

# Stora Enso in 2018



THE RENEWABLE MATERIALS COMPANY



# Stora Enso operates worldwide and focuses on utilising expertise in renewable materials and creating value in packaging, pulp, paper, and wood.

## Sales

EUR 10.5 billion

## Employees

26 000

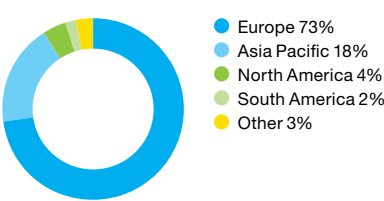
## Countries

30

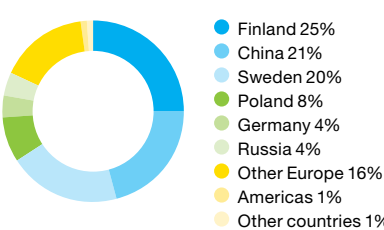


Countries where Stora Enso has production, plantations or projects

## Sales by destination



## Personnel by country<sup>1</sup>



<sup>1</sup>Excluding employees of our 50%-owned joint operations Veracel and Montes del Plata.



## The power of trees

Stora Enso's raw material is renewable, recyclable and fossil-free. This provides us with a great advantage in addressing the global megatrends. Our promise for a renewable future is based on sustainability, innovation and technological capabilities.

### Accelerated pace of innovation

By building on a strong portfolio that is based on wood fibres, we aim to leverage our raw material, market-leading expertise and market insight to ever greater extents. We are investing more in innovation and R&D and increasing sales in new applications, products and services.

### Profit improvement of 32%

The strength of our strategy and progress shows in our figures for 2018. We have had eight consecutive quarters of sales growth. We reached a substantially improved profitability with an operational EBIT that was 32% higher than last year. Our operational ROCE was close to 16%, well above the strategic target of 13%.

### Supported by investments

During 2018, the ramp-up of strategic investments in Beihai, Varkaus and Murów continued. The production of wooden building components (LVL) is well underway at Varkaus and the new fluff pulp line at Skutskär Mill is up and running. We began production of biocomposite granules at our Hylte Mill. We initiated a feasibility study to evaluate the potential conversion of Oulu paper mill into packaging board production.

We signed an agreement to acquire forest assets in Bergvik Skog, as we aim to secure competitive raw material supply and further develop long-term sustainable forest management.

### Sustainability at the heart

With rising consumption and global warming, it is increasingly clear that an economy based on fossil-based fuels and other non-renewable materials is not viable. Stora Enso is contributing to the transition to a circular bioeconomy by providing bio-based solutions that are renewable, recyclable and low-carbon.

The United Nations have defined a set of 17 Sustainable Development Goals (SDGs) that address social and economic development issues on a global scale. Stora Enso supports all 17 SDGs, and we have identified three strategic goals that our business has the most impact on.

As always, I thank all our partners, suppliers, and employees for their contributions throughout 2018, and our customers and investors for their valued trust.

Karl-Henrik Sundström  
Stora Enso's CEO

This is a summary of Stora Enso in 2018. The full annual report is available at [storaenso.com/annualreport2018](https://storaenso.com/annualreport2018)



# This is Stora Enso

Part of the bioeconomy, Stora Enso is a leading global provider of renewable solutions in packaging, biomaterials, wooden constructions and paper. We employ some 26 000 people in more than 30 countries and our shares are listed on the Helsinki (STEAV, STERV) and Stockholm (STE A, STE R) stock exchanges.

Our fibre-based materials are renewable and recyclable. Our solutions provide low-carbon alternatives to products based on fossil fuels and other non-renewable materials. We believe that everything that is made from fossil-based materials today can be made from a tree tomorrow.

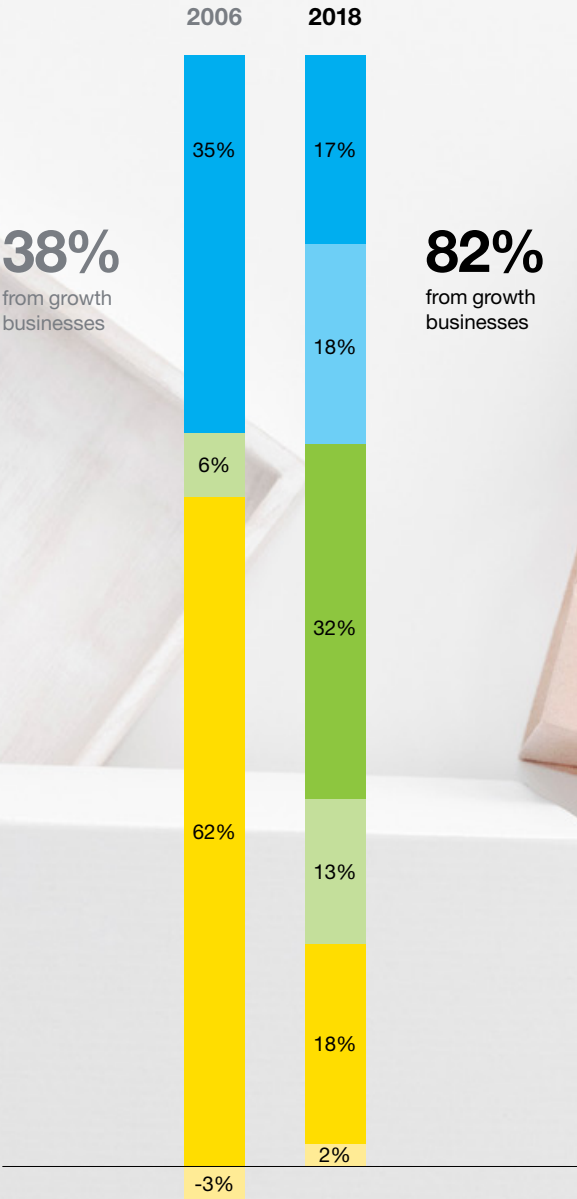
Our purpose:

Do good for people and the planet.  
Replace fossil-based materials with renewable solutions.

Our values:

Lead.  
Do What’s Right.

## Operational EBIT



● Consumer Board ● Packaging Solutions<sup>1</sup> ● Biomaterials  
● Wood Products ● Paper<sup>2</sup> ● Other and eliminations

<sup>1</sup> In 2006 in Consumer Board  
<sup>2</sup> In 2006 includes merchants

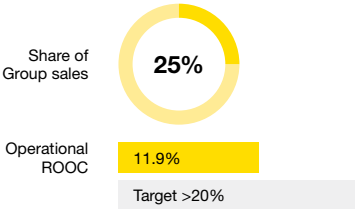
Stora Enso’s strategy of transforming into a renewable materials growth company ensures that we can continue to deliver sustainable profitable growth. Four of our divisions are growing, while our Paper division is focused on cash generation.

## Divisions in brief



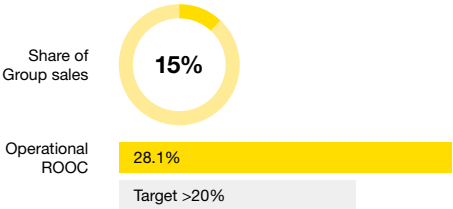
### Consumer Board

The ambition of the Consumer Board division is to be the global leader in high-quality virgin fibre cartonboard. We aim to be the preferred partner of our customers, such as converters, brand owners and retailers, in premium end-use packaging and graphical segments. Our wide board and barrier coating selection is suitable for consumer packaging for liquid, food, pharmaceutical and luxury goods.



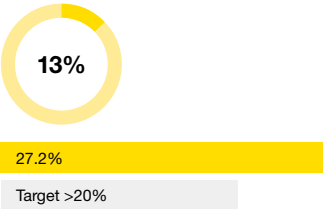
### Wood Products

The Wood Products division is a leading provider of innovative wood-based solutions. The product range covers all areas of construction, including massive wooden elements and wooden components. It also includes a variety of sawn timber goods and pellets for sustainable heating. The emerging product range of Biocomposites addresses the opportunities to replace plastics in consumer goods and creates potential in various demanding exterior applications in a cost-competitive way.



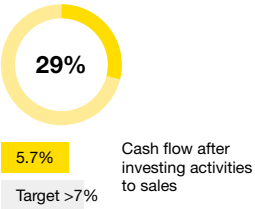
### Packaging Solutions

The Packaging Solutions division provides fibre-based board materials and corrugated packaging products and services that are designed for a wide array of applications. Our renewable high-end packaging solutions serve leading converters, brand owners and retailers – including those in e-commerce that are looking to optimise performance, drive innovation and improve their sustainability.



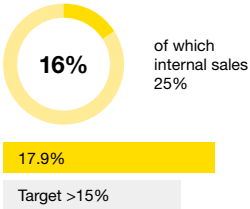
### Paper

Stora Enso is the second largest paper producer in Europe with an established customer base and a wide product portfolio for print and office use. Customers benefit from Stora Enso’s broad selection of papers made from recycled and virgin fibre as well as our valuable industry experience, know-how and customer support.



### Biomaterials

The Biomaterials division offers a wide variety of pulp grades to meet the demands of paper, board, tissue, textile and hygiene product producers. We are maximising the business potential of the by-products extracted in our processes, such as tall oil and turpentine from biomass. Based on our strong innovation approach, all fractions of biomass, like sugars and lignin, hold substantial potential for use in various applications.



### Personnel by division

- Consumer Board 16%
- Packaging Solutions 30%
- Biomaterials 7%
- Wood Products 15%
- Paper 19%
- Other 13%

## Operational ROCE

**of sales from growth businesses**

## Net debt to operational EBITDA

# 1.1

Target <2.0

## Debt/equity ratio

0.31

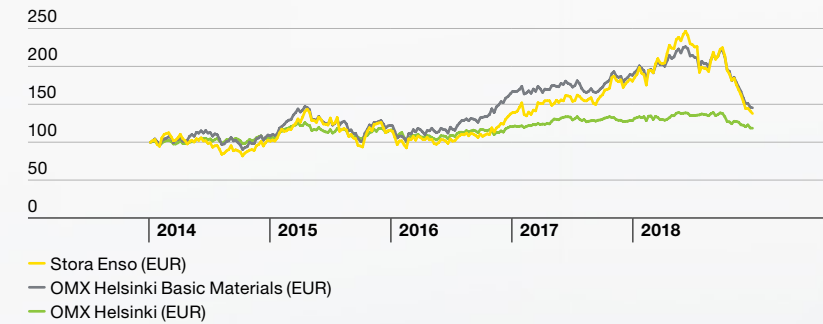
Target <0.60

# Eight

**consecutive quarters  
of sales growth**

### Stora Enso R Share vs Nasdaq Helsinki indices

1.1.2014 = 100

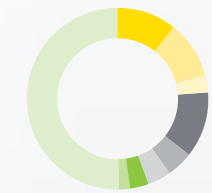


## Dividend proposal

**EUR 0.50**

per share

### Ownership distribution, % of shares held



<sup>1</sup> Entirely owned by the Finnish state

<sup>2</sup> As confirmed to Stora Enso

## Combating global warming

**-18%**

less CO<sub>2</sub>e per tonne compared  
to the 2010 base-year level

## Promoting sustainable forestry

# 96%

of the lands we own or manage  
were covered by forest  
certification schemes

## Sustainable sourcing

# 95%

Supplier Code of Conduct coverage





# Business environment

Global warming is one of the biggest challenges of our time. There is an increasing demand for raw material that is renewable, recyclable and fossil-free. Stora Enso concentrates on finding renewable solutions that will replace fossil-based materials in packaging, building construction and industrial intermediate chemicals. This means innovating bio-based solutions to replace plastics, concrete, glass, metal and other non-renewable materials.

The demand for food, clothing, housing, energy, infrastructure and consumer products continues to increase, driven by global megatrends, such as population growth, urbanisation, rising incomes, and changing lifestyles.



Stora Enso's business is based on supporting our customers in meeting consumers' demand for renewable products.



## Consumer Board

Consumer packaging board accounts for 15% of the global consumer packaging materials market, while flexible and rigid plastics together make up close to 70%. By replacing fossil-based and unsustainable materials with innovative fibre-based products, we will be able to gain market share and significantly accelerate growth going forward.

**The global consumer packaging market is growing by**

**2.5%**  
per year.



## Packaging Solutions

**Corrugated packaging and containerboards are the largest segments in the paper and board business globally with**

**45%**

of the total volume, offering room for growth in several areas.

The customer base in containerboards and corrugated packaging is fragmented as it encompasses converters, brand owners, retailers, industrial and e-commerce companies.



## Wood Products

Stora Enso's Wood Products division is the largest supplier of wooden construction material in Europe and the fourth largest in the world with 21 production units in 11 different countries.

The global market growth for sawn softwood is estimated to be 2–3% annually.

**The European new construction market is growing at**

**3.5% annually.**



## Biomaterials

**The global pulp market continues to grow**

with demand and supply in balance, and supported by the megatrends of the growth of the middle class in the developing countries and progress in digitalisation, urbanisation, eco-awareness and changing lifestyles.

The market for renewable textiles, non-wovens, carton board, hygiene products, specialty and tissue papers continues to grow, generating demand for our various pulp grades with the aging population specifically driving demand for fluff pulp. Furthermore, the megatrends are driving demand for virgin pulp in China.



## Paper

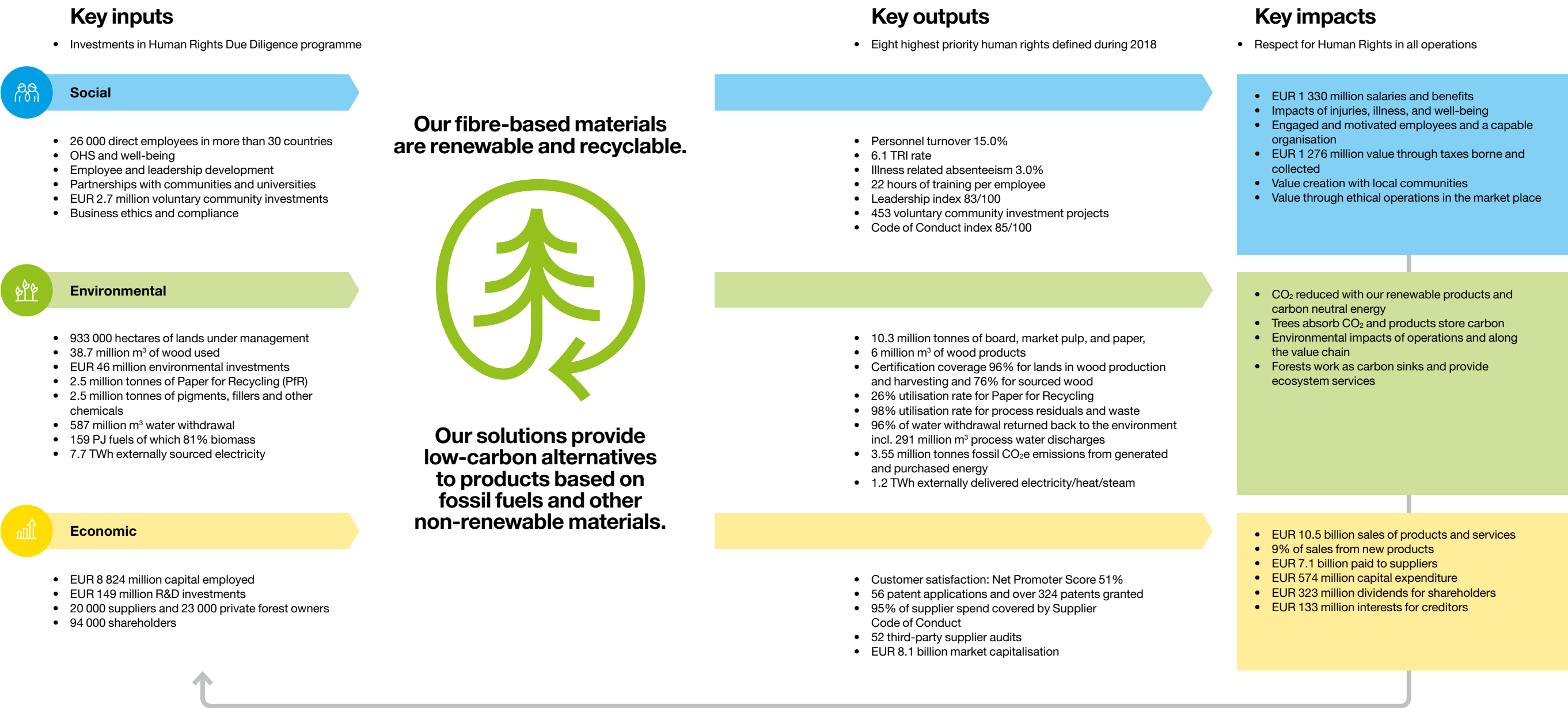
European paper demand is declining at a rate of 3–5 % per year, varying across paper grades and geographies. However, this is still a large global business and paper will continue to play a significant role in media and advertising in the future.

**Print and digital media complement each other:**

flyers and folders are used in advertising and online retailers publish printed magazines and establish physical store locations to improve customer experience. Print advertising brings consumers into stores.

Book paper sales have remained stable as many people prefer reading books in the traditional format. Copy paper is performing relatively well as people continue to print at offices and home.

# How we create value as a renewable materials company









# Combatting global warming with renewable solutions

As a leading renewable materials company with access to carbon neutral biomass, we are in a unique position to combat global warming.

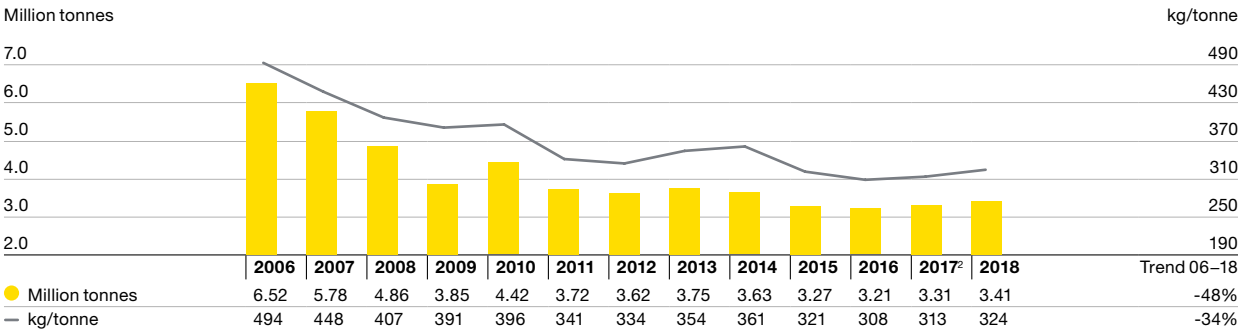


At Stora Enso we have set ambitious science-based targets for reducing greenhouse gas (GHG) emissions throughout our value chain. We commit to reducing GHG emissions from operations by 31% per tonne of pulp, paper and board

produced by 2030 when compared to the 2010 baseline. To reduce emissions in the value chain, Stora Enso commits to having 70% of its non-fibre raw material suppliers and downstream transportation suppliers in terms of spend set their own GHG

reduction targets by 2025, towards the aim of adopting science-based GHG reduction targets by 2030. In addition, we will educate 100% of customer-facing staff on the advantages of setting science-based targets by 2020.

## Greenhouse gas emissions in relation to production<sup>1</sup>

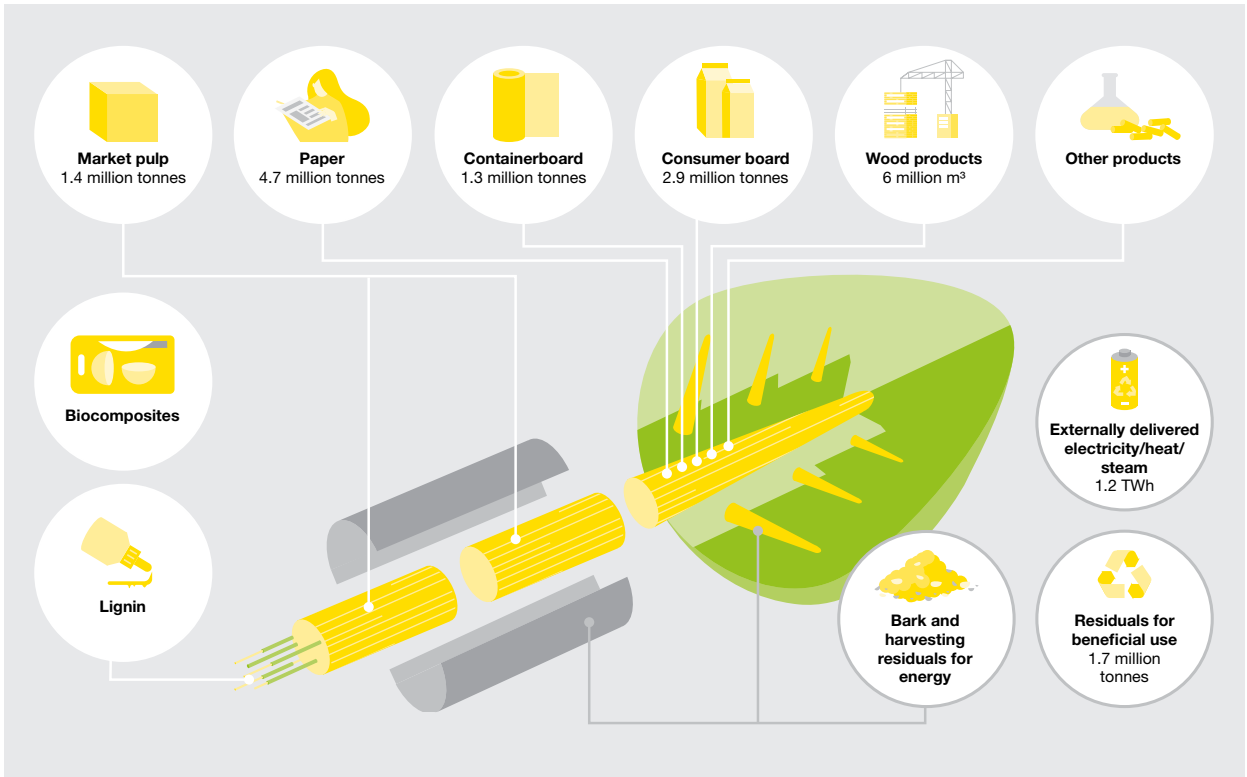


<sup>1</sup> Covering direct and indirect emissions as fossil CO<sub>2</sub> equivalents (scope 1 and 2) from board, pulp, paper and corrugated production units. Excluding joint operations. Normalised figures are reported per unit of sales production.

<sup>2</sup> Historical figures recalculated due to accuracy improvements.

## Efficient use of materials in circular bioeconomy

The most valuable round wood is used to make wood products such as building materials. Other round wood can be converted into pulp, which can be used to make products such as packaging, paper and biomaterials. The remaining parts, such as bark and branches, can then be used as a source of renewable energy.



For more details, see **Sustainability 2018** at [storaenso.com/annualreport2018](https://www.storaenso.com/annualreport2018).



Everything  
that's made  
from fossil-based  
materials today  
can be made from  
a tree tomorrow.





# Highlights of 2018

We need speed to make an impact and to be the first out with new products and services. We offer fast support to our customers as they respond to changing consumer trends, thus helping lessen dependence on fossil-based materials and decreasing the burden on the environment.

## Introducing biocomposites to reduce the consumption of plastic

DuraSense™ by Stora Enso biocomposites enable the use of renewable wood-based fibres, which can be used as substitutes for fossil-based plastic. It offers customers a wood fibre-based alternative which improves sustainability performance and, depending on the product, significantly reduces the carbon footprint. Stora Enso is building a new Biocomposites Competence Centre at its Hylte Mill in Sweden to speed up market access.



## Award-winning Lineo

Lineo™ by Stora Enso is made from lignin, which is an abundant product as it is one of the main building blocks of trees and thus a step towards replacing fossil-based products with renewable solutions. Lineo has received an overwhelmingly positive response from stakeholders and received several awards for being a significant, innovative bio-based product.



## Sustainable solution for packaging authentication

ECO™ by Stora Enso is a new sustainable RFID tag technology that is designed for intelligent packaging functionalities in supply chain, retail and e-commerce applications. The technology enables paper-based RFID tags, providing a plastic-free and recyclable solution for packaging authentication. To further develop the intelligent packaging business, Stora Enso established a new intelligent packaging unit.



## New wood-based textile fibres

In 2018, Stora Enso announced joining H&M group and Inter IKEA group in a joint venture, TreeToTextile, with the aim of developing new textile fibres in a sustainable way at attractive cost levels. Stora Enso will support the industrialisation of TreeToTextile's production process by jointly setting up a demonstration plant at one of our existing Nordic mills and contributing to the technology development.

**Stora Enso was awarded as Finland's most startup-friendly company.**



## Startup collaboration accelerates growth

Stora Enso was recognised as Finland's most startup friendly company. One reason for the award is the collaboration with the startup company Sulapac, with whom Stora Enso will begin the development of biodegradable straws as well as fully renewable caps and closures for liquid packages. Plus, in cooperation with another startup Trä Group, Stora Enso will increase digitalisation in the wooden construction value chain by providing services for healthy and affordable living.





#### Strategic LVL investment ramped up

The ramp-up of laminated veneer lumber (LVL) production in Varkaus was completed during the year. It reached the EBITDA break-even already during the first quarter.



#### Dissolving pulp investment in Enocell proceeding as planned

Biomaterials is increasing its dissolving pulp production capacity in Finland. Enocell Mill will be converted to focus entirely on the production of dissolving pulp with completion during the second half of 2019. This investment improves our pulp mix, adding softwood dissolving pulp to our product portfolio and supporting the mill in becoming an integrated biorefinery plant for new bio-based chemicals.



#### Upgrading Heinola Fluting Mill

The EUR 28 million investment in Heinola Fluting Mill in Finland was completed successfully. The investment was made to improve product quality and increase the production capacity of the AvantFlute SC product portfolio, thus meeting the increased demand for high quality fluting products used for food, fruit and vegetable packaging. AvantFlute SC is Semi-Chemical fluting made from virgin fibre and has been especially developed to endure demanding conditions.

#### Continued investments in micro-fibrillated cellulose (MFC)

Stora Enso has invested in the acceleration of the product development of new micro-fibrillated cellulose (MFC) applications in recent years. MFC can be used in barrier layers for grease and oxygen, and in the future as biodegradable films that can replace aluminium in paperboard packaging. Due to its exceptional properties and 100% renewable raw material, MFC is designed to replace current fossil-based materials in a variety of applications. The operational optimisation and commercialisation of MFC for light-weighting is proceeding as planned, following the completion of the development projects and investments in the Ingerois, Imatra and Fors mills.



#### New fluff pulp line up and running in Skutskär

Production started as planned at the new fluff pulp line at Skutskär Mill in Sweden following the EUR 26 million investment to meet the growing demand in the hygiene market. We also completed the EUR 16 million investment to improve Skutskär Mill's environmental performance by reducing sulphur emissions.



In 2018

9%

of our sales came from new products and services

#### Boosting green energy generation in Maxau

Stora Enso is investing EUR 25 million at Maxau Mill in Germany and installing a new steam turbine with a closed-loop cooling system and additional biomass storage. This will reduce the energy cost and secure the long-term cost competitiveness of the paper mill. The investment enables a higher share of biomass and a clear reduction in our CO<sub>2</sub> emissions.



#### Collaborating with Gasum on biogas

Stora Enso and the energy company Gasum will build a biogas plant at Nymölla Mill in Sweden to turn the mill's wastewater effluent into renewable energy. The expected liquified biogas production of the plant is 75–90 GWh per year, equal to the amount of fuel needed annually for more than 200 long-haul lorries.

#### Multi-storey wooden buildings

Stora Enso was selected as the provider of wooden material for several new building projects around the world, including 25 King Street in Brisbane, Australia, the largest wooden commercial office building in the world: total floor area of close to 15 000 m<sup>2</sup> covering 10 floors.

Long-term target

15%

of our sales is expected to come from new products and services



# Group Leadership Team



**Karl-Henrik Sundström**  
Chief Executive Officer (CEO)

**Johanna Hagelberg**  
Executive Vice President,  
Sourcing and Logistics

**Jari Suominen**  
Executive Vice President,  
Division Wood Products

**Annica Bresky**  
Executive Vice President,  
Division Consumer Board

**Ulrika Lilja**  
Executive Vice President,  
Communications

**Per Lyrvall**  
Executive Vice President,  
Legal, General Counsel,  
Country Manager Sweden

**Kati ter Horst**  
Executive Vice President,  
Division Paper

**Marcus Mannström**  
Executive Vice President,  
Division Biomaterials

**Noel Morrin**  
Executive Vice President,  
Sustainability

**Malin Bendz**  
Executive Vice President,  
HR

**Gilles van Nieuwenhuyzen**  
Executive Vice President,  
Division Packaging Solutions

**Seppo Parvi**  
Chief Financial Officer (CFO), Deputy  
to the CEO, Country Manager Finland

**Stora Enso Oyj**  
P.O. Box 309  
FI-00101 Helsinki, Finland  
Visiting address: Kanavaranta 1  
Tel. +358 2046 131

**Stora Enso AB**  
P.O. Box 70395  
SE-107 24 Stockholm, Sweden  
Visiting address: World Trade Center  
Klarabergsviadukten 70  
Tel. +46 1046 46 000

storaenso.com  
group.communications@storaenso.com

For more detailed information about the Group Leadership Team, see [storaenso.com/investors/governance](https://storaenso.com/investors/governance)

Concept and design: Miltton Oy



# Our simple business idea



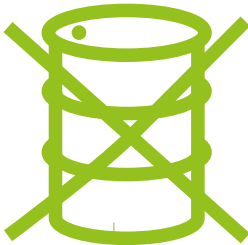
Renewable



Bio-based



Recyclable



Fossil-free



Biodegradable



storaenso

Our 26 000 employees around the world are helping customers become more sustainable and competitive by replacing fossil-based materials with renewable, recyclable, low-carbon solutions made from trees.

See our offering and eco-innovations for packaging, construction, chemicals and other industries at [www.storaenso.com](http://www.storaenso.com)

**THE RENEWABLE MATERIALS COMPANY**