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HOLMEN

nability



# Holmen and sustainability

### We welcome your questions and comments

### Work on sustainability

Holmen and sustainability presents an in-depth picture of organisation, working practices and trends, with the aim of meeting ever greater demands for sustainable development.

This report provides answers to many questions about Holmen's approach to sustainability - but it is a large subject and there are bound to be many more. We therefore welcome questions and comments on the topics that are covered.

AVAILABLE IN THREE LANGUAGES.

Holmen and sustainability is also available in Swedish and Spanish.

#### **MORE INFORMATION ONLINE.** The

Holmen website www.holmen.com contains additional information about Holmen's approach to sustainability and about environmental efforts in the various business areas in 2010. A GRI register and the KMPG assurance report can also be found there.



### More about Holmen

The Annual report 2010 including sustainability report provides detailed information about the Group's financial performance and conditions on its markets during the year. A new feature this year is that the annual report also includes a report on work on sustainability in 2010.



Cover photograph: Pine seedlings in the smallest variety of Holmen's Starpot 50 growing system. The empty seed case will soon be shed and the cotyledons (seed leaves) will unfold. When planted, the seedlings are around ten centimetres in length.

Photograph: Håkan Nordström.

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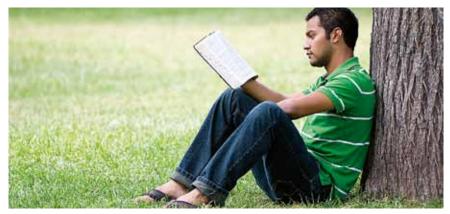
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### Further reading on sustainability

Further information about sustainability can be found in the *Annual report 2010 including sustainability report* and on the Holmen website. The website also contains descriptions of the environmental activities in the various business areas, a complete GRI register and the auditors' assurance report. www.holmen.com







### **Reporting principles**

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Holmen and sustainability describes Holmen from the point of view of sustainable enterprise. The emphasis is on social responsibility and environmental responsibility, with in-depth descriptions of organisation, working practices and trends.

Holmen and sustainability presents a broad picture of the Holmen Group. This publication covers all forest and industrial operations, as well as social issues. It also describes the forward-looking efforts to meet ever greater demands for sustainable development.

Holmen has published sustainability reports annually since 2004. The previous edition was distributed in March 2010.

### STAKEHOLDERS AND TARGET GROUPS.

Employees, customers, shareholders, business partners, opinion formers, authorities, analysts, schools and the general public.

**THE FACTS** presented in *Holmen and sustainability* are largely the same as those that Holmen is legally and contractually required to report to the authorities. Some data have been specifically produced for this publication. The most important key indicators are presented in the relevant sections. Supplementary environmental information and detailed data can be found on the Holmen website. ADAPTATION TO GRI AND THE UN

**GLOBAL COMPACT.** The object of the Global Reporting Initiative (GRI) is to encourage companies and organisations to voluntarily describe their activities from an economic, environmental and social perspective.

Holmen's method of reporting has been adapted to the GRI requirements and the 10 principles of the UN Global Compact. The Group's combined GRI reporting consists of the Annual Report 2010 including sustainability report, Holmen and sustainability and additional information on the Holmen website. There is also a complete GRI register and the auditors' assurance report. The Group's GRI reporting satisfies GRI reporting level A+, as also confirmed by auditors at KPMG.

### Internal production

Holmen and sustainability is compiled and produced within the Group. Holmen regards internal production as a way of developing sustainability efforts in the areas concerned. A special working group containing representatives of Holmen's Group staffs is responsible for coordinating sustainability issues. This group is appointed by the Group's CEO and is responsible for the sustainability information in the *Annual Report 2010 including sustainability report* and *Holmen and sustainability*.

### Annual report

The Holmen report 2010 including sustainability report provides detailed information about the Group's financial performance and the conditions that permeated its markets during the year. It also contains the corporate governance report and detailed information on the Board, senior management, auditors and Annual General Meeting.

A new feature this year is that the annual report includes a description of work on sustainability in 2010, together with key indicators for employees, production and the environment at Group level for the past five years.



### **CEO's statement**

Holmen's most important task is to create long-term value for our shareholders by ensuring that our business activities meet the needs of our various stakeholders. As well as the shareholders, these are our customers, employees, suppliers and the community around us. The same stakeholders also demand that we adopt a sustainable approach in creating this value.

Holmen has worked successfully on environmental and social responsibility over a long period of time. Our involvement in sustainability issues has been made possible by fundamentally sound profitability.

WITH THIS PUBLICATION, Holmen and sustainability, we wish to present the Group in a broad light, and we aspire to be a company that respects its responsibilities in the long term. This applies to the whole chain, from the time when we plant seedlings in the forests to when we manufacture and distribute our products - and finally, when these products are used and recycled. We also wish to describe how sustainability is not solely concerned with physical resources and the environment but just as much with our personnel and our role in society. We also want to make it clear that it is impossible to create a business that is sustainable in the long term unless we are profitable.

The concepts of sustainability and taking a long-term approach guide many of the decisions taken in our company. The investment at Iggesund Mill is an example of this. A new recovery boiler with a turbine is being built at a cost of SEK 2.3 billion, making the mill self-sufficient in energy. In the longer term it will be possible to run the business without using any fossil fuels whatsoever. The new sawmill in Braviken is another investment for the future. Our investments in expanding wind power are a third example. All these investments obviously need to fulfil our profitability criteria.

### PERHAPS THE GREATEST CHALLENGE

of our time is the risk of climate change. Holmen as a company holds a unique position in this respect, as our operation is based on the natural and renewable raw material provided by the forests. Products and sources of energy with an impact on climate can be replaced by managing the forests and using



the products they provide instead. Holmen's environmental goals help put the focus on climate and energy issues.

Our work leaves a positive mark on the world at large. Holmen is included in several international corporate indexes – these aim to make it easier for investors and others to identify companies that adopt a credible approach to sustainability issues. Holmen has quite clearly gained a leading position in this area. Practical proof of this is the fact that we now meet the requirements for the very highest reporting level in Global Reporting Initiative, GRI A+.

### TAKING EVERYTHING TOGETHER,

I would venture to claim that Holmen is well placed to meet the increasingly exacting demands of the present – and the future – for sustainability. We undertake long-term forestry in which both growth and the total stock of wood increase year on year, and we are ambitious in the nature conservation methods we are developing in the forests. Hydro power and future investments in wind power are in line with our energy and climate goals. Investments in the area of biorefining are exciting and are expected to provide new products and profitable business. **THROUGH OUR COMMITMENT TO** and membership of the UN Global Compact, we at Holmen take a clear stance on issues of human rights and environmental responsibility. There is a high level of awareness among our employees – one of the benefits of our personnel policy which to a large extent encourages learning, responsibility and personal initiative.

Skilled and committed employees are crucial to success. My aspiration is for Holmen to be known as a company that has a good personnel policy and offers stimulating work. Significant resources are therefore earmarked for personnel development and leadership. Committed leaders with insight are essential in enabling us to exploit the opportunities the future offers to create a profitable business.

Stockholm, 18 February 2011

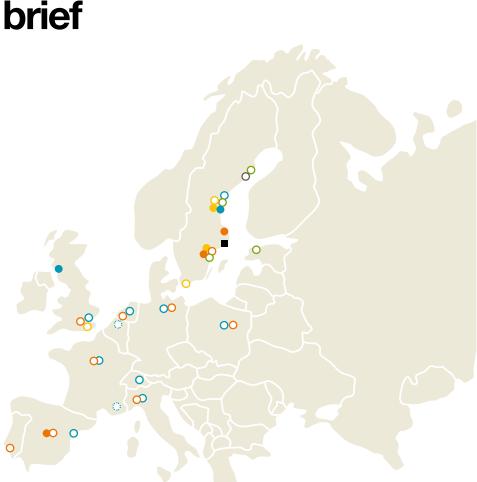
Maxim Hall

Magnus Hall President and CEO

### Holmen in brief

- Holmen, head office
   Production sites
   Sales offices, forest regions and purchasing companies
- Sheeting units
- e Holmen Paper
- Iggesund Paperboard
- 😑 Holmen Timber
- Holmen Skog
- Holmen Energi

Operations outside Europe Holmen Paper: sales office in the US. Iggesund Paperboard: sales offices in Hongkong, Singapore and the US. Holmen Timber: sales in North Africa and the Middle East via Uni4 Marketing AB.



Holmen is a forest industry group that manufactures printing paper, paperboard and sawn timber and runs forestry and energy production operations. The company's extensive forest holdings and its high proportion of energy production are strategically important resources that reinforce Holmen's position and future growth.

Holmen's operations consist of three productoriented and two raw-material-oriented business areas, which are to be developed through organic growth.

Holmen's manufacturing operations in the product-oriented areas are based on renewable raw materials from sustainably managed forests. The Holmen Paper business area manufactures printing paper for daily newspapers, magazines, catalogues, directories/manuals, advertising print and books. The paper is manufactured at two mills in Sweden and one in Spain. Iggesund Paperboard produces board for consumer packaging and graphics printing at one mill in Sweden and one in the UK. Holmen Timber produces sawn timber at two Swedish sawmills. Holmen Skog is responsible for managing and developing the Group's land holdings, which comprise around 1.3 million hectares – of which 1 million are used for forestry. The normal annual volume of wood harvested in company forests is some 2.5 million cubic metres.

Holmen Energi is in charge of the Group's hydro power production and of developing energy-related operations. During a normal year, hydro power production amounts to around 1 100 GWh.

Holmen's forest and energy assets are highly valuable to the company, helping to give it a stable foundation. In addition to generating even and high earnings, they create advantages in supplying raw materials to the product-oriented business areas. Forest raw materials and the energy area also have immense development potential. The Group is about 60 per cent self-sufficient in wood, and self-sufficiency in electricity is around 30 per cent. A significant proportion of the thermal energy required is covered by bioenergy produced at the company's own facilities.

The Group has five production plants in Sweden and one each in the UK and Spain. The forests and hydro power facilities are located in Sweden. Around 90 per cent of sales take place in Europe via Holmen's own sales companies.

Holmen's two classes of shares are listed in the Large Cap segment on the Nasdaq OMX Nordic Exchange.



# Production and use of Holmen's products



### Production...

**HARVESTING** in Holmen forests meets around 60 per cent of the wood requirements. The remainder is purchased from private forest-owners, obtained through exchanges with other forest companies or imported. The proportion of imported wood is very small.

The mill in Workington uses wood that is purchased in the UK.

Recovered paper is used at Braviken Paper Mill. Production at Holmen Paper Madrid is entirely based on recovered paper. All the sites apply certified quality, environmental and energy management systems. Holmen's forestry applies a certified environmental management system and is certified under the international forest standards PEFC and FSC.

### PÅAB

Recovered paper in Sweden is obtained from the partly owned company PÅAB.

### Carpa

Wholly owned Spanish company which collected 447 000 tonnes of recovered paper in 2010.

### **Sheeting units**

Paperboard is cut into sheets in Utrecht (the Netherlands) and Valence (France). Capacity 75 000 tonnes/year.

**Skärnäs Terminal** in Iggesund, which handles 800 000 tonnes of forest products per year. 340 ship dockings in 2010. Holmen has production facilities in Sweden, the UK and Spain. Some further processing takes place in the Netherlands and France. The Group's forests and hydro power stations are located in Sweden.

### ... use

**DAILY NEWSPAPERS.** A large number of newspapers in Europe, but also in other parts of the world, are printed on paper from Holmen.

### MAGAZINES, SUPPLEMENTS AND

**WEEKLIES.** Holmen has a broad range of different grades of paper for these types of publications.

**DIRECT MAIL AND CATALOGUES** generate sales both through stores and online.

**BOOKS.** The level of consumption of books is high in Europe. Book paper is an increasingly important product for Holmen.

### PACKAGING FOR FOODS, MEDICINES, COSMETICS, CONFECTIONERY AND

**TOBACCO PRODUCTS.** There are strict requirements for the cleanliness as well as printability and runnability of paperboard for these products. It is also important that the packaging conveys the right impression about its often exclusive contents.

### COVERS FOR PRINTED MATERIAL.

Paperboard is often used for the covers of various printed materials, of which this report is an example.

### WOODEN INTERIORS AND CONSTRUC-

**TION TIMBER.** Living with wood and building with wood. Holmen sawn timber is nowadays used for exposed applications in residential settings and as a construction material for wooden buildings.

### Hallsta Paper Mill

Holmen Paper Raw materials: Spruce pulpwood. Process: TMP and groundwood pulp. Products: Newsprint, MF Magazine, SC paper and book paper. Production capacity: 670 000 tonnes/year. Average number of employees: 733.

### Braviken Paper Mill

Raw materials: Spruce pulpwood, recovered paper. Process: TMP and DIP. Products: Newsprint, coloured newsprint, directory paper and MF Magazine. Production capacity: 750 000 tonnes/year. Average number of employees: 604.

### **Holmen Paper Madrid**

Holmen Paper Raw materials: Recovered paper. Process: DIP. Products: Newsprint, MF Magazine and LWC Recycled. Production capacity: 495 000 tonnes/year\*. Average number of employees: 369\*. \* Before the closure of PM61

### **Iggesund Mill**

Iggesund Paperboard Raw materials: Softwood and hardwood pulpwood. Process: Sulphate pulp. Products: Solid bleached board, plastic-coated paperboard and sulphate pulp. Production capacity: 330 000 tonnes/year (paperboard). Average number of employees: 890.

### Workington Mill

Iggesund Paperboard Raw materials: Spruce pulpwood and purchased sulphate pulp. Process: RMP. Products: Folding boxboard. Production capacity: 200 000 tonnes/year. Average number of employees: 405.

### **Iggesund Sawmill**

Holmen Timber Raw materials: Pine saw logs. Process: Sawmilling. Products: Pine sawn timber. Production capacity: 310 000 cubic metres/year. Average number of employees: 97.

### **Braviken Sawmill**

Holmen Timber Raw materials: Spruce saw logs Process: Sawmilling. Products: Spruce sawn timber. Production capacity: 550 000 cubic metres/year with full capacity 2013. Number of employees at year end 2010: 110.

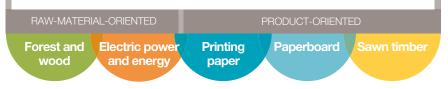


### Strategy



### **Strategy:** Grow and develop our five business areas

Sustainable and profitable business activities • Strong financial position Key market is Europe • Quality, productivity and cost focus • Commitment in leadership and skilled workforce.



Holmen's strategy is based on two concepts: a fully integrated approach and sustainability. Economic, social and environmental aspects are handled in a sustainable and responsible way.

#### HOLMEN'S OPERATIONS ARE BASED ON

the natural and renewable raw materials provided by the forests. A significant portion of the energy required comes from sustainable energy sources such as hydro power and bioenergy, and in the future wind power will also be used. The Group's products – printing paper, paperboard and sawn timber – can be recycled after use as both material and energy.

#### HOLMEN'S WORK ON SUSTAINABILITY

is characterised by taking responsibility towards stakeholders, being a good employer and meeting the environmental requirements that have to be respected. The targets for work on sustainability strengthen the brand and contribute to boosting competitiveness.

THE TABLE ON THE NEXT PAGE describes Holmen's sustainability targets for economic development, social responsibility and environmental responsibility. A brief indication is given of the trend in recent years for each area. More detailed presentations of targets and outcomes are included in the relevant sections later in this report. Targets for economic development are presented in the annual report.

### HOLMEN'S GROUP MANAGEMENT is

responsible for ensuring that the targets for economic development, social responsibility and environmental responsibility are followed up. Group management also decides whether targets need to be revised or whether new targets should be formulated. All the sustainability targets are reported annually to the Holmen Board. Aspects of sustainability form an integral part of decisions taken within Holmen. In this way the company moves closer every day to attaining the set targets. Several of the targets for social responsibility are monitored through the employee survey conducted every two years. The targets for industrial accidents and the number of women managers are monitored continuously.

The local environmental targets at all the units are monitored under the certified management systems applied. These targets are set in the short term, unlike the Groupwide, long-term goals.



### Sustainability goals

**ECONOMIC DEVELOPMENT.** Good profitability and a strong financial position will create the necessary conditions for long-term sustainable development for business partners, employees, shareholders and society.

**SOCIAL RESPONSIBILITY.** Holmen will respect ethical and social standards and be a good business partner and member of the community. As a good employer, the company will aim to ensure good leadership and motivate and develop its employees.

ENVIRONMENTAL RESPONSIBILITY.

Holmen's operations will be permeated by a fully integrated approach, including protection of the environment and efficient use of raw materials and energy.



Economic development	TARGET	OUTTURN 2010	REMARK
Profitability and return	Sustainably higher than market cost of capital	Higher	Met for the past six years except 2008.
Capital structure	Debt/equity ratio 0.3–0.8	0.34	Met for the past seven years.
Dividends	-	-	Decisions on ordinary dividends will be based on an appraisal of the Group's profitability, future investment plans and financial position.

Social responsibility	TARGET	OUTTURN 2010	REMARK
Inblick index: the prospects of doing a good job	2011: at least 650	623 (2009)	The index has increased by almost 100 units since 2003. (600 = good, 700 = excellent)
Leadership index	2011: at least 61	58 (2009)	The index has improved from 52 since 2003. (60 = good, 70 = excellent)
Annual performance reviews	2011: at least 80 %	62 % (2009)	Another 23 % have performance reviews irregularly.
Accidents at work leading to sick leave/1000 employees	2013: maximum 10	24.8	The trend has not been satisfactory.
Proportion of women managers	2012: at least 19 %	16.5 %	Has doubled since 2006.

Environmental responsibility	TARGET	OUTTURN 2010	REMARK
Reduce the use of fossil fuels at the Swedish units	2020: reduction of 90 %	55 %	Reference year 2005.
Rationalise the use of energy (MWh/product unit)	2020: 15 %	5.2 %	Reference year 2005.
Increase rate of growth in Holmen forests	25 % within 30 years	-	Reference year 2007. Estimated effect of growth-increasing measures in progress is more than 20 %.
Increase extraction/deliveries of biofuel	2020: 1.5 TWh	1.25 TWh	Reference year 2006: 0.42 TWh.
Production of electricity from wind power	2020: 1 TWh	4 GWh	Reference year 2010.



# Products from a sustainability perspective



Holmen makes continuous efforts to improve the characteristics of its products. It is essential to reduce the use of energy, water and other raw materials from the point of view of climate. In the area of biorefining, Holmen is studying new business concepts and products.

### **Basic conditions**

**SUNLIGHT, AIR AND WATER,** together with the nutrients in the soil, are the main "raw materials" that trees in the forests need in order to grow. It takes between 60 and 110 years before the trees are finally harvested. However, wood starts to be removed when trees are 30 years old, because this is when the forest is thinned for the first time. Thinning is then carried out once more, or sometimes on two more occasions.

Holmen's forests are managed sustainably. Annual removals of wood amount to 80–85 per cent of the growth.

Holmen's objective is to preserve the biodiversity of the forests. Around 20 per cent of Holmen's forested land is completely set aside from forestry activities.

Holmen has procedures to trace all wood back to its origin. The wood that Holmen purchases must have been harvested in accordance with applicable legislation and must meet the Group's environmental requirements. **RECOVERED PAPER.** Holmen uses recovered paper at Braviken Paper Mill and Holmen Paper Madrid. Production at Holmen Paper Madrid is based entirely on the use of recovered paper.

**THERMAL ENERGY.** Biofuels and recovered thermal energy supply around 70 per cent of the thermal energy required for the manufacturing of Holmen's products.

**ELECTRICAL ENERGY.** Hydro power generated by the company, back-pressure power at the mills and wind power meet around a third of Holmen's electrical energy needs. Remaining quantities are purchased.

**REDUCED USE OF WATER.** An extensive project focused on saving water is in progress at Holmen Paper Madrid. Work is also under way at Iggesund Mill, Braviken Paper Mill and Hallsta Paper Mill to reduce the need for water.

### Holmen R&D

Holmen's research and development (R&D) activities are decentralised to the business areas and mills. The units co-operate on common issues. The Group Technology staff unit works to develop contacts with external research and to influence the direction it takes.

Holmen invests a total of around SEK 100 million annually in R&D, of which about a quarter comprises external expenses.



### **Printing paper**

Printing paper is produced from spruce wood and recovered paper. The paper is mainly used for daily newspapers, weeklies, books and other printed material. Holmen's printing paper made from mechanical pulp and pulp based on recovered fibre offers an alternative to paper based on chemical pulp. The former results in high stiffness and a lower grammage for the paper, which saves resources.

#### LOWER ENERGY CONSUMPTION is a

priority area for development. The pulp line that started at Braviken Paper Mill in 2008 has to date consumed just under 20 per cent less electricity than the previous line. As a result of further development activity there are good prospects of attaining a power saving of up to 30 per cent.

**GOOD PRINTABILITY** is a key competitive advantage for printing-paper customers. Holmen is therefore focusing on developing new and improved grades of paper.

### BETTER RECOVERED-FIBRE-BASED

**PRINTING PAPER.** Holmen is striving to achieve further improvements in printing paper based on recovered fibre. Work aimed at increasing the yield and extracting more fibres from the recovered paper is continuing at the same time

### Paperboard

Paperboard is produced from pine, spruce and birch wood. Iggesund Mill is virtually self-sufficient in thermal energy from biofuels. The paperboard is principally used for consumer packaging, in which it fulfils a protective hygienic function. It allows for the production of small packs which are resourceefficient to transport. The paperboard is also used for graphics printing because it has good printing and conversion properties.

### SURFACE TREATMENT AND IMPROVED

**OPTICAL PROPERTIES.** The paperboard is coated with fine-grained mineral particles to smoothen out the microscopic irregularities between the fibres. The coating improves the paperboard's suitability for high-quality printing. The focus is also on improving the optical characteristics of the surface layer of the paperboard.

#### PHYSICAL PROPERTIES OF PAPER-

**BOARD.** The ability of paperboard to be folded, stamped and embossed is an important competitive advantage. This is also true of runnability, which is how quickly and reliably the paperboard can be printed and shaped into packaging.

**FIBRE MODIFICATION** is a way of chemically or mechanically increasing the stiffness and bulk properties of the cellulose fibres.

**LOWER WEIGHT.** For resource and environmental reasons it is important to reduce the quantity of fibres and make the paperboard lighter without loss of strength, stiffness and printability.

#### **BIOLOGICAL BARRIER MATERIALS**

expand the area of use. Barrier materials against moisture, grease and aroma based on biological substances are added to the paperboard. The aim is to completely phase out oil-based materials such as polyethylene.

### PRODUCT SAFETY - PAPERBOARD.

Iggesund Paperboard's packaging products are made exclusively from virgin fibre. The chemicals used in production are approved by the environmental authorities. The paperboard meets the requirements of international legislation in relation to safety, hygiene, taste and odour.

The paperboard also meets the requirements of the EU Packaging Directive with regard to weight, volume and recyclability. Iggesund Paperboard carries out customer surveys to monitor how its paperboard is used, so that improvements can be made.

### Sawn timber

Holmen produces sawn timber from pine saw logs at the sawmill in Iggesund. The products are mainly used in home interiors, for example as wooden floors, panels and furniture. At the new sawmill in Norrköping, Holmen produces construction timber from spruce saw logs.

Using wood in buildings instead of materials with a climate impact, such as concrete and steele, reduces society's carbon dioxide emissions. Sawn timber also "locks in" carbon dioxide for as long as the product is in use, thereby functioning as a temporary carbon sink. **ADJUSTMENT OF SAWING PATTERN.** To strengthen certain characteristics of wood and minimise others, Holmen Timber is improving the way in which the logs are sawn. This relates, for instance, to the way in which the pith is removed to prevent it from causing cracks in the final products.

**DRYING SAWN TIMBER.** Work is focused on eliminating defects in the form of drying cracks and warping, which often arise during the drying process.

WITH THE NEW SAWMILL in Norrköping, Holmen is entering the market for construction timber. After the start-up phase, the sawmill will focus efforts on enhancing the use of the raw material so that the finished construction timber maximises customer benefit.

### **Biorefinery – new products**

Holmen Biorefinery Development Centre (HBC) forms part of the operations of Holmen Energi. The unit is tasked with identifying and developing new business concepts and products, mainly based on forest raw material and residual products. The opportunities in transport biofuels, biogas, chemicals and biomass fuels are being studied with the focus on sustainably profitable business.

Research and development is under way in the area of transport biofuels. Options for the gasification of biomass and synthesis to various fuels are being investigated.

In the area of biogas, possible ways of digesting wastewater and fibre sludge to methane gas in Holmen's mills are being studied. There appears to be good potential with regard to production and sale to a growing biogas market for road transport.

HBC is taking part in a research project focused on micro-composites and nanocomposites and other uses for the wood raw material through fractionation of its components.

Chemicals with high added value suitable as building blocks for polymers and fuels with a high energy content are another important focal area.



### **Organisation and joint action**



Holmen's operations are decentralised to the business areas, mills and forest regions. Important areas of development for Holmen are driven by the Group staffs through networks with specialist skills.

### **Board and Group management**

**BOARD.** The Holmen Board comprises nine members elected by the Annual General Meeting. One of these is the Group President and CEO. The union organisations appoint three employee representatives and three deputies. The Board regularly addresses relevant sustainability issues. Company officials such as specialists in the areas of social responsibility and environmental responsibility make presentations at Board meetings.

**GROUP MANAGEMENT.** Holmen's Group management consists of the Group President and CEO and the heads of the five business areas and the five Group staffs. Group management meets monthly and attends to issues relating to the development of the business and financial results, business planning, budgets, investments and personnel and environmental issues.

### INTERNAL CONTROL PROCESSES.

The Group operates with rolling three-year business plans prepared by specialists in the business areas and staffs. The business plans are discussed by Group management and adopted by the Board. Goals and strategies are broken down into action plans and activities which are possible to measure and evaluate. The business plans are important to the long-term, strategic governance of the Group.

Information on the work and membership of the Board and Group management can be found in the annual report.

#### Sustainability

The Group's CEO is ultimately responsible for sustainability issues at Holmen. A special working group, consisting of representatives of the Group staffs, works on sustainability issues. This group is appointed by the





Board President and CEO Business area manager Head of Group staff Mill manager Forest manager

Finance Personnel/HR Environment Energy and climate Information Purchasing

R&D

IT

Working environment health and safety Management systems Information systems Risk management Union relations Transport Water treatment Chemicals Waste management

The Group's Board, CEO and heads of Group staffs, the heads of the five business areas, and mill and forest managers are each responsible for operations at their organisational levels.

Management groups deal with policies and strategies, as well as exchanging experiences.

Joint action groups. In areas where more detailed work is important, joint action groups that include specialists have been set up. These groups are involved in the exchange of experience and development of expertise in their particular fields.

Group's CEO and is chaired by Holmen's Director of Sustainable and Environmental Affairs. One of its tasks is to produce the sustainability report Holmen and sustainability.

### Social responsibility

Personnel activities at Holmen are carried out in accordance with the Group's Human Resources (HR) policy. They are co-ordinated by a management group for HR, which comprises the personnel managers of the business areas and is chaired by the Group's Head of Human Resources.

**HR ACTIVITIES** are directed towards strategic targets for working climate, leadership, performance reviews, the number of industrial accidents and the proportion of women managers.

### **COLLABORATION WITH TRADE UNIONS**

takes place in the Holmen European Works Council and in consultation groups at each unit. Trade union representatives take part in project and working groups.

### Environmental responsibility

Environmental activities are conducted in accordance with Holmen's environmental policy. The Group Board, the CEO and the heads of the business areas have overall responsibility for the environmental work.

Operational responsibility for environmental matters is held by mill managers and forest managers.

Holmen's Director of Sustainable and Environmental Affairs chairs Holmen's environmental council, monitors developments in the field, follows activities relating to the Group's environmental targets and runs joint action groups.

### ENVIRONMENTAL MANAGEMENT

**SYSTEMS.** All units at Holmen, including Holmen Skog, apply certified environmental management systems. Holmen's forestry is certified in accordance with the international PEFC and FSC forest standards. Energy management systems are in place at all the sites.

### Finance

FINANCIAL ACTIVITIES AT HOLMEN are largely decentralised to business area, mill and forest region level. Group Finance has responsibility for co-ordinating financial activity in the Group, with functions for financing, controlling, accounting and reporting, taxes and insurance.

### Information

FINANCIAL INFORMATION. Holmen publishes an annual report and sustainability report which are audited by external auditors. Financial information is published regularly on the Holmen website.

**PRODUCT INFORMATION.** The business areas issue magazines targeted at customers and other stakeholders.

**INFORMATION FOR PERSONNEL.** The staff magazine Holmen Insikt and the intranet Online are important sources of information for Holmen's employees.

### Purchasing

The purchase of goods and services is coordinated at Holmen with the aim of reducing total costs. The requirements of quality and sustainability are also emphasised in the purchasing policy. Supplier assessments are made, linked to the targets. An audit plan has been drawn up for 2011.

### **Risk management**

**RISK MANAGEMENT ISSUES** are coordinated by a Group-wide body. The aim is for Holmen's major facilities to be classified as having the best possible fire safety standard. Holmen has insurance cover for property damage and loss of contribution margin. The Group's forest holdings are not insured because they are dispersed over large areas of the country, which reduces the risk of simultaneous damage.



### Policies and guidelines – code of conduct

### Sustainable development

Sustainable development is an overarching goal at Holmen. According to the Group's strategy, the business is to be characterised by a fully integrated approach, in which the environment is protected, raw materials and energy are used efficiently, and ethical and social norms are respected. Holmen's policies and guidelines, taken together, represent a guidance tool – code of conduct – focused on sustainable development. Together with the legislation in each country, it provides the frameworks for, and governs, Holmen's actions in various areas. Group management adopts all the policies.

Altogether, there are around 20 Group-wide policies and guidelines in the areas of environmental responsibility, social responsibility and economic development. Policies and guidelines more than three years old are reviewed and revised as necessary. Most of these policies can be found on the website.

### **Environmental responsibility**

**THE ENVIRONMENTAL POLICY** contains general principles for the Group's environmental activities. It covers the environmental aspects prioritised by Holmen and its stakeholders.

**GUIDELINES FOR THE PURCHASING OF WOOD.** Holmen stipulates that the wood that the company obtains must be harvested in accordance with applicable laws and must satisfy specified environmental requirements.

**SUSTAINABLE FORESTRY.** Guidelines that indicate how the Group's forests are to be managed from the points of view of both production and the environment. The requirements in the PEFC and FSC forestry standards are incorporated into the 60 guidelines contained in this document.

**THE TRAVEL POLICY** expresses the Group's endeavour to bring about cost-effective, environmentally sound and safe travel.

### Social responsibility

**THE HR POLICY** reflects the Group's stance on what constitute sound human resources practices. It highlights the joint responsibility of management and staff for maintaining a good work and development climate. The policy also clarifies the requirements to be met by good managers. **EQUALITY AND DIVERSITY.** The policy expresses the Group's view of the equal value of all people and its endeavour to bring about a more even gender distribution and greater diversity. All employees are expected to contribute to a good psychosocial working environment. The policy was adopted in 2010 and replaces the previous policy on equality.

**WORKING ENVIRONMENT.** This policy covers ergonomics, protection, safety, discrimination, stress, rehabilitation and alcohol and drug abuse.

**BRIBERY AND CORRUPTION.** The policy makes it clear that employees must carefully consider the meaning and purpose of any favours/benefits offered in their contacts with customers and suppliers.

**THE PAY POLICY** clarifies the Group's view of what should govern pay-setting.

**INTERNAL LABOUR MARKET.** This policy supports employees wishing to change jobs. Holmen regards internal mobility as a way of developing its employees.

**UNION CO-OPERATION AGREEMENTS** between management and the union organisations focus on health, equality of opportunity and development of skills.

### **Economic development GUIDELINES FOR FINANCIAL** reporting state the goals for the Group's external financial reports and contain detailed guidelines on internal reporting.

**THE INFORMATION POLICY** regulates how the company is to manage, disseminate and comment on internal and external information. It follows the recommendations of the Stockholm Stock Exchange.

**THE COMPETITION POLICY**, revised in 2010, aims to ensure that employees are aware of and comply with the rules that are applicable where the Group operates. The rules are based on EU competition law.

**THE PURCHASING POLICY** states that Holmen is obliged to apply and maintain good business ethics and to take account of sustainability aspects.

**LOCAL GUIDELINES** apply in several areas and are adapted to the specific unit.

### All production takes place in the EU

Holmen's production takes place in the EU, where the majority of the products are also sold. There are also some sales to the United States and countries in North Africa and Asia. In all countries, Holmen operates in accordance with laws and agreements, and observes good business practice. Holmen also endeavours to ascertain how the Group's stakeholders address issues relating to the environment and personnel.

### Human rights



### The 10 principles of the Global Compact

#### Human rights

- Support and respect protection of internationally proclaimed human rights in the sphere that the company is able to influence.
- 2. Make sure that they are not complicit in human rights abuses.
- 3. Uphold the freedom of association and recognise the right to collective bargaining.
- 4. Eliminate all forms of forced labour.
- 5. Eliminate child labour
- 6. Eliminate discrimination in respect of employment and occupation.

#### Environment

- 7. Support a precautionary approach to environmental challenges.
- 8. Undertake initiatives to promote greater environmental responsibility
- Encourage the development and diffusion of environmentally friendly technologies.

#### Corruption

10. Combat all forms of corruption, including extortion and bribery.

Holmen has been a member of the UN Global Compact for several years. As such, the Group has taken a clear stance on issues related to human rights, social conditions, responsibility for the environment and the right to establish trade unions.

Holmen is a member of the international organisation Global Compact and also of its Nordic network. The Group therefore supports the 10 principles listed below.

There is little risk of anything in Holmen's operations conflicting with the UN Universal Declaration of Human Rights, because all production takes place in the EU, where such matters are closely regulated. Holmen does, however, continuously monitor the issue. A study was launched in 2010 to discover whether any customers and suppliers in countries where risks exist are failing to comply with the requirements of the Global Compact. The study will be completed in 2011. Holmen reports work done on sustainability to the Global Compact each year.

### **GLOBAL COMPACT**

The Global Compact is based on:

- The UN Universal Declaration of Human Rights.
- The OECD (Organisation for Economic Cooperation and Development) draws up principles and standards that governments apply to multinational enterprises so that they engage in business on a responsible basis.
- The International Labour Organisation (ILO) Declaration on Fundamental Principles and Rights at Work.
- The Rio Declaration on the Environment and Development.
- www.unglobalcompact.org

#### Comments

- -5. Holmen only has production in the EU, where these matters are regulated by EU legislation. Major customers and suppliers outside the EU have been investigated and no suspect cases have been noted.
- EU legislation regulates the issue of freedom of association in union co-operation agreements.
- Holmen applies the EU's anti-discrimination laws, and regularly surveys whethe any form of discrimination occurs. A policy of zero tolerance is followed.
- 7. Holmen's operations require environmental permits from authorities, and the requirement for a precautionary approach is therefore met.
- 8. EU legislation is the cornerstone for the environmental conditions set by authorities and these are regularly reviewed. Certified environmental management systems are applied at the mills and in the forestry operations. The forestry operations are also managed in accordance with the PEFC and FSC standards. Energy management systems are in use at all the sites.
- Environmental activities and technical development in the environmental area are mainly carried out internally but also together with other companies in the industry. The results are usually published. Holmen is open to exchanging experience about environmental issues.
- 10. Holmen's policy on bribery and corruption draws attention to the stringency of legislation on these issues. The policy makes it clear that employees must carefully consider the meaning and purpose of any favours/benefits offered in their contacts with customers and suppliers.

More detailed descriptions can be found in the sections on social responsibility and environmental responsibility.



### **Stakeholders**



### Foundations associated with Holmen

The Kempe Foundations support research and education in the natural sciences in the counties of Västernorrland, Västerbotten and Norrbotten. In recent years the foundations have allocated around SEK 50–80 million per year, most of it going to Umeå University, the Luleå University of Technology, the Swedish University of Agricultural Sciences in Umeå, and to Mid Sweden University and related research in Örnsköldsvik. www.kempe.com

#### Karl Erik Önnesjö Foundation.

A professorship in paper electronics was instituted at Linköping University's Norrköping Campus in 2005. The professorship will receive funding of SEK 1 million per year for 15 years from the foundation. www.onnesjostiftelsen.se



Holmen conducts a continuous dialogue with its stakeholders, which raises the Group's awareness of what the stakeholders expect from it – and vice-versa. This in turn represents an important basis from which to identify strengths and weaknesses and enhance sustainability efforts.

The dialogue with stakeholders is a natural feature of day-to-day activity in the Group. It comprises everything from the management's commitment on strategic issues to the mills' contacts with authorities and the community. Dialogue can also be requested by external stakeholders.

International business indices continuously evaluate Holmen's sustainability efforts with the aim of identifying companies that work well on sustainability issues. Holmen takes a positive view of this and regards open communication on sustainability efforts as a means of strengthening the Group's brand. It also helps in generating greater value for Holmen and its stakeholders.

The most important groups of stakeholders and a selection of recurrent issues are described below.

### Shareholders, investors and analysts

Holmen endeavours to convey a true picture of the Group from the point of view of sustainability. Shareholders, investors and analysts are informed about economic, environmental and social issues in the Group through channels such as analyst meetings and the Holmen website. Shareholders have an opportunity to put questions to the Board and company management at the Group's Annual General Meeting.

Holmen regards it as natural that it should be scrutinised in relation to economic and sustainability issues and it takes part in a large number of surveys and interviews every year. The Group finds this scrutiny valuable in identifying strengths and weaknesses.

Most issues in recent years have concerned the Group's policies and compliance with them, the Board's work on sustainability issues and the company's work on climate change.

### Consultation with Sami people

Holmen's forest land in northern Sweden largely overlaps the reindeer winter grazing land of Sami communities. There are thus two users of the same land with different requirements and circumstances, which has led to a number of conflicts over the years. These primarily concern the lichen-dominated land that reindeer need when they are in the forests, but fertiliser application and lodgepole pine are other issues raised.

Holmen's view is that many of the conflicts that have occurred to date could have been avoided. By reconciling forestry plans and reindeer management plans it is possible to resolve many issues at the planning stage. It is particularly important for both parties to learn more about each other's industries and improve the conditions that apply to running them. environmental, transport and energy issues through the Swedish Forest Industries Federation.

Holmen maintains close and regular contact with authorities, other land users and the rest of the business community. Holmen endeavours to provide the public, the media and opinion formers with a true picture of the Group's activities.

Permit appraisals of the Group's operations are performed continuously. Where required, matters relating to soil pollution at discontinued industrial sites are also addressed. All investigations and actions are carried out in consultation with the environmental authorities.

Local residents are consulted in cases where Holmen's industrial sites are located close to communities.

### Present and future employees

Holmen has a clear aspiration to be an attractive and responsible employer by offering motivating and challenging work.

When changes or closures at industrial sites affect the size of the workforce, Holmen endeavours to take clear social responsibility in order to mitigate the problems faced by those affected.

Employee surveys are conducted every two years and provide a basis for improvements. Holmen's aspiration is that its employees should feel a sense of participation in the business through personnel meetings, internal media and dialogue with employees and unions.

Holmen conducts a range of different activities for schools and universities. The company also co-operates on the projects of doctoral and licentiate students, welcomes students working on degree projects and offers a large number of summer jobs.

#### Whistleblowing

Employees and people who follow or do business with Holmen, such as customers, suppliers, financial analysts and others, can contact the management at Holmen using the e-mail address fairness@holmen.com. This channel can be used to provide important information about any deficiencies in Holmen's financial reporting or to submit complaints or comments about possible areas for concern at the company.

### Customers and business partners

Holmen attaches a great deal of importance to long-term relations with its business partners. Customers make demands of Holmen with regard to products and services, good business practice and the way in which the company deals with key sustainability issues. Holmen makes the same demands of its suppliers of input materials and services.

Holmen regularly monitors what customers think about the company through customer surveys. The results are converted into action plans where necessary. In the past few years, many questions from customers have been concerned with climate change, forest certification and traceability of wood.

### Society

Holmen's forestry and industrial operations have an impact on the public and other interests in society.

Holmen undertakes activities aimed at influencing politicians and authorities on





### Local significance

Holmen's operations are of great significance to employment in the places where the company is active. The closures as well as investments that have been made in recent years also have consequences for the rest of the labour market in the affected communities.

Alongside its core operation, Holmen contributes to economic growth through investments, research and development and cooperation with companies and organisations in several of the places where it operates.

**FOR SEVERAL YEARS,** Holmen has been gauging the Group's impact on local employment. Holmen Skog's role as an employer in regions where it operates is also calculated. The income earned by forest owners on sales of wood to Holmen is translated into jobs.

Holmen has a total of around 3 000 employees in Sweden. However, the total number of jobs generated by the Group is far higher. Through a ripple effect, further jobs are created at suppliers. Jobs are also created elsewhere in the business community and in public services as a consequence of the purchasing power that these jobs provide.

The community study carried out by the Group shows that the average Holmen employee generates a further three jobs elsewhere in the community. **ALTOGETHER, AROUND 12 100 JOBS** are created in Sweden, which is a decrease from 2007 when the equivalent figure was around 12 600.

In 2007–2010 Holmen Paper shut down paper machines and heightened the efficiency of its operations due to inadequate profitability. This has mainly affected Hallstavik and Vargön. In Norrköping, Holmen Timber's construction of a new sawmill has more than offset the cuts at Braviken Paper Mill.

Holmen is endeavouring to minimise the impact of the closures, both for individual employees and for the communities affected. This includes assistance in finding new jobs, early retirement and training.

In Vargön, extensive measures have been taken to prepare the former industrial site for new activities. The measures include demolishing most of the buildings and identifying and dealing with soil pollution. All measures are carried out in consultation with the environmental authorities and external experts. Holmen transferred the property to the Municipality of Vänersborg in early 2011. In the longer term, this may mean that new jobs are created at the site where the paper mill was formerly located.

**LOCAL INVOLVEMENT.** As a major employer, Holmen takes part in local activities in many locations. This participation ranges from representation on various research councils and in municipal marketing companies to scholarship activities.

**SPONSORSHIP.** Holmen supports the MODO Hockey ice hockey team and the IFK Norrköping football team, as well as the Paralympic athlete Jonas Jacobsson. Holmen also supports a number of other local sports clubs.

The Group is involved in Sweden's Young Investors and in cultural and humanitarian sponsorship in various locations, such as the SOS Children's Villages and the Swedish Brain Foundation.

Holmen's community study is carried out by Ömalm Consulting AB, Örnsköldsvik, in close co-operation with Holmen and each municipality concerned. Descriptions of Holmen's community studies up to 2009 inclusive are presented at www.holmen.com.

Holmen's community study								
NUMBER OF FULL-TIME EQUIVALENTS IN 2010	HOLMEN SKOG	NORRKÖPING- HUDIKSVALL/ REGION <sup>1)</sup> NORDANSTIG		HA	LLSTAVIK	TOTAL SWEDEN 2010 <sup>2)</sup>		
	Sweden	Total	Excl. forests	Total	Excl. forests	Total	Excl. forests	
Direct jobs	426	758	705	1 119	1 065	735	731	2 927
Indirect jobs and forest owners	2 187	486	225	724	409	67	31	2 852
Total direct and indirect jobs	2 613	1 244	930	1 843	1 474	802	762	5 779
Jobs in trade and services	1 044	653	489	611	489	316	300	2 322
Total incl. trade and services	3 657	1 897	1 419	2 454	1 963	1 118	1 062	8 101
Municipal and county council jobs	1 100	420	314	771	616	214	203	2 233
Public sector employees' share of service industry	431	223	167	264	211	85	81	890
Public sector employees' direct and indirect share of own sector	469	143	106	325	260	57	54	889
Total	5 657	2 683	2 006	3 814	3 050	1 474	1 400	12 113
Share of full-time equivalents in each location, %		3.73)	3.5 <sup>3)</sup>	19.44)	15.64)	54 <sup>6)</sup> 7.5 <sup>6)</sup>	51 <sup>5)</sup> 7.1 <sup>6)</sup>	

1) Norrköping and surrounding municipalities 2) Duplications eliminated 3) Municipality of Norrköping only 4) Municipalities of Hudiksvall and Nordanstig 5) Parishes of Häverö-Singö, Edebo and Ununge 6) Municipality of Norrtälje



### Social assets of the forests



The forests also constitute significant social assets. A large number of people enjoy them in their leisure time. All Sweden's forests are open to the general public under the right of common access.

**HEALTH AND WELLBEING.** Recent research demonstrates clearly that forests and nature have a beneficial effect on people's physical and mental health. The motor skills and ability to learn of both children and adults is improved by spending time in nature. Consequently, many municipalities have taken steps to make forests near to urban areas more accessible to the public.

**FORESTS AND YOUNG PEOPLE.** Many children and adolescents today are not used to spending time out in the countryside, or do not have an opportunity to do so. It is therefore important to emphasise the recreational assets offered by forests and nature to young people. Holmen takes part in the activities run by the *Skogen i Skolan* (Forest in School) organisation in all parts of Sweden, for instance by arranging study visits to the forests.

**NATURE TOURISM** is a growing sector in Sweden, in particular attracting many visitors from the more densely populated urban regions in central parts of Europe. Holmen has an extensive network of roads in its forests, which are also open to the general public.

**HUNTING** can almost be termed a popular movement in Sweden. Altogether there are no fewer than 260 000 hunters in the country. Around 5 000 hunters are registered on Holmen land. Holmen welcomes hunters onto its land and supports local hunting interests in various ways, such as by organising special hunting events for young people and women in a few locations. These events attract a great deal of interest and have resulted in an increase in the number of registered hunters on the company's land.

**ANGLING** is undertaken in lakes and rivers on the Group's land. It is not known how many anglers there are, but they easily outnumber hunters – one in four Swedes say that they go fishing at least once a year.

**BIRDWATCHING.** Holmen has been cooperating with the Swedish Wetlands Fund since the late 1990s to establish and restore wetlands. To date, around 40 wetlands have been created or restored. The primary purpose is to benefit the birds that depend on wetlands for breeding. But wetlands also fulfil a social function for people who are interested in birds.

One of Holmen Skog's environmental targets is to create or restore at least one wetland per year on the Group's land. The wetlands should be functional and also be made accessible to the public through signposting, notices and lookout towers.



### **Own forests create future strength**



Holmen's forests have an important role to play in tackling the problem of climate change. The Group's forest stewardship programme is aimed at increasing the rate of growth by 25 per cent within 30 years.

The forests represent a biological production apparatus that can produce wood and energy for all eternity, with the aid of sun, air and water. The forests and their products thus play a given part in the sustainable society of the future. Realisation that this is the case and the increasing shortages of finite raw materials help to strengthen the position of products made from renewable raw materials.

Growth in Holmen's forests comfortably exceeds annual removal of wood. The aggregate stock of wood in the forests is therefore steadily increasing. This trend has been in progress for a long time and will continue until the mid-21st century. The reason for this is that a large proportion of the growth is taking place in young forests that are not yet ready for harvesting. As these younger forests become older, it will also become possible to harvest the same volume of wood each year as is added by growth at the same time.

### **Biomass combines**

The Holmen sites in Iggesund and Norrköping are what are known as biomass combines. The raw material first goes to the sawmills and becomes sawn timber, and what is left at the end of the process then goes on to be used as raw material for the paper and paperboard mills. By gathering all fibre flows together in one place, it will become possible to add other operations in the longer term. Pellets, district heating and generation of electricity are a few viable options.

### Forest raw material offers opportunities for development

Holmen is examining the feasibility of manufacturing additional products, besides traditional ones, from forest raw materials. These may include chemical products, transport fuels and entirely new materials. Holmen has strengthened its organisation in this area, in which it has identified some very interesting future opportunities.

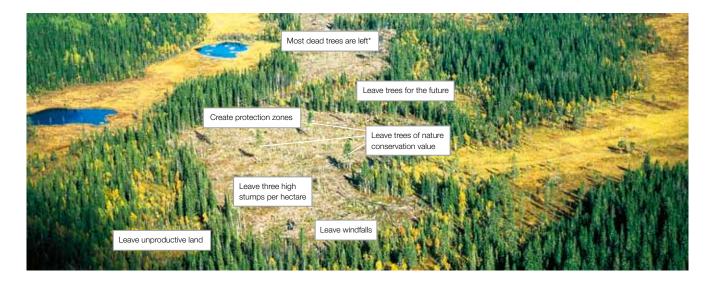
**INCREASED FOREST GROWTH.** Under the forest stewardship programme introduced in 2006, Holmen will be able to increase the growth rate in its own forests by about 25 per cent within 30 years. This will be done through a number of well-established measures that together make a great impact; see the table below.

Increased forest production is consistent with the aspirations of society to combat climate change. It improves the prospects of manufacturing substitutes for products with an impact on climate and for fossil-based energy sources.

How growth in Holmen's forests increased by around 25% within	
ACTION	EFFECT, %
More effective regeneration	approx. 5
Clearing out forest ditches	2–3
Forest fertilisation	approx. 2
Selected seedlings	3–4
More effective root-rot treatment	approx. 2
Lodgepole pine on suitable land	3–4
More effective cleaning, reduced moose population, selected seed stock etc.	6–7



### **Concern for nature**



Holmen has been working actively for many years on nature conservation efforts that make a positive contribution to biodiversity. There are guidelines on how the qualities of natural woodland are "built into" the managed forests.

Eighteen per cent of Holmen's forested land is excluded from forestry in order to preserve variety in forest types in the landscape – and therefore also biodiversity. Important aspects of the concern for nature shown in regeneration felling are presented here.

### Dead wood

Just over half of all forest-living species are dependent on dead wood for their survival. In present-day forests there is a shortage of large, old and dead trees in comparison with virgin forest-like environments. These contained dead wood in the form of trees lying on the ground, trees broken off or attacked by rot, or old, dry pines. Dead deciduous trees are found particularly in damper areas and following fires. Holmen makes sure that vertical and horizontal dead trees are left. Holmen also creates dead wood by leaving high stumps when harvesting. To make sure that dead wood will also be available in the future, protection zones, trees of nature conservation value and trees for the future are left so that there are large, old and dying trees in the forest landscape.

### Ancient trees

Large, old trees are important to biodiversity as well as variation. To increase the supply of these trees, all trees of nature conservation value are spared in harvesting. These are trees of differing types or trees that show fire marks, are hollow or are particularly large. If there are no trees of nature conservation value in the area, what are known as trees for the future are left. These are trees that may develop into trees of nature conservation value in the future. Altogether, at least ten trees of nature conservation value or trees for the future are to be left per hectare.

If possible, the trees are to be left in substantial groups and sited so that large bare surfaces are avoided. Nature conservation value is raised in the new forests and links between different forest stands and forest generations are created.

### **Unproductive land**

Bogs and rocky areas where the trees grow slowly are counted as unproductive forest land. There is often a high proportion of ancient, slow-growing and dry trees, which is important for a large number of animals and plants. No forestry is undertaken on unproductive land.

### Creating protection zones

Protection zones are to be left alongside unproductive forest land, seas, lakes, rivers and streams, agricultural land and buildings. These zones accommodate a rich diversity of species, as the environment is variable in terms of light admission, soil type, moisture and so on. The wealth of species also depends on the flora and fauna of the forests being mixed with those associated with bogs, water or open landscapes.

Alongside rivers and streams, protection zones are created to preserve shade on the water while limiting the risk of impact on water quality and bottom conditions. Holmen is working towards creating protection zones that have forest cover and consist of trees and shrubs of differing age and height.

<sup>\*</sup> Trees that have died less than a year ago and that may be a breeding ground for pests, such as the pine weevil, are removed to prevent these pests massively increasing in number and becoming a danger to living forest.



### Wood procurement

### Traceability (Chain of Custody)

Iggesund Mill, Iggesund Sawmill, Braviken Sawmill, Hallsta Paper Mill and Braviken Paper Mill have their own chain-of-custody certificates under both FSC and PEFC.

Workington Mill holds Chain-of-Custody certification under FSC.

Braviken Paper Mill holds a certificate for FSC Mixed for the production of printing paper based on both virgin fibre and recovered paper.

### Wood procurement in Sweden

Most of Holmen's forests are located in northern Sweden, while its mills are in the southern and central parts of the country. The mills consequently largely source their wood through purchases from private forest owners in those parts of the country.

In the past, almost all the wood from Holmen's forests in northern Sweden was sold to local buyers. Holmen is also increasingly using this wood for its sites in central Sweden through logistic and exchange arrangements.

Holmen's Swedish facilities consumed 4.4 (4.1) million cubic metres of wood in 2010. Harvesting in Holmen's own forests totalled 2.5 (2.9) million cubic metres, equivalent to around 60 per cent of the Group's wood requirement.



Holmen's own forests meet around 60 per cent of the need for wood. The remainder is bought in, mainly from private forest owners. Holmen imports only a small volume of wood into Sweden. All wood can be traced back to its origin.

### Wood procurement in Estonia

Holmen imports small volumes (approximately 150 000 cubic metres) of wood, mainly from Estonia. Holmen's wholly owned subsidiary Holmen Mets buys and transports wood to its own terminals there. Almost all the wood is bought from private forest owners. Most of it is delivered to Iggesund Mill. Smaller volumes also go to Hallsta Paper Mill and external buyers.

**HOLMEN METS** is certified under the FSC standard for Controlled Wood and has procedures and systems in place to trace all wood back to its origin. Holmen considers the systems for traceability now in use in Estonia to meet exacting requirements. The return of land confiscated after the Second World War has now been largely completed.

Environmentally certified forests in Sweden 2010 ACREAGE, MILLION OF ALL FORESTS, % HECTARES FSC, forest companies 91 40 FSC, private forest owners 1.4 6 PEFC, forest companies 29 13 3.4 15 PEFC, private forest owners Total 12.9 56

The total figure has been adjusted for the wood from forests with dual certification.

There are consequently fewer forests now whose ownership is unclear, which makes it easier for the authorities to verify the origin of wood.

#### **ENVIRONMENTAL CERTIFICATION IN ESTONIA.** The state-owned forests are certified under FSC. This is equivalent to around half the total acreage of forest land in the country. The proportion of certified,

### Wood procurement in the UK

privately owned forests is small.

The paperboard mill in Workington uses around 300 000 cubic metres of spruce wood and sawmill chips annually. Most of the wood comes from state-owned forests, mainly in south-west Scotland and northern England. A small proportion is sourced from private forest owners. Holmen does not own any forests in the UK.

### ENVIRONMENTAL CERTIFICATION IN

**THE UK.** All state-owned forests and most of the privately owned forests are certified under FSC.



### Environmental certification in Holmen Skog

**PEFC – forest stewardship.** Holmen's forests are managed in accordance with the Swedish PEFC standard.

**PEFC – group certification.** Holmen can also PEFC-certify private forest owners and contractors.

**PEFC – traceability.** Holmen can trace all wood bought in Sweden back to its origin.

### FSC – forest stewardship.

Holmen's forests are managed in accordance with the Swedish FSC standard.

**FSC – group certification.** Holmen can also FSC-certify private forest owners.

FSC – traceability. Holmen has procedures enabling Swedish and imported wood to be traced back to its origin.

**FSC – Controlled Wood.** Non-certified wood is also verified under the FSC rules on wood procurement.

**ISO 14001.** Holmen Skog complies with the environmental management standard ISO 14001 in its environmental work.

Verification. The international certification companies Det Norske Veritas and Svensk SkogsCertifiering verify that the requirements of the environmental certifications are met.

### **FSC Controlled Wood**

The proportion of certified wood at the various sites varies with availability in the area. Holmen Skog's chain-of-custody certification (FSC Controlled Wood) provides assurance that non-certified wood has not been harvested illegally or in contravention of the rights of indigenous peoples, does not come from controversial sources, has not been genetically modified and does not come from natural forests that have been converted into plantations.



### All wood used by Holmen can be traced back to its origin

#### Traceability, Sweden

Holmen can trace all wood back to the site where it was harvested. Each consignment of wood is given an ID number, which accompanies it from the harvesting site until it passes into Holmen's possession.

### Traceability, Estonia

Holmen Mets holds Chain-of-Custody certification under the FSC Controlled Wood standard. The authorities today have a good knowledge of who owns the forests and continuously verify compliance with laws and regulations.

Holmen Mets carries out spot checks on the wood bought. Holmen's procedures are in turn verified by the quality assurance body Smartwood, which is accredited by FSC.

### Holmen's guidelines for purchasing wood

Holmen has applied clear guidelines for

purchases of wood since 1998. These contain environmental requirements and define types of forest from which the Group does not buy wood. If the guidelines are not followed, for example if information supplied on origin is incorrect, Holmen has the right to terminate the deal without compensation.

#### Statutory requirements, Sweden

All harvesting of stands more than half a hectare in area must be reported to the Swedish Forest Agency. This notification must also specify how regeneration will take place. The Swedish Forest Agency verifies how the work is performed.

#### Statutory requirements, Estonia

The Estonian forest management authority verifies in the same way as the Swedish authority that harvesting and regeneration are carried out correctly.

For further information about forests and wood: www.holmen.com

### Proportion of certified wood reaching Holmen's mills in 2010, %

	HALLSTA PAPER MILL	BRAVIKEN PAPER MILL	IGGESUND MILL	WORKINGTON MILL	IGGESUND SAWMILL
FSC	23	26	29	100	39
PEFC	22	25	24	-	37
Total	23	30	29	100	39
of which from company forests	8	9	20	-	23

The total figure has been adjusted for the wood from forests with dual certification. The figures used are based on both verified and estimated volumes. The relatively low proportion of certified wood from company forests is due to most of Holmen's forests being located in northern Sweden.



### **Recovered paper**

Holmen uses recovered paper in the form of collected newspapers, magazines, directories and catalogues for production of printing paper. An increased proportion of refined grades is reducing the need for recovered paper.

Holmen Paper uses recovered paper at two of its mills.

Holmen Paper's use of recovered paper has decreased in recent years. The closingdown of a paper machine and the recycled fibre plant at Hallsta Paper Mill in 2008, combined with a switch to increasingly refined products, has led to a decrease in the use of recovered paper.

The proportion of recycled fibre pulp at Braviken Paper Mill varies between 20 and 50 per cent in different grades of paper. Braviken Paper Mill holds a certificate for FSC Mixed for the production of printing paper based on both virgin fibre and recovered paper.

Production at Holmen Paper Madrid is entirely based on recovered paper.

### **Procurement in Sweden**

Recovered paper for Holmen's Swedish mills is purchased by the partly owned company PÅAB. Just over half the volume comes from within the country, and the rest is imported from the UK, Norway and Denmark. The paper from the UK is carried on return journeys by the ships used to take paper products to the UK.

### **Procurement in Spain**

Much of the recovered paper used at Holmen Paper Madrid comes from CARPA, a wholly owned paper recovery company, and from partly owned companies. Most of it is purchased in Spain. Other volumes are imported from Portugal, France and the UK.

### **Recovered fibre collection**

In Sweden 74 per cent of all the paper and board used in the country was recovered. In Spain the proportion recovered was equally high, and for Europe as a whole (CEPI countries\*) it was 70 per cent. All these figures relate to 2009, the latest year for which comprehensive statistics are available. Reduced consumption of paper and paperboard in both Sweden and Spain in 2009 meant that the volume of recovered paper collected also decreased. On the other hand, the collection rate in Spain rose, while it fell in Sweden. As the supply of recovered paper in Sweden did not meet the need, a net volume of 0.45 million tonnes was imported. In Spain, imports and exports of recovered paper were in balance.

In 2009 there were net exports of 11.7 million tonnes of recovered paper from Europe (CEPI countries\*), mainly to countries in Asia, particularly China. This is an increase of 12 per cent compared with 2008. It means that the competition for recovered paper has increased significantly, leading to an increase in the price of raw materials.

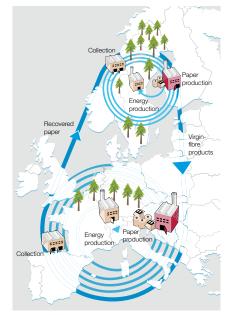
### Producer responsibility for newsprint

A law on producer responsibility for recovered paper was introduced in Sweden in 1994. This regulates the obligation of newsprint manufacturers to collect and dispose of recovered paper. The target to reach a collection rate of 75 per cent has long been met. The figure for 2009 was 91 per cent. A joint company, Pressretur, has been set up by the largest newsprint producers in Sweden, including Holmen, to handle the practical aspects of producer responsibility.

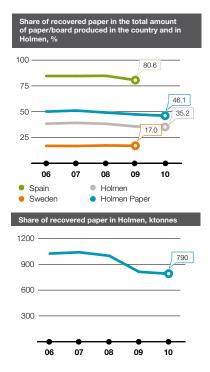
### Recovered paper good for many – but not all – types of paper

Recovered paper is a good raw material for newsprint and some grades of printing paper, tissue paper, corrugated board and some types of packaging board. However, recovered paper is not suitable as a raw material for high-quality paperboard or for packaging in direct contact with foodstuffs, for which cleanliness requirements are very strict.

\* CEPI: a European federation for the pulp and paper industry.



The Nordic region is the driver of Europe's increasingly closed fibre system. The system has to be constantly topped up with virgin fibres from the Nordic forests so that quality is maintained. Holmen's sites are included in the European flow of both virgin fibre and recovered fibre.





The volume of water used in production is steadily declining following the adoption of increasingly efficient methods and equipment. The mill in Madrid will replace all fresh water with recycled water in 2011.

### Water – an important raw material for Holmen

Holmen uses water to transport and wash fibres at the mills. Water is also used for other operations, such as cooling and steam production.

The water used is almost entirely surface water, that is to say water taken from lakes and rivers.

Holmen is endeavouring to reduce its use of water, leading to a decrease of about 20 per cent in specific need over the past ten years (in terms of cubic metres of water per tonne of final product). The same water is often used several times. Polluted water from the process is treated in several stages before it is released. At Holmen sites this involves various combinations of mechanical, biological and chemical treatment.

Flowing water is utilised to generate electricity at Holmen's hydro power plants.

### How Holmen tackles water issues

In Sweden and the UK there are ample supplies of surface water. Precipitation levels are high, so watercourses are well filled throughout the year.

The supply of water is limited for Holmen Paper Madrid, as this site is not located next to any river or stream. Municipal fresh water has therefore been used so far in the process.

Holmen has not established any Groupwide environmental targets to reduce water use. The issue is dealt with at each site, and for some mills there are environmental targets under the environmental management systems.

There are conditions for the emission of various substances at the mills. These conditions are laid down by the environmental authorities. The conditions in the environmental permits regarding type of wastewater treatment are based on the unique water conditions in the vicinity of each mill. Holmen continuously monitors the status of recipient aquatic environments in close co-operation with the environmental authorities.

Holmen's forests contain lakes, streams and other water-rich environments, which are all sensitive ecosystems with a rich fauna. The waters in the forests are a priority area for Holmen, and active efforts are made both in setting environmental targets and in practical work. Major training initiatives are being taken for field personnel and contractors as an important aspect of this work, focusing on water issues in practice.

### Efforts at Holmen Paper Madrid

Following a series of efficiency measures, the mill's specific water consumption is now among the lowest in Europe. To further reduce the need for fresh water, the mill, in co-operation with the water supplier, has developed advanced technology to use treated municipal wastewater. As a result, in 2011 the mill will be able to replace all fresh water for the process with recirculated water. This will be "recycled water", which is treated in accordance with very exacting requirements. The fresh water released in this way is equivalent to the annual needs of 80 000 households.

Holmen Paper Madrid will consequently become the first mill in Europe to manufacture paper based entirely on recovered paper and "recycled water".

### Statutory requirements

The EU's Water Framework Directive is being implemented. Its target is to achieve a good status for all water in Europe by 2015. This means that the industry may face new requirements for measures so that all watercourses attain good water quality.

The Group participates in local water conservation associations, which will have a key role when the Framework Directive comes into effect.



Holmen Paper Madrid was chosen in November 2010 as the winner of the Water Efficiency Award for its efforts to improve efficiency and reduce water use. This prize is equivalent to the Oscars in the film industry. Environmental manager Francisca Peréz Alzugaray received the prize from Petri Helsky of Kemira and master of ceremonies Anne de Baetzelier.

Holmen is well placed to satisfy the requirements of the EU Directive with the measures being taken to reduce both water consumption and emissions.

### Water footprint

In line with increased awareness of the sensitivity of nature to climate change, there has been increasing focus on the availability of fresh water around the world. Methods are therefore now being developed to be able to calculate the water footprint of companies and products, that is to say water consumption from a lifecycle perspective.

A sector-wide project to describe the use of water at industrial sites and water flows in forestry was started in Sweden in 2010. Holmen is taking part and will compile detailed information on water flows so that it can establish water footprints for its operations and products.







Increased energy costs and the relationship between energy use and climate change have resulted in an increased focus on energy issues in the Group. It is crucial to Holmen's long-term profitability to keep energy consumption and costs as low as possible.

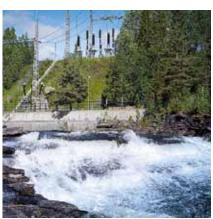
### Company-generated electricity meets one-third of requirements ...

Holmen wholly or partly owns 21 hydro power stations located on the Umeälven, Faxälven, Gideälven, Iggesundsån, Ljusnan and Motala Ström rivers. Combined with the company's own back-pressure power production, this means that Holmen is approximately 30 per cent self-sufficient in electricity. Production in the hydro power plants in 2010 totalled 1 145 GWh, just over that of a normal year.

Holmen is a partner in the BasEl wind power company VindIn. The first wind turbines entered service at Skutskär at the end of 2009. Holmen's share of the electrical energy they produced was just under 4 GWh in 2010.

### ... the rest is purchased

Most of the electricity needed at Holmen's mills is purchased externally. The Group is consequently one of the largest purchasers of electrical energy in Sweden. To deal with the risks this poses, hedged long-term contracts are signed with the electricity suppliers. The prices of its purchased electricity in Sweden have been fully hedged up to 2012 and 85 per cent has been hedged for the following



years up until 2015. At the end of 2010 a new hedged contract was signed for the period 2016–2021 for electricity supply equivalent to around 30 per cent of Holmen's electricity purchasing requirement.

### Bioenergy meets half the need for thermal energy

Biofuels, mainly in the form of bark and wood-containing liquors, meet approximately half of Holmen's thermal energy requirements. Combined with recovered thermal energy, this means that almost two-thirds of the thermal energy needed is produced internally. Remaining quantities of heat are produced at and close to the mills using natural gas and oil, or are purchased from external suppliers.

### Surplus heat

Iggesund Mill and Hallsta Paper Mill are located close to built-up areas. Surplus heat is delivered to the municipal district-heating networks.

### **Energy-saving measures**

Efforts to improve energy efficiency and reduce the use of fossil fuels are increasing for reasons related to climate change and resources. Holmen is therefore making active efforts to identify and implement energysaving measures and to increase the level of self-sufficiency in energy.

This mainly involves improving efficiency in the use of energy and increasing the proportion of back-pressure power, as well Holmen uses large amounts of energy. The manufacturing of thermo-mechanical pulp is particularly heavy on electricity. The proportion of electricity produced from biomass fuels and wind power is increasing in the Group.

as making greater use of waste heat and increasing the proportion of bioenergy.

A number of Group-wide sustainability targets in the environmental area ensure that operations focus on climate and energy issues. This work has been successful, and the Group's emissions of fossil carbon dioxide have fallen by around 30 per cent since 2005. The decrease for the Swedish sites has been 55 per cent.

Some examples of current activities related to energy and climate change at Holmen mills are presented below.

**BRAVIKEN PAPER MILL.** A new line for energy-efficient production of thermo-mechanical pulp (TMP) began in the autumn of 2008. The investment totalled around SEK 500 million, of which the Swedish Energy Agency contributed around SEK 40 million. Compared with the previous pulp line, the energy need has been reduced to date by just under 20 per cent. In addition, the quality of the paper pulp is greatly superior. Three PhD thesis projects are now focusing on achieving a 30 per cent reduction through further measures.

Several projects are focused on saving energy, principally by increasing heat recovery at the TMP plant. The proportion of TMP pulp in production will also be increased as part of this effort.

The need for oil at the mill has decreased by 40 per cent since 2005.

**HALLSTA PAPER MILL.** A new electric boiler will be commissioned at the end of



2011. The investment will result in smaller steam losses and reduced use of oil.

Several measures have been taken at the mill to reduce the need for oil. This need has declined by around 65 per cent since 2005.

HOLMEN PAPER MADRID. A second energy-efficient cogeneration plant was commissioned at the mill in 2010. The power plant produces energy based on natural gas. The new power plant produces low emissions of nitrogen oxides.

**IGGESUND MILL.** Holmen took a decision to invest in a new recovery boiler and turbine at the mill during the year. The investment totals SEK 2.3 billion and provides a basis for running the operation without using fossil fuels or purchased electricity. The mill's use of oil has decreased by 45 per cent since 2005.

**WORKINGTON MILL.** The target for investments in converting the pulp process is to reduce energy use by 10 per cent. This will reduce fossil carbon dioxide emissions from the natural gas-fired cogeneration plant located next to the mill.

### New hydro power plant

Holmen built a new and more efficient power plant on the Iggesundsån river in 2009 to replace three older ones. The power plant was commissioned at the end of the year. In 2010 this power plant produced 28 GWh, which is around 35 per cent more than the old power plants. The Group is exploring the possibility of making cautious use of undeveloped waterfall rights.

### **Energy management systems**

The Group's Swedish mills have certified energy management systems. Workington Mill has been operating under a certifiable energy management system since the start of 2008. Holmen Paper Madrid has introduced an energy management system that was certified in 2009. In 2010 it became the first paper mill in Spain to be certified according to the European standard, EN 16001.

### Preparations for wind power

Permit applications were submitted in 2010 for wind turbines at Blodrotberget

### **Energy supply in Holmen**

Electric energy	2010	2009	2008	2007	2006
SHARE OF HOLMEN'S TOTAL CONSUMPTION, %					
Company hydro power	25	23	22	23	18
Company back-pressure power	10	8	9	8	12
Purchased electricity	65	69	69	69	70

Holmen owns, wholly or partly, 21 hydro power stations. Back-pressure power is produced at the mills. The electricity that is purchased in Sweden is mainly produced at hydro or nuclear power stations.

Thermal energy	2010	2009	2008	2007	2006
SHARE OF HOLMEN'S TOTAL CONSUMPTION, %					
Biofuel	50	52	48	46	45
Recovered thermal energy	20	19	15	14	14
Natural gas	15	13	15	14	15
Oil, LPG	8	6	12	16	16
Purchased thermal energy	7	10	10	10	10

At Iggesund Mill large amounts of thermal energy are produced by burning wood-containing liquors. At the Hallsta and Braviken paper mills surplus heat is recovered from the TMP production process. Significant quantities are also generated by burning bark. Natural gas is used at the mills in Workington and Madrid.

and Blackfjället in the Municipality of Örnsköldsvik and at Varvsvik in the Municipality of Norrtälje. All these sites are on forest land.

**HOLMEN AND E.ON** signed a contract on jointly developing wind power in the municipality of Örnsköldsvik at the beginning of 2011. The plan is to build 70 wind turbines mainly located on Holmen land. Annual production is estimated at around 330 GWh. The target is for the wind farms to be fully developed by 2015.

### More biofuel

Holmen is gradually increasing the extraction of biofuel from its own forests and has become more active as a buyer and seller on the biofuel market. Holmen's long-term forest stewardship efforts are increasing the total stock of wood. By taking further measures to stimulate growth, it will therefore eventually be possible to significantly increase the volumes of wood and biofuel extracted.

### Waste

Work is in progress in the Group to improve the prospects of extracting energy from waste. Various measures are being taken to raise the calorific value of waste.

### Peat extraction

Holmen is investigating the possibility of harvesting peat on the Group's land. To gain experience, peat cutting began outside Örnsköldsvik in 2009. A total of 46 GWh of peat was harvested on the site in 2010, and the area of peat extraction will be further extended in 2011 which, it is hoped, will increase the volume of peat harvested.

#### Industry-wide measures

Holmen has formed BasEl i Sverige AB along with other electricity-intensive companies. BasEl aims to increase the supply of electricity at competitive prices.

BasEl's wind power company, VindIn, commissioned the first wind turbines in Skutskär in 2009. The next project consists of a larger wind farm with around 24 turbines at Trattberget in the municipality of Örnsköldsvik.

Holmen and four other companies have launched discussions with Vattenfall to safeguard future baseload power that is free of carbon dioxide.



# Forests, products and work on climate change



Managing the forests and using the products they yield are important factors in efforts to tackle the problem of global warming.

### Two "types" of carbon dioxide

Carbon dioxide is carbon dioxide – but there is good reason for making a distinction regarding its source.

**Biogenic carbon dioxide,** which is released when biomass fuels and wood-based products are burnt, is equivalent to the quantity that would have been released had the trees instead been left to rot in the forest. Biogenic carbon dioxide is already part of the carbon cycle in the atmosphere, and does not contribute to the greenhouse effect.

**Fossil carbon dioxide,** which is released when oil and coal are burnt, adds new quantities of carbon dioxide to the atmosphere. Both oil and coal have been stored in the Earth's crust for millions of years. It is fossil carbon dioxide that is the cause of the problem of climate change. **THE FORESTS PROVIDE** raw materials and bioenergy which, unlike those based on oil, do not add new quantities of greenhouse gases to the atmosphere. Society is therefore increasingly turning its attention to the forests as part of the solution to the problem of climate change.

The combined volume of wood in the trees that grow in Holmen's forests is increasing. A significant portion of growth takes place in young forests that are not yet sufficiently mature for harvesting. A major factor in this increasing growth is the way in which Holmen has managed its forests over a long period of time. Today Holmen only removes around 85 per cent of annual growth. The trees in the forest capture carbon dioxide and store it as carbon in their biomass. The combined stock of wood is steadily increasing. More wood, that is to say increased biomass, also allows us to make products capable of replacing those that have an adverse impact on climate. The quantity of bioenergy that can replace fossil-based energy sources is increasing to the same degree.

### THE FORESTS AND FOREST PRODUCTS

can be regarded as "carbon sinks", but this is only true subject to a proviso. The carbon stored in living forests and in forest products such as wood, paper and paperboard will sooner or later be released again as carbon dioxide. On the other hand carbon sinks can be said to exist if the use of wood-based products in society persistently increases. The difference between present-day levels and the new ones constitutes a carbon sink, because more carbon dioxide is constantly being bound in either trees or wood products.

Forests play their most important role with regard to climate when wood is used as a substitute for materials and sources of energy that have a detrimental effect on climate. There is a dual effect. Greenhouse gas emissions from producing and using materials and sources of energy with a harmful climate impact are avoided. Used forest products make excellent biofuels, replacing fossil fuels.



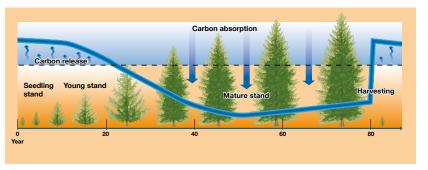
### The age of the forests decides the absorption of carbon dioxide

The ability of the forests to absorb carbon dioxide is related to a number of factors: the age of the trees, how the forests are managed, the local climate, the nutrient content of the soil and the level of precipitation.

The forests in southern Sweden absorb more carbon dioxide in a shorter time than the forests in the northern parts of the country. Conversely, more carbon dioxide is released from forest land in southern Sweden than in northern Sweden. This is because the rate of decomposition is faster in the south owing to the higher annual mean temperature.

### Seedling and young stands - 1 to 20 years

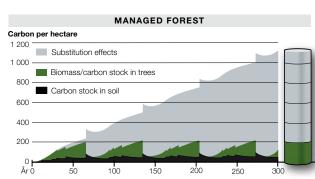
**old.** Forest land releases carbon dioxide after harvesting due to increased penetration of sunlight, which speeds up the rotting process in the soil layer. The trees are still too small to make up for the release of carbon dioxide.



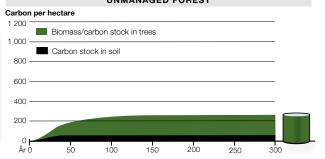
The age ranges indicated are approximate and vary for different parts of the country, as well as with height above sea level. The colder the climate and the higher above sea level, the more slowly the forest grows.

Younger and middle-aged stands. The trees grow fastest during this period and absorb far more carbon dioxide than the soil releases. **Older forests – 80 years and older.** The trees' growth and ability to absorb carbon dioxide decline as they become older. At the same time the forces of decomposition start to act. Branches fall to the ground and some trees die, which increases the release of carbon dioxide.

### Why a managed forest is better for the climate than an unmanaged one



### UNMANAGED FOREST



#### Basic conditions:

### Managed forest. Planted, cleaned, thinned and harvested at regular intervals over 300 years.

In the managed forest a stock of wood is built up over a period of 70 years which is then mostly harvested. Wood and biofuel are used to replace other materials and sources of energy with an impact on the climate.

Unmanaged forest. Allowed to develop freely over 300 years. In the unmanaged forest the stock of wood is built up once – and then changes insignificantly over time. The trees act as a carbon sink, but in the unmanaged forest the substitution effect goes completely unused.

The comparison is based on the research report "Integrated carbon analysis of forest management practices and wood substitution". Eriksson et al, NRC Research Press Web 2007 (National Research Council Canada).



### Holmen's carbon footprint

Holmen's carbon footprint shows that the Group's forests and products contribute to capturing carbon dioxide and reducing the greenhouse gas emissions produced by society.

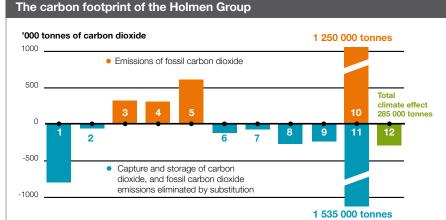
A carbon footprint reveals the quantity of greenhouse gases that a product generates during its lifecycle. The calculations begin with the raw material and end with the disposal or recycling of the product. The carbon footprint can thus be said to be a measure of the product's climate benefit/climate impact. A calculation of the Holmen Group's carbon footprint has been made based on the guidelines of the European industry organisation CEPI.

Calculations of Holmen's carbon footprint clearly indicate that the Group's operations have positive effects in relation to climate change. Carbon dioxide capture and the effects of substitution are greater than Holmen's emissions of fossil carbon dioxide.

This positive effect on climate will be further strengthened by the Group-wide environmental targets focused on energy and climate. The Group's production of sawn timber will increase sharply with the start-up of Braviken Sawmill. This will more than double the substitution effect of the sawn timber, while also increasing the quantity of carbon dioxide held in temporary storage.



The Swedish Chamber of Commerce in the Netherlands on the occasion of its 50th anniversary in October 2010 awarded a corporate prize to Holmen for the Group's efforts to reduce climate impact. Sweden's Crown Princess Victoria presented the award to Björn Kvick, Head of Iggesund Paperboard.



- 795 000 tonnes Annual increase in stock of wood = carbon sink.
- 57 000 tonnes Fertilisation increases the growth of the trees and enables them to capture more carbon dioxide. Estimated effect.
- 324 000 tonnes Release from forest land (estimated effect). Production of fertilisers and emissions from felling on Holmen land.
- 313 000 tonnes Production at Holmen sites and emissions in felling wood raw material purchased externally.
- 612 000 tonnes Production of input goods, purchased electricity and heating, collection of recovered paper, heating at nurseries, biofuel transport, and transporting wood and input goods to and products from Holmen sites.

- 6. **114 000 tonnes** Biofuel originating in Holmen forests
- sold externally for energy production. Heating delivered from Holmen. The effect is calculated as the quantity of fossil-based carbon dioxide avoided when biofuel is used.
- 66 000 tonnes Waste/residual products burnt externally for energy production. The effect is calculated as the quantity of fossil carbon dioxide avoided when this waste is used.
- 267 000 tonnes Holmen's sawn timber often replaces other materials with an impact on climate. The effect is calculated as the quantity of fossil-based carbon dioxide avoided when sawn timber is used.
- 236 000 tonnes Holmen's sawn timber stores carbon dioxide for as long as it is used, and thus acts as a temporary carbon sink.

The data are based on information from the facts section of *Annual report* 2010 including sustainability report and calculations of carbon footprints for the Group's products. The data for the increasing stock of wood and estimated effects are averages for 2005–2010. The calculations are based on guidelines issued by the European industry organisation CEPI.

- 1250 000 tonnes Total fossil carbon dioxide emissions caused by Holmen operations.
- 11. **1 535 000 tonnes** Total positive climate effects of Holmen operations.
- Total climate effect: 285 000 tonnes. Net effect, i.e. positive climate effects minus total fossil carbon dioxide emissions.

Secondary biofuel, which consists of using paper products and sawn timber that are burnt, is not included in the calculation above. It is not possible to establish exactly how much is involved. Holmen has made a cautious estimate that 20 per cent of the Group's paper and paperboard (based on 2010 production) and sawn timber (based on the Group's production during the 1960s) is finally burnt as a substitute for oil. The effect is calculated as the quantity of fossil carbon dioxide avoided, and is approximately 540 000 tonnes. The actual figure is probably significantly higher.

Instruments in the

## area of climate change



The EU has decided on climate and energy targets for 2020 in order to tackle the changes taking place in the earth's climate. Holmen's environmental targets are in line with the EU targets.

### **Emissions trading**

Since 2005 the EU has had a scheme for trading emission allowances for fossil carbon dioxide. After a trial period in 2005–2007, the scheme became permanent in 2008. The total allocation of emission allowances for the period 2008–2012 is lower than during the trial period, which is in line with intentions behind the scheme. Ahead of the trading period that begins in 2013, there will also continue to be a free allocation to companies in the paper industry.

Holmen's paper and paperboard mills are included in the trading scheme. The steps taken by the Group to reduce the use of fossil fuels have made it possible to sell emission allowances. The result for 2010, SEK 26 million, is the highest to date.

Holmen takes a positive view of the initiatives that have been taken to tackle the problems of climate change. The Group has set targets for fossil carbon dioxide emissions for 2020. However, the Group is opposed to the trading scheme not taking account of the indirect effects on the price of electricity that have arisen. Production costs are relatively low in Sweden, because most electric power is produced using fossil-free sources of energy such as hydro power and nuclear power. It is more expensive to produce electricity from fossil fuels, partly because of the emissions trading requirement. The price of electricity is determined by the marginal principle, which means that the price of the most expensive electric power has an impact on all electricity. Holmen therefore welcomes the opportunities now being created to compensate energy-intensive industry, which has been hit particularly hard.

### Energy taxes and voluntary agreements

A tax on electric power was introduced in Sweden in 2004. Electricity-intensive companies can avoid the tax by saving energy and introducing energy management systems under the terms of the *Programme for Energy Efficiency (PFE) Act.* After a first stage, the Act has been extended to the end of 2014. British companies can reduce their energy tax payments by 80 per cent under the *Climate Change Agreement (CCA)*.

Holmen has introduced certified energy management systems at all its Swedish units and has programmes to improve energy efficiency. Electricity tax costs have consequently been reduced by around SEK 20 million a year.

### **Electricity certificates**

Under Swedish law, companies that generate renewable electricity are allocated an electricity certificate for each MWh produced. Renewable electricity is defined as electricity originating in sustainable energy sources – new hydro power and biofuel. Electricity consumers are obliged to purchase a certain number of electricity certificates in relation to their consumption, known as a quota obligation. Demand for renewable electricity will increase as this quota obligation is gradually raised. Electricity-intensive industries are exempt from the quota obligation. The system has been extended until 2030, and the target levels have also been raised.

Holmen has produced renewable electricity for several years. This has brought in revenue since the law was introduced in 2003. The reported income has ranged between SEK 40 and 70 million over the past five-year period. When the system was initiated there was a rule that granted rights to existing installations to produce renewable electric power with entitlement to certificates. This right expires at the end of 2012, when those installations at which large investments have not been made will be affected. Most Holmen sites will consequently lose their entitlement to certificates. In 2010, Holmen decided to invest in a new recovery boiler and turbine at Iggesund Mill. This site will receive certificates for another 15 years as electricity production increases. The production of renewable energy will increase from the present-day level of 200 to 330–420 GWh.

Holmen is investing in wind power through VindIn and is investigating options for constructing wind farms on the Group's land.

### EU climate package

In 2008, the European Parliament agreed on a climate and energy package. Under this package, by 2020 the EU will reduce its emissions of greenhouse gases by 20 per cent compared with 1990 levels.

Holmen forms part of a business sector that takes part in the carbon dioxide emissions trading scheme. The requirements to be met by this sector are stricter. Based on the 2005 level, emissions are to decrease by 21 per cent by 2020.

Other important targets are that energy consumption will be cut by 20 per cent by 2020, the share of renewable energy in energy consumption will increase to 20 per cent and the proportion of transport biofuels will increase to 10 per cent.

Holmen takes a positive view of the climate package, which is consistent with the climate and energy targets that apply to the Group and the sector as a whole.



### **Economic development**







A profitable business does not just produce a return for owners and financiers. It also creates jobs and makes it possible to buy input goods.

**HEALTHY PROFITABILITY** and a strong financial position are key factors that create conditions for development that is sustainable in the long term. Profitability is also a prerequisite for investments that allow the company to evolve in line with gradual changes in market conditions.

Holmen's business is capital intensive, and much expansion is the result of investing in additional capacity, improved production and more efficient use of energy. Aspects of sustainability form an integral part of all decisions taken within Holmen. In this way the company moves closer every day to attaining the set targets. Holmen is essentially already part of the sustainable society through its operations, by being a successful and profitable company that manufactures products from natural raw materials.

### ALONGSIDE EFFICIENT PRODUCTION

processes, the cost of raw materials and transport has a crucial bearing on competitiveness. The main raw materials for producing printing paper, paperboard and sawn timber are fibre, in the form of wood, recovered paper and pulp, and energy, in the form of electricity and heat. Holmen produces 95 per cent of the pulp and thermal energy it requires at its own mills using a highly integrated process. The procurement of other raw materials is underpinned through backward integration along the production chain by owning forests, hydro power plants and recovered-paper procurement units.

The level of self-sufficiency in wood is around 60 per cent. The company produces 30–35 per cent of the electricity required to meet the Group's needs. In addition, the price of 50 per cent of electricity supplies has been hedged through long-term supply contracts. Significant volumes of recovered paper are purchased via wholly and partly owned paper collection companies.

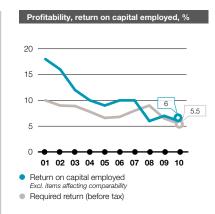
**THE OVERALL AMBITION** of the Group's operations is to provide a customer offering that contains attractive, high-quality products as well as good service. This is

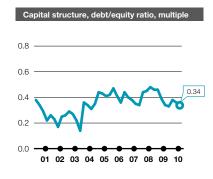
to be done cost-effectively to maintain Holmen's position as a competitive supplier. Large-scale, efficient and environmentally sound production facilities and skilled employees yield high productivity and efficient use of input goods and capital. Effective interaction between marketing, product development and production increases is essential to achieve successful long-term investments, economies of scale and development. Basic volumes of certain products are combined with selective ventures involving improved or more advanced products for both existing and new categories of customers.

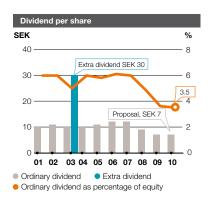
The *Local significance* section in this report describes the impact Holmen has on employment in places where the company operates. Beyond its core operation, the company contributes to economic development through investments, research and development, and co-operation with companies and organisations in several of the places where the Group operates.



	Suppliers to customers 8 443 million	a <sup>9/6</sup> 1 <sup>9/6</sup> a <sup>9/6</sup> a <sup>9/6</sup> a <sup>9/6</sup> s <sup>8</sup> State Shareholders
Holmen's	business in 2010 broken down into stakeholders	
Customers	Sales of paper, paperboard, sawn timber, wood and electricity	SEKm 18 443
Suppliers	Purchases of products, materials and services, along with deprecia	ation, etc14 158
Employees	Wages, salaries and social security costs	- 2 689
Lenders	Interest	-208
State	Taxes	-684
Shareholder	s Net profit	704
1) Based on cons	solidated income statement.	588







### Holmen has set itself targets that support long-term and sustainable financial development:

Profitability. Holmen's profitability will consistently exceed the market cost of capital. This will give Holmen access to capital to finance growth and development. At Group level, the key ratio used to calculate profitability is Value Added; this is defined as operating profit/ loss less the cost of capital and tax. It provides a simple and sufficiently fair benchmark that is continuously followed up for the Group, business areas and production units.

For a long time, profitability has exceeded the cost of capital, but as a result of the difficult situation for printing paper, it has been unsatisfactory in recent years.

**Capital structure.** Holmen's aim is to have a strong financial position that provides financial stability and enables the company to make correct, long-term business decisions that are not solely dependent on the state of the economy and external financing options.

The debt/equity ratio is to be in the interval of 0.3–0.8, and adjustment to this target is one aspect of Holmen's strategic planning.

**Dividends.** Decisions on ordinary dividends will be based on an appraisal of the Group's profitability, future investment plans and financial position.

Over the past ten years the ordinary dividend has averaged 5.3 per cent of equity. This has meant that 67 per cent of earnings per share has been paid out in ordinary dividends each year.

In addition to ordinary dividends, Holmen paid extra dividends for the 1998, 2000 and 2003 financial years.



### Working practices – environmental responsibility



Holmen's environmental policy focuses on the environmental aspects that are relevant to the Group's stakeholders. Environmentally related risks are analysed and action is taken on a regular basis.

### HOLMEN'S ENVIRONMENTAL POLICY

contains principles for the Group's environmental activities and covers the aspects that are of relevance to Holmen and its stakeholders.

#### ENVIRONMENTAL RESPONSIBILITY.

The Group's Board and CEO, as well as the heads of the business areas, have overall responsibility for the environment. Operational responsibility is held by mill managers and forest managers. The Group's Director of Environmental and Sustainable Affairs chairs Holmen's Environmental Council and coordinates environmental efforts.

JOINT ACTION GROUPS. The purpose of the Environmental Council is to ensure that the environmental policy is applied. The Council consists of the environmental managers of each business area and mill and is chaired by the Group's Director of Environmental and Sustainable Affairs.

The Energy Council makes decisions on hedging electricity prices, as well as on electricity certificates and emission allowances. This Council consists of representatives from the relevant business areas and Group staffs.

Climate issues are mainly dealt with by the Group Technology Staff. Responsibility for energy efficiency is held by the business areas. Senior Management follows up the Group's climate and energy targets.

Other joint action groups deal with matters relating to management systems, chemicals (REACH legislation), water treatment, transport and waste.

**OFFICIAL SUPERVISION.** All the Group's mills have environmental permits containing conditions regulating emissions to air and water. The environmental authorities regu-

larly inspect operations at the mills. Forestry operations are supervised by the Swedish Forest Agency.

### ENVIRONMENTAL MANAGEMENT

**SYSTEMS** certified in accordance with ISO 14001 are applied at all the units and in forestry operations. All the production units have quality management systems that have been certified in accordance with ISO 9001.

### ENERGY MANAGEMENT SYSTEMS.

Certified energy management systems are in place at all the Swedish units. Holmen Paper Madrid became the first pulp and paper mill in Spain to be certified according to the European standard for energy management systems in 2010. Workington Mill has operated in accordance with a certifiable management system since 2008.

**FORESTRY STANDARDS.** Holmen's forestry is certified in accordance with the international PEFC and FSC standards.

### CHAIN-OF-CUSTODY CERTIFICATION.

There is Chain-of-Custody certification at Holmen Skog and at most of the Group's mills under the PEFC and FSC standards, which means that the wood can be traced back to its origin.

### AUDITING OF CERTIFICATION. All

certified systems are regularly checked by external, certified auditors.

**SUPPLIER APPRAISAL.** A system for appraising suppliers of goods and services was introduced in 2009. Environmental responsibility, quality issues and social aspects form part of the appraisal.

### Holmen makes continuous efforts to manage risks related to the environment

- Self-inspection so that conditions regarding emissions and other conditions imposed by environmental authorities are fulfilled
- Checks on the management of chemicals and waste
- Environmental risk assessments
- Checks and inspections by authorities
- Group-wide climate and energy targets
- Certified environmental and energy management systems
- Environmental certification and chainof-custody certification under the forestry standards FSC and PEFC
- All certified systems are regularly checked by external, certified auditors
- Appraisal of suppliers and hauliers with respect to environmental aspects
- Self-inspection of compliance with power industry guidelines for dam safety
- Studies are carried out at discontinued sites and remediation is carried out where necessary. This work is carried out in consultation with the environmental authorities.

ICC. Holmen has been affiliated to the International Chamber of Commerce's Business Commission on Sustainable Development for more than 10 years. This establishes 16 principles for environmentally aware leadership. www.icc.org



### Permits and certifications



All Holmen units hold the permits and certificates required for their operations.

**THE EU'S IPCC** (Integrated Pollution Prevention and Control) Directive is a keystone of its environmental legislation. In Sweden, the formal requirements of IPPC were satisfied by the introduction of the Environmental Code in 1999. The sites in Sweden that hold permits under the Environmental Protection Act have been adapted to IPPC in accordance with guidelines from 2004. In 2010 it was decided that the IPPC Directive and several other directives should be combined into new legislation, the Industrial Emissions Directive (IED). The IED rules will apply from 2014 at the earliest.

**CERTIFICATIONS.** Holmen applies certified systems for environmental, energy and quality management as well as for forest stewardship. All its systems are integrated into the business and reviewed annually by internal and external specialists.

**ISO 14001 AND ISO 9001** are international standards for environmental management and quality management.

**SS 627750 AND EN 16001** are the Swedish and European standards for the introduction of energy management systems.

**FSC** – Forest Stewardship Council is a system for the certification of forestry that is supported by several environmental organisations.

**PEFC** – Programme for the Endorsement of Forest Certification schemes is a system for forest certification.

**CHAIN-OF-CUSTODY CERTIFICATION** enables wood used at the certificated units to be traced back to its origin.

**CERTIFICATES** for the management systems and forest standards can be viewed at www.holmen.com.

Holmen's industrial activities require a permit from the environmental authorities in the country concerned. Operations are subject to supervision by the environmental authorities and the certified auditors of the management systems.

Permits from authoritie	s, year	
Hallsta Paper Mill	Environmental Protection Act	2000
Braviken Paper Mill	Environmental Code	2002
Holmen Paper Madrid	IPPC	2006
Iggesund Mill	Environmental Protection Act <sup>1)</sup>	2003
Production in Strömsbruk	Notifiable activities subject to local government supervision	2007
Workington Mill	IPPC	2002
Sheeting units	Only require a permit for a few parameters	-
Skärnäs Terminal	Environmental Code	1999
Iggesund Sawmill	Environmental Protection Act <sup>2)</sup>	1994
Braviken Sawmill	Environmental Code	2010
Holmen Energi	Permit for water activities (rules in the Environmental Code)	-

 An application for a new permit under the Environmental Code was submitted to the Environmental Court at the beginning of 2011.

2) Work on applying for a new permit under the Environmental Code began in 2010.

Certifications for management systems <sup>1)</sup> , year	ENVIRONMENT	ENERGY	QUALITY
Hallsta Paper Mill	2001	2005	1993
Braviken Paper Mill	1999	2006	1996
Holmen Paper Madrid	2002	2009/102)	2000
Iggesund Mill <sup>3)</sup>	2001	2005	1990
Workington Mill	2003	20084)	1990
Iggesund Sawmill	1999	2006	1997
Braviken Sawmill	5)	5)	5)

1) Environment/ISO 14001, Energy/SS 627750, Quality/ISO 9001.

2) Certification to SS 627750 and UNE 216301. In 2010 certification to European standard EN 16001.

3) The certifications include the production unit in Strömsbruk and Skärnäs Terminal.

4) Energy management system introduced. Certification will take place when international standard has been adopted. 5) Auditing for certification of the management systems will take place in April 2011.

5) Auditing for certification of the management systems will take place in April 2011.			
Forestry certifications, year	FSC	PEFC	
Holmen Skog	1998	2003	
	_	_	
Chain-of-Custody certification, year	FSC	PEFC	
Hallsta Paper Mill	2008	2007	
Braviken Paper Mill	20081)	2009	
Iggesund Mill	2007	2007	
Workington Mill	2005	-	
Iggesund Sawmill	2005	2004	
Braviken Sawmill	2011	2011	
Holmen Skog	2007	-	
Holmen Mets	2007	-	

1) Braviken Paper Mill holds a certificate for FSC Mixed.



### **Environmental work in the Group**



Holmen's operations are governed by the conditions set by environmental authorities, which also check compliance with these conditions. The certified management systems contain environmental and energy targets that are regularly reviewed and tightened to achieve continuous improvements.

HOLMEN'S ENVIRONMENTAL WORK has been described in environmental and sustainability reports since 1993. Environmental legislation and requirements of environmental authorities have become successively more stringent over the intervening period. This has led Holmen to make environmental and energy concerns important aspects in planning production and investments. The aggregate effect has been a gradual reduction in the Group's environmental impact over a long period.

Efforts to improve energy efficiency and reduce the use of fossil fuels have steadily increased since 2000 for reasons related to climate change and resources.

Prioritised environmental aspects are emissions to air and water, noise and waste. The diagrams show that the trend per tonne of end product has been positive for many of the environmental aspects.

Noise is an important aspect of environmental efforts at Holmen's sites. Holmen carries out continuous measurements at its sites. The noise levels at Holmen units have decreased as a result of action taken. All the units are now below the permitted noise levels in environmental permits.

Holmen also considers it important to investigate and, if necessary, remediate contaminants at discontinued industrial sites, contamination that arose as a result of technology and practice that existed when these sites were still in operation. The investigations are carried out in consultation with the environmental authorities.

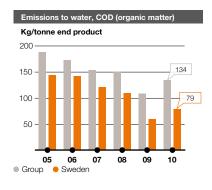
**EXCEEDING LIMITS.** Accidental emissions sometimes occur at the industrial plants, mostly due to faults in equipment. This

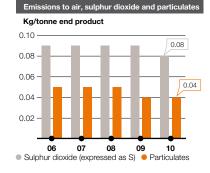
may lead to permitted levels for emissions to air and water being exceeded. When this happens, the environmental authorities are informed and action is taken. It may also lead to procedures in the environmental management systems being reviewed to prevent the incidents being repeated. The non-compliances have not been of a material nature, and the limit values in the environmental conditions have not been exceeded.

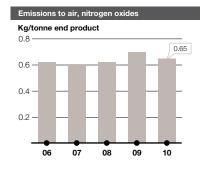
**COMPLAINTS.** People living near the mills may lodge complaints about noise and odours. Comments may also be expressed on felling operations carried out or planned. All complaints and comments are handled in accordance with the rules in the certified environmental management systems. Dialogue with stakeholders is an important aspect of this activity.

**HOLMEN CONTRIBUTES** to a positive effect on climate by prioritising work concerned with targets for energy and climate.

- Use of fossil fuels is to decrease by 90 per cent in the Swedish operations by 2020 compared with 2005.
- The Group's specific energy use is to be improved by 15 per cent by 2020 compared with 2005.
- The growth rate in Holmen's forests is to be increased by 25 per cent within 30 years compared with 2007.
- Extraction and deliveries of biofuels are to be increased by 1 TWh by 2020 compared with 2006.
- Production of electricity from wind power is to be 1 TWh in 2020. This environmental target was adopted in 2010.









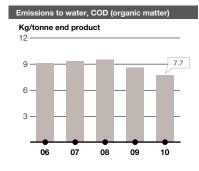
As a result of its work on energy and climate, Holmen's use of oil has decreased, and consequently so too have emissions of fossil carbon dioxide. The need for oil at the Swedish units has fallen by more than half since 2005. The foreign mills are supplied with energy from local cogeneration plants based on natural gas. Natural gas is the best fossil alternative to biofuels from the point of view of climate change.

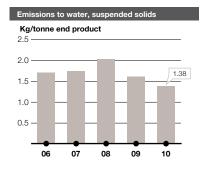
**IMPORTANT ENVIRONMENTAL** measures in the continuous efforts to make improvements with investments in process and treatment technology are described here. Several environmentally related measures were taken in 2010 as part of the improvement efforts for the next few years.

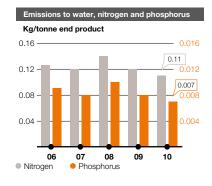
- Investments in the mills have meant that the Group's total fossil carbon dioxide emissions through to the end of 2010 have decreased by around 30 per cent in comparison with 2005. Emissions have decreased by around 55 per cent at the Swedish units.
- The Group's specific energy use has decreased by just over five per cent since 2005.
- In 2008 a new pulp line started at Braviken Paper Mill for producing thermomechanical pulp, which has reduced the specific electricity needs of the production line by just under 20 per cent. The target is a 30 per cent reduction.



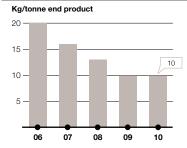
- Holmen is investing in a new recovery boiler with a turbine at Iggesund Mill. This boiler plant will make the mill selfsufficient in energy and additionally make it possible to carry out production without fossil fuels. A new lean-gas system reduces emissions of foul-smelling sulphur compounds to the air.
- A second gas cogeneration plant for efficient energy production was commissioned at Holmen Paper Madrid. Specific emissions of nitrogen oxides decreased by around 20 per cent.
- An investment project was started at Workington Mill to refit the mill's pulp line. Energy consumption is expected to decrease by 10 per cent. An environmental study on the prospects of installing an energy boiler for biofuel has been carried out.
- A 50-year-old oil-fired boiler at Hallsta Paper Mill will be replaced by an electric boiler.
- The wastewater treatment plant at Iggesund Mill was supplemented by a chemical flotation unit in 2009. Emissions have decreased by as much as 25–40 per cent in the past year for COD (organic matter), nitrogen and phosphorus (fertiliser substances).
- A rail-based transport solution for finished products was introduced at the Swedish mills during the year. As well as lower costs, this results in reduced emissions to air.
- In order to be able to meet the environmental target to reduce the impact of forestry on rivers, streams and lakes, in 2010 Holmen Skog provided training for all its own personnel and those of its contractors who plan and implement measures in the forests. Altogether nearly 1 000 people were trained.
- The volume of waste sent to landfill has decreased by just over 70 per cent over the past ten years. Efforts to identify ways of making good use of the waste that arises in operations from the point of view of profitability and the environment have been stepped up.













# **Environmental protection expenditure**



# **Environmental investments**

At the mills, environmental and energy concerns are important aspects in the planning of production and investments. Under Statistics Sweden guidelines, the investments are divided into direct and integrated investments, and investments for economical use of energy. Examples of investments in recent years are given below.

**DIRECT** investments include the costs of emission treatment investments, for example different types of treatment equipment.

Over the past five years, it is the investment in the new wastewater treatment plant at Iggesund Mill that has accounted for a significant share of the direct environmental investments. As a result of this, the costs of such investments totalled around SEK 130 million for 2009.

**INTEGRATED** investments consist of the costs of emissions-preventing equipment where older process equipment is replaced by new equipment with better environmental performance. The costs of investments of this type totalled around SEK 40 million in 2008, with most of this sum relating to constructing a new hydro power plant on the Iggesundsån river to replace three older power plants.

**ELECTRICITY AND HEAT-SAVING** investments have been significant in recent years. The new pulp line for thermomechanical pulp production at Braviken Paper Mill, which started in 2008, meant that the costs of investments of this type totalled around SEK 400 million in that year.

Construction of a new recovery boiler

with a turbine is in progress at Iggesund Mill, an investment partly intended to achieve more economical use of electricity and thermal energy. The investment totals SEK 2.3 billion, and the environmentally related parts of this project are significant.

# **Environmental costs**

**INTERNAL AND EXTERNAL** efforts are needed to be able to pursue ambitious environmental activities. The costs of this include personnel, operation of treatment equipment, supervision, development projects, soil studies and costs of consultants.

The costs have totalled between SEK 180 and 225 million in the past five years.

### ENVIRONMENTAL TAXES AND CHARGES.

The mills pay tax on landfilled waste, carbon dioxide and sulphur tax and charges for emissions of nitrogen oxides.

Costs through to the end of 2010 have fallen by half in comparison with 2005. A strong contributor to this fall is the fact that the Swedish mills have been able to reduce their use of fossil fuels and consequently also the costs of fuel taxes. The costs are expected to decrease further as investments are made at both Iggesund Mill and at Hallsta Paper Mill, where an oil-fired boiler is being replaced by an electric boiler in 2011.

**THE ENVIRONMENTAL COSTS** of forestry are estimated as the value of the wood that is not harvested for environmental reasons. Holmen sets aside around ten per cent of its productive forest acreage and thus refrains from harvesting around ten per cent of the possible volume. The annual loss of income is estimated at around SEK 70 million. Holmen invests significant sums in process equipment intended for economical use of electrical and thermal energy. Environmental protection expenditure is reported in accordance with Statistics Sweden guidelines.

# Income

The Group's mills have participated in the EU Emissions Trading Scheme since 2005. The steps taken by the Group to reduce the use of fossil fuels and therefore carbon dioxide emissions have made it possible to sell emission allowances. The reported result varies from year to year. The result for 2010, SEK 26 million, is the highest to date.

The Swedish mills have traded electricity certificates, which are allocated to producers of renewable electricity, since 2003. Holmen has produced renewable electricity at its mills for several years. The reported result has ranged between SEK 40 and 70 million over the past five years.

**SURPLUS THERMAL ENERGY** produced at some of the mills has been sold to municipal district heating networks since 2009. The annual revenue from the heat sold is around SEK 5 million.

Various types of waste arise in production. Several of the mills sell such waste to external users, for example for construction purposes. The revenue from this source has ranged between SEK 10 and 20 million over the past five-year period.

# **Penalty charges**

If officially permitted emission levels are exceeded, penalty charges can be imposed on the company that causes the emissions. The environmental and energy management systems introduced and regular checks on the industrial operations by the authorities mean that the risks of limits being exceeded can be managed successfully. Holmen has not caused any emissions that have led to penalty charges.



# Transport



Holmen's business areas have responsibility for transporting their products from the mills to the customers. Holmen Skog organises transport to the mills of wood from forests in Sweden and of imported wood from its countries of origin. In the UK, wood transport is organised by the mill in Workington.

Ships operated under long-term charters have accounted for more than half of all transport in Holmen for several years. Capacity utilisation on the ships is high. They are also used to carry recovered paper to Sweden.

Rail is mainly used for distributing products from Sweden to southern Europe and to a certain extent also for incoming raw materials.

Trucks are the main mode of transport for saw logs and pulpwood. Trucks are also generally the only option for transporting products from the port terminals in Europe to customers. The same also applies to distribution over short distances from mills to customers.

**TRANSPORT EMISSIONS.** Holmen aims to improve transport efficiency and reduce the impact of transport on the environment.

In 2010 a Group-wide logistics project focusing on finished products ended. The aim was to reduce costs and environmental impact while maintaining or raising the level of service. A strategy has been established to ensure a gradual transition to rail-based logistics solutions from the Group's three Swedish mills. As well as lowered costs, this means reduced emissions to air by 2012, as a quarter of volumes are being transferred from ship to rail. Carbon dioxide emissions are estimated to decrease by around 10 000 tonnes a year compared with the situation in the past. In addition, there are reduced emissions because the need for truck transport from port to customer in Europe is eliminated.

Holmen is a partner in Scandfibre Logistic AB, a company that supplies and develops transport and logistics services for the Swedish forest industry.

### ENVIRONMENTALLY EFFICIENT SHIPS.

As large volumes of finished products will be transferred from sea to rail transport, Holmen will take three ships on longterm charter from 2011. All the ships are equipped with catalytic converters, resulting in very low emissions of nitrogen oxides.

All ships employed by Holmen run on oil that meets the requirement of a sulphur content of less than 1.0 per cent applicable to Baltic and North Sea shipping.

**HOLMEN SKOG** has long been taking active measures to minimise transport activity by flow optimisation and the exchange of wood with other forest companies. In 2010 significant volumes were relocated between northern and southern Sweden.

Holmen Skog is working to develop fuelefficient vehicles. Modern optimisation tools are used in planning to investigate environmentally efficient and cost-effective transport combinations.

The ETT ("one more stack") project, which is aimed at increasing the volume of wood carried on logging trucks, is an example of new technology. Two years of Holmen takes measures to improve efficiency in transporting raw materials and products and to limit their impact on the environment. The aim is to make greater use of rail transport whenever practical and financially viable.

test operation on a vehicle have yielded very favourable results, with a 20 per cent reduction in both carbon dioxide emissions and transport costs.

Over the past five-year period, Holmen has reduced the average transport distance for harvested wood by around 10 per cent.

The El-forest electric hybrid forwarder reduces fuel consumption by between 30 and 50 per cent when used for transport in the forests. Holmen's first electric hybrid forwarder will be delivered in 2011 and is being tested in practical operation.

**THE GROUP'S TRAVEL POLICY** includes environmental aspects of travel with the aim of reducing the extent of travel and consequently its environmental impact.

Holmen is taking part in industrywide efforts to reduce the impact of transport on climate. The target is to reduce fossil carbon dioxide emissions from transport by 20 per cent by 2020.

The new policy of the Swedish industry federation on transport and sustainability has been applicable since September 2010. In addition to this, there are joint sustainability criteria developed for the industry that can be used in procuring truck transport services. These criteria will also be gradually introduced into Holmen's operations. Equivalent criteria for shipping and rail transport will be drawn up.



# Waste

Various kinds of waste arise in the manufacture of Holmen's products. The vast majority of it is recovered or utilised as energy. The volume of waste sent to landfill has declined by almost 70 per cent since the year 2000.

Holmen endeavours to minimise its quantity of waste and to utilise the highest proportion possible. Waste taxes and landfilling costs necessitate cost-effective management.

Waste is separated into categories at all the units. Employees and contractors receive regular training in waste-handling procedures.

A Group team is taking steps to identify environmentally sound ways of using the waste that arises. The focus is on identifying product areas in which various materials can be regarded as a valuable resource, which can lead to new business.

# **Current issues**

In 2010, Holmen carried out a preliminary project to investigate the possibility of producing biogas in the mills' treatment plants for further processing into transport fuel. If the plans are put into effect, waste in the form of sludge from the treatment plants will decrease in the future.

Holmen is continuing its co-operation with Värmeforsk to develop methods and equipment for the environmentally sound use of incinerator ash.

**IGGESUND MILL.** The mill was deregistered for waste tax in 2009, as no production waste now goes to landfill. All production waste (treatment plant gravel, precipitation sludge, green liquor sludge, ash and sludge from chemical flotation) is considered to have potential for use as a construction material in capping Holmen's own landfill. As capping is a time-limited activity, several projects are in progress to find more longterm uses for the production waste. As well as biogas production, examples include the recovery of precipitation chemicals, incineration with energy production and construction material for forest roads.

**HALLSTA PAPER MILL.** The ash that arises when biofuels are burned has previously been used to a large extent for external

construction purposes, such as road building. In 2010, the ash was mostly used to create a suitable slope on the mill's landfill before it is closed. It is planned that the previous use will be resumed when the landfill is no longer used. Around a quarter of the sludge that arises in the mill's waste treatment was used in 2010 for soil products and the remainder for the extraction of energy. The proportion of biosludge has been higher since the recovered paper plant was closed at the end of 2008, making it more difficult to dewater and burn the sludge. If the plans for biogas production are put into effect, the quantity of biosludge will decrease sharply, also making it easier to dewater the sludge.

**HOLMEN PAPER MADRID**. There was less deinking sludge in 2010 than in 2009 due to lower production. However, the volume of reject plastic increased due contamination of the incoming raw material. The sludge is principally used at present for agricultural purposes and for producing bricks. Various projects ran in 2010 aimed to find new uses for waste. The principal focus for the reject plastic is energy extraction and for the sludge is various building materials.

# THE PAPER MILLS IN BRAVIKEN AND

**MADRID.** Metals in the form of staples and packing wire are removed during the recovered paper process and are sold for recycling to external buyers. Recovered

# Four categories of waste

**Combustible waste that is used.** Mainly used to generate thermal energy at the mills or in external heating plants.

#### Waste for various uses

Several projects have been carried out in recent years to find alternative uses for the waste that is produced. Some types of waste, for example sludge from wastewater treatment plants, can be used as a soil improver after treatment. Incinerator ash has been used as a road-building material and soil improver, and to cap landfills.

Waste sent to landfill. As a result of legislation and efforts to find alternative uses, the volume of waste sent to landfill has fallen by almost 70 per cent since 2002.

# Hazardous waste consists of materials such as waste oils, chemical residues and fluorescent tubes. Such waste is collected by authorised companies for recycling. Some is destroyed under controlled

paper sludge from Braviken Paper Mill is used to cap an external landfill. A project is in progress to improve sludge handling and recovered paper rejects.





# Chemicals

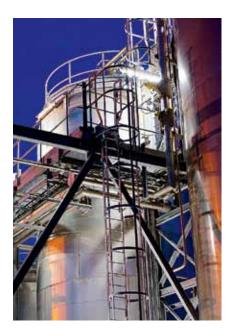
The EU Regulation on chemicals and their safe use was introduced in 2007. Holmen works systematically to fulfil its requirements.

Chemicals are necessary when producing paper and paperboard, for instance to endow the products with specific properties. Certain chemicals are used in large amounts while others only occur in small quantities.

**ONLY APPROVED CHEMICALS.** Chemicals groups have been established at all Holmen mills. The chemicals are assessed on the basis of aspects such as technical function, product safety, the working environment and the external environment.

**HOLMEN TAKES REGULAR STEPS** to develop and improve the joint chemicals database used within the Group. This work takes place in close co-operation with the companies that supply the chemicals. **EVERY YEAR, HOLMEN SENDS** a comprehensive report on its use of chemicals to the environmental authorities.

**THE EU REGULATION REACH** has resulted in more stringent requirements for manufacturers and importers of chemicals to make health and environmental risk assessments. The Group is working towards fulfilling the requirements of REACH, for instance by forming a REACH network and using the industry federations in Sweden, the UK and Spain as support. In 2010 the Group ensured that the requirements for registering substances that follow from REACH were met.



# **Discontinued operations**

Holmen deals with soil pollution at discontinued industrial sites. This work is done in close consultation with the environmental authority.

The Swedish Environmental Code contains clear rules regulating how to deal with sites that have been contaminated by previous operations. According to one of Sweden's national environmental objectives, the presence of substances in the environment must not pose a threat to human health or the environment. Holmen regards work concerned with discontinued operations to be an important part of its sustainability efforts.

Some of the Group's discontinued sites contain contaminated land, requiring studies that assess risks to the environment and health. Action may also be required. Responsibility for remediation is established following detailed assessments in terms of liability and reasonableness.

Work to deal with soil contamination is currently in progress at the following discontinued sites.

# **Discontinued sawmills**

In the past, Swedish sawmills customarily used various types of wood preservatives to prevent rot and insect attack in sawn timber. Several of these products later proved to be environmentally hazardous and have long been prohibited.

Wood preservatives of this type were used at the Group's former sawmills at Håstaholmen, Stocka and Lännaholm. Parts of the former industrial sites are consequently still contaminated. Soil studies and investigations into suitable remediation measures are in progress at these sawmill sites. Action is planned in 2011 at the former sawmills at Håstaholmen and Lännaholm.

# **Discontinued sulphite mills**

The soil at sulphite pulp mills is usually contaminated with substances typical of

that type of operation. Waste in the form of pyrite ash arose at most sulphite pulp mills. This ash contains metals and was often used as a filler. Some mills also produced bleaching chemicals. Investigations for Holmen are under way at Strömsbruk, Loddby and Domsjö.

Production at Wargön Mill, where there was formerly a sulphite mill, was discontinued at the end of 2008. In consultation with the supervisory authority, Holmen has studied the presence of soil contamination at the site. Identified contamination will be remediated starting in 2011.

# Discontinued mechanical wood pulp mill

At the long-discontinued Bure mechanical wood pulp mill, pulp used to be impregnated with a bactericidal agent that may have contaminated the soil on the site and on the floor of the bay outside the mill.

Holmen conducted a general study of the environmental situation at this former industrial site in 2010. Supplementary studies will be carried out in 2011.



# Working practices – social responsibility





Holmen's personnel policy is aimed at developing employeeship, leadership and organisation. Activities in this area are based on laws, collective agreements and Group-wide policies.

Important issues affecting employees are coordinated by the HR management team. This consists of the personnel managers of the business areas and is chaired by the head of Group Human Resources. The management team meets monthly to discuss and decide on strategies, policies and joint guidelines. The larger units have their own personnel managers, HR specialists, and health and safety engineers.

# The HR process

The activities of the Group's personnel departments are based on Holmen's personnel policy and the HR activity plan. The activity plan is revised annually and is endorsed by the management teams of the Group and business areas and by the union organisations. The activity plan is also submitted to the Holmen Board. The main emphasis is on

# The HR concept

Personnel issues at Holmen are co-ordinated under the internationally established concept of HR (Human Resources). This emphasises the direct link between personnel activities and the company's business concept. developing a supply of skills, and on leadership and organisation. The results are followed through key indicators and in *Holmen Inblick*, the Group's employee survey. HR forms a natural part of the business areas' activity plans.

# Policies

Holmen's combined HR policies reflect the Group's view of personnel policy. All Groupwide HR policies have been developed in association with, or have been endorsed by, the union organisations. The trend is towards an increasing number of Group-wide policies being supplemented by local guidelines. All the policies are reviewed every three years and are revised as necessary. Follow-up of how well managers and employees conform to these guidelines is done in conjunction with the employee survey. There are Group-wide policies for the following areas:

- Personnel policy
- Working environment
- Diversity and gender equality
- Internal labour market
- New employees
- Pay setting
- Pensions
- Business travel.

# Working environment, fire and safety

Issues in these areas are handled by a Groupwide team consisting of specialists from the business areas. This team initiates measures and procedures to reduce the number of industrial accidents and fires.

# Laws and collective agreements

A number of laws and collective agreements govern the Swedish labour market. Similar laws exist in the UK, Spain and the Netherlands.

- Co-Determination at Work Act
- EU anti-discrimination law
- Trade Union Representatives (Status at the Workplace) Act
- Work Environment Act
- Agreements between industry organisation the Swedish Forest Industries Federation and trade union organisations.
- Working Hours Act
- Employment Protection Act



# HR work

# **HR** targets

Holmen has set strategic HR targets since 2002. These have remained largely unchanged during the 2000s. The targets, which have covered the whole Group since 2008, concern the following areas:

- The prerequisites for doing a good job (Inblick index)
- Leadership
- Performance reviews
- Industrial accidents
- Women managers.

The prerequisites for doing a good job, leadership and performance reviews are measured once every two years in the employee survey, while data on fulfilment of other targets is taken from the payroll systems. Joint work processes and systems simplify and rationalise personnel-related activities in the Group. HR work is managed with strategic key indicators, which are developing in a positive direction.

STRATEGIC HR TARGETS. The rate of industrial accidents leading to absence has been around 25 per 1 000 employees in the past five years, which is well above the target of 10. The number of performance reviews has increased, but the trend has not been as good as expected. The leadership index has improved steadily since 2003 and is close to the established target. The best trend has been in the Inblick index, which has risen continuously since measurements began in 2003 and for which the target was reached in 2009. The proportion of women managers has also risen steadily in the past five years. Four out of five strategic key indicators have therefore shown a positive trend.

**OPERATIONAL KEY INDICATORS** are monitored through the HR system. Some of

them are indicated here. Average age in the Group has been between 45 and 46 for several years, which is satisfactory. The level of education is rising as younger, well-educated people join the company. Recruitment and departures were in balance during the first half of the 2000s. In the past three years, twice as many people have left as have been recruited as a result of workforce reductions due to profitability problems, principally at Holmen Paper. Sickness absence has been at a satisfactorily low level for a few years. The proportion of temporary employees has been around 7 per cent in recent years.

Target fulfilment for 2010 is reported in the *Annual report 2010 including sustainability report*, while long-term trends are described in the relevant sections of this publication.

# **Workforce reductions**

Holmen has been conducting rationalisation programmes at all the units for several years. Machines have been closed down and the organisation has been rationalised. In the case of Wargön Mill, this meant completely closing down operation.

WHEN THE ORGANISATION is reviewed, a number of employees are often found to be surplus to requirements. The company then negotiates with the trade union organisations and tries to find solutions that have as little impact as possible on the employees concerned and on the community in question. This involves, for example, offering redundancy settlements, early retirement or training grants in cooperation with the Swedish Public Employment Service. Experience of this work is favourable, and the usual outcome is a limited number of employees needing to be made redundant. In Spain it is possible to lay off employees for a period of time, similar to the model that formerly existed in Sweden. In Spain and the UK the company makes redundancy payments that increase with the number of years of service.

### THE ADMINISTRATIVE PROCESSES in

the Group have been reviewed to improve efficiency and reduce costs. This process principally affects the areas of facilities management, finance and IT. Significant savings are achieved through outsourcing or centralisation.

### SUPPORT FOR THOSE WHO LOSE

**THEIR JOB.** By agreement, Holmen in Sweden, in association with the unions, engages companies that specialise in overmanning issues to support employees who lose their jobs. All who are surplus to requirements are allocated a personal coach to assist them in looking for employment. There are no equivalent agreements in the UK and Spain.



# **Employee surveys**



The results of the *Holmen Inblick* employee survey, which has been conducted since 2003, show that working conditions at the Group's units have improved. This is the result of systematic HR work towards specified targets for several years.

The purpose of the employee survey is to check that managers and employees meet their responsibilities under the personnel policy. The Inblick index has risen by nearly 100 units since ratings began, and in 2009 stood at well over 600, considered to be a good level by TNS SIFO, which conducts the survey. The Swedish units have developed more strongly, probably as a result of having worked with the employee surveys for several years. In the longer term the aim is to reach the 700 level, which TNS SIFO judges to be excellent.

Leadership has continuously improved since 2003, but not to the same extent. Holmen has therefore increased its support for weak managers, so that they can improve. In some cases these managers have also been offered more suitable work in the organisation. The objective in the short term is for the leadership index to surpass 60, which is regarded as a good level.

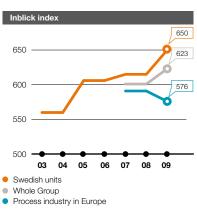
The overall survey results are also compared with the process industry in Europe. Holmen has achieved higher results than the sector average in all surveys. **ANNUAL PERFORMANCE REVIEWS** in

the Group are conducted for just over 60 per cent of employees, while 23 per cent have reviews on a less regular basis. The Swedish units achieve a higher score as a result of having worked on the issue longer. The proportion of performance reviews carried out is nearly 100 per cent for white-collar employees and lowest for shift workers. The trend is weaker than is expected.

Holmen is endeavouring to raise both the leadership index and the proportion of performance reviews conducted. The *Manager at Holmen* development programme, which has been implemented since 2010, is one of the tools used. Training in performance reviews and coaching is provided at the units.

# Employee survey 2011

The Holmen Inblick employee survey was carried out in January 2011. This survey has been adapted to meet the requirements of Manager at Holmen, and the leadership index is therefore not entirely comparable retrospectively. The question areas that have shown good results over a long period have



The Inblick index is calculated by the employees completing a questionnaire containing questions in eight areas:

- Skills
- Co-operation and process
- Motivation
- Organisational efficiency
- Responsibility and initiative
  Learning
- Learning
   Authority
- Authonly
   Climate of renewal.

If everyone gives maximum scores to the questions in each area, the total value of the Inblick index is 1 000.

been replaced by new crucial areas such as questions concerning the manager's manager, the quality of performance reviews, the working environment and diversity.

The response rate has been high since the surveys began – between 78 and 79 per cent. In the most recent survey in 2011, the response rate fell slightly to 76 per cent, principally due to a low proportion of responses from Holmen Paper Madrid, where the closing-down of a paper machine was announced at the same time as the survey.

The results of *Holmen Inblick* will be available on the Holmen website during the latter part of spring 2011.

### IMPROVEMENT EFFORTS PRODUCE

**RESULTS.** All managers have to report the result of their *Holmen Inblick* employee survey to their own employees. The survey is a valuable tool for identifying what actions need to be taken, and employees are encouraged to take part in the improvement efforts. The trend also shows that the actions that have been taken have led to changes.



# Leader development

Good leadership contributes to strengthening the team and increasing its motivation. Holmen conducts an extensive development programme for all managers in the Group. The overarching aim of the programme is to create a better company.

# Manager at Holmen

All managers in Holmen take part in the *Manager at Holmen* development programme. The programme is guided by awareness that good leadership provides the foundation for motivation and impetus in the organisation. Leaders who are able to commit themselves and motivate their employees generate strength and potential in their teams and induce them to perform better.

**LEADER TRAINING.** As part of the programme, all new managers in the Group are allocated a local tutor, who is a colleague with several years of managerial experience.

New managers undergo a brief period of leader training after being appointed to their positions. The aim is to give new managers a common view of leadership as early on as possible, so that they can quickly settle into the role. The programme gives participants a kit of basic tools for use in day-to-day leadership.

Holmen's basic leader training is a 15-day course. New managers take this course within a year of being appointed. The training covers such topics as self-analysis, leading others, situational leadership and feedback. Participants receive support in identifying their own strengths and areas for improvement.

An international programme to develop capable managers within the Group is conducted in association with Stockholm School of Economics IFL Executive Education. The aim is to foster managership and leadership skills and create a common approach to strategic issues. The programme is held every two years, with around 25 participants from all parts of Holmen. Another aim is to increase the number of women participating in the programme.

THE WORK SITUATION OF MANAGERS

is continuously evaluated in a manager

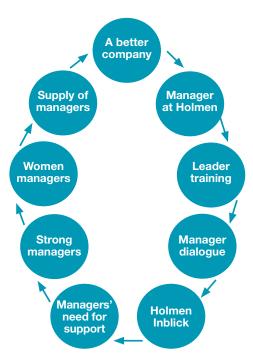
survey conducted in conjunction with Holmen Inblick. In this survey, Holmen managers answer questions about how aware they are of what expectations the organisation has of them in different areas. There are also questions about how much managers become involved in different processes such as targets, budgets and business plans. In addition, the manager is asked to describe how the dialogue with his or her line manager works. The overall impression from this manager survey is analysed and converted into development efforts.

### MANAGERS ARE EVALUATED in Holmen

*Inblick* on the basis of a bottom-up perspective. From this, each manager receives a personal leader profile describing the manager's characteristics in the areas of involving, relationship-creating, driving and growing leadership. In conjunction with leader training courses and the manager supply process, supplementary evaluation is done from a top-down perspective and by colleagues. Taken together, this provides a complete picture of how managership and leadership are working. The aim is to assess all managers in Holmen systematically.

**SOME MANAGERS** obtain low leadership indices in the employee survey. This leads to action plans focused on providing the managers concerned with support to improve their leadership. Managers who are not deemed to have the right profile are given duties without managerial responsibility. The target is for there to be no managers with low leadership indices by the time of the next employee survey. The Group management makes strict demands in this area and follows up the results.

**STRONG MANAGERS.** It is worth noting, however, that the vast majority of Holmen's managers are excellent leaders. Many of



them act as mentors for those who need support. Strong leaders are distinguished by the way they involve their employees in the business and make them grow in their professional roles.

**WOMEN GAIN HIGHER** marks for leadership in Holmen Inblick than their male counterparts. They are deemed to be better at taking decisions and setting clear requirements. They are also regarded by their colleagues as better listeners and more encouraging than male managers. With regard to being a role model, the gap between men and women in managerial positions is as wide as 15 percentage points. This adds even more weight to the Group's efforts to increase the proportion of women managers.

**EVERY TWO YEARS, HOLMEN** identifies employees who have what it takes to be promoted to higher positions and who are interested in such advancement. Identifying existing managers ready to take on bigger and more demanding tasks is equally important. Another distinct aim is to identify more women employees with management potential. Holmen's target is to fill around 75 per cent of all managerial vacancies through internal recruitment.



# Women in Holmen

Holmen has endeavoured to increase the proportion of women in its organisation for many years. These efforts have produced results, and the proportion of women managers has doubled in five years.

# Proportion of well-educated new women recruits is increasing

Women have always been under-represented in the forest industry, and Holmen is no exception. The proportion of women in the Group is still low, at just under 20 per cent, but is slowly rising.

Of employees appointed in the period 2006–2010, around 25 per cent were women. The proportion of women in the annual induction programme for new graduate recruits has been just over 30 per cent for several years, which lays the foundation for an increase in the proportion of women in higher positions.

**MORE WOMEN MANAGERS.** The proportion of women managers at Holmen's units was very low in the early 2000s. This proportion has more than doubled to just





over 16 per cent since 2006. The aim is to reach at least 19 per cent by 2012, and this can only be done by identifying more potential women managers. The aim is to increase the proportion of women when appointing managers. This has indeed happened in recent years. Holmen's Swedish units appointed 109 new managers over the period 2008–2010, of whom 32 were women, equivalent to 29 per cent.

# **RISING NUMBERS OF WOMEN IN MANAGEMENT TEAMS.** In the past five years, the number of women in the management teams of the Group, business areas and mills has risen from 6 to 16. The management team at Iggesund Mill has steadily increased its proportion of women, and in recent years has had a preponderance of women, with six compared to five men. The Holmen Board has two women members, of whom one is elected by the AGM and the other is an employee representative.

# SHORTAGE OF WOMEN OPERATORS.

If the number of women in higher positions is to increase further, there is a need for the proportion of women operators to increase. These form the recruitment base for first-line managers. Holmen has started work on this, but it will take time to produce results.

# No form of discrimination is accepted

Some workplaces, especially the mills, are notable for their "blokeish" jargon. Nine per cent of women in the 2009 employee survey felt that they had been discriminated against at some time on account of their gender. The employee survey is a valuable instrument for identifying any such problems that may exist.

According to survey results in recent years, no one experienced discrimination on the grounds of sexual orientation. On the other hand, three per cent of employees stated that they felt discriminated against

# Gender aspects in the employee survey

The 2007 and 2009 employee surveys show that women's Inblick index scores are higher than those of men. In the 2003 survey the opposite was true. Holmen interprets this as meaning that gender equality efforts are having an impact.

Women and men also take a different view of opportunities to combine work and family. A study shows that women employees find it more difficult to reconcile the role of manager with family life. Both women and men would like to see greater flexibility at the workplace. In addition, there are demands for better opportunities to build a career during periods of life other than the "classic" age span of 30 to 40.

The company pays 80 per cent of the portion of pay not covered by the Swedish social insurance system, making it easier for families to share parental leave.

on the basis of either gender, disability or ethnic origin. Another three per cent experienced age discrimination. Holmen applies EU discrimination laws and does not accept any form of discrimination. At those units where some form of discrimination was discovered, the causes were investigated and action was taken.

# Unwarranted pay differences

Under statutory requirements in Sweden, Holmen conducts a survey of pay in its Swedish units every three years. The company identifies any pay differences between women and men who perform identical or equivalent tasks. The survey is conducted to identify, remediate and prevent unwarranted gender-related differences in pay and other terms of employment. Where unwarranted pay differences have been discovered, action plans have been adopted in consultation with the union organisations.



# An attractive employer



Attracting, recruiting and developing committed and skilled employees is crucial if Holmen is to continue to operate successfully. The Group works to convey an image of Holmen as an attractive employer.

# Contacts with schools and universities

**PRIMARY AND LOWER SECONDARY SCHOOL.** Holmen participates in the nationwide programme run by the *Forest in School* organisation. The company also hosts pupils on work experience schemes. Over a ten-day period some 60 primary and lower secondary school pupils in the Hudiksvall area have a chance to study the work in the forests and at the mills and follow the whole process from wood to finished product.

**UPPER SECONDARY SCHOOL.** Holmen is involved in a project known as *Journey into the Future*, together with the Swedish Forest Industries Federation. This project is aimed at young people and teachers at upper secondary schools. Themed days on the forest industry are held at around 130 schools around Sweden, and more than 110 000 pupils have taken part since the start in 1999. Holmen follows up these themed days with study visits to nearby mills.

The Group also runs an annual continuing professional development course for some 30 social science teachers from all parts of the country. The programme highlights various aspects such as raw materials, energy, the environment and climate. A large proportion of the teachers say that they have found the training useful for their own teaching. Together with other companies in the industry, Holmen has trained more than 1 000 teachers since the programme began eleven years ago.

As knowledge of chemistry is a key skill in the sector, particular attention has been paid to chemistry teachers in recent years. *Chem-is-tree, forest industry chemistry for upper secondary schools*, is a teaching aid available free of charge on the website of the Swedish Forest Industries Federation.

HIGHER EDUCATION. Holmen takes part in the labour market days organised at colleges of technology and the Royal College of Forestry. In association with other forest companies, Holmen also arranges industry evenings for students at six institutes of technology, as well as forest training programmes. This activity has been undertaken since 1996, and attracts between 600 and 800 students annually.

The Group maintains continuous contact with students on forest and technical training programmes that provide knowledge in line with Holmen's needs. The company receives study visits from selected universities and institutes of technology every year to increase their knowledge of and interest in the forest industry.

# Degree projects

Holmen hosts around 25 students for degree projects in the Group every year. In addition, Holmen takes on around 500 young people for summer employment. As well as this, there are a large number of interviews with and questionnaires from students writing essays in higher education.

# Trainee programmes

Holmen's various units have long taken on a number of trainees with university degrees every year. This yenture has been highly successful, and in 2009 Holmen extended the programme to the whole Group. The number of trainees in the programme is adapted to the needs of the units and can range between 4 and 15 for a single year. The trainees work at units in the Group for a period of ten months. They carry out individual projects and receive Group-wide training. After the traineeship, they are given an ordinary position at one of the units. As trainees gain an insight into large parts of Holmen, it is hoped that this will boost internal mobility in the longer term. The Group also sees this as a way of strengthening its brand in the institutes of technology.

Several of the mills also conduct annual trainee programmes for operators. The aim has not just been to attract young promising technicians but also to increase the proportion of women operators. Good results have been achieved by providing new recruits with the necessary technical knowledge rather than requiring them to have completed a technical education programme. The numbers of women and men are consequently equal in these programmes.



# **Development of skills**





Every year Holmen devotes substantial resources to developing the skills of its employees. This principally relates to increasing professional expertise and becoming more proficient in one's role, but also to being able to take on new and bigger work tasks.

Some examples are:

- Widened responsibility or new role
- · Work on projects
- Deputy position
- · Learning to use new equipment
- Taking part in networks
- · Taking part in or receiving study visits
- Mentor or mentee
- Internal teacher or tutor.

**THE HR SYSTEM** that has come into use at the Swedish units improves opportunities for skills development. In a few years' time, all job descriptions will be based on skills. In future, all employees will be able to compare their present-day skills with what the position requires. Each individual employee's development plan will be more clearly related to the position's requirements.

# Mentoring programme

Around 15–20 mentees annually take part in Holmen's mentoring programme. Around 140 mentees have completed the programme since it began in 2002. The mentees have their own mentor from some other unit in the Group. In the assessments that have been carried out, the programme has consistently earned high scores. It is not just the mentees who consider that they have developed their skills – so too do the mentors.

# Skills exchange

For the past few years Holmen's development engineers in particular have been offered the opportunity to work at other units in the Group for a limited period of time. The aim is to enable them to gain new insights into their usual tasks.

# Induction programme

In addition to local induction programmes, there is also an international Group-wide programme for new graduate recruits. Every year around 60 new recruits from the countries where Holmen operates take part. The aim of the programme is to improve knowledge of the Group and offer participants an opportunity to network. Holmen's CEO and other members of Group management assist with the programme.

Skills development is traditionally a matter of becoming more proficient in one's occupation through training and/or by gaining qualifications for new tasks. But the term also covers the enhancement of skills that comes with having increased responsibility, using new technology and having a change of duties. All the business areas provide several training programmes each year to raise the skills levels of employees. The induction of new employees additionally requires significant training activities. Holmen estimates that each employee on average receives around 30 hours of traditional training per year. In addition there are a large number of hours of learning in everyday practice.

### LEARNING WITHOUT COURSES is the

method that is to permeate skills development. Learning takes place as a natural part of everyday work, and the effects are positive with regard to both acquisition of skills and cost. This learning is extensive but difficult to measure.



# Health and safety

Holmen endeavours to create a good working environment that is both safe and stimulating. Sickness absence has fallen substantially in recent years, while the number of industrial accidents at the mills is at an unsatisfactorily high level.

The Group's working environment policy emphasises areas in which action needs to be taken. This is supplemented by local guidelines. Holmen conducts annual internal audits of its working environment and fire safety activities.

# Continued high level of industrial accidents

With effect from 2010, Holmen reports the accident rate in the same way as the rest of the industry – the number of industrial accidents in proportion to the number of employees in the Group.

The number of industrial accidents per 1 000 employees leading to more than eight hours of absence has been around 25 in the past five years, which is well above the target of 10. Too many accidents are caused by safety equipment not being used or procedures not being followed. Reducing the number of such accidents represents a major challenge for Holmen. No Holmen employee has been involved in a fatal accident.

# INDUSTRIAL ACCIDENTS - TARGET.

Holmen's target is to reduce the number of industrial accidents resulting in absence of more than eight hours by 30 per cent per year, so that it is no more than 10 per 1 000 employees in 2013. The vision is to become a completely injury-free company.

A Group-wide activity plan has been devised for implementation at all the units to substantially reduce the number of industrial accidents. The intention is to increase awareness and develop a culture with a higher degree of safety thinking. Serious accidents and incidents have to be investigated more quickly and reported personally to the mill manager. Holmen regards this as important, not just for present-day employees but also for those who will be recruited in the future.

**INCIDENT REPORTING.** Some serious incidents have occurred at Holmen units in recent years. The risk of accidents can

be reduced by reporting incidents and by learning from them.

# TRAINING IN WORKING ENVIRONMENT

**ISSUES.** All new employees at the mills undergo training in what defines a safe working environment. All managers and union safety representatives receive training.

# Declining rate of sickness absence

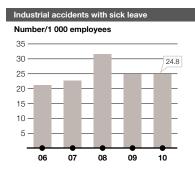
The rate of sickness absence was around 7 per cent at the start of the 2000s. It has steadily fallen and is now half that level. Holmen has followed the general trend in society, but there are also grounds for regarding this as a result of the company's work on health.

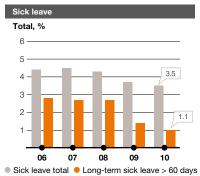
**LONG-TERM ABSENCE** (more than 60 days) has been below 1.5 per cent for a few years. Ten years ago the rate of long-term absence was around 4 per cent. Furthermore, women are no longer as over-represented as they used to be among people on long-term sick leave. The large workforce reductions in recent years have been accomplished in many cases through early retirement, which has also contributed to the lower rate of long-term absence.

Researchers claim that people who are fit for work need a rate of absence of 1–2 per cent to recover from serious illnesses. Holmen is within this range.

**THE SHORT-TERM ABSENCE** rate (1–14 days) has been below 2 per cent for many years, which is lower than for the industry as a whole. People need time to recover from short-term illnesses, and too low a rate of sick leave can instead mean that people go to work when they should not.

**GOOD-HEALTH INDEX.** Holmen annually measures what is known as the good-health index. This is a measure of the proportion of employees who have not had a day of sick





leave during a calendar year.

In the past few years the good-health index at Holmen's units has been around 45 per cent. The Group offers its employees a range of preventive healthcare activity options.

**STRESS.** The employee survey contains questions on stress and anxiety. In addition, the survey asks whether there is time for recovery. The results are at an acceptable level.

**COMPANY HEALTH SERVICE.** All employees have access to a company health service that provides rehabilitation and supports return to work. Regular health checks are also offered to the employees so that they can detect early onset of disease.

**LEGIONELLA.** The wastewater treatment plants at several Swedish forest industry mills contain legionella bacteria. An industry-wide method of risk analysis has been introduced and has been applied at Holmen units for a few years. Maintenance procedures and water handling have been improved. Affected individuals and at-risk groups are offered health assessments.



# **Union co-operation**

# The right of association

The employees' right to belong to a union, known as the right of association, is regulated by law. By this is meant the right of employees and employers to form and belong to unions or employer associations.

# Legislation in the EU

This section mainly describes co-operation and legislation in Sweden. The situation is broadly similar in the Netherlands, the UK and Spain.

**UNION CO-OPERATION.** The company's employees are represented on the Group Board by three members and three deputy members. The union organisations meet regularly in consultation groups. These groups are appointed at Group, business area and workplace level and meet the management of the unit concerned on a regular basis.

The unions are involved in major development and investment projects. Examples are the design of the Holmen Inblick employee survey, a new organisation for IT, the TMP plant at Braviken Paper Mill and the new recovery boiler at Iggesund Mill.

Union activities and the time needed for them are governed by agreements between the company and the union organisations. The company regards union activities as valuable.

# THE HOLMEN EUROPEAN WORKS

**COUNCIL (HEWC)** is the Group's internal European union council. Its activities are governed by EU law. The Council consists of eleven members and represents all the larger units. The HEWC meets twice a year, and acts as a forum for consultation across national borders. Experience is favourable, and the HEWC has helped Group units in various countries to come closer together.

**TERMS OF EMPLOYMENT** are mainly governed by agreements at national level between the employer organisation and the unions. These agreements contain guidelines for annual pay reviews and general terms of employment such as pension and insurance Holmen has constructive co-operation in a spirit of trust with the trade union organisations on all major issues and regards it natural that all employees should be affiliated to unions. Good collaboration between the company and the unions is fundamental to the company's development.

terms. All national agreements are binding on the company and its union organisations. Taken together, this contributes to greater employment security for Holmen's employees.

The agreements are supplemented by agreements at local level covering working hours, flexitime, production bonuses and preventive health care. The employees are also offered a company health service and voluntary group insurance schemes covering accidents and death.

Holmen's pay policy and pay process describe the basis on which the company sets pay for a particular position. In conjunction with the annual pay review, the manager and employee have a discussion in which the manager gives reasons for the outcome of the pay review.

# THE RATE OF UNION MEMBERSHIP

in Holmen varies between countries and is highest in Sweden, at around 85 per cent. The equivalent figures for the UK and Spain are around 50 per cent and around 40 per cent respectively. The company considers it important to have a distinct counterpart for important negotiation issues; for this reason, the rate of union membership should not be too low.

**HEALTH AND SAFETY RULES** have been drawn up at all units in association with the unions.

# DISPUTES AND DISAGREEMENTS over

working conditions that cannot be resolved by managers and employees with assistance from the unit's HR department are referred for local negotiation between representatives of the company and the employee's union. If the parties still fail to agree, the matter can be referred for central negotiation between representatives at national level. The Labour Court is the arbiter of last resort in Sweden.

The disputes that arise in Holmen are resolved in virtually all cases within the company. It is very unusual for disputes to go to court.

**OVERMANNING** arises when the company's organisation is larger than is required for the long-term operation of the business in accordance with the strategy established by the company. When this situation occurs, the employer negotiates with the unions with a view to reaching a mutually acceptable solution. In Sweden, an impact assessment is also made in accordance with the guidelines issued by the Swedish Work Environment Authority.

In the event of overmanning, the company aims to minimise the number of redundancies as far as possible through redeployment, early retirement and training. Notice periods are governed by national agreements between the parties.

# The Swedish Codetermination at Work Act

The Swedish Co-determination at Work Act applies to all important changes in the business. The aim is to give the employees' side influence and right of co-determination on important issues. In the event of major changes to the organisation, the employer is required to negotiate before a decision is made. The union organisations have the right to receive information, analyse the impact and express their opinion before a decision is made.





# Holmen complies with GRI A+



GRI – Global Reporting Initiative – is an international organisation under whose auspices a number of interest groups in society have drawn up global guidelines for how companies are to report on parameters covered by the concept of sustainable development.

**THE PURPOSE OF GRI** is to create uniformity in sustainability reporting and to make it easier to assess and compare companies from social, environmental and economic perspectives. Application of GRI guidelines is voluntary.

#### HOLMEN TAKES A POSITIVE VIEW OF

**GRI**, and has been following its guidelines for sustainability reporting since 2006. Account has been taken of the ten reporting principles of GRI in compiling Holmen's sustainability report. The purpose of these principles is to ensure that information describing the business in terms of its sustainability is included, and that the quality of the information provided satisfies the GRI criteria.

**HOLMEN IS OF THE OPINION** that the reporting of social, environmental and economic facts/aspects in Holmen's combined sustainability reporting for 2010 complies with GRI reporting level A+.

THE AUDIT COMPANY KPMG has

conducted a general review of the contents of Holmen's GRI reporting in relation to the information requirements in the GRI guidelines for sustainability reporting, G3. Holmen's GRI reporting consists of the *Annual report 2010 including sustainability report* and *Holmen and sustainability*. Additional information can be found on the website, together with a GRI register. KPMG's assurance report can be found on the Holmen website.

The KPMG assurance report states that the information Holmen has provided in the above-mentioned documents together satisfies GRI reporting level A+.

**GLOBAL REPORTING INITIATIVE.** The organisation's website provides a comprehensive picture of GRI and its regulatory framework. www.globalreporting.org



# **Recognitions and assessments**

Holmen is noted for its work on sustainability, and the Group is included in a number of international corporate indexes and environmental funds. Holmen is aware that active work on sustainability and clear communication strengthen the brand and goodwill. Stakeholders' evaluations of sustainability efforts are important so that these efforts can be enhanced. This also raises the level of skill and commitment in the company. Financial analysts have shown increased interest in sustainability issues in recent years.

The purpose of corporate indexes and environmental funds is to make it easier for investors to identify companies that operate responsibly in relation to economic, environmental and social aspects.

#### Corporate indexes and environmental funds

OMXSUSTAIN

OMXSUSTAIN NASDAQ OMX OMX GES SUSTAINABILITY SWEDEN

GES Nordic Sustainability Index covers the leading 50 Nordic companies in the area of sustainability. Holmen is also included in the equivalent Swedish index. https://indexes.nasdaqomx.com



FTSE4Good Index Series. Companies in this index are notable for their well developed environmental work and good relations with their stakeholders. Holmen has been included since 2005. www.ftse.com/ftse4good



Storebrand SRI. Companies that are world leaders in the areas of environmental and social responsibility qualify for Storebrand's *Best in Class* list. Holmen came top in the 2010 evaluation. www.storebrand.com



Forum ETHIBEL contains companies deemed to be above average in the areas of economic, social and environmental sustainability. The evaluation is made by the analyst company Vigeo. www.ethibel.org



Dexia Asset Management. Holmen was included in the Dexia Money Market Euro Sustainable Fund in 2009. This fund contains companies that meet strict requirements on sustainability. www.dexia-am.com



MSCI ESG indices compiles sustainability indices for institutional investors. Holmen is included in four such indices, one of which is MSCI WORLD ESG INDEX. www.msci.com

NORDIC SUSTAINABILITY STARS

SIX STAR s a sustainability index launched by SIX Telekurs in 2009 in co-operation with Ethix SRI Advisors. Holmen features in SIX STAR Sweden Sustainability Index 25. www.six-telekurs.se



KEMPEN CAPITAL MANAGEMENT. Based on an assessment of business ethics, social and environmental aspects, Holmen was brought into the Kempen Socially Responsible Universe in 2010 and is included in the Kempen/SNS European Smaller SRI Index. www.kempen.nl



Swedbank Robur. Holmen is approved for inclusion in Swedbank Robur's Ethica and Banco fund families. Holmen is placed in the *Best Practice* category. www.swedbankrobur.se

# ASN C BANK

ASN AANDELSFOND. Companies in this fund are characterised by well developed efforts for human rights and environmental responsibility. The focus is on companies' environmental efforts. Holmen was brought into the fund in 2010. www.asnbank.nl

TRIODOS BANK. Holmen was approved in 2010 for inclusion in Triodos Bank's Sustainability Equity Fund, Sustainable Bond Fund and Sustainable Mix Fund. www.triodos.com

### **Assessments**

**Carbon Disclosure Project (CDP)** is a non-profit organisation that works to bring about a constructive dialogue between stakeholders with climate impact as a common denominator. Holmen took part in the 2010 evaluation. www.cdproject.net

**Enterprise.com (e.com)** is a company that primarily evaluates annual reports. Holmen was selected as an example of best practice

for the way in which sustainability issues were reported and discussed in the sustainability report for 2009. www.reportwatch.net

The Sustainable Value Creation Survey. Holmen took part in 2009 in this survey in which the 100 largest companies on Nasdaq OMX Large Cap were asked about guidelines on sustainability efforts. Behind the initiative are fifteen Swedish institutional investors. In 2010 Holmen took part in a follow-up seminar on this initiative. www.hallbartvardeskapande.se

**EIRIS.** In the 2010 evaluation by the analysis company EIRIS of 1 800 companies around the world, Holmen was ranked, together with eight other companies, as *Biodiversity Leaders* with regard to policy and working practices for handling risks to biodiversity. www.eiris.org

# **Definitions and glossary**

#### **Biofuel/biofrefining**

Renewable fuels, such as wood, black liquor, bark and tall oil.

### **Biological treatment**

Wastewater is treated using microorganisms. The principle is the same as in nature, but the decomposition takes place much more quickly.

#### **Biomass combine**

The Holmen sites in Iggesund and Norrköping are what are known as biomass combines. The raw material first goes to the sawmills and becomes sawn timber, and what is left at the end of the process then goes on to be used as raw material for the paper and paperboard mills.

#### **Carbon footprint**

A measure of the amount of greenhouse gases that a product generates during its lifecycle.

### Carbon dioxide (CO<sub>2</sub>)

Carbon is the building block of life and is part of all living things. Biogenic carbon dioxide is released when biological material decays or wood is burned. Fossil carbon dioxide is released when coal, oil or natural gas is burned.

#### Certification

Assessment performed by a third party. A certificate is a document which shows that the conditions for certification have been met.

### COD

(Chemical Oxygen Demand). Chemical oxygen demanding substances. A measure of the amount of oxygen needed for the complete decomposition of organic material in water.

#### Debt/equity ratio

Net financial debt divided by the sum of equity and any non-controlling interests.

#### DIP

De-inked pulp. Pulp produced from de-inked recovered paper.

## Earnings per share (EPS)

Profit for the year divided by the weighted average number of shares outstanding, adjusted for buyback of shares, if any, during the year. Diluted EPS means that any diluting effect from outstanding call options has been taken into account.

### Folding boxboard (FBB)

Multi-layered paperboard made from mechanical and chemical pulp.

### Fossil fuels

Fuels based on carbon and hydrogen compounds from sediment or sedimentary bedrock – mainly coal, oil and natural gas.

### FSC

The Forest Stewardship Council is an organisation that develops international forest standards. The FSC promotes management of the world's forests in a way that is acceptable from three perspectives: environmentally, socially and economically.

#### Groundwood pulp

Mechanical pulp produced by grinding wood against a grindstone.

### GRI

Global Reporting Initiative. International cooperation body, in which many different groups of stakeholders in society have drawn up global guidelines for how companies are to report on activities encompassed by the umbrella term of sustainable development. www.globalreporting.org.

#### HR

Personnel issues at Holmen are co-ordinated under the internationally established concept of HR (Human Resources). This emphasises the direct link between personnel activities and the company's business concept.

#### Inblick index

The prerequisites for doing a good job.

#### Incident

An unforeseen dangerous event that does not lead to human injury. The reporting of incidents is important to prevent the risk of accidents occurring.

#### IPPC

Integrated Pollution Prevention and Control. EU environmental legislation about integrated, individual testing and supervision of major industrial companies.

#### ISO 9001

An international standard for quality management systems. Primarily aimed at companies and organisations that wish to improve two aspects of their operations, i.e. to ensure more satisfied customers and lower costs.

#### ISO 14001

An international environmental management standard drawn up by ISO. Important principles in ISO 14001 include regular environmental audits and a gradual increase in the requirements.

#### Leadership index

Part of the employee survey *Holmen Inblick*. Questions are asked about the manager's ability to involve people, create relationships, be a driving force and allow employees to grow.

#### LWC

Light-weight coated wood-containing paper. Mainly used for magazines and catalogues.

## MF Magazine

Machine finished. Includes standard and coloured newsprint.

#### Nitrogen (N)

An element contained in wood. Nitrogen emissions to water may cause eutrophication.

### Nitrogen oxides (NO<sub>x</sub>)

Gases that consist of nitrogen and oxygen that are formed in combustion. In moist air, nitrogen oxides are converted into nitric acid, which creates acid rain. Nitrogen oxides also have a fertilising effect.

#### Particulates

Particles of ash formed in incineration of bark or liquor, for example.

#### Peat

Peat consists of plant material that, owing to a lack of oxygen, has only partly decomposed into bogs and fens. The incomplete breakdown means that much of the energy content of the biological material is retained, enabling peat to be used as fuel.

#### PEFC

The Programme of the Endorsement of Forest Certification Schemes is an international forest standard. In Sweden, the PEFC and FSC standards are largely identical.

#### Performance reviews

Annual dialogue between a manager and an employee aiming to support and boost the employee's development.

#### Phosphorus (P)

An element contained in wood. Excessive phosphorus in the water may cause over-fertilisation (eutrophication) and oxygen consumption.

#### Productive forest land

Forest land that on average can produce 1 cubic metre standing volume of wood per hectare and year during the growth period of the forest stand.

#### REACH

Registration, Evaluation and Authorisation of Chemicals. An EU Regulation that requires testing of the chemicals used in EU Member States.

#### Return on capital employed

Operating profit/loss (excl. items affecting comparability and transferred operations) expressed as a percentage of average capital employed.

#### SC

Super-calendered paper. Uncoated, glazed magazine paper.

#### Solid bleached board (SBB)

Multi-layered paperboard made from bleached chemical pulp.

### Substitution

When wood is used as a substitute for materials and sources of energy that have a negative climate impact.

#### Sulphur dioxide (SO<sub>2</sub>)

A gas consisting of sulphur and oxygen that is formed in combustion of sulphur-containing fuels, such as oil. In contact with moist air, sulphur dioxide is converted into nitric acid, which creates acid rain.

#### Suspended solids (SS)

Waterborne substances consisting of fibres and particles that can largely be removed using a fine mesh filter.

#### Tall oil

By-product of the sulphate pulp process used for making soft soap, paints and other products. It is also an excellent biofuel.

#### ТМР

Thermo-mechanical pulp. Obtained by heating spruce chips and then grinding them in refiners.

#### Water footprint

Water use from a lifecycle perspective.

