



**ORKLA ENVIRONMENTAL REPORT 2006**

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This document is a summary of Orkla's environmental report for 2006.  
For more information on environmental activities, visit the website at  
[www.orkla.no/environment](http://www.orkla.no/environment).

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## ORKLA'S ENVIRONMENTAL POLICY

Orkla is committed to sound, long-term, sustainable operations that reflect the Group's awareness of its responsibility towards its employees, society at large and the environment. Everyone must feel confident about buying Orkla products, as regards both the origin and quality of the products and their impact on human beings and the environment.

We therefore work purposefully to:

- continuously enhance our ability to economise on our consumption of raw materials, water and energy and prevent adverse environmental effects.
- identify and assess the environmental impacts that we cause and reduce these impacts by implementing effective, long-term solutions.
- create safe, healthy and attractive workplaces and minimise any negative effects of our operations on the local community.
- ensure that environmental aspects are taken into account when new products are developed and suppliers are chosen.
- provide information about our environmental activities in an open, trustworthy manner and maintain an active dialogue on various environmental issues with stakeholders.

Each company is responsible for defining goals and preparing activity plans, establishing systems and control procedures, and carrying out and reporting on its environmental activities. Compliance with national legislation and local regulations is a minimum requirement. Employees must be made aware of their environmental responsibility and be involved in environmental efforts at their workplace.

*Orkla's environmental policy was adopted by the Orkla Group Management Team on 26 April 2004.*

## ABOUT ORKLA

Orkla is one of the largest listed groups in Norway. Its core businesses are Branded Consumer Goods, Speciality Materials and Financial Investments. Originally a national company primarily engaged in mining, Orkla has developed into an international industrial group in the past 25 years. During this period, both earnings and profit have grown as a result of a combination of efficient operations and structural moves. Orkla's strategy is to achieve long-term value creation and growth through innovation, operational improvements and structural development.

### ENVIRONMENTAL EVENTS IN 2006

Orkla's HSE activities are characterised by a coherent, long-term approach and a desire to contribute to sustainable development. Continuous improvement is a fundamental principle.

Orkla therefore focuses on preventive HSE work. A good, safe working environment is a basic prerequisite for sustainable value creation. Risk analyses are an important tool in the efforts to promote the right attitudes and behaviour.

In 2006 the branded consumer goods companies continued to focus on the safety and origin of raw materials and products. In the Speciality Materials area, environmental activities have been dominated by the energy issue and a variety of measures aimed at reducing emissions to air and water of substances that have an impact on the environment. The Group's environmental work is increasingly influenced by the global climate debate.

Listed below are some of the environmental events reported by the various business areas in 2006.

#### Orkla Foods

- The Lost Time Injury Frequency (LTIF) rate was 8 in 2006, compared with 14 in 2005. Abba Seafood, Felix Austria and Guseppe succeeded in significantly reducing their injury rates compared with 2005. The Russian companies SladCo and Krupskaya have many employees and low LTIF rates.
- Various energy-saving measures were implemented at several factories, such as Pöltsamaa, Stranda, Eslöv, Rakkestad and Kungshamn, thereby saving over 12 GWh. At the end of 2006, a general programme of measures to reduce energy use was initiated at Orkla Foods, aimed at cutting energy consumption by a further 2-5% per year.
- In 2006 Orkla Foods again succeeded in maintaining its restrictive policy as regards the use of raw materials from genetically modified organisms (GMOs) in the manufacture of food products

### **Orkla Brands**

- The overall LTIF rate for the Orkla Brands factories was 10.6 in 2006, but the rate varies significantly from one factory to another. Lilleborg Ello, Lilleborg Ski, Nidar and MöllerCollett are well below the target limit of 10 set for 2006, while the LTIF rate at all the snacks factories is over 10. The factories that carried out International Safety Rating System (ISRS) audits have subsequently seen a marked decrease in the LTIF rate.
- The Lilleborg factory in Ski, Norway, continued its long-term efforts to reduce the quantity of organic matter in the processing water that is discharged to the public sewage system. Discharges from the factory totalled less than 1.8 tonnes of oxygen consuming organic matter (measured in COD) per week in 2006, which is considerably less than the licence limit of 3.5 tonnes of COD per week. The goal for 2007 is a maximum of 1.7 tonnes of COD per week.
- In 2006 there was growing media focus, especially in Sweden, on the possible nutritional effects of trans fat and hardened fat, particularly in biscuits. Göteborgs Kex has eliminated trans fat from all its products, and the company initiated an aggressive campaign of 0% trans fat labelling. Development work is continuing with a view to also replacing all hardened fat with vegetable oil.

### **Elkem**

- The LTIF rate for Elkem was 3.5 in 2006, on a par with 2005. Elkem also measures the TRIF rate. Through a variety of measures, the TRIF rate has been significantly reduced in the past few years, from 34.3 in 2004 to 12.4 in 2006. Despite Elkem's focus on accident prevention, a fatal accident caused by burn injuries occurred at the Elkem Thamshavn plant in Norway in 2006.
- Elkem uses large amounts of energy in the form of electricity. Consumption of electricity was reduced by around 10% from 2005 to 2006, from 9.5 TWh to 8.5 TWh, primarily due to lower production volumes.
- Elkem's emissions of greenhouse gases in 2006 were equivalent to 1.94 million tonnes of CO<sub>2</sub> and account for approximately 80% of Orkla's total emissions. The emissions are essentially related to the carbothermal production of metals and alloys and the electrolytic production of aluminium.
- Since 1999 Elkem has reduced its emissions of sulphur dioxide in Norway by more than 30%, from around 5,500 tonnes to 3,700 tonnes in 2006. This reduction was achieved through a combination of lower production of emission-intensive products and focus on consumption of low-sulphur coal.

### **Sapa**

- Sapa as a whole reported a decrease in work-related injuries in 2006. The LTIF rate fell from 21.2 in 2004 to 14.7 in 2006. At nine factories, the LTIF rate was under 8, while three factories report rates of over 30. Despite Sapa's focus on accident prevention, a fatal accident occurred when a maintenance worker collided with a bulldozer while cycling on the factory site in Lichtervelde, Belgium.
- Sapa's total energy consumption increased to over 1 TWh in 2006. Numerous measures have been implemented to make more efficient use of resources, and are making a significant impact on energy consumption. For instance, Sapa Heat Transfer in Sweden aims to reduce energy consumption by around 8 GWh per year by making certain minor investments.
- Emissions of sulphur dioxide from fossil fuels and metallurgical processes were reduced from around 48 tonnes in 2003 to 27 tonnes in 2006, largely due to less use of sulphurous material.

### **Borregaard**

- The overall LTIF rate for Borregaard was 9.5 in 2006, slightly higher than the rate of 9.1 in 2005. Four plants had zero injuries leading to absence, while six plants reported an LTIF rate of over 10. At the Sarpsborg plant in Norway, where half of Borregaard's employees work, the LTIF rate was 5.1.
- At the Borregaard plant in Sarpsborg two regrettable incidents resulted in discharges to the Glomma River in 2006: discharges of fuel oil in March and mercury in November. Studies carried out by external experts showed that there was no serious environmental damage.
- Energy-saving is one of Borregaard's highest priority environmental objectives. Borregaard's total energy consumption was close to 3.3 TWh in 2006, approximately 3% higher than in 2005. Almost 75% of its total consumption of energy is heat (steam, hot water and hot air). Energy-saving measures carried out by Borregaard in Norway helped to reduce energy consumption by approximately 65 GWh in 2006.
- One of the greatest environmental challenges is related to discharges of oxygen con-

suming organic matter (measured in COD) and suspended matter that pass from the processing plant to the biological treatment plant. In the course of 2007, the Sarpsborg plant will complete a programme of investments totalling around NOK 280 million to reduce discharges of organic matter. The factory in Switzerland plans to implement environmental measures at a total cost of more than NOK 100 million over the next three years, particularly with a view to reducing COD levels.

## **HEALTH, SAFETY AND ENVIRONMENT (HSE)**

### **The report of the board of directors in Orkla Annual Report 2006**

Orkla's HSE activities are characterised by a coherent, long-term approach and a desire to contribute to sustainable development. Continuous improvement is a fundamental principle. Orkla's environmental policy summarises the Group's attitude to environmental activities. The details of environmental programmes are formulated and implemented by the individual business areas. Elkem and Sapa are included in Orkla's HSE reporting for 2006.

A good, safe working environment is important for employees and a basic prerequisite for sustainable value creation. Orkla therefore focuses on preventive HSE activities. Risk analyses are an important tool in efforts to develop correct attitudes and behaviour. Regular drills are held to train employees to deal with a variety of emergency situations.

Despite the focus on preventing occupational accidents, two tragic accidents occurred in 2006 in which employees lost their lives. At the Elkem plant in Thamshavn, Norway, an operator died in a smelting furnace accident, and at the Sapa factory in Lichtervelde, Belgium, an employee was run over by a bulldozer while cycling on the factory site. The Lost Time Injury Frequency (LTIF) rate was 11.4 injuries leading to absence per million hours worked, compared with 10.7 in 2005. Since the sale of the media business, the Group is more exposed to workplaces that entail a higher level of inherent risk.

In 2006 there was a spill of fuel oil from a filling pipe at the Borregaard factory in Sarpsborg. Borregaard has implemented several measures to prevent such accidents in future.

The working environment in the Group is generally satisfactory and employee opinion surveys are carried out regularly to identify any potential for improvement.

The sickness absence rate in Orkla's Norwegian companies was 7.4%, compared with 7.1% in 2005.

Orkla recognises the environmental impact of its operations and strives to limit the consequences. All environmental requirements imposed by authorities and local communities must be complied with. Orkla is also attentive to the views of customers, consumers and employees.

Elkem and Borregaard are major energy consumers and are therefore continuously engaged in energy-saving and investment projects to reduce consumption and increase the use of renewable energy. The Borregaard factory in Sarpsborg is implementing a NOK 280 million investment programme to meet the requirements of a new environmental licence. These investments will lead to significant energy saving gains.

With focus on global climate problems, Orkla works hard to reduce its greenhouse gas emissions. No single activity leads to greater environmental improvements than long-term efforts to increase productivity and use environmentally sounder production methods. Elkem's emissions of greenhouse gases in 2006 were equivalent to about 1.9 million tonnes of carbon dioxide and accounted for about 80% of Orkla's total emissions. They consisted mainly of carbon dioxide from the carbothermal production of metals and alloys, and of fluorocarbon compounds from the electrolytic production of aluminium. Most of Elkem's metal production is based on renewable hydro-electric power that is generated close to the smelting works. This ensures the least possible environmental impact and makes an important contribution towards reducing greenhouse gas emissions from global metal production.

Orkla strongly emphasises the importance of generating trust and confidence. The Group's products must therefore be based on safe raw materials and be manufactured using methods that are accepted by customers and consumers. In the Branded Con-

sumer Goods area, Orkla has established its own Food Safety Standard. Orkla makes strict demands on its suppliers with respect to product safety and the environment. The Group has adopted a restrictive policy regarding the use of modern gene technology in the manufacture of food products.

The distribution of raw materials and products has a significant impact on the environment. Orkla therefore focuses on rationalising transport and using packaging materials that can be re-used or recycled in an appropriate manner. Orkla companies are members of Nordic organisations that collect and recycle packaging.

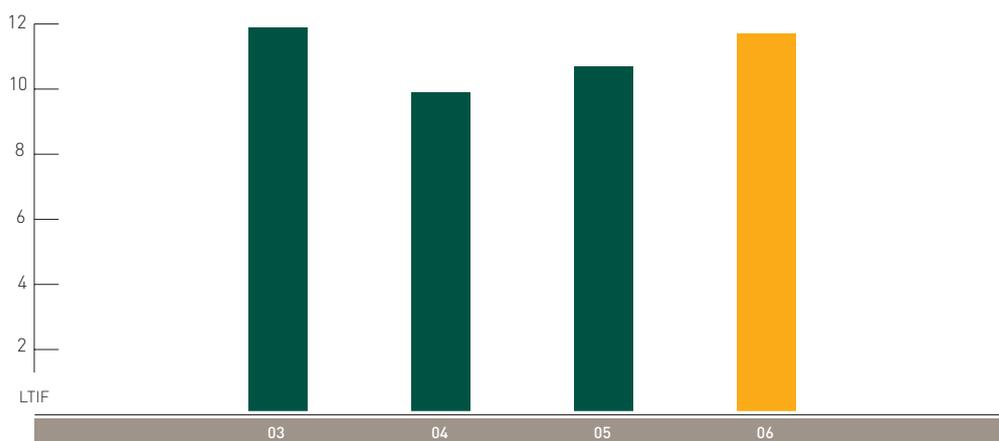
*More detailed information about Orkla's HSE activities and the current status in the various business areas may be found at [www.orkla.com/environment/2006](http://www.orkla.com/environment/2006).*

## RESULTS 2003–2006

### Safety and health

Implementing a wide range of measures to ensure a safe working environment has been a key aspect of Orkla's operations in 2006. Despite the focus on accident prevention, two tragic accidents occurred in which employees lost their lives. At the Elkem plant in Thamshavn, Norway, an operator died in a smelting furnace accident, and at the Sapa plant in Lichtervelde, Belgium, an employee collided with a bulldozer while cycling on the factory site.

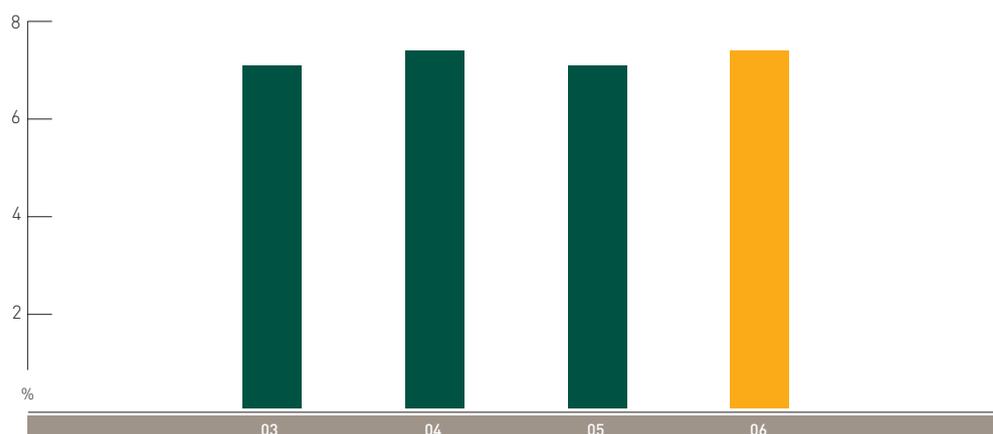
The LTIF rate in 2006 was 11.7 injuries leading to absence per million hours worked, OCCUPATIONAL INJURIES (LTIF<sup>1</sup>) AT ORKLA



<sup>1</sup> Number of injuries leading to absence per million hours worked

compared with 10.7 in 2005. Since the sale of the media business, the Group is relatively more exposed to inherent risk. The injury frequency rate is unsatisfactory, and efforts will therefore be intensified in 2007 to reduce the number of occupational injuries.

The sickness absence rate for Orkla's Norwegian operations was 7.4% in 2006, SICKNESS ABSENCE AT ORKLA IN NORWAY<sup>1</sup>



<sup>1</sup> Historical figures (including discontinued operations) in the period 2003–2005

pared with 7.1% in 2005 and 7.4% in 2004. Efforts to reduce sickness absence, through the Inclusive Workplace project and by other means, will continue in 2007.

## Energy consumption

Orkla uses large amounts of energy. The Group's total energy consumption, 13.9 TWh, was about 5% lower than in 2005, largely due to a certain decline in Elkem's production volume. Electricity accounted for approximately 75% of total energy consumption, and most of this energy was generated by hydropower. The Speciality Materials businesses (Elkem, Sapa and Borregaard) accounted for approximately 93% of Orkla's total energy consumption in 2006.

<b>ENERGY CONSUMPTION<sup>1</sup></b>				
	<b>Electric energy GWh</b>	<b>Thermal energy incl. district heating GWh</b>	<b>Total energy consumption GWh</b>	<b>Percentage electric energy %</b>
<b>BRANDED CONSUMER GOODS</b>				
<b>Orkla Foods</b>				
2006	352	415	767	46
2005	339	384	723	47
2004	233	329	562	41
2003	216	353	569	38
<b>Orkla Brands</b>				
2006	97	120	217	45
2005	97	127	224	43
2004	46	40	86	53
2003	46	40	86	53
<b>SPECIALITY MATERIALS</b>				
<b>Elkem</b>				
2006	8,511	42	8,553	>99
2005	9,495	40	9,535	>99
2004	9,412	40	9,452	>99
2003	8,940	40	8,980	>99
<b>Sapa</b>				
2006	536	513	1,049	51
2005	508	448	956	53
2004	499	474	973	51
2003	478	482	960	50
<b>Borregaard</b>				
2006	847	2,448	3,295	26
2005	835	2,358	3,193	26
2004	833	2,430	3,263	26
2003	834	2,417	3,251	26
<b>ORKLA</b>				
2006	10,343	3,538	13,881	75
2005	11,274	3,357	14,631	77
2004	11,023	3,313	14,336	77
2003	10,514	3,332	13,846	76
<sup>1</sup> Elkem and Sapa were incorporated into Orkla in 2005. The table also shows energy consumption in 2003–2004.				

For financial reasons Orkla has chosen to use several different energy systems, which means that in each business area emissions of various gases that have an impact on the environment vary from one year to the next. Changes in the size, composition and factory structure of Orkla and its business areas in the period 2003–2006 have had a strong impact on energy consumption.

Elkem's high consumption of electricity in the electrochemical production of metals

and alloys dominated the Orkla Group's energy consumption. Most of the electricity is produced near the location where it is used, which minimises energy loss in transport and reduces the need for an electricity grid. Elkem is an industry leader in terms of producing metal with low specific energy consumption and recovering energy from large smelting furnaces.

### Emissions of greenhouse gases and sulphur dioxide from fossil materials

Changes in the size, composition and factory structure of Orkla and its business areas in the period 2003-2006 also had an impact on the Group's emissions of carbon dioxide and other greenhouse gases, as well as sulphur dioxide. The Speciality Materials businesses accounted for around 95% of greenhouse gas emissions (expressed as carbon dioxide equivalents) and over 99% of sulphur dioxide emissions in 2006.

<b>EMISSIONS OF GREENHOUSE GASES AND SULPHUR DIOXIDE<sup>1</sup></b>		
	<b>Emissions from burning of fossil fuel to produce thermal energy, from oxidation of fossil carbon in electrochemical production of metal and from production of sulphur dioxide</b>	
	<b>carbon dioxide equivalents 1,000 tonnes</b>	<b>sulphur dioxide tonnes</b>
<b>BRANDED CONSUMER GOODS</b>		
<b>Orkla Foods</b>		
2006	87	55
2005	81	56
2004	73	55
2003	79	59
<b>Orkla Brands</b>		
2006	29	5
2005	30	6
2004	8	1
2003	8	1
<b>SPECIALITY MATERIALS</b>		
<b>Elkem</b>		
2006	1,944	5,280
2005	2,125	6,460
2004	2,173	6,650
2003	1,956	5,790
<b>Sapa</b>		
2006	83	27
2005	87	41
2004	87	41
2003	81	48
<b>Borregaard</b>		
2006	325	3,341
2005	289	6,430
2004	235	5,587
2003	238	5,044
<b>ORKLA</b>		
2006	2,468	8,708
2005	2,612	12,993
2004	2,576	12,334
2003	2,362	10,942

<sup>1</sup> Elkem and Sapa were incorporated into Orkla in 2005.  
The table also shows emissions of carbon dioxide equivalents and sulphur dioxide in 2003-2004.

Elkem's emissions of greenhouse gases are essentially related to production of carbon

dioxide in the electrochemical manufacture of metals and of fluorocarbon compounds in the manufacture of aluminium. In 2006, greenhouse gas emissions were about 180,000 tonnes lower than in 2005, largely as a result of lower production volumes. The Federation of Norwegian Industries and the Norwegian Ministry of the Environment have entered into an agreement which commits the industry to complying with a maximum emission limit of 13.5 million tonnes of CO<sup>2</sup> equivalents in 2007. Elkem will have no difficulty in meeting its share of the industry's total commitment.

Since 1999, Elkem has reduced its emissions of sulphur dioxide in Norway by more than 30%, from around 5,500 tonnes to 3,700 tonnes in 2006. This decline was achieved through a combination of lower production of emission-intensive products and focus on the use of coal with low sulphur content. Elkem and the other players in the Norwegian processing industry have established the Processing Industry Environment Fund. Through an agreement with the Norwegian authorities, the industry has pledged to reduce emissions of sulphur dioxide by 5,000 tonnes per year by 2010. In 2001 Elkem paid approximately NOK 15 million in sulphur dioxide tax without this having any proven environmental effect. Since 2002, Elkem has paid corresponding amounts to the Environmental Fund. The Fund gives priority to emission-reducing measures that generate the greatest effect in relation to the investment.



## ABOUT ORKLA FOODS

Orkla Foods is a leading developer, manufacturer and supplier of food products in the Nordic region, Central and Eastern Europe and Russia. Operations are concentrated around the company's own strong brands and concepts. Orkla Foods is divided into three main areas: Orkla Foods Nordic, Orkla Foods International and Orkla Food Ingredients.

Orkla Foods produces pizzas and pies, sauces, between-meal snacks, ready meals, fruit and berry-based products, preserved vegetables, seafood, processed potatoes, baking ingredients, bakery products, margarine and chocolate.

In 2006 Orkla Foods took over the Russian company Krupskaya. The company is included in Orkla's environmental report as from 2006, in addition to two new factories in Orkla Foods Romania. In the course of the year, the Procordia Food factory in Färjestaden, Sweden, was closed, and Bakers, Norway, purchased Martin Nordby and closed its factories in Arendal and Kristiansand, replacing them with a new factory in Lillesand. At the end of 2006, Orkla Foods had 70 production plants in 14 countries and employed a workforce equivalent to 11,182 man-years.

## ENVIRONMENTAL EVENTS IN 2006

### Health and safety

The sickness absence rate at Orkla Foods was 5.7% in 2006, down from 2005, when the corresponding figure was 5.9%. 5.7% is the lowest rate in the company's history, but higher than the target for 2006, which was set at 5.4%.

The Lost Time Injury Frequency rate (LTIF) or the number of injuries leading to absence per million hours worked, at Orkla Foods was 8 in 2006, compared with 14 in 2005. The target rate for 2006, which was 9, was thereby met. The reason for the improvement from 2005 is partly the inclusion of the Russian companies SladCo and Krupskaya, both of which have many employees and low LTIF rates, and partly focused efforts at the Abba Seafood, Felix Austria and Guseppe factories, all of which succeeded in reducing the injury frequency rate substantially compared with 2005.

A serious occupational accident occurred at the Dragsbæk margarine factory in Thisted, Denmark in 2006, when the cover of a cooling pipe containing ammonia blew off in the production plant. An employee standing in the vicinity of the accident site was hit by the jet of ammonia, while another employee inhaled the ammonia fumes. The former was seriously injured and was put in a respirator for one day, spending a total of eleven days in hospital before being discharged. He had no permanent injuries. The other employee was taken to hospital for observation, but was discharged the following day. The acci-

dent was the result of liquid ammonia having collected in a blind pipe. When the compressor started up, the ammonia was set in motion, striking the end of the pipe with such force that the cover was knocked off the suction pipe. To ensure that this does not happen again, all blind pipes have been removed, pressure compensation valves have been installed, and the start-up and end procedures have been changed so as to avoid large fluctuations in transient pressure.

No other serious accidents occurred at Orkla Foods facilities.

### **Employee opinion survey**

A comprehensive employee opinion survey was carried out in all Orkla's business areas in 2006. This will be repeated every third year in order to monitor the employees' work situation. Considerable attention is focused on the survey, which is regarded as an extremely important tool for bringing about improvements throughout the organisation. The 85% response rate at Orkla Foods was very high, a level that is regarded as "world class". The results are discussed in the individual business units and departments, and action plans are drawn up to make improvements while maintaining the aspects that function well. The measures recommended in the action plan will be carried out in the course of 2007.

### **Raw materials (including water) and packaging**

In 2006 Orkla Foods succeeded in maintaining its restrictive policy as regards not utilising raw materials from genetically modified organisms (GMO) in the manufacture of food products.

Water consumption at Orkla Foods totalled 6,366,000 m<sup>3</sup> in 2006. This is an increase of 173,000 m<sup>3</sup> from 2005, and is essentially due to the inclusion of Krupskaya in the statistics. Average consumption per tonne finished product in 2006 was 7.1 m<sup>3</sup>, which is on a par with 2005. Several factories made comprehensive efforts to reduce their water consumption in 2006. One example is Stabburet's ketchup and dressing factory in Rygge, Norway, which succeeded in reducing water consumption from 2.3 m<sup>3</sup> per tonne finished product in 2005 to 2.0 m<sup>3</sup> per tonne finished product in 2006 by optimising its production series and improving washing procedures. The manufacture of certain products entailing more water-intensive production processes has increased water consumption per tonne finished product at some factories. Orkla Foods' total water consumption per tonne finished product in 2006 remained virtually unchanged from 2005.

In 2006, Orkla Foods companies continued their efforts to choose optimal packaging solutions for both existing and new products. The companies' goal is to find the right balance between cost, production efficiency and environmental considerations. Packaging consumption per tonne finished product at Orkla Foods was 112 kg in 2006. Glass accounted for the largest amount in terms of weight (47%), followed by paper (31%), plastic (13%) and metal (9%).

### **Energy**

Total energy consumption at Orkla Foods was 767 GWh in 2006, compared with 723 GWh in 2005. The increase can partly be ascribed to the incorporation of Krupskaya (39 GWh) and partly to higher energy consumption at Bakers in Norway (10 GWh). Energy consumption at other companies was approximately the same as or slightly lower than 2005. Several factories carried out energy-saving activities that generated appreciable positive results at factory level, as a result of which the increase for Orkla Foods as a whole was less than the 49 GWh contributed by Bakers and Krupskaya. In terms of consumption per tonne finished product, energy consumption at Orkla Foods rose from 0.82 MWh per tonne in 2005 to 0.83 MWh per tonne in 2006 (excluding Krupskaya). The increase per tonne is partly due to the rise in energy consumption at Bakers, and partly to lower production volumes at SladCo, and would have been higher if energy consumption per tonne had not been reduced at several Orkla Foods factories.

Examples of energy-saving activities carried out at Orkla Foods factories in 2006:

- At the Põltsamaa Felix factory in Põltsamaa, Estonia, a total upgrading of the factory's heating system reduced oil consumption by approximately 500 tonnes per year, or around 35% of the factory's oil consumption in 2005. The reduction is equivalent to 5,300 MWh.

- At Stabburet's two pizza factories in Stranda, Norway, work continued on the comprehensive energy-saving programme that has been in progress for the past two years. Activities in 2006 generated energy savings of about 3,000 MWh for the year. A large part of this reduction is ascribable to the optimisation of the factories' ventilation system.
- The Procordia Food factory in Eslöv, Sweden, carried out a project to utilise heat from the freezer compressors to heat washing water. 60,000 m<sup>3</sup> of water is heated per year, and the heat used is equivalent to a reduction of 2,533 MWh in energy consumption.
- At Idun Industri's factory in Rakkestad, Norway, an oil boiler was replaced by steam from a local waste incineration plant. Besides the fact that the steam from the waste incineration is cleaner energy, the higher efficiency factor of the new energy source has also reduced energy consumption by around 600 MWh. This is equivalent to around 20% of the factory's total energy consumption in 2005.
- At Abba Seafood's raw material storage facility in Kungshamn, Sweden, the refrigerator circuits in the facility were hooked up to a single common refrigerator plant. This has reduced energy consumption by about 340 MWh per year, equivalent to a decrease of approximately 10% in the storage facility's energy consumption in 2005.

### **Emissions and waste**

Most of the Orkla Foods factories have official licences for discharges, waste and noise. Some factories were granted new licences in 2006.

At the Krupskaya factory in St. Petersburg, Russia, a fat separator was installed in the outlet from the milk storage facility, which will reduce discharges of fat from the facility by 50%.

In 2006, wash water was discharged from the Panda factory in Vaajakoski, Finland, when a drain pipe broke. The wash water flowed into the rainwater drain instead of into the treatment plant. Necessary measures have been implemented.

Abba Seafood in Kungshamn, Sweden, replaced an oil burner in 2006 with a low-NO<sub>x</sub> burner. The new burner generates lower emissions of nitrogen oxides, which total 48 mg/MJ fuel. The burner, which is a combi-burner, also makes it possible to use other types of fuel, such as natural gas, biogas and propane.

Orkla Foods' emissions of carbon dioxide increased from 80,600 tonnes in 2005 to 87,200 tonnes in 2006, due to the inclusion of Krupskaya in the statistics. In terms of specific company performance, Põltsamaa Felix, Estonia, cut its carbon dioxide emissions by 1,100 tonnes by reducing its oil consumption, while Bakers and Stabburet in Norway increased their carbon dioxide emissions by 1,100 and 900 tonnes, respectively, due to higher oil consumption. At other companies, carbon dioxide emissions fell slightly or remained virtually unchanged.

Sulphur dioxide emissions totalled 55 tonnes in 2006, down 0.8 tonnes from 2005. In terms of company performance, sulphur dioxide emissions were substantially reduced at Põltsamaa Felix, Estonia due to considerably lower consumption of heavy oil, while Jästbolaget in Sweden, Stabburet in Norway and Procordia Food in Sweden all had slightly higher sulphur dioxide emissions in 2006 than in 2005 due to higher oil consumption.

The total volume of waste at Orkla Foods was 85,900 tonnes in 2006. Most of the waste was used in the production of feed (33,000 tonnes) and bio-energy (18,200 tonnes). 12,400 tonnes were utilised as fertiliser and 4,400 tonnes were incinerated. 7,800 tonnes consisted of sorted packaging that was sent for recycling. 7,200 tonnes of waste were sent to landfills. The factories continued their systematic efforts to improve their waste sorting procedures in 2006. Abba Seafood and Stabburet were among the companies that were most successful in increasing their sorting rate in 2006.

### **Transport**

Distributing raw materials and products has a significant environmental impact. In 2006 Bakers closed its factories in Arendal and Kristiansand, replacing them with a new bakery in Lillesand. As a result of this restructuring, the number of distribution routes was reduced from 19 to 14. In terms of kilometres, this was a reduction of 225,000 km per year.

### **The local environment**

Krupskaya in St. Petersburg, Russia, dug up and replaced around 20 m<sup>3</sup> of the ground around the factory, as earlier studies had shown that the soil was polluted with polycyclic aromatic hydrocarbons (PAH).

Procordia Food in Eslöv, Sweden, received four complaints from neighbours about a discharge of mashed potato powder. All the complaints concerned the same incident. Discharges of small amounts of mashed potato powder from the factory occur from time to time due to variations in raw materials or processing. Measures have been implemented to reduce these discharges.

### **Other matters**

HSE risk assessments were carried out during the year and updated in accordance with Orkla's risk management instructions.

## **CHALLENGES**

### **Health and safety**

The Lost Time Injury Frequency (LTIF) rate varies to a relatively large extent from one Orkla Foods company to another. The goal is for all companies to eventually achieve a LTIF rate of under 10. Intensive efforts are being made to reduce injury frequency, particularly in companies with high LTIF rates. The goal for 2007 is to achieve an average rate of 7 or less.

Active efforts are also being made to further reduce sickness absence. The goal for 2007 is to reduce the sickness absence rate from 5.7% to 5.1%.

Substantial amounts of ammonia are used as a refrigerant in the factories' big refrigeration and freezer plants. If an accident occurs, there is a risk that ammonia gas will leak out and cause injury. The factories are therefore designed in such a way as to minimise the risk of this type of accident. To maintain strong focus on safety, emergency drills are held regularly at factories where there are large amounts of ammonia.

### **Raw materials (including water), chemicals and packaging**

Factor inputs are the part of the value chain that has the greatest negative impact on the environment. It is therefore extremely important that we are able to utilise factor inputs as effectively as possible. In our production processes, the focus is on increasing yield from raw materials and ensuring the lowest possible percentage of wastage.

In order to reduce the use of packaging, active efforts are made to choose optimal packaging solutions for both existing and new products. The goal is to design packaging that provides adequate protection for the product with the lowest possible use of resources and the least environmental impact. Reducing the volume of packaging per quantity of finished product poses a challenge, since it is becoming increasingly common, for marketing reasons, to sell products in small packages (a smaller quantity of product per package).

### **Energy**

For both financial and environmental reasons, energy consumption must be reduced. Energy prices are rising steadily, and many production processes require growing amounts of energy, due to the use of smaller consumer packages and shorter production series. At the end of 2006, a general programme of activities was initiated to cut energy consumption at Orkla Foods, aimed at achieving a reduction of 2-5% per year. This work consists of making continuous operational improvements. Responsibility for identifying and implementing measures lies with the individual companies, but their efforts are supported by a dedicated team.

### **Waste and emissions**

In order to reduce emissions of carbon dioxide and sulphur dioxide, it is essential to curb energy consumption and switch to cleaner sources of energy.

The amount of discharges to water is closely linked to the yield from production processes. It is therefore extremely important, for both financial and environmental reasons, to promote good process management based on the lowest possible consumption of raw materials. Current efforts will continue in 2007.

The amount of waste from production must be further reduced in the years ahead. Several factories have invested in special waste facilities to rationalise the waste sorting process. Efforts to reduce and sort waste will continue in 2007.

### Transport

Distributing factor inputs and products entails significant environmental impacts. Orkla Foods companies seek to reduce the negative impact of transport, for instance by rationalising transport. An important contribution can be made to achieving this objective by optimising packaging to ensure that pallets and vehicles are utilised as effectively as possible. Some companies require carriers of finished products to have environmental certification.

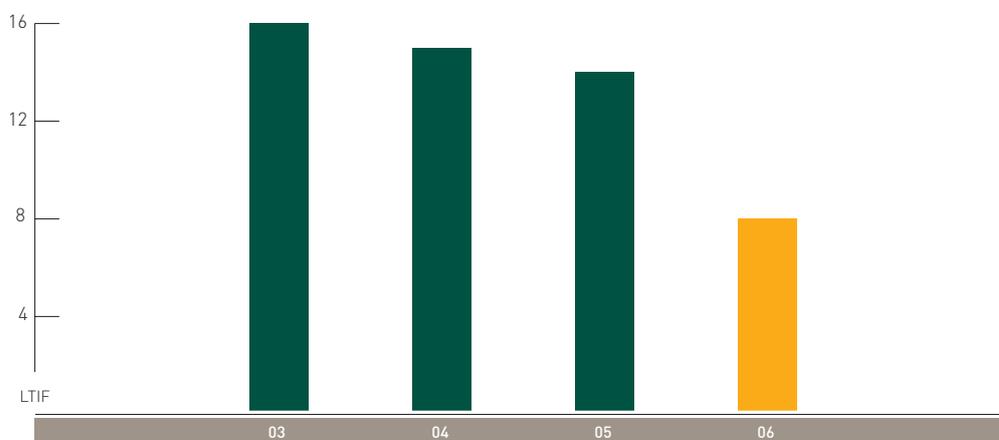
### The local environment

Complying with the noise limits imposed by the authorities poses a challenge for some factories. Evening and night-time limits are lower, and compliance with official limits has become increasingly difficult as evening and night-time production has been stepped up. Active efforts are being made to monitor noise and take necessary action.

## RESULTS 2003–2006

### Health and safety

OCCUPATIONAL INJURIES (LTIF<sup>1</sup>) AT ORKLA FOODS<sup>2</sup>

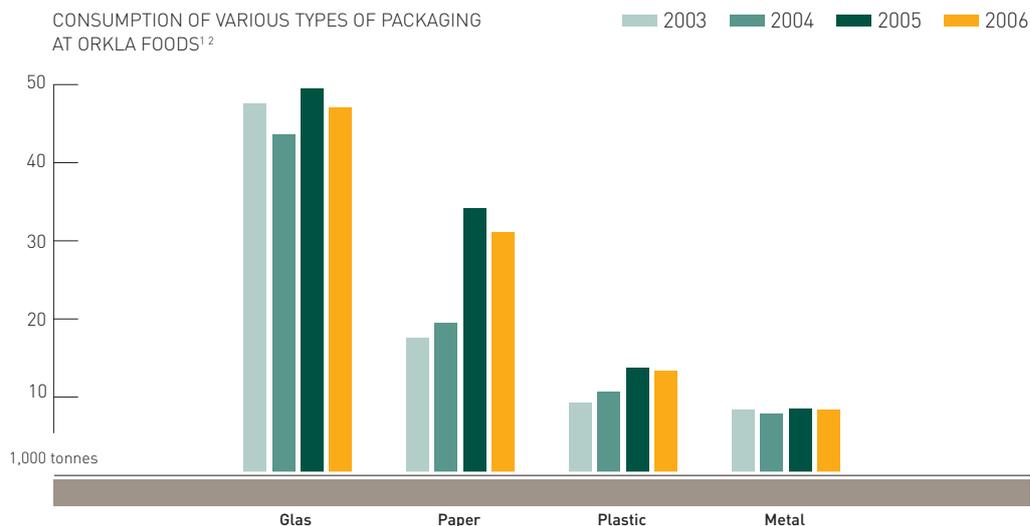


<sup>1</sup> Number of injuries leading to absence per million hours worked

<sup>2</sup> SladCo and Krupskaya are included in 2006

The Lost Time Injury Frequency (LTIF) rate, which represents the number of injuries leading to absence per million hours worked, declined from 16 in 2003 to 8 in 2006. The decrease from 14 in 2005 to 8 in 2006 is primarily due to the inclusion in the statistics of SladCo and Krupskaya, Russia, both of which have a large number of employees and low LTIF rates, but also due to focused efforts at the Abba Seafood, Felix Austria and Giuseppe factories, all of which succeeded in significantly reducing their injury frequency rates compared with 2005.

## Use of packaging



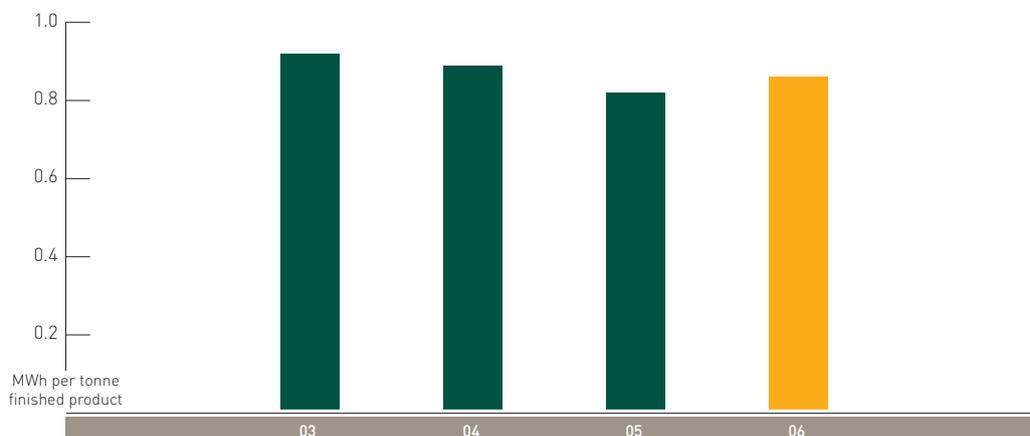
<sup>1</sup> Bakers and SladCo are included from 2005

<sup>2</sup> Krupskaya is included in 2006

The diagram shows the use of various packaging materials for Orkla Foods products. On average, approximately 112 kg of packaging material is used per tonne finished product, but packaging use varies greatly from one type of product to another. Glass and paper (including cardboard and corrugated cardboard) are the heaviest materials. The amount of glass used fell slightly in 2006 due to a decline in the manufacture of products packaged in glass. Paper has been used increasingly in the past few years, but in 2006 this trend was broken due to lower production volumes at SladCo. The use of plastic increased between 2003 and 2005, but remained more or less stable in 2006. The use of metal packaging remained at about the same level between 2003 and 2006.

## Energy

ENERGY CONSUMPTION AT ORKLA FOODS<sup>1,2</sup>



<sup>1</sup> Bakers and SladCo are included from 2005

<sup>2</sup> Krupskaya is included in 2006

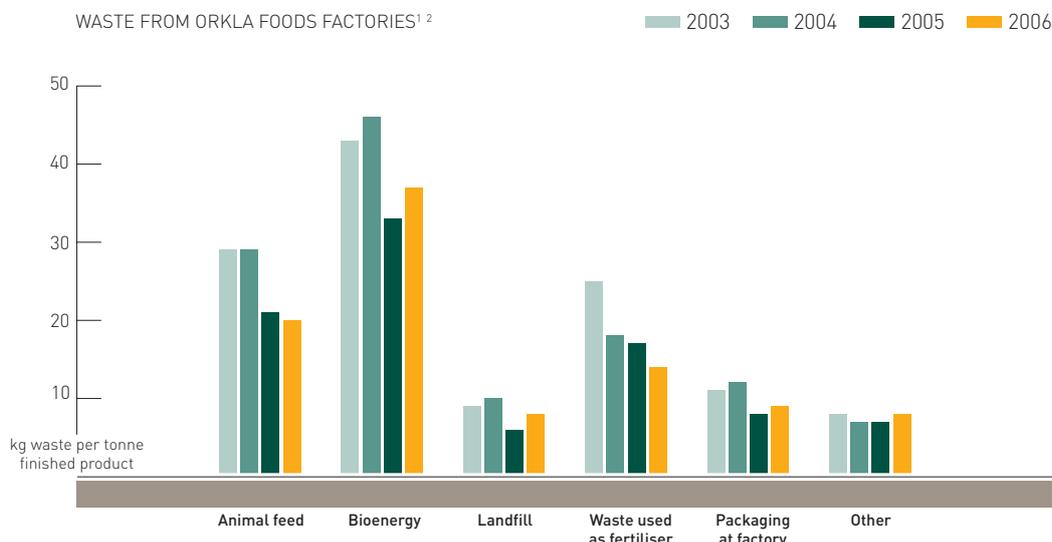
Energy consumption at Orkla Foods per quantity of finished product has declined in the past few years. This trend was broken in 2006, when energy consumption rose from 0.82 MWh to 0.86 MWh per tonne finished product. The increase in 2006 can primarily be ascribed to the inclusion in the statistics of Krupskaya, which consumes a relatively high amount of energy per tonne, but also to increased energy consumption per tonne at Bakers and lower production volumes at SladCo. For continuing business, energy consumption in 2006 was 0.83 MWh per tonne finished product. Given the increase in the production of value-added products and the fact that the quantity of product per package has been reduced for marketing reasons, considerable efforts are required on the part of the companies to prevent energy consumption per tonne from increasing. Põltsamaa Felix in Estonia is the company that made the greatest progress in reducing energy consumption per tonne. (The company cut its energy consumption from 1.74 MWh/tonne in 2005 to 1.12 MWh/tonne in 2006.)

The drop in consumption from 2004 to 2005 is mainly due to the inclusion in the statistics of SladCo and Bakers, both of which consume a relatively low amount of energy per quantity of finished product.

Energy consumption in 2006 totalled 767 GWh, compared with 723 GWh in 2004. For continuing business, energy consumption totalled 728 GWh in 2006.

## Waste

WASTE FROM ORKLA FOODS FACTORIES<sup>1 2</sup>



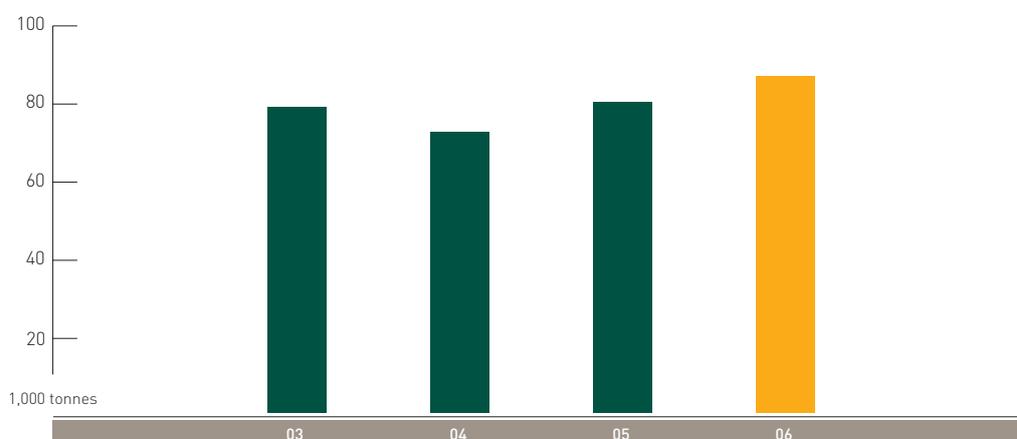
<sup>1</sup> Bakers and SladCo are included from 2005

<sup>2</sup> Krupskaya is included in 2006

In 2006 Orkla Foods factories generated around 86,000 tonnes of waste (equivalent to 96 kg per tonne finished product). Most of the waste consisted of organic residuals that were used to produce bio-energy (about 33,000 tonnes, or 37 kg per tonne finished product), animal feed (about 18,000 tonnes, or 20 kg per tonne finished product) and fertiliser (about 12,000 tonnes, or 14 kg per tonne finished product). Around 7,000 tonnes (8 kg per tonne finished product) were sent to landfills. All the factories ensure that used packaging is collected and sorted before being sent to recycling plants. From 2003 to 2006 the packaging collected increased by 5% per year (from 6,400 tonnes in 2003 to 7,800 tonnes in 2006).

## Emissions of carbon dioxide and sulphur dioxide

CARBON DIOXIDE EMISSIONS AT ORKLA FOODS<sup>1 2</sup>



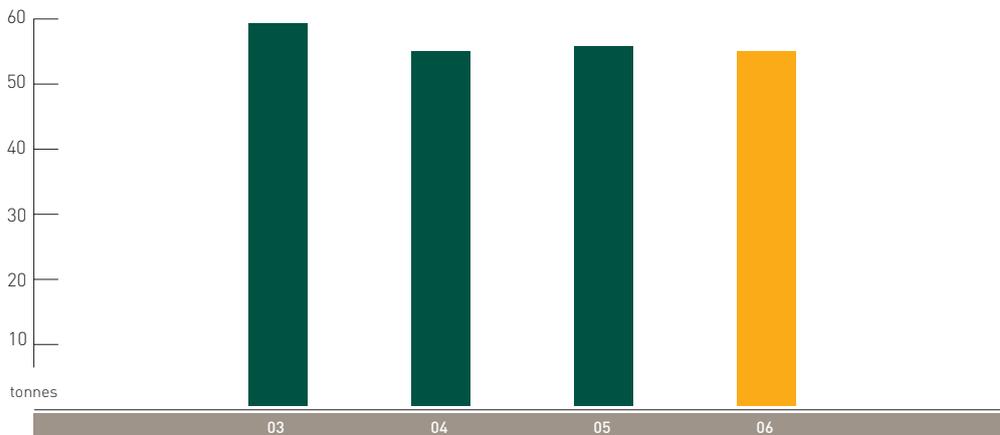
<sup>1</sup> Bakers and SladCo are included from 2005

<sup>2</sup> Krupskaya is included in 2006

Orkla Foods' carbon dioxide emissions are generated by burning oil, natural gas and propane. In 2003, emissions were slightly higher than normal (79,200 tonnes), due to the increased use of oil in the production of thermal energy at the Norwegian factories, because of high electricity prices. In 2004 emissions were back at a more or less nor-

mal level (72,700 tonnes). In 2005 carbon dioxide emissions rose to 80,600 tonnes due to the inclusion of SladCo and Bakers in the statistics. The rise in emissions from 2005 to 2006 (87,200) is ascribable to the inclusion of Krupskaya and higher consumption of oil at Bakers and Stabburet.

SULPHUR DIOXIDE EMISSIONS AT ORKLA FOODS<sup>1 2</sup>



<sup>1</sup> Bakers and SladCo are included from 2005

<sup>2</sup> Krupskaya is included in 2006

Emissions of sulphur dioxide are generated when oil is burned. In the period 2003-2006 emissions were highest in 2003, due to the high consumption of heavy oil at Põltsamaa Felix in Estonia. The increase from 55 tonnes in 2004 to 56 tonnes in 2005 is due to the inclusion of Bakers in the statistics as from 2005. The reduction in emissions from 2005 to 2006 (55 tonnes) is ascribable to lower consumption of heavy oil at Põltsamaa Felix. Neither SladCo nor Krupskaya use oil, which means that the inclusion of these companies does not affect Orkla Foods' sulphur dioxide emissions.



## ABOUT ORKLA BRANDS

Orkla Brands comprises companies operating in the detergents, personal care/cosmetics, snacks, confectionery, biscuits, textiles, dietary supplements and health products segments. Based on solid, long-standing traditions, the companies develop, manufacture and market leading branded consumer goods that have a strong identity and position, both in terms of consumer loyalty and among retailers. Orkla Brands products are the most marketing-intensive products manufactured by the Orkla Group.

Orkla Brands operates primarily in the Nordic region and has approximately 3,450 employees. This business area has a total of 15 production facilities in five countries. In 2006 Orkla took over Dansk Droge, Denmark. The company was incorporated into Orkla Brands under the Dietary Supplements and Health Products area, but is not covered by the environment report for 2006.

Eight Orkla Brands factories are certified in accordance with one or more ISO systems. Factories also comply with national statutory safety requirements in the field of health, the working environment and the external environment.

## ENVIRONMENTAL EVENTS IN 2006

### Health and safety

In 2006 Orkla Brands focused on improving the working environment at its factories by carrying out risk assessments, monitoring and auditing management systems, setting targets, conducting safety interviews and safety inspections at regular intervals, and carrying out external audits. Efforts to ensure that accidents, injuries and near-accidents are registered in the factories' non-conformance systems continued. Active use was made of the non-conformance systems to implement corrective measures.

As an important step in the process of ensuring a good, safe working environment, in the past few years Orkla Brands has carried out systematic safety audits in accordance with Det Norske Veritas (DNV)'s International Safety Rating System (ISRS). In 2006 the four largest snacks factories, Chips Finland, OLW in Sweden, KiMs in Denmark and KiMs in Norway, were audited. On the whole, the audits showed that there is potential for improvement in management systems for HSE work. On the basis of the audit results, plans of action were drawn up for each factory and will be implemented in 2007. New ISRS audits are also planned in 2007, for instance in the newly acquired Dansk Droge.

A serious occupational accident took place at the KiMs factory in Skreia, Norway, in December. The arm of an employee of a cleaning company hired by the factory was

caught on the chips line during cleaning. Despite swift intervention and optimal medical care, his hand had to be amputated. The Norwegian Labour Inspectorate and the police are investigating the incident.

There were no fatal accidents at any factories in 2006.

The Orkla Brands factories have an overall Lost Time Injury Frequency ((LTIF) rate, which is the number of injuries leading to absence per million hours worked, of 10.6 in 2006. This is higher than the targeted limit of 10. The rate varies substantially from one factory to another. Lilleborg Ello, Lilleborg Ski, Nidar and MöllerCollett are well below the limit. The snacks factories all have an LTIF of more than 10. The factories that have carried out ISRS audits have subsequently reported a marked drop in their injury frequency rate, and the snacks factories are expected to follow the same pattern.

The sickness absence rate at Orkla Brands in 2006 was slightly lower than the year before: 7.1% compared with 7.3% in 2005. The targeted reduction of 10 per cent was not achieved. The rate for most of the businesses remained relatively stable in relation to 2005. A higher sickness absence rate in some places may be related to ongoing restructuring processes, and particular attention has been focused on this aspect. The trend is otherwise that sickness absence is declining at the factories, but increasing among white-collar workers. This trend is being monitored closely, and new guidelines will be issued in 2007 to ensure even closer follow-up of persons on sick leave in Norway.

All the factories provide comprehensive, systematic HSE training for employees, and there was again considerable activity in this field in 2006. The factory in Ski, Norway, held two new HSE courses, and Nidar, Norway, carried out a 40-hour course on the working environment for management staff and health and safety officers. KiMs Norway held a major industrial safety exercise.

There was a fire at MöllerCollett's cod liver oil refinery in Oslo in August. Organic materials in one of the dust extraction units spontaneously ignited, resulting in the full turnout of the fire service. No one was injured, and the fire caused no risk to the refinery's surroundings or the external environment. The material damage was minor, but processing in the cod liver oil refinery had to be halted for three weeks in order to renovate the room. This caused no delivery problems.

### **Raw materials (including water)**

Nidar has focused on reducing its water consumption throughout 2006. Public utility water used for cooling purposes was replaced by water from an ice water plant. A campaign was also carried out to increase awareness of how each employee can contribute towards reducing water consumption. The sum result of these efforts was a decrease in consumption from 8.1 m<sup>3</sup> water per tonne produced in 2005 to 6.7 m<sup>3</sup> per tonne produced in 2006.

### **Energy**

Energy consumption at Orkla Brands totalled 217 GWh in 2006, compared with 224 GWh the previous year. This decrease was achieved in part through focused efforts at the Nidar factory in Trondheim where employees worked actively to reduce consumption of both electricity and thermal energy. As a result of these efforts, the factory's total energy consumption decreased from 32,200 MWh in 2005 to 30,100 MWh in 2006. Chips Finland installed a heat exchanger for recycling steam condensate from a heating furnace, thereby reducing oil consumption by approximately 25 m<sup>3</sup> per year.

### **Emissions and waste**

Eight of Orkla Brands' 14 factories operate under licence. In 2006 none of the factories exceeded their licence limits.

In 2006 the Lilleborg factory in Ski continued its long-term efforts to reduce the quantity of organic matter in the processing water that is discharged to the public sewage system. This work has produced results. The licence limit is 3.5 tonnes of oxygen consuming organic matter (measured in COD) per week, while the factory discharged less than 1.8 tonnes per week in 2006. Since 2005, the factory has reduced its discharges by 2 tonnes (92 tonnes were discharged in 2006, down from 94 tonnes in 2005). This decline

is due to a new solution for the reuse of wash water which also makes it possible to reduce consumption of chemicals to a certain degree.

Orkla Brands' emissions of carbon dioxide to air totalled 29,100 tonnes in 2006. This is more or less on a par with 2005, when emissions totalled 29,700 tonnes.

Emissions of sulphur dioxide to air totalled 5.3 tonnes in 2006. This is a reduction from 2005, when 5.6 tonnes were emitted. The reduction is largely due to Nidar's switch from oil to butane.

In the past few years, efforts have been made to put in place more systematic procedures for waste sorting at the Orkla Brands factories, and the percentage of waste that is sent to landfills has been reduced. In 2006 several of the factories concentrated on increasing production yield, thereby reducing waste. At Göteborgs Kex, Sweden, this has resulted in a 15 per cent drop in production wastage.

### **The local environment**

The site of Lilleborg's main warehouse facility on the Aker River in Oslo has been found to be polluted as a result of the former owner's operations. Lilleborg has been engaged in constructive dialogue with both the Norwegian Pollution Control Authority and later the County Governor's Environmental Protection Department about this situation. Based on environmental surveys and risk assessments carried out by the Norwegian Geotechnical Institute, measures were implemented in 2006, by moving roof drainage pipes, to ensure that the pollution does not spread. This matter has now been concluded.

Due to complaints from neighbours in 2006, KiMs Norge has taken steps to reduce noise. Measurements subsequently carried out show that this action has been effective. The factory has also received complaints from neighbours about the unpleasant smell of deep-frying fat, and alternative solutions were therefore examined in 2006. Investments in measures have been budgeted for and are scheduled to be carried out in 2007.

### **Other matters**

Lilleborg was the first Norwegian household product manufacturer to obtain certification under the Nordic eco-label, Swan, for one of its products, the liquid detergent Omo Color, in 1993. The percentage of Swan-labelled products sold by Lilleborg to grocery retailers has remained stable at over 45% in recent years, but declined in 2006 to 43%. Lilleborg still offers Swan-labelled detergents in the main grocery segments. In 2005 Lilleborg Professional launched a new range comprising as many as 22 Swan-labelled products, and in 2006 more Swan-labelled products for both the dishwashing and personal care segments were introduced on the professional market. Lilleborg also offers products recommended by the Norwegian Asthma and Allergy Association (NAAF). The percentage of NAAF-recommended products in the Lilleborg range remained stable at 11% in 2006, on a par with 2005.

Göteborgs Kex Sweden, Chips Finland and Topp Sweden offer several KRAV-labelled products. Nidar, Lilleborg and La Mote are members of the Ethical Trading Initiative. Several of the companies display the Green Dot on their products to indicate that they contribute towards financing the various material recycling companies.

A comprehensive employee opinion survey was carried out at Orkla in 2006. This type of survey is conducted every three years in order to shed light on the employees' work situation. The survey has high priority and is regarded as an extremely important tool for efforts to bring about improvements in all parts of the organisation. In 2007, improvement measures will be implemented on the basis of the survey findings.

During the year, HSE risk assessments were reviewed and updated in accordance with Orkla's risk management instructions.

## CHALLENGES

### Health and safety

The Lost Time Injury Frequency (LTIF) rate varies from one company to another, and is higher than the targeted limit of 10 at several companies. The goal for 2007 is to reduce the rate to under 10 at more companies.

Orkla Brands aims to further reduce its sickness absence rate. The goal for 2007 is to reduce the 2006 rate by 10 per cent. This will be achieved in part by intensifying efforts related to the Inclusive Workplace scheme in the Norwegian companies.

### Raw materials (including water), chemicals and packaging

Orkla Brands focuses on making optimal use of raw materials and on selecting the best raw materials in terms of quality, environment and health. All the Orkla Brands companies operate in accordance with Orkla's Code of Conduct. In addition to this code, several companies have drawn up a set of ethical guidelines for their suppliers. These guidelines set somewhat more specific environmental requirements, which will gradually be introduced for suppliers as from the first quarter of 2007.

In 2006 there was increased media focus, especially in Sweden, on the use of trans fat and hardened fat, particularly in biscuits. Orkla has focused actively on this issue for several years. Among other things, Göteborgs Kex eliminated trans fat in all its products in 2005, and in 2006 the company initiated a proactive campaign of 0% trans fat labelling in accordance with Danish legislation, which is among the strictest in the world in this field. Development work is continuing with a view to also replacing all hardened fat with vegetable oil. This work is progressing well, and several of the biggest brands already contain no hardened fat.

Lilleborg is constantly looking for ingredients that have the least possible adverse effects on health and the environment, and operates in compliance with the substitution requirement whereby dangerous products or substances must be substituted by something that is safe or less dangerous.

Orkla Brands is working on packaging development in several areas; for instance, the business area is represented in Emballasjedugnaden NOK, a cooperative project in which grocery suppliers, packaging producers and retailers have joined forces to motivate the players in the packaging chain to introduce their own control procedures to ensure packaging optimisation.

Lilleborg works systematically to reduce the quantity of packaging used for its detergents. The transition to refills and concentrated products has helped to make packaging reduction possible. After a steady decline in the quantity of packaging per wash during most of the 1990s, packaging quantities have increased slightly since the early 2000s due to the switch to a larger proportion of liquid detergents and non-reusable packaging that is easier to handle.

### Energy

Energy consumption must be reduced for both economic and environmental reasons. Energy prices continue to rise, and many production processes are increasingly energy-intensive, due to smaller consumer packaging units and shorter production series. Energy-saving activities are planned at several of the Orkla Brands factories in 2007. Among other things, the MöllerCollett factory in Oslo will seek to make optimal use of biofuel that is internally generated in the production process.

OLW aims to reduce the use of fuel oil, replacing it with liquefied petroleum gas (LPG) at its factory in Filipstad, Sweden.

### Emissions and waste

The factories that operate under licence closely monitor all emissions and discharges and strive to stay well within the authorised limits. The Lilleborg factory in Ski has set a specific target for 2007 of no more than 1.7 tonnes of oxygen consuming organic matter (measured in chemical oxygen demand (COD) per week.

Chips Finland expects to have to renew its emissions licence. The new requirements are not yet known, but will probably entail investments and conversions.

OLW Sweden will install an extra effluent filter in order to separate out potato shoots more effectively, thereby facilitating processing of effluents at the local treatment plant.

After use, Lilleborg's detergents and personal care products end up in the municipal sewage system. Lilleborg therefore systematically selects raw materials that have the least possible negative impact on the water environment.

Reducing product waste and production wastage is a challenge at Nidar, Göteborgs Kex and the Chips factories from both an economic and environmental viewpoint. Nidar has planned a wide range of activities in 2007 to increase production yield and reduce the amount of wastage. The goal is to reduce product waste by over 30 per cent. In 2007 Göteborgs Kex will continue its efforts to maximise yield.

MöllerCollett will consider reusing specific fat substances to produce concentrates and reduce the quantity of bleaching earth used in the process, thereby reducing production waste.

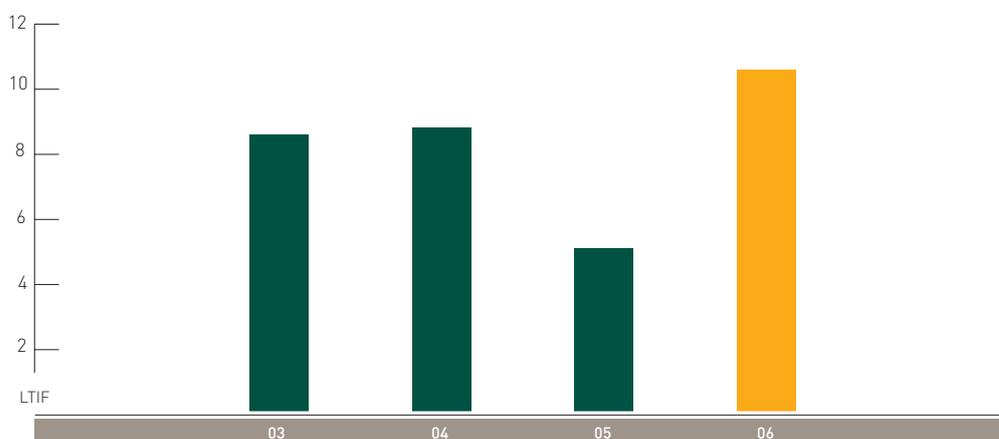
### The local environment

Several of the Orkla Brands factories that are located in or close to housing areas face challenges in terms of odours and noise, and are focusing on minimising the adverse effects on their local communities. KiMs Norge has specific plans to invest in an odour reduction plant.

## RESULTS 2003–2006

### Health and safety

OCCUPATIONAL INJURIES (LTIF<sup>1</sup>) AT ORKLA BRANDS<sup>2</sup>

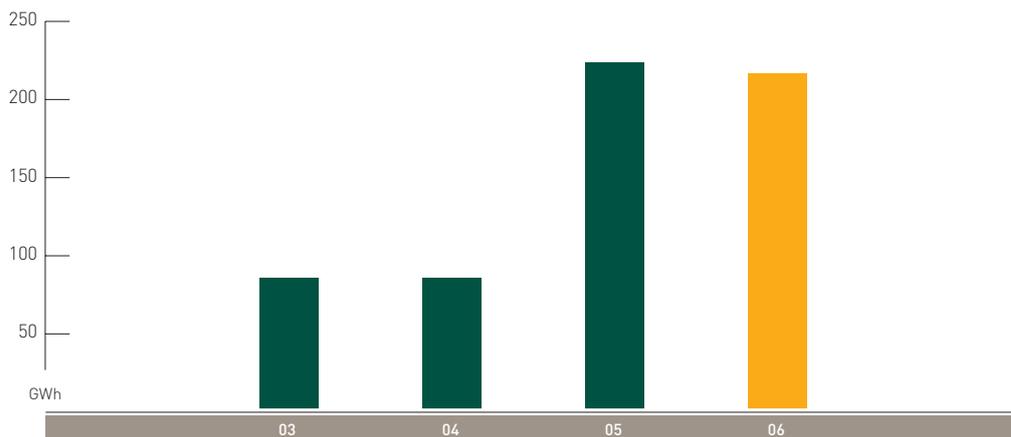


<sup>1</sup> Number of injuries leading to absence per million hours worked  
<sup>2</sup> Chips Norden is included in 2006

The LTIF rate (number of injuries leading to absence per million hours worked) was reduced from 8.6 in 2003 to 5.1 in 2005. The LTIF rate rose to 10.6 in 2006 due to the inclusion of Chips Nordic Region in the statistics. Generally speaking, the LTIF rate of Chips companies is higher than that of other Orkla Brands companies. The ISRS audits carried out in 2006 and subsequent improvement measures are expected to have as good an effect at Chips as in the other Orkla Brands companies.

## Energy

ENERGY CONSUMPTION AT ORKLA BRANDS<sup>1</sup>

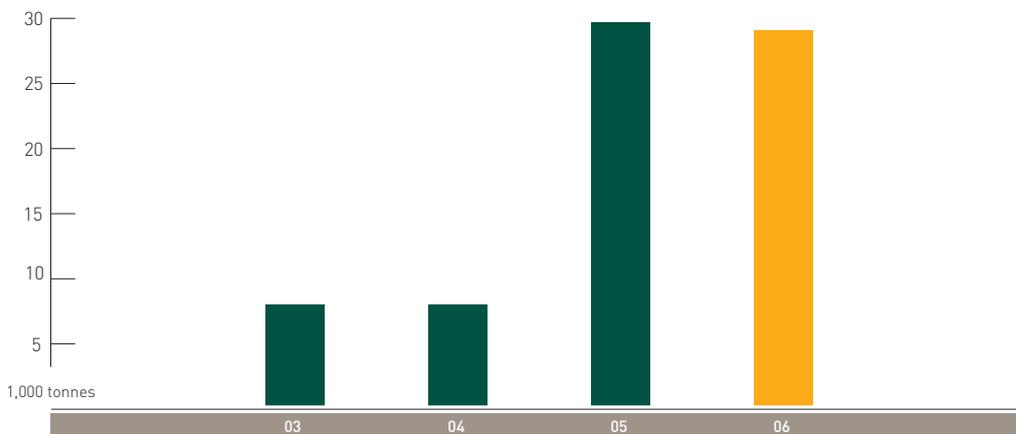


<sup>1</sup> Chips is included from 2005

Energy consumption rose to close to three times the level in 2005 when Chips was incorporated into the statistics. From 2005 to 2006, energy consumption was reduced by approximately 7 GWh as a result of active energy-saving efforts at several factories. Nidar Norway, for instance, succeeded in reducing its total energy consumption by 2.1 GWh from 2005 to 2006. Utslipp av karbondioksid og svoveldioksid

## Carbon dioxide and sulphur dioxide emissions

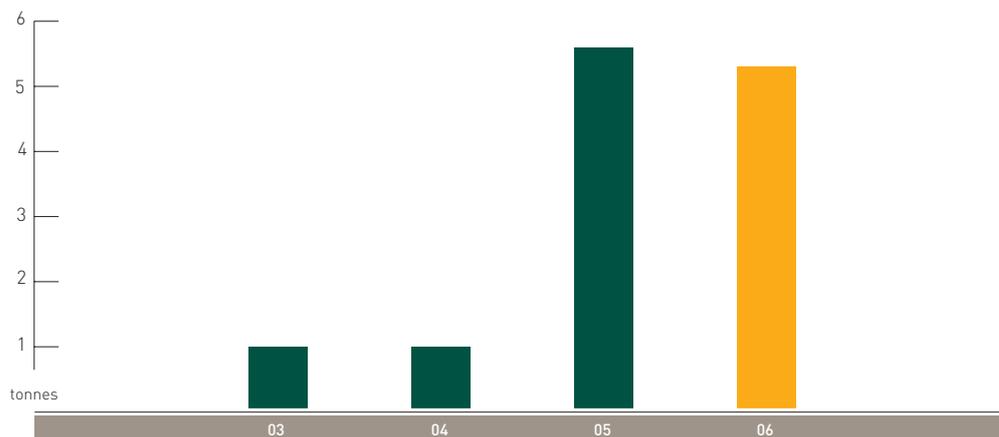
CARBON DIOXIDE EMISSIONS AT ORKLA BRANDS<sup>1</sup>



<sup>1</sup> Chips is included from 2005

Orkla Brands' emissions of carbon dioxide are generated by burning oil, natural gas, propane and butane. Emissions rose from 8 tonnes to close to 30 tonnes when Chips was included in the statistics in 2005. From 2005 to 2006, carbon dioxide emissions remained more or less unchanged.

SULPHUR DIOXIDE EMISSIONS AT ORKLA BRANDS<sup>1</sup>

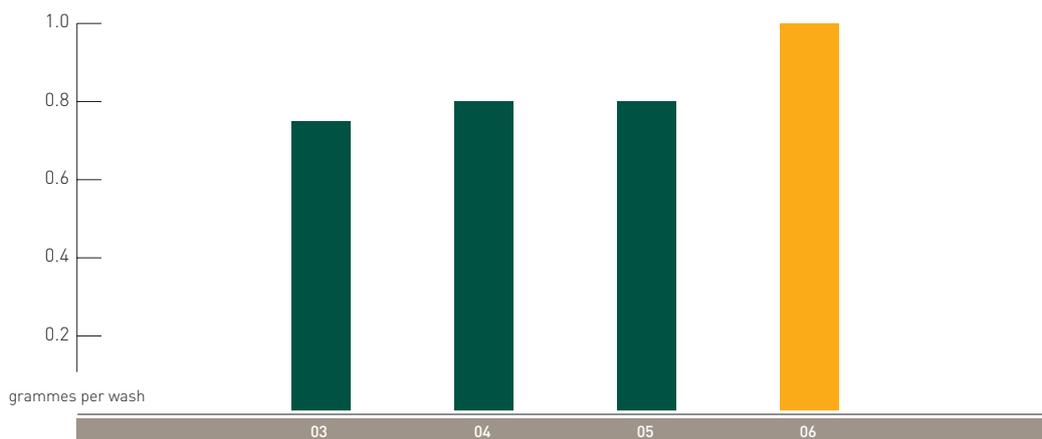


<sup>1</sup> Chips is included from 2005

Emissions of sulphur dioxide are generated by burning oil. Emissions rose from one tonne to 5.6 tonnes when Chips was included in the statistics in 2005. From 2005 to 2006, sulphur dioxide emissions decreased by 0.3 tonnes, largely due to the fact that Nidar reduced its oil consumption from 8,600 MWh to 1,400 MWh.

### Not readily degradable chemicals

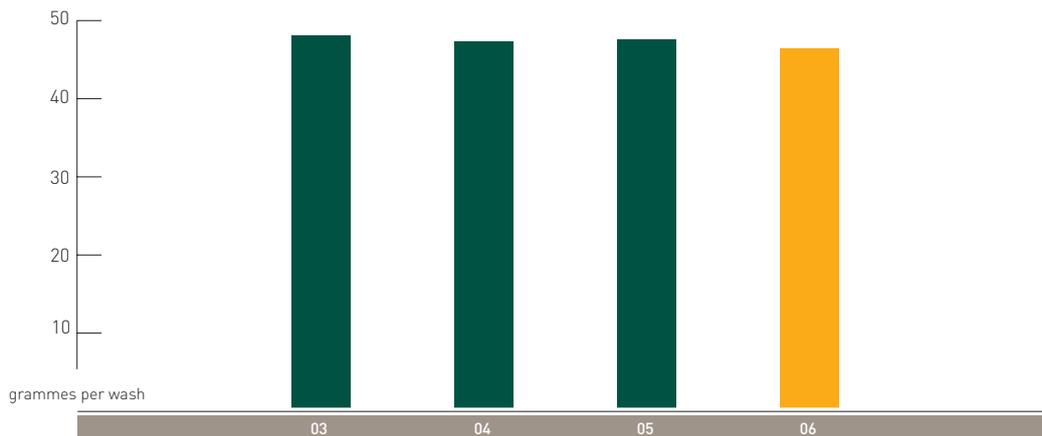
CHEMICALS THAT ARE NOT READILY DEGRADABLE  
PER WASH IN LAUNDRY DETERGENTS FROM LILLEBORG



From 1996 until 2003 the quantity of “not readily degradable chemicals per wash” in Lilleborg’s detergents has been reduced by over 50 per cent. From 2003 to 2006 the amount increased from 0.75 g per wash to 1.00 g per wash due to changes in product composition.

## Chemicals per wash

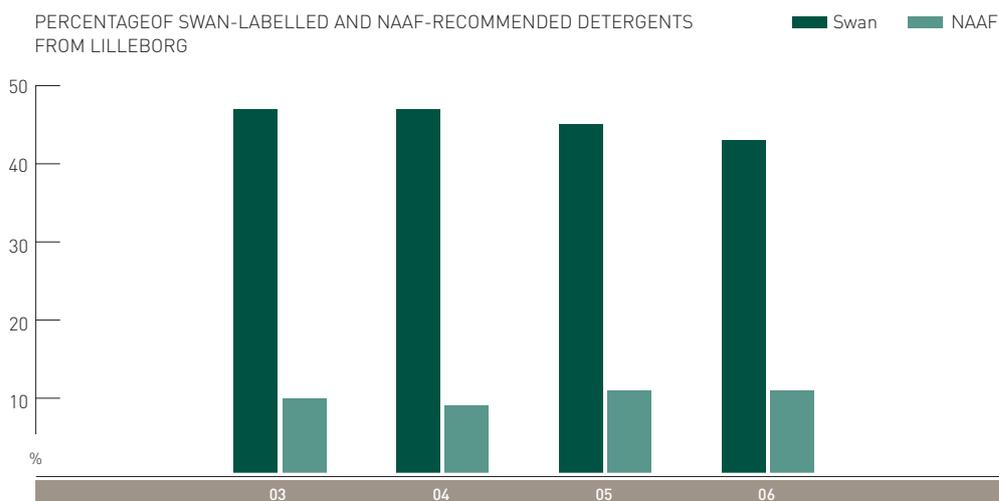
CHEMICALS PER WASH IN LAUNDRY DETERGENTS FROM LILLEBORG



Lilleborg monitors the quantity of chemicals per wash in the detergents it sells. This quantity was reduced from the previous year, largely due to the fact that although sales volumes of detergents in powder, tablet and liquid form increased from 2005 to 2006, the increase was greatest for powder and tablet detergents, which contain less chemicals per wash than liquid detergents.

## Percentage of Swan-labelled and NAAF-recommended detergents

PERCENTAGE OF SWAN-LABELLED AND NAAF-RECOMMENDED DETERGENTS FROM LILLEBORG



Lilleborg offers consumers eco-labelled and NAAF-recommended detergents. The percentage of Swan eco-labelled products in Lilleborg's product range has remained relatively stable since 1997. In 2006 it declined slightly from 45% to 43%. On the other hand, the percentage of Swan-labelled products for the professional market rose significantly.

More than 10% of Lilleborg's household detergents are recommended by the Norwegian Asthma and Allergy Association (NAAF). NAAF's recommendation is intended to help persons with allergies and hypersensitive persons find products that reduce the risk of an allergic reaction. The percentage of NAAF-recommended detergents has remained stable from 2003 to 2006.



## ABOUT ELKEM

Elkem is one of the world's leading producers of metals, alloys and materials based on naturally found minerals and ores. Its main products are aluminium, energy, silicon metal, special ferro-silicon alloys for the foundry industry, carbon and microsilica. Elkem has 3,200 employees and 17 production plants in Europe, North America, South America and Asia, in addition to several hydro-electric power plants and a widespread network of sales offices and agents in its main markets.

Elkem is making substantial investments in the solar cell industry. Efforts to establish industrial production of high-purity silicon metal for the solar cell industry were further intensified in 2006. In October 2006, the Board of Directors of Orkla ASA decided to build a production plant in Kristiansand at a total cost of NOK 2.7 billion. Work is also in progress on expanding the Saudefaldene hydropower plants and on construction of the anode factory in Mosjøen.

## ENVIRONMENTAL EVENTS IN 2006

### Health and safety

Health, safety and environment (HSE) is an integral part of all of Elkem's operations. Every factory has HSE action plans and focuses on reporting and dealing with non-conformances. Both action plans and security procedures are based on risk assessments.

Systematic audits have been implemented throughout the organisation. At every factory, audits and non-conformances must be followed up at daily work meetings and at regular management meetings. HSE statistics are reported on a monthly basis, and the HSE situation tops the agenda at all meetings.

Each factory ensures that information on HSE is provided to its employees as part of the training programmes. Several plants regularly distribute environmental status reports to employees, neighbours, official authorities, non-governmental organisations, etc. Elkem also meets regularly with the Norwegian Pollution Control Authority (SFT).

All Elkem factories are required to have an environmental licence. There were no serious cases of non-compliance with environmental licences or permits in 2006. Elkem experienced several minor discharges which were due to both equipment failure and operational irregularities. All such discharges are routinely reported to the authorities.

Health and safety are fundamental elements of the Elkem Business System (EBS). The goal is to provide a safe workplace where each employee leaves work without having

injured himself or any one else. Despite Elkem's focus on accident prevention, four serious accidents occurred in 2006 as a result of water coming into contact with liquid metal at the Thamshavn, Salten, Fiskaa Carbon and Pryor plants. The explosion at the Elkem Thamshavn plant (Norway) resulted in a fatal accident caused by burn injuries, and the explosion at Elkem Salten (Norway) in an eye injury.

### **Emissions and waste**

Carbon dioxide emissions are an inevitable consequence of Elkem's production processes. However, emissions of carbon dioxide and other greenhouse gases can only be reduced to a theoretical minimum by improving processes and operations.

Elkem's emissions of greenhouse gases in 2006 are equivalent to 1.94 million tonnes of carbon dioxide and account for approximately 80% of Orkla's total greenhouse gas emissions. Emissions are largely related to the carbothermal production of metals and alloys and the electrolytic production of aluminium. Most of Elkem's metal production is based on renewable hydropower generated close to the smelting plants. Compared with countries where energy production is based on fossil fuels, Elkem's production of this type of metal generates far lower greenhouse gas emissions.

In the production of ferrous alloys, the potential for reducing emissions per quantity of metal produced is in fact limited. Carbon dioxide is a necessary consequence of the process itself, which consists of breaking the bond between metal and oxygen in the raw material and binding the oxygen to carbon which is added in the form of coal and coke. Biocarbon is used to some extent as a reduction agent, since this can enhance the production process.

Since 1999 Elkem has reduced its sulphur dioxide emissions in Norway by more than 30 per cent, from around 5,500 tonnes to 3,700 tonnes in 2006. This cut was achieved through a combination of lower production of emission-intensive products and focus on use of low-sulphur coal.

To reduce the risk to employees posed by polyaromatic hydrocarbons (PAH) and emissions to air and water, the processing system has been changed at the Elkem Lista plant (Norway). A comprehensive programme of measures has also been implemented at the aluminium plants with a view to reducing the formation and emission of sulphur hexafluoride (SF<sub>6</sub>), which has a strong climatic impact.

There are many sources of waste, and Elkem has a long tradition of sorting and classifying waste. The amount of waste has decreased significantly in the past few years, and most of it is now recycled.

### **Raw materials and chemicals**

Elkem has focused on the content of sulphur and certain trace elements in most raw materials.

Conditions for the safe storage of raw materials and chemicals in tanks, silos, etc. are continuously monitored by means of internal and general audits.

### **Energy**

Elkem uses large amounts of energy. Much of the energy is hydro-electric power. Electricity consumption was reduced by about 10% in the past year, from 9.5 TWh in 2005 to 8.5 TWh in 2006, mainly due to a reduction of around 8% in production volumes.

In 2006 Elkem's own plants in Norway and Canada generated around 3.1 TWh of electricity. About 60% of the electricity was used in Elkem's own processes, while 40% was sold to external customers. Elkem's own production of electricity will be increased to around 3.6 TWh in 2008.

Substantial energy and environmental gains have been realised in the past few years through Elkem's own R&D work. As a result of various investments, the silicon smelter at the Elkem Thamshavn plant is now the largest, most efficient in the world.

## **Products and processes**

No single activity at Elkem brings about greater environmental improvements than long-term efforts to increase productivity.

Elkem products make an essential contribution towards promoting an environmentally friendlier world. Aluminium and silicon lessen the weight of vehicles, which in turn reduces the amount of energy required during transport.

Elkem is a technological and market leader with regard to the development and use of microparticles (Microsilica®) from the smelting process. The particles are added to concrete, building materials and fire-resistant products, helping to promote favourable environmental and safety solutions in a number of fields. Elkem's filter technology forms the basis for effective dust filtering systems in the processing industry all over the world.

Elkem is also making substantial investments in the solar cell industry (see focus article). Hydropower and solar cells generate energy without emitting greenhouse gases.

## **The local environment**

Emissions of dust, odours, sulphur dioxide, nitrogen oxides and noise from most of the Elkem plants affect the local environment, but current measurements show that no emissions in Norway exceed local air quality standards or other criteria issued by the Norwegian Pollution Control Authority (SFT). Elkem is particularly concerned to reduce emissions of PAH and certain trace elements in air and water.

At the Elkem Bremanger plant, Norway, a surveillance programme has been established to monitor polluting effects at Nordgulen, where the company established a sea-fill (that was in use from 1988 to 1993), and partly treated discharges to the fjord from the Silgrain process. This part of the fjord is systematically monitored. Tests carried out in 2006 showed that the water quality in the fjord continues to improve.

## **Other matters**

All Elkem factories are certified in accordance with the ISO 9000 quality standard. All the Norwegian factories operate in accordance with the ISO 14001 environmental standard, primarily on the basis of the Norwegian system of internal inspections. All the Norwegian factories also participate in the international Responsible Care environmental programme.

# **CHALLENGES**

## **Health and safety**

A common health, safety and environment system (FOKUS) is currently being implemented in the Elkem organisation, which includes a training programme for all employees. The focus is on management involvement, non-conformance management, job observation and training programmes.

To prevent future explosions due to water coming into contact with liquid metal, Elkem has introduced stricter routines, improved protective equipment and increased inspections of cooling water systems.

The involvement of management and individual follow-up will be further intensified to reduce sickness absence, (cf. the Inclusive Workplace Agreement in Norway).

## **Emissions and waste**

The Federation of Norwegian Industries and the Ministry of the Environment have entered into an agreement that commits the sector to a maximum emission limit of 13.5 million tonnes of CO<sup>2</sup> equivalents in 2007. Elkem does not anticipate any difficulty in meeting its share of the total commitment.

Together with other processing industries in Norway, Elkem has established a Processing Industry Environment Fund. Under an agreement with the Norwegian authorities,

the processing industry is committed to reducing emission levels by 5,000 tonnes of SO<sub>2</sub> per year by 2010. In 2001 Elkem paid approximately NOK 15 million in SO<sub>2</sub> tax without this having any proven environmental effect. Since the beginning of 2002, Elkem has paid a similar amount to the Environment Fund. The Fund gives priority to the emission reduction measures that will have the greatest effect in relation to the investment.

Elkem focuses on the sulphur content of various raw materials. The aluminium factories have installed SO<sub>2</sub> scrubbers and projects have been initiated to further improve sulphur removal at Elkem Carbon Fiskaa and Elkem Mosjøen in Norway.

Work is in progress on optimising and monitoring reductions in nitrogen oxide emissions from the ferrosilicon and silicon factories.

Elkem Bremanger and Elkem Carbon Fiskaa will monitor discharges to water and changes in sea water after the project has been completed.

The ferrosilicon and silicon factories are also focusing on reducing dust in the working environment.

### **Energy**

Elkem is a leading company in its sector as regards recovering energy from large smelting furnaces and producing metal with low specific energy consumption. Elkem Lista is planning several projects to recover thermal energy in order to utilise excess heat from exhaust. Elkem Carbon China also has projects under way aimed at improving energy utilisation.

### **New licences**

The company does not anticipate having to make any major investments to meet the authorities' requirements. Elkem's ferrosilicon and silicon factories in Norway will in any case apply to renew their emission licences. Elkem Solar received its operating licence from the Norwegian Pollution Control Authority in March 2007.

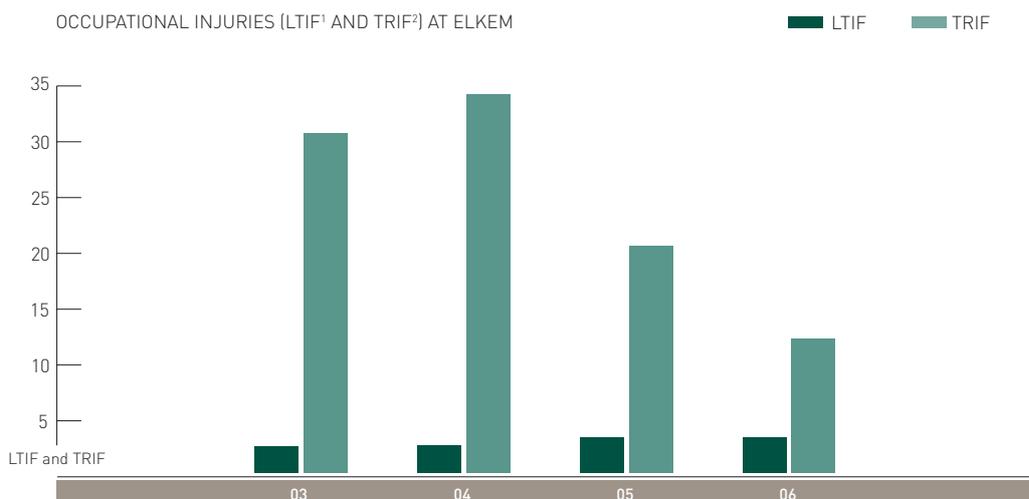
### **Other matters**

Elkem takes the view that work on HSE in its companies is at the same level or better than at similar production plants in the rest of the world.

However, the main challenge for Elkem in the near future is to consider whether it is possible to invest in developing tomorrow's technology and smelting plants on the basis of the technological expertise that is available today in its companies in Norway or in other high-cost countries.

## RESULTS 2003–2006

### Health and safety



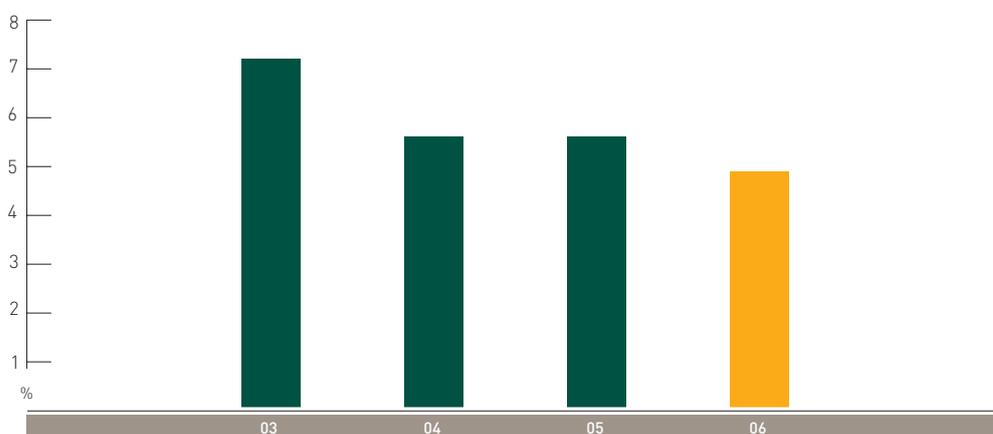
<sup>1</sup>LTIF = Number of injuries leading to absence per million hours worked

<sup>2</sup>TRIF = Number of injuries leading to absence or a need for medical treatment without absence per million hours worked

The LTIF rate (the number of injuries leading to absence per million hours worked) at Elkem was 3.5 in 2006. This is on a par with 2005 but slightly higher than in 2004, when the LTIF rate was 2.7. Elkem also measures the TRIF rate (the number of injuries leading to absence or a need for medical treatment without absence per million hours worked). As a result of various measures, the TRIF rate has been significantly reduced in recent years, from 34.3 in 2004 to 12.4 in 2006.

Despite Elkem's focus on preventing accidents, one fatal accident caused by burn injuries occurred at the Elkem plant in Thamshavn, Norway.

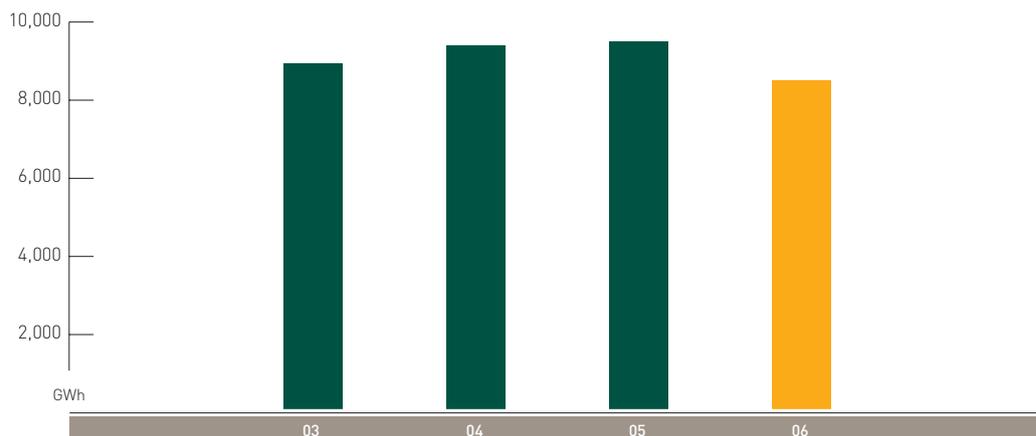
#### SICKNESS ABSENCE IN ELKEM'S NORWEGIAN OPERATIONS



The sickness absence rate in Elkem's Norwegian companies was 4.9% in 2006. As a result of continuous focus on preventive efforts, sickness absence has been reduced from 7.2% in 2003 to 4.9% in 2006. The goal is to further reduce sickness absence through strong management involvement and individual follow-up. Energi

## Energy

CONSUMPTION OF ELECTRICITY AT ELKEM

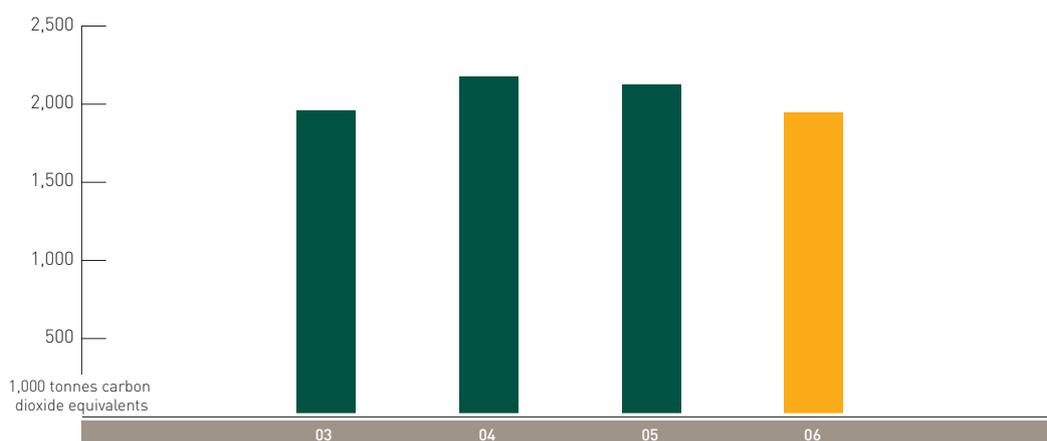


Elkem consumes large quantities of energy. Much of it is in the form of hydro-electric power. Electricity consumption has been reduced by approximately 10% in the past year, from 9.5 TWh in 2005 to 8.5 TWh in 2006, largely due to a reduction in production volume. Substantial energy and environmental gains have been realised in recent years as a result of Elkem's own R&D activities. Elkem is a leading company in its sector with respect to recovering energy from large smelting furnaces and producing metal with low specific energy consumption.

In 2006 Elkem produced approximately 3.1 TWh of electricity itself in Norway and Canada. Approximately 60% of this electricity was used in Elkem's own processes, while 40% was sold to external customers. There are plans to increase Elkem's own electricity production to around 3.6 TWh in 2008.

## Emissions

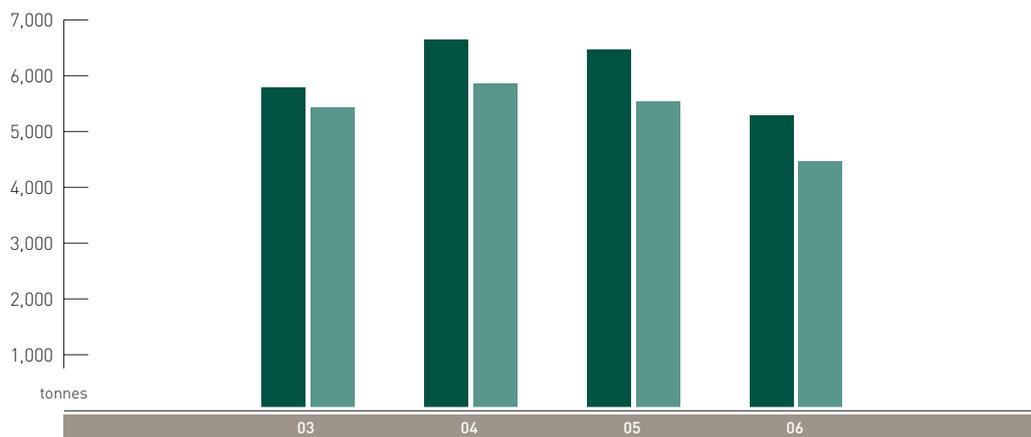
GREENHOUSE GAS EMISSIONS AT ELKEM



Production of carbon dioxide and other greenhouse gases is an inevitable consequence of Elkem's production. Emissions of greenhouse gases in 2006 were equivalent to approximately 1.94 million tonnes of CO<sub>2</sub> and accounted for around 80% of Orkla's total greenhouse gas emissions. Emissions are largely linked to carbothermal production of metals and alloys and to electrolytic production of aluminium. Most of Elkem's metal production is based on renewable hydro-electric power that is produced in the proximity of the smelting plants. The Federation of Norwegian Industries and the Ministry of the Environment have entered into an agreement that commits the sector to a maximum emission limit of 13.5 million tonnes of CO<sub>2</sub> in 2007. Elkem does not anticipate any difficulty in meeting its share of the total commitment.

EMISSIONS OF SULPHUR DIOXIDE AND NITROGEN OXIDES AT ELKEM

■ Sulphur dioxide ■ Nitrogen oxides



Elkem's total SO<sub>2</sub> emissions declined continuously between 2004 (approximately 6.65 thousand tonnes SO<sub>2</sub>) and 2006 (approximately 5.28 thousand tonnes SO<sub>2</sub>). Since 1999, Elkem has reduced SO<sub>2</sub> emissions in Norway by more than 30%, from about 5,500 tonnes to 3,700 tonnes in 2006. The decline is due to a combination of a reduction in the production of emission-intensive products and focus on using coal with low sulphur content. All the aluminium factories have installed SO<sub>2</sub> scrubbers and projects have been initiated to further improve sulphur removal at several smelting plants.

The trend for emissions of nitrogen oxides is similar to that for SO<sub>2</sub> emissions.



## ABOUT SAPA

Sapa develops, manufactures and markets value-added profiles, profile-based building systems and heat transfer strip in aluminium. The business concept is based on close cooperation with customers, which are mainly found in Europe, North America and Asia. The largest customer segments are the construction, transport, automotive and engineering industries, and home and office. The company has approximately 9,000 employees and production plants in 13 countries in Europe, the USA and China.

## ENVIRONMENTAL EVENTS IN 2006

### Health and safety

At Sapa, work on health, safety and the environment (HSE) is an integral part of overall activities. Twice a year, the HSE officer carries out a review and an evaluation of whether HSE activities and the way they are organised function satisfactorily. HSE figures are reported monthly and the HSE situation tops the agenda at management meetings and daily production meetings. It is also discussed at meetings of the Board of Directors of Sapa AB and meetings of the executive management.

Plans have been drawn up for risk assessments and risk analyses. Employees receive regular training on HSE through programmes in Genesis, which is Sapa's adapted version of the Toyota Production System. Various committees have been established which meet regularly to promote awareness of health and safety issues.

A tragic accident occurred when a maintenance worker collided with a bulldozer while cycling on a factory site in Lichtervelde, Belgium. This fatal accident was a serious wake-up call for many Sapa employees.

There were no other serious accidents at Sapa in 2006.

For Sapa as a whole, there was a positive decline in occupational injuries in 2006. The LTIF rate (the number of injuries leading to absence per million hours worked) dropped from 21.2 (2004) to 14.7 (2006). At nine factories, the LTIF rate was below the average for the European Aluminium Association, which is 8. Three factories reported an LTIF rate of over 30. Sapa's vision is to achieve an LTIF rate of zero.

All factories reported near accidents, which have been investigated and will be studied in further detail.

The sickness absence rate was 3.7% in 2006, which is a slight decline compared with

the previous year. A plan will be drawn up to record the pattern of sickness absence in each country and obtain an overview of what each company is doing to reduce sickness absence. Measures will also be identified to improve the situation even further.

Many factories are installing new machinery to reduce production noise. Installing various types of screening around especially noisy machinery has proved effective.

### **Raw materials and chemicals**

At most factories, Sapa's suppliers must be able to prove that they work according to established environmental management systems. Suppliers of powder paints must use powder that does not contain TGIC<sup>1</sup> (hardener) or lead. Sapa has also informed all suppliers of scrap aluminium that their products must not contain oil or be radioactive.

All chemical tanks are surrounded by containment barriers to prevent leakage to the soil and environmental damage.

### **Energy**

Sapa consumes large quantities of energy. Total consumption of electricity and thermal energy was more than 1,000 GWh in 2006. 51% of energy consumption was electricity, 45% was thermal energy from fossil fuels and 4% came from district heating.

Sapa Heat Transfer Sweden saved 4 per cent electricity and 25 per cent heating (calculated in terms of MWh per tonne produced) in 2006. The factory takes part in a programme headed by the central authorities which exempts the factory from tax (SEK 5/MWh) on process-related electricity consumption. The requirement for participation in this programme is to have a certification system for energy and to report on the activities and measures that are initiated to achieve a reduction in energy consumption equivalent to the tax exemption.

The installation of regenerative burners in some factories has proved to reduce gas consumption by up to 20 per cent.

### **Emissions and waste**

Emissions of sulphur dioxide from fossil fuels and metallurgical processes have been reduced from approximately 48 tonnes in 2003 to 27 tonnes in 2006 (based on data from ten entities that report on this area). This is mainly due to a decline in the use of materials that contain sulphur.

Sapa Heat Transfer in Sweden has installed a cooling system in connection with the process for re-smelting recycled aluminium products. This has been done to reduce the amount of dust and increase the amount of aluminium that can be recovered from slag. Sapa Heat Transfer has also installed nitrogen gas in all smelting furnaces to eliminate odour problems.

Water that is cleaned through a reverse osmosis process is used as washing water in the preliminary process prior to anode oxidation. This reduces water consumption and the amount of waste water at Sapa Profily, Slovakia.

Sapa Profiles Inc. in the USA uses pigging systems to wash the inside of pipes and thereby reduce the quantity of solvents. Closed loop liquid systems are also used to reduce the amount of chemical waste.

Industrial waste water from certain factories contains relatively high levels of soluble salts, such as sodium chloride and phosphate, that can lead to serious problems in the sewage system. Several measures have been implemented to reduce this risk.

Chromium and nickel pollution have been found in groundwater in surveys carried out at Sapa Aluminium in the Netherlands. Quantifiable measures have been implemented, but the authorities have nevertheless requested further investigations to estimate the extent of the pollution. Sapa Profiles in France has also received requests from the authorities to carry out analyses of the soil in the area around the factory.

<sup>1</sup> TGIC = triglycidyl isocyanurate

Approximately 93% of the raw materials that are purchased become finished products. The total amount of waste in 2006 was approximately 37,000 tonnes, of which 44% was recyclable and 48% was classified as hazardous waste.

Improvements in waste management at Sapa Heat Transfer in Sweden have reduced disposal costs per tonne by 11 per cent.

### **Transport**

Most business areas do not have a transport policy. In Sweden, all transport suppliers are certified according to the ISO 14001 standard or have begun the process of achieving certification. Sapa Building System UK has taken the initiative to use diesel transport that meets the EU specifications according to the Euro IV standard. Sapa has also developed its own standards for calculating the environmental impact of transport.

### **The local environment**

Eight factories have received complaints from neighbours relating to noise, odours or dust pollution. The factories have limited the use of night shifts and have taught all truck drivers how to reduce noise levels.

### **Products and processes**

New products with special environmental properties have been developed for the automotive and building markets. Product development at Sapa Heat Transfer in Sweden focuses on materials that tolerate high temperatures in order to meet the requirements of future emission regulations in the automotive industry. Sapa Heat Transfer also focuses on meeting the requirements regarding maximum levels for heavy metals in all products pursuant to the RoHS Directive<sup>2</sup>.

### **Other matters**

Most of Sapa's factories are required to have environmental licences. No serious variances from the environmental licences or permits were reported at Sapa in 2006. Most of Sapa's factories are certified according to the ISO 9000 standard. Ten of the largest factories are also certified according to the ISO 14001 or EMAS environmental standards.

## **CHALLENGES**

### **Health and safety**

Sapa's overarching goal is to achieve a zero LTIF rate. The first step is to reduce the LTIF rate to at least the same level as the average for the European Aluminium Association (EAA), which is 8. All units will receive monthly statistics that compare the LTIF rate for Sapa units in relation to the EAA average for the industry as a whole.

Sapa's HSE policy has been amended in order to emphasise the responsibility of the managing director of each company for ensuring safety. With assistance from Elkem and through various training programmes, working groups will ensure that HSE continues to be a top priority in 2007. The goal is to build an HSE culture at all factories, thereby reducing the acute risk events that lead to damage and injury, and to further improve the conditions for achieving the safety targets.

Areas where moveable equipment and pedestrians are present at the same time have been found to be high risk areas. Many factories will draw up internal traffic plans and clearly mark indoor and outdoor pedestrian zones.

All factories ensure that training is provided and driving licences are issued for relevant personnel before they are permitted to use the most hazardous machinery. If updated tests or examinations are necessary, they are carried out.

There are plans to conduct a survey of sickness absence in each country to find out what each company is doing to reduce sickness absence and how conditions can be improved.

<sup>2</sup> RoHS Directive = legislation concerning the use of hazardous substances in electrical and electronic equipment.

## **Energy**

Many measures have been implemented to improve the utilisation of resources, and this has had a significant impact on energy consumption at Sapa. Sapa Heat Transfer Sweden aims to reduce energy consumption by approximately 8 GWh per year by making certain minor investments. All the energy purchased by Sapa Heat Transfer Sweden was environmentally approved in 2006. This means that production of the energy did not lead to emissions of fossil carbon dioxide.

Several factories will start using oil with lower sulphur content and low-NOx burners in 2007.

## **Emissions and waste**

The flux material that is used in the cleaning process for smelted aluminium usually contains chloride ions. New, stricter regulations have been introduced in Sweden and elsewhere for waste that is delivered to landfill sites. This may create problems in disposing of metal waste.

Sapa Profily Slovakia will modify its cooling system in 2007 and remove the CFC-113 cooling medium in the coolers. Pursuant to national legislation, the deadline for phasing out the old cooling systems is 2010.

Sapa Heat Transfer Sweden will install a centrifuge system to reduce the quantity of liquid oil waste and enable the recycling of oil emulsion in the heat rolling process.

## **Transport**

Sapa Profiles Inc. USA plans to increase allowances for employees who car-pool in order to reduce the number of people who drive to work alone.

## **Licences**

A couple of factories will have to renew their environmental licences in 2007. This will entail investments that will contribute to reductions in noise and pollution to air, the management of waste sent to landfills, the treatment of waste water and the management of equalising basins. Most of the factories must comply with the EU Integrated Prevention Pollution Control Directive (96/61/CE). This affects the terms of the licences.

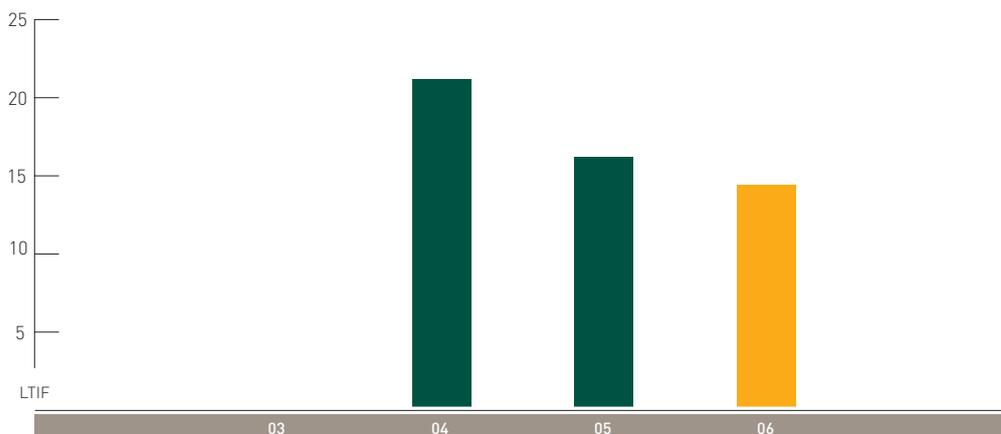
## **Other matters**

Sapa Profiles Inc. USA intends to increase the use of online conference calls to reduce travel.

## RESULTS 2003–2006

### Health and safety

OCCUPATIONAL INJURIES (LTIF<sup>1</sup>) AT SAPA



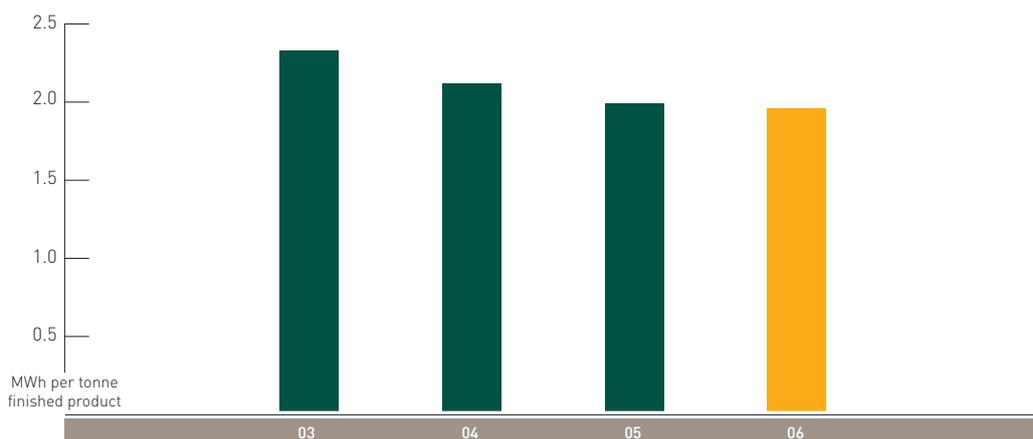
<sup>1</sup> Number of injuries leading to absence per million hours worked

The LTIF rate (number of injuries leading to absence per million hours worked) has dropped from 21.2 in 2004 to 14.4 in 2006. At nine factories, the LTIF rate was below the average of 8.0 for the European Aluminium Association (EAA). Three factories reported an LTIF rate above 30. All enterprises will receive monthly statistics that compare the LTIF rate for Sapa companies with the EAA average for the industry as a whole. Sapa's vision is to achieve a zero LTIF rate.

Despite Sapa's focus on preventing accidents, there was one fatal accident when a maintenance worker collided with a bulldozer while cycling on the factory site at Lichtervelde, Belgium.

### Energy

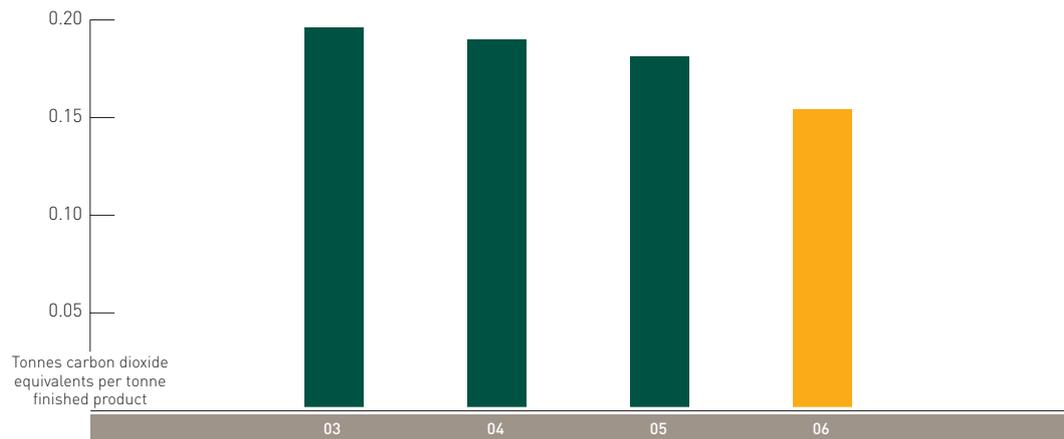
ENERGY CONSUMPTION AT SAPA



Total consumption of electricity and thermal energy at Sapa was more than 1,000 GWh in 2006. 51% of energy consumption was in the form of electricity. As a result of various energy-saving measures and investments, it has been possible to continuously reduce energy consumption per tonne finished product from about 2.3 MWh to about 2.0 MWh in the period 2003-2006. Utslipp av klimagasser og svoveldioksid

## Emissions of greenhouse gases and sulphur dioxide

GREENHOUSE GAS EMISSIONS AT SAPA<sup>1</sup>



<sup>1</sup> Not all Sapa factories are included in 2003

Emissions of greenhouse gases have also been significantly reduced in the period 2003-2006. Specific emissions have dropped from approximately 0.20 (2003) to 0.15 (2006) tonnes of CO<sub>2</sub> equivalents per tonne finished product. Emissions of sulphur dioxide from fossil fuels and the metallurgical processes in the ten factories that register SO<sub>2</sub> emissions have been reduced from about 48 tonnes in 2003 to 27 tonnes in 2006.



## ABOUT BORREGAARD

Borregaard's unique competence and long-term focus on wood-based chemicals has positioned the company as the world's biggest player in the field of lignin-based binding and dispersing agents and a global leader in selected segments of the speciality cellulose market. The manufacture of vanillin, yeast products and bio-ethanol ensures high utilisation of raw materials and provides a platform for a broader product portfolio, including ingredients for food products. Borregaard also holds attractive positions on the electric power market and as a supplier of fine chemicals for the pharmaceutical industry. The company has 11 production plants in 11 countries and its own sales offices in the most important industrial markets in Europe, Asia, America and Africa. Borregaard has 1,700 employees.

## ENVIRONMENTAL EVENTS IN 2006

### Health and safety

For Borregaard as a whole, the LTIF rate (number of injuries leading to absence per million hours worked) was 9.5 in 2006. This is a slight increase compared with 2005, when the LTIF rate was 9.1. Four plants had zero absence due to injury, while six plants reported an LTIF rate of more than 10. At the Sarpsborg plant in Norway, where half of Borregaard's employees work, the LTIF rate was 5.1. Borregaard now also measures the TRIF rate (the total number of injuries leading to absence or a need for medical treatment without absence per million hours worked). For Borregaard as a whole, the TRIF rate was 24.2 in 2006, which was slightly lower than the previous year.

No fatal accidents or accidents leading to serious, lasting injury to employees were registered in 2006.

The sickness absence rate at Borregaard's Norwegian companies was 7.7% in 2006, around one percentage point higher than in previous years. Sickness absence at Borregaard Switzerland was 2.7% in 2006. This was slightly lower than in 2005, when the sickness absence rate was 3%. Most of Borregaard's other units reported low sickness absence in 2006.

### Energy

Total energy consumption for all Borregaard's units was almost 3.3 TWh in 2006, approximately 3% higher than the previous year. Consumption of thermal energy, which accounts for about 74% of total energy consumption, is based on fossil fuels, biofuel and the utilisation of process and waste heat from its own and neighbouring factories.

Energy saving is one of Borregaard's highest environmental priorities and energy management is an integral part of the company's HSE activities, especially because reduced energy consumption will help to reduce oil consumption since marginal and top-load energy supplies come from oil or fossil fuel sources. Energy saving programmes have resulted in significant energy gains over several years. At Borregaard Norway, energy saving projects helped to reduce energy consumption by approximately 65 GWh in 2006. This is equivalent to 6,500 tonnes of oil.

Despite extensive energy saving measures, oil consumption increased in 2006. This was due to a rise in production, an increased degree of processing and the loss of waste heat from the sulphuric acid factory in Sarpsborg, which was closed down in 2005. The environmental investments currently in progress will contribute to lower consumption and an increased supply of biofuel.

However, specific energy consumption per solid cubic metre timber has been reduced somewhat in the last four years.

### **Emissions**

Borregaard works continuously on a number of projects aimed at reducing emissions to air and water of substances that have an impact on the environment.

The Borregaard factories in Norway and Switzerland both had relatively high emissions of organic matter in 2006. In Norway, Borregaard was asked by the authorities to change the operating parameters for its biological treatment plant for a few months. This led to higher values for organic matter (COD). The treatment plant is now being operated in the ordinary way and emissions are gradually being reduced in step with the implementation of environmental investments.

The Swiss factory had problems throughout the year with unstable production processes, which led to higher emissions to air and water. A comprehensive action plan has been implemented to reduce emissions, with the help of external experts. Emissions to air (SO<sub>2</sub>) were reduced towards the end of the year.

At the Borregaard factory in Sarpsborg, there were two regrettable accidental discharges to water in 2006. In March there was a discharge of fuel oil into the River Glomma from a filling pipe between a tanker and a storage tank. Some of the oil was collected at the quay, but approximately 8 m<sup>3</sup> ran down the Glomma and harmed a number of seabirds. Borregaard contributed to a rehabilitation project for oil-damaged birds.

In November 2006 an accident led to a discharge of 4.1 kg of mercury into the River Glomma from a treatment plant for leakage water from the chloralkali factory.

Investigations carried out by external experts did not find any serious environmental damage resulting from the discharges to the River Glomma. Nevertheless, Borregaard deeply regrets these events. The company has carried out new risk assessments, intensified monitoring and operating procedures and installed new equipment to prevent such accidents in future.

All incidents that exceeded the statutory and licence specifications have been reported to the authorities.

### **Products from natural, renewable raw materials**

Most of Borregaard's wood-based products, i.e. speciality cellulose, lignin products, vanillin, yeast products and bio-ethanol, are themselves environmentally sustainable and interesting alternatives to products based on non-renewable materials.

Calculations and life-cycle analyses for certain products also confirm that Borregaard's concept for the use of timber as a raw material is sustainable and environmentally advantageous, even when the company's energy consumption and production factors are taken into account. The main example is the use of lignin products in concrete, which makes it possible to reduce the water and cement content of the concrete without affecting its quality or strength. This leads to a reduction in energy consumption and, not least, lower CO<sub>2</sub> emissions from cement production. Global CO<sub>2</sub> savings are estimated to be 3-4 times higher than emissions resulting from the company's produc-

tion of these products. Borregaard is the world's largest manufacturer of lignin-based products and has factories in many countries in Europe, America and Africa.

### **Management systems**

Most of Borregaard's units are certified according to the ISO 9001/9002 quality standards. Several of the major factories, such as Borregaard Sarpsborg and Borregaard Switzerland, are also certified according to the ISO 14001 environmental management standard. Borregaard has pledged to conform to the guidelines laid down in the voluntary international environmental programme Responsible Care.

## **CHALLENGES**

### **Health and safety**

Sickness absence at Borregaard's Norwegian companies increased from 2005 to 2006. To counteract this, the companies will intensify their efforts within the framework of the Inclusive Workplace (IA) Agreement.

Systematic efforts are made to increase safety and reduce injuries. Injuries that do not lead to absence are also registered and followed up in order to identify and reduce factors that may constitute a safety or injury risk. Targets have been set for improving injury rates (LTIF and TRIF).

A safety forum has also been established comprising representatives from all Borregaard companies so that they can learn from each others' experience and coordinate measures in this area. The evaluation criteria for managers include HSE-related criteria.

### **Natural raw materials**

Borregaard's operations are largely based on natural, renewable raw materials. The high degree to which Borregaard utilises timber is important in itself from the resource point of view. Many of Borregaard's products are a good alternative to products based on non-renewable fossil raw materials.

As far as possible, Borregaard wishes to give priority to timber in its own vicinity, thereby reducing the need for transport. The raw material comes to the factory in the form of either whole logs or wood chips that are a by-product from the sawmills. Borregaard gives priority to timber from forests that are managed according to internationally recognised principles for sustainable forest management. Through its sector organisation in Norway, Borregaard has also contributed to the further development of certification systems for Norwegian timber.

In 2006 Borregaard used timber equivalent to 1.67 million solid cubic metres at its factories in Norway and Switzerland.

### **Energy**

Energy is an important input factor for Borregaard and is vitally important in terms of environmental impact, costs and production. Borregaard's factory in Sarpsborg, Norway, account for almost half of the company's energy consumption. The cellulose plants are particularly energy-intensive, especially as regards thermal energy. Almost three quarters of Borregaard's total energy consumption is in the form of thermal energy (steam, hot water or hot air).

Most cellulose factories burn a large proportion of the biofuel in timber to provide energy for production. Due to Borregaard's unique concept for utilising almost all the substances found in timber to make a variety of products (which are largely alternatives to oil-based products), thermal energy must be acquired from other sources. A substantial amount of the thermal energy requirements are met by fossil fuels, such as oil and gas. Reducing oil consumption is an important challenge for Borregaard, especially in Norway. There are plans to build another plant to recover energy from waste. This type of plant produces low emissions and helps to reduce oil consumption. The use of biofuel has also increased as a result of improved utilisation of bark and residuals from the production process.

Borregaard has been focusing strongly on energy saving for several years, and significant gains have been achieved by investing in equipment and good energy management systems. The goal has been for energy-saving measures to meet the increase in energy needs resulting from increased production and a higher degree of processing.

Work is also being done on energy saving in connection with the use of electric power. The Sarpsborg factories and other companies in the sector have entered into an agreement with the authorities to contribute towards reducing electricity consumption.

Borregaard produces almost enough hydro-electric power at its own plants in Norway to cover its own energy consumption. In Switzerland, some power is produced by utilising steam from the company's own processes.

### **Emissions**

The main challenges as regards emissions are associated with emissions of organic substances (COD) to water and sulphur dioxide (SO<sub>2</sub>) to air at Borregaard's cellulose and wood-based chemicals factories in Norway and Switzerland.

In Switzerland there were problems through large parts of 2006 in connection with production in an integrated system for SO<sub>2</sub> and energy recovery, which also led to high SO<sub>2</sub> emissions. Production has now been stabilised and SO<sub>2</sub> levels are significantly lower. Emission levels are closely monitored with the aim of reducing them even further. At the Norwegian factory, SO<sub>2</sub> emissions from the cellulose boiler have sometimes been high. A comprehensive action plan has been implemented to reduce emissions from this plant. There are also plans for a new boiler house chimney with an SO<sub>2</sub> scrubber.

At both factories, work is in progress on improvements and measures throughout the production process to reduce the quantity of organic substances that come from the processes into the companies' biological treatment plants. At the Sarpsborg factory, an investment programme amounting to approximately NOK 280 million will be completed in 2007, which will contribute to lower emissions of organic substances, as well as chlororganic compounds (AOX) and copper. At the Swiss factory there are plans to spend more than NOK 100 million on environmental measures, especially to reduce organic substances.

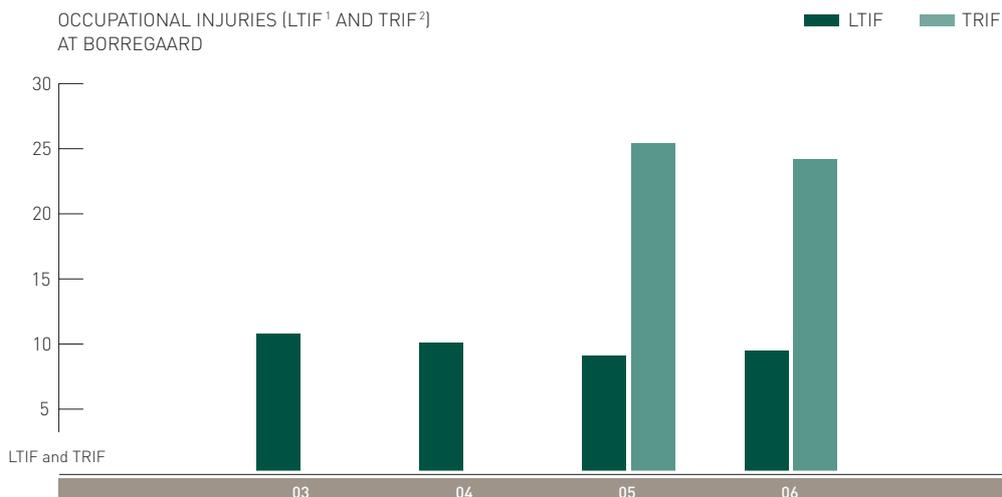
Borregaard wishes to minimise odours and noise from its factories. Complaints from neighbours are registered and followed up through contacts, information and measures if necessary.

### **New licences**

The factories in Norway and Switzerland are subject to challenging limits for emissions of organic substances, and the limits in future licences will be even stricter. The Borregaard factories in Sarpsborg will have new licence limits from November 2007, while the Swiss factory will have to meet new requirements from 2009. Substantial investments are being made to comply with the new emission limits. These investments will also result in reduced energy consumption and an increased capture of biomass for incineration, which will reduce oil consumption.

## RESULTS 2003–2006

### Health and safety

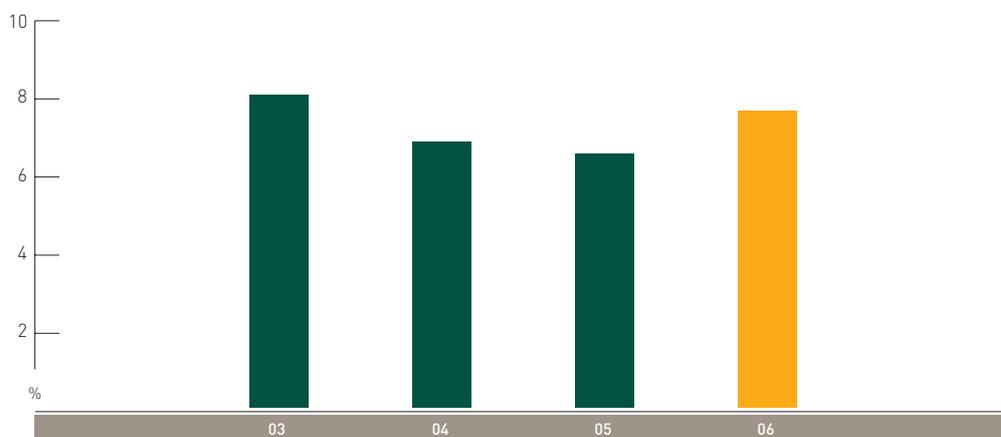


<sup>1</sup>LTIF = Number of injuries leading to absence per million hours worked

<sup>2</sup>TRIF = Number of injuries leading to absence or a need for medical treatment without absence per million hours worked

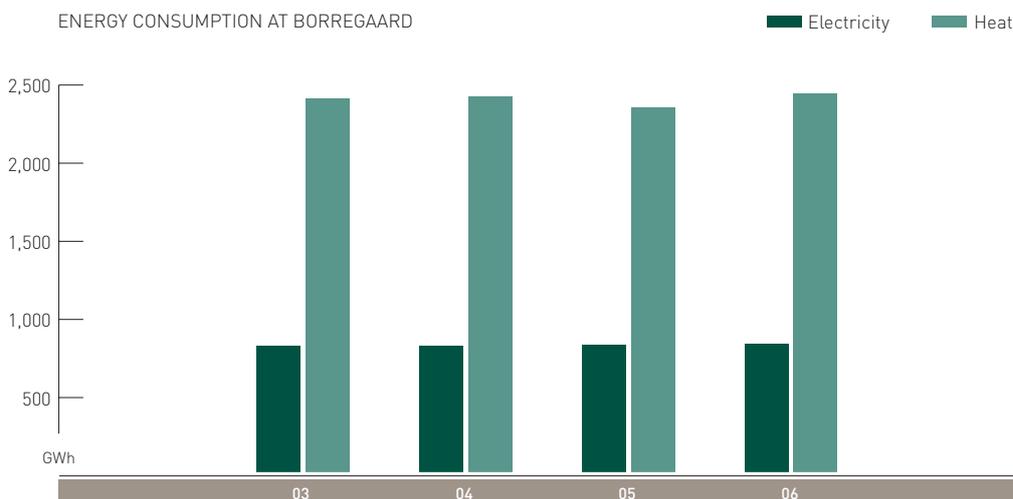
For Borregaard as a whole, the LTIF rate (number of injuries leading to absence per million hours worked) was 9.5 in 2006. This is a slight increase compared with 2005, when the LTIF rate was 9.1. Four plants had zero absence due to injury, while six plants reported an LTIF rate of more than 10. At the Sarpsborg plant, Norway, where half of Borregaard's employees work, the LTIF rate was 5.1. Borregaard now also measures the TRIF rate (the total number of injuries leading to absence or a need for medical treatment without absence per million hours worked). For Borregaard as a whole, the TRIF rate was 24.2 in 2006, which was slightly lower than the previous year. Targets have been set to reduce the injury rates (LTIF and TRIF rates).

#### SICKNESS ABSENCE IN BORREGAARD'S NORWEGIAN OPERATIONS



The sickness absence rate at Borregaard's Norwegian companies was 7.7% in 2006, about one percentage point higher than in previous years. To counteract this increase, the company will intensify its efforts within the framework of the Inclusive Workplace agreement. Sickness absence at Borregaard Switzerland was 2.7% in 2006. This was slightly lower than in 2005, when sickness absence was 3.0%. Most of Borregaard's other units reported low sickness absence in 2006.

## Energy

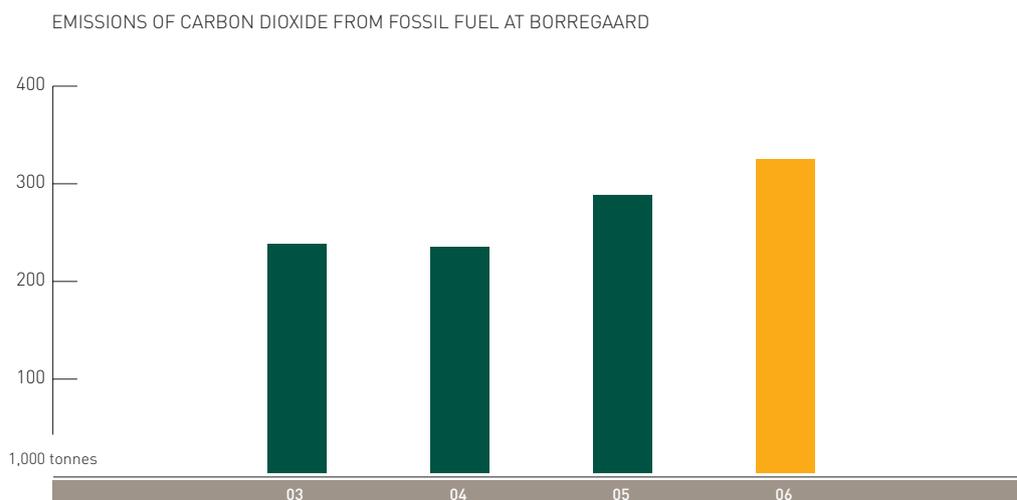


Energy saving is one of Borregaard's highest environmental priorities and energy management is an integral part of the company's HSE activities. Total energy consumption for all Borregaard's units was almost 3.3 TWh in 2006, approximately 3% higher than the previous year. Consumption of thermal energy, which accounts for about 74% of total energy consumption, is based on fossil fuels, biofuel and the utilisation of process and waste heat from its own and other neighbouring factories.

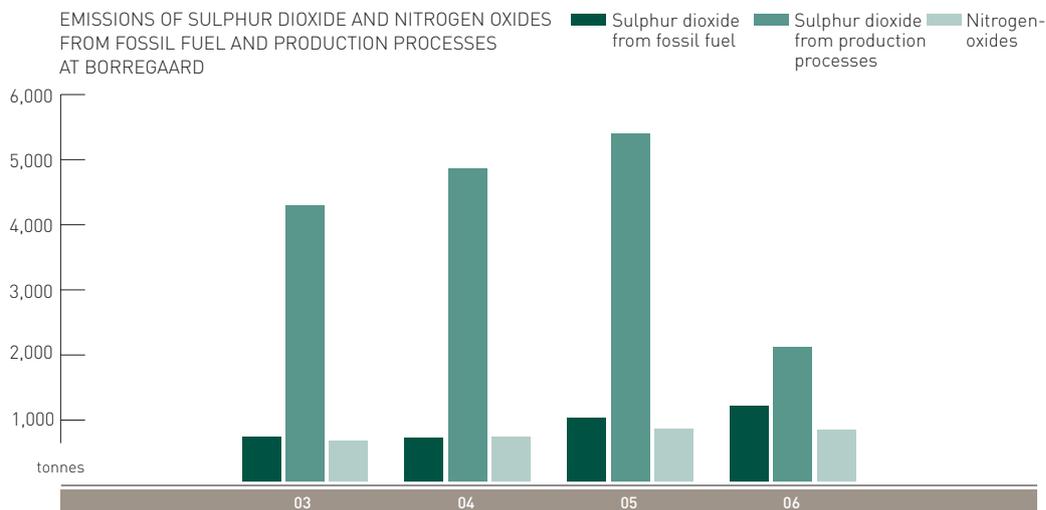
Despite extensive energy saving measures, oil consumption increased in 2006. This was due to increased production, an increased degree of processing and the loss of waste heat from the sulphuric acid factory in Sarpsborg, which was closed down in 2005. The environmental investments that are currently being made will contribute to lower consumption and increase the supply of biofuel.

Borregaard is also working on various measures to save electricity. The Sarpsborg factory and other companies in the sector have entered into an agreement with the authorities to contribute towards reducing electricity consumption. Borregaard produces almost enough hydro-electric power at its own plants in Norway to cover its energy needs.

## Emissions

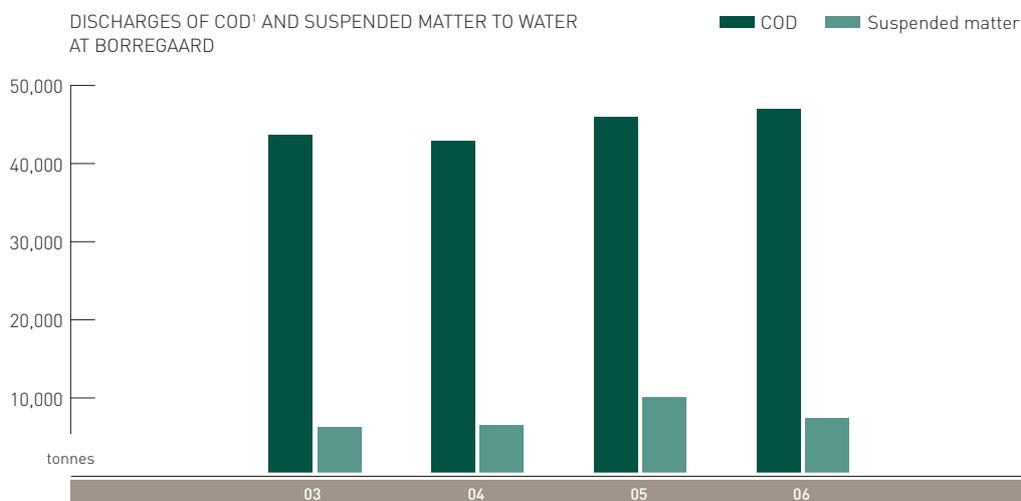


Emissions of carbon dioxide from fossil fuel have increased by approximately 35% in the past two years. Despite extensive energy-saving measures, consumption of fossil fuel has increased by just over 30% as a result of increased production, a greater degree of processing and the loss of waste heat from the sulphuric acid factory in Sarpsborg, which was closed down in 2005. The environmental investments that are currently being made will reduce consumption of fossil fuels and thereby also emissions of carbon dioxide.



The continuous rise in total emissions of sulphur dioxide from burning fossil fuels since 2003 was halted in 2006 because there were no emissions from the old sulphuric acid factory in Sarpsborg. At the Norwegian factory SO<sub>2</sub> emissions from the cellulose digester plant have sometimes been high, and in Switzerland there were problems through large parts of 2006 in connection with production in an integrated system for SO<sub>2</sub> and energy recovery, which also led to high SO<sub>2</sub> emissions. Production has now been stabilised and SO<sub>2</sub> levels are significantly lower. Several action plans are being implemented to further reduce emissions. Among other things, there are plans for a new boiler house chimney with an SO<sub>2</sub> scrubber at the Sarpsborg factory.

Emissions of nitrogen oxide also increased in the period 2003-2006, primarily due to greater consumption of fossil fuel.



<sup>1</sup> Chemical Oxygen demand (Measurement of quantity of organic matter in discharges to water)

One of the greatest environmental challenges is related to discharges of organic substances (COD and suspended matter) to water at Borregaard's cellulose and wood-based chemicals factories in Norway and Switzerland. Work is in progress at both factories on improvements and measures throughout the production process to reduce the amount of organic material that comes from the process into the companies' biological treatment plants. At the Sarpsborg factory, an investment programme amounting to approximately NOK 280 million will be completed in 2007, which will contribute to lower emissions of organic substances, as well as chlororganic substances (AOX) and copper. The Swiss factory plans to spend more than NOK 100 million on environmental measures over the next three years, especially to reduce organic substances.