely with authorities and other stakeholders. In addition to the regulative compensations, we also support and implement voluntary measures to protect and revitalise migratory fish stocks with our migrating fish programme.

The programme continued in Finland. UPM submitted an application for a permit for dismantling of a decommissioned water intake dam structures in Arvajankoski, Jämsä, and for the further fishery rehabilitation of Arvajankoski. UPM’s goal is to start the fisheries’ rehabilitation in co-operation with local stakeholders. In addition to the ongoing fish migration obstacle removal and rehabilitation projects, UPM is participating in practical local projects and research activities to promote fish migration.

The risk assessment confirms that our production sites are located in areas with low to medium basin risks as they provide 2030 risk maps for 2050 scenarios of water risks, based on climate and socio-economic changes, to enable us to understand and prepare for future water risks and opportunities.

Based on these climate scenarios, our Changshu paper mill near Shanghai is expected to see the greatest rise in water basin risk by 2050. In recent years, however, the mill has made substantial improvements in water efficiency. Besides improving water efficiency, the mill has also reduced its effluent load by 40% since 2008.

CASE

ASSESSING WATER RISKS USING WWF WATER RISK FILTER TOOL

We first evaluated our pulp and paper mills on Water Stress Index maps a decade ago. A few years ago, we used the WWF Water Risk Filter, an online tool to assess water risks. The tool helped us conduct, measure and interpret the results of our water risk assessment and our water work more effectively. During 2021, we updated the water risk analysis and extended scope to all plywood mills, labelstock factories and terminals as well as new projects in Uruguay and Germany, in addition to pulp and paper mills globally.

Our responsible water use highlights the importance of water resources and good water management all over the world.

IMPACT
• Our measures ensure that the impact of our operations on watercourses are minimised so that clean water is available for surrounding communities
• Our efforts to protect and restore aquatic ecosystems enhance the quality of watercourses and the natural habitat of species living there

TARGETS
• Use water responsibly
• Continuously reduce the effluent load and wastewater volume generated by our operations
• Use only recycled nutrients in effluent treatment

WATER USE
• Water-intensive operations in areas with sufficient water resources
• Efficient use of water with appropriate recycling techniques
• Treatment of used water according to the Best Available Techniques

UPM AVERAGE PRODUCT

<table>
<thead>
<tr>
<th>TARGETS</th>
<th>REDUCTION ACHIEVED FOR THE UPM AVERAGE PRODUCT</th>
</tr>
</thead>
<tbody>
<tr>
<td>40% reduction in effluent load (COD)</td>
<td>18%</td>
</tr>
<tr>
<td>30% reduction of wastewater volume generated by our operations</td>
<td>38%</td>
</tr>
</tbody>
</table>
Our activities and products have impacts on society. Understanding these impacts is a prerequisite to develop our operations. Direct and indirect inputs and outputs provide a comprehensive picture of the value chain and form the basis for the impact assessment. Environmental, social and economic aspects are considered. In 2021, we further developed our assessment of impacts in monetary terms. We looked at the different steps in the process, the choices that need to be made in terms of impact valuation objectives and the challenges in the calculation. We are also studying the potential benefits of the method and how it could be applied in decision-making.

Our activities and products have impacts on society. Under standing these impacts is a prerequisite to develop our operations. Direct and indirect inputs and outputs provide a comprehensive picture of the value chain and form the basis for the impact assessment. Environmental, social and economic aspects are considered. In 2021, we further developed our assessment of impacts in monetary terms. We looked at the different steps in the process, the choices that need to be made in terms of impact valuation objectives and the challenges in the calculation. We are also studying the potential benefits of the method and how it could be applied in decision-making.

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INDIRECT UPSTREAM

| Number of bto-b suppliers | 20,000 |
| Private forest owners supplying wood to UPM | 23,000 |
| Swellings planted | 50 million |
| Supplier spend covered by UPM Supplier Code | 86% |
| Certified wood | 84% |
| Percentage of wood origin known | 100% |
| Biogenic CO2 emissions (Scope 2 upstream) | 2.3 t |
| Biogenic CO2 emissions (Scope 3 upstream) | 4.0 t |
| Water intensive production sites located in water abundant areas | 100% |
| New area | 2,200 |
| Restricted chemical substances in UPM screening | 5,600 |
| Olsen and leased forests and plantations | 1,057,000 ha |

DIRECT UPSTREAM

| Raw materials | Products |
| Wood | 26 m³ |
| Market pulp | 1.7 m³ |
| Recovered paper | 1.7 m³ |
| Minerals | 2.0 m³ |
| Purchased paper for converting | 0.5 m³ |
| Plastic, adhesives, resins, fibres | 0.2 m³ |
| Costs, raw materials | EUR 3.4 billion |
| Water uptake | 390 m³ |
| Surface water | |
| Ground water | 20 m³ |
| Comunal water | 4 m³ |
| Energy |
| Renewable fuels | 26,000 GWh |
| Fossil fuels | 11,000 GWh |
| Purchased electricity and heat | 13,600 GWh |

DIRECT DOWNTREAM

| Emissions to air |
| Nitrogen oxides | 7,700 t |
| Sulphur dioxide | 820 t |
| Particulates | 1,100 t |
| VOC | 390 t |
| Fixed CO2 emissions (Scope 1) | 2.7 t |
| Biogenic CO2 emissions (Scope 1) | 9.8 t |

| Emissions to water |
| Process wastewater | 190 m³ |
| Cooling water | 190 m³ |
| Virgin materials replaced | 2.5 t |
| Value of products eligible for recycling | 8.2 billion |

| Materials and by-products |
| Material recycling | 615,000 t |
| Energy recovery | 192,000 t |
| Composting | 6,600 t |
| Landfills | 93,000 t |
| Temporary storage | 8,300 t |
| Irrigation without energy recovery | 2,300 t |
| Hazardous waste for special treatment | 5,600 t |

| Energy |
| Energy consumption | 171 groups |

DIRECT DOWNSTREAM

| Nitrogen oxides | 7,700 t |
| Sulphur dioxide | 820 t |
| Particulates | 1,100 t |
| VOC | 390 t |
| Fixed CO2 emissions (Scope 1) | 2.7 t |
| Biogenic CO2 emissions (Scope 1) | 9.8 t |

| Emissions to water |
| Process wastewater | 190 m³ |
| Cooling water | 190 m³ |
| Virgin materials replaced | 2.5 t |
| Value of products eligible for recycling | 8.2 billion |

| Materials and by-products |
| Material recycling | 615,000 t |
| Energy recovery | 192,000 t |
| Composting | 6,600 t |
| Landfills | 93,000 t |
| Temporary storage | 8,300 t |
| Irrigation without energy recovery | 2,300 t |
| Hazardous waste for special treatment | 5,600 t |

| People and society |
| Employees | 17,000 |
| Shareholders | 123,300 |
| Training hours per employee | 7 |
| Total recordable injury frequency incl. contractors | 7.2 |
| Dividend distribution | EUR 693m |
| Employee wages and benefits | EUR 1,094m |
| Corporate income taxes paid and property taxes | EUR 306m |

| Environmental |
| Climate change mitigation through UPM’s forest management | 820 million |
| Ecosystem services secured through sustainable forest management | 8.2 billion |
| Vitality and prosperity for area of influence | 6.6 billion |
| Increased social capital and skills of employees | 650 million |
| Wellbeing and safety of employees and contractors | 5.6 billion |
| Biodiversity enhanced in managed forests and through conservation | 5.3 billion |
| Climate change mitigation through UPM’s carbon actions | 5.1 billion |
| Value added EUR 3.7 billion |
| Socioeconomic value of carbon sink of UPM own and leased forests EUR 380m |
| Socioeconomic value of GHG emissions (Scope 1-3) EUR 1.3 billion |
| Socioeconomic value of other air emissions EUR 1.3 billion |
| Recreational value of UPM forests EUR 80m |
| Value of ash used as raw material EUR 15m |
| Impact of paid taxes on social capital EUR 327m |

UPM’s detailed material balance is available at www.upm.com/responsibility

98 UPM ANNUAL REPORT 2021
99 UPM ANNUAL REPORT 2021
Attractive packaging and label design play an important role in consumers' purchasing decisions. Sustainable label materials make a difference in environmentally sound packaging. We enable our customers and brand owners to make responsible labelling choices, from renewable raw materials to recyclability and reuse. Our high-quality label materials ensure that important product information is carried even in the most challenging conditions.

Read more about positive impact on UPM's website.
UPM complies with all recommendations of the Finnish Corporate Governance Code (CG Code) for listed companies, which is issued by the Finnish Securities Market Association. In accordance with the CG Code, we have published our Corporate Governance Statement (CG Statement) for the financial year 2021. It is available on the corporate website at www.upm.com/governance. We can refer to the CG Statement for information on:

- Our governance structure and management system
- The duties and responsibilities of the Board of Directors and its Committees
- The duties and responsibilities of our management bodies
- Our management and control procedures related to internal control, risk management, internal audit, insider administration and related party transactions

Our decision-making, management and operations are guided by our values and by the UPM Code of Conduct. Our governance structure supports good management, responsible business operations and compliance at all levels, with clear responsibilities and reporting lines.

**Governance framework**

The illustration below summarises the basic regulatory framework for our governance.

**General Meeting of shareholders**

Our Annual General Meeting (AGM) 2021 took place in Helsinki on 30 March 2021. The proposals of the Board of Directors and the Nomination and Governance Committee to the AGM were published in January and the notice of the AGM was published in February. In order to prevent the spread of the COVID-19 pandemic, the AGM was arranged under the Finnish temporary legislative act (677/2020) and held without the shareholders’ and their proxy representatives’ presence at the meeting venue. UPM also offered a proxy authorisation service, whereupon shareholders had the possibility to authorise an independent proxy representative nominated by the Company.

This exceptional AGM arrangement was necessary to ensure the health and safety of the shareholders, employees and other stakeholders, as well as to organise the meeting in a predictable way, allowing equal means for shareholders to participate while also ensuring compliance with the prevailing restrictions set by the authorities at that time. The sharehold- ers could participate and exercise their shareholder rights at the AGM by voting in advance, and by submitting counterproposals and asking questions in writing in advance. A total of 2,542 (2,524) shareholders were represented at the meeting and they represented 54.2% (52.0%) of the Company’s shares and voting rights at the time of the AGM. The AGM supported all the proposals, and all decisions at the meeting were made in accordance with the proposals by the Board of Directors, as well as the Board’s Nomination and Governance Committee.

The shareholders and the public were able to follow the whole meeting, including greetings by the Board Chair and a review of the year 2021 by the President and CEO through a webcast. The recorded speeches were further made available after the AGM on the corporate website at www.upm.com/agm2021.

For the year 2021, the Board of Directors has proposed a dividend of EUR 1.30 per share. Due to continued COVID-19 pandemic the meeting will be arranged under the Finnish temporary legislative act (375/2021). Shareholders can only participate and exercise their shareholder rights in the AGM by voting in advance via an electronic voting or proxy service provided by the Company as well as by submitting counterproposals and asking questions in writing prior to the meeting. The AGM, as well as speeches by the Chair of the Board and the President and CEO, can be followed through a webcast. Detailed instructions for shareholders are available on the corporate website at www.upm.com/agm2022.

1 April 2021. UPM’s Remuneration Report 2020 for governing bodies was presented to and adopted by the AGM for the first time. Information on other decisions made at the AGM can be found later on in this section and on the corporate website at www.upm.com/agm2021.

The AGM 2022 will be held on 29 March. For the year 2022, the Board of Directors has proposed a dividend of EUR 1.30 per share.
The new director, Jari Gustafsson (born 1959), is a Finnish citizen and holds a Master’s degree in Political Science from the University of Helsinki. Gustafsson has been the Ambassador of Finland to Greece and Albania since 2020. Previously, he has worked as the Permanent Secretary of the Ministry of Economic Affairs and Employment, Finland, as the Ambassador of Finland to the People’s Republic of China and Mongolia and as the Ambassador of Finland to Japan. He has also been a Board Member at the Export Bank for Reconstruction and Development (EBRD) UK and the Deputy Director-General at the Ministry for Foreign Affairs of Finland in the Department for External Economic Relations.

Board diversity

The overall aim of diversity is for the Board, as a whole, to have a broad range of skills, experience and perspectives, as well as knowledge of UPM and relevant industries, so that the Board can effectively accomplish its responsibilities, in particular those pertaining to strategy and risk management. With regard to other factors relevant to Board diversity, it is the Board’s objective to include an appropriate number of directors of different nationalities, ages, genders and lengths of service, as presented in the pie charts below. Information on the professional backgrounds of the Board of Directors and their other significant commitments is available on pages 112-113 of this report.

Board diversity – nationality

- Finnish, 56%
- Dutch, 11%
- Norwegian, 11%
- British, 11%
- Swiss, 11%

Board diversity – gender

- <5 years, 64%
- 5–10 years, 33%
- >10 years, 2%

Board diversity – tenure

- 2020: 33%
- 2021: 67%

Board diversity – education

- MSc., 1
- Ph.D., 3
- M. Sc. (Chem., Physics), 1
- M. Sc. (Finance), 1
- M. Sc. (Eng.), 1
- M. Sc. (Phil., Sci.), 1
- BA (Business Econ.), 1

ATTENDANCE AT BOARD AND COMMITTEE MEETINGS 2021

<table>
<thead>
<tr>
<th>DIRECTOR</th>
<th>ATTENDANCE / NO. OF BOARD MEETINGS</th>
<th>ATTENDANCE / NO. OF COMMITTEE MEETINGS</th>
<th>ATTENDANCE / NO. OF BOARD MEETINGS</th>
<th>ATTENDANCE / NO. OF COMMITTEE MEETINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Björn Wahlroos, Board and NGC Chair</td>
<td>9/9</td>
<td>100</td>
<td>6/6</td>
<td>100</td>
</tr>
<tr>
<td>Berndt Brunow, Deputy Chair and NGC member</td>
<td>9/9</td>
<td>100</td>
<td>6/6</td>
<td>100</td>
</tr>
<tr>
<td>Henrik Ehrensvåg, RC member, RC Chair as of 30 March</td>
<td>9/9</td>
<td>100</td>
<td>6/6</td>
<td>100</td>
</tr>
<tr>
<td>Emma FitzGerald, AC member until 30 March and as of 27 April, RC member as of 30 March</td>
<td>9/9</td>
<td>100</td>
<td>6/6</td>
<td>100</td>
</tr>
<tr>
<td>Jan Gustafsson, Board and AC member as of 30 March</td>
<td>9/9</td>
<td>100</td>
<td>6/6</td>
<td>100</td>
</tr>
<tr>
<td>Kari-Noora Kauppi, AC Chair until and NGC member as of 30 March</td>
<td>9/9</td>
<td>100</td>
<td>6/6</td>
<td>100</td>
</tr>
<tr>
<td>Marjaan Oudeman, AC member</td>
<td>9/9</td>
<td>100</td>
<td>5/5</td>
<td>100</td>
</tr>
<tr>
<td>Kim Wahl, RC member</td>
<td>9/9</td>
<td>100</td>
<td>6/6</td>
<td>100</td>
</tr>
</tbody>
</table>

NGC: Nominations and Governance Committee, RC: Remuneration Committee, AC: Audit Committee

The Board’s diversity principles are included in the Board and Committee Charters and, more specifically, in the Board’s Diversity Policy which is available at www.upm.com/governance. More information on UPM Board diversity related objectives and the results obtained is available in our CG Statement 2021.
The Board has also concluded that all directors are independent and able to exercise their duties without the risk of being influenced by conflicts of interest. The independence of the Board members is assessed based on the independence criteria set out in the Independence Principles. Each committee assesses Board members’ positions in the light of the independence criteria. In particular, the Corporate Governance Committee assesses Board members’ positions and the composition of its Board committees on an annual basis, with the assistance of the Remuneration and Governance Committee.

Director independence

The Board of Directors evaluates the independence of its members both annually and on a continuing basis, with the assistance of the Board’s Nomination and Governance Committee. Director independence is determined on the basis of the criteria of the Finnish CG Code. The majority of the members of the Board of Directors must be independent of the Company, and at least two of these independent members must be independent of any significant shareholders. The independence of the Board members is determined on the basis of the Committee’s annual proposal for the composition of the Board. The Committee assesses the independence of the members of the Board of Directors on a continuous basis. It also reviews a report on any changes in professional engagements and other commitments at each meeting to ensure that members are compliant with the independence guidelines. The Committee would be in a position to revise how such changes may affect the Board members’ availability for Board-related work and to consider how such changes may affect the Board’s current composition and that of its committees.

Director performance evaluation

In 2021, the Board continued to focus on the Board’s strategic investments, the pulp mill project in Uruguay and the biochemicals biorefinery in Germany. The Board has been closely monitoring the status and operations of the pulp mill project in Uruguay since 2016 and has conducted several status reviews, including risk assessments, in its meetings since then. The investment will raise UPM’s pulp production capacity by more than 50% and significantly contribute to future earnings. Read more on this strategic investment on pages 42–43 and on the corporate website at www.upm.com/growth.

The investment decision on the new biorefinery in Germany was made in January 2020 and the Board has regularly reviewed the project’s status and feasibility. The biorefinery will produce a range of 100% wood-based biochemicals that enable a switch from fossil raw materials to sustainable alternatives in various consumer-driven end-uses. Read more on this strategic investment on pages 56–57 and on the corporate website at www.upm-biochemicals.com/biorefinery.

Board performance evaluation

The Board of Directors conducts an annual evaluation of its performance and working methods, including an evaluation of the performance and working methods of its committees. In 2021, the evaluation was conducted as a self-evaluation in November and its results were reviewed and discussed at the Board meeting in December. The Board members evaluated the performance of the Board and its committees in relation to their respective duties and responsibilities, the Board and committee compositions and strategies, and the effectiveness of the Board and committee meetings, the individual performance of the Board members and the performance of the Chair of the Board.

The overall results of the 2021 self-evaluation were highly favourable and indicated that the Board, the Chair of the Board and the Board committees are performing effectively and efficiently. In particular, the Board committees are compliant with the independence criteria. The Board has approved the annual proposal for the composition of the Board of Directors on a continuous basis. It also reviews a report on any changes in professional engagements and other commitments at each meeting to ensure that members are compliant with the independence guidelines. The Committee would be in a position to revise how such changes may affect the Board members’ availability for Board-related work and to consider how such changes may affect the Board’s current composition and that of its committees.

Board-related work in 2021

The Board convened according to its original meeting schedule and held nine meetings in 2021. Its work was not disrupted, even during the COVID-19 pandemic. There is no minimum meeting attendance requirement for Board members. Instead, Board members are expected to attend all meetings unless there is a valid reason for not attending. The average attendance of the Board members at the Board meetings was 98.6% (95.6%), and at the Committee meetings 100% (95.9%). The personal attendance rate of each Board member is presented in the table on page 105. In connection with its meetings, the Board also held non-executive sessions and non-executive sessions with the auditor.

Board committees

The Audit Committee, with its three committees, was established to further improve the preparation of matters to be decided by the Board. The Board committees are responsible for overseeing the Company’s financial reporting processes and financial and reporting controls, internal control, internal audit and risk management, and for monitoring the Company’s audit and compliance procedures. In 2021, the Audit Committee held five meetings. The Committee’s self-evaluation as well as the Committee’s annual proposal for the composition of the Board committees and the appointment of committee members and Chairs were approved by the Board.

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The Audit Committee

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The Nomination and Governance Committee

The Nomination and Governance Committee assisted the Board in reviewing the composition, qualifications and duties of the Board committees and the Board members. Read more on this strategic investment on pages 56–57 and on the corporate website at www.upm-biochemicals.com/biorefinery.

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The overall results of the 2021 self-evaluation were highly favourable and indicated that the Board, the Chair of the Board and the Board committees are performing effectively and efficiently. In particular, the Board committees are compliant with the independence criteria.

The Audit Committee

The Audit Committee is responsible for reviewing the Company’s financial reporting processes and financial and reporting controls, internal control, internal audit and risk management, and for monitoring the Company’s audit and compliance procedures. In 2021, the Audit Committee held five meetings. The Committee’s self-evaluation as well as the Committee’s annual proposal for the composition of the Board committees and the appointment of committee members and Chairs were approved by the Board.

The overall results of the 2021 self-evaluation were highly favourable and indicated that the Board, the Chair of the Board and the Board committees are performing effectively and efficiently. In particular, the Board committees are compliant with the independence criteria.
Committee evaluated the qualifications and independence of the auditor, as well as the audit-related and non-audit-related services provided by the auditor. The evaluation included an assessment of the effectiveness of the audit process, the quality of the audit, the performance of the lead auditor and the audit team, and the co-operation with the auditor’s international audit network.

As a result of the evaluation, the Committee recommended to the Board the re-election of PricewaterhouseCoopers Oy as the Company’s auditor. The Board concurred with this proposal and has made a corresponding proposal to the AGM 2022. Following the stipulations of the Audit Regulation, the last financial year at PricewaterhouseCoopers Oy can act as the Company’s auditor is 2023.

According to PricewaterhouseCoopers Oy; Authorised Public Accountant Mikko Nieminen would continue as the lead audit partner.

Remuneration Committee
The Remuneration Committee is responsible for preparing the Company’s remuneration principles and practices, and for planning the remuneration and succession of the President and CEO as well as other senior executives.

In 2021, the Committee held six meetings. In addition to the Remuneration Committee’s assigned matters and regular reports as listed above, in 2021 it also focused on the Remuneration Report presented to the Board at the AGM 2022. Of the incumbent members, Rengel Manner will not be available for re-election. The Nomination and Governance Committee’s proposal on the composition of the Board in 2022, as well as the Board’s assessment of the independence of potential Board members, is included in the table above.

Executive management
Jussi Pesonen has been the President and Chief Executive Officer of UPM-Kymmene Corporation since January 2014. According to his service agreement, Jussi Pesonen is entitled to retire at the age of 60, and the President and CEO chairs the Group Executive Team. The compositions of these management bodies are presented in the table above.

Management responsibilities
Members of the Group Executive Team have primary responsibility for the business areas and global functions that they lead. These areas of responsibility are shown in the illustration above.

Remuneration
In accordance with the CG Code, we have published our Remuneration Report for the financial year 2021. The Remuneration Report and information on the remuneration of the Group Executive Team members is available on the corporate website at www.upm.com/governance.

Remuneration of the Board of Directors
In accordance with the Nomination and Governance Committee’s proposal at the AGM 2021, it was decided that the remuneration of the members of the Board of Directors be raised so that the Chair of the Board will be paid an annual base fee of EUR 195,000, the Deputy Chair of the Board EUR 140,000 and other members of the Board EUR 115,000. The annual committee fees remained unchanged.

The approved annual fees and total remuneration for all Board members, as well as the number of shares purchased, are presented in the tables on the next page. Board members do not receive any other financial benefits for their Board or Committee membership in addition to the annual base and committee fees. Travel and lodging expenses incurred from meetings held elsewhere than in a director’s place of residence were paid against invoice. Shares purchased for the Board members or Committee members from the respective Board member’s account have been transferred for two years from the purchase date (28 April 2022) or until the membership of the respective Board member has ended, whichever occurs first.

A long-standing custom at UPM to reimburse the costs of the Board’s members and the Chair of the Board is to be carried out in the current year.

Committee’s work载
The Nomination and Governance Committee is responsible for the composition, diversity and remuneration of the Board of Directors and corporate governance. If necessary, the committee also identifies individuals who are qualified to serve as the President and CEO.

In 2021, the Committee held six meetings. In addition to the Nomination and Governance Committee’s assigned matters and regular reports as listed above, in 2021 it also focused on the arrangements of the AGM under the Finnish temporary legislative act (687/2020) prevailing at the time. The Committee further reviewed and proposed certain rotation to the composition of the committees, as well as assisted the Board in the preparation of the Remuneration Report presented to the AGM for the first time.

The Nomination and Governance Committee conducted its annual review of the structure, size, composition, diversity and succession needs of the Board as a whole. This included whether the Board reflects an appropriate balance of sound judgement and a diverse range of business expertise, skills, experience, independence, availability of service to the Company and other desired qualities.

As a result of careful research and selection efforts, the Nomination and Governance Committee has proposed that Topi Kopparavsky be elected as a new member of the Board at the AGM 2022.

Responsibility areas of the members of the Group Executive Team
The Remuneration Committee is responsible for preparing the Company’s remuneration principles and practices, and for planning the remuneration and succession of the President and CEO as well as other senior executives. The nominations and governance committee’s proposal on the composition of the Board in 2022, as well as the Board’s assessment of the independence of potential Board members, is included in the table above.

Management responsibilities
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A long-standing custom at UPM to reimburse the costs of the Board’s members and the Chair of the Board is to be carried out in the current year.
Remuneration of executive management

Remuneration at UPM is designed to encourage our value-based behaviour and the achievement of ambitious strategic targets, as well as compensate performance accordingly. The aim of the remuneration process for the Company’s management team is to promote the Company’s long-term financial success, competitiveness and favourable development of shareholder value. Remuneration comprises fixed and variable components. These components are shown in the table on the right.

The variable components are linked to pre-determined and measurable performance criteria, and thresholds have been set for the payable amount. The payable amounts of incentives are linked to the management team member’s position, as well as their achievement of performance measures and targets set on an annual basis. The Company has the right to reclaim any paid or due variable remuneration under certain circumstances, such as violation of law or other legal obligation, or violation of the UPM Code of Conduct or other Company policies. Overall circumstances will be considered before exercising this right. The Company also has the right to cancel, recover or restate any paid or due variable remuneration in the event that financial or other calculations are found to be incorrect.

Salaries, benefits and incentives earned by the President and CEO and members of the Group Executive Team are shown in the tables on the right. In 2021, costs under the Finnish statutory pension scheme for the President and CEO amounted to EUR 329,000 (EUR 349,000). Payments under the voluntary pension plan amounted to EUR 1,221,000 (EUR 1,421,000). The President and CEO’s voluntary pension benefit was arranged through a defined contribution plan in 2021.

Remuneration in 2021

<table>
<thead>
<tr>
<th>DIRECTOR</th>
<th>ANNUAL BASE FEE (EUR) OF WHICH 40% FOR SHARES (EUR) 60% IN CASH (EUR)</th>
<th>ANNUAL COMMITTEE FEE (EUR)</th>
<th>TOTAL REMUNERATION (EUR)</th>
<th>NUMBER OF SHARES PURCHASED AS PART OF ANNUAL BASE FEE 5</th>
<th>TOTAL 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bjørn Wahlroos</td>
<td>78,000 117,000</td>
<td>20,000</td>
<td>215,000</td>
<td>2,838</td>
<td></td>
</tr>
<tr>
<td>Berndt Bränn</td>
<td>140,000</td>
<td>10,000</td>
<td>150,000</td>
<td>1,710</td>
<td></td>
</tr>
<tr>
<td>Hannik Ehnholm</td>
<td>46,000 69,000</td>
<td>20,000</td>
<td>155,000</td>
<td>1,405</td>
<td></td>
</tr>
<tr>
<td>Emma FitzGerald</td>
<td>46,000 69,000</td>
<td>23,000</td>
<td>160,000</td>
<td>1,405</td>
<td></td>
</tr>
<tr>
<td>Jari Gustafsson</td>
<td>46,000 69,000</td>
<td>15,000</td>
<td>150,000</td>
<td>1,405</td>
<td></td>
</tr>
<tr>
<td>Pio-Noora Kauppi</td>
<td>46,000 69,000</td>
<td>10,000</td>
<td>125,000</td>
<td>1,405</td>
<td></td>
</tr>
<tr>
<td>Marjan Oudemans</td>
<td>46,000 69,000</td>
<td>15,000</td>
<td>150,000</td>
<td>1,405</td>
<td></td>
</tr>
<tr>
<td>Martin O Porto</td>
<td>46,000 69,000</td>
<td>10,000</td>
<td>125,000</td>
<td>1,405</td>
<td></td>
</tr>
<tr>
<td>Kim Wihl</td>
<td>46,000 69,000</td>
<td>35,000</td>
<td>150,000</td>
<td>1,405</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1,140,000</td>
<td>160,000</td>
<td>1,300,000</td>
<td>13,928</td>
<td></td>
</tr>
</tbody>
</table>

1) As AGM 2021, An Puhlosen and Veli-Matti Reinikkala’s terms ended due to the announcement that they were not available for re-election. No Board fees were payable to them during the financial year 2021.
2) Transaction date 28 April 2021.
Chair of the Board
• Chair and member since 2008
• Chair of the Nomination and Governance Committee
• Independent of the Company and significant shareholders
• Born 1952, Finnish citizen
• Ph.D. (Econ.)
• UPM shares 270,700


Chair of the Board of Sampo plc. Board member of the Finnish Business and Policy Forum EVA and the Research Institute of the Finnish Economy ETIA. Board member of the Mannerheim Foundation.

Jorma Ollila

Deputy Chair of the Board
• Member since 2002, Deputy Chair since 2010
• Member of the Nomination and Governance Committee
• Independent of the Company and significant shareholders
• Born 1950, Finnish citizen
• B.Sc. (Bus.)
• UPM shares 316,462


Pia-Noora Kangas

Member since 2015
• Chair of the Remuneration Committee
• Independent of the Company and significant shareholders
• Born 1969, Finnish citizen
• M.Sc. (Econ.)
• UPM shares 12,719

President and CEO of KONE Corporation since 2014 and KONE Corporation’s Chief Financial Officer and Executive Board member 2009–2014. Previously worked for Goldman Sachs International 1998–2009, most recently as a Managing Director in the Investment Banking Division. Prior to this, various positions at UBS Limited 1994–1999. Member of the foundation Board of the International Institute for Management Development (IIMD, Switzerland) and member of the European Round Table for Industry (ERT).

Marjan Ouwendijk

Member since 2015
• Member of the Nomination and Governance Committee
• Independent of the Company and significant shareholders
• Born 1957, Finnish citizen
• LL.M.
• UPM shares 22

Member of the Audit Committee
• Member since 2012
• Independent of the Company and significant shareholders
• Born 1952, Dutch citizen
• LL.M., MBA
• UPM shares 8,163

Member of the European Round Table for Industry (ERT).

Kim Wahl

Member since 2015
• Member of the Remuneration Committee
• Independent of the Company and significant shareholders
• Born 1970, Swiss citizen
• M.Sc. (Eng.)
• UPM shares 20,413

Member of the European Round Table for Industry (ERT).

Martin 8. Forst

Member since 2016
• Member of the Nomination and Governance Committee
• Independent of the Company and significant shareholders
• Born 1959, Norwegian citizen
• MBA (Harvard)
• UPM shares 1,780


Member since 2016
• Member of the Audit Committee
• Independent of the Company and significant shareholders
• Born 1957, New Zealand citizen
• MBA
• UPM shares 1,360

Member of the European Round Table for Industry (ERT).

Samuli Paatero

Member since 2020
• Chair of the Audit Committee
• Independent of the Company and significant shareholders
• Born 1959, Finnish citizen
• LL.M., MBA
• UPM shares 8


Member since 2018
• Member of the Audit Committee
• Independent of the Company and significant shareholders
• Born 1958, Norwegian citizen
• MBA (Harvard)
• UPM shares 2,020

Chair of the Board of Manna 76, 1997–1999. Member of the Board of Directors of a number of other companies. Chair of the Supervisory Board of the Research Institute of the Finnish Economy, member of the Board of Directors of the Union Bank of Finland 1989–1992. Board member of the Finnish Business and Policy Forum EVA. Member of the Board of Directors of the Research Institute of the Finnish Economy, member of the Board of Directors of the Union Bank of Finland 1989–1992.

Member of the Board of Directors
GROUP EXECUTIVE TEAM

President and CEO
• M.Sc. (Eng.)
• Born 1969, Finnish citizen
• Member of the Group Executive Team since 2001, employed by the UPM Group since 1996
• UPM shares 596,549

Chief Financial Officer, Executive Vice President, UPM Energy
• M.Sc. (Tech.), MBA
• Born 1963, Finnish citizen
• Member of the Group Executive Team since 2008, employed by the UPM Group since 2003
• UPM shares 193,634

Executive Vice President, UPM Fibres
• Ph. D. (Eng.)
• Born 1965, German citizen
• Member of the Group Executive Team since 2013, employed by the UPM Group since 1998
• UPM shares 113,036

Executive Vice President, UPM Chemicals
• M.Sc. (Econ.), M.B.A
• Born 1969, Italian citizen
• Member of the Group Executive Team since 2011, employed by the UPM Group since 2004
• UPM shares 71,262

Executive Vice President, UPM Paper
• M.Sc. (Eng.)
• Born 1964, Finnish citizen
• Member of the Group Executive Team since 2008, employed by the UPM Group since 2005
• UPM shares 7,790

Executive Vice President, UPM Fine Papers
• M.Sc. (Eng.)
• Born 1965, Finnish citizen
• Member of the Group Executive Team since 2010, employed by the UPM Group since 2007
• UPM shares 7,990

Executive Vice President, UPM Packaging
• M.Sc. (Eng.)
• Born 1969, Dutch citizen
• Member of the Group Executive Team since 2008, employed by the UPM Group since 2005
• UPM shares 7,990

Executive Vice President, UPM Technologies
• M.Sc. (Eng.)
• Born 1972, Finnish citizen
• Member of the Group Executive Team since 2010, employed by the UPM Group since 2006
• UPM shares 56,972

Executive Vice President, UPM Communication Papers
• M.Sc. (Eng.)
• Born 1969, Italian citizen
• Member of the Group Executive Team since 2010, employed by the UPM Group since 2006
• UPM shares 56,972

Executive Vice President, UPM Coatings
• M.Sc. (Eng.)
• Born 1964, Finnish citizen
• Member of the Group Executive Team since 2008, employed by the UPM Group since 2005
• UPM shares 56,972

Executive Vice President, UPM Biomass
• M.Sc. (Eng.)
• Born 1965, German citizen
• Member of the Group Executive Team since 2010, employed by the UPM Group since 2007
• UPM shares 7,990

Executive Vice President, UPM PlasFib
• M.Sc. (Eng.)
• Born 1969, Finnish citizen
• Member of the Group Executive Team since 2010, employed by the UPM Group since 2007
• UPM shares 56,972

Executive Vice President, UPM Pulp
• B.Sc. (Eng.)
• Born 1969, Finnish citizen
• Member of the Group Executive Team since October 2020, employed by the UPM Group since 1994
• UPM shares 1,400


Chief Financial Officer, Executive Vice President, UPM Energy
• M.Sc. (Tech.), MBA
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Independent practitioner’s limited assurance report on UPM’s Corporate Responsibility reporting

Practitioner’s independence, other ethical requirements and quality control
We have complied with the independence and other ethical requirements of the International Ethics Standards Board for Accountants (IESBA Code), which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior.

Our multi-disciplinary team of corporate responsibility and assurance specialists possesses the requisite skills and experience within financial and non-financial assurance, corporate responsibility strategy and management, social and environmental issues, as well as the 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 management, including documentation and internal controls, that covers the framework of the quality system and the quality assurance procedures it has implemented.

We have performed our limited assurance engagements in accordance with the AA1000 AccountAbility Principles (2018) with moderate (limited) level of assurance.
Creating a Positive Impact in Local Communities

We create positive societal impacts, from the significant added value generated by our supply chain to fair wages and good working conditions. Today, we provide meaningful jobs for about 17,000 people in 46 countries. In many locations, we are a significant employer, taxpayer and partner to entrepreneurs, contributing positively to the development of local communities. We also support a number of good causes, from reading and learning to education and scientific research.

Read more about our positive impact on UPM’s website.
Report of the Board of Directors

UPM introduction and business model

As a frontrunner in forest industry, UPM provides sustainable solutions to the growing global demand for more sustainable and renewable materials and are recyclable. UPM invests in sustainable growth and innovates for a future beyond fossil fuels across six business segments: UPM Biofiliings, UPM Energy, UPM Raflatac, UPM Specialty Papers, UPM Communication Papers and UPM Plywood. The business areas are competitive with strong market positions. Each business area creates value to its stakeholders by operating separate business units 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 quality (High) 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

Clear roles and responsibilities

Group

- Portfolio strategy
- Capital allocation
- Code of Conduct
- Responsibility targets

Businesses

- Business area strategies
- Business target
- Control efficiency measures
- Value creation
- Ownership and societal value
- License to operate

Outcomes

- Top performance
- Competitive advantage
- Growth focus project
- Innovation

UPM 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 quality (High) 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 2021

The world economy recovered from the severe global recession of 2020. The year 2021 began with rising optimism about growth driven by an upswing in global output and consumer spending, as well as economic stimuli in developed countries. Global recovery continued throughout the year despite disruptions in global supply chains, inflationary pressure and the growing uncertainty caused by worsening geopolitical tensions. Global GDP growth is projected at 5.6% in 2021.

The year 2021 was marked by the pandemic recession. Domestic demand was strong, and the reopening of the economy made good progress. Global supply chain disruptions and disruptions globally in many supply chains, including logistics and energy, continued to impact on the availability and uncertainty on the price and availability of many raw materials and energy.

Safety and business continuity

UPM has implemented extensive precautionary measures to protect the health and safety of its employees in all its business areas. The measures were also taken to ensure business continuity and the progression of its strategic projects during the pandemic. Despite these efforts, UPM’s operations in Q3 were impacted by the supply chain disruptions and logistical challenges to large investment projects and maintenance shutdowns.

In April 2020 TVO announced that fuel loading into the OL3 reactor at the UPM Kymi pulp mill had been completed in August 2020, and the fuel loading was closed in January 2021.

Projects and maintenance shutdowns

The pandemic and the related health and safety measures added challenges to large investment projects and maintenance shutdowns. UPM’s transformative pulp project in Uruguay and biochemicals project in Germany are proceeding with strict health and safety controls. Despite these efforts, some delays in project completion and costs of the projects are the possible during the pandemic, the related containment measures and the current market demand is influenced by the global economic situation. Demand for graphic papers is more prone to be impacted by the lockdowns around the world. The lockdowns limit a wide range of consumer-driven services and retail, as well as work at the office.

Demand for advanced renewable Nashville and naphtha continued to be impacted by the lockdowns around the world.

The lockdown and the level of economic activity may also influence demand for the related pulp mill. In Q2 2020, graphic paper demand in Europe decreased by 32% from the previous year, as particularly advertising driven paper consumption and office paper demand being impacted by the lockdowns across Europe. These impacts moderated to some extent as the year progressed, and graphic paper demand decreased by 18% in Q3 2020 and by 14% in Q4 2020 year-on-year. During Q1 2021 the pandemic, and the related containment measures continued to impact on the market demand and environment, and graphic paper demand decreased by 14% from last year. In Q2 2021, as economies in Europe started to gradually open, demand for office paper in China increased sharply in H1 but decreased below the long-term average price levels in H2.

Market demand for plywood in Europe was strong. Demand for structural plywood was driven by high levels of activity in the building and construction sectors, as well as for housing good in panel production, vehicle flooring and construction-related industrial applications. Market prices increased in many end-uses.

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The COVID-19 pandemic, the related containment measures around the world and rapid changes in the global economy continue to represent significant uncertainty.

Global economy

The COVID-19 pandemic and the related containment measures resulted in a sharp decline in the global economy in 2020. During the first phase of the recession, the pandemic containment measures and lockdowns around the world severely limited or temporarily stopped significant parts of the non-essential business and consumer activities. The world economy started to recover, but it is uncertain how long the lasting recession will be and how long it will take to fully recover. The economies in different parts of the world remain possible.

The recovery in the global economy from the deep downturn in 2020 will be slow and uneven. After a sharp and swift decline and disruptions globally in many supply chains, including logistics and energy, continued to impact on the availability of many raw materials and energy.

 demand during the pandemic. In 2021, the global economy has
demand in H2, while remaining at a good level.

Market prices increased in H1 and declined in H2, while remaining at a good level.

Market prices increased in H1 and declined in H2, while remaining at a good level.

Market prices increased in H1 and declined in H2, while remaining at a good level.

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Financing
UPM’s financial position is strong. UPM’s net debt was EUR 647 million at the end of 2021. Cash funds and unused committed credit facilities totalled EUR 2.5 billion at the end of 2021. This includes the sustainability-linked EUR 750 million committed syndicated revolving credit facility of which EUR 50 million is maturing in 2025 and EUR 700 million is maturing in 2026 and EUR 159 million equivalent overdraft facility. During Q4 2020, UPM successfully issued a EUR 750 million Green Bond under the EMTN (Euro Medium Term Note) programme. A second EUR 500 million Green Bond was issued in Q1 2021.

Key figures

<table>
<thead>
<tr>
<th>2021</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net debt, EURm</td>
<td>647</td>
<td>56</td>
</tr>
<tr>
<td>Capital employed at the end of period, EURm</td>
<td>13,759</td>
<td>11,555</td>
</tr>
<tr>
<td>Equity per share at the end of period, EUR</td>
<td>20.34</td>
<td>17.53</td>
</tr>
<tr>
<td>Operating cash flow per share, EUR</td>
<td>2.34</td>
<td>1.05</td>
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<tr>
<td>Comparable EPS, EUR</td>
<td>2.22</td>
<td>1.37</td>
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<tr>
<td>Return on equity (ROE), %</td>
<td>12.7</td>
<td>7.5</td>
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<tr>
<td>Return on capital employed (ROCE), %</td>
<td>12.4</td>
<td>6.7</td>
</tr>
<tr>
<td>Comparable ROCE, %</td>
<td>11.7</td>
<td>8.3</td>
</tr>
<tr>
<td>Operating cash flow, EUR</td>
<td>1,290</td>
<td>1,005</td>
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<tr>
<td>Operating cash flow per share, EUR</td>
<td>2.34</td>
<td>1.89</td>
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<td>Equity per share at the end of period, EUR</td>
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<tr>
<td>Net debt, EUR</td>
<td>647</td>
<td>56</td>
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<tr>
<td>Net debt to EBITDA</td>
<td>0.35</td>
<td>0.04</td>
</tr>
<tr>
<td>Number of the end of period</td>
<td>16,956</td>
<td>18,014</td>
</tr>
</tbody>
</table>

> Refer Other financial information - Alternative performance measures for definitions of key figures.

Results

2021 compared with 2020

Sales in 2021 were EUR 16.9 billion, 14% higher than the EUR 15.0 billion for 2020. Sales increased in all business areas, driven by higher sales prices and delivery volumes.

Comparable EBIT and EBITDA increased by 55% to EUR 1,471 million, 15.0% of sales (948 million, 11.1%). Sales prices increased for UPM Biofinning, UPM Energy, UPM Specialty Papers, UPM Raflatac and UPM Plywood and decreased for UPM Communication Papers.

Variable costs increased in all business areas, especially in UPM Communication Papers, UPM Specialty Papers and UPM Raflatac. At the level, the positive impact of higher sales prices more than offset the negative impact of higher variable costs.

Delivery volumes were higher in all business areas. Fixed costs decreased by EUR 2 million. Costs in the comparison period were reduced by temporary measures to adjust to the COVID-19 pandemic. The industry-wide strike in Finland impacted both delivery volumes and fixed costs in Q1 2020.

Depreciation, excluding items affecting comparability, remained stable at EUR 463 million (474 million) including depreciation of leased assets totalling EUR 74 million (73 million). The change in the fair value of forest assets net of wood harvested was EUR 111 million (23 million).

Operating profit totalled EUR 1.562 billion (761 million). Items affecting comparability in operating profit totalled EUR 91 million in the period (187 million), including the EUR 133 million gain on the sale of Shotton Mill in UPM Communication Papers business area and EUR 50 million impairment charges of newsprint related assets in 2020. The items affecting comparability in operating profit included EUR 90 million in relation to the restructuring charges related to the closure of the UPM Chapelle paper mill, EUR 85 million in restructuring charges related to the closure of the Jyväskylä plywood mill, EUR 6 million in charges related to the restructuring of the functions of UPM Communication Papers, EUR 9 million in charges related to restructuring of the functions of UPM Raflatac, EUR 12 million on the sale of the group’s share in Kainuu Voima Oy and EUR 11 million on the sale of other noncurrent assets.

Net interest and other finance income and costs were EUR 12 million (26 million). The exchange rate and fair value gains and losses were EUR 3 million (2 million). Income taxes totalled EUR 240 million (169 million). Profit for 2021 was EUR 1.307 billion (568 million), and comparable profit was EUR 1.204 billion (737 million).

Financing and cash flow

In 2021 cash flow from operating activities before capital expenditure and other finance income and costs was EUR 1.250 billion (1.055 billion). Working capital increased by EUR 115 million (93 million). Net debt was EUR 647 million at the end of 2021 (56 million). The gearing ratio as of 31 December 2021 was 6% (1%). The net debt to EBITDA ratio, based on the last 12 month of EBITDA, was 0.33 as of the period (0.04).

On 31 December 2021 UPM’s cash funds and unused committed credit facilities totalled EUR 1,250 million (1,055 million). This includes the sustainability-linked five-year EUR 750 million revolving credit facility signed in Q1 2020 and the EUR 159 million equivalent revolving credit facility.

On 13 November 2020 UPM issued a EUR 750 million Green Bond and on 15 March 2021 UPM issued a EUR 300 million Green Bond under its EMTN (Euro Medium Term Note) programme. A second EUR 500 million Green Bond under its EMTN (Euro Medium Term Note) programme.

A dividend of EUR 1.30 per share (totaling EUR 693 million) was paid on 12 April 2021 for the 2020 financial year.

Capital expenditure

In 2021, capital expenditure totalled EUR 1.483 billion, which was 15.1% of sales (903 million, 10.5% of sales). Capital expenditure does not include acquisitions to leased assets.

In 2022, UPM’s total capital expenditure, excluding investments in shares, is expected to be about EUR 1.5 billion, which includes estimated capital expenditure of approximately EUR 1.3 billion in transformative projects. Transformative projects consist of the new pulp mill, port operations, local investments outside the mill fence in Uruguay. The updated schedule for the start-up of the facility is by the end of 2023.

In December 2021, UPM announced that it is investing EUR 10 million in the development of UPM Plywood’s plywood mill in Joensuu, Finland. The investment includes new production lines, new workshops and 720 square metres of completely new production space.

Personnel

In 2021, UPM had an average of 17,512 employees (18,557). At the beginning of the year the number of employees was 18,014 and at the end of 2021 it was 16,966.

Further information about personnel is available in our People section in UPM Annual Report 2021.

Uruguay pulp mill investment

On 23 July 2019, UPM announced that it would invest USD 2.72 billion in a 2.1 million tone greenfield eucalyptus pulp mill near Paso de los Toros, central Uruguay. Additionally, UPM would invest approximately USD 280 million in port operations in Montevideo and USD 70 million in local investments outside the mill fence, including a new residential area in Paso de los Toros. In May 2020, an electrical grid reinforcement investment of USD 70 million was added to the scope of the project to fully utilize and sell the surplus energy of the mill.

The investment will grow UPM’s current pulp capacity by more than 50%, resulting in a step change in the scale of UPM’s pulp business as well as in UPM’s future earnings.

With a combined competitive wood supply, scale, best available techniques and efficient logistics, the mill is expected to reach a highly competitive cash cost level of approximately USD 280 per tonnes delivered to pulp. This figure includes the variable and fixed costs of plantation operations, wood sourcing, mill operations and logistics delivered to the main markets. Furthermore, the safety and sustainability performance of the value chain from plantations to customer delivery is expected to be on an industry-leading level.

Competitive wood supply

Eucalyptus availability for the mill is secured through UPM’s own and leased plantations, as well as through wood sourcing agreements with private partners. The plantations in Uruguay cover 466,000 hectares. They will supply the current UPM Fray Bentos mill and the new mill near Paso de los Toros.

Additional investments in plantations totalling EUR 1,500 million, which includes EUR 1,300 million for new eucalyptus plantations in Uruguay. Additionally, UPM would invest approximately EUR 200 million in wood sourcing, mill operations and logistics. The estimated capital expenditure of approximately EUR 1,300 million in new eucalyptus plantations in Uruguay. Additionally, UPM would invest approximately EUR 200 million in wood sourcing, mill operations and logistics. The estimated capital expenditure of approximately EUR 1,300 million in new eucalyptus plantations in Uruguay.
The mill has been designed as an efficient single-line operation. The pulp mill has been planned to secure the opportunity to use the latest technology and standards enabling a high level of safety and sustainability of the value chain. When commissioned, the mill will generate more than 110 MW surplus of power, and the environmental permits enable further capacity potential. When in operation, the mill will decrease by 43% the GHG emissions of its production process and meet the highest safety standards. Its power generation will be CO2-free and TVO will have a secure solution for the final disposal of used residues.

Events during the year 2021

On 19 January, UPM announced that it would invest EUR 13 million in the pulp mill at UPM Raflatac in Poland. The investment will increase UPM Raflatac’s Direct Thermal (DT) linerless annual production capacity by 100 million m². The startup of the new production line is expected in 2022.

On 28 January, UPM announced that it moved forward with biofuels strategy. In the quarter, UPM started a biofuels business development programme and its Green Finance Framework. The bond matures in 2024.

On 26 February, UPM announced that it has joined The Climate Pledge, a cross-sector community of world-class companies working together to crack the climate crisis and decarbonise our economy. These companies are committed to reach the targets of the Paris Agreement well in advance.

On 27 May, UPM announced that it has issued a new EUR 500 million Green Bond under its EMTN (Euro Medium Term Note) programme. The bonds mature in March 2023 and pay a fixed coupon of 0.50%.

On 19 March, UPM announced that it has applied for listing of a EUR 500 million Green Bond under its Euro Medium Term Note (EMTN) programme on the Irish Stock Exchange plc, trading as Euronext Dublin. The bond will be listed under the medium-term note programme of UPM Tampa Timber Oyj. Under the Euronext Dublin listing, the bond will be traded in the Irish market. This listing will support UPM’s ambition to be a green leader in its industry.

Biocombustible refinery investment

In January 2021, UPM announced that it moves forward with biofuels growth plans and starts the basic engineering phase of next generation biorefinery. The biorefinery will produce 20% of UPM’s annual wood-based renewable fuel needs in its pulp mills and power plants. The refinery will convert wood biomass-based residues and side streams into high-quality renewable fuels including biofuels and biochemicals. In the feedstocks, wood biomass-based residues and side streams play a significant role.

UPM is proceeding with a detailed commercial and basic engineering project of this biorefinery investment. UPM will continue to cooperate with the existing and new suppliers to estimate the potential biorefinery capacity.

During the study UPM has completed site assessments in two locations: Kotka, Finland and Rotterdam, the Netherlands. Work continues in both locations, where the highest carbon footprint of the project will be obtained from the chemical processes. The environmental benefits of the UPM Biorefinery and the UPM Biofuels business development programme will be well aligned with the targets set by the Paris Agreement and UPM’s Sustainability Roadmap.

The potential biorefinery would have an annual capacity of 500,000 tonnes of high-quality renewable fuels including biofuels and biochemicals. The potential refinery would significantly reduce the carbon footprint of road transport and aviation, as well as replace fossil raw materials, enabling a better resource efficiency. Work continues in both locations and the final decision will be made after the feasibility study is completed.

Biofuels business development

In January 2021, UPM announced that it moves forward with biofuels growth plans and starts the basic engineering phase of next generation biorefinery. The biorefinery would have an annual capacity of 500,000 tonnes of high-quality renewable fuels including biofuels and biochemicals. In the feedstocks, wood biomass-based residues and side streams play a significant role.

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On 23 March, the fuel loading of the O3 EFR unit started.

On 30 March, UPM held its Annual General Meeting.

On 14 April, UPM announced that it aims to increase the efficiency of its global functions by reorganising and streamlining operations in Finland, Germany, and Austria. The employee consultation process was completed in Finland in June and in Germany and Austria in July. As a result, the number of employees will decrease by 35%.

On 15 April, UPM announced that it has improved its outlook for 2021.

On 27 April, Emma Flajerald was appointed as the fourth member of UPM’s Audit Committee.

On 5 May, UPM received a rating of AAA in the MSCI ESG Ratings assessment.

On 14 May, UPM announced that it has signed an agreement to sell its Shotton newsprint mill site in North Wales, United Kingdom and all related assets to Enoren Paper Ltd.

On 29 June, UPM announced that UPM Raflatac has completed its employee consultation processes. As a result, the number of positions at UPM Raflatac will decrease by 12%.

On 6 July, global sustainability ratings provider EcoVadis recognised UPM on the highest Platinum level for its sustainable performance in 2021. The assessment is based on UPM’s performance as a supplier.

On 20 September, UPM announced that it has been recognised as one of the world’s 37 most sustainable companies by the UN Global Compact. UPM has had LEAD status since 2016.

On 30 September, UPM announced that the transaction of UPM Shotton newsprint mill was closed and newsprint production has ended. The gain on sale of the mill amounted to EUR 133 million.

On 12 October, UPM announced that European Commission’s competition authorities had started an unannounced inspection at UPM’s pulp mill in Joensuu, Finland.

On 18 October, UPM announced that its offer to Kaipola Green Port Oy. UPM closed the Kaipola mill site in Jämsä, Finland, to Kaipola Green Port Oy. UPM closed the Kaipola mill site in Jämsä, Finland, to Kaipola Green Port Oy.

On 20 October, UPM announced that it has signed an agreement to sell its Chapple Darby newsprint mill in Grand-Couronne, France, site to a consortium of two partners Sambi and Papes France SAS. UPM has permanently ceased production at its Chapple Darby newsprint mill in June 2020.

On 18 October, UPM announced that it has sold the Kaipola mill site in Jämsä, Finland, to Kaipola Green Port Oy. UPM closed the Kaipola mill site permanently in January 2021.

On 15 November, UPM announced that it has been listed in the Dow Jones European and World Sustainability Indices (DJSI) for 2021-2022 as the only company in its industry.

On 7 December, UPM announced that it has been recognised with a CDP ‘A’ score for its sustainable forestry operations.

On 13 December, UPM announced that it is investing EUR 10 million in the development of UPM Plywood’s plywood mill in Jämijärvi, Finland. The investment includes new production lines, new workshops and 720 square meters of completely new production space.

On 14 December, UPM announced that the Finnish Paperworkers’ Union has issued a strike envelope to UPM, declaring a three-week’s strike to all the working paper industry collective agreement at UPM.

On 21 December, the O3 EFR unit started up.

Events after the balance sheet date

On 1 January, UPM announced that members of the Paperworkers’ Union, the Finnish Electrical Workers’ Union and the Trade Union Pro have started strikes at UPM mills in Jämijärvi, Kouvola, Lappeenranta, Pietarsaari, Rauma, Tampere and Valkeakoski. UPM businesses working under the strikes in Finland are UPM Pulp, UPM Biofuels, UPM Communication Papers, UPM Specialty Papers and UPM Raflatac. According to the unions, the strikes would continue until 22 January 2022 unless a new collective labour agreement is reached before that. The duration of the strike has since been extended twice (on 5 January and 20 January) by the Paperworkers’ union and currently is due to last until 19 February 2022, unless new agreements are reached before that.

Outlook for 2022

UPM’s earnings recovered to the strong pre-pandemic level in 2021 and overall, 2022 is expected to be another good year for the company. There are significant uncertainties in the outlook for 2022, related to the ongoing pandemic, continuation of the global economic recovery, the unusual energy market situation, tight raw material supply chains, and the labour negotiations in Finland.

The gain on sale of the mill amounted to EUR 133 million.

In the early part of the year, production and earnings are expected to be affected at the Finnish units of UPM Pulp, UPM Biobased, UPM Raflatac, UPM Specialty Papers and UPM Communication Papers.

Sales prices for many UPM products are expected to increase in the beginning of 2022, most notably the graphic and specialty paper sectors.

Many variable cost items are expected to increase in 2022 or stay at an elevated level. UPM will continue to manage margins with product pricing, optimising its product and market mix, efficient use of assets as well as by taking measures to improve variable and fixed cost efficiency.

UPM’s comparable EBIT in H1 2022 is expected to be on similar level compared to H1 2021.

Sales

Sales, EURm 2,945  2,183

Comparable EBITDA, EURm 1,016  348

% of sales 34.5  15.9

Change in fair value of forest assets and wood harvested, EURm -9 -8

Share of results of associates and joint ventures, EURm 2 2

Depreciation, amortisation and impairment charges, EURm -191 -176

Operating profit, EURm 817  166

% of sales 27.8  7.6

Items affecting comparability in operating profit, EURm - -

Comparable EBIT, EURm 817  166

% of sales 27.8  7.6

Capital employed (average), EURm 4,437  3,620

Comparable ROCE, % 18.4  4.6

Pulp deliveries, 1,000 1,548  1,035

2021 compared with 2020

Comparable EBIT increased due to significantly higher pulp and timber sales prices.

The average price in euro for UPM’s pulp deliveries increased by 35%.

Market environment

• In China, chemical pulp demand growth was slowing down in 2021 though showing some improvement at the end of the year. In Europe, demand in Europe was good in 2021. In 2021, the average European market price in euro was 27% higher for NBSK and 44% higher for BHPF. Compared with 2020, the average market price in US dollars was 46% higher for NBSK and 42% higher for BHPF, compared with 2020.

• Strong demand for advanced renewable diesel and naphtha.

• Naphtha markets for paper chemicals were at a high level.

Sources: FOEX, UPM

UPM Biorefining

UPM Biorefining consists of pulp, timber and Biofuels businesses. UPM Pulp offers a wide range of pulp grades, while Timber offers certified sawn timber and UPM Biofuels produces lignocellulosic-based renewable diesel for diesel engines and renewable naphtha that can be used for replacing fossil raw materials in the petrochemical industry.

UPM Energy

UPM Energy generates cost-competitive, carbon-neutral electricity and heat for industrial electricity consumers as well as services to industrial electricity consumers and producers.
In Asia, demand was particularly strong in H1 2021. In H2, demand decreased below long-term average price levels.

## UPM Raflatac

UPM Raflatac offers innovative and sustainable self-adhesive label materials for branding and promotion, information and packaging, food, beverage, personal care, pharmaceutical and logistics segments, for example.

### Comparable EBIT

<table>
<thead>
<tr>
<th>Year</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>1,671</td>
<td>1,560</td>
</tr>
<tr>
<td>Comparable EBIT, EURm</td>
<td>223</td>
<td>214</td>
</tr>
<tr>
<td>% of sales</td>
<td>13.3</td>
<td>13.3</td>
</tr>
<tr>
<td>Comparable ROCE, %</td>
<td>60.2</td>
<td>39.3</td>
</tr>
</tbody>
</table>

1) Items affecting comparability include restructuring charges.

## UPM Specialty Papers

UPM Specialty Papers offers labelling and packaging materials as well as office and graphic papers for labelling, commercial printing, food, beverage, personal care, pharmaceutical and logistics segments, for example.

### Comparable EBIT

<table>
<thead>
<tr>
<th>Year</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>1,535</td>
<td>1,420</td>
</tr>
<tr>
<td>Comparable EBIT, EURm</td>
<td>129</td>
<td>120</td>
</tr>
<tr>
<td>% of sales</td>
<td>8.7</td>
<td>8.5</td>
</tr>
<tr>
<td>Comparable ROCE, %</td>
<td>57.9</td>
<td>34.0</td>
</tr>
</tbody>
</table>

1) Items affecting comparability include restructuring charges.

## UPM Communication Papers

UPM Communication Papers offers an extensive product range of sustainability-produced graphic papers for labelling and printing as well as office and graphic use.

### Comparable EBIT

<table>
<thead>
<tr>
<th>Year</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>3,577</td>
<td>3,333</td>
</tr>
<tr>
<td>Comparable EBIT, EURm</td>
<td>150</td>
<td>134</td>
</tr>
<tr>
<td>% of sales</td>
<td>4.2</td>
<td>4.0</td>
</tr>
<tr>
<td>Comparable ROCE, %</td>
<td>56.9</td>
<td>50.0</td>
</tr>
</tbody>
</table>

1) Items affecting comparability include restructuring charges.

## UPM Plywood

UPM Plywood offers high quality WISA® plywood and veneer products for construction, vehicle flooring, LNG shipbuilding, parquet manufacturing and other industrial applications.

### Comparable EBIT

<table>
<thead>
<tr>
<th>Year</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>492</td>
<td>402</td>
</tr>
<tr>
<td>Comparable EBIT, EURm</td>
<td>17</td>
<td>33</td>
</tr>
<tr>
<td>% of sales</td>
<td>3.5</td>
<td>8.2</td>
</tr>
<tr>
<td>Comparable ROCE, %</td>
<td>25.1</td>
<td>11.2</td>
</tr>
</tbody>
</table>

1) Items affecting comparability include EUR 15 million restructuring charges and EUR 1 million impairment charges related to Jyväskylä plywood mill closure in 2020. In 2021, items affecting comparability include EUR 17 million restructuring charges and EUR 1 million impairment charges related to closure of Jyväskylä plywood mill.

## Market environment

- **Global** demand for self-adhesive label materials continued healthy in 2021. However, supply constraints towards end of the year held back market growth somewhat.
- **In Asia**, demand was particularly strong in H1 2021. In H2, demand was softening.
- **In Europe and in the Americas**, the robust demand growth continued from the previous year.

### Results

- **Comparable EBIT decreased due to higher input costs. Sales prices increased and delivery volumes were higher.**

#### Market environment

- **Global demand** for labels, release and packaging paper was good in 2021. Demand was driven by fast moving consumer goods and e-commerce. Market prices increased.
- In H1 2021, fine paper market prices in Asia-Pacific region was good but in H2 2021 demand became weaker.
- In H1 2021, fine paper market prices in China increased sharply from the previous year. However, in H2 2021 market prices decreased below long-term average price levels.

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**Comparable EBIT decreased due to higher input costs. Sales prices increased and delivery volumes were higher.**

**Market environment**

- **In Europe** demand for graphic papers in Europe was 4% higher than in 2020. Newsprint demand decreased by 1%, magazine papers increased by 1% and fine papers increased by 10% compared to 2020.
- In 2021, publication paper prices in Europe remained unchanged and fine paper prices were 1% higher compared to 2020.
- In 2021, demand for magazine papers in North America is estimated to have increased by 1% compared to 2020. The average price in US dollars for magazine papers increased by 11% compared to 2020.

Sources: PPI/RISI, Euro-Graph, PPPC
At the Annual General Meeting held on 30 March 2021, the number of members of the Board of Directors was confirmed as nine instead of the previous ten, and Berndt Brunow, Henrik Ehrnrooth, Emma FitzGerald, Kim Wahlroos and Björn Wahlroos were re-elected to the Board. Jari Gustafsson was elected as a new director to the Board. The directors’ term of office will be from the annual general meeting held in 2021 to the annual general meeting held in 2022.

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ACCOUNTS FOR 2021

and related disputes and entered into force in late March 2018. French state. The 2018 GSA concerns the completion of the OL3 project from a consortium formed by Areva GmbH, Areva NP SAS and approximately 31%.

UPM's indirect share of OL3 is majority shareholder of Teollisuuden Voima Oyj (TVO). TVO is in the Olkiluoto site (OL3). When completed, OL3 will supply electricity to its shareholders on a cost-price principle (so called 'Mankala-principle') increases the historical costs of the property, plant and equipment in its balance sheet.

As announced by TVO, the fuel loading of OL3 was completed in April 2021. UPM has contracted with Areva, the Supplier party, was preparing a financial solution to ensure necessary funding to complete the OL3 project. On 17 May 2021 TVO announced that TVO and Supplier also negotiated on the terms of completing the OL3 project, and the key matters are:

are-TVAs companies' trust mechanism, set up in the GSA 2018, to be in force for a period of 12 years and other conditions with respect to the beginning of January 2021.

According to TVO, the OL3 project company would not be able to cover their own costs as of 12 January 2021. In the case that the Supplier consortium companies would not complete the OL3 project until the end of February 2022, they would pay additional compensation for delays, depending on the date of completion.

On June 3, 2021 TVO announced that it had signed agreements regarding amendments to the GSA 2018 with Supplier consortium companies and Arena group parent company Arena SA. The agreements regarding the amendments to the GSA 2018 entered into force on 12 July 2021, when all related conditions were fulfilled.

For example, result in interruption or downsizing of production, change in the product mix or increased competition due to price or quality. For example, export ban policies to protect forests or to bolster their domestic timber industry, which may have a material effect on the availability and cost of wood. It is also uncertain how the EU energy policies may affect the availability and cost of energy.

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Despite these efforts, some changes to the detailed timeline of Germany are proceeding with strict health and safety controls, but effecting UPM’s operations. For example, in October 2021 the use of intermediaries when applying for permits and licences. The UPM Code of Conduct sets the standards of responsible practices including anti-corruption, competition law, human rights, responsible sourcing and environmental matters. Partnership arrangements may also be too rigid to enable timely changes required, for example, in connection with changes in the market conditions or the economy. UPM’s partners may have different targets and initiatives to those of UPM. Although UPM may not have sole control over strategic direction and operational output of these entities, its partners may have the right to make decisions on key business matters with which UPM does not agree. In some cases, strategic partners may choose not to continue partnerships that they previously had.

Lithuania

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UPM ANNUAL REPORT 2021

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All of UPM’s production plants are located in areas where there is sufficient water available. In 2021, a comprehensive water risk analysis confirmed the earlier results, and provided scenarios for 2030 and 2050. The water used by UPM plants comes from rivers, lakes or groundwater resources. UPM uses water responsibly in terms of the company’s water consumption and effluent quality. If the price of raw water were to increase by EUR 0.01 per cubic metre, it would mean additional water costs of approximately EUR 4 million annually. In 2021, wastewater volume decreased by 12% per tonne of paper and removed on the lime kilns and electrostatic precipitator at UPM Kymi pulp mill’s lime kiln to reduce dust emissions. The company-wide Clean Run programme, launched in 2012, aims to improve UPM’s environmental performance by bringing environmental issues to the forefront of everyday work. All sites systematically follow up on deviations, proactively report observations and near misses, carry out walk and discussions, and compile detailed risk assessments. Despite the global pandemic, approximately 1,400 [1,700] environmental walks were organised and 2,500 (2,700) preventive environmental observations and near misses were reported in 2021.

Until 2020 there has been a significant decrease in the number of environmental incidents since UPM’s implementation of its Environmental Management System in 2007. A total of 1 (1) environmental contraventions of obligations occurred in 2021, of which 1 (1) was related to air, and 1 to water and one to soil. All deviations were immediately reported to the authorities and, where relevant, to local stakeholders. Appropriate measures were taken to normalise the situation, and will be taken to prevent similar occurrences. No major environmental incidents occurred in UPM production plants in 2021.

As part of Clean Run development, UPM launched in 2021 a new project to collect, share and improve the implementation of environmental best practices across all operations. A best practice can be a procedure, instruction, practice or technology, worth sharing with others who could benefit from knowing it and possibly implementing it.

Climate
The management of climate change related issues is integrated to management of other non-financial risks. In 2021, UPM took a number of measures to normalise the situation, and will be taken to prevent such occurrences. No major environmental incidents occurred at UPM production plants in 2021.

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In 2020, the European Union’s Sustainable Finance Classification System (EU Taxonomy Regulation, 2020/852) was published. In 2021, the European Commission adopted the related EU Disclosures Delegated Act, which requires large financial and non-financial companies to provide information to investors about the environmental performance of their assets and economic activities. In annual reports published in 2022, large companies need to start to report the proportion of their economic activities that are considered as Taxonomy-eligible. An eligible economic activity is an activity that is included in the scope of delegated acts adopted pursuant to the Taxonomy Regulation. In 2023, large companies need to report activities that are considered as Taxonomy-aligned, i.e. which comply with the criteria for environmentally sustainable economic activities. In the beginning, the focus is on activities contributing to climate objectives, climate change mitigation and adaptation, according to the EU Climate Delegated Act and the EU Climate Law.

Based on the regulation, UPM has carried out an assessment to identify the economic activities which would be eligible i.e. included in the scope of EU Taxonomy. The assessment was carried out with the support of UPM financials and businesses, and led by UPM’s finance and responsibility teams. EU NACE Classification (Statistical Classification of Economic Activities in the European Community) was used as reference in activity identification. In 2022, UPM will continue the assessment with a thorough evaluation of the alignment of activities with the sustainability criteria defined in the regulation.

The identified eligible activities focus on the climate change mitigation objective. The identified activities are: sustainable forest management, hydropower generation, biofuels and biomaterials businesses, paper production from mostly recycled content, part of renewable energy generation, sales of heat to local communities, part of the ongoing investment in a biochemicals refinery in Germany, some water transportation activities as well as R&D activities towards a future beyond fossils. In addition, water and wastewater related activities have been considered in the assessment. However, as those are not products or services of UPM, they are not currently contributing to UPM turnover, those activities have not been considered as Taxonomy-eligible activities. UPM’s main business activities are not included in the scope of EU Taxonomy.

The identified eligible activities correspond with following categories of the EU Taxonomy:

<table>
<thead>
<tr>
<th>Activity no.</th>
<th>EU Taxonomy activity</th>
<th>UPM activity</th>
<th>Relevant for turnover</th>
<th>Relevant for CapEx</th>
<th>Relevant for OpEx</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Afforestation</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>1.3</td>
<td>Forest management</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>3.1d</td>
<td>Manufacture of organic base chemicals</td>
<td></td>
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<td>Manufacture of logs and biomass for use in transport</td>
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</tr>
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<td>X</td>
</tr>
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<td></td>
<td></td>
<td>X</td>
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<tr>
<td>6.10</td>
<td>Sea and coastal freight water transport, vessels for port operations and ancillary activities</td>
<td></td>
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<tr>
<td>9.1</td>
<td>Close to market research, development and innovation</td>
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<table>
<thead>
<tr>
<th>Taxonomy-eligible activities</th>
<th>Preportion of turnover</th>
<th>%</th>
<th>Absolute CapEx, EURm</th>
<th>Preportion of CapEx</th>
<th>%</th>
<th>Absolute OpEx, EURm</th>
<th>Preportion of OpEx</th>
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<tr>
<td>2021</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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Material non-financial topics and key performance indicators

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<th>KEY PERFORMANCE INDICATOR</th>
<th>2021 RESULTS</th>
<th>2031 RESULTS</th>
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<td>Governance, Anti-</td>
<td></td>
<td>Compliance risks are identified and assessed in connection with the company's risk management process. These risks are managed and mitigated by training, communication, due diligence procedures, audits and practical guidelines specifically targeted at anti-corruption and anti-bribery. UPM Code of Conduct training is mandatory to all employees and anti-bribery training to all salaried employees.</td>
<td>100% coverage of participating in UPM Code of Conduct training (continued).</td>
<td>100% coverage of participating in UPM Code of Conduct training.</td>
</tr>
<tr>
<td>Corruptions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human rights</td>
<td></td>
<td>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 safety and local sourcing, as well as for risk assessments and audit for suppliers.</td>
<td>80% of total supplier spend covered by UPM Supplier and Third Party Code (continued).</td>
<td>80% of total supplier spend covered by UPM Supplier and Third Party Code.</td>
</tr>
<tr>
<td>Responsible sourcing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Responsible leadership</td>
<td></td>
<td>UPM continuously develops leadership capabilities, management teams and an engaging culture, and develops, implements, executes, and reviews strategy, work and leadership with an ongoing annual survey engagement. UPM’s global leadership development portfolio has capabilities to lead overall, lead people and lead business. Programs online, e.g., coaching and purposeful leadership development, career planning and feedback, and training in resilience and leadership in complexity.</td>
<td>Employee engagement clearly above benchmark by 2030.</td>
<td>Employee engagement average score 68. This is 6 points below the global external benchmark.</td>
</tr>
<tr>
<td>Learning and development</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safe and healthy working</td>
<td></td>
<td>Goal-setting discussions are held and development plans created for employees, completion rate 100% by 2020.</td>
<td>88% (82%) of employees had completed individual goal settings or annual reviews: 70% (67%) had a development plan documented.</td>
<td>88% (82%) of employees had completed individual goal settings or annual reviews: 70% (67%) had a development plan documented.</td>
</tr>
<tr>
<td>environment</td>
<td></td>
<td>No fatalities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diversity</td>
<td></td>
<td>Total recordable injury-frequency (TRIFs) &lt;2 by 2020, including contractors</td>
<td>0 (0 total accident, 32) serious accidents.</td>
<td>UPM is among top 10% companies by 2030 on overall 'awards’ sense of belonging at UPM.</td>
</tr>
<tr>
<td>Fair rewarding</td>
<td></td>
<td>Employee engagement average score 68.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product stewardship</td>
<td></td>
<td>Goal-setting discussions are held and development plans created for employees, completion rate 100% by 2020.</td>
<td>88% (82%) of employees had completed individual goal settings or annual reviews: 70% (67%) had a development plan documented.</td>
<td>88% (82%) of employees had completed individual goal settings or annual reviews: 70% (67%) had a development plan documented.</td>
</tr>
<tr>
<td>Climate</td>
<td></td>
<td>Ecolabels help customers make responsible choices and provide stakeholders with important information. Third party verified environmental certificates and labels tell customers about the environmental performance of our products.</td>
<td>All applicable products eligible for ecolabelling by 2030.</td>
<td>All applicable products eligible for ecolabelling by 2030.</td>
</tr>
<tr>
<td>Water</td>
<td></td>
<td>Wastewater volume reduced by 30% by 2030 (compared to 2008)</td>
<td>18% reduction in wastewater volume achieved since 2008 for the UPM average product.</td>
<td>18% reduction in wastewater volume achieved since 2008 for the UPM average product.</td>
</tr>
</tbody>
</table>

Research and development

Innovating for the future
Innovation and R&D programmes are essential in the development of new technologies and research. Research and development expenses cover the development of new technologies, businesses and processes. Our 2030 responsibility targets and our contribution to the UN SDGs are integrated into our R&D activities and product development (page 32).

In 2021, UPM spent EUR 266 (189) million on research and development, making up 21.3% (18.5%) of UPM’s operating cash flow. In addition to direct R&D expenditure of EUR 46 (41) million, the figure includes operating negative cash flow and capital expenditures in developing businesses, transformative business prospects and digitalisation projects.

Expanding the infrastructure
UPM’s BioBea research centres in Lappeenranta, Finland and Changshu, China are accelerating the development of new bio-based products and their launch to the markets. The Lærm BioBea Base in Germany was established at the end of the year. It works in connection with the research centres from UPM and in collaboration with our businesses, supporting the journey from innovation to business. We have nearly 3,000 patents and patent applications, and near 1,400 trademarks globally. Licensing innovations and technologies provides an excellent basis for value creation with customers and technology partners. As an example, at the end of 2021, UPM Biochemicals owned 160 patents and patent applications and more than 350 patents and patent applications were held by partners, covering technology and products throughout the value chain.

Innovating climate-positive products
Our products offer solutions to mitigating climate change as they replace fossil raw materials with bio-based renewable alternatives. The product scope covers the entire duration of their lifecycle, especially when recycled multiple times. New solutions are developed in collaboration with our customers, technology partners and academia. In 2021, UPM launched 4 of our three strategic focus areas for growth. Our lignoCellulosic biochemicals biorefinery in Leuna, Germany, will enable a switch from fossil raw materials to wood-based sustainable alternatives in textiles, plastics, PET bottles, packaging and pharma or cosmetics products.

The commercialisation of bioeconomics is taking significant steps forward. In 2021, UPM started a collaboration with The Coca-Cola Company to develop wood-based plastic materials for PET bottles. We also launched UPM BioMotion™ renewable functional fillers to significantly reduce the CO₂ footprint and weight of rubber and plastics in various end-uses (page 32).

The basic engineering phase of a next generation bioethanol biorefinery, announced in January 2021, is proceeding at full speed. The potential bioethanol could produce high-quality renewable products including sustainable jet fuel. The products would significantly reduce the carbon footprint of road transport and aviation, as well as replace fossil raw materials with chemical and plastic alternatives from renewable sources.

UPM Biochemicals develops and supplies innovative and sustainable wood-based biobased materials for high-throughput drug screening, personalised medicine, advanced cell therapies, 3D bioprinting, tissue engineering and advanced wound care. More than 300 patents protect our existing and future products. We are also examining new ways to utilise renewable fibre-based materials, such as wood-based bio-based materials developed for textiles, nanowovens, hygiene products, labels and flexible packaging, amongst other applications.

Solid portfolio
The significance of the patents, trademarks and intellectual property rights protecting our innovations is more pronounced in our new businesses, supporting the journey from innovation to business. We have nearly 3,000 patents and patent applications, and near 1,400 trademarks globally. Licensing innovations and technologies provides an excellent basis for value creation with customers and technology partners. As an example, at the end of 2021, UPM Biochemicals owned 160 patents and patent applications and another 353 patents and patent applications were held by partners, covering technology and products throughout the value chain.

The commercialisation of bioeconomics is taking significant steps forward. In 2021, UPM started a collaboration with The Coca-Cola Company to develop wood-based plastic materials for PET bottles. We also launched UPM BioMotion™ renewable functional fillers to significantly reduce the CO₂ footprint and weight of rubber and plastics in various end-uses (page 32).
Value from data and digital solutions

We aim to significantly increase the value that we can create from data and digital solutions. The development work in data utilisation focuses on high-quality, compliant, secure and modern common data platforms and services. We use agile methods in defining and implementing new business-driven data and digital solutions together with our partners. As a result, we aim for data products and digital services that have identified business value.

We finalised our Digit and Data strategy in 2021 based on a solid operating model created in cooperation with businesses. Our target is to achieve greater efficiency from the digital and data-driven solutions both on a corporate and a business level. The development projects common to several businesses include digital customer experience and pricing, digital supply chain and intelligent operations. The implementation of the strategy and development projects will start in 2022.

Extensive partner network

Our global partner network is comprised of customers, universities, research organisations, suppliers and startup companies. Collaboration speeds up the development and launch of new business solutions.

The partnership with our European partners under the BioEconomy Alliance encourages us to approach the circularity of bio-based products in Europe. As a shareholder in the Finnish company CCL Innovation Ltd, we aim to propel breakthrough solutions in the circular economy and cleantech. We collaborate with the European Chemical Industry Council (CEIC) and Renewable Carbon Initiative (RCI) to promote making chemicals more sustainable and more climate smart. UPM Specialty Papers and UPM Raflatac actively collaborate with FormaEco during the establishment of robust production processes and a competent, well-trained team.

Our climate smart UPM Biomedicals is at the forefront of innovation and development. With the successful completion of the pilot scale, the business platform is being built and customer engagement points to a promising commercial future for UPM Biomedicals.

Market demand and customer interest confirmed in UPM Biomedicals

The initial biodegradable biopolymer in jeans is taking shape, while a robust business platform is being built towards commercialisation. The forecast points to a promising commercial future for UPM Biomedicals.

The EUR 350 million investment will open completely new markets for us, with large growth potential for the future. The biorefinery will produce a range of 100% wood-based biochemicals, the main products being bio-monoethylene glycol (BioMEG), bio-monopropylene glycol (BioMPG) and lignin-based renewable functional fillers, with a total annual capacity of approximately 320,000 tonnes.

In 2021, detailed engineering, procurement and permit processes continued progressing well, and building at the site took off. However, the pandemic situation played down the completion of the detailed engineering. Disruptions to global supply chains affected both the availability of critical components and the cost of critical materials. The startup is estimated to take place by end of 2022. The capital expenditure estimate will be re-validated.

At the same time, the business platform was strengthened. We have continued building a team of international experts with a strong chemical industry background to advise us further in our research and development, build strong commercial operations, and then establish the service and customer teams. UPM Raflatac continues to be a strong partner in the business development process.

We also started hiring and training the operations personnel for the biorefinery. The innovative digital twin of our biorefinery supports the establishment of robust production processes and a competent, well-trained team.

UPM's chemicals made from renewable raw materials will offer a missing link to achieve a truly sustainable circular economy: rubber and plastics based on renewable chemicals. Our glycols and Renewable Functional Fillers (RFF) are made from renewable resources, work well in existing production and recycling processes, and will support the transition away from oil, gas and coal-based materials.

We have made strong progress in opening sales channels in various global enduse industries, mainly in packaging, automotive and textiles applications.

We have started joint product development with potential customers in various rubber applications to validate the technical performance of our RFF and bring waste alternatives to CO2-heavy rubbers to the market. We also launched UPM BioMotionTM, the renewable functional fillers set to significantly reduce the carbon footprint and weight of rubber and plastic applications.

The possibilities of our new biochemical products are endless. This was demonstrated by a cooperation agreement with the CoorCoca Company, who have unveiled their new 100% plant-based recyclable bottle, highlighting UPM's industrial biobased innovation as a breakthrough for the production of a new generation of biochemicals that will help produce the sustainable packaging of the future.

Our innovation and know-how in the circular economy transformation was recognised by the jury. We climbed up to 3rd place in the European Rubber Journal’s top 10 elastomers for sustainability.

Opening new markets for UPM Biochemicals

We actively collaborate with universities, research centres and key industrial partners in the fields of high-throughput drug screening, personalised medicine, advanced cell therapies, 3D bioprinting, tissue engineering and advanced wound care. More than 520 patents and applications protect our existing and future products.

In life science, our main products are GrowDex®, a range of hydrogels for 3D cell culturing, and GrowDex®1 in an enzyme to release the cells from the gel. The non-adhesive ensures excellent compatibility with even the most demanding cells, such as stem cell and patient-derived cells. Our gels are animal free and do not introduce animal DNA into the test results. In 2021, we entered into a global distribution agreement with PerkinElmer Health Sciences, Inc. for the UPM GrowDex® and GrowDass® products.

The collaboration offers researchers a solution for high-throughput screening (HTS) of 3D cell cultures in the early stages of the drug discovery process, combining the cell imaging solutions and knowledge of PerkinElmer and the animal-free 3D reagents of UPM. The instrument, software and cell culture marks a new era of research and accelerates the drug development process in which thousands of compounds are screened, to eventually introduce a new drug onto the market.

PerkinElmer’s automated high-content screening system using GrowDex hydrogels has been successfully used in a number of research projects in cancer research, where models of human primary tissues and resistance testing of patient-derived cells for personalised cancer treatment research.

GrowDass® is a range of biolinks for 3D bioprinting, used in areas such as cancer research, where models of tumours can be printed to test their response to different treatments. Launched in 2021, our collaboration with CellINK will allow us to develop the technology to print organs or tissue that, in the future, could be transplanted into patients.

In the clinical field, FixdDex™ wound dressings were marketed and sold to healthcare professionals and hospitals in Finland, and work is ongoing to expand into other European markets.

UPM Biomedicals

UPM Biomedicals is at the forefront of innovation and commercialisation, with a particular focus on personalised medicine. UPM Biomedicals develops and supplies innovative and sustainable wood-based biomaterials for medical and life science applications. The main component in our products is high-quality nanocellulose, extracted from birch wood.
R&D’s role in different businesses

BUSINESS AREA DESCRIPTION

UPM Plywood product management and development provides competitive products within selected end-use areas in collaboration with our customers, superior technical expertise and support for customers, as well as support for the commercialisation of newly developed products and applications. For example, further expanding the use of light冈杉HISA flaxlinnng solution to new product lines.

Information on shares

Shares

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

On 31 December 2021, the total number of UPM shares was 533,735,699.

In line with the issuance authorisation described below, the number of shares may increase to a maximum of 558,735,699.

On 31 December 2021, 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.

In 2021, UPM shares worth a total of EUR 8,435 million (9,921 million) were traded on the Nasdaq Helsinki stock exchange. This is estimated to represent more than 70% of the total trading volume in UPM shares. The highest listing was EUR 35.37 in September and the lowest was EUR 29.11 in January.

Changes in number of shares

<table>
<thead>
<tr>
<th>Year</th>
<th>2021</th>
<th>2020</th>
<th>2019</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of shares at 31 December</td>
<td>533,735,699</td>
<td>533,735,699</td>
<td>533,735,699</td>
<td>533,735,699</td>
<td>533,735,699</td>
</tr>
<tr>
<td>Number of shares at 31 January</td>
<td>533,735,699</td>
<td>533,735,699</td>
<td>533,735,699</td>
<td>533,735,699</td>
<td>533,735,699</td>
</tr>
</tbody>
</table>

Major shareholders at 31 December 2021

<table>
<thead>
<tr>
<th>NUMBER OF SHARES</th>
<th>HOLDING %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emirates Market Pension Insurance Company</td>
<td>11,601,000</td>
</tr>
<tr>
<td>Varma Mutual Pension Insurance Company</td>
<td>8,169,340</td>
</tr>
<tr>
<td>ELC Mutual Pension Insurance Company</td>
<td>5,326,719</td>
</tr>
<tr>
<td>The Society of Swedish ineritance in Finland</td>
<td>2,677,070</td>
</tr>
<tr>
<td>Holding Monety Or</td>
<td>2,550,000</td>
</tr>
<tr>
<td>The State Pension Fund</td>
<td>2,550,000</td>
</tr>
<tr>
<td>Quest Investment fund</td>
<td>2,332,632</td>
</tr>
<tr>
<td>Methodist Life Insurance Company</td>
<td>1,657,589</td>
</tr>
<tr>
<td>SECURITY TRADING</td>
<td>1,760,000</td>
</tr>
<tr>
<td>Kyren Olaylend</td>
<td>1,696,340</td>
</tr>
<tr>
<td>Nominees &amp; Registered foreign owners</td>
<td>355,786,834</td>
</tr>
<tr>
<td>Others</td>
<td>137,810,125</td>
</tr>
<tr>
<td>Total</td>
<td>533,735,699</td>
</tr>
</tbody>
</table>

UPM’s annual report is available at: www.upm.com An annual general meeting held on 30 March 2021 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 30 March 2021 authorised the Board of Directors to decide on the issuance of new shares, the transfer of treasury shares and the issuance of special rights entitled to shares in proportion to the shareholders’ existing holdings in the Company, or in a directed share issue, deviating from the shareholder’s pre-emptive subscription right. 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 the number of shares that can be received on the basis of special rights. The authorisation will be valid for 18 months 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.

Amounts held by the Board of Directors

The Board of Directors has no current authorisation to issue shares, convertible bonds or share options.
Under the provisions of the Securities Markets Act, changes in holdings must be disclosed when the holding reaches, exceeds or falls below 5, 10, 15, 20, 25, 30, 50 or 66.7 (2/3) per cent of the voting rights or the number of shares of the company. The stock exchange releases notifications of changes in holdings pursuant to Chapter 9, Section 5 of the Securities Market Act are available in UPM website upm.com/investors.

### Adjusted share related indicators

<table>
<thead>
<tr>
<th>SHARE RELATED INDICATORS</th>
<th>2021</th>
<th>2020</th>
<th>2019</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earnings per share (EPS), EUR</td>
<td>2.41</td>
<td>1.05</td>
<td>1.99</td>
<td>2.80</td>
<td>1.82</td>
</tr>
<tr>
<td>Comparable EPS, EUR</td>
<td>2.22</td>
<td>1.37</td>
<td>2.07</td>
<td>2.14</td>
<td>1.88</td>
</tr>
<tr>
<td>Equity per share, EUR</td>
<td>20.34</td>
<td>17.53</td>
<td>18.87</td>
<td>18.56</td>
<td>16.24</td>
</tr>
<tr>
<td>Dividend per share, EUR ①</td>
<td>1.30</td>
<td>1.30</td>
<td>1.30</td>
<td>1.15</td>
<td>0.95</td>
</tr>
<tr>
<td>Dividend to earnings ratio, %</td>
<td>53.9</td>
<td>123.7</td>
<td>65.4</td>
<td>64.6</td>
<td>63.0</td>
</tr>
<tr>
<td>Dividend to operating cash flow, %</td>
<td>55</td>
<td>69</td>
<td>38</td>
<td>52</td>
<td>42</td>
</tr>
</tbody>
</table>

① Proposal for 2021
② Trading on the Nasdaq Helsinki Main Market. Treasury shares bought by the company are included in shares traded.

### The definitions of adjusted share related indicators are described below

<table>
<thead>
<tr>
<th>SHARE RELATED INDICATORS</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earnings per share (EPS), EUR</td>
<td>Profit for the period attributable to owners of the parent company divided by adjusted average number of shares during the period excluding treasury shares.</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>Equity per share, EUR</td>
<td>Equity attributable to the owners of the parent company in relation to the adjusted number of shares at the end of period.</td>
</tr>
<tr>
<td>Dividend per share</td>
<td>Dividend distribution divided by adjusted number of shares at the end of period.</td>
</tr>
<tr>
<td>Dividend to earnings ratio, %</td>
<td>Dividend per share as a percentage of earnings per share.</td>
</tr>
<tr>
<td>Dividend to operating cash flow, %</td>
<td>Dividend per share as a percentage of operating cash flow per share.</td>
</tr>
<tr>
<td>Effective dividend yield, %</td>
<td>Adjusted dividend per share as a percentage of adjusted share price at 31.12.</td>
</tr>
<tr>
<td>P/E ratio</td>
<td>Adjusted share price in relation to the earnings per share.</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>Market capitalisation, EURm</td>
<td>Total number of shares (excluding those held as treasury shares) multiplied by the share price at the end of period.</td>
</tr>
<tr>
<td>Adjusted share price at the end of period</td>
<td>Share price at the end of period in relation to share issue coefficient.</td>
</tr>
<tr>
<td>Adjusted average share price</td>
<td>Total value of shares traded in relation to adjusted number of shares traded during the period.</td>
</tr>
</tbody>
</table>
The Board of Directors proposes to the Annual General Meeting of UPM-Kymmene Corporation to be held on 29 March 2022 that a dividend of EUR 1.30 per share be paid based on the balance sheet to be adopted for the financial year ending 31 December 2021 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 31 March 2022. The Board of Directors proposes that the dividend will be paid on 7 April 2022.

On the date of the dividend proposal, 27 January 2022, the Company’s registered number of shares is 533,735,699. 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 693.3 million.

On 31 December 2021, the distributable funds of the parent company were EUR 3,299,180,167.25 including EUR 469,282,175.70 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.

Signatures of the annual accounts and the report of the Board of Directors for the year 2021

Helsinki, 27 January 2022

Björn Wahlroos
Chair

Berndt Brunow

Hannik Ehnrooth

Emma FitzGerald

Jari Gustafsson

Pia-Noora Kauppi

Marjan Oudeman
Martin à Porta

Kim Wahl

Jussi Pesonen
President and CEO

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Consolidated financial statements, IFRS

Consolidated income statement

<table>
<thead>
<tr>
<th>EURm</th>
<th>NOTE</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>2,2</td>
<td>9,814</td>
<td>8,580</td>
</tr>
<tr>
<td>Other operating income</td>
<td>2,3</td>
<td>254</td>
<td>116</td>
</tr>
<tr>
<td>Costs and expenses</td>
<td>2,3</td>
<td>-8,104</td>
<td>-7,371</td>
</tr>
<tr>
<td>Change in fair value of forest assets and wood harvested</td>
<td>4,2</td>
<td>111</td>
<td>-25</td>
</tr>
<tr>
<td>Share of results of associated companies and joint ventures</td>
<td>2,3</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Depreciation, amortisation and impairment charges</td>
<td>2,3, 4, 4, 4</td>
<td>-515</td>
<td>-541</td>
</tr>
<tr>
<td>Operating profit</td>
<td>2,3, 4, 4, 4</td>
<td>1,562</td>
<td>761</td>
</tr>
<tr>
<td>Exchange rate and fair value gains and losses</td>
<td>2,3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Interest and other finance costs, net</td>
<td>2,3</td>
<td>-12</td>
<td>-26</td>
</tr>
<tr>
<td>Profit before tax</td>
<td>2,3</td>
<td>1,548</td>
<td>737</td>
</tr>
<tr>
<td>Income taxes</td>
<td>2,3</td>
<td>-240</td>
<td>-169</td>
</tr>
<tr>
<td>Profit for the period</td>
<td>2,3</td>
<td>1,307</td>
<td>568</td>
</tr>
</tbody>
</table>

Attributable to:

| Owners of the parent company | 2,3 | 1,286 | 560 |
| Non-controlling interests | 2,3, 4, 4, 4 | 8 | 8 |

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

| Basic earnings per share, EUR | 2,3, 4, 4, 4 | 2.4 | 2.41 |
| Diluted earnings per share, EUR | 2,3, 4, 4, 4 | 2.4 | 2.41 |

Consolidated statement of comprehensive income

<table>
<thead>
<tr>
<th>EURm</th>
<th>NOTE</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profit for the period</td>
<td>2,3, 4, 4, 4</td>
<td>1,307</td>
<td>568</td>
</tr>
<tr>
<td>Other comprehensive income for the period, net of tax</td>
<td>2,3</td>
<td>96</td>
<td>-36</td>
</tr>
<tr>
<td>Actuarial gains and losses on defined benefit plans</td>
<td>2,3</td>
<td>96</td>
<td>-36</td>
</tr>
<tr>
<td>Changes in fair value of energy shareholdings</td>
<td>2,3</td>
<td>632</td>
<td>-251</td>
</tr>
<tr>
<td>Items that may be reclassified subsequently to income statement:</td>
<td>2,3</td>
<td>337</td>
<td>-242</td>
</tr>
<tr>
<td>Translation differences</td>
<td>2,3</td>
<td>337</td>
<td>-242</td>
</tr>
<tr>
<td>Net investment hedge</td>
<td>2,3</td>
<td>-21</td>
<td>5</td>
</tr>
<tr>
<td>Cash flow hedges</td>
<td>2,3</td>
<td>-127</td>
<td>-24</td>
</tr>
<tr>
<td>Other comprehensive income for the period, net of tax</td>
<td>2,3</td>
<td>7,225</td>
<td>2,255</td>
</tr>
<tr>
<td>Total comprehensive income for the period</td>
<td>2,3</td>
<td>7,225</td>
<td>2,255</td>
</tr>
</tbody>
</table>

Attributable to:

| Owners of the parent company | 2,3 | 2,194 | 7 |
| Non-controlling interests | 2,3 | 31 | 6 |

Total comprehensive income for the period | 2,3 | 2,255 | — |

The notes are integral part of these consolidated financial statements.

Consolidated balance sheet

<table>
<thead>
<tr>
<th>EURm</th>
<th>NOTE</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assets</td>
<td>4.4</td>
<td>237</td>
<td>229</td>
</tr>
<tr>
<td>Goodwill</td>
<td>4.4</td>
<td>364</td>
<td>363</td>
</tr>
<tr>
<td>Other intangible assets</td>
<td>4.4</td>
<td>5,569</td>
<td>4,316</td>
</tr>
<tr>
<td>Property, plant and equipment</td>
<td>4.4</td>
<td>5,569</td>
<td>4,316</td>
</tr>
<tr>
<td>Lease assets</td>
<td>4.4</td>
<td>608</td>
<td>361</td>
</tr>
<tr>
<td>Forest assets</td>
<td>4.4</td>
<td>2,358</td>
<td>2,077</td>
</tr>
<tr>
<td>Energy shareholdings</td>
<td>4.4</td>
<td>2,579</td>
<td>1,936</td>
</tr>
<tr>
<td>Other non-current financial assets</td>
<td>4.4</td>
<td>133</td>
<td>166</td>
</tr>
<tr>
<td>Deferred tax assets</td>
<td>4.4</td>
<td>466</td>
<td>421</td>
</tr>
<tr>
<td>Net retirement benefit assets</td>
<td>4.4</td>
<td>79</td>
<td>26</td>
</tr>
<tr>
<td>Investments in associates and joint ventures</td>
<td>4.4</td>
<td>33</td>
<td>33</td>
</tr>
<tr>
<td>Other non-current assets</td>
<td>4.4</td>
<td>20</td>
<td>21</td>
</tr>
<tr>
<td>Non-current assets</td>
<td>4.4</td>
<td>12,420</td>
<td>10,149</td>
</tr>
<tr>
<td>Inventories</td>
<td>4.4</td>
<td>1,594</td>
<td>1,285</td>
</tr>
<tr>
<td>Trade and other receivables</td>
<td>4.4</td>
<td>2,024</td>
<td>1,534</td>
</tr>
<tr>
<td>Other current financial assets</td>
<td>4.4</td>
<td>139</td>
<td>136</td>
</tr>
<tr>
<td>Income tax receivables</td>
<td>4.4</td>
<td>40</td>
<td>24</td>
</tr>
<tr>
<td>Cash and cash equivalents</td>
<td>4.4</td>
<td>1,460</td>
<td>1,720</td>
</tr>
<tr>
<td>Current assets</td>
<td>4.4</td>
<td>3,257</td>
<td>4,709</td>
</tr>
<tr>
<td>Assets</td>
<td>4.4</td>
<td>17,876</td>
<td>14,858</td>
</tr>
</tbody>
</table>

Liabilities

<table>
<thead>
<tr>
<th>EURm</th>
<th>NOTE</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share capital</td>
<td>5.5</td>
<td>890</td>
<td>890</td>
</tr>
<tr>
<td>Treasury shares</td>
<td>5.5</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Translation reserve</td>
<td>5.5</td>
<td>329</td>
<td>25</td>
</tr>
<tr>
<td>Other reserves</td>
<td>5.5</td>
<td>1,938</td>
<td>1,430</td>
</tr>
<tr>
<td>Reserve for invested non-restricted equity</td>
<td>5.5</td>
<td>1,273</td>
<td>1,273</td>
</tr>
<tr>
<td>Retained earnings</td>
<td>5.5</td>
<td>6,419</td>
<td>5,735</td>
</tr>
<tr>
<td>Equity attributable to owners of the parent company</td>
<td>5.5</td>
<td>10,846</td>
<td>9,351</td>
</tr>
<tr>
<td>Non-controlling interests</td>
<td>5.5</td>
<td>261</td>
<td>162</td>
</tr>
<tr>
<td>Equity</td>
<td>5.5</td>
<td>11,108</td>
<td>9,513</td>
</tr>
<tr>
<td>Deferred tax liabilities</td>
<td>5.5</td>
<td>596</td>
<td>584</td>
</tr>
<tr>
<td>Net fair value gain liabilities</td>
<td>5.5</td>
<td>676</td>
<td>771</td>
</tr>
<tr>
<td>Provisions</td>
<td>5.5</td>
<td>155</td>
<td>222</td>
</tr>
<tr>
<td>Non-current debt</td>
<td>5.5</td>
<td>2,566</td>
<td>1,952</td>
</tr>
<tr>
<td>Other non-current financial liabilities</td>
<td>5.5</td>
<td>109</td>
<td>67</td>
</tr>
<tr>
<td>Non-current liabilities</td>
<td>5.5</td>
<td>4,102</td>
<td>3,606</td>
</tr>
<tr>
<td>Current debt</td>
<td>5.5</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Trade and other payables</td>
<td>5.5</td>
<td>2,254</td>
<td>1,571</td>
</tr>
<tr>
<td>Other current financial liabilities</td>
<td>5.5</td>
<td>95</td>
<td>48</td>
</tr>
<tr>
<td>Income tax payables</td>
<td>5.5</td>
<td>32</td>
<td>30</td>
</tr>
<tr>
<td>Current liabilities</td>
<td>5.5</td>
<td>2,468</td>
<td>1,740</td>
</tr>
<tr>
<td>Liabilities</td>
<td>5.5</td>
<td>5,570</td>
<td>5,345</td>
</tr>
<tr>
<td>Equity and liabilities</td>
<td>5.5</td>
<td>17,876</td>
<td>14,858</td>
</tr>
</tbody>
</table>

The notes are integral part of these consolidated financial statements.
Consolidated statement of changes in equity

EURm

<table>
<thead>
<tr>
<th>SHARE CAPITAL</th>
<th>TREASURY SHARES</th>
<th>TRANSLATION RESERVE</th>
<th>OTHER RESERVES</th>
<th>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>890</td>
<td>-2</td>
<td>25</td>
<td>1,430</td>
<td>1,273</td>
<td>5,735</td>
<td>9,351</td>
<td>162</td>
<td>9,513</td>
</tr>
</tbody>
</table>

Value at 1 January 2021

Profit for the period

Translation differences

Cash flow hedges - reclassified to income statement, net of tax

Cash flow hedges - reclassified to profit

Cash flow hedges - change in fair value, net of tax

Net investment hedge, net of tax

Energy shareholdings - changes in fair value, net of tax

Actuarial gains and losses on defined benefit plans, net of tax

Total comprehensive income for the period

Share-based payments, net of tax

Dividend distribution

Other items

Contributions by non-controlling interests

Total transactions with owners for the period

Total equity at 31 December 2021

Value at 1 January 2020

Profit for the period

Translation differences

Cash flow hedges - reclassified to income statement, net of tax

Cash flow hedges - reclassified to profit

Cash flow hedges - change in fair value, net of tax

Net investment hedge, net of tax

Energy shareholdings - changes in fair value, net of tax

Actuarial gains and losses on defined benefit plans, net of tax

Total comprehensive income for the period

Share-based payments, net of tax

Dividends paid to owners of the parent company

Dividends paid to non-controlling interests

Contributions paid by non-controlling interests

Change in investment funds

Other financing cash flow

Financing cash flow

Change in cash and cash equivalents

Cash and cash equivalents at the beginning of the period

Exchange rate effect on cash and cash equivalents

Change in cash and cash equivalents at the end of the period

» Refer Note 5.5 Share capital and reserves, for further information.

Consolidated cash flow statement

EURm

<table>
<thead>
<tr>
<th>Cash flows from operating activities</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profit for the period</td>
<td>1,307</td>
<td>568</td>
</tr>
<tr>
<td>Adjustments</td>
<td>356</td>
<td>721</td>
</tr>
<tr>
<td>Interest received</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Interest paid</td>
<td>-26</td>
<td>-37</td>
</tr>
<tr>
<td>Dividends received</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Other financial items, net</td>
<td>-2</td>
<td>-14</td>
</tr>
<tr>
<td>Income taxes paid</td>
<td>-275</td>
<td>-145</td>
</tr>
<tr>
<td>Change in working capital</td>
<td>-115</td>
<td>-93</td>
</tr>
<tr>
<td>Operating cash flow</td>
<td>1,250</td>
<td>1,005</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cash flows from investing activities</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital expenditure</td>
<td>-1,432</td>
<td>-818</td>
</tr>
<tr>
<td>Additions to forest assets</td>
<td>-89</td>
<td>57</td>
</tr>
<tr>
<td>Investments in energy shareholdings</td>
<td>0</td>
<td>-47</td>
</tr>
<tr>
<td>Proceeds from sale of property, plant and equipment and intangible assets, net of tax</td>
<td>17</td>
<td>23</td>
</tr>
<tr>
<td>Proceeds from sale of forest assets, net of tax</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Proceeds from disposal of businesses and subsidiaries</td>
<td>137</td>
<td>0</td>
</tr>
<tr>
<td>Proceeds from disposal of energy shareholdings</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Proceeds from disposal of joint operations</td>
<td>0</td>
<td>17</td>
</tr>
<tr>
<td>Net cash flows from net investment hedges</td>
<td>9</td>
<td>-4</td>
</tr>
<tr>
<td>Change in other non-current assets</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Investing cash flow</td>
<td>-1,323</td>
<td>-879</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cash flows from financing activities</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proceeds from non-current debt</td>
<td>600</td>
<td>861</td>
</tr>
<tr>
<td>Payments of non-current debt</td>
<td>-16</td>
<td>-31</td>
</tr>
<tr>
<td>Lease repayments</td>
<td>-86</td>
<td>-86</td>
</tr>
<tr>
<td>Change in current liabilities</td>
<td>0</td>
<td>-2</td>
</tr>
<tr>
<td>Net cash flows from derivatives</td>
<td>34</td>
<td>-17</td>
</tr>
<tr>
<td>Dividends paid to owners of the parent company</td>
<td>493</td>
<td>493</td>
</tr>
<tr>
<td>Dividends paid to non-controlling interests</td>
<td>-12</td>
<td>-23</td>
</tr>
<tr>
<td>Contributions paid by non-controlling interests</td>
<td>82</td>
<td>67</td>
</tr>
<tr>
<td>Change in investment funds</td>
<td>-100</td>
<td>0</td>
</tr>
<tr>
<td>Other financing cash flow</td>
<td>-5</td>
<td>-4</td>
</tr>
<tr>
<td>Financing cash flow</td>
<td>-194</td>
<td>71</td>
</tr>
</tbody>
</table>

| Change in cash and cash equivalents  | -268 | 197  |

| Cash and cash equivalents at the beginning of the period | 1,720 | 1,536 |
| Change in cash and cash equivalents at the end of the period | 1,462 | 1,720 |
Notes to the consolidated financial statements

The notes to the consolidated financial statements are grouped into sections based on their nature. The notes contain the 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 bioindustry group. UPM’s large product range covers pulp, graphic and specialty papers, self-adhesive labels, wood-based renewable diesel, electricity as well as plywood and timber products.

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, 2020. Figures presented in these financial statements are rounded and therefore the sum of individual figures might deviate from the presented total figure.

In accordance with the European Single Electronic Format (ESEF) reporting requirements, UPM has published the Board of Directors report and the financial statements as an XHTML file. In line with the ESEF requirements, the primary statements of the consolidated financial statements have been labelled with XBRL tags. XBRL tags are not applied by UPM to the specific financial statement area.

1.3 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. 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.

KEY ESTIMATES AND JUDGMENTS NOTE

<table>
<thead>
<tr>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valuation of forest assets</td>
<td>4.2</td>
</tr>
<tr>
<td>Fair value determination of energy shareholdings</td>
<td>4.3</td>
</tr>
<tr>
<td>Impairment of property, plant and equipment</td>
<td>4.1</td>
</tr>
<tr>
<td>Impairment of goodwill and other intangible assets</td>
<td>4.4</td>
</tr>
<tr>
<td>Pension and other post-employment benefits</td>
<td>3.6</td>
</tr>
<tr>
<td>Income taxes</td>
<td>7.1</td>
</tr>
<tr>
<td>Environmental provisions</td>
<td>4.5</td>
</tr>
<tr>
<td>Legal contingencies</td>
<td>9.2</td>
</tr>
</tbody>
</table>

Risks related disclosures, whether they are financial, actuarial, credit or counterparty in nature, can be found in sections marked with this symbol.

1.4 Results of operations

Net sales in 2021 amounted to EUR 10,874 million (10,551 million). Operating profit was EUR 1,675 million (1,215 million). Income taxes paid related to investing activities are presented in investing cash flow.
1.3 Consolidation principles

Subsidiaries

UPM’s consolidated financial statements include the financial statements of the parent company, UPM-Kymmene Corporation, and subsidiaries controlled by UPM. All group entities apply consistently UPM’s accounting policies. All intercompany transactions, receivables, liabilities and unrealised profits, as well as intragroup profit distributions, are eliminated. Unrealised losses are also eliminated unless the transaction provides evidence of an impairment of the transferred asset.

Joint operations

A joint operation is a joint arrangement whereby the parties that jointly control the arrangement have rights to the assets, and obligations for the liabilities, relating to the arrangement. Joint control is a contractual agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require the unanimous consent of the parties sharing control.

UPM’s share in joint operations is recognised in the consolidated balance sheet through recognition of the group’s own assets and liabilities and revenues and expenses in the arrangement together with UPM’s proportionate share in the joint assets, liabilities, joint income and expenses. The proportionate share of realised and unrealised gains and losses arising from intragroup transactions between UPM and its joint operations is eliminated.

Associates and joint ventures

Associates are entities over which the group has significant influence but no control. Significant influence is the power to participate in the financial and operating decisions of the investee without control or joint control.

Non-controlling interests

The profit or loss attributable to owners of the parent company and non-controlling interests is presented on the face of the income statement. Non-controlling interests are presented in the consolidated balance sheet within equity, separately from equity attributable to owners of the parent company.

Foreign currency translation

Foreign currency transactions are translated into the functional currency using the exchange rate prevailing at the date of transaction. Receivables and liabilities denominated in foreign currencies outstanding on the balance sheet date are translated into the functional currency using the balance sheet date exchange rate. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation of year-end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognised in the income statement, except when recognised in other comprehensive income as qualifying cash flow hedges and qualifying net investment hedges.

Management changes

The group has reviewed IFRS standard amendments effective on periods starting 1 January 2021. The amendments effective as of 1 January 2021 did not have any impact on the group’s financial statements.
The goods and services included in sales revenue of each business area are presented in below table:

### Business Area Information for the Year Ended 31 December 2021

<table>
<thead>
<tr>
<th>Business Area</th>
<th>Description and Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPM Plywood</td>
<td>High quality WISA® plywood and veneer products for construction, vehicle flooring, UHG shipbuilding, paperboard manufacturing and other industrial applications.</td>
</tr>
<tr>
<td>Other operations</td>
<td>Other operations include UPM Forest, UPM Biochemicals, UPM Biorefining, UPM Biomedicals, and UPM Other Operations.</td>
</tr>
</tbody>
</table>

#### 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 profitable and have strong market positions. Financial target setting, one business that faces declining demand. All UPM businesses are profitable and have strong market positions. Financial target setting, follow-up and allocation of resources in the group's performance management as well as services to industrial electricity consumers and producers. UPM has a portfolio of five businesses that operate on growing markets and one business that faces declining demand. All of UPM businesses are profitable and have strong market positions. Financial target setting, follow-up and allocation of resources in the group's performance management as well as services to industrial electricity consumers and producers.

<table>
<thead>
<tr>
<th>Key Financial Figures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EBIT and comparable ROCE.</strong></td>
</tr>
<tr>
<td><strong>Underlying business performance and to enhance comparability.</strong></td>
</tr>
<tr>
<td><strong>Comparable ROCE, %</strong></td>
</tr>
</tbody>
</table>

#### UPM Financial Report 2021

<table>
<thead>
<tr>
<th>Figures</th>
<th>EURm, OR AS INDICATED</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total assets</strong></td>
<td>17,676</td>
</tr>
<tr>
<td><strong>Capital expenditure</strong></td>
<td>1,483</td>
</tr>
<tr>
<td><strong>Depreciation and amortisation</strong></td>
<td>463</td>
</tr>
<tr>
<td><strong>Impairment charges</strong></td>
<td>-91</td>
</tr>
<tr>
<td><strong>Capital employed, 31 December</strong></td>
<td>12,739</td>
</tr>
<tr>
<td><strong>Average capital employed</strong></td>
<td>12,657</td>
</tr>
<tr>
<td><strong>Capital expenditure, excluding acquisitions and shares</strong></td>
<td>12,422</td>
</tr>
<tr>
<td><strong>Comparable ROCE, %</strong></td>
<td>11.7</td>
</tr>
<tr>
<td><strong>Personnel, 31 December</strong></td>
<td>16,966</td>
</tr>
<tr>
<td><strong>Other liabilities</strong></td>
<td>863</td>
</tr>
<tr>
<td><strong>Other financial liabilities</strong></td>
<td>3,400</td>
</tr>
<tr>
<td><strong>Total liabilities</strong></td>
<td>6,570</td>
</tr>
</tbody>
</table>

#### Business Area Information for the Year Ended 31 December 2021

<table>
<thead>
<tr>
<th>Business Area</th>
<th>Description and Products</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UPM Pulp</strong></td>
<td>A versatile range of responsibly-produced pulp grades suitable for a wide range of end uses such as tissue, specialty and packaging papers, graphic papers and board.</td>
</tr>
<tr>
<td><strong>UPM Specialty Papers</strong></td>
<td>Offers labelling and packaging materials as well as office and graphic papers for labelling, commercial siliconising, packaging, office use and printing.</td>
</tr>
<tr>
<td><strong>UPM Communication Papers</strong></td>
<td>Offers an extensive product range of sustainably produced graphic papers for advertising and publishing as well as home and office uses.</td>
</tr>
<tr>
<td><strong>UPM Biorefining</strong></td>
<td>Consists of UPM Pulp, UPM Timber and UPM Biofuels business units.</td>
</tr>
<tr>
<td><strong>UPM Raflatac</strong></td>
<td>Offers innovative and sustainable self-adhesive label materials for branding and promotion, information and functional labelling in the food, beverage, personal care, pharmaceutical and logistics segments, for example.</td>
</tr>
<tr>
<td><strong>UPM Specialty Papers</strong></td>
<td>Offers labelling and packaging materials as well as office and graphic papers for labelling, commercial siliconising, packaging, office use and printing.</td>
</tr>
<tr>
<td><strong>UPM Communication Papers</strong></td>
<td>Offers an extensive product range of sustainably produced graphic papers for advertising and publishing as well as home and office uses.</td>
</tr>
<tr>
<td><strong>UPM Plywood</strong></td>
<td>Offers high quality WISA® plywood and veneer products for construction, vehicle flooring, UHG shipbuilding, paperboard manufacturing and other industrial applications.</td>
</tr>
</tbody>
</table>

#### Other Financial Information

- **Comparable EBIT** includes elimination of internal sales and internal inventory margin and the changes in fair value of unrealised cash flow and commodity hedges that are not allocated to segments.
- **Comparable ROCE** includes elimination of internal sales and internal inventory margin and the changes in fair value of unrealised cash flow and commodity hedges that are not allocated to segments.
- **Comparable ROCE** includes elimination of internal sales and internal inventory margin and the changes in fair value of unrealised cash flow and commodity hedges that are not allocated to segments.

**Refer Other financial information on: Alternative performance measures, for definitions of key figures and reconciliation to measures presented in the consolidated income statement and balance sheet prepared in accordance with IFRS.**
Business area information for the year ended 31 December 2020

Items affecting comparability

<table>
<thead>
<tr>
<th>EURm</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profit for the period</td>
<td>103</td>
<td>-149</td>
</tr>
<tr>
<td>Change in tax rates</td>
<td>-3</td>
<td>-3</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>-152</td>
</tr>
</tbody>
</table>

Certain non-operational or non-cash valuation transactions with significant income statement impact are considered as items affecting comparability and reported separately to reflect the underlying business performance and to enhance comparability from period to period.

In 2021, items affecting comparability relate mainly to UPM Communication Papers and include a capital gain on sale of shares of Shotton Mill Ltd amounting to EUR 123 million and impairment charges of newsprint resultant fixed assets amounting to EUR 50 million.

In 2020, items affecting comparability in UPM Communication Papers include EUR 177 million restructuring charges and EUR 58 million impairment charges related to closure of UPM Chapelle paper mill and UPM Kappala paper mill. In UPM Plywood business area, items affecting comparability include EUR 1.5 million restructuring charges and EUR 8 million impairment charges related to the closure of Jyväskylä plywood mill.

Additionally, restructuring charges reported as items affecting comparability include prior capacity closures in UPM Communication Papers as well as restructuring costs related to the business functions of UPM Communications Papers and UPM Bullatex.

Capital gains affecting the comparability comprise of a gain of EUR 12 million relating to sale of group’s share in Kainuun Voima Oy as well as earnings of EUR 11 million on the sale of other non-current assets.

Capital gains and losses on sale of non-current assets | 12 | 21 |

Changes in tax rates | -3 | -3 |

Total | 12 | -18 |

In 2021, items affecting comparability include EUR 117 million restructuring charges and EUR 58 million impairment charges related to closure of UPM Chapelle paper mill and UPM Kappala paper mill. In UPM Plywood business area, items affecting comparability include EUR 1.5 million restructuring charges and EUR 8 million impairment charges related to the closure of Jyväskylä plywood mill.

Additionally, restructuring charges reported as items affecting comparability include prior capacity closures in UPM Communication Papers as well as restructuring costs related to the business functions of UPM Communications Papers and UPM Bullatex.

Capital gains affecting the comparability comprise of a gain of EUR 12 million relating to sale of group’s share in Kainuun Voima Oy as well as earnings of EUR 11 million on the sale of other non-current assets.

Capital gains and losses on sale of non-current assets | 12 | 21 |

Changes in tax rates | -3 | -3 |

Total | 12 | -18 |

## Sales by destination country

<table>
<thead>
<tr>
<th>Country</th>
<th>EURm 2021</th>
<th>EURm 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finland</td>
<td>9,889</td>
<td>9,050</td>
</tr>
<tr>
<td>Germany</td>
<td>1,521</td>
<td>1,395</td>
</tr>
<tr>
<td>United States</td>
<td>4,046</td>
<td>3,257</td>
</tr>
<tr>
<td>China</td>
<td>711</td>
<td>683</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>412</td>
<td>328</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>148</td>
<td>151</td>
</tr>
<tr>
<td>Austria</td>
<td>101</td>
<td>103</td>
</tr>
<tr>
<td>Russia</td>
<td>137</td>
<td>123</td>
</tr>
<tr>
<td>Poland</td>
<td>155</td>
<td>125</td>
</tr>
<tr>
<td>Estonia</td>
<td>51</td>
<td>53</td>
</tr>
<tr>
<td>France</td>
<td>33</td>
<td>43</td>
</tr>
<tr>
<td>Other EU countries</td>
<td>55</td>
<td>48</td>
</tr>
<tr>
<td>Other European countries</td>
<td>27</td>
<td>29</td>
</tr>
<tr>
<td>Rest of world</td>
<td>392</td>
<td>330</td>
</tr>
<tr>
<td>Total</td>
<td>17,676</td>
<td>14,858</td>
</tr>
</tbody>
</table>

## Total assets and capital expenditure by country

<table>
<thead>
<tr>
<th>Country</th>
<th>Assets</th>
<th>Capital expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finland</td>
<td>1,046</td>
<td>845</td>
</tr>
<tr>
<td>Germany</td>
<td>1,395</td>
<td>1,304</td>
</tr>
<tr>
<td>United States</td>
<td>1,089</td>
<td>963</td>
</tr>
<tr>
<td>China</td>
<td>1,058</td>
<td>953</td>
</tr>
<tr>
<td>France</td>
<td>378</td>
<td>326</td>
</tr>
<tr>
<td>Uruguay</td>
<td>142</td>
<td>33</td>
</tr>
<tr>
<td>Poland</td>
<td>336</td>
<td>277</td>
</tr>
<tr>
<td>Austria</td>
<td>131</td>
<td>122</td>
</tr>
<tr>
<td>Russia</td>
<td>194</td>
<td>159</td>
</tr>
<tr>
<td>Other EU countries</td>
<td>1,651</td>
<td>1,495</td>
</tr>
<tr>
<td>Other European countries</td>
<td>352</td>
<td>298</td>
</tr>
<tr>
<td>Rest of world</td>
<td>1,462</td>
<td>1,272</td>
</tr>
<tr>
<td>Total</td>
<td>17,676</td>
<td>14,858</td>
</tr>
</tbody>
</table>
2.2 Sales

UPM generates revenue mainly from the sale of goods, i.e. several types of products. The majority of UPM’s revenue comes from sales of graphic and specialty papers to publishers, retailers, printing houses, merchants and distributors, converters and label stock manufacturers; sales of self-adhesive label materials to label printers and brand owners and sales of pulp products to tissue, board, specialty and graphic paper producers. The revenue comprises also sales of energy, biofuel, sawn timber and plywood products and a very limited amount of services related to sale of goods.

UPM sells a proportion of its products to several major customers. The largest customer in terms of sales was represented approximately 2% (2%) of UPM’s sales and the ten largest customers represented approximately 13% (14%) of such sales.

The group’s external sales by industry segment, because this depicts how the nature, amount, timing and uncertainty of revenue and cash flows are affected by economic factors. Sales by UPM business areas are reported consistently with the internal reporting provided to UPM’s President and CEO who is responsible for allocating resources and assessing performance of the business areas. The goods and services included in sales revenue of each business area are presented in below tables.

External sales by major products

<table>
<thead>
<tr>
<th>Business area</th>
<th>EUR million 2021</th>
<th>EUR million 2020</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPM Biorefining</td>
<td>2,940</td>
<td>2,183</td>
<td>33%</td>
</tr>
<tr>
<td>UPM Energy</td>
<td>526</td>
<td>379</td>
<td>39%</td>
</tr>
<tr>
<td>UPM Forest</td>
<td>1,671</td>
<td>1,560</td>
<td>7%</td>
</tr>
<tr>
<td>UPM Specialty Papers</td>
<td>1,482</td>
<td>1,324</td>
<td>12%</td>
</tr>
<tr>
<td>UPM Communication Papers</td>
<td>3,577</td>
<td>3,333</td>
<td>7%</td>
</tr>
<tr>
<td>UPM Plywood</td>
<td>492</td>
<td>405</td>
<td>21%</td>
</tr>
<tr>
<td>Other operations</td>
<td>286</td>
<td>225</td>
<td>25%</td>
</tr>
<tr>
<td>Eliminations</td>
<td>1,157</td>
<td>828</td>
<td>—</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9,814</strong></td>
<td><strong>8,380</strong></td>
<td><strong>14%</strong></td>
</tr>
</tbody>
</table>

Sales by business area

<table>
<thead>
<tr>
<th>EURm</th>
<th>2021</th>
<th>2020</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPM Biorefining</td>
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<td>2,183</td>
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<td>—</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>9,814</strong></td>
<td><strong>8,380</strong></td>
<td><strong>14%</strong></td>
</tr>
</tbody>
</table>

Effect of a 10% change in prices on operating profit for the year

<table>
<thead>
<tr>
<th>EURm</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Papers in UPM Communication Papers</td>
<td>336</td>
<td>318</td>
</tr>
<tr>
<td>Fine and specialty papers in UPM Specialty Papers</td>
<td>126</td>
<td>114</td>
</tr>
<tr>
<td>Label materials in UPM Biorefining</td>
<td>157</td>
<td>156</td>
</tr>
<tr>
<td>Plywood</td>
<td>46</td>
<td>57</td>
</tr>
<tr>
<td>Sawn timber</td>
<td>49</td>
<td>31</td>
</tr>
<tr>
<td>Chemical pulp (net effect)</td>
<td>65</td>
<td>56</td>
</tr>
</tbody>
</table>

The biggest factor affecting UPM’s financial results is the sales price of pulp. A rise in the pulp price have less than half of the effect of the same percentage change in sales price.

Accounting policies

Sales of goods

UPM’s performance obligation in the contracts with customers consists of providing the goods specified in the contracts. Revenue from UPM’s product sales is recognised when performance obligation is satisfied, which takes place at point in time when control of the good has been transferred to the customer. In UPM’s customer contracts the transfer of control and thus timing of revenue recognition is largely dependent on delivery terms. Group terms of delivery are based on Incoterms 2020, the official rules for interpretation of trade terms issued by the International Chamber of Commerce. Major part of the sales contracts is on delivery terms basis, whereby delivery is not a promised service to the customer, as the control of a good does not transfer to the customer before shipment. Revenue and the corresponding receivable are recorded at the point in time when the delivery is performed.

For sales transactions designated free of carriage (FCA), revenue is recorded at the time of shipment. For sales transactions designated as Carriage paid to (CIP) or Carriage and Insurance Paid to (CPT), the portion of revenue relating to goods is recorded at the time of loading and the portion of revenue relating to delivery services over time when the service has been performed.

UPM sells energy to Nordpool electricity market. Revenue is recognised when electricity is transmitted over time.

Sales of services

UPM provides forest expertise and contracting services to woodland and forestry owners and freight services (free space on group’s vessels sold for delivery services) to customers and the receipt of payment is less than 12 months. For these contracts the group has elected to use the practical expedient not to adjust revenue for the effect of financing contracts. Advance payments received from customers are recognised as contract liability. UPM does not have any contract assets arising from contracts with customers.

Distribution of other operating costs and expense

<table>
<thead>
<tr>
<th>EURm</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of goods sold</td>
<td>8,114</td>
<td>7,371</td>
</tr>
<tr>
<td>Cost of services provided</td>
<td>4,546</td>
<td>4,551</td>
</tr>
<tr>
<td>Employee costs</td>
<td>1,094</td>
<td>1,188</td>
</tr>
<tr>
<td>Other operating expenses</td>
<td>670</td>
<td>852</td>
</tr>
<tr>
<td>Credit losses</td>
<td>1,176</td>
<td>781</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>8,104</strong></td>
<td><strong>7,371</strong></td>
</tr>
</tbody>
</table>

Emission expenses | 106 | 106 |

Credit losses | 5 | 9 |

Maintenance and other operating expenses | 756 | 818 |

**Total** | **670** | **852** |

1) Emission expenses include gains on sales of emission rights EUR 144 (13) million.
2) Other operating expenses include, among others, energy as well as expenses related to services and group’s administration.

Refer to Note 4.6 Working capital for information on contract liabilities and refund liabilities.

Operating expenses

Operating expenses excluding forest assets fair value change, woodland harvested and share of results of associates and joint ventures are presented below.

<table>
<thead>
<tr>
<th>EURm</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw materials, consumables and goods</td>
<td>5,446</td>
<td>4,551</td>
</tr>
<tr>
<td>Employee costs</td>
<td>1,094</td>
<td>1,188</td>
</tr>
<tr>
<td>Other operating costs and expenses</td>
<td>670</td>
<td>852</td>
</tr>
<tr>
<td>Delivery costs and other external charges</td>
<td>1,176</td>
<td>781</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>8,104</strong></td>
<td><strong>7,371</strong></td>
</tr>
</tbody>
</table>

Refer to Note 3 Employee rewards, for further information.

Refer to Note 4.6 Working capital for information on contract liabilities and refund liabilities.

Refer to Note 2.1 Business areas for information on UPM products.
In 2021, gains on sale of non-current assets include an EUR 133 million gain from the disposal of Shotton Mill Ltd, and EUR 1 million gain from the disposal of UPM’s 50% share in the joint operation Kauhava Oy.

Research and development costs
The research and development costs included in operating expenses were EUR 46 million (41 million) in 2021. The focus was on new technologies and developing businesses.

Government grants
In 2021, government grants recognised as deduction of operating expenses totalled to EUR 9 million (7 million) of which EUR 2 million (4 million) relates to Finland. EUR 4 million is related to COVID relief in the period.

Emission rights
The group has recognised EUR 75 million (57 million) of income in other operating income and EUR 106 million of income (10 million of expense) under Other operating costs and expenses relating to CO2 emissions. The liability to deliver the obligation to return emission rights is recognised based on market price at the date of initial recognition. Emission rights are not amortised. If the market price of emissions rights at the balance sheet date is lower 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 income statement, systematically, over the compliance period to which the corresponding emission rights relate. The liability to deliver emission rights is recognised based on the price of emissions. The emissions realised are expensed under 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 profit or loss represents the costs of purchasing additional emission rights. Emission rights and associated provisions are derecognised when disposed. Any profit or loss represents the costs of purchasing additional 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 annual operating cash flow per share.

The dividend paid in 2021 was EUR 693 million (EUR 1.30 per share) which is 69% of the operating cash flow per share and in 2020, EUR 693 million (EUR 1.30 per share). The Board of Directors proposes to the Annual General Meeting that a dividend of EUR 693 million, EUR 1.30 per share, will be paid in respect of 2021. The proposed dividend represents 55% of UPM’s operating cash flow per share for the year 2021.

Earning per share

<table>
<thead>
<tr>
<th>Earnings per share</th>
<th>EUR/m 2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic earnings per share</td>
<td>EUR 2.41</td>
<td>1.05</td>
</tr>
<tr>
<td>Diluted earnings per share, EUR</td>
<td>EUR 2.41</td>
<td>1.05</td>
</tr>
</tbody>
</table>

Accounting policies

Research and development costs
Research and development costs are expensed as incurred, except for certain development costs, which are capitalised as they generate future economic benefits, and UPM can measure the cost reliably. Capitalised development costs are amortised on a systematic basis over their expected useful lives, usually not exceeding five years.

Government grants
Government grants are recognised at fair value where there is a reasonable assurance that the grant will be received and the group will comply with the attached conditions. Government grants relating to the purchase of property, plant and equipment are deducted from the acquisition cost of the asset and accordingly directly reduce the annual depreciation of the underlying asset. Other government grants are recognised in the income statement in the period to match them with the costs they are intended to compensate.

Other operating income
Other operating income mainly includes gains on the disposal of non-current assets and rental income. Further, other operating income includes foreign exchange gains and losses in respect of UPM’s normal business activities. Gains and losses on derivatives not qualifying hedge accounting are also recognised in other operating income.

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, a 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 emissions 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 income statement, systematically, over the compliance period to which the corresponding emission rights relate. The liability to deliver emission rights is recognised based on the price of emissions. The emissions realised are expensed under 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 profit or loss represents the costs of purchasing additional emission rights. Emission rights and associated provisions are derecognised when disposed. Any profit or loss represents the costs of purchasing additional emission rights.

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Earnings per share

<table>
<thead>
<tr>
<th>Earnings per share</th>
<th>EUR/m 2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic earnings per share</td>
<td>EUR 2.41</td>
<td>1.05</td>
</tr>
<tr>
<td>Diluted earnings per share, EUR</td>
<td>EUR 2.41</td>
<td>1.05</td>
</tr>
</tbody>
</table>

Accounting policies

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Government grants
Government grants are recognised at fair value where there is a reasonable assurance that the grant will be received and the group will comply with the attached conditions. Government grants relating to the purchase of property, plant and equipment are deducted from the acquisition cost of the asset and accordingly directly reduce the annual depreciation of the underlying asset. Other government grants are recognised in the income statement in the period to match them with the costs they are intended to compensate.
### 3. Employee rewards

#### 3.1 Employee costs

<table>
<thead>
<tr>
<th>EURm</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries and fees</td>
<td>877</td>
<td>879</td>
</tr>
<tr>
<td>Share-based payments</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td>Pension and other post-employment benefits, defined benefit plans</td>
<td>16</td>
<td>13</td>
</tr>
<tr>
<td>Pension costs, defined contribution plans</td>
<td>95</td>
<td>89</td>
</tr>
<tr>
<td>Other indirect employee costs</td>
<td>93</td>
<td>94</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,054</td>
<td>1,188</td>
</tr>
</tbody>
</table>

1) Other indirect employee expenses primarily include other statutory social expenses, excluding pension expenses.

#### 3.2 Key management personnel

The remuneration of the members of the Board of Directors was resolved to be raised so that the Chair of the Board will be paid an annual base fee of EUR 195,000, the Deputy Chair of the Board EUR 160,000, and other members of the Board EUR 115,000.

The annual base fee was paid in company shares and cash so that approximately 40% of the fee was paid in the company share to be purchased on the Board members’ behalf, and the rest in cash. The company paid any costs and transfer tax related to the purchase of the company shares.

### Shareholdings (no. of shares) and fees of the Board of Directors

<table>
<thead>
<tr>
<th>Board members</th>
<th>March 31</th>
<th>Annual base fee (EUR 1,000)</th>
<th>Annual fee (EUR 1,000)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Jari Gustafsson</strong></td>
<td>2)</td>
<td>—</td>
<td>115</td>
</tr>
<tr>
<td><strong>Martti Rannikko</strong></td>
<td>—</td>
<td>—</td>
<td>115</td>
</tr>
<tr>
<td><strong>Antti Autio</strong></td>
<td>—</td>
<td>—</td>
<td>115</td>
</tr>
</tbody>
</table>

1) Jari Gustafsson was elected as new director to the Board in 2021.

### 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 schemes: the Performance Share Plan (PSP) for senior executives and the Deferred Bonus Plan (DBP) for other key employees.

Voluntary pension benefit was arranged through a defined benefit plan until the end of November 2020. The last contribution to the defined benefit plan was made in 2020. Under the defined benefit plan, the target pension was 60% of the average indexed earnings from the last ten full calendar years of employment calculated according to the Finnish statutory pension scheme.

### Salaries and benefits paid to the President and CEO and the Group Executive Team

**EUR 1,000**

<table>
<thead>
<tr>
<th>President and CEO Jussi Pesonen</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries and fees</td>
<td>1,093</td>
<td>1,093</td>
</tr>
<tr>
<td>Short-term incentives</td>
<td>708</td>
<td>888</td>
</tr>
<tr>
<td>Share rewards</td>
<td>1,902</td>
<td>2,734</td>
</tr>
<tr>
<td>Benefits</td>
<td>41</td>
<td>31</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>3,784</td>
<td>4,747</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other members of Group Executive Team</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries and fees</td>
<td>1,398</td>
<td>1,330</td>
</tr>
<tr>
<td>Short-term incentives</td>
<td>3,936</td>
<td>3,831</td>
</tr>
<tr>
<td>Share rewards</td>
<td>10,000</td>
<td>12,134</td>
</tr>
<tr>
<td>Benefits</td>
<td>12,134</td>
<td>14,026</td>
</tr>
</tbody>
</table>

1) 11 members in 2021 and 2020.

In 2021, costs under the Finnish statutory pension scheme for the President and CEO amounted to EUR 329,000 (349,000) and payments under the voluntary pension plan amounted to EUR 1,200,000 (1,421,000).

In 2021, costs under the Finnish and German statutory pension schemes for Group Executive Team (GET) members (excluding the President and CEO) amounted to EUR 860,000 (785,000) and payments under the voluntary pension plan amounted to EUR 1,025,000 (964,000).

The remuneration of the President and CEO and other members of the Group Executive Team consists of the base salary and benefits, short-term incentives and long-term share-based incentives.

In 2021, the short-term incentives are based on the company’s Short-Term Incentive Plan and they are paid annually in cash. The amount of the incentive is linked to the executive’s position and achievement of annually set targets. The maximum incentives amount to a total of 100% of the annual base salary to the Business Area Executives and to a total of 70% of annual base salary to the other members 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 3.8 million (3.4 million).

According to the service agreement, the President and CEO would have been entitled to retire in November 2020 at the age of 60 but at the request of the company’s Board of Directors, the President and CEO has decided to continue his position. The President and CEO has a voluntary pension benefit in addition to the Finnish statutory pension scheme. The President and CEO’s performance Share Plan (PSP) is targeted at the President and CEO and other Group Executive Team (GET) members as well as other selected members of the management. Under the ongoing plans UPM shares are awarded based on total shareholder return during a three-year earning period. The earned shares are delivered after the earning period has ended. Total shareholder return takes into account share price appreciation and paid dividends.
The group operates various pension schemes in accordance with local conditions and practices in the countries of operations. Retirement benefit obligations 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 recognized in the balance sheet are presented below:

<table>
<thead>
<tr>
<th>Scheme</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FINLAND</td>
<td>UK</td>
</tr>
<tr>
<td>Present value of funded obligations</td>
<td>577</td>
<td>542</td>
</tr>
<tr>
<td>Deficit (+)/surplus (+)</td>
<td>-55</td>
<td>-23</td>
</tr>
<tr>
<td>Net defined benefit liability (net asset)</td>
<td>-55</td>
<td>23</td>
</tr>
<tr>
<td>Fair value of plan assets</td>
<td>-56</td>
<td>-23</td>
</tr>
<tr>
<td>Fair value of plan liabilities</td>
<td>2</td>
<td>-</td>
</tr>
</tbody>
</table>


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 79% (81%) of group’s Finnish employees are insured with an insurance company and these arrangements qualify as defined contribution plans. Approximately 21% (19%) of employees are insured with TyEL foundation (UPM Tyeliliitto eläkeläärijärjestö). The TyEL foundation is administrated 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 on 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.
Present value of obligation and fair value of plan assets

<table>
<thead>
<tr>
<th></th>
<th>Pension and other post-employment benefits 2021</th>
<th></th>
<th>Pension and other post-employment benefits 2020</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PRESENT VALUE OF OBLIGATION</td>
<td>FAIR VALUE OF PLAN ASSETS</td>
<td>NET DEFINED BENEFIT LIABILITY (ASSET)</td>
<td>PRESENT VALUE OF OBLIGATION</td>
</tr>
<tr>
<td>Carrying value, at 1 January</td>
<td>1,859</td>
<td>-1,140</td>
<td>719</td>
<td>1,784</td>
</tr>
<tr>
<td>Current service cost</td>
<td>13</td>
<td>—</td>
<td>15</td>
<td>14</td>
</tr>
<tr>
<td>Post service cost</td>
<td>-2</td>
<td>—</td>
<td>-2</td>
<td>-2</td>
</tr>
<tr>
<td>Claims and losses arising from settlements</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Interest expense (a) income (b)</td>
<td>12</td>
<td>—</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>Total included in employee costs [Note 3.1]</td>
<td>25</td>
<td>-9</td>
<td>16</td>
<td>27</td>
</tr>
<tr>
<td>Actuarial gains and losses arising from changes in demographics assumptions</td>
<td>-12</td>
<td>—</td>
<td>-12</td>
<td>-3</td>
</tr>
<tr>
<td>Actuarial gains and losses arising from changes in financial assumptions</td>
<td>-58</td>
<td>—</td>
<td>-58</td>
<td>163</td>
</tr>
<tr>
<td>Actuarial gains and losses arising from experience adjustments</td>
<td>6</td>
<td>—</td>
<td>6</td>
<td>21</td>
</tr>
<tr>
<td>Return on plan assets, excluding amounts included in interest expense (a) income (b)</td>
<td>—</td>
<td>-62</td>
<td>-62</td>
<td>—</td>
</tr>
<tr>
<td>Total remeasurement gains (+) and losses (-) included in other comprehensive income</td>
<td>-66</td>
<td>-62</td>
<td>-128</td>
<td>140</td>
</tr>
<tr>
<td>Benefits paid</td>
<td>-64</td>
<td>64</td>
<td>—</td>
<td>-63</td>
</tr>
<tr>
<td>Settlements paid</td>
<td>-4</td>
<td>3</td>
<td>-1</td>
<td>—</td>
</tr>
<tr>
<td>Contributions by the employer</td>
<td>—</td>
<td>-33</td>
<td>-33</td>
<td>—</td>
</tr>
<tr>
<td>Translation differences</td>
<td>39</td>
<td>36</td>
<td>3</td>
<td>28</td>
</tr>
<tr>
<td>Carrying value, at 31 December</td>
<td>1,790</td>
<td>-1,214</td>
<td>576</td>
<td>1,859</td>
</tr>
</tbody>
</table>

Actuarial risks

Defined benefit plans typically expose the group to the following actuarial risks:

**Investment risk (asset volatility)**

The group is exposed to changes of assets’ values especially in the investments of the foundations and schemes in Finland and in the UK. The asset values of these arrangements constitute 99% of total asset values in defined benefit plans within group. 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.

**Interest risk**

Discount rates used in calculations are based on high-quality corporate debt instruments 21% and equity instruments 30% used may differ materially from actual results due to, among others, changes in 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.

**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 1 million.

**Life expectancy**

Adjustments in mortality assumption have an impact on group’s defined benefit obligations. An increase in life expectancy by one year will increase the obligation in Finland by EUR 25 million, in the UK by EUR 26 million and in Germany by EUR 26 million.

**Present value of obligation**

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 1 million.

**Future salary risk**

In the Finnish plan, the inflation risk is not significant as changes in the inflation assumption are mainly covered by the TyEL pooling system. In the UK, the pensions in payment are tied to Retail Price Index whilst inflation assumption are mainly covered by the TyEL pooling system. In Germany the pensions have to be adjusted in accordance with the Consumer Price Index.

**Inflation risk**

In Germany the pensions have to be adjusted in accordance with the Consumer Price Index. In the UK, the pensions in payment are tied to Retail Price Index whilst in inflation assumption are mainly covered by the TyEL pooling system. In Germany the pensions have to be adjusted in accordance with the Consumer Price Index.

**Inflation risk**

The weighted average principal assumptions used in the valuations of the defined benefit obligations are detailed below:

<table>
<thead>
<tr>
<th>Country</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>FINLAND</td>
<td>UK</td>
<td>GERMANY</td>
</tr>
<tr>
<td>Discount rate %</td>
<td>0.80</td>
<td>0.33</td>
</tr>
<tr>
<td>Inflation %</td>
<td>2.03</td>
<td>1.33</td>
</tr>
<tr>
<td>Rate of salary increase %</td>
<td>2.01</td>
<td>1.33</td>
</tr>
<tr>
<td>Rate of pension increase %</td>
<td>1.02</td>
<td>0.62</td>
</tr>
<tr>
<td>Expected average remaining working years of participants</td>
<td>15.3</td>
<td>14.1</td>
</tr>
</tbody>
</table>

A negative change indicates a decrease in the defined benefit obligation. A positive change indicates an increase in the defined benefit obligation.

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 at 31 December

<table>
<thead>
<tr>
<th></th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Money market</td>
<td>678</td>
<td>138</td>
</tr>
<tr>
<td>Debt instruments</td>
<td>—</td>
<td>253</td>
</tr>
<tr>
<td>Equity instruments</td>
<td>92</td>
<td>56</td>
</tr>
<tr>
<td>Property</td>
<td>—</td>
<td>124</td>
</tr>
<tr>
<td>Assets held by insurance companies</td>
<td>—</td>
<td>52</td>
</tr>
<tr>
<td>Other assets</td>
<td>—</td>
<td>23</td>
</tr>
<tr>
<td>Total</td>
<td>720</td>
<td>484</td>
</tr>
</tbody>
</table>

In 2021 plan assets include the company’s ordinary shares with a fair value of EUR 0 million (2 million).

In 2022 contributions of EUR 32 million are expected to be paid to group’s defined benefit plans. In 2021 contributions of EUR 33 million were paid to group’s defined benefit plans.
**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.

### Capital employed

**2021** | **2020**  
---|---
Property, plant and equipment | 5,569 | 4,316  
Leased assets | 608 | 561  
Forest assets | 2,328 | 2,077  
Energy shareholdings | 2,579 | 1,938  
Goods and other intangible assets | 403 | 592  
Operating working capital | 1,204 | 1,247  
Provisions | -155 | -222  
Net retirement benefit assets and liabilities | -130 | -143  
Cash and cash equivalents | 1,460 | 1,720  
Other assets and liabilities | 290 | 215  
Net deferred tax assets and liabilities | 761 | 948  
Total | 13,759 | 11,555  

**Formula**

\[
\text{Capital employed} = \text{Property, plant and equipment} + \text{Leased assets} + \text{Forest assets} + \text{Energy shareholdings} + \text{Goods and other intangible assets} + \text{Operating working capital} + \text{Provisions} + \text{Net retirement benefit assets and liabilities} + \text{Cash and cash equivalents} + \text{Other assets and liabilities} + \text{Net deferred tax assets and liabilities}
\]
Major capital commitments at 31 December

<table>
<thead>
<tr>
<th>Million</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>New bioenergy / Germany</td>
<td>315</td>
<td>471</td>
</tr>
<tr>
<td>CCP power plant / Germany</td>
<td>32</td>
<td>67</td>
</tr>
<tr>
<td>New pulp mill / Uruguay</td>
<td>1,406</td>
<td>2,139</td>
</tr>
<tr>
<td>Renovation and modernisation / Kaukasousi</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td>hydro power plant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mill development / plywood Joensuu</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

Impairment losses
In December 2021, UPM conducted an impairment test of UPM Communication Papers fixed assets. The costs of pulp, recycled fibre, logistics and energy increased significantly in 2021 and high production costs continue to challenge the operations in the foreseeable future. Fair value less cost to sell method was used in the calculation with an inflation rate of 2.0%, negative sales growth rate of 5.4% in real terms, and a positive discount rate of 6.7%. As a result of the test calculation, UPM recognised impairment charges of EUR 30 million related to newsprint property, plant and equipment.

In June 2020, UPM announced the plan that it has started a consultation process for the potential closure of the UPM Jyväskylä plywood mill in Finland. With the plan to permanently close the mill, UPM recognised impairment charges of EUR 8 million in the plywood business area.

In August 2020, UPM announced the plans for the permanent closure of the UPM Kaipola paper mill in Finland. The mill was permanently closed in early January 2021. With the permanent closure of the mill, UPM recognised impairment charges of EUR 33 million in the Communication Papers business area.

Accounting policies

Property, plant and equipment
Property, plant and equipment is stated at historical cost. Costs of assets acquired in business combinations are determined at fair value at the acquisition date. Depreciation is calculated on a straight line basis and is reviewed annually. Management makes estimates on the future useful lives for which there are separately identifiable cash flows (cash-generating units). Non-financial assets, other than goodwill, that have suffered impairment are reviewed for possible reversal of the impairment at each reporting date. Where an impairment loss is subsequently reversed, the carrying amount of the asset is increased to the revised estimate of its recoverable amount, but the increased carrying amount will not exceed the carrying amount that would have been determined had no impairment loss been recognised for the asset in prior years.

Key estimates and judgements
The estimations of useful lives, residual value as well as depreciation and amortisation methods require significant management judgement and are reviewed annually. Management makes estimates on the future useful lives of the asset and its eventual disposal. While management believes that estimates of future cash flows are reasonable, different assumptions regarding such cash flows could materially affect valuations. The long useful lives of assets, changes in estimated future sales prices of products, changes in product costs and changes in the discount rates used could lead to significant impairment charges. The estimates are also in an acquisition when determining the fair values and remaining useful lives of acquired intangible and tangible assets.

4.2 Forest assets

UPM is both a major forest owner and a purchaser of wood. The value of forest assets, i.e., standing trees, amounted to EUR 2,328 million (2,077 million) at the end of 2021. UPM’s own and leased forest land areas are summarised in below table.

<table>
<thead>
<tr>
<th>Million</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finland</td>
<td>513</td>
<td>426</td>
</tr>
<tr>
<td>Uruguay</td>
<td>395</td>
<td>288</td>
</tr>
<tr>
<td>Other countries</td>
<td>297</td>
<td>241</td>
</tr>
<tr>
<td>Total</td>
<td>1,000</td>
<td>755</td>
</tr>
</tbody>
</table>

The fair value of forest assets at 31 December 2021 amounted to EUR 2,579 million (1,936 million) at the end of 2021. These energy companies supply energy or both energy and heat to their shareholders on a co-principle (Mankala-principle) which is widely applied in the Finnish energy industry. Under the Mankala-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.

In 2020, UPM issued a shareholder loan of EUR 47 million without a maturity date to PVO. Embedded into the loan terms is a right to issue new shares in the PVO 82 series against the remaining, unpaid nominal of the loan starting from 2021. The loan is valued at fair value and is taken into account as a part of the total fair valuation of the PVO 82 series valuation. In addition, in 2020 UPM announced an aim commitment of EUR 123 million to PVO, where also a right to issue new PVO 82 shares is embedded starting from 2023.
PVO’s share capital is divided into different series of shares. The B and B2 series relate to PVO’s shareholdings in Teollisuuden Voima Oyj (TVO). UPM has no direct shareholdings in TVO. TVO operates two nuclear power plants (Olkiluoto 1 and Olkiluoto 2) and is constructing a new nuclear power plant in Olkiluoto (Olkiluoto 3), Finland. The operation of a nuclear power plant is governed by international, European Union and local nuclear regulatory regimes. Pursuant to the Finnish Nuclear Liability Act, the operator of a nuclear facility has a strict third-party liability in relation to nuclear accidents. Shareholders of power companies that own and operate nuclear power plants are not subject to the liability under the Nuclear Liability Act in Finland, the future costs of conditioning, storage and final disposal of spent fuel, management of low and intermediate level radioactive waste as well as nuclear power plant decommissioning are provided for by a state established fund (the Finnish State Nuclear Waste Management Fund). The contributions to the Fund are intended to be sufficient to cover estimated future costs. These contributions have been taken into consideration in the fair value of the related energy shareholdings.

Key estimates and judgements

Fair valuation and sensitivity

Valuation of energy shareholdings requires management’s assumptions and estimates of a number of factors that may differ from the actual outcome which could lead to significant adjustment to the carrying amount of the asset. Fair value is determined on a discounted cash flow basis and the main factors impacting the future cash flows include future electricity prices, price trends and discount rates.

The electricity price estimate is based on a simulation of the Finnish area electricity price. A change of 3% in the electricity price used in the model would change the total value of the assets by EUR 370 million. The discount rate of 5.08% used in the valuation model is determined using the weighted average cost of capital method. A change of 0.5 percentage points in the discount rate would change the estimated fair value of the assets by approximately EUR 330 million.

Other uncertainties and risk factors in the value of the assets relate to startup schedule of the fixed price turn-key Olkiluoto 3 EPR nuclear power plant project. UPM’s indirect share of the capacity of Olkiluoto 3 EPR is approximately 31%, through its PVO B2 shares. Changes in regulatory environment or taxation could also have an impact on the value of the energy generating assets.

Key estimates and judgements

Fair valuation and sensitivity

Valuation of energy shareholdings requires management’s assumptions and estimates of a number of factors that may differ from the actual outcome which could lead to significant adjustment to the carrying amount of the asset. Fair value is determined on a discounted cash flow basis and the main factors impacting the future cash flows include future electricity prices, price trends and discount rates.

The electricity price estimate is based on a simulation of the Finnish area electricity price. A change of 3% in the electricity price used in the model would change the total value of the assets by EUR 370 million. The discount rate of 5.08% used in the valuation model is determined using the weighted average cost of capital method. A change of 0.5 percentage points in the discount rate would change the estimated fair value of the assets by approximately EUR 330 million.

Other uncertainties and risk factors in the value of the assets relate to startup schedule of the fixed price turn-key Olkiluoto 3 EPR nuclear power plant project. UPM’s indirect share of the capacity of Olkiluoto 3 EPR is approximately 31%, through its PVO B2 shares. Changes in regulatory environment or taxation could also have an impact on the value of the energy generating assets.

4.4 Goodwill and other intangible assets

The group’s goodwill mainly relates to pulp operations in Finland and Uruguay belonging to UPM Biorefining business area.

Goodwill by business area

<table>
<thead>
<tr>
<th>EUm</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulp operations Uruguay</td>
<td>102</td>
<td>94</td>
</tr>
<tr>
<td>Pulp operations Finland</td>
<td>113</td>
<td>113</td>
</tr>
<tr>
<td>UPM Raflatac</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>UPM Plywood</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Other operations</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>237</td>
<td>229</td>
</tr>
</tbody>
</table>

Goodwill

<table>
<thead>
<tr>
<th>EUm</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carrying value, at 1 January</td>
<td>229</td>
<td>238</td>
</tr>
<tr>
<td>Translation differences</td>
<td>8</td>
<td>—</td>
</tr>
<tr>
<td>Carrying value, at 31 December</td>
<td>237</td>
<td>229</td>
</tr>
</tbody>
</table>

Other intangible assets

<table>
<thead>
<tr>
<th>EUm</th>
<th>INTANGIBLE RIGHTS</th>
<th>SOFTWARE AND OTHER INTANGIBLE ASSETS</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021</td>
<td>Accumulated costs</td>
<td>477</td>
<td>541</td>
</tr>
<tr>
<td></td>
<td>Accumulated amortisation and impairments</td>
<td>279</td>
<td>177</td>
</tr>
<tr>
<td></td>
<td>Carrying value, at 31 December</td>
<td>198</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td>Carrying value, at 1 January</td>
<td>199</td>
<td>69</td>
</tr>
<tr>
<td></td>
<td>Additions</td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Amortisation</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Redeposits</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Carrying value, at 31 December</td>
<td>198</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td>Emission rights, carrying value</td>
<td>104</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Carrying value including emission rights, at 31 December</td>
<td>236</td>
<td>—</td>
</tr>
<tr>
<td>2020</td>
<td>Accumulated costs</td>
<td>477</td>
<td>655</td>
</tr>
<tr>
<td></td>
<td>Accumulated amortisation and impairments</td>
<td>272</td>
<td>396</td>
</tr>
<tr>
<td></td>
<td>Carrying value, at 31 December</td>
<td>199</td>
<td>69</td>
</tr>
<tr>
<td></td>
<td>Carrying value, at 1 January</td>
<td>199</td>
<td>67</td>
</tr>
<tr>
<td></td>
<td>Additions</td>
<td>3</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>Amortisation</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Redeposits</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Carrying value, at 31 December</td>
<td>199</td>
<td>69</td>
</tr>
<tr>
<td></td>
<td>Emission rights, carrying value</td>
<td>95</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Carrying value including emission rights, at 31 December</td>
<td>336</td>
<td>—</td>
</tr>
</tbody>
</table>

1 Refer Note 2.3 Operating expenses and other operating income, for further information on emission rights.
**Impairment testing**

Impairment tests for goodwill and water rights with indefinite life were carried out in the fourth quarter 2021. Water rights of hydropower plants belonging to UPM Energy and reported in intangible rights amounted EUR 169 million at the end of 2021 and 2020. The values of water rights were tested based on expected future cash flows of each separate hydro power plant. The basis for valuation and key assumptions used in goodwill impairment testing are summarised in below table.

<table>
<thead>
<tr>
<th>CASH GENERATING UNIT</th>
<th>BASIS OF VALUATION</th>
<th>PERIOD OF FORECAST</th>
<th>PRE-TAX DISCOUNT RATE</th>
<th>KEY ASSUMPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulp operations Finland</td>
<td>Value in use</td>
<td>10 years + terminal value</td>
<td>9.41 % (2020: 7.84 %)</td>
<td>Pulp price, wood costs</td>
</tr>
<tr>
<td>Pulp operations Uruguay</td>
<td>Value in use</td>
<td>10 years + terminal value</td>
<td>7.50 % (2020: 7.84 %)</td>
<td>Pulp price, wood costs</td>
</tr>
<tr>
<td>UPM Raflatac</td>
<td>Value in use</td>
<td>10 years + terminal value</td>
<td>8.22 % (2020: 7.80 %)</td>
<td>Product prices, cost development</td>
</tr>
<tr>
<td>UPM Plywood</td>
<td>Value in use</td>
<td>10 years + terminal value</td>
<td>13.01 % (2020: 13.04 %)</td>
<td>Product prices, cost development</td>
</tr>
</tbody>
</table>

**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 question. The adjusted after-tax discount rate is translated to a present value rate for each cash generating unit (CGU) based on the specific tax rate applicable to where the CGU operates.

**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 assessments 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 ten-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.

**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 hydro power 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.

**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.

**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.

**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 assessments 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 ten-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.

**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 hydro power 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 capitalised 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.

**Goodwill impairment tests**

Goodwill impairment tests were carried out for pulp operations in Finland and Uruguay, belonging to UPM Biofinning business area, UPM Raflatac, business area and UPM Plywood business area. The 2021 impairment tests did not result in a recognition of any impairment.

**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 question. The adjusted after-tax discount rate is translated to a present value rate for each cash generating unit (CGU) based on the specific tax rate applicable to where the CGU operates.

**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 assessments 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 ten-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.

**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 CGUs or other groups of assets. Each CGU is no larger than a business area. The carrying amount for the CGUs 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**

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 higher of the asset’s net selling price and its value in use.

### 4.5 Provisions

<table>
<thead>
<tr>
<th>Year</th>
<th>Cash inflows largely independent of the cash inflows of other assets or other CGUs</th>
<th>Cash inflows largely independent of the cash inflows of other assets or other CGUs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021</td>
<td>EURm</td>
<td>EURm</td>
</tr>
<tr>
<td>Provisions at 1 January</td>
<td>52</td>
<td>91</td>
</tr>
<tr>
<td>Provisions made during the year</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Provisions utilised during the year</td>
<td>22</td>
<td>53</td>
</tr>
<tr>
<td>Unused provisions reversed</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Provisions at 31 December</td>
<td>24</td>
<td>36</td>
</tr>
<tr>
<td>Unemployment compensations</td>
<td>0</td>
<td>17</td>
</tr>
<tr>
<td>Non-current</td>
<td>8</td>
<td>68</td>
</tr>
<tr>
<td>Total</td>
<td>88</td>
<td>155</td>
</tr>
</tbody>
</table>

**Responsibility beyond fossils strategy**

**Strategy**

**Businesses**

**Governance**

**Accounts for 2021**

UPM ANNUAL REPORT 2021
4.6 Working capital

The group defines operating working capital as inventories, trade receivables, trade payables and advances received which are presented separately below. The performance obligations related to advances received are typically fulfilled within 12 months of receipt of the advance. UPM is focusing on working capital efficiency and targeting sustainable and reduced in operating working capital.

## Operating working capital

### Inventories

<table>
<thead>
<tr>
<th></th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw materials and consumables</td>
<td>794</td>
<td>647</td>
</tr>
<tr>
<td>Work in progress</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Finished products and goods</td>
<td>769</td>
<td>616</td>
</tr>
<tr>
<td>Advance payments</td>
<td>25</td>
<td>16</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,594</strong></td>
<td><strong>1,285</strong></td>
</tr>
</tbody>
</table>

### Trade and other receivables

<table>
<thead>
<tr>
<th></th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade receivables</td>
<td>1,204</td>
<td>1,247</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,204</strong></td>
<td><strong>1,247</strong></td>
</tr>
</tbody>
</table>

## Trade and other payables

<table>
<thead>
<tr>
<th></th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade receivables</td>
<td>1,345</td>
<td>1,129</td>
</tr>
<tr>
<td>Loss allowance provision</td>
<td>25</td>
<td>31</td>
</tr>
<tr>
<td><strong>Total trade receivables</strong></td>
<td><strong>1,370</strong></td>
<td><strong>1,088</strong></td>
</tr>
<tr>
<td>Prepayments and accrued income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personnel and other tax liabilities</td>
<td>20</td>
<td>48</td>
</tr>
<tr>
<td>Other items</td>
<td>175</td>
<td>130</td>
</tr>
<tr>
<td><strong>Total prepayments and accrued income</strong></td>
<td><strong>200</strong></td>
<td><strong>186</strong></td>
</tr>
</tbody>
</table>

### Other receivables

<table>
<thead>
<tr>
<th></th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAT and other indirect taxes receivable</td>
<td>166</td>
<td>135</td>
</tr>
<tr>
<td>Other receivables</td>
<td>339</td>
<td>113</td>
</tr>
<tr>
<td><strong>Total other receivables</strong></td>
<td><strong>505</strong></td>
<td><strong>248</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,024</strong></td>
<td><strong>1,534</strong></td>
</tr>
</tbody>
</table>

## Accounting policies

A provision is recognized when a current or future legal or constructive obligation exists as a result of a past event and it is probable that an outflow of resources will be required to settle the obligation and the amount can be reliably estimated. Provisions are split between amounts expected to be settled within 12 months of the balance sheet date (current) and amounts expected to be settled later (non-current).

### Restructuring and termination provisions

A restructuring provision is recognized when the details of a plan that the group has communicated to the employees have been communicated to the employees.

### Environmental provisions

Environmental provisions that relate to an existing condition caused by past operations that do not contribute to future economic benefits are recognized. The recognition of environmental provisions is based on current interpretations of environmental laws and regulations. Such provisions are recognized 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 was located. The amount recognized 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 equivalent amount is deducted from the provision. The provision is recognized and subsequently depreciated as part of the asset. Provisions do not include any third-party recoveries.

### Emission provisions

Emission obligations are recognized in provisions on based on realized emissions. The provision is measured at the carrying amount of the corresponding emission rights held, which are recognized as intangible assets. In case of deficit in emission rights, the shortage is valued at the market value at the balance sheet date.

## Accounting policies

**Provisions**

Provisions are recognized when the group has a present legal or constructive obligation as a result of a past event, an unfavorable outcome is probable and the amount of loss can be reasonably estimated. Due to inherent uncertain nature of litigation, the actual losses may differ significantly from the originally estimated provision.

> Refer Note 9.2 litigation for details of legal contingencies.

### Key estimates and judgements

#### 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.

### Key estimates and judgements

#### 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.
5. Capital structure

**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. 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.

### UPM’s capital

<table>
<thead>
<tr>
<th>EURm</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity attributable to owners of the parent company</td>
<td>10,846</td>
<td>9,351</td>
</tr>
<tr>
<td>Noncontrolling interest</td>
<td>261</td>
<td>162</td>
</tr>
<tr>
<td>Total equity</td>
<td>11,107</td>
<td>9,513</td>
</tr>
<tr>
<td>Noncurrent debt</td>
<td>2,586</td>
<td>1,952</td>
</tr>
<tr>
<td>Current debt</td>
<td>86</td>
<td>90</td>
</tr>
<tr>
<td>Total debt</td>
<td>2,672</td>
<td>2,042</td>
</tr>
<tr>
<td>Total capitalisation</td>
<td>13,759</td>
<td>11,553</td>
</tr>
<tr>
<td>Total inflow</td>
<td>574</td>
<td>—</td>
</tr>
<tr>
<td>Total outflow</td>
<td>-1</td>
<td>-1</td>
</tr>
<tr>
<td>Net inflow</td>
<td>573</td>
<td>—</td>
</tr>
<tr>
<td>Net debt</td>
<td>677</td>
<td>56</td>
</tr>
</tbody>
</table>

**Liquidity**

<table>
<thead>
<tr>
<th>EURm</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash at bank</td>
<td>1,313</td>
<td>1,390</td>
</tr>
<tr>
<td>Cash equivalents</td>
<td>146</td>
<td>330</td>
</tr>
<tr>
<td>Investment funds</td>
<td>100</td>
<td>—</td>
</tr>
<tr>
<td>Committed credit lines</td>
<td>909</td>
<td>1,458</td>
</tr>
<tr>
<td>of which used</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Loan commitments</td>
<td>-123</td>
<td>-123</td>
</tr>
<tr>
<td>Used uncommitted credit lines</td>
<td>-2</td>
<td>-2</td>
</tr>
<tr>
<td>Long-term loan repayment cash flow</td>
<td>-77</td>
<td>-80</td>
</tr>
<tr>
<td>Liquidity</td>
<td>2,267</td>
<td>2,973</td>
</tr>
</tbody>
</table>

**Liquidity and refinancing risk**

Under all circumstances, UPM seeks to maintain adequate liquidity, which depends on a number of factors, such as the availability of cash flows from operations and access to additional debt and equity financing. UPM aims to ensure sufficient liquidity by means of efficient cash management and restricting financial investments to investment types that can readily be converted into cash and by keeping a sufficient amount of unused committed credit lines or cash as a reserve. UPM aims to minimise refinancing risks by ensuring a balanced loan portfolio maturing schedule and sufficiently long maturities. The average loan maturity at 31 December 2021 was 7.3 years (7.6 years).

### Maturity of debt at the end of 2021

<table>
<thead>
<tr>
<th>EURm</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
<th>2025</th>
<th>2026</th>
<th>2027+</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonds</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>1,381</td>
<td>1,381</td>
</tr>
<tr>
<td>Loans from financial institutions</td>
<td>6</td>
<td>8</td>
<td>19</td>
<td>36</td>
<td>31</td>
<td>122</td>
<td>219</td>
</tr>
<tr>
<td>Lease liabilities</td>
<td>70</td>
<td>69</td>
<td>62</td>
<td>67</td>
<td>31</td>
<td>275</td>
<td>574</td>
</tr>
<tr>
<td>Other loans</td>
<td>1</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>163</td>
<td>164</td>
</tr>
<tr>
<td>Current loans</td>
<td>2</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>2</td>
</tr>
<tr>
<td>Principal payments</td>
<td>79</td>
<td>76</td>
<td>81</td>
<td>101</td>
<td>62</td>
<td>2,141</td>
<td>2,540</td>
</tr>
<tr>
<td>Interest payments</td>
<td>45</td>
<td>45</td>
<td>44</td>
<td>44</td>
<td>43</td>
<td>107</td>
<td>328</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 104 million and other non-cash adjustments decreasing carrying value by EUR 22 million.

### Maturity of debt at the end of 2020

<table>
<thead>
<tr>
<th>EURm</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
<th>2025</th>
<th>2026</th>
<th>2027+</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonds</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>1,056</td>
<td>1,056</td>
<td></td>
</tr>
<tr>
<td>Loans from financial institutions</td>
<td>4</td>
<td>4</td>
<td>17</td>
<td>8</td>
<td>16</td>
<td>77</td>
<td>126</td>
<td></td>
</tr>
<tr>
<td>Lease liabilities</td>
<td>73</td>
<td>63</td>
<td>53</td>
<td>50</td>
<td>54</td>
<td>248</td>
<td>544</td>
<td></td>
</tr>
<tr>
<td>Other loans</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>168</td>
<td>171</td>
<td></td>
</tr>
<tr>
<td>Current loans</td>
<td>2</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Principal payments</td>
<td>82</td>
<td>67</td>
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<td>37</td>
<td>127</td>
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</table>

The difference between the above nominal values and carrying value of total debt arise from fair value adjustments increasing carrying value by EUR 157 million and other non-cash adjustments decreasing carrying value by EUR 18 million.

### Maturity of derivatives included in net debt and guarantees at the end of 2021

<table>
<thead>
<tr>
<th>EURm</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
<th>2025</th>
<th>2026</th>
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<tbody>
<tr>
<td>Net settled interest rate swaps</td>
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<td>149</td>
<td>149</td>
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<tr>
<td>Gross settled derivatives</td>
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<td>—</td>
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<td>—</td>
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<td>149</td>
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<tr>
<td>Gross currency swaps</td>
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<tr>
<td>Guarantees</td>
<td>—</td>
<td>—</td>
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<td>—</td>
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</tbody>
</table>
Accounts for 2021


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. In 2021, net debt increased by EUR 591 million. Net debt totalled EUR 647 million (56 million) at the end of 2021.

In October 2020 UPM established a EUR 3 billion Euro Medium Term Note (EMTN) programme and launched a Green Finance Framework. The independent second opinion concerning the framework was provided by CICERO Shades of Green. UPM’s framework was rated with the highest-grade, CICERO Dark Green.

UPM ANNUAL REPORT 2021

<table>
<thead>
<tr>
<th>Year</th>
<th>EURm</th>
<th>EURm</th>
<th>EURm</th>
<th>EURm</th>
<th>EURm</th>
<th>EURm</th>
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<tr>
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<td>2,046</td>
<td>157</td>
<td>2,046</td>
<td>157</td>
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Net debt

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<td>Derivatives</td>
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<td>210</td>
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<td>Repayments of lease liabilities</td>
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<tr>
<td>Current debt</td>
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<td>157</td>
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<tr>
<td>Other receivables</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>Non-current interest-bearing assets</td>
<td>148</td>
<td>181</td>
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<td>Loan receivables</td>
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<tr>
<td>Cash and cash equivalents</td>
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Change in net debt 2021

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<th>EURm</th>
<th>EURm</th>
<th>EURm</th>
<th>EURm</th>
<th>EURm</th>
<th>EURm</th>
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<th>EURm</th>
<th>EURm</th>
<th>EURm</th>
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<tr>
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<td>-</td>
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<tr>
<td>Change in current liabilities</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
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<td>-</td>
<td>-</td>
<td>-</td>
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</tr>
<tr>
<td>Transaction costs and discounts in operating cash flow</td>
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<td>-</td>
<td>-</td>
<td>-</td>
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<td>-</td>
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</tr>
<tr>
<td>Change in other financial assets in operating cash flow</td>
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<td>-</td>
<td>-</td>
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<tr>
<td>Change in other financial assets in investing cash flow</td>
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<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
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<tr>
<td>Change in net debt, non-cash</td>
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<td>268</td>
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<td>New contracts and subsequent additions</td>
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<td>-</td>
<td>-</td>
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<td></td>
</tr>
<tr>
<td>Fair value gains and losses</td>
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<td>-28</td>
<td>-35</td>
<td>-</td>
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<td>-</td>
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<td>-</td>
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<tr>
<td>Exchange gains and losses</td>
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<td>-</td>
<td>-</td>
<td>-</td>
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</tr>
<tr>
<td>Effective interest rate adjustment</td>
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<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Carrying value, at 31 December</td>
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<td>574</td>
<td>2</td>
<td>-99</td>
<td>-100</td>
<td>-219</td>
<td>268</td>
<td>268</td>
<td>476</td>
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</table>

Gearing ratio, %

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<tr>
<th>Year</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
<th>21</th>
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<tbody>
<tr>
<td>2021</td>
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<td>-</td>
<td>-</td>
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<tr>
<td>2020</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
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</table>

Financial risk

Change in net debt, cash

-7 | - | - | - | - | - | - | - | - | - | - | - |

Derivatives

<table>
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<tr>
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<th>EURm</th>
<th>EURm</th>
<th>EURm</th>
<th>EURm</th>
<th>EURm</th>
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<th>EURm</th>
<th>EURm</th>
<th>EURm</th>
<th>EURm</th>
<th>EURm</th>
<th>EURm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total inflow</td>
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<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total outflow</td>
<td>-1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Maturity table of derivatives included in net debt and guarantees at the end of 2020
### Change in net debt 2020

<table>
<thead>
<tr>
<th>Description</th>
<th>EURm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carrying value, at 1 January</td>
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<tr>
<td>Change in net debt, cash</td>
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</tr>
<tr>
<td>Proceeds from non-current debt</td>
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<tr>
<td>Payments of non-current debt</td>
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</tr>
<tr>
<td>Lease repayments</td>
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</tr>
<tr>
<td>Change in current liabilities</td>
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</tr>
<tr>
<td>Net cash flows from derivatives</td>
<td>-12</td>
</tr>
<tr>
<td>Transaction costs and discounts in operating cash flow</td>
<td>-10</td>
</tr>
<tr>
<td>Change in other financial assets in operating cash flow</td>
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<tr>
<td>Change in other financial assets in investing cash flow</td>
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<tr>
<td>Change in cash and cash equivalents</td>
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<td>Carrying value, at 31 December</td>
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<td>Change in net debt, non-cash</td>
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<tr>
<td>New contracts and subsequent additions</td>
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<tr>
<td>Lease liability reassessments</td>
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<tr>
<td>Fair value gains and losses</td>
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<td>Exchange gains and losses</td>
<td>-35</td>
</tr>
<tr>
<td>Effective interest rate adjustment</td>
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</tr>
<tr>
<td>Reclassification between non-current and current loans</td>
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<td>Liabilities related to assets classified as held for sale</td>
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<td>Carrying value, at 31 December</td>
<td>1,489</td>
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</table>

### 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.

<table>
<thead>
<tr>
<th>Description</th>
<th>EURm</th>
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<td>Opening net debt</td>
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<tr>
<td>Change in net debt, non-cash</td>
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<tr>
<td>Opening net debt</td>
<td>647</td>
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</table>

### Bonds

<table>
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<tbody>
<tr>
<td>Fixed rate period</td>
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<tr>
<td>Interest rate, currency</td>
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</tr>
<tr>
<td>Nominal value issued, million</td>
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</tr>
<tr>
<td>Carrying value, 2021</td>
<td></td>
</tr>
<tr>
<td>Carrying value, 2020</td>
<td></td>
</tr>
</tbody>
</table>

### Leases

Leases of property, plant and equipment where UPM, as a lessee, obtains substantially all of the economic benefits from the use of the identified asset and where UPM has the right to direct the use of the identified asset, are classified as leases. Approximately 56% (33%) of leased assets recognised on the balance sheet consists of land areas in Uruguay, which the group uses for eucalyptus plantations. Approximately 30% (34%) of the leased assets on the balance sheet consist of five power plants. UPM uses the energy generated by these plants for its own production. In addition, the group has leased one waste water treatment plant as well as several warehouses, terminals, offices, railcars and vessels. UPM also leases some production machinery and equipment like forklifts and vehicles that are insignificant to the total leased assets portfolio.

In 2021, the total cash outflow for leased assets was EUR 84 (86) million. The expenses related to short-term leases recognised in the statement for 2021 amounted to EUR 7 (7) million. The group had no significant variable lease payments in 2021.

The lease commitments for leases not commenced at year-end 31 December 2021 totalled approximately EUR 409 (412) million, which are mostly related to long-term charter agreements, railway service agreement in Uruguay and service agreements related to wood handling, waste water treatment and other utilities in Leuna, Germany.
The group as a lessee

At inception of a lease contract, the group makes an assessment whether the lease is a finance lease or an operating lease. If the lease is a lease contract of company cars.

The group assesses whether a contract is or contains a lease at inception of the contract. This assessment involves the exercise of judgment about whether it depends on a specified asset, whether UPM obtains substantially all of the economic benefits from the use of that asset, and whether UPM has the right to direct the use of the asset.

The group recognises a leased asset and a lease liability at the commencement date, except for short-term leases. UPM applies this to all asset classes. Short-term leases are leases that, at the commencement date, have a lease term of 12 months or less. A lease that contains a purchase option is not a short-term lease. UPM recognises lease payments of short-term leases as an expense on a straight-line basis over the lease term.

Lease transfers substantially all of the risks and rewards incidental to ownership of the asset, it is considered to be a finance lease; if not, the lease is considered to be an operating lease. The group has only a minor amount of operating lease contracts, whereby the lease payments are recognised on a straight-line basis over the term of the lease.

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, bank overdrafts and derivatives.

Classification of financial assets into different measurement categories depends on the contractual cash flow characteristics and the business model for managing the financial asset. The measurement category of each financial asset is determined at inception. Financial assets and liabilities are offset and the net amount reported in the balance sheet when there is a legally enforceable right to offset amounts and there is an intention to settle on a net basis or realise the asset and settle the liability simultaneously.

### Financial assets and liabilities by category at the end of 2021

<table>
<thead>
<tr>
<th>Category</th>
<th>Fair Value Through Profit and Loss</th>
<th>Equity Instruments at Fair Value Through Other Components</th>
<th>Derivatives Under Hedging Accounting</th>
<th>Financial Assets and Liabilities at Amortised Cost</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy shareholdings</td>
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<tr>
<td>Other non-current financial assets</td>
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<td></td>
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<td></td>
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<tr>
<td>Loans and receivables</td>
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</tr>
<tr>
<td>Derivatives</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Investment funds</td>
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<tr>
<td>Total financial assets</td>
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<td>6,335</td>
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<td>Non-current debt</td>
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<td></td>
</tr>
<tr>
<td>Interests-bearing liabilities</td>
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</tr>
<tr>
<td>Derivatives</td>
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<tr>
<td>Total other financial liabilities</td>
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<td>Total non-current financial liabilities</td>
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<td>Current liabilities</td>
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<tr>
<td>Interests-bearing liabilities</td>
<td></td>
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<tr>
<td>Derivatives</td>
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<tr>
<td>Total current liabilities</td>
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<tr>
<td>Total liabilities</td>
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</tr>
<tr>
<td>Total financial liabilities</td>
<td>113,257</td>
<td>149,347</td>
<td>6,335</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. All advances payments for leases not commenced at the year and reporting date 31 December.

2. Exchange rate movements.

3. Total financial liabilities include on-balance sheet financial derivatives.

### Accounting policies

#### Leases

The group as a lessee

UPM assesses whether a contract is or contains a lease at inception of the contract. This assessment involves the exercise of judgment about whether it depends on a specified asset, whether UPM obtains substantially all of the economic benefits from the use of that asset, and whether UPM has the right to direct the use of the asset.

The group recognises a leased asset and a lease liability at the commencement date, except for short-term leases. UPM applies this to all asset classes. Short-term leases are leases that, at the commencement date, have a lease term of 12 months or less. A lease that contains a purchase option is not a short-term lease. UPM recognises lease payments of short-term leases as an expense on a straight-line basis over the lease term.

The lease liability is recognised at the commencement date and any adjustments of the initial measurement of the lease liability, are recognised on a straight-line basis over the term of the lease.

#### 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, bank overdrafts and derivatives.

Classification of financial assets into different measurement categories depends on the contractual cash flow characteristics and the business model for managing the financial asset. The measurement category of each financial asset is determined at inception. Financial assets and liabilities are offset and the net amount reported in the balance sheet when there is a legally enforceable right to offset amounts and there is an intention to settle on a net basis or realise the asset and settle the liability simultaneously.

<table>
<thead>
<tr>
<th>Category</th>
<th>Fair Value Through Profit and Loss</th>
<th>Equity Instruments at Fair Value Through Other Components</th>
<th>Derivatives Under Hedging Accounting</th>
<th>Financial Assets and Liabilities at Amortised Cost</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy shareholdings</td>
<td>2,579</td>
<td>2,579</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other non-current financial assets</td>
<td></td>
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<tr>
<td>Loans and receivables</td>
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<tr>
<td>Derivatives</td>
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<tr>
<td>Investment funds</td>
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<td></td>
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</tr>
<tr>
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<tr>
<td>Non-current debt</td>
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<tr>
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<tr>
<td>Total other financial liabilities</td>
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<tr>
<td>Total non-current financial liabilities</td>
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<tr>
<td>Current liabilities</td>
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<tr>
<td>Interests-bearing liabilities</td>
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1. All advances payments for leases not commenced at the year and reporting date 31 December.

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3. Total financial liabilities include on-balance sheet financial derivatives.

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<tr>
<td>Investment funds</td>
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<tr>
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<tr>
<td>Total non-current financial liabilities</td>
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<td></td>
</tr>
<tr>
<td>Current liabilities</td>
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</tr>
<tr>
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<tr>
<td>Derivatives</td>
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</tr>
<tr>
<td>Total current liabilities</td>
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<tr>
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</tr>
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<td>113,257</td>
<td>149,347</td>
<td>6,335</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. All advances payments for leases not commenced at the year and reporting date 31 December.

2. Exchange rate movements.

3. Total financial liabilities include on-balance sheet financial derivatives.
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 2,573 million (1,978 million) at the end of 2021. For quoted bonds, the fair values are based on the quoted market value as at the balance sheet date. At the end of 2021, all bonds were quoted.

This category comprises loan receivables with fixed or determinable payments that are not quoted in an active market, as well as trade and other receivables, and cash and cash equivalents. They are included in non-current assets unless they mature within 12 months of the balance sheet date. Cash and cash equivalents are always classified as current assets. 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. As soon as a loan receivables or cash and cash equivalents are originated or purchased, a loss allowance for 12-month expected credit losses are recognised in profit or loss. If credit risk increases significantly, full lifetime expected credit losses are recognised in profit or loss. In the comparison period, loan receivables were impaired if the carrying amount exceeded the estimated recoverable amount. The credit loss model applied to trade receivables is described in "Note 4.8 Working capital.

Fair value through profit or loss

This category includes derivatives that don’t qualify for hedge accounting and investments funds. They are measured at fair value and any gains or losses from subsequent measurement are recognised in the income statement.

Equity instruments at fair value through OCI

This category includes mainly UPM’s energy shareholdings. These assets are measured at fair value through other comprehensive income.

Financial assets or liabilities of which fair values are not based on observable inputs are classified in level 3. This category include UPM’s energy shareholdings and forest assets. Fair valuations are performed at least quarterly by forest assets management and overseen by the Audit Committee.

The different levels of fair value hierarchy are used in fair value estimation are defined as follows:

Fair values under level 1
Graded prices (unadjusted) traded in active markets for identical assets or liabilities. Derivatives include futures and currency forwards traded in exchange.

Fair values under level 2
Observable inputs are used as basis for fair value calculations either directly (price) or indirectly (derived from prices). If all significant inputs required to fair value instrument are observable, the instrument is included in level 2. For investment funds, the valuation is based on quoted prices (unadjusted) for identical assets in markets that are not active. For derivatives, level 2 include OTC derivatives like forward foreign exchange contracts, foreign currency options, interest and currency swaps and commodity swaps. Specific valuation techniques used to value financial instruments at level 2 include the following methods:

Interest forward rate agreements (FRA) are fair valued based on quoted market rates on the balance sheet date. Forward foreign exchange contracts are fair valued based on the contract forward rates at the balance sheet date. Foreign currency options are fair valued based on quoted market rates and market volatility rates on the balance sheet date by using the Black&Scholes option valuation model. Interest and currency swap instruments are fair valued as present value of the estimated future cash flows based on observable yield curves. Commodity swaps are fair valued based on forward prices on the balance sheet date.

An embedded derivative that is by nature a foreign currency forward contract is valuated at market forward exchange rates and is included in level 2. Embedded derivatives are monitored by the group finance management and overseen by the Audit Committee.

Fair values under level 3
Financial assets or liabilities of which fair values are not based on observable market data (that is, unobservable inputs) are classified under level 3. This category include UPM’s energy shareholdings and forest assets. Fair valuations are performed at least quarterly by respective business areas or functions. Fair valuations are reviewed by the group finance management and overseen by the Audit Committee.

1) Consists mainly of non-current advances received and a put liability that is not estimated to mature within 12 months.

2) Includes mainly of non-current advances received and a put liability that is not estimated to mature within 12 months.

> Refer Note 5.2 Net debt, for further information on net debt and bonds.
5.4 Financial income and expenses

<table>
<thead>
<tr>
<th>EURm</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>6</td>
<td>17</td>
</tr>
<tr>
<td>Other operating income</td>
<td>-5</td>
<td>-30</td>
</tr>
<tr>
<td>Total</td>
<td>1</td>
<td>-49</td>
</tr>
</tbody>
</table>

Foreign exchange gains and losses in the operating profit excluding non-qualifying hedges

<table>
<thead>
<tr>
<th>EURm</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash flow hedges reclassified from hedging reserve</td>
<td>-79</td>
<td>42</td>
</tr>
<tr>
<td>Non-qualifying hedges</td>
<td>-22</td>
<td>24</td>
</tr>
<tr>
<td>Total</td>
<td>-102</td>
<td>66</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. At 31 December 2021, 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>2021</th>
<th>2020</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>

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. At 31 December 2021, the number of the company’s shares was 411,653 (411,653) of its own shares, 0.08% (0.08%) of the total number of shares.

Treasury shares

At 31 December 2021, the company held 411,653 (411,653) of its own shares, 0.08% (0.08%) of the total number of shares.

Reserves

<table>
<thead>
<tr>
<th>EURm</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fair value reserve</td>
<td>2,012</td>
<td>1,380</td>
</tr>
<tr>
<td>Hedging reserve</td>
<td>96</td>
<td>28</td>
</tr>
<tr>
<td>Share-based payments reserve</td>
<td>21</td>
<td>22</td>
</tr>
<tr>
<td>Total other reserves</td>
<td>1,938</td>
<td>1,430</td>
</tr>
<tr>
<td>Reserve for invested non-restricted equity</td>
<td>1,273</td>
<td>1,273</td>
</tr>
<tr>
<td>Translation reserve</td>
<td>329</td>
<td>25</td>
</tr>
<tr>
<td>Total reserves</td>
<td>3,539</td>
<td>2,728</td>
</tr>
</tbody>
</table>

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 recycled only within equity upon the disposal of the asset.

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 and the cost of hedging when recognised in OCI. 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. In 2021, a gain of EUR 9 million was recalculated from the hedging reserve to other financial income as a result of inefficiency. In 2020, there were no reclassifications from the cash flow hedge reserve to profit or loss during the period resulting from inefficiency.

Share-based payments reserve

The share-based payments reserve is used to recognise the fair value at the grant date of the share incentive plans. Performance Share Plan and Deferred Bonus Plan, over their vesting period.

Reserve for invested non-restricted equity

Reserve for invested non-restricted equity includes, 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. There were no reclassifications from the translation reserve to profit or loss during the period resulting from inefficiency of net investment hedges.

Accounting policies

Transaction costs directly relating to the issue of new shares or share options are recognised, net of tax, in equity as a reduction in the proceeds. Where any group company purchases the parent company’s shares (treasury share), 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 which 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.

### Foreign exchange risk

As a consequence of the global nature of its business, UPM is exposed to risks associated with changes in exchange rates, primarily with respect to USD, GBP and JPY. Foreign exchange risk arises from contractual and expected commercial future payment flows (transaction exposure), changes in value of recognised assets and liabilities denominated in foreign currency and change 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 earnings and in the group’s balance sheet. Changing exchange rates can also have indirect effects, such as in relative competitiveness between currency regions.

#### Transaction exposure

The group hedges transaction exposure related to highly probable future foreign currency cash flows on a rolling basis over the next 12-month period based on forecasts by the respective business areas. Transaction risk arises from the changes in currency rates of highly probable transactions, which are expected to take place in currencies other than the functional currency.

The group’s policy is to hedge an average of 50% of its estimated net currency risk cash flow exposure. Some highly probable cash flows have been hedged for longer than 12 months ahead while deviating from the risk neutral hedging level at the same time. At 31 December 2021, 49% of forecast 12-month currency risk flows had been hedged.

The group enters into external forward contracts, which are designated at group level as hedging instruments to reduce the exchange risk of highly probable future foreign currency cash flows. Cash flow hedge accounting is applied where possible. If hedge accounting is not possible, fair value changes due to the hedging instrument are recognised through profit or loss immediately.

At the end of 2021, UPM’s estimated net currency risk flow for the next 12 months was EUR 1,886 million (1,327 million).

The weighted hedging rate by currency against EUR were USD 1.88, JPY 130.29 and GBP 0.86.

### Translation exposure

The group has several currency denominated assets and liabilities on its balance sheet such as foreign currency bonds, loans and deposits, group internal loans and cash in other currencies than functional currencies. UPM aims to fully hedge this balance sheet translation exposure. However, there might be unhedged balance sheet exposures within the limits set in group Treasury Policy. At 31 December 2021, the unhedged balance sheet exposures in net of interestbearing assets and liabilities amounted to EUR 9 million (11 million). Currency hedging is not applied and all fair value changes of hedging instruments are recognised through profit or loss immediately.

The group’s policy is to hedge 100% of its estimated net translation exposure. In addition to commercial foreign currency flow, the group has hedged risk currency flow related to investments. Cash flow or fair value hedge accounting is applied. At the end of 2021 the hedged net risk currency flow was EUR 350 million (EUR 470 million).

#### Interest rate risk

The interest-bearing liabilities and assets expose the group to interest rate risk, namely repricing and/or 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 level. The group uses interest rate derivatives, such as interest rate swaps, interest rate futures and cross currency swaps, to change net debt duration.

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.
- The position includes cash on hand and balances held in net of accounts payable and receivable hedging were EUR 352 million (340 million).
- Hedging accounting is not applied and all fair value changes of hedging instruments are recognised through profit or loss immediately.
- The position excludes foreign currency denominated future cash flows and effects of translation exposure and related hedges.

The following table illustrates the effect to profit before tax as a result of changes in interest expense on floating rate debt:

### Message for considerations

Most of the interest rate derivatives hedging interest on long-term debt meet the requirement of fair value hedge accounting.

#### Interest rate sensitivity

The following table illustrates the effect to profit before tax as a result of changes in interest expense on floating rate debt:

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 to the yield curve.
- In the case of fair value hedged derivatives 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 ineffectiveness has an effect on the profit of the year.
- Cash balances are excluded.
- Investment funds are excluded.
- Foreign currency transaction are excluded.
- 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.
- 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 remeasurement of the financial assets and liabilities to fair value) and are therefore included in the income-related sensitivity analysis.

### Numerical Data

#### Foreign exchange risk sensitivity

The following table illustrates the effect to profit before tax due to recognised balance sheet items in foreign currency and the effect to equity arising mainly from foreign currency forwards used to hedge foreign currency flows.

<table>
<thead>
<tr>
<th>Currency</th>
<th>2021 Profit before tax</th>
<th>2020 Profit before tax</th>
</tr>
</thead>
<tbody>
<tr>
<td>EUR</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>USD</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>GBP</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>JPY</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Nominal values of the group’s net debt by currency including derivatives

<table>
<thead>
<tr>
<th>Currency</th>
<th>2021 Net debt</th>
<th>2020 Net debt</th>
</tr>
</thead>
<tbody>
<tr>
<td>EUR</td>
<td>2020 basis points lower</td>
<td>11 12</td>
</tr>
<tr>
<td>USD</td>
<td>0.4 0.2</td>
<td>0.4 0.2</td>
</tr>
<tr>
<td>GBP</td>
<td>0.2 0.1</td>
<td>0.2 0.1</td>
</tr>
<tr>
<td>JPY</td>
<td>-0.3 -0.3</td>
<td>-0.3 -0.3</td>
</tr>
<tr>
<td>Total</td>
<td>0.1 -0.5</td>
<td>0.1 -0.5</td>
</tr>
</tbody>
</table>

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 to the yield curve.
- In the case of fair value hedged derivatives 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 ineffectiveness has an effect on the profit of the year.
- Cash balances are excluded.
- Investment funds are excluded.
- Floating rate debt that are measured at amortised cost and is not designated to fair value hedge relationship is not subject to interest rate risk sensitivity.
- 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 remeasurement 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 the price of electricity consumption and production. Electricity prices rely on fossil fuel and emissions allowance prices as well as the balance of supply and demand. The group’s sensitivity to electricity market price is dependent on the electricity production and consumption levels and the hedging levels. The inherent price risks arise from the daily sales and purchases of electricity from the power market with spot prices, and the hedging objective is to reduce the earnings volatility that arises from electricity prices.

UPM considers Nordic system and electricity price area differential (EPA/D) for Finland products perfect hedges for corresponding electricity price risk components in Finland. The components of electricity price risk in the Nordic price area are defined as the Nordic System System and EPAD electricity derivative contracts, mostly Nasdaq Commodities forwards, futures and options, system and EPAD prices are considered as separately identifiable and reliably measurable risk components in electricity sales and purchase contracts as well as in the hedging instruments. In fair value hedging relationships, the fair value change of designated system and EPAD derivatives are offsetting electricity sales and purchase prices. The share of the hedged component covers approximately 80-90% and the share of EPAD component covers 10-20% of the changes in electricity sales and purchase prices.

The electricity price risk in the Central European power market is hedged by entering into European Electricity Exchange futures. Products used for hedging hedge the entire price risk for the underlining price area. The time frame hedged has historically been approximately 5 years. Hedging level has been typically higher for the nearest years and lower for the latter years. Hedging level for a certain year has historically varied between 0-150%. UPM constantly updates its electricity production and consumption forecasts. Hedging level is calculated based on the most recent available information about the electricity production and consumption forecast.

UPM has documented for accounting for the hedging relationships when it hedges its electricity price risk. In addition to the electricity price risk, UPM also hedges electricity forwards and forwards, 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 stoploss limits.

Electricity derivatives price sensitivity

Sensitivity analysis for financial electricity derivatives is based on position at the end of 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 accounted and non-accounted volumes. In the analysis it is assumed that forward quotation in Nasdaq Commodities and EEX would change EUR 5/MWh price quotation in Nasdaq Commodities and EEX would change EUR 5/MWh price quotation.

<table>
<thead>
<tr>
<th>Net forward hedges</th>
<th>Effect</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>EUR 5/MWh</td>
<td>0.1</td>
<td>0.7</td>
<td></td>
</tr>
<tr>
<td>Equity</td>
<td>115.9</td>
<td>64.9</td>
<td></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 they are designated as hedging relationships. A derivative is designated as a hedge if the change in the fair value of the derivative, hedges of highly probable forecasted transactions (cash flow hedge), or hedges of net investment foreign subsidiaries with other than the EUR as their functional currency (net investment hedge). Derivative fair values on the balance sheet are recognised at fair value and a share of the instrument component covers more than 12 months and is current when the remaining maturity is less than 12 months.

For hedge accounting purposes, UPM documents the relationship between the hedging instruments and hedged item, as well as the risk management objective and strategy for undertaking various hedging transactions at the inception date. This process includes linking all derivatives accounted as hedges to specific assets or liabilities or to specific firm commitments or forecast transactions. The group also documents its assessment, both at the hedge inception and on an on-going 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 hedges are categorised as speculative hedges.

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, net of tax. The ineffective portion of changes generated by the hedged items. Thereby the hedge ratio between the instrument and the cash flow is 1:1. Ineffectiveness may arise in the highly unlikely case that the forecasted cash flows are no longer expected to occur. Ineffectiveness can also occur in the balance sheet when the hedging instrument with an appropriate maturity is not available in the market for the whole duration of the hedged item. Then the terms of the hedging instrument and the hedged item don’t fully match, which causes minor ineffectiveness. There are no other significant sources of ineffectiveness that can reasonably be expected to take place. Ineffectiveness in electricity price hedges may arise in the highly unlikely case that the forecasted cash flows are no longer expected to occur. Ineffectiveness may also arise in case EPAD prices remained lower for the latter years. Hedging level for a certain year has historically varied between 0-80%. UPM constantly updates its electricity price risk components in Finland. The components of electricity price risk in the Nordic price area are defined as the Nordic System System and EPAD electricity derivative contracts, mostly Nasdaq Commodities forwards, futures and options, system and EPAD prices are considered as separately identifiable and reliably measurable risk components in electricity sales and purchase contracts as well as in the hedging instruments. In fair value hedging relationships, the fair value change of designated system and EPAD derivatives are offsetting electricity sales and purchase prices. The share of the hedged component covers approximately 80-90% and the share of EPAD component covers 10-20% of the changes in electricity sales and purchase prices.

Hedging of net investments in foreign subsidiaries

Net derivative 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 reserves. 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.

The hedging instrument is always made in the same currency as the hedged investment, hence the hedge ratio in net investment hedging is 1:1. For hedging of fair value investments, ineffectiveness may only arise in the highly unlikely situation where the hedging item is disposed of or sold during the duration of the hedging instrument.

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 qualify as fair value hedges and that are prospectively highly effective are recognised in the income statement under financial items. Gains and losses accumulated fair value in equity are included in the income statement when the foreign operation is partially disposed of or sold.

Ineffectiveness in fair value hedges of fixed interest risk may arise in case of early redemption of such debt, which is hedged under fair value hedge accounting. The group has not recognised other significant sources of ineffectiveness that can reasonably be expected to take place.

The group applies fair value hedge accounting also for hedging firm commitment of a purchase in foreign currency. The currency changes of the hedging instrument are recorded through profit and loss in financial income. Gains and losses recognised as part of the acquisition cost of a fixed asset.

Financial counterparty risk

The financial instruments the group has aligned with banks and financial institutions contain element of risk of the counterparties being unable to meet their obligations. According to the Group Treasury Policy, derivative investments 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.

Effect of IBOR reform and significant assumptions

Group’s risk exposure that is directly affected by the IBOR reform is fair value hedge accounting of long-term fixed-rate debt for changes in fair value attributable to USD LIBOR which is the current benchmark interest rate. USD LIBOR is currently expected to be published until June 2023. Group currently has only few contracts which reference USD LIBOR and extend to only a limited extent. The IBOR reform will follow changes to ISDA and other market guidelines on effects of these changes in IBOR and other rates. In case of early redemption of such debt, which is hedged under fair value hedge accounting, fair value for both the hedged item and hedging instrument is calculated with identical rate. Therefore no ineffectiveness is expected.
Net fair values of derivatives

<table>
<thead>
<tr>
<th>Type of Risk</th>
<th>POSITIVE FAIR VALUES</th>
<th>NEGATIVE FAIR VALUES</th>
<th>NET FAIR VALUES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2021</td>
<td>2020</td>
<td></td>
</tr>
<tr>
<td>Foreign exchange risk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forward foreign exchange contracts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash flow hedges</td>
<td>21</td>
<td>-53</td>
<td>-31</td>
</tr>
<tr>
<td>Net investment hedge</td>
<td>2</td>
<td>-27</td>
<td>-26</td>
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<tr>
<td>Non-qualifying hedges</td>
<td>11</td>
<td>-13</td>
<td>-2</td>
</tr>
<tr>
<td>Cross currency swaps</td>
<td>-4</td>
<td>-4</td>
<td>-1</td>
</tr>
<tr>
<td>Derivatives hedging foreign exchange risk</td>
<td>33</td>
<td>-97</td>
<td>-63</td>
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<tr>
<td>Interest rate risk</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Fair value hedges</td>
<td>86</td>
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<td>-113</td>
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<tr>
<td>Non-qualifying hedges</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Cross currency swaps</td>
<td>-40</td>
<td>-40</td>
<td>-44</td>
</tr>
<tr>
<td>Derivatives hedging interest risk</td>
<td>128</td>
<td>23</td>
<td>150</td>
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<tr>
<td>Commodity risk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity sales</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Cash flow hedges</td>
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<td>-6</td>
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<tr>
<td>Electricity purchase</td>
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<tr>
<td>Cash flow hedges</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Other commodities</td>
<td>-3</td>
<td>-2</td>
<td>1</td>
</tr>
<tr>
<td>Derivatives hedging commodity risk</td>
<td>1</td>
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<td>-8</td>
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<tr>
<td>Total</td>
<td>162</td>
<td>-128</td>
<td>34</td>
</tr>
</tbody>
</table>

No derivatives are subject to offsetting in the group's financial statements. All derivatives are under ISDA or similar master netting agreement.

Nominal amounts of derivatives

<table>
<thead>
<tr>
<th>EURm</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest rate futures</td>
<td>2,280</td>
<td>2,391</td>
</tr>
<tr>
<td>Interest rate swaps</td>
<td>1,081</td>
<td>1,056</td>
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<tr>
<td>Forward foreign exchange contracts</td>
<td>2,650</td>
<td>3,992</td>
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<td>Currency options</td>
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<td>20</td>
</tr>
<tr>
<td>Cross currency swaps</td>
<td>161</td>
<td>166</td>
</tr>
<tr>
<td>Commodity contracts</td>
<td>1,508</td>
<td>791</td>
</tr>
</tbody>
</table>

Cash collateral pledged for derivative contracts totalled EUR 292 million of which EUR 291 million relate to commodity contracts and EUR 1 million to interest rate futures.

Net fair values of derivatives calculated by counterparty

<table>
<thead>
<tr>
<th>EURm</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
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<td>441</td>
</tr>
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<td>Currency options</td>
<td>-</td>
<td>20</td>
</tr>
<tr>
<td>Cross currency swaps</td>
<td>161</td>
<td>166</td>
</tr>
<tr>
<td>Commodity contracts</td>
<td>1,508</td>
<td>791</td>
</tr>
</tbody>
</table>

Timing of nominal amounts of derivatives 2021

<table>
<thead>
<tr>
<th>Within 1 year</th>
<th>Between 1–5 years</th>
<th>Later than 5 years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>EURm</td>
<td>2021</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign exchange risk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forward foreign exchange contracts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash flow hedges</td>
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<td>90</td>
<td>-</td>
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<td>-</td>
</tr>
<tr>
<td>Non-qualifying hedges</td>
<td>864</td>
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<tr>
<td>Cross currency swaps</td>
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</tr>
<tr>
<td>Non-qualifying hedges</td>
<td>-</td>
<td>-</td>
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</tr>
<tr>
<td>Total</td>
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</tr>
<tr>
<td>Interest rate risk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest rate swaps</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Fair value hedges</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cross currency swaps</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Commodity risk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity sales</td>
<td></td>
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<tr>
<td>Cash flow hedges</td>
<td>612</td>
<td>335</td>
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<td>397</td>
<td>108</td>
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<td>Other commodities</td>
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<tr>
<td>Non-qualifying hedges</td>
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<td></td>
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</tr>
<tr>
<td>Total</td>
<td>54</td>
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<td>-</td>
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</tbody>
</table>

Timing of nominal amounts of derivatives 2020

<table>
<thead>
<tr>
<th>Within 1 year</th>
<th>Between 1–5 years</th>
<th>Later than 5 years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>EURm</td>
<td>2020</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign exchange risk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forward foreign exchange contracts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash flow hedges</td>
<td>2,004</td>
<td>441</td>
<td>-</td>
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<td>Net investment hedge</td>
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<td>-</td>
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<tr>
<td>Non-qualifying hedges</td>
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<tr>
<td>Currency options</td>
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<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cross currency swaps</td>
<td>Non-qualifying hedges</td>
<td>166</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Interest rate risk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest rate swaps</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fair value hedges</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cross currency swaps</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commodity risk</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Electricity sales</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Cash flow hedges</td>
<td>2,391</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Non-qualifying hedges</td>
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<td>-</td>
</tr>
<tr>
<td>Electricity purchase</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Cash flow hedges</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Other commodities</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Non-qualifying hedges</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The nominals of cross currency swaps are included in both foreign exchange risk and interest rate risk.
7. Income tax

7.1 Tax on profit for the year

Income tax

In 2021, tax on profit for the year amounted to EUR 240 million (169 million). The effective tax rate was 15.5% (22.9%). In 2021 and 2020, the effective tax rate was affected by the income not subject to tax from subsidiaries operating in tax-free zone and German tax rate that is higher than in Finland. In addition, in 2021 effective tax rate was impacted by tax exempt capital gain on the sale of shares of Shotton Mill Ltd and in 2020 by the losses resulting from the closure of UPM Chappelle paper mill for which no deferred tax assets were recognised due to uncertainty of their utilisation.

Income tax

<table>
<thead>
<tr>
<th></th>
<th>2021</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current tax expense</td>
<td>273</td>
<td>141</td>
<td></td>
</tr>
<tr>
<td>Change in deferred taxes</td>
<td>-32</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>240</td>
<td>169</td>
<td></td>
</tr>
</tbody>
</table>

Tax rate reconciliation

<table>
<thead>
<tr>
<th>EURm</th>
<th>2021</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profit before tax</td>
<td>1,548</td>
<td>737</td>
<td></td>
</tr>
<tr>
<td>Computed tax at Finnish statutory rate of 20%</td>
<td>310</td>
<td>147</td>
<td></td>
</tr>
<tr>
<td>Difference between Finnish and foreign rates</td>
<td>-16</td>
<td>-1</td>
<td></td>
</tr>
<tr>
<td>Tax-exempt income</td>
<td>-50</td>
<td>-29</td>
<td></td>
</tr>
<tr>
<td>Non-deductible expenses</td>
<td>6</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Withholding taxes</td>
<td>4</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Tax loss with no tax benefit</td>
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<td>29</td>
<td></td>
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<tr>
<td>Results of associates</td>
<td>13</td>
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<td></td>
</tr>
<tr>
<td>Change in taxation legislation</td>
<td>2</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Change in recoverability of deferred tax assets</td>
<td>13</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Retirement benefit liabilities and provisions</td>
<td>127</td>
<td>156</td>
<td>148</td>
</tr>
<tr>
<td>Other temporary differences</td>
<td>267</td>
<td>163</td>
<td>103</td>
</tr>
<tr>
<td>Tax losses carried forward</td>
<td>230</td>
<td>157</td>
<td>180</td>
</tr>
<tr>
<td>Offset against liabilities</td>
<td>-297</td>
<td>-170</td>
<td>-157</td>
</tr>
<tr>
<td>Total</td>
<td>466</td>
<td>421</td>
<td>395</td>
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</tbody>
</table>

Deferred tax liabilities

<table>
<thead>
<tr>
<th>EURm</th>
<th>2021</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intangible assets and property, plant and equipment</td>
<td>-261</td>
<td>-245</td>
<td>-249</td>
</tr>
<tr>
<td>Inventories</td>
<td>53</td>
<td>38</td>
<td>45</td>
</tr>
<tr>
<td>Retiree benefit liabilities and provisions</td>
<td>127</td>
<td>156</td>
<td>148</td>
</tr>
<tr>
<td>Other temporary differences</td>
<td>217</td>
<td>-132</td>
<td>-86</td>
</tr>
<tr>
<td>Offset against liabilities</td>
<td>297</td>
<td>170</td>
<td>157</td>
</tr>
<tr>
<td>Total</td>
<td>-96</td>
<td>-564</td>
<td>-549</td>
</tr>
<tr>
<td>Net deferred tax assets (liabilities)</td>
<td>-130</td>
<td>-143</td>
<td>-153</td>
</tr>
</tbody>
</table>

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.

Accounting policies

The group’s income tax expense comprises current tax and deferred tax. Current tax is calculated on the taxable result for the period based on the tax rates prevailing in the countries where the group operates and includes tax adjustments for previous periods and withholding taxes deducted at source on intra-group transactions. Tax expense is recognised in the income statement, unless it relates to items that have been recognised in equity as part of other comprehensive income. In these instances, the related tax expense is also recognised in equity or other comprehensive income, respectively.

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 interpretation of existing tax laws. Management periodically evaluates positions taken in tax returns with respect of situations in which applicable tax regulation is subject to interpretation and adjusts income tax liabilities where appropriate.

7.2 Deferred tax

<table>
<thead>
<tr>
<th>EURm</th>
<th>2021</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deferred tax assets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intangible assets and property, plant and equipment</td>
<td>-261</td>
<td>-245</td>
<td>-249</td>
</tr>
<tr>
<td>Forest assets</td>
<td>-398</td>
<td>-352</td>
<td>-364</td>
</tr>
<tr>
<td>Retirement benefit liabilities and provisions</td>
<td>-17</td>
<td>-5</td>
<td>-7</td>
</tr>
<tr>
<td>Other temporary differences</td>
<td>-217</td>
<td>-132</td>
<td>-86</td>
</tr>
<tr>
<td>Offset against liabilities</td>
<td>-297</td>
<td>-170</td>
<td>-157</td>
</tr>
<tr>
<td>Total</td>
<td>-96</td>
<td>-564</td>
<td>-549</td>
</tr>
<tr>
<td>Deferred tax liabilities</td>
<td>-130</td>
<td>-143</td>
<td>-153</td>
</tr>
</tbody>
</table>

Movements in deferred tax assets and liabilities

<table>
<thead>
<tr>
<th>EURm</th>
<th>2021</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before tax</td>
<td>Tax</td>
<td>Before tax</td>
</tr>
<tr>
<td>Carrying value, at 1 January</td>
<td>-143</td>
<td>-153</td>
<td></td>
</tr>
<tr>
<td>Charged to income statement</td>
<td>-32</td>
<td>-28</td>
<td></td>
</tr>
<tr>
<td>Charged to other comprehensive income</td>
<td>-15</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>Exchange rate adjustments</td>
<td>-4</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Net deferred tax assets (liabilities)</td>
<td>-130</td>
<td>-143</td>
<td></td>
</tr>
</tbody>
</table>

Recognised deferred tax assets

The recognition of deferred tax assets requires management judgement as to whether it is probable that such balances will be utilized and/or reversed in the foreseeable future. At 31 December 2021, net operating loss carry-forwards for which the group has recognised a deferred tax asset amounted to EUR 802 million (556 million), of which EUR 717 million (475 million) was attributable to German subsidiaries. In Germany net operating loss carry-forwards do not expire. In other countries net operating loss carry-forwards expire at various dates and in varying amounts. Based on profit forecasts, it is probable that there will be sufficient future taxable profits available against which the tax losses can be utilised.

The assumptions regarding future realization of tax benefits, 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 843 million (849 million) in 2021. These net operating loss carry-forwards are mainly attributable to certain German and French subsidiaries and do not expire. In addition, the group has not recognised deferred tax assets on loss carry-forwards relating to closed Weyerhaeuser paper mill due to only minor operations in Canada. These loss carry-forwards expire at different times by the end of 2029.

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 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.

Deferred income tax is determined using tax rates (and laws) that have been enacted or substantially enacted by the balance sheet date and are expected to apply when the related deferred income tax asset is realised or the deferred income tax liability is settled. 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 set-off and an intention to settle on a net basis.
8. Group structure

8.1 Business acquisitions and disposals

In 2021, UPM permanently closed paper production at its Shelton newspaper mill site in North Wales, United Kingdom. The site and all related assets were sold to Eren Paper Ltd, a subsidiary of Modern Karton Sanayi ve Ticaret A.S., the combinerboard and corrugated packaging business of the Turkish industrial conglomerate Eren Holding (“Eren”), thereby closing the transaction announced in May 2021. UPM also made several minor sales of its equity investments accounted at fair value through OCI. In 2020, UPM sold its 50% share in the joint operation Kainuun Voima. The proceeds of these disposals exceeded the book value of the assets by 35%.

In 2021, UPM purchased an additional 20.23% share in the joint operation Alholmens Kraft, increasing UPM’s ownership from 27.88% to 29.77%.

To 50.00%. UPM also made a minor investment in InfraLeuna GmbH, which was accounted for as a fair value through OCI investment. In 2020, UPM sold its 50% share in the joint operation Kainuun Voima, thereby closing the transaction announced in May 2021. UPM also made a minor sale of its 6.1% ownership in BSW Timber Ltd, which was accounted for as a fair value through OCI investment.

Reconciliation of gain on sale and net cash arising from the disposal of Shelton Mill Ltd

<table>
<thead>
<tr>
<th>Subsidiary</th>
<th>Country of Incorporation</th>
<th>Holdings % 2020</th>
<th>Holdings % 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rhein Paper GmbH</td>
<td>DE</td>
<td>100.00</td>
<td>100.00</td>
</tr>
</tbody>
</table>

8.2 Principal subsidiaries and joint operations

Transactions with non-controlling interests

In 2021, UPM made a minor acquisition of an additional 24% holding of its subsidiary Jyväskylä Oy from a non-controlling shareholder. In 2020, there were no changes in the share of non-controlling interests.

Accounting policies

UPM consolidates acquired entities at the acquisition date which is when it gains control using the acquisition method. Consideration transferred is determined as the fair value of the assets transferred, the liabilities assumed, and equity instruments issued including the fair value of a contingent consideration. Acquisition-related costs are expensed as incurred. Identifiable assets acquired and liabilities and contingent liabilities assumed are measured initially at their fair values at the acquisition date. The group measures any non-controlling interest in the acquiree 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.

The assets, liabilities, income and expenses of subsidiaries with non-controlling interests are consolidated line by line into the UPM consolidated financial statements. The proportion of the profit for the period, as well as the accumulated share of total equity belonging to non-controlling interests are presented separately in the consolidated income statement and consolidated balance sheet.

Accounting policies

UPM consolidates acquired entities at the acquisition date which is when it gains control using the acquisition method. Consideration transferred is determined as the fair value of the assets transferred, the liabilities assumed, and equity instruments issued including the fair value of a contingent consideration. Acquisition-related costs are expensed as incurred. Identifiable assets acquired and liabilities and contingent liabilities assumed are measured initially at their fair values at the acquisition date. The group measures any non-controlling interest in the acquiree 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.

The assets, liabilities, income and expenses of subsidiaries with non-controlling interests are consolidated line by line into the UPM consolidated financial statements. The proportion of the profit for the period, as well as the accumulated share of total equity belonging to non-controlling interests are presented separately in the consolidated income statement and consolidated balance sheet.

SUBSIDIARIES

<table>
<thead>
<tr>
<th>Subsidiary</th>
<th>Country of Incorporation</th>
<th>Holdings % 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blöndal Paper Company</td>
<td>US</td>
<td>100.00</td>
</tr>
<tr>
<td>Bleimino S.A.</td>
<td>UY</td>
<td>91.00</td>
</tr>
<tr>
<td>Caesar S.A.</td>
<td>UY</td>
<td>91.00</td>
</tr>
<tr>
<td>Forestal Oriental S.A.</td>
<td>UY</td>
<td>100.00</td>
</tr>
<tr>
<td>Gebäude Lager GmbH Paflingfabrik</td>
<td>DE</td>
<td>100.00</td>
</tr>
<tr>
<td>ICC UPM Ukraine</td>
<td>UA</td>
<td>100.00</td>
</tr>
<tr>
<td>Nordband Papier GmbH</td>
<td>DE</td>
<td>100.00</td>
</tr>
<tr>
<td>NorService GmbH</td>
<td>DE</td>
<td>100.00</td>
</tr>
<tr>
<td>nors group</td>
<td>DE</td>
<td>100.00</td>
</tr>
<tr>
<td>OOD UPMKumene</td>
<td>RU</td>
<td>100.00</td>
</tr>
<tr>
<td>OOO UPMKumene Chudovo</td>
<td>RU</td>
<td>100.00</td>
</tr>
<tr>
<td>PT UPM Raflatac Indonesia</td>
<td>ID</td>
<td>100.00</td>
</tr>
<tr>
<td>Rhein Paper GmbH</td>
<td>DE</td>
<td>100.00</td>
</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 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 2021 or 2020.

For information concerning shares held by members of the Board of Directors 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 Encore Ympäristöpalvelut Oy. Austria Papier Recycling GmbH purchases recovered paper in Austria and L.C.I s.r.l. in Italy. ASC Alpapaper Sortierung Dachau GmbH is a German recovered paper sorting company. The purchases from those four companies represented approximately 91% (95%) 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>Subsidiary/other</th>
<th>Total</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>EURm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIVIDENDS RECEIVED</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PURCHASES OF RAW MATERIALS AND SERVICES</td>
<td>69</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>INVENTORY RECEIVABLES</td>
<td>5</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>TRADE AND OTHER RECEIVABLES</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>TRADE AND OTHER PAYABLES</td>
<td>9</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

8.4 Assets held for sale

No assets were classified as held for sale at the end of 2021 or 2020.

Accounting policies

Non-current assets (or disposal groups) 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 sole 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.

<table>
<thead>
<tr>
<th>Item</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>EURm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>On behalf of others</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Other own commitments</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>233</td>
<td>234</td>
</tr>
</tbody>
</table>

The lease commitments for leases not commenced at the end of 2021 amounted to EUR 412 million.

9.2 Litigation

Contingent liabilities

The group is defendant or plaintiff in a number of legal proceedings incidental to its operations. These lawsuits primarily involve claims arising from commercial law issues.

Group companies

The group’s management is not aware of any significant litigation in the UK.

In October, the European Commission conducted an unannounced inspection of UPM’s premises. According to the Commission’s press release on 12 October, the Commission has concerns that the impacted companies in the wood pulp sector may have violated EU cartel rules that prohibit cartels and restrictive business practices. The Commission states that the unannounced inspections are a preliminary step in an investigation into suspected anticompetitive practices, and the fact that the Commission carries out such inspections does not mean that the companies are guilty of anticompetitive behaviour nor does it prejudice the outcome of the investigation itself. UPM takes any suspected violation of antitrust rules very seriously and has a compliance programme in place to mitigate the risk of such violations. For example, all employees and executives are required to take training on the UPM Code of Conduct, which includes a section regarding antitrust compliance. In addition, UPM has also in place a specific training programme regarding antitrust rules which covers approximately 3,000 employees and executives.

9.3 Events after the balance sheet date

On 1 January, UPM announced that members of the Paperworkers’ Union, the Finnish Electrical Workers’ Union and the Trade Union Pro have started strikes at UPM mills in Jämsäinasko, Kovvala, Lappeenranta, Pietarsaari, Rauma, Tampere and Vällisnuki. UPM businesses falling under the strikes in Finland are UPM Pulp, UPM Biofuels, UPM Communication Papers, UPM Specialty Papers and UPM Rajastja. According to the unions, the strikes would continue until 22 January 2022 unless a new collective labour agreement is reached before that. The duration of the strike has since been extended twice (on 5 January and 20 January) by the Paperworkers’ union and at the time of signing the annual accounts, 27 January, the strike is due to last until 19 February 2022, unless new agreements are reached before that.
10. Other notes

10.1 Forthcoming new standards, amendments and accounting policy changes

Certain new accounting standard amendments and interpretations have been published that come into effect only after the reporting period started on 1 January 2021. These standards and amendments are not expected to have a material impact on the group in the current or future reporting periods and on foreseeable future transactions and have not been early adopted.

Change in the composition of reportable segments

The group will change its reportable segments composition by moving the UPM Biofuels business into Other Operations on 1 January 2022. UPM is forming a new business unit by combining UPM Biofuels, UPM Biotechnicals, UPM Biomedicals and UPM Biocomposites businesses. The aim is to speed up business growth and to leverage the capabilities and competences across projects efficiently. This unit will inherit the name UPM Biorefining and will be reported as part of Other operations. UPM Pulp and UPM Timber currently reported under UPM Biorefining will be reported as UPM Fibres business area from 1 January 2022.

Following the change, Other Operations will include UPM Forest, UPM Biofuels, UPM Biotechnicals, UPM Biomedicals and UPM Biocomposites businesses as well as group services. The change will impact KPIs of UPM Biorefining (1.1.2022 UPM Fibres) reportable segment and Other Operations. The comparative periods will be restated according to the new reporting principles. The reporting change has no impact on group financial result or balance sheet.

### UPM Biorefining (1.1.2022 UPM Fibres)

<table>
<thead>
<tr>
<th>2021</th>
<th>UPM Biorefining as published</th>
<th>UPM Fibres restated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales EURm</td>
<td>2,945</td>
<td>2,794</td>
</tr>
<tr>
<td>Comparable EBITDA, EURm</td>
<td>1,016</td>
<td>961</td>
</tr>
<tr>
<td>% of sales</td>
<td>35</td>
<td>34</td>
</tr>
<tr>
<td>Change in fair value of forest assets and wood harvested, EURm</td>
<td>-9</td>
<td>-9</td>
</tr>
<tr>
<td>Share of results of associated companies and joint ventures, EURm</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Depreciation, amortisation and impairment charges, EURm</td>
<td>-191</td>
<td>-173</td>
</tr>
<tr>
<td>Operating profit, EURm</td>
<td>817</td>
<td>781</td>
</tr>
<tr>
<td>% of sales</td>
<td>28</td>
<td>28</td>
</tr>
<tr>
<td>Comparable EBIT, EURm</td>
<td>817</td>
<td>781</td>
</tr>
<tr>
<td>% of sales</td>
<td>28</td>
<td>28</td>
</tr>
<tr>
<td>Capital employed (average), EURm</td>
<td>4,637</td>
<td>4,377</td>
</tr>
<tr>
<td>Comparable ROCE, %</td>
<td>18</td>
<td>18</td>
</tr>
</tbody>
</table>

### Other operations

<table>
<thead>
<tr>
<th>2021</th>
<th>As published</th>
<th>Restated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales EURm</td>
<td>280</td>
<td>483</td>
</tr>
<tr>
<td>Comparable EBITDA, EURm</td>
<td>-19</td>
<td>36</td>
</tr>
<tr>
<td>Change in fair value of forest assets and wood harvested, EURm</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>Depreciation, amortisation and impairment charges, EURm</td>
<td>-25</td>
<td>-44</td>
</tr>
<tr>
<td>Operating profit, EURm</td>
<td>75</td>
<td>112</td>
</tr>
<tr>
<td>Items affecting comparability in operating profit, EURm</td>
<td>-1</td>
<td>-1</td>
</tr>
<tr>
<td>Comparable EBIT, EURm</td>
<td>76</td>
<td>113</td>
</tr>
<tr>
<td>Capital employed (average), EURm</td>
<td>1,992</td>
<td>2,152</td>
</tr>
<tr>
<td>Comparable ROCE, %</td>
<td>6</td>
<td>5</td>
</tr>
</tbody>
</table>

### Parent company accounts

#### (Finnish Accounting Standards, FAS)

#### Income statement

<table>
<thead>
<tr>
<th>EURm</th>
<th>NOTE</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>1</td>
<td>2,554</td>
<td>1,816</td>
</tr>
<tr>
<td>Change in inventories of finished goods and work in progress</td>
<td>2</td>
<td>-6</td>
<td></td>
</tr>
<tr>
<td>Production for own use</td>
<td>2</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Other operating income</td>
<td>2</td>
<td>27</td>
<td>44</td>
</tr>
<tr>
<td>Materials and services</td>
<td>2</td>
<td>-62</td>
<td>-66</td>
</tr>
<tr>
<td>Raw materials and consumables purchased</td>
<td>2</td>
<td>-1,740</td>
<td>-1,544</td>
</tr>
<tr>
<td>Chart unit in inventories</td>
<td>2</td>
<td>16</td>
<td>6</td>
</tr>
<tr>
<td>External charges</td>
<td>2</td>
<td>-6</td>
<td>-6</td>
</tr>
<tr>
<td>Personnel expenses</td>
<td>2</td>
<td>-71</td>
<td>-75</td>
</tr>
<tr>
<td>Salaries and fees</td>
<td>2</td>
<td>-274</td>
<td>-234</td>
</tr>
<tr>
<td>Indirect employee costs</td>
<td>2</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Pension costs</td>
<td>2</td>
<td>-31</td>
<td>-31</td>
</tr>
<tr>
<td>Other indirect employee costs</td>
<td>2</td>
<td>-248</td>
<td>-234</td>
</tr>
<tr>
<td>Depreciation, amortisation and impairment charges</td>
<td>4</td>
<td>-123</td>
<td>-115</td>
</tr>
<tr>
<td>Depreciation and amortisation</td>
<td>4</td>
<td>-123</td>
<td>-115</td>
</tr>
<tr>
<td>Impairment charges on non-current assets</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Other operating expenses</td>
<td>5</td>
<td>-124</td>
<td>-116</td>
</tr>
<tr>
<td>Operating profit</td>
<td>5</td>
<td>-180</td>
<td>-183</td>
</tr>
<tr>
<td>Financial income and expenses</td>
<td>301</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>Income from non-current assets</td>
<td>281</td>
<td>302</td>
<td></td>
</tr>
<tr>
<td>Dividend income from group companies</td>
<td>288</td>
<td>348</td>
<td></td>
</tr>
<tr>
<td>Interest income from group companies</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Other interest and financial income</td>
<td>3</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td>Other interest income from group companies</td>
<td>25</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td>Other interest income from other companies</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Other financial income from group companies</td>
<td>6</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>Other financial income from other companies</td>
<td>6</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>Impairment charges on investments</td>
<td>0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Interest and other financial expenses</td>
<td>9</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Interest expenses to group companies</td>
<td>-10</td>
<td>-8</td>
<td></td>
</tr>
<tr>
<td>Interest expenses to other companies</td>
<td>-10</td>
<td>-21</td>
<td></td>
</tr>
<tr>
<td>Other financial expenses to group companies</td>
<td>-20</td>
<td>-20</td>
<td></td>
</tr>
<tr>
<td>Other financial expenses to other companies</td>
<td>-50</td>
<td>-69</td>
<td></td>
</tr>
<tr>
<td>Profit before closing entries and tax</td>
<td>281</td>
<td>302</td>
<td></td>
</tr>
<tr>
<td>Closing entries</td>
<td>581</td>
<td>273</td>
<td></td>
</tr>
<tr>
<td>Depreciation difference</td>
<td>22</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Group contributions granted</td>
<td>19</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>Income taxes</td>
<td>6</td>
<td>-115</td>
<td>-8</td>
</tr>
<tr>
<td>Profit for the period</td>
<td>486</td>
<td>249</td>
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## Balance sheet

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<tr>
<td>Land and water areas</td>
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<table>
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<th>2020</th>
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<tr>
<td><strong>EQUITY AND LIABILITIES</strong></td>
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<td><strong>LIABILITIES</strong></td>
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### Cash flow statement

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<td>Cash flows from operating activities</td>
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<td>Profit before closing entries and tax</td>
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<td>Operating cash flow</td>
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<td>Cash flows from investing activities</td>
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<tr>
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<td>15</td>
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<td>Change in working capital 2)</td>
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<td>-131</td>
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<tr>
<td>Adjustments to operating profit 1)</td>
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<td>175</td>
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<tr>
<td>Financial income and expenses</td>
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<td>-302</td>
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<tr>
<td>Total</td>
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<td>-131</td>
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<td>Change in cash and cash equivalents</td>
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### Notes to cash flow statement

1) Adjustments to operating profit

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<thead>
<tr>
<th>EURm</th>
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<th>2020</th>
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</thead>
<tbody>
<tr>
<td>Depreciation, amortisation and impairment charges</td>
<td>124</td>
<td>116</td>
</tr>
<tr>
<td>Capital gains and losses on sale of non-current assets</td>
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<td>-12</td>
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<tr>
<td>Change in provisions</td>
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<td>71</td>
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<tr>
<td>Total</td>
<td>64</td>
<td>175</td>
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2) Change in working capital

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<td>Current non-interest-bearing liabilities</td>
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<td>Total</td>
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</table>

3) Income taxes related to sale of assets are presented in investing cash flow.
1. Sales

Sales by business area

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<tr>
<td>UPM Biorefining</td>
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Sales by destination

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<td>Finland</td>
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<td>16</td>
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<tr>
<td>Other countries</td>
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<tr>
<td>Total</td>
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<td>1,816</td>
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2. Other operating income

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<td>190</td>
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<tr>
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<td>-2</td>
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<tr>
<td>Total</td>
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</table>

3. Personnel expenses

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<th>EURm 2020</th>
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<tr>
<td>Salaries and fees of the President and CEO, and members of the Board of Directors</td>
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<tr>
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<td>190</td>
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<tr>
<td>Pension costs</td>
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<td>31</td>
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<td>Other indirect employee costs</td>
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4. Depreciation, amortisation and impairment charges

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<td>Other intangible assets</td>
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<td>10</td>
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<tr>
<td>Machinery and equipment</td>
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<td>81</td>
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<tr>
<td>Total</td>
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<td>116</td>
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5. Other operating expenses

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6. Income taxes

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Deferred tax assets and liabilities

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Deferred tax liabilities

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<tbody>
<tr>
<td>Accumulated depreciation difference</td>
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<td>Revaluations of land areas</td>
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7. Intangible assets

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<th>EURm 2020</th>
<th>EURm 2021</th>
<th>EURm 2020</th>
<th>EURm 2021</th>
<th>EURm 2020</th>
<th>EURm 2021</th>
<th>EURm 2020</th>
<th>EURm 2021</th>
<th>EURm 2020</th>
</tr>
</thead>
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<td>8</td>
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<td>10</td>
</tr>
<tr>
<td>Machinery and equipment</td>
<td>85</td>
<td>81</td>
<td>103</td>
<td>109</td>
<td>117</td>
<td>117</td>
<td>128</td>
<td>128</td>
<td>137</td>
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<td>26</td>
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<td>116</td>
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8. Tangible assets

<table>
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<th>EURm 2021</th>
<th>EURm 2020</th>
<th>EURm 2021</th>
<th>EURm 2020</th>
<th>EURm 2021</th>
<th>EURm 2020</th>
<th>EURm 2021</th>
<th>EURm 2020</th>
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</thead>
<tbody>
<tr>
<td>Land and water areas</td>
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<td>2,251</td>
<td>2,351</td>
<td>145</td>
<td>113</td>
<td>1,599</td>
<td>1,541</td>
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<td>1,462</td>
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<td>122</td>
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<td>1,462</td>
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<tr>
<td>Machinery and equipment</td>
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<td>4,299</td>
<td>4,299</td>
<td>2,199</td>
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</table>

1) The parent company has not recognised deferred tax assets and liabilities in the balance sheet. Deferred tax assets and liabilities are calculated based on temporary differences between the carrying and taxable values of assets and liabilities.

Note 6.1 - Financial risks, fair values and maturities of the group external derivatives

All financial derivative contracts of the group are made by the parent company. All contracts are made with external counterparties except internal derivatives which are used to manage foreign currency and interest rate exposure. Internal derivatives are one cross currency swap with nominal value of EUR 57 million (66 million) maturing in 2027 and foreign currency forwards with nominal value of EUR 356 million (462 million) maturing between 2022 and 2024.

1) The research and development costs in operating expenses were EUR 9 million (9 million) and auditor’s fee EUR 2.7 million (2.0 million). In personnel expenses the research and development costs were EUR 20 million (17 million).
## 9. Other non-current assets

<table>
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</tr>
<tr>
<td>Disposals</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Value adjustments 1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Carrying value, at 31 December</td>
<td>4,610</td>
<td>4,610</td>
</tr>
</tbody>
</table>

1) Value adjustments are shown in financial expenses.

## 10. Current receivables

<table>
<thead>
<tr>
<th></th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade receivables</td>
<td>559 (9) 32</td>
<td>319</td>
</tr>
<tr>
<td>Loan receivables 1</td>
<td>1,114 (4)</td>
<td>1,114 (4)</td>
</tr>
<tr>
<td>Prepayments and accrued income 1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other current receivables</td>
<td>271</td>
<td>271</td>
</tr>
<tr>
<td>Carrying value, at 31 December</td>
<td>1,678</td>
<td>1,678</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 2021 and 2020.

### 11. Equity

<table>
<thead>
<tr>
<th></th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carrying value, at 1 January</td>
<td>890 (1,273)</td>
<td>890 (1,273)</td>
</tr>
<tr>
<td>Transfer of profit from previous year</td>
<td>—</td>
<td>756</td>
</tr>
<tr>
<td>Profit for period</td>
<td>—</td>
<td>249</td>
</tr>
<tr>
<td>Dividend distribution</td>
<td>—</td>
<td>249</td>
</tr>
<tr>
<td>Carrying value, at 31 December</td>
<td>890 (1,273)</td>
<td>890 (1,273)</td>
</tr>
</tbody>
</table>

### Prepayments and accrued income

<table>
<thead>
<tr>
<th></th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy taxes</td>
<td>—</td>
<td>7</td>
</tr>
<tr>
<td>Interest income</td>
<td>11</td>
<td>14</td>
</tr>
<tr>
<td>Exchange gains and losses</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>Income taxes</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td>Other items</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Carrying value, at 31 December</td>
<td>30</td>
<td>42</td>
</tr>
</tbody>
</table>

### Current receivables

<table>
<thead>
<tr>
<th></th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade receivables</td>
<td>559 (9) 32</td>
<td>319</td>
</tr>
<tr>
<td>Loan receivables 1</td>
<td>1,114 (4)</td>
<td>1,114 (4)</td>
</tr>
<tr>
<td>Prepayments and accrued income 1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other current receivables</td>
<td>271</td>
<td>271</td>
</tr>
<tr>
<td>Carrying value, at 31 December</td>
<td>1,678</td>
<td>1,678</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 2021 and 2020.

<table>
<thead>
<tr>
<th>EURm</th>
<th>Restructuring</th>
<th>Termination</th>
<th>Environmental</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2021</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provisions at 1 January</td>
<td>3</td>
<td>5</td>
<td>8</td>
<td>172</td>
<td>187</td>
</tr>
<tr>
<td>Provisions made during the year</td>
<td>—</td>
<td>1</td>
<td>1</td>
<td>13</td>
<td>15</td>
</tr>
<tr>
<td>Provisions utilised during the year</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Unused provisions reversed</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>47</td>
<td>48</td>
</tr>
<tr>
<td>Carrying value, at 31 December</td>
<td>3</td>
<td>3</td>
<td>9</td>
<td>137</td>
<td>152</td>
</tr>
<tr>
<td><strong>2020</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provisions at 1 January</td>
<td>3</td>
<td>3</td>
<td>8</td>
<td>172</td>
<td>187</td>
</tr>
<tr>
<td>Provisions made during the year</td>
<td>—</td>
<td>—</td>
<td>4</td>
<td>141</td>
<td>145</td>
</tr>
<tr>
<td>Provisions utilised during the year</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Unused provisions reversed</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>47</td>
<td>48</td>
</tr>
<tr>
<td>Carrying value, at 31 December</td>
<td>3</td>
<td>3</td>
<td>8</td>
<td>137</td>
<td>152</td>
</tr>
</tbody>
</table>

1 Other provisions are attributable to onerous contracts and fair value losses of financial derivatives. At the end of 2021 the fair value loss in other provisions of EUR 3 million (5 million) is attributable to one group internal cross currency swap and EUR 13 million (47 million) to group internal foreign currency forwards.

13. Non-current liabilities

**Maturity in 2027 (in 2026) or later**

<table>
<thead>
<tr>
<th>EURm</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonds</td>
<td>1,581</td>
<td>1,056</td>
</tr>
<tr>
<td>Loans from financial institutions</td>
<td>200</td>
<td>100</td>
</tr>
<tr>
<td>Provisions to group companies</td>
<td>153</td>
<td>148</td>
</tr>
<tr>
<td>Other non-current liabilities</td>
<td>163</td>
<td>166</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,865</td>
<td>1,299</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EURm</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonds</td>
<td>1,581</td>
<td>1,056</td>
</tr>
<tr>
<td>Loans from financial institutions</td>
<td>123</td>
<td>77</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,865</td>
<td>1,299</td>
</tr>
</tbody>
</table>

14. Current liabilities

**Maturity in 2027 (in 2026) or later**

<table>
<thead>
<tr>
<th>EURm</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade payables</td>
<td>165</td>
<td>108</td>
</tr>
<tr>
<td>Accrued expenses and deferred income</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>Other current liabilities</td>
<td>2,696</td>
<td>2,595</td>
</tr>
<tr>
<td><strong>Carrying value, at 31 December</strong></td>
<td>2,873</td>
<td>2,695</td>
</tr>
</tbody>
</table>

15. Commitments

**Maturity in 2027 (in 2026) or later**

<table>
<thead>
<tr>
<th>EURm</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guarantees for loans on behalf of group companies</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Other guarantees on behalf of group companies</td>
<td>36</td>
<td>26</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>37</td>
<td>27</td>
</tr>
</tbody>
</table>

**Related party transactions**

In addition, the parent company acts as a guarantor on behalf of other companies belonging to the group. Majority of such commitments relate to major investment projects and can end up payable by the parent company in case group companies are unable to manage their obligations. **Refer Note 4.1.** Property, plant and equipment for information about major investment projects.

Pension commitments of the President and CEO and the members of the Group Executive Team **Refer Note 3.2.** Key management personnel.

16. Shares and holdings owned by parent company

### Subsidiaries

<table>
<thead>
<tr>
<th>Name of Subsidiary</th>
<th>Country of Incorporation</th>
<th>Holding %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Myllykoski Oy</td>
<td>FI</td>
<td>100.00</td>
</tr>
<tr>
<td>Repola Investment Oy</td>
<td>FI</td>
<td>100.00</td>
</tr>
<tr>
<td>Sunewniet Makro Oy</td>
<td>FI</td>
<td>65.44</td>
</tr>
<tr>
<td>Umicore Oy</td>
<td>FI</td>
<td>100.00</td>
</tr>
<tr>
<td>UPM (Vancouver) Limited</td>
<td>VN</td>
<td>100.00</td>
</tr>
<tr>
<td>UPM AG</td>
<td>CH</td>
<td>100.00</td>
</tr>
<tr>
<td>UPM Asia Pacific Pte. Ltd.</td>
<td>SG</td>
<td>100.00</td>
</tr>
<tr>
<td>UPM B.V.</td>
<td>NL</td>
<td>100.00</td>
</tr>
<tr>
<td>UPM Biochemicals GmbH</td>
<td>DE</td>
<td>100.00</td>
</tr>
<tr>
<td>UPM Bulgaria EGOD</td>
<td>BG</td>
<td>100.00</td>
</tr>
<tr>
<td>UPM Communication Papers Oy</td>
<td>FI</td>
<td>100.00</td>
</tr>
<tr>
<td>UPM Energy Oy</td>
<td>FI</td>
<td>100.00</td>
</tr>
</tbody>
</table>
### Participating Interest Companies

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Country of Incorporation</th>
<th>Holding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keminai Oy; Juhana Ristie 3</td>
<td>FI</td>
<td>23.41</td>
</tr>
<tr>
<td>Metsätepä Oy</td>
<td>FI</td>
<td>23.95</td>
</tr>
<tr>
<td>Oy Corporate Ab</td>
<td>FI</td>
<td>36.60</td>
</tr>
<tr>
<td>Oy Kaakulaboratorio - Centrallaboratorium Ab</td>
<td>FI</td>
<td>38.65</td>
</tr>
<tr>
<td>Perkko Oy</td>
<td>FI</td>
<td>33.33</td>
</tr>
<tr>
<td>Ronnäsin Keminaihuolto Oy</td>
<td>FI</td>
<td>28.41</td>
</tr>
<tr>
<td>Selloonaisuusvakuutus Oy</td>
<td>FI</td>
<td>33.33</td>
</tr>
<tr>
<td>Stevenäs Oy</td>
<td>FI</td>
<td>34.32</td>
</tr>
</tbody>
</table>

Group subsidiaries and joint operations are disclosed in Note 8.2.
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. Material misstatements are possible 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 timing and extent of our audit procedures and to evaluate the effect of misstatements on the financial statements as a whole.

Overall group materiality

€ 77 million (previous year € 60 million)

How we determined it

Approximately 3% of the 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 is a generally accepted materiality threshold in auditing standards.

How we tailored our group audit scope

We tailored the scope of our audit, taking into account the structure of the UPMKymmene 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 their specific nature, covering the majority of revenue, assets and liabilities of the group. Selected specific 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.

As 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

Refer to note 4.2. in the consolidated financial statements for the related disclosures.

The group owns and leases total of a 1,057 thousand hectares of forests and plantations in Finland, the United States and Uruguay valued € 228 million at 31 December 2021. 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 and land are valued at cost. Main factors used in the valuation includes rates for growth and wood harvested, stumpage prices and discount rates.

We focused on this area as the amounts 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

In testing the valuation of forest assets, in conjunction with our valuation specialists we:

- Assessed the methodologies adopted by management for the valuation;
- Tested the mathematical accuracy of the model used for valuation;
- Assessed the discount rates applied in the valuation;
- Assessed the other key valuation assumptions; and,
- Validated key inputs and data used in valuation model such as stumpage price, trend price forecast, tree growth assumptions, consumer price index and inflation.

Valuation of energy shareholdings

Refer to note 4.3. in the consolidated financial statements for the related disclosures.

The energy shareholdings amounted to € 257 million at 31 December 2021. 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 startup schedule of the nuclear power plant unit Olkiluoto 3.

We focused on this area as the amounts are material, the valuation process is complex and judgmental and is based on assumptions that are affected by expected future market or economic conditions.

How our audit addressed the key audit matter

In testing the valuation of the energy shareholdings, in conjunction with our valuation specialists we:

- Assessed the methodology adopted by management for the valuation;
- Tested the mathematical accuracy of the model used for valuation;
- Assessed the future electricity prices and price trends; and,
- Assessed the discount rate applied in the valuation.

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 a 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 but to do so.

Auditor’s Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about 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 it 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 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 conducted in accordance with good auditing practice, we exercise professional judgment and maintain professional skepticism throughout the audit.

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design the audit procedures that are appropriate to the risks.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate to 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.
- Evaluate the appropriateness of accounting policies used and the reasonableness of management’s estimates and assumptions made.
- Conclude on the appropriateness of the Board of Directors’ and the Managing Director’s use of the going concern basis of accounting and based on the audit evidence obtained whether a material uncertainty exists related to events or conditions that may cast significant doubt on the parent company’s or the group’s ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor’s report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor’s report. However, future events or conditions may cause the parent company or the group to cease to continue as a going concern.
• Evaluate the overall presentation, structure and context of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events so that the financial statements give a true and fair view.
• Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit. We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor’s report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a more specific communication is appropriate.

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 25 years. The Company arranged the latest audit tendering process in 2013. Authorised Public Accountant (KHT) Mikko Nieminen has acted as the responsible auditor since 4 April 2019, representing a total uninterrupted period of three years.

Other Information

The Board of Directors and the Managing Director are responsible for the other information. The other information comprises the report of the Board of Directors and the information included in the Annual Report, but does not include the financial statements and our auditor’s report thereon. We have obtained the report of the Board of Directors prior to the date of this auditor’s report and the Annual Report is expected to be made available to us after that date.

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.

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.

Helsinki: 15 February 2022
PricewaterhouseCoopers Oy
Authorised Public Accountants

Mikko Nieminen
Authorised Public Accountant (KHT)

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:

<table>
<thead>
<tr>
<th>ALTERNATIVE PERFORMANCE MEASURE</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 energy shareholdings as presented on the face of the IFRS income statement. Gains on sale of energy shareholdings are not recorded to the income statement from 2018 onwards.</td>
</tr>
<tr>
<td>Comparable EBT</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 noncurrent debt less cash and cash equivalents and interest-bearing current and noncurrent financial assets.</td>
</tr>
<tr>
<td>Items affecting comparability</td>
<td>Certain nonoperational or noncash 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 financial instruments resulting from changes in valuation parameters or others or changes in legislation or legal proceedings. In addition, the changes in fair value of unrealized 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 is 1% of EBITDA.</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>Profit 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 share purchases</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>Grossing 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 comparable EBITDA.</td>
</tr>
</tbody>
</table>
| Equity to assets ratio, % | Equity expressed as a percentage of total assets less Intangible assets.

Other financial information

Performance Measures

<table>
<thead>
<tr>
<th>ALTERNATIVE PERFORMANCE MEASURE</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 energy shareholdings as presented on the face of the IFRS income statement. Gains on sale of energy shareholdings are not recorded to the income statement from 2018 onwards.</td>
</tr>
<tr>
<td>Comparable EBT</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 noncurrent debt less cash and cash equivalents and interest-bearing current and noncurrent financial assets.</td>
</tr>
<tr>
<td>Items affecting comparability</td>
<td>Certain nonoperational or noncash 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 financial instruments resulting from changes in valuation parameters or others or changes in legislation or legal proceedings. In addition, the changes in fair value of unrealized 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 is 1% of EBITDA.</td>
</tr>
<tr>
<td>Free cash flow</td>
<td>Cash generated from operations after cash used for investing activities.</td>
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<tr>
<td>Return on equity (ROE), %</td>
<td>Profit for the period as a percentage of average equity.</td>
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<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>Profit 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>
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<td>Equity expressed as a percentage of total assets less Intangible assets.</td>
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<td>Capital gains and losses on sale of non-current assets</td>
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</table>

### Increase in accounts for 2021

- **Comparable ROE**: 137% (Q4/21)
- **Profit before tax**: 420% (Q4/21)
- **Comparable EBIT**: 470% (Q4/21)
- **Comparable EBITDA**: 1,821% (Q4/21)

**Quarterly key figures are unaudited**

**UPM ANNUAL REPORT 2021**
In 2016 UPM has relabelled 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

Sources of wood to UPM mills 2021

Environment deviations at UPM production sites

Wood deliveries to UPM mills

Age structure of UPM employees 2021

UPM employees by region

Ratio of female to male salaries weighted basic salary 2021

The ratio is calculated by comparing weighted average of basic salaries of women to men on the same job grade, for the nine biggest countries in terms of salaried employees. These countries cover 91% of UPM’s total number of salaried employees.
Global operations, strong market positions

Our 17,000 people work in 46 countries across six continents. With our head office in Finland, our most important markets are in Europe, Asia and North America.

UPM ENERGY

• A versatile range of chemical pulp for many growing and uses with annual production capacity of 3.7 million tonnes produced in Finland and Uruguay
• Annual capacities in tonnes by mills: UPM Fray Bentos 1.3 million, UPM Paara 0.4 million, UPM Kaukas 0.3 million and UPM Kymi 0.8 million tonnes
• 466,000 ha of own and leased plantations in Uruguay
• Certified sawn timber with annual capacity of 1.4 million cubic metres, produced at four sawmills in Finland

UPM FIBRES

• Cost competitive low-emission electricity generation in Finland consisting of hydro, nuclear and thermal power
• The total electricity generation capacity is 1,468 MW, including UPM’s own hydropower plants and shareholdings in other energy companies
• Market agility and optimisation services for industrial consumers
• Largest shareholdings – 47.69% of Pohjolan Voima Oy (PVO), 21.9% of Kemijoki Oy’s hydropower shares

Hydropower plants:
Finland: Parnawahti, Kuusinen (Lohja), Kihnu (Kihnu), Kaukas (Kaukas), Kuusakoski (Kuusakoski), Tyrvää (Sastamala), Viikkiönsalmi (Viikkiönsalmi) and Åmala

Market position

#3 in Finland

UPM RAFLATAC

• Self-adhesive label materials for promotion, information and functional product and information labelling
• 10 factories and 28 slitting and distribution terminals in all continents

Labelling factories:
China: Changshu
Finland: Tampere, Rauma
France: Nancy
Malaysia: Johor
Poland: Kukurygrot (Wrocław) and Nowa Wola (Wrocław)
United Kingdom: Scarborough
USA: Mill River, NIC, Fletcher, NC and Diocese, SC

Slitting and distribution terminals:
Argentina: Buenos Aires
Australia: Adelaide, Brisbane and Melbourne
China: Shantou
India: Bangalore and Navi Mumbai
Indonesia: Jakarta
Italy: Orvieto
Mexico: Ciudad de México and Guadalajara
New Zealand: Auckland
Russia: Moscow, St Petersburg and Ulyanovsk
South Africa: Cape Town and Johannesburg
South Korea: Suwon-Si
Spain: Boadilla
Thailand: Bangkok
Turkey: Istanbul
Ukraine: Kiev
USA: Dallas, TX, Ontario, CA and Seattle, WA
Vietnam: Hanoi

Market position

#8 globally

UPM RAFFI

• Natural rubber latex

Mills: UPM Kaukas (Lappeenranta), UPM Kymi (Kouvola) and Äetsä (Kouvola), Tyrvää (Sastamala), Voikkaa (Joensuu), Katerma (Kuhmo), Keltti (Kouvola), Harjavalta, Kallioinen (Sotkamo), Kaltimo (Kouvola), Mikkeli, and UPM Savonlinna

Market position

#6

UPM ANNUAL REPORT 2021

UPM SPECIALTY PAPERS

• Labelling materials, release liner base papers, flexible packaging papers, office and graphic papers
• Total annual production capacity of 2.0 million tonnes

Paper mills:
China: UPM Changshu
Germany: UPM Nordland Papier (Dörpen)
Finland: UPM Jämijärvi (Jämsä) and UPM Teräväeri (Võõra)

Market position

#1 in high-quality office paper segment in China

OTHER OPERATIONS

• UPM forest: Purchasing wood and biomass in 11 countries, 510,000 ha of own forest land in Finland and 76,000 ha in the USA, offering forestry services to private forest owners in Finland
• UPM Biochemics: Wood-based renewable diesel and naphtha with the annual capacity of 130,000 t produced
• UPM Biochemicals: glycols, lignin products, renewable functional fluids
• UPM Biochemicals: Wood-based biomedicial products for medical and life science applications
• UPM Biocomposites: UPM Profi deck materials made of recycled plastic waste and UPM forms composite material to replace foamed plastics

Biofuels
Finland: UPM Lappeenranta Bioenergy
Biochemicals
Germany: Biochemica biosynfuel, Leuna (completed in 2023)
Biomedicals
Finland: Biomedicum research and educational centre, Helsinki
Biocomposites mills
Finland: UPM Lobi
Germany: UPM Bruskad (Karlshagen)

UPM PLYWOOD

• Plywood and veneer products ready for construction, vehicle flooring and LNG shipbuilding as well as other industrial end uses
• Production capacity: 960,000 cubic metres
• Production in 6 mills in Finland, Estonia and Russia

Plywood mills
Estonia: UPM Chelepa
Finland: UPM Jääna, UPM Pelkässä (3 mills), Ristina, Mäki-Hämikä and UPM Savonlinna
Russia: UPM Chudovo
Veneer mill
Finland: UPM Katio (Võõra, Kuusakoski)

Market position

#1 in Europe
High and mid segments in EMEA
LNG plywood globally
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Annual General Meeting
UPM-Kymmene Corporation’s AGM will be held on Tuesday, 29 March 2022 at 14:00 EEST (in Event Studio Eero at Töölönlahdenkatu 2, Helsinki, Finland). Due to the COVID-19 pandemic, it is not possible to attend the meeting in person. Detailed instructions for shareholders are available on the corporate website at www.upm.com/agm2022

DIVIDEND
The Board of Directors proposes to the Annual General Meeting that a dividend of EUR 1.30 per share be paid for the 2021 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 31 March 2022. The Board of Directors proposes that the dividend be paid on 7 April 2022.

FINANCIAL REPORTS IN 2022
UPM will publish the financial reports in 2022 as follows:
• UPM Interim Report for January–March (Q1) on 26 April 2022
• UPM Half Year Financial Report for January–June (Q1–Q2) on 21 July 2022
• UPM Interim Report for January–September (Q1–Q3) on 25 October 2022