

Green Bond Framework

March 2018



Introduction

Stora Enso, the renewable materials company

Stora Enso was formed in 1998 through the merger of the Finnish company Enso Oyj and the Swedish company Stora Kopparbergs Bergslags Aktiebolag (STORA). With roots going back as far as the 13th century, Stora Enso has had many forms with diverse operations, overseas expansion as well as mergers and acquisitions, all the while meeting new business challenges.

With its foundation in wood-based materials and solutions, Stora Enso is in a key position to drive development in line with global trends and create customer and end-consumer value in the bioeconomy. We believe that everything that is made from fossil-based materials today can be made from a tree tomorrow. Our materials are renewable, reusable, and recyclable. They form the building blocks for a range of innovative solutions in packaging, wooden construction, and biomaterials that can help replace products based on fossil fuels and other non-renewable materials. We make every effort to use 100% of a tree for the board, timber, paper, and other products, as well as bioenergy from waste. In production, we are driving down the use of fossil fuels and pushing towards carbon neutrality as much as it is technically and commercially feasible. We

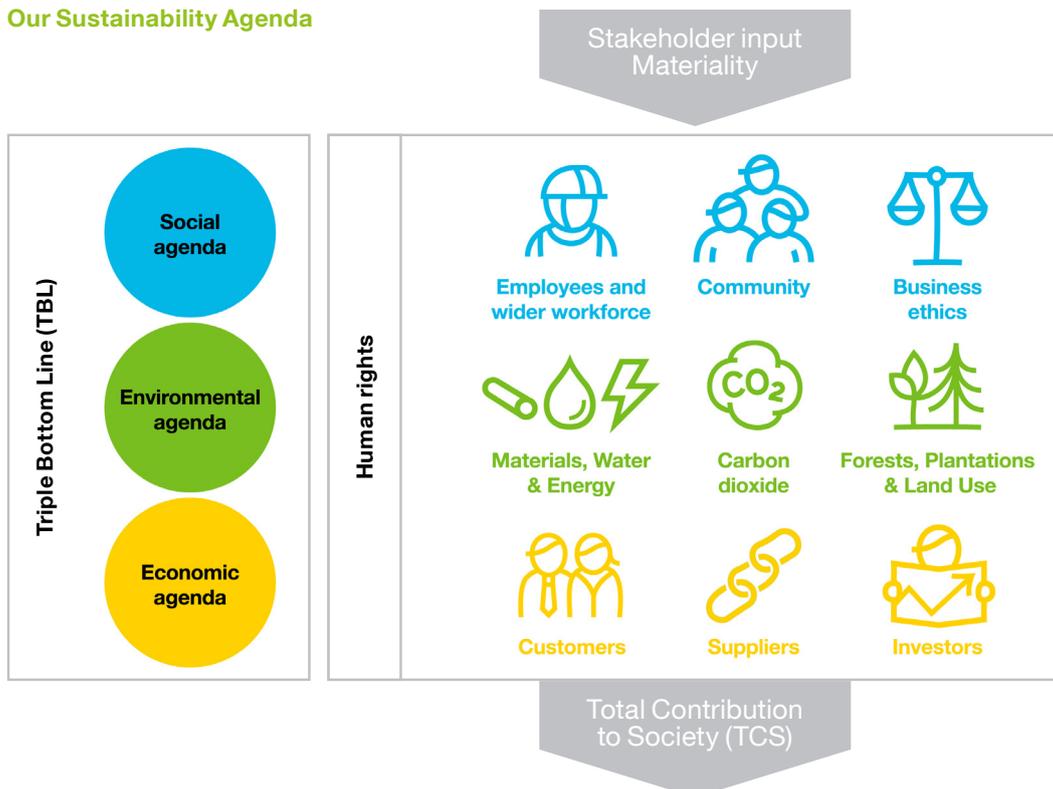
practice and promote sustainable forestry and work to ensure that more trees are planted than are harvested.

Stora Enso has committed to a set of ambitious science-based reduction targets for greenhouse gas (GHG) emissions. We are committed to reducing GHG emissions from our operations by 31% per tonne of pulp, paper and board produced by 2030 from a 2010 baseline, in line with the 2°C limit set for global warming by the Paris Agreement. For more information see www.sciencebasedtargets.org

Stora Enso's sustainability strategy is based on the Triple Bottom Line framework

Stora Enso's Sustainability Agenda encompasses the social, environmental, and economic responsibility of our operations throughout the value chain. It addresses the ten sustainability topics identified as material to Stora Enso and our key stakeholders. In line with our Sustainability Agenda, we have set ambitious targets and key performance indicators (KPIs) for our sustainability work. Progress is regularly monitored at group-level and via division-level business reviews and reported on via the annual Sustainability Report and quarterly Interim Reports.

Our Sustainability Agenda



We acknowledge the importance of the United Nations' Sustainable Development Goals (SDGs) as part of a commonly agreed global ambition to end poverty, protect our planet, and ensure prosperity for all. Our work to integrate the SDGs into our strategy is in line with the SDG Compass guide for companies, developed by the Global Reporting Initiative (GRI), the UN Global Compact (UNGC), and the World Business Council for Sustainable Development (WBCSD).

Stora Enso's sustainability governance structure, guidelines, and policies

Sustainability is a key element of Stora Enso's corporate governance, promoted by the Board of Directors, the CEO, and the Group Leadership Team. The CEO carries the ultimate responsibility for the successful implementation of our sustainability strategy. Stora Enso's sustainability work is steered by our Sustainability Council, whose members come from our five divisions, our Sourcing and Logistics function, and the group Sustainability team. The Board of Directors' Sustainability and Ethics Committee oversees the implementation of our sustainability strategy and the ethics and compliance strategy. At Stora Enso, sustainability work is led by the Executive Vice President, Sustainability, who reports directly to the CEO and is part of the Group Leadership Team.

Our Sustainability Policy describes our overall approach. At the same time, our Code of Conduct and other policies, guidelines, and statements on specific sustainability topics all further elaborate our approach, while also guiding our employees in their everyday work. Additionally, our mills apply third-party-certified management systems, and we utilise traceability systems to ensure that all the wood and fibre we use originates from legal sources. We strive to obtain third-party verification of these systems. These documents are available at Stora Enso's website and in the appendix.

The contents of our 2017 Sustainability Report have been assured by an independent third-party assurance provider with a level of Limited Assurance. For the third year running, a level of Reasonable Assurance has been provided for our direct and indirect fossil CO₂ emissions (scopes 1 and 2). Stora Enso is one of the few companies in the world that assures its CO₂ reporting for stakeholders at Reasonable Level.

Our environmental agenda underpins Green Bonds

Stora Enso's environmental agenda focuses on the following aspects material to the company and key stakeholders:

- 1) Materials, water, and energy,
- 2) Carbon dioxide, and
- 3) Forests, plantations, and land-use.

As a leading renewable materials company with access to carbon neutral biomass, we are in a unique position to combat global warming. We drive down fossil fuel use so that we get as close to zero as possible within the decade using

technically and commercially feasible means, and we seek to substitute fossil-based and other non-renewable materials with our renewable products.

Wood and fibre are the main raw materials in Stora Enso's production processes. Materials made with virgin fibre are used for products with special safety requirements such as packaging for food and pharmaceuticals. Virgin fibre is also needed in the paper recycling process. After about seven recycling rounds, paper fibres become too short to be reused but can then be burned for bioenergy, prompting the need for new virgin fibre.

Sustainable forest management safeguards forest health and productivity, helps combat global warming, and protects biodiversity – whilst securing the long-term availability of our renewable resources. In 2017, 88% of Stora Enso's wood came from managed semi-natural forests in Europe and 92% of the lands we own or lease were covered by forest certification systems. In 2017, 12% of Stora Enso's wood came from tree plantations. When establishing new plantations, we use internationally approved principles such as the Food and Agriculture Organisation's (FAO) Voluntary Guidelines on Planted Forests.

Green Bonds at Stora Enso

Stora Enso has the long-term aim 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 decisions and credit evaluation. As an example of this, Stora Enso signed a new Revolving Credit Facility (RCF) loan in December 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. This Green Bond Framework is a further example of such.

Stora Enso's funding strategy is based on the group's overall strategy. Stora Enso should 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 strives to build confidence and a track record with fixed-income investors by being informative and transparent. We will also issue bonds to provide financing for general corporate purposes and projects that do not fit into this framework, however always in the same transparent manner, as being sustainable underpins our thinking and our approach in every aspect of business.

This Green Bond Framework is based on and aligned with the 2017 version of the Green Bond Principles (GBP) published by the International Capital Markets Association (ICMA). To confirm such alignment, Stora Enso has commissioned Sustainability as an external reviewer to provide a second-party opinion on this framework.

Eligible activities

In accordance with the Stora Enso Green Bond Framework, proceeds from Green Bonds will be used solely to finance or refinance projects (going back up to two years) and activities defined under the Eligible Categories presented below. The relevant use of proceeds is outlined for each category and is comprised of individual projects or a portfolio of projects that has been selected based on Stora Enso's policies and governance structure described later in this framework. Where appropriate, the use of proceeds may be used to finance operating expenditures related to the projects (e.g. forest management, R&D) and will be tracked on a project or portfolio basis. Only projects or investments controlled and managed by Stora Enso, or within one of Stora Enso group controlled subsidiaries, will be deemed eligible.

Eligible Categories

To be eligible for Green Bond proceeds, the projects must fall within one of the following Eligible Categories. The Use of Proceeds is described for each category and is supported by a non-exhaustive list of Eligible Projects and a description of the context.

1. Sustainable Forest Management
2. Renewable, Low-Carbon, and Eco-Efficient Products, Product Technologies, and Processes
3. Energy Efficiency
4. Renewable Energy and Waste to Energy
5. Sustainable Water Management
6. Waste Management and Pollution Control

1. Sustainable Forest Management

Use of Proceeds

Proceeds in this category will be used to finance the acquisition, maintenance, and management of forests certified under the Forest Stewardship Council (FSC^{® 1}) and the Programme for the Endorsement of Forest Certification (PEFC). The proceeds will be used solely in FSC or PEFC-certified forests and no proceeds will go primarily to fossil fuel projects or to fund the use of genetically engineered trees.

Eligible Projects

- Regeneration of forests and plantations harvested by Stora Enso
- Wood harvesting of FSC or PEFC-certified forests (e.g. labor cost)
- Seedlings (e.g. production and procurement of pine, spruce, birch, or eucalyptus used in forest regeneration)
- Silvicultural operations (e.g. soil preparation, planting, pre-commercial thinning)
- Fertilisation (e.g. labor costs)
- Infrastructure to facilitate sustainable forest management
- Restoration of native forests and conservation of biodiversity.

Description

Stora Enso's approach to responsible forest and tree plantation management takes into account the economic, social, and environmental aspects of sustainability. Rather than simply complying with national legislation and regulatory obligations, 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.

Wood harvesting is planned to suit the special characteristics of each harvesting site, making use of appropriate felling methods and technology. Wood harvesting volumes are always aligned with

the long-term carrying capacity of the forests and plantations. All the roundwood, chips, sawdust, and externally purchased pulp supplied to our mills come from sustainable sources.

We always ensure that the forests and plantations where we harvest wood are duly regenerated. Often this is done with active planting or sowing, though in many areas active regeneration is complemented by natural seed dispersal from nearby forests, by leaving seed trees in the harvesting area, or by coppicing. Whatever the methods used, we always make sure the trees that we harvest will be replaced by new growth.

We do not procure wood and fibre that has been:

- illegally harvested;
- logged in protected areas or areas currently undergoing official processes of designation for protection;
- harvested in forests where High Conservation Values are threatened by logging;
- sourced from areas undergoing conversion from forest or other wooded ecosystems to plantations or non-forest uses, unless such conversion is justified on grounds of net social and environmental gain; or
- harvested in violation of traditional rights or civil rights.

To follow up on our progress we have, for the land owned, leased and managed by Stora Enso, KPIs in place that measure the percentage covered by certification systems. For more information see Stora Enso's Wood and Fibre Sourcing, and Land Management Policy, which can be found in the appendix to this framework.

¹ Stora Enso Communications' FSC[®] trademark license number is FSC-N001919.

2. Renewable, Low-Carbon, and Eco-Efficient Products, Product Technologies, and Processes

Use of Proceeds

Proceeds in this category will be directed towards financing the research, development, and equipment used in the manufacturing of products for the bioeconomy.

Eligible Projects

- Investments in and maintenance of production facilities that manufacture low-carbon products based on renewable materials
- R&D of renewable and low-carbon products, processes, and technologies with the purpose of replacing fossil-based and other non-renewable materials with bio-based alternatives.

Description

Our materials are renewable, reusable, and recyclable and come from sustainably managed forests and plantations. They form the building blocks for a range of innovative solutions in packaging, wooden construction, and biomaterials that can help replace products based on fossil fuels and other non-renewable materials.

3. Energy Efficiency

Use of Proceeds

Proceeds in this category will be directed towards financing overall efficiency improvements related to Stora Enso's operations and management systems. Typically such efficiency improvements are at a minimum of 20%. No proceeds will be used for operations that primarily run on fossil fuels.

Eligible Projects

- Efficient management systems in production units
- Operational energy saving projects (e.g. heat recovery and exchange systems, frequency converters, upgrading production units).

Description

By using materials efficiently and replacing non-renewable materials, Stora Enso operates at the heart of the bioeconomy. The environmental work at our mills, including water and energy management and resource efficiency, is supported by third-party-certified environmental management systems. A fundamental part of our work is a central energy efficiency investment fund.

4. Renewable Energy and Waste to Energy

Use of Proceeds

Proceeds in this category will be used to finance the development, operations, maintenance, and upgrading of facilities used to produce energy from biomass and waste products.

Eligible Projects

- Energy production from biomass and waste products from Stora Enso's own operations and external sources (e.g. by-products from packaging, pulp, paper, sawn goods production and residuals from harvesting operations and recovered wood, waste from local authorities)
- Transmission, equipment, and processes related to renewable energy production for use in Stora Enso's operations and the local communities.

Description

Stora Enso's production generates by-products such as black liquor, bark, and different kinds of sludge. These materials together with harvesting residues and recovered wood all constitute important biomass sources which can be used

to produce energy. All residues from our forest operations used as biomass come from non-food-competing, non-GM renewable sources. We use traceability systems to ensure that all the wood and fibre, and hence biomass, we use is sustainably sourced. Harvested wood is used primarily for pulp making and sawn wood. Renewable energy is generated using primarily residues and by-products.

Stora Enso is responsible for the generation and transmission of renewable biomass-based energy. Such energy is to a large extent used in Stora Enso's operations but may also be used to heat and power local communities. Biomass sources can be complemented by Refuse Derived Fuels containing recycled fibre and plastics from, for example, municipal waste. In 2017, the share of biomass in our internal energy production was 82%. These activities, together with our energy efficiency investments, contribute to us reaching our science-based greenhouse gas reduction targets.

5. Sustainable Water Management

Use of Proceeds

Proceeds in this category will be used to finance equipment and management systems involved in the process of reducing, recycling, and treating water in Stora Enso's operations.

Eligible Projects

- Equipment for reduction of water use at production facilities and recycling of water in industrial processes (e.g. cooling towers, control and measurement equipment)
- Equipment for water treatment to recycle and reuse water (e.g. biological waste water treatment plants, micro filters and aeration equipment)

Description

Production at Stora Enso's mills requires large amounts of water. However, only around 4% is consumed in our production processes while almost 96% is returned 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. Stora Enso uses high-performing wastewater treatment systems to ensure that discharged water is ecologically safe and meets all requirements. Water is recycled within our mills whenever possible to reduce the need for water intake. Optimising our water use also reduces the need for water pumping and heating, which creates energy savings and makes the purification of the remaining wastewater more efficient.

6. Waste Management and Pollution Control

Use of Proceeds

Proceeds in this category will be used to finance equipment and management systems involved in the process of reducing, recycling, and managing waste and residuals from Stora Enso's operations.

Eligible Projects

- Equipment for reduction of waste, wastewater, residuals, and air emissions (e.g. air feed systems in boilers, selective non-catalytic reduction (SNCR) technology, evaporators, automation equipment to monitor emissions, electrostatic precipitators, filtration devices, scrubbers, gas collection systems, non-condensable gas systems to reduce emissions)
- Equipment for processing and reusing waste and residuals (e.g. sludge and dewatering presses)

Description

Stora Enso's production processes generate various residuals and wastes, including ash, sawdust, bark, and wastewater treatment sludge. Many of these materials are used in our internal bioenergy generation and pulp production, or supplied to partners to be used in agriculture, brick manufacturing, or road construction, for instance. We are constantly innovating to improve resource efficiency and make profitable use of materials that would otherwise end up as waste. We ensure that hazardous waste is safely processed at suitable facilities or incinerators, and we report on hazardous waste disposal in accordance with the relevant regulations.

Processes and Governance

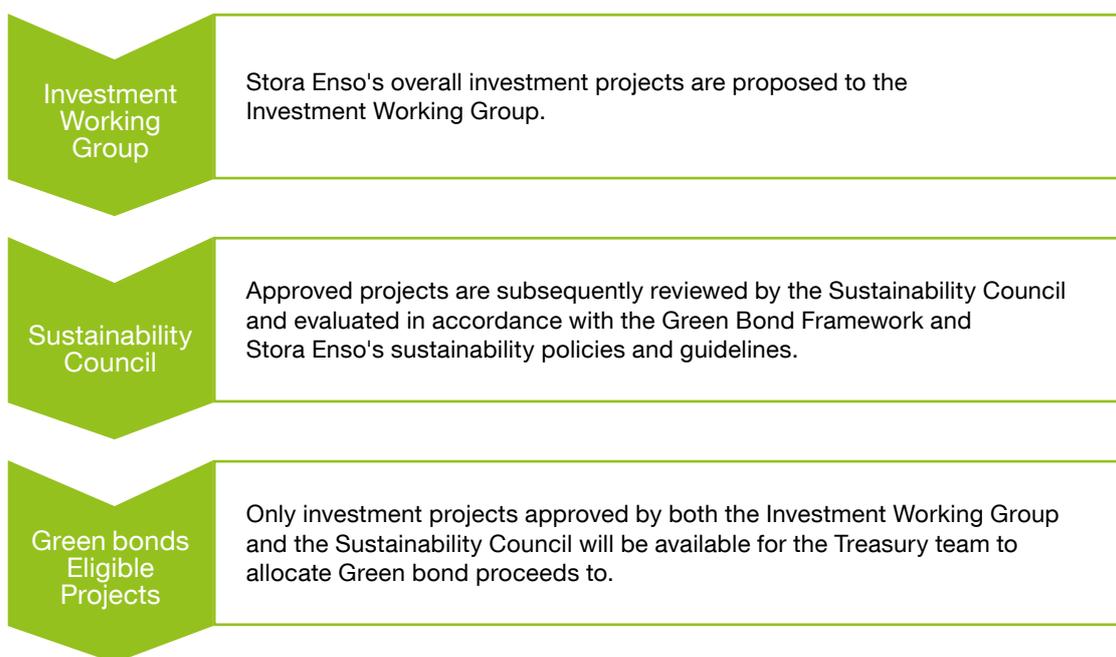
Strategic investment projects are approved on group-level following the mandate by the CEO and Board of Directors. Each division will also be granted an annual allocation intended for smaller annual replacement and development needs in relation to investments. All large projects are reviewed by the Investment Working Group comprising group and division representatives and headed by the CFO. Risks are mitigated through detailed pre-feasibility and feasibility studies which are prepared for each large investment. Group investment guidelines stipulate the process, governance, risk management, and monitoring procedures for strategic projects. Post completion audits are carried out for all significant investments.

To ensure a credible process for selecting projects we have defined a set of Green Bond-specific steps, which have been integrated into

the existing governance model of Stora Enso. The overall governance model for Stora Enso's Green Bond Framework, including the definition of Eligible Activities, have further been developed by a dedicated Green Bond team consisting of members from the sustainability, investment planning, and treasury departments.

While Green Bonds are administered by the Treasury team, our governance model includes experts from across the company to ensure alignment to the framework. Approvals for Green Bonds use of proceeds for investment are governed solely by our Sustainability Council. The Sustainability Council consists of members from our five divisions, our Sourcing and Logistics function, and the group Sustainability team, and is chaired by the Executive Vice President, Sustainability.

Outline of the Green Bond selection process



Internal accounting

Stora Enso will at all times keep and monitor a separate register of Eligible Projects and net proceeds from the combined Green Bond issuance. If, at any time, the total amount of proceeds from Green Bonds exceed the total value of Eligible Projects, the excess liquidity may be invested according to Stora Enso's liquidity and/or liability management activities. The Treasury team will be responsible for managing this register.

Reporting and impact

In accordance with the Green Bond Principles, Stora Enso will provide an annual update on the activities related to its Green Bonds issuance. In such updates we will seek to provide information on the allocation of the use of proceeds as well as relevant impact metrics. The information will be made publicly available via Stora Enso's website.

The relevant information provided will include:

Use of Proceeds

- A breakdown of proceeds in accordance with the areas highlighted under Eligible Activities
- The amount of unallocated proceeds
- A closer description of some of the activities financed.

Impact reporting

- For allocated and Eligible Projects, the actual impact will be reported when relevant according to the proposed metrics outlined in the below table.

The group-level sustainability KPIs are published in our Sustainability Report annually and demonstrate our continuous commitment to sustainability. Stora Enso will develop relevant KPIs for Eligible Activities depending on projects and as the market and standards develop. Such KPIs are proposed in Table 1 but may change over time subject to providing a relevant understanding of the impact. For Eligible Activities where KPIs cannot be systematically measured and reported on (e.g. R&D), Stora Enso will seek to provide information on the goals, assumed positive environmental impact, and results of the activities financed.

Table 1: Proposed impact metrics for Stora Enso's Green Bonds

Use of Proceeds category	Examples of proposed impact metrics (KPIs)
Sustainable Forest Management	Total land area certified by FSC and PEFC
Renewable, Low-Carbon and Eco-efficient Products, Product Technologies and Processes	Total amount of products produced
	Ecolabels
	Externally validated life cycle calculations such as product carbon footprints
Energy efficiency	Annual energy saving (heat, electricity)
	Avoided or reduced CO ₂ -e emissions
Renewable Energy and Waste to Energy	Total renewable / bioenergy energy generation (MWh)
	Avoided or reduced CO ₂ -e emissions
Sustainable Water Management	Amount or % of water recycled
	Amount of water reduced
Waste Management and Pollution Control	Amount of waste and residual reduced

Table 2: Existing Sustainability impact metrics on group level

Stora Enso environmental agenda focus areas	Reporting metrics
Energy, materials, and water	Process residuals utilisation rate (%)
	Process water discharge per saleable tonne of pulp, paper, and board (m ³ /tonne)
	Total water withdrawal per saleable tonne of pulp, paper, and board (m ³ /tonne)
	Reduction in electricity and heat consumption per saleable tonne of pulp, paper, and board (kWh/tonne)
Carbon dioxide (combatting global warming)	GHG emissions from our operations per tonne of pulp, paper, and board produced
Forests, plantations, and land-use	Percentage of these lands covered by certification systems

Appendix

Supporting material

Sustainability Policy:

http://assets.storaenso.com/se/com/DownloadCenterDocuments/Sustainability_Policy.pdf

Policy for Energy and Carbon:

http://assets.storaenso.com/se/com/DownloadCenterDocuments/Policy_for_Energy_and_Carbon.pdf

Wood and Fibre Sourcing and Land Management:

http://assets.storaenso.com/se/com/DownloadCenterDocuments/Wood_and_Fibre_Sourcing_and_Land_Management_Policy.pdf

Environmental guidelines provides further detail on the implementation of policies down to the level of ISO and forest certification:

http://assets.storaenso.com/se/com/DownloadCenterDocuments/environmental_guidelines1.pdf