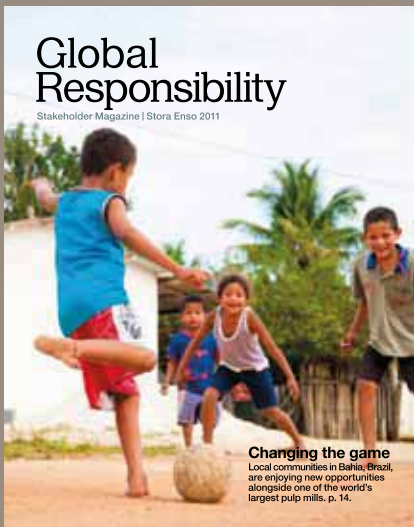


Global Responsibility Report

Stora Enso 2011



Global Responsibility Stakeholder

Magazine

This report also includes a new stakeholder magazine, containing articles about our Global Responsibility work.

Global Responsibility Report

Stora Enso 2011

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Stora Enso in brief

Stora Enso is the global rethinker of the biomaterials, paper, packaging and wood products industry.

We always rethink the old and expand to the new to offer our customers innovative solutions based on renewable materials.

The Group has some 30 000 employees in more than 35 countries worldwide, and is a publicly traded company listed in Helsinki and Stockholm. Our customers include publishers, printing houses and paper merchants, as well as the packaging, joinery and construction industries.

Our annual production capacity is 4.9 million tonnes of chemical pulp, 11.8 million tonnes of paper and board, 1.3 billion square metres of corrugated packaging and 6.0 million cubic metres of sawn wood products, including 3.1 million cubic metres of value-added products. Our sales in 2011 were EUR 11.0 billion with an operational EBIT of EUR 866.7 million.

Stora Enso's mission is to use and develop its expertise in renewable materials to meet the needs of its customers and many of today's global raw material challenges. Our products provide a climate-friendly alternative to many products made from competing non-renewable materials, and have a smaller carbon footprint. Our solutions based on wood therefore have wide-reaching benefits for us as a business, for people and for the planet. Global Responsibility – meaning economic, social and environmental responsibility – underpins our thinking and our approach to every aspect of doing business.

Stora Enso will focus more on growth markets in China and Latin America, and fibre-based packaging, plantation-based pulp and selected paper grades. Fibre-based packaging offers steady long-term growth in most segments and has vast innovation potential, offering sustainable new solutions for our customers. Plantation-based pulp allows us to secure low-cost fibre for production.

New business areas in 2012

In January 2012 Stora Enso announced the reorganisation of the Group's business area structure. The two paper business areas Publication Paper and Fine Paper have now been combined into a single business area called Printing and Reading. The Packaging Business Area has been renamed Renewable Packaging. A new business area called Biomaterials has been established, comprising mainly the Company's joint-venture pulp mills, stand-alone pulp mills and tree plantations. The Wood Products Business Area has been renamed Building and Living.

This report describes the year 2011, when the previous business area structure was still in place. The new business area structure will be reflected in the Global Responsibility Report for 2012. The first Financial Report to apply the new business area structure will be the Interim Review for the first quarter of 2012.

External recognition

Carbon Disclosure Leadership Index

In 2011 Stora Enso received top scores within the paper and forest products industry in the Carbon Disclosure Project's (CDP) Nordic Carbon Disclosure Leadership Index (CDLI) for our reporting on carbon emissions. The company was also ranked among the top five companies overall in the same index.

The Carbon Disclosure Project (CDP) is an independent non-profit organisation backed by over 551 institutional investors with a combined USD 71 trillion of assets under management. It gathers information on corporations' greenhouse gas emissions, and the risks and opportunities they face in relation to climate change. It also sets standards for carbon disclosure methodology and processes.

Dow Jones Sustainability Indexes

Stora Enso was the only European company from the paper and forest products industry listed in the Dow Jones Sustainability Indexes (DJSI) for 2011–2012. We received top industry scores for sustainable forest management, product stewardship and environmental management. We have now been listed on the DJSI every year for 11 years running.

The DJSI assesses the economic, environmental and social performance of some of the world's largest companies.

Forest Footprint Disclosure

Stora Enso was ranked as sector leader within the basic materials sector for 2011 in the annual review of the Forest Footprint Disclosure. This is the second year in a row that we have received this recognition.

Forest Footprint Disclosure is a special project run by the Canopy Foundation, aiming to increase companies' understanding of their "forest footprint", which results from the use of key commodities that can put forests at risk, including soy, palm oil, timber, cattle products and biofuels.

FTSE4Good Index

Stora Enso was again included in the FTSE4Good Index Series, where we have been listed since 2001. The FTSE4Good Index Series has been designed to measure the performance of companies that meet globally recognised corporate responsibility standards, and to help investors identify such companies. The index focuses on environmental management, human and labour rights, supply chain labour standards and efforts to counter bribery.

World's Most Ethical Companies

Stora Enso was named by the Ethisphere Institute as one of the World's Most Ethical Companies for 2011. This institute is dedicated to the study, creation and sharing of best practices in ethics, compliance, and corporate governance.

Supporting the UN Global Compact

Stora Enso supports the ten principles of the UN Global Compact, and we respect and promote these principles throughout our operations. The table below lists the ten principles of the UN Global Compact and specifies where information on how we address these issues can be found in this report.

UN Global Compact principles

Human Rights	Read more
Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights.	See pages 15, 27
Principle 2: Businesses should make sure that they are not complicit in human rights abuses.	See pages 15, 27
Labour Standards	
Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.	See pages 15, 27 and 22–23
Principle 4: Businesses should uphold the elimination of all forms of forced and compulsory labour.	See pages 15, 27
Principle 5: Businesses should uphold the effective abolition of child labour.	See pages 15, 27
Principle 6: Businesses should uphold the elimination of discrimination in respect of employment and occupation.	See pages 15, 27 and 22–23
Environment	
Principle 7: Businesses should support a precautionary approach to environmental challenges.	See pages 40–41
Principle 8: Businesses should undertake initiatives to promote greater environmental responsibility.	See pages 33–37 and 40–49
Principle 9: Businesses should encourage the development and diffusion of environmentally friendly technologies.	See pages 33–37 and 40–49
Anti-corruption	
Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.	See page 15



Global Responsibility on map

The focuses of our work vary according to local conditions and priorities. This map gives an overview of our main sustainability issues in different geographical locations.

Europe

Most of Stora Enso's production capacity is located in Europe. Minimising the environmental impact of our mills is a top sustainability priority here. We have especially focused on minimising CO₂ emissions, and on responsible water use. Read more about our environmental work on pages 39–51. Our work on environmental and water issues is also described in a feature article about Skoghall Mill, Sweden, in our stakeholder magazine (distributed together with this report).

Stora Enso sources most of its main raw material, wood, in Northern Europe. Promoting forest certification and sustainable forestry is therefore a vital part of our sustainability work in this region. Read more about sustainable forestry and how we source our wood and fibre on pages 33–37.

Occupational health and safety is another important focus of our work in Europe, where most of Stora Enso's employees are located. Read more about this work on pages 25–26. During 2011 we have also been rethinking our approach to human resources management. Read more on pages 22–24.

In recent years we have reduced production capacity at certain locations in Europe. We have continued our support for the people and communities affected by job losses. Read more on page 23.

Brazil

Stora Enso owns a state-of-the-art pulp mill and large-scale eucalyptus plantations through its joint venture Veracel, whose operations are located in Bahia, Northeast Brazil. Stora Enso also runs tree plantations in Rio Grande do Sul and a magazine paper mill at Arapoti, both in the South of Brazil.

To support socio-economic development and help local communities benefit from our presence in the region, Veracel runs tree-farming programmes and schemes to support other local livelihoods including agriculture and handicrafts. In the areas around Veracel's plantations we work to protect local biodiversity by restoring natural Atlantic Rainforest habitats and promoting related environmental education and academic research. Stora Enso and Veracel control large areas of land, and we engage with landless social movements in Brazil to find sustainable land use solutions. Read more on pages 19–21, and also in our stakeholder magazine (distributed together with this report).



Russia

Our operations in Russia include wood sourcing and forestry operations, as well as three packaging mills and two sawmills. In Russia we particularly focus on ensuring the legality and acceptability of wood, promoting forest certification, and improving occupational health and safety practices. Read more on pages 25–26 and 33–35.

China

In addition to our two paper mills and two core plants, Stora Enso owns production and distribution units in China through the packaging company Inpac International, acquired in 2011. This acquisition increased the number of Stora Enso employees in China from 1 800 to over 4 500. Read more about our human resources management work in our new growth markets on pages 22–23 and in our stakeholder magazine (distributed together with this report).

We have been establishing and managing tree plantations in Guangxi, Southern China, since 2002. One important element of this work concerns respecting local people's land use rights and working to prevent land use disputes. We are currently revising the land lease contracts with local people, while continuously striving to improve working and living conditions of our contract workers, and also training local contractors to meet our sustainability standards. Read more about our operations in Guangxi on pages 19–21 and 27, and in our stakeholder magazine.

Uruguay

Through our joint venture Montes del Plata, Stora Enso is constructing a new pulp mill and related infrastructure. The mill construction involves several schemes designed to mitigate harmful impacts and find innovative ways for local communities to benefit. We own large land areas in Uruguay, where we have introduced plantation forestry in lands previously used for cattle grazing. Forest certification processes are an important tool to ensure sustainable forest management practices are followed in our tree plantations. Partnerships with local farmers give them additional income from wood production. Montes del Plata is also engaged with local communities through various development programmes. Read more on pages 19–21 and 33–35, and also in our stakeholder magazine (distributed together with this report).



Message from the CEO

The Global Responsibility report that you are holding is a verified review that follows the internationally recognised Global Reporting Initiative guidelines. To some of you this may sound like a lot of mumbo jumbo, so I'd like to explain what this means. It means that in this report we will not only talk about our achievements, but also about our failures. It also means that all the information in this report has been checked by an external verifier to make sure that the facts and figures we give you are exact and correct.

Reporting is largely about policies, figures, targets and performance. The transparent disclosure of these issues is important, but this makes up only one part of Global Responsibility. This report contains some complex sustainability terminology, but we do not want to hide anything behind jargon. For us at Stora Enso, Global Responsibility is about opening our eyes and ears to the world, so as to understand what is expected from us. It is about rethinking our work all the time, and driving change.

You can make a difference

Opening up to stakeholders is one of the major trends we are seeing in business around the world today. Businesses must increasingly gain acceptance for their operations from a growing number of stakeholders. For us at Stora Enso, listening to you as an individual stakeholder and a consumer lies at the heart of our business. Your opinion can make a difference.

Whether or not we understand and meet the needs and expectations of the communities around us is not just a question of responsibility. It will eventually determine the success of our business. This is especially important in areas where common solutions are yet to be found.

In 2011, one of these areas was Southern Bahia in Brazil, where our joint venture Veracel is located. Several stakeholders have been criticising Veracel's operations, especially with regard to the company's application for an environmental licence for a possible expansion. Public hearings on the possible expansion arranged by Veracel in 2011 enabled around 2 350 people to express their support or opposition. Having learnt about stakeholders' expectations, Veracel is now looking for new ways to operate and share benefits.

The first steps have already been taken. Veracel sources wood from local tree farmers in Southern Bahia, and last year the first group of local farmers were granted group forest certification to verify that their

wood comes from responsibly managed tree plantations. Veracel has also taken steps to diversify the use of the company's lands, enabling trees and food crops to be farmed together.

This is the direction we want to be taking in the long term. We will seek out inclusive business models that enable us to partner and share value with local communities. Those business models must extend all the way from our sourcing of raw materials to consumers around the world. They must benefit both business and local communities.

In the meantime, we have adopted a more structured approach in listening to our stakeholders both locally and in the social media. In 2011 we have been increasingly encouraging our staff to initiate open dialogues with all interested stakeholders. We have provided tools for this, such as a stakeholder guideline covering the whole Group, which was launched last year.

If you have read this far in these opening words, I can assume that you are probably an interested stakeholder. So I would like to encourage you to come and have a say on our Facebook pages at www.facebook.com/storaenso. Tell us your thoughts and ideas – we will listen. You have the power to make us rethink.

Our people

In 2011 the world economy went through turbulent times. But regardless of the economic realities of the world now or in future, there are certain issues on which we cannot and will not compromise.

One of these things is the health and safety of our staff. I am proud to say that our lost-time accident rate (the number of accidents that keep people off work per million working hours) improved significantly in 2011. Yet ultimately the only acceptable target for safety is zero accidents. To work towards this, we have set a mid-term goal of less than 5 lost-time accidents per million working hours by the end of 2013. We will provide our business areas and units with the necessary guidance, skills, training and coaching to reach this goal.

Another thing that will not change is our commitment to ethical business behavior. In 2011 we launched our new business practice policy – a clear set of rules that defines how to act when doing business. Our Code of Conduct also sets out rules defining how you can and cannot behave as a Stora Enso employee. In 2012 we will strengthen this Code of Conduct by expanding its scope to cover more areas.



“Businesses must gain acceptance for their operations from a growing number of stakeholders.”

The code has to change as the times change – it is not a set of rules to be archived somewhere. It is a living part of the everyday life of every person working at Stora Enso.

In addition to our own Code of Conduct, we are also committed to the United Nations Global Compact and all its principles, including principles on human rights. For us at Stora Enso, our work respecting and promoting human rights starts from the workplace and extends along our global supply chain.

Although many of the challenges we face in terms of global responsibility are in areas far from our traditional home base, there is still a lot we can do in Europe, too. Our continuing restructuring in Europe mainly affected employees working for our Fine Paper Business Area and the employees of Kopparfors Sawmill, which closed in 2011. Supporting these people is an ongoing challenge and a top priority for Stora Enso. We are supporting them individually, mostly by helping them to find new opportunities within or outside Stora Enso. We are doing this in close cooperation with the local authorities to make sure that each person affected receives all the support and information available.

Products to improve the quality of your life

In terms of our environmental work, we did well in 2011. We made steady progress towards most of our environmental targets. We also received high scores in the Dow Jones Sustainability Indexes and in the Nordic Carbon Disclosure Leadership Index.

In December, we set out a new, more ambitious fossil CO₂ target for the whole Group, aiming to reduce our fossil CO₂ intensity by 35% by the end of 2025 compared to 2006 levels. At Stora Enso we feel we have a clear responsibility to combat climate change – whether or not any global political decision is reached through the United Nations framework. We have a role to play both in reducing our own emissions, and in making products that have a lower carbon footprint than competing products made of non-renewable materials.

Another trend that affects us all is global population growth, and the consequent pressure on natural resources and ecosystems. As the world is getting more and more crowded, we are running out of our natural resources. The European Commission has made resource efficiency a top priority in its Europe 2020 strategy, and institutions such as the Organisation for Economic Cooperation and Development (OECD) are highlighting this issue as one of the main challenges facing humanity in the 21st century.

At Stora Enso we have an excellent opportunity to become a leader in the efficient use of raw materials. We have a good track record in using materials, including our use of water and the beneficial use of wastes. Our products are resource-efficient as they are made of renewable materials, and also themselves reusable or recyclable. We can convert your used beverage cartons to make new packaging materials, generate energy, and even recover aluminium. We have the knowledge and technology to do this – as long as you choose fibre-based products and then recycle them.

This brings me to the point of everything we do at Stora Enso – to meet your needs. We exist because of our customers and consumers. I believe that consumers, all of us, will be happier in a world that is not hazardous or polluted, but safe and healthy. At Stora Enso, we answer this call by making building materials, packaging and paper which are recyclable, which store carbon, and which provide favourable alternatives to products made of non-renewable materials. We are constantly looking for new, smarter fibre-based solutions. I believe that a better future is possible for all of us, as long as we make the right choices.

Jouko Karvinen
CEO of Stora Enso

Verified reporting in line with the Global Reporting Initiative (GRI)

This report follows the sustainability reporting guidelines defined by the Global Reporting Initiative (GRI), applying the G3.1 guidelines, the most recent generation of sustainability reporting guidelines. Stora Enso has applied the GRI guidelines in annual sustainability reporting since 2003. We believe that following these guidelines is the best way to offer transparent and reliable information about our efforts on all the vital aspects of sustainability.

This GRI report has been verified in detail by an independent third party assurance provider, in accordance with the voluntary external assurance practices of sustainability reporting. The assurance statement for the report appears on page 60.

Report scope

The report corresponds to the B+ level in the GRI's reporting standards. Level B means that our sustainability reporting covers those indicators of the GRI framework that we have defined as relevant to our stakeholders and our operations. The + symbol indicates that an external third party has verified this report. The process we have applied to define material issues is described on page 13. The GRI index table appears on pages 54–57 together with the reported indicators and detailed reporting information.

The consolidated performance data in this report covers the parent company, Stora Enso Oyj, and all companies in which we hold, directly or indirectly, over 50% of the voting rights.

Our consolidated sustainability performance data does not cover equity accounted investments, of which Stora Enso's ownership is between 20% and 50%, or companies in which our ownership share is less than 20%. These represent undertakings in which Stora Enso has significant influence, but which the company does not control.

Reporting on our joint ventures in South America

For instance, data related to the sustainability performance of our joint ventures Veracel in Brazil and Montes del Plata in Uruguay, which are both 50%-owned by Stora Enso, is not consolidated into the sustainability performance data presented in this report.

This report does, however, describe issues directly relating to companies of which Stora Enso's ownership is 50% or below, where these issues have been identified as material to our stakeholders. Since our two joint ventures in South America have attracted considerable attention among our stakeholders, we feel it is important to report on the issues concerned. For information about Veracel and Montes del Plata, see pages 19–21 and 33–35, and also our stakeholder magazine (distributed together with this report).

Guiding our operations

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- We now use the social media as an additional channel for dialogues with our stakeholders. [Page 11](#)



- We have set a new tougher target for reducing our CO₂ emissions. [Page 14](#)



- Major stakeholder concerns included criticism of our logging practices in Sweden. [Page 12](#)

Governance and management

- **Stora Enso's Global Responsibility governance and management practices ensure that social, environmental and economic responsibilities are duly taken into account.**

For Stora Enso global responsibility means taking concrete and proactive measures to improve the environmental and social responsibility of our operations together with our stakeholders. We have robust governance and management practices in place to ensure that social and environmental aspects are duly taken into account in our everyday operations, as well as in our business decisions. We use a wide range of tools to do this in practice, including:

- Global Responsibility governance
- specific policies on Global Responsibility
- group-level Global Responsibility targets
- management systems
- supply chain management
- social and environmental impact and risk assessments for investment decisions
- responsibility reporting and third party assurance

Global Responsibility governance

Stora Enso's Group Executive Team (GET) is responsible for our Global Responsibility policy and principles. A Global Responsibility management team supports and advises the GET on sustainability issues, and coordinates and monitors sustainability work across Stora Enso in practice. The Global Responsibility management team includes sustainability experts from Stora Enso's Group Functions, Business Areas, forestry operations, and regional operations in Latin America and China.

Our Business Areas and all support functions are responsible for the operational management of sustainability issues. The role of the Global Responsibility corporate function is to develop and support Stora Enso's responsibility work.

Policies

Stora Enso has developed a set of policies and principles that define our group-wide approach to important topics, and guide us in our day-to-day operations.

- **Sustainability Policy** forms the basis for our social and environmental work.
- **Business Practice Policy** sets out Stora Enso's approach to ethical business practices, dealing with topics such as antitrust, conflicts of interest, bribes and money laundering.
- **Principles for Social Responsibility** define Stora Enso's approach to human and labour rights and community involvement.
- **Principles for Occupational Health and Safety** define the focus areas of our work related to workplace health and safety.
- **Principles for Sustainable Wood and Fibre Procurement and Land Management** set out our approach to responsible wood

and fibre sourcing as well as land management in areas where we have plantations.

We have also established a Code of Conduct, which summarises the key elements of our policies and principles, and provides further guidance on what they mean in practice (see page 15).

Stora Enso has a clearly defined position on vital issues such as forest certification, illegal logging and the use of Genetically Modified Organisms (GMOs). All the policies and principles listed above are available together with further position papers at: www.storaenso.com/sustainabilitypolicies.

Group-level targets

We set group-level responsibility targets to help us efficiently manage our environmental and social performance across our operations. These targets are continuously reviewed, and we proactively set new targets where necessary. We also report annually on our performance against these targets. For more information about our responsibility targets and performance, see page 14.

Management systems

Stora Enso's policies and principles are translated into practice through management systems that help our units to recognise any responsibility-related issues that need to be addressed. These systems are used to set targets and schedules, to assign responsibilities, and to follow up on our performance with regard to environmental impacts, occupational health and safety, product safety and hygiene, and forest and plantation operations.

Most of these management systems are third-party-certified. This means that an external party has verified that the management systems are in line with a relevant nationally or internationally recognised standard. More details of these systems are included in the respective sections of this report.

Supply chain management

Stora Enso sources materials and services such as wood, chemicals, and transport and harvesting services from a large network of external suppliers and contractors.

We have practices in place to ensure that also our environmental and social commitments are followed and translated into practice throughout the value chain. Our wood suppliers and the whole wood supply chain are covered by regular controls and audits as part of our traceability, chain-of-custody and forest certification processes. Detailed descriptions of these processes are given in the wood and fibre sourcing section of this report (see pages 32–35).

For other suppliers and contractors, Stora Enso has set sustainability requirements which are included in purchasing agreements and duly monitored. For a more detailed description of how sustainability management works along the supply chain, see page 38.

Responsible investment decisions

When planning and evaluating potential future investments, we strive to identify risks related to sustainability in good time, in order to guide decision-making in our investment processes. We use tools such as Sustainability Due Diligence and Environmental and Social Impact Assessments (ESIA) to help us to ensure that no unsustainable projects are initiated, and that we fully understand all the related risks and opportunities. These tools also enable us to adapt project plans to suit local circumstances. For more details, see pages 17–18.

Responsibility reporting and assurance

Our Global Responsibility reporting is an important tool for managing environmental and social responsibility issues. We use third party assurance to add transparency to our responsibility reporting. We have been using such external verification since 1998. The full assurance statement for this report can be found on page 60.

Stakeholder engagement

- **Most major stakeholder concerns are related to our operations in new growth markets.**
- **A new stakeholder guideline was launched to support our employees in stakeholder relations.**
- **We are increasingly using social media as a complementary channel for stakeholder dialogue and feedback.**

Feedback from our stakeholders helps us to see which issues we should prioritise. In 2010, Stora Enso established a new function within our organisation named Global Responsibility to focus on improving stakeholder relations. During 2011 the Group worked to develop a more systematic and comprehensive approach to stakeholder engagement. This work involved systematically following stakeholders' comments in social media, continuously encouraging stakeholders to provide us with feedback through social media channels, and organising a stakeholder workshop to identify and spotlight weak signals coming from our stakeholders, as well as launching a stakeholder guideline for Stora Enso in line with our Code of Conduct.

This stakeholder guideline is a publically available tool that our employees can use to build better relations with stakeholders. It provides instruction on how to identify their stakeholders, how to make stakeholder action plans, and how to behave when engaging with stakeholders. It emphasises the need to respect all stakeholders, and encourages our employees to initiate open dialogues with all interested stakeholders.

Our stakeholders define Global Responsibility

Stora Enso's Global Responsibility agenda – our annual list of planned actions – is based on stakeholder feedback. Most feedback reaches us directly through our everyday contacts with our stakeholders at meetings, fairs, training events, open house events, community visits, public hearings and other events organised for or by our stakeholders. We also regularly receive indirect stakeholder feedback, for instance via grievance channels, surveys, trade unions, associations and customer

Who is a stakeholder?

For Stora Enso, a stakeholder is anyone interested in what the Group is doing. In our sector significant stakeholders include:

- Consumers
- Customers
- Employees
- Forest-owners
- Governments
- Investors
- Local communities
- Media
- NGOs
- Partners

Stora Enso engages with all stakeholders with interests in our operations. If you are interested in our responsibility work, you are also an important stakeholder for us.

You can send us your feedback in various ways, for instance through www.facebook.com/storaenso.

satisfaction measurement. (For more details of our customer satisfaction measurement, see page 30).

Stakeholder discussions in the social media are an increasingly important source of feedback. In 2011 our annual materiality review was partially based on the results of social media screening. We actively seek feedback and dialogue through our Facebook, Twitter and YouTube sites, and we regularly follow discussions related to us and our industry in other social media channels, such as blogs. Listening to our stakeholders through social media is also a useful tool for mapping weak signals that may become major stakeholder issues in the future.

The social media do not provide a comprehensive tool for stakeholder engagement, however, as some stakeholders have little or no presence in social media channels. In countries where many of our stakeholders

do not have access to social media, we have organised our work so that we are in continuous direct contact. This can involve organising regular visits to local villages, monthly meetings with local farmers, or public hearings.

Major stakeholder concerns in 2011

In March, the Swedish Society for Nature Conservation (SSNC) published a report expressing concern about the protection of biodiversity in Sweden. The report criticised Stora Enso for logging in areas with high biodiversity value. Stora Enso responded by stating that our forestry operations comply with the national forestry law, our own Wood Procurement Principles, and forest certification standards. In uncertain cases we always consult the Swedish Forest Agency. In 2011, we provided training for 20 employees on the identification of key biotopes and 50 employees on nature value assessment procedures. Since this accusation was made we have also employed an environmental manager to consult and train our staff on biodiversity issues. We are closely following the ongoing discussion between the SSNC, other NGOs and Swedish legislators. For more details about Stora Enso's forestry practices, see pages 33–36.

The FSC certification of Veracel, a joint venture of Stora Enso and Fibria in Brazil, was criticised in 2011. In response to a complaint filed in 2010, Veracel's FSC certificate provider SGS Qualifor was investigated, and Veracel's FSC certificate was audited in 2011. Based on these investigations, SGS Qualifor's licence to grant certificates in Brazil was suspended in 2011, specifically due to stakeholders' concerns about plantation management. But it was deemed that Veracel's FSC certification remains valid. For more details about Veracel's operations, see pages 19–21 and 33–36.

In September, two NGOs Rettet den Regenwald and Salve le Floreste launched a petition against Veracel, collecting the signatures of people opposing the granting of an environmental licence for the possible expansion of Veracel's operations. Around 2 350 people participated in related public hearings in 2011, expressing both support for and opposition to the expansion. For Stora Enso, any expansion of our operations should be based on local support. In Brazil, we are working to improve our understanding of local concerns and take them into account more sensitively in our operations.

In mid-September around 200 workers at the Montes del Plata Mill project, a joint venture of Stora Enso and Arauco in Uruguay, went on strike. The workers were demanding higher daily allowances for their travelling and lunch expenses. The strike ended after 12 days of open negotiations with a final agreement reached on 21 October 2011.

In November a documentary film "The Red Forest Hotel" was premiered in Finland. The film's criticisms of Stora Enso's operations in Guangxi, China, gained coverage in the Finnish media. The film claims that Stora Enso and the local government in Guangxi have forced local villagers to surrender their lands using violence and by misleadingly inducing the villagers to sign disadvantageous land contracts. It also claims that Stora Enso and the local government have been involved

in the imprisonment of a local lawyer, and that eucalyptus plantations have caused problems including the drying up of local springs, soil depletion and lost opportunities to farm other crops.

The film had been made in 2009 and 2010, and some of the information it presented was out of date by the time of its release. Stora Enso had already noticed problems with unclear land contracts related to our operations in China in 2009. In response, we launched a systematic legal screening and correction process covering all the land contracts made in Guangxi. By the time the film was released Stora Enso had also initiated other new actions in the area, including a 24/7 grievance hotline, a community development plan, and the employment of staff specifically assigned to meet villagers on a daily basis to hear about their needs and concerns.

Memberships in associations

In 2011, Stora Enso continued its membership in the following associations:

- World Business Council for Sustainable Development (WBCSD)
- Confederation of European Paper Industries (CEPI)
- The Alliance for Beverage Cartons and the Environment (ACE)
- National industry federations
- Forest certification bodies
- UN Global Compact
- United Global Compact Nordic Network
- The Forest Dialogue (TFD)
- Water Footprint Network
- ISO 26000 Working Group
- ISO Environmental Management Committee

Key stakeholder projects in 2011

New Generation Plantation Project

Through this initiative Stora Enso, certain other companies, governmental organisations and the WWF are working to enhance sustainable plantation forestry around the world. Stora Enso has resolved to take part in a new phase of the project initiated by the WWF, aiming to improve the institutional and technological aspects of responsible plantation management over the next two years. In 2011, Stora Enso co-hosted a Responsible Markets Workshop about New Generation Plantations together with other companies and the WWF.

Working together to promote biodiversity in Guangxi, China

Stora Enso is cooperating with the local branch of Flora & Fauna International in Guangxi on studies of plantation vegetation and ways to use trends in birds' numbers as indicators of the ecological health of plantations. Stora Enso and Fauna & Flora International jointly organised a workshop in Nanning in November 2011. The workshop also involved members of the local forestry bureau, representatives from the environmental protection department, university professors and other local stakeholders. It enabled participants to share their opinions on biodiversity issues, and publicise these issues among media representatives.

New employer branding platform launched

In order to attract talent, as well as retain and develop current employees, Stora Enso launched a new “You are the Opportunity” employer branding platform. This scheme aims to ensure that all of our employees feel proud to work for Stora Enso.

Defining material issues for this report

In 2009 and 2010, our materiality reviews were conducted through stakeholder surveys, whose results were similar in both years. In 2011, we instead carried out an internal survey among members of our personnel who work closely with stakeholders, as well as a social media monitoring study following stakeholders’ discussions. These surveys indicated that the same issues that had been identified as significant in 2009 and 2010 are still relevant.

As the basic material issues seemed to remain the same, we wanted to take a new, more ambitious approach towards mapping the interests of our stakeholders. Our goal has been to find new, emerging stakeholder expectations, or weak signals that we could take into account as early as possible in anticipation of future trends. These new and emerging stakeholder expectations were identified by using two main sources of information: stakeholders’ discussions in social media, and ideas about our stakeholders’ expectations held by key Stora Enso personnel who work closely with our stakeholders globally.

Our materiality analysis in 2011 was therefore conducted as a workshop facilitated by an independent external partner. The workshop examined background information about stakeholders’ expectations in combination with the expertise of our key personnel and findings from previous materiality analyses.

Key results from the materiality review

As in previous years, stakeholders’ main expectations related to issues including the environmental performance of our mills, forest certification and the origin of wood. The global scale of our operations means that the environmental and social impacts of tree plantations, supply chain sustainability and water footprint also remained major stakeholder interests in 2011.

Targets and performance

We report annually on our Global Responsibility performance against our targets. We also continuously review these targets and proactively set new targets where necessary.

All Stora Enso's Global Responsibility targets for 2011 and 2012 are listed in the table below, with notes on the status of each target and references to the sections of this report where progress towards them is described in more detail.

Targets for 2011	Performance in 2011	Targets for 2012	Read more
Guiding our operations			
Code of Conduct		Revise Code of Conduct and training material. Continue to train new employees.	page 15
People			
Zero lost-time accidents (LTA) per million hours worked	LTA rate 11.0	LTA rate less than 5 by the end of 2013 (a mid-term goal towards zero lost-time accidents)	pages 25–26
Attendance rate above 97%	96.6%	Attendance rate above 97%	pages 25–26
Responsible sourcing			
To increase the share of certified fibre in our wood supply to 70% by 2012	66%	To increase the share of certified fibre in our wood supply to 70%	page 34
To train all Stora Enso purchasing personnel on managing sustainability in the supply chain	153 purchasing personnel trained	Out of the material purchased from suppliers identified as high-risk, at least 33% to be sourced from suppliers audited by Stora Enso	page 38
Environment			
To establish a new CO ₂ reduction target by the end of 2011, since the previous target (to reduce Group-level CO ₂ emissions by 20% from 2006 level) was achieved in 2010	New target duly established	Reduce Group-level CO ₂ intensity of pulp, paper and board mills by 35% from 2006 level by the end of 2025	pages 40–42
Reduce SO ₂ emissions by 30% from 2007 level by the end of 2013	SO ₂ successfully reduced to a level 36.5% below 2007 benchmark level	The need for a new target will be assessed during 2012	pages 47, 51
Reduce waste to landfill by 5% from 2007 level by the end of 2013	Waste to landfill 9.7% higher 2007 benchmark level	Reduce waste to landfill to a level 5% below 2007 levels by the end of 2013	pages 47–48, 51
Reduce Chemical Oxygen Demand (COD) by 10% from 2007 level by the end of 2013	COD reduced to a level 4.5% below 2007 benchmark level	Reduce Chemical Oxygen Demand (COD) by 10% from 2007 level by the end of 2013	pages 45–46, 51
Reduce process water discharges by 10% from 2005 level by the end of 2013	Process water discharges reduced to a level 6% below 2005 benchmark level	Reduce process water discharges by 10% from 2005 level by the end of 2013	pages 45–46, 51

Code of Conduct

- **Code of Conduct training for employees continued, with most employees from our newly acquired operations in China and India receiving training.**
- **Our new Business Practice Policy takes a tough stand on ethical business practices.**

Stora Enso has a single set of values that are applied wherever we operate.

The Stora Enso Code of Conduct defines common rules for all our employees, and provides guidance on Stora Enso's approach to ethical business practices, environmental values as well as human and labour rights.

The Code of Conduct defines how we behave as a company and as employees, and the way we must act in business to ensure ethical and compliant behaviour. It aims to ensure that every one of our employees has an equal right to a workplace that is safe, healthy and free of discrimination, and that as a global organisation we always take responsibility for our actions and comply with local laws and regulations everywhere we operate. We also communicate our Code of Conduct to our business partners, suppliers and joint venture companies, and encourage them to follow it.

Continued training

To ensure that all Stora Enso employees understand and follow the rules set out in the Code of Conduct, we have set a target that every Stora Enso employee should receive related training through our established e-learning tool or face-to-face training. By the end of 2010, an estimated 81% of our employees had undergone such training.

We are continuing this training where employees have not yet been trained, and also working to ensure that all new employees are trained promptly. A special effort was made during 2011 to train the employees of our newly acquired operations in China and India. All employees from our new Chinese operations and 90% of employees from our new Indian operations have now received such training.

During 2011 Stora Enso also provided training for 153 purchasing personnel on how to manage sustainability issues in purchasing contexts. This wide-ranging training covered issues including ways to ensure ethical business practices in purchasing.

A tougher stand on ethical business practices

In 2011 Stora Enso launched a new Business Practice Policy as an addition to our Code of Conduct, aiming to further strengthen our stand on ethical business practices. This new policy gives our employees more detailed guidance on topics including antitrust, corruption, gifts and entertainment, conflicts of interest and money laundering. The policy has been communicated to all employees, and related training was provided for some 300 management-level employees. During 2012 more specific training will be given to people in key positions.

In connection with the launch of the new policy Stora Enso also conducted a risk assessment to identify risks related to corruption. The results of this assessment will help us to prioritise training efforts and preventive measures where they are most needed.

An effective grievance mechanism

During 2011 several complaints were received through our Code of Conduct grievance channel, which enables employees to report breaches of the Code of Conduct anonymously and confidentially. All complaints are received and reviewed by Stora Enso's Head of Internal Audit and reported to Stora Enso's Financial and Audit Committee. The cases reported in 2011 mainly related to suspected misuse of company assets, conflicts of interest or kickback schemes. A total of 89% of these cases were considered to involve possible policy violations, and consequently resulted in internal investigations. Of the cases investigated, 88% led to disciplinary or legal actions. None of these cases were related to child labour, forced or compulsory labour, or discrimination.

We aim to improve our grievance mechanism in 2012 by engaging an external whistle-blowing service provider. This will further lower the threshold for employees who might wish to report on non-compliance issues confidentially.

Reviewing our Code of Conduct

We aim to review and revise our Code of Conduct and the related training during 2012. We will consequently strive to ensure that any new and updated policies are noted and understood by all of our employees. This means that employees will receive further training on these key issues. We also want to continue highlighting the importance of ethical behaviour, and ensure that our values and common rules are fully followed in practice.

A member of the global society

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Global Responsibility in our new growth markets

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Human resources

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Health and safety

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Human Rights

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- The environmental licensing process for Veracel's possible expansion in southern Bahia involved well-attended public hearings. [Page 19](#)



- Arapoti Mill's manager Lucinei Damalio was nominated as a safety ambassador for the Stora Enso Group. [Page 26](#)



- The opening ceremony of Stora Enso Inpac Packaging was held in China in September. Due to this acquisition around 3 100 new employees have joined Stora Enso. [Page 22](#)

A member of the global society

- **Stora Enso's operations affect various stakeholders globally, regionally and locally.**
- **Our mills and forestry operations often play a major role in local economies.**
- **We conduct Environmental and Social Impact Assessments (ESIA) for all major new projects, such as greenfield mill projects, that could significantly change local conditions.**

In addition to minimising any adverse impacts that our activities may have, we also aim to enrich economic and social conditions in the communities where we operate by building understanding and promoting collaboration. We strive to enhance social inclusion and devise business models that create a better future for the people and communities around us.

Direct economic impacts

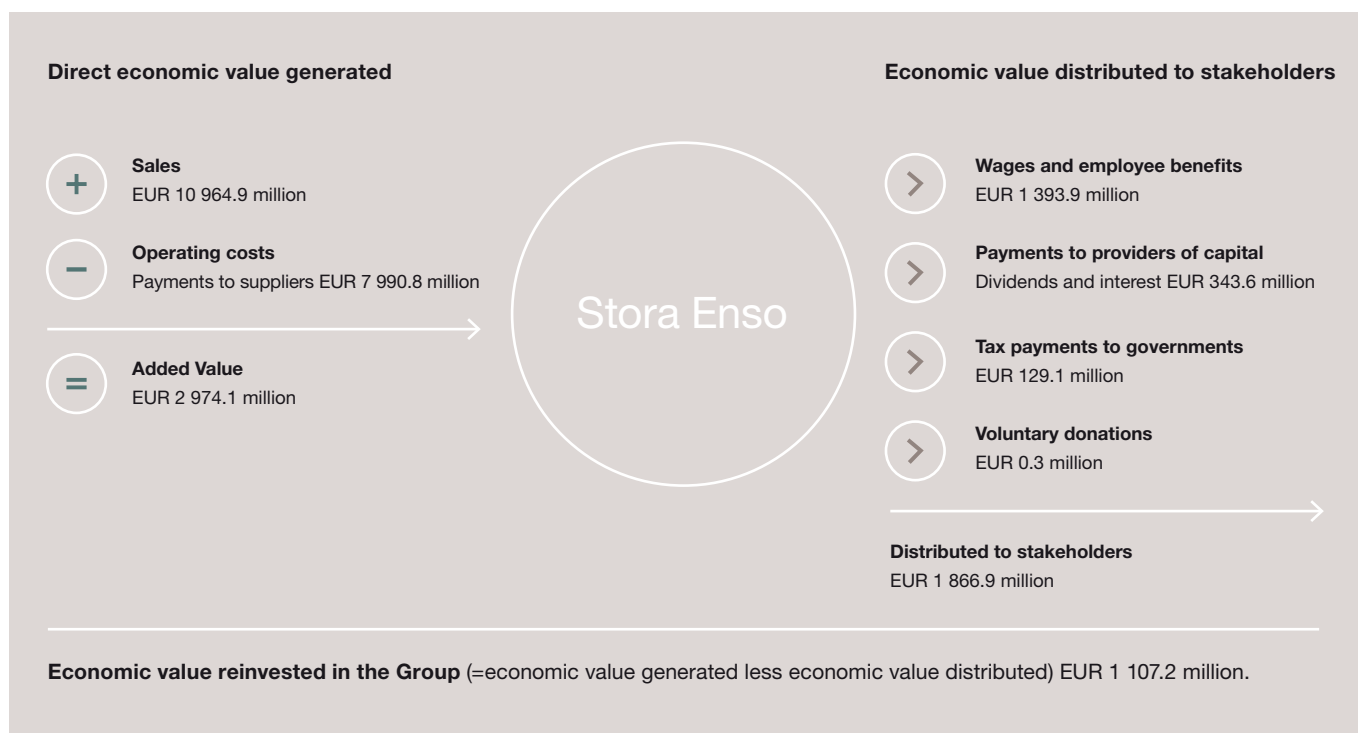
Our operations contribute to local, regional and national economies by creating economic benefits for different stakeholder groups. Our sales and purchases boost our customers' and suppliers' businesses. Our employees, our shareholders and local and national governments gain income through the salaries, dividends and taxes we pay. Stora Enso also engages in many community projects and events in the localities where we operate. The related direct monetary flows below indicate the extent to which Stora Enso's operations generate economic value for different stakeholders around the world.

Impacts on local communities

Our operations often play a major role and have wide-ranging impacts in the communities where we operate. Our mills are often located in peripheral regions where they are major employers, tax-payers and business partners for local entrepreneurs. All of our operations have potential negative impacts on local communities, if they are not well managed. Our mills, which are mainly located in Europe, consume large amounts of energy and raw materials, and generate emissions and wastes of various kinds. Our tree plantations in China, Brazil and Uruguay affect local communities due to their impacts on local land use, livelihoods and biodiversity.

In response to such issues, all of our operations have implemented actions to minimise any adverse impacts our operations may have on the local environment and community. For instance, to continuously minimise environmental impacts, all of our pulp, paper and board mills adopt Best Available Technologies and have certified environmental management systems in place. To read more about our mills' environmental work and performance, see pages 39–51. Our tree plantation operations in China, Brazil and Uruguay have all implemented sustainability programmes to manage their social and environmental impacts. To read more about how we fulfil our responsibilities in tree plantations, see pages 19–21 and 33–36.

Economic value generated and distributed by Stora Enso in 2011



Establishing operations in new settings

Whenever we establish operations in new areas, it is vital that we understand the consequent environmental and social impacts on local communities. We conduct Environmental and Social Impact Assessments (ESIA) for all new projects that could cause significant adverse impacts or other significant changes in local conditions. Such projects include all greenfield pulp, paper or board mills, large greenfield sawmills, industrial-scale plantation projects, and any large-scale expansions of existing facilities.

Stora Enso has developed common guidelines for conducting ESIA as an integral part of the Group's Investment Guidelines. One important element of any ESIA involves establishing dialogues with local residents, members of local organisations, expert researchers and other stakeholders through interviews, meetings, workshops and public hearings.

The results of ESIA give Stora Enso valuable information on how local communities will be affected by changes in their socio-economic structure, impacts on cultural heritage, and developments in community health, safety and security.

Structural change in Northern Europe

To remain competitive in the rapidly globalising economy Stora Enso has undergone profound restructuring in recent years. This has meant

that communities in our traditional areas of operations in Northern Europe have suffered due to the closures of production lines or entire production units.

Discontinuing operations and closing mills creates problems not only for our employees, but also for the affected communities as a whole. We proactively help such communities to deal with regional structural changes and find new alternatives for the people affected. We have taken special measures of this kind in Finland, which has been most heavily affected by the company's restructuring programme.

Stora Enso started collaboration in 2009 with Finland's Ministry of Employment and the Economy and various local authorities to anticipate structural change and find new business opportunities for the communities around Varkaus Mill and Sunila Mill. When significant capacity closures were announced at Varkaus Mill in 2010 Stora Enso continued working with the local authorities with the aim of attracting new businesses to the area and exploiting new employment opportunities. Stora Enso has continued this collaboration through out 2011 by participating actively in the work of the local development agency.

In addition to these measures, Stora Enso assists affected employees by providing support packages and other forms of compensation. For more details, see page 23. Stora Enso also works to minimise the environmental impacts of mill closures (see page 50).

Sales by region



Purchases by region



Personnel expenses by region



Global Responsibility in our new growth markets

- We are actively looking for new business models to engage and benefit local communities.
- The impacts of tree plantations on land use, water balance and soils are major concerns for our stakeholders.

Sustainably managed tree plantations have an increasing strategic importance for Stora Enso. At the moment tree plantations still account for less than 10% of our total fibre use, but their significance will grow. Stora Enso has commercial-scale plantations in Brazil, Uruguay and China, as well as trial plantations in Laos and Thailand. We strive to work together with local stakeholders in all of these locations to learn from them and understand their needs.

This section of the report will concentrate on social issues and interactions with local communities. The environmental aspects of tree plantations are covered in the report's Responsible sourcing section on pages 32–38.

Respecting the neighbouring communities

Stora Enso aims to be an active and accepted member of local society wherever we operate. We work according to the same standards everywhere in the world, guided by our Code of Conduct. Our mills are constructed according to Best Available Techniques and their impacts on the surrounding environment meet the strictest standards. Proper planning and management and detailed studies of social, economic and environmental impacts are standard procedures in our plantation operations.

We are well aware that different stakeholders may have varied land use interests due to local history and traditional practices. We want to engage more with local stakeholders, and create cooperation models based on our learning and development together with these stakeholders. Such cooperation may involve running community development projects to meet local needs, purchasing wood from local farmers, or implementing agroforestry models that combine, for example, cattle grazing and honey production with tree growing.

In 2011, our joint venture with Fibria in Southern Bahia in Brazil, **Veracel**, continued working on local income generation programmes which support the manufacturing and marketing of handicrafts and honey. Veracel has also enabled some of its lands located near villages to be used by neighbourhood associations to cultivate agricultural crops, additionally providing technical, financial and marketing support.

Veracel has a tree farmer programme involving 104 farmers with about 20 000 hectares of plantations in all. Veracel also supports educational schemes and other initiatives to strengthen the cultural identity of local indigenous communities.

Veracel's Atlantic Rainforest conservation station runs scientific research, works to conserve native ecosystems and endangered

species, and provides environmental education to increase local residents' environmental awareness. In 2011, Veracel Station opened a new exhibition entitled "If I were the forest". Through sculptures and interactive scenarios, visitors were encouraged to see issues from the viewpoint of forest fauna and flora. Figures representing animals, plants and people created an imaginative setting for educational work on environmental conservation, in celebration of the United Nations' International Year of Forests.

In Uruguay, **Montes del Plata**, Stora Enso's joint venture with Arauco, started the construction of a new pulp mill and related infrastructure in June 2011. In its plantation operations, the company continued two significant ongoing programmes. Its programme promoting production integration among local farmers has rented out over 100 000 hectares of land for cattle grazing, with agreements limited to 1 500 hectares per tenant to support the equitable sharing of land use rights and consequent benefits. The company's Good Neighbour Programme meanwhile aims to promote open stakeholder dialogue and keep local inhabitants informed about the company's operations, including planting and harvesting.

At the end of 2011, Montes del Plata started to integrate these existing programmes and further assess the needs of neighbouring communities. The idea is that all key stakeholders including local authorities, organisations and residents should work together with the company's representatives to create an integrated model for community development.

In **Guangxi**, China, Stora Enso has a community development fund used for short-term improvements in the villages, such as road improvements and the building of schools. New plans made in 2011 aim to boost stakeholder engagement and community development.

A new cooperation programme was started with the University of Guangxi, whose experts conducted a social baseline study of Stora Enso's operating area. This study, which complements earlier socio-economic studies, compiled useful information including details of present population levels, incomes and land uses at village community level. The next step will be to choose pilot areas where Stora Enso and the university will run community development schemes starting in 2012. The idea is to identify critical areas and engage with these villages to increase our understanding of possible ways to improve their livelihoods in the long term.

In our trial plantations in **Laos**, Stora Enso continued developing a plantation concept that combines trees with food production. In this agroforestry model people cultivate crops such as rice, between rows of trees. One serious problem is that this area was heavily bombed during the Vietnam War. Before establishing plantations, Stora Enso must clear any unexploded ordinance from large areas of land. This helps local villagers by also creating new opportunities for safe farming. The social impact assessment on these operations was completed by UNDP Laos in June 2011 and published on their website.

New business models

Our strategic goal is to go beyond social programmes and find new business models that further engage local communities and enable multiple land uses that can benefit them. We feel that in some respects we still are too isolated from local communities and need to engage with them more profoundly.

We are particularly aiming to combine tree-farming with the production of locally needed crops. Wood can also be produced for other uses than pulp, to provide more varied income opportunities. We are developing such models together with our stakeholders. One such model that we are developing with Embrapa (a Brazilian public company for agricultural research and development) involves establishing agroforestry programmes for tree-farmers and land reform settlements.

Economic impacts of Veracel and Montes del Plata

Our investments in pulp mills and tree plantations are large, long-term investments. Such projects have a significant impact on the local economy, increase national exports, and offer considerable employment opportunities.

Figures from Veracel in Brazil and Montes del Plata in Uruguay are not consolidated in the review of our economic impacts on page 17, as these companies are 50/50 joint ventures that we own together with our partners Fibria and Arauco, but they are reviewed here.

During 2011, Veracel directly employed 748 persons, and employed a further 2 941 persons through its contractors. In addition to these jobs, social impact studies indicate that the company's operations have more indirectly resulted in the creation of a further 13 000 jobs. Corporate taxes paid by Veracel to government bodies totalled 74 million Reais (approximately EUR 31 million) in 2011. Veracel's social investments, including investments in local development programs and charitable donations, amounted to 1.5 million Reais (approximately EUR 620 000) in 2011.

Montes del Plata will significantly boost the country's economy, especially after the pulp mill starts production. This economic growth will be accompanied by a significant increase in direct and indirect employment. An impact study published by the consultants Deloitte in November 2011 states that once the Montes del Plata mill is fully operational, Uruguay's gross domestic product (GDP) will increase by USD 770 million. This figure is equivalent to almost 2% of national GDP in 2010.

About 500 people will be directly employed at the mill located in Punta Pereira. Together with indirectly created jobs (including forestry activities around the country) the total employment impact of the mill should amount to more than 5 000 full-time jobs.

During the construction phase over 6 000 jobs will be created, including 3 000 jobs for construction workers, as well as many jobs for suppliers and service providers.

Montes del Plata's pulp mill will be situated in a free trade zone (FTZ). Tax free zones are a common way to attract foreign investments and

generate employment so as to reduce poverty and stimulate the economy. This project constitutes the largest single private investment in the history of Uruguay. The plantation operations are under normal taxation legislation and not included in the free trade zone.

Addressing stakeholders' concerns

To understand and communicate the social and economical impacts that our operations will have on local communities, Stora Enso commissions independent third parties to conduct Environmental and Social Impact Assessments (ESIA) for all significant new projects.

We consider all of the concerns stakeholders might have about the changes our operations might bring to an area, and address these concerns through open and transparent communications and dialogues. Effective grievance mechanisms are set up to enable local people to raise issues publicly, and also anonymously.

Concerns related to water

The impacts of tree plantations on local water balances and soils concern many stakeholders. We take these impacts into account already during the planning stage. Stora Enso does not establish tree plantations in hydrologically sensitive areas. Soil conditions and the availability of water must be carefully monitored. The overall hydrological impacts of plantations depend on many factors including previous land use, rainfall patterns and plantation design.

At **Veracel**, significant watercourses are included among permanent preservation areas, and no plantations are established in their vicinity, as is required by Brazilian law. Veracel is running a hydrological monitoring programme in cooperation with São Paulo University focusing on two catchment areas – one in a preservation area (Veracel Station) and the other in an area with eucalyptus plantations.

Data from the weekly monitoring of the two watersheds will enable comparisons between water quality and flows in an area with eucalyptus plantations and an area with natural vegetation. This monitoring has already been run since 2005, but it will be continued in order to eliminate the possible impacts of short-term climatic variations on results. So far no significant differences have been noticed between the two watersheds.

In Uruguay, **Montes del Plata** is currently monitoring hydrological trends in its plantation landholdings by examining pairs of watersheds with common conditions such as representative soil types, where one area consists of pastureland and the other is planted with trees. These paired watersheds are a part of a larger long-term study run by the Instituto de Mecánica de los Fluidos (IMFIA) of the local university (Universidad de la República), which aims to examine watershed characteristics and water balances nationally.

In **Guangxi**, a water and soil monitoring programme was started in cooperation with the Guangxi University in February 2011. Baseline data was compiled in August, and the second round of measurements will be carried out in the beginning of 2012.

Land use conflicts

Land use conflicts typically arise from unclear land tenure and land use rights, which often have their background in historical and socio-political factors.

The Brazilian government has been running a land reform programme for several years. Social movements use land invasions as a way to make their voices heard. Several landless people's movements are active in the region where Veracel operates. At the end of 2011, 8 021 hectares of Veracel's land were under invasion. The main movements involved include the Landless Workers' Movement (MST), the Fight for Land Movement (MLT), and the Federation of Agricultural Workers (FETAG). Veracel is working closely with the government of the State of Bahia and engaging in active dialogue with these movements to find common ground for cooperation, and to guarantee that the removal of the land invaders is handled peacefully. So far, all such cases have been resolved peacefully.

Practices and contracts related to collectively owned land in Guangxi have been criticised in the Finnish documentary "Red Forest Hotel", which was filmed in 2009–2010 and released in November 2011.

Stora Enso had already noticed irregularities in the complex chain of local land lease contracts in 2009, and duly started a legal screening and correction process of all contracts for collective lands. Stora Enso has been involved in more than 1 600 such contracts, many of which have one or more additional sub-contracts in the chain, so screening had to cover more than 4 800 contracts. Many of the irregularities concern unclear land use rights, contractors who have not paid rents, or cases where the first contract in a long chain has not been signed by a sufficient number of villagers.

We have been working with village committees and villagers to correct these contracts since 2010. This is a slow process, since the contracts cannot be corrected without the involvement of all parties. Sometimes issues can be resolved through minor adjustments, but in some cases we need to renegotiate entire contracts. Many contracts cover several villages with large numbers of inhabitants, and in some cases our representatives must visit several hundred households.

On the other hand, this contract screening and correction process has given us an excellent opportunity to engage more closely with villagers. During 2011 there were no violent incidents in Stora Enso's lands in Guangxi.

Concerns about the relocation of local residents

In Uruguay, Montes del Plata and the Ministry of Transport and Public Works are jointly building an extension of the national route that will lead to the site, in order to redirect heavy traffic around a neighbouring village. This will affect two houses and some grazing lands. The bypass route was planned using a new approach for Uruguay with the involvement of the stakeholders affected. Montes del Plata, the local authorities and the affected people met weekly to jointly discuss solutions that would mitigate impacts, and to define compensation levels.

In Guangxi, the initial establishment of the mill site resulted in the resettlement of 1 200 villagers from the site to a new location approximately 2 km away. The resettlement was managed by the City of Beihai together with other resettlement processes related to developments in the same industrial zone. The process has involved the payment of both one-off compensation and regular allowances for each person affected, in accordance with local government policy. Even though we are not directly involved in this process, Stora Enso has maintained regular contact with the people affected, enabling them to communicate their concerns openly, and helping them find solutions. Community surveys conducted by the University of Guangxi indicate that the relocated people feel their housing conditions have improved, but issues related to the inadequacy of compensation and a lack of new employment opportunities have been identified. Some of these missing employment opportunities are connected to the fact that Stora Enso has not made an investment decision on the mill yet, since it was anticipated that these people might work in the mill and on its construction.

Open and transparent communications

Maintaining open dialogues and engaging with stakeholders are important ways for Stora Enso to understand local realities better. It is important to find communication channels that effectively reach local stakeholders. For more information on our stakeholder engagement work see pages 11–13.

Veracel organised a round of public hearings in 2011 as part of the environmental licensing process for a future enlargement of the plantations and the mill, even though no investment decision has yet been made. Hearings were held in August in four municipalities chosen by the Environmental Agency of the State of Bahia (INEMA), and located in Veracel's present and possible future operating areas. They were attended by a total of around 2 350 people.

The Montes del Plata project is looking for innovative ways to engage with local inhabitants and keep them informed. Montes del Plata runs its own local TV programme, and provides material to local radio stations. Spanish language TV programmes can also be viewed on the Montes del Plata website (www.montesdelplata.com.uy). Montes del Plata has also launched a new stakeholder forum for development together with the Latin American Centre of Human Studies. The first sessions of this forum were held in the town of Conchillas in October and December. Montes del Plata has also established a grievance mechanism to enable employees and local inhabitants to raise their concerns.

In Guangxi, Stora Enso has been operating a 24/7 telephone hotline since 2005. Cards publicising this service are distributed during our social engagement officers' and technical staff's regular visits to villages. Stora Enso also publishes a bi-monthly newsletter for distribution in the villages.

Human resources

- Leadership, reward, workforce planning and employer branding have been selected as top priorities in our human resources management.
- Restructuring and the demographic profile of our staff continue to require special attention in Europe.
- Human resources practices were strengthened in new markets to attract and retain employees.

At Stora Enso 2011 was a year for rethinking our People Agenda – our whole approach to Human Resources Management – after several years of restructuring and staff reductions.

To support a shift from “fighting to survive” to “fighting to win”, leadership was selected as one of three priority areas in our People Agenda, together with workforce planning & employer branding, and reward. Another focus area involved shaping and communicating clear expectations for leaders, and developing talent. This work will continue in the coming years.

The total number of employees at Stora Enso increased to 29 505 at the end of 2011, compared to 26 379 at the end of 2010. Most of our new employees are in China and India, and they have joined Stora Enso with our acquisition of Inpac International (currently Stora Enso Inpac Packaging). The personnel turnover for the whole Group was 11%, but excluding the operations of Stora Enso Inpac Packaging, where personnel turnover has been high, this figure would have been 7.4%.

In 2011, 25% of our employees were 51 years or older. However, the age profile of our staff varies significantly around the world. In China and Latin America the shares of employees aged 51 years or above are 3% and 8% respectively; while in Finland, Germany and Sweden the equivalent shares are 35%, 32% and 40%. Considering that in our mature markets (i.e. Finland and Sweden) we do not have a strong position as an employer of choice according to several surveys, and that in our new markets we are still fairly unknown, the demographic profile of our staff is certainly a concern.

In this context, it is important for us to ensure that all of our employees are proud to work for Stora Enso. In the beginning of the year a group of line managers gathered to provide input for our Employee Value

Proposition, resulting in the launch of the employer branding platform “You are the Opportunity”. This is now the brand we use for a number of activities designed both to attract new talent, and to retain and develop our current employees.

Leadership and employee development

We believe that leadership is the greatest individual driver for performance and culture. Our ambition is to have high-performing individuals in all leadership positions, driving performance as well as the desired culture. We also aim to maintain a strong talent pool to ensure we always have the option to hire from within.

At the beginning of 2011 the Group Executive Team (GET) formulated five leadership themes; “Customer focus”, “Business acumen”, “Do what’s right”, “Inspire & motivate”, and “People management”. These themes have been discussed at various internal management meetings, and they were also a theme at the Leadership Forum held in Stockholm in October, where some 250 of Stora Enso’s managers from all around the globe gathered for an annual business update and networking. Senior managers have also been provided individual feedback related to the five themes through 360° assessments, in which superiors, subordinates and peers give feedback through their responses to a set of predefined questions related to our Leadership themes.

One key success factor for developing leaders is our ability to provide them with new challenges that expose them to new and different situations. One goal consequently defined for 2011 was to actively vacate top management positions, giving priority to talents from other parts of the organisation, or even external recruits, when filling these positions. The idea is that by creating vacancies we will enable new leaders to develop by giving them new and challenging opportunities.

Another initiative in 2011 has been our Pathfinder Programme, which is a new and innovative leadership development programme designed to provide a selected group of talents with real challenges related to Stora Enso’s most important business priorities. This six-month programme is run in cooperation with the IMD Business School of Lausanne, Switzerland. The programme was launched in October 2011 after a selection process that whittled down 150 applicants to 12 eventual participants.

Key human resources indicators

	2011	2010	2009
Number of employees at year-end	29 505	26 379	27 390
Share of women among all employees (%)	24	20	20
Women in the Group Executive Team	0 out of 9	0 out of 8	1 out of 8
Women in the Board of Directors	1 out of 7	2 out of 8	2 out of 9

All of Stora Enso's employees are covered by our performance management process. This process aims to align individual targets with company targets, set priorities, and provide feedback on each employee's work and professional development. Each manager must conduct at least one annual performance and development review with his/her direct reports.

During the year, management audits have been carried out in all Business Areas. These audits aim to identify potential talents, create succession plans and find ways to develop our employees' skills to meet our business needs.

Labour relations

Employee relations, including collective bargaining agreements, are mainly managed on a country level. 72% of our employees are covered by collective bargaining agreements.

The EU directive on European Works Councils (EWC) applies to Stora Enso. This directive aims to give workers' representatives a direct line of communication with top management. The annual Stora Enso EWC meeting was held in May 2011, with 29 employee representatives delegated from 10 European countries. One employee representative from Latin America and another from China attended the meeting as observers. In addition to assessing the current business situation and market outlook facing Stora Enso, the meeting also examined our people agenda as a means to realise our business strategy and encourage improvements in health and safety.

Human resources in our new markets

Many of our new employees come from our acquisitions and joint ventures in Latin America or Asia. We are working actively with our joint venture partners to establish human resources practices that will help us to attract and retain people with the right skills. Examples of such activities include reviews of salary and overtime compensation levels, travel insurance schemes, and local incentive programmes. We are also providing scholarships as a way to attract key competence to our company in markets where we are still relatively unknown as an employer. In 2012 we believe similar actions will also help us to reduce the high personnel turnover rate at our newly acquired Stora Enso Inpac Packaging operations.

In China the right to freedom of association and collective bargaining is stipulated by law. Most of our Chinese operations have formed unions within the state-authorised China Labour Union. We have also formed worker councils at most of our units in China to serve as channels for direct feedback and dialogue between employees and management.

Restructuring in Europe

The Group continued its restructuring efforts in Europe during 2011. Stora Enso actively supports those affected, primarily by helping them to find new opportunities within or outside the Group in close cooperation with the local community. Support actions are handled on an individual basis. Examples include support in finding new employment through outplacement, coaching, retraining, moves to other locations, or support in retirement planning.

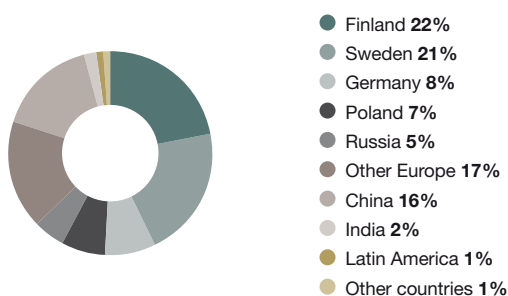
During 2011 our Fine Paper Business Area re-evaluated its working methods and built a new business model to increase cost competitiveness. The related restructuring measures affected some 250 employees in Sweden, Finland, Sweden, Germany, Belgium and the United Kingdom.

Kopparfors Sawmill and its pellet mill in Sweden closed permanently during 2011, affecting 110 employees. Stora Enso is striving to find suitable options for every single employee from Kopparfors in close cooperation with the local authorities. Half of the people affected had found new jobs by the end of 2011.

In November our Packaging Business Area announced plans to restructure its core and coreboard operations in Finland, Germany, the United Kingdom and the USA, and to streamline corrugated packaging production in Finland. The planned restructuring measures will lead to redundancies affecting approximately 130 employees in Finland, Germany, the United Kingdom and the USA.

Stora Enso announced the closures of paper machines at Maxau Mill in Germany and Varkaus Mill in Finland in 2010. Support for the affected people continued in 2011. By the end of the year as many as 75% of those affected in Varkaus had found acceptable solutions for their future. At Maxau Mill no forced redundancies were necessary, as mutually acceptable agreements were reached with all the employees concerned. Many of them found new jobs locally outside Stora Enso, and several employees moved into positions elsewhere within the mill. Read more about structural changes in Europe on page 18.

Employee distribution by country



Employee distribution by age, gender and region

Age Group	Americas		Asia		Europe		Total
	Female	Male	Female	Male	Female	Male	
<30	20%	80%	48%	52%	20%	80%	22%
31-50	14%	86%	36%	64%	21%	79%	53%
>50	13%	87%	15%	85%	17%	83%	25%
Total	15%	85%	42%	58%	20%	80%	100%

Employee hires and leavings by age, gender and region

Hires*

Age Group	Americas		Asia		Europe		Total
	Female	Male	Female	Male	Female	Male	
<30	5	11	576	483	121	374	1 570
31-50	5	8	147	98	139	294	691
>50				2	10	67	79
Total	10	19	723	583	270	735	2 340

Leavings**

Age Group	Americas		Asia		Europe		Total
	Female	Male	Female	Male	Female	Male	
<30	8	4	758	522	32	198	1 522
31-50	5	14	179	144	194	468	1 004
>50	2	11	2	6	146	561	728
Total	15	29	939	672	372	1 227	3 254

* Hires: number of permanent employees joining the company.

** Leavings: number of permanent employees leaving, voluntary or due to restructuring, retirement or death.

Personnel turnover by region*

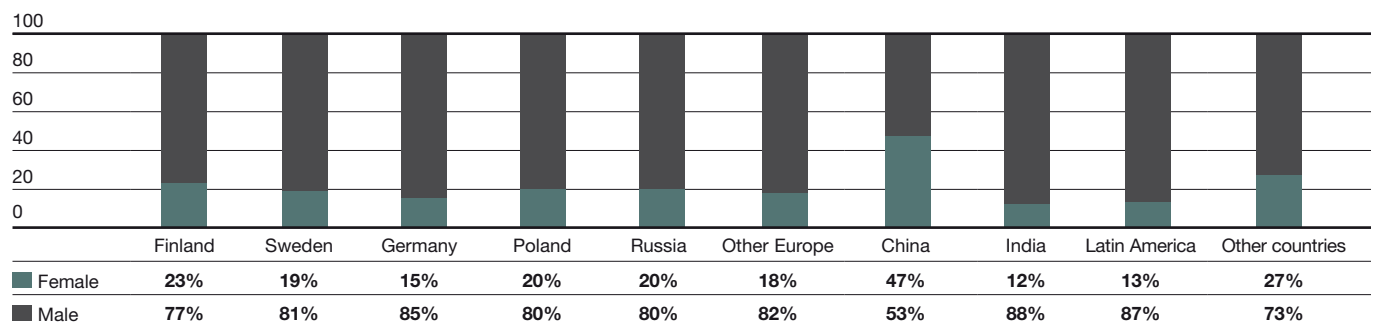
Region	Turnover
Americas	7.3%
Asia	29.7%
Europe	6.8%
Group	11.0%

Employees by gender and contract type

	Male	Female
Permanent, full-time employees	21 166	6 277
Permanent, part-time employees	292	306
Temporary employees	1 013	451
All employees	22 471	7 034

* % of permanent employees leaving, calculated against all employees at year-end.

Gender distribution by country



Health and safety

- **The overall lost-time accident rate across the Group improved significantly.**
- **Special safety actions continued in our mills in Finland.**
- **Arapoti Mill's manager was nominated as a safety ambassador to spread Arapoti's successful safety approach.**

Progress was made during 2011 both in building commitment to a target of zero accidents, and in operational safety performance itself. A set of challenging milestones were set by the CEO to be reached by the end of 2013, as a driver for improvements in our approach to safety issues.

Rethinking safety globally

In mid-2011 several new steps were taken globally to speed progress towards a safe workplace. A zero accident target was enforced as the only acceptable safety target. Two demanding milestone targets were set aiming to reduce the Group-wide lost-time accident rate to below 5 per million hours worked, and the total recordable incident rate to below 15 per million hours worked by the end of 2013. Progress against these milestones is to be monitored up monthly at Group level and for each business area.

A set of preventive actions will be implemented at all Stora Enso units globally. Firstly, all units are now required to start every workday and shift with an informal safety dialogue. Secondly, a target of five safety observations per person per year was established, with a focus on making observations and giving feedback on safe and unsafe behavior. These actions aim to make safety a topic that is discussed and observed daily in all units.

Incident reporting was also strengthened, with all incidents reported case-by-case to business area management and Group Health and Safety, and any serious and fatal accidents reported directly to the Group Executive Team. The frequency of reporting and monitoring of safety performance was also changed from quarterly to monthly. These actions will increase our understanding of safety performance within each unit, and also help units to get better information on the kinds of incidents or improvements that have occurred in other units globally.

Special safety actions in our Finnish units have been running since 2009. New common rules have been developed and a common approach has been devised to implement the new common global actions and to reach the new targets set for 2013. Special efforts included the use of a safety video and an e-learning package to train our own employees and contractors' staff. Safety performance continued to improve in Finland at a steady rate, with a lost-time accident (LTA) rate of 17.7 per million hours worked achieved in 2011, compared to 21.8 in 2010, 23.1 in 2009 and 28.3 in 2008. However, this safety performance level remains unsatisfactory, and special actions will continue in Finland.

A major overhaul of the occupational health system was also conducted in our Finnish units. New health management systems were launched and occupational health service providers were replaced in most units. The focus has been on the need to achieve demanding targets on preventive actions, so as to tackle the low attendance rates in Finland (94.5%, compared to 96.6% across Stora Enso worldwide) and reduce the level of work disability risk.

Health and safety performance in 2011

The Group lost-time accident rate improved significantly during 2011, declining to 11.0 accidents per million hours worked (from 13.2 in 2010). In addition to the clear improvements in Finland described earlier, LTA rates in Sweden and Continental Europe also improved clearly, to 8.3 (11.2) and 13.0 (14.9), respectively. Our operations in China recorded 3.0 lost-time accidents per million hours worked (3.3).

The best performing Business Area was Packaging, with a lost-time accident rate of 9.6 compared to 12.0 in the previous year. Publication Paper, Fine Paper and Packaging have all steadily improved their safety performance, while Wood Products is trailing behind. The Wood Supply organisation's health and safety performance remained strong, with a lost-time accident rate of 5.3 and an attendance rate of 98.1%.

Attendance rates

On attendance rates (actual working time as a percentage of total theoretical working time, considering all absenteeism due to sickness and accidents), performance across the whole Group improved slightly to 96.6% (96.2%). However, attendance rates vary significantly by region. Finland trails with a rate of 94.5% (93.9%), compared to Sweden's 97.2% (96.8%) and Continental Europe's 96.1% (96%). Our operations in China recorded an attendance rate of 99.7% (99.4%). The best performing Business Area was Packaging with a rate of 96.9% (95.9%). The lowest figure was recorded by Publication Paper, where the attendance rate was 95.8% (95.8%).

Fatal accidents

On 19 December an employee was found dead outside the mill fence of Kabel Mill in Germany. Investigations were still ongoing when this report was published.

On 5 April a fatal accident occurred at Langerbrugge Mill in Belgium when a sub-contractor's employee fell from a great height inside a tank.

On 30 September a fatal accident occurred at the harbour of Sunila Mill in Finland, when a seaman employed by a shipping company was killed while unloading wood from a cargo hold.

During 2011 two people died in traffic accidents on their way to or from work in Finland, one in Oulu and one in Lahti.

Top performers

A total of 24 units reached a level of zero lost-time accidents in 2011. A further 44 units reached the target attendance rate of over 97%.

Arapoti Mill in Brazil remains the best performer on safety. In October the mill reached a full four years without any lost-time accidents. This corresponds to over 2.5 million working hours. Arapoti's success is due to the strong, consistent commitment of the mill's management, and years of work implementing a wide array of safety processes and tools. To learn from Arapoti's success, the mill manager Mr. Lucinei Damalio was nominated as a safety ambassador during 2011, to visit Stora Enso mills and explain the successful safety approach adopted at Arapoti.

Other top performers in safety included Sachsen Mill in Germany, Dawang and Suzhou mills in China, Skoghall Mill in Sweden, Impilahti Sawmill in Russia, Wood Supply units in the Baltic countries and several Packaging and Corenso units in Finland, Russia, the Baltic countries, Poland and China. These good performances are the result of consistent and systematic work towards creating a safe working environment and a culture that promotes safe behaviour.

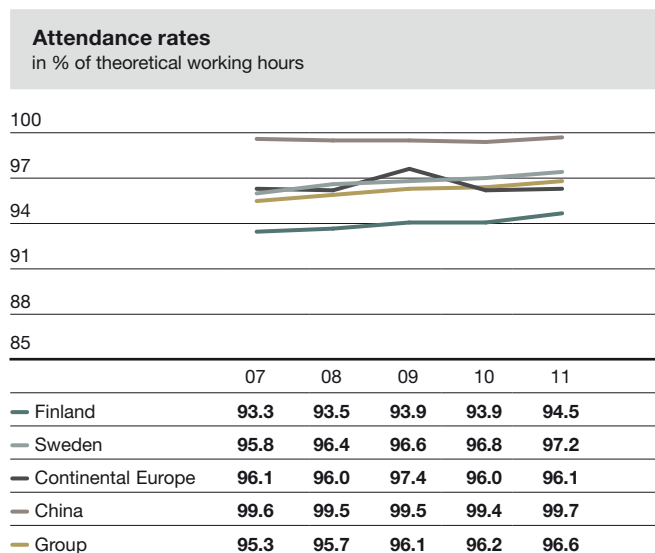
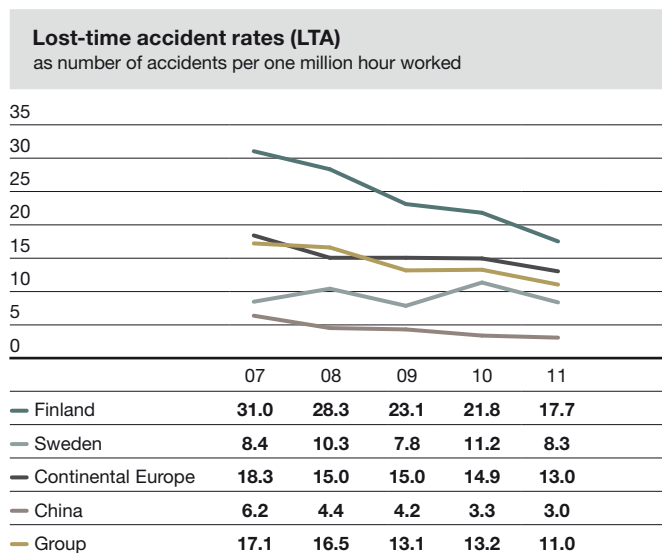
The target attendance rate of 97% was reached by 44 units globally. It should be noted, however, that differences in social security systems and national legislation mean that attendance figures globally are not fully comparable.

The best units in terms of reporting near misses and safety observations were Arapoti Mill in Brazil, Hylte Mill in Sweden and Anjala Mill in Finland. Hylte and Anjala reached a level of over 2 observations per person, while Arapoti's figure was close to 40 per person. The new target on safety observations, 5 per person per year, aims to encourage employees in all units to proactively report any unsafe practices or working conditions they notice during their everyday work, instead of focusing on incidents that have already happened. In the future even more weight will be given to these preventive measures when assessing unit performance.

Actions planned for 2012

In 2012 we will continue to implement the agreed common safety actions. The frequency of Group-level reporting will be changed in the beginning of the year from quarterly to monthly, to enable the faster monitoring of progress towards the targets set for 2013. During 2012 more work will be done to identify common safety processes and actions to be undertaken in all units, as the second step towards a global safety management system. There will also be an increased focus on contractors' performance, in addition to the performance of our own employees.

After the strong focus on safety during 2011, greater attention will be given to health and well-being in 2012. This will involve sharing best practices globally and taking the first steps towards the creation of a global health management system.



Human Rights

- International agreements on human rights guide our operations in areas where local legislation is weak or non-existent.
- To ensure that human and labour rights also extend through our supply chain, we train our purchasing personnel and conduct sustainability audits in identified risk areas.

We want to make sure that we are fair, transparent and responsible, and fully comply with human and labour rights in all of our everyday dealings with our employees, our business partners and the communities around us. We also encourage respect for internationally recognised human rights in the areas and countries where we operate.

We are actively committed to the United Nations Universal Declaration of Human Rights and we fully observe the International Labour Organisation's core conventions on labour rights. These international agreements define minimum standards and serve to guide our operations in areas where local legislation is weak or non-existent.

Stora Enso is also actively following developments and discussions related to the Business and Human Rights framework devised by John Ruggie, Special Representative of the UN Secretary-General on business and human rights.

Enshrined commitments

Our commitment to human rights is expressed in our Principles for Social Responsibility (see page 10), and human and labour rights are also an integral part of our company Code of Conduct (see page 15).

Identifying human rights risks

To gain an improved understanding of how well human rights issues are acknowledged and embedded in our day-to-day operations, we conducted a human rights compliance assessment in 2010. This assessment aimed to identify possible human rights risks in our business operations, while at the same time raising awareness of these issues and promoting internal learning. The assessment covered our operations in Brazil, Uruguay, China, Laos and Russia, encompassing all internationally recognised human rights and their impacts on employees, suppliers and contractors and local communities.

The assessment revealed that the most significant human and labour rights risks in our operations are related to the basic labour rights of contract labour and our suppliers' employees. In Guangxi, China, local people's land use rights were also recognised as an important issue.

Training for our own employees

We strive to increase awareness of human and labour rights among our own employees through our Code of Conduct and related training, which is mandatory for all employees. By the end of 2010 we had altogether trained 81% of our employees on our Code of Conduct. Special efforts were made during 2011 to train all the employees of

our newly acquired operations in China and India. To read more about our Code of Conduct, see page 15. To read more about our employee relations and practices, see pages 22–23.

Addressing issues along our supply chain

In 2011 we actively continued working to ensure that our sustainability requirements are met along our supply chain, and that human and labour rights extend through the operations of our suppliers and contractors. Our sustainability requirements specifically cover basic workers' rights, including freedom of association and collective bargaining, minimum age, free choice of employment and non-discrimination, as well as requirements on wages and working hours.

Our target is to have these sustainability requirements included in all our purchasing agreements, including locally managed agreements. To improve awareness of our sustainability requirements in practice, related training was provided for 153 purchasing personnel during 2011. Participants learnt how to manage sustainability in the supply chain, also with regard to our supplier requirements on human and labour rights.

In 2011 we also continued to conduct sustainability audits at selected suppliers. Human and labour rights issues are a significant part of these audits. None of the non-compliances found during the audits in 2010 and 2011 have been related to child labour, forced labour or freedom of association. To read more about these audits and our work to improve standards along the supply chain, see page 38.

In addition to working with suppliers, we have to improve collaboration with contractors to ensure that human rights are fully observed throughout their operations. This is especially important in our plantation project in Guangxi, where training for contractors has been provided in 2008 and 2009 on topics including labour laws and health and safety, through an initiative launched by Stora Enso together with the International Finance Corporation (IFC). This training continued during 2011, with some 90 contractors trained on issues including basic business skills, health and safety as well as basic labour rights.

Land rights of local communities

In our plantation projects, where our land use is intensive, we have to ensure that the land use rights of local people are fully respected.

In response to disputes related to land use rights in Guangxi, we have taken specific measures to improve the land leasing process and to guarantee that land use rights are respected. For more information, see page 21.

We recognise the unique economic and cultural needs of indigenous peoples and their traditional uses of forests and legitimate right to their traditional lands. In Brazil, our joint venture Veracel maintains good relations with the area's 17 Pataxó and Tupinambás communities, and supports local educational programmes designed to strengthen their cultural identity. For more information, see page 19.

Products and innovation

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Innovation and product development

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Measuring customer satisfaction

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Environmental impact and product labelling

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Product safety and hygiene

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- Our wood-based building solutions increase residential comfort and also have positive climate impacts. [Page 29](#)



- Stora Enso Packaging produced 1.86 million tonnes of fibre-based packaging materials for hygiene- and consumer-sensitive purposes. [Page 31](#)



- Our Barcelona Mill received the European Union's LIFE environment award for its innovative recycling processes. [Page 31](#)

Innovation and product development

- Our products are recyclable, climate-friendly, and based on renewable materials.
- During 2011 we have launched new products with significant environmental benefits.

In 2011 Stora Enso introduced a new company philosophy and a change process known as “Rethink.” The idea behind this is that we must challenge ourselves and the outside world – to rethink the ways we work and live. We believe that the world needs a new approach to materials, and that renewable materials will play a powerful role in creating more sustainable development. Stora Enso’s visions for the future include new materials such as our Micro Fibrillated Cellulose (MFC) for new uses and industries, intelligent packaging solutions that reduce the wastage of food, and advanced module-based solutions for construction using wood. We are already developing new products together with our customers and other stakeholders in key areas including wood- and fibre-based products, services, and bioenergy.

New products designed to enhance sustainability

In 2011 0.7% of our revenue amounting to EUR 80.1 million, was reinvested into R&D activities, bringing environmental benefits such as improved resource efficiency and minimised environmental footprints. Health and safety aspects also direct our product development, especially for packaging materials used in direct contact with foodstuffs.

The pilot-scale production of Micro Fibrillated Cellulose started in late 2011 at Stora Enso’s Imatra Mills in Finland. This technology offers a new kind of fibre-based material for renewable packaging, with considerable potential for further applications in other industries. MFC technology is already giving Stora Enso opportunities to further reduce the amounts of raw materials used in packaging products.

During the year Stora Enso Packaging launched several new fibre-based packaging solutions, which are recyclable and in some cases also compostable. Examples include renewable packaging for foodstuffs to replace plastic trays; microwaveable and ovenproof food packages that can replace aluminium trays; and biodegradable packaging boards for use in cups, plates, trays and folding cartons; as well as lighter liquid packaging board.

Stora Enso Publication Paper meanwhile introduced Vivid, a new lighter paper grade alternative for publications such as travel guides, cook books and school books. Stora Enso Fine Paper’s new lightweight offset paper range Berga Lite has at the same time been extended to lower basis weights. Both of these new lighter paper grades reduce the environmental impact per tonne of paper without compromising on printing quality. Berga Lite is produced by our Varkaus Mill, an energy efficient integrated mill where bioenergy accounts for more than 90% of total energy use.

Competitive wood-based urban construction solutions produced on a large industrial scale can significantly reduce carbon emissions. In 2011, Stora Enso Wood Products launched the Urban MultiStorey™ concept, which is based on wooden cross-laminated timber (CLT) elements. This concept delivers quick-to-install building solutions which can be used in residential, commercial and industrial multi-storey buildings instead of concrete and steel elements. CLT can be a highly favourable solution for low-energy buildings thanks to its airtightness and an advanced element connection system that allows the flexible use of insulation materials.

During 2011 Stora Enso Wood Products also continued to develop new wood modification methods for demanding exterior applications, aiming to provide alternatives made of European pine or spruce wood instead of tropical hardwoods and biocide-impregnated wood products. Research projects were also launched to find more ways to utilise residual material flows from sawmills, pulp mills, and paper and board mills in new composite products that will enhance material efficiency and reuse.

In addition to developing new products and innovations, our development work also strives to continuously improve the use of raw materials, energy, water and other resources.

Bioenergy products

During 2011 we continued to expand our wood pellet supply base by investing in a new 100 000-tonne pellet mill at Imavere Sawmill in Estonia. The new mill started to operate at the end of 2011. Wood pellets can be used instead of fossil fuels to heat homes individually or through local district heating schemes. The raw materials used to make compressed wood pellets mostly consist of sawdust and wood shaving residues from the sawmilling process.

Stora Enso and Neste Oil have continued to explore opportunities for the commercial production of biomass-based vehicle fuels. Test runs at our demonstration plant in Varkaus have verified the technologies used along the process chain, from the harvesting of logging residues to the cleaning of syngas and its synthesis into biowax, a material for making vehicle fuels. In 2011 an environmental impact assessment process for a commercial scale biodiesel production unit in Finland was completed. The final decision on the building of a commercial-scale production unit is dependent on public support, and particularly the availability of funding from the EU’s NER 300 renewable energy initiative. These funding decisions should be resolved by the end of 2012.

Measuring customer satisfaction

- **Customer feedback plays an essential role in our product and business development.**

The systematic process of collecting customer feedback plays an essential role in our product and business development. Stora Enso's customer feedback system is based on the concept of Net Promoter Score®. It involves feedback and scores collected through face-to-face interviews, web-based surveys and telephone surveys conducted by our internal staff or an external call centre. Interviews with customers are based on open questions. This means customers are free to discuss any issues that make them satisfied or dissatisfied with Stora Enso. Customers' comments are systematically analysed and linked

to customers' expectations in areas such as product quality, delivery performance or sustainability.

Stora Enso ensures that this feedback is used to create improvements by assigning the responsible persons to take corrective actions, and by then checking that the customer is satisfied with the actions taken. Most of our customer feedback relates to expectations concerning our products, prices, delivery and service, but issues related to sustainability are also mentioned frequently. Such sustainability-related customer feedback is taken into account in the setting of priorities for our responsibility work and in our definition of material sustainability issues from our stakeholders' perspectives.

Environmental impact and product labelling

- **All Stora Enso's paper and board products are safely recyclable and recoverable.**
- **Many of our products are covered by product labelling schemes designed to communicate their environmental performance.**
- **Our Barcelona Mill was granted the European Union's LIFE environment award for its innovative recycling process.**

To identify and minimise the environmental impacts of our main paper and board products, we calculate product life cycle inventories (LCIs), which can then also be used in wider life cycle analyses (LCAs) of the finished products. LCAs usually cover the various stages of a product's life cycle, extending from the procurement of raw materials, through energy use and transportation, to the generation of emissions and waste, and consequent impacts on water, soil and air. LCIs serve as the basis for environmental labels and declarations, carbon footprint information, responses to customer's inquiries, and product marketing. LCIs have been conducted for all of Stora Enso's main paper and board product groups, and for one wood product group. There are already plans to expand LCI coverage to all our main wood products groups. Stora Enso Wood Products is also taking part in ECO2, a major international research project that aims to improve our understanding of carbon efficiency in the total life-cycles of buildings.

Paper Profiles

Stora Enso provides product-specific information on the environmental performance of its paper products through Paper Profiles, a voluntary environmental product declaration scheme developed by leading paper producers. Paper Profiles enable paper buyers to make well-informed product choices, by presenting environmental figures in a standardised way. They cover the environmental impacts of pulp and paper production, including product composition and emissions, wood procure-

ment and environmental management. Paper Profiles are available on request for all of Stora Enso's paper and graphical packaging products.

Eco-labels

Several of Stora Enso's paper products are covered by recognised eco-labels such as the EU Flower, the Nordic Swan and the Blue Angel (Blauer Engel). This enables our customers to use an eco-label on their own products. The criteria used by these labelling schemes typically cover the whole life cycle of a product, from its raw material ingredients to energy use and waste. To meet customer demand we have expanded our application of the Nordic Swan criteria and EU Ecolabel criteria, especially for copy and graphical papers, and also for selected graphical board grades. We are also following the development of the Nordic Swan criteria for one-way and disposable food service packs for possible later application. Stora Enso is also actively engaged with the EU Commission and other bodies responsible for the development and updating of eco-labelling standards and criteria.

Forest certification labels

Many Stora Enso products are also covered by forest certification labels, showing that they have been produced using wood from certified forests and controlled sources. The two most common forest certification systems are the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification schemes (PEFC). A forest certification label on the final product means that the journey of the wood from a certified forest all the way to the mill and onwards to the store shelf has been documented and verified by an external party. For more details, see page 34.

Environmental footprints

The footprint concept is an increasingly popular way to quantify the impacts of products or services on the environment. Carbon footprints, probably the most familiar of these footprints, describe the

amounts of greenhouse gases released into the atmosphere due to the consumption patterns of individuals or organisations, or the running of a process, or the manufacture of a product. Water footprints measure the consumption of fresh water, including the direct water consumption of consumers, producers or products, and also indirect water consumption caused by the extraction and use of raw materials along the supply chain.

All of Stora Enso's business areas have calculated carbon footprints for their main products or product groups based on existing guidelines, and we willingly make this information available to our customers. To read more about our carbon emissions and carbon footprint, see pages 40–42.

We are also actively looking into possible ways to define water footprints for our products (see pages 45–46). Although there are not yet any commonly accepted methodologies for calculating and communicating carbon or water footprints, there are many interesting related initiatives. Stora Enso is participating in several of these initiatives, and also working with the International Organization for Standardization (ISO) with regard to the development of standards for carbon and water footprints.

We believe, however, that conclusions and claims on the environmental performance of products should ultimately not be limited to single aspects, but rather take a more holistic view of the overall environmental impacts of a product. Stora Enso is therefore engaged with The Confederation of European Paper Industries (CEPI) and the European Commission on defining rules for a wider product footprint for paper products, which would cover all the relevant environmental impacts along the product life cycle.

Recyclability of products

All of Stora Enso's paper and board products are safely recyclable and recoverable. Stora Enso is one of Europe's largest users of recovered fibre. For more information, see page 37.

We are currently working to further enhance and promote the recyclability of our products in various ways. One of our objectives is to further increase the European paper recycling rate (currently 69%) through our own actions and collaboration with CEPI.

In 2011, our Barcelona Mill received the European Union's LIFE environment award for its advanced beverage carton recycling process. This process enables the full recovery of cartons' fibre and aluminium content, and the utilisation of their plastic content in energy generation.

Product safety and hygiene

- All Stora Enso units producing food and other sensitive packaging materials follow the appropriate regulations and standards.

Ensuring product safety is fundamental for products that are used in contact with food or for other sensitive end uses such as toys or pharmaceuticals packaging. In 2011 Stora Enso Packaging produced 1.86 million tonnes of packaging materials that will come into direct contact with food or pharmaceutical products, or be used for other hygiene- and consumer-sensitive purposes.

Responsible chemical use

Ensuring the safety of products starts with the purchasing of chemicals. Only chemicals specifically approved for such purposes are used in the production of food contact materials. We work with our suppliers to ensure that we only use chemicals that are registered in accordance with the European Union's REACH registration system, and that no substances listed by REACH as substances of very high concern appear in our products.

Stora Enso has also registered the substances we manufacture in our production processes in accordance with the REACH legislation. The EU's wide-ranging REACH legislation aims to improve the protection of human health and the environment by comprehensively identifying the safety properties of chemical substances.

Safety and hygiene systems

To guarantee that consumer demands and food safety regulations are fully met, all Stora Enso units producing food contact materials and other sensitive packaging materials follow Good Manufacturing Practice (GMP). This set of internationally recognised guidelines, which is also incorporated into EU regulations, aims to ensure safety and product quality in foods and pharmaceutical products. GMP covers the whole production chain from the procurement of raw materials, through manufacturing processes, to the delivery of the end products.

All of our mills producing direct food contact materials and materials for other hygiene-sensitive purposes are certified according to ISO 22000 or other recognised hygiene management standards. Stora Enso provides customers with information on products' hygiene and safety aspects through compliance declarations, and we have effective processes in place for testing product safety, dealing with complaints, and organising product recalls if necessary. Mills producing indirect food contact materials are also currently building up certified hygiene management systems. Such certification shows that mills have duly analysed and eliminated any possible safety risks, so as to ensure the maximum safety of their products. For a full list of certified mills, see pages 52–53.

Responsible sourcing

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Sustainable forestry

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Recovered fibre

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Pulp procurement

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Supply chain management

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- Forest-owners in many countries can join group forest certification schemes run by Stora Enso. [Page 34](#)



- We improved our auditing capacity by training a pool of internal sustainability auditors. [Page 38](#)



- Stora Enso is one of the biggest consumers of recovered paper in Europe. [Page 37](#)

Sustainable forestry

- The share of certified wood in our wood supply was **66% (67% in 2010)**.
- Significant progress was achieved on group forest certifications in Finland and Russia.
- Stora Enso continued to participate actively in WWF's New Generation Plantations project.

Stora Enso mainly procures wood from private forest-owners, state-owned forests and companies in Finland, Sweden, the Baltic Countries, Continental Europe and Russia. Some 6% (6% in 2010) of our wood is sourced from tree plantations in the Southern Hemisphere, including pulp produced by our joint venture Veracel in Brazil.

Wood from tree plantations still accounts for only a small share, but the importance of plantation sources for Stora Enso is increasing. Stora Enso has plantations in Brazil, Uruguay, China, Laos and Thailand.

In 2011, the total amount of wood (including roundwood, chips and sawdust) delivered to our mills was 35.7 million cubic metres (solid under bark) (35.5 million).

We bought 6% (6%) of the pulp used in our mills from external sources for reasons related to logistics and quality. Our mills also use considerable quantities of recovered fibres, amounting to 26% in 2011 (26%) of the fibre used in our paper and board production.

Wood is our most important raw material. Our operations are based on economically, socially and environmentally sustainable forest and tree plantation management practices. Economical sustainability involves ensuring that our business opportunities remain viable. The aspects of social sustainability that we emphasise include human and labour rights, health and safety issues, the fair distribution of economic benefits, the multiple use of forests and the protection of sites with historical, social or cultural importance. To read more about our social responsibility work, especially in relation to our tree plantations, see pages 19–21.

Our key environmental priorities in sustainable forestry include the conservation of biodiversity, soil protection, and the quality and quantity of water resources. The right balance between these different aspects depends on the region in question. To promote our goals concerning sustainable forestry, we also actively network with other parties. In June 2011 we expanded our participation in the Global Forest & Trade Network (GFTN) of the World Wide Fund for Nature (WWF). This WWF initiative aims to eliminate illegal logging and transform the global marketplace into a force for saving the world's ecologically valuable forests. For more information about the GFTN see www.gftn.panda.org. Stora Enso Wood Supply Europe has been a member of the GFTN since 2006, and from 2011 all of our own mills which use wood or pulp from sources covered by Stora Enso's participation in the GFTN, will also be involved in the network.

Clear plantation management principles

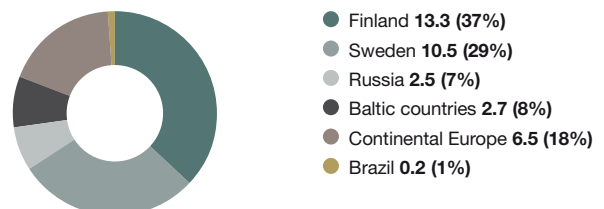
We run our own plantations and joint venture plantations in Brazil, China and Uruguay, as well as trial plantations in Laos and Thailand. In line with our principles, Stora Enso never converts natural forests or protected areas into plantations, and we always conduct environmental and social impact assessments for greenfield plantation projects. Stora Enso works according to internationally approved principles and forest management practices, and applies established planning procedures when setting up sustainable plantations. This is also important from a business perspective, as these are clearly intended to be long-term investments.

One key part of sustainable plantation management is good planning. For example, our Integrated Operational Site Planning (IOSP) scheme became standard practice in our plantations in Guangxi, China in 2011. IOSP incorporates technical, environmental and social issues such as the establishment of ecological buffer zones into the planning process. No major operations may be carried out without a valid IOSP.

During 2011 Stora Enso has taken further steps to enhance sustainable plantation forestry globally together with other companies, governmental organisations and the WWF. We have promised to take part in the upcoming third phase of WWF's New Generation Plantations project, which aims to enhance the institutional and technological aspects of responsible plantation management over the next two years.

New Generation Plantations are forest plantations that respect the Earth's ecological limits and use natural resources and land efficiently. These plantations protect and enhance high conservation values; they are developed through effective stakeholder involvement processes; and they contribute to economic growth and employment. By protecting biodiversity and the global climate, well-managed plantations can form part of the solution to forest degradation, biodiversity loss and climate change.

Wood procurement by region*
million m³



* Total amounts of wood (roundwood, chips and sawdust) procured within these areas for delivery to our own mills (million m³, solid under bark).

Stora Enso has been involved in developing the New Generation Plantation concept since its launch in 2007. Participating in this second phase of the project gives us an opportunity to rethink and improve our operations by learning from our different stakeholders. In September 2011, Stora Enso co-hosted a Responsible Markets Workshop about New Generation Plantations together with other companies from the forest industry sector and the WWF.

Promoting forest certification globally

We promote credible forest certification as a tool to enhance sustainable forest management practices. The two major forest certification systems recognised by Stora Enso are run by the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC). To meet our customer's needs we aim to continuously increase the amounts of certified fibre used in our products.

Overall, the proportion of the world's forests certified for sustainable management is still under 10%, with most of the certified forests located in North America and Europe. In 2011, the share of certified wood in our wood supply was 66% (67% in 2010). Our target is to increase this share to 70% during 2012.

In Finland, the lack of a widely accepted FSC standard has been a major challenge to increase the amount of FSC-certified wood. In early 2011, the Finnish national standard was approved by FSC International. The majority of Finnish forests have already been PEFC-certified. The preference for PEFC is due to the country's forest ownership structure, which is dominated by small-scale private forest-owners. Stora Enso also wants to promote FSC certification in Finland by offering Finnish forest owners the opportunity to join an FSC group certification scheme administered by Stora Enso.

Stora Enso's wood sourcing units in Continental Europe cooperated intensively with different certification working groups at both the national and international level. These working groups mainly focused on the practical implementation in daily operations of the new chain-of-custody standards for FSC Controlled Wood and the new PEFC Due Diligence System.

Our Publication Paper business area's multi-site chain-of-custody system was further improved during the year through closer cooperation between the mills, the further development of national cross-auditing and enhanced training.

In Russia, Stora Enso is running an FSC certification group for wood suppliers who want to certify their forest lease areas under FSC. Stora Enso established this group in order to make certification more accessible and cost-efficient for small and medium-sized logging companies. The group supports its members in the preparation of necessary documents, and organises training and centralised contracting with the auditors. This concept was created as a joint effort of Stora Enso, WWF Russia and the logging companies.

The first two members of the group in Kostroma and Yaroslav regions, the Lyubimsky and Buisky logging companies, received their FSC certificates in December 2010. The certificates cover forest lease areas totalling 166 000 hectares. During 2011, three new members with another 120 000 hectares in the Kirov and Novgorod regions joined the group. This group for external suppliers was the first FSC certification group established in Russia. Stora Enso's own Russian subsidiary companies have been FSC-certified since 2006.

In Brazil, Stora Enso's joint venture Veracel's certificate provider SGS Qualifor had its license suspended in February 2011. This process started with a formal complaint submitted by a stakeholder to Accreditation Services International (ASI) through the FSC Dispute Resolution System. ASI subsequently conducted audits to examine whether SGS Qualifor had properly assessed Veracel. On 13 September 2011 ASI published an update for the assessment report on Veracel and SGS Qualifor, with three non-compliances and one additional remark, which SGS is currently clarifying with ASI.

Veracel's FSC certification has been thoroughly audited and continues to be valid. The company has started negotiations with another certification body.

Veracel is also organising group certification for private tree farmers who provide wood for the mill. The first group of 16 farmers (of a total of 104) was audited by the certification body Imaflora and received FSC certification for both forest management and chain-of-custody in November 2011. The certified area amounts to 5 800 hectares, and this is one of the first FSC group certificates in Brazil. The same group of farmers were also granted certification under CERFLOR (a Brazilian forest certification programme endorsed by PEFC) from the certification body Bureau Veritas.

Our joint venture in Uruguay, Montes del Plata, obtained FSC certification for more of its tree plantations, following a second audit carried out in August 2011. Montes del Plata has now 198 230 hectares of land certified, representing around 77% of the total area owned by the company.

In China, we continued to work on the development of forest management certification standards through the FSC and the Chinese National Forest Certification System, for which our plantations earlier served as a pilot case.

Wood from sustainable sources

We constantly aim to increase the share of certified wood in our wood supply, but even if wood comes from uncertified forests, we want our stakeholders to trust that it comes from sustainable sources. To this end we use our own traceability systems to check that all wood has been harvested in compliance with the relevant national legislation and according to our Wood Procurement Principles.

In June 2011, we updated these wood procurement principles. According to the principles, we do not procure wood or fibre from undesirable sources, such as:

- illegally harvested wood
- protected areas or areas in the official process of designation for protection, unless the logging is clearly in line with national conservation regulations forests with High Conservation Values as defined by the High Conservation Value Resource Network (HCVRN), or forests perceived as being threatened by logging as indicated by balanced stakeholder process
- areas being converted from forests or other wooded ecosystems to plantations or non-forest uses, unless the conversion is justified on grounds of net social and environmental gain
- wood harvested in violation of traditional and civil rights
- forests in which genetically modified trees are planted

Our traceability systems cover all roundwood, chips, sawdust and externally purchased pulp. They are regularly controlled through internal and external audits. In addition, 100% of our purchased wood and pulp is covered by third party verifications and certifications, such as chain-of-custody, Controlled Wood and/or ISO 14001.

Conserving biodiversity

Ecological landscape plans and biodiversity assessments conducted to identify valuable habitats form the basis for our forest and plantation management planning, and also guide our forestry operations. Our employees and forestry contractors receive in-work training on nature management. For example, in 2010/2011 we organised a university course on conservation biology for our 15 forest planning experts in Sweden, who work across the country.

We only establish tree plantations on lands with low biodiversity value, such as former pasturelands. We never convert native forests or protected areas into plantations. All ecologically important areas are identified and duly protected. We also continuously monitor the impacts of our operations on biodiversity, soil and water resources.

Our joint venture company in Brazil, Veracel, continued to actively restore Atlantic rainforest habitats in its lands. The company sourced native tree seedlings from local nurseries and planted 400 hectares of former pasturelands as in previous years. This voluntary work is part of a government initiative designed to restore the Atlantic rainforest and connect the remaining areas with ecological forest corridors, enabling birds and animals to move from one area to another. By the end of 2011 Veracel had planted a total of more than 4 300 hectares of rainforest.

In Sweden, Stora Enso Skog, the Siljan District, Bergvik Skog and the local authorities jointly launched a project designed to save an endangered local beetle species, *Tragosoma depsarium*, from extinction.

In Finland, the environmental performance of harvesting and forest management operations is monitored annually by an independent third party (either a regional forestry centre or the Forestry Development Centre Tapio). Environmental plans are required under the ISO 14001 environmental management standard, and Stora Enso's plans include annually defined environmental performance level targets. In 2011 our evaluated performance level was slightly below our annual target.

The voluntary METSO forest biodiversity protection programme for Southern Finland, run by the Finnish government, is being actively promoted by Stora Enso. The programme particularly targets private forest-owners, who can obtain compensation for protecting ecologically valuable forest areas accepted for the programme. Stora Enso has also set targets to encourage our own wood purchasing personnel to actively search for suitable forest areas for protection. The programme particularly targets private forest owners, who can obtain compensation for protecting areas accepted for the programme. In 2011, our personnel proposed 7 protection initiatives among forest-owners in Finland.

A new model has also been put in place in Finland to better safeguard endangered species living in forest habitats. Stora Enso Wood Supply Finland participated in the working group responsible for developing the model, together with forest owners, environmental organisations, the authorities and other stakeholders. Stora Enso has received geographical data on more than 40 000 occurrences of 501 endangered species. We have saved this data in our Forest Map system, to enable wood procurement supervisors to take endangered species into account when they plan harvesting. This system will be taken into full use in the beginning of 2012.

In Guangxi, we have started a water monitoring programme in our plantations together with Guangxi University. We are also cooperating with the local office of Fauna & Flora International on studies of plantation vegetation and ways to use bird numbers as indicators of the ecological health of plantations. Stora Enso and Fauna & Flora International jointly organised a workshop in Nanning in October 2011 which also involved members of the local forestry bureau, representatives from the environmental protection department, university professors and other local stakeholders. This workshop enabled participants to share their opinions on biodiversity issues, and publicise these issues among media representatives.

Forests, plantations and lands owned by Stora Enso*

As of 31 December 2011

Unit**	Area	Certification coverage	Details of local landscapes and protected areas
Montes del Plata plantations and lands, Uruguay (joint venture with Arauco)	246 732 ha, of which 136 032 ha planted	FSC on 186 400 ha, of which 107 392 ha planted	Mainly pasturelands and agricultural fields. Remnants of native ecosystems, such as grasslands and riparian forests, have been protected within the company's lands.
Veracel plantations and lands, Bahia, Brazil (joint venture with Fibria)	211 676 ha, of which 92 388 ha planted	CERFLOR (PEFC), FSC	Dominated by pasturelands cleared from Atlantic rainforest between the 1950s and 1980s. 105 368 ha of Veracel's lands are protected, including a 6 069 ha Private Natural Heritage Reserve. These protected areas mostly consist of native forest remnants at different stages of regeneration (see page 35).
Plantations and lands, Rio Grande do Sul, Brazil	45 161 ha, of which 20 850 ha planted		Mainly pasturelands and agricultural fields. 14 000 ha of the total area is protected, including native grasslands, riparian forests and other habitats.
Trial plantations, Thailand	1 350 ha, of which 1 280 ha planted		The plantations are located within an agricultural landscape with no protected areas in or near the plantations.
Wood Supply Baltic, Lithuania	453 ha		70 ha of nature reserves, e.g. buffer zones, and part of a national park.
Wood Supply Baltic, Estonia	92 ha, including 85 ha of forest		No protected areas within this area.

* In addition to the forest and plantation areas listed above, Stora Enso owns 43% of Bergvik Skog, who owns 2.3 million hectares of land in Sweden and 95 000 hectares in Latvia; and 41% of Tornator, who owns 595 000 hectares of forestland in Finland, 12 000 hectares in Romania, and 13 000 hectares in Estonia.

** Including units where Stora Enso's shareholding is at least 50%.

Forests and plantations leased and managed by Stora Enso

As of 31 December 2011

Unit*	Area	Certification coverage	Details of local landscapes and protected areas
Olonetsles, Russia	222 500 ha	FSC group certificate	In Russia protected areas are generally excluded from lease agreements. Areas amounting to 2 362 ha are protected as natural monuments (mainly marshlands).
Ladenso, Russia	153 900 ha	FSC group certificate	409 ha protected as natural monuments, including genetic pine reserves and watercourses.
Plantations and lands, Guangxi, China	90 384 ha, of which 73 621 ha planted with eucalyptus and 9 299 ha with other species		Mosaic landscape including agricultural crop-fields, forest plantations and settlements. No native ecosystems are found in the leased lands. Areas totalling around 800 ha are protected, consisting of steep slopes, buffer zones and other important areas for watershed protection.
Terminal, Russia	42 307 ha	FSC group certificate	No protected areas within this area.
Wood Supply Continental Europe, Czech Republic	21 700 ha	PEFC	7 084 ha within a landscape protection area, including a 1 895 ha bird protection area within the Natura 2000 programme. Other small-scale nature reserves totalling 892 ha.
Montes del Plata plantations and lands, Uruguay (joint venture with Arauco)	18 595 ha, of which 12 700 ha planted	FSC on 10 571 ha, of which all are planted	Mainly pasturelands and agricultural fields. Protected and sensitive areas are excluded from lease agreements.
Trial plantations, Laos	1 200 ha, of which 800 ha planted		The plantations are located within a mosaic of intensive shifting cultivation areas and traditionally protected remnants of native forests. One plantation area is located close to a National Biodiversity Conservation Area. All planted areas are covered by agroforestry production schemes.

* Including units where Stora Enso's shareholding is at least 50%.

Recovered fibre

- **Stora Enso is one of the biggest consumers of recovered paper in Europe. In 2011, we used approximately 2.7 million tonnes of recovered paper.**
- **Recovered paper accounts for 26% of our total fibre use.**
- **We are constantly developing new ways to reuse materials earlier seen as wastes.**

Stora Enso used 2.7 million tonnes of recovered paper in 2011 which makes us one of the biggest consumers of recovered paper in Europe. In 2011, recovered paper accounted for 26% of our total fibre use (26% in 2010). This amount has been increasing lately, but the current availability and price of recovered fibre mean that it may be hard to achieve further increases, particularly since large quantities of recovered paper are being shipped to China to meet the country's increasing fibre needs. To help ease this situation we are also aiming to increase consumers' awareness of the importance of local recycling.

At the end of the year Stora Enso acquired 51% of DanFiber, a company that sources around 150 000 tonnes of recovered paper annually from the Danish market. Through this investment we aim to improve the local availability of recovered fibre for our mills, especially Hylte Mill in Sweden.

Eleven of Stora Enso's mills currently obtain all or some of their fibre from recovered paper. White grades are used at Langerbrugge (100%), Hylte (50%), Sachsen (100%), Maxau (partly) and Dawang (100%); and brown grades at Barcelona (100%), Ostrołęka (100%), Corenso France (100%), Pori, Heinola and Wisconsin Rapids. In addition, Stora Enso's consumption of recovered paper will increase considerably when Ostrołęka Mill in Poland starts up its new board machine in 2013.

Most of these mills are located in densely populated areas close to major sources of recovered paper and board. We are also constantly developing new ways to reuse more materials that have earlier been seen as wastes. In June 2011 our Barcelona Mill was granted the European Union's LIFE environment award for its advanced beverage carton recycling process. This process enables the full recovery of recovered cartons' fibre and aluminium content, and the utilisation of their plastic content to generate energy.

Pulp procurement

- **We produce most of the pulp used in our mills ourselves, but Stora Enso still buys small amounts of chemical pulp from external sources.**
- **Purchased pulp is included in our traceability systems.**

We produce most of the pulp used in our mills internally. But for reasons related to quality considerations and logistics, we also purchase small amounts of chemical pulp from external suppliers. In 2011, externally purchased chemical pulp accounted to 6% (6% in 2010) of all chemical pulp used by the company. Only a small amount of mechanical pulp was purchased from external suppliers. Pulp deliveries from Veracel to Stora Enso totalled 0.54 million tonnes in 2011. Pulp from Veracel is mainly shipped to Oulu, Uetersen and Suzhou mills.

Purchased pulp must meet the same sustainability criteria as purchased wood. Pulp is included in our traceability system, so the origins of all the fibre used in purchased pulp must be known and suitably documented. In 2011, we renewed our pulp procurement guidelines. From now on, the minimum requirement for all purchased pulp is a chain-of-custody certificate (PEFC, FSC or FSC CW). These new guidelines were included in an e-learning tool provided for all our purchasing staff who buy externally produced pulp. Purchased pulp is now also covered by Stora Enso's participation in WWF's Global & Forest Trade Network (see page 33) for the first time.

Supply chain management

- The majority of our purchasing agreements are now covered by our sustainability requirements.
- During the year 153 purchasing personnel received training on sustainability issues.

In 2011 Stora Enso sourced goods and services worth some EUR 6.97 billion. In addition to wood, recovered fibre and pulp, this figure covers materials used in production processes such as chemicals and fillers, other materials such as spare parts and clothing, and services ranging from maintenance to energy and logistics services. Some 94.8% of these purchases by value were sourced in Europe, 3.5% in Asia, and 1.3% in South America. Through our supply chain we have considerable impacts on many people, communities and environments in different parts of the world.

Requirements for suppliers

Our wood suppliers and the whole wood supply chain are subject to strict environmental and social requirements. They are covered by regular sustainability controls and audits through forest and chain-of-custody certification schemes. A detailed description of our wood and fibre sourcing is given on pages 33–37.

For suppliers of other materials and services Stora Enso has developed a set of sustainability requirements that are routinely included in our purchasing agreements. These requirements cover environmental management, business practices, health and safety issues, and human and labour rights.

If we find that a supplier is not meeting these requirements, we ask for a corrective action plan for reaching compliance, and offer guidance on the necessary improvements where this is needed. Stora Enso reserves the right to terminate contracts in case of serious and repeated violations.

In 2011, 98% of our material purchases and 90% of the logistics services purchased at Group level were covered by our sustainability requirements. Our target is to have all purchasing agreements covered, including purchases made at the local level. During 2011 local-level

purchasers were trained and instructed to start including the requirements in all local purchasing agreements.

Monitoring suppliers

During 2011 we continued to implement monitoring procedures designed to help us ensure that our sustainability requirements are met in practice. Our follow-up mechanisms include two key tools:

- Sustainability self-assessments
- Sustainability audits

Our supplier self-assessments were integrated into Stora Enso's general supplier management and taken into wider use during 2011. This roll out of self-assessments will continue through 2012. Our target is to expand coverage to all material suppliers and key logistics service providers coordinated at Group level.

As a further monitoring mechanism we conduct sustainability audits of selected suppliers. The selection of suppliers for audits is based on risks considered by country and sector, in addition to information received through sustainability self-assessments.

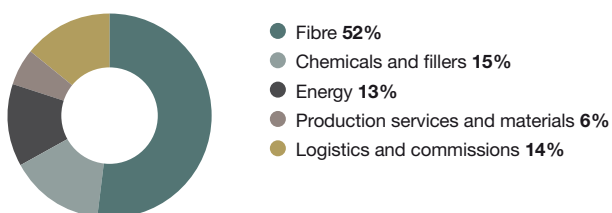
Corrective action plans had been requested from two of the six suppliers audited in 2010, and these action plans were followed up during 2011. Five further sustainability audits were run in 2011, including one follow up audit at a supplier who had been audited in 2010. All of these audited suppliers were chemical suppliers, located in India, China and Italy. These audits covered 17% of purchases coming from suppliers identified as high-risk. All of these audits resulted in corrective actions that will be followed up during 2012. None of the non-compliances were related to child labour, forced labour or freedom of association.

We improved our internal auditing capacity during 2011 by training a pool of internal sustainability auditors, and initiating collaboration with an external partner providing auditing services. Three of the audits conducted in 2011 were realised by Stora Enso's own employees, and two by the external partner.

Training for purchasing personnel

Raising awareness of social and environmental responsibility among our purchasing personnel in the context of supply chain management is a good way to ensure responsible sourcing. In 2011 we trained 153 employees working with purchasing at both the Group level and the local level on how to manage sustainability along the supply chain. This training covered environmental responsibility, ethical business practices, occupational health and safety, and human and labour rights. It was designed to set out a common process and define roles and responsibilities for the monitoring of suppliers across the whole company. This will help us to further integrate responsibility as a key element in our sourcing activities.

Breakdown of raw material and service costs*



* % of variable costs

Climate actions	40
Energy	42
Impacts from logistics	44
Water	45
Emissions to air	47
Waste management	47
Investments, incidents and permits	48



- The multi-fuel power plant at Langerbrugge Mill can run on various types of biofuels, as well as sorted wastes, coal and gas. [Page 42](#)



- Ash from our bioenergy production can be used in road construction. We are constantly looking for new ways to use materials. [Page 47](#)



- All our wastewater treatment plants are carefully monitored. [Page 45](#)

Climate actions

- **The Group's total estimated carbon footprint has reduced by 25% compared to 2007.**
- **We test suitable forestry machinery on soft soils in Finland and Sweden to reduce the risk that milder winters could have on our wood supply.**
- **The benefits of wood compared to materials based on fossil fuels represent a competitive advantage for Stora Enso.**

We work to eliminate and reduce carbon dioxide (CO₂) emissions all along our value chain. This involves promoting sustainable forest and tree plantation management practices, creating innovative products based on renewable raw materials, and developing cleaner and more energy efficient production processes. At the same time, we contribute to a less carbon-intensive global economy by further improving our energy efficiency, increasing the share of bioenergy in our total energy use and by our products, which are recyclable and based on renewable raw materials.

Business risks and opportunities related to climate change

Stora Enso believes the world needs a new approach to materials. The growing demand for sustainable products is driven by changes in regulations, physical climatic parameters, and consumers' and society's environmental awareness. Stora Enso recognises a strategic opportunity in the fact that our products such as fibre-based packaging or wooden construction elements are based on renewable materials, since consumers and customers concerned about climate change and resource scarcity are increasingly demanding low-carbon and carbon-neutral product alternatives.

The preferability of wood – our main raw material – over materials based on fossil fuels is a competitive advantage for us. Our products have comparatively low carbon footprints, and they also store carbon throughout their usage, after which they are recyclable or they may be incinerated to produce energy. For more information about our products and product development, see pages 29–31.

As an energy-intensive company we face risks related to climate change and costs including those driven by regulations. The EU's Emission Trading Scheme (ETS) affects us directly and through energy prices in Europe. The ETS will further intensify the competition for biomass, which can lead to higher wood prices. The ETS will also increase energy costs for our electricity suppliers when emission allowances have to be completely purchased from 2013 onwards. There is also a risk that changes in regulations in different regions and countries could result in unfair trade imbalances and threaten competitiveness within the global pulp and paper industry.

Stora Enso has not released or purchased any project-based carbon credits during 2011. Our joint venture in Uruguay, Montes del Plata,

is engaged in an officially registered Clean Development Mechanism (CDM) project, which will be audited during 2012.

Since physical climatic parameters are dynamic, the world may face changes in frequency of extreme weather events such as storms, flooding and in certain areas droughts. Storms can result in serious wind damage to forests, often resulting in a short-term oversupply of timber but reduced supply in the medium term. Changes in precipitation patterns and milder winters with more rain and less snow, and reduced periods of frozen soils, can also make forest soils and roads softer. This would particularly affect the harvesting and transportation of wood in Finland and Sweden. Stora Enso's Wood Supply operations are continuously testing new technologies aiming to improve the usability of forestry machines on soft soils to reduce the risks associated with milder winters. We are also participating in development of these new harvesting machines in Sweden and Finland.

Forests and the climate

Wood is our most important raw material. Growing trees absorb carbon dioxide from the atmosphere and store it as carbon. Wood is a renewable resource. As long as forests and plantations are managed sustainably, new generations of trees will grow back after mature trees are logged, absorbing CO₂ from the atmosphere once again. Sustainable forest and plantation management thus plays a vital role in mitigating global warming.

We promote third party forest certification and chain-of-custody certification to guarantee that all our wood originates from sustainably managed forests and tree plantations. We also actively combat illegal logging, which is a major cause of global deforestation. Our tree plantations sequester more carbon than the previous land uses, since they have been almost entirely planted on formerly unused grasslands or areas earlier used for grazing cattle. We are also restoring and conserving areas of Atlantic rainforest in and around the tree plantations we own through our joint venture Veracel in Brazil. These forests and our tree plantations are significant carbon sinks. For more details see page 35.

Carbon footprint

Most of our greenhouse gas emissions come from the energy we purchase and produce to operate our mills and manufacturing processes. To reduce costs and reach our environmental goals, we are continuously working to improve the energy efficiency of our production and our energy self-sufficiency. We are also promoting the use of low-carbon energy alternatives, both in our own power generation and in external procurement. In addition, we aim to continue our longstanding work supplying district heating for local communities wherever this is technically and economically feasible. For more information about our energy use see pages 42–43.

Since 2007 we have estimated our Group-wide carbon footprint on an annual basis, with the aim of identifying the main sources of CO₂ emissions across our operations.

We base our carbon footprint accounting and calculations on guidelines established and provided by the Greenhouse Gas Protocol of the World Resource Institute (WRI) and the World Business Council for Sustainable Development (WBCSD). Our accounting concentrates on CO₂, which is the dominant greenhouse gas in our carbon footprint, but emissions of other greenhouse gases are also included where data exists.

We report on emissions in three areas:

- **Scope 1:** Emissions from sources we directly own or control, including on-site energy generation and processes, power boilers, lime kilns, paper-drying processes, vehicles, engines and harvesting equipment.
- **Scope 2:** Emissions related to the purchased electricity and heat consumed in our operations.
- **Scope 3:** Emissions from other indirect sources including the harvesting and transportation of wood raw materials and finished products, and emissions generated by raw material and fuel suppliers. These figures have been calculated based on estimates of CO₂ emissions per unit of production in 2011.

Over the past five years our total estimated carbon footprint (including Scopes 1, 2 and 3) has shrunk by 25%. In 2011 our total carbon footprint amounted to 8.81 million tonnes of CO₂ equivalent compared with 9.60 million tonnes in 2010. This was largely due to increases in multi-fuel energy production at our mills in Maxau, Langerbrugge and Ostrołęka.

In 2011, direct emissions from production (Scope 1) made up 34% of our total carbon footprint, indirect emissions related to production (Scope 2) made up 21%, and emissions from outsourced activities (Scope 3) accounted for 45%.

For details of our initiatives to reduce CO₂ emissions from transportation, see page 44.

CO₂ reduction target

We are actively working to reduce greenhouse gas emissions from our production. In 2007 we set a target to reduce fossil CO₂ emissions per saleable tonne of pulp, paper and board by 20% from 2006 levels by the end of 2020. By the end of 2011 we had reduced our CO₂ emissions by 30% compared to the baseline year 2006. As this target was already achieved in 2010, we have set a new target during 2011 to reduce fossil CO₂ emissions per saleable tonne of pulp, paper and board by 35% from 2006 levels by the end of 2025. This target covers both emissions generated directly by our own facilities (Scope 1), and indirect emissions produced during the generation of the electricity and heat we purchase (Scope 2).

The significant reductions made in the past years have been achieved mainly through investments in biomass boilers reducing the use of fossil fuels and increased internal power and heat production. Other contributing factors have included improved productivity, the use of more efficient equipment, and streamlined processes. One significant reason for the CO₂ reductions achieved during 2011 was the increased internal production of electricity at Maxau, Langerbrugge and Ostrołęka.

Direct and indirect CO₂ emissions

We continued to reduce our direct fossil CO₂ emissions during 2011 both in absolute terms and per unit of sales production. Since 2007 we have reduced our direct CO₂ emissions from stationary combustion sources at our pulp, paper and board mills by 7% per unit of sales production.

Our indirect CO₂ emissions are significantly influenced by the energy mixes used in the national grids of the countries where we operate. During 2011 our fossil CO₂ emissions from energy purchased for electricity and heat decreased to a level 42% lower than in 2007.

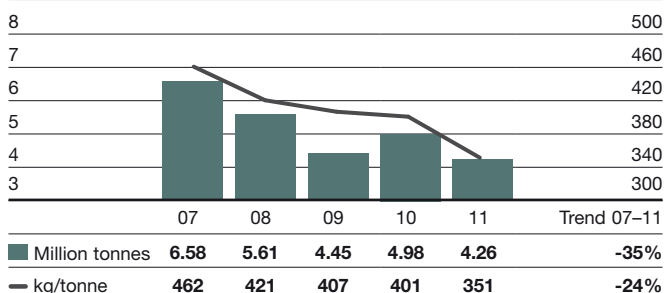
Group carbon footprint 2011

8.81 million tonnes of CO₂ equivalents



- **Scope 1:** Direct emissions from production **34%**
- **Scope 2:** Indirect emissions related to production (purchased electricity and heat) **21%**
- **Scope 3:** Indirect emissions from outsourced activities **45%**

Our CO₂ emissions*



* Covering direct and indirect fossil CO₂ emissions (Scope 1 and 2) from pulp, paper and board production facilities. Normalised figures are reported per unit sales production. Some of the figures have been recalculated from previous years due to changes in baseline and reporting errors.

Group level carbon footprint 2007–2011¹⁾

Emission source		Fossil CO ₂ equivalent (million tonnes)				
		2011	2010	2009	2008	2007
Stationary and mobile combustion sources (direct)	Scope 1	2.97	3.26*	2.63*	3.26	3.60
Purchased electricity and heat (indirect)	Scope 2	1.85	2.26*	2.27*	2.83*	3.41*
Other sources (indirect)	Scope 3	3.99	4.08*	3.61*	4.39*	4.69*
Total		8.81	9.60	8.51	10.48	11.70

1) Covers all Stora Enso's production units.

* Figures have been recalculated due to changes in baseline and reporting errors.

Energy

- Biomass accounted for 76% of our total fuel use.
- We conducted energy audits in ten of our mills to further improve energy efficiency. The energy audits will continue in 2012.

Stora Enso generates steam and electricity internally for use at our production facilities, and purchases fuel, electricity and heat from external suppliers. Our energy procurement and generation strategy focuses on our long-term needs. Existing contracts and our internal electricity generation are estimated to cover around 88% of our electricity needs for the next 5 years.

In 2011 our mills consumed 15.4 TWh of electricity (16.2 TWh in 2010) and 125.4 PJ of heat (127.7 PJ). Our total energy self-sufficiency figure in 2011 increased to 57%, compared to 56% in 2010. Renewable energy accounted for 64% of our total energy use in 2011.

Stora Enso's own energy generation

Pulp and paper production results in by-products such as black liquor, bark and de-inking and bio-sludge that Stora Enso utilises to produce bioenergy. Harvesting residues and recovered wood are also important biomass sources for our internal energy generation. In 2011 the share of biomass in our internal energy production increased to 76% (73%).

In 2011 our electricity self-sufficiency was 40% compared to 37% in 2010 and 33% in 2009. Our new multi-fuel power plants at Langerbrugge Mill in Belgium, Maxau Mill in Germany and Ostrołęka Mill in Poland started to operate during 2010, so 2011 was their first full year generating energy. These facilities alone increased Stora Enso's electricity self-sufficiency by 5% and reduced our annual CO₂ emissions by 470 000 tonnes compared with 2010. These multi-fuel power plants can use various types of biofuels including forest residues and recovered wood, as well as various sorted wastes, coal and gas.

Procurement, partnerships and wind power

Stora Enso is increasingly focusing on securing and enhancing access to cleaner energy through strategic partnerships with external energy suppliers. In 2011 we finalised a long-term contract for the delivery of nearly 7 TWh of low-carbon electricity. In 2011 81% of our purchased electricity was generated from low-carbon sources including nuclear energy and renewable energy sources. At Skutskär Mill in Sweden, a wind park built by VindIn AB, of which Stora Enso owns about 18%, generated 32 900 MWh during 2011. Stora Enso has also decided to participate in VindIn's second wind farm project in Sweden, which is expected to generate 213 000 MWh annually.

Energy efficiency

The best way to cut energy costs and work towards our environmental and business goals is to reduce our energy use. In 2011 our overall energy efficiency (electricity and heat) improved by 0.5%. In 2011 we also set new individual targets for each of our business areas to further improve energy efficiency. Our Fine Paper Business Area reached its target of reducing specific energy consumption by 2%, achieving a reduction of 4.2%, while Packaging Business Area came close to its 2% target by reaching 1.7% respectively. Our Publication Paper Business Area also came close to its target of reducing electricity consumption by 1%, achieving a reduction of 0.7%. The energy consumption baseline year for these targets is 2010. The business areas will keep the same improvement targets also for 2012, with the 2011 levels as the new baseline.

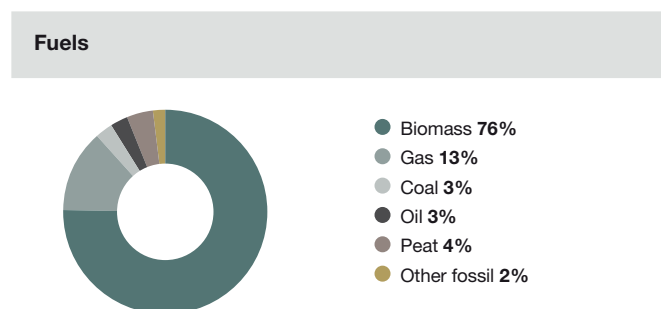
Better use of the combined heat and power (CHP) potential of our mills can increase the power-to-heat ratio of our internal energy production. This means that for each MWh of heat that we produce, we should also aim to maximise the amounts of electricity generated. The Group's overall power-to-heat ratio improved from 22% in 2010 to 23% in 2011.

Our centralised energy efficiency fund, which was set up in 2008 to support our mills' energy efficiency projects, supported 53 projects in 2011. These projects, which focus on improving energy efficiency and reducing energy consumption, should generate total energy savings amounting to at least 170 000 MWh per year when in full effect.

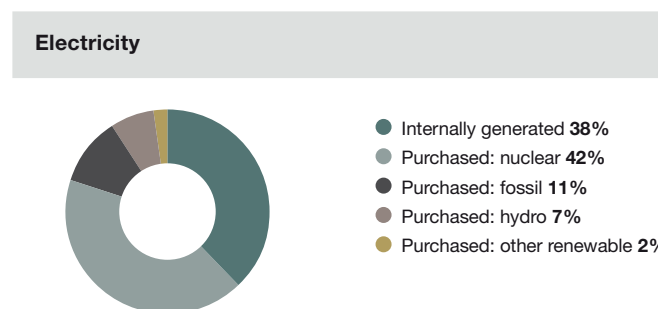
To further improve our energy use we have created a network of three forums for our Nordic and Continental paper and board mills in Europe. These forums involve mill personnel with responsibility for energy

issues, who work together systematically to find ways to improve the efficiency of energy use, referring to the targets set for each business area. To coordinate and steer this work and promote the spread of useful information obtained from energy audits the new position of Energy Efficiency Manager was created in 2011. During 2011 energy audits were run at our mills in Nymölla, Sachsen, Skutskär, Sunila, Varkaus, Kabel, Corbehem, Enocell, Fors and Maxau. Similar audits will be run during 2012 to identify further scope for energy savings.

Energy consumption

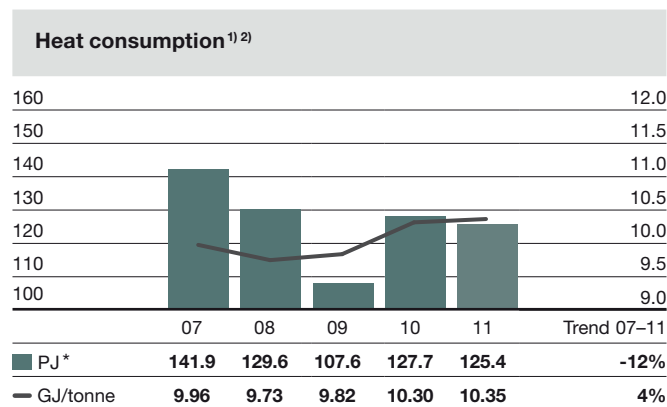
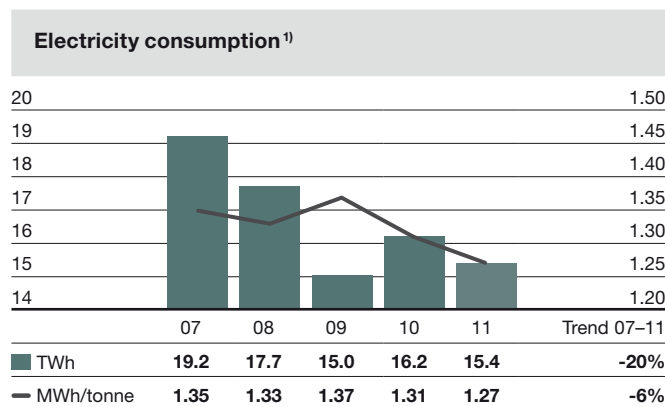


Our total annual fuel consumption was 156 565 (157 945) terajoules (TJ) in 2011. 1 TJ = 10¹² joules.



We generated and purchased 16.1 terawatt hours (TWh) of electricity in 2011 and consumed 15.4 TWh, 0.6 TWh was sold. 1 TWh (terawatt hour) = 10⁹ kilowatt hours

Energy efficiency



1) From pulp, paper and board production facilities. Normalised figures are reported per unit sales production.

2) Excluding heat for electricity generation.

* 1 PJ = 10¹⁵ joules.

Impacts from logistics

- We shift from road to rail and shipping as far as possible.

Stora Enso transported 40 million tonnes of wood raw material and products in 2011. About 60% of this total consisted of wood transportation.

Where the transportation of products is concerned, transportation by sea accounts for approximately 95%, road 3%, and rail 2%. In 2011 the transportation of our products accounted for an estimated 18% of Stora Enso's total carbon emissions (see pages 41–42). Other environmental impacts include emissions of sulphur compounds, nitrogen oxides and noise.

The tough winter weather in Northern Europe in 2010–2011 caused problems for rail transport and also sea transport, due to exceptionally thick ice cover in the Baltic Sea. In many cases road transportation was used more widely as a temporary solution. If such situations become more frequent, this could favour road transportation over time, which would increase our transport-related energy needs and emissions of carbon dioxide (CO₂).

Over the last three years we have explored opportunities for intermodal transportation in Europe to supply products directly from our mills to our customers. This involves loading products into trailers at the mill. Though the trailers eventually arrive at the customer's premises by truck, for most of the journey they are transported by train or ship. This set-up reduces the need for handling work, while still combining the flexibility of trucks with the use of more environmentally friendly rail and shipping.

In Sweden we have taken special measures to reduce CO₂ emissions related to wood transportation by shifting away from road transportation and moving greater volumes by rail. In 2011 our third major roundwood terminal came into operation in Falköping enabling more wood to be transported from forests to mills by train instead of truck. We estimate that this long-term logistics programme could eventually keep as many as 75 000 truckloads off Sweden's roads annually, leading to significant reductions in CO₂ emissions. Our Swedish roundwood terminals have been built in strategic locations as part of long-term logistical improvements. Stora Enso is already one of Sweden's biggest users of railway freight services, and we intend to make further shifts from road to rail wherever possible.

Stora Enso's mills in Finland and Sweden received the Authorised Economic Operator (AEO) certificate during 2010 and 2011. This certificate guarantees that Stora Enso follows strict quality, safety and security standards during the transportation of goods throughout the supply chain. AEO certificates are currently recognised across the European Union, by the U.S. security programme C-TPAT, and in Japan and Norway. As an AEO-certified company, Stora Enso has easier access to customs authorisations which simplify our export and import procedures, enabling shorter lead times. A similar certification process is now ongoing in Germany and the objective is to have four German mills certified during 2012.

All logistics services used by Stora Enso are covered by our strict social and environmental purchasing requirements. Our wood suppliers and the whole wood supply chain are also covered by regular sustainability controls and audits through forest and chain-of-custody certification schemes. Read more about how we ensure sustainability along our supply chain on page 38. Our wood and fibre sourcing is described in detail on pages 33–37.

Water

- All our wastewater streams are carefully purified in our water treatment plants.
- Efficient water use is an important permanent focus area in our sustainability work.
- We are actively participating in the development of water footprint methodology and national and international water initiatives.

Water is vital for life, and also provides many social, environmental and economic benefits. Many regions of the world are already facing water supply shortages, and improving living standards and population growth are increasing the demand for water. Water pollution and water shortages are concerns on a global scale. For us as a company this means we must use water responsibly everywhere we operate, and always carefully take local water needs into account.

Responsible use of water

Since 2009, Stora Enso's sustainability work has had a special focus on water, and we have actively participated in various international initiatives related to water. These initiatives include the CEO Water Mandate of the UN Global Compact and the work of the World Business Council for Sustainable Development on water risk assessment tools. Stora Enso is also involved in the development of an international ISO standard for water accounting and in the Water Footprint Network.

Water plays a central role in our pulp, paper and board production processes. The structure of paper is dependent on water, as hydrogen bonds are needed to keep the wood fibres together. Stora Enso also uses water for cooling, cleaning, and as a carrier of energy in the form of steam. Water is also needed as a medium to carry fibres through production processes.

We have a long history of monitoring the water use of our mills, and the consequent effluents and their effects on the recipient water bodies. Our strict environmental performance targets include targets for process water discharges. We monitor our progress towards these targets on a quarterly basis, and report our results transparently every year.

In 2011, we organised an internal two-day seminar on water issues, at which environmental managers from our mills, the sustainability heads of the business areas, and people from our group functions all came together to receive training and discuss vital issues related to water. We also launched a new water project that aims to identify and evaluate suitable solutions and technologies for further improving our performance on water consumption and water discharges. This project will start in 2012, and it has been designed to help us reach our water-related performance targets.

Last year we also continued to refine the methods used to calculate the water balances of our mills. These calculations include both direct water use, and indirect water use related to the water present in fibres

and chemicals. Most of our water inputs consist of process and cooling water, with only a minor contribution from the water content of different raw materials, including 2% from wood and bark, and 0.2% from recovered fibre, purchased pulp and chemicals. Around 4% of our total water intake ends up being released as steam from processes; 0.3% ends up in our products; and the rest is treated and discharged back into the water bodies from which it was extracted.

Around 96% of our water intake is recycled back to the environment, either after appropriate treatment (process water) or without treatment where this is not necessary (cooling water). The quantities of water that we "consume", meaning that this water is no longer available to meet other needs, are estimated to amount to around 4% of our total water use. This consumption of water includes water that evaporates during our processes, and water that is incorporated in our products, by-products and wastes.

Water risk assessment

In 2011 we assessed our operations and our supply chain for water risks. The results of these risk assessments suggest that almost all of Stora Enso's production units are located in regions where water is a relatively abundant resource. Our Barcelona Mill is an exception, as water scarcity is a major regional concern in Catalonia. As a result, Barcelona Mill has been allocating resources for water management and related technologies with long-term perspective, and already managed to reduce its water use by 65% over the last 15 years.

Water sources

In 2011, we sourced a total of 311 million cubic metres of process water and 364 million cubic metres of cooling water for our production processes. Almost all of this water (99%) was taken from lakes and rivers, and less than 1% was withdrawn from municipal sources or extracted from groundwater reserves.

All of our water intakes are regulated by the authorities, and we follow local laws and regulations everywhere. In five localities we either use more than 5% of the average total volume of the water body concerned, or the water body has been recognised by authorities as a sensitive area. For more details, see page 58. In these localities our water use is particularly strictly regulated and supervised by the relevant authorities.

Water discharges

All our wastewater streams are carefully purified in our treatment plants before being released back into the natural environment. This is essential, since impurities in water discharges can harm ecosystems in lakes, rivers and other natural water bodies. Stora Enso uses top class wastewater treatment systems to ensure that the water we release is purified, ecologically safe, and meets all regulatory requirements. About 99% of our releases of purified water are discharged into surface water bodies. Some of Stora Enso's mills additionally channel wastewater into municipal or private treatment plants.

Stora Enso's target is to reduce process water discharges by 10% of their 2005 levels by 2013. During 2011 the Group made slight progress towards this target. We have reduced our normalised discharges of process water by 6% since 2005.

Another target that we have set for water discharges is to reduce average Chemical Oxygen Demand (COD) levels in our water releases by 10% from 2007 levels by the end of 2013. During 2011 our normalised discharges of COD declined slightly. Since 2007 we have reduced our COD discharges by 4.5%.

In 2011 we continued to reduce our normalised discharges of Adsorbable Organic Halogen Compounds (AOX). AOX is a collective term for the amounts of chlorine or other halogens bound to organic matter in wastewater. Over the last five years our discharges of AOX have fluctuated within a range that represents good performance. This is due to the fact that Stora Enso has not used elemental chlorine in its bleaching processes for over 20 years. In 2011 our normalised AOX discharges were 7% below their level in 2007.

During 2011 our normalised discharges of nitrogen increased slightly and phosphorus discharges decreased slightly. Compounds of both nitrogen and phosphorus provide nutrient sources for the micro-organisms that are vital to our biological wastewater treatment processes. In natural water bodies excessive amounts of nitrogen and phosphorus can lead to increased biological activity through eutrophication. Over the past five years our normalised discharges of phosphorus have decreased by 12% and discharges of nitrogen have increased by 4%.

Water footprints

The development of water accounting methods and reporting guidelines is complex, and numerous international initiatives are ongoing. At the moment there is no globally standardised methodology for calculating total water consumption levels for companies or specific products. However, the International Organization for Standardization (ISO) has started to develop such a standard, focusing on a life cycle approach. The forest industry is involved in this development work through the Confederation of European Paper Industries (CEPI) and national forest industry federations. Stora Enso participates in standardisation work through national standardisation bodies.

We believe that in water footprint accounting it is important to distinguish between actual water consumption and the water we need to use in our processes, which is then safely released back into the environment after appropriate treatment. In the paper industry the actual consumption of water typically amounts to only 6–7% of the total water intake.

During 2010 Stora Enso tested water accounting methodology developed by the Water Footprint Network (WFN) at Stora Enso's Skoghall Mill in Sweden together with WFN, WWF and the Alliance for Beverage Cartons (ACE). The consequent water footprint report was published in 2011, and it can be downloaded from the ACE's website. One key finding of the study indicated that 99% of the mill's total water consumption is made up of the rainwater that feeds growing forests, and only 1% is derived from other processes along the supply chain including production processes at the mill. One weakness of this methodology is that it does not take regional variations in the pressure on available water resources, known as water stress, into account, but treats water use the same way in all geographical areas. Other aspects that should still be further developed concern the role of forests in water accounting, and how wastewater discharges should be included in water footprints. For more information on environmental footprints, see pages 30–31.

Emissions to air

- The combustion of fuels used to produce energy is a major source of our air emissions.
- Our work to reduce air emissions is based on the increased use of renewable energy, improvements in the efficiency of production and energy use, and advanced emission control technologies.

Our atmospheric emissions result mainly from the combustion of fuels used in energy generation. These emissions include carbon dioxide (CO₂), sulphur dioxide (SO₂) and nitrogen oxides (NO_x). Stora Enso has taken action to promote reductions in CO₂ emissions and our total carbon footprint by establishing a new target (see page 14).

We are working to reduce our emissions to air by using more renewable energy and by increasing our energy efficiency (see pages 42–43). SO₂ and NO_x emissions, which affect air quality and cause acid rain and soil acidification, are also controlled through advanced technologies such as scrubbers and boiler process control systems. Over the five-year period 2007–2011 our normalised emissions of nitrogen oxides (NO_x) have increased by 2.4%.

In 2011 we continued to reduce our SO₂ emissions. Our target has been to reduce our SO₂ emissions by 30% from 2007 levels by 2013. We have in fact already reached this target, as our SO₂ emissions in 2011 were 36.5% below the 2007 level, and during 2012 we will assess the need for a new target.

Waste management

- The amounts of our waste being sent to landfill have increased, particularly due to increased use of biofuels that generate more ash than fossil fuels.
- We are constantly looking for new and innovative ways to reuse residual materials.

Stora Enso's production processes generate various residuals and wastes, the vast majority of which are beneficially reused. Such materials include biomass fibres, ash from energy production, lime solids from pulping processes, and wastewater treatment sludge. Many of these materials can be used for bioenergy production, for agricultural purposes, or for brick manufacturing and road construction. We are constantly looking for new and innovative ways to reuse materials that would otherwise end up as wastes. Across the Group we have achieved a waste reuse rate of 97% (96% in 2010).

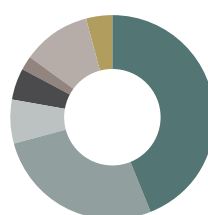
Waste to landfill

Residual materials that cannot be reused end up in landfills. In 2011 our total waste to landfill rate decreased significantly to 12.4 kg/tonne of pulp, paper and board produced (16.9 kg/tonne in 2010). This means that good progress was made towards our target to reduce normalised waste to landfill by 5% from the baseline year 2007 by the end of 2013. Nevertheless, in 2011 we generated 9.7% more waste to landfill (in terms of kg/product tonne) than in 2007, which shows that we are still far from reaching our target. One major reason for this is our increased use of biomass fuels, which generate more ash than other fuels. Another factor is reduced demand for residual ash for beneficial uses. The target will be evaluated during 2012.

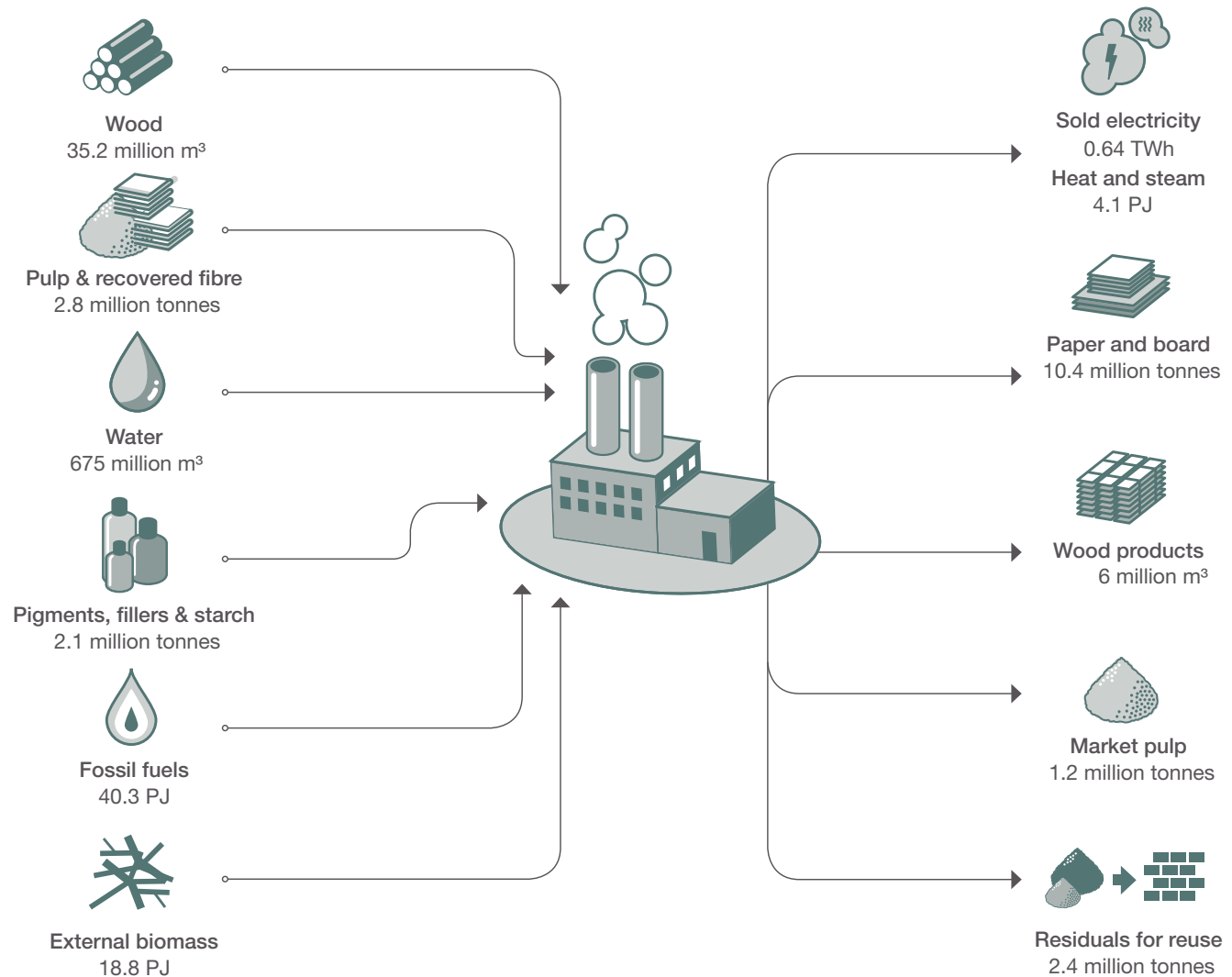
Hazardous wastes

Hazardous wastes from our production include used oils, solvents, paints, laboratory chemicals and batteries. In 2011 Stora Enso's production units created a total of 7 777 tonnes of hazardous waste, up from 3 514 tonnes in 2010. This significant increase was largely due to the dismantling of paper machines PM 2, PM 4 and Corenso operations at Varkaus Mill. We dispose of hazardous wastes by either burning them to generate energy, or ensuring that they are safely processed at hazardous waste facilities or incinerators. We report on our disposal of hazardous wastes in line with definitions set out in respective national regulations. No significant spills, releases or leakages of hazardous wastes occurred in 2011.

Utilisation of residual materials



Material use in 2011



Investments, incidents and permits

- Our environmental investments were mainly directed to improve the quality of air and water, to enhance resource efficiency, and to minimise the risk of accidental spills.

In 2011, Stora Enso's environmental investments amounted to EUR 22 million (EUR 37 million in 2010). These investments were mainly directed to improve the quality of air and water, to enhance resource efficiency, and to minimise the risk of accidental spills.

Stora Enso's environmental costs in 2011 excluding interest and including depreciation totalled EUR 200 million (EUR 152 million).

These costs include taxes, fees, refunds, permit-related costs, and repair and maintenance costs, as well as the prices paid for chemicals and certain materials.

Estimates indicate that a total of EUR 126 million (EUR 119 million) will be needed to cover future environmental liabilities, such as removing mercury and other contaminants from Stora Enso mill sites. There are currently no active or pending legal claims concerning environmental issues which could have material adverse effect on Stora Enso's financial position.

Environmental incidents 2011

Unit	Incidents	Corrective actions
Hylte Mill, Sweden	Routine measurements revealed that dioxin levels in boiler 4 were in excess of the regulatory limits set by the Swedish Environmental Protection Agency.	Pending. The case was reported to the County Administrative Board (CAB). Investigations related to combustion and possible adsorbing equipment were started immediately, and are still ongoing. Preventive actions have been defined for full implementation during the first half of 2012. The results will be reported to the CAB in May 2012
Skoghall Mill, Sweden	The guideline value for chlorate was exceeded in February and October, due to the insufficient functioning of the mill's biological wastewater treatment facility.	Resolved. The excessive values were reported to the County Administrative Board. The problems with the biological treatment were caused by exceptionally cold weather in February and a temporary disturbance in October. No specific corrective measures were considered to be needed.
Anjalankoski Mill, Finland	K2 boiler's yearly permit limits for dioxins and furans were exceeded in 2011.	A development plan for boiler K2 has been approved by the authorities. The consequent investments in air pre-heaters will be made in January 2012.
	Waste water treatment plant's monthly permit limits (COD, BOD, Phosphorus) exceeded during January – April in 2011.	Special development plan for waste water treatment plant is approved by authorities.
Oulu Mill, Finland	Two permit levels were exceeded in 2011. In May, total phosphorus levels in wastewater exceeded the limit value. This incident was due to a leakage of toxic diphenyl from the facilities of the Arizona Chemical company, which operates in the mill area.	Negotiations ensued between Arizona Chemical (AC) and the authorities. AC has subsequently improved the pretreatment of its wastewater.
	In November particulate emissions from the mill's lime kiln were too high, due to the malfunctioning of electrostatic filters.	The system used to monitor the electrostatic precipitators must be improved. The findings of a root cause analysis have not yet been reported.
	Four accidental discharges also occurred: two at the paper mill and two at the pulp mill. All cases were reported to the authorities. Because no permit levels were exceeded, and none of these incidents had significant or permanent environmental impacts, no legal sanctions or other actions were necessary.	Oulu Mill maintains a low threshold on reporting environmental incidents to the authorities. Every accidental discharge is discussed at a specially organised meeting, where all the personnel responsible for the incident are represented (including worker(s), management and directors). Corrective actions are planned during these meetings. In addition, several studies have been initiated in order to improve the treatment of wastewater from the pulp and paper mill. A risk analysis for the whole mill will be run during 2012.
Veitsiluoto Mill, Finland	The mill's COD discharges exceeded the limit value of 50 tonnes/day in November (reaching 51.6 tonnes/day) because of problems during the start-up of the pulp mill after a long maintenance stoppage.	No further actions were needed. The authorities have accepted our explanations for the surpassing of the limit.
	Phosphorus discharges exceeded the limit value of 45 kg/day in December (reaching 48.2 kg/day). This problem was due to a severe storm which lasted for four days, disrupting clarification processes at the mill's biological wastewater treatment plant.	No further actions were needed. The authorities have accepted our explanations for the surpassing of the limit.

Complying with environmental permits

Each of our mills is regulated by environmental permits based on the national, regional and local legislation applicable to each location. Our mills continuously monitor their own compliance with these permits, as do the appropriate environmental authorities. All of the environmental incidents at Stora Enso mills in 2011 that resulted in major permit violations, claims, compensations or significant media coverage are detailed in the table on page 49.

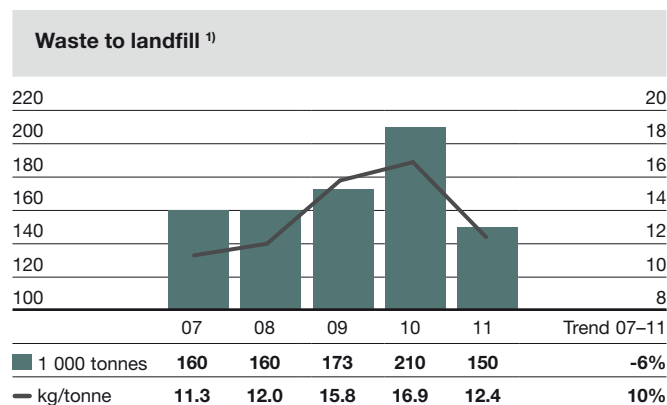
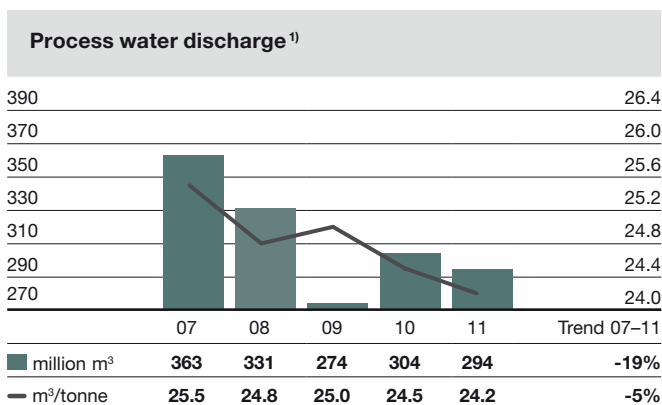
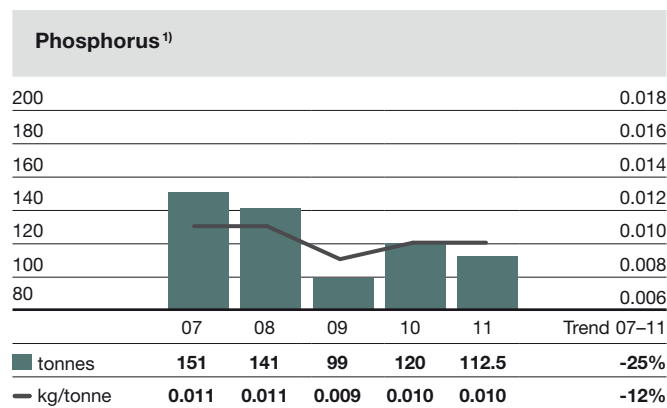
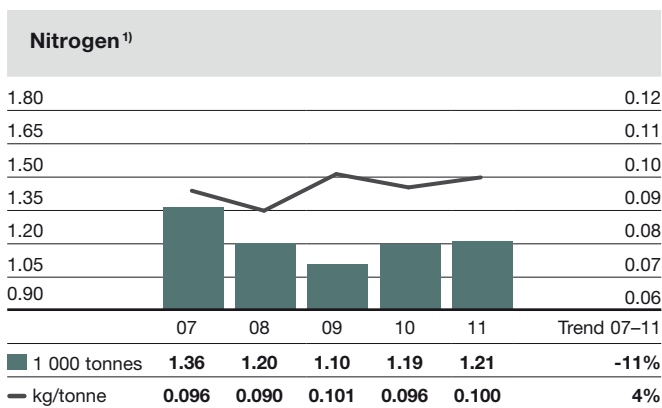
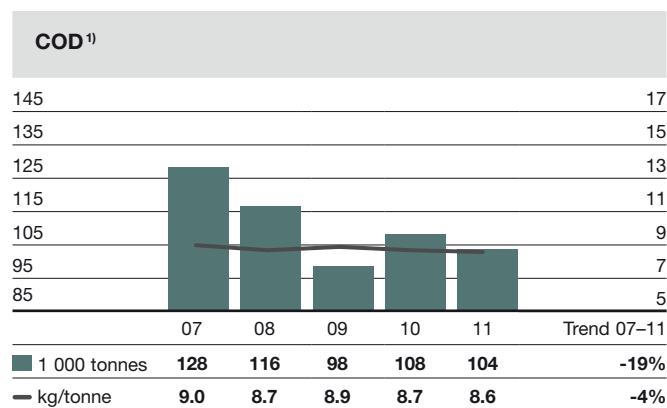
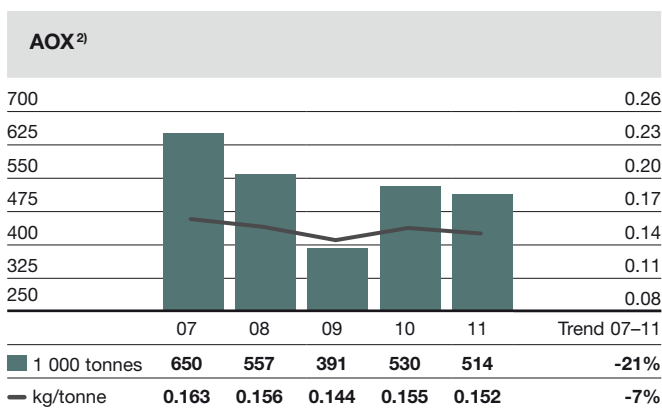
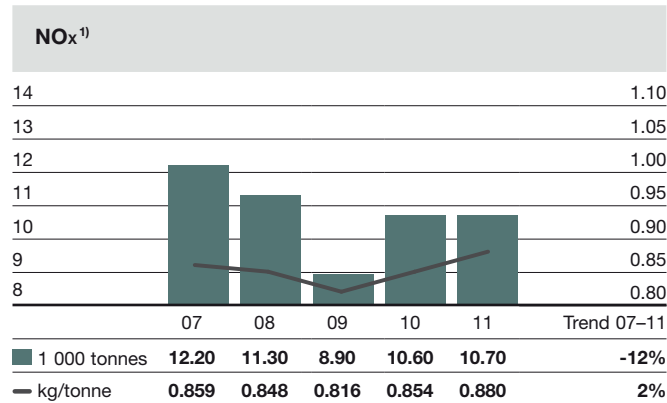
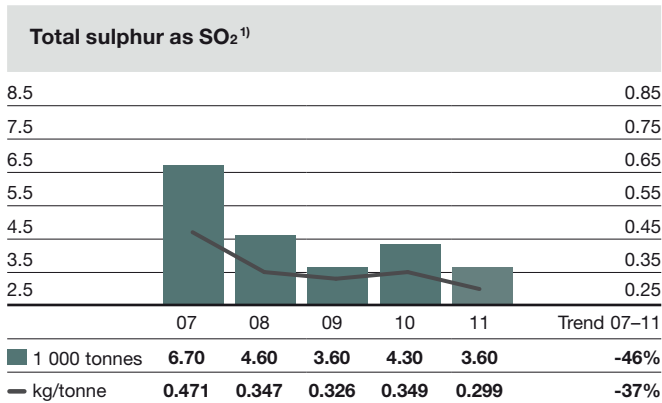
Environmental impacts of mill closures

Whenever a mill is closed down, Stora Enso ensures that the mill site and surrounding area is properly cleaned and restored, in accordance with local laws, regulations, and environmental permits granted by the relevant authorities.

In 2011, Stora Enso closed Kopparfors sawmill and pellet mill in Sweden. We have started an investigation to assess the state of local soils and sediments. The results of this study will be reported to the authorities in 2012.

Kemijärvi Pulp Mill in Finland was permanently closed down in 2008. In December 2011 Vaasa Court of Appeal gave decision concerning the environmental permit for the closure of the mill. The judgement included an obligation to remove the majority of the sludge from the sediment of the water treatment lagoon. Stora Enso disagrees with the decision and has in January 2012 filed an appeal to Supreme Administrative Court.

Norrsundet Pulp Mill in Sweden was permanently closed in December 2008. Environmental provisions for refuse handling, site cleaning and sea sediment cleaning have been recognised. In 2011 some chemical substances were found in the sea sediment outside the mill area. Discussions with the county administrative board about possible cleanup actions and responsibilities are ongoing and no decisions had been taken by the day this report was published.



1) From pulp, paper and board production facilities. Normalised figures are reported per unit sales production.

2) From bleached chemical pulp production facilities only. Normalised figures are reported per unit bleached chemical pulp production.

Sustainability data by unit

Certificates

Unit	Number of employees ^{a)}	Products	Production ^{b)}	Recovered fibre ^{c)}	Certificates							Landfill*	Hazardous waste ^{d)} *
					ISO 14001	ISO 9001	OHSAS 18001	ISO 22000	BRC/IOF/FDA	FSC C-o-C	PEFC C-o-C		
Belgium													
Langerbrugge Mill	388	① ②	533 772	x	x	x	x			x	x	21 528	49
Brazil													
Arapoti Mill	347	②	158 400		x	x	x			x	x	2 525	
China													
Dawang Mill	216	②	139 000	x	x	x	x			x		80	0
Dongguan Mill	181	④	9 712		x	x							1
Qian'an Mill	785	④	39 732		x	x							
Suzhou Mill	545	③	227 730		x	x	x			x	x	0	11
Estonia													
Tallinn Mill	36	⑥	4 669			x						17	
Finland													
Anjalankoski Mill	355	① ④	564 434		x	x	x	x		x	x	445	192
Enocell Mill	171	⑤	464 176		x	x	x			x	x	172	46
Heinola Fluting Mill	196	④	243 600	x	x	x	x			x	x	1 010	209
Heinola Mill	142	⑥	34 154		x	x	x	x				26	5
Imatra Mills	1226 ^{h)}	④ ⑤	1 019 132		x	x	x	x	x	x	x	7 096	281
Kristinankaupunki Mill	56	⑥	6 283		x	x	x	x				19	
Lahti Mill	258	⑥	20 978		x	x	x	x				32	114
Oulu Mill	675	③ ⑤	1 188 960		x	x	x			x	x	80	131
Ruovesi Mill	86	⑥	3 762		x	x	x	x				12	18
Sunila Mill	180	⑤	339 127		x	x	x			x	x	2 823	61
Varkaus Mill	286 ^{h)}	③ ⑤	263 530		x	x	x			x	x	6 585	4 593
Veitsiluoto Mill	804 ^{h)}	② ③	845 850		x	x	x			x	x	2 626	30
France													
Corbehem Mill	349	②	274 191		x	x				x	x	889	82
Germany													
Kabel Mill	614	②	367 921		x	x	x			x	x	1	216
Maxau Mill	471	① ②	442 221	x	x	x	x			x	x	10 842	183
Sachsen Mill	314	① ⑤	298 173	x	x	x	x			x	x	0	141
Uetersen Mill	430	③ ④	238 753		x	x	x			x	x		25
Hungary													
Páty and Komárom Mills	190	⑥	13 083		x	x						47	74
India													
Chennai Mill	251	④	15 552									44	6
Latvia													
Riga Mill	128	⑥	42 892			x						52	
Lithuania													
Kaunas Mill	46	⑥	5 680			x						10	
Poland													
Łódz Mill	234	⑥	51 670		x	x	x					113	2
Mosina Mill	100	⑥	8 996		x	x	x					57	16
Ostrołęka Mill	1 205	④ ⑥	322 005	x	x	x	x			x ⁱ⁾		5 928	16
Tychy Mill	156	⑥	44 646		x	x	x					27	6
Russia													
Arzamas Mill	202	⑥	38 889			x						229	
Balabanovo Mill	390	⑥	44 598			x						349	
Lukhovitsy Mill	140	⑥	23 000			x						240	
Spain													
Barcelona Mill	270	④	165 065	x	x	x	x			x		17 129	42
Sweden													
Falu Rödfärg	j)	⑧	632		x	x							10
Fors Mill	681	④	370 079		x	x	x	x		x	x	726	136
Hylte Mill	806	①	817 701	x	x	x	x			x	x	57 796	204
Jönköping Mill	212	⑥	25 613		x	x						1	12
Kvarnsveden Mill	841	① ②	912 515		x	x	x			x	x	60	104
Nymölla Mill	758	③ ⑤	459 931		x	x	x			x	x	112	26
Skene Mill	166	⑥	41 626		x	x						30	4
Skoghall Mill	864	④	714 784		x	x	x	x		x	x	3 090	210
Skoghall Mill Forshaga	104	⑥	90 635		x	x	x	x		x	x	4	4
Skutskär Mill	380	⑤	532 694		x	x	x			x	x	446	9
Vikingsstad Mill	64	⑥	20 411		x	x						8	5
Corenso													
Corenso Pori Coreboard Mill	107	④	118 169	x	x	x	x					796	11
Corenso France Coreboard Mill	86	④	86 580	x	x	x	x					3 442	4
Wisconsin Rapids Coreboard Mill	66	④	70 435	x	x	x	x					3 714	0
Corenso, core factories	778	⑥	194 627		k)	k)	k)	k)	k)			264	44
Stora Enso Wood Products													
Sawmills	3 948 ^{l)}	⑦	5 987 004		k)	k)	k)			k)	k)	10 184	444
Total pulp, paper, board and converted products, tonnes			12 960 768									161 706	7 777
Total wood products, m³			5 987 004									10 184	444
Grand Total											171 890	8 221	

Footnotes a) Year average. Source: financial accounting database. **b)** Sales production. Sawn timber is reported in m³, other products in metric tonnes. **c)** Mills using recovered fibre 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 SO₂ (sulphur dioxide) and includes all sulphurous compounds. **f)** All CO₂ figures are calculated using the WRI/WBCSD Greenhouse Gas Protocol. Direct emissions from internal transport are excluded. **g)** Indirect emissions from purchased heat and electricity. **h)** This figure does not include service company personnel. **i)** Covers only kraft paper production **j)** Does not have personnel but buys this as a service from Stora Enso AB. **k)** See www.storaenso.com/certificates. **l)** Includes Eridomic personnel (small company).

SO ₂ e) [*]	NO _x as NO ₂ [*]	Direct CO ₂ fossil f) [*]	Direct CO ₂ biomass f) [*]	Indirect CO ₂ g) [*]	COD [*]	AOX [*]	Phosphorus [*]	Nitrogen [*]	Process water discharge ^{**}
9	276	86 655	439 143	137 819	928	1.3	6.8	17.4	6 675
0	121	14 548	90 359	25 491	388				2 806
0	0	0		149 589	124	15.0	0.6	1.2	1 602
		179		1 799	14				1
				29 580					2
271	396	139 363		94 981	63		0.3	3.6	1 417
				713					2
1	378	319 603	132 197	78 842	5 004		6.7	218.0	10 379
146	817	81 835	1 533 443		10 864	92.9	2.3	41.8	24 347
477	389	180 198	162 581	11 827	1 185		2.2	11.9	3 912
26	11	4 342		1 102					254
177	1 708	164 884	2 433 673	88 568	17 458	183.0	13.6	182.1	60 530
		118		106					1
				3 034					26
466	1 196	279 445	1 127 081	54 382	7 925	61.0	12.0	70.0	18 406
		574		291					3
62	624	47 838	838 009	18	6 505	69.0	8.0	33.9	16 463
233	765	55 754	667 517	13 874	2 584	13.5	5.5	60.4	11 256
756	1 092	340 599	1 160 301	70 211	14 000	40.6	10.7	125.2	11 577
1	40	55 131		24 775	814	0.5	1.8		6 009
	14	15 764		352 511	891	0.3	2.4	25.0	5 661
7	331	147 010	326 824	178 365	1 457	0.4	1.9	8.5	5 541
1	123	168 480	53 506	1 012	691	0.5	0.8	5.4	3 387
0	29	80 492		49 397	34	0.3	0.0	0.3	933
		2 263		2 447					4
1	1	743		1 615	0				0
		2		3 887					9
				1 381					3
0	3	76 080		5 548					16
		369		1 718					5
53	17	150 701	183 523	87 161	939		2.8	23.4	5 929
		2 167		3 394					6
1	3	3 488		12 697					26
1	3	4 119		18 869					30
		1 771		11 637					22
	118	183 671		0	175				821
4		529		7					
5	113	3 212	264 527	5 828	1 621	0.3	1.3	32.7	4 371
5	191	31 207	301 718	17 458	1 422	1.3	3.0	29.2	7 916
1		529		143					
79	141	17 051	308 936	34 271	3 013	1.3	2.5	75.4	12 690
509	599	-5 467	718 489	4 988	11 112	0.0	4.0	64.4	27 193
0		3		61					
181	455	70 642	893 840	11 639	7 118	12.9	6.7	89.6	23 212
		25		80					
181	727	22 216	1 588 010	323	6 613	40.9	16.2	89.7	18 878
2		1 313		11					
1	1	736		30 249	314		0.1	4.9	626
		18 212		1 344	137				512
				40 752	393				750
		4 858		14 224					17
38	714	13 944	286 254	170 434	192		5.1		239
3 695	11 396	2 787 196	13 509 931	1 850 453	103 978	535.1	117.3	1 211.5	294 465
38	714	13 944	286 254	170 434	192		5.1		239
3 733	12 110	2 801 140	13 796 185	2 020 887	104 170	535.1	122.4	1 211.5	294 704

Products ① newsprint ② magazine paper ③ fine paper ④ board and packaging paper ⑤ market pulp ⑥ converted products (e.g. cores, corrugated board) ⑦ wood products ⑧ red paint pigment

* tonnes ** 1 000m³

GRI table

This report follows the Global Reporting Initiative's (GRI) G3.1 guidelines and meets the GRI B+ level. The level B means our reporting covers those GRI indicators that we have defined as relevant to our stakeholders and operations. The table below shows how and where the GRI indicators are addressed.

GR – Stora Enso Global Responsibility Report 2011
 FP – Stora Enso Financial Performance Report 2011
 CG – Stora Enso Corporate Governance Report 2011

- Fully reported
- Partially reported

Profile	Location	Level
1. STRATEGY AND ANALYSIS		
1.1 Statement from the CEO	GR pages 6–7	●
1.2 Description of key impacts, risks and opportunities	GR pages 4–5, 6–7	●
2. ORGANISATIONAL PROFILE		
2.1 Name of the organisation	GR page 2	●
2.2 Primary brands, products and/or services	GR page 2	●
2.3 Operational structure of the organisation	GR page 2, FP 52	●
2.4 Location of headquarters	GR back cover	●
2.5 Countries in which the organisation's operations are located	GR pages 2, 4–5	●
2.6 Nature of ownership and legal form	GR page 2	●
2.7 Markets served	GR pages 2, 17–18	●
2.8 Scale of the reporting organisation	GR page 2, FP page 36	●
2.9 Significant changes during the reporting period	GR page 23. Acquisition of Inpac International.	●
2.10 Awards received during the reporting period	GR pages 3, 6–7, 31	●
3. REPORT PARAMETERS		
Report profile		
3.1 Reporting period	1 January 2011–31 December 2011	●
3.2 Date of most recent previous report	24 February 2011	●
3.3 Reporting cycle	Annual	●
3.4 Contact point for questions	GR back cover	●
Report scope and boundary		
3.5 Process for defining report content	GR page 13	●
3.6 Boundary of the report	GR page 8	●
3.7 Specific limitations on the scope or boundary	Consolidated environmental performance data covers all production units, unless otherwise is stated in connection to the respective environmental indicator. Sales offices and staff functions are excluded from environmental performance data. In the OHS data, some smaller staff functions and sales offices are not included. Numbers of employees are derived from financial accounting, and cover all employees on the payroll during the year. Other Human Resources (HR) data is derived from separately collected HR statistics, and covers permanent and temporary employees as of 31 December 2011.	●
3.8 Basis for reporting on joint ventures, subsidiaries etc	GR page 8. Efora Oy, of which Stora Enso owns 51% and ABB 49%, and which provides maintenance services to Stora Enso mills in Finland, is not included in the consolidated performance data. The related joint venture agreement defines Efora Oy as an ABB company. Outsourced operations are not included in the consolidated performance data unless specifically indicated.	●
3.9 Data measurement techniques	A description of data measurement techniques can be found at www.storaenso.com/annualreports	●
3.10 Explanation of the effect of any re-statements of information	This is reported in connection with each indicator as relevant. As a general principle for environmental performance data we remove emissions from divested sites from the baseline, and add emissions from acquired sites to the baseline. In cases involving organic growth or mill closures, baselines are not changed.	●
3.11 Significant changes in the scope, boundary, or measurement methods applied	Inpac International acquisition was completed in 2011, and the performance data of Inpac International (Stora Enso Inpac Packaging) is included in this report. There have been no other significant changes since the last report.	●
3.13 Policy and current practice regarding external assurance	GR pages 8, 60	●

Profile	Location	Level
4. GOVERNANCE, COMMITMENTS AND ENGAGEMENT		
Governance		
4.1 Governance structure	CG page 2	●
4.2 Position of the chair of the board of directors	CG page 2	●
4.3 Independent, non-executive directors on the board of directors	CG page 4	●
4.4 Mechanisms for shareholders and employees to provide recommendations to the board of directors	CG page 3. All shareholders have the right to make proposals to the shareholder meeting agenda within authority of the Annual General Meeting (AGM). All shareholders also have the right to present questions to the Board of Directors (BOD) and executive management at the AGM. There is no employee representation at board-level. However, the employee representatives meet the chairman and the vice chairman of the BOD and the CEO in connection with board meetings on a regular basis.	●
4.5 Executive compensation	CG pages 4, 7–8, 10–12. Remuneration is based on base salary, short term and long term incentives and pension. The short term incentive can include personal or team targets related to social and environmental performance.	●
4.6 Avoiding conflicts of interest	CG pages 4, 13	●
4.7 Determining the qualifications and expertise of board members	The company has a nomination board whose task it is to propose new board members. When preparing proposals the nomination board evaluates the specific needs of the Board of Directors, including also possible needs for sustainability related competencies, and takes those specific qualifications into account in their proposals.	●
4.8 Mission or values statements, codes of conduct, sustainability principles	GR page 10	●
4.9 Board-level procedures overseeing sustainability performance	GR page 10, CG page 5. The board addresses sustainability issues when deemed necessary	●
4.10 Evaluating board performance with respect to sustainability performance	CG pages 4, 5. The evaluation of the board's performance is generic in nature and focuses mostly on working methods and not on any specific area in particular. However, if concerns relating to sustainability issues arise, the evaluation helps the board to identify those issues and bring them to the agenda.	●
Commitments to external initiatives		
4.11 Addressing the precautionary approach or principle	GR pages 17–18	●
4.12 External charters, principles or initiatives endorsed	GR pages 3, 6–7, 12, 40	●
4.13 Memberships in associations	GR page 12	●
4.14 List of stakeholder groups engaged	GR pages 11–13	●
4.15 Identification and selection of stakeholders	GR pages 11–13. Stora Enso's Global Responsibility function is responsible for reviewing the company's stakeholder groups as deemed necessary.	●
4.16 Approaches to stakeholder engagement	GR pages 11–13. Our engagement with all stakeholder groups is continuous and ongoing.	●
4.17 Responding to key topics resulting from stakeholder engagements	GR pages 11–13	●
5. PERFORMANCE INDICATORS		
ECONOMIC INDICATORS: Economic performance		
EC1 Direct economic value generated and distributed	GR page 17	●
EC2 Risks and opportunities due to climate change	GR pages 40–41, FP page 31	○
EC3 Coverage of defined benefit plan obligations	FP pages 89–95	●
EC4 Significant financial assistance from government	FP pages 2, 60	○
EC9 Significant indirect economic impacts	GR pages 19–21	○
ENVIRONMENTAL INDICATORS		
Materials		
EN1 Materials used by weight or volume	GR page 48	●
EN2 Recycled materials used	GR pages 33, 37	●
Energy		
EN3 Direct energy consumption	GR pages 42–43	●
EN4 Indirect energy consumption	GR pages 42–43	●
EN5 Energy saved through conservation and efficiency improvements	GR pages 42–43	●
EN6 Initiatives to provide energy-efficient or renewable energy based products	GR pages 42–43	●
EN7 Initiatives to reduce indirect energy consumption	GR pages 42–43	○
Water		
EN8 Total water withdrawal	GR pages 45–46	●
EN9 Water sources significantly affected by withdrawal of water	GR pages 45–46. A table showing water sources follows the CRI table.	●
EN10 Total recycling and reuse of water	GR pages 45–46	○

Profile	Location	Level
Biodiversity		
EN11 Location and size of land holdings in biodiversity-rich habitats	GR page 36	●
EN12 Significant impacts on biodiversity	GR pages 19–21, 33–36	○
EN13 Habitats protected or restored	GR pages 33–36	○
EN14 Managing impacts on biodiversity	GR pages 33–36	○
EN15 Number of vulnerable species affected by operations	GR pages 33–36	○
Emissions, effluents and waste		
EN16 Total direct and indirect greenhouse gas emissions	GR pages 40–42	●
EN17 Other relevant indirect greenhouse gas emissions	GR pages 40–42	●
EN18 Initiatives to reduce greenhouse gas emissions	GR pages 40–42, 44	●
EN20 NO _x , SO _x and other significant air emissions	GR pages 47, 51	○
EN21 Total water discharge	GR pages 45–46, 51–53	●
EN22 Total amount of waste	GR page 47, 52–53	○
EN23 Significant spills	GR page 49	●
EN24 Transported, imported, exported or treated hazardous waste	GR page 47	○
Products and services		
EN26 Mitigating environmental impacts of products and services	GR pages 30–31	○
Compliance		
EN28 Fines and sanctions for non-compliance with	GR page 50	●
Transport		
EN29 Environmental impacts of transportation	GR page 44	○
Overall		
EN30 Environmental expenditures	GR page 48	●
SOCIAL INDICATORS		
LABOUR PRACTICES AND DECENT WORK		
Employment		
LA1 Breakdown of workforce	GR pages 23–24	●
LA2 Breakdown of employee turnover	GR page 24	●
Labour/management relations		
LA4 Coverage of collective bargaining agreements	GR page 23	●
Occupational health and safety		
LA7 Injuries, lost days, absentee rates and fatalities	GR pages 25–26. Data on safety incidents is not consolidated by gender, though the relevant data is available in our units. As the target of safety is to create a workplace free from accidents, the collection of gender-specific data on accidents is not relevant from a safety management point-of-view, and is therefore not centrally collected or communicated in Group figures.	●
Training and education		
LA11 Programmes for skills management and lifelong learning to support continued employability and manage career endings	GR pages 22–23	○
LA12 Employees receiving performance and career development reviews	GR pages 22–23. All of Stora Enso's employees are covered by performance management process.	●
Diversity and equal opportunity		
LA13 Composition of governance bodies and employee breakdown	GR pages 22–23, CG pages 16–19	●
HUMAN RIGHTS		
Investment and procurement practices		
HR1 Human rights screening or clauses included in significant investment agreements	GR pages 18, 27	○
HR2 Screening suppliers and contractors on human rights and actions taken	GR page 38. Stora Enso's supplier sustainability requirements include human rights related aspects.	○
HR3 Employee training on human rights	GR pages 15, 27. Stora Enso's Code of Conduct training includes human rights related aspects.	●
Non-discrimination		
HR4 Actions taken in incidents of discrimination	GR page 15. Code of Conduct grievance mechanism. No incidents occurred in 2011.	●
Freedom of association and collective bargaining		
HR5 Supporting right to freedom of association and collective bargaining in risk areas	GR pages 22–23, 38	●

Profile	Location	Level
Child labour		
HR6 Measures taken to eliminate child labour in risk areas	GR page 15, 38	●
Forced and compulsory labour		
HR7 Measures taken to eliminate forced and compulsory labour in risk areas	GR pages 15, 38	●
Indigenous rights		
HR9 Violations of indigenous people's rights and actions taken	GR page 27. No violations have occurred.	●
Assessment		
HR10 Operations subject to human rights reviews and/or assessments	GR pages 18, 27	○
Remediation		
HR11 Human rights related grievances	GR page 15	●
SOCIETY		
Community		
SO1 Management of impacts on communities in areas affected by activities	GR pages 19–21, 23	○
SO9 Operations with significant negative impacts on local communities	GR pages 19–21, 23	○
SO10 Prevention and mitigation measures for negative impacts on local communities	GR pages 19–21, 23	○
Corruption		
SO3 Anti-corruption training	GR page 15	●
SO4 Actions taken in response to corruption incidents	GR page 15	○
Public policy		
SO5 Public policy and lobbying	GR pages 30–31	○
SO6 Contributions to political parties, politicians and institutions	Stora Enso has not paid any political contributions during 2011.	●
Anti-competitive behaviour		
SO7 Anti-trust and monopoly court cases	<p>In the context of magazine paper sales in the USA in 2002 and 2003 Stora Enso was sued in a number of class action (and other civil) lawsuits filed in the USA by various magazine paper purchasers that have claimed damages for alleged antitrust violations. On 14 December 2010 a US federal court granted a motion for summary judgement, which Stora Enso had filed, seeking dismissal of the direct purchaser class-action claims. The ruling, which plaintiffs can appeal, means that the court has ruled in favour of Stora Enso and found the direct purchaser class action claims to be without legal foundation. The ruling also provides a strong legal basis to seek similar dismissals of other remaining civil cases. No provisions have been made in Stora Enso's accounts for these lawsuits.</p> <p>On 3 December 2009 the Finnish Market Court fined Stora Enso for competition law infringements in the market for roundwood in Finland from 1997 to 2004. Stora Enso did not appeal against the ruling.</p> <p>On 31 March 2011 Metsähallitus of Finland initiated legal proceedings against Stora Enso, UPM and Metsäliitto claiming compensation for damages allegedly suffered due to the competition law infringements amounting altogether to EUR 283 million. In December 2011 Metsähallitus included damages allegedly suffered in 2005 in its claim. Further, Metsähallitus also decreased its total claim to EUR 159 million and its secondary claim against Stora Enso to EUR 87.2 million.</p> <p>In addition and before year end 2011 Finnish municipalities and private forest owners have initiated similar legal proceedings. These claims are waiting to be processed and formally served by the Court. The total claim amount on all defendants is estimated to be below EUR 50 million. Stora Enso denies that Metsähallitus, and other plaintiffs, have suffered any damages whatsoever and will forcefully defend itself. No provisions have been made in Stora Enso's accounts for this lawsuit.</p>	●
Compliance		
SO8 Fines and sanctions for non-compliance with laws and regulations	Stora Enso has not been subject to any significant fines or significant non-monetary sanctions due to non-compliance with business practice related laws and regulations during 2011.	●
PRODUCT RESPONSIBILITY		
Customer health and safety		
PR1 Assessment of health and safety impacts of products	GR page 31	●
Product and service labelling		
PR3 Product information required by procedures	GR pages 30–31	●
PR5 Practices related to customer satisfaction	GR page 30	○

Water sources significantly affected (EN9)

Mill	Water source	Average annual withdrawals amount to 5% or more of the annual average volume	Recognised by the authorities as a sensitive area	Volume of water source (thousand cubic metres)	Biodiversity value and protection status	Value / Importance to local communities
Nymölla Mill, Sweden	Lake Ivö	Yes	Yes	200 340	Natura 2000 site, due to rare fish species.	Low / The mill regulates water levels in the lake in accordance with legal obligations. No other measures required by the local authorities.
Corbehem Mill, France	River Scarpe	Yes	No	96 500	No special protection status granted or specific biodiversity values identified.	Low / No significant pressure from local communities. Corbehem Mill is the only mill on this section of the river.
Sachsen Mill, Germany	River Mulde	No	Yes	1 984 900	Natura 2000 site, due to alluvial landscapes which provide habitat for many bird species.	Medium / The initial level of water pollution upstream from the mill is relatively high.
Soustre Mill, France	River Isle	No	Yes	220 700	Classified as sensitive by the national authorities due to the risk of eutrophication.	Medium / Recreational value and value to other users including fish farms, agriculture and industry.
Pori Mill, Finland	River Kokemäenjoki	No	Yes	11 037 600	Natura 2000 site, due to valuable bird habitats.	Medium / Recreational value and value to other users including fish farming, agriculture and industry.



Statement GRI Application Level Check

GRI hereby states that **Stora Enso Oyj** has presented its report "Global Responsibility Report 2011" to GRI's Report Services which have concluded that the report fulfills the requirement of Application Level B+.

GRI Application Levels communicate the extent to which the content of the G3.1 Guidelines has been used in the submitted sustainability reporting. The Check confirms that the required set and number of disclosures for that Application Level have been addressed in the reporting and that the GRI Content Index demonstrates a valid representation of the required disclosures, as described in the GRI G3.1 Guidelines.

Application Levels do not provide an opinion on the sustainability performance of the reporter nor the quality of the information in the report.

Amsterdam, the 16th of February 2012

A handwritten signature in blue ink, appearing to read "Nelmara Arbex", is written over a large, faint watermark of the GRI globe logo.

Nelmara Arbex
Deputy Chief Executive
Global Reporting Initiative



The "+" has been added to this Application Level because Stora Enso Oyj has submitted (part of) this report for external assurance. GRI accepts the reporter's own criteria for choosing the relevant assurance provider.

The Global Reporting Initiative (GRI) is a network-based organization that has pioneered the development of the world's most widely used sustainability reporting framework and is committed to its continuous improvement and application worldwide. The GRI Guidelines set out the principles and indicators that organizations can use to measure and report their economic, environmental, and social performance. www.globalreporting.org

Disclaimer: Where the relevant sustainability reporting includes external links, including to audio visual material, this statement only concerns material submitted to GRI at the time of the Check on February 16th 2012. GRI explicitly excludes the statement being applied to any later changes to such material.

Independent Assurance Statement Tofuture

To the Management and Stakeholders of Stora Enso

Scope and Objectives

The Management of Stora Enso commissioned us to perform a limited assurance engagement on the Global Responsibility Report 2011 ("the Report"). The assurance engagement was conducted in accordance with the AA1000 Assurance Standard (2008) and as a type 2 engagement.

We have duly performed a limited assurance engagement, the objective of which was to evaluate:

- Stora Enso's adherence to the AA1000 Accountability Principles of inclusivity, materiality and responsiveness;
- the reliability of performance information presented in the Report according to the Quality of Information Principles defined in the Global Reporting Initiative Guidelines; and
- the GRI application level of the Report.

Responsibilities of the Management of Stora Enso and the Assurance Providers

Stora Enso's Management is responsible for the preparation of the Report and the performance data and statements presented therein, which the company management has approved. Our responsibility as assurance providers is to express a conclusion based on our work performed. The criteria used for our assessment include the Global Reporting Initiative Guidelines and Stora Enso's own internal reporting guidelines.

Assurance Provider's Independence and Competence

An assurance provider is required to be independent and impartial from the reporting organisation. We were not involved in the preparation of the Report, and had no other engagement with Stora Enso during the reporting year. Our assurance team consists of competent and experienced responsibility reporting and assurance experts, who have the necessary skills to perform an assurance process. Further information, including a statement of competencies related to the team can be found at: www.tofuture.eu.

Basis of Our Opinion and Limitations

Assurance providers are obliged to plan and perform the assurance process so as to ensure that they collect adequate evidence for the necessary conclusions to be drawn. The procedures selected depend on the assurance provider's judgement, including their assessment of the risk of material misstatement adhering to the reporting criteria.

We have performed the following procedures:

- Assessment of the procedures Stora Enso has in place to ensure adherence to principles of stakeholder inclusivity, materiality and responsiveness.
- Interviews with the CEO and three other members of the Group Executive Team to gain an understanding of the major impacts, risks and opportunities related to Stora Enso's global responsibility agenda.
- Interviews with managers responsible for performance data collection at Group level and in selected sites.
- Review of Group-level systems and procedures to generate, collect and report performance data for the Report.
- Evaluations of Group-level calculations and data consolidation procedures and internal controls to ensure the accuracy of data.
- Review of data sources, data generation and reporting processes at Hylte Mill in Sweden, Ostroleka Mill in Poland and Wood Supply in Finland.

Conclusions

Adherence to AA1000 Accountability Principles

- Inclusivity: Stora Enso was found to have systems in place for stakeholder involvement, and the company has made a commitment to stakeholder dialogue
- Materiality: Stora Enso has defined material reporting issues as a part of the company's global responsibility governance and management
- Responsiveness: Stora Enso has adequate policies, guidelines and procedures in place to respond to stakeholders' expectations

Reliability of Performance Information

We have reviewed the basis of the global responsibility information provided in the Report. Based on our review, nothing has come to our attention that would suggest that the Report would not give a fair and balanced view of Stora Enso's global responsibility performance on all material issues, or that the information presented in respect to all material issues would not be reliable with regard to the reporting criteria.

GRI Application Level

The Report corresponds to the GRI application level B+

Observations and Recommendations

Based on our limited level assurance engagement, we present the following observations and recommendations, which do not affect the conclusions presented above.

- Stora Enso has developed the Global Responsibility approach to manage the company's sustainability impacts, risks and opportunities with a special focus on stakeholders. We recommend that Stora Enso should proceed with global and local stakeholder engagement in order to utilise the full potential of the Global Responsibility approach in the context of managing local socio-economic and global sustainability risks and opportunities.
- Stora Enso has systems and controls in place to collect and consolidate Group-level responsibility data from different sources. In 2011 Stora Enso has further developed the data compilation procedures for occupational health and safety (OHS) and human resources data. We recommend that all the company's global responsibility data gathering processes should be integrated into a single, streamlined process, which should be fully documented in order to address risk management and change management issues coherently for the purposes of reporting
- Global responsibility governance and management procedures are firmly established at Stora Enso. The company is making progress in its global responsibility performance against set targets, and has intensified efforts to improve its OHS performance. We encourage Stora Enso to further develop its global responsibility target-setting by establishing more ambitious and forward-looking future targets, and by connecting global responsibility measures to financial performance and stakeholder value creation.

Espoo, Finland, 7th February 2012

Tofuture Oy | Sustainability Assurance



Mikael Niskala
Director of Assurance Practice



Jani Alenius
Senior Assurance Practitioner

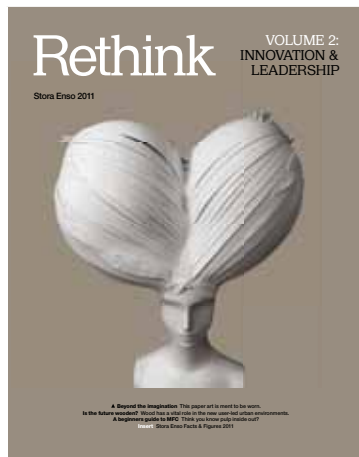


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000-35



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Text stock: LumiSilk 100 g/m², Stora Enso, Oulu Mill (ISO 14001 certified)
Stakeholder magazine text stock: LumiArt 115g/m², Stora Enso, Oulu Mill (ISO 14001 certified)

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Stora Enso Financial Report 2011

Contains detailed information on Stora Enso's financial performance and corporate governance, as well as the capital markets. This includes consolidated financial statements and notes, and the report of the Board of Directors.

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