Group environmental report 2003

The Grundfos Group

BE > THINK > INNOVATE >

GRUNDFOS

Summary

Accountability is a core value to the Grundfos Group. This report describes how we put this responsible approach to the environment and occupational health and safety into practice during 2003. We have decided to structure the report in accordance with our Business Excellence management model. The report describes the management aspect of our environmental work as well as activities and results in areas such as staff, customers, society and finance.

Management – staff involvement
Staff involvement is one of the keys to the Group's success with its environmental initiatives. The number of staff suggestions for environmental improvements has risen sharply in recent years. It reflects the focus and commitment to these issues that exist among staff throughout the organisation.

There is a tradition for commitment to environmental work and experience sharing, not only within individual companies in the Group, but also between different companies and across borders. Annual internal audits ensure ongoing dialogue and exchange of ideas about "best practice" in the field.

All production companies carrying the Grundfos name comply with the requirement for certification according to ISO 14001, the international standard for environmental management. The only exception is the Hungarian company, which will become certified in 2004.

Staff – focus on health and safety
In the past year, the Group has focused on two main areas relating to health and safety: a reduction in the number of work related accidents and a reduction in the number of hazardous chemicals.

We have made a concerted effort to prevent accidents at work, and have, for example, begun registering near-accidents to enable us to focus on preventive actions. The results have been good, and following an unfortunate accident frequency record in 2000 of 30.3 accidents per 1 million working hours, the accident frequency has now been reduced to 19.5. We will maintain our focus on work accidents in the years to come.

We have decided to divide production chemicals into three groups according to the degree of hazard involved. This classification has made the issue more transparent, and we have come closer to our goal of reducing the number of the most hazardous chemicals.

We survey staff satisfaction with their working environment every second year. The result of this year's survey showed that staff in the Grundfos production companies world-wide give the Group 4.52 points out of 5 for its efforts to create a safe working environment. It should be noted, however, that this question was left out of the survey in the Hungarian company.

Customers – Grundfos pumps solve environmental tasks
We give three examples to describe how Grundfos pumps help solve environmental tasks on a daily basis. The examples involve wastewater handling, dosing of chemicals and energy-saving pump installations.

Society – global and local environmental influences
Globally, the Group's sale of energy-saving pumps have, in 2003, resulted in an annual reduction of energy consumption corresponding to the annual energy consumption of 111,415 households. As far as our own production is concerned, we have reduced the indexed electricity consumption by 10% since 2000. Although the Group is currently expanding rapidly, we still aim for a 20% reduction of the indexed electricity consumption by the end of 2005. The indexed water consumption has also been reduced by 7% since 2000, and the indexed amount of chemical waste by 5%.

Finance – financial results of our environmental work
We have tried to express the financial impact of our environmental work in figures. If the consumption to turnover ratio had remained the same as in 1999, the reduction in the consumption of electricity, water and heating in 2003 would correspond to approximately DKK 15.5 million at Group level.

Management, policy and strategy

The Group President has the floor

Accountability in our interactions with individuals, the environment and society as a whole has always been one of the fundamental values of the Grundfos Group. Our values underscore the way we act, and it was the values and the Grundfos culture they have created that motivated us to sign the UN Global Compact initiative in 2002.

The purpose of the global pact is to create a dialogue and promote learning based on a behavioural codex that signatories to the pact are encouraged to implement. The pact is voluntary, and there is therefore no minimum level of activity required to be a valid member. At Grundfos, however, words are followed by action, which is borne out by the results we have achieved within the working environment and health and safety.

We are very satisfied with the result of our efforts to reduce the number of work accidents in our production companies. In only three years, we have managed to reduce the accident frequency from 30.3 to 19.5 accidents per 1 million working hours. The issue of work accidents has been and still is on the agenda at all levels of the organisation, and the preventive work is gaining ground throughout the Group.

It is also a pleasure to see the high degree of staff commitment to the improvement of the Grundfos environment and health and safety. In 2003, we have again beaten our own record as regards the number of improvement suggestion from staff. We are aware that the many suggestions from staff are the main reason why we have achieved such good results in this area.

We appreciate the recognition we receive for our environmental work. Over the years, Grundfos has been honoured with awards for the way in which we report on the environment as well as for the actual activities and the results we achieve. In 2003, we received a diploma for good working environment practices on account of our effort to phase out the use of solvents to degrease metal parts during production. Acknowledgements like this motivate us to continue working towards sustainable development.

This report describes the main activities and results of 2003 relating to the environment and occupational health and safety.

We hope that you will enjoy the report.

Group President Jens Jørgen Madsen

Management

It is our belief and our experience that you achieve the best results by involving as many staff members as possible. The Group's activities to improve the environment and health and safety are therefore supported at many levels in the organisation, and a record number of staff suggestions help us achieve the objectives. This section deals with the sharing of responsibility, learning and experience.

The Group's ongoing efforts to promote sustainable development – environmentally, socially and financially – are based on its underlying values. The values are expressed in the way we choose to do business and are an important part of our management model, the Business Excellence model, and our vision – the future we are trying to create.

The three categories – customers, staff and society – refer to the corresponding categories on the right hand side of the Business Excellence model: the results side. In fact, success in all three areas is a prerequisite for business success. We consider satisfied staff and a safe and sound working environment to be just as important as satisfied customers, if we are to achieve good results. We have decided to use the same structure in this report to describe our efforts and results for staff, customers and society in the field of environment and occupational health and safety. Finally, we summarise the financial aspects of the environmental and health and safety work.

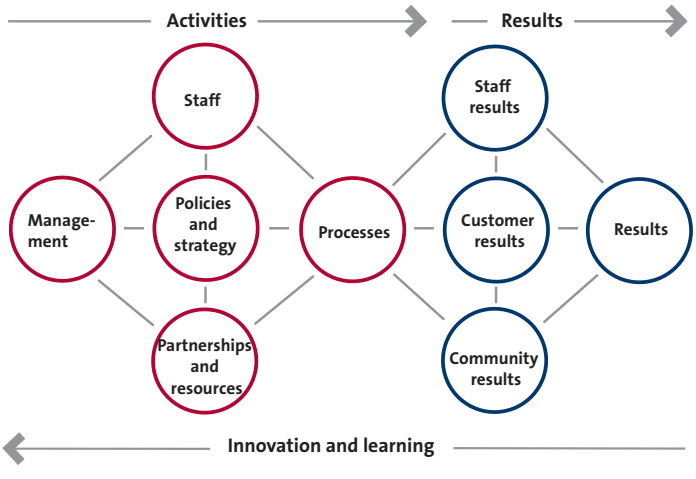
The Grundfos vision:

· The company's customers consider Grundfos to be the leading manufacturer and business partner for top quality pumps – in terms of functionality as well as environmental friendliness.

· There is a high degree of satisfaction among company staff, as the jobs and terms of employment provide opportunities for personal development, and the working environment is characterised by consideration for the individual staff member's aspirations and qualifications.

· Society at large holds Grundfos in high esteem and recognises the Group for its strict adherence to legal requirements and its respect for democratic principles, local traditions and environment, as well as the people whose lives and conditions are affected.

The Business Excellence model



Sharing of responsibility

You do not achieve good results without hard work. Whether staff satisfaction, customer satisfaction or environmental results, you need to make a concerted effort and evaluate and measure the results on an ongoing basis.

It is the Group's belief and experience that a high degree of staff involvement provides the best long-term results, and our environmental and health and safety initiatives are therefore supported at many levels in the organisation. This makes it necessary to involve several levels, as illustrated on page 7, when it comes to defining environmental and health and safety objectives and preparing the necessary action plans.

Group Management determines the overall objectives for the Group once a year. The decision is based on the financial results of recent years, audit results and input from the Group's environmental organisation about Group focus areas for the coming year.

Each production company defines its own objectives, which, as a minimum, encompass the same topics as the objectives for the Group as a whole. In addition, the companies may adopt individual objectives that apply in other areas where circumstances contribute to the Group's overall environmental load.

Local area management adopts action plans that help meet the objectives. It should be appreciated, however, that staff have responded to the invitation to get actively involved by providing a large number of suggestions for improvements that have contributed greatly to the results. The number of suggestions has increased dramatically in recent years, and has become a measuring point in its own right. These suggestions for improvement may relate to other matters and not just environment and health and safety, and their number reflects the staff's commitment to their company.

Group environmental objectives

Subject	Environmental objectives	Term
Electricity	Reduction of indexed electricity consumption by 20 per cent compared with 2000	31-12-2005
Water	Reduction of indexed water consumption by 10 per cent compared with 2000	31-12-2005
Chemical waste	Reduction of indexed chemical waste by 20 per cent compared with 2000	31-12-2005
*Number of "red" chemicals	Reduction of number of "red" chemicals to 90	31-12-2005
*Number of "yellow" chemicals	Potential reduction to be mapped in 2004	
Work accidents	Accident frequency: 18 accidents per 1 million working hours	
	Accident-related absence: 2 hours per 1000 working hours	31-12-2005
Electricity consumption of products	At least 80% of new products developed during the period until year 2006	
	should as a minimum consume 5% less electricity than the previous model.	
	If the previous model is less than five years old, the objective is a 2% reduction.	31-12-2005
Material consumption of products	All new products developed during the period until year 2006, should consume	
	less raw materials than the previous model.	31-12-2005

* Grundfos classifies chemicals as "red", "yellow" and "green", where red indicates the most hazardous chemicals.

Notes

The objective for the number of red chemicals has been changed compared with the Group's annual accounts, as the figures relating to the American company have now been included.

The objective for the number of yellow chemicals has been added compared with the Group's annual accounts.

The objective for accident-related absence is now indicated in terms of number of hours per 1000 working hours compared with the Group annual accounts, which state number of accidents per 1 million working hours.

The deadline for the objective for the electricity consumption of products has been changed to 2006 compared with the Group annual accounts, which state 2005.

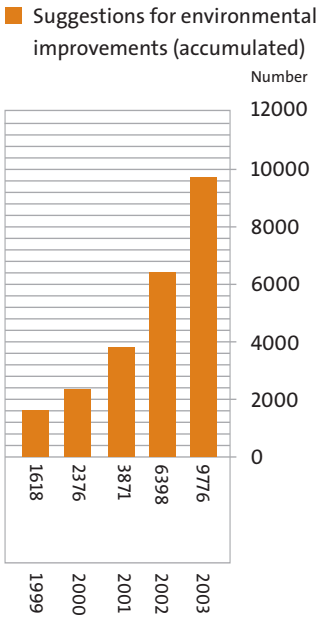
Dissemination of learning and experience

Staff will be motivated to make suggestions for improvements if they believe that their suggestions are taken seriously. As the number of suggestions increases, a need arises for an effective system to handle and follow up on the suggestions. Grundfos has accordingly developed a database that is accessible to all staff in the Danish company.

A cross-organisational task group was appointed to develop a database that met the many different needs and wishes throughout the organisation. It was a top priority to ensure the database was user-friendly. Without this it would not have been widely used.

Its main purpose was to record the staff member who was in charge of individual suggestions, deadlines, etc. In addition, the database has become a key factor in the dissemination of ideas and experience to other companies within the Group.

At Grundfos, experience sharing and collaboration across the organisation is a top priority, as we believe it strengthens the Grundfos esprit de corps and the feeling that we all work towards a common goal. At the same time, experience sharing is an important part of the work to disseminate and implement management systems, policies and procedures throughout the organisation.



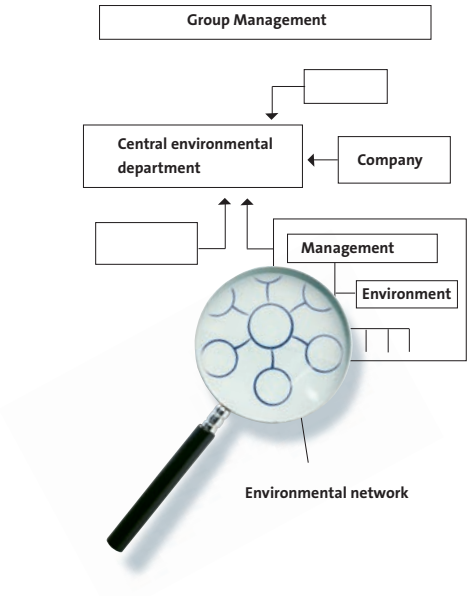
Our uniform system for environmental and health and safety audits is a good example of how we prioritise and structure experience sharing. The system is being implemented at several levels in the organisation, as has been the case with many other Grundfos systems.

In addition to an audit team that audits the management system for environment and health and safety in all production companies in the Group, we have appointed an in-house audit team for each company.

The Group audit team mainly focuses on the system and management aspects of the environmental and health and safety work. The team primarily consists of middle-level management from the production companies with responsibility for environment and health and safety.

The in-house audit teams deal with operational issues in greater detail. The members of the audit teams are primarily staff without management responsibility but with practical experience from day-to-day environmental and health and safety work. The size of the audit team depends on the size of the company.

The main purpose of auditing at two levels is to check whether the environment and health and safety management system has been properly implemented. However, it is also very important to Grundfos that the audit promotes an exchange of ideas and experience.



Requirements and voluntary actions

All production companies carrying the Grundfos name must be certified according to ISO 14001, the international standard for environmental management. This requirement is part of our Group environmental policy and all companies already comply except the Hungarian company, which is likely to become certified in 2004. All new or purchased companies have three years to implement the system. This is the reason why the Hungarian company is not yet certified.

Production companies in the Group that do not carry the Grundfos name are also subject to requirements. They are not required to have a certified environment management system but must comply with a number of minimum requirements to environment and health and safety, defined in-house. The system used to evaluate the companies that do not carry the Grundfos name is identical to the one we use to evaluate our suppliers. The companies have also been included in the Group audit plan for environment and occupational health and safety.

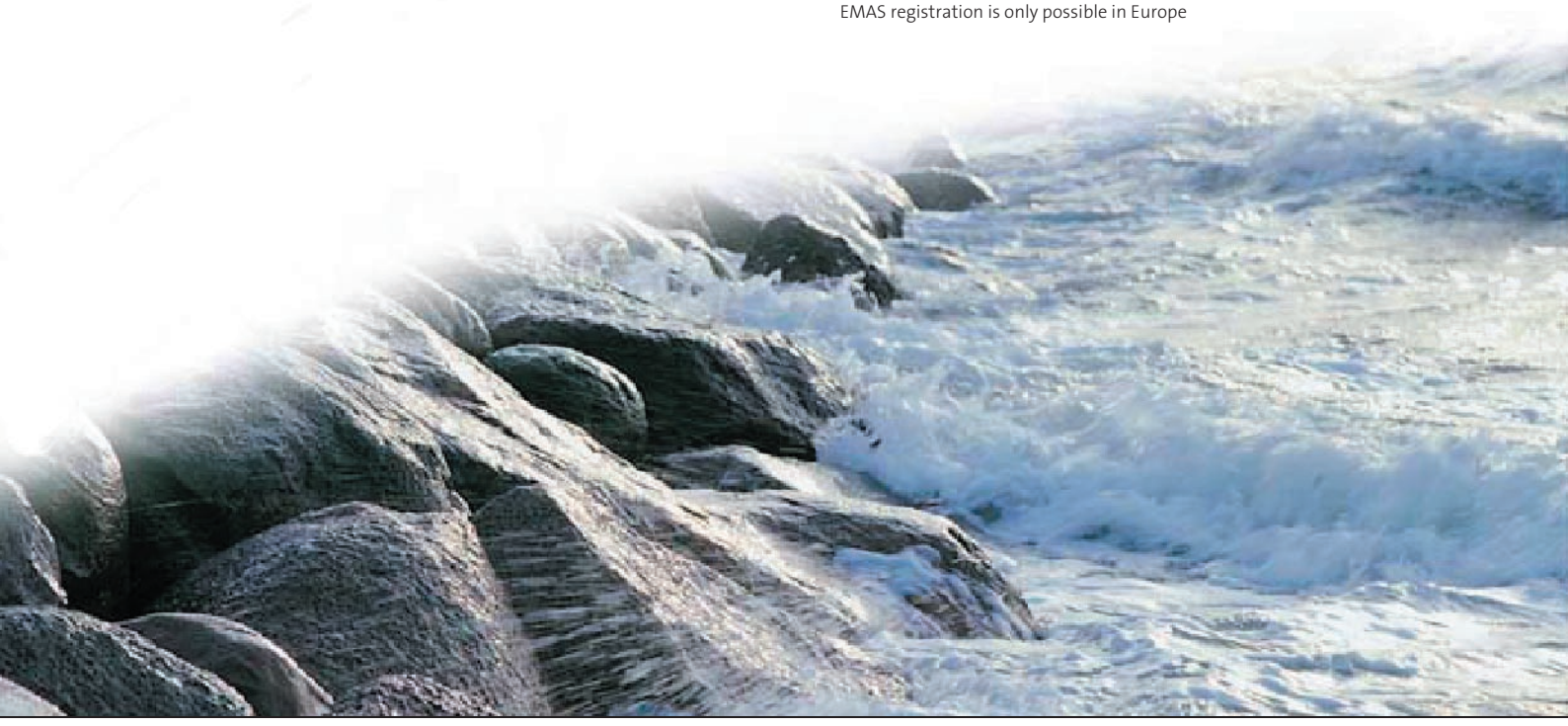
The propagation of environmental and health and safety management within the Group is not just driven by fixed requirements. Occupational health and safety has always been part of our environmental management system, but the implementation of a certified management system for health and safety is not a Group requirement – only a recommendation.

As the first company within the Grundfos Group, the Danish production company decided in 2000 to obtain the OHSAS 18001 certification for occupational health and safety. The American production company was certified in 2003.

Countries with environmental and working environment certifications

	ISO 14001	EMAS	OHSAS 18001
Denmark	x	x	x
Germany	x	x	2005
United Kingdom	x	x	2004
France	x	x	x
USA	x		x
Taiwan	x		x
China	x		2004
Finland	x		
Hungary	2004		

EMAS registration is only possible in Europe



Activities and results

Staff

In its attempts to ensure a safe and healthy working environment, the Grundfos Group has concentrated on reducing the number of work accidents and limiting the use of hazardous chemicals. The Group also works hard to reduce noise and avoid monotonous, repetitive work. The following section describes the Group's activities and results relating to health and safety.

Work environment and related concepts
It is one of the Group's four key strategies to provide an attractive and responsible workplace. This implies working consistently towards a healthy and safe working environment and providing good social conditions for staff.

In our view, environment and health and safety issues are interrelated, and the Grundfos management system has therefore covered both areas from the very beginning.

There is no clear dividing line between environment, health and safety and social responsibility, and in our day-to-day work we do not distinguish between the three different target areas. In this report, however, we have chosen to report on environment and health and safety first.

Effort focused on work accidents
Instead of dissipating its efforts, Grundfos has decided to focus on a few key areas. We are convinced this is how we will achieve the best results. At a joint environmental seminar in 2003, the Group's environmental managers defined the most important target areas for improvement within health and safety.

The Group is to focus on the following two key areas:

· a reduction in the number of work accidents

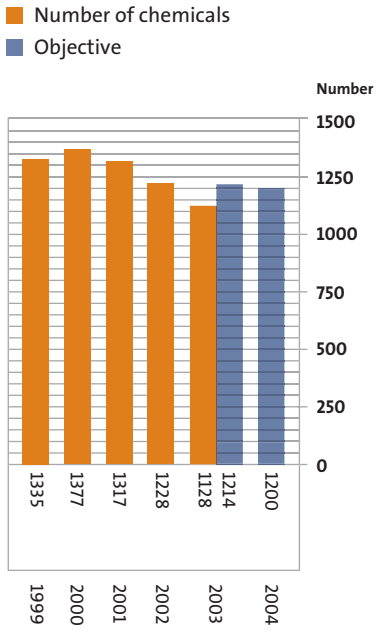
· a reduction in the number of hazardous chemicals

Objectives have been defined at Group level for both areas, and each company contributes in accordance with their own individual partial objectives. As a result of the differences in procedures, physical conditions and local legislation, the companies also define individual objectives in other target areas.

Limitation of production chemicals
A reduction in the number of production chemicals has been a Grundfos objective for many years.

The argument is that it is easier to manage the risks involved if you work with a limited number of chemicals. Grundfos uses a broad interpretation of the word "chemicals", which includes oil and degreasing agents.

In last year's Group environmental report, we were able to tell that by the end of the year 2002 we had achieved our objective to reduce the number of chemicals by 9% compared with the year 2000. In 2003, the number was further reduced, and the objective of 1200 chemicals by the end of 2004 has already been achieved.



We will continue to focus on using as few chemicals as possible, but instead of reducing the number overall, we will start concentrating on the most hazardous chemicals.

To this end, we have decided in 2003 to create our own basic classification of chemicals consisting of a red, a yellow and a green group. The most hazardous chemicals are red and the least hazardous are green.

The classification is based on the European labelling rules, as there are no universal rules. Chemicals used in non-European companies have been classified in the same way on the basis of the relevant safety data sheets.

All chemicals in the Grundfos production companies have now been classified, which allows us to rapidly identify the most problematic chemicals from a health and safety point of view.

The new Group objective is to reduce the number of red chemicals – see table on page 6.

Prevention of work accidents

Following an unfortunate Group record in 2000 with an accident frequency of 30.3 per 1 million working hours, the number of work accidents was singled out as the Group's number one priority for 2001. The initiatives launched at that time have contributed to the steady drop in accident frequency recorded in 2003.

The initiatives mainly consisted of a system for proper follow-up on accidents that had already happened and the subsequent implementation of corrective action to avoid reoccurrence. An important part of the process consisted in reporting each work accident to both the company's top management and the local production management, who are responsible for follow-up.

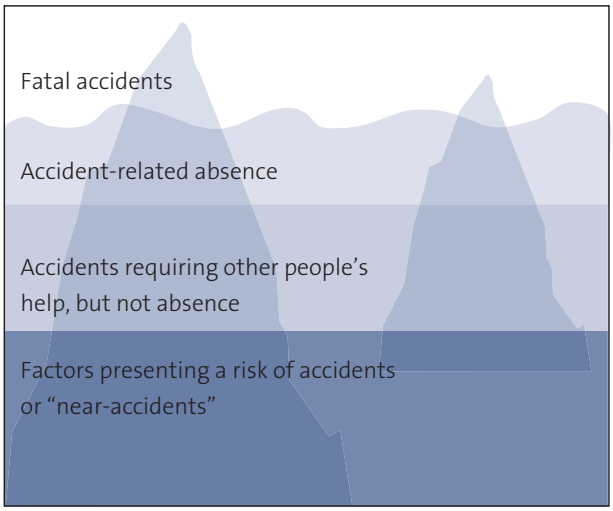
Recording of near-accidents

A staff member was in serious danger when a large pump fell off a storage shelf. The pump just missed him, but fortunately no accident occurred. We nevertheless followed up on the incident, as we try hard to avoid future accidents by recording situations in which accidents nearly happened.

The effort to avoid work accidents is often illustrated using the so-called accident iceberg – and not just at Grundfos.

If we are to successfully reduce the number of accident-related absence, we need to reduce the entire accident iceberg. This is best done by reducing the number of near-accidents – i.e. by focusing on the bottom of the iceberg. That is why we record all near-accidents and follow up to the same extent as on actual accidents.

The iceberg



The American production company has gone one step further. In their effort to shrink the accident iceberg, they no longer wait until an event becomes a near-accident. They register the events at the time they would normally pass unnoticed as part of day-to-day work.

The company has determined a number of critical movements and behaviour patterns during work performance by studying the reasons for accidents that have already occurred. A group of trained observers regularly observe their colleagues and record when any of the critical movements occur. The cause is then investigated.

It normally turns out that the critical movements become part of the routine because they make the work process easier, faster or more comfortable. This procedure allows the company to concentrate on motivating staff to change their behaviour patterns and prefer the safe work process – this then becomes the one performed.

Common Group rules for recording of accidents

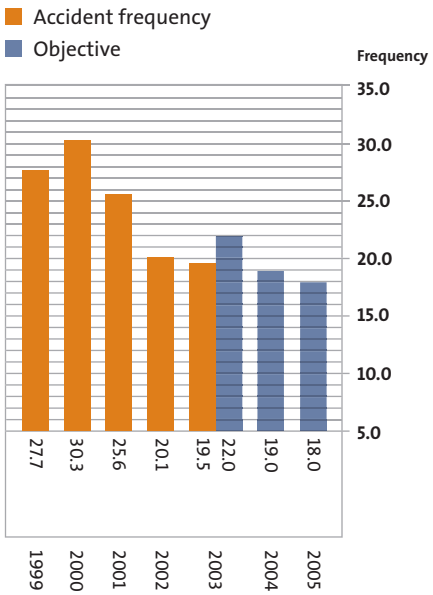
There are different rules for the recording of accidents in the different countries where Grundfos production companies are based. Some countries, for example, include accidents that occur on the way to and from work. The number of days of accident-related absence required before the accident is included in the statistical data also varies.

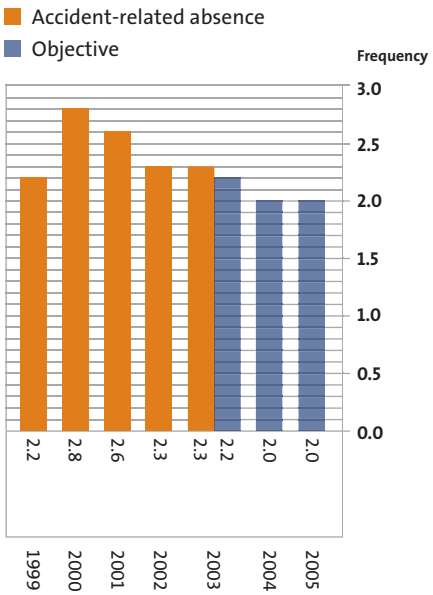
Consequently, Grundfos has established a common Group standard for accident recording. The standard makes it possible to compare the different companies and calculate an accident frequency ratio for the Group as a whole.

This extra effort has produced excellent results, as can be seen from the graphs illustrating accident frequency and accident-related absence. Since the year 2000, accident frequency has been reduced by 35%, corresponding to a reduction of 80 accidents with absence in 2003, compared with the year 2000. When considering the reduction in the number of work related accidents, it should be kept in mind that the figures for 2003 comprise the companies in Finland and Hungary, which were not part of the Group in 2000.

Other targeted areas

Other efforts to improve health and safety included work to reduce noise levels, which vary considerably between production companies. As an example, the noise level in an assembly plant varies considerably from that in an actual production plant where metal items are punched and pressed.





An important improvement has taken place in the German company in the production area where metal items are mechanically processed – the so-called "mill" area. The erection of noise-protective screens around all the "mills" has considerably reduced the noise level in the factory. The noise-protective screens also prevent coolants and lubricants from being splashed on the floor around the machines, and makes it much easier to keep the area clean.

Monotonous, repetitive work is also increasingly becoming an item on the agenda – both as part of accident prevention and in order to prevent work-related illnesses. The extent and nature of monotonous, repetitive work is being analysed, especially in the Danish and German companies, using systematic workplace surveys. The survey methods used in the two companies vary, but the intention is the same – to identify workplaces where monotonous, repetitive work takes place so that the problems can be solved on the spot.

Staff surveys to assess health and safety

The work done to reduce the number of hazardous chemicals and prevent work accidents as well as to reduce noise and monotonous, repetitive work have produced measurable results. However, it is much more difficult to measure the working environment in general at Grundfos.

By spending resources on creating a good working environment and good social conditions, Grundfos would like to ensure that staff enjoy being part of the Grundfos Group. The degree of satisfaction is measured by job satisfaction surveys throughout the Group.

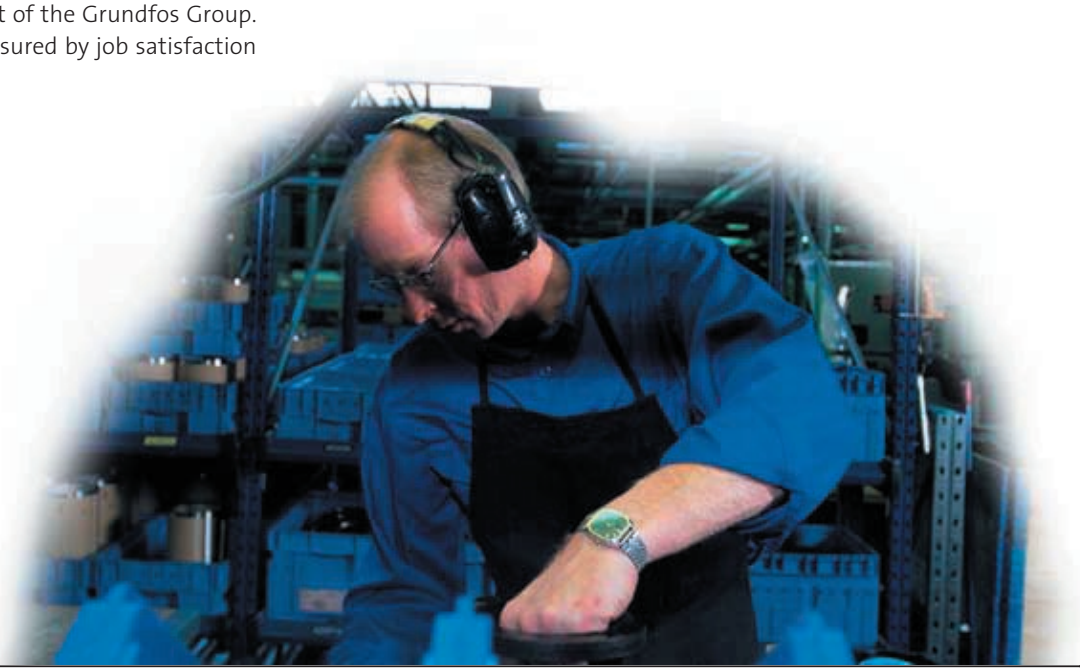
We carry out surveys in all Grundfos companies. The questions in the surveys used in the production companies have been standardised to make sure the same questions are asked in all production companies.

The following are examples of the questions:

"I enjoy going to work".
"I can say what I think to my manager".

The statement "Grundfos creates a work environment that minimises the risk of injury" scored 4.52 points and thus came top of the list. It should be noted, however, that the Hungarian company did not include this question in their survey.

The point in the survey that obtains the highest score is: "I enjoy going to work". In the latest survey, this question obtained a score of 4.4 out of 5. The score is a good indicator that our efforts to create a good working environment impact on the general level of satisfaction of the individual staff member.



Customers

Grundfos makes a point of ensuring that our products are as environmentally harmless as possible. This is an important factor in the development of both existing pumps and new pumps.

It is our goal that new versions of pumps should use at least 5% less energy than the previous model. We more than met this goal in 2003, and we are convinced that we will meet it in the future as well. A concerted effort on behalf of our development department makes sure of that.

We have been pleased to note that more and more of our customers appreciate this development, not just because the lower energy consumption results in reduced costs, but also because many of our customers share our attitude to – and responsibility towards - the environment.

We have included a couple of examples that show that our customers demand new products because they help them reduce energy consumption or solve pollution problems.

Keeping Torbay clean - a large-scale wastewater project from Grundfos

TORBAY, UK: South West Water is a major water and sewerage company servicing the entire south west of England. Its many impressive achievements include the "Clean Sweep" programme, which aims at ensuring clean coastal waters in South West England. Representing a total investment of GBP 1 billion, this programme is one of largest of its kind in the whole world. Grundfos has joined the South West Water "Clean Sweep" programme to provide a large-scale wastewater pumping solution and help improve bathing waters on the English Riviera.

The situation

When South West Water wanted to take their "Clean Sweep" programme to the holiday resort of Torbay, England, they naturally looked for the perfect pumps to meet their wastewater needs. The acclaimed water plant specialists Ondeo Degrémont went in search of the most convincing solution. In due course, Grundfos was chosen to provide four heavy-duty sewage pumps to service the area and keep the bathing waters clean.

Grundfos provided

- A large-scale wastewater pumping solution
- A pumping solution that improves bathing waters
- Variable speed drives in pumping solution to accommodate peak periods

The Grundfos solution

And indeed, drastic measures were called for. Before the "Clean Sweep" project, 45 million litres of sewage was going straight into the sea each year without any treatment whatsoever. Large-scale construction work was initiated to handle the wastewater flows, passing through a new 475-metre tunnel. This provided an excellent opportunity for Grundfos to prove that our wastewater range can handle any and all amounts of sewage. Grundfos supplied four 300 kW pumps with a duty point of 378 l/second. This equipment, pumps unscreened sewage, and is operated by variable speed drives to accommodate peak periods with perfect ease.

The outcome

Now, Grundfos pumps lead wastewater from two of the major towns in the area to be treated before being returned to the environment. Wastewater from a third town - Torquay - will be treated to the same high standards by the winter of 2003/2004. By closing raw sewage outlets for good, the "Clean Sweep" programme has successfully improved bathing waters wherever it has been implemented. Grundfos is proud to be a part of it.

Pumps data

- Pump type: 4 x 300 kW sewage pumps
- Head: 56.2 m
- Flow: 378 l/sec.
- Dry well mounted

Project data

- Customer: South West Water
- Contractor: Ondeo Degrémont

Grundfos dosing technology in Austrian wastewater treatment plant

A Grundfos dosing pump improves efficiency and optimises chemical consumption at this Austrian wastewater treatment plant

TRUMAU-SCHÖNAU, AUSTRIA: Gemeindeabwasserverband Trumau-Schönau is a joint municipal wastewater treatment plant situated in lower Austria on the edge of the well-known Gumpoldskirchen winegrowing district. The wine growing area is bordered by the small river Triesting, which receives the effluent from the Trumau-Schönau wastewater treatment plant.

After having resorted to manual dosing of chemicals for years, the Trumau-Schönau plant recently decided to invest in a complete Grundfos dosing unit for the critical dosing of ferric chloride sulphate into the sludge container. This has increased safety and greatly reduced chemical costs.

Grundfos provided
- Dosing accuracy
- Safe, automatic operation
- Reduced chemical costs
- Improved system efficiency

The situation
The Trumau-Schönau wastewater treatment plant serves seven smaller communities in the region with a total of 18,000 inhabitants. The plant was built in 1985 and handles a PE (population equivalent) of 40,000 units, 10,000 of which are industrial waste, primarily from a large abattoir and a textile factory. The annual output from the plant is some 2.5 million m3 of treated wastewater.

Until recently the dosing of ferric chloride sulphate (FeClSO4) into the sludge was carried out manually by means of a simple barrel pump, a totally inaccurate, and - especially in windy conditions - dangerous method. Ferric chloride sulphate is a costly chemical and accurate dosing is critical to the processes in the treatment plant. A total of some 3,000 litres of chemicals are used per month.

The Grundfos solution
The Grundfos DMM mechanical diaphragm dosing pumps are heavy-duty pumps with a capacity of 0-990 l/h at pressures of up to 10 bar. Stroke length and stroke frequency can be regulated manually, or pulse signals sent from external sensors and meters can regulate the stroke frequency. Alternatively, an external analogue signal regulates the dosage from 0 to 100%.

At the Trumau-Schönau plant, dosing is controlled via an external control box mounted in a heated cabinet adjacent to the 4,000 litre tank into which the chemicals are dosed.

The dosing pump operates on/off in order to quantify the dosage per sludge container. The amount of chemicals used is recorded in order to optimise future consumption.

The outcome
The Grundfos DMM dosing unit has provided accurate dosing, which ensures that only the exact required amount of the costly and dangerous chemicals is used. The chemicals are now being processed in a fully enclosed system and manual handling of the chemicals is no longer required.

Pumps data
Pump type: One Grundfos DMM 155PP dosing unit.

Mr. Heinrich Hasenauer,
General Manager of Gemeindeabwasserverband Trumau-Schönau:
"The main arguments for installing the Grundfos DMM dosing system were safe environment for the employees, and a better draining of sludge, due to the precise recording of dosage. The dosing unit improves the reliability of the operation and increases the safety of the handling of dangerous chemicals."

Ecology first for Central Japan Railway Company

The new research centre in Komaki has been built with great respect for the environment.

Since its establishment in 1987, the Central Japan Railway Company (JR Central) has vigorously promoted technological development. July 2002 saw the opening of their newest research centre in Komaki in southern Japan.

With a responsible focus on the environment, the new facility incorporates ecological technology in a number of applications, including solar power, cogeneration and ice storage.

Grundfos provided
- Efficient operation
- Energy savings
- Integrated system solution

The situation
The 20-hectare complex in Komaki contains over 12,500 square metres of office space, large-scale test equipment, an outdoor test track, a wind tunnel, a Shinkansen Bullet Train driving simulator as well as global environment conservation facilities.

The global environment conservation facilities were to include a 560kW energy-saving cogeneration system. JR Central wished not only to make a contribution to conserving the global environment, but also to be able to pursue technical development in the field of new energy sources.

The Grundfos solution
Over 50 multistage CR pumps have been installed, playing an important part in the centre's cogeneration system. In cogeneration, heat energy and electrical or mechanical power is produced from the same fuel in the same facility. Here, waste heat (as in steam) can be used to produce electricity or employed as a heating source.

The outcome
JR Central presently enjoys low energy consumption, a large amount of free floor space and elegant installation where Grundfos is incorporated into their systems.

Grundfos pumps provide high-quality, reliable operation within hot water circulation, as just one example. The vertical pump category also suits the Japanese market well, where land is sparse.

Site designer
Takeshi Ushikoshi, Nihon Sekkei, Inc. says:
"First of all, the Grundfos CRN multistage pump has an outstanding efficiency and superior running cost parameters. The high efficiency suits our energy saving demands. Moreover, designing the pump installations was facilitated by their in-line design, where we also saved valuable floor space."

Grundfos products used
- 51 CR/CRN pumps

Society

Grundfos aims at contributing to the improvement of the global environment by acting responsibly towards the society of which we are a part and the environment we influence. We divide the responsibility into two levels:

1. **The global level**
2. **The local level**

The energy consumption of the pump during use is by far the greatest load on the environment. It is an important environmental factor at a global level.

At a local level, the environmental factors in the areas in which we manufacture play an important role.

Both levels have been taken into consideration in the following.

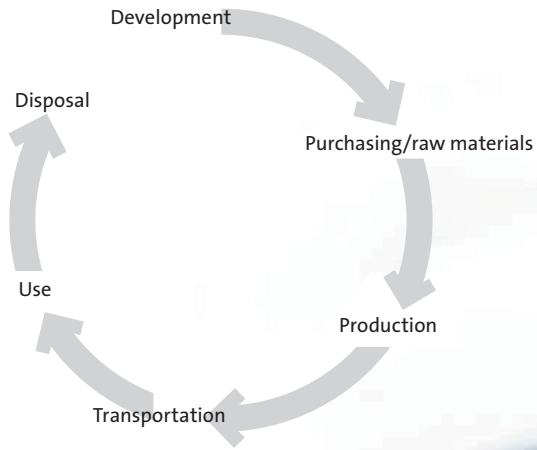
The life cycle of a Grundfos pump
The calculation of the life cycle of a pump serves, on the one hand, to demonstrate which environmental factors are most important for the pump, and on the other how much better a new version of a pump is compared with the older models in terms of environmental load.

The life cycle of a Grundfos pump consists of the following stages:

· Product development
· Production
· Transportation
· Use
· Disposal.

The environmental impact during the use and disposal stages are largely determined at the development stage which determines the electricity effect of the pump, i.e. pump performance in relation to amount of electricity consumed. The combination of the materials used is also determined during the development phase. The combination of the materials determines to what extent parts of the pump can by recycled at the end of its service life. We have therefore combined these stages under a common heading in the following section: "product-related environmental factors."

Life cycle



Product-related environmental factors

Development

The electricity consumption during operation is by far the greatest environmental load during the life cycle of a pump. Grundfos therefore focuses on optimising the efficiency of the pumps, i.e. tries to minimise the energy consumption of the pump as much as possible in relation to its performance. Grundfos has defined an objective in this regard:

At least 80% of new products developed up until 2006 must have an electricity consumption that is 5% less than the previous model, as a minimum. If the previous model is less than 5 years old, the electricity consumption must be reduced by at least 2%.

The table shows the results achieved for pumps introduced on the market in 2003.

As shown in the table, the objective for the pump launched in 2003 was achieved, as the energy consumption is 6.4% less than in the previous model.

Product-related environmental results

Product	Material objective		Energy objective	
	Objective	Result	Objective	Result
MeCR	-	28%	-5%	-6.4%

Sales

In the sales phase, it is important to explain to the customer that the new energy-saving model is the best and cheapest in the long run, even if the initial purchase is slightly more expensive.

The Danish sales company has as objective to increase the sales share of energy-saving pumps by 3% during 2004 compared with 2003.

The company has initiated a number of activities with a view to achieving this objective:

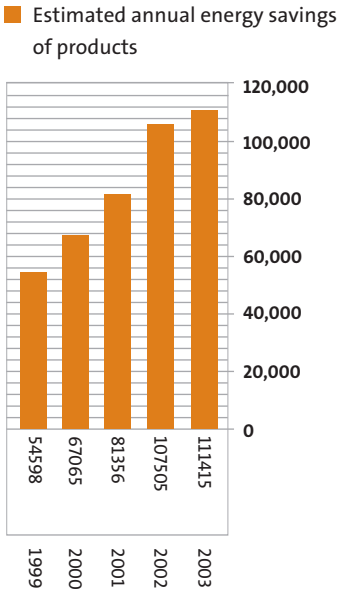
· Events where technicians are informed about the Grundfos Alpha energy-saving pump

· Information to technicians about a new heating standard (DS 469)

· Collaboration with ELFOR (business-to-business-sales) and Energisparefonden (end user sales) over campaigns

The sale of energy-saving pumps in 2003 resulted in an estimated annual energy saving corresponding to the annual electricity consumption of 111,415 households. The estimate is based on actual sales figures and on comparisons between new and older pump models. In addition, the estimate is based on experience with the customers' use of the pumps.

Grundfos participates in European cooperation around energy labelling of pumps, and as a result we received the Danish version of the EU environmental award for international environmental collaboration in 2003/2004.



Material consumption
Material consumption and composition influences the environmental impact of a pump. The main aspects are whether the pump consists of materials that are considered "scarce resources," and whether parts of the pump can be recycled at the end of its service life.

Grundfos has defined an objective for the reduction in material consumption. All new products developed between now and 2006 must consume fewer resources than the previous model, as a starting point.

We did not achieve the objective for an overall reduction in materials in 2003. If we had focused on achieving that objective, we would not have been able to achieve one of our main objectives, i.e. the reduction in the energy consumption of our products. The energy consumption objective was given higher priority because it represents the greatest combined environmental load.

The choice of materials influences the combined environmental impact of a pump. The following factors play a part:

· Materials may be scare resources, which should be used to a limited extent.

· Materials may release vapours that are harmful to health or environment when the product is used.

· Materials may be difficult to recycle when the product is disposed of.

These aspects have become increasingly important following the adoption of two EU directives.

· The WEEE directive pertains to the disposal of electrical and electronic equipment and stipulates that the responsibility for that type of waste lies with the producer.

· The RoHS directive prohibits the use of a number of materials for the manufacture of electrical and electronic products.

Grundfos has determined a strategy for phasing out all materials that will be prohibited on the basis of the mentioned two directives. One of the objectives, for example, is to phase out lead in soldering by the end of 2005.

Production-related environmental factors
Grundfos has production companies in countries with different laws, nature and cultures. Despite these differences, certain environmental factors are important in all production companies, and Grundfos has defined objectives for those factors at Group level. The factors are:

- Electricity consumption
- Water consumption
- Chemical waste

The individual companies have defined their own objectives for other important environmental factors.

Electricity consumption
Electricity is used for various production purposes: ventilation, cooling, compressed air, operation of production equipment, lighting and more. It is very important to continue to reduce electricity consumption, as it impacts on the discharge of CO2. At the same time, the reduction of electricity consumption contributes to the Group's financial sustainability. In recent years, Grundfos has introduced many improvements to reduce electricity consumption, as can be seen from the graph on page 20.

The indexed electricity consumption has been reduced by 10% since 2000. There was a slight deterioration in 2003 compared with 2002 due to a number of relocations and extensions in several companies that have not yet led to an increase in turnover – the key figure used to calculate the index.

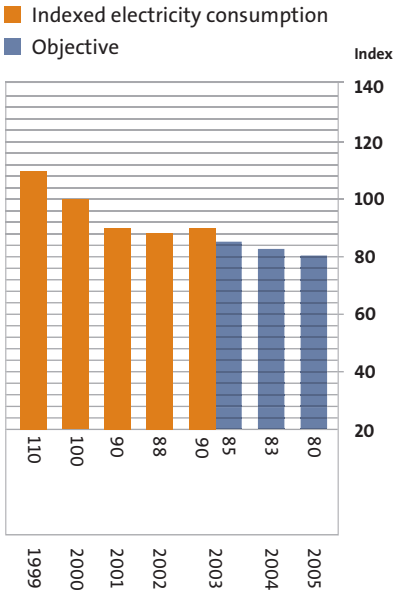
We have nevertheless decided not to change the objective to reduce the indexed electricity consumption compared with 2000 by 20% by the end of 2005.

The following activities are aimed at reducing electricity consumption:

· Renewed mapping of the main consumers in the Danish company following major relocation – leading to the identification of concrete savings projects.

· The electricity consumption for lighting in the Taiwanese company was reduced by replacing old mercury light sources, etc.

· Better utilisation of compressors in the British company.

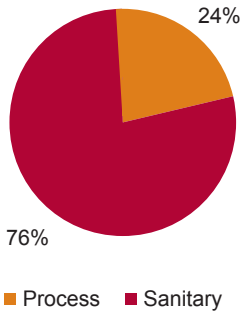


Water consumption and wastewater

Clean water is becoming an increasingly scarce resource, and water consumption has therefore been identified as an important environmental factor in all Grundfos production companies. The production departments use water to fill test tanks, wash metal items, and mix cooling/cutting fluid and more.

The indexed water consumption for production purposes has dropped dramatically in some companies as a result of dedicated efforts. Consequently, the consumption for sanitary purposes, e.g. canteen, showers, drinking water, flushing toilets, etc. is greater than the consumption for production. In the Danish company, for example, 76% of the water is used for sanitary purposes and 24% for production.

Distribution of water consumption

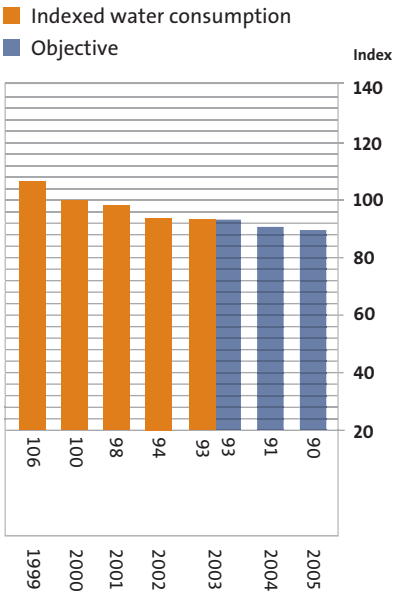


It is an overall objective for the Grundfos Group to reduce the indexed water consumption by 10% before the end of 2005.

The indexed water consumption was reduced by 7% between 2000 and the end of 2003. The Danish, Chinese and Taiwanese companies achieved the biggest reductions in relation to production activity. These reductions were achieved, among other things, by a more systematic monitoring of water consumption, with very positive results.

As a negative consequence of the low water consumption, the wastewater from production becomes more concentrated. The Danish production company in particular has had this experience after nearly halving its water consumption since 1995/1996. This has made it harder to meet the requirements for the amount of waste the company is allowed to discharge per litre of industrial process water, as defined by the regulatory authorities.

To solve the problem, the Danish companies carried out a comprehensive test with biological purification of wastewater in 2003. Grundfos plans a full-scale implementation of this method in 2004.



Chemical waste

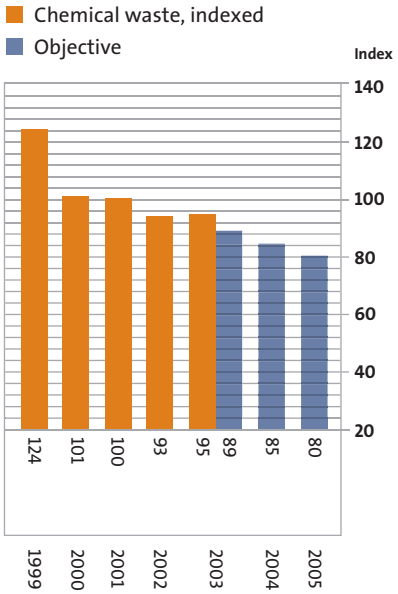
Chemical waste consists of various solid and liquid waste that is mostly defined as hazardous waste, depending on the country of origin. Grundfos has tried to provide comparable figures for chemical waste despite the differences in local legislation in the countries where our production companies are based.

The indexed amount of chemical waste has been reduced by 5% since the year 2000. The Danish production company has had a considerable increase in sludge from wastewater purification. This was the main reason why we did not meet the objective.

We have nevertheless decided not to change the objective to reduce the indexed amount of chemical waste by 20% by the end of 2005. This will be achieved through the following activities:

· By introducing a biological process for wastewater purification in the Danish production company, we expect to be able to reduce the amount of sludge already in 2004.

· The French production company has introduced an evaporation plant to evaporate and recover wastewater from a process that previously disposed of the wastewater as chemical waste. The process uses a large amount of water. The evaporator was installed in the autumn of 2003 and has already reduced the amount of chemical waste in the French company by 17% compared with 2002.



Transportation

Since 2001, Grundfos has gathered environmental data for selected transportation routes that will be used to define objectives for ongoing environmental improvements.

We have gathered data about the regular routes between the Grundfos distribution centre in Denmark and the distribution centres in France, Germany and Hungary. By recording data about all shipments between distribution centres in the form of the weight of the consignment, its size in m2, number of kilometres covered and type of truck (EURO norm), we have been able to calculate a set of environmental ratios.

Objectives have now been defined for the load ratio – i.e. the degree of utilisation of the space in a truck during transportation. The objective for the load ratio between Denmark and Germany was not achieved in 2003. In the second half of 2003, we reduced the number of daily truck departures, which has already resulted in a very positive trend for 2004, ensuring that the objective for 2004 will be achieved.

The objective for transportation between Denmark and Hungary was not achieved in 2003. The 2003 objective will be maintained in 2004. In 2004 more production will be shifted to Hungary without increasing the number of trucks.

We endeavour to adjust the number of daily departures on an ongoing basis to match the need.

The table shows results and objectives for the load ratios between the mentioned distribution centres:

Load ratio

Route	Result 2001	Result 2003	Objective 2003	Objectve 2004
Denmark <-> Germany	63.2	71.5	75	80
Denmark <-> France	58.4	88.3	78	78
Denmark <-> Hungary	72.3	82.8	88	88

Data matrix

	Year	Denmark	United Kingdom	France	Taiwan
Electricity consumption, MWh					
	1999	75.137	4.073	7.223	2.224
	2000	79.723	4.243	7.733	2.718
	2001	77.165	4.166	6.927	2.566
	2002	76.300	4.112	8.231	2.671
	2003	80.242	4.339	8.732	2.886
Water consumption, m3					
	1999	111.523	8.553	8.978	16.720
	2000	127.509	7.863	8.813	14.780
	2001	118.213	10.624	8.156	20.040
	2002	116.241	11.414	7.675	17.422
	2003	118.409	15.678	7.990	19.384
Heating consumption, MWh					
	1999	37.655	3.361	4.095	412
	2000	35.639	3.414	2.646	605
	2001	43.113	3.454	2.975	490
	2002	42.099	2.536	3.060	509
	2003	46.577	2.513	3.786	614
Chemical waste, tons					
	1999	416	410	1.009	186
	2000	399	343	969	123
	2001	469	349	1.030	69
	2002	460	217	970	83
	2003	600	274	803	151
Other waste, tons					
	1999	-	-	-	-
	2000	-	-	-	-
	2001	-	-	-	-
	2002	7.823	644	454	326
	2003	8.158	645	670	548
Number of "red" chemicals					
	1999	-	-	-	-
	2000	-	-	-	-
	2001	-	-	-	-
	2002	-	-	-	-
	2003	58	0	0	2
Suggestions for environmental improvements, (accumulated)	1999	1321	1	105	132
	2000	1723	8	107	217
	2001	2606	33	354	269
	2002	4040	39	513	333
	2003	6031	54	625	537
Accident frequency, number of accidents per 1 million working hours	1999	32,49	16,79	10,15	8,42
	2000	34,45	19,69	13,94	25,80
	2001	28,06	4,14	9,19	28,45
	2002	21,72	32,86	17,32	9,29
	2003	18,23	22,95	16,69	12,30
Accident-related absence hours per 1000 working hours	1999	2,40	1,27	1,66	0,23
	2000	2,63	1,01	4,50	0,23
	2001	2,72	0,39	4,80	0,30
	2002	2,00	7,89	5,60	0,13
	2003	2,30	2,39	3,84	0,10

	Germany	China	USA	Hungary	Finland	Total
Electricity consumption, MWh	8.462	1.457	7.536	-	-	106.112
	8.829	2.117	7.377	-	-	112.741
	8.721	2.691	5.289	2.884	1.741	112.150
	8.688	2.630	4.749	4.667	1.881	113.930
	8.857	3.154	5.090	6.341	1.795	121.437
Water consumption, m3	13.957	22.736	49.376	-	-	231.843
	10.893	38.228	46.494	-	-	254.580
	10.103	53.247	45.860	7.067	2.510	275.820
	10.638	55.693	41.698	10.270	2.457	273.508
	10.939	57.255	40.226	11.846	3.084	284.811
Heating consumption, MWh	8.224	1.143	828	-	-	55.718
	7.277	1.495	644	-	-	51.720
	8.569	1.981	765	2.873	1.097	65.317
	8.083	1.990	740	4.257	959	64.233
	8.362	2.064	646	5.622	730	70.914
Chemical waste, tons						
	104	41	30	-	-	2.195
	162	70	33	-	-	2.099
	184	83	29	51	25	2.290
	231	66	28	114	42	2.212
	268	79	29	104	42	2.350
Other waste, tons						
	-	-	-	-	-	-
	-	-	-	-	-	-
	-	-	-	-	-	-
	1.482	388	918	368	108	12.511
	1.384	415	776	658	112	13.367
Number of "red" chemicals	-	-	-	-	-	-
	-	-	-	-	-	-
	-	-	-	-	-	-
	-	-	-	-	-	-
	8	2	20	0	9	99
Suggestions for environmental improvements, (accumulated)	-	40	19	-	-	1.618
	-	126	195	-	-	2.376
	98	188	323	-	-	3.871
	395	409	655	-	14	6.398
	725	608	1168	-	28	9.776
Accident frequency, number of accidents per 1 million working hours	30,51	9,69	32,70	-	-	27,74
	27,91	9,19	36,80	-	-	30,25
	20,92	11,91	21,90	16,99	222,27	25,57
	24,36	6,65	25,15	7,27	28,86	20,14
	12,62	7,38	10,35	34,16	93,00	19,49
Accident-related absence hours per 1000 working hours	2,79	0,23	4,14	-	-	2,16
	3,69	0,45	6,91	-	-	2,84
	3,63	1,20	2,23	0,51	3,93	2,56
	2,43	0,37	1,72	0,45	2,97	2,26
	1,13	1,09	3,23	2,98	7,59	2,31

Finance

Profit is not an objective in its own right, as far as environmental and health and safety improvements are concerned. It is nevertheless motivating to see on a daily basis that small and large environmental improvements have a major financial impact. Grundfos therefore wishes to measure the financial impact of our environmental and health and safety activities.

Calculations of the financial impact of environmental activities relating to the consumption of electricity, water and heating in production in the Group as a whole are shown below.

It is not possible to make any financial calculations at Group level in the below-mentioned areas, and we therefore only show the results achieved in Grundfos, Denmark.

· Chemical consumption

· Fees for the discharge of heavy metals in wastewater

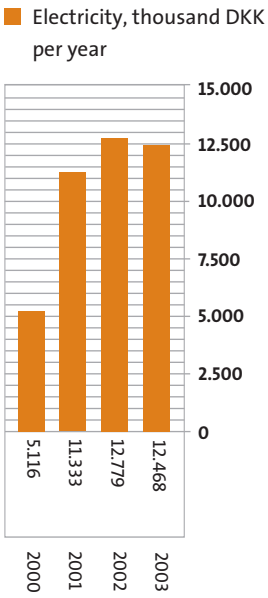
· Accident-related absence

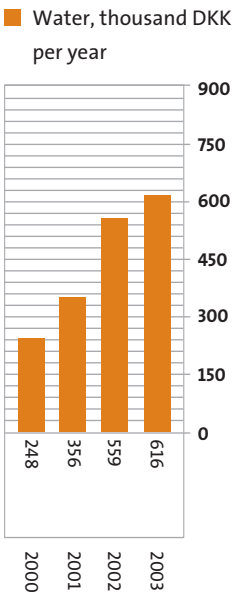
Consumption of electricity, water and heating
We use relative, indexed figures and compare the resource consumption to turnover ratio from year to year. The method ensures that we even out any changes in conditions such as increases or decreases in production activity.

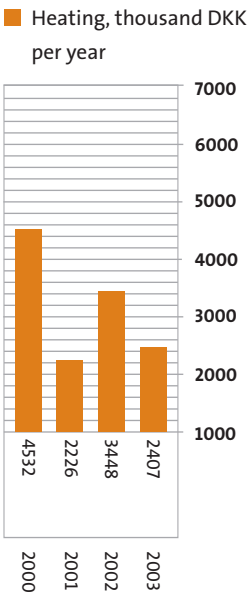
We also use relative, indexed figures to calculate the financial impact of the resource savings.

In 2003, we would, for example, have incurred an additional expense of DKK 12,468,000 for electricity, if the consumption to turnover ratio had remained the same as in 1999. All results are shown in the graphs below.

In order to be able to assess the overall financial gains from environmental activities, it would be necessary to also look at the amount of investments and other costs relating to each individual activity. It is not possible to gather such data at the present moment.







The charts show how much higher our expenses for electricity, water and heat, respectively, would have been if consumption relative to turnover had been the same as in 1999.

Calculations for the Danish production company
It is not possible to make financial calculations at Group level for the following area, and the figures therefore only apply to the Danish production company.

The cost of chemicals would have been approximately DKK 4 million higher in 2003, if the consumption to production activity had been the same as in 1999. In the Danish production company, the production activity is measured as the number of direct production hours. In 2001, the upward trend in chemical consumption was reversed as a result of increased focus on the issue.

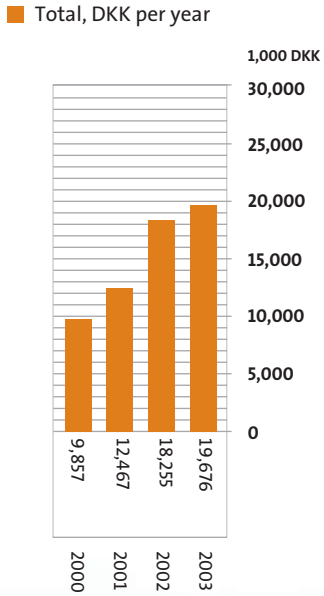
As a result of tougher regulations regarding wastewater discharge for the Bjerringbro production area, Grundfos in 2002 introduced a new method for purification of industrial process water. The new method has had a positive effect on the discharge of heavy metals, and in 2003 we achieved a saving of more than DKK 300,000 in special fees for discharge of heavy metals compared with 2002.

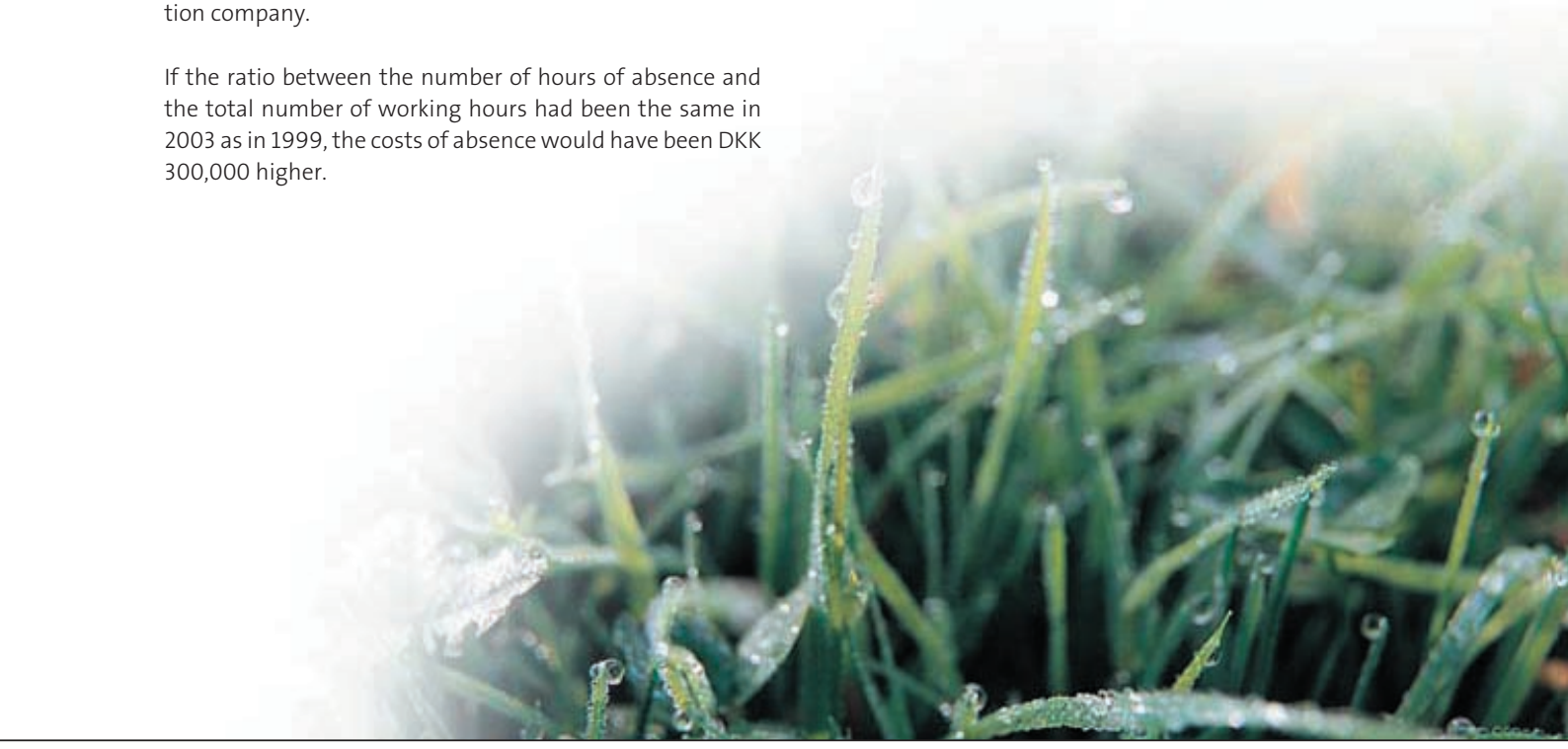
The calculation of savings in heavy metal fees is based on actual costs and not indexed figures, as opposed to the other calculations. The annual cost of heavy metal fees is shown in the diagramme below.

The close focus on work accidents at Grundfos in recent years has produced dramatic results in the Danish production company.

If the ratio between the number of hours of absence and the total number of working hours had been the same in 2003 as in 1999, the costs of absence would have been DKK 300,000 higher.

Total cost reduction
The table below illustrates the Group's financial savings resulting from the reduction in consumption of electricity, water and heating as well as chemical consumption, accident-related absence and discharge of heavy metals in the Danish production company.





Background

Basis of the report

The Grundfos Group environmental report covers the nine production companies that carry the Grundfos name. At this stage, companies that do not carry the Grundfos name operate as independent companies within the Group and therefore do not yet have to comply with the same basic values and business principles as the companies with the Grundfos name. In the past financial year, these companies represented 12% of the Group's combined turnover.

The report deals with global and work environmental issues and to some extent with financial issues. The activities and results described in the Group environmental report relate to the financial year of 2003.

The data has been collected and processed by the Central Environment Department at Grundfos. Data for the environmental report is collected annually from the production companies according to a fixed reporting procedure and in a standardised format. In the production companies, the key data is collected in accordance with procedures laid down in the environmental management systems. The development of this data is monitored on an ongoing basis. A Group standard was defined for data collection and processing in connection with the collection of data for this report. The standard defines the content of the data and the procedures for quality control of data.

Data and data collection systems form part of the ongoing internal environmental audits and are also included in the tests of the environmental management systems carried out by the external certification bodies.

The efforts to improve the production environment are governed by the environmental management system of the individual production companies. In addition to data from the production sites, data was collected from Group corporate departments, including Human Resources, Shipping, the Development Centre and Finance.

Although Grundfos goes to great lengths to ensure that the data in this Group environmental report is as complete and accurate as possible, certain data may be subject to uncertainty.

Indexed figures have been used in the report. Please see the "Additional information" section for a more detailed description.

Additional information

Glossary

EMAS: Eco Management and Audit Scheme. European directive for environmental management.

ISO 14001: International standard for environmental management.

OHSAS 18001: Standard for occupational health and safety management.

Environmental audit: Spot checks to see if the environmental management system complies with the requirements of ISO 14001, OHSAS 18001 as well as with own requirements.

Business Excellence model: Management model.

Calculation of index and financial ratios

Indexed key figures have been used in several places in this report. Indexed figures are used in order to compare figures for different years despite changes in production activity. Most objectives are therefore defined on the basis of indexed key figures. The exact figures used for the production activity vary from one production company to the other. Some use the number of working hours spent, some turnover, and some entirely different indicators of the production activity. The turnover of production companies that carry the Grundfos name is used to define the overall Group objectives.

Example

If the electricity consumption in year 2003 is 100 million kWh and the turnover DKK 2 billion, whereas the electricity consumption in 2000 was 95 million kWh and the turnover DKK 1.8 billion, the index for year 2003 compared with

2000 would be: (100/2)/(95/1.8)*100 = 94.7, i.e. a saving of 5.3% from 2000 to 2003.
The financial calculations of savings in resource consumption were based on the following consideration: how much more would Grundfos have paid for electricity/water/heating, if the consumption to turnover ratio had been the same in 2003 as in 1999.

Local costs of the different resources were taken into account. The conversion into DKK was based on the exchange rates as at 1 January 2004.

Accident frequency and accident-related absence
The accident frequency is measured as the number of accidents per 1 million working hours. The accident-related absence is measured as the number of hours of absence per 1,000 working hours.

Changes compared with Group environmental report 2002

The following changes compared with the data used in the Group environmental report for 2002 were recorded during the collection of data for this year's Group environmental report:

Heating, China: the heating consumption for the years 1999 – 2002 has been changed, as an incorrect calorific value for natural gas was used in the past.

Chemical waste, China: in connection with data verification for this report, it was noted that data relating to chemical waste had been incorrectly stated as a result of an incorrect classification of waste. The figures for the years 1999 – 2002 have been corrected.

Other waste, USA: as a result of an incorrect classification of waste, the figure for other waste in 2002 had been incorrectly stated. The figure has been corrected in this report.

Heating consumption, Finland: a minor adjustment has been made of the heating consumption for 2001.

Statement from Deloitte

To the executive board of Grundfos
We have been engaged by the management of Grundfos to perform certain control procedures related to the company's group environmental report for 2003 (the Report).

Procedures performed
At corporate headquarters and at a sample of sites, we conducted interviews and tested on a sample basis supporting documentation. Our procedures included comparing the data presented in the Report with internal registrations and other documentation supporting the collected data.

· We analysed whether the data collection procedures, described on page 26, where used at corporate level to collect data from reporting units for 2003, and whether the data collected in this way are appropriately reflected in the Report.

· We compared the 2003 data reported from a sample of two production sites, Bjerringbro (Denmark) and Suzhou (China), to the source documentation supporting the submitted data.

· We compared the information in the Report to corresponding information in the Grundfos Group's audited Annual Report for 2003.

The above procedures do not constitute an audit or a review in accordance with Danish auditing standards, and therefore we do not provide any assurance on the correctness of the total Report.

Conclusion
Based upon our work, we find that systematic data collection procedures have been applied for the purpose of collecting 2003 data from the reporting units for inclusion in the Report and that the reported data have been reflected appropriately in the Report. For the two reporting units identified above, submitted data are consistent with the source documentation presented to us. Further, except for a few aspects which emerge from the notes in this Report, the information in the Report is consistent with corresponding information in the Grundfos Group's audited Annual Report for 2003.

Aarhus, 5 May 2004

Deloitte

Statsautoriseret Revisionsaktieselskab

H.P. Møller Christiansen,
State Authorised Public Accountant (Denmark)

Preben J. Sørensen,
State Authorised Public Accountant (Denmark)

Grundfos in brief

An annual production of approximately 10 million pump units makes Grundfos one of the world's leading pump manufacturers. The pumps are manufactured by Group production companies in Denmark, Germany, France, Hungary, United Kingdom, Finland, the United States, China and Taiwan.

Grundfos products are primarily sold through the Group's own national companies. Grundfos has sales companies in all parts of the world, and in addition, local distributors in a number of countries also sell Grundfos pumps.

The daily task performed by Grundfos pumps is to provide water in an effective and reliable manner, whether water for human consumption, for irrigation of fields and watering of animals, for industrial processes, heating and cooling of buildings or wastewater discharge.

In addition to pumps and pump systems, Grundfos develops, produces and sells electric motors and high-technology electronic equipment to make the pumps "intelligent', increase their capacity and minimise their power consumption.

The Group is dedicated to continued research in new materials and processes in order to be able to introduce new, groundbreaking pumps and pump systems that satisfy market requirements to efficient, reliable and energy-saving plants.

Quality is key in all Grundfos products. This implies a focus on construction, design and choice of materials and production processes. A high degree of own production ensures high productivity, a healthy work environment and consideration for the external environment.

The most important resource in the Grundfos Group is its employees, and their knowledge and commitment. Therefore, the Group aims to provide the employees with further training and to create an inspiring environment that promotes the development and production of new products with an increased utility value and high quality for the customers.

The Grundfos Group is owned by the Poul Due Jensen Foundation, whose primary purpose is to expand and develop the Group. Reinvestment of own funds ensures that the Grundfos Group remains an independent company.

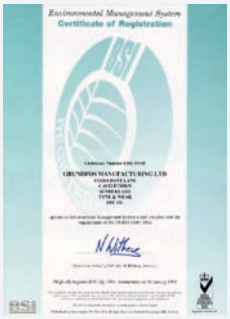
For further information about Grundfos, please visit our website at: http://www.grundfos.com

Key figures, amounts in millions DKK	1999	2000	2001	2002	2003
Net turnover	8145	9522	10214	10703	11152
Profit before tax	476	739	618	726	1078
Capital investments, tangible	655	725	870	798	854
Research and development costs, incl. capitalised costs	336	380	458	454	464
Equity capital	3033	3573	3935	4205	4637
Minority interests	509	597	597	612	679
Number of employees, closing	9591	10773	10985	11383	11707

Manufacturing companies

The flags indicate production companies that carry the Grundfos name. All the companies are certified according to the international environmental standard ISO 14002 except for the Hungarian company, which is expected to become certified in 2004.

Certificates



ISO 14001, United Kingdom

ISO 14001, France

ISO 14001, Denmark

ISO 14001, USA

ISO 14001, Finland

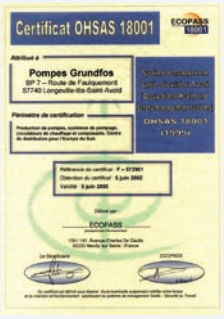
ISO 14001, China

ISO 14001, Taiwan

ISO 14001, Germany

OHSAS 18001, Taiwan

OHSAS 18001, Denmark



OHSAS 18001, France

Executive order 923, Denmark

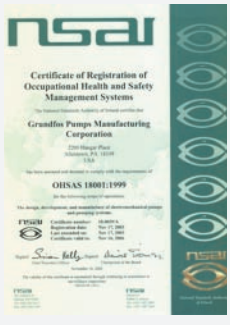
EMAS, Denmark

EMAS, United Kingdom

EMAS, France

OHAS 18001, USA (Fresno)

EMAS, Germany

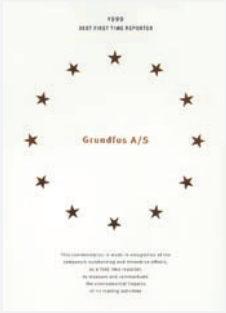


OHAS 18001, USA (Allentown)

Diplomas

Working Environment Award, LFA

Environmental Award, IDA

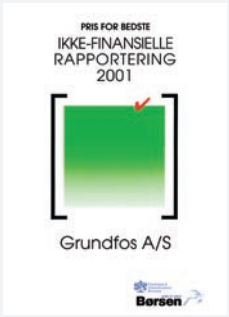


Best First Time Reporter

EU Environmental Award, IDA

The Green Accounts Award

United States Environmental Protection Agency



Award for Best Non-Financial Report

The Social Index, the Ministry of Social Affairs, Denmark

Diploma for Best Environmental Report

EU Environmental Award

The Industry's Education Award, DI, Denmark

EU Environmental Award, IDA Denmark

Good Practice Commendation "Dangerous substances - handle with care", European Agency for Safety and Health at Work

European Foundation for Quality Management

BE > THINK > INNOVATE >

Being responsible is our foundation
Thinking ahead makes it possible
Innovation is the essence

The Grundfos Group

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GRUNDFOS