

Environmental and Social Report FeF Chemicals A/S 2002

As a chemical company we have a major responsibility for our surroundings and our employees – the environment and people. And we believe that the results of our work show that we take this responsibility very seriously.



FeF Chemicals

FeF Chemicals is a small chemical company which is 100% owned by Novo Nordisk A/S, the company's largest customer. FeF Chemicals has 70 employees, mostly working in production or on analysis and quality assurance, both of which are closely linked with production.





FeF is located about 5 km north of Køge in Roskilde County and occupies about 90,000 m². To the east, it borders a lagoon facing Køge Bay, which has been designated an area of natural beauty. South of the site, there is an industrial and residential area. North of the site, there is a furniture business with living quarters, and north of this more industry. Københavnsvej passes to the west, and west of this is an old residential neighbourhood.

FeF is situated in an area with special drinking water interests, which means that there is a particular focus on protecting the groundwater.

OUR PRODUCTS FeF produces chemical products for various purposes. Our main activities are the production and sale of quaternary ammonium compounds, which are used for disinfecting, as additives in cosmetics and pharmaceutical products, or as auxiliaries in the pharmaceutical industry.

FeF's most important secondary activities are the manufacture of products for the medical and veterinary industries. For the medical industry, we supply substituted silica gel for recovering organic substances, and purified enzyme for use in the production of pharmaceutical products. We mainly supply to Novo Nordisk.

RESOURCES AND ENVIRONMENTAL IMPACT

In addition to water and energy, we use a range of chemical substances in the form of amines, chlorinated and brominated organic substances, organic solvents and other chemical auxiliaries. We also use cardboard and plastic packaging for our products.

The main environmental impacts are atmospheric emissions of organic solvents from drying processes, and CO₂, SO₂ and NO_x from energy production. We discharge wastewater in the form of process wastewater, which is piped to Køge Local Wastewater Treatment Plant, and in the form of cooling water, which is discharged after use directly into Køge Bay. Finally, we have solid waste, which is disposed of in accordance with Køge Municipality's waste regulations.

IMPLEMENTING MANAGEMENT SYSTEMS

FeF's management system covers both product quality and environmental issues. Environmental management applies to both H&S and the external environment and covers all production processes and departments. In 2002 we upgraded our quality assurance system from ISO 9002 to ISO 9001, and we also implemented the ISO 14001 Environmental Management System. The Quality System and the Environmental Management System meet the requirements of the Good Manufacturing Practice Guide for Bulk Pharmaceutical Excipients, ISO 9001, ISO 14001 and the Danish Chemical Industry Federation's Responsible Care programme, which is an environmental and H&S code for the chemical industry. Through Novo Nordisk, FeF also supports the ICC Business Charter for Sustainable Development.

All FeF's production plants, etc., are covered by environmental approvals, which set limits for our impact on the surrounding environment.

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A busy year focusing on the environment

2002 was a busy year for FeF. As in previous years, we experienced growth in turnover and in the number of employees. We fully implemented two new management systems. And building work did not stop. At the start of the year we began fitting out the new silica gel plant, and in November we finished a smart new canteen for employees.

Preben Engelund Poulsen, CEO



In 2002 we had our quality assurance system upgraded from ISO 9002 to ISO 9001, and in the autumn we were certified in accordance with the environmental standard ISO 14001. The preparations for environmental certification were many and long – and involved all employees across the organisation. This meant that in 2002 there was special focus on the environment.

We are proud that we achieved our target of being certified in accordance with ISO 14001. One of the purposes of the system is to increase environmental awareness among employees. They should individually be conscious of their environmental impacts, be familiar with our environmental policy, and know where they can turn if they have ideas for environmental improvements.

This resulted in a large number of suggestions from employees. Two of the areas that we focused on during the year were our water and energy consumption, and we introduced a number of initiatives which in the long term will reduce our consumption in these areas.

As part of the Novo Nordisk Group, we work according to an environmental policy that obliges us to prevent pollution and continuously improve our environmental performance. We ensure this by carrying out environmental analyses of all new activities and by setting targets relating to the company's main environmental issues. Thus, for a number of years we have specifically incorporated the environment into our work, but with the implementation of ISO 14001 we can now be certain that the environment is an integrated part of our work processes. Another important basis for implementing the system was our customers' expectations. As a modern chemical company, they expect us to have systematised our work in safety and environmental issues. Otherwise, we could not attract the quality-conscious customers that we work with today.

Our second environmental target for 2002 was to reduce acetone losses to a maximum of 0.064 kg acetone/kg product. We achieved this, losses falling to 0.053 kg acetone/kg product.

SAFETY AN IMPORTANT FACTOR Unfortunately, our target of completely avoiding occupational injuries in 2002 was not achieved. We had two minor injuries, each resulting in just a single day's absence from work. During the year we again organised a number of activities that will help employees anticipate possible injuries.

Being a chemical company, safety is always high on our agenda. It is important that our employees know how they should handle chemical substances and be familiar with the procedures they should follow in the event of an injury. We therefore continued the series of training days on handling chemical substances, looking at the raw materials used in the individual departments, discussing risks and protective equipment, and emphasising precautions to be taken in the event of technical failure or spills.

In conjunction with the Emergency Service, in 2002 we held a firefighting course for all employees in the company. The course included a firefighting exercise, and we plan to hold similar courses every other year. We also updated and tested our emergency plan, also in conjunction with the Emergency Service in Køge. Finally, employees had the opportunity to take part in voluntary first-aid courses.

INVOLVEMENT IN THE LOCAL COMMUNITY We try wherever possible to promote local industry in Køge. We are therefore very pleased to hire local skilled manual workers when we

carry out extension work. Furthermore, we are involved in an initiative with Køge County called "the inclusive labour market", the aim of which is that local companies take on people with reduced working capability. This may be e.g. in a part-time job or employment with some sort of financial support. It may also mean allowing employees who would be at risk of leaving the labour market to continue their employment with the company, possibly in a different capacity. We also have a representative in the KUUF (Køge Training & Development Forum), which is appointed by Køge Business Council to i.a. help consolidate Køge's position as a training town. Finally, we support charitable organisations such as The Red Cross, The Danish Cancer Society and the World Wildlife Fund.

MAJOR CHANGES COMPARED TO 2001 FeF's total water consumption fell by 20% compared to 2001. This was due partly to the focus on this issue in connection with the environmental mapping, and partly to the fitting of water meters and regulating valves that allow operators the possibility of controlling consumption in daily operations. As a result of the falling water consumption, the wastewater discharge from FeF was reduced by 14%.

Overall energy consumption (electricity and natural gas) showed a slight increase of 4% compared to 2001. This was due to increased activities with more building works and more employees.

The total quantity of waste fell by 64%. This was due primarily to the fact that in 2001 we had a large quantity of building waste from the demolition of our old workshop building.

Total acetone emissions into the air increased by 14% in spite of the fact that acetone losses per kg of product fell. This increase was due partly to the fact that the produced quantity of crystalline quaternary ammonium compounds rose, and partly that there is a degree of uncertainty associated with the method used for calculating air emissions.

Finally, emissions of ozone-depleting substances rose by 26% to a total of 71 kg. This was a matter of three accidental releases which are described in more detail later in the report.

FUTURE TARGETS In 2003 we will continue our environmental work. Our environmental mapping produced lots of good suggestions for environmental improvement measures. We have not yet managed to realise them all, and there is a good deal of work ahead in evaluating the individual suggestions and introducing new initiatives. One of our main targets will still be to further reduce acetone emissions.

In the area of safety, in 2003 we will also be focusing on the handling of hazardous substances and keeping employees up to date on how they can prevent accidents and how they should act in the event of an accident.

Here in the management statement and in the rest of this report we discuss the issues and activities that we think best show how we at FeF Chemicals A/S have worked on environmental and social responsibility in 2002. The selected issues and activities reflect the environmental impacts from FeF which were revealed as important in our environmental mapping, for which the authorities impose requirements for self-monitoring, and on which Novo Nordisk is focusing. We are proud of our efforts and plan to continue in the same vein in the coming years.

Focus on safety

Health & safety is an area in which we have actively been working for a number of years. We are a chemical plant, and it is therefore only natural that the safety of our employees is at the forefront of our minds. In 2002 we chose to introduce a number of new work processes that will help us to anticipate occupational injuries.





In 2002 we set the target of avoiding occupational injuries altogether. If, however, injuries were to occur, the percentage of absence from work should be equivalent to no more than five working days. Unfortunately, this target was only partly achieved since we sustained two occupational injuries, a scalding and a corrosion burn, although these only resulted in a single day's absence from work in each case.

We have decided that we will continue to strive long term to put a full stop to occupational injuries – but we also acknowledge that we need a target for each year that better reflects the reality of our work. For this reason, the target for 2003 is that the frequency of absence from work as a result of occupational injuries must not exceed 0.02%. This is equivalent to a maximum of three days absence given the current number of employees. In order to achieve this target, we have introduced a number of work procedures that will help us to anticipate any occupational injuries.

In 2002 we systematised our approach to health & safety in a number of ways. A new initiative is that the health & safety representatives from the individual departments carry out regular 'safety rounds' to check that all safety matters are in order. We have also set up a safety database as a supplement to the company's existing plant maintenance database. The safety database contains an overview of the company's non-plant-related

safety equipment and details how and when this should be inspected. Finally, for many years we have been using a change and non-conformance reporting system in which, among other things, on the basis of workplace assessments we tackle the areas that require special focus.

EMPLOYEES TRAINED IN SAFETY An important factor in preventing occupational injuries is the training of employees. In the last two years we have concentrated in particular on the handling of chemicals and the use of protective equipment. We have held training days for the individual departments in production, the warehouse and the workshop at which i.a. we have looked at risks involving chemicals and discussed how spills should be handled and how employees should act in the event of an accident. Subsequently, a number of relevant suggestions and ideas have been incorporated in our working instructions.

INSTRUCTION OF EXTERNAL WORKERS Since we have a number of external skilled manual workers at the company, we have introduced a new system to ensure that they too are aware of our safety rules. Thus, all workers receive safety instructions before they begin work, and in addition they must carry a card indicating that they have received instructions and listing the 10 most important 'safety messages'. External skilled →

Social target 2003

The frequency of absence from work as a result of occupational injuries must not exceed 0.02%.

manual workers are also instructed in our most important environmental rules such as waste disposal.

FIRE AND FIRST-AID COURSES In conjunction with the Emergency Service, we held a firefighting course for all employees in the organisation. The course included both theoretical and practical elements. In the latter, all employees had to handle a fire extinguisher and navigate their way in pairs through a smoke-filled room. In the last four years we have had our own firemen. These are employees who can serve as the Emergency Service's assistants in the event of a fire. They have completed an extended fire course.

In connection with the updating of our emergency plan we held an unannounced fire drill – also in conjunction with the Emergency Service. A subsequent evaluation showed that the employees handled the fire drill in exemplary fashion.

Finally, we gave employees the opportunity to volunteer for a first-aid course – both a basic course and a top-up course. Many employees availed themselves of this opportunity.

EMPLOYEE DEVELOPMENT As in the rest of the Novo Nordisk Group, we have annual development interviews with employees. We have a training database in which employees' requests for further training are logged. At the end of the year we follow up on whether employees have been on the courses they requested. We are not yet able to provide statistics on course participation, but we can see that in most cases the requested courses have been taken.

A STABLE AND FLEXIBLE WORKPLACE For a number of years we have had a low employee turnover. The service period

of the company's employees averages 10 years, and most employees who leave the company do so because they are retiring.

In actual fact, we have not been working systematically to retain our employees. Our success is probably due to the fact that they have a high degree of codetermination in the organisation of their work. And it is probably also an important factor that they generally feel that they are given responsibility in their work.

We are striving to be a flexible workplace. We have a flexi-system for all salaried employees and for hourly-paid workers in areas where it is viable. Hourly-paid workers (who make up about a third of the workforce) and, new in 2002, skilled manual workers have the option to enrol in Novo Nordisk's PC scheme in which Novo Nordisk makes a computer available to employees who wish to attend a PC course. The scheme has been very popular with employees with a take-up of around 82%.

EVALUATION OF SUPPLIERS Novo Nordisk set the target that 90% of the company's main raw material suppliers should be evaluated on their environmental and social performance during 2002. We evaluated five out of six key suppliers. At the start of the year we sent out a questionnaire to our suppliers, and on the basis of this we were able to gauge whether there were areas in which the suppliers were not meeting the standards that Novo Nordisk has set for e.g. human rights.

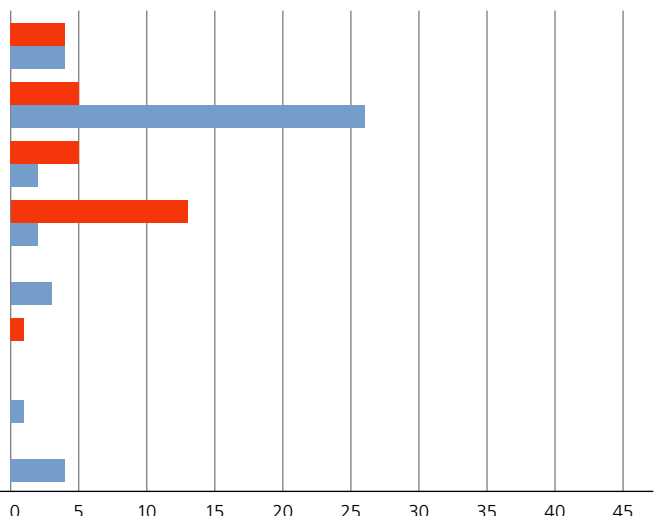
The purpose of the evaluation is not to terminate cooperation if suppliers are failing to meet our requirements, but to help them to improve their performance and create a trusting relationship in which they feel that they can come to us to discuss any problems. However, this does not apply at present since all our suppliers are meeting corporate requirements.

Our employees	2000	2001	2002
Total number of employees	56	62	70
Number of full-time employees	54	61	68
Number of part-time employees	2	1	2
Average age distribution (years)	43.4	43.7	43.7
Average years of service	11.0	11.0	10.4
Employee turnover (%)	1.8	1.7	1.5

Occupational injuries	2000	2001	2002
Frequency of occupational injuries	0.0	10.1	17.9
Number of lost-time injuries	0	1	2

Gender representation 2002

Department	female	male
Administration	4	4
Production	5	26
Research & Development	5	2
Quality Control	13	2
Marketing & Distribution	0	3
Other job functions	1	0
Senior management	0	1
Management	0	4



CUSTOMERS

We have been evaluated as well

It is not just us evaluating our suppliers' social and environmental performance. For the first time we have been evaluated in respect of environment and health & safety by one of our American customers. This went very well and the customer only highlighted a few areas in which we could tighten up on our existing conduct, e.g. marking out of tanks and storage sites. The evaluation was a very positive experience. We see this is a way of having our system tested so that we can fill any holes that may exist.

EMPLOYEES' ASSOCIATION

A range of social activities

For a long time we have placed emphasis on the company being a well-run and pleasant workplace for our employees – and we are aware that relations between the employees play an important role in meeting this objective. We consider the large membership of the employees' association – The Fan – a reflection of the fact that the employees like to mix socially. The Fan has done a great job of bringing us together across employee groups. The success is reflected in the rate of participation in the association's activities, which is often up to 60%. Amongst the activities in 2002 were a golfing day, a hike and Novo Nordisk's summer party in the Park. The Fan was also responsible for organising a family day with a plant tour and meal for all employees and their families at FeF.



OFFICE ETIQUETTE

Open-plan offices require consideration

For the first time in 2002 we established open-plan offices in our new building housing the Quality, Production and Environmental departments. This innovation met with mixed feelings from employees – and following its implementation there is still no real agreement on whether the new set-up functions better than the old offices. However, it is agreed that the open-plan environment requires that employees show more consideration towards one another than previously. Provided basic consideration is shown towards colleagues, the new office environment has proven to have many advantages. Employees no longer sit isolated in their offices – and interaction between employees has increased – both socially and professionally. However, meetings, interviews and telephone conversations are problematic.

CARE AND ATTENTION

H&S an integrated part of new canteen

In November, employees were given a new canteen that is larger and brighter than the old one. During the building process, we removed some tall plants so that there is now a view from the canteen over Køge Bay. The kitchen has also been expanded so that we can now

serve hot meals. In fitting out the kitchen, it was important to give employees working in the canteen the best possible working conditions. Thus, their working processes were carefully examined so that equipment was placed at the right height. There are also adjustable tables that employees can set at a suitable height. We have also had a cold store installed which functions better than several small refrigerators. The employees working in the kitchen were involved in the decision-making process right from the start.

THE CALM BEFORE THE STORM

No new building work in 2003

We anticipate that the production of purified enzyme will increase in 2003. We therefore have plans to install a new plant that will be ready for operation in 2005. The plant is still only on the drawing-board, and we do not expect to begin building in 2003. This means that for the first time since 1995 we will have a year without new building work. We are both pleased and frustrated with this. New buildings are a visible symbol of progress and development, which we need to see in our area. On the other hand, they demand a lot of time from a lot of employees who will now have the opportunity in 2003 to concentrate more on our products.

Systematic environmental work

In 2002 preparing for the ISO 14001 certification required a lot of our energy and attention. This has been a long process, and we are proud of the fact that we have now achieved our target and had our environmental management systematised and approved.





As long ago as 1995 we carried out a pilot project on environmental management in conjunction with Roskilde County. Since then we have come a long way, and this is due not least to the fact that our employees have been actively committed to the process.

Throughout 2002 we worked on mapping the company's environmental impacts. This was done by the Environmental department and employees in the individual departments discussing the environmental impacts of the company's specific work processes. We then set targets and drew up action plans for improving selected environmental impacts. We also carried out internal audits according to ISO 14001 throughout the company, through which it was established that everyone is working according to the new routines required by the standard.

The major focus on environment in connection with the certification has already meant that we have received a mass of constructive ideas from employees for environmental improvements. We can use the ISO 14001 system to persist with these ideas and adopt a consistent approach to them. In fact, we received more suggestions than it was possible to implement in 2002. The remaining suggestions have not been forgotten and will be taken up in the next environmental mapping.

TARGET TO REDUCE AIR EMISSIONS Our greatest environmental impact is the emission of acetone from the production of crystalline quaternary ammonium compounds. In 2002 we therefore set ourselves the target of reducing losses of acetone to a maximum of 0.064 kg acetone/kg product. We achieved

this target, with acetone losses falling to 0.053 kg acetone/kg product. The reasons for this were i.a. that last year we renovated the drying system in one of our plants, and that through the environmental mapping we applied greater focus to the problem and how we perform a number of work processes. As well as emissions of acetone, there are significant air emissions of methylene chloride from the production of genabilic acid, and carbon dioxide and nitrogen oxides from the burning of natural gas to produce steam for production purposes.

For 2003 we have set ourselves the target of reducing the consumption of acetone for the production of crystalline quaternary ammonium compounds to 0.060 kg acetone/kg product. This target has thus already been achieved since the initiatives implemented have proven to have a greater effect than anticipated. The planned initiative for 2003 may therefore be expected to reduce the figure even more.

EXAMPLES OF CLEANER TECHNOLOGY FeF uses a number of basic production technologies and processes in chemical synthesis. We are trying to limit the effect on the environment as much as possible by e.g. using the 'best available technology' both in connection with the design and setting up of new equipment and plants, and in connection with ongoing improvements in the existing production processes.

There are numerous examples of this: we recover organic solvents by distillation; we have modified our drying processes connected with the production of crystalline quaternary ammonium compounds so that a greater part of the solvent is re- →

Environmental targets 2003

We have set six general targets for the coming years. For each of these we have set one or more specific targets that we will work towards in 2003. The general targets are:

We will optimise our utilisation of groundwater for cooling taking into consideration that the recovery is from a preventive drilling.

We will optimise our electricity consumption through electricity-saving initiatives in existing production processes and ongoing environmentally appropriate planning.

We will optimise our utilisation of natural gas for steam production.

We will reduce our consumption of acetone for the production of quaternary ammonium compounds by optimising acetone recovery.

We will reduce the risk of releases of ozone-depleting substances through special focus on systematic maintenance of plant.

We will continually update employees' knowledge of hazardous substances so that they know how to handle these to prevent accidents and how to act in the event of any accidents that may occur.

covered in closed systems; we recover heat from ventilation systems in our newer plants; we recycle empty raw material packaging as sales packaging for technical products; and we have double-walled storage tanks to minimise the risk of chemical leaks.

REVISION OF OUR PREVENTIVE PROGRAMME

Environmental mapping in 1988 and 1989 established pollution of soil and groundwater from our own production of i.a. plant protectives and amines in the 1960s and from degreasing activities carried out by a previous neighbouring firm. The pollution involves various organic substances, including pesticides, chlorinated and brominated solvents and their breakdown products. Pollution with copper, bromide and bromate was found in some areas.

In conjunction with Roskilde County and a consultancy engineering firm, a preventive programme has been drawn up which will reduce the pollution and stop it spreading. This means i.a. pumping a certain quantity of water from the polluted groundwater reservoir and control measurements in the form of surveys of the groundwater table and analyses of water quality. The authorities have laid down a requirement for an annual water recovery of 60,000–120,000 m³ to ensure a satisfactory effect of the preventive drillings. In 2002 our groundwater recovery totalled 105,000 m³.

In conjunction with the county, we are working on revising the programme with the aim of reducing the water recovery to a level closer to 60,000 m³. Our environmental mapping has identified areas for possible improvements. The recovered water will be used to cool our plant, although we have not yet investigated whether we can achieve the same cooling effect using a smaller water quantity. In the autumn we fitted water meters and regulating valves on the cooling water system. The groundwater recovery fell to 84,000 m³, which was a reduction of 20% compared to 2001. In 2003 we will continue to work on optimising our utilisation of groundwater for cooling purposes.

REDUCTION OF WASTEWATER FeF's production gives rise to wastewater in the form of process wastewater and cooling water. We also discharge sanitary wastewater and rainwater from outdoor areas impervious to water.

The process wastewater is pH-neutralised before discharge to the municipal sewage system and Køge Local Wastewater Treatment Plant, from where the treated wastewater is discharged into Køge Bay.

In 2001 we introduced a new system for neutralising wastewater which makes homogenisation and neutralisation of the process wastewater much more effective. The cooling water used to cool reaction tanks, etc., is discharged untreated

directly into Køge Bay, together with any rainwater from storage yards and other areas impervious to water. Rainwater from storage yards for raw materials and products is collected in a retention basin, where it is analysed for pH and content of quaternary ammonium compounds before being mixed with the cooling water and discharged into Køge Bay.

Measurements of the discharged wastewater flows show that we are observing the requirements of our wastewater permits by a good margin.

The total wastewater quantity from FeF to Køge Local Wastewater Treatment Plant and Køge Bay fell by 14% compared to 2001. This was mainly due to the fact that our water consumption fell significantly in 2002, as discussed under "Revision of our preventive programme".

OPTIMISING ELECTRICITY CONSUMPTION

In fitting out the new silica gel factory we have also strived to reduce our impact on the environment as far as possible. Thus we have fitted frequency converters on the large electrical consumers so that electricity consumption can be regulated as required. Another electricity-saving initiative in the new factory is the ventilation system. For the first time we have integrated control of the system into the control of the process plant. The air change in the room, and hence the ventilation speed, are in this way matched to the ongoing process requirement without any need to compromise health & safety. In standby situations the air change is thus reduced by about 50%. This means that the ventilation system only runs at normal power for about 200 days in the year. This also has the positive side-effect that the lifetime of the machines is extended.

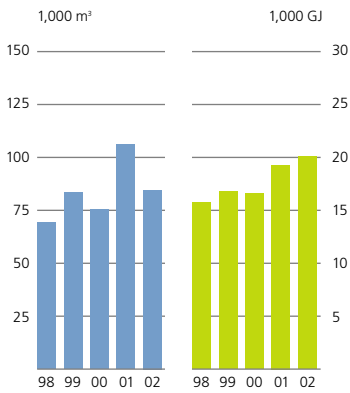
In 2002, the consumption of electricity rose by approx. 7% compared to the previous year. The reason for this rise was increased activity, i.a. commissioning of the new silica gel factory, putting into use of the new open-plan offices, and increased ventilation in the canteen and laboratories. In the next few years we will continue to work on optimising electricity consumption through electricity-saving initiatives in the existing production processes.

ENVIRONMENT-FRIENDLY WASTE HANDLING

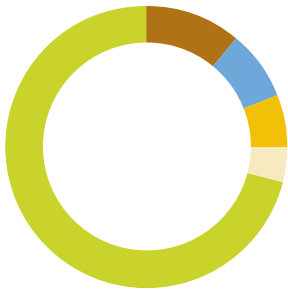
FeF's production also gives rise to various forms of waste. The waste can be divided into two main groups: non-hazardous waste and hazardous waste. As much waste as possible within each of these main groups is sorted for recycling. All waste is handled, transported and disposed of in accordance with Køge Municipality's industrial waste regulations.

Waste which is non-recyclable and non-hazardous is sent to Kara Incineration Plant in Roskilde if it is combustible or Kara Landfill Site in Roskilde for landfill if it is non-combustible. Hazardous waste is sent for destruction at

Water and energy consumption

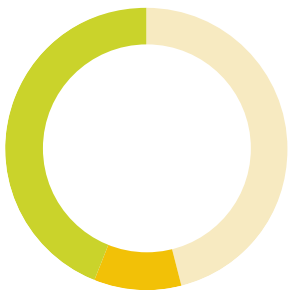


Breakdown of energy sources



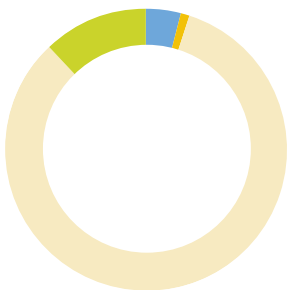
- Electricity: coal 11%
- Electricity: orimulsion and oil 8%
- Electricity: natural gas 6%
- Electricity: biomass and waste 4%
- Heat and steam: natural gas 71%

Breakdown of raw materials



- Organic chemical compounds 46%
- Organic solvents 10%
- Other auxiliaries 44%

Waste disposal



- Incineration 4%
- Landfill 1%
- Controlled destruction 83%
- Recycling 12%



NEW CANTEEN

Electricity-saving ventilation system

The major focus on the environment in connection with implementation of ISO 14001 has meant that we consider environmental improvements when planning changes and new projects. One of the initiatives is the ventilation system in our new canteen. The system has been set up with the possibility of regulating the power level as needed. This means that we in the new canteen can control the ventilation level and thus save energy.

NETWORK

Sharing experience on environmental work

We are involved in various network groups in which we share experience with other companies. On the one hand, we are part of a network of chemical companies in the local area, and on the other hand a network of the various production units in Novo Nordisk A/S. In preparation for the implementation of ISO 14001 it was instructive and inspiring to gain an insight into other companies' working processes.

RECYCLING

Air compressors heat up the warehouse

In 2001 a number of air compressors were placed in our workshop. These generate great heat since they are driven by electric motors that compress the air. The heat from the air compressors was a major nuisance to employees occasionally working there and could develop into a problem for the electric installations, so we considered setting up a ventilation

system to cool the room. However, we found a better solution in the spring when we moved the air compressors to one of our stores in a locked room. If the temperature in the store falls to below the desired temperature, hot filtered air is blown from the compressor room into the warehouse. In this way we are making use of waste heat and thereby reducing our energy consumption.

MONITORING

Securing ground tanks against leakage

In 2002 we had three new storage tanks built in connection with the new silica gel factory. The tanks are buried since they contain flammable solvents, and they are double-walled and provided with automatic leak monitoring. If a hole appears in just one of the walls, this will be detected before solvents seep out and pollute the ground. In connection with this project, the automatic leak monitoring was also linked to the two older ground tanks of the same type that previously were only monitored manually.



Kommunekemi in Nyborg, either directly or via the joint municipal collecting station I/S Mokra in Gadstrup, with the exception of waste which is sent for recycling by permission of Køge Municipality.

Waste handling is an important element of our environmental certification, and we have therefore provided improved instructions and signing for sorting waste.

In 2002 our total quantity of waste fell by 64% compared to 2001. This was due primarily to the fact that last year we had a large amount of building waste from the demolition of our old workshops. The total quantity of hazardous waste for controlled destruction did not change from 2001.

ACCIDENTAL RELEASES In 2002 we had three accidental releases where ozone-depleting substances escaped into the environment, in all 71 kg. When we discovered the releases, we followed our instructions, identified the leaks and rectified the fault. In two of the cases this proved to be a defect in a bought-in cylinder. We subsequently complained to the supplier of the cylinder.

SIX YEARS WITHOUT A COMPLAINT The most obvious nuisances from FeF's activities which might give cause for complaint are noise and the smell of acetone or amine in connection with e.g. the filling of storage tanks or the failure of cold-traps. We have established a procedure for handling complaints. However, we have had no need to use it in the last six years, during which we have not received any complaints about nuisances from the site's activities.

Statement on green accounts 2002 for FeF Chemicals A/S

On 18 February 2003 Roskilde County received the green accounts for the accounting period 1 January 2002 to 31 December 2002. Pursuant to §35a of the Danish Environmental Protection Act and §12, paras 2, 3 and 6 and §17, para. 4 of Statutory Order no. 594 of 5 July 2002 on the duty of certain listed activities to draw up green accounts, the county wishes to issue the following statement on the above green accounts.

Statement on the green accounts

The county has no information on the company that differs from that provided in the accounts, and has no information on other major issues that, in the opinion of the county, should have been included.

Basis for the draft statement

The county has read the company's green accounts for the accounting period 1 January 2002 to 31 December 2002 and has taken its position on the accounts on the basis of the county's existing information on the company's environmental activities and the conditions laid down in the approvals. The assessment thus covers the information contained in the green accounts, cf. Statutory Order no. 975 of 13 December 1995 on the duty of certain listed activities to draw up green accounts.



Environmental data 1998–2002

	Unit	1998	1999	2000	2001	2002
Water						
Water (total)	1,000 m ³	69.4	83.4	75.5	106	84.8
Drinking water	1,000 m ³	0.6	0.8	0.8	0.7	0.8
Other quality	1,000 m ³	68.8	82.6	74.7	105	84
Energy						
Energy (total)	1,000 GJ	15.7	16.8	16.6	19.3	20.1
External (electricity)	1,000 GJ	3.9	4.3	4.3	5.4	5.8
Internal (subtotal)	1,000 GJ	11.8	12.5	12.3	13.9	14.3
Gasoil	1,000 GJ	10.2	10.4	10.4	1.9	0.0
Natural gas	1,000 GJ	1.6	2.2	1.8	12.0	14.3
Materials						
Materials (total)	tons	2,586	2,736	2,930	2,034	2,067
Raw materials	tons	2,500	2,650	2,830	1,953	1,986
Packaging materials	tons	86	86	100	81	81
Products						
Products (total)	tons	2,117	2,152	2,433	1,570	1,481
Quaternary ammonium compounds	tons	2,037	2,120	2,381	1,521	1,445
Other products	tons	80	32	52	49	36
Wastewater						
Volume	1,000 m ³	73.1	90.7	71.3	109	94
Suspended solids	tons	0.2	0.2	1.0	0.5	0.3
COD	tons	16	17	18	16	23
Nitrogen	tons	0.06	0.05	0.04	0.02	0.02
Phosphorus	tons	–	–	–	0.5	0.3
Other waste						
Other waste (total)	tons	279	232	482	1,102	401
Incineration	tons	2.2	2.2	12	27	15
Landfill	tons	40	12	7.0	8.7	3.0
Controlled destruction	tons	201	190	346	337	337
Recycling (subtotal)	tons	36	28	117	729	47
Construction waste	tons	19	9.3	93	693	24
Electronic equipment	tons	0	0	0	0.4	0.3
Glass	tons	0	0	0	0.03	0.03
Metals (incl. iron drums)	tons	14	15	22	33	19
Paper & cardboard	tons	2.5	3.8	2.0	2.8	3.4
Emissions to air						
Organic solvents	tons	34.6	28.7	17.8	11.2	12.9
Acetone	tons	34.0	28.1	17.5	10.7	12.2
Methylene chloride	tons	0.6	0.6	0.3	0.5	0.8
Ozone-depleting substances (total)	kg	16	63	14	57	71
Carbon dioxide (CO ₂)	tons	1,434	1,527	1,371	1,536	1,560
Sulphur dioxide (SO ₂)	tons	1.6	2.0	1.0	0.6	0.6
Nitrogen oxides (NO _x)	tons	3.1	3.0	2.0	2.0	1.9
Environmental Impact Potentials						
Global warming	tons CO ₂ -eqv.	1,530	1,700	1,434	1,658	1,712
Ozone layer depletion	kg CFC ₁₁ -eqv.	0.6	3.0	0.6	2.3	2.8
Acidification	tons SO ₂ -eqv.	3.8	3.4	2.9	2.0	1.9
Eutrophication	tons NO ₃ -eqv.	4.6	3.6	3.0	18	12
Compliance and complaints						
Breaches of regulatory limits		3	2	0	1	0
Regulatory limits with repeated breaches		1	0	0	0	0
Accidental releases		0	3	2	0	3
Complaints		0	0	0	0	0
Stockpile of Ozone Layer-degrading Substances						
CFC	kg	0	0	0	0	0
HCFC	kg	205	325	293	207	259
Methyl bromide	tons	53	32	43	40	30

Data in this report were included in the assurance engagement performed by Deloitte & Touche. The full Assurance Statement from Deloitte & Touche can be found on page 58 of Novo Nordisk's *Sustainability Report 2002*.



FeF Chemicals is a well-established company with more than 50 years' experience in fine chemicals. We have 70 employees and sell our products internationally. FeF Chemicals produces quaternary ammonium compounds, substituted silica gel for recovering organic substances, and purified enzyme. The products are used for disinfecting, as additives in cosmetics and pharmaceutical products, and as auxiliaries in the pharmaceutical industry. FeF Chemicals is 100% owned by Novo Nordisk A/S, which in turn is owned by Novo A/S – both are headquartered in Bagsværd. Through this ownership we are committed to the integration of sustainable development into the management of our company. This is being done on the basis of the 'Charter' for companies in the Novo Group. We aim to be sustainable not only financially but also in terms of social and environmental responsibility. This report (including the annex) also constitutes the company's green accounts for 2002. For more information, visit www.novonordisk.com/sustainability, where you can also download this report in English and Danish.

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