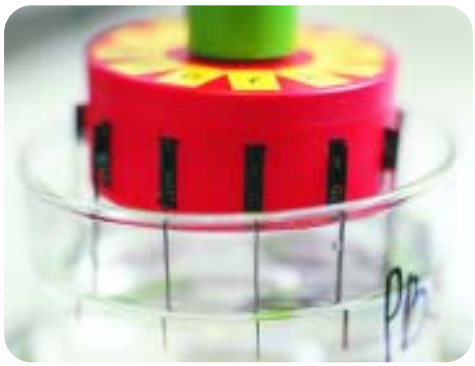
Environmental and Social Report Hillerød 2002

Novo Nordisk in Hillerød is growing. And the way that we handle our environmental and social responsibility will help to determine whether we can continue this progress in the years to come. It is our belief that we are on the right track.

novo nordisk®

Novo Nordisk – a large workplace in Hillerød

Novo Nordisk's site in Hillerød is located in an industrial area to the southwest of the town. A great effort has been made to blend the plants into the landscape, e.g. the surrounding recreational area of Brennum Park, which is open to the public. Novo Nordisk has helped to build a lake near Favrholm and also planted the area.



To the east, Novo Nordisk's property borders a residential area, while on the other three sides it is a minimum of 250 m to the nearest house. Novo Nordisk occupies a total area in Hillerød of 1,630,000 m^2 – 790,000 m^2 in urban zone and the remainder in agricultural zone. The number of employees at the close of the year was 1,262.

BOTH RESEARCH AND PRODUCTION Novo Nordisk in Hillerød primarily works on researching, developing and producing devices for treating diabetes. In 2002 we opened two new plants – one for manufacturing the haemophilia medicine NovoSeven® and one for producing medical injection devices, e.g. NovoPen® and Innovo®. The NovoSeven® plant was ready at the end of 2002, but will not begin producing for the market until the end of 2003. The plant for production of NovoPen®/Innovo® was ready for production in August 2002. The site in Hillerød also has warehouses for raw materials and products, a central boiler plant and administration. We currently operate in four main areas:

- Research and development in protein delivery systems (PDS), where we research and develop new dosing systems for pharmaceutical products. Novo Nordisk's range of pen systems and dosers for injecting insulin was developed in this area.
- Manufacture of diabetes disposable pens (DDP). NovoLet® and FlexPen® are known as 'pre-filled insulin pens' and are used to inject insulin. In order to manufacture these products, we injection-mould the plastic components, fill the insulin into cartridges, then assemble and pack the pre-filled pens. Quality control and quality assurance are an integral part of the production process.
- Manufacture of reusable pens and dosing systems – medical systems production (MSP). NovoPen® and Innovo® are systems used to inject/dose insulin. We buy the components, which we assemble using automatic and manual processes, and then pack the finished products. Quality control is again an integral part of the production process.
- Manufacture of Factor VIIa bulk – Site FVII. Factor VIIa is the active substance in the blood preparation NovoSeven®. Production is based on cultivation of genetically modified mammal cells followed by a series of recovery processes. The recovered product is sent for final treatment and packing at Novo Nordisk's factory in Gentofte.

LOW ENVIRONMENTAL IMPACT In addition to water and energy, the existing plants use various types of plastic material and glass for the production of pen systems, as well as packaging in the form of paper and cardboard.

The environmental impacts from production are generally minimal. The major impacts are air emissions of carbon dioxide and nitrogen oxides from our natural-gas boilers, noise, and cardboard, paper and plastic waste, which is sorted and sent for recycling.

MANAGEMENT SYSTEMS The plants are certified according to ISO 9001/9002 and have an established management system that covers all the important areas, including product quality and environmental and social issues. We are currently working to introduce an Environmental Management System according to ISO 14001 with a view to certification in 2003.

The site's activities are regulated by several environmental approvals and one wastewater permit, which set limits for our impact on the surrounding environment.

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A busy year with new premises and production processes

2002 was a hectic year for Novo Nordisk in Hillerød. Two brand new plants were opened just 12 and 18 months respectively from the time when the first turf was cut. MSP has been brought together under one roof in one of the new plants, while the second accommodates a completely new unit here in Hillerød – Site FVII. We continued the implementation of ISO 14001 and mapped all our main environmental impacts. As always, health & safety was high on the agenda, and we also introduced a new focus area – equal opportunities.

From the left: Lars Guldbæk Karlsen, Palle Thorsen, Henrik Risborg and Kim Steengaard

Here and in the remainder of this report we discuss the issues and activities that in our opinion best show how we at Novo Nordisk in Hillerød worked on environmental and social responsibility in 2002. We have 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. We are proud of our efforts and plan to continue in the same vein in the coming years.

NEW INITIATIVES IN ALL CORNERS OF THE COMPANY
For DDP 2002 was marked by production of the new FlexPen®, which is used with our newest insulin analogues – NovoRapid® and NovoMix® 30. This meant taking on more employees and introducing new production equipment.

The year at Site FVII was about integrating new employees and setting up machinery. In 2002 we ran tests and planned actual production for the end of 2003. We went from having 11 employees at the end of 2001 to 38 at the end of 2002. In order to ensure good chemistry between the employees, all teams took an active part in the recruitment of new employees.

In MSP it was a major step for us to bring our unit together under one roof. The employees now have better working conditions in the large, open, bright premises. Unfortunately, in the autumn we had to adjust our production capacity. In order to tackle the situation as appropriately as possible we found vacant positions in other parts of Novo Nordisk in Hillerød matching the 29 positions that we had to let go. The employees were thus all given the opportunity to remain with the company.

The year in PDS was marked by the fact that we are a relatively new unit established in 2001. Since then we have acquired many new employees and so we have spent a lot of energy integrating them and establishing the infrastructure to support our work.

ENVIRONMENTAL MAPPING AND WASTE HANDLING It is planned that MSP, DDP and Site FVII will be certified in accordance with the environmental management standard ISO 14001 during 2003. PDS belongs to Research & Development and will not therefore be certified since the first round of certification is only for production units. In DDP and MSP our environmental coordinators mapped the company's environmental impacts in 2002 and drew up action plans for how they would train employees in 2003. Site FVII will begin to do the same early in 2003. In the area of waste we have already taken initiatives to improve handling. For example, we have improved the signing for the area's containers so that there are clear guidelines on how the company's waste should be sorted.

HEALTH & SAFETY A PERMANENT FOCUS AREA Health & safety is an area that we are continually working to improve. In 2002 the number of injuries unfortunately rose to 17 compared to 12 in 2001. This increase was due only partly to the higher number of employees, and if we look at the individual injuries, there are no obvious trends. The figures show that health & safety must remain a focus for employees and management.

EVEN BETTER AT EMPLOYEE DEVELOPMENT We are pleased that we at Novo Nordisk in Hillerød have an employee turnover of just 5%. The majority of the employees who chose to leave in 2002 underwent an exit interview – either locally or centrally in the Human Resources department. In this way we identified that employee development is an area in which we need to make even greater efforts.

For the whole of Novo Nordisk 2002 was a tough year in respect of costs. However, we still worked to develop our employees. In 2001 we set the target that all managers should set targets for how they would develop their employees. We achieved this target, and in 2002 MSP and DDP focused in particular on training our hourly-paid workers.

CELEBRATING OUR SUCCESSES In order to foster a winning culture in the company, we decided in 2001 to set joint challenging targets for our units, achieve these targets and celebrate our successes. The units may have different procedures, but what we have in common is that we celebrate our successes. For example, in PDS Packaging we have developed a 'staircase', each step of which symbolises a milestone in the form of a success that might be either personal or project-related. When we reach the end of the 'staircase', we celebrate the success. In finished goods production in DDP we invited Monique to give a concert one lunchtime to celebrate a success.

BREACHES, ACCIDENTAL RELEASES AND COMPLAINTS
In 2002 we recorded 12 breaches of regulatory limit values. 11 of these concerned exceeding the conditions for pH values in our wastewater, a problem that we are working to resolve in dialogue with Hillerød Municipality. The final breach was non-compliance with a noise requirement.

We also had two accidental releases of propylene glycol. And we received one complaint about noise connected with building work in the area. It should be noted in this regard that we are working continuously on monitoring and damping noise from our production activities. All this is discussed in more detail in the environmental section of this report.

Novo Nordisk had a revised permit notified by Hillerød Municipality on 19 December 2002 for connection of wastewater to the municipal wastewater system. The Danish Society for the Conservation of Nature and the Arresø Association have contested the decision with the Danish Environmental Protection Agency.

EVALUATION OF SUPPLIERS 2002 was a year for really focusing on evaluating the environmental and social performance of our suppliers. Our target for 2002 was to evaluate 90% of our main raw material suppliers. We achieved this, and the performance of our suppliers was satisfactory in every case.

EXPECTATIONS FOR THE FUTURE During 2003 we will continue to implement ISO 14001. At the start of the year we have planned training for all employees, and after that we will start our initiatives for environmental improvement. In the social area, in 2002 we introduced equal opportunities as a focus area. We had action plans drawn up for how we would incorporate the area into e.g. our recruitment programmes. In 2003 we will begin implementing these action plans – and this means that all employees will be involved in the work.

As Hillerød is developing into a centre for biotech companies, the future will see tough competition to attract and retain the best employees. In 2003 we will also therefore be working towards even better development opportunities for our employees than we already have. Finally, we hope in the foreseeable future to be able to have a Leisure Centre here in Hillerød where our employees can exercise and meet up for social events.

Aiming to be an exciting and safe workplace

Our employees constitute one of our most important resources – and this is therefore an area which we are prioritising highly. In 2002 we worked on our social responsibility on numerous fronts. Health & safety is an area which for many years has been high on the agenda at Novo Nordisk. This concerns i.a. our employees' safety, and it is therefore an area which we are constantly striving to improve.

We also know that it means a lot to our employees that they can develop in their work. We therefore attach great importance to developing employees so that they always face new and exciting challenges.

Health & safety work is organised in the individual units. Employees elect health & safety representatives (HSRs), who spend a large part of their working time tackling health & safety problems. Together with the management of each unit, the health & safety representatives form a group which, under the responsibility of the management, prioritises and coordinates the health & safety work and prepares workplace assessments and workplace instructions.

The way the units are working to improve health & safety is highly varied. In DDP we felt that there was a need for efforts in our NovoLet® serigraph department and so we ran a campaign in 2002. We installed new extraction, made sure that the waste buckets were correctly placed, and that there were gloves available where they need to be used.

In 2002 we opened two new plants in MSP and Site FVII. Our health & safety representatives were involved in the planning of both. Since a large part of the work in MSP is done manually, an exercise room was set up for employees in the new plant with physical instruction twice weekly.

In Site FVII, the Production department held a seminar day on health & safety at which we focused i.a. on safety procedures, near-misses and the psychosocial working environment. There were some good discussions on physical accidents, on other subjects such as bullying and management reluctance to confront problems, and on how we will work on health & safety in future.

EQUAL OPPORTUNITIES In 2002 a general focus area for Novo Nordisk was to ensure equal opportunities. At Site FVII, where we had a number of new employees, we incorporated equal opportunities into our induction programme so that all new employees could get to know the company's attitude in this area. In the other departments, it was initially only managers and salaried employees who were involved in the work on equal opportunities. We were visited by Fahmy Almajid, a consultant on the integration of ethnic minorities, and DDP was visited by IKEA, who explained their project relating to equal opportunities. In 2002 we drew up action plans for how we would involve all employees in the area in 2003. This means i.a. that all employees have the opportunity to discuss issues relating to discrimination and equal opportunities.

PATERNITY LEAVE In 2002 Novo Nordisk adopted one year's parental leave with full pay. In many places we can already see that employees are happy with this scheme. The biggest change for us →

Social targets 2003

All units in Hillerød will contribute to achieving the following corporate targets:

80% of all employees should discuss the findings from DAWN, HERS or other relevant studies with patients.

80% of all managers should score 3.0 or more in eVoice on questions related to 'winning culture'. All managers with a score below 3.0 should take action to improve in this area.

The 2003 targets for increasing equal opportunities should be set and 80% of these targets achieved.

Units with an unwanted employee turnover of more than 10% should reduce their turnover to a maximum of 10% by the end of 2003.

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is that it is now also men who are availing themselves of this option to stay at home with their infants. At the end of 2002 we thus had a handful of men who had applied for between 25 and 35 weeks' paternity leave in 2003.

MEETING PEOPLE WITH DIABETES In 2002 we set the target of every employee entering into dialogue with a person with diabetes during the year. We achieved this target. The idea of these meetings is that a better understanding of our customers' needs helps to motivate and give meaning to our work. Many of the participants have mentioned how these meetings have really opened their eyes to the problems and challenges that our customers are facing. We arranged four large such patient meetings, where a doctor and two patients talked about living with diabetes. At Site FVII we held a similar meeting involving people with haemophilia.

EMPLOYEE DEVELOPMENT There are development/training plans for the majority of employees – either on an individual or team basis. In PDS and MSP, we focused on competences in 2002. We identified the competences that we need and then drew up action plans for how we would develop employees within these competences.

In 2002, both MSP and DDP took on site training coordinators. Their main job is to set up a structure of training initiatives, create an overview and take care of more long-term training planning. One of their most important tasks is to improve training for hourly-paid workers. Additionally, HR partners have joined all areas. Their job is to help ensure that management and our method of organising work always support the business.

In conjunction with the pharmaceutical companies Løven and Lundbeck, Novo Nordisk has introduced training for medical operators. In Hillerød in 2002 we began training 35 medical operators. The training consists of in all six weeks' training at the job retraining centre in Copenhagen.

GOOD CONDITIONS FOR SHIFT WORKERS A lot of the employees in DDP do shift work, which continues seven days a week. The shift work is planned so that duties are distributed as evenly as possible. Individual employees have early shifts, late shifts and nights shifts in a pre-planned roster, and we try to plan the shifts so that it is possible to have a proper handover from colleague to colleague in the change between shifts. Since 2001 the canteen has opened in the evening and at weekends. We also try to give as much free time as possible in the transition from a night shift to a day shift.

A POPULAR PLACE TO VISIT Novo Nordisk in Hillerød is a popular place to visit for customers, training institutions and other stakeholders. In 2002 we had more than 4,000 visitors to the site. The majority of these visitors were customers, but we also had guests with a technological or professional interest in our plants, while others wanted to see the place where their mother or father works.

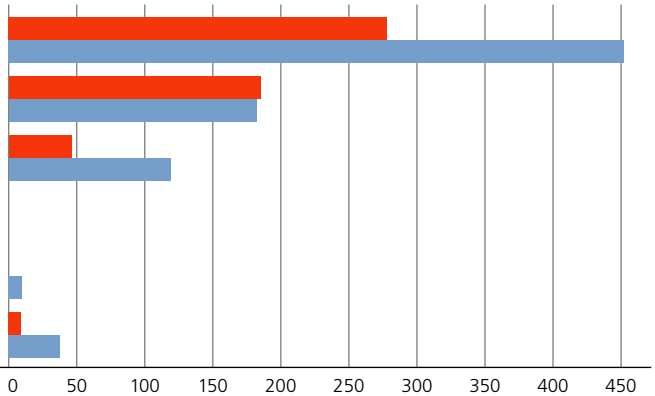
We are pleased with the high number of visitors; not just because it is satisfying to show our work to others who think it is exciting, but also because it is instructive and stimulating for our employees to talk about production. As well as visits from various departments of the Danish Diabetes Association, Site FVII has planned visits by the Danish Haemophilia Society in 2003. Here the employees received direct feedback on how customers experience our products.

CONTACT IS IMPORTANT We know that it is important to have good relations with the community in which we operate. We therefore inform our neighbours when we are beginning new initiatives. We help to sponsor local cultural activities such as the castle festival in Hillerød, and we have also sponsored sporting events and humanitarian projects, e.g. through Amnesty International.

Our employees	2000	2001	**2002**
Total number of employees	812	1,130	**1,262**
Number of full-time employees	778	1,082	**1,222**
Number of part-time employees	34	48	**40**
Average age distribution (years)	37.1	37.2	**37.9**
Average years of service	4.7	4.4	**4.6**
Employee turnover (%)	7.3	3.2	**4.6**

Occupational injuries	2000	2001	**2002**
Frequency of occupational injuries	8.5	6,6	**8.4**
Number of lost-time injuries	11	12	**17**

Gender representation		2001	**2002**
Administration	female	188	**278**
	male	323	**452**
Production		227	**185**
		254	**182**
Research & Development		40	**46**
		96	**119**
Other job functions		0	**0**
		2	**0**
Senior management (EVP, SVP, VP)*		–	**0**
		–	**10**
Management (Manager)*		–	**9**
		–	**38**



* The figures for senior management and management are also included in the totals for the other employee categories.

WORLD DIABETES DAY

Joint exercise for a good cause

It is a tradition throughout Novo Nordisk that employees take part in a jog-a-thon on World Diabetes Day on 14 November. In 2002 also the jog-a-thon was a major event in Hillerød, attracting 370 employees from across the units. We were visited by the British Minister for Employment, who started the jog after a joint warm-up. There was a choice between running/walking 5 or 10 kilometres – and the first to cross the line at each distance was awarded a prize. Employees had the opportunity to have a blood-sugar reading taken during the day, and in the canteens our chef served a 'diabetes menu'. It is also a tradition that employees pay a small amount to take part in the jog-a-thon, while Novo Nordisk gives an amount for each kilometre the employees run. The proceeds go to a diabetes care project. In 2002 the proceeds were given to a number of diabetes information and training projects in Trinidad and Tobago.

STOP-SMOKING CAMPAIGN

Helping employees to break an unhealthy habit

When MSP moved into its new plant, we took the decision to make the plant a no-smoking area. Smoking is therefore now only permitted in the specially designated smoking areas. The decision was welcomed by our employees – including most of the smokers. As an aid to smokers, in autumn we held five stop-smoking courses lasting six weeks. The course was run by two nurses, who advised on both the physical and psychological consequences of giving up cigarettes. We were also visited by a doctor and a dietician. The latter gave good advice on how best to avoid putting on too much weight when you stop smoking. Participants were given either nicotine chewing gum, patches or tablets to help them keep cigarettes out of their lives.

REORIENTATION

Bus to run closer to the new plant

When MSP moved into the new plant in July, many of the employees had about fifteen minutes added to their walk from the bus-stop to the plant. We therefore contacted the Greater Copenhagen Development Council and Hillerød Municipality to ask whether bus 600S could stop at Peder Oxes Allé and bus 577P run through Brennum Park. This should be resolved in spring/summer 2003. At the same time, Novo Nordisk will lay a path from Peder Oxes Allé to the plant. This will give employees a little more time in the morning.

MORE SPACE

New premises in PDS

When MSP moved to its new plant, the development laboratory in PDS acquired more space in the basement of building 20B. All the offices have been renovated to provide good space and effective sun-screening. The laboratory assistant work is now being done in laboratories, paperwork is mostly being done in offices, and apparatus and equipment have been located more appropriately in terms of noise and indoor climate. There is now room for equipment accessories ... and for elbows! We are pleased that PDS is now a combined unit. This gives inspiration to our daily work and is good for our common social life.

SITE VISITS

Visits from children with diabetes and a TV host

Among the many visitors in 2002 were 12 children with diabetes from Hillerød Hospital. One of the boys had told a Novo Nordisk employee that he would like to see how a FlexPen® was made. DDP therefore invited him – and 11 other children with diabetes – to a tour of our production site. This proved to be especially successful because the children were accompanied round by the popular children's TV host Camilla Ottesen. All the children were given the 12 parts that are needed to assemble a FlexPen®.

STORYTELLING

Stories from everyday life

Since PDS is a relatively new unit, in 2002 we worked on culture and values. Instead of letting management define our values, we held a competition. All employees were challenged to write a story that reflected their everyday experience in PDS. Each story was rewarded with a specially designed 'storyteller mug'. Many of the stories were read out in the departments, and the best storyteller was presented with a bicycle. There were lots of exciting stories that expressed how different employees experience the culture in PDS. We hope that in future it will become an integral part of our everyday life to share stories with one another since this gives valuable insight into our daily work.

A year of focus on environmental mapping

At Novo Nordisk in Hillerød we are continuously working to reduce our impact on the surrounding environment as much as possible by using the best available technology, optimising our processes and disposing of our waste flows in an environmentally appropriate manner. The environmental work in 2002 was marked by the fact that we will be introducing environmental management according to ISO 14001 and will be certified in 2003.

As part of the implementation we have mapped our environmental impacts and drawn up plans for how we will increase environmental awareness in individual employees in the company.

MSP, DDP and Site FVII will be ISO 14001-certified during 2003. Back in 2001, DDP and MSP set up environmental groups with representatives from the various departments in the unit. It is these groups that will drive the implementation of the environmental standard. In 2002 we mapped our environmental impacts and obtained a good overview of how we can implement initiatives for environmental improvement. The next major step in the implementation process is to increase environmental awareness among employees and introduce initiatives for environmental improvement. Site FVII will be starting this work in 2003. The ideas for these initiatives will come i.a. from employees. At the beginning of 2003 we will begin training involving all employees in MSP, DDP and Site FVII.

Although the implementation is running independently in the individual units, there is close cooperation between the environmental coordinators. It is important that we have a range of common procedures and targets for how we will resolve problems affecting the whole area. The cooperation is also valuable because we can share experiences and inspire each other in implementing ISO 14001.

SYSTEMATIC WASTE HANDLING One of the areas in which we began initiatives in 2002 is waste handling, which is taken care of centrally by the Service Centre in Hillerød.

At Novo Nordisk in Hillerød we have been working on sorting waste for three years, but it is only now that we have really systematised this area. We have improved signing so that employees now have clear and unambiguous information on what should and should not be placed in the various waste containers. Although we can already see that employees have become better at sorting their waste, we expect even better results in 2003. If employees are to change their behaviour, this requires that we explain why it is so important. Thus, waste handling will become a key theme in employee training in 2003.

The majority of waste is made up of plastic, which is collected and sent to Expladan in Haarlev for recycling. Paper and cardboard are sent to AFAV I/S for recycling. Refuse and other combustible waste is sent for incineration at I/S Vestforbrænding Incineration Plant in Glostrup. The total amount of waste increased from 724 tons in 2001 to 768 tons in 2002. This increase was due i.a. to the fact that we acquired two new plants. There was thus a large amount of waste from the packaging of new materials and from the building work itself.

MINIMUM ENVIRONMENTAL IMPACT Wherever possible at the plants in Hillerød we use 'cleaner technology' to minimise our resource consumption and impact on the surrounding environment. We therefore use laser printing instead of the normal printing process with organic solvents, we use chlorine-free granulates for manufacturing plastic components, and we are installing ventilation systems with a high degree of recirculation or heat recovery.

ENVIRONMENT AN INTEGRATED PART OF INITIATIVES When we buy new machinery or plan new plants, the envir- →

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Environmental targets 2003

The Environmental Management System in DDP and MSP will be ISO 14001-certified by the end of the third quarter. Factor VII will be certified before the end of 2003.

DDP will also:
Improve utilisation of water per produced unit by 5% and utilisation of energy per produced unit by 4% compared to 2002.

Examine the energy consumption of the electric motor of the ventilation system for building 24A.

Work on correct waste sorting and at least one environment-improving waste fraction.

MSP will also:
Focus on reducing energy consumption through mapping, gathering data and carrying out an energy survey, and specifically in 2003 by reducing the consumption of water and natural gas for humidification by 35% compared to the budgeted consumption.

Reduce the consumption of copying paper per employee by 5% compared to the consumption per employee in the first quarter of 2003.

Work to reduce waste by reducing waste percentages in selected departments and identifying an environment-improving waste fraction.

onment is always an integrated part of the decision-making process. Thus, in the setting up of our new plants in MSP and Site FVII we also strived to use the best available technology.

MSP's factory was built with the following energy-saving initiatives:

- All ventilators and pumps are controlled so that performance is constantly matched to need (frequency control).
- Ventilation systems use recirculation.
- Differentiated heating of production premises according to need.
- Natural gas-fired boilers are fitted with flue gas exchangers for condensing operation.
- Air compressors are controlled so that power is constantly matched to need (frequency control).
- Energy-efficient lighting with movement sensors fitted.

The plant for manufacturing Factor VIIa bulk was built with the following energy-saving initiatives:

- Recirculation in all plants where possible.
- Differentiated heating of production premises according to need.
- Combustion air from the steam boiler plant will be recirculated in winter to heat up ventilation air and produce hot service water.
- Condensate from the steam generator and Water For Injection distillation columns will be recycled so that we can dispense with a separate water heating system for steam production.
- Optimum light influx to ensure limited use of artificial lighting in large parts of the joint distribution area.

LASTING FOCUS ON USE OF RESOURCES Our major consumption of resources consists of water and energy. We also use large amounts of plastic materials for producing injection pens, as well as paper and cardboard for packaging. In the new Factor VIIa bulk plant we use various raw materials in the production of NovoSeven®, e.g. glucose, and bases and acids, which are used for cleaning process equipment, etc.

In DDP we had good results in 2002 in terms of our eco-productivity index (EPI), succeeding in producing more products than in the previous year per consumed unit of water or energy. MSP does not use water directly in the production process. In respect of energy consumption, it was significant that we moved to a new, larger plant. Since there are more square metres (15,167 m^2), a higher ceiling and a boiler for steam production, it is only natural that energy consumption increased. In this regard there is a natural start-up period, which means that the consumption of energy is not matched by an increased number of components produced. In 2002 Site FVII ran a number of tests. These activities consume large amounts of energy that are not offset by cleared production, which affects the ratio of production to energy consumption of which the EPI is a measure.

In 2002 we set the target of increasing productivity by 4% and 5% per used energy and water unit respectively compared to 2001. In DDP we more than achieved the targets, managing to produce 22% more per used water unit and a full 42% more per used energy unit! As explained above, MSP was unable to achieve the target for energy.

In DDP we are planning to carry out a survey of our energy situation in 2003 so that if possible we can introduce initiatives for environmental improvement.

GREATER MATERIAL CONSUMPTION In 2002 Hillerød used a total of 1,855 tons of raw materials and auxiliaries, and 932 tons of packaging. Compared to 2001, this was an increase in the consumption of raw materials, etc., of 10% and in packaging of 2%. The reason for this development was increased production.

FOCUS ON WASTEWATER We carry out our own inspections of wastewater at least four times a year, which is a requirement of our connection permit from Hillerød Municipality. In 2002 we wanted to improve our control over the wastewater neutralising plant, so we began an investigation to find the source of the fluctuations in pH value in our discharged wastewater and are now working, in dialogue with Hillerød Municipality, to achieve this better control.

Novo Nordisk had a revised permit notified by Hillerød Municipality on 19 December 2002 for connecting wastewater to the municipal wastewater system. The Danish Society for the Conservation of Nature and the Arresø Association have contested the decision with the Danish Environmental Protection Agency.

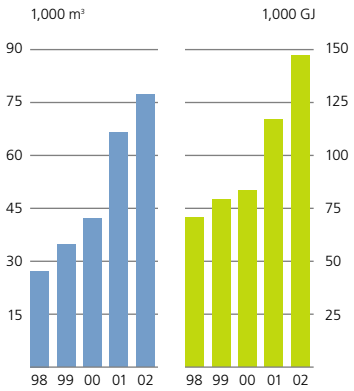
The wastewater for the whole site consists of water from cleaning glass cartridges and production equipment, plus sanitary wastewater. The wastewater is piped via the public sewage system to Hillerød Central Wastewater Treatment Plant, from where the treated wastewater is discharged via Pøleå Stream into Lake Arresø.

Rainwater from outdoor areas impervious to water runs via a sand-trap and oil separator to a holding basin and from there via the municipal rainwater system to Havelse Stream.

In 2002 we discharged 72,400 m^3 of wastewater compared to 51,400 m^3 in 2001. This was due to an increase in the number of employees and the building of the two new plants – i.a. commissioning of the Factor VIIa bulk factory, which was responsible for 9,500 m^3 of the wastewater, and increased production in DDP.

CONTROLLING SOIL POLLUTION We have diesel oil pollution on our property from a discontinued tank system for filling fuel into vehicles which belonged to the State Pilot Dairy previously occupying the site. In 2001 we mapped the pol- →

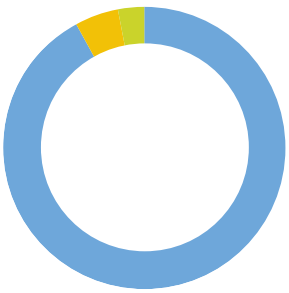
Water and energy consumption



Breakdown of energy sources

Electricity: coal 19%
Electricity: orimulsion and oil 14%
Electricity: natural gas 11%
Electricity: biomass and waste 7%
Heat and steam: natural gas and gasoil 49%

Breakdown of raw materials



Plastic 92%
Metal 5%
Other auxiliaries 3%

Waste disposal

Incineration 27%
Controlled destruction 11%
Recycling 62%

SYSTEMATISATION

Environmentally friendly product development

When we in PDS develop new products, as well as a range of quality procedures that we have to observe there is also a requirement that the products impact the environment as little as possible. This applies during production, use and final disposal. We have focused on this for many years, but in 2002 we sought a more systematic way of integrating environmental considerations into our development processes. We have drawn up a set of guidelines detailing how to document the environmental considerations that we have taken in the development process, and we recommend that a form of Environmental Goods Declaration be drawn up containing i.a. the necessary facts and reasons behind the choice of materials and the concept. In this way we ensure that employees give thought to environmental consequences when new devices and packaging are developed.

PESTICIDES

Organic fatty acids make mincemeat of weeds

We have also taken the initiative to reduce our consumption of pesticides for combatting weeds. Whereas in 2002 we used Roundup Bio, in 2003 we will be using a more environmentally friendly concentrated product, which is made from naturally occurring fatty acids (40% nonane acid).

The organic fatty acids dissolve the weeds' cell walls, after which the plant is scorched and dries up, and about two days after application the agent is biologically broken down by general bacteria in the soil.

PESTICIDES

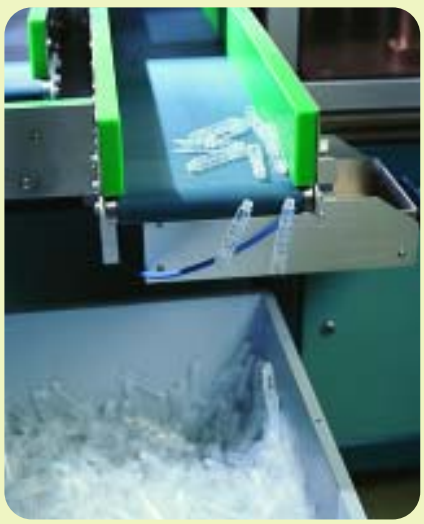
Coconut oil makes mincemeat of insects

In connection with the environmental mapping we took the initiative to reduce our consumption of pesticides for combatting insects. Whereas in 2002 we used Empire 20, in 2003 we will be using a more environmentally friendly product, which is made solely from plant oils (3.4% coconut oil).

ENVIRONMENT AND BUSINESS

Plastic waste sold and recycled

Our production of devices generates a lot of plastic waste in the form of rejected components, raw materials of deficient quality, and automatic waste from operation of the machinery. We sell all this waste to the recovery company Expladan, where it is ground down and turned into new plastic products that they sell on to their customers. In this way we are meeting Hillerød Municipality's requirements for recycling as well as reducing both the direct impact on the environment from our production and, albeit to a limited extent, our cost on raw materials.



→ Continued from page 12

lution, which affects an area of approx. 175 m^2. The pollution presents no risk while the area is being used as it is today – only if the soil is one day moved might there be a risk that would need to be taken into consideration. We are therefore not planning to remove the pollution at present. When mapping the pollution, we found that there were leaks in a sewage pipe and an oil separator. These will be restored in March 2003. Frederiksborg County is being kept informed of the matter.

COMPLIANCE WITH ENVIRONMENTAL LEGISLATION In 2002 we recorded 12 breaches of regulatory limit values relating to pH. One of these was a breach of a noise limit, two were breaches of pH in the production of FVIIa, and another two were direct breaches of the conditions for DDP's production. The remaining seven also originated in DDP and came from an extraordinary, non-compulsory measurement that we performed on our own initiative to find the source of the fluctuation in pH in our wastewater, cf. the section on wastewater.

We had one accidental release into the sewage system of approx. 25–30 litres of propylene glycol from an expansion tank for a compressed air system. The expansion tank was subsequently replaced. In addition, as a result of a leakage in a cooling water system we had a release of approx. 1,300 litres of 35% propylene glycol into the sewage system.

MINIMAL AIR POLLUTION The major sources of air emissions in Hillerød are activities connected with our own production of heat and steam based on natural gas and gasoil.

Our environmental approval sets limit values for air emissions of metacresol and phenol, which are used as preservatives in insulin preparations, and formaldehyde, which is given off in small concentrations when injection-moulding plastic components. As part of our self-monitoring, in 2000 and 2001 we carried out first-time measurements of air emissions of these substances. The measurements showed that we are observing the applicable requirements by a high margin.

NOISE AND COMPLAINTS The site's activities do not normally entail nuisances which may give cause for complaints and we did not receive any complaints about nuisances from our production activities on the site in 2002. However, we did receive one complaint from a neighbour during building work on the Factor VIIa bulk factory. The complaint concerned noise from a temporary welding extraction system which was dampened and has now been removed.

It is still important that we are continually aware of any noise sources so that we can prevent the need for complaints. It is a requirement of our environmental approval from Frederiksborg County that every year we carry out control measurements and calculations of the external noise contributions towards neighbours. During our work in 2002 it proved necessary to dampen a chimney and some ventilators in order to observe the applicable noise requirements. An action plan for noise damping was submitted to the county, and the noise damping is expected to be carried out in 2003.

Statement on green accounts 2002 for Novo Nordisk Hillerød

On 18 March 2003 Frederiksborg County received Novo Nordisk Hillerød's final green accounts 2002.

In processing the green accounts, the county has taken its position on the basis of the following information contained in the accounts. References to Statutory Order no. 975 of 13 December 1995 are given in parentheses.

Basic information

- The category/categories for which the company is environment-approved (§5, no. 3)
- Information on the most significant environmental approvals granted to the company (§5, no. 5)
- The brief qualitative description of the most significant resource and environment parameters characterising the primary activities of the company and the secondary activities, where relevant (§5, no. 7)

Information on environmental issues

- Data on the major consumption by the company of energy, water and raw materials (§7, para. 1, no. 1)
- Data on significant types and volumes of pollutants to the extent they
  - form part of the production processes (§7, para. 1, no. 1),
  - are discharged by the company to air, water and soil (§7, para. 1, no. 2),
  - form part of the company's products (§7, para. 1, no. 3),
  - form part of wastes from the company (§7, para. 1, no. 4).

Frederiksborg County's comments

Frederiksborg County has examined the company's green accounts for 2002 and found that the information they contain on the company's environmental issues corresponds to the information of which the county is aware. Frederiksborg County therefore has no comments to make on the green accounts.

Environmental data 1998–2002

	Unit	1998	1999	2000	2001	**2002**
Water						
Drinking water	1,000 m^3	27.3	34.8	42.3	66.5	**77.4**
Energy						
Energy (total)	1,000 GJ	70.6	79.1	83.5	117	**147.0**
External (electricity)	1,000 GJ	35.8	39.3	45.7	55.5	**73.7**
Internal (subtotal)	1,000 GJ	34.8	39.8	37.8	61.5	**73.3**
Gasoil	1,000 GJ	1.2	1.1	0.9	0.9	**1.0**
Natural gas	1,000 GJ	33.6	38.7	36.9	60.6	**72.3**
Materials						
Materials (total)	tons	1,211	1,425	1,788	2,611	**2,787**
Raw materials	tons	1,080	700	1,223	1,693	**1,855**
Packaging materials	tons	131	725	565	918	**932**
Wastewater						
Volume	1,000 m^3	25.2	31.3	38.7	51.4	**72.4**
Suspended solids	tons	–	10	12	16	**23**
COD	tons	–	17	21	27	**38**
Nitrogen	tons	–	1.7	2.1	2.8	**3.98**
Phosphorus	tons	–	0.5	0.6	0.8	**1.1**
Other waste						
Other waste (total)	tons	429	432	534	724	**768**
Incineration	tons	295	160	195	205	**209**
Landfill	tons	0	2,5	0	0	**0.0**
Controlled destruction	tons	1.1	24	13	60	**85**
Recycling (subtotal)	tons	133	245	326	459	**475**
Construction waste	tons	0	1.3	27	39	**1**
Electronic equipment	tons	0	0	2.5	2.4	**1.8**
Glass	tons	0	0	0	0.06	**0.3**
Food	tons	0	3.4	5.8	6.9	**7.7**
Metal	tons	1.5	3.9	0	3.7	**6.4**
Paper & cardboard	tons	44	63	68	112	**132**
Plastic	tons	88	173	223	295	**326**
Emissions to air						
Ozone-depleting substances (HCFC)	kg	30	31	0	47	**103**
Carbon dioxide (CO_2)	1,000 tons	7.5	8.1	8.9	13.5	**16.4**
Sulphur dioxide (SO_2)	tons	13	13	15	19	**10**
Nitrogen oxides (NO_x)	tons	18	16	17	13	**23**
Environmental Impact Potentials						
Global warming	1,000 tons CO_2-eqv.	7.5	8.1	8.9	13.6	**16.3**
Ozone layer depletion	kg CFC_{11}-eqv.	1.2	1.2	0	1.9	**4.1**
Acidification	tons SO_2-eqv.	26	24	27	28	**27**
Eutrophication	tons NO_3-eqv.	24	21	52	54	**83**
Compliance and complaints						
Breaches of regulatory limits		0	0	4	5	**12**
Regulatory limits with repeated breaches		0	0	2	1	**1**
Accidental releases*		0	0	0	0	**2**
Complaints		0	0	0	0	**1**
Stockpile of Ozone Layer-degrading Substances						
CFC	kg	13	13	13	10	**13**
HCFC	kg	662	662	670	686	**697**

* The two accidental releases in 2002 are not included in the total number of accidental releases for Novo Nordisk. This is due to an error in connection with the annual reporting from Site Hillerød. The total for Novo Nordisk will be corrected for the 2003 reporting.

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*.

Novo Nordisk is an international biotechnological and pharmaceutical company. We offer a wide range of insulin products, as well as products for growth disorders, hormone replacement therapy and haemophilia. We are headquartered in Bagsværd and have production facilities in Denmark, France, the USA, Brazil, South Africa, Japan and China. We have around 18,000 employees worldwide and are part of the holding company Novo A/S, which is also headquartered in Bagsværd. 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. The Charter sets out our Values, Commitments and Fundamentals, as well as the Novo Nordisk Way of Management, which includes the company's Vision and Policies. 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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