



Value from responsibility

2019

Megatrends drive consumer demand and the need for sustainable choices



Population growth

Urbanisation

Higher living standards

Digitalisation

+2 billion

middle class
consumers

Food and water

Hygiene & personal care

Packaging

E-commerce, marketing

Mobility

Energy

Living and construction

Sustainability is the only solid foundation for long term value creation



Climate change

Increasing resource scarcity

Sustainable choices and
tightening regulation

UPM solutions

Sustainable land use

Resource efficiency

Circular economy

Renewable materials

Replacing fossil

Decarbonising traffic and energy

UPM Biofore – Beyond fossils



Our purpose

We create value by seizing the limitless potential of bioeconomy.

Our vision

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

The competence, integrity and drive of our people make us unique.



Our Biofore strategy challenges us to aim higher every day



**WE CREATE VALUE BY SEIZING THE LIMITLESS
POTENTIAL OF BIOECONOMY**

1

PERFORMANCE

2

GROWTH

3

INNOVATION

4

RESPONSIBILITY

**STRONG LONG-TERM FUNDAMENTALS FOR DEMAND GROWTH
AND HIGH BARRIERS TO ENTRY**

Our responsibility agenda is guided by the Biofore strategy and contributes to UN's Sustainable Development Goals



**SUSTAINABLE
DEVELOPMENT
GOALS**

3 GOOD HEALTH
AND WELL-BEING



8 DECENT WORK AND
ECONOMIC GROWTH



9 INDUSTRY, INNOVATION
AND INFRASTRUCTURE



Goals where our negative impact is largest and those where we can contribute most positively

**2030
TARGETS**

12 RESPONSIBLE
CONSUMPTION
AND PRODUCTION



13 CLIMATE
ACTION



15 LIFE
ON LAND



Value from responsibility

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

The bioeconomy offers new opportunities for value creation and business growth.



2030
TARGETS



UPM 2030 responsibility targets

Economic



UPM RESPONSIBILITY FOCUS AREA	2030 TARGET	2030 FOLLOW-UP / 2018 RESULTS
ECONOMIC		
Profit Creating value to shareholders	<ul style="list-style-type: none"> • Comparable EBIT growth through focused top-line growth and margin expansion • Comparable ROE: 10% • Net debt/EBITDA: around 2 times or less 	<ul style="list-style-type: none"> • Comparable EBIT increased by 17% to EUR 1,513 million (1,292 million) • Comparable ROE was 12.9% • Net debt/EBITDA was -0.17 times
Governance Ensuring accountability and compliance	<ul style="list-style-type: none"> • 100% coverage of participation to UPM Code of Conduct training (continuous) 	<ul style="list-style-type: none"> • 99% (98%) of active employees completed the Code of Conduct training
Responsible sourcing Adding value through responsible business practices	<ul style="list-style-type: none"> • 80% of UPM spend qualified against UPM Supplier and Third Party Code (continuous) • 100% of UPM raw material spend qualified against UPM Supplier and Third Party Code by 2030 ¹⁾ • Continuous supplier auditing based on systematic risk assessment practices 	<ul style="list-style-type: none"> • 83% (82%) of supplier spend qualified against UPM Supplier and Third Party Code • 94% (96%) of raw material spend qualified against UPM Supplier and Third Party Code • 210 supplier audits were conducted based on identified risks, including human rights, social and environmental topics

UPM 2030 responsibility targets

Social



UPM RESPONSIBILITY FOCUS AREA

2030 TARGET

2030 FOLLOW-UP / 2018 RESULTS

SOCIAL

Diversity and inclusion

Developing organisational culture and local conditions to ensure diverse and inclusive working environment for business success

- People feel that UPM values and promotes diversity. People are treated fairly in their work environment and can advance regardless of personal background or characteristics. 95% favourable in the Employee Engagement Survey Diversity and Inclusion index by 2030
- Diversity and inclusion initiative (continuous)

- Responses to the Employee Engagement Survey's Diversity and Inclusion index 68% (67%) favourable
- UPM continued to develop an inclusive and diverse working environment and reviewed the status and actions in businesses

Continuous learning and development

Ensuring high performance for business success and continuous professional development for future employability

- Goal setting discussions are held and development plans are created for employees, completion rate 100% by 2030
- Employees perceive good opportunities for learning and development at UPM, 80% favourable in Employee Engagement Survey by 2030

- 89% (89%) of employees had completed individual goal setting or annual discussion. 61% (62%) of employees had a development plan documented
- Responses to Employee Engagement Survey's question regarding learning and development were 66% (65%) favourable

Responsible leadership

Emphasising value-based and inspiring leadership and integrity
Continuous development of working environment

- Employee engagement and enablement indices with favourable score clearly above external high-performing norm by 2030

- Employee engagement index 71% (71%) favourable. This is 3 ppt points below the external high-performing norm. Employee enablement index 72% (73%) favourable. This is 1 ppt point below the external high-performing norm

Working conditions

Ensuring safe and healthy working environment and wellbeing of employees

- No fatalities or serious accidents in UPM operations
- Continuous improvement in safety: Lost time accident frequency (LTAF) <1 and Total recordable injury frequency (TRIF) <2 levels permanently reached (including contractors)
- All operations have certified OHS system by 2030
- Health Promotion Programme is in use at all UPM sites and businesses by 2030
- Absenteeism rate <2% in all organisations by 2030

- No fatalities in 2018, two serious accidents
- LTAF was 2.7 (3.3) for UPM workforces and 2.9 (4.3) including contractors
- TRIF was 6.9 (8.2) for UPM workforce and 6.6 (8.5) including contractors
- All production sites have an OHS management system in place. 44% of the sites have external certification of their OHS system
- A majority of the sites with Health Promotion initiatives. Preparations for global UPM Health Concept to be launched in 2019.
- The absenteeism rate was 3.9% (3.8%)

Community involvement

Ensuring local commitment

- Continuous development of strategic sustainability initiatives with leading NGOs
- Continuous sharing of best practices of stakeholder initiatives
- UPM's Biofore Share and Care programme brings significant added value

- UPM continued its global strategic partnership with FSC® and its co-operation with BirdLife and Vida Silvestre
- Sharing of best practices ensured through well-established operational stakeholder forums, for example
- Programme continued with focus on employee volunteering in 2018

UPM 2030 responsibility targets

Environmental



UPM RESPONSIBILITY FOCUS AREA	2030 TARGET	2030 FOLLOW-UP / 2018 RESULTS
ENVIRONMENTAL ²⁾		
Product stewardship Taking care of the entire lifecycle	<ul style="list-style-type: none"> Environmental Management Systems in 100% use (continuous) Environmental Product Declarations for all products (continuous) ³⁾ All applicable products eligible for ecolabelling by 2030 	<ul style="list-style-type: none"> 100% of production sites have a certified environmental management system Environmental declarations are available for all relevant UPM products 85% (85%) of UPM sales were eligible for ecolabelling
Waste Promoting material efficiency and circular economy – reduce, reuse and recycle	<ul style="list-style-type: none"> No process waste sent to landfills or to incineration without energy recovery by 2030 	<ul style="list-style-type: none"> 90% (89%) of UPM's total process waste was recovered or recycled. The total amount of waste to landfills decreased by 2% compared to 2017
Climate Creating climate solutions and working towards carbon neutrality	<ul style="list-style-type: none"> Fossil CO₂ emissions from its own combustion and purchased electricity (Scope 1 and 2) reduced by 30% by 2030 Maximise the business benefits of greenhouse gas claims (continuous) Improve energy efficiency annually by 1% (continuous) 70% share of renewable fuels (continuous) Acidifying flue gases (NO_x/SO₂) reduced 20% by 2030 ⁴⁾ 	<ul style="list-style-type: none"> Fossil CO₂ emissions reduced by 4% compared to 2017. Without sales of greenhouse gas claims of energy used by UPM, the reported emissions (Scope 1 and 2) would have been over 7% lower ⁷⁾ UPM sold greenhouse gas claims worth nearly 1.1 million CO₂ tonnes Energy efficiency target was not achieved Level of 70% (69%) reached in the use of renewable fuels 29% reduction achieved since 2008 for the UPM average product
Water Using water responsibly	<ul style="list-style-type: none"> Effluent load (COD) reduced by 40% by 2030 ⁴⁾ Wastewater volume reduced by 30% by 2030 ⁴⁾ 100% of nutrients used at effluent treatment from recycled sources by 2030 ⁴⁾ 	<ul style="list-style-type: none"> 29% reduction in effluent load achieved since 2008 for the UPM average product 14% reduction in wastewater volume achieved since 2008 for the UPM average product 22% (17%) of nutrients from recycled resources
Forests and biodiversity Ensuring sustainable land use and keeping forests full of life	<ul style="list-style-type: none"> 100% coverage of chains of custody (continuous) All fibre certified by 2030 ⁵⁾ Positive impact on biodiversity (continuous): implementing biodiversity programme and developing monitoring system ⁶⁾ 	<ul style="list-style-type: none"> Coverage is 100% 81% (85%) of all wood used by UPM is sourced from certified forests Target was launched end of 2018

¹⁾ Covers all UPM raw material spend including wood and wood-based biomass sourcing and excluding energy

²⁾ Environmental targets: from 2008 levels

³⁾ Includes paper, timber, plywood, pulp and label

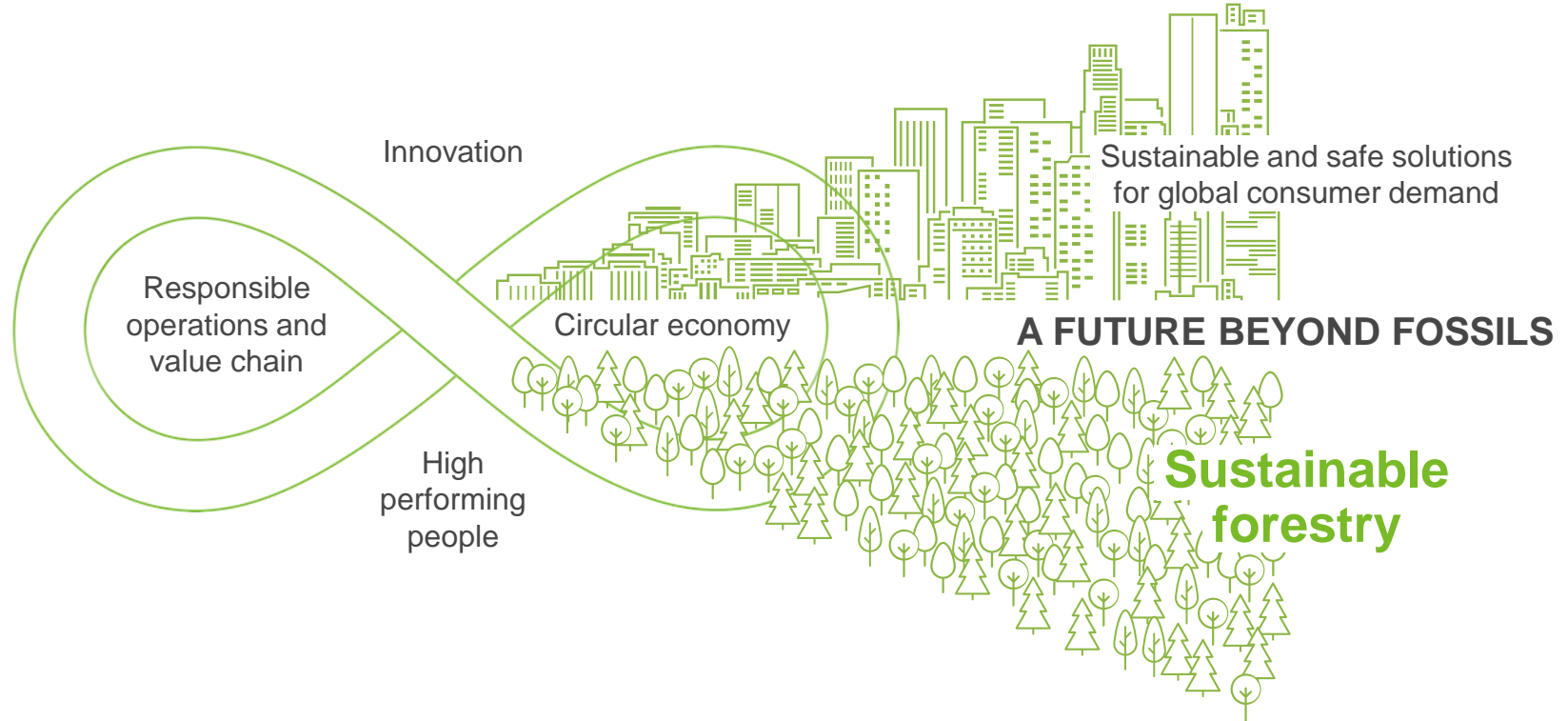
⁴⁾ Numerical targets relevant for pulp and paper production

⁵⁾ Forest management certification

⁶⁾ Covers UPM own forests in Finland

⁷⁾ Scope 2 emissions 2017 were corrected due to sold claims that were not reported

From fossils to bioeconomy



Sustainable forestry

**Sustainably managed forests grow more,
while taking care of biodiversity and
carbon sinks**



Forests are the
SECOND LARGEST
ABSORBER OF CO₂
after the oceans



Sustainable forestry

This is sustainable forestry at UPM



Our own forests and plantations are 100% certified

All fibre we use is certified by 2030 (2018: 81%)

We know the origin of wood

Strong stakeholder engagement

Own long-term and global biodiversity programme

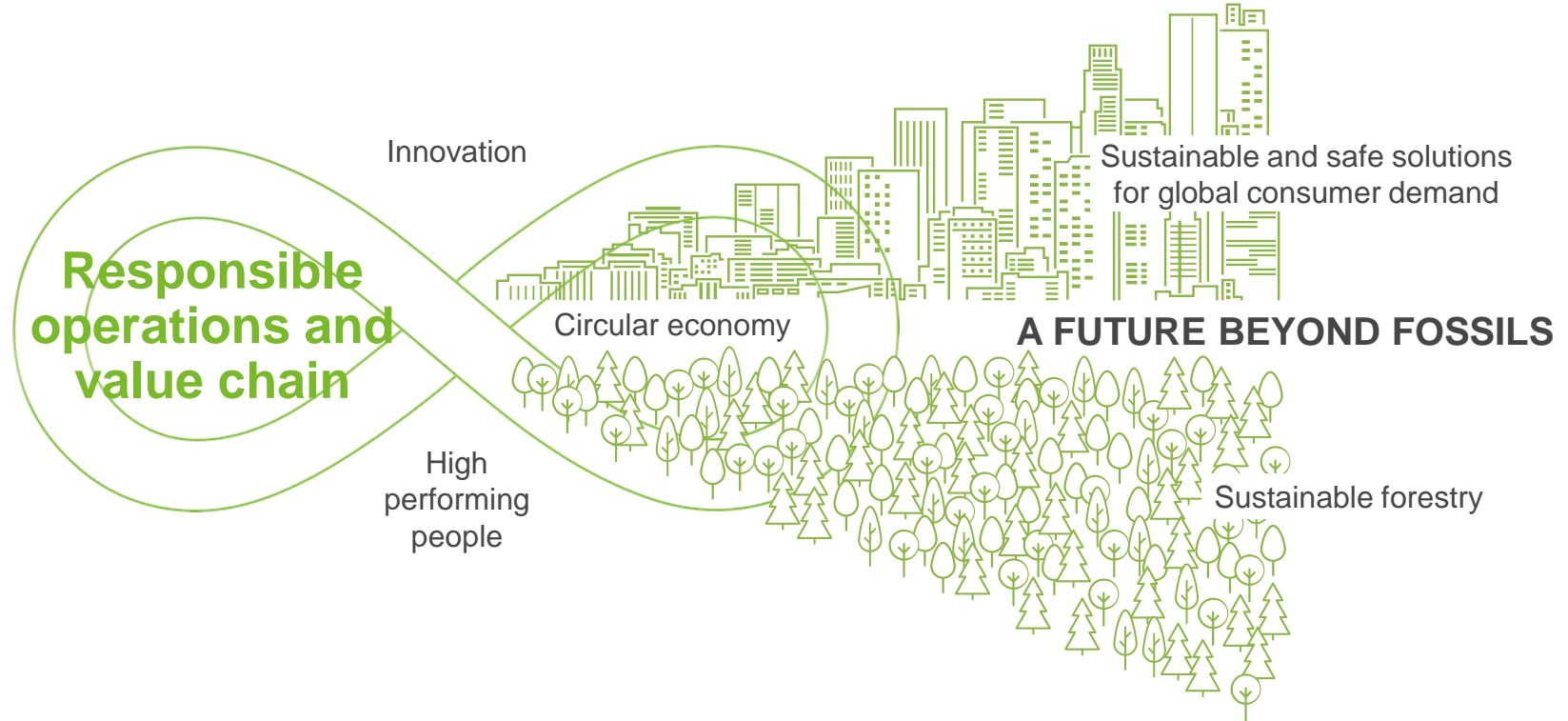
No competing with food production

No wood from tropical rainforests
or plantations established
by destroying rainforest

No operations in areas where the rights
of indigenous peoples are threatened



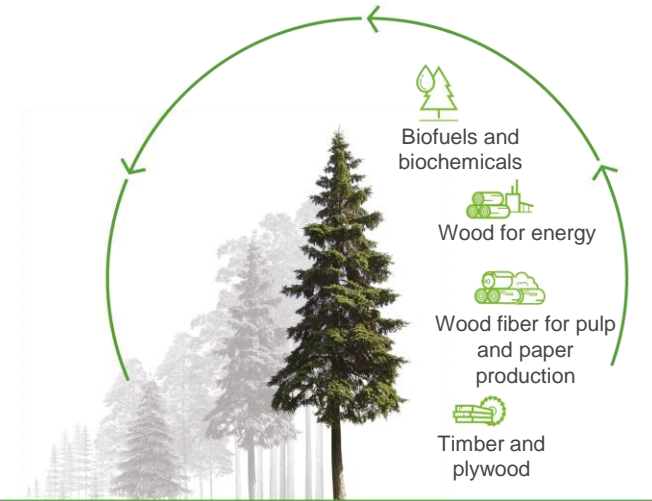
From fossils to bioeconomy



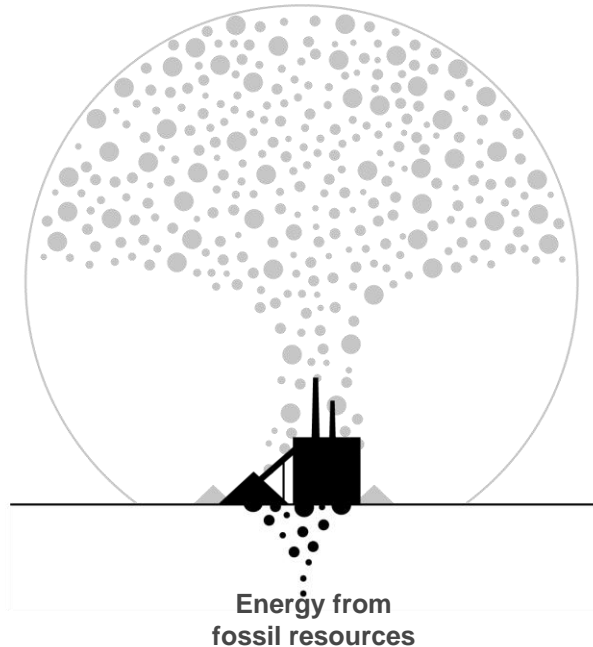
Bioeconomy offers a sustainable alternative to fossil-based economy



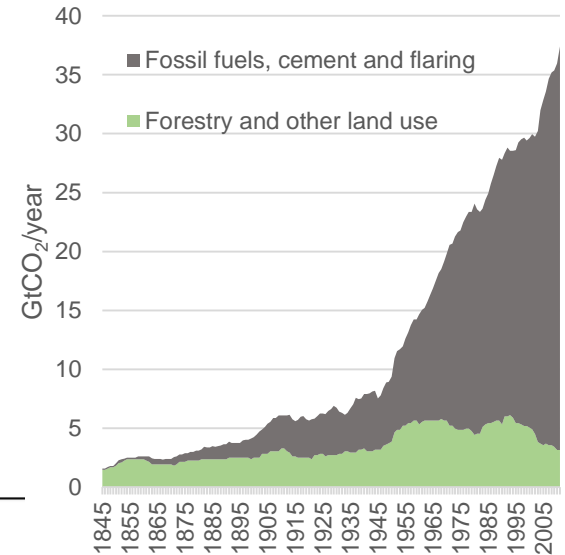
Biomass use is not increasing
CO₂ to carbon cycle



Use of fossil resources
increases CO₂ amount



Use of fossils has increased
global CO₂ -emissions



Source: IPCC AR5

Comprehensive approach to climate change mitigation



Forests

Carbon sinks and storages
maintenance, forestation,
renewal



Production

CO₂ emissions
low emission energy,
energy efficiency



Products

Product substitution
replacing fossils, recyclability,
carbon storages

Sustainable forestry preserves forests and increases carbon sinks



WE PLANT

50 million

trees in a year

IN URUGUAY
A NEW CARBON SINK OF

40M tonnes

in 25 years



UPM **BIOFORE-BEYOND** FOSSILS

Responsible operations and value chain

We continuously improve resource-efficiency in production



90%

of our production waste
is recycled or recovered

70%

of the fuels used
are biomass-based

14%

Wastewater volume/tonne
of product reduced
in 2008–2018



Responsible operations and value chain

Our focus is on transparency and efficiency



Working towards carbon neutrality
Treating water responsibly
Zero solid waste:
After 2030 no waste to landfills



Responsible operations and value chain

Our responsible sourcing principles



**UPM Supplier
and Third Party
Code**



**Transparent
supplier
requirements**



**Systematic
risk
assessment**



**Continuous
development
in co-operation**

94%

of raw material spend is
qualified against the UPM
Supplier and Third Party Code

24,000

Number of b-to-b
suppliers globally



Responsible operations and value chain **Examples**

Responsible operations and value chain

More with Biofore in China program further improves clean and efficient paper making



Low Carbon Energy

Reduce energy consumption
per ton of paper by 25% **



Zero Waste Water

Reduce water consumption
to 3 m³ per ton of paper *

* Industry average in China 10–15 m³ per ton of paper,
UPM Changshu today 6–7 m³ per ton of paper

** –12% in year 2017

Responsible operations and value chain

We are the water efficiency frontrunner in China



In past 10 years we have reduced water consumption at the Changshu mill by

60%

We are the Water Efficiency Frontrunner in Jiangsu Province and among 11 companies in China

Responsible operations and value chain

UPM Raflatac has piloted the Biofore Site™ concept



Inclusive **sustainability programme** where all employees have a role to play in making UPM Raflatac the industry sustainability leader and partner of choice.

Framework for creating a **sustainability culture** in all Raflatac factories and terminals and the platform for continuous development towards the 2030 responsibility targets and the requirements of ISO 14001.



Responsible operations and value chain

Our operations have many positive societal impacts on communities where we operate



EMAS reports
for all pulp & paper mills

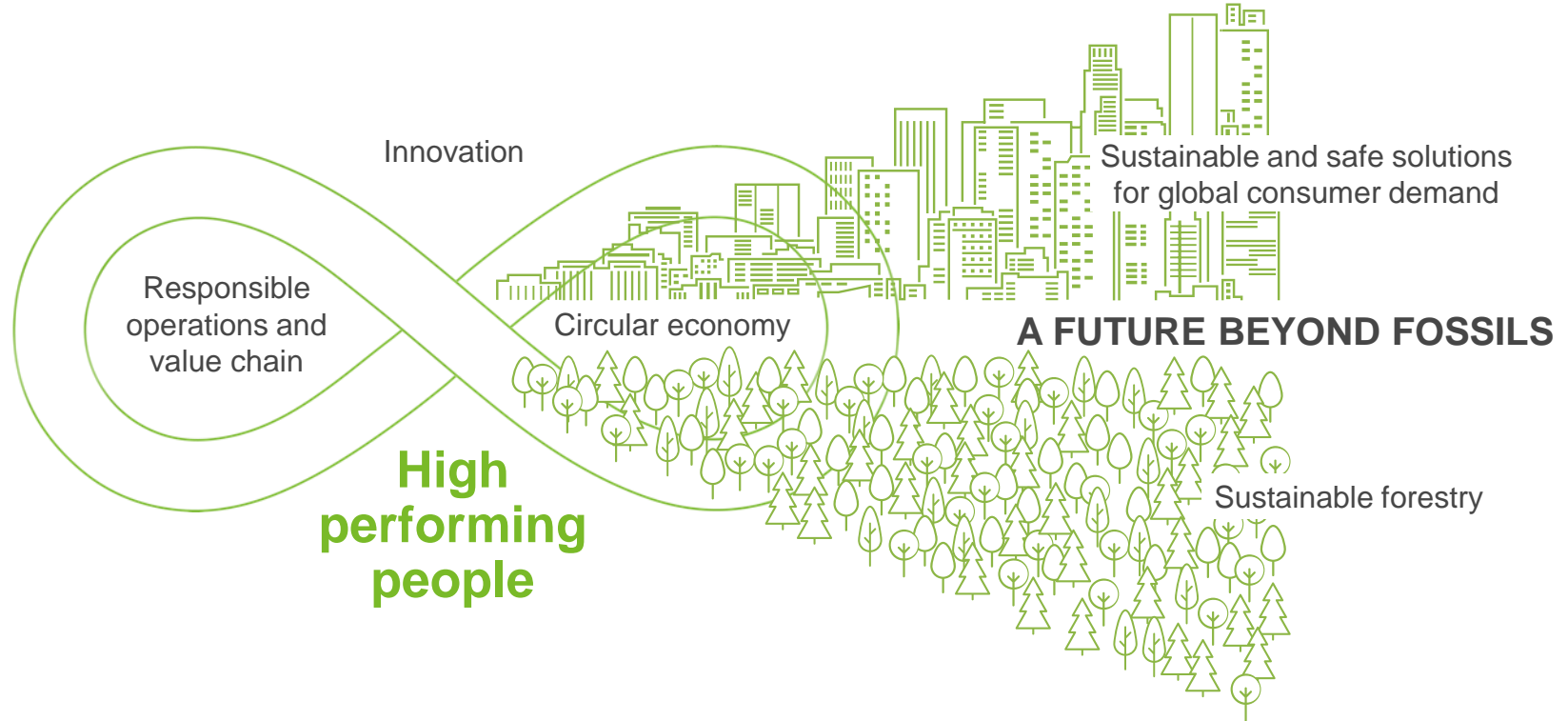
283 Million
euros

Corporate income
and property taxes paid

190 Million
euros

Consumption impact
in Finland

From fossils to bioeconomy



High performing people We focus on people and respecting human rights...



...of our employees



...of our suppliers
& contractors



...of the communities
where we operate



High performing people

The competence, integrity and drive of our people make us unique



Safety and wellbeing of people drives development.

Value-based, inspiring and responsible leadership and integrity motivate our people.

Committing to respect human rights.

Maintaining a good dialogue creates value for us and for the people and societies where we operate.

2030
TARGETS



Engaging with communities through donations, sponsorships and employee volunteering

BIOFORE
SHARE AND CARE



Reading
& learning



Engaging with
communities



Responsible
water use



Boosting
bioinnovation

High performing people **Examples**

High performing people Compliance and continuous improvement



99%

of employees have completed
the UPM Code of Conduct
training

–61%

Total Recordable Injury Rate
(TRIF) reduced globally
in 2012–2018



High performing people

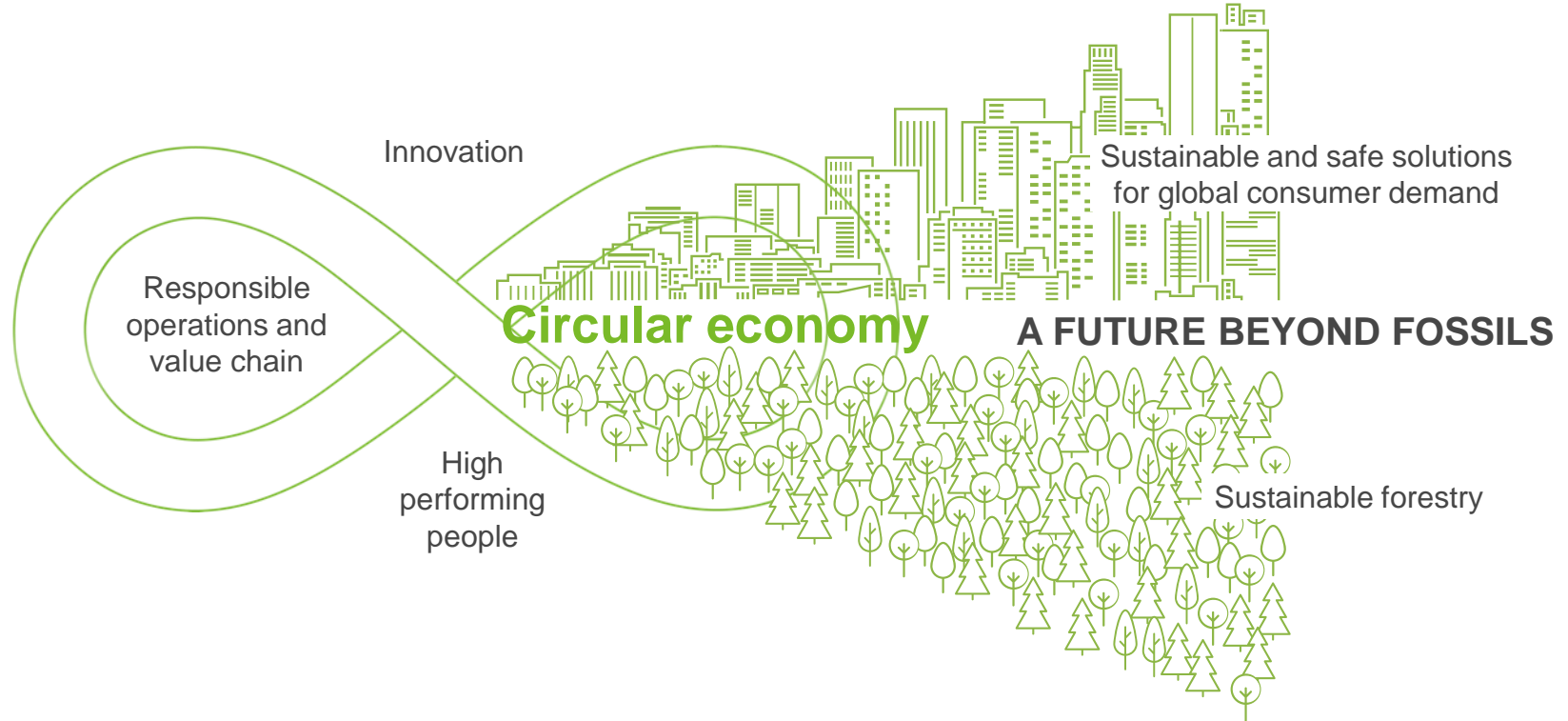
UPM Graduate Programme is an international graduate trainee programme for enthusiastic young professionals from all over the world.

“This has been the best possible transition from a student into a multi-talented forest industry professional with a global network of colleagues.”

ANNIINA KUJALA,
UPM Graduate



From fossils to bioeconomy



Circular economy at the core of all operations

Addresses two key global challenges: climate change and resource scarcity

Promotes material efficiency – reduce, reuse and recycle

90%
of UPM's total process waste recycled or recovered

2030
TARGETS



A woman with long dark hair, wearing a red V-neck shirt and a brown shoulder bag, is standing in a grocery store aisle. She is holding a small glass jar with a green substance inside and looking at it. The shelves are stocked with various food items, including jars and bags. The lighting is bright, typical of a supermarket.

Circular economy

The cornerstone of a sustainable future



- Reusing materials and products
- Using waste, residues and sidestreams as a resource
- Recycling to new and similar products
- Closing the loop in water circulation
- Collaboration and partnerships

Circular economy

Product stewardship takes care of the entire product lifecycle



Ecodesign thinking

Minimising environmental impacts from design stage to end-use

5,600

chemicals that are subject to restrictions in our products

Open and transparent product information

85%

of UPM sales was eligible for ecolabelling

2030
TARGETS



Circular economy **Examples**



Circular economy

**We are the graphic paper industries'
recycling champion**



Today every third
fibre we use is
recycled.

UPM is the world's largest user of

Recovered fibre
for printing paper

Circular economy

Joining forces to promote a circular plastics economy



Only 100 % reusable,
recyclable and compostable
plastic packaging
on the market by 2025.

UPM Raflatac has signed by
the Ellen MacArthur Foundation
with a mission to accelerate the
transition to a circular economy.

Working with **350 organisations** –
brand owners, packaging
producers, retailers, recyclers and
NGO's – towards one shared goal.

UPM ProFi – Material efficiency at its best



42,000

tons of UPM Raflatac label surplus material
used in UPM ProFi production, which means
1,750 fewer lorries of waste
to landfill or incineration

1m²

of UPM ProFi Deck
board contains

10kg

of label surplus material

The recycled material in
UPM ProFi Terra is around

90%

Circular economy

UPM BioVerno – Driving cleaner traffic



Crude Tall Oil,
a residue of pulp
making process
as raw material

No increase
in harvesting
nor land use

Outside food
value chain

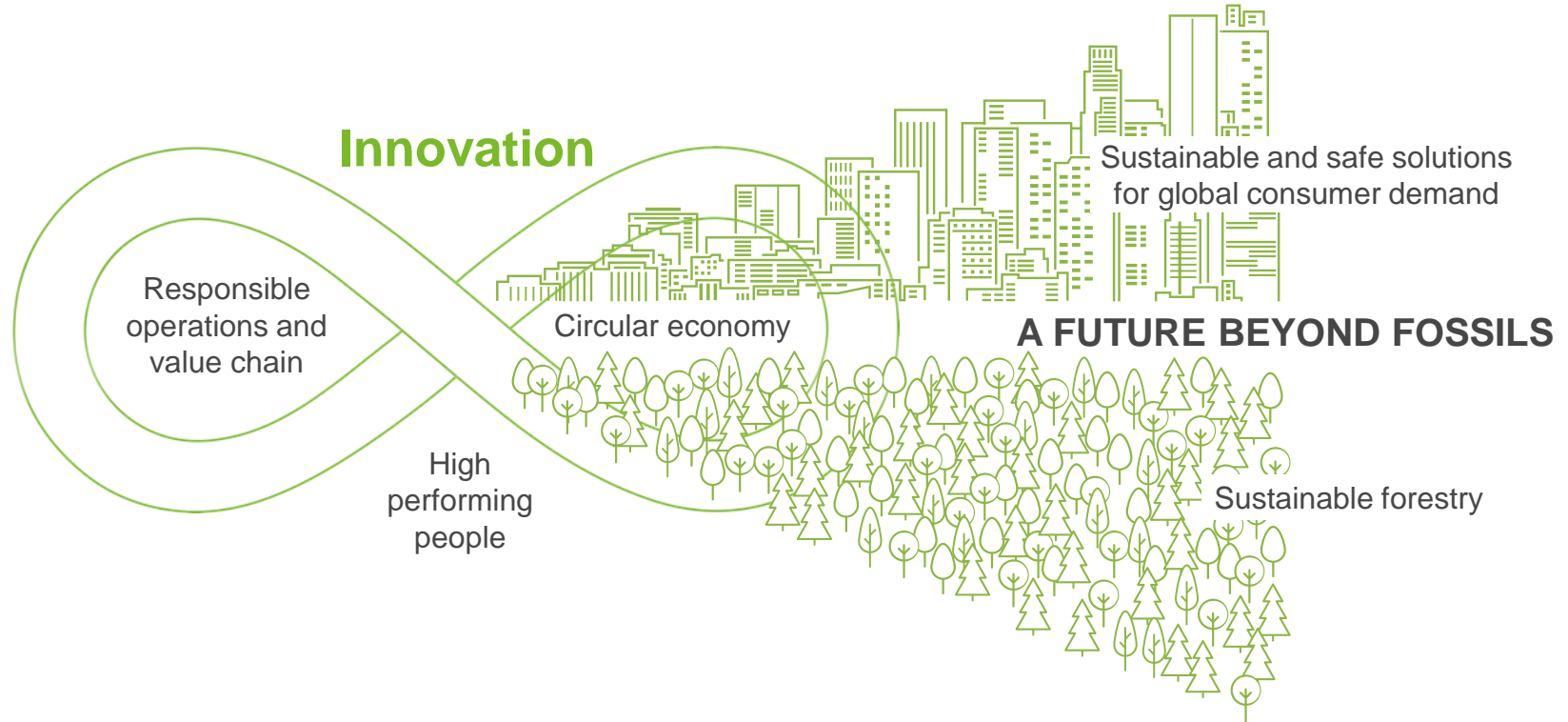
100%

Renewable raw material

80%

Less fossil
CO₂ emissions

From fossils to bioeconomy



We innovate for a future beyond fossils



200

researchers globally

370

patents filed in 2018

EUR 106 million

Spend on research
and development in 2018

Growth and competitive edge from innovations



Strong expertise and position in forest biomass processing



Circular economy thinking, resource efficiency and product stewardship

Renewable, recyclable and environmentally sound materials and products



Agile research and development, bioeconomy innovations and new technologies

Significant and solid patent portfolio



Extensive co-creation with partner network



Innovation

Investing in new innovations



UPM Biofuels is **studying** opportunities for a possible biorefinery in Kotka, Finland

- Environmental impact assessment completed
- The potential **second UPM biorefinery** would
 - produce approximately 500,000 tonnes of advanced biofuels for transportation
 - use several new sustainable feedstocks, e.g. solid wood biomass and Brassica Carinata*
 - use conversion of solid biomass and hydrotreatment technology

* Brassica Carinata is a sequential crop growing in South America. It produces non-edible oil suitable for biofuels' feedstock and protein for animal feed.

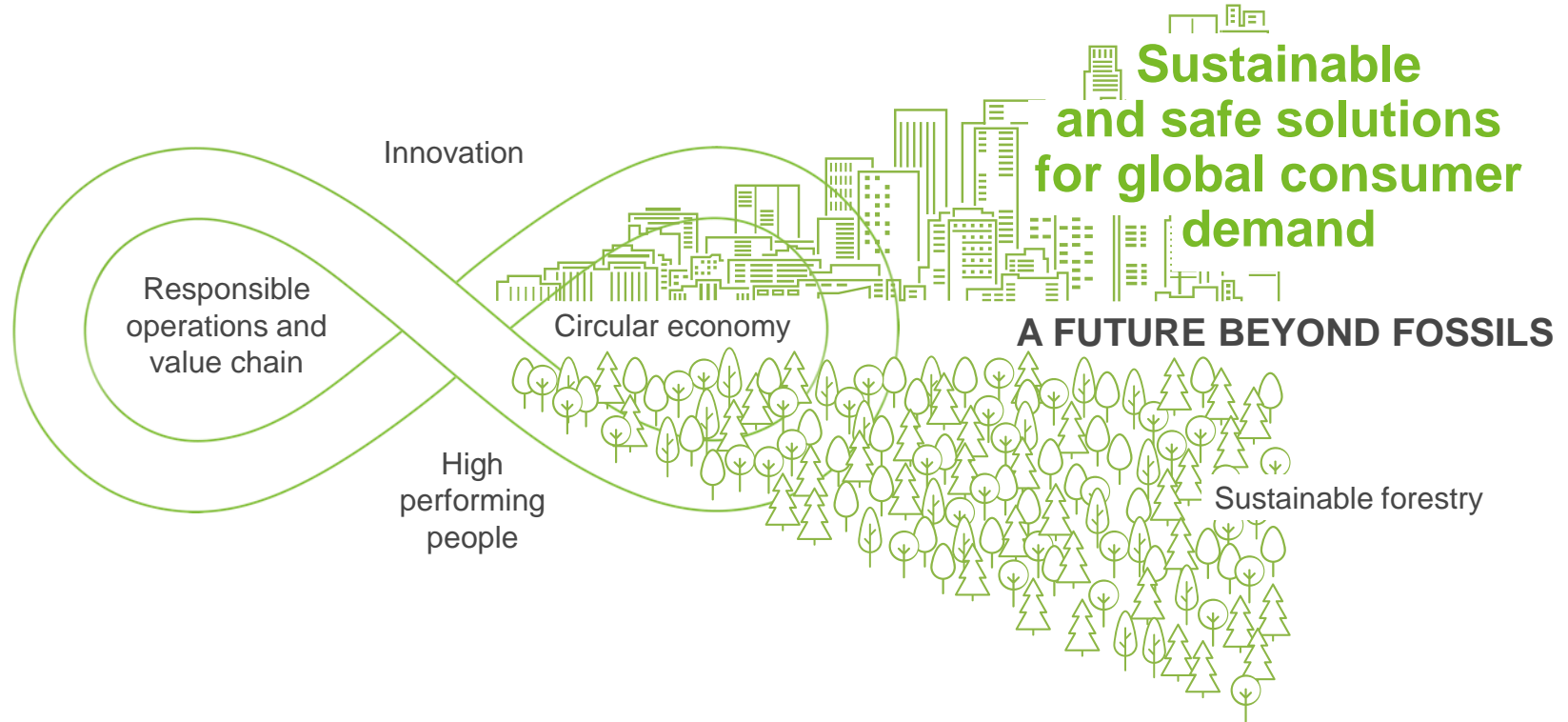
Innovation

Evaluating the potential of building a biorefinery to produce sustainable wood-based biochemicals in Germany



- Wood-based renewable biochemicals offer sustainable and competitive high-quality solutions for replacing fossil-based raw materials
- Renewable **glycols** would be ready to be converted into various industrial products and everyday consumer goods such as textiles, bottles & packaging
- **Lignin** is tailor-made for specific end-uses, e.g. for resin and plastic industries

From fossils to bioeconomy



Driven by sustainable solutions for a future beyond fossils



ELECTRICITY
everywhere

**PLYWOOD
AND SAWN TIMBER**
for construction and
industrial applications

**GRAPHIC AND
OFFICE PAPERS**
for advertising and
home and office uses

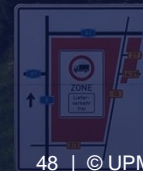
PLYWOOD
for vehicle flooring

**PULP AND
SPECIALTY PAPERS**
for packing materials

**RENEWABLE
BIOFUELS**
for all diesel engines

BIOCOMPOSITES
for various outdoor
building material uses

LABEL MATERIALS
for information and
product labelling



Sustainable and safe solutions
for global consumer demand

Minimum weight. Maximum performance.

- **UPM Valor** can substitute up to 15% higher basis weight papers
- **Lighter paper** means a **smaller environmental footprint**: less raw material, less water and less energy to produce and transport
- **Lighter flights – less fuel consumption –** e.g. Finnair's customer magazine Bluewing is printed on UPM Valor

UPM BioVerno naphtha – the natural solution for renewable plastic

Issue

20% of a typical carton is fossil-based plastic.

Challenge

To develop a 100% renewable* beverage carton and reduce its CO₂ footprint.

Solution

Collaborating with Dow and Elopak to convert wood-based UPM BioVerno naphtha to plastic for cartons.

Biofore Beyond Fossils

**The 100%
wood-based
beverage carton**



Sustainable and safe solutions
for global consumer demand

GrowDex® – Natural growth



- GrowDex® is a sustainable nanofibrillar cellulose hydrogel for 3D cell culturing and other biomedical applications
- Extracted from birch, highly biocompatible with human cells and tissues
- Close co-operation with the Institute for Molecular Medicine Finland (FIMM) at the University of Helsinki, Finland in cancer research

Sustainable and safe solutions
for global consumer demand

WISA BioBond with sustainable lignin



- A new bio-based bonding solution for producing plywood
- Replaces more than 50% of the fossil-based phenol with environmentally sustainable lignin in the adhesive used in the production of plywood
- The lignin is obtained as a residue generated during the kraft pulping process

Our business creates economical and societal value for a future beyond fossils

CLIMATE
CHANGE
MITIGATION

SUSTAINABLE WATER
AND LAND USE

PROSPERITY:
EMPLOYEMENT
AND TAXES

CIRCULAR ECONOMY

VITAL LOCAL COMMUNITIES

EMPLOYEE WELLBEING
AND SAFE WORK ENVIRONMENT

SUSTAINABLE AND SAFE PRODUCTS



2030
TARGETS



Our consistent efforts on responsibility have received recognition globally

- UN Global Compact LEAD
- Dow Jones Sustainability Index
- RobecoSAM's Sustainability Yearbook
- CDP Programs





UPM **BIOFORE** **BEYOND** FOSSILS

**Inspired by
the limitless
opportunities
of bioeconomy**

**Delivering
renewable and
responsible
solutions**

**Innovating
for a future
beyond fossils**

UPM **BIOFORE**
BEYOND FOSSILS



Value from responsibility

Compliance

**Responsible
operations and
value chain**



**Renewable,
recyclable and
safe products**

**Value based
leadership**

Value from responsibility

Compliance

- Responsible business practises
- Decision making, management and operations guided by our values and UPM Code of Conduct
 - Reliable, credible and transparent reporting

Responsible operations and value chain

- Material efficiency and circular economy thinking
- Climate solutions and working towards carbon neutrality
 - Diversity and inclusion
 - Responsible water use
 - Sustainable land use
 - Respecting human rights



Renewable, recyclable and safe products

- Renewable and biodegradable raw materials and recyclable products
- Product stewardship
- Open and transparent product communications

Value based leadership

- Safe and healthy working environment and wellbeing of employees
- Value-based and inspiring leadership
- Diversity and inclusion
- High performance and continuous professional development of employees
- Local commitment

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Responsible operations
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Value based
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Responsible operations
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**Value based
leadership**

Renewable, recyclable
and safe products

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BEYOND FOSSILS

