



Our sustainability work covers social, environmental, and economic responsibility throughout our value chain, with respect for human rights integrated into everything we do.



Sustainability

Part of Stora Enso's Annual Report 2020

THE RENEWABLE MATERIALS COMPANY





Construction materials currently account for 11% of the global CO₂ emissions. There is a need to shift from steel and concrete to renewable low-carbon and circular building materials, such as wood. Pictured here is the design by Anttinen Oiva Arkkitehdit for Stora Enso's new Helsinki head office building. The building will be based on the Office Building Concept by Stora Enso.



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The report contents have been assured by an independent third-party assurance provider with a level of Limited Assurance. A level of Reasonable Assurance has been provided for our direct and indirect fossil CO₂e emissions.

The GRI Index is available at storaenso.com/gri2020



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Sustainability at Stora Enso

At Stora Enso, sustainability covers the social, environmental, and economic responsibility of our operations and value chain. We care for people and the planet – from the forest to innovation, manufacturing, product use, and end-of-life, while respecting human rights in all that we do.



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.



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Our year 2020



Protecting biodiversity

Sustainable forestry helps safeguard forest health and biodiversity, while securing the long-term availability of our renewable products. 100% of our wood comes from sustainable sources and we apply recognised industry standards to ensure this. During the year, Stora Enso developed a new ambitious Forest Sustainability Strategy focusing on four areas: Carbon, Biodiversity, Land use, and Communities.



Driving circularity together with our partners

Transforming to circularity does not happen overnight or in isolation. Stora Enso works with its partners, customers, and other stakeholders to create circular solutions throughout the value chains. For example, we are one of the founding companies of 4evergreen, a European circular economy platform.



Substituting fossil-based materials

When Stora Enso's renewable products replace fossil-based or other non-renewable alternatives, they have significant benefits for the climate. Our substitution of fossil materials prevents nearly 18Mt of CO₂ annually from entering the atmosphere.



Climate impact

-11.5 million tonnes of CO₂e
(annual estimate)

Promoting sustainable forestry

98%
of the lands we own or manage were covered by forest certification schemes

Sustainable finance

EUR 1 506 million
total amount of Stora Enso's outstanding green bonds

An exceptional year

The global Covid-19 pandemic has changed our lives in ways we could not have imagined. As a company, our duty is to ensure the health and safety of our colleagues. While Stora Enso continues to provide vital renewable materials to its customers, many of whom serve the medical, hygiene, and food industries, our units are also supporting their local communities. During the pandemic, many of our community investment projects consisted of donating materials, such as personal protective equipment (PPE), but also cash donations to charity organisations dedicated to health and social welfare.

Highlights of 2020

By replacing fossil-based materials with our renewable solutions, we help drive the transition from a fossil fuel consuming world to a sustainable future based on circular bioeconomy. Here are some of the highlights of our year throughout our value chain.

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Employee volunteering

2 684
employees involved in community investment activities during working hours.

› Read more on page 24



Calculating our climate impact

We carried out extensive research with the Swedish University of Agricultural Sciences (SLU) on the carbon balance in the value chain from forest to end-products.

› Read more on page 45

Safety during a global pandemic

We acted early to secure the wellbeing and health and safety of our employees and others working on our premises.

› Read more on page 20



Our CO₂e emissions were

26%
lower than the 2010 base-year level.

› Read more on page 46

Enhancing human rights training

In 2020, we launched a new human rights e-learning.

› Read more on page 16



Value from waste and residuals

Our utilisation rate for process residuals and waste was

98%

› Read more on page 38

Comprehensive monitoring

Our code of conduct index increased to

86

› Read more on page 31



Cooperating for low-carbon sea logistics

We took steps to decarbonise our sea logistics through industry collaboration and close cooperation with a major supplier.

› Read more on page 62

Green bonds and the use of proceeds

In 2020, the proceeds were used to finance sustainable forest acquisition and management in Sweden, reduce greenhouse gas emissions at our Maxau Mill as well as to develop a production line for cross-laminated timber (CLT), at our Gruvön Mill and Ždírec sawmill.

› Read more on page 65



Contributing to the circular bioeconomy

We published our Circular Design Guidelines that outline our commitment to contribute to a circular bioeconomy through our products and solutions.

› Read more on page 57





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We work towards a renewable future.

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We create value in the bioeconomy with our renewable products and contribute to solving global challenges.

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As the renewable materials company, our promise is that everything that can be made with fossil-based materials today can be made from a tree tomorrow. To accelerate this development, we are shaping our business to build on our leading positions and growth opportunities in packaging, building solutions and biomaterials innovations. Our forest, traditional wood products and market pulp are the foundation for value creation in our company.

Out of the global megatrends impacting societies, markets and businesses, climate change is the greatest challenge. A growing global population and more consumption mean that the planet's resources are being stretched even further. Through collaboration with customers, industry partners, recyclers and innovators, we aim to make the fossil-free circular economy an everyday reality.

Our Sustainability Agenda encompasses the social, environmental, and economic responsibility of our operations throughout the value chain. The agenda is based on the Triple Bottom Line framework widely used in corporate responsibility work. It addresses the ten sustainability topics identified as material to Stora Enso and our key stakeholders: Employees and wider workforce; Community; Business ethics; Materials, water, and energy; Carbon dioxide; Forests, plantations, and land use; Customers; Suppliers; and Investors. As respect for human rights is considered so integral to our long-term success, it constitutes an overarching theme of our Sustainability Agenda.

In line with the agenda, we have set targets and defined key performance indicators (KPIs) for our sustainability work. Progress is regularly monitored at Group level and via division-level business reviews. Consolidated results on our performance are reported annually in our **Sustainability report**. Selected sustainability indicators are also reported quarterly in our Interim Reports.

Stora Enso acknowledges the importance of the United Nations Sustainable Development Goals (SDGs) as part of a commonly agreed global ambition to end poverty, protect the planet, and improve the lives and prospects of everyone, everywhere. Read more about our approach to the SDGs on pages 10–11.



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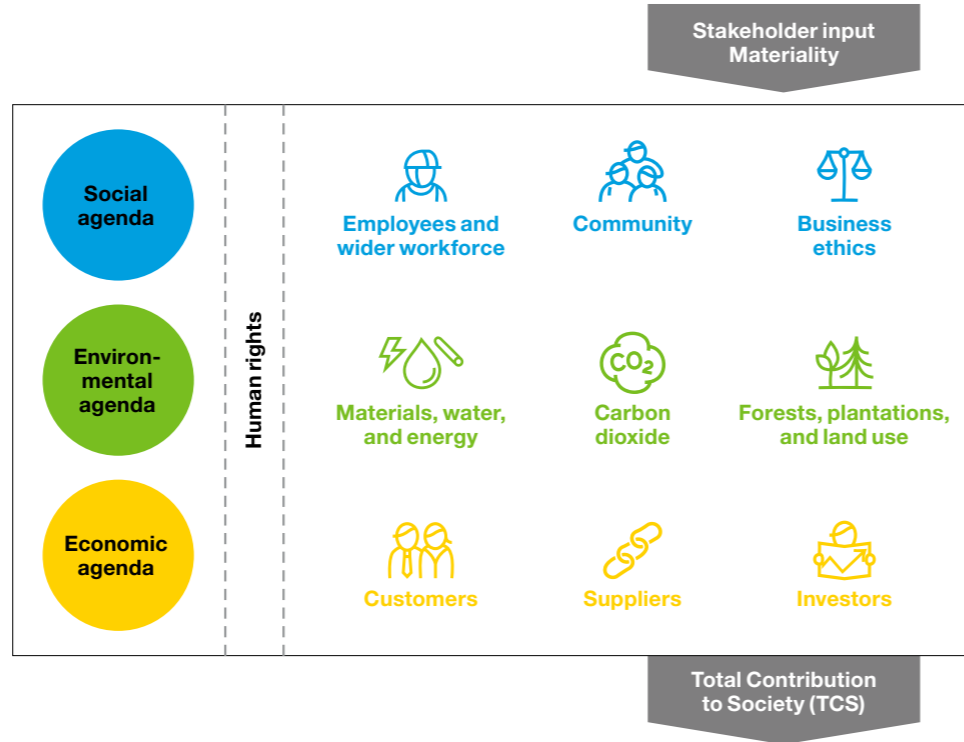
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Our Sustainability Agenda is based on the classic Triple Bottom Line model. It addresses the ten sustainability topics identified as material to Stora Enso.

Sustainability governance

At Stora Enso, sustainability is promoted by the Board of Directors, the President and CEO (CEO), and the Group Leadership Team (GLT). The CEO holds the ultimate responsibility for the successful implementation of our sustainability strategy.

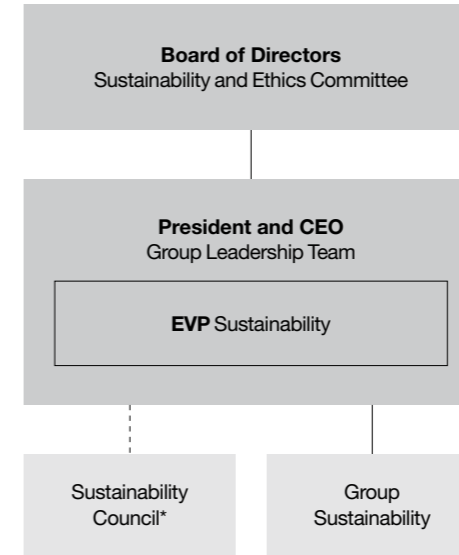
The Board of Directors' Sustainability and Ethics Committee oversees the implementation of our sustainability strategy and the ethics and compliance strategy. The committee met four times in 2020 and has also reviewed the disclosures in this report. The main focus areas of the committee during the year are described in our **Governance report**.

At Stora Enso, sustainability work is led by the Executive Vice President (EVP), Sustainability, who reports directly to the CEO and is part of the Group Leadership Team (GLT). Everyday sustainability topics are managed by our Group

Sustainability team together with our Human Resources, Legal, Wood Supply, Group OHS, and Sourcing and Logistics functions, and our six divisions. Each of our business divisions has its own Head of Sustainability, who reports directly to the EVP of the division. Other key functions, such as Sourcing and Logistics, have sustainability organisations to support their management teams. The everyday implementation of Stora Enso's Sustainability Agenda is the responsibility of line management supported by functional experts at all levels.

Stora Enso's sustainability work is steered by our Sustainability Council, which includes members from our divisions, our Sourcing and Logistics function, and subject matter experts from our Group Sustainability team. Chaired by the EVP, Sustainability, its work involves sharing good practices and identifying longer-term

Sustainability governance at Stora Enso



* Stora Enso's operational sustainability work is steered by our Sustainability Council, which includes members from our divisions, Sourcing and Logistics function, and subject matter experts from our Group Sustainability team.

-- EVP Sustainability chairs the Sustainability Council. Members of the Council report directly to their respective EVP.

opportunities and challenges that may require a Group-wide response. The Sustainability Council met ten times during 2020. The GLT is periodically informed of specific sustainability developments, as is the Board of Directors when appropriate, through its Sustainability and Ethics Committee.

Sustainability is one of the performance metrics in the remuneration of GLT members through Short Term Incentive programmes. Members of the GLT can be assigned appropriate sustainability indicators. For more information on remuneration, see our **Remuneration report**.

Sustainability governance of joint operations

Our joint operations in Brazil (Veracel) and Uruguay (Montes del Plata) have their own sustainability teams, and sustainability topics are regularly discussed by their boards, which include representatives from their parent companies. In

addition, Stora Enso is represented on the board of its equity-accounted investments, such as forest company Tornator in Finland.

Structured sustainability processes

Our Sustainability Policy describes our overall approach to sustainability. At the same time, our code of conduct – the **Stora Enso Code** – and other policies and guidelines on specific sustainability topics further elaborate our approach, while also guiding our employees in their everyday work. As an example, based on our Sustainability Agenda, our internal Sustainability Assessment checklist ensures that sustainability and circularity are considered in all research and development initiatives and in the development of new products.

Our policies and guidelines are available at storaenso.com/sustainability.

Stakeholder engagement

Open dialogue with our key stakeholders is crucial if we are to successfully and proactively identify concerns, global trends and market expectations. Our stakeholder engagement work is based on both structured and ad hoc interaction, as well as regular surveys on topics such as customer and employee satisfaction and investor expectations. We also obtain important information through formal grievance channels. Engaging with stakeholders on social media is important for us in understanding their opinions and concerns locally around our units, as well as on a divisional and Group level. We actively monitor social media discussions and respond, where appropriate, to stakeholder queries through suitable channels.

Materiality during the global pandemic

Given the nature of our business, truly material issues do not change annually within our operations, and therefore our Sustainability Agenda and targets are set for the long term.

In 2020, we updated the materiality assessment for our sustainability topics. The baseline for our work was the Group's most recent extensive materiality assessment, supported by an international expert organisation, carried out in 2017. In the assessment for 2020, the Covid-19 pandemic was one of the key external factors analysed. The assessment reconfirmed that all topics in our current Sustainability agenda continue to be material for the company. Although the pandemic highlights the importance of



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our social agenda from the relative materiality perspective, environmental topics remain essential. The assessment identified four sustainability topics as particularly material for Stora Enso in 2020: Climate change, Sustainable forestry and biodiversity, Renewable and circular products, and Occupational Health and Safety with actions to adapt to the pandemic.

This Sustainability report reflects the assessment results. For more information, see the separate [Materiality Assessment 2020](#).

We use investor and other stakeholder feedback to identify new or emerging topics for our annual sustainability reporting. These new or emerging topics are often of high interest to certain stakeholders. Our materiality review complements our Enterprise Risk Management (ERM) process with a broader scope of sustainability topics than those identified as the Group's key financial risks and opportunities. Whereas our statutory [Non-Financial Reporting](#) in the Report of the Board of Directors includes those sustainability topics that relate to the Group's key risks, our longer Sustainability report also covers topics considered important by stakeholders in our broader materiality review process.

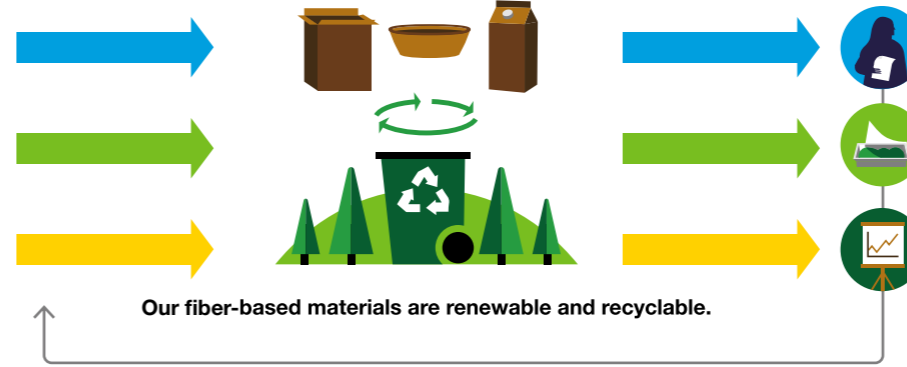
We also prepare our reporting in accordance with the GRI Sustainability Reporting Standards. Our reporting covers all the General Disclosures, as well as the topic-specific GRI Standards we deem material. For more information, see our online [GRI Content Index](#). In 2020, we started reporting against the standards of the Sustainability Accounting Standards Board (SASB). For more information, see [Financials 2020](#).

Collaboration with non-governmental organisations

Stora Enso actively cooperates with prioritised non-governmental organisations (NGOs) and industry associations. We are involved in developing industry practices related to climate change, the circular bioeconomy, sustainable forestry, human rights, and business ethics, as well as the development of sustainability reporting and assurance. Examples of our collaboration during 2020 can be found in the relevant sections of this report.

In 2020, Stora Enso's CEO was appointed to the Executive Committee of the World Business Council for Sustainable Development (WBCSD) for the period 2021–2023.

How we create value as the renewable materials company



Stora Enso engages with people and communities all over the world through its operations, sales, and supply chains. We have a range of positive financial, social, and environmental impacts on society, such as direct and indirect employment, taxes and dividends, and products that provide renewable alternatives to non-renewable materials. For more information about how we create value and contribute to society, see [Strategy 2020](#). For details on Stora Enso's annual tax footprint in the countries where we operate, see [Financials 2020](#).

Significant stakeholder groups for Stora Enso include:

- Consumers
- Customers
- Employees
- Forest owners
- Policy makers
- Investors
- Local communities
- Media
- NGOs
- Partners and suppliers
- Trade unions

In 2020, Stora Enso actively collaborated with international organisations including:

- 4evergreen, page 58
- Climate Leadership Coalition, page 46
- Global Business Initiative on Human Rights (GBI), page 14
- Science Based Targets initiative, page 43
- The Ellen MacArthur Foundation, page 35
- The Prince of Wales's A4S Accounting for Sustainability, page 65
- The Prince of Wales's Corporate Leaders Group (CLG), page 45
- The Forest Dialogue (TFD), page 50
- Transparency International, page 29
- UN Global Compact, page 68
- We Mean Business Coalition, page 46
- World Business Council for Sustainable Development (WBCSD), pages 35, 46, 50, and 57
- World Green Building Council, pages 46 and 57
- WWF, pages 51 and 53

About this report

Stora Enso's Sustainability report 2020 is structured to reflect our Sustainability Agenda, with its ten elements addressed through a common four-tier framework:

Opportunities and challenges

These sections examine the external factors and global trends currently affecting the topics included in our Sustainability Agenda. Please note that our corporate risk management assessment appears in [Financials 2020](#).

Our policies

These sections set out the strategies and policies we use to address key opportunities and challenges.

How we work

These sections describe the processes, procedures, and systems we deploy to realise our strategies and policies.

Progress

These sections report on our performance during 2020.

External assurance

This report has been assured by an independent third-party provider with a level of Limited Assurance. Given our commitment to combatting climate change and related emission data reliability, a level of Reasonable Assurance has been provided for our direct and indirect fossil CO₂e emissions (Scope 1 and 2). For more information on assurance, see page 72.

Our sustainability targets and key performance indicators (KPIs)

Key performance indicator (KPI)			2020	2019	2018	Targets	Progress
	Human rights	Implementation of Human Rights due diligence programme	22 out of 24 development actions finalised in Group function processes	24 development actions mapped in Group function processes	Eight highest priority human rights defined	Actions to address the development findings in Group function processes to be completed by the end of 2020	Not achieved
	Employees and wider workforce	Total Recordable Incident (TRI) rate ¹	6.1	7.0	6.1	4.7 milestone by the end of 2020 New milestone will be communicated in the Interim Report for Q1 2021	Not achieved
		Leadership Index ²	84	83	83	85 by the end of 2022	In progress
	Community	% of working hours and in-kind in community investments (CI) ³	41%	46%	50%	70% by end of 2023 while also increasing the total CI	In progress
	Business ethics	Code of Conduct Index ²	86	84	85	Positive trend	Achieved
	Materials, water, and energy	Number of significant environmental incidents ⁴	8	9	8	Zero significant incidents	Not achieved
		Materials: Process residuals utilisation rate (%) ⁵	98%	98%	98%	Maintain the high utilisation rate of 98%	Achieved
		Water: Total Water Withdrawal per saleable tonne of board, pulp, and paper (m ³ /tonne)	65	61	56	Decreasing trend from a 2016 base-year (57m ³)	Not achieved
		Water: Process water discharge per saleable tonne of board, pulp, and paper (m ³ /tonne)	31	29	26	Decreasing trend from a 2016 base-year (27m ³)	Not achieved
		Energy: Reduction in electricity and heat consumption per saleable tonne of board, pulp, and paper (kWh/tonne)	0.2%	-3.7% ⁶	-3.8% ⁶	-15% by the end of 2020 from a 2010 base-year	Not achieved
	Energy: Projected Energy Savings % (kWh saved/kWh total used, electricity and heat)	-0.9%	-1.4%	-1.3%	-0.8% annual energy saving until 2030	Achieved	
	Carbon dioxide	Reduction in CO ₂ equivalents per saleable tonne of board, pulp, and paper (kg/tonne)	-26%	-26% ⁶	-18%	-31% by the end of 2030 from a 2010 base-year	In progress
	Forests, plantations, and land use	% of the lands owned or managed by Stora Enso that are in wood production and harvesting covered by forest certification schemes	98%	98%	96%	Maintain the high coverage level of 96%	Achieved
	Suppliers	% of supplier spend covered by our Supplier Code of Conduct	96%	96%	95%	Maintain the high coverage level of 95%	Achieved

¹ Number of incidents among our own employees per one million hours worked. Including joint operations Veracel and Montes del Plata.
² Measured in the annual employee survey.

³ Excluding joint operations. Community investments cover cash donations, employee working hours for voluntary community work, and in-kind.
⁴ Environmental incidents involving a non-compliance with environmental legislation or a permit, or a significant stakeholder concern related to environmental performance. For more details, see page 42.

⁵ Utilisation rate for process residuals excluding, for example, tall oil, turpentine, and wood chips.
⁶ Recalculated due to additional data or organisational scope changes after the previous report. Read more about our calculation principles in [Reporting scope](#).

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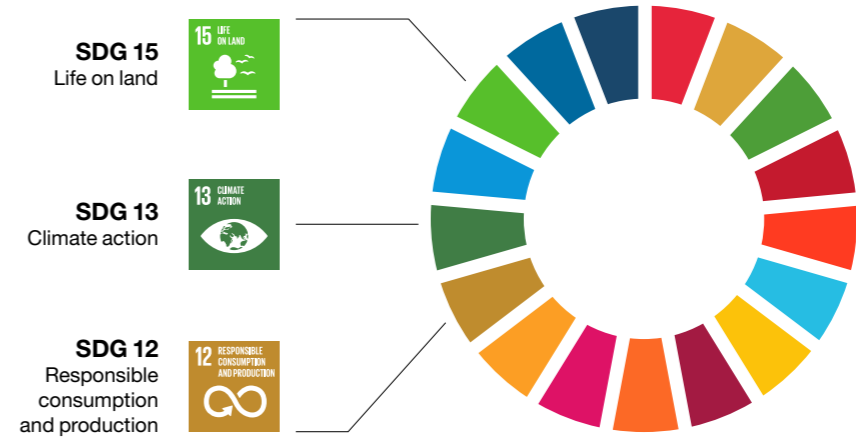
Contributing to the Sustainable Development Goals

The seventeen United Nations Sustainable Development Goals (SDGs) 2030 address social and economic development issues on a global scale. During the year, the Covid-19 pandemic underpinned the importance of our social agenda as an enabler when we contribute to our most strategic SDGs 12, 13, and 15.



Our priority SDGs

Stora Enso supports all seventeen SDGs, and the following three goals are identified as the most relevant to our business:



Driving sustainability for the biggest impact

Sustainable development is at the heart of our business strategy. We create value in the bioeconomy with our renewable products, and by doing so contribute to solving global sustainability challenges.

Stora Enso supports all seventeen SDGs, and the goals 12, 13, and 15 related to our environmental agenda have been identified as most relevant where we have the largest impact through our operations and products. Our earlier prioritisation of the SDGs was included in our 2020 materiality review.

Stora Enso recognises that it has both positive impacts that contribute to the SDGs but also negative impacts that we have the

responsibility to mitigate. Scaling up positive and minimising negative impacts is fundamental to our contribution.

In 2020, we contributed to the preparation of the Forest Sector SDG Roadmap: [Implementation Report](#) as part of our co-chairing of the Forest Solutions Group (FSG) at the World Business Council for Sustainable Development (WBCSD). The report describes the FSG members' progress on eight impact areas, such as Working Forests, Climate, the Bioeconomy or Communities. Alongside qualitative analysis, the progress is reported with a set of KPIs.

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SDG 12 – Responsible consumption and production

Relevant sub-targets for Stora Enso: 12.2 – 12.6, 12.8, 12.a



SDG 13 – Climate action

Relevant sub-targets for Stora Enso: 13.1-13.3

Many of our actions contribute simultaneously to SDG 12 and SDG 13. Our operations are based on renewable raw materials and sustainable forest management, which contribute to responsible consumption and resource use – and climate action. Our products help our customers and society at large to reduce CO₂ emissions by providing low-carbon, renewable, and recyclable alternatives to solutions based on fossil fuels and other non-renewable materials. Stora Enso is collaborating with the Swedish University of Agricultural Sciences (SLU) to develop more

accurate climate impact research. In 2020, SLU published a new report, providing evidence of Stora Enso's positive climate impact, including avoided emissions by product substitution and forest sequestration.

During 2020, we announced new investments as part of our business strategy, with the common aim to offer low-carbon, renewable, and circular products to our customers. Examples can be found throughout the Annual Report:

- Formed fiber helping to replace plastics and more carbon-intensive alternatives, page 58
- Cross-Laminated Timber (CLT) production in Ždírec. As a sustainable, renewable material, CLT shows significant growth potential in construction, **Strategy 2020**
- Lignin, which can be used for example in bio-based carbon materials for energy storage, and in biochemicals, **Strategy 2020**
- Biofoam for protective packaging and cushioning, page 59.

We apply [circular design principles](#) to maximise the circularity of our products and solutions, thus helping to reduce environmental impacts.

Furthermore, we work with [value chain partners](#) to improve actual recyclability.

In addition to our products, we contribute to SDG 12 and SDG 13 through our operations and supply chains. Within our operations, the process residuals utilisation rate remained high at 98% (98% in 2019). During 2020, we continued to work with chemical safety and the sustainable use of chemicals in our operations. The aim of this work is to minimise any adverse impacts on human health and the environment.

Read more:

- Innovations driving change towards a greener future, **Strategy 2020**
- Accelerating circularity along the value chain, page 35 and **Strategy 2020**
- Generating value from waste and residuals at our units, page 38
- Using our purchasing power to help global supply chains become more sustainable, page 60



SDG 15 – Life on land

Relevant sub-targets for Stora Enso: 15.1, 15.2, 15.3, and 15.5.

Sustainable forest management safeguards forest health and productivity, helps combat climate change, and protects biodiversity while securing the long-term availability of our renewable resources. Our work with forest, plantations and land-use directly contributes to SDG 15.

All roundwood, chips, sawdust, and externally purchased pulp supplied to our mills come from sustainable sources. We use a range of tools to ensure this, and to guarantee the sustainability of each stage of the forest management cycle. These tools include forest certification and third-party traceability systems.

Stora Enso's current activities focus mainly on improving sustainable forest management practices to enhance positive impacts on biodiversity. Our long-term strategic focus is to measure biodiversity holistically to be able to improve selected aspects with the largest impact.

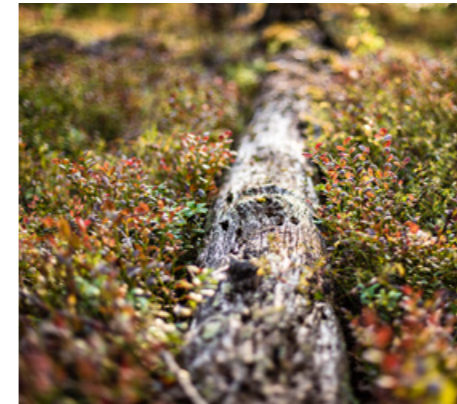
Read more about our co-operation with the Swedish University of Agricultural Sciences (SLU).

Stora Enso invests in conservation efforts by protecting and restoring significant areas of land. For more information, see the [table](#) listing our owned and managed lands.

All sites Stora Enso harvests are regenerated. In 2020, we planted approximately 62 million tree seedlings.

We provide certification training and advisory services for forest smallholders in Sweden and Finland. Our Group Certification programme in Russia covered 1.3 million hectares at the end of 2020. Stora Enso joint operation, Veracel, has pioneered the Forest Stewardship Council (FSC¹) certification in Brazil by establishing and managing FSC certification groups for local tree farmers (Fomento florestal). Subsequently, the management of these group certificates has been moved to the tree farmers' association.

At the end of 2020, the coverage of externally audited forest certification in our owned or managed land for wood production and harvesting remained high at 98% (98% at the end of 2019).



Read more:

- Forest certification, page 52
- Biodiversity, page 51
- Forest regeneration, page 51

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Podcast

The Sustainable Development Goals: from rainbow washing to transforming the world

The plan is for the world to achieve the UN Sustainable Development Goals (SDGs) by 2030. In our podcast, our guests discuss how companies can contribute to the goals and if they are being ambitious enough or just "rainbow washing" – using the SDGs superficially.

For example, business can have a critical role in contributing to SDG13 on Climate Action. "Science-based targets help to make sure that the emission reductions that the company is working on are carried out at the necessary pace and scale," says **Anna Kruij**, Manager Environment and Climate at UN Global Compact.

Stora Enso's climate and forestry targets contribute to the SDGs. "We need to keep the forests healthy and growing well to offer solutions that can substitute for fossil-based alternatives," says **Antti Marjokorpi**, Head of Forests, Plantations, and Land use Sustainability at Stora Enso

"The business-as-usual model that we have been sustaining is not viable," says **Filippo Veglio**, Managing Director at World Business Council for Sustainable Development (WBCSD). "2030 is an important milestone and this is a key decade to transform economic systems. But there will be a lot more work coming our way beyond 2030."

Listen to the podcast [▶ storaenso.com](#)



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When we grow and harvest trees, make renewable products, or transport materials, we have an impact on people.



Opportunities and challenges

Developments in human rights regulation

Many of the human rights challenges we face are deeply rooted in local communities and can only be effectively addressed through a long-term commitment and close cooperation with global and local stakeholders.

The UN Guiding Principles on Business and Human Rights (UNGPs) highlight that companies have an ongoing responsibility to respect human rights and to conduct related due diligence, even where government actions and regulatory frameworks are inadequate. In addition, the Covid-19 pandemic has highlighted the importance of protecting people from human and labour rights violations in global supply chains, especially in times of crisis, and has consequently sped up the development of EU-level legislation on human rights due diligence. Stora Enso supports human rights regulation that puts companies on an equal standing and helps to ensure that people are treated with decency and respect.

Our policies

Integrated into our sustainability work

Human rights are integrated into our Sustainability Agenda, which is aligned with the ten principles of the UN Global Compact. We are also committed to the UNGPs, which require companies to conduct due diligence to identify, assess, and remedy the impacts that their activities may have on people.

Relevant Stora Enso policies on human rights include:

- Stora Enso Code – our code of conduct that expresses our respect for human and labour rights.
- Supplier Code of Conduct – imposes strict contractual requirements on our suppliers regarding human rights.
- Human Rights Policy – sets out our commitment to respect human rights throughout our operations and in all relationships involving Stora Enso and expresses our respect for international human rights instruments.
- Human Rights Guidelines – provide more insight into how we work towards our policy objectives and with our highest priority human rights.



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Human rights are also a fundamental part of several internal policies and guidelines such as our Environmental Guidelines, Diversity Policy, and our Minimum Human Resources Requirements for labour conditions.

How we work

Assessing and addressing our human rights impacts

Our commitment to respect human rights covers all our operations, including our employees, contractors, suppliers, and neighbouring communities. We require that human rights risks and impacts are taken into account throughout our operations, including investment decisions related to mergers, acquisitions, and divestments. Our investment guidelines stipulate that environmental and social risks and impacts, including those related to human rights, must be duly identified, assessed, and addressed prior to approval in projects with business-critical risks.

Stora Enso's key tools for human rights due diligence

Continuous or periodic monitoring with:

- Stora Enso Code
- Business Practice Policy
- Minimum Human Resources Requirements for labour conditions
- Supplier Code of Conduct
- Safety standards and tools for all units
- Grievance mechanisms

Project-specific human rights due diligence with:

- Investment guidelines
- Environmental and social due diligence for mergers and acquisitions
- Environmental and Social Impact Assessments (ESIAs)
- Community consultations, including Free, Prior, and Informed Consent (FPIC)
- Sustainability Assessment checklist for innovation projects

Environmental and Social Impact Assessments (ESIAs)

We conduct ESIAs for new projects that could directly or indirectly cause significant adverse

effects in local communities. Such projects include board, pulp, paper, or sawmills built on greenfield sites, industrial scale plantation projects, and any large-scale investments in or expansions of existing facilities.

An important element of any ESIA involves assessing the operational context from a social impact perspective, including human rights, and establishing dialogues with local residents, members of local organisations, experts, and other stakeholders. This is done through interviews, meetings, workshops, and public hearings. ESIA results give us valuable information on how local communities may be affected by changes in their socio-economic situation and any impacts on cultural heritage, while also setting out implications for community health and safety.

Community consultations

Respecting human rights, including Free, Prior, and Informed Consent (FPIC), in land identification, acquisition, and management is one of our highest priorities. These processes are implemented together with local communities and authorities. Community consultations, such as FPIC, are a key element in our human rights due diligence and forestry operations, especially concerning land leasing and indigenous peoples' rights. Together with partners, we have developed various FPIC tools to ensure that communities understand the information that is shared with them, and regularly train our employees in community engagement and consultation. We also continue to enhance gender inclusion in community consultation meetings, which is an important part of FPIC.

The form and frequency of our engagement with local communities is shaped by the local context. In some areas, the interaction is done through community representatives while other communities prefer direct and inclusive contact. Many of our employees live in the communities and have a deeper understanding of the local context.

Stora Enso is a major forest owner in Sweden (see page 53) and a significant forestry operator in both Finland and Sweden. We recognise our responsibilities regarding the rights of indigenous Sámi people living on areas that are located on or neighbouring our lands or where we procure wood, and we maintain good relations with them in Finland and Sweden. In Central Sweden, for



Due to the Covid-19 pandemic, our community consultations in Guangxi, China, were conducted virtually in the beginning of 2020. We were able to continue them in person, with careful safety considerations, later in the spring.

example, we have had special agreements on land use with five Sámi communities since 1992. We have well-established routines for dialogue, including regular discussions on forestry, reindeer herding, and each other's opportunities and challenges. An evaluation meeting is held annually. We always consult the concerned Sámi villages before any forestry operations, and all consultation meetings are documented. For more information about our land use and wood procurement, see pages 49–54.

Our forestry employees in Guangxi, China, work in dialogue with local communities to understand the potential social impacts of our operations. For example, ethnic minorities, formally recognised by the Guangxi government, live in many areas of the province. This was re-confirmed in a community mapping completed by Stora Enso's forestry operations in China during 2020, as part of new forest certification requirements to map all local indigenous communities. Whereas previous mappings by Stora Enso focused on two regions around our plantations where the presence of ethnic minorities was known, the new

mapping included all four neighbouring regions with eight prefecture-level cities. The mapping concluded that 15% of all communities in these regions can be considered ethnic minorities. In two prefecture-level cities, Nanning and Chongzou, the combined share of such communities is 88%. The assessment gives us a more comprehensive understanding of the structure and customs of the communities around our plantations, which will help us further develop our social engagement activities.

Veracel, our 50%-owned joint operation in Brazil, has a team of community liaison officers who are in regular contact with community representatives to agree on actions and next steps.

In southern Laos, in the Saravane and Savannakhet provinces, our trial eucalyptus plantations are located near culturally and ethnically diverse villages. Despite the decision made in 2020 to downsize our Laos operations, we will continue to engage with local communities in a culturally appropriate way, based on informed consultation and participation.

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Many of our units and joint operations strive to improve road safety through road construction, training drivers, and raising awareness in local communities.

For more information about how Stora Enso supports and works with local communities, see pages 23–27.

Access to remedy and grievance channels

In accordance with the UN Guiding Principles on Business and Human Rights and our own Human Rights Policy, Stora Enso is committed to remedy situations where our activities have caused or contributed to adverse human rights impacts. Where violations are committed by third parties with links to Stora Enso through our operations, products, or services, we strive to use our influence together with the relevant stakeholders to ensure that those impacts are remedied. For example, our joint operation Veracel in Brazil has worked closely with landless movements and authorities for several years to find and implement solutions to land distribution disputes. Veracel has also helped stakeholders

understand their rights to various services, including access to legal support. For more information, see page 15.

Access to grievance mechanisms is one of Stora Enso's highest priority human rights. Our formal grievance mechanism enables any stakeholder to report instances where their rights may have been infringed, or where they have observed potential violations of the Stora Enso Code, including those related to human rights. This service is independently administered by an external service provider. For more information, see page 30.

We have also established grievance channels in local languages for communities and other external stakeholders associated with our plantations and mill in Guangxi, China. We encourage anyone with concerns to call our anonymous hotline number, write to us, visit us, or talk to our field personnel. Stora Enso's employees are trained to distribute information about our operations in local villages

and to duly process grievances, also in villages not engaged in any kind of business relationship with the company.

Similar local grievance channels exist for our project in Laos, and our joint operations Veracel in Brazil and Montes del Plata in Uruguay. In Laos, Stora Enso works with communities to raise awareness of villager rights and the channels they can use if concerns arise.

Reporting on our performance

Stora Enso reports on its human rights work annually and strives to align its reporting with the UNGP reporting framework. In addition, our annual Slavery and Human Trafficking Statement is available at storaenso.com/sustainability.

In 2020, Stora Enso's human rights reporting was top-ranked in a study by the multi-stakeholder SIHTI project. The study assessed the human rights reporting of companies using the Corporate Human Rights Benchmark methodology.

Progress

Continued focus on due diligence

While we respect and consider all human rights to be important, our highest priority human rights remain the primary focus of our work:

- Health and safety
- Fair labour (fair employment conditions, forced labour, freedom of association, non-discrimination and non-harassment)
- Land and natural resource rights acquisition and management
- Grievance mechanisms
- Children's rights (relevant to the forest sector).

We continued to develop our human rights due diligence programme in 2020. By the end of the year, we had finalised 22 out of 24 actions addressing development areas that were identified for Group function processes in 2019. In addition, integrating human rights into Stora Enso's enterprise risk management (ERM) process proceeded during the year. The work focused on ensuring that our highest priority human rights are reflected in the risk register with associated risk factors, impacts, and responses. The goal of this on-going work is to ensure that both financial risk and the risk to people are considered in our ERM process.

In 2020, we joined the Global Business Initiative for Human Rights (GBI) to advance respect for human rights in business through peer learning.

In Finland, we continued to voice our support for human rights due diligence legislation during the year. We also joined a campaign in Sweden calling for similar development in the EU. The campaign is led by a coalition of Swedish civil society organisations.

We updated and published externally our Human Rights Guidelines to provide our stakeholders with more detailed insight into how we work with human rights.

Actions related to our highest priority human rights in 2020 included:

Health and safety

It is our goal that everyone who works for us, either directly or indirectly, returns home safely from a healthy workplace every day. Despite our strong efforts to ensure this, two fatal accidents occurred in our forestry operations in China in 2020. For more information on fatal and other accidents in 2020 as well as our progress in health and safety, including our response to the Covid-19 pandemic, see pages 18–23.

In Brazil, Veracel, our 50/50 joint operation with the Brazilian company Suzano, manages a pulp mill, eucalyptus plantations, and related logistics in southern Bahia State. In 2020, Veracel supported the construction of a field hospital and donated personal protection equipment during the Covid-19 pandemic. For more information, see page 26.

In Guangxi province, China, we continued to focus on road safety in rural areas in 2020. For more information, see page 26.

Our joint operation Montes del Plata in Uruguay continued to address and raise awareness of road safety. For more information, see page 27.

Fair labour

We set strict standards for our operations to ensure fair employment conditions for all employees, on-site contractors, and our suppliers' employees. Our Minimum Human Resources Requirements for labour conditions cover these topics for our own employees, including compensation (see page 22), working hours, forced labour, freedom of association, discrimination, and harassment. Our Supplier Code of Conduct sets similar requirements for our suppliers and contractors.

In 2020, we updated our Supplier Code of Conduct (SCoC), with additions around fair



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employment conditions, including requirements for recruitment agency use and reasonable remuneration for employees. For more information, see page 62.

For several years, Stora Enso has been monitoring labour rights in its bagasse supply chain in the United States to ensure that working hour schedules do not have adverse impacts on contractor health and safety. For more information, see page 62.

Our commitment to combat forced labour in our operations and supply chains is expressed in our Human Rights Guidelines and the Stora Enso Code. For more information about how we manage potential forced labour and human trafficking, see our annual Slavery and Human Trafficking Statement.

In 2020, approximately 80% of our employees were covered by collective bargaining agreements (read more in the GRI Index). In addition, to further strengthen our commitment to freedom of association, we continued to address areas in the global framework agreement that we have signed with the labour unions IndustriAll, UniGlobal, and BWI.

In 2020, we initiated an internal campaign raising awareness on harassment and discrimination. For more information, see page 31. For more information about diversity, inclusion, and gender equality, see pages 21–22.

During the year, to strengthen its activities around diversity and inclusion, our joint operation Veracel added a Brazilian Sign Language (BSL) reader on its website and Intranet and began using a BSL interpreter for internal meetings and events.

Land and natural resource rights acquisition and management

Sustainable resettlement in Brazil

Illegal land invasions of private property are a long-running challenge in Brazil that has affected various actors that use land, such as mining companies and farming businesses. Some areas of our joint operation Veracel's land have been illegally occupied since 2008. While Veracel is not the root cause of the problems that landless people face, it aims to be part of the local solution without taking on the role of the state.

Veracel strives to maintain continuous dialogue with landless movements and supports land allocations through the Sustainable

Settlements Initiative, launched in 2012. In 2020, the initiative continued to provide farmland and technical and educational support to hundreds of families to improve their incomes. The Sustainable Settlements Initiative is facilitated by the Government of the State of Bahia and is conducted in cooperation with the National Institute of Colonisation and Agrarian Reform (INCRA) and the representatives of six officially recognised landless people's social movements.

The movements have pledged to leave areas occupied since July 2011, while Veracel has agreed not to seek to repossess areas occupied before this date. The initiative relates to a total area of approximately 16 500 hectares of Veracel's lands designated for the settlements to be purchased from the company by INCRA.

Veracel continues to support the transition of families from these settlements to more permanent residencies on the same land, as the legal processes regarding their claim to the land are resolved over time. In 2020, this support included assisting farmers in improving productivity, the construction of food production units, and help with the commercialisation and marketing of the produce. The goal is to gradually transfer full responsibility of the area to the families by 2022. To minimise the impacts of the Covid-19 pandemic on this transition, and to protect the health and safety of the families, Veracel created emergency plans in 2020 that included, for example, ways to secure food production during the pandemic.

In line with a 2018 agreement that complements the earlier Sustainable Settlement Initiative, Veracel has agreed to sell approximately 3 500 hectares of previously occupied land to the movements on which to grow food. In 2020, Veracel began cooperation with the Federal University of Southern Bahia (UFSB) to support these new settlements by conducting socio-environmental profiles of the families, training farmers in, for example, productivity planning, and monitoring results. The total value of the 5-year agreement with UFSB, to be carried out in stages, is over EUR 750 000.

In total, since 2012, Veracel has voluntarily approved the transfer of approximately 20 000 hectares of land to benefit landless people. By the end of 2020, 215 hectares of productive land owned by Veracel remained occupied by movements not involved in the Sustainable

Blog

Ensuring respect for human rights as the world recovers



Every one of us, no matter who we are or where we are born, is entitled to the same basic rights and freedoms. As the world recovers from the Covid-19 pandemic, calls for companies to respect these rights are intensifying, **Yiva Stiller**, Human Rights Director at Stora Enso, writes in her blog post.

The UN Guiding Principles on Business and Human Rights (UNGPs) clarify the roles of states and companies in protecting and respecting human rights. The UNGPs were not intended as law but more to steer companies in the right direction. Creating a level playing field, where all companies must take action, is

one of the reasons why Stora Enso supports human rights regulation on a global and EU level.

The Covid-19 pandemic has brought to light the vulnerability of global supply chains and how unemployment hits people unequally. In addition, climate change cannot be solved without solving social issues. As we are once again rebuilding the world, it needs to come with a transformation that considers both the environmental and social implications of our actions.

Read more [> storaenso.com](#)



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We raise awareness of human rights within Stora Enso through training and communications. In 2020, we launched a new human rights e-learning for our employees.

Settlement Initiative or in the new agreement. Veracel will continue to seek repossessions of the remaining occupied areas through legal processes. Stora Enso also reports on the occupied areas in the Group's Interim Reports.

Veracel also maintains good relations with local indigenous villages and supports educational, infrastructure, and cultural programmes for 29 Pataxó and three Tupinambá communities. Within these programmes in 2020, Veracel donated school supplies to approximately 5 000 indigenous elementary and high school students and teachers, supported the construction of classrooms, and supported infrastructure improvements in local indigenous villages.

Some of the indigenous communities are calling for the expansion of the Barra Velha Indian Reserve. The extension would cover hundreds

of land properties, including 3 219 hectares of land acquired by Veracel before the indigenous peoples first made claim to the land. At the end of 2020, this case was still being processed by the regional federal court. Veracel remains committed to fully comply with the court's eventual decision.

Monitoring land recovery in China

Stora Enso leases 81 000 hectares of land in Guangxi province, China, of which 53 600 hectares is leased from state-owned forest farms. The remaining 27 400 hectares, or 34% of the total area, is social land leased from village collectives, individual households, and local forest farms.

Parts of the land leased by Stora Enso have been occupied for up to ten years for the purpose of growing crops and trees on a small scale.

In some cases, the occupiers are claiming rights to the land based on historical land ownership documents that have been superseded by state ownership in successive land reform processes.

At the end of the year, 5 350 hectares of productive land leased by Stora Enso was occupied, including 4 870 hectares of state-owned land and 480 hectares of social land. Approximately 4 000 people were growing crops and trees on the occupied land. In 2020, the Guangxi government's recent efforts to recover occupied land in the province reached areas where Stora Enso leases land from state-owned forest farms. Stora Enso is carefully monitoring the land recovery process and, for example, reserves the right to stop the proceedings at any point. We have also trained our local staff to identify causes for concern, to promote our grievance channel, and to engage with the occupiers to ensure that they are informed and do not feel threatened.

Grievance mechanisms

Our grievance hotline is available to all employees, on-site contractors, suppliers, and any other external stakeholders. In 2020, we took steps to improve external stakeholder access to the hotline. For more information about our grievance channels and reports received through them in 2020, see pages 29–31.

Children's rights (relevant to the forest sector)

Stora Enso's work on children's rights and business is integrated into our implementation of the UN Guiding Principles of Business and Human Rights framework. We support the Children's Rights and Business Principles developed by UNICEF, Save the Children, and the UN Global Compact, and we focus on those principles where we can have the biggest impact.

For several years, Veracel has successfully cooperated with the NGO Childhood Brasil to combat child abuse and exploitation in the nearby municipalities of Belmonte, Porto Seguro, Santa Cruz de Cabralia, and Eunápolis. The goal is to improve the capacity of the municipalities to handle cases of child abuse and adolescent violence through strengthening public policies and providing training to professionals. In 2020, Childhood Brasil and Veracel, together with judiciary, civil society, and municipal representatives, agreed on a ten-year plan to continue this work.

In 2020, Veracel began supporting a three-year extra-curricular programme that aims to strengthen the cultural development of socially vulnerable children and adolescents in the city of Porto Seguro. The programme includes ballet, music, and theatre workshops during after-school hours.

Montes del Plata, our joint venture in Uruguay, together with local educational institutions and other organisations initiated an English learning programme for the students of a local secondary school in 2020. The goal is to motivate the students to continue their studies further through recreational and cultural activities.

Stora Enso continues to support six schools in cooperation with the non-governmental organisation Idara-e-Taleem-o-Aagahi (ITA) in Pakistan as part of a remediation programme targeting 640 children identified as child workers in 2015 in the supply chain of our former 35% minority holding in the equity accounted investment Bulleh Shah Packaging (Private) Ltd. (BSP). The programme will continue until 2023 when the youngest children complete compulsory primary school education. However, most of the children will be young workers by 2023, which is why the programme began to shift its focus to vocational training in 2020 to improve their future employability. In 2020, ITA also created an outreach programme to ensure that education continued during the local Covid-19 lockdown. The programme used low-tech digital learning, such as with mobile phones, and mobilised community members to take an active role in educating the children.

Enhancing human rights training

In 2020, we launched a human rights e-learning that will be rolled out in our divisions and functions during 2021 to build on our existing employee training. The e-learning explains what respecting human rights means for individuals, companies in general, and Stora Enso specifically.

We have included a section on human rights in the e-learning for the Stora Enso Code, which is mandatory for all employees.

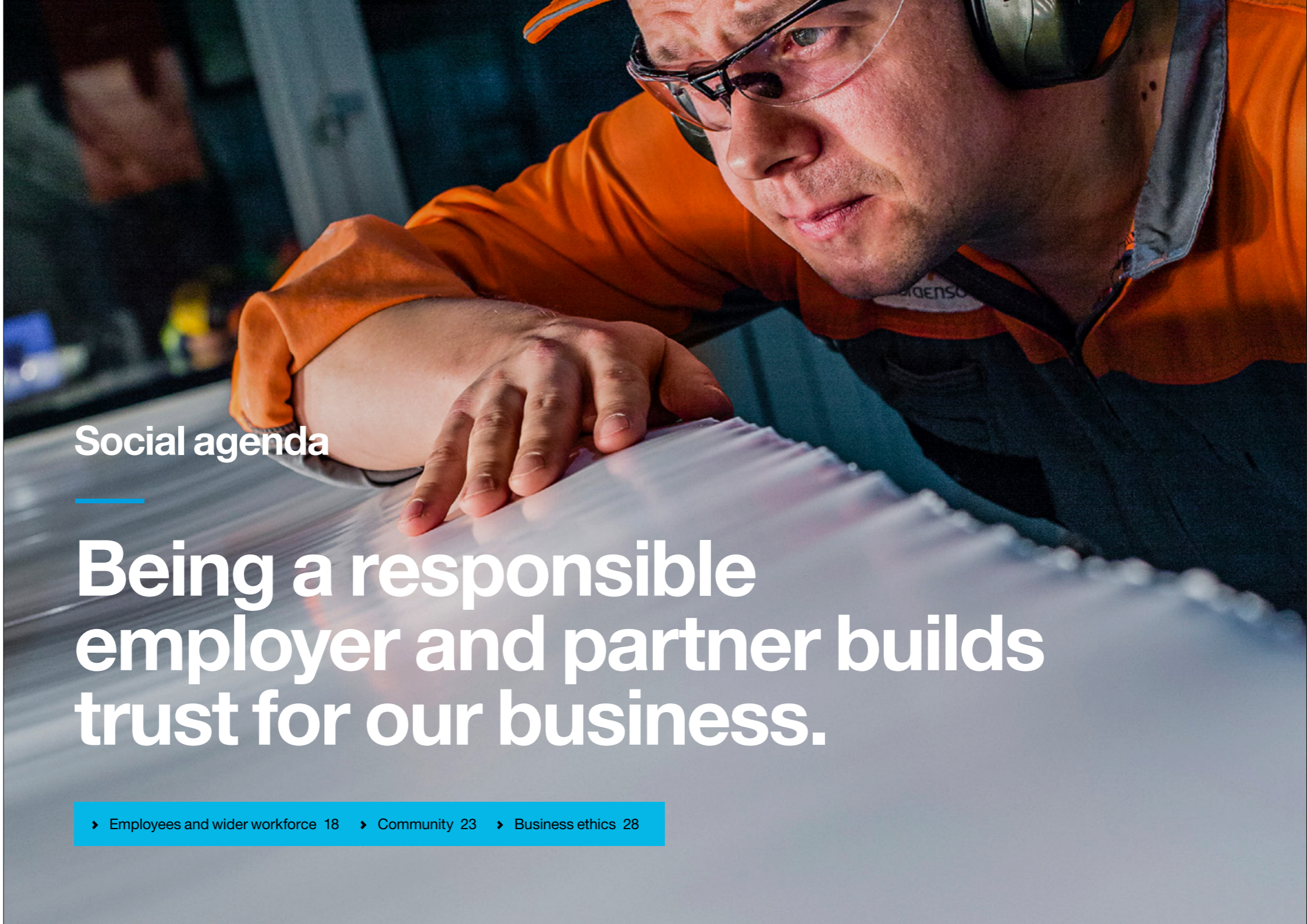
In Brazil, Veracel continues training, auditing, and follow-up procedures related to its supplier code of conduct. Additional human rights training is provided to employees working as guards for Veracel's security service provider, as required by national law, when they begin employment and then every two years.



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Social agenda

Being a responsible employer and partner builds trust for our business.

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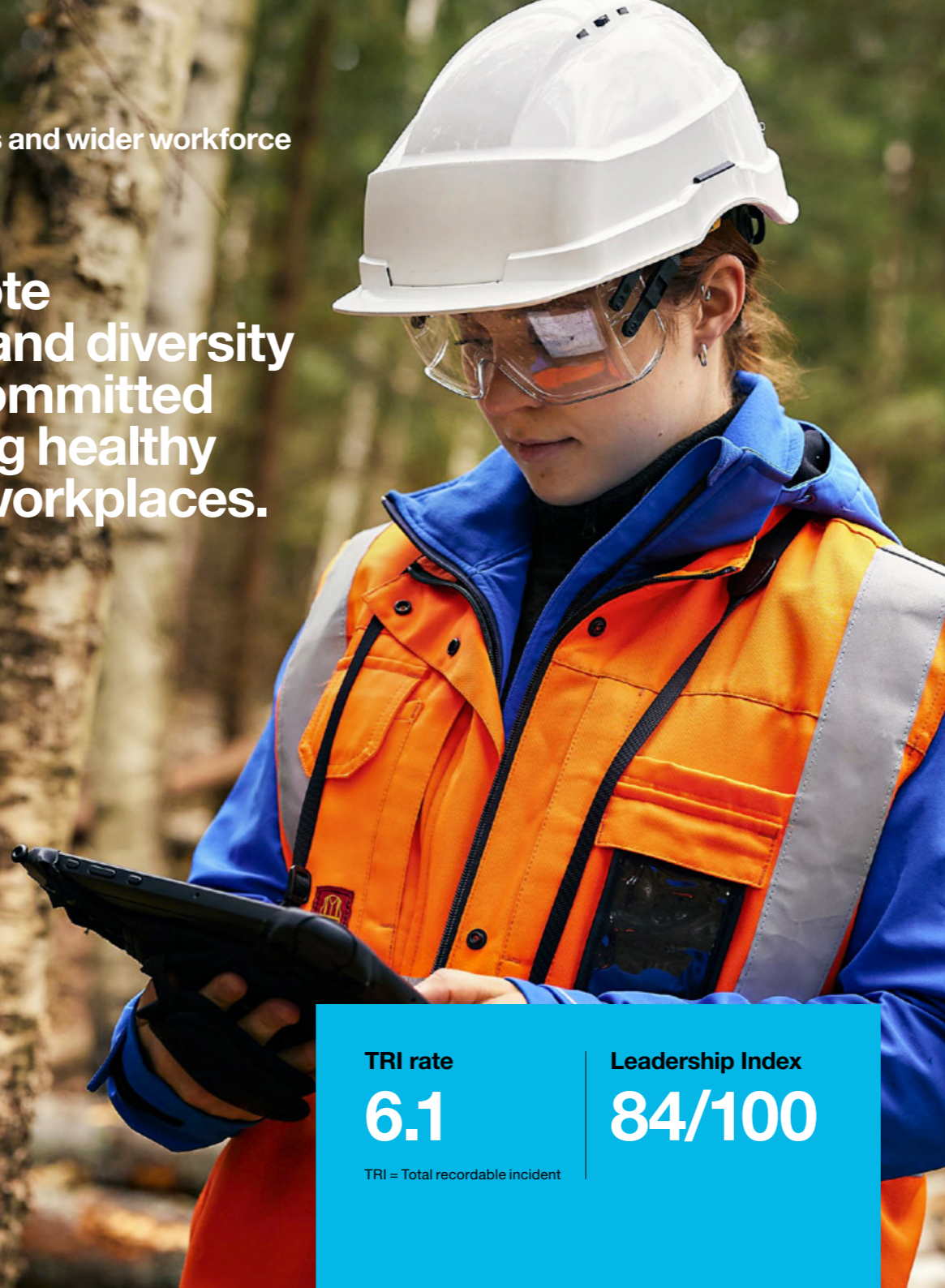
Employees and wider workforce

We promote inclusion and diversity and are committed to ensuring healthy and safe workplaces.

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TRI rate

6.1

TRI = Total recordable incident

Leadership Index

84/100

Opportunities and challenges

Change through people

Despite the Covid-19 pandemic and its unprecedented impact on global health, Stora Enso continues its transformation journey as the renewable materials company. During 2020, we continued to focus on what we can influence during these challenging times, including ensuring the health and safety of our workforce.

Engaged and motivated employees and a capable organisation will enable us to deliver our business strategy. The development of capabilities in customer insight, innovation, and operational efficiency, as well as the ability to utilise new technologies will be critical for our future success. We need to ensure we have competent and engaged employees when managing our employee turnover and the demographic structure of our workforce in various markets. This will require careful workforce planning and responsible leadership. To be successful and to promote a safe working culture, we need to develop our leadership, organisation, competencies and processes. We continuously focus on providing a safe workplace free from harassment and discrimination, and support wellbeing at work.

Our policies

Motivated employees and a capable organisation

Stora Enso's People Agenda guides our efforts in creating engagement and motivation among our employees and in building a capable organisation that can help us realise our business strategy. Key areas in our People Agenda include: strategic workforce planning, talent acquisition, talent management, competence development, leadership development, performance management, people ethics, and health and wellbeing. Read more in **Strategy 2020**.

Stora Enso's Health and Safety Policy defines the objectives for our safety management as well as our governance model for managing health and safety topics in practice and integrating them into annual planning and reporting.

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Other key documents applied in our people and safety management include our:

- Stora Enso Code – our code of conduct
- Supplier Code of Conduct
- Minimum Human Resources Requirements for labour conditions
- Global Framework Agreement
- Diversity Policy
- Human Rights Policy

How we work

Occupational safety

The health and safety of Stora Enso's employees is a key priority. Our goal is to provide an accident-free and inclusive workplace. A company-wide safety culture means that everyone is responsible for making every workday healthy and safe – starting with our top management and throughout the company.

We closely monitor the Covid-19 situation globally and take action to secure the health and safety of our employees and others working on our premises. This work is steered by a Crisis Management team that consists of Group Leadership Team members and is led by the CEO. For more information on how Stora Enso promoted the health and safety of employees during the pandemic in 2020, see page 20.

Safety management at Stora Enso is based on international standards but our processes go beyond these requirements. Our units are transitioning from the OHSAS 18001 to the ISO 45001 occupational health and safety (OHS) management system. In 2020, 85% of our own employees were covered by one of these third-party audited management systems. Responsibility for implementing each safety tool and programme in our units lies with line management, supported by local staff and OHS professionals.

The Board of Directors' Sustainability and Ethics Committee oversees the Group-wide safety work. Safety and industrial hygiene are managed by the Group Safety function and occupational health including wellbeing is managed by our Group Human Resources function. Stora Enso's Safety Steering Group directs strategic long-term planning at Group level and oversees the work of the Safety Management Team, which develops and aligns Group-wide safety programmes. Our country-level OHS networks in Finland, Sweden, Germany, and China also share good practices and organise

Case

Stora Enso's digital safety innovations showcase agility



When times change, so do companies. In these exceptional times, Stora Enso is leading the way in exploring new technologies for maintaining a high level of occupational safety. With Covid-19 challenging the regular safety procedures, an example of new ways of working is replacing physical safety audits with digital ones. Live-stream mill tours make the audits easy to execute, as the only necessary equipment are a 3G internet connection, a selfie-stick, and a headset. The digital safety audits have exceeded expectations and Stora Enso is evaluating if

they could be used in some locations even after the pandemic.

In addition, Stora Enso units have explored live-stream safety walks where participants from different countries virtually walk through a mill and discuss findings. Virtual reality is also being tested for safety training.

"Technology can support us in taking the next steps in occupational safety and will bring a competitive advantage," says **Wolf Willems**, Head of Safety at Stora Enso.

Read the full article at [storaenso.com](#)

training to enhance our safety procedures and competencies.

Local OHS committees and working groups at our units provide forums for raising safety-related topics and suggestions. Safety is also a key item for Stora Enso's Operations Forum that develops the company's operations cross-divisionally. To further integrate safety into our operations, the Group Safety function began reporting to the Chair of Stora Enso's Operations Forum, who reports directly to the CEO, in September 2020.

Our units follow Group-level instructions when reporting on safety performance data,

including incidents, absenteeism statistics, and safety observations. Stora Enso also monitors the number of safety incidents among on-site, logistics, and forestry contractors. We have also introduced consistent visitor inductions, that include safety information, for all our units.

Stora Enso has a formal procedure to increase the sharing of insights from previous accidents within the company and to prevent similar accidents from happening again. The insights are discussed in different forums throughout the company, such as in the Group Leadership Team, Safety Steering Group,

Safety Management team, and division and mill management teams.

Health and wellbeing

We believe that the foundation for physical and mental health and wellbeing in the workplace is based on people management, organisation of work, and an inclusive work environment that promotes both physical and mental health. All these factors impact the health and wellbeing, including stress levels, of our employees and need to be addressed to create wellbeing in the organisation. We follow wellbeing in our annual employee survey with a specific wellbeing index that measures inclusion and organisational factors impacting health and wellbeing in the workplace.

To ensure that our employees are well informed and to support their wellbeing, we set up new actions and channels for internal communications around Covid-19 during the year. These included bi-weekly information calls with the CEO and the Group Leadership Team as well as a special site on our intranet dedicated to wellbeing.

Contractor safety

Stora Enso's comprehensive approach to safety covers everyone working in and visiting our operations, including our own employees, contractors, suppliers, and on-site visitors. We encourage everyone to give feedback and provide ideas on how to further improve safety. Additionally, we promote safety among our contractors and suppliers through a dedicated "Safety Trail" e-learning. We also emphasise the importance of safety by asking suppliers for information on their safety performance in our tendering process. In 2020, extra precautionary measures were taken related to our maintenance stops, to keep our people, our contractors and the surrounding communities safe. For more information about our co-operation with suppliers, see pages 60-63. We also cooperate closely on safety work with our joint operations in Brazil and Uruguay.

Leadership – driving company culture

Leadership is a key enabler of our strategy as it is the strongest driver for performance, wellbeing and company culture. Our culture is based on our values "Lead" and "Do what's right," which we expect our leaders to embrace and demonstrate through their actions and behaviour. We measure

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our progress on leadership by using a Leadership Index, which is based on the responses of our annual employee survey.

Performance management

Managing the performance of our employees is an important part of engaging and motivating our workforce. We set and communicate clear targets for our employees, help them understand how they contribute to our company's success, and provide development opportunities and regular feedback. Our annual employee performance appraisals are an important component of our performance management.

Diversity

We believe diversity strengthens our competitiveness and we aim to reflect the societies in which we operate. Diverse working teams enable us to explore different perspectives and challenge our way of thinking, contributing to better decision-making. To benefit from diverse working teams, we need inclusive work environments that respect and appreciate individual differences and allow us to embrace the diversity of backgrounds and perspectives of our employees. Dimensions such as skills and experiences, gender, age, cultural background,

and personality are important to Stora Enso when we strive for diversity.

Fair working conditions

We care for all our employees and are committed to fully respecting human rights throughout our operations. All Stora Enso units are expected to work systematically to ensure that employees are treated with respect and fairness. Units should also comply with a set of minimum requirements for labour conditions in order to create an environment where employees are both motivated and able to perform their work. These requirements address areas such as working hours, basic employee rights, working conditions, and non-discrimination. Based on a self-assessment conducted in 2019, the vast majority of our production units are in compliance with these requirements, and units with improvement needs have established action plans to become fully compliant with them. The next self-assessment will be conducted in 2021.

We continued to address areas in the Global Framework Agreement that we have signed with the labour unions IndustriAll, UniGlobal, and BWI to strive for a working environment where all our employees are treated with respect and in a fair manner.

Support in restructuring situations

In organisational restructuring situations, it is important that the impacted employees understand the reasons for the change. Our ambition is to support leaving employees in finding work elsewhere. Support initiatives are often developed on a country or local level to best suit the local circumstances and requirements. Every employee is treated with respect and has access to support throughout the restructuring process.

The earlier announced plan concerning the conversion of our Oulu paper mill in Finland into a packaging production unit was completed in January 2021, and the redundancies of 365 employees mainly took place during the year 2020. We also announced the closure of the newsprint paper machine (PM3) and the deinking plant at Hylte Mill in Sweden. These measures will impact up to 140 employees. Our Forest division downsized its plantation operations in Laos and our Packaging Materials division closed the paper sack plant at the Ostrołęka Mill in Poland. Closing the plant resulted in 130 redundancies. Our Wood Products division finalised the divestment of the Pfarrkirchen sawmill. The unit employed 90 employees.

At Oulu Mill, we have offered training to all interested employees to support them in finding new job opportunities. Over 120 employees have participated in this training. Overall, a solution already exists for almost 200 employees before the end of their Stora Enso employment contract. The solutions include new employment, either within Stora Enso or externally, professional training (over 50 employees participating), and some employee retirements.

In connection with the paper sack plant decommission in Ostrołęka, we have cooperated with an external partner to support our employees.

During 2020, our China packaging units started to increasingly outsource needed workforce to further improve operational flexibility in the face of changing market situations. The units' packaging manufacturing operations are relatively labour intensive and the number of employees varies according to seasonality.

Progress

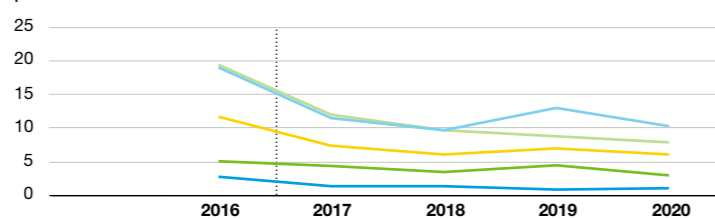
Safety during a global pandemic

During the global Covid-19 pandemic, we have promoted the health and safety of our employees and others working in our premises through various measures. We took early action by imposing a global travel ban from early February 2020. We also prohibited all physical meetings by strongly advising personnel to work remotely whenever feasible, restricted access to mill sites, and quarantined potentially affected employees. These practices were in place throughout most of the year. Our employees were advised to follow the rules and recommendations of national and local authorities both at work and in their private lives. In the end of November, several Covid-19 infections were detected among contractors working on the Oulu Mill conversion project. Following the infections, Stora Enso further enhanced guidelines to prevent Covid-19 infections, tested the entire personnel including contractors working at the mill, and continued testing as required. We also conducted a third-party supplier audit of selected contractors on how they have prepared for and executed the prevention of Covid-19 while onsite at Oulu Mill. We continue to closely monitor the Covid-19 situation.

Enhancing safety performance

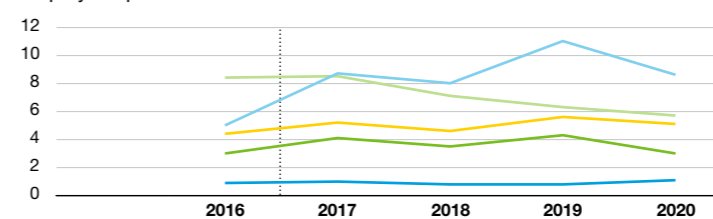
Stora Enso reports incidents and accidents using the international Occupational Health and

Total recordable incident rates (TRI)^{1 2}
 Number of incidents among our own employees per one million hours worked



China	2.8	1.4	1.4	0.9	1.1
Finland	19.0	11.5	9.7	13.0	10.3
Poland	5.1	4.4	3.5	4.5	3.0
Sweden	19.4	12.0	9.7	8.8	7.9
Group	11.7	7.4	6.1	7.0	6.1

Lost-time accident rates (LTA)^{1 2}
 Number of lost-time accidents among our own employees per one million hours worked



China	0.9	1.0	0.8	0.8	1.1
Finland	5.0	8.7	8.0	11.0	8.6
Poland	3.0	4.1	3.5	4.3	3.0
Sweden	8.4	8.5	7.1	6.3	5.7
Group	4.4	5.2	4.6	5.6	5.1

¹ For Stora Enso employees, including joint operations. Figures for the four largest countries in terms of the total number of employees.

² Since January 2017, Stora Enso has applied Occupational Safety and Health Administration (OSHA) definitions in the reporting of TRI and LTA rates. Due to this change, the 2016 figures are not comparable with 2017–2020 figures.



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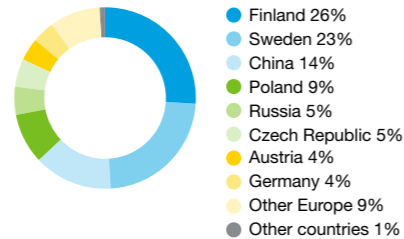
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Safety (OHS) definitions when reporting Total Recordable Incident (TRI) and Lost-Time Accident (LTA) rates. This allows the reported rates to be better aligned with international standards and to enable future benchmarking with peers and companies in other sectors. Stora Enso uses the Total Recordable Incident (TRI) rate as its main key performance indicator (KPI) as it provides a comprehensive overview of safety performance by including less severe accidents. Stora Enso also monitors contractor accidents in separate categories for on-site accidents and logistics incidents. For more information, see page 63.

Our milestone for 2020 was to reach the TRI rate of 4.7 by the end of 2020. In 2020, our TRI rate decreased to 6.1 (7.0 in 2019). Despite our ambition to improve our safety performance, the milestone for 2020 was not achieved. Tragically, during the year, two fatalities occurred at our Guangxi forestry operations in China, both involving contractor employees. We have investigated the incidents and their root causes together with the contractor and local authorities. The learnings from these tragic events will be acted upon at Stora Enso to prevent such accidents from recurring.

Regarding occupational health, Stora Enso measures illness related absenteeism with a focus on encouraging units to invest in proactive health management. In 2020, illness-related absenteeism amounted to 3.6% (3.4%¹) of maximum theoretical working hours of our employees.

Employee distribution by country¹



¹ Excluding employees of our 50%-owned joint operations Veracel in Brazil and Montes del Plata in Uruguay.

For Stora Enso, developing trust with employees is critical when it comes to safety issues and discussing safety incidents. In 2020, we continued to introduce the 'Fair and Just' process, which provides a transparent way to manage the outcome of safety investigations. It also serves as a tool to facilitate the review and discussion of safety incidents and other unsafe behaviour. The aim of 'Fair and Just' is to create a blame-free working environment and a learning organisation to ensure that all our employees are treated in a fair and just manner.

Stora Enso also encourages employees and contractors to identify and report unsafe situations or actions. In 2020, the average number of safety observations reported per employee was 12.2 (12.7). To further increase and harmonise safety reporting, Stora Enso is implementing a Group-wide digital tool for submitting safety observations, safety notifications and near-misses in our operations and office locations. The implementation of the new reporting system began in Q4 2020 and will continue in 2021.

In November 2020, Stora Enso arranged a Group-wide Safety Week with the theme 'Caring for each other'. The aim was to engage our management, employees and contractors to accelerate safety and safety culture through local activities. Safety Week resulted in a range of activities across divisions, functions and offices, such as safety webinars and trainings, as well as health and wellbeing activities.

During the year, Stora Enso continued its safety audit programme to verify the implementation of safety standards and tools. The programme promotes a common approach, content, and methodology for safety audits with focus on common areas of concern such as the "Lockout-Tagout" procedure, risk assessments, permits to work, and the operating of heavy machinery. During the year, 2 (43) physical internal safety audits were conducted across Stora Enso units before the programme was put on hold due to Covid-19. By using digital tools, we were able to conduct 30 additional online safety audits despite social distancing.

Leadership and performance management

Stora Enso's KPI for leadership is the Leadership Index, which is calculated based on our annual employee survey. Our target is to achieve an index of 85/100 by 2022. In 2020, the Leadership Index



Our aim is to create a safe and blame-free workplace where all employees are treated in a fair and just manner.

improved to 84 (83). The response rate to our employee survey remained high at 83% (86%).

We continuously invest in the development of our leaders through programmes such as "Lead Through People." The Lead Through People programme targets all managers in the company and supports them in developing their leadership skills to drive performance, wellbeing, and company culture. Since 2015, approximately 3 400 managers have participated in this programme. During 2020, we organised a series of leadership webinars to address challenges related to remote leadership and to support leaders in various other topics. Around 1 700 leaders were invited to these online seminars, and the recordings of the webinars were made available afterwards.

All Stora Enso employees should be involved in at least one formal performance appraisal meeting with their manager each year. In 2020, 90% (90%) of our employee survey respondents stated that they had taken part in a performance review in the past twelve months.

Employee diversity

When asked about diversity in the annual employee survey, 85% (84%) of our employees reported

that their management was able to create diverse teams. As for gender diversity among our senior management, 73% were male and 27% female at the end of 2020 (76% and 24% in 2019). The Group Leadership Team had 6 female and 9 male members at the end of 2020.

Living wages

Every other year, the global non-profit organisation BSR supports us in defining and calculating living wages in relevant locations. We reviewed the situation in our production units in Brazil, China, Estonia, Laos, Latvia, Lithuania, Poland, Russia, and Uruguay in 2019. The results of this study indicate that our units' minimum compensation in these countries is above the living wages defined by BSR. The next study will be conducted in 2021.

¹ As of our 2020 reporting, our joint operations Veracel and Montes del Plata are excluded from the absenteeism rate, which is in line with our other HR reporting. The 2019 rate has been recalculated for comparability. For more information about data boundaries in our sustainability reporting, see [Reporting scope](#).



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Compensation and equal opportunity¹

	Ratio of highest individual compensation to median compensation ²		Female employees' compensation compared to male employees ³	
	2020	2019	2020	2019
China	101	106	90%	91%
Finland	17	13	92%	95%
Poland	17	19	90%	94%
Sweden	26	42	99%	99%

¹ Figures for the four largest countries in terms of the total number of employees. For more information on remuneration, see our Remuneration report 2020.
² The ratio shows how many times larger the highest individual annual total compensation, including paid incentives, is compared to median compensation.
³ Calculated using weighted averages based on gender comparisons within each country's employee categories as applicable.

Share of female employees at Stora Enso

	2020	2019
Total number of employees at year-end ¹	22 320	24 390
Share of women among all employees (%)	24%	26%
Share of women among senior managers (%)	27%	24%
Women in the Group Leadership Team	6 out of 15	5 out of 11
Women in the Board of Directors	2 out of 9	2 out of 9

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

Employee distribution and turnover¹

	China ⁴		Finland		Poland		Sweden		Group total
	Female	Male	Female	Male	Female	Male	Female	Male	
Number of employees	1 420 (45%)	1 720 (55%)	1 180 (20%)	4 600 (80%)	400 (20%)	1 570 (80%)	1 080 (21%)	3 960 (79%)	22 320
Up to 30	340	540	120	490	70	250	140	500	16%
31–50	1 060	1 110	630	2 330	220	880	540	1 510	53%
51 and over	20	70	430	1 780	110	440	400	1 950	31%
Number of hires²	70 (26%)	200 (74%)	60 (22%)	210 (78%)	20 (22%)	70 (78%)	70 (27%)	190 (73%)	1 430
Up to 30	30	110	20	70	10	20	20	80	41%
31–50	40	90	40	110	10	40	50	90	51%
51 and over	0	0	0	30	0	10	0	20	8%
Number of leavings³	660 (55%)	550 (45%)	80 (15%)	460 (85%)	40 (16%)	210 (84%)	70 (21%)	260 (79%)	2 830
Up to 30	220	220	0	20	0	30	10	30	23%
31–50	440	320	40	150	20	100	30	80	50%
51 and over	0	10	40	290	20	80	30	150	27%
Employee turnover	46 %	32 %	7 %	10 %	9 %	13 %	6 %	6 %	13%

¹ Figures for the four largest countries in terms of the total number of employees. Rounded to the nearest 10.
² Hires: numbers of permanent employees joining the company. Excludes hires due to acquisitions.
³ Leavings: numbers of permanent employees leaving voluntarily or due to restructuring, retirement or death. Excludes leavings due to divestments.
⁴ The employee turnover in China is mainly due to Stora Enso China Packaging units where packaging manufacturing operations are relatively labour intensive and the number of employees vary according to seasonality. The employee turnover in China Packaging has a significant impact on the Group employee turnover. The Group employee turnover excluding China Packaging units was 8% in 2020.

Our lowest wages compared to local minimum wages¹

	Ratio of our lowest wage to the local minimum wage	
	2020	2019
Brazil ²	1.2	1.1
China ³	1.3	1.5
Estonia	1.2	1.0
Latvia	1.7	1.6
Lithuania	1.4	1.5
Poland	1.1	1.2
Russia	1.6	1.4
Uruguay ⁴	1.6	1.5

¹ In the most relevant locations based on internal assessment and human rights risks, compared to minimum wage levels set at national, state, or provincial level as applicable. Reporting on Laos discontinued due to the downsizing of the operation. The ratio shows how many times larger our lowest wage is compared to the local minimum wage.
² Including employees of our 50%-owned joint operation Veracel.
³ Due to variations in regional minimum wages, the ratio is calculated as a weighted average for Stora Enso's units in China. The weighting is based on the units' total number of employees.
⁴ Including employees of our 50%-owned joint operation Montes del Plata.



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With a global presence in more than 30 countries, Stora Enso engages with numerous local communities around the world.

Total voluntary community investment
EUR 2.7 million

Opportunities and challenges

Supporting community resilience

Companies can improve the quality of life of local communities through active corporate citizenship. Voluntary investments can also generate long-term community support for the company's operations.

When Stora Enso sources its main raw material – renewable wood – and manufactures its wood-based products, it depends on local communities for workforce and a social license to operate. In our efforts to be a good corporate citizen, we support and work with these communities to help them thrive economically, socially, and environmentally. The Covid-19 pandemic has demonstrated how important, although challenging, community engagement and investment can be in times of crisis. When communities thrive, they are more resilient to changes brought on by phenomena and crises, such as pandemics, climate change, or economic turbulence.

While Stora Enso is a significant employer, taxpayer, and business partner in many communities, our operations also generate emissions and our tree plantations influence land use in ways that may adversely impact the rights of those communities. Our actions must be managed responsibly in order to minimise negative socio-environmental impacts, maximise our positive influence, and maintain a constructive community dialogue that ensures our long-term license to operate.

Our policies

Guidance for our community work

Policies that guide Stora Enso's community relations include our:

- Sponsorship and Donations Policy
- Community Investment Guidelines
- Volunteering Guideline – encourages our employees to volunteer during their working hours to support charitable causes.
- The Stora Enso Code – our code of conduct
- Business Practice Policy
- Human Rights Policy
- Tax Policy

Our joint operations in Brazil and Uruguay have each developed formal procedures for their respective community work to reflect Stora Enso's requirements.

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How we work

Managing our impacts on local communities

We take precautionary actions to mitigate and remedy potential adverse environmental and social impacts on neighbouring communities. These include:

- Due diligence where we evaluate the impacts that our current or potential business operations may have on local communities and the environment. Community consultations are a key element of this work. For more information, see page 13.
- Third-party certified management systems at our production units that apply international standards, such as ISO 14001, ISO 45001, and ISO 50001.
- Third-party forest management certification for our own forestry operations and suppliers, such as the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC).
- When necessary, restructuring processes and the closure of operations are realised in cooperation with the authorities to support communities through related changes, and to create opportunities for new business initiatives.
- Grievance mechanisms are available to communities close to our operations. For more information, see page 30.

Community investment through local projects

To Stora Enso, voluntary community investment means contributions that involve engaging with local communities beyond our core business and legal responsibility. This is carried out through voluntary donations of cash, working hours, and in-kind for non-profit purposes or non-profit community organisations in accordance with the globally recognised Business for Societal Impact framework (B4SI, formerly LBG).

Stora Enso has a worldwide Community Investment programme where projects are managed and funded locally to ensure that the communities close to our operations are the main beneficiaries. The programme has three strategic focus areas: Education, Environment, and Resilient local communities.

We promote volunteering as a way to strengthen the relationship between our

Voluntary community investment by investment area¹



¹Total community investment including cash, working hours, and in-kind as defined in the B4SI framework. Including 50% of joint operations Veracel in Brazil and Montes del Plata in Uruguay. ² Resilient local communities include B4SI framework areas of Economic development, Social welfare, Healthy lifestyle and Arts and Culture.

employees and local communities. All Stora Enso employees can volunteer eight hours of work time per year to charitable causes.

We monitor the impact that our contributions have on local communities. For example, in China, Stora Enso has invested in drinking water projects since 2017. These projects have benefitted nearly 3 500 people and enabled a significant reduction in the instances of water-related illnesses and the consumption of bottled water in the communities.

Progress

Contributions affected by Covid-19 pandemic

Our key performance indicator (KPI) for community investment monitors the proportion of inputs made in working hours and in-kind

compared with cash donations, excluding our joint operations, with continued growth in our community investment over time. Our target is to increase the proportion of working hours and in-kind contributions to 70% by the end of 2023, excluding joint operations. Our progress towards this target was slowed down in 2020, which is largely explained by the restrictions on volunteer work and community projects that we needed to enforce to ensure the safety of our employees and community members during the Covid-19 pandemic. In 2020, this proportion decreased to 41% (46% in 2019). When including our joint operations in Brazil and Uruguay, the proportion was 19% (22%). The difference is explained by the nature of community investment projects in these countries, where programmes tend to be more

long-term and often cover wider societal issues with investment needs. Due to limitations brought on by the pandemic, the share of community investment projects in the Education category reduced to 14% (18% in 2019). The share of those related to the categories of Environment and Resilient local communities was 5% and 76% respectively (6% and 66% in 2019). During the pandemic, many of our community investment projects consisted of donating materials, such as personal protective equipment (PPE), but also cash donations to charity organisations dedicated to health and social welfare. In 2020, the number of reported employees involved in community investment activities during working hours increased to 2 684 (1 771), but total volunteered hours decreased



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Case

Supporting local communities during the pandemic



We are living in exceptional times and solidarity is needed more than ever. Authorities, charities, and businesses are working together to reach out to those in need. While Stora Enso continues to provide vital renewable materials to its customers, many of whom serve the medical, hygiene, and food industries, our units are also supporting their communities.

“The resilience of local communities is now more important than ever, and Stora Enso wants to be a partner that can support this goal,” says **Leena Delestre**, Community

Investment Manager at Stora Enso. “Our units support communities in three ways: through cash donations, donations of materials, and volunteering on company time.”

Examples of Stora Enso units supporting their communities include donating to a food programme in Finland, donating packaging for hospital supplies in Poland, producing disinfectant for local needs in Sweden, and donating packaged milk to school children in China.

Read the full article at storaenso.com

to 6 921 (8 372). The total contribution to communities as defined by Business for Societal Impact was EUR 2.7 million (EUR 2.7 million), including 50% of the community investments by our 50/50 joint operations in Brazil and Uruguay. The total number of Stora Enso's voluntary community investment projects was 343 (441 in 2019), including those facilitated by our joint operations.

Community support around the world

During 2020, we engaged with the communities close to our operations in various ways, including agroforestry programmes and educational support. Many of the donations related to Covid-19 support were granted to charity organisations with a local reach in order to ensure that the help went directly to families in need.

Our community engagement work was impacted by the Covid-19 pandemic in different ways. In Europe, our employee volunteering reduced and focused on activities related to pandemic support. In Uruguay and Brazil, where community engagement typically takes place face to face, our employees have mainly relied on phone conversations, emails, and virtual meetings to ensure the safety of everyone involved. In Guangxi, China, our community engagement work was affected by the pandemic in the beginning of the year but we were able to continue the activities somewhat normally later in the spring, when government restrictions on accessing local communities were lifted.

Europe

In Europe, Stora Enso's community investments are mainly targeted to benefit the local communities where we operate to enhance their resilience and attractiveness to existing and potential employees. To grow and support our potential labour pool, we participate in programmes that promote education and youth work training and provide internships and public research opportunities. We also promote diversity and inclusion in the local workforce by participating in programmes that facilitate the employment of disadvantaged people and refugees.

To contribute to the everyday vitality of communities, we also financially support

Our Uimaharju Mills began cooperation with a local school to support studies in natural sciences.

local associations, including sports clubs and cultural activities.

In 2020, many of our units in Europe supported their local communities with challenges related to the Covid-19 pandemic. For example, many of our mills in Finland supported local food aid programmes for families struggling financially, in collaboration with charity organisations. Some of our mills in Finland, Sweden, and Poland also donated protective personal equipment (PPE) to local aid collections. For more examples, read [this article](#).

Our Uimaharju Mills in Finland began a three-year cooperation with a local secondary school to provide students with an opportunity to deepen their studies in natural sciences (STEM). During the programme, the students will spend some of their study time at Uimaharju Mills to learn about water management, wood-based products, and sustainability in a mill environment. We also continued to support the Finnish Forest Foundation (FFF) by matching voluntary donations from forest owners, which are linked to the purchase of wood. These donations contribute to FFF's community investment funds that focus on the economic aspects of the forestry sector. Activities include inspiring young people to pursue a career in forestry and funding relevant research projects. Stora Enso has supported the foundation since 1995.

During the year, Stora Enso's substantial cash donation to Save the Children in Sweden and Finland covered both domestic programmes and international humanitarian assistance

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and helped mitigate negative impacts caused by the pandemic. In Sweden, the target group was newly arrived children and youth from other countries, children and youth in socially and economically deprived areas of Sweden, and children who have experienced abuse. In Finland, our donation contributed to providing books and supporting hobbies for under-privileged children.

As for humanitarian assistance, Stora Enso's donation to Save the Children Sweden was used to enable a strategic partnership between Save the Children and UNHCR, which focused on improving the health of the most marginalised children in five refugee camps and reception centre for Burundian refugees in Rwanda. Our donation to Save the Children Finland's humanitarian assistance programme was directed to Somalia, Kenya, and Ethiopia to respond to severe drought and the consequent critical levels of hunger.

Guangxi, China

In the Guangxi province of China, Stora Enso's field staff and social engagement officers speak regularly with local communities impacted by our plantations and mill, and along our transportation routes, to inform them about our operations and to enable them to express their concerns and suggest ideas for improvement. Our aim is to identify and understand concerns and risks, so that we are prepared to properly mitigate and remedy them when necessary. For more information about our community consultation work, see page 13.

In 2020, Stora Enso employees across our operations in China organised a fundraiser to support the prevention and follow-up measures of the Covid-19 pandemic. Over 1 200 employees raised EUR 22 700, which was matched 1:1 by Stora Enso's units in China. The funds were donated to the China Charity Federation to support national pandemic relief work and to foster economic and social recovery in China.

During the year, our Beihai Mill donated 800 kg of its paperboard to six schools in Guangxi to support Braille education for visually impaired children. The mill also organised two coastal clean-up activities, during which nearly 80 employees collected approximately one tonne of waste from the local beaches.

Our forestry operations in Guangxi run community projects to address challenges in rural



Nearly 80 Beihai Mill employees collected waste from the local beaches in two clean-up activities in 2020.

villages near our plantations. In 2020, Stora Enso supported 16 community projects that benefited over 32 000 people. The projects had three main focus areas: road construction and safety, sports and cultural development, drinking water, and sanitation.

For example, we donated to several road construction and safety projects to improve traffic safety and benefit the local rural economy. One such project included the construction of a road that has enabled more than 800 villagers to transport their crops without having to travel on mud roads. The road also eases our harvesting and transportation operations.

In addition, together with the local government, Stora Enso invested in a drinking water project in a rural community near our

plantations during 2020. We supported the construction of a 2 km long water pipe, which will provide clean drinking water to approximately 780 residents.

Veracel, Brazil

Our 50/50 joint operation Veracel owns 213 000 hectares of land in Bahia, Brazil, of which about half is reserved for rainforest restoration and conservation and about 82 000 hectares are planted with eucalyptus trees. Veracel also leases 11 000 hectares of land. Supporting income generation and employment in local communities are the top priorities of Veracel's sustainability agenda.

For information on Veracel's engagement with indigenous communities, see page 16.

Veracel's community support during the pandemic

To support local health and safety efforts related to the Covid-19 pandemic in 2020, Veracel donated more than 200 000 items of Personal Protective Equipment (PPE) to public health units, social service clinics, and rural workers' associations in Bahia. In partnership with its second owner, Suzano, Veracel also supported the construction of a field hospital in the city of Teixeira de Freitas, run by the Government of the State of Bahia, and donated 20 respirators to the hospital. To support local fishing and indigenous communities, Veracel donated food, cleaning and water purification products, as well as demineralised water for the manufacturing of disinfectant.

Supporting local livelihoods

Veracel supports local livelihoods by making some of its land available to family farmers, and by providing training and technical support. The Agrovida and Roça do Povo farming programmes, for instance, aim to support local farmers, produce food for local communities, and trade surplus production in regional markets. A new cassava processing plant was built within the Roça do Povo programme, and training was provided to improve the productivity of cassava growing. The project will strengthen the local community by generating income and developing new skills. During 2020, the two initiatives assisted a total of 164 (192 in 2019) families cultivating 168 (168) hectares of land in total.

To safeguard biodiversity and help provide additional income to local families, Veracel allows beekeepers to keep hives on company land. It also provides training in beekeeping as well as technical and material support. During 2020, a total of 158 (161) beekeepers, mostly working through local cooperatives, produced 88 (114) tonnes of honey.

Beekeepers on Veracel's land in Brazil produced 88 tonnes of honey in 2020.

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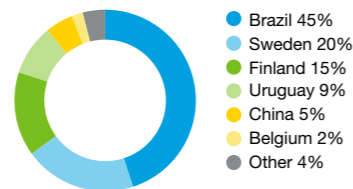
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Our donation to Save the Children contributed to providing books and supporting hobbies for under-privileged children.

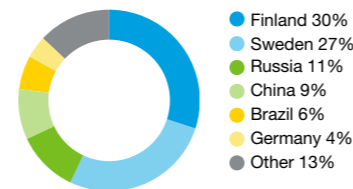
Voluntary community investment¹

EUR 2.7 million



Voluntary community investment projects²

By number of projects (343 projects in total)



¹ Total community investment includes cash, working hours, and in-kind as defined in the B4SI framework. Including 50% of joint operations Veracel in Brazil and Montes del Plata in Uruguay. ² Including joint operations.

In 2020, Veracel also continued to support local fishing communities near Belmonte. The cooperation included support for establishing local fisheries, providing infrastructure for their commercialisation, offering safety training, and donating radios, computers, and printers to local fishing associations and vessels. A shellfish collection programme empowers women by creating a profitable livelihood, developing the women's professional skills, and improving their opportunities to take part in community decision-making. During the year, due to the social distancing restrictions put in place due to the Covid-19 pandemic, the women were not able to work in the production unit built in 2019. To help generate alternative income, Veracel donated materials to the women to produce reusable face masks in their homes. The masks were then sold to Veracel.

To further support the local economy, Veracel gives preference to local businesses when sourcing goods and services.

Montes del Plata, Uruguay

Montes del Plata, our 50/50 joint operation owned together with the Chilean company Arauco, runs a pulp mill in Punta Pereira in southwestern Uruguay, together with associated eucalyptus plantations mainly located in central and north-western parts of the country. Montes del Plata owns 190 000 hectares and leases 79 000 hectares (Alianzas programme) of land. The Alianzas programme provides additional income for local farmers by enabling them to integrate eucalyptus plantations into their farms on suitable lands. At the end of 2020, 524 (475 in 2019) farmers participated in the programme with 59 500 (53 000) hectares planted with eucalyptus. Due to the Covid-19 pandemic, Montes del Plata launched a podcast to ensure communication with the farmers continued despite restrictions on face-to-face meetings. The podcast discussed topics, such as safety, conservation, and social sustainability.

Alianzas also promotes the diverse use of Montes del Plata's lands for purposes such as cattle grazing and honey production. The diverse use of land enhances local livelihoods, reduces the risk of forest fires, and helps to build stronger relationships with the community. During 2020, 194 farmers kept cattle on Montes del Plata's land and 38 farmers produced honey from approximately 5 660 beehives situated on the company's land to supplement their incomes. During the year, Montes del Plata continued its cooperation with NGO Aves

Uruguay to promote the sustainable management of natural grasslands, which are considered a conservation priority in South America. Over 65 000 hectares of grassland coexist with Montes del Plata's plantations. In 2020, the cooperation included defining a conservation index for three plots of Montes del Plata land, developing a plan to manage these ecosystems, and evaluating the new practices together with Alianzas farmers that keep cattle on the plots.

Montes del Plata also seeks to benefit local communities by maximising local hiring and participating in mentoring programmes.

Montes del Plata's Bioparque M'Bopicuá environmental centre celebrated its 20-year anniversary in 2020. The centre, which typically hosts about 2 000 visitors annually, promotes education, and enables visitors to experience native wildlife at first hand.

During the year, Montes del Plata supported the local community in its efforts to combat the Covid-19 pandemic by, for example, donating hospital beds, face shields, and an ambulance to strengthen the response capacity of the department of Colonia.

Raising awareness of road safety

Montes del Plata has a long-term strategy for the safe transportation of wood, including annual action plans involving truck drivers, transport companies, and local communities. The mill's wood supply is operated by approximately 600 truck drivers from different transport companies. Montes del Plata trains all drivers before they start working for the company, organises quarterly workshops for drivers on safety, and follows up on safety indicators. Due to the Covid-19 pandemic, Montes del Plata was not able to carry out its awareness-raising initiative targeted at local schools and communities in 2020. Instead, the company launched a road safety campaign on radio stations along its transport routes.

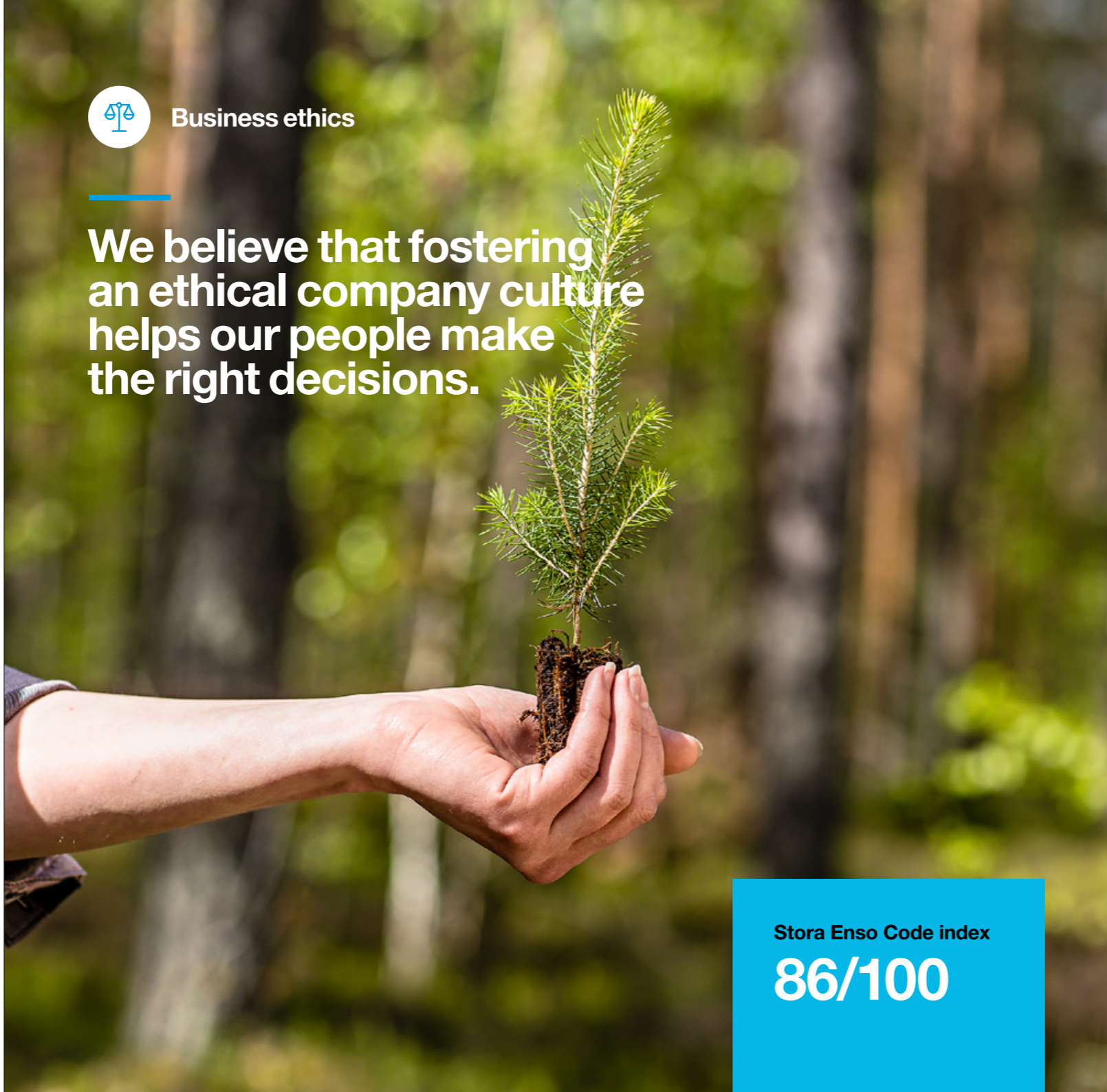
Laos

In 2020, Stora Enso announced it will downsize its Laos operations. Despite this, our village development fund will continue to support local development and livelihoods in the provinces where we operate. The projects are designed together with local residents based on their needs and are all endorsed by the local authorities. Most of the 2020 funding was directed into projects related to health and sanitation, food security, and income generation.



Business ethics

We believe that fostering an ethical company culture helps our people make the right decisions.



Stora Enso Code index

86/100

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Opportunities and challenges

Broad ethical approach beyond compliance

Stora Enso operates in locations including high-risk markets that offer good business opportunities but may also entail exposure to serious risks relating to topics such as corruption and fraud. The US Foreign Corrupt Practices Act, the UK Bribery Act, and the French Loi Sapin II are all examples of effective legislation that governments and authorities have introduced to combat corruption. These laws place high demands on companies' controlling mechanisms, but they also help to build accountability and trust among stakeholders. Competition law is also an area where lawmakers and competition authorities are increasingly active in their efforts to preserve a competitive economy. Complying with international trade sanctions may also require companies to take new measures.

Digitalisation brings great opportunities for organisations, but it also presents challenges regarding cybersecurity and the treatment of stakeholders' personal data. Legislation such as the EU General Data Protection Regulation (GDPR) sets requirements concerning the processing of personal data, with heavy fines imposed for infringements. While compliance with laws and regulations is always the highest priority for us, we believe that adopting a wider ethical approach is also crucial.

Our policies

Comprehensive approach to ethics and compliance

Our code of conduct, the **Stora Enso Code**, is a single set of values for all our employees that explains our approach to ethical business practices, human and labour rights, as well as environmental values. These values are applied wherever we operate.

Other policies relevant to ethics and compliance include our:

- Business Practice Policy
- Data Privacy Policy
- Supplier Code of Conduct



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We ensure that our grievance channels operate effectively and are accessible to all relevant stakeholders.

How we work

Combatting misconduct on all fronts

Stora Enso's Ethics and Compliance function sits within our Legal team, headed by our General Counsel who reports directly to the CEO. Our Ethics and Compliance Management Committee, a governance body appointed by the CEO, monitors Stora Enso's legal compliance and ethical business conduct by following up on our Ethics and Compliance Action List. The Committee met four times during 2020.

Stora Enso's Ethics and Compliance Strategy forms the basis for annual action plans. The strategy has five focus areas:

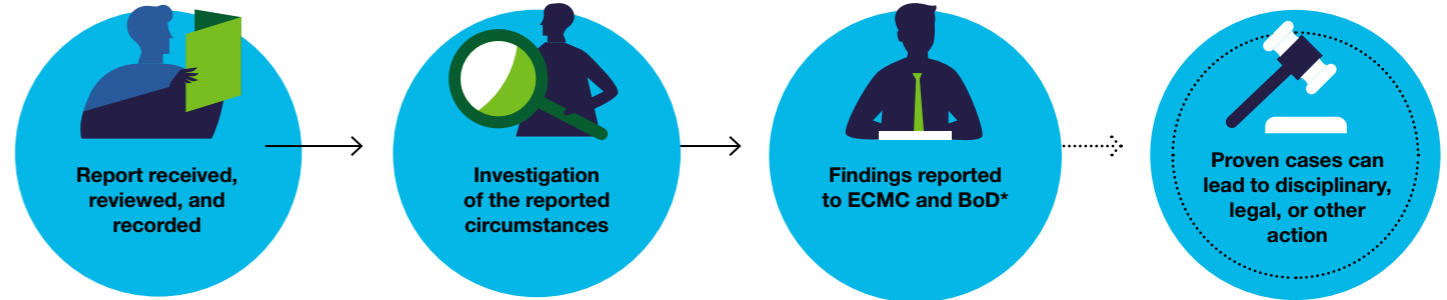
- Top-level commitment
- Improved communication and training
- Intensified efforts in countries with heightened concerns
- Developing our grievance channels
- Ethics and compliance as a competitive edge.

Stora Enso is represented in Transparency International (TI) Sweden's Chapter and has a steering role in TI Sweden's Corporate Supporters' Forum.

Top-level commitment

In our efforts to make Stora Enso a more value-driven organisation, we highlight the importance

How we investigate suspected non-compliance cases



* ECMC = Ethics and Compliance Management Committee
BoD = Board of Directors' Sustainability and Ethics Committee and Board of Directors' Financial and Audit Committee

of top-level commitment. All managers in key positions are required to participate in training and make a personal commitment to the Stora Enso Code and our Business Practice Policy, and to share related information with employees in their respective organisations.

Training our employees

We strive to ensure that Stora Enso's employees and business partners all understand what ethical behaviour is, and how they should respond to any ethical dilemmas that may arise. Communications and training are a crucial part of this work.

Our employees receive Stora Enso Code training, either through an e-learning tool or through face-to-face training for those who do not have direct computer access. We aim to ensure that our new employees receive such training within their first month of employment.

In addition, in-depth training on anti-trust, anti-corruption, and other compliance-related topics is mandatory for all members of our Group Leadership Team, for divisional and mill management teams, and for employees dealing with competitor contacts, purchasing, marketing, and sales. The training has been run since 2013 and a new interactive training was launched in 2020. All relevant employees will be invited to complete the updated training during 2021.

The Stora Enso Data Privacy Policy aims to protect the company against risks related to breaches of data privacy, to let our employees know how Stora Enso collects and uses their personal data, and to ensure that the privacy rights of our employees, business partners, and other stakeholders are protected. All white-collar Stora Enso employees are required to complete our e-learning training on data privacy. By the end of 2020, 92% of white-collar employees had been trained (88% by the end of 2019).

In addition, Stora Enso employees are offered training in dawn raids, trade associations, joint purchasing agreements, gifts and hospitality, and the onboarding of critical business partners.

Comprehensive risk assessments on compliance

Operating in high-risk markets and entering into joint ventures can entail exposure to serious risks. Our risk assessment procedures on compliance cover all our units. The most significant compliance risks in our global operations relate to anti-trust and corruption.

Overall risk assessment at Stora Enso follows the Risk Management Process (ERM) and is outlined in our Enterprise Risk Management instructions. In recent years, ethics and compliance has been considered one of Stora Enso's key risks. In 2020, the ethics and

compliance risk assessment, closely connected with the Ethics and Compliance Self-Assessment Tool (T.E.S.T.), was performed several times.

The results of this assessment have been used in divisional manager discussions to enhance compliance; for strategy planning in the Group Ethics and Compliance function; and in the Group-level ERM process.

The management and employees of our fully and jointly owned operations in China, Brazil, and Uruguay receive training on our Business Practice Policy. Employees in our 50%-owned joint operations in Brazil and Uruguay also receive training on their respective Codes of Conduct and Business Practice Principles, covering topics such as human rights, environmental impacts, safety, and ethical practices.

Breakdown of potential non-compliance cases

	2020	2019
Anti-trust	0	0
Conflict of interest	9	4
Corruption	6	4
Fraud	14	12
Discrimination, harassment and/or bullying	28	26
Health and safety	8	3
Miscellaneous	21	8
Total	86	57



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The Covid-19 pandemic is a stress test for compliance, and leadership is needed more than ever before to ensure ethical business practices.



A culture of ethical behaviour is key to our long-term success.

In recent years, we have reviewed the joint ventures where Stora Enso is a shareholder, implemented competition law guidelines, and arranged training at board level when considered necessary. Guidelines and training have focused on relevant competition law aspects such as information sharing.

During 2019 and 2020, simulations of unannounced inspections (often referred to as “dawn raids”) and online dawn raid trainings were carried out in approximately 20 of Stora Enso’s offices worldwide. The purpose of the dawn raid spot checks was to verify that Stora Enso’s Dawn Raid Instruction Manual and Package have been properly implemented within the company, including but not limited to the obligation to cooperate fully with the authorities.

Grievance channels

Our employees are encouraged to report suspected cases of misconduct or unethical behaviour. Other stakeholders may also want to seek ways to raise concerns over our activities. To ensure that rights to privacy and effective remedy

are respected, we must ensure that our grievance channels operate effectively and are accessible to all relevant stakeholders.

Stora Enso uses an external service through which our employees and external stakeholders can anonymously report potential non-compliance cases by phone, mail, or online. This grievance channel is available 24/7 and is open to all stakeholders globally. In 2020, we worked to identify ways to better inform external stakeholders about the hotline and how to use it.

All potential non-compliance cases involving a Stora Enso employee or a third party working for the company are duly investigated by the Ethics and Compliance function, and reported both to our Ethics and Compliance Management Committee, and to our Board of Directors’ Sustainability and Ethics Committee. Proven cases of non-compliance can lead to disciplinary or legal action.

Our operations in China and Laos offer internal grievance channels in multiple local languages.

Our joint operations Veracel in Brazil and Montes del Plata in Uruguay each have their own local grievance mechanisms.



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In 2020, a total of 86 reports received through Stora Enso's various grievance channels were identified as potential non-compliance cases (57 in 2019).

A total of 76 investigations of potential non-compliance cases were completed in 2020 (40 in 2019), also including open cases from previous years. Proven cases leading to disciplinary action, legal action and/or process improvements were identified in 28 (26) of the investigations.

Based on our assessments, 10 of the proven cases can be considered relating to corruption and/or fraud (9 in 2019). All these cases resulted in employee dismissal or disciplinary process. Two of the cases resulted in the termination of business relationships.

Progress

Comprehensive monitoring

We use an index to monitor and evaluate the employee perception of our work on topics covered by the Stora Enso Code. The index is based on our annual employee survey responses to questions related to the Code, Stora Enso's values, fair and equal treatment of employees, safety, and responsibility. The index is used as a management tool to understand the ethics and compliance culture of our different teams. In 2020, the index increased to 86 (84 in 2019). Our objective is to maintain the positive trend by increasing our efforts in communications and training during 2021.

During 2020, we continued the work of the Divisional Compliance Forums and the Group Function Compliance Forum to bring together the heads of key functions and divisions to assess risks, monitor compliance, and contribute to a value driven organisation.

In 2020, we launched a virtual compliance council.

Our Ethics and Compliance Self-Assessment Tool (T.E.S.T.), introduced in 2015, was run once in 2020. This tool has been designed to give our divisions and functions a better overview of the progress their units are making in implementing our policies and compliance measures, while also identifying, measuring and managing possible gaps and risks related to compliance. In 2020, the tool was further developed to cover data privacy, operational health and safety as well as our minimum HR requirements. The results are addressed through the Compliance Forums with action plans subsequently developed, implemented, and monitored as necessary.

Encouraging employee discussions on ethics

We support our managers in discussing ethics topics in their teams by providing them with ethical dilemmas and related instructions. We also support managers with topic-related communication materials to facilitate the discussions. In 2020, topics included diversity and transparency in decision making, the Covid-19 pandemic, and rules for competitor cooperation.

In 2020, our Ethics Ambassadors, consisting of Stora Enso employees, continued their work to voluntarily support our Ethics and Compliance function by running training sessions, clarifying our rules, and answering questions in their respective units.

The Ethics and Compliance Case Book features compliance cases to serve as reference and training material for our employees. The example cases help to illustrate ethics and compliance issues in practice and facilitate discussions and training on important topics. Two additional cases were added in 2020.

Extensive training materials for a Group-wide campaign addressing harassment and discrimination were prepared in 2020. The campaign will be launched in early 2021.

Digitalisation in focus

A virtual compliance counsel, Amanda, was launched in 2020 to help guide our employees in ethics and compliance-related issues. The chatbot uses modern artificial intelligence (AI) technology and was developed in close collaboration with the company IBM.

Given the many potential opportunities from digitalisation and AI in the legal field, digitalisation

Case

Ethical decision making in times of crisis



It can be quite easy to do the right thing when life is predictable, but when a crisis hits, people may cut corners. Companies with strong business ethics have an open conversational culture where people are not afraid to speak up when they face unethical behaviour or ethical dilemmas.

“The Covid-19 pandemic is an opportunity for companies to see how strong and ethical their company culture truly is, and how

prepared they are to maintain that culture,” says **Anna Romberg**, co-founder of the Nordic Business Ethics initiative. “By creating role models out of leaders and providing a safe space for speaking up – one that also works in these times of remote working – companies can impact the way employees behave during a crisis.”

Read the full article at > storaenso.com

has been added as a strategic core capability of the team's Business Information Officer role.

Enhanced compliance control processes

Making sure that laws, regulations, and company rules are complied with, not only by us but also by our business partners, is an essential part of our business. To ensure better compliance control, a third-party management tool is used

for conducting due diligence and onboarding critical business partners. Information from public sources as well as from the potential business partners themselves is collected in an organised way to enable informed decisions by business managers and compliance professionals.

Similarly, a screening process has been implemented for when recruiting for certain top management positions at Stora Enso to identify potential hiring risks.



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Environmental agenda

We are uniquely positioned to contribute to the circular bioeconomy.

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The world needs materials that are both renewable and recyclable – a circular bioeconomy – to combat climate change and to minimise waste.

Process residuals utilisation rate

98%

Share of biomass in energy generation

82%

Opportunities and challenges

Reduced waste, maximum value

Among the global megatrends impacting societies, markets, and businesses, climate change is the greatest challenge of our time. This means that consumers, legislators, companies, and financial institutes have an increasing focus on raw materials, CO₂ emissions, circularity, and waste reduction. Moreover, governments around the world are increasingly regulating the use of fossil-based materials, such as plastics.

The European Green Deal provides an action plan to boost the efficient use of resources by moving to a clean, circular economy, restore biodiversity, and cut pollution. In 2020, the European Union (EU) proposed a European Climate Law as part of the Green Deal. As an overall ambition level, the EU should achieve net zero greenhouse gas emissions and climate neutrality by 2050. To fulfil the ambition, contributions are also requested from energy intensive industries in terms of further emission reductions and promoting energy efficiency. The European Commission (EC) adopted a new Circular Economy Action Plan in March 2020 – one of the main blocks of the European Green Deal. Stora Enso welcomes the work the European Parliament is doing to ensure society transitions to a circular economy.

We also follow regulatory developments in other parts of the world, such as the Chinese Environmental Protection Laws concerning our operations in China and related laws in the country on water protection, air pollution, solid waste, and noise pollution as well as circular economy regulations relevant to our product range. Stora Enso monitors relevant environmental regulation in Brazil and Uruguay through its joint operations.

Materials

As a renewable materials company, Stora Enso operates at the heart of the bioeconomy and contributes to a circular economy. In a circular economy, waste is minimised as materials are reused and recycled to maximise their value. The Circular Economy Action Plan aims to promote a cleaner and more competitive Europe. This will drive legislative reviews in the areas of sustainable product policy, circularity, and waste reduction. Another commitment of the European Green Deal is the EC chemicals strategy for

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Wood fibers can be recycled at least 5-7 times, sometimes over 20 times. Once fibers get too degraded to recycle, they can be used to make bioenergy.

sustainability which is part of the EU's zero pollution ambition. The objectives of these ambitions create a need for new innovations and provide business opportunities for Stora Enso.

Water

Water plays a central role in Stora Enso's production, heating, cooling, and cleaning processes, and in generating renewable electricity from the hydropower we purchase. We mainly withdraw our process and cooling water from surface waters and after use, we clean the process water in our treatment plants before discharging it back to the local environment. Sustainably managed forests and plantations

have a key role in maintaining natural water cycles, absorbing CO₂, and therefore increasing resilience to the impacts of climate change. Our forests and plantations need rainwater for growth, and active water management in plantations contributes to positive effects on the total water balance as well as water storage, purity, and quality. We consider water in the planning and management of our forest and plantation operations.

The EU Water Framework Directive sets the objective to protect and enhance water resources to ensure good water quality in lakes, rivers, groundwater, and transitional and coastal waters. Other key directives are the Water

Framework Directive, the Groundwater Directive, and the Environmental Quality Standards Directive. These requirements are implemented in the environmental legislative framework of each member state, with which we must comply via our environmental permits.

While water is relatively abundant in most of our production locations, water scarcity may still impact our operations locally and through our wider supply chains, as controls on pollution, recycling, and water pricing are tightened. Some of our mills are occasionally impacted by water stress in terms of availability or increased water temperature. We therefore consider water stewardship to be an area of increasing importance. At the same time, such challenges give us opportunities to reduce costs by using water and energy more efficiently.

Energy

The EU's Energy Efficiency Directive II includes new targets for 2030 that require annual energy savings of 0.8% of energy consumed. Additionally, the Renewable Energy Directive II sets member states a binding collective target on an EU level to derive 32% of their final energy consumption from renewable sources by 2030. With its high proportion of biomass-based energy, the forest industry can help the EU achieve its targets.

Our policies

Guidance throughout the supply chain

Stora Enso's policies relevant to our use of materials, water, and energy include our:

- Stora Enso Code – our code of conduct guides us on issues related to resource use.
- Policy on Energy and Carbon – a policy stating our ambitions in combatting climate change.
- Environmental Guidelines – a comprehensive overview of our policy objectives and how we work to achieve them.
- Supplier Code of Conduct, Practical Guidance for Stora Enso's Suppliers, Purchasers' Instructions, Sourcing Policy, and Sourcing Guidelines – a guiding framework for the responsible sourcing of materials and energy.
- Policy on Wood and Fiber Sourcing, and Land Management – our commitment to the responsible integration of forestry, land use, sourcing, and water stewardship into our sustainable forest management and land use practices.

By 2020, 94% of our total energy consumption was certified to the ISO 50001 energy management system.

How we work

External initiatives guide our work

We apply precautionary management actions to mitigate and remedy potential adverse impacts on the environment and people. The environmental work at our mills, including water and energy management and resource efficiency, is supported by third-party certified environmental management systems. All our sawmills, corrugated packaging units, and board, pulp, and paper mills are certified to the ISO 14001 environmental management system.

Using materials, water, and energy in our production affects the environment but may also have an impact on people. At Stora Enso, keeping employees and surrounding communities safe and healthy is a top priority. The interests of local communities are respected in our approach to systematic Environmental and Social Impact Assessments for new industrial projects as well as due diligence executed in conjunction with mergers, acquisitions, and divestments (see page 13).

As part of our Supplier Code of Conduct, our suppliers commit to report significant environmental non-compliances and accidents. Our forestry contractors are given on-the-job training in ecological management, including the identification of hydrologically sensitive areas. Through our Wood and Fiber Sourcing, and Land Management policy, we encourage forest owners to apply sustainable forest and land management practices that help conserve water resources. We require our external pulp suppliers to follow similar principles in their wood and fiber procurement.

By the end of 2020, 94% of our total energy consumption was certified to the ISO 50001 energy management system standard (95% in 2019). For unit-specific information on certificates, see pages 69–71.



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Our board, pulp, and paper mills monitor effluent discharges, suspended solids, chemical oxygen demand, total organic carbon, phosphorous, nitrogen, and water quality, including temperature and pH scale. Mills apply both online and offline measurements, such as standard methods for the forest products industry, in order to fulfill permit limit requirements and to protect ecosystems, wildlife, and human health.

Emissions to the atmosphere and effluent discharges to water bodies from our mills are regulated by the relevant authorities, with limits set through environmental permit processes that consider local environmental conditions, including water quality and resources, external stakeholders, and legislation. Our mills in Finland and Sweden work jointly with external stakeholders to steward shared water resources in regional water recipient control programmes. These programmes have been established together with other companies, communities, and regional authorities to monitor physical, chemical, and biological water quality development over the long term.

Compliance with legislation and environmental permit limits are monitored by the mill in question and reported to the environmental authorities. Non-compliances and incidents are reported by mills to Group management on a quarterly basis. Significant incidents are reported immediately. For details of significant environmental incidents and violations of environmental permits in 2020, see page 42.

Environmental improvements and investment needs at our production units are driven by regional and local conditions. The Best Available Techniques (BAT) Reference Document (BREF) for the Production of Pulp, Paper and Board is developed by the European IPPC Bureau. The current version published by the EC contains BAT conclusions that form the reference for setting permit conditions for installations

Our circular design principles aim to maximise the circularity of our products and solutions.

covered by the EU's Industrial Emissions Directive. BAT conclusions cover board, pulp, paper, and sawmills, as well as medium and large combustion plants. Our compliance with the BREF and environmental permits is reviewed quarterly, and investments are proactively planned as part of Group investment processes and fitted into Stora Enso's normal capital expenditure framework and policy.

As a public commitment to water resource management and the development of sustainable water strategies, Stora Enso signed the United Nations Global Compact's CEO Water Mandate in 2009 and the Finnish Water Stewardship Commitment in 2018.

Contributing to the circular bioeconomy

We help our customers to become more circular with our renewable, recyclable and, in many cases, compostable products. We minimise waste and resource use and aim to maintain the value of products and materials for as long as possible through product design, innovation, and recycling. When a material or product has reached its end-of-life, we promote recycling and energy recovery to create further value. Read more about our approach to circularity in **Strategy 2020**.

Stora Enso has a Group Circular Economy roadmap consisting of three focus areas: create value through new circular pilot projects and partnerships, integrate circular economy into design and innovation, and build internal and external awareness and a culture of circular thinking. We apply circular design principles to maximise the circularity of our products and solutions and help reduce environmental impacts. We also work with partners to ensure the development of truly circular value chains for the future.

We are a signatory to the New Plastics Economy Global Commitment led by the Ellen MacArthur Foundation, in collaboration with UN Environment. Our progress was disclosed in the foundation's Global Commitment Progress Report in 2020. We are a founding board member of the World Business Council for Sustainable Development's (WBCSD) circular economy initiative, Factor10. Stora Enso also contributed to WBCSD's Circular Economy Action Plan 2020 – Summary for Business, and worked with the WBCSD on the publication of a new report on the circular bioeconomy, "The business opportunity contributing to a sustainable world".

Case

Residuals from the mill feed the forest



When trees are harvested and forest residues, such as branches and treetops, are left in the forest, some nutrients are returned to the soil, but when both the wood and the forest residues are removed, less nutrition remains in the forest. Our Skoghall Mill in Sweden is part of a research project that investigates the opportunity to use sludge from the mill's wastewater treatment plant and ash from the biofuel boiler to produce a sustainable fertilizer

for the forest. Both the sludge and ash contain the original nutrients from the harvested trees. "This is an important project because the goal is to return residuals from the forest industry back to the forest in an environmentally friendly way," says **Margareta Persson**, Assistant Nursery Manager at Sjögränd nursery.

Read the full article at > storaenso.com

Stora Enso is engaged in several research and innovation consortia to develop common approaches and tools to promote the circular economy. These include the Circular Transformation research collaboration with the KTH Royal Institute of Technology in Stockholm, Sweden, and the FINIX textile circularity ecosystem collaboration led by Aalto University in Finland.

Stora Enso is also contributing to the development of the first global standard for circular economy, under a process led by the International Organization for Standardization (ISO).

In 2020, to be proactive in a topic of growing importance, Stora Enso established an internal

Microplastics Working Group in order to take a systematic approach to defining, mapping, and mitigating microplastics in our value chain. We are also, for example, conducting and participating in studies on the topic and actively follow and participate in related EU discussions. Moreover, we are engaging in more specific microplastics discussions with selected suppliers to gain a better understanding of and performance in minimising microplastics in the value chain.

For information on how we worked with our customers and value chain partners to advance the circular bioeconomy in 2020, see page 58.

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Our goal is to reduce impacts on water use, minimise impacts on quality, and recycle water within mills when possible.

Value from waste and residuals

In addition to our traditional products as well as lignin, tall oil, turpentine, and energy pellets, Stora Enso's production processes generate other residuals and waste, such as ash, sawdust, bark, and wastewater treatment sludge. Many of these materials are used in our internal bioenergy generation or supplied to third parties to be used in applications such as agriculture, cement and concrete products, or land and road construction. We constantly seek ways to improve resource efficiency in order to extract additional economic value from material streams that would otherwise end up as waste.

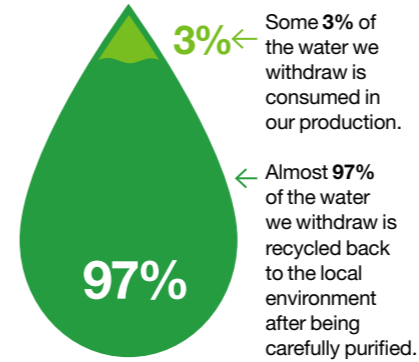
We ensure that hazardous waste is safely processed at suitable facilities, and we report on hazardous waste disposal in accordance with relevant regulations. Our third-party certified ISO 14001 systems comprise of on-site management procedures for handling chemicals and waste at our mills. Expertise and best practices related

to optimising material streams are shared throughout Stora Enso by networks focusing on environmental management, materials, Paper for Recycling, chemical safety, and product safety.

We aim to maximise the value of our material streams and work towards zero process waste. We work to achieve this through circular material flows in our value chain while reducing our own process waste to landfill to as close to zero as legally, technically, and commercially possible. Our Group target is to maintain the high level of a 98% process residuals utilisation rate. The target covers all Stora Enso production units.

Stora Enso continues to partner with the Swedish government agency for innovation, [Vinnova](#), with the aim to recycle our materials containing carbon and calcium in the steel industry. Successful trials have explored the beneficial use of fly ash, lime mud, bio sludge and fiber sludge. Trials will continue in 2021.

Stora Enso's water withdrawal and consumption



In 2020, EUR 7 million was earmarked for energy efficiency investment projects at our mills.

Recycled paper and board

Wood and fiber are the main raw materials in Stora Enso's production processes. Materials made with virgin fiber are used for products with special safety requirements, such as packaging for food and pharmaceuticals. For more information about our wood procurement, see pages 49–54.

While wood-based fibers can typically be recycled 5-7 times, in some cases over 20 times, virgin fiber is also needed in the paper recycling process. After several recycling rounds, paper fibers eventually become too short to be reused but can be burned for bioenergy, which drives the need for new virgin fiber. Stora Enso also uses paper for recycling (PfR) wherever it makes environmental and economic sense. Recycled newspapers and magazines are used to produce certain paper grades at Langerbrugge Mill in Belgium (where they account for 100% of sourced fiber), Sachsen Mill (100%) and Maxau

Mill (75%) in Germany, and Hylte Mill in Sweden (25%). Recovered board is used to make specific containerboard grades at Ostrołęka Mill in Poland (85% of fiber sourced for containerboard production) and at Varkaus Mill in Finland.

Through cooperation with local authorities and waste management companies, and our own collection facilities, we secure sufficient PfR from industrial, commercial and domestic sources. In Poland, we own and manage a network of 18 depots where PfR is collected and baled for transportation to our Ostrołęka Mill.

According to [CEPI](#), Europe's overall PfR recycling rate has been high for many years. In 2019, the rate was 72%, and the collection was 57.5 million tonnes of PfR (-2.5% compared to 2018). This is a noteworthy achievement as not all paper, such as tissue paper, can currently be recycled. While overall collection rates within the EU are relatively high, certain central and southern European countries still have potential to improve. Focusing on EU countries with collection rates below 60%, Stora Enso and the paper industry are actively supporting best practices while these countries establish sustainable collection systems to support the EU goal (74% paper recycling rate by 2020).

In 2020, Stora Enso announced that, together with Tetra Pak, it would initiate a feasibility study to assess the viability of building a large-scale recycling line for Used Beverage Cartons (UBC) at Stora Enso's Ostrołęka Mill in Poland. This would represent a significant increase in recycling capacity for beverage cartons across Europe.

Responsible water use

Production at Stora Enso's mills requires large amounts of water. However, only around 3% is consumed in our production processes while almost 97% is recycled back to the local environment. Process water is purified by our treatment plants and then discharged, whereas cooling and other non-process water can be safely released without treatment.

According to our water reporting, 98.3% of our total water withdrawal was from surface water, 1.6% from municipal sources, and 0.1% from groundwater in 2020. Our strategic approach to water stewardship is built on six pillars: assessing of conditions at mills and in the water basins where we operate; mapping water use at mills to identify saving potential; setting ambition levels and goals; investments; measuring



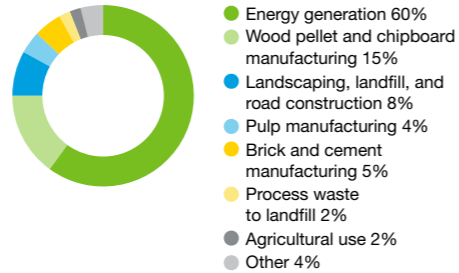
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Utilisation of process waste and residual materials¹

3.5 million tonnes²

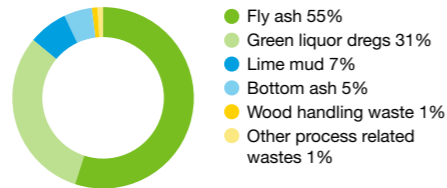


¹ Covers all Stora Enso production units, as dry tonnes. Excluding joint operations.

² Internal and external utilisation of process waste and residual materials amounted to 3.5 million tonnes in 2020 (3.4 million tonnes in 2019 and 3.7 million tonnes in 2018).

Process waste to landfill¹

63 thousand tonnes



¹ Covers all Stora Enso production units. Excluding joint operations. In addition to process waste to landfill, Stora Enso's production units created a total of 1 745 tonnes of non-process waste, and 91 312 tonnes of process waste was sent to on-site storage facilities.

We are one of the biggest buyers and users of recycled board and paper in Europe.

performance; and communicating and engaging with stakeholders.

During 2020, we applied the WRI Water Aqueduct Tool to assess water-related risks at our production units. The tool identified that only four of our units with limited water use operate in regions with High Baseline Water Stress: corrugated units Łódź in Poland, Tallin in Estonia, and Jiashan in China, as well as Näpi sawmill in Estonia. During 2020, these units withdrew 38 800 m³ of water which is well below 0.1% of the Group's total water withdrawal. Equally, the process water discharges of these units were 6 000 m³, which is well below 0.1% of the Group's total water discharges.

In 2020, we also continued to implement our Enterprise Risk Management (ERM) procedures geared towards enhanced water stewardship, water stress, and their potential financial impact.

Our strategic water goals are to reduce impacts on water use, minimise impacts on quality, and recycle water within mills when possible to reduce the need for water intake. Our Group targets are to achieve decreasing trends in both total water withdrawal and process water discharges per saleable tonne of board, pulp and paper. In line with Group targets and to drive continuous improvement, our units set their own quantified water targets based on their local context as part of environmental management systems.

During 2020, a water management pilot project was executed at our Sunila Mill in Finland, which resulted in a systematic mapping of water use. Significant water saving potential was identified, and the implementation of saving measures will be verified in 2021. The pilot at Sunila also provides input to our aim to establish a new Group standard for systematic water management work and a Group water efficiency target for board, pulp, and paper mills in 2021.

In 2020, approximately 2% of our intake water was recycled internally by reusing cooling and non-contact water as process water (approximately 2% in 2019). Optimising our use reduces the need for water pumping and heating, which creates energy savings and makes the purification of the remaining wastewater more efficient.

We continue to explore the potential to use refined wastewater residue in new products. For example, our Skoghall Mill in Sweden is working with the University of Karlstad to create bio-based products such as bioplastics and hydrogen gas from biosludge.

Case

Going for the win-win-win



The energy company Gasum and Stora Enso will together turn waste into renewable green energy at Nymölla Mill in Sweden. The liquified biogas (LBG) from Nymölla will improve the overall balance of renewable energy in Sweden considerably.

"Nymölla Mill has long been a leading light in sustainability," says **Jonathan Bakewell**,

VP, Office Papers, Stora Enso Paper Division. "Even though today the paper production process is essentially carbon-neutral, they always want to do more."

Read the full article at > storaenso.com

Long-term energy supply contracts

Board, pulp, and paper production processes are the most energy intensive phases in Stora Enso's value chain, which makes it essential for our mills to have access to a reliable energy supply at a reasonable cost. Stora Enso's energy supply is managed under long-term contracts, direct market access through energy exchanges, efficient combined heat and power production, and shareholdings in power generation companies such as Pohjolan Voima Oyj and Teollisuuden Voima Oyj in Finland. For more information, see **Financials 2020** (Note 14).

Stora Enso is committed to continuous improvement in energy efficiency and energy

self-sufficiency. We evaluate the opportunities to use fuels from biomass residual streams or other low-carbon options when assessing energy investments.

Structured approach to energy management

Stora Enso's Energy Services team is responsible for procuring energy and managing the implementation of our energy strategy. This work involves the hedging of energy prices, managing the trading of emission rights, green certificates, and guarantees of origin, consulting our mills on a wide range of energy topics, and monitoring our carbon dioxide allowance

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balance. The team also monitors and contributes to developments in energy legislation.

A high proportion of biomass is used in the internal energy production at most of our mills. This renewable energy is generated from by-products and residuals from our own production processes, harvested residues, recovered wood, and waste streams.

The harvesting residuals used for energy within Stora Enso's operations are mainly purchased by our wood supply organisation in connection with wood purchases. Mills are individually responsible for the procurement of most other fuels. They are also responsible for optimising energy efficiency using internal tools and certified environmental and energy management systems, supported by our energy efficiency teams.

Progress

Materials

Designing for circularity

In 2020, Stora Enso published its [Circular Design Guidelines](#). The guidelines outline our commitment to contribute to a circular bioeconomy through our products and solutions. These principles will serve as guidance for all our units, functions, and divisions, whether they are planning to create new processes and products or to update existing ones.

Value from waste

During 2020, we continued to monitor our financial value creation from process waste and residuals and the commercialisation of new product applications. Stora Enso's utilisation rate for process residuals and waste across the Group, including internal and external uses, was 98% in 2020 (98% in 2019). During the year, Stora Enso's revenue from residuals, such as bark and fly ash, was EUR 105 million. We improved our procedures for this reporting in 2020, and a comparable figure for previous year is not available.

We continued the commercialisation and product development applications for fly ash from several paper mills, such as Hylte in Sweden and Sachsen in Germany. A prerequisite for launching fly ash as a product is the registration of the product according to the EU regulation for chemicals (REACH). This registration also ensures that the product will be used in a safe and controlled manner according to risk assessments. In 2020, Stora Enso launched a new product [VersaLime™](#), which is

a recycled and circular product marketed for a range of applications. VersaLime™ is a recycled mineral made from fly ash resulting from paper and board production that can replace non-renewable materials to help our customers' become more circular and reduce their carbon footprint.

In Finland, the Anjalankoski Mills are involved in a long-term research project aimed at improving water protection and resource utilisation in the Tuusulanjärvi region. The project reduces the nutrient load from agriculture to surface water and investigates the use of composted sludge from the mills in agricultural land improvement. In 2020, the research showed that the fiber applications may even halve the amount of phosphorus leaching from fields.

Other examples of material efficiency and circularity include the beneficial use of fly ash at our Langerbrugge Mill in Belgium. Together with contractors, Langerbrugge Mill recycled approximately 53 000 tonnes of calcium-rich fly ash for road construction and for the cement manufacturing industry in 2020.

Hazardous waste

During 2020, Stora Enso's production units generated a total of 5 605 tonnes of hazardous waste, up from 4 807 tonnes in 2019. This waste includes oils, solvents, paints, laboratory chemicals, and batteries that are transported and processed by authorised contractors. In addition, 8 720 tonnes (8 575 tonnes in 2019) of sludge classified as hazardous waste was generated at the disused Falun copper mine in Sweden and handled by an authorised contractor.

Paper for Recycling

In 2020, our paper mills used 1.9 million tonnes of recycled paper and board (2.2 million tonnes in 2019). This makes Stora Enso one of the largest Paper for Recycling (PfR) consumers in Europe. The PfR utilisation rate in our paper and board production was 25% (25%).

During 2020, Stora Enso continued to explore the recycling potential of paper cups for magazine paper production on a large scale at its Langerbrugge Mill in Belgium. The paperboard for paper cups are made from high-quality, renewable fibers that can have several lives thanks to recycling. Stora Enso is looking into partnerships for the collection and sorting of used paper cups to ensure that this high-quality fiber material is captured and given a second life.



We use all fractions of biomass, such as lignin and sugars, to develop new solutions.

Chemical safety management

During 2020, Stora Enso introduced digital tools for managing chemical safety information, where they were not already in use. This improved the accessibility and continued roll out of a Group-wide Chemicals Management Guideline, which outlines the minimum requirements for all our units globally, including occupational health and safety and environmental safety. The guideline is a part of the internal management systems at our operational units and auditing will be conducted within their existing structures.

Stora Enso's revenue from residuals, such as bark and fly ash, was EUR 105 million.

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Water

Promoting water efficiency

The objective of our KPIs on total water withdrawal and process water discharges is to drive a downward trend from our 2016 baselines of 57 m³ and 27 m³ per saleable tonne of product, respectively. In 2020, our total water withdrawal was 65 m³ per saleable tonne (61 in 2019) and our process water discharges amounted to 31 m³ per saleable tonne (29 in 2019). The normalised performance as per tonne was partly affected by lower production levels. The water needed at our board, pulp, and paper mills is not in direct relation to production volumes, and wastewater treatment, in particular, requires a regular flow of water to function properly.

We continued to identify mill-specific water-related challenges and opportunities in 2020. Our EUR 25 million investment at Maxau Mill in Germany to install a new steam turbine with a closed-loop cooling system and additional biomass storage was completed during the year. Alongside improved energy efficiency and reduction in our fossil CO₂ emissions, the cooling system will relieve pressure on the Rhine River through a lower thermal output and by withdrawing considerably less water.

Effluents to water

The wastewater treatment facilities that treat process water from our production processes release effluents to water. These effluents include

phosphorus, nitrogen, chemical oxygen demand (COD) substances, and adsorbable organic halogen compounds (AOX). These facilities at our mills ensure that discharged water is ecologically safe.

Discharging process water that has not been properly treated can contribute to local environmental impacts. Excessive concentrations of phosphorus compounds in water, together with nitrogen compounds and organic substances, can lead to increased biological activity in natural watercourses through eutrophication. AOX is a collective term for the amount of chlorine or other halogens bound to organic matter such as wastewater.

The investment of EUR 3.6 million in wastewater treatment improvements at the Anjalankoski Mills was completed in 2020. With the new bio-sludge centrifuges and process control model in place, the amount of water effluents decreased in 2020 compared to 2019: nitrogen by 4%, COD by 6%, and phosphorus by 27%.

Continued focus on legionella management

Legionella is a bacterium that commonly appears in ground and surface waters and is considered potentially dangerous to humans when inhaled as aerosols (water mist). Legionella can cause respiratory infections such as Legionnaires' disease that can lead to pneumonia. Legionella can exist in the pulp and paper industry's biological wastewater treatment facilities, cooling towers, and water ponds. Following the roll out of new Group

instructions for the management of legionella in 2019, over 300 employees were trained as a precautionary action during 2019 and 2020. Following an outbreak of legionnaire's disease close to Ghent in Belgium in 2019, the Flemish Care and Health Agency identified the cooling tower of the power plant at our Langerbrugge Mill as one possible source of the infection. By the end of 2020 investigations were still ongoing.

Energy

Our Group-wide energy efficiency target was to reduce specific energy (electricity and heat) consumption per tonne of pulp, paper, and board production by 15% by 2020, compared with the baseline year of 2010. In 2020, our specific energy

consumption per tonne was 0.2% higher than the 2010 baseline (2.9% lower in 2019). Specific energy consumption has been affected by structural factors such as production line closures in the Paper division, or conversions to new products at our mills, as well as our changing product portfolio.

As most of our production processes are energy intensive, our new energy efficiency target is to achieve at least 0.8% annual energy savings by 2030. The target is followed with a KPI describing the projected fraction of energy savings per total energy use of electricity and heat. In 2020, the projected annual energy savings were -0.9% equivalent to 310 GWh (-1.4% or 521 GWh in 2019). This is estimated to eliminate over 20 000 tonnes of annual direct fossil CO₂ emissions.

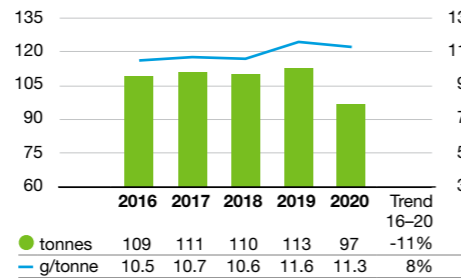
Water withdrawal and consumption¹²

Million m ³	2016	2017	2018	2019	2020	Trend 16-20
Process water	296	290	290	298	285	-4 %
Cooling water (net)	300	304	297	297	273	-9 %
Total water withdrawal	596	594	586	595	558	-6 %
m ³ /tonne	58	57	56	61	65	12 %
Water consumption	24	27	24	23	20	-17 %
m ³ /tonne	2.4	2.6	2.4	2.3	2.3	-4 %
Process water discharges	279	270	272	282	266	-5 %
m ³ /tonne	27	26	26	29	31	16 %

¹ Figures from board, pulp, and paper production units. Normalised figures are reported per unit of sales production.

² Historical figures recalculated due to additional data or organisation scope changes after the previous report. For more, see Reporting scope.

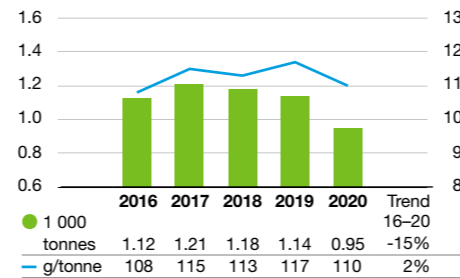
Phosphorus¹²



¹ Figures cover board, pulp, and paper production units. Excluding joint operations. Normalised figures are reported per unit of sales production.

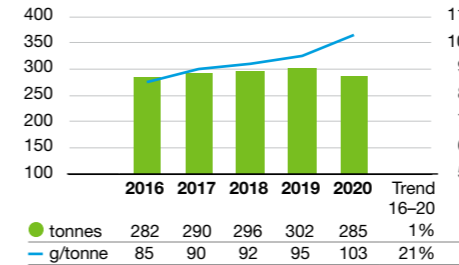
² Historical figures recalculated due to additional data or organisational scope changes after the previous report. Read more about our calculation principles in Reporting scope.

Nitrogen¹²



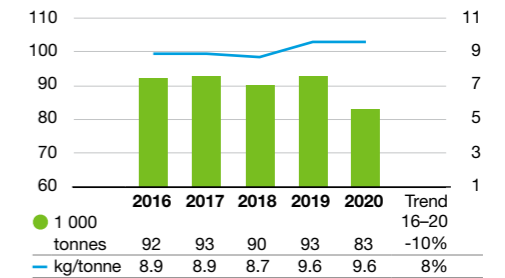
¹ Figures cover board, pulp, and paper production units. Excluding joint operations. Normalised figures are reported per unit of sales production.

Adsorbable organic halogen compounds (AOX)¹²



¹ Figures from bleached chemical pulp production units only. Excluding joint operations. Normalised figures are reported per unit of bleached chemical pulp production.

Chemical oxygen demand (COD)¹²



¹ Figures cover board, pulp, and paper production units. Excluding joint operations. Normalised figures are reported per unit of sales production.



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In 2020, the share of biomass in energy generation at our own mill sites was 82% (82%). Our total energy self-sufficiency rate was 67% (67%) and our electricity self-sufficiency rate was 63% (61%). Electricity from Pohjolan Voima Oy (PVO), where Stora Enso is a minority shareholder, is included as our own generation in these self-sufficiency figures.

Energy efficiency high on the agenda
Stora Enso continued to enhance energy efficiency throughout its operations. During 2020, we started to audit our mills' compressed air networks to further increase energy efficiency.

We are committed to the voluntary Energy Intensive Industries Agreement managed by the Finnish Forest Industries Federation (FFI), which aims for a national 4% energy use reduction among its signatories between 2017 and 2020, and a 3.5% reduction (cumulative, in MWh) between 2021 and 2025.

We also participate in groups that share industry best practice on energy efficiency in Finland and promote energy efficiency at our mills.

Stora Enso's energy and water efficiency fund
Our central energy and water efficiency investment fund is another important part of our work. In 2020, this fund amounted to EUR 7 million (EUR 10 million in 2019) and was earmarked for energy efficiency investment projects at our mills. The fund financed 37 (47) projects in 2020, including one to increase the use of biogas and install high efficiency air

blowers at Ostrolęka Mill in Poland, as well as a project to improve the impregnation of chemo-thermomechanical pulp (CTMP) and the installation of a new energy efficient moisturiser to board machine 8 at Skoghall Mill in Sweden. When fully implemented, all the projects financed in 2020 are estimated to generate annual energy savings of at least 123 GWh (40 GWh electricity and 83 GWh heat). This is equivalent to 0.3% of our annual energy consumption.

To give higher attention to water management, the scope of the energy efficiency fund was expanded and renamed as the "Energy and water efficiency fund" during 2020.

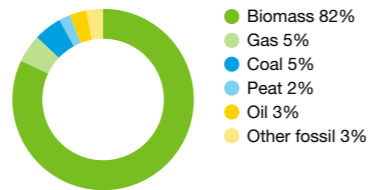
Emissions to air
Our atmospheric emissions primarily result from the combustion of fuels for energy generation. Emissions include carbon dioxide (CO₂), sulphur dioxide (SO₂), nitrogen oxides (NO_x), and fine particles. When not properly managed, CO₂ contributes to climate change while SO₂ and NO_x emissions affect air quality and can cause acid rain and soil acidification. We work to reduce our air emissions by using more renewable energy, improving energy efficiency, and using advanced technologies such as scrubbers and boiler process control systems.

In 2020, Stora Enso's Group-wide SO₂ emissions amounted to 2 410 tonnes (2 890 tonnes in 2019), NO_x emissions totalled 8 990 tonnes (10 360 tonnes), and emissions of fine particles amounted to 1 440 tonnes (1 680 tonnes).



Water plays a central role in our production, heating, cooling, and cleaning processes.

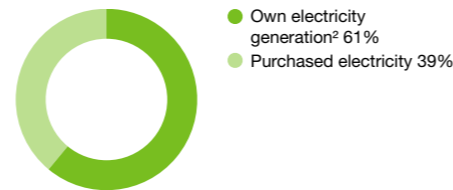
Fuels¹



Our total annual fuel consumption was 38.6 terawatt hours (TWh) in 2020 (41.8 TWh in 2019).

¹ Figures cover board, pulp, and paper production units. Excluding joint operations.

Electricity generation and sourcing¹

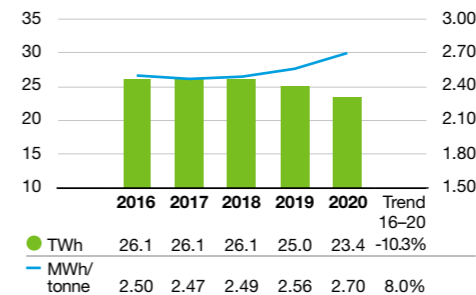


During 2020, we generated and purchased 10.9 terawatt hours (TWh) of electricity and consumed 10.5 TWh (12.0 and 11.6 during 2019). 0.4 TWh was sold (0.4).

¹ Figures cover board, pulp, and paper production units. Excluding joint operations.

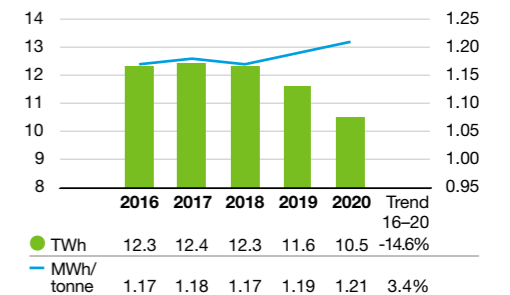
² Including electricity from Pohjolan Voima Oyj (PVO), where Stora Enso is a minority shareholder.

Heat consumption¹



¹ Heat consumed by board, pulp, and paper mills, excluding sold heat and heat used for electricity generation. Excluding joint operations. Normalised figures are reported per unit of sales production.

Electricity consumption¹



¹ Electricity consumed by board, pulp, and paper mills, excluding sold electricity. Excluding joint operations. Normalised figures are reported per unit of sales production.

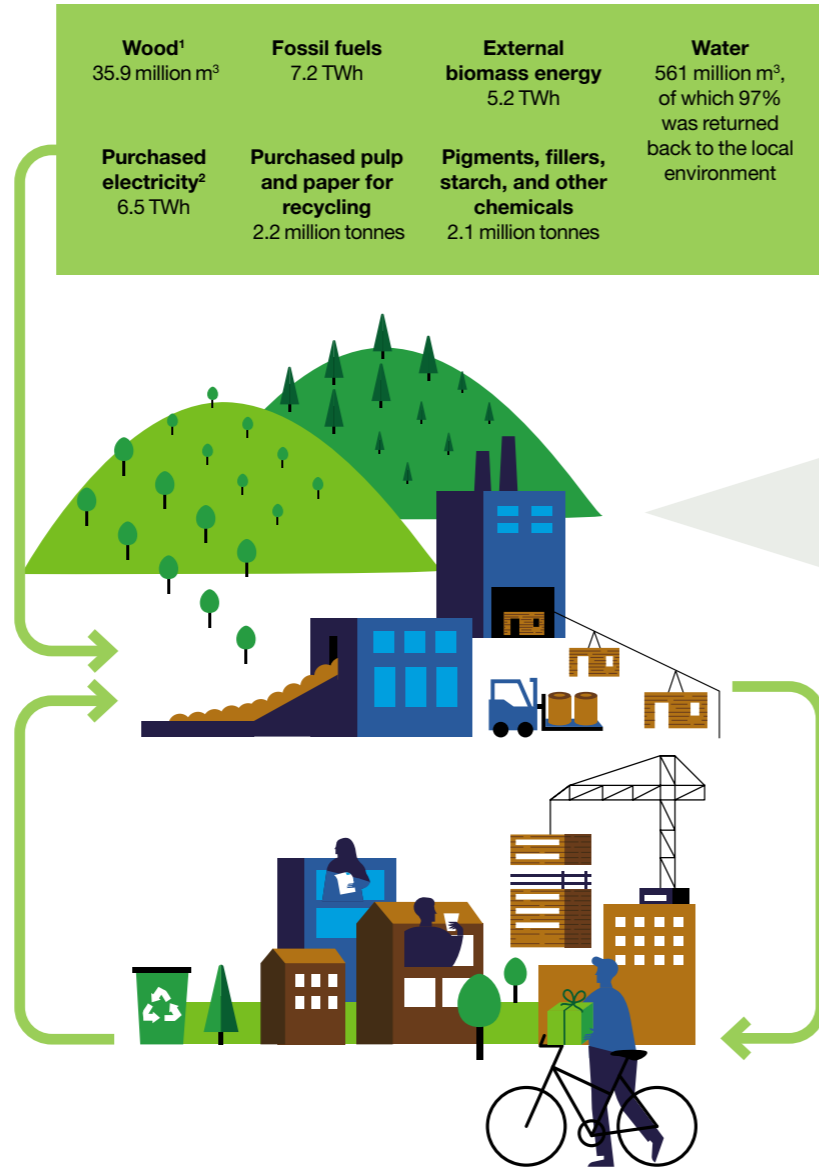


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Efficient use of materials in circular bioeconomy¹



¹ Covers all Stora Enso production units. Excluding 50%-owned joint operations Veracel and Montes del Plata, except the Wood use and Market pulp production figures in which 50% of the joint operations are included. The illustration shows the key materials used in our processes, together with our production figures as reported in our environmental reporting system. For a comprehensive illustration on how we create value see our [Strategy 2020](#). ² Electricity from PVO included in purchased electricity. ³ Corrugated packaging production partly based on our own containerboard production. ⁴ Other products include mainly pellets, wood chips, tall oil, and turpentine.



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Environmental incidents in 2020

Our objective is to have no environmental incidents but occasionally, unexpected process events can result in temporary breaches. The table below provides details of environmental incidents involving a non-compliance with environmental legislation or permits, or a significant stakeholder concern related to environmental performance.

Unit	Incident	Corrective actions
Oulu Mill, Finland	The permit limit for phosphorous discharge was exceeded in January due to problems in the biological wastewater treatment plant. This was caused by bacteria growth in the biosludge settling during trials with biogas plant rejects, which lead to an increased level of suspended solids in the treatment plant.	The biogas plant trials were stopped and the amount of biosludge in the aeration basin was lowered to reduce escaping sludge and improve oxygen levels. Potential investments in aeration capacity and sludge handling are under investigation.
Hyite Mill, Sweden	The air emission limits for dioxins and furans were exceeded at periodic monitoring in February.	Actions have been taken with trials of various fuel mixes (DIP sludge, recovered wood and effluent sludge) and frequent monitoring with a sampling device. The trials were successful and the emissions are now kept within the limits.
Maxau Mill, Germany	The permit limit for COD discharge was exceeded during several days in August due to issues with the sludge overflow in the biological wastewater treatment outlet.	Corrective actions were taken through extended shutdowns of PM 8 and DIP plant 3 and the increased addition of nitrogen and sludge removal. Investments were made in increased sludge-dewatering capacity.
	The mill experienced problems with sludge flotation overflow in the wastewater treatment plant in October 2020.	New way of operating sludge treatment was introduced comprising optimisation of buffer capacity, chemical dosing, sludge removal, and improved cooling water treatment.
Lahti Mill, Finland	The environmental permit limit for copper discharges to water was exceeded during April, June, and October. This was due to problems with washing waters at the wastewater line of the converting machines.	Inspections performed of the sewage system, new sampling plan established, and washing water precipitation test done. Root cause for the copper discharges is still pending, including considerations for wastewater treatment investment.
Sunila Mill, Finland	The monthly permit limit for NOx emissions to air from the bark boiler was exceeded in November and December.	Corrective actions taken as part of the bark boiler improvement, including repair of air combustion system, new burners for support fuel, air pre-heaters and secondary air valve adjustments. The installations will be finalised in January 2021.
Anjalankoski Mills, Finland	The annual permit limit value for dioxins and furans was exceeded. This was due to challenges with the existing cleaning equipment and fuel mix in boiler 2.	Different options will be evaluated in 2021 in order to establish stable boiler operating conditions.



Carbon dioxide

We combat climate change with renewable materials, resource efficient production, and sustainable forest management.

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Our CO₂e emissions were
26% lower
 than the 2010 base-year level

Opportunities and challenges

Contributing to a low-carbon economy

Climate change is one of the greatest challenges of our time, impacting the environment and people through natural disasters and the loss of ecosystems and livelihoods. As a leading renewable materials company with access to carbon-neutral biomass, Stora Enso is in a unique position to combat climate change. Trees in sustainably managed forests absorb carbon dioxide (CO₂) from the atmosphere and together with wood-based products act as carbon storage. Our products help our customers and society at large to reduce CO₂ emissions by providing low-carbon alternatives to solutions based on fossil fuels and other non-renewable materials.

The first truly global climate agreement was approved at the Paris Climate Conference (COP21) in 2015 and entered into force in November 2016. Ahead of COP21, Stora Enso signed a pledge to combat global warming with science-based reduction targets for greenhouse gas (GHG) emissions. In December 2017, we became the first forest products company to have its climate targets approved by the Science Based Targets initiative¹.

The EU's Emissions Trading System (ETS) is the world's first and largest mandatory system for trading greenhouse gas emission allowances. Covering 40% of the EU's emissions, it is a major element of the EU's policy to combat climate change. The ETS grants 'carbon leakage' status to industries where it is considered that costs related to climate policies might cause businesses to transfer production to countries outside the EU with less demanding requirements. The forest industry is exposed to a significant risk of carbon leakage and thus it has carbon leakage status for its main end products. This means that the forest industry is eligible to receive free emission allowances. The number of free emission allowances decreases each year and it follows the emission reduction targets set by EU.

¹ The Science Based Targets initiative is a collaboration between CDP, World Resources Institute (WRI), the World Wide Fund for Nature (WWF), and the United Nations Global Compact (UNGC). It is also one of the commitments of the We Mean Business Coalition to drive ambitious corporate climate action.



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The European Commission has recently presented its strategy for a carbon neutral EU by 2050. The strategy relies on the circular economy, natural carbon sinks, and lifestyle changes and suggests emission cuts from all main sectors, including power generation, industry, transport, buildings, construction, and agriculture. As an overall ambition level, it states that by 2050, the EU should achieve net zero greenhouse gas emissions. The role of a competitive EU industry is considered a key enabler in the strategy, and it specifically refers to reaping the full benefits of the bioeconomy. As a result, in 2020, the European Commission proposed a European Green Deal which includes a new European Climate Law and proposes a target to reduce EU emissions by 55% by 2030. Stora Enso welcomes the proposal to make the EU carbon neutral by 2050, and also supports emissions reduction of at least 55% by 2030.

Our policies

A resilient carbon strategy

Agreed in 2016, our carbon strategy states that it is our firm intention to drive down our fossil fuel use, so that we get as close to zero as possible within a decade using technically and commercially feasible means. Relevant policies guiding and steering our efforts to combat climate change include our:

- Policy for Energy and Carbon
- Environmental Guidelines – a more comprehensive overview of our policy objectives and how we work to achieve them.
- Supplier Code of Conduct and Practical Guidance for Stora Enso's Suppliers – guides us on how CO₂ emissions can be reduced in our supply chain.

How we work

Scenario-driven work

We actively aim to reduce the energy intensity of our operations and our dependency on fossil fuels. We measure our progress to reduce greenhouse gas (GHG) emissions as a key performance indicator (KPI). Stora Enso's science-based target (SBT) is to reduce GHG emissions from our operations by 31% per tonne of pulp, paper, and board produced by 2030, compared with the 2010 base year. We report on our progress in our annual Sustainability report and quarterly Interim Reports.

Case

Beyond reducing emissions: science-based evidence for our positive climate impact



The Swedish University of Agricultural Sciences (SLU), Stora Enso's partner in developing climate impact research for forest product companies, published a report in November 2020 that provides evidence of our positive climate impact.

When trees are harvested, the carbon stored in the wood fibers is not released immediately but continues to be stored in products made from that wood for as long as the product stays in use. With wooden buildings, for example, the timespan can be decades and the substitution effect is big. When Stora Enso's

products replace fossil-based or other non-renewable alternatives, it is possible to prevent almost 18 Mt of CO₂e from entering the atmosphere annually.

"Climate impact calculations need to be based on science and the most up-to-date available knowledge," says **Torun Hammar**, PhD and part of the research team. "Hopefully, there will be a commonly agreed method that will make it easier to compare companies. There is always more research to be done."

Read the full article at > storaenso.com

Our substitution of fossil materials prevents nearly 18Mt of CO₂ annually.

The Stora Enso Carbon Neutrality Roadmap is a key tool in our GHG scenario assessment and the establishment of reduction targets. The roadmap guides our long and short-term fossil CO₂ reduction actions. Read more about our actions in the Progress section of this chapter.

Evaluating risks and opportunities

Stora Enso evaluates the financial risks and opportunities related to climate change through its annual Enterprise Risk Management (ERM) process, which forms an integral part of the Group's management approach (for more

information, see **Financials 2020**). We routinely calculate the financial impacts of potential cost increases in relation to emission allowances, including the impacts of possible increases in energy prices.

Our production units systematically work to meet their environmental regulatory requirements and to improve their energy efficiency. Their work is supported by international third-party certified systems such as the ISO 14001 environmental management system and the ISO 50001 energy management system. For unit-specific information on certifications, see pages 69–71.

Detailed carbon reporting

We publicly report on our greenhouse gas emissions in three categories:

- Carbon dioxide equivalent (CO₂e) emissions from operations we directly own or control, including on-site energy generation facilities and our own processes, power boilers, lime kilns, and on-site vehicles (Scope 1).
- CO₂e emissions related to the electricity and heat we purchase externally for use in our operations (Scope 2).
- Estimated CO₂e emissions from other indirect sources along our value chain (Scope 3).

All our units report quarterly on carbon emissions for Scopes 1 and 2. A Group-level estimate for Scope 3 emissions is updated every second year. In 2020, a new assessment was made for Scope 3. Our carbon footprint accounting is based on guidelines provided by the Greenhouse Gas Protocol of the World Resource Institute ([WRI](https://www.wri.org/greenhouse-gas-protocol)) and the World Business Council for Sustainable Development ([WBCSD](https://www.wbcsd.org/)). In 2020, we continued to have the reporting of our direct and indirect fossil CO₂e emissions (Scopes 1 and 2) externally assured to a Reasonable Level. For more information, see page 72.

Reporting according to TCFD

The Financial Stability Board's (FSB) Task Force on Climate-related Financial Disclosures ([TCFD](https://www.tcfdd.org/)) recommends a framework for disclosing climate-related risks and opportunities that goes beyond current practices. Stora Enso published its first TCFD-aligned reporting in the Report of Board of Directors in 2019. During 2020, our work focused on a qualitative scenario assessment for physical climate-related risks and opportunities in the Nordic forests. For more information



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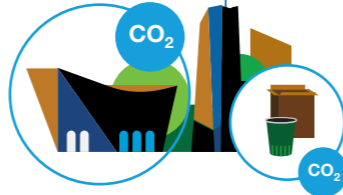
Stora Enso's annual estimated climate impact



Our forests remove carbon¹

-1.5

million tonnes of CO₂



Our products store carbon

-2.6

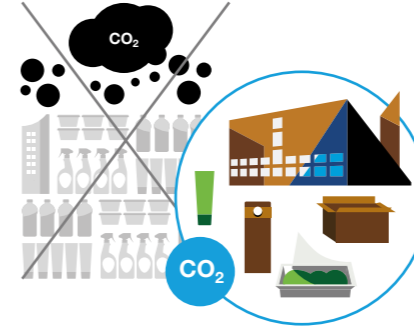
million tonnes of CO₂e



Our value chain emissions²

+10.5

million tonnes of CO₂e



Our products substitute fossil-based products, saving

-17.9

million tonnes of CO₂e



Climate impact³

-11.5

million tonnes of CO₂e

¹ Estimated net annual carbon sequestration in own and managed forests and plantations, which provide about 30% of our wood use. Excludes purchased wood. Third-party owned forests that provide Stora Enso's purchased wood are estimated to have an additional net carbon sequestration of -5 million tonnes of CO₂ annually.

² Fossil CO₂e emissions in 2019 including direct emissions from our operations, emissions from purchased energy as well as emissions from other sources along our value chain (Scope 1, 2, and 3). Calculated based on the guidance provided by the Greenhouse Gas Protocol.

³ Negative value indicates a net removal from atmosphere. Calculated by the Swedish University of Agricultural Sciences (SLU) in 2020 based on Stora Enso's production, forest and wood use, and emission figures in 2019: [Climate effects of a forestry company – including biogenic carbon fluxes and substitution effects](#).

on Stora Enso's reporting according to TCFD recommendations, see **Financials 2020**.

Improving our energy efficiency

Greenhouse gases emitted by our operations include carbon dioxide, methane, and nitrous oxide – with carbon dioxide being the most significant by far. The most effective ways to reduce our direct fossil CO₂ emissions are to further improve our energy efficiency, and to continue to increase our use of biomass fuels from residuals. Significant investments in recent years, particularly in multi-fuel boilers, have achieved large reductions in our fossil CO₂ intensity.

Calculating our climate impact

Growing trees absorb carbon dioxide from the atmosphere, and the carbon is stored in renewable, fiber-based products even through recycling.

Our products help our customers and society at large to reduce CO₂ emissions by providing low-carbon solutions to fossil-based alternatives. We cooperate with the Swedish University of Agricultural Sciences (SLU) to further develop the scientific methods for calculating climate impact. The research also takes into account how Stora Enso's products can substitute other greenhouse gas intensive materials and energy, such as plastics or concrete. In 2020, the SLU published a report on the climate impacts of a forest company. Read the SLU report [here](#). We continued to implement methodologies for calculating the quantities of carbon sequestered in forests and plantations owned and managed by Stora Enso and our associate companies. For more information, see page 50.

Stora Enso regularly carries out Life Cycle Assessments (LCAs) to understand and develop

the environmental footprints of products, including carbon footprints. The LCAs show great potential for renewable products in substituting fossil-based alternatives to cut CO₂ emissions. For example, our product-specific LCAs show that wood fiber-based lids made from **formed fiber** have a carbon footprint that is approximately 75% lower than lids made from alternative product materials, such as plastic or bagasse. Read more on page 58.

External recognition and partnerships to combat climate change

In February 2020, Stora Enso was top-ranked in greenhouse gas management for the third time in a row. The Transition Pathway Initiative (TPI) is an asset owner-led initiative supported by the Grantham Research Institute and London School of Economics. It evaluates and tracks the quality of a company's management of greenhouse gas

emissions and of risks and opportunities related to the low-carbon transition. It also evaluates how a company's future carbon performance would compare to the international targets and national pledges made under the Paris Agreement. In its assessment of how 18 of the largest paper producers globally are preparing for the transition to a low-carbon economy, TPI top-ranked Stora Enso in both management quality and carbon performance.

Stora Enso endorses the Corporate Leaders Group (CLG) policy statement on net-zero strategies. The CLG brings together European business leaders to accelerate progress towards a low-carbon, sustainable economy. In 2020, Stora Enso's CEO signed an open letter urging EU heads of state and the European Commission to support an emissions reduction target of at least 55% by 2030.



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Stora Enso collaborated in the WBCSD Food, Agriculture & Forest Products TCFD Preparer Forum publication titled Disclosure in a time of system transformation: Climate-related financial disclosure for food, agriculture and forest products companies.

Stora Enso is a member of the We Mean Business coalition. The coalition brings together non-profit organisations, businesses, and investors that recognise that transitioning to a low-carbon economy is the only way to secure sustainable economic growth.

As a partner of the World Green Building Council's European network, we supported the launch of the 'Bringing Embodied Carbon Upfront' report, with the vision of net zero embodied carbon for the construction industry.

Stora Enso is a member of the Climate Leadership Coalition. In 2020, we participated in the preparation of the pre-engagement study on industrial-scale Power-to-Fuel project.

Progress

Our science-based targets

In 2020, our CO₂e emissions per saleable tonne of board, pulp, and paper were 26% lower than the 2010 benchmark level (26% lower in 2019). The performance remained stable despite the Group's lower production in 2020 compared to 2019. During 2020, our performance was positively affected by the less fossil-intensive electricity purchased for our mills in Finland as well as energy efficiency improvements and further reductions of fossil fuel use at several mills.

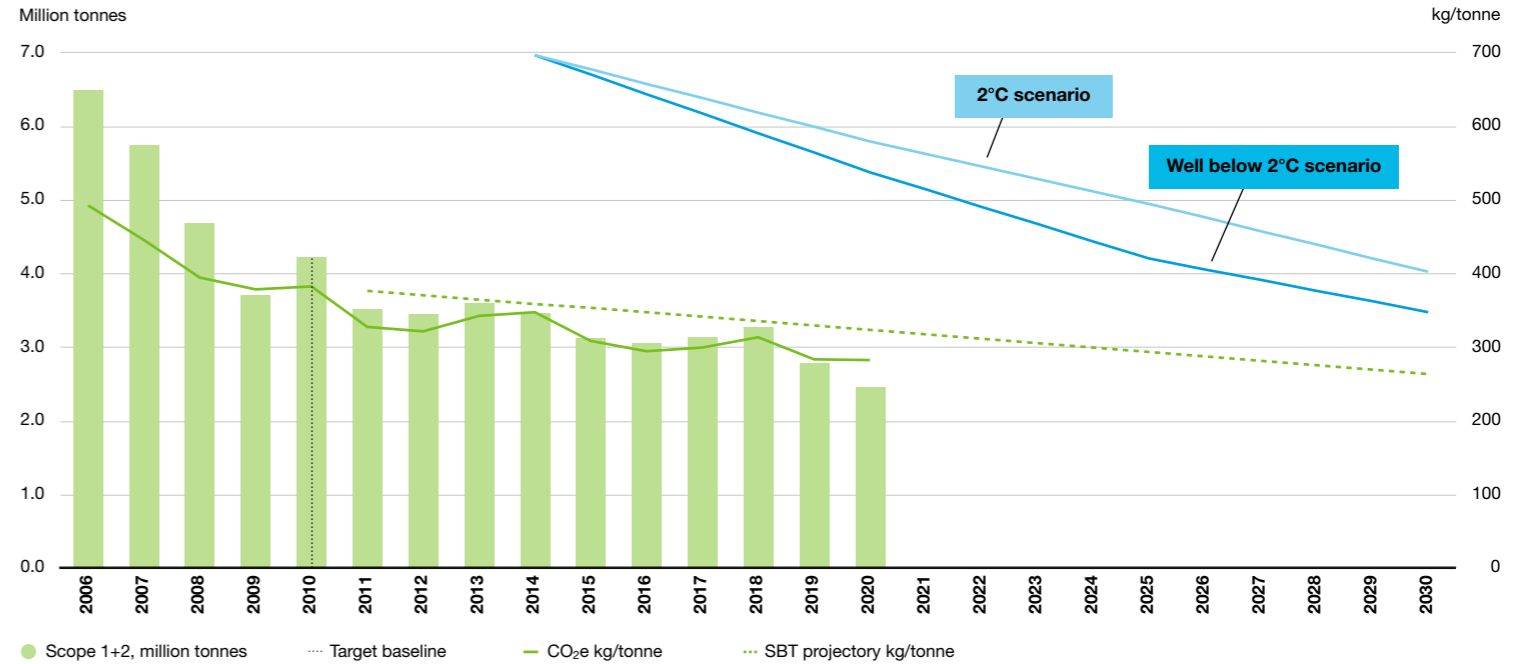
In absolute terms, our direct and indirect CO₂e emissions were 42% lower than in 2010. Direct CO₂e emissions were 23% lower than in 2010. The CO₂e emissions resulting from the generation of purchased electricity and heat during 2020 were 79% lower than in 2010.

The total direct and indirect CO₂e emissions from Stora Enso's board, pulp, and paper mills amounted to 2.45 million tonnes in 2020 (2.77 million tonnes in 2019).

In 2020, our Wood Products division signed a hydroelectric power contract for our units Alytus in Lithuania, Imavere and Nāpi in Estonia, and Launkalne in Latvia that will enable them to deliver products with close to zero carbon emissions from their operations. In addition to the purchase of renewable electricity, the mills produce their own heat based on renewable bioenergy.

Stora Enso's GHG performance^{1,3} and scenarios for the forest industry²

Greenhouse gas emissions (GHG) in relation to production



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 ⁴	2017	2018	2019	2020	Target 2030
Scope 1+2	6.5	5.75	4.69	3.70	4.22	3.53	3.45	3.59	3.46	3.12	3.05	3.14	3.27	2.77	2.45	
kg/tonne	493	446	395	379	383	328	322	343	348	309	295	300	314	284	283	264

¹ Covering direct and indirect emissions as fossil CO₂ 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. Includes trading of Guarantees of Origin of electricity.

² GHG reduction pathways for 2°C scenario and well below 2°C scenario as CO₂e kg/tonne, based on information from the Transition Pathway Initiative (TPI)* including scenarios data from the Energy Technology Perspectives report by the International Energy Agency.

³ Fossil CO₂e emissions data from our operations (scope 1+2) have been verified at reasonable assurance level since 2015 and calculated according to the GHG protocol. Historical figures recalculated due to additional data or organisation scope changes after the previous report. For more, see Reporting scope.

⁴ Since 2016 our CO₂e performance has been adversely affected by the coal-based energy generation at our Beihai Mill in China.
*Asset owner-led initiative supported by Grantham Research Institute and London School of Economics.
SBT = Science-based target

Stora Enso's carbon footprint 2016–2020¹

	Fossil CO ₂ equivalent (million tonnes) ³					Trend 16–20
	2016	2017	2018	2019	2020	
Scope 1: Direct emissions from our operations. ²	2.39	2.34	2.48	2.38	2.18	–9%
Scope 2: Emissions from purchased energy consumed in our operations. ²	0.77	0.90	0.89	0.49	0.34	–56%
Scope 3: Emissions from other sources along our value chain. ⁴	7.11	7.54	7.47	7.07	6.31	–11%
Total	10.27	10.78	10.85	9.94	8.83	–14%

¹ Covers all Stora Enso production units. Excluding joint operations. Includes the trading of Guarantees of Origin for electricity.

² Historical figures recalculated due to additional data or organisation scope changes after the previous report. For more, see Reporting scope.

³ The CO₂ factors we use for purchased energy (scope 2) largely follow the market-based methodology, which means that almost all our units apply CO₂ factors provided by their energy suppliers. When applying currently available location-based factors our scope 2 emissions for 2020 are 0.82 million tonnes of CO₂ equivalents (0.90 million tonnes in 2019).

⁴ Historical scope 3 emissions recalculated bi-annually against the most recent methodology in order to ensure comparability.



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More than 80% of the fuel used at Maxau Mill is biomass-based. A new steam turbine will further increase the potential of combined heat and power production at the mill.

At the end of 2020, 14 of Stora Enso's mills used harvesting and production process residuals to generate renewable energy and distributed it to local district heating systems (approximately 90%) and industrial partners (approximately 10%). In most cases, the heat supplied from our production units directly reduces the local use of oil and other fossil fuels. In 2020, a total of 0.9 TWh of heat (0.9 TWh in 2019) was sold to these district heating systems serving 12 (13) communities. Using this amount of renewable energy instead of, for example, light fuel oil for heating resulted in estimated emission reduction savings of 0.23 million tonnes of fossil CO₂ (0.23 million tonnes).

Investing in a low-carbon future

We strive to increase the proportion of biomass in our internal energy generation. In line with our policy to give preference to energy from low-

fossil carbon sources, Stora Enso has invested EUR 25 million to boost green energy generation at Maxau Mill in Germany. The project was completed during 2020 and is expected to save 50 000 tonnes of CO₂ emissions annually. In 2020, we announced that the excess heat from the Maxau Mill will also be used to provide renewable, biomass-based district heating for the city of Karlsruhe in south-west Germany.

Our Oulu Mill produces energy for its own use, for other operations located in the plant area and for the district heating network of the City of Oulu. Following the conversion, which was completed in January 2021, the plant will have the technical capability to produce all energy without fossil fuels. The share of peat in the fuel mix will also decrease from the current level. Switching to renewable fuels will significantly reduce the mill's fossil CO₂ emissions.

Case

Fossil-free production through climate-smart choices



Following decades of continuous sustainability work, our Fors Mill in Sweden has been fossil-carbon emission free in its electricity and steam production since 2017. This has been achieved by moving from fossil fuels, such as coal, oil, and gas, to biofuels. Today, the journey continues towards becoming the world's most resource efficient mill.

"We've come a long way, and today, sustainable production is at the core of our operations," says **Gunnar Sjöblom**, acting Mill Director at Fors Mill. "But the journey will not stop here. We must constantly look at what we can do to be part of the solution to climate change."

Read the full article at > storaenso.com



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Another important part of our work is our central energy efficiency investment fund. For more information, see page 40.

Investigating non-fossil fuel alternatives for Beihai Mill

At our Beihai Mill in Guangxi province, China, coal is currently the main energy source as there are inadequate sustainable supply chains for non-fossil fuels in the region at present. The mill has started to gradually move away from coal to biomass and other non-fossil fuels as its power boiler is technically able to use a variety of fuel mixes. In 2020, modest amounts of wastewater sludge, bark, and forest residuals were used in the boiler. Our midterm target is to increase the share of bio and waste-based fuels in the mill's energy generation to 50% of fuel energy.

Carbon neutral emissions

Carbon neutral CO₂ emissions are fossil-free emissions generated during the combustion of biomass-based fuels sourced from sustainably managed forests¹. These emissions are carbon neutral as the forests are regenerated and the new generation of trees absorbs CO₂ as it grows. When forests are sustainably managed, this cycle can continue indefinitely. Stora Enso's operations utilise renewable biomass fuels from forest and process residuals to a large extent, which means that the proportion of carbon neutral CO₂ emissions in our total emissions is high. In 2020, 82% (82%) of the total direct and indirect CO₂ emissions from our own operations were carbon neutral, originating from biomass fuels.

Our carbon footprint

Direct emissions from our operations account for 25% (24% in 2019) of our carbon footprint, while emissions related to the electricity and heat that we purchase for use in our operations account for 4% (5%) of our total carbon emissions.

In 2020, 82% of the total CO₂ emissions from our own operations were carbon neutral.

We estimate that 71% (71%) of the emissions in our carbon footprint are generated elsewhere along our value chain. The majority of our emissions are generated in the sourcing and manufacturing of our raw materials and services (27% of our total carbon footprint); in the further processing of our products by customers (28%); and in the transportation of raw materials to our mills and our final products to our customers (16%). To identify potential for further reducing our emissions in Scopes 1, 2, and 3, we have strengthened our internal steering processes in accordance with the actions agreed in our science-based targets.

Value chain emissions

The CO₂ emissions generated during the transportation of our raw materials and products, which is the most significant environmental impact associated with our logistical operations, are mainly produced by external service providers. Transportation accounts for 23% of all our Scope 3 CO₂ emissions.

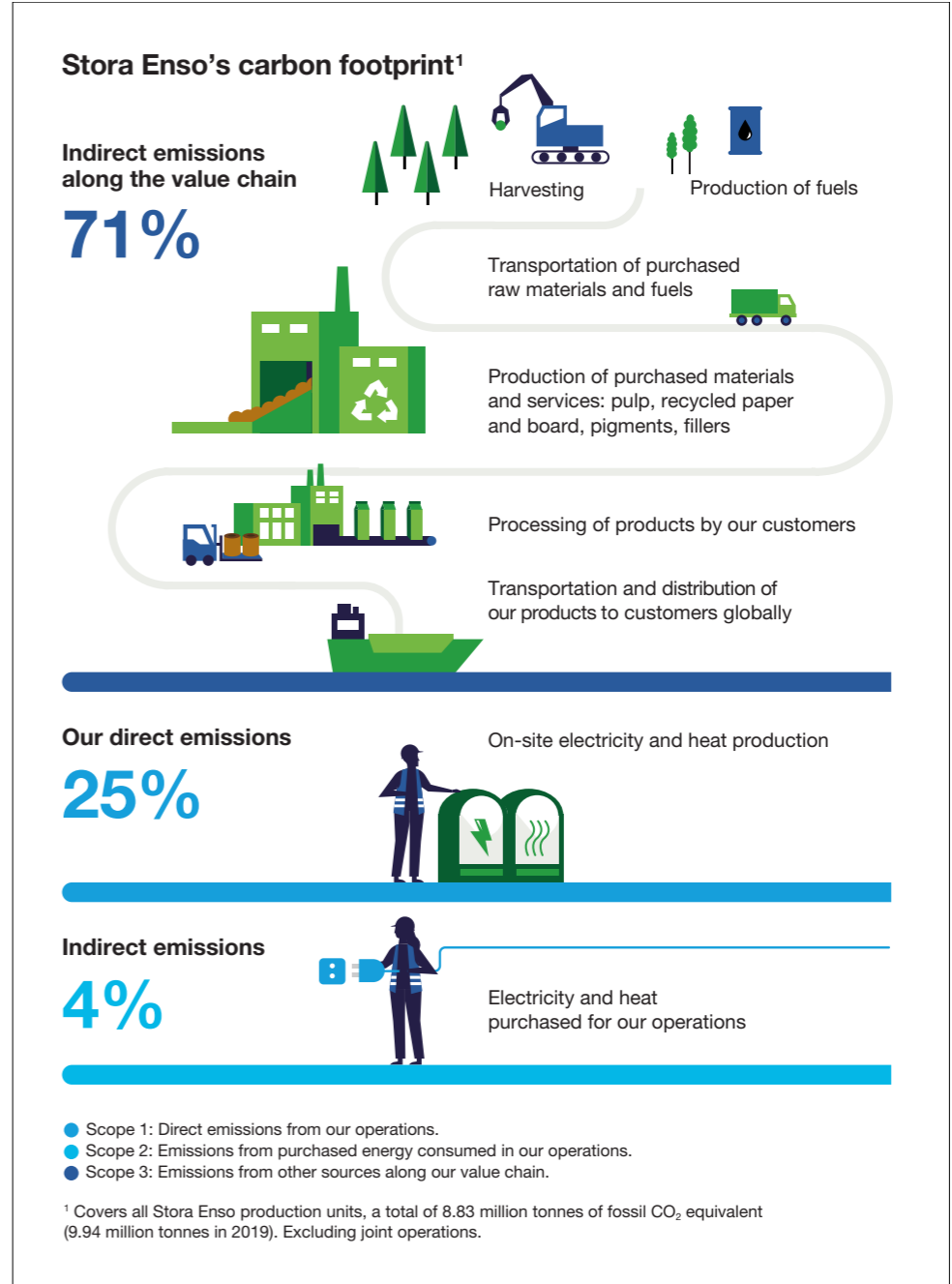
Sea transport accounts for approximately 89% of all our product transportation by weight and distance, while road and rail transportation account for 9% and 2% respectively.

Our commitment to science-based targets includes engagement targets for Scope 3. To reduce emissions in the value chain, Stora Enso commits to having 70% of its non-fiber raw material suppliers and downstream transportation suppliers in terms of spend set their own reduction targets by 2025, towards the aim of adopting science-based GHG reduction targets by 2030.

We use sustainability criteria in the tendering phase of our sourcing process and when collecting data on supplier performance. Since 2018, suppliers have been asked to respond to a set of questions about their CO₂ emissions. These criteria are part of every tender, regardless of previous contracts with the same supplier. For more information on how we work with our suppliers, see pages 60–63.

In addition, our target was to educate 100% of our customer-facing staff on the advantages of setting science-based targets by 2020. By the end of the year, 90% of our employees in the scope had completed the training, which will continue in 2021.

¹ Recommendations on Biomass Carbon Neutrality, WBCSD 2015.





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Sustainable forest management safeguards biodiversity and helps combat climate change.



Forest certification coverage for lands owned or managed by us

98%

Opportunities and challenges

Combatting climate change with forests

Forests and plantations are an increasingly important part of the wider global sustainable development agenda, particularly in relation to combatting climate change. As a renewable natural resource, wood represents a favourable alternative to fossil-based and other non-renewable materials. Growing trees absorb carbon dioxide (CO₂) from the atmosphere, and together with wood-based products act as carbon storage. The carbon remains in the fibers when trees are turned into products, and even through recycling. Sustainable forest management ensures that new generations of trees replace those that are harvested.

The role of forests in combatting climate change has been broadly recognised. The Intergovernmental Panel on Climate Change (IPCC) issued the [Climate Change and Land report](#) in 2019 that emphasised sustainable land management. The role of sustainable forest management is further emphasised in the EU Biodiversity strategy adopted in May 2020. It is also highlighted in the EU Forest Strategy Roadmap consultation from November 2020 that the forthcoming strategy will aim to ensure the sustainable management of all EU forests, maximising the provision of their multiple functions while enhancing their productive capacity. For Stora Enso, it is essential that any regional or national policy fully utilises the potential of sustainable renewable materials and supports the transition towards a circular economy.

Climate change entails physical challenges and opportunities for forests and plantations but also people, which highlights the importance of sustainable forestry as one of the solutions to climate change. Changing patterns of temperature, wind, and rainfall impact our operational environment. Well-managed forests and plantations can make ecosystems more resilient to negative impacts, and even benefit from the positive effects. Growing trees absorb CO₂. Forest health and growth must be ensured by managing forests sustainably throughout the forest life cycle.

Using forests or land for tree plantations may impact the human rights of forestry workers and local communities. Maintaining a good dialogue



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with local communities helps to ensure that their rights to, for example, property, self-determination, and cultural activities, are respected.

Global challenges such as population growth, the increasing demand for agricultural land, and the widening gap between the supply and demand for wood, require us to use natural resources even more efficiently, and to produce more raw materials from less land.

Our policies

Committed to sustainable wood and fiber sourcing

Stora Enso's policy on Wood and Fiber Sourcing, and Land Management covers the entire cycle of forest and tree plantation management. The policy requires sustainable forest management through responsible sourcing and land use – to safeguard the health and ecological functions of ecosystems and to help conserve biodiversity, soil, and water resources. To achieve this, we maintain an open dialogue with our stakeholders.

Other relevant policies that promote sustainable forestry include our:

- Environmental Guidelines – a more comprehensive overview of our policy objectives and how we work to achieve them.
- The Stora Enso Code – our code of conduct.
- Supplier Code of Conduct – our requirements for suppliers.

How we work

Ensuring the sustainability of fiber

Stora Enso's approach to responsible forest and tree plantation management is based on the economic, social, and environmental aspects of sustainability. Compliance with national legislation and regulatory obligations is only the starting point for our work. We actively support and implement voluntary forest conservation and restoration measures on lands owned, leased, and managed by Stora Enso, and in other areas where we purchase wood.

Stora Enso continued its cooperation with the World Wildlife Fund for Nature (WWF) in several countries in 2020. Initiatives included the New Generation Plantations (NGP) platform, which focuses on the institutional and technological aspects of responsible plantation management.

We are active members in numerous local and global forestry associations, networks,



Veracel is the first tree plantation company in Brazil to receive FSC recognition for preserving and responsibly managing ecosystem services.

and programmes. Stora Enso has been a member of the Forest Solutions Group (FSG) of the World Business Council for Sustainable Development (WBCSD) since the late 1990s and has co-chaired it since 2018. During 2020, we actively participated in the preparation of the Forest Sector SDG Roadmap Implementation Impact Report. We also continued to support and participate in The Forests Dialogue (TFD). The TFD is a 20-year-old platform for multi-stakeholder discussion and collaboration that has worked on the most pressing local and global issues facing forests and people for two decades.

In 2020, Stora Enso joined the Business for Nature call to action in the lead-up to the United Nations conference on biodiversity.

Stora Enso and the Forest Stewardship Council (FSC) have an international partnership agreement to establish a long-term strategic collaboration to develop and promote sustainable forestry. During 2020, the focus was on expanding FSC group certification among private forest owners in Finland, where forest owners are

increasingly interested in forest certification. Stora Enso promotes all main forest certification systems and is committed to the responsible sourcing of wood and fiber from only sustainably managed forests and tree plantations.

To strengthen the development of sustainable forestry, Stora Enso has established a long-term cooperation with the Swedish University of Agricultural Sciences (SLU). The main goal of the collaboration is to jointly pursue research projects to develop new knowledge within sustainable forestry. The activities focus on research projects formulated in four integrated collaboration areas: forest management for increased growth, forest management for increased biodiversity, remote sensing technology, and life cycle analysis. The collaboration will further strengthen the information exchange and competence development of Stora Enso and SLU staff.

Strategic approach to forests

To cover all aspects of sustainability in our forest and plantation management, we apply the same

Growing forests sequester CO₂

comprehensive wood procurement process in all our operating regions. Our own forests and long-term lease agreements secure a sustainable and transparent wood supply.

The Forest division's wood supply operations in Finland, Sweden, Baltics, and Russia cover the entire management cycle in forests – from planning to harvesting, logistics, and forest regeneration. The flexible utilisation of different wood sources is key in an efficient and reliable wood supply. We always make sure a new generation of trees replaces those that are harvested.

We use long-term planning to ensure our forest operations are preparing and adapting to the changing climate conditions. Stora Enso evaluates the risks and opportunities related to climate change and forest and land use through the annual Enterprise Risk Management (ERM) process, which forms an integral part of the Group's management approach (for more information, see **Financials 2020**).

Increased ambition for forest sustainability

In 2020, Stora Enso developed a new ambitious Forest Sustainability Strategy, building on the Group sustainability agenda. The strategy focuses on four areas: Carbon, Biodiversity, Land use, and Communities.

In *Carbon*, the strategic focus is on enabling the provision of superior climate benefits for Stora Enso's end-customers. The primary development areas are forest carbon sequestration potential and the reduction of value chain emissions in forestry operations. As growing forests absorb CO₂, our focus is on the positive substitution effect enabled by our products rather than maximising the carbon sink in productive forests. Stora Enso has carried out extensive research with SLU on the carbon balance in the value chain from forest to end-products.

In *Biodiversity*, our long-term strategic focus is to measure biodiversity holistically to be able to optimise wood production and biodiversity in our forests and tree plantations. We collaborate with SLU to develop indicators for measuring and monitoring the biodiversity impacts of our operations and create new methods to enhance



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Precision forestry using drone monitoring and artificial intelligence offers new opportunities to monitor forests and to increase their value for forest owners.

selected aspects of biodiversity in our forest management and wood procurement operations.

In *Land-use*, the strategic focus is on safeguarding ecosystem functions and optimising societal benefits. Stora Enso forest operations have a significant socio-economic contribution to rural communities. We aim to strengthen cooperation with local stakeholders and explore different land use options, such as wind farms and the use of forests for recreation.

In *Communities*, the strategic focus is on maintaining the prosperity and resilience of communities close to Stora Enso's operations – now and for future generations. Read more about our work with communities on pages 23–27.

Responsible forestry

Stora Enso's wood comes from three sources: company-owned forests, company-owned tree plantations, and third-party suppliers. In 2020, 87% (87%) of Stora Enso's wood came from managed semi-natural forests in Europe, most of which are privately owned. We work together with forest owners to identify sensitive forest

areas in need of protection. Our experts are trained to identify such areas and we regularly consult the authorities on these matters. Forest planning involves finding ways to optimise wood production and conservation.

In 2020, 13% of Stora Enso's wood came from tree plantations (13%). When establishing new plantations, we use internationally approved principles and forest certification standards. Our commercial plantations are also certified to ensure that all aspects of sustainability are taken into consideration. Stora Enso never establishes plantations in natural forests, protected areas, or water-sensitive locations. We only use land with low biodiversity value, such as former pastureland. Stora Enso's employees and forestry contractors are given on-the-job training in ecological management, and we regularly monitor the impacts of our operations on biodiversity, soil, and water resources.

As we recognise that our plantations are an integral part of local land use, we evaluate and define sustainable land use practices specifically for each location. After determining the scope

of expected impacts and possible remedies, we decide whether or not to proceed with a proposed project. Stora Enso subsequently remains in constant dialogue with stakeholders and strives to ensure that land contracts are legitimate and fair. For more information about human rights in land acquisition and management, see pages 12–16.

Forest regeneration

Sustainable forest management ensures that a new generation of trees replaces the harvested ones. We ensure that forests are regenerated and remain healthy also in the future. This is normally done through active planting or sowing, although in some areas active regeneration is complemented by natural seed dispersal, leaving seed trees standing in the harvesting area, or coppicing. In 2020, approximately 62 million tree seedlings were planted by Stora Enso.

In Sweden, where Stora Enso owns approximately 1.4 million hectares of forest, seedlings for regeneration sites are delivered from three Stora Enso-owned nurseries in central Sweden.

Protecting biodiversity

Sustainable forest management safeguards forest health and productivity and protects biodiversity – while securing the long-term availability of our renewable resources. This is why we closely monitor the management of the forests and plantations from which we source wood. Wood harvesting is planned to suit the particular characteristics of each harvesting site, making use of appropriate harvesting methods and technologies. Harvesting volumes are aligned with the long-term carrying capacity of particular forests and plantations.

In northern managed semi-natural forests, biodiversity is maintained and enhanced in both wood production and set-aside areas. As trees take many years or decades to mature, long-term forestry planning is essential. This involves ecological landscape plans and biodiversity assessments to identify, conserve, and restore vital ecosystems and ecological features. For examples on how we implement biodiversity management practices in northern forests and tree plantations, see page 54.

Stora Enso also cooperates with WWF Finland to promote the conservation and sustainable use of forests. This work includes promoting

Interview

New standards for biodiversity



Stora Enso wants to be a leader in biodiversity. "We want to set new standards and become thought leaders in this area. That takes time of course, but we want to invest in it. We continuously develop our methodology, increase our efficiency and make everyday considerations through adapted forest management," says **Johan Lindman**, SVP Global Forestry and Sustainability. "This may include setting aside areas of the forest to stimulate biodiversity, and in general, always managing the forest with biodiversity in mind." Learn more about the new forest sustainability strategy in our interview with Johan Lindman.

Read the full article at storaenso.com

alternative harvesting practices among private forest owners.

In fast growing tree plantations, the landscape typically consists of a mosaic of areas for both intensive wood production and biodiversity conservation.

In Brazil, our joint operation Veracel goes beyond regeneration by conserving and restoring areas of natural Atlantic Rainforest. All Veracel's tree plantations were established on degraded pasture lands, and no rainforest has been converted into plantations. When Veracel's

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plantations were established in 1991, less than 7% of the original Atlantic rainforest was left in the region following extensive logging and clearing for cattle ranching between the 1950s and 1980s. Since the plantations were established, Veracel has worked systematically to protect and restore local biodiversity.

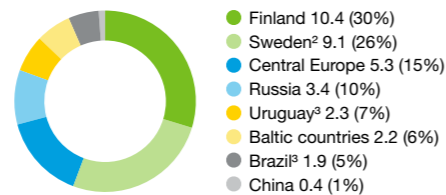
Approximately half of Veracel's 213 000 hectares of land are dedicated to rainforest preservation and restoration. Veracel aims to restore approximately 400 hectares of rainforest habitat every year by planting native species. In total, 7 200 hectares of forest have been restored between 1994 and the end of 2020. This work is part of a regional restoration programme that helps connect the remaining areas of valuable natural habitat to each other with forest corridors that enable wildlife to move more freely from one area to another. Veracel's significant contribution to the conservation of natural Atlantic rainforest and its rich biodiversity has been recognised by both the Brazilian authorities and international stakeholders.

The Veracel Station visitor centre, established in an area of preserved rainforest habitat, conducts research, conserves native and endangered ecosystems, and raises environmental awareness among visitors. Since 2015, the visitor centre has also developed ecotourism, with a special focus on birdwatching. Veracel Station typically hosts 4 000–6 000 visitors annually.

Veracel is the first tree plantation company in Brazil to receive FSC recognition for preserving and responsibly managing ecosystem services.

Wood procurement by region¹

35.0 million m³



¹ Total amounts of wood (roundwood and chips) procured within these regions for delivery to our mills (million m³, solid under bark). Excluding internal wood chip deliveries.

² Including wood procured from Norway.

³ Figures for Brazil and Uruguay include 50% of the wood procurement of our joint operations Veracel and Montes del Plata.

Case

Safeguarding biodiversity in Uruguay



Protecting the environment and biodiversity is a top priority for Montes del Plata, our 50/50 joint operation in Uruguay. Montes del Plata owns 190 000 hectares and leases 79 000 hectares of land, of which approximately 65% is planted with eucalyptus trees. The remaining is reserved for purposes such as cattle grazing and the conservation of native forests and special ecosystems.

Some of the actions taken by Montes del Plata to safeguard biodiversity over the years

include preserving local species, promoting beekeeping on company land, and educating the public at its environmental centre Bioparque M'Bopicuá. Bioparque M'Bopicuá has also released into the wild a population of collared peccaries (Pecari tajacu), a mammal species extinct in the wild in Uruguay.

Read the full article at [▶ storaenso.com](#)

In Uruguay, our joint operation Montes del Plata continued its cooperation with NGO Aves Uruguay in 2020. For more information, see page 27.

Promoting sustainable forestry management through forest certification

All roundwood, chips, sawdust, and externally purchased pulp supplied to our mills come from sustainable sources. We use a range of tools to ensure this, and to guarantee the sustainability of each part of the forest management cycle. These tools include forest certification and third-party traceability systems such as the Forest Stewardship Council's (FSC) Chain of Custody/ Controlled Wood scheme, the Chain of Custody/ Due Diligence System of the Programme for the Endorsement of Forest Certification (PEFC),

and the ISO 14001 environmental management system. In addition, our Supplier Code of Conduct complements these tools by imposing strict contractual requirements on our suppliers.

We work actively with our stakeholders to promote sustainable forest management and the wider use of certification systems. As certification programmes cover all three aspects of sustainability (environmental, social, and economic), they are an important indicator of responsible forestry. We often work beyond certification requirements, for example with larger conservation areas, significant community investments, and by promoting societal benefits from land use.

We regularly audit our suppliers and work together with respected local institutions to ensure

everything is done according to the standards set by certification schemes and our own policies.

Improving forest growth

Stora Enso continuously works towards the long-term goal of improving the productivity and quality of company forests and tree plantations to sustainably enhance wood production per unit of land. Improved productivity and high-quality raw material help to maximise climate benefits by substituting fossil-based products. Tree breeding primarily targets increased biomass production (i.e. volume and density) and cellulose yield. Other objectives might include improved rooting or resistance to frost, drought, pests, or diseases, depending on local conditions and the species in question. We test and apply modern scientific tools for tree improvement and the management of genetic diversity in tree plantations. This may involve selecting 'elite trees' or conducting marker-assisted breeding and genetic engineering.

Our genetic engineering activities are in the research phase. As with traditional clone improvements, it will take many years to develop genetically engineered clones for commercial use. During 2020, we continued the process to establish field trials in areas totalling less than five hectares in Brazil. These trials fully comply with relevant national regulations. Stora Enso will not carry out any trials considered by the authorities to be unsafe or otherwise not permitted. We currently have no plans to plant genetically engineered trees in any of our commercial plantations.

Progress

Wood from sustainable sources

At the end of 2020, Stora Enso owned or managed lands covering a total area of 2.34¹ million hectares (2.35 million hectares in 2019). The majority of Stora Enso's owned or managed lands are located in Sweden. For more details, see the tables on page 53. We follow our progress in responsible forestry with a key performance indicator (KPI) that measures the proportion of land in wood production and harvesting owned or managed by Stora Enso that is covered by forest certification schemes. Our target is to maintain the high level of 96%. In 2020, coverage amounted to 98%¹ (98% in 2019).

¹ Including 100% of lands managed by joint operations Veracel and Montes del Plata. Excluding Tornator.



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The proportion of third-party certified wood in our total wood supply was 78% in 2020 (75% in 2019). We know the origin of all the wood we use and 100% comes from sustainable sources.

In 2020, the total amount of wood (including roundwood, wood chips, and sawdust) delivered to our mills was 35.0 million m³ (solid under bark) (36.3 million m³ in 2019).

In Russia, we continued to work with WWF. During the year, with Stora Enso's support, WWF Russia organised training related to the social aspects of forestry. At the end of the year, the total area covered by group forestry certifications in Russia was 1.3 million hectares (1.3 million hectares in 2019). Our Russian subsidiaries have been FSC certified since 2006, and the

lands managed by Stora Enso in Russia through long-term harvesting rights are included in the total certified area. For further details, see the table below. We also continued our support for the Boreal Forest Platform, a stakeholder forum organised by WWF Russia.

In Finland, Stora Enso offers FSC forest certification services to private forest owners. In 2020, the number of members in Stora Enso Wood Supply Finland's FSC group grew to 415 private forest owners (285 in 2019), corresponding to 79 000 hectares (over 54 000 hectares at the end of 2019).

Since 2011, Veracel has promoted group certification among its tree farmers in Brazil. Aspx, an association representing certified tree

farms, manages the certification process by using certificates granted by both FSC and Cerflor (PEFC). By the end of 2020, dual forest certificates had been obtained by 76 farmers (75 at the end of 2019) for areas totalling 38 000 hectares (38 000), including 16 000 hectares (16 000) planted with eucalyptus.

Stakeholder concerns and dialogues

Stora Enso recognises that the areas where we operate are of value to different stakeholders. We have therefore adopted an integrated approach to land use around our plantations. This includes applied innovative land use models in Uruguay and Brazil to benefit local farmers and communities as well as the company. For more information on these integrated land use practices, see pages 26–27.

In 2020, sustainable forestry was a stakeholder interest as environmental NGOs were widely calling for increased forest protection. In our stakeholder communications during the year, we stressed our commitment to sustainable forest management, forest certification, wood traceability, biodiversity conservation, and open stakeholder dialogues, and that we always ensure that all the wood we use comes from sustainably managed sources. We believe that the most sustainable way to protect high conservation value is through national and regional multi-stakeholder processes. During the year, Stora Enso engaged in regular dialogues with NGOs and other stakeholders. We also encouraged our business partners and NGOs to participate in such engagements.

Forests, plantations, and land owned by Stora Enso¹ as of 31 December 2020

Unit	Area	Certification coverage	Details of local landscapes and protected areas
Swedish forest holdings	1 394 000 ha, of which 1 145 000 productive forest land	PEFC and FSC for 1 394 000 ha	Protected areas amount to 416 000 ha and consist of productive or non-productive land which has been set-aside from wood production and infrastructure development either voluntarily or by legal requirements.
Wood Supply, Estonia	140 ha, of which 120 ha productive forest land		No protected areas within this area.
Montes del Plata plantations and lands, Uruguay (joint operation with Arauco)	190 000 ha, of which 109 000 ha planted	PEFC and FSC for 190 000 ha	Protected areas amount to 11 000 ha and consist of remnants of native ecosystems, such as grasslands and riparian forests, within the company's lands. Local landscape consists mainly of pasturelands and agricultural fields.
Veracel plantations and lands, Bahia, Brazil (joint operation with Suzano)	213 000 ha, of which 82 000 ha planted for pulp production	CERFLOR (PEFC) for 189 000 ha; FSC for 189 000 ha	Protected areas amount to 107 000 ha, including a 6 000 ha Private Natural Heritage Reserve, and mostly consist of native forest remnants at different stages of regeneration. Local landscape consists of pasturelands and agricultural fields cleared from Atlantic rainforest between the 1950s and 1980s.

¹ Including operations where Stora Enso's shareholding is at least 50% and size of the area exceeds 100 hectares. In addition to the forest and plantation areas listed above, Stora Enso owns 41% of Tornator, which owns 0.6 million hectares of forestland in Finland, 68 000 hectares in Estonia, and 12 000 hectares in Romania.

Forests and plantations managed by Stora Enso¹ as of 31 December 2020

Unit	Area	Certification coverage	Details of local landscapes and protected areas
Wood Supply, Russia ²	370 000 ha, of which 334 000 ha productive forest land	FSC group certificate 370 000 ha	Protected areas amount to 18 000 ha and consist of productive or non-productive land that has been set aside from wood production and infrastructure development either voluntarily or by legal requirements.
Plantations and lands, Guangxi, China	81 000 ha, of which 74 000 ha planted	Chinese Forest Certification Council certificate (PEFC) for 81 000 ha; FSC for 81 000 ha	Protected areas amount to 3 000 ha and consist of buffer zones and other important areas for the protection of watersheds and native flora and fauna. No pristine ecosystems are found in the leased lands. Local mosaic landscape includes agricultural crop fields, forest plantations, and settlements.
Montes del Plata	79 000 ha, of which 68 000 ha planted	PEFC and FSC for 69 000 ha	No protected areas managed by Stora Enso as they are excluded from lease agreements.
Veracel	11 000 ha, of which 5 000 ha planted	CERFLOR (PEFC) for 9 000 ha; FSC for 9 000 ha	Protected areas amount to 4 000 ha and consist of native forest remnants at different stages of regeneration.
Trial plantations, Laos	4 000 ha, of which 3 000 ha planted	FSC for 4 000 ha	Protected areas amount to 600 ha and mainly consist of traditionally protected remnants of native forests. The plantations are located within a mosaic of intensive shifting cultivation lands and protected areas. One Stora Enso's plantation area is located close to a National Biodiversity Conservation Area. The majority of the total area is covered by agroforestry production schemes.

¹ Areas managed through leasing or long-term harvesting rights. Including operations where Stora Enso's shareholding is at least 50% and the size of the area exceeds 100 hectares.

² Long-term harvesting right.



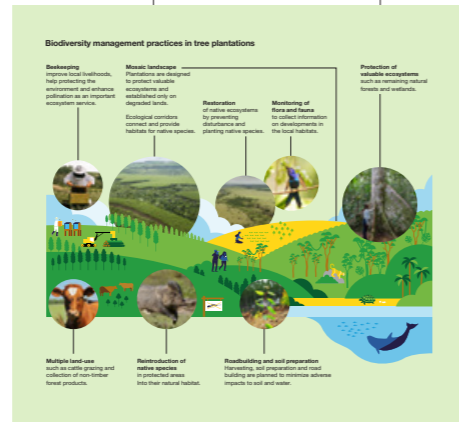
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Protecting biodiversity

We ensure that forests grow more than they are harvested, and that biodiversity is an integral part of everyday forest management.



See the full infographic Biodiversity in tree plantations [here](#).

Read more at storaenso.com/biodiversity

Biodiversity management practices in Northern forests

Decaying wood

Decaying wood provides an important habitat for a wide variety of forest species.

Retention trees

Provide continuum of decaying wood for forest species, such as birds who need it for nesting.

Forest structure

Variation in forest structure helps to maintain species and habitat diversity.

High stumps

During harvesting, we make artificial snags to increase the amount of deadwood.

Protection of valuable sites

In forest management planning, we identify and protect ecologically and culturally valuable sites.



Controlled burning

Creates suitable habitats for many fire-dependent species and enhances forest regeneration.

Soil and water protection

Harvesting, soil preparation and road building are planned to minimize adverse impacts to soil and water.

Buffer zones

Protect watercourses, connect and provide habitats for forest species and improve visual quality of the managed landscape.



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Economic agenda

Our renewable products meet consumer demand for more eco-friendly, circular solutions.

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Customers

We provide our customers with renewable solutions and innovations to replace non-renewable materials.

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30
of our production units were registered in Sedex

Opportunities and challenges

Increasing demand for sustainable solutions

Among the global megatrends impacting societies, markets, and businesses, climate change is one of our greatest challenges. Consumers, legislators, companies, and financial institutions are increasingly focusing on raw materials, CO₂ emissions, circularity, and waste reduction. Moreover, governments around the world are increasingly regulating the use of fossil-based materials, such as plastics.

The European Commission (EC) has adopted a Circular Economy Action Plan that will drive legislative reviews in the areas of sustainable product policy, circularity, and waste reduction. The EC Circular Economy Package, including the EU directive on single use plastics, creates a need for new innovations and provides business opportunities for Stora Enso.

Substituting fossil based and other non-renewable materials with wood fiber can also make a significant contribution¹ to the EU's targets for greenhouse gas emissions. Our massive wood elements for buildings are examples of solutions that store carbon and have a smaller carbon footprint than non-renewable alternatives.

The global and European policy developments, such as climate policies, emissions reduction targets, and circular economy and healthy living requirements set our pathway to the future. In the long term, we believe societies will increasingly choose to replace fossil-based and other non-renewable materials with renewable solutions, such as those offered by Stora Enso.

Our policies

Driven by our values

The Stora Enso Code constitutes a single set of values for all our employees. It explains our approach to ethical business practices, human and labour rights, and environmental values. These values are applied wherever we operate and in all customer relations.

¹ Material economics



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The pandemic has changed our buying behaviour and e-commerce is growing in specific areas, such as food.

In 2020, Stora Enso published its [Circular Design Guidelines](#). These principles will serve as guidance for all our units, functions, and divisions, whether they are planning to create new processes and products or to update existing ones. During the year, the Packaging Materials division published a [Circular Design Guide for Packaging](#) that focuses on designing for recyclability.

How we work

Value from customer engagement

Our expertise in renewable materials and products with high sustainability performance helps us meet the needs of our current and future customers. Our divisions have specific focus areas and products that cater to a broad range of customers. Their product portfolios include various boards for packaging and printing, several pulp grades, wood products for construction, biocomposites, energy pellets, paper products made from virgin and recycled fiber, lignin, formed fiber, and intelligent packaging. We foresee many possibilities for bio-based chemicals, bio-barriers,

lignin, and biocomposites to meet industry and consumer demands for solutions that can replace fossil-based materials.

Stora Enso promotes and participates in successful recycling schemes, particularly for paper and board. We also sell and reuse a variety of valuable by-products and residuals from our production processes. For more information, see page 36.

We actively work with our customers to improve material efficiency and reduce the environmental impact of our products and related processes through, for example, circular programmes and life cycle analyses.

We work with the World Green Building Council (WorldGBC) to help realise the global vision of achieving 40% less CO₂ emissions from building materials by 2030, and no net CO₂ emissions from building materials by 2050. To make this possible and to enable our customers to assess the impact of their buildings over the full life cycle, we develop Environmental Product Declarations (EPD) for all our building products. Read more about our EPDs on page 58. Furthermore, Stora Enso is co-chair

of the Business Case for Circular Buildings project, which is a collaboration between the WorldGBC and the World Business Council for Sustainable Development (WBCSD). The project aims to quantitatively and, where not possible, qualitatively articulate the business case for circular solutions in buildings.

We also share our sustainability expertise with customers. In 2020, our Paper Division introduced its new [“Sustainability Page and Hub”](#). The website contains information on the division's sustainable offerings and a hub where customers and other stakeholders can log in to download comprehensive information, such as FSC, PEFC, ISO, and Ecolabel certificates, Paper Profiles, Carbon Footprint Fact Sheets, and REACH declarations. In addition, our Wood Products division introduced a new sustainability [webpage](#), including document libraries for certifications and declarations.

We systematically measure customer satisfaction. In 2020, our Net Promoter Score, which measures the willingness of our customers to recommend our products and services to others, was 59% (56% in 2019).

In 2020, Stora Enso published its Circular Design Guidelines.

Safety and sustainability certifications

Ensuring the safety of all our products is essential in everything we do in order to safeguard the environment as well as the health and safety of our employees, customers, and end-users. Our in-house product safety and quality control systems cover product development, raw material sourcing, and the manufacturing and delivery of products. We require that our suppliers comply with our product safety requirements.

Statements from the US Centers for Disease Control and Prevention (CDC) and other medical institution confirm that there is currently no evidence to support the transmission of the Covid-19 virus associated with goods that are shipped over a period of days. Our logistics service providers are following local and national disease prevention and control guidelines in their operations.

Our products covered by specific safety regulations include food contact materials, materials for toys, packaging for pharmaceuticals, personal care and hygiene products, and construction materials. Our units producing these sensitive materials follow Good Manufacturing Practices, which are a set of widely recognised guidelines incorporated into EU regulations. In addition to following Good Manufacturing Practices, most Packaging Solutions Mills and all except two of our Packaging Materials Mills are certified according to recognised hygiene management standards. The remaining two mills in Packaging Material Division, Ostroleka Mill and Oulu Containerboard Mill, will be certified during the first half of 2021. Food safety compliance for essential raw materials is also verified with our suppliers prior to any purchasing decision. We provide our customers with information on product hygiene and safety aspects through compliance declarations.

We also follow legislation designed to protect human health and the environment. These include the EU's regulation for chemicals (REACH), Biocidal Products, the Classification, Labelling, and Packaging Regulation, as well as relevant food contact legislation and demands concerning food safety. When producing food contact materials, we only use chemicals that have been specifically approved for this purpose, after evaluating their safety and legal compliance. Our divisions have Product Safety Networks in place, and all our mills work to ensure that their products meet the relevant safety requirements. The ISO 22000, FSSC 22000, and FDA product safety certificates issued to many of our units further ensure that we apply a systematic approach to food safety issues.

ISO 9001, ISO 14001, ISO 50001, and ISO 45001 certified systems help our units to identify and meet customer requirements and to systematically improve product quality, environmental, energy, and occupational safety management. Many of our wood products are also CE marked to guarantee that they comply with the relevant EU legislation.

Many Stora Enso products are sold as FSC or PEFC certified or with other verification for responsible chain-of-custody and due diligence. These tools validate that the wood used in our products comes from responsibly managed sources, and that the entire journey of the raw material – from forest to end-user – has been

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verified by a third party. In 2020, our Biomaterials division began a collaboration with FSC and PEFC to include lignin in a chain-of-custody certification.

Our DuraSense® Eco PP, a biocomposite product that is based on renewable wood fibers, has numerous sustainability and safety features. Eco PP is available as FSC and PEFC certified and includes polypropylene that is based on bio-based materials that do not compete with food crops and are palm oil free. The product is also certified according to ISCC Plus (International Sustainability and Carbon Certification) and is approved for products that are in contact with food (European food contact approval, US Food and Drug Administration pending).

For more information about our responsible forestry and forest certification work, see pages 49–54. For unit-specific information on certificates, see pages 69–71.

Life cycle assessments and ecolabels

We collect product-specific life cycle inventory (LCI) data, which is typically used in Life Cycle Assessments (LCAs) conducted by our own experts, our customers, or brand owners, often in collaboration with academia, expert organisations, or industry associations.

During the year, the Wood Products division completed a set of EPDs (Environmental Product Declaration), which are publicly available for its entire product range, from classic sawn timber to engineered wood products, such as CLT (Cross Laminated Timber) and LVL (Laminated Veneer Lumber). These EPDs offer transparent, third-party verified information about the environmental performance of a product throughout its life cycle and are in line with relevant ISO and EN standards. EPDs provide important information to our customers when assessing the life cycle impacts of their projects, further processed products, or entire buildings. We are also able to support our customers in their own product LCAs. EPDs provide an important resource for customers that wish to apply for building certification schemes or ecolabels for their products.

In 2020, our Packaging Solutions division published an LCA on formed fiber which is produced at our Hylte Mill in Sweden. The LCA study focused on a coffee cup lid and a food bowl made of formed fiber, comparing them to the same products made from bagasse pulp, polystyrene, and Recycled Polyethylene Terephthalate (RPET). According to the LCA,



We drive the sustainable construction market through CO₂ efficient building solutions.

We are one of the founding companies of 4evergreen, a European circular economy platform.

formed fiber is the most low-carbon material choice on the market. The PureFiber™ product line contains no plastic or per- and polyfluoroalkyl substances (PFAS) and enables an approximately 75% smaller CO₂ footprint compared to alternative packaging materials, such as plastic or bagasse. In 2020, we also announced investments in more formed fiber capacity at Hylte Mill as well as our Qian'an Mill in China.

More than 90% of our Paper division's own brands are covered by one or more recognised ecolabel, including the EU Ecolabel, the Nordic

Ecolabel, and the German Blue Angel (Blauer Engel). Many of our graphical board brands are also available as EU Ecolabel certified. Ecolabel criteria cover the entire life cycle of a product, from the extraction of raw materials to production, product use, and disposal. The Blue Angel ecolabel criteria for graphic and recycled paper were revised in 2020, setting stricter requirements for elements such as discharges to water.

The environmental performance of our paper and board products is in line with the voluntary Paper Profile initiative. Paper Profile declarations have been calculated for all our paper and containerboard products and all main paperboard products.

Progress

Sustainability through co-creation

Customer needs play an important role when we develop products, services, and processes. We identify these needs by exchanging expertise with our customers on various sustainability topics.

We support our customers to meet consumer demand for sustainable products. For example, in 2020, we started a co-branding cooperation with Hakle, a German tissue products producer. Hakle's packaging includes a URL that links to Stora Enso's sustainable pulp website informing consumers about the origin of the pulp in these products as well as on sustainable forest management.

Advancing the circular bioeconomy

As the renewable materials company, Stora Enso operates at the heart of the circular bioeconomy. With our expertise, we can help customers achieve their circularity and renewability ambitions.

Stora Enso has been one of the lead companies behind the 4evergreen alliance – a European circular economy platform launched in 2019 that focuses on fiber-based packaging. The aim is to drive the recycling of fiber-based packaging and collaboration in circular design and materials to enable positive change in the circular economy.

Our Packaging Materials division also works with the Paper Cup Alliance to actively facilitate the recycling of paper cups in the UK, together with many of our customers. We work extensively on communication, advocacy, and recycling with the beverage carton industry through national, regional, and global platforms. These platforms include the Alliance for Beverage Cartons and the Environment (ACE), the EXTR:ACT platform for increasing beverage carton recycling in Europe, and the GRACE alliance for advocating, communicating, and improving the recycling of beverage cartons globally.

Similarly, at European level, in the food service industry, we are founding members of EPPA (European Paper Packaging Association) collaborating on topics such as food safety, LCA, advocacy, and recycling. At national level, we work through networks such as Pro-S-Pack in Germany, Alliance Gobelets Carton in France, and the Paper Cup Alliance and PCRRG (The Paper Cup Recovery and Recycling Group) in the UK.

In 2020, Stora Enso and the Helsinki Olympic Stadium signed a partnership to promote circular economy solutions. The aim is to develop low-carbon, eco-friendly operations at the stadium by promoting the use of renewable materials and circular economy solutions. Stora Enso explores reusing products as well as recycling used materials to give high-quality wood fibers a second life in new products that will be used at the stadium.



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Case

Delivering the necessities in challenging times



In a short time, Covid-19 has forced us to rethink many everyday things we've previously taken for granted. Working, travelling, eating, and shopping are suddenly not what they used to be. But even in the most difficult of times, basic needs must be met.

A key question is: what happens if there are disruptions in supply chains, or if goods cannot be delivered? Some supply chains are complex: a cup of coffee, for example, can require 29 companies to collaborate across 18 countries. But many daily necessities are

produced locally, close to us, requiring much shorter supply chains.

Stora Enso has an important role in delivering these necessities: our renewable material, wood, enables safe and hygiene packaging for food and beverages; delivers your online orders; and becomes the pulp for hygiene products and tissue papers. Importantly, it also grows back in sustainably managed forests and is widely recyclable.

Read the full article at ▶ storaenso.com

In 2020, Stora Enso announced that, together with Tetra Pak, it is initiating a feasibility study to assess the viability of building a large-scale recycling line for Used Beverage Cartons (UBC) at Stora Enso's Ostrołęka Mill in Poland. If realised, the annual capacity of the new recycling line would be 50 000 tonnes of UBC, which would significantly contribute to the recycling capacity for beverage cartons across Europe.

As a part of the business model for biocomposites, we are offering a take-back of products containing materials that can be used in our biocomposites production. The products can then be reprocessed at our Hylte Mill into new biocomposites granules and reused in new products. Compared with most pure recycled plastics, the inclusion of fibers helps the material maintain its qualities and be re-processed over more cycles. From 2021 onwards, the entire recycling process can be carried out in Hylte. In 2021, a waste material platform will be introduced with the ambition to find more waste streams to be used in the production of our biocomposites. The wood fibers used in biocomposites are mostly waste that would otherwise be used for energy generation.

Sustainability at the centre of innovation

In 2020, we continued to innovate to substitute fossil-based materials. In our innovation work, we used an internal checklist to ensure that sustainability and circularity are considered at all stages of every research and development initiative. Stora Enso's expenditure on innovation, research, and development in 2020 was EUR 146 million (EUR 141 million), which was equivalent to 1.7% (1.4%) of sales. Read more about our approach to innovation in **Financials 2020** and in **Strategy 2020**.

In 2020, we signed an agreement with Cordenka to jointly develop bio-based carbon fiber for industrial applications, such as wind energy rotor blades. We also announced a plan to build a pilot facility for producing biofoam which is a lightweight, fiber-based foam material for protective packaging and cushioning for fragile products such as consumer electronics. The pilot plant will be located at Stora Enso's Fors Mill in Sweden.

In 2020, Stora Enso announced its investment in dispersion barrier technology at its Forshaga site in Sweden. The investment enables the

development and production of paperboard with barrier properties that are easier to handle in a recycling process, have a lower carbon footprint, and are compostable in industrial facilities. The new equipment is expected to be taken into use during the second quarter of 2021.

In our Wood Products division, innovation work continued in 2020 with a focus on product and service development. For example, the School Concept was launched for designing and building sustainable schools. In addition, digital services for building designers, engineers and architects, such as BIM (Building Information Modelling) and sensor developments in wood products, were enhanced to develop even more sustainable, low-carbon and healthier wood products and buildings. These solutions can be applied to residential, office, and public buildings, such as schools and kindergartens. The solutions enable the design and maintenance of wooden buildings that draw on the full sustainability potential of low-carbon wooden buildings. This can decrease climate impact, promote healthier living, reduce chemicals in the environment, enhance the long-term durability of buildings, and drive a more circular approach to materials and carbon.

A responsible and trusted supplier

By the end of 2020, 30 (25 in 2019) of 61 Stora Enso's production units were registered in the Supplier Ethical Data Exchange (Sedex). Sedex is a platform where we can share sustainability information with multiple customers in an agreed format and level of detail. By the end of the year, 16 of the 30 units had been audited through Sedex Member Ethical Data Audits (SMETA) at least once since 2011. Due to Covid-19 restrictions, only one SMETA audit was carried out in 2020.

Our containerboard business moved from the Packaging Solutions division to the Packaging Materials division in January 2020. As the integration was still underway in the beginning of 2020, not all Packaging Materials mills were Sedex audited during the year. Containerboard mills will be audited in 2021. All summary audit reports are made visible to customers in Sedex.

Stora Enso is also a member of the ethical supplier rating system Ecovadis. Ecovadis' sustainability scorecards provide detailed insight into environmental, social, and ethical risks in the supply chain. Since 2017, we have been included in the top 1% of industry supplier performers in sustainability.



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We have strict requirements for all our suppliers and support them in becoming more sustainable.



96%
of supplier spend was covered by our Supplier Code of Conduct

Opportunities and challenges

Responding to new opportunities and requirements

As a company with over 20 000 suppliers around the world, Stora Enso can use its purchasing power to help global supply chains become more sustainable. However, reaching a comprehensive understanding of a supplier's sustainability performance, including their potential impacts on human rights, remains a challenge, even with strict sourcing processes and criteria in place.

The Covid-19 pandemic has brought on uncertainty for business and supply chains globally. Stora Enso will continue to proactively monitor and respond to the pandemic to ensure minimal impact on our ability to purchase materials, serve customers, and run operations.

Stora Enso runs sourcing and logistics operations in various regulatory environments. Current developments in national and EU-level legislation on supply chain due diligence, for example, may affect the way we conduct sourcing and logistics activities in the future. In addition, we respond to stakeholder demands concerning topics, such as supply chain transparency and reducing the use of plastic. By passing on these types of requirements to our direct suppliers, we are able to drive positive change further down our supply chains.

As Stora Enso continues to commercialise its renewable innovations, we need new types of machines and materials for the manufacturing of these new products. Sourcing for the production of RFID tags, formed fiber, and lignin for lithium-ion batteries, for example, is gradually expanding our supplier base to cover new product categories.

Our policies

Company-wide commitment to responsible sourcing

The Stora Enso Supplier Code of Conduct (SCoC), which was updated in 2020, is the cornerstone of our approach to responsible sourcing. It is a legally binding document that imposes sustainability requirements on our suppliers concerning human and labour rights, occupational health and safety, the environment, and responsible business practices. The SCoC applies to all our sourcing categories globally.

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Several other Stora Enso policies and documents also support responsible sourcing, including our:

- Stora Enso Code – our code of conduct.
- Sourcing Policy, Logistics Policy – our statements on our sourcing and logistics framework and objectives.
- Sourcing Guideline, Logistics Guideline – define how sourcing and logistics should be executed, managed, and controlled.

Through our Supplier Code of Conduct, we also implement several policies and guidelines, such as our Policy on Wood and Fiber Sourcing, and Land Management, Chemical Management Guideline, and Human Rights Policy.

How we work

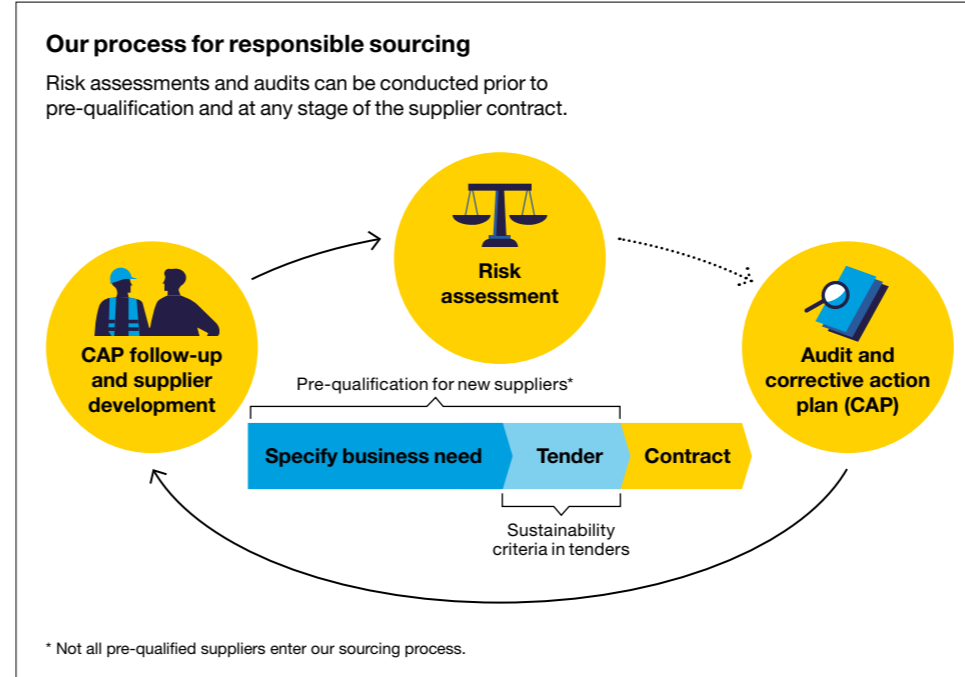
A robust process for on-boarding suppliers

Materials and products sourced by Stora Enso include wood and fiber-based materials such as pulp and Paper for Recycling (PFR), chemicals, fillers, energy, fuels, and spare parts, as well as maintenance, logistics, and IT services. In 2020, purchases of materials, goods, and services represented 50% of our total variable cost (49% in 2019) while fiber procurement accounted for 50% (51%).

Sourcing is a centrally led function at Stora Enso that provides the entire Group with a systematic approach to purchasing goods and services. Sourcing initiatives are reviewed and resolved by dedicated committees that meet when the sourcing need is specified, during the tendering process, and when a contract is drafted.

All suppliers wishing to do business with Stora Enso must first pre-qualify during tendering or, at the latest, before a contract is drafted. To pre-qualify, suppliers must complete a questionnaire, submit confirmation of their compliance with our SCoC, and complete our safety management online training.

We use sustainability criteria in the tendering phase of all sourcing, regardless of previous contracts with the same supplier. The criteria help us make more balanced sourcing decisions and create incentives for suppliers to invest in sustainability reporting. To fulfil the criteria, suppliers need to respond to a set of questions about their financial stability, occupational accident rates, and carbon dioxide



(CO₂) emissions. In 2020, we began to more systematically collect the data received through this process (read more in the Progress section of this chapter). Collecting data on our suppliers' CO₂ emissions helps us understand where they are in terms of setting reduction targets for their greenhouse gas emissions. This also contributes to Stora Enso's science-based targets which include a commitment to ensure that 70% of our suppliers set their own reduction targets by 2025.

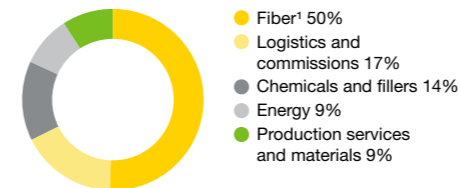
Supporting and monitoring our suppliers

In addition to enforcing our SCoC, we help our suppliers improve their sustainability performance. Our deep dives combine desktop reviews and on-site visits to help us better understand specific supply chains and support suppliers in improving their operations. In addition, when not restricted by external factors such as the Covid-19 pandemic, we conduct on-site visits and commission audits by third-party auditors to monitor and improve supplier performance. Focused audits are done based on risk assessments or concerns raised by internal or external stakeholders.

We have automated our supplier risk assessments by integrating our sustainability risk mapping tool into the company's main sourcing reporting system. Based on a supplier's environmental, social, and governance (ESG) risk profile, they may be selected for a third-party sustainability audit.

Breakdown of raw material and service costs

% of our total variable costs



¹ Wood, Paper for Recycling, and purchased pulp

Any suspected SCoC non-conformances identified during supplier visits or audits, or brought to our attention through our many grievance channels, are duly investigated. The findings are discussed, and a corrective action plan is devised together with the supplier in question. The supplier must commit to the plan, and our purchasers follow up on its implementation. If a supplier does not take the necessary corrective actions, new discussions are held to examine the reasons, and at a higher management level if necessary. In cases where a supplier is not willing to improve their performance, the relationship is terminated.

Contractors

Some of our suppliers are contractors hired for long-term work, such as in forest and plantation management, and others on a shorter-term basis, for example in large-scale investment or mill maintenance projects. Our SCoC and sourcing process applies to all contractors. While contractors are primarily responsible for their own employees, we strive to ensure that everyone working on our premises is treated fairly and receives adequate safety training.

Pulp procurement

Most of the pulp used in Stora Enso's operations is produced internally at our mills. For specific quality and logistical reasons, a small proportion of the pulp is purchased from external suppliers. As with wood, we ensure that all this pulp is sustainably sourced. For more information about our wood procurement, see pages 49–54.

Paper for Recycling

Stora Enso sources paper for recycling (PFR) from local authorities and waste management companies. For more details on our PFR use, see pages 36 and 38.

Progress

New Supplier Code of Conduct

Stora Enso's key performance indicator (KPI) for responsible sourcing measures the proportion of our total supplier spend covered by our SCoC, including all categories and regions. By the end of 2020, 96% of Stora Enso's total spend on materials, goods, and services was covered (96% at the end of 2019), which exceeds our target to maintain the level of 95%. Joint operations,



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intellectual property rights (IPR), leasing fees, financial trading, government fees such as customs, and wood purchases from private individual forest owners are not included in our total supplier spend.

We updated our Supplier Code of Conduct in 2020. During the process, we engaged with our stakeholders through focus group discussions, where we introduced the planned updates and requested feedback from our suppliers, customers, and investors. We organised five focus group sessions with participants from 41 companies. The stakeholder feedback helped us consider more perspectives and validated our updates on topics, such as data privacy, climate change, and reasonable remuneration for employees. The updated code of conduct will be valid from 2021.

Due to travel restrictions related to the Covid-19 pandemic, we were not able to conduct supply chain deep dives in 2020. We did, however, continue to monitor one supply chain in China and one in the USA, which both have been targets of previous deep dives. In China, after switching to a coal supplier with a significantly better sustainability performance than our previous supplier, we continued to look for more sustainable alternatives to coal which is currently the only feasible energy source for an industrial facility as large as Stora Enso's Beihai Mill. In the USA, our demonstration plant in Raceland, Louisiana, converts cellulosic biomass into highly refined xylose sugars. For feedstock, the plant purchases bagasse, a residual from the sugar-making process, from a nearby sugar mill. We continued to monitor labour rights in the bagasse supply chain in 2020 to ensure that working hour schedules do not have adverse impacts on contractor health and safety. Our Biomaterials division announced the permanent closure of its US operations, along with the demonstration plant, in January 2021.

In 2020, we began measuring the share of contracted suppliers, by spend, that have provided the safety and/or CO₂ emission data required by our sustainability criteria during the

We updated our Supplier Code of Conduct in 2020.



Chemicals and fillers represented 14% of our total variable cost in 2020.

tendering phase. During the year, we were able to increase this share from less than 30% (at the end of 2019) to 77% (at the end of 2020).

We also completed a "future proof" study that provides insight into how we can improve the sustainability of the products and services we procure in the long term. The goal was to identify categories where more sustainable solutions may be available now or in the near future. The study provided new inspiration, such as ideas for more sustainable chemical options both in products and processes, but also confirmed that we have been focusing on the right areas.

During the year, we also updated our standard payment terms to suppliers by extending our payment timeframe from 60 to 90 days, recognising legal restrictions in some countries, but excluded small and medium-size suppliers from this change. This exclusion means

that we will continue to pay our smaller suppliers within the previous, shorter payment timeframe to help them remain financially stable.

Steps to decarbonise our sea logistics

As a Clean Cargo Working Group member, Stora Enso has access to supplier-specific CO₂e emissions data on sea logistics. In 2020, we began connecting this data with information about the shipping routes of our cargo, with the goal to identify opportunities to decarbonise the transport of our goods. The resulting real-time hourly updates on supplier CO₂e emissions, and consequent improved visibility, will help us optimise the cost, service, and sustainability aspects of our logistics.

As an example of collaboration to reduce emissions in our supply chain, a carbon pact between Stora Enso and Maersk was brought to

a close in 2020. The agreement, in place 2015-2020, aimed to reduce Stora Enso's CO₂ emissions from ocean transportation with Maersk by 10% per container transported over the period. By the end of the agreement, a reduction of approximately 25% was achieved, well exceeding the target.

Occasionally, people board our chartered sea logistics line from Central Europe to the Nordic countries without permission and undetected. In 2020, our sea logistics suppliers recorded one such case of three people found hiding (three cases and 11 people in 2019). Detailed records show that the people were treated with dignity and respect onboard and ensured a safe and humane return into the custody of local authorities when the vessel returned to Central Europe. In addition, five people entered a truck transporting our goods in Belgium and were found before the truck left the country. All five were released into the custody of

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Case

Renewing our supplier code with radical engagement



While we all want all supply chains to become fully sustainable overnight, it's essential that suppliers can feel that fulfilling requirements is within their reach, **Johanna Pirinen**, SVP Sustainable Sourcing and Logistics at Stora Enso, writes in her blog post.

Stora Enso refreshed its Supplier Code of Conduct, which sets the company's requirements for suppliers, in 2020. From the beginning, it was clear that we wanted to be radically transparent and to hear what

others had to say. We ran several focus groups online, with participants representing some of our biggest suppliers, sustainability-oriented customers, and an investor.

What was considered fully acceptable in business a few decades ago, might be completely out of the question today. To be a leader in doing the right thing, we need to stay alert in a changing world and work together with our suppliers and partners.

Read more ▶ storaenso.com

the local police. For more information about how we manage potential human trafficking, see our annual [Slavery and Human Trafficking Statement](#).

Promoting supplier safety

Stora Enso's commitment to safety also extends to its suppliers and contractors. In 2020, safety was strongly highlighted during our global Supplier Day. In addition, during Stora Enso's Safety Week 2020, we held three webinars for suppliers to further communicate our expectations on sustainability and especially safety. One of the webinars was held in Chinese for the first time to better reach our suppliers in China.

In 2020, our Sourcing function analysed all accidents related to machines, such as reach stackers and telescopic handlers, to identify safety improvement needs and to suggest such improvements to the machine supplier.

Using a Group-wide safety reporting platform, we continuously monitor contractor accidents to recognise patterns and to identify those with an unacceptably high accident performance compared to their peers. When such behaviour is indicated by statistics, we take action to mitigate it by, for example demanding the supplier to conduct root cause analyses and provide corrective action plans. After a decreasing trend in contractor accidents over several years, the number of cases increased slightly in 2020 and tragically, two fatalities occurred in our Guangxi forestry operations in China, both involving contractor employees. For more information, see page 21.

Auditing during the pandemic

Because of travel and safety restrictions implemented due to the Covid-19 pandemic, we were not able to conduct deep dives or on-site sustainability audits of suppliers on our regular scale during 2020. To make up for this, we piloted online audits, where we successfully conducted virtual site tours and document reviews to confirm, for instance, that important training had been given to employees and performed virtual site visits. During 2020, a total of 22 Stora Enso suppliers were audited through third-party sustainability audits (62 in 2019), including five audits (17 through the HSEQ (Health, Safety, Environment, and Quality management) audit cluster in Finland. The numbers include both online and physical third-party audits.

Three of the third-party supplier audits were online audits. Our experience is that with

suppliers that already have a good understanding of sustainability, online audits can provide equally valuable information compared to on-site audits. The challenges of online auditing, on the other hand, include losing the first-hand feel of supplier premises and the opportunity to raise awareness of sustainability topics among those suppliers that are less experienced with them.

The audits continued to focus on suppliers with heightened sustainability risks, as identified by our risk assessment. By the end of 2020, 51% of our identified high-risk suppliers, by spend, were covered by third-party sustainability audits (28% in 2019).

As in previous years, the audits revealed non-conformances particularly related to working hours, basic worker rights, and emergency preparedness. Several non-conformances were also related to missing documentation and policies. We create corrective action plans for all non-conformances and follow up on them.

In addition to the broader supplier sustainability audits, we conducted a third-party supplier audit of selected contractors on how they have prepared for and executed the prevention of Covid-19 while working on the Oulu conversion project. For more information, see page 20.

Suspected violations of our Supplier Code of Conduct are brought to our attention through our many channels. When a Stora Enso employee or a third-party working for us is involved, these cases are included in our investigation of potential non-compliance cases, presented on page 29.

No supplier relationships were terminated in 2020 (none in 2019) based on findings or follow-ups resulting from third-party audits or our dialogue with suppliers. However, one supplier relationship was suspended due to the release of untreated wastewater directly into a nearby sea lagoon. The immediate risk was eliminated quickly by re-directing the wastewater into the municipal system, but we continue our dialogue with the supplier to encourage and help them to find a systematic and long-term sustainable solution. In another case, we transferred some of our order volumes from one supplier to another due to safety misconduct while also supporting the supplier to identify improvement opportunities through an audit and continuous dialogue. In addition, one supplier contract was not renewed due to misconduct related to business ethics.



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We continuously keep investors informed of our sustainability progress and future direction.



EUR 1 506 million
total amount of Stora Enso's
outstanding green bonds

Opportunities and challenges

Growing interest in sustainable investing

Investors are increasingly recognising the importance of corporate sustainability in their investment decision-making by exploring ways to integrate environmental, social, and governance (ESG) performance into their investment strategies. In addition to the growing interest in sustainability aspects and precautions taken against Covid-19, investors perceive sustainability as a valuable competitive advantage for companies. Transparent sustainability reporting is seen as an important tool in identifying investment opportunities that can generate long-term shareholder value. Hence, companies are encouraged to conduct their business more sustainably. Simultaneously, investors expect financial rewards from their investments.

At Stora Enso, we believe that long-term financial success results from truly sustainable business. Stora Enso's Investor Relations work is guided by several laws and regulations, including the EU's Market Abuse Regulation (MAR), the Finnish Securities Markets Act, Nasdaq rules in Helsinki and Stockholm, and the standards of the Finnish Financial Supervisory Authority. More climate-related reporting obligations are expected through the EU Taxonomy in the coming years. Stora Enso monitors the progress of the taxonomy and is prepared to develop its reporting aligned with the new framework.

Our policies

Guiding our Investor Relations

- Company policies and guidelines related to Stora Enso's Investor Relations include our:
- Disclosure Policy – a set of rules covering all our communication with investors and other stakeholders. It encompasses insider guidelines, silent periods, communications governance, and communications procedures.
 - The Stora Enso Code – our code of conduct, applied to all our operations around the world, including Investor Relations.

How we work

Sustainability as a key element

A growing number of investors are committed to integrating ESG factors into their investments.



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Aspects of sustainability, such as combatting climate change and sustainable forest management, are important to Stora Enso's investors. Our main shareholders are long-term investors that place high value on sustainable business practices, and continuously monitor and evaluate our performance. Stora Enso's investors see sustainability as a business opportunity for the company with its renewable solutions. For more information on how we create value through a sustainable business model, see **Strategy 2020**. For details of Stora Enso's ownership distribution, see **Financials 2020**.

Timely and transparent communication with investors is a top priority for Stora Enso. We actively maintain open dialogue with our investors on ESG matters through conference calls, seminars, roadshow meetings, webcasts and face-to-face meetings when possible. Due to Covid-19, all investor meetings were held virtually after mid-March 2020, without compromising our level of activity. We also regularly share updated information on our sustainability performance with investors in our Interim and Annual Reports, web updates, and investor newsletters. Furthermore, we participate in sustainability events of interest to investors. For more information about our investor relations, see storaenso.com/investors.

In 2020 we started reporting against the standards of the Sustainability Accounting Standards Board (SASB). For more information about SASB, see **Financials 2020**. For our climate-related risks and opportunities with reference to the Task Force on Climate-related Financial Disclosures (TCFD), see **Financials 2020**.

During the year Stora Enso also continued to engage with the Prince of Wales' Accounting for Sustainability Project (A4S). The A4S was established by The Prince of Wales in 2004, and it aims to inspire action by finance leaders to drive a fundamental shift towards resilient business models and a sustainable economy. Stora Enso joined the A4S in 2018.

In 2020, we started to report against the SASB standards.

Stora Enso's Sustainable Finance strategy is an integrated part of our overall strategy. Stora Enso aims to have access to sufficient and competitively priced funding at any time to be able to pursue its strategy and achieve its targets. In order to accomplish this, our emphasis is on debt capital markets funding. Stora Enso's long-term goal is to secure funding partners that have sustainability as a fundamental part of their agenda. We aim to influence and develop the financial markets to ensure that sustainability becomes an integral part of investment decisions and credit evaluation.

Stora Enso has an undrawn EUR 600 million Revolving Credit Facility (RCF) loan signed in 2017 where part of the pricing is based on Stora Enso's ability to reduce greenhouse gas emissions per tonne of pulp, paper, and board produced, in accordance with the Science Based Targets initiative.

Stora Enso has a Green Bond Framework as part of its Sustainable Finance strategy. The ongoing ambition is to offer fixed income instruments that support sustainability-focused investors, and to report the direct environmental impacts of specific investments and business activities. The Green Bond framework is based on and aligned with the international Green Bond Principles (GBP) formulated by the International Capital Market Association. The framework lists the possibilities and limitations of the project categories that Stora Enso has defined as eligible for green funding.

Progress

ESG topics embedded into investor relations activities

During the year, we continued our strategy to enhance the availability of ESG information to investors, and to prioritise Stora Enso's participation in questionnaires and assessments for the ESG index and ratings schemes that are most material for our investors. Investors were especially interested in Stora Enso's new Forest division and the change in the valuation method related to our forest assets in the Nordics, as well as in renewable solutions that replace fossil-based materials. In 2020, Stora Enso organised a Capital Markets Day and provided an update on our strategy, including our three focus areas for growth, market growth drivers and a review of all our divisions. Read more at storaenso.com/investors.

Interview

It all starts in the forest



"We create value from our forests by increasing long-term yield, optimising our land base, and securing financial flexibility," says **Jari Suominen**, Head of Stora Enso's Forest Division, in his interview. "Our own forests and long-term wood supply agreements secure a cost-efficient, stable, and secure supply for our mills and stabilise wood market volatility. With sustainable forest management and R&D, both the returns and the value of forest assets can be increased."

Stora Enso has a strong foundation for future climate work because forests and wood-based products have a key role in mitigating climate change. We safeguard forest health and productivity, combat climate change, protect biodiversity, and secure the long-term availability of our renewable resources. The essential thing is that we do all these simultaneously.

Read the full article at > storaenso.com

For more information about our investor activities during the year, see Capital Markets in **Financials 2020**.

Sustainable finance and green bond use of proceeds

Stora Enso issued its first green bonds in February 2019. In April 2020, we issued a new five-year SEK 1.7 billion green bond and a volume increase to the same bond in June 2020, with the total size of SEK 3.4 billion. In November 2020, we issued our first euro green bond with a ten-year maturity and EUR 500 million in size. By the end of 2020, the total amount of Stora Enso's outstanding

green bonds amounted to EUR 1 506 million (EUR 670 million in the end of 2019).

In 2020, the proceeds from green bonds were used to finance sustainable forest acquisition and management in Sweden, reduce greenhouse gas emissions at our Maxau Mill in Germany, and develop a production line for cross-laminated timber (CLT), a high-performance low-carbon building material, at our Gruvön Mill in Sweden and Ždírec sawmill in the Czech Republic. For more information about our outstanding green bonds, impact reporting and the impacts of the proceeds, see storaenso.com/greenbonds.



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ESG indices and other external recognition in 2020



Euronext Vigeo
Stora Enso is listed in the Euronext Vigeo Europe, and Eurozone 120 indices as one of the 120 most advanced companies in terms of environmental, social, and governance (ESG) performance.



MSCI
In 2020, Stora Enso maintained a rating of AA in the MSCI ESG Ratings assessment. Stora Enso is included in several of MSCI's ESG indices.



ECPI Ethical Indices
Stora Enso is included in the ECPI EMU Ethical Equity and ECPI World ESG Equity indices, which covers ESG criteria.



Solactive Europe Corporate Social Responsibility Index
Represents European securities that are screened in the field of Corporate Social Responsibility. This includes the following aspects: human rights, human capital, environmental social impact, market ethics and corporate governance. The index is a successor index of the Ethibel Sustainability Index Excellence Europe.

OMX Sustainability Finland index
Stora Enso is included in the NASDAQ OMX Sustainability Finland index.



STOXX ESG indices
Stora Enso is included in several STOXX ESG indices. These indices rate leading global companies according to ESG criteria.



ISS ESG
Stora Enso rated "Prime" with a rating of B- by the ISS ESG Corporate Rating regarding sustainability performance. Score by the Institutional Shareholder Services (ISS).



FTSE4Good Index
Stora Enso is included in the FTSE4Good Index Series. These indices measure the performance of companies demonstrating strong ESG practices.



CDP
Stora Enso is included in CDP's Climate List, which identifies the global companies that are taking leadership in climate action.

Transition Pathway Initiative (TPI)
In February 2020, Stora Enso was top-ranked in greenhouse gas management and performance by the TPI. An asset owner-led and asset manager-supported global initiative, the TPI assesses companies' preparedness for transition to a low carbon economy, supporting efforts to address climate change.



ReportWatch/Comprend
Stora Enso's Annual report 2019, including the Sustainability report, received the highest A+ ranking among more than 300 reports globally.



WBCSD
Stora Enso's Sustainability Report 2019 was included in the top ten sustainability reports globally according to the 2020 Reporting matters publication by the World Business Council for Sustainable Development (WBCSD).



Ecovadis
Stora Enso was included in the top 1% of the Ecovadis ethical supplier rating system, and achieved the highest recognition level (Platinum).



Most sustainable company
Stora Enso was ranked the most sustainable listed company in our sector in Sweden by Dagens Industri, Aktuell Hållbarhet, and Lund University School of Economics and Management.



Sustainability

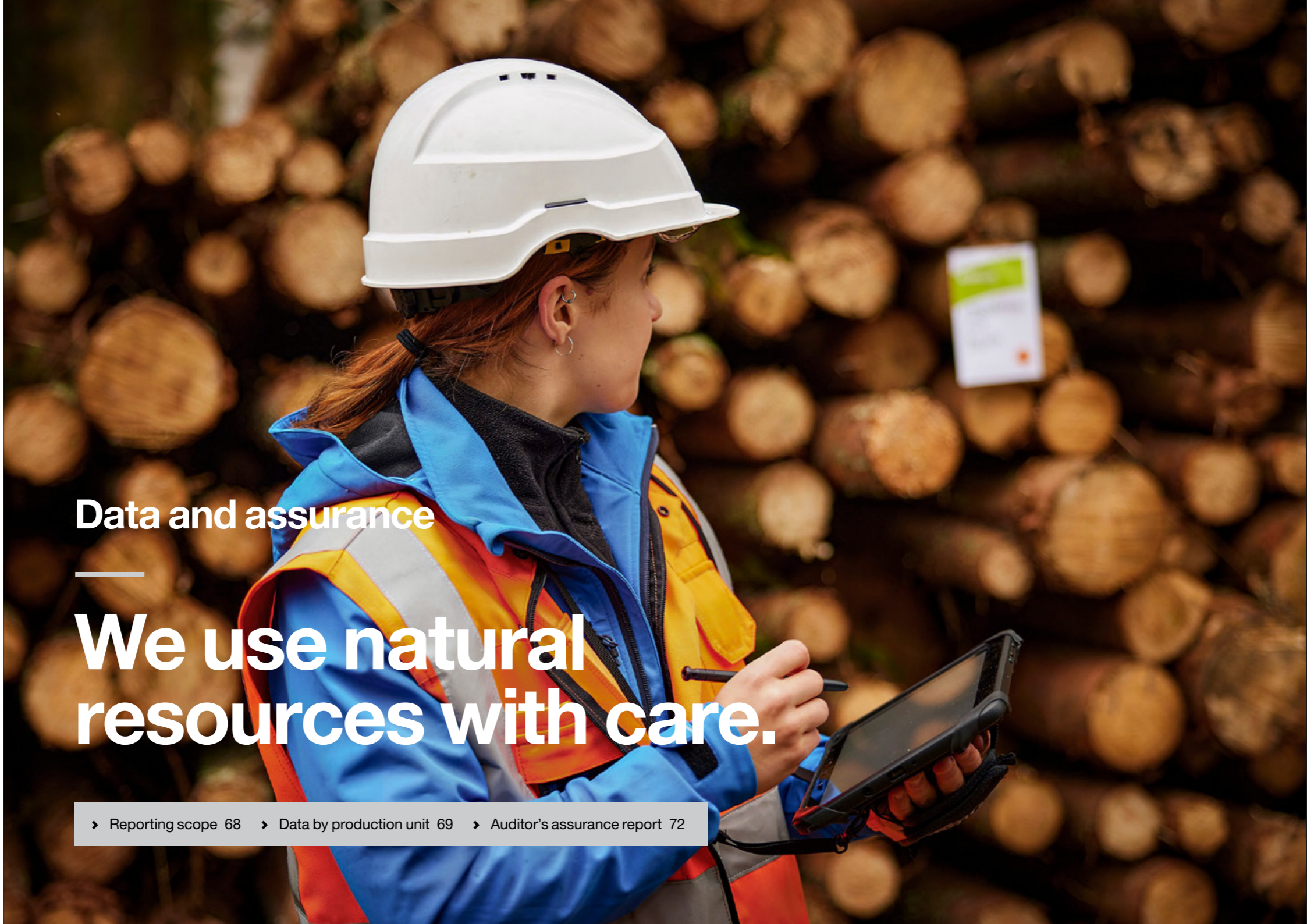
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Data and assurance

We use natural resources with care.

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Reporting scope

At Stora Enso, we regularly review the priorities in our Sustainability Agenda and ensure that our reporting duly addresses them. When defining the materiality of issues impacting our sustainable business model, we consider the expectations of our major internal and external stakeholders. For more information on our approach to materiality, see page 7.

Data boundaries

Unless otherwise stated, the Group's consolidated performance data expressed in this report covers the parent company, Stora Enso Oyj, and all companies in which we hold over 50% of voting rights directly or indirectly. The consolidated figures and our reporting on human rights, safety, community, and forests, plantations, and land use also include the 50% owned joint operations Veracel in Brazil and Montes del Plata in Uruguay, due to their materiality to the Group's sustainability impacts and stakeholder interest.

Consolidated environmental and energy data covers our production units. Stora Enso's sawmills and converting facilities are excluded from water, energy, and certain CO₂ indicators that are normalised per tonne of sales production unless otherwise specified in the respective footnotes. This is due to the lower materiality of sawmills and converting facilities in the Group's related performance and different metrics for sales production (cubic metre and square metre, respectively), compared with board, pulp, and paper mills (tonnes).

In our environmental and energy reporting, divestments and closures are managed according to the international Greenhouse Gas Protocol. This means that when necessary, figures for historical performance are recalculated following the removal of divested units from the baseline. However, closed units are included in the environmental and energy targets and trend

calculation baselines, as per internationally accepted rules.

Human Resources (HR) data is derived from separately collected statistics. Unlike in our financial reporting, consolidated HR data in this Sustainability report excludes employees of our 50% owned joint operations Montes del Plata and Veracel. The HR data presented covers our permanent and temporary employees as of 31 December 2020 and are expressed as a headcount (rounded to the nearest 10). Certain administrative functions and sales offices are not included in the Group's consolidated occupational health and safety (OHS) data due to availability, relatively small headcount, and lower occupational safety risk compared to production units.

For more details, see our [online appendix on area-specific data boundaries](#).

Financial figures in our sustainability reporting are reported in accordance with International Financial Reporting Standards (IFRS) as applicable.

Significant changes during 2020

During the year, Stora Enso divested a sawn construction timber mill at Pfarrkirchen in Germany and closed one standard newsprint paper machine at Hylte, Sweden. A new unit at Hylte started the production of formed fibre food service products, and the Oulu Mill in Finland was converted from paper into packaging production.

During 2020, our China packaging units started to increasingly outsource needed workforce to further improve operational flexibility with changing market situations, having an effect on the Group's reported HR figures.

For more information on the employee impacts of the Group's restructuring during the year, see [Support in restructuring situations](#).

For more information on the Group's acquisitions and disposals, see note 4 in **Financials 2020**.

In accordance with the GRI Standards

We also prepare our reporting in accordance with the GRI Sustainability Reporting Standards: Core option. Our reporting covers all the General Disclosures as well as the topic-specific GRI Standards we deem material. Our [GRI Content Index](#) lists our disclosures with reference to the GRI Standards and refers to the locations where these issues are addressed in our reporting. The location references are complemented in the index with additional information, such as reasons for omission as necessary.

Impacts that make sustainability topics relevant to us may occur outside operations owned by Stora Enso, or they may only be material for some of our operations or locations. When our reporting on a sustainability disclosure only concerns specific units, geographical regions or other data collection boundaries, based on the identified materiality, this is specified in connection with the respective disclosure.



Implementation of SASB Standards

In 2020, Stora Enso also started to report in accordance with the standards of the Sustainability Accounting Standards Board (SASB), primarily targeted for investors. The most relevant SASB standards for Stora Enso are Forest Management and Pulp & Paper Products sector standards. For more background and our SASB content index, see the Capital Markets chapter in **Financials 2020**.

External assurance

This report has been verified by an independent third-party assurance provider in accordance with the voluntary external assurance practices followed in sustainability reporting. The assurance report appears on page 72. PwC has provided a limited level of assurance covering the entire contents of this report, based on an assessment of materiality and risk. For the sixth year running, a level of reasonable assurance has been provided for Stora Enso's reporting on direct and indirect fossil CO₂e emissions (Scopes 1 and 2).

The UN Global Compact

Stora Enso supports the ten principles of the United Nations Global Compact, an initiative set up in 2000 to encourage businesses worldwide to embed responsibility into their operations. We respect and promote these principles throughout our operations and report on our progress in this report. We annually upload our Communication on Progress to the [UN Global Compact website](#) as a public record of our commitment.

Data by production unit

This table presents unit-specific information on environmental performance, production, certificates, and numbers of employees.

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Unit	Number of employees ^{a)}	Production capacity ^{b)} 1 000 t	Products	Recovered fiber ^{c)}	Certificates							Fossil CO ₂ emissions																	
					ISO 9001	ISO 14001	ISO 22000	FSSC 22000	FDA	ISO 50001	OHSAS 18001	ISO 45001	FSC® CoC	PEFC™/CFCC CoC	Process waste to landfill	Hazardous waste ^{d)}	SO ₂ ^{e)}	NO _x as NO ₂	Direct CO ₂ ^{f)}	Indirect CO ₂ ^{f)}	CO ₂ on-site transport ^{f)}	Carbon neutral CO ₂ , biomass fuels ^{f)}	COD	AOX	Phosphorus	Nitrogen	Process water discharges		
												t	t	t	t	t	t	t	t	t	t	t	t	t	t	1 000 m ³			
Belgium																													
Langerbrugge	361	555	④	x	x	x		x	x	x	x	21 279	52	5	265	110 330	20 524	1 433	420 297	982	0.94	6.1	31.1	6 215					
China																													
Beihai	400	470	①		x	x	x		x	x	x	344	24	209	251	498 726	16 490	1 149	44 596	277		1.8	16.1	6 875					
Dongguan	726	30*	③		x	x			x	x		0	19				3 506	0	0	13		0.0	0.8	50					
Jiashan	205	20*	③		x	x			x	x		0	3				1 797	1	0	0		0.0	0.0	4					
Qian'an	1 274	25*	③		x	x			x	x		0	6				7 743	15	0	0				1					
Wujin	429	10*	③									1	40				7 811	0	0	0				1					
Estonia																													
Tallinn	37	15*	③		x	x	x			x	x	8	0			73	549	9											
Finland																													
Anjala/Ingerois	556	435/280	④ ①		x	x	x	x ^{g)}		x	x	x	0	154	13	218	82 024	24 234	1 243	133 889	1 532		1.7	53.9	8 491				
Enocell	254	490	②		x	x			x	x	x	x	6 381	52	110	782	68 179	-312	165	1 297 360	7 472	41.5	1.9	38.6	22 310				
Heinola Fluting	219	300	①		x	x	x		x	x	x	783	104	408	233	106 863	2 780	138	192 705	1 032		2.4	17.5	1 507					
Imatra	1 218	1 195	① ②		x	x	x	x	x	x	x	3 425	342	102	1 567	178 311	18 809	1 461	1 993 574	22 165	108.0	15.6	226.0	59 727					
Kristiinankaupunki	55	20*	③		x	x	x		x	x		0	1				121	23						1					
Lahti	255	130*	③		x	x	x		x	x		0	370				291	12		4		0.0	0.3	25					
Oulu ^{h)}	640	1 080	④ ②		x	x			x	x	x	455	536	115	713	100 984	4 345	1 920	838 517	5 391	19.0	8.9	65.0	14 841					
Sunila	228	375	② ⑤		x	x			x	x	x	3 544	232	72	457	32 368	892	489	607 845	5 054	32.7	6.4	15.5	13 998					
Varkaus	286	390	①	x	x	x			x	x	x	2 198	156	121	420	46 654	4 781	416	675 557	1 440		3.9	73.3	15 251					
Veitsiluoto	680	790	④		x	x	x ⁱ⁾		x	x	x	1 165	37	245	900	183 849	7 844	238	894 657	8 034	30.0	8.6	86.0	8 501					
Germany																													
Maxau	422	530	④	x	x				x	x	x	0	85	1	223	83 481	140 698	3	371 709	1 464	0.3	3.0	6.3	4 862					
Sachsen	239	310	④ ②	x	x				x	x	x		27	2	126	131 319	19 361	608	26 056	552	0.5	0.3	11.8	3 136					
Latvia																													
Riga	175	110*	③		x	x	x		x	x		0	65		2	2 175	350	191						14					
Lithuania																													
Kaunas	51	20*	③		x	x	x			x	x	0	1											2					



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					ISO 9001	ISO 14001	ISO 22000	FSSC 22000	FDA	ISO 50001	OHSAS 18001	ISO 45001	FSC [®] CoC	PEFC [™] /CFCC CoC	Process waste to landfill	Hazardous waste ^{d)}	SO ₂ ^{e)}	NO _x as NO ₂	Direct CO ₂ ^{f)}	Indirect CO ₂ ^{f)}	CO ₂ on-site transport ^{f)}	Carbon neutral CO ₂ , biomass fuels ^{f)}	COD	AOX	Phosphorus	Nitrogen	Process water discharges
Poland																											
Łódź	284	135*	③		x	x	x			x	x	x	0	0	30	3 108											
Mosina	97	20*	③		x	x	x			x	x	x	0	123		394		40									1
Ostrołęka Corrugated ^{g)}	261	145*	③	x	x	x				x	x	x	0	0			4 981	101									
Ostrołęka Containerboard ^{g)}	933	725	① ④		x	x				x	x	x	0	19	267	355	303 821		1 637	468 554	852	4.1	27.5	10 201			
Tychy	184	135*	③		x	x	x			x	x	x	0	0			3 500		174							10	
Russia																											
Arzamas	161	100*	③		x	x	x					x	20	9	1	6	2 767	2 578	67								26
Balabanovo	330	165*	③		x	x	x					x	0	6	1	2	4 712	4 143	87								23
Lukhovitsy	142	100*	③		x	x	x					x	0	6	2	2 448	2 483	103									15
Sweden																											
Falu Rödfärg	^{k)}		⑥		x	x							0	8 720		407		5.26									
Fors	526	455	①		x	x	x	x	x	x	x	x	0	70	6	90		86	583	208 279	1 776	0.6	1.3	20.1	4 558		
Hylte Paper	407	480	④	x	x	x				x	x	x	12 455	57		118	5 560	95	602	166 282	645	1.0	1.4	24.6	4 456		
Hylte Biocomposite	23	15	③		x	x						x	0				9	4									
Hylte Formed Fiber	11	20	③					x										0									
Jönköping	169	100*	③		x	x	x					x	0	35			298	594	33							11	
Kvarnsveden	449	385	④		x	x				x	x	x	0	75	16	91	9 795	199		158 948	1 791	0.6	1.8	31.6	6 675		
Nymölla	545	485	④ ②		x	x				x	x	x	0	111	457	443	-10 059	73	25 320	690 108	9 602	1.8	3.8	46.1	28 372		
Skene	134	100*	③		x	x						x	0	1				17	7							17	
Skoghall	713	885	①		x	x	x	x		x	x	x	6 546	997	164	431	47 151	137	1 586	983 529	9 059	20.3	11.9	78.0	26 876		
Skoghall (Forshaga)	108	120	①		x	x	x	x	x	x	x	x	0	8			876	3	124								
Skutskär	413	540	②		x	x				x	x	x	0	42	69	812	133	33	1 405	1 177 927	4 281	32.1	12.7	81.1	19 027		
Vikingstad	63	75*	③		x	x						x	0	1			1 026	60	1							18	
Total board, pulp, paper, converted products														58 603	12 586	2 386	8 536	2 001 394	298 136	41 418	11 350 390	83 420	289	98	951	266 096	
Total, wood products																											
Wood products units ^{m)}					n)	n)	n)	n)	n)	n)	n)	n)	n)	4 427	1 739	23	452	4 827	40 326	16 105	457 068						
Grand total														63 029	14 324	2 408	8 988	2 006 222	338 463	57 523	11 807 459	83 420	289	98	951	266 096	

a) Yearly average as full-time equivalents.
 b) Production capacities of integrated pulp, paper, and board mills only include paper and board production capacities.
 c) Mills using recovered fiber as raw material (fully or partly).
 d) Reported on the basis of country-specific definitions applied in national regulations.
 e) Total sulphur is reported as sulphur dioxide (SO₂) equivalent, but includes all sulphurous compounds.
 f) All CO₂ figures are calculated using the WRI/WBCSD Greenhouse Gas Protocol and Scope 2 Guidance.
 g) FSSC 22000 for board production at Ingerois.
 h) Paper and bleached pulp production in Oulu stopped in September 2020 for conversion to unbleached pulp and virgin kraftliner production starting at the beginning of 2021.
 i) ISO 22000 certified only PM5.
 j) Water discharges reported together from both Ostrołęka units.
 k) Does not have its own personnel but hires personnel from Stora Enso AB.
 l) Excluding total corrugated board capacity 1 368 million m².
 m) Production capacities for sawn timber 5 830 000 m³ and for wood pellets 495 000 t.
 n) See separate table for Wood Products units.

Products:
 ① board and packaging paper
 ② market pulp
 ③ converted products (e.g. cores, corrugated board, formed fiber)
 ④ paper
 ⑤ lignin
 ⑥ red paint pigment

The figure 0 (zero) in the table signifies that such discharges, emissions, or waste did not occur or they were below the Group's reporting threshold. Where cells are left blank, this signifies that the parameter is considered as not relevant for that unit.

Certificate documents can be found at storaenso.com/certificates.

* million m²



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Unit	Capacities						Certificates							Fossil CO ₂ emissions								
	Number of employees ^{a)}	Sawn products	Further processed	CLT	Wood pellets	LVL	ISO 9001	ISO 14001	ISO 50001	OHSAS 18001	FSC [®] CoC	PEFC [™] CoC	SBP	Process waste to landfill	Hazardous waste ^{b)}	SO ₂	NO _x as NO ₂	Direct CO ₂ ^{c)}	Indirect CO ₂ ^{c)}	CO ₂ , on-site transportation ^{c)}	Carbon neutral CO ₂ biomass fuels ^{c)}	
	1 000 m ³	1 000 m ³	1 000 m ³	1 000 m ³	1 000 t	1 000 m ³								t	t	t	t	t	t	t	t	
Wood products units																						
Austria																						
Bad St. Leonhard	259	360	105	80			x	x	x	x	x	x	0	53		3				3		
Brand	213	440	295				x	x	x	x	x	x	0	59		5				3		
Ybbs	409	700	450	110			x	x	x	x	x	x	0	103		9				3		
Czech Republic																						
Planá	237	390	220				x	x	x	x	x	x	332	78	1.0	36				1 714	24 466	
Ždírec	264	580	220		80		x	x	x	x	x	x	3 888	27	3.3	96				2 284	129 799	
Estonia																						
Imavere	307	340	160		100		x	x	x	x	x	x	7	53	3.7	37		11 419	1 625		51 882	
Näpi	97	50	180		25		x	x	x	x	x	x	13	31	0.5	5	20	3 253	288		5 697	
Finland																						
Honkalahti	117	310	70				x	x	x	x	x	x	0	37	0.6	25		815	876		34 006	
Uimaharju ^{d)}	69	240					x	x	x	x	x	x	0	26		4		2 188	416		1 809	
Varkaus	127	210	35			75	x	x	x	x	x	x	0	50				3 132	906			
Veitsiluoto ^{e)}	56	200					x	x	x	x	x	x	0	0	7.5	18		463	473			
Latvia																						
Launkalne ^{f)}	173	250	60		30		x	x	x	x	x	x		29		32	404			1 305	33 335	
Lithuania																						
Alytus	253	210	115				x	x	x	x	x	x	0	25	1.6	13				1 071	26 277	
The Netherlands																						
Amsterdam	50		80				x	x	x	x	x	x	0	1			14	1 059	3			
Poland																						
Murow	274	300	210				x	x	x	x	x	x	0	1 052	2.8	17				1 351	18 768	
Russia																						
Impilahti	140	160	10		25		x	x	x	x	x	x	0	0		11		5 697	1 364		26 456	
Nebolchi	179	180	45		40		x	x	x	x	x	x	187	0	0.5	44		8 252	1 153		28 503	
Sweden																						
Ala	134	400	50		100		x	x	x	x	x	x	0	68	0.1	7	4 389	4 037	1 270			
Gruvön ^{g)}	201	370	150	50	100		x	x	x	x	x	x	0	49	1.0	90		11			76 071	
Wood products units total	5 690	2 455	240	500	75								4 427	1 739	23	452	4 827	40 326	16 105		457 068	

a) Yearly average as full-time equivalents.
 b) Reporting is based on country-specific definitions applied in national regulations.
 c) All CO₂ figures are calculated using the WRI/WBCSD Greenhouse Gas Protocol and Scope 2 Guidance.
 d) Uimaharju sawmill belongs to division Biomaterials
 e) Veitsiluoto sawmill belongs to division Paper.
 f) Launkalne pellet production ramping up.
 g) Gruvön CLT production ramping up.

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Auditor's Assurance Report

To the Board of Directors and Management of Stora Enso Oyj

We have been engaged by the Board of Directors and the Group Leadership Team of Stora Enso Oyj (hereafter Stora Enso) to provide limited assurance on Stora Enso's Sustainability report 2020 as a whole, and reasonable assurance on Stora Enso's direct and indirect (scopes 1+2) fossil CO₂ emissions as disclosed in the Sustainability report.

Responsibilities of the Board and Management

The Board of Directors and Group Leadership Team of Stora Enso are responsible for preparing the Sustainability report in accordance with the Reporting Criteria as set out in the Company's reporting instructions, including the Sustainability Reporting Standards of the Global Reporting Initiative (GRI) and the Greenhouse Gas Protocol for CO₂ emissions. This responsibility includes the internal control relevant to the preparation of a Sustainability report that is free from material misstatements, whether due to fraud or error.

Responsibilities of the Auditor

Our responsibility is to express a conclusion on the Sustainability report based on the procedures we have performed and the evidence we have obtained. Our assignment is limited to the historical information that is presented and thus does not include future-oriented information. We do not accept, or assume responsibility to anyone else, except to Stora Enso for our work, for this report, or for the conclusions that we have reached.

We conducted the assurance engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000 revised, "Assurance Engagements Other than Audits or Reviews of Historical Financial Information", to provide limited assurance on the Sustainability report as a whole, and in accordance with ISAE 3410, "Assurance Engagements on Greenhouse Gas Statements", to provide reasonable assurance on direct and indirect (scopes 1+2) fossil CO₂ emissions as disclosed in the Sustainability report. These standards require that we plan and perform the engagement to obtain the appropriate level of assurance that the information examined is free from material misstatement.

A reasonable assurance engagement includes examining, on a test basis, evidence supporting the selected information in the Sustainability report. We have evaluated the effectiveness of internal controls and the processes for collecting and consolidating CO₂ emissions data, and performed testing on a sample basis to evaluate whether the CO₂ emissions are reported according to the Reporting Criteria.

A limited assurance engagement consists of making inquiries, primarily of persons responsible for the preparation of the Sustainability report, reviewing documentation, and applying analytical and other limited assurance procedures based on the auditor's judgement. In addition, we have performed remote site visits

to Anjala (Finland), Skoghall (Sweden) and Veracel (joint operation, Brazil) to review compliance with reporting policies, assess the reliability of local reporting process, and test data collected for sustainability reporting purposes on a sample basis.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our conclusions below. The conclusion based on our limited assurance procedures does not comprise the same level of assurance as the conclusion of our reasonable assurance procedures. Since this assurance engagement is combined, our conclusions regarding the reasonable assurance and the limited assurance procedures are presented separately below.

Our independence and quality control

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

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

Conclusions

Based on the limited assurance procedures we have performed, nothing has come to our attention that causes us to believe that the Sustainability report is not prepared, in all material respects, in accordance with the Reporting Criteria.

In our opinion, Stora Enso's direct and indirect (scopes 1+2) fossil CO₂ emissions which have been subject to our reasonable assurance procedures have, in all material respects, been prepared in accordance with the Reporting Criteria.

Helsinki, 9 February 2021
PricewaterhouseCoopers

Samuli Perälä
Authorized Public Accountant

Karin Juslin
Sustainability Reporting Specialist



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It should be noted that Stora Enso and its business are exposed to various risks and uncertainties and certain statements herein which are not historical facts, including, without limitation those regarding expectations for market growth and developments; expectations for growth and profitability; and statements preceded by "believes", "expects", "anticipates", "foresees", or similar expressions, are forward-looking statements. Since these statements are based on current plans, estimates and projections, they involve risks and uncertainties, which may cause actual results to materially differ from those expressed in such forward-looking statements. Such factors include, but are not limited to: (1) operating factors such as continued success of manufacturing activities and the achievement of efficiencies therein, continued success of product development, acceptance of new products or services by the Group's targeted customers, success of the existing and future collaboration arrangements, changes in business strategy or development plans or targets, changes in the degree of protection created by the Group's patents and other intellectual property rights, the availability of capital on acceptable terms; (2) industry conditions, such as strength of product demand, intensity of competition, prevailing and future global market prices for the Group's products and the pricing pressures thereto, price fluctuations in raw materials, financial condition of the customers and the competitors of the Group, the potential introduction of competing products and technologies by competitors; and (3) general economic conditions, such as rates of economic growth in the Group's principal geographic markets or fluctuations in exchange and interest rates. All statements are based on management's best assumptions and beliefs in light of the information currently available to it and Stora Enso assumes no obligation to publicly update or revise any forward-looking statement except to the extent legally required.