

Stora Enso in 2019



THE RENEWABLE MATERIALS COMPANY



We are the renewable materials company



Our raw material is renewable, recyclable, and fossil-free.



Our products replace fossil-based materials.



Our renewable products contribute to a circular bioeconomy.

Sales

EUR 10.1 billion

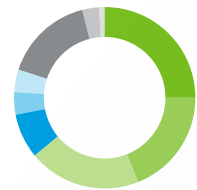
Employees

26 000

● Countries where Stora Enso has production, plantations or projects



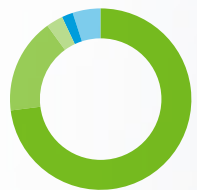
Personnel by country¹



- Finland 25%
- China 19%
- Sweden 20%
- Poland 8%
- Germany 4%
- Russia 4%
- Other Europe 16%
- Brazil and Uruguay 3%
- Other countries 1%

¹ Including 50% of the employees at Veracel in Brazil and Montes del Plata in Uruguay.

Sales by destination



- Europe 73%
- Asia Pacific 17%
- North America 3%
- South America 2%
- Other 5%



The future grows in the forest

For our customers, leaders and society, the need for a shift towards a sustainable bioeconomy with positive climate impact is more apparent than ever. Stora Enso is in a unique position to lead a transition from a linear to a circular economy, from dependency on finite or fossil-based materials towards materials and solutions that are renewable, recyclable and with low or zero carbon footprint.

Sustainability and innovation at the core

We continue to build a strong portfolio, helping our customers to be more competitive and sustainable – for today and tomorrow. Our promise to society and our foundation for innovation is “Everything that is made from fossil-based materials today can be made from a tree tomorrow.”

100% of our wood comes from sustainable sources where biodiversity values are secured. With the acquisition of forests from Bergvik Skog in Sweden, we became one of the largest private owners of biological assets in the world. Stora Enso supports all 17 Sustainable Development Goals (SDGs) defined by the United Nations and we have identified the three strategic goals where we contribute most: Responsible Consumption and Production, Climate Action and Life on Land. We have set tough science-based targets regarding the reduction of greenhouse gas emissions and will continue our drive to improve energy efficiency and reduce our use of fossil fuels.

Result 2019

In 2019, 72% of sales and 78% of operational EBIT came from our growth businesses of packaging, wood products and biomaterials. Over 7% of our sales came from new products and services. Our operational EBIT was affected by lower prices for our products. I am not pleased with our profitability levels, but we have focused on areas we can influence. I am very satisfied that we delivered a record

high cash flow, despite the challenging market conditions.

While megatrends and our customers' needs support our strategic direction, Stora Enso is also affected by today's political and economic instability. To mitigate these effects, we implemented a profit protection programme during 2019 and will continue this into 2021.

Transformation continues

One of our biggest decisions during 2019 was to convert the Oulu paper mill into packaging materials. Other milestones include the finalisation of the cross-laminated timber (CLT) investment at Gruvön sawmill. The conversion of Enocell Mill into dissolving pulp that can be used for textile applications, is another example of replacing materials from finite sources with more sustainable alternatives.

Openness to change

Our greatest assets are our people and our ecosystems of customers, partners and suppliers. Taking the lead requires courage and a mind-set of openness to change.

I'm very proud of leading this fantastic company. We are well equipped to deliver on our strategy and take the challenge of creating a world based on renewable materials.

Annica Bresky
Stora Enso's President and CEO

This is a summary of Stora Enso in 2019. The full annual report is available at storaenso.com/annualreport

This is Stora Enso

Part of the bioeconomy, Stora Enso is a leading global provider of renewable solutions in packaging, biomaterials, wooden construction 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 fiber-based materials are renewable, recyclable and fossil-free. Our solutions offer low-carbon alternatives to products based on finite resources. We believe that everything that is made from fossil-based materials today can be made from a tree tomorrow.



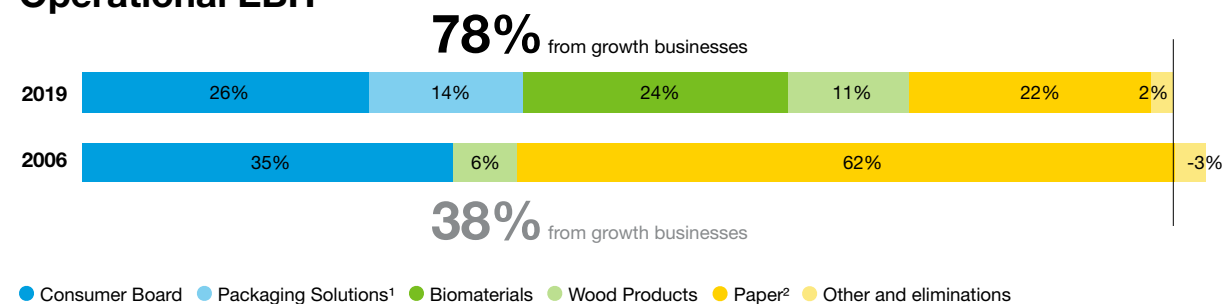
Our purpose:

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

Our values:

Lead. Do What's Right.

Operational EBIT



¹ In 2006 in Consumer Board ² In 2006 includes merchants

Stora Enso is transforming from a traditional paper and board producer to a renewable materials growth company. Five of our divisions are growing, while our Paper division is focused on cash generation.

Divisions in brief 2020



Packaging Materials

The ambition of Packaging Materials division is to be a global leader in circular economy with our high-quality renewable packaging materials based on both virgin and recycled fiber. Addressing the needs of today's eco-conscious consumers, we help customers and brand owners to find the best material for their packaging and to replace fossil-based materials with low carbon footprint, renewable and recyclable alternatives.



Packaging Solutions

Packaging Solutions division develops and sells world class fiber-based packaging products and services. We constantly innovate and find new ways to replace fossil-based packaging with renewable, eco-friendly alternatives. Our high-end packaging solutions are used by leading customers and brands across multiple industries.



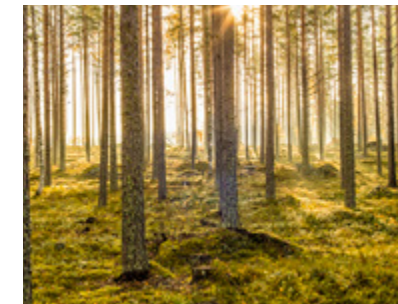
Biomaterials

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



Wood Products

The Wood Products division is a leading provider of innovative wood-based solutions. The product range covers applications for construction, the window and door industry, as well as for the packaging and decoration industries. Biocomposites offer plastic replacement opportunities in e.g. consumer goods, industrial components, cosmetics and packaging. Pellets provide a sustainable solution for heating. The offering includes service concepts such as Building Solutions and e-business. Our solutions meet strict requirements regarding safety, quality, design and sustainability.



Forest

The new Forest division, which started operations in the beginning of 2020, includes Stora Enso's Swedish forest assets and the 41% share of Tornator with the majority of its forest assets located in Finland. The division also includes wood supply operations in Finland, Sweden, Russia and the Baltic countries. The division's key focus areas are sustainable forest management, competitive wood supply to Stora Enso's mills and innovation. As a major player in the bioeconomy, access to wood is critical for Stora Enso. Today, Stora Enso is one of the biggest private forest owners in the world.



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 fiber as well as our valuable industry experience, know-how and customer support.

As of 1 January 2020, Stora Enso merged its containerboard business in the Packaging Solutions division with the Consumer Board division, creating a new Packaging Materials division. The remaining business in Packaging Solutions together with the recently created Formed Fiber unit, will constitute a more focused Packaging Solutions division. The Group has also established a new Forest division.

Key figures

9.8%

Operational ROCE

72%

of sales from growth businesses

Net debt to operational EBITDA

2.1

Target <2.0

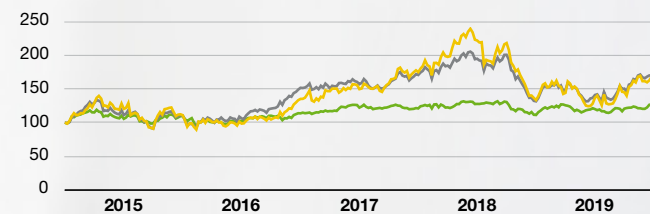
Debt to equity ratio

0.43

Target <0.60

Stora Enso R Share vs Nasdaq Helsinki indices

1.1.2015 = 100



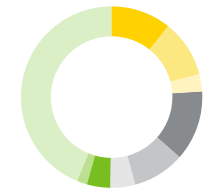
— Stora Enso (EUR)
— OMX Helsinki Basic Materials (EUR)
— OMX Helsinki (EUR)

Dividend proposal

EUR 0.50

per share

Ownership distribution, % of shares held



- Solidium Oy¹ 10.7%
- FAM AB² 10.2%
- Social Insurance Institution of Finland (KELA) 3.1%
- Finnish institutions (excl. Solidium and KELA) 12.5%
- Swedish institutions (excl. FAM) 9.3%
- Finnish private shareholders 4.4%
- Swedish private shareholders 4.2%
- ADR holders 1.8%
- Under nominee names (non-Finnish/non-Swedish shareholders) 43.8%

¹ Entirely owned by Finnish state.

² As confirmed to Stora Enso.

Combatting global warming

-25%

lower CO₂e in 2019 than the 2010 base-year level

Total area of lands Stora Enso owns or manages

2.35 million hectares

Promoting sustainable forestry

98%

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

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



The drive for a sustainable future in the bioeconomy

The global megatrends continue to affect industries and businesses around the world. The signposts are quite clear, pointing to an acute need for raw materials that are renewable, recyclable and fossil-free. This is huge advantage for Stora Enso. We have a promise, which also steers our innovation agenda, and that is “Everything that is made out of fossil-based materials today can be made from a tree tomorrow.”

More people and more consumption mean that the planet’s resources are being stretched even further

Eco awareness

As many as 70 percent of consumers state that they have purchased an environmentally friendly product, even if it was more expensive. A total of 66 percent have avoided a particular product or brand for environmental reasons.
Source: Millward Brown for TetraPak: Environment Research

Global warming

Carbon neutrality will create a EUR 6 000 billion market for smart green solutions by 2050.
Source: Sitra megatrends

Digitalisation

Retail e-commerce sales are projected to increase to over USD 4 000 billion, making up 14.6% of total retail spending.
Source: eMarketer

Urbanisation

Close to 70% of the world’s population are expected to live in urban areas by 2050. With pressure on infrastructure and resources, urbanisation is creating significant opportunities for more sustainable living.
Source: Sitra megatrends

Growing middle class

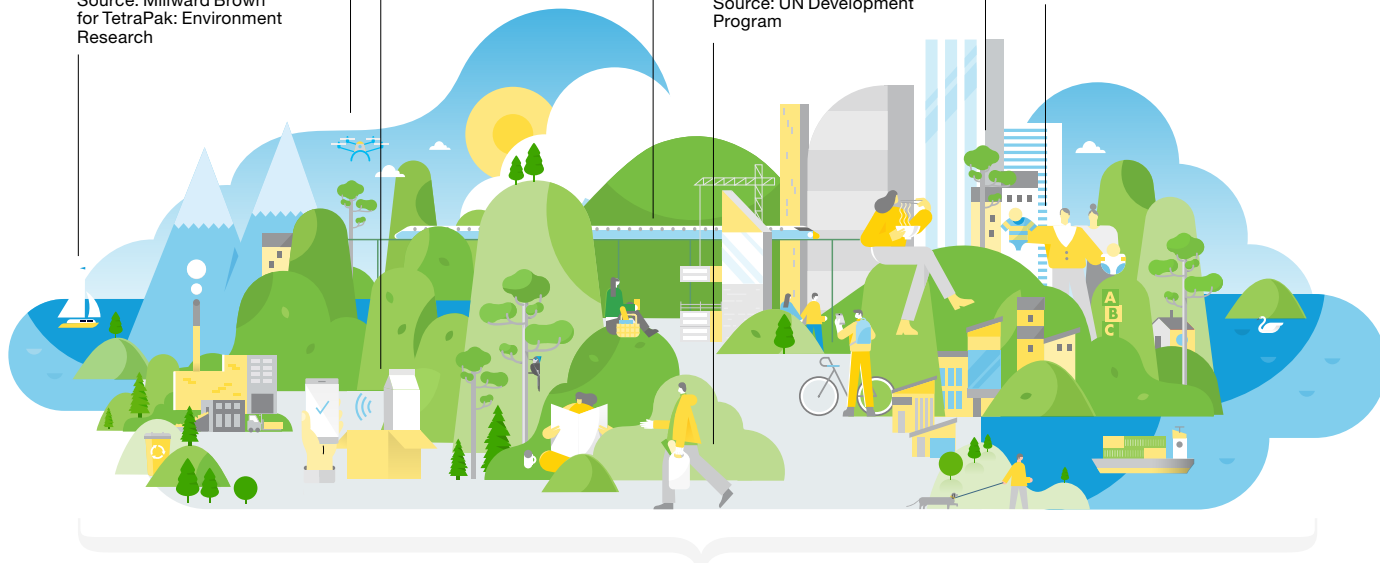
By 2030, 60 percent of the world’s population will be middle class, earning USD 10–100 a day.
Source: UN Development Program

Changing lifestyles

China’s demand for packaged food will continue to grow at about 8 percent a year up to 2024.
Source: Research and Markets: Packaged food markets in China

Growing population

The global population is expected to reach 9 billion by 2050, leading to greater resource shortage. By 2030, the global population of people aged 65 and older will double to one billion.
Sources: Sitra megatrends, National Institute on Aging



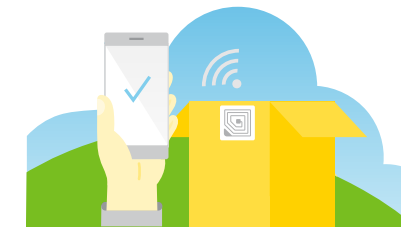
Increasing demand for raw material that is renewable, recyclable, and fossil-free



Stora Enso is one of the largest producers of virgin fiber board in the world. We are the global leader in liquid packaging and the biggest producer of food service board and carton board in our strategic segments in Europe. Our growth is faster than the global packaging market, accelerated by our renewable materials and innovations that can replace fossil-based packaging materials.

Even with existing packaging technologies, 25%

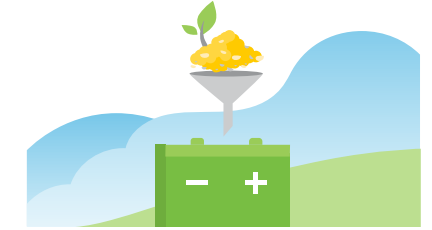
of European plastic packaging could be replaced with renewable solutions.



Total retail e-commerce sales are forecast to grow by 15% annually.

This is pushing growth in corrugated packaging, which accounts for most of the e-commerce packaging.

As an industry leader in renewable packaging, we hold a strong position in the corrugated packaging focus markets: a leading status in the Nordics, second in the Baltics and Poland, third in China and fifth in Russia.



The nature of the global pulp business continues to remain cyclic. However, its long-term growth is strongly supported by the megatrends such as 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, nonwoven materials, carton boards for packaging, hygiene products, specialty and tissue papers continues to grow.

This in turn generates demand for our various pulp grades specifically with the aging population driving demand for fluff pulp.



Stora Enso 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.

Most of Wood Products sales go directly to industrial manufacturers, merchants or retailers with the remaining channels going through wholesalers and trading houses. Our aim is to increase the share of value-added products and services, while also developing our distribution centres. This means that the share of direct sales will grow in the future.

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



As the second largest paper producer in Europe, we provide a wide range of products and services for print and office use to our customers.

Print and digital media complement each other: flyers and folders are used in advertising, and online retailers publish printed magazines and catalogues and establish physical store locations to improve customer experience.

Publishers still create most of their revenues from print and print media remains the most trusted source of information. Print advertising brings consumers into stores.

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



Our business is a net contributor to prevent global warming

Sustainable forestry is the foundation for long-term carbon neutral raw material from forests. Best climate benefit comes from combining forest-based products and sustainable forestry with a resource efficient value chain.

Substituting materials from finite resources is our key competitive advantage

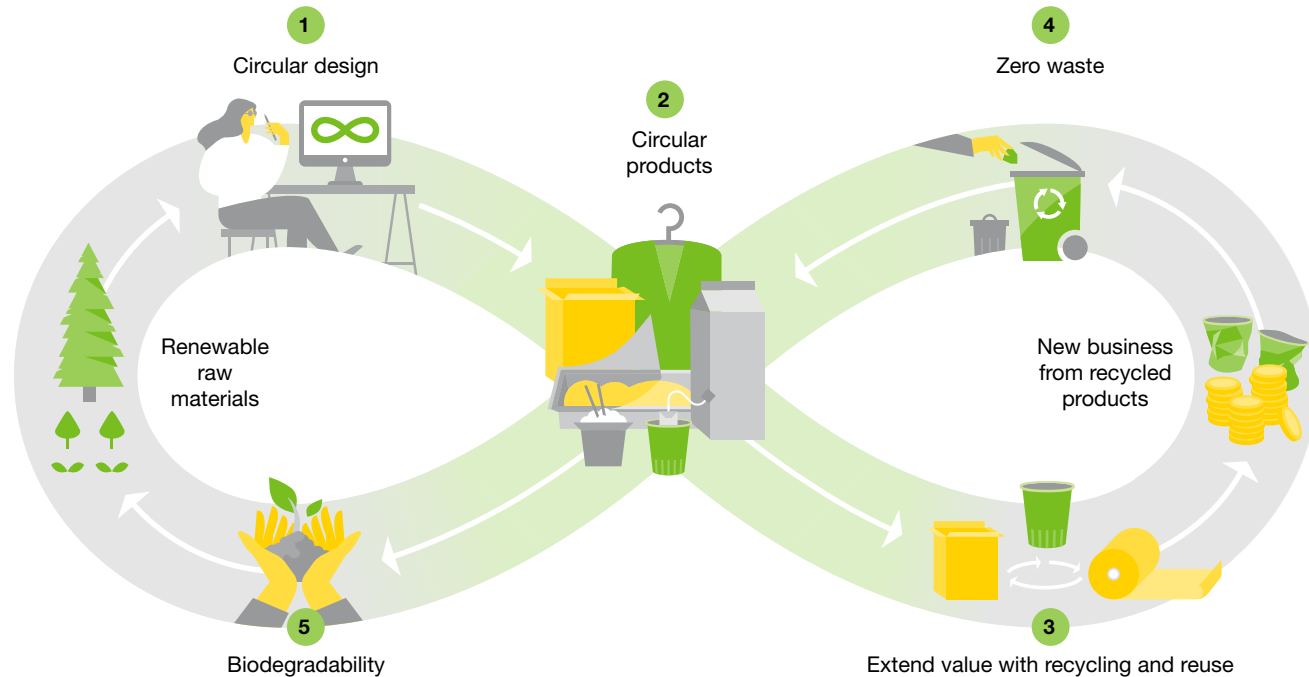
As a company, Stora Enso contributes to a better climate. Trees in our sustainably managed forests absorb CO₂ from the atmosphere and when harvested act as a store. Carbon stays in the fibers when they are made into products, and even through recycling. Carbon storage can be increased by substituting materials from finite resources with renewable alternatives. This is a significant and growing opportunity for us. By substituting fossil-based materials, Stora Enso's products saved an estimated 20 million tonnes of CO₂ in 2019 which is comparable to the average annual CO₂ emissions of 5.1 million cars.



For information about the calculation method, please see storaenso.com/sustainability

A circular view for a better and brighter world

A leader in the bioeconomy, Stora Enso also wants to contribute to a circular economy where resources are kept in use for as long as possible, reusing and finally recovering materials for other purposes. Altogether, the circular bioeconomy is a good formula for keeping the planet healthier.



1 Circular design

Circular design refers to designing for the whole system and all stages of the product lifecycle. It considers the materials used, the manufacturing process, the product, its distribution and the potential for reuse, or recycling. Our aim is to maintain the value of products for as long as possible through product design, innovation and recycling.

2 New business from circular products and solutions

In the circular bioeconomy, products are bio-based. They are also shared, reused, remanufactured and finally recycled. Creating new products and business

models is all about collaboration. We form partnerships to build circular value chains for the future.

3 Extend value with reuse and recycling

We collaborate with customers and partners to develop circular solutions to replace plastics and cut down on waste along the supply chain. We examine how our products perform in different recycling systems, and analyse lifecycles in terms of carbon footprint. This is supported by alliances and commitments, such as CEPI's 4evergreen initiative and the New Plastics Economy Global Commitment, led by the Ellen MacArthur

Foundation in collaboration with the UN Environment Programme.

4 Zero waste

We work to minimise waste and resource use overall. In our own operations, we focus on optimising our use of resources and on creating value out of by-products.

5 Biodegradability

When a product has reached the end of its life, we promote recycling and energy recovery to create further value. At the end of the life cycle, many of our products are biodegradable or can be burned for energy.



Driving the change towards more efficient recycling of packaging

We work with our value chain partners, participate in industry collaboration and co-create with our customers for circular design. One example of this is the aim to start recycling used paper cups on a large scale at Langerbrugge paper mill in Belgium. Bringing paper cups into the recycling scheme represents a new business opportunity as cups are such an underutilized source of quality recycled fiber.



We are collaborating with customers and partners to develop circular solutions to replace plastics and cut down on waste along the supply chain.

How we create value as a renewable materials company

Key inputs

- Investments in Human Rights Due Diligence programme

Social

- 26 000 direct employees in more than 30 countries
- OHS and well-being
- Employee and leadership development
- Partnerships with communities and universities
- EUR 2.7 million voluntary community investments
- Business ethics and compliance

Key outputs

- Development areas mapped against the highest priority human rights during 2019

- Personnel turnover 15.0%
- 7.0 TRL rate
- Illness related absenteeism 3.2%
- 30 hours of training per employee
- Leadership index 83/100
- 441 voluntary community investment projects
- Code of Conduct index 84/100

Key impacts

- Respect for Human Rights in all operations

- EUR 1 331 million salaries and benefits
- Impacts of injuries, illness, and well-being
- Engaged and motivated employees and a capable organisation
- EUR 2 032 million value through taxes borne and collected
- Value creation with local communities
- Value through ethical operations in the market place

Environmental

- 2.35 million hectares of lands under ownership or management
- 37.1 million m³ of wood used
- EUR 54 million environmental investments
- 2.2 million tonnes of Paper for Recycling (PFR)
- 2.3 million tonnes of pigments, fillers and other chemicals
- 599 million m³ water withdrawal
- 41.8 TWh fuels of which 82% biomass
- 7.0 TWh purchased electricity

Our fiber-based materials are renewable and recyclable.

Our solutions provide low-carbon alternatives to products based on finite resources.

- 10.5 million tonnes of board, market pulp, and paper
- 4.9 million m³ of wood products
- Certification coverage 98% for lands in wood production and harvesting and 75% sourced wood
- 25% utilisation rate for Paper for Recycling
- 98% utilisation rate for process residuals and waste
- 96% of water withdrawal returned back to the environment incl. 298 million m³ process water discharges
- 3.04 million tonnes fossil CO₂e emissions from generated and purchased energy
- 1.2 TWh externally delivered electricity/heat/steam

- Total climate benefit 12 million tonnes of CO₂e with our renewable products and forest carbon sinks
- Environmental impacts of operations and along the value chain
- Forests work as carbon sinks and provide ecosystem services

Economic

- EUR 10 632 million capital employed
- EUR 141 million R&D investments
- Over 20 000 suppliers and 23 500 private forest owners
- 112 000 shareholders

- Customer satisfaction: Net Promoter Score 56%
- 65 patent applications and over 430 patents granted
- 96% of supplier spend covered by Supplier Code of Conduct
- 62 third-party supplier audits
- EUR 10.3 billion market capitalisation

- EUR 10.1 billion sales of products and services
- 7% of sales from new products
- EUR 6.9 billion paid to suppliers
- EUR 656 million capital expenditure
- EUR 394 million dividends for shareholders
- EUR 154 million interests for creditors

Trees absorb CO₂ and store carbon together with wood-based products, which can then be recycled as raw material or used for energy generation.

Adopting the Sustainable Development Goals
Stora Enso supports all 17 SDGs, and the following three goals are identified as the most strategic to our business:



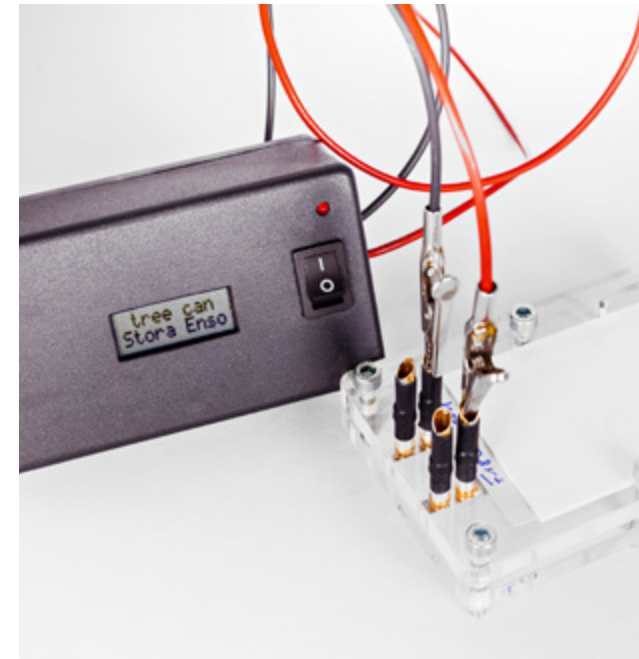
Renewable materials take us to a fossil-free future

Strong consumer demand to replace fossil-based plastics has positively impacted the attractiveness of new fiber-based solutions to our customers.



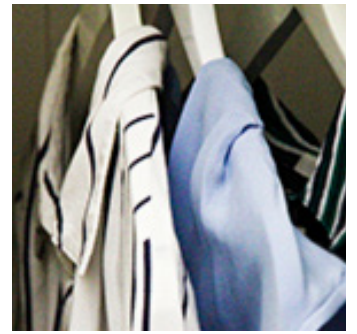
Renewable paperboard tube for cosmetics packaging

A paperboard tube to reduce plastic in primary packaging of cosmetics, which is a new application area for our paperboard. The body of the tube is made of Natura Shape™ by Stora Enso, which is 70% based on renewable raw material and thus reduces the need to use fossil-based raw material.



Bio-based carbon materials for energy storage

Stora Enso is investing EUR 10 million to build a pilot facility for producing bio-based carbon materials based on lignin. Wood-based carbon can be utilised as a crucial component in batteries typically used in consumer electronics, the automotive industry and large-scale energy storage systems. The investment further strengthens Stora Enso's opportunities to replace fossil-based and mined raw materials as well as to connect sustainable materials to ongoing technology innovations.



More dissolving pulp capacity to fulfil market demand

Enocell Mill has been converted to focus entirely on the production of dissolving pulp, used as a raw material in the textile industry, for example, to replace cotton and fossil-based materials, such as polyester. Demand for dissolving pulp is growing at above the industrial average, driven by increased demand for viscose-type fabrics in the textile industry and non-woven applications.



Oulu Mill to produce packaging materials

Stora Enso invests approximately EUR 350 million to convert the Oulu paper mill in Finland to produce kraftliner for packing. The conversion will enable us to further improve our position in the growing packaging business. The typical end use for kraftliner is packaging that requires high strength, quality and purity, such as for food, as well as heavy-duty packaging. Production is expected to start by the end of 2020. After the conversion, Stora Enso will no longer produce wood-free coated papers.

In 2019

over 7%

of our sales came from new products and services

Long-term target

15%

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



Next generation eco-products designed for purpose

In 2019, Stora Enso announced an investment of EUR 5 million to build a new production line and related infrastructure to manufacture formed fiber products at Hylte Mill in Sweden. Formed fiber products are manufactured by pressing various wood-based pulps into a three-dimensional shape in a moulding machine. This enables a broad range of applications, including plastic-free cups, bowls, and plates.



Awarded corrugated ice cream packaging

In 2019, a packaging solution developed by Stora Enso in Lahti for the Finnish artisan ice cream manufacturer Vanhan Porvoon Jäätelötehdas was given two awards; the ScanStar 2019 by the Scandinavian Packaging Association and the WorldStar 2020 by the World Packaging Organisation.



Sustainable automated new retail solutions

Stora Enso and the digital transformation company Atos are bringing new automated retail solutions and services to the market. The new service is based on the concept of "Intelligent Cabinets", which are RFID (Radio Frequency Identification) enabled e-kiosks designed for on-the-go purchasing.



Increased CLT capacity

In 2019, Stora Enso opened its third production unit for cross-laminated timber, this time in Sweden, at Gruvön sawmill. The production capacity of 100 000 m³ annually amounts to 4 500 normal-sized apartments. The total production of CLT broke the one million cubic metres mark this year. CLT replaces non-renewable materials in the construction industry and we see a growing demand for sustainable solutions in the construction market.



Biocomposites offer an affordable way to go green

DuraSense[®] by Stora Enso is a blend of wood fibers and polymers, offering our customers an affordable way to go green. The DuraSense[®] product family is suitable for a wide range of applications from consumer goods to industrial applications for manufacturing by injection moulding, extrusion, and 3D printing.

The re-usable and durable cutlery made from our biocomposites has a significantly lower carbon footprint than conventional plastic cutlery.

Group Leadership Team



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For more detailed information about the Group Leadership Team, see **Governance 2019**, or storaenso.com/investors/governance.

Concept and design: Milton Oy

#ReplacePlastics

Choose a plastic-free future

It's not enough to recycle. We need to replace plastic with renewable material if we're going to meet the demands for a greener planet. In the future your everyday products will come in packages made from trees and plants.

Welcome to the renewable materials company.

storaenso.com/replaceplastics



THE RENEWABLE MATERIALS COMPANY



storaenso