Annual Report 1998

VATTENFALL

the Vattenfall group

Contents

Vattenfall is one of the largest energy groups in the Nordic region, with about SEK 28 billion in net sales.

Vattenfall's business focuses on three main areas: the energy market, electricity generation and network operations.

Vattenfall offers efficient energy solutions which help to enhance customers' competitiveness, environment and quality of life. About one million customers in the Nordic region and northern Europe purchase their energy solutions from Vattenfall. The Group has customers in all sectors: industrial and energy companies, the service sector, real-estate companies, agricultural companies and households. Vattenfall sells electricity, heat, natural gas, one-stop energy solutions and provides servicing, maintenance and consulting.

Vattenfall generates about 20 per cent of the electricity used in the Nordic region. Electricity is primarily generated by hydro and nuclear power plants with additional capacity provided by other energy sources.

Vattenfall is the leading operator of regional and local distribution networks in the Nordic countries, with a total of 990,000 network customers.

Vattenfall also has operations in Germany, Poland, the Netherlands, Estonia, Latvia, Lithuania, the Czech Republic, Thailand, Laos, Brazil and Bolivia.

Vattenfall invests in product development and a programme for sustainable energy solutions to ensure the Group's continued development and growth.

The Vattenfall Group comprises the parent company, Vattenfall AB (publ) and ninety directly or indirectly owned subsidiaries.

Photographs

People make the company. In autumn 1998, 500 randomly selected Vattenfall employees were each given a disposable camera to document - in pictures - Vattenfall's work on the themes of change and the future. Additional photographs were also selected from Vattenfall's archives. Most had been taken by the famous Swedish photographer, Lennart Nilsson, on the occasion of Vattenfall's 50th anniversary in 1959. Stewen Quigley took the photographs of the Board of Directors and the Group Management. Four pages are devoted to selected photographs from Vattenfall's brand-building campaign, conducted in spring 1998.

One Business – One Report

This year, we have decided to publish one report combining the annual report and the environmental report for 1998. We believe that environmental issues are an integral part of our business. The "Business Activities 1998" section also describes some of the environmental aspects of our business and products. "Vattenfall and the Environment" focuses on our internal environmental work, including our environmental accounts and a summary of our environmental performance.

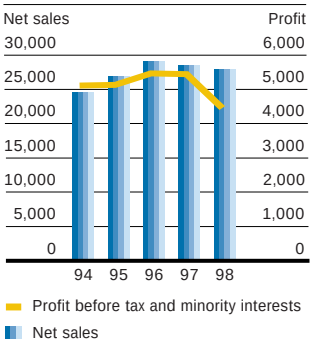
Details on the impact of Vattenfall's activities on the environment and our use of resources will be published at our web site, www.vattenfall.se, during the course of 1999. In this way, we can rapidly keep you up-to-date and reduce our use of resources.

1998 in brief

1998 has been a year of:

- **Increasing competition**
- **Reduced profit due to low electricity prices**
- **Abundant water supply and high availability at nuclear power plants**
- **Intensified internal efficiency improvement programme**
- **Investment in product development and one-stop energy solutions**

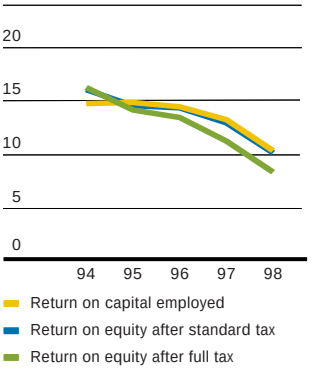
Sales and profit (SEK m)



financial highlights

	1998	1997
Net sales (SEK m)	**27,957**	28,458
Profit before tax and minority interests (SEK m)	**4,448**	5,439
Return on equity after standard tax (%)	**10.2**	13.0
Return on equity after full tax (%)	**8.4**	11.3
Return on capital employed (%)	**10.4**	13.3
Equity/assets ratio (%)	**39.7**	40.3
Cash flow (internally generated funds) (SEK m)	**6,767**	7,869
Total investments (SEK m)	**4,528**	4,877
Total electricity sales (TWh)	**83.8**	78.7
Total heat sales (TWh)	**4.6**	3.7
Total natural gas sales (TWh)	**9.0**	9.0
Average number of employees in the Group	**7,996**	7,847

Return on capital (%)



markets and products in focus

Our focus is on product and market development and on improving the efficiency of our internal operations.

Sales and Profit

1998 saw a good supply of electricity throughout the Nordic region, as a result of abundant rain and snowfall. This led to tougher competition, with the lowest average price on the Nordic electricity exchange since market deregulation. Vattenfall's net sales figure of SEK 28 billion is half a billion less than 1997. Traditional bilateral trade involving physical deliveries is on the decline, while customers continue using financial instruments from Vattenfall to hedge against fluctuations in the price of electricity. Sales to NordPool are increasing.

Lower margins mean that we must review the level of expenditure within the Group as a whole. At the same time, we are making strategic investments in marketing and product development and can see the results in the increased sales of Färdig Värme and one-stop energy solutions. Sales outside Sweden have also improved.

Profit amounted to just over SEK 4.4 billion, which was one billion less than in 1997. The deterioration is due to lower margins as well as added costs for marketing, product development and research.

Market Development

High generation capacity in the Nordic region and surrounding areas led to greater competition, putting pressure on margins at the electricity generation stage. A system whereby settlements are made on the basis of standard load profiles is expected to be introduced with respect to small consumers in November 1999. This will further intensify price-based competition among suppliers. Vattenfall will meet the challenge by simplifying its administrative procedures and by securing customer loyalty through attractive special offers. During 1998, we intensified our focus on strategic product development to enhance electricity sales by also providing energy services. Such services are increasingly demanded by customers.

Sales of one-stop energy solutions, including heating, have grown during the year. We are now pursuing partnerships with industrial customers by taking over plant operation and improving their energy efficiency. Partnership agreements with other electricity vendors to provide various customized solutions for the market is another developing area. In 1998, the number of these partners – who account for about 340,000 customers – increased by 5 to 12. Including our own base of one million, we now reach about 1.3 million customers.

Vattenfall's products are also marketed on the other side of the Baltic Sea – in the Baltic countries, Poland and Germany. In addition, we have opened an electricity sales office in the Netherlands. Deregulation within the European Union is progressing at a somewhat slower rate than that advocated by the Internal Electricity Market Directive, at the same time that customers are pressing for an accelerated pace. The difficulty of obtaining reasonable terms for transferring electricity within a single member state and between different member states is the main stumbling block.

Constant Change

Vattenfall has become a customer-oriented company which relies on the creativity of its employees to constantly come up with innovative solutions that will give us a competitive edge. To cope with constant change, each of our employees needs to be bold, committed and result-oriented. Due to information technology and the streamlining of various business processes, fewer employees are needed within the conventional electricity supply area. On the other hand, we need more employees and new expertise within product development, marketing and sales and to penetrate markets outside Sweden. In 1997, we started to prepare

for change by launching the Skills Swap programme for employees interested in further development and in finding new jobs within Vattenfall. To reduce the level of costs within the Group – by a minimum of one billion kronor – the Internal Efficiency Improvement programme was launched at year-end 1997.

Restructuring

Like the rest of the world, the energy industry throughout the Nordic region is currently undergoing rapid restructuring towards fewer and larger constellations of players. Vattenfall actively participates in the restructuring by acquiring electricity networks, electricity sales concessions and heating operations. During the year, Vattenfall acquired electricity networks in Sweden representing just over 50,000 customers and electricity sales concessions representing just over 46,000 customers.

Vattenfall is the largest electricity producer, network operator and electricity vendor in the Nordic region.

During 1998, Vattenfall negotiated with the Swedish state concerning the sale of capacity in Ringhals as part of a possible settlement concerning the Barsebäck nuclear power plant.

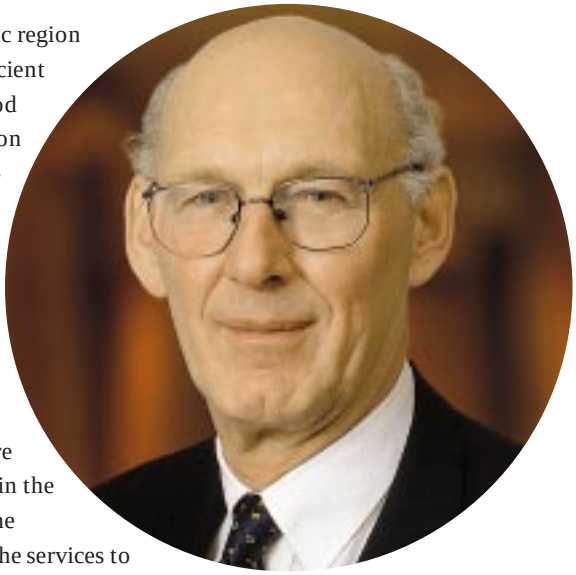
In Germany, a further 25 per cent stake in VASA Energy was acquired in 1998, bringing Vattenfall's share to 75 per cent.

Cost-effective Energy Supply

Electricity is mainly generated in hydro power and nuclear power plants. The supply of water has been unusually high, leading to full reservoirs and high generation levels. Nuclear power plant capability was also higher than ever. Vattenfall's electricity generation processes are flexible, cost-effective, efficient and have a low environmental impact. The new market conditions reduced the need for Vattenfall to maintain its own reserves of standby power.

Biofuels, which are increasingly used in heat production, now account for half of the total heat produced.

Natural gas is imported from Denmark. A study on the Nordic natural gas grid was presented in 1998. The study was conducted by a number of Swedish, Danish and Finnish energy companies, including Vattenfall Naturgas, and was partly financed by the European Union. The study shows that a greater use of natural gas in the Nordic region would mean a more efficient energy supply and a good chance of meeting carbon dioxide emission-reduction targets, since oil and coal would be partly replaced by natural gas.



Priority to the Environment

Environmental issues are given high priority within the Group. Vattenfall has the expertise and provides the services to help our customers improve their environment. We offer various environmentally-sound solutions, including electricity generated from a specified source. Environmental management systems – which are in place in most of our operations – are an integral part of our business, as is reflected in this annual report. The Forsmark and Ringhals nuclear power plants and Vattenfall Energisystem have been certified according to ISO 14001. Forsmark has also been registered under EMAS.

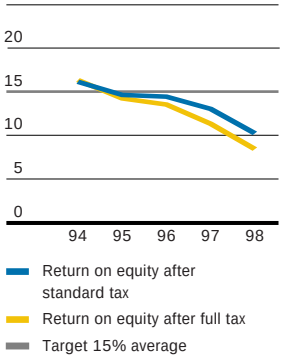
The Year 2000 and the EMU

A special project, reporting directly to the executive management, was set up in 1997 to ensure that Vattenfall's computer systems are Year 2000 compliant. A total of 14,000 systems, with different types of processors are being audited. This work is scheduled to be completed during the first half of 1999. We expect to be able to enter the new millenium with the customer delivery guarantees that normally apply.

In some of the countries where Vattenfall has operations, the Euro was introduced at year-end 1998 and Vattenfall has accordingly adapted its systems to the new currency.

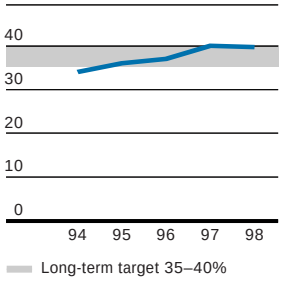
Carl-Erik Nyquist
President and Chief Executive Officer
Stockholm, February 23, 1999

Return on equity, 1994–1998 (%)



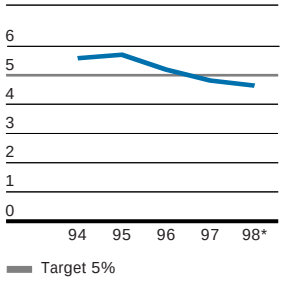
The target has not been attained since 1995.

Equity/assets ratio, 1994–1998 (%)



Since 1995, the equity/assets ratio has been within or above the target interval.

Dividend, 1994–1998, in relation to equity (%)



** Proposed distribution*

The dividend exceeded the 5 per cent target in 1994–1996. The proposed distribution for 1998 is below the target. The target of the dividend corresponding to one-third of profit has been exceeded throughout the period.

Vision, Mission and Financial Objectives

Vision

Vattenfall's vision is to be

- *A leading European energy company*
- *A global energy partner*

Our vision expresses our aim to be among the most efficient energy companies in Europe. To attain this goal, we must continuously and actively adapt our business and participate offensively in the rapid restructuring of the industry.

As a global energy partner, Vattenfall intends to offer multinational customers the opportunity of working in partnership on the markets where those customers operate. Vattenfall is also looking to co-operate with local energy companies on attractive growth markets.

The critical success factors for the achievement of this vision are:

- Satisfied and loyal customers
- Reduced costs
- The development of customized products and services
- The establishment of a local presence
- A strong brand name
- Active and dynamic management
- Growth through acquisitions, partnerships and new product development.

Mission

Vattenfall's mission is to enhance customers' competitiveness, environment and quality of life through a unique combination of efficient energy solutions and world-class service.

Our mission expresses our conviction of the value of being a one-stop energy company providing electricity, heating, natural gas and energy services to our customers.

Financial Objectives

Vattenfall's overall financial objective is to combine competitive earnings with a healthy balance between capital strength and dividends.

Given the difference between the book and market value of its fixed assets, the Group aims in the long term to generate a return on equity after standard tax of around 15 per cent over each economic cycle.

Vattenfall considers that an equity/assets ratio of 35–40 per cent will provide the necessary financial strength.

The Board intends to pay stable dividends equivalent to a third of profit, and around 5 per cent of equity.

Analysis

Vattenfall's profitability target was not reached in 1998 due to decreased margins on a stagnant electricity market. A reduction in the electricity price by one öre (SEK 0.01) will lead to an SEK 700 million decline in profit. Costs have increased as a result of the product and market development drive in 1998. The equity/assets ratio target was met in 1998.

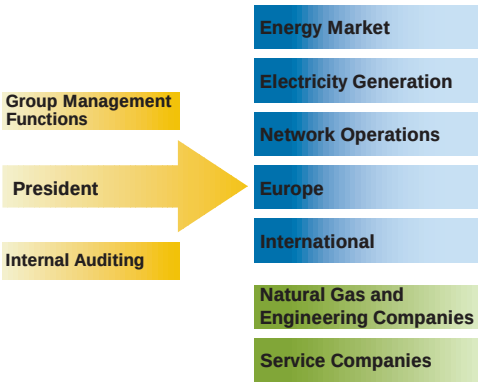
Other Overall Objectives for the Group

In addition to the financial objectives, the Group has formulated objectives for customers, employees, processes, the environment and development.

Organizational Structure

The Group is organized into five business areas, a group comprising a partly-owned natural gas company and three engineering and consultancy companies as well as six service companies. In addition, there are five group management functions and one internal auditing function.

As of 1999, as part of the business transformation process, Vattenfall has streamlined its activities into three core businesses: energy market, electricity generation and network operations.



The Five Business Areas

Vattenfall Energy Market is responsible for product development, product responsibility and sales on the Nordic market. Although the largest product area is electricity, heat, source-specified electricity, one-stop energy solutions and energy services are expanding. This business area includes sales companies in Norway and Finland. In Denmark, Vattenfall has formed the Ström A/S sales company together with NESA and Vattenfall's stake is 50 per cent.

Vattenfall Electricity Generation is responsible for electricity supply within the Nordic region and for large-scale generation. Electricity is generated by hydro power plants, by the nuclear power plant owned by Forsmarks Kraftgrupp AB, where Vattenfall has a 74.5 per cent ownership stake, by the Ringhals nuclear power plant and by thermal power plants. Ringhals will be incorporated in 1999. The business area also includes Vattenfall Bränsle AB and the Swedish Nuclear Fuel and Waste Management Co (SKB), of which Vattenfall owns about 58 per cent. Operation and maintenance for thermal power and hydro power within and outside the Group are now included in a new group of companies, Vattenfall Generation Services (VGS).

Vattenfall Network Operations is responsible for transmission over regional and local electricity networks as well as for network-related consultancy services. Since year-end, network operations in Sweden have been conducted through four integrated companies. Two network companies also exist in Finland, Hämeen Sähkö Oy and Lapuan Sähkö Oy. The business area also includes partly-owned network companies and the network maintenance contractor, Vattenfall ElnätService AB, and Vattenfall Energimätning AB.

Vattenfall Europe is responsible for operations in the rest of Europe, outside the Nordic region. Subsidiaries exist in Estonia, Latvia, Lithuania, Poland, the Czech Republic and Germany. A sales office has been set up in the Netherlands. The aim is to conduct electricity sales, distribution and provide one-stop energy solutions.

Vattenfall International manages investments and business on markets outside Europe. The business area includes the subsidiaries, Nordic Power Invest AB, which manages investment activities, and the partly-owned (85 per cent) international consulting company, SwedPower AB.

Other

The partly-owned Vattenfall Naturgas AB (51 per cent) and three wholly-owned energy consulting companies are organized in a separate group of Natural Gas and Engineering companies. In addition, six service companies exist with different specializations and activities within the entire Group.

pioneering development

Commitment, a need for achievement and a sense of boldness have inspired those who have worked hard – since the end of the last century – to bring about the electrification of Sweden and to shape today's Nordic electricity market. In true pioneering spirit, these were people who were not afraid to try out new technical solutions and new forms of control. In keeping with their spirit, we must rise to the challenge that now faces us: that of staying ahead on a new, deregulated electricity market and preparing the way for a sustainable energy system.

The history of electricity in Sweden goes all the way back to the late nineteenth century when the first pioneering local electrification projects were conducted around the country. The town of Härnösand is one example. As early as in 1885, electric arc street lamps – imported from England – were installed along Skeppsbron in Härnösand. The pioneers behind the project, those who introduced the technology, were a group of sea captains – local Härnösand folk with the privilege of having an international outlook.

On January 1, 1909, Kungliga Vattenfallsstyrelsen (the Royal Power Board), the precursor to the Vattenfall Group, was formed. One of the people behind the initiative was the head of the Kungliga Trollhätte Kanal- och Vattenverk utility, Vilhelm Hansen. Hansen managed to convince the Swedish parliament that electrification would lay the groundwork for industrialization which, in turn, would stimulate economic development and ultimately improve state finances. Hansen was appointed director and, in 1910, the first generator in Trollhättan was taken into operation. This project – Vattenfall's first production facility – heralded the start of a three-quarters of a century long electrification campaign in Sweden. First of all, hydro power was developed – using innovative solutions with advanced civil engineering technology.

Hydro power was followed by the next leap of technology – the development of electricity transmission and the construction of the trunkline network. One milestone was the 1,000 kilometer-long 380 kV transmission line which was erected in connection with the construction of Harsprånget power plant. The plant was completed and taken into operation in 1952. Two years later, the next milestone in power transmission technology was in place – the direct current power cable between the mainland and the island of Gotland.

The third major expansion phase – nuclear power – then occurred. Vattenfall's early decision to use ASEA's light-water reactor technology in Swedish nuclear power plants resulted in plants with high capability and performance.

Many and varied have been the views expressed on the developments in Sweden over the years. Electrification is the element of the industrialization process that has most caught the attention of the Swedish people. It is difficult to identify any other issue that has awakened such strong sentiment in both the political and private arenas.

The Market Replaces the Monopoly

In the early nineties, the government-appointed commission of inquiry presented its first report on the deregulation of the Swedish electricity market, i.e. that electricity would be generated

and sold on an open market. At the time that the proposal was submitted, corresponding reforms had only been made in Norway and with respect to large consumers in England. The Swedish market was deregulated as of January 1, 1996.

The end of 1998 marks three years of open competition on the deregulated Swedish market. Developments over the past three years have been characterized by highly dynamic and rapid change. While this has depressed financial margins and profitability, it has also forced the power companies to become more creative in developing innovative solutions. Although the pressure is on, being first in line has clear advantages. Early experience from Swedish deregulation and the Nordic situation is a valuable asset for Vattenfall now that much of Europe and the rest of the world have decided to follow suit.

The free trade in electricity is a driver of much of the market dynamics. New entrants are appearing on the scene at the same time that old structures are being replaced by new ones. The first player to develop a new solution can quickly gain a competitive advantage. Boldness and commitment are essential in order to win market share and improve profitability.

New Challenges

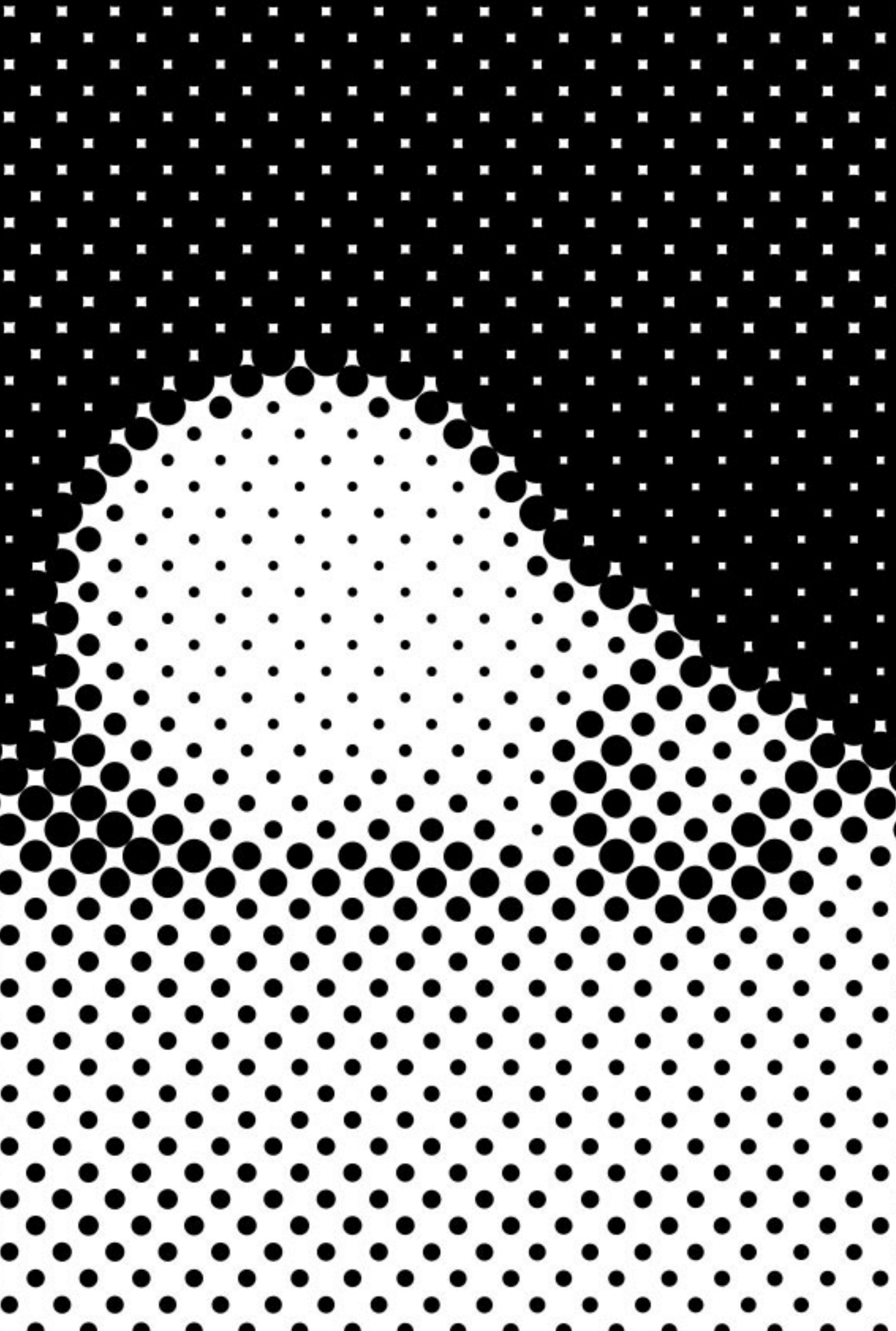
Sweden's obligations under the Kyoto Protocol and the subsequent agreement within the European Union require that action must be taken to limit emissions of carbon dioxide and other pollutants. This issue will radically affect the development of our whole society. Will Sweden opt for higher energy taxes, environmental charges and more stringent restrictions than the rest of the world? What will be the consequences for industry, the transport sector etc.? How will politicians in different countries cope with a situation where cross-border electricity trade will become part of the system? The solutions that are found will have a major impact on the future development of the electricity industry. Vattenfall is well equipped to meet future challenges with its expertise from energy efficiency projects and from its work on developing bioenergy and wind power technology.

On the supply side, new electricity generation technology is being developed. Access to natural gas must be secured. This is vital from a European standpoint. Technology for the separation and disposal of carbon dioxide from electricity generation is being tested. At the same time, research laboratories the world over are concentrating on developing high-efficiency small-scale units for local electricity generation. With the help of IT, small-scale local generation facilities can be remotely operated and can potentially become an important part of the future electricity supply system.

At the same time that new electricity supply technology is being developed, intensive work is being conducted to improve energy efficiency, focusing on engines, refrigeration and cooling as well as domestic heating. A systems-based approach is becoming increasingly important as customers demand more complex energy solutions.

When the electrification campaign was started in Sweden, only one line was followed – exploitation of the potential of hydro power. This was followed by large-scale transmission technology. The industrialization of Sweden was built upon these successes. Today, development is occurring on many different fronts at the same time and there are many technical options to choose from.

Today's improved communications systems mean that it is not just sea captains who can witness what is happening in the world at large. Current advances in IT – especially the Internet explosion – are facilitating the rapid development of knowledge on a global scale. Never before have we experienced such intense and rapid progress as we are now.



business and markets

Electricity markets all over the world are opening up to competition. In Europe, the Council Directive on the Internal Electricity Market entered into force on February 19, 1999 and the deregulation process is under way in many parts of the United States.

A Changing Market

The idea of electricity trading on a free market has now become so deeply rooted that political initiatives are no longer the driving force behind developments. Instead, the deregulation process is being driven by customer demands. Initially, price could become the focus of attention. However, in the long term, the impact of the new market dynamics on the range of products and services on offer will be just as important, leading to innovative and exciting solutions.

The new electricity market is attracting completely new types of entrants. Nowadays, it is difficult to clearly define the electricity market. Moreover, this issue is no longer relevant.

The move towards more competitive forms of electricity trading is often accompanied by a reduction in public ownership of the electricity sector, i.e. privatization. However, this is not the case in all countries. In Norway, for example, at the end of 1998, a bill was presented to further strengthen public ownership of electricity generation facilities. Nevertheless, the trend is usually the opposite in other countries.

A free market means increased efficiency in the use of the available electricity generation resources. This can clearly be seen in the impact of the free market on eliminating the need for reserve capacity. Previously, each producer covered its own need for reserve capacity. However, on the free market, a temporary shortfall can now be met by buying electricity from the exchange. It has become more cost-effective to pay high spot market prices for a short period of time than to maintain reserve capacity in the form of standby facilities.

Consequently, during the year, oil-fired plants, representing a total of 2,000 MW, have either been shut down or mothballed in Sweden. Vattenfall has mothballed the Stenungsund and Marviken facilities, representing a total of 1,020 MW. In Denmark, for similar reasons, a significant part of the older and less environmentally-adapted coal-fired plants will be shut down over the next few years. If these plants are replaced by more resource-efficient and environmentally-sound processes, this will be a positive step for the environment, in keeping with the aim to take tangible action to counteract the greenhouse effect.

The 1997 Kyoto Protocol, the 1998 EU member state agreement on implementing emission control in Europe and the autumn's climate change conference in Buenos Aires are events which will set new conditions for the development of the industry within the near future. On the open market, suppliers with a will to survive will have to demonstrate good environmental performance. The outlook is positive for Vattenfall, since the Group's electricity generation resources are almost completely free from carbon dioxide emissions.

Vattenfall must change in response to changing market conditions. New products, markets and a strong brand name will provide future growth. Photographs from Vattenfall's brand-building campaign in spring 1998 are depicted on the opposite page.

Company Comparisons

Comparisons with Other European Power Companies

This section compares Vattenfall with a number of major power companies in Sweden and abroad, based on their 1997 annual accounts. The ratio analysis is based on Vattenfall's definitions, see page 60.

Vattenfall shows a return on assets which is higher than the average while the return on equity corresponds to the average of the analyzed companies. On the other hand, Vattenfall's interest cover is below average. The debt cover corresponds to the average, while the equity/assets ratio is higher than the average in the comparison.

It must be emphasized that full comparability is not possible. Certain companies, especially those in Germany, apply accounting policies/assumptions which are different from those used in Sweden. In some cases, this has a significant impact on the ratios. The main difference is in the way funds are allocated for the future expenses of the management of nuclear waste. In Germany, the companies each make internal provisions and these are reported as non-interest-bearing liabilities. This considerably reduces the capital employed in the German companies, which enhances the ratios calculated on this basis. For instance, in the case of RWE Energie there is a large difference between return on capital employed (61 per cent) and total assets (8 per cent), see the diagrams on the opposite page.

The Swedish power companies pay fees corresponding to the future expenses of the management of nuclear waste to the Nuclear Waste Fund.

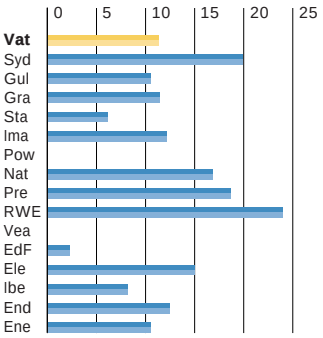
The following companies are included in the comparison (1997 figures)

Company and country	Electricity sales (TWh)	Principal resources (%)*	Market share (% by volume)	Total sales (SEK m)
Vattenfall (Vat) *Sweden*	**79**	Nuclear power **42** Hydro power **35**	*Nordic* **22**	**28**
Sydkraft (Syd) *Sweden*	32	Nuclear power 37 Hydro power 23	*Nordic* 9	15
Gullspång (Gul)** *Sweden*	14	Nuclear power 30 Hydro power 35	*Nordic* 4	6
Graningeverken (Gra) *Sweden*	5	Hydro power 56 Bought in 44	*Nordic* 2	3
Statkraft (Sta) *Norway*	32	Hydro power 85 Bought in 15	*Nordic* 9	7
Imatran Voima (Ima)** *Finland*	48	Nuclear power 31 Hydro power 26	*Nordic* 14	20
PowerGen (Pow) *Great Britain*	56	Fossil fuels 100	20	36
National Power (Nat) *Great Britain*	60	Fossil fuels 100	21	41
PreussenElektra (Pre) *Germany*	105	Fossil fuels 28 Nuclear power 27	24	71
RWE Energie (RWE) *Germany*	132	Fossil fuels 72 Nuclear power 24	30	71
VEAG (Vea) *Former East Germany*	47	Fossil fuels 89 Bought in 9	11	23
Electricité de France (EdF) *France*	439	Nuclear power 82 Hydro power 14	97	242
Electrabel (Ele) *Belgium*	68	Nuclear power 58 Fossil fuels 34	90	51
Iberdrola (Ibe) *Spain*	57	Nuclear power 40 Hydro power 30	40	43
Endesa (End) *Spain*	69	Fossil fuels 58 Nuclear power 29	43	70
Enel (Ene) *Italy*	219	Fossil fuels 71 Hydro power 15	87	186

* *Energy bought in refers to the entire company, including heat sales.*

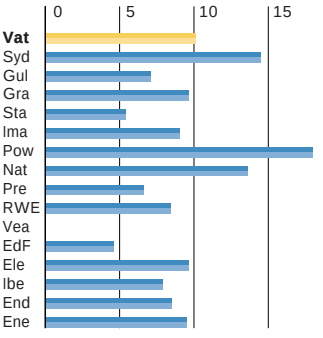
** *Gullspång is also included in the figures for Imatran Voima.*

Return on equity after full tax (%), 1997



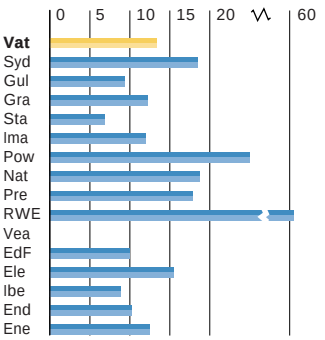
Vattenfall's return on equity is just over 11 per cent, corresponding to the average. Sydkraft's high value is due to material capital gains. Negative values for PowerGen and VEAG are due to extra tax payments and low operating profit, respectively.

Return on assets (%), 1997



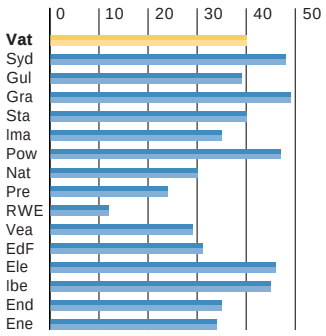
Vattenfall's return on assets is above average at 9 per cent. The British companies, which have high values, have a larger proportion of fossil-fuelled plants, resulting in comparatively low total assets.

Return on capital employed (%), 1997



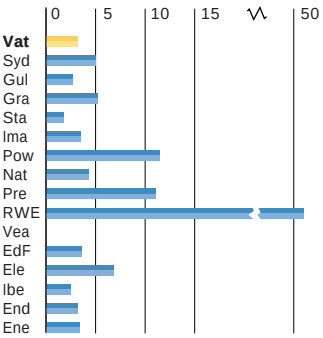
Vattenfall's return on capital employed is below the average of about 16 per cent. PreussenElektra and RWE Energie have substantial reserves reported as non-interest-bearing liabilities, which have resulted in a significantly higher return on capital employed than on assets.

Equity/assets ratio (%), 1997



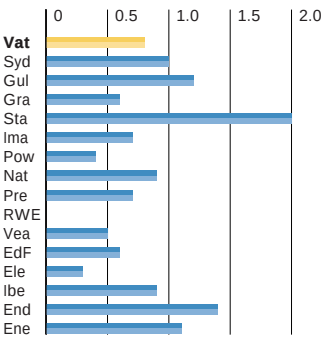
Vattenfall's equity/assets ratio is above average (37 per cent). Certain companies have strong balance sheets. German companies have low ratios because the reserves for the future management of nuclear waste are reported as liabilities and as liquid assets on the balance sheet.

Interest cover (times), 1997



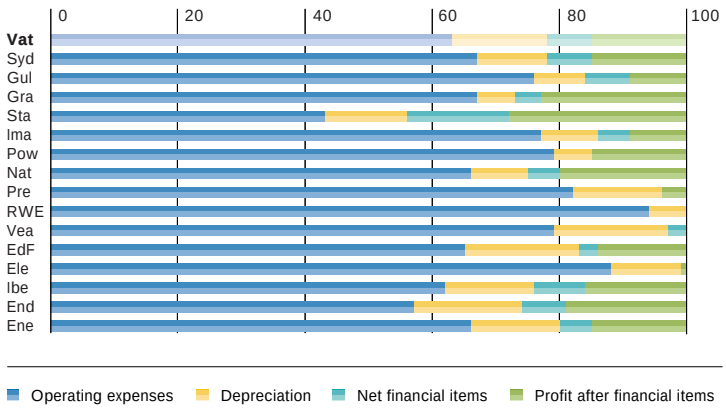
Interest cover shows considerable variations in the comparison. The average is 7. Vattenfall's interest cover of 3 times is comparatively low. Some of the companies report much higher figures due to very low financial expenses.

Debt cover (times), 1997



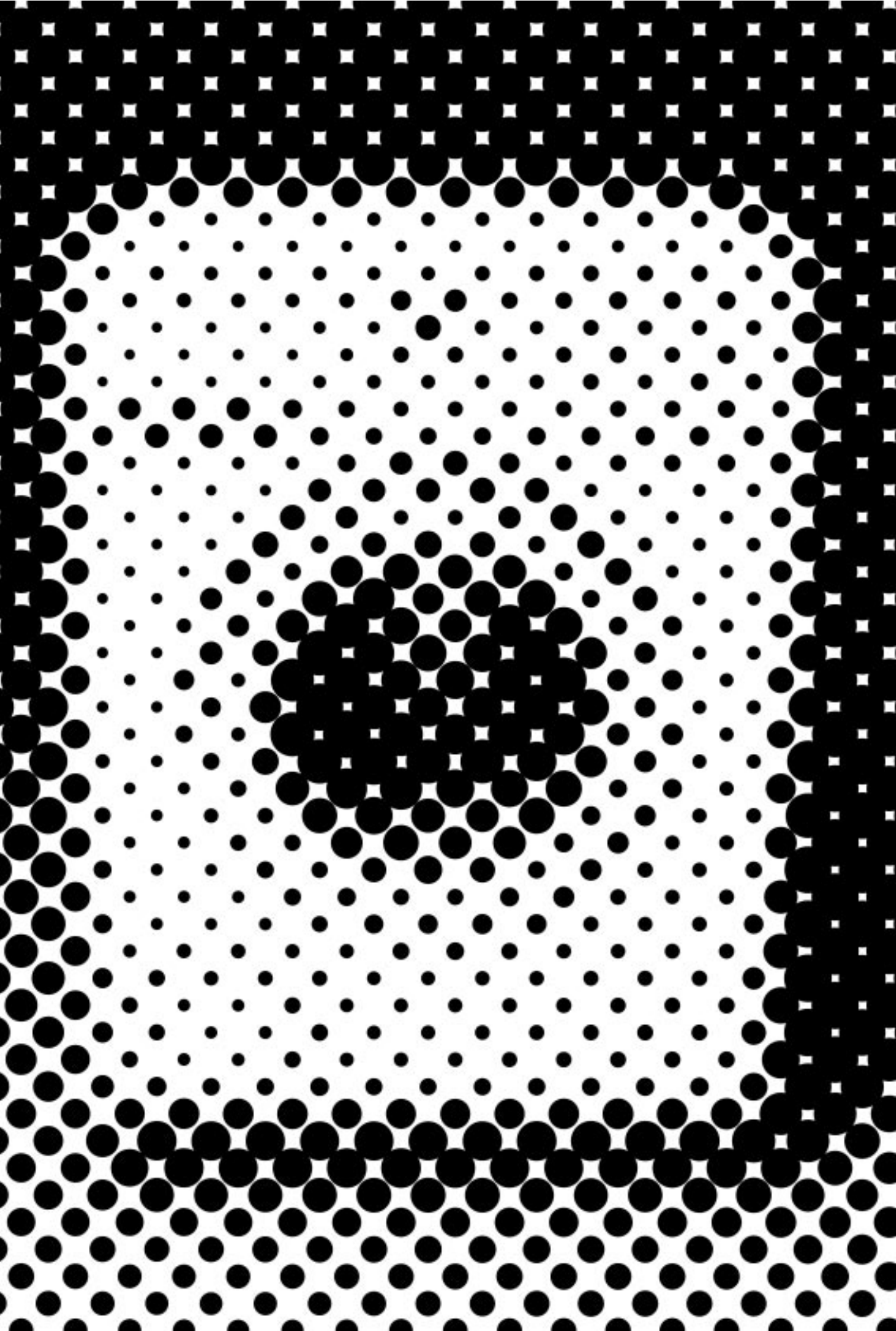
Vattenfall's debt cover corresponds to the average (0.8 times). There is a considerable spread between the companies. Some companies report very low figures due to a relatively low proportion of interest-bearing liabilities in relation to equity.

Percentage distribution of expenses and profit in relation to income (%), 1997



The graph gives an overview of how total income was used by each company in 1997. Vattenfall's operating expenses are relatively low, while for example, British and German companies, with a larger number of fossil-fuelled plants and a resulting large proportion of fuel costs, have high operating expenses. These companies have lower capital costs in the form of depreciation and interest. (VEAG reports a loss after financial items).

Comparisons between Vattenfall and other power companies with respect to emissions are provided in the Environmental Accounts, Note 8, page 77.



business activities 1998

Vattenfall offers customers a complete range of efficient energy solutions and quality service. The purpose of the Group's products and services is to create customer value in the form of improved competitiveness, enhanced environment and increased quality of life.

The Energy Market

Vattenfall provides a wide range of goods and services to a predominantly Nordic market. Since customers in different size categories have varying needs and demands, market activities have been divided into different segments. Financial trading on the electricity market is growing and new instruments are being developed to manage uncertainty and risk.

Total physical sales of electricity on the Swedish market amounted to 59.9 TWh, which corresponds to a 41.7 per cent market share.

Mega Energy

The largest groups of companies in the Nordic regions have been assigned Key Customer Managers. These individuals work closely with their corporate customers in order to better understand their business processes and needs, so that the product range and customer needs can be co-ordinated to develop an efficient, customized energy solution. In 1998, this customer segment accounted for 32 per cent of Vattenfall's combined electricity sales volume.

The customized solutions are based on the individual customer needs, and can range from energy efficiency campaigns to large, joint projects, where Vattenfall can also acquire and take over the operational responsibility for the customer's energy facility. Naturally, both partners stand to gain from such an arrangement.

Such partnerships with major customers can often involve agreements to supply electricity to an entire corporate group and this may be linked to other products and services. One product range which has attracted considerable interest within this segment is the one-stop energy solutions ("Färdig-products") where Vattenfall intervenes in areas which are outside the core business of the customer but which are vital for the customer's competitiveness. These solutions may involve heating, cooling, drying, compressed air, indoor climate control etc.

The extensive expertise which is gradually built up in the partnership also gives scope for development work where both the customer and Vattenfall's specialists can take the initiative to new customized solutions.

Local Market Partners

For a couple of years, Vattenfall has been developing a partnership concept for local energy companies, with the aim of creating synergies which will consolidate the market position of the local partner, based on a close relationship with Vattenfall. The local company can thereby provide additional products and services to its customers than it would have been able to without extensive investment in product development. Furthermore, this limits the company's business risk and makes it possible to channel resources into sales promotion.

Sales through partnerships involve Vattenfall's entire product range. Vattenfall also contributes with marketing tools, market analysis and customer loyalty programmes. Vattenfall had 12 partnership agreements during 1998. In terms of electricity sales volume, these partnerships accounted for 7 per cent of Vattenfall's total sales volume during the year. Vattenfall's partners have a total of 340,000 customers, of which 315,000 are in Sweden and 25,000 are in Norway.

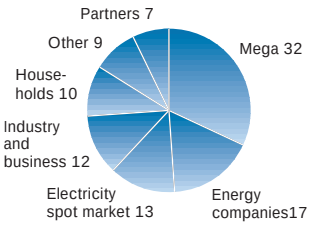
Subsidiaries with their Own Brand Names

Vattenfall also operates under a number of local brand names, where sales in Sweden are conducted through seven wholly-owned and partly-owned companies. This strengthens the presence of the companies on the local market

New products and services are developed to enhance the competitiveness, environment and quality of life of our customers. Vattenfall is now strategically investing in customer-oriented product development.

and allows them to develop closer links with industrial and business customers as well as households within a particular geographical area. The subsidiaries have a total of 235,000 customers, thereby accounting for 4.7 per cent of Vattenfall's electricity sales volume in 1998. One of these subsidiaries is Gotlands Energiverk which, during 1998, was the focal point for the development of services relating to customer communications. Vattenfall is currently conducting a full-scale development project on Gotland, called GotCom. The project aims at developing a series of new customer services, based on two-way communications.

Electricity sales distributed according to customer segment (%)



Of the electricity sales, industrial and business customers accounted for 44 per cent, energy companies (including market partners) for 24 per cent and households for 10 per cent.

Industrial and Business Segment

Vattenfall markets electricity, heating and energy services to a large number of consumers within the corporate, municipal and local authority sectors. The total number of customers within the industrial and business segment is about 27,000. All industries are represented, from small service companies, municipalities and local authorities to nationwide and Nordic industrial groups. In total, these accounted for 12 per cent of the electricity sales volume in 1998. Vattenfall's one-stop energy solutions have also gained a foothold in the industrial and business market. Several agreements involving close co-operation with customers to improve environmental performance and energy efficiency have been signed, including agreements with the Scan group, comprising 35 companies, and Vasakronan AB.

One area which has attracted considerable interest is Vattenfall's products with an environmental profile, where the energy source is specified and which also carry the Sound Environmental Choice label (VindEl and VattenEl). A customer signing an agreement for these products is guaranteed that electricity, corresponding to no less than the customer's own consumption, will be supplied to the network from the specified energy source. This gives the customer indirect influence over the planning of new production from wind power plants, for example.

During 1998, electricity from the Lule River – the largest river used for hydro power in Sweden, with a normal annual output of 14 TWh electricity – was backed by an environmental declaration. The environmental impact of the plant is low in terms of emissions and resource usage, but the dam and water control system have a greater impact on the landscape and on biotopes. The environmental declaration was examined by SIS-SAQ and the certification was registered in early 1999.

Energy Companies

In 1998, energy companies, apart from market partners, accounted for 17 per cent of Vattenfall's electricity sales volume. Customers mainly comprise local electricity trading companies with a need for competitive electricity products for local consumers as well as independent players with their own power portfolios.

Vattenfall offers these companies physical as well as financial electricity products, efficient risk control products and portfolio management for electricity trading. Vattenfall also provides technical and administrative products and services for marketing companies, networks and heating operations.

Household Customers

Although this segment mainly comprises households, it also includes small businesses

Some of these photographs were taken by Vattenfall employees while others come from Vattenfall's archives.

such as small shops and craft businesses. In 1998, sales to this segment accounted for 10 per cent of Vattenfall's electricity sales. Vattenfall accounted for about 17 per cent of the sales volume to households in Sweden. In Finland, its share was 9 per cent. The number of Vattenfall customers in this segment is 870,000, of which 700,000 are in Sweden and 170,000 in Finland.

Customer mobility in this segment was relatively low during the past year. This could be explained by the lack of clarity concerning how to develop time-based metering of electricity consumption. A parliamentary resolution was made in autumn 1998 to introduce, as of November 1, 1999, a system whereby electricity is allocated to suppliers on the basis of standard load profiles.

Vattenfall is intensifying its development of the consumer market for services and electricity products within the customer communications area, e.g. monitoring services and remote metering.

Heating

Vattenfall sells various types of heating solutions.

One product which has generated business is the one-stop heating solution (Färdig Värme). This product involves Vattenfall assuming responsibility for supplying heat to a company, thereby guaranteeing that the heat will be reliably and efficiently generated and delivered.

Total heat delivered amounted to 4.1 TWh, of which about 50 per cent was based on biofuels. Vattenfall currently operates almost 200 heating facilities in Sweden with a total of over 500 boilers. District-heating accounted for 2.1 TWh of the heat delivered.

Norway, Finland and Denmark

The wholly-owned companies in Finland and Norway, provide a local base from which Vattenfall can penetrate the market in both countries and reach 176,000 customers. In Norway, Vattenfall AS sells the Group's products and services directly to companies and large corporate groups. Vattenfall reaches small customers through market partners. In 1998, Vattenfall sold a total of 4.4 TWh of electricity in Norway and generated SEK 815 million in sales. Vattenfall's market share is 3.7 per cent (2.3). The agreement for co-operation with the Elkem group marked a breakthrough in Norway. The agreement, which expires in the year 2020, represents a total of about 48 TWh of electricity in sales and entails close co-operation within the energy service area.

The Finnish market is penetrated through Vattenfall Sähkönmyynti Oy. Vattenfall sold a total of 6.7 TWh of electricity in Finland in 1998 and generated SEK 1,401 million in sales. Vattenfall's market share was 8.8 per cent (9.1).

Towards year-end, Vattenfall and Danish NESA formed a joint sales company, Ström A/S. Vattenfall and NESA each own half of the shares in the company, which provides electricity and electricity-related products to Danish customers. Ström A/S signed a delivery contract with Denmark's largest electricity consumer, Det Danske Stålvalseværk, comprising the entire consumption of the rolling mill, and with Banestyrelsen. In total, the agreement represents 0.7 TWh/year, which is 2 per cent of the total Danish electricity market and just over one-third of the free Danish consumer market.

Vattenfall's electricity balance in the Nordic countries, 1998

Outputs (TWh)	
Sweden	59.9
Norway	4.4
Finland	6.7
Denmark	0.1
Sales outside the Nordic region	1.3
Pool trading	10.9
Total sales	**83.3**
Minority interests	7.8
Compensatory hydro power etc.	1.2
Total	**92.3**

Inputs (TWh)	
Renewable:	
Hydro power	34.9
Wind power	0.036
Nuclear power	48.3
Other thermal power	0.1
Total generated internally	**83.3**
Purchase	12.2
Less internal consumption	–3.2
Total	**92.3**

Sales are still dominated by the Swedish market, but have increased in Norway and Finland over the past few years.

Electricity Supply

Electricity generation has become a highly competitive business on the Nordic electricity market. Electricity pricing on exchanges, Swedish-Norwegian NordPool and Finnish El-EX, is transparent as is the case for oil and metals.

There is constant adjustment concerning the purchase/sale of electricity and generation in inhouse facilities, based on calculations of inhouse production costs, electricity spot market prices and estimated capacity in water reservoirs.

The beginning of 1998 saw very low reservoir levels, just over 25 per cent lower than the median. However, due to an abundant subsequent supply – 30 per cent higher than in a normal year – the year ended with high water levels in Vattenfall's reservoirs.

Due to the abundant supply of water, nuclear reactor power levels were reduced during certain periods of the year. In 1998, refuelling and maintenance outages at the units were completed on schedule.

The distribution of Vattenfall's own generation, purchases and sales in the Nordic region is shown in the electricity balance above.

Electricity Generation

In 1998, Vattenfall's electricity generation was largely problem-free.

The Electricity Generation business area was reorganized in 1998 to improve competitiveness. Within hydro power, the plant ownership role has been separated from operation and maintenance. This division was made a year ago with respect to standby oil-fired facilities. Operation and maintenance are now provided through a separate contractor organization, Vattenfall Generation Services. This division makes it possible to maintain an internal customer-supplier relationship within the Group and allows the contractor organization

Some of these photographs were taken by Vattenfall employees while others come from Vattenfall's archives.

to provide its services to companies outside the Group.

Hydro Power

Vattenfall owns about 70 large hydro power plants and about 90 smaller facilities (less than 10 MW). The upgrading of old hydro power plants continued throughout the year.

In a joint project with ABB and Kværner, a development unit of 10 MW was taken into operation in Porjus' old power plant. The Powerformer generator used in this unit is of a new ABB design (see also page 24). The unit will be used to develop and demonstrate new plant and maintenance technology and will have a significant impact on the cost of maintenance work and reinvestment in hydro power plants.

Nuclear Power

Vattenfall is the sole owner of Ringhals nuclear power plant and owns 74.5 per cent of Forsmarks Kraftgrupp AB. The electricity balance on page 16 includes the entire production at Forsmark.

Unit capability at nuclear power plants has increased throughout the nineties. In 1998, it was 89.5 per cent for Ringhals and, 93.3 per cent for Forsmark, which is significantly better than the average for other nuclear power plants in the world (see also the diagram on this page).

The Forsmark and Ringhals nuclear power plants have been environmentally certified in accordance with the international ISO 14001 standard. Forsmark has also been registered under EMAS. Forsmark and Ringhals are respectively the third and fourth nuclear power plants in Europe which, after an objective audit, can claim to have an environmentally-adapted electricity generation process. All of Vattenfall's nuclear power has, therefore, been certified through environmental management systems. This is important for Vattenfall, since customers – especially within the large industrial segment – are increasingly demanding that their electricity suppliers should be environmentally certified.

Ringhals Nuclear Power Plant

The operating year at Ringhals was largely incident-free with short planned outages. The production costs for the past year were among the lowest ever.

The campaign at Ringhals to modernize and upgrade the units continued as scheduled during the year.

Measures to eliminate steam line vibrations which had caused problems at Ringhals 3, following the replacement of the steam generator in 1995, were completed during the refuelling and maintenance outage in summer.

Forsmark Nuclear Power Plant

Almost two-thirds of Forsmark's plant reinvestment programme were completed as of the refuelling and maintenance outages in 1998. The project, which is expected to be completed in the year 2000, is on schedule.

Other Thermal Power Plants

In 1997, the Danish Government granted permission for the construction of the Avedøre 2 thermal power plant outside Copenhagen. The plant, a gas-fired CHP with a capacity of 500 MW electricity, is jointly owned and operated with i/s Sjællandske Kraftværker. Vattenfall has a 40 per cent share. Construction was started in 1998 and is on schedule with startup expected in the year 2001.

Vattenfall has also obtained permission to construct a gas-fired power plant in Imatra in Finland. An investment decision has not yet been made.

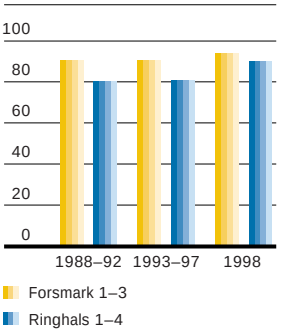
The deregulation of the electricity market

Capacity of Vattenfall's plants in the Nordic region (MW), 1998

Hydro power	**8,770**
Nuclear power	**6,630**
Other thermal*	**1,140**
Wind power	**20**
	16,560

** The standby plants at Stenungsund and Marviken were mothballed as of 1998 and are, therefore, not included here.*

Unit capability at Forsmark and Ringhals (%), 1988–1998



The unit capability factor at Forsmark and Ringhals has increased throughout the nineties.

The unit capability factor is the ratio of the available electricity generation over a given time period to the reference electricity generation over the same time period, expressed as a percentage.

has decreased the value of reserve capacity. Svenska Kraftnät, which is responsible for the Swedish electricity balance, has signed a contract for a gas turbine capacity of 600 MW, which is estimated to be the reserve capacity that will be necessary. Non-contracted gas turbines, with a capacity of about 300 MW, will in the long run be phased out since Vattenfall can, if necessary, purchase electricity on the electricity exchanges or import electricity. This is also the reason why Vattenfall, in 1997, decided to mothball the oil-fired plants in Stenungsund and Marviken, representing a total capacity of about 1,020 MW.

Wind Power

Over the past 20 years, Vattenfall has been developing wind power and now owns 38 wind power plants, representing about 20 MW, of which 0.6 MW was completed during the year. During 1998, 36 GWh (23) was generated, which is an increase of more than 50 per cent, compared with 1997. Vattenfall is, thereby, Sweden's largest individual owner of wind power plants and accounts for about 12 per cent of wind power production in Sweden. In addition, Vattenfall had signed a contract to obtain 54 GWh of electricity from other wind power plant owners.

In view of the current situation, the continued commercial expansion of wind power is completely dependent on customers' interest in purchasing electricity from wind power plants (VindEl) and on the ability to obtain permission for additional facilities.

Fuel Supply

Vattenfall Bränsle AB supplies the Group with the necessary fuel for electricity generation (uranium and oil). Fuel is procured at competitive prices on the international market. In 1998, the company had SEK 1,459 million (1,408) in sales.

Uranium is purchased through long and short-term contracts and on the spot market. International market prices declined during 1998. Vattenfall requires that its uranium vendors and suppliers of nuclear fuel services comply with international requirements regarding environmental management, emissions and industrial safety. Quality control is conducted by examining documentation, through contacts with authorities and special site inspections. During 1998, uranium was purchased for the period of 2001–2005. Four different vendors were chosen. These agreements will result in reduced fuel costs for nuclear power over the next few years.

SKB

The Swedish Nuclear Fuel and Waste Management Co. (SKB) manages the spent nuclear fuel and other radioactive waste generated in Sweden and is the last link in the nuclear fuel cycle. SKB is owned by the Swedish nuclear power plants and Vattenfall's total stake in the company is 58 per cent.

SKB is currently involved in the siting of a repository for spent nuclear fuel. For some time, SKB has owned and operated a Final Repository for Radioactive Operational Waste (SFR) at Forsmark nuclear power plant as well as an Interim Storage Facility for Spent Nuclear Fuel (CLAB) at Oskarshamn nuclear power plant. SKB is also responsible for the transport of all radioactive waste.

Over the years, SKB has developed considerable expertise, from an international perspective. This expertise is currently applied to operate and develop Swedish facilities, and in a series of environmental and safety improvement projects within Central and Eastern Europe, including the Kola Peninsula. This consulting is entirely externally financed.

Some of these photographs were taken by Vattenfall employees while others come from Vattenfall's archives.

Network Operations

Restructuring and Efficiency

Vattenfall's new network organization was developed in three stages.

- The wholly-owned local network companies merged to become four large companies in 1998.
- Owner and contractor roles were separated and streamlined in 1998.
- The local networks became an operational part of the wholly-owned companies with regional networks as of the beginning of 1999.

The regional networks are owned by Vattenfall Regionnät AB (VRAB), whose role is strictly limited to that of ownership. Responsibility for network operation rests with the four regional network companies, comprising (as of 1999), Vattenfall Norrnät, Vattenfall Sveanät, Vattenfall Västnät and Vattenfall Östnät, as well as with the partly-owned companies Ryssa Elverk, Gotlands Energiverk, Flens Energinät, Östra Roslags Elverk and Västerbergslagens Energi. A total of 815,000 network customers in Sweden are served. Network operation and maintenance is carried out by the contracting company, Vattenfall Elnät-Service AB. Ownership and operation roles have also been separated in the Finnish companies, Hämeen Sähkö and Lapuan Sähkö. A total of 175,000 network customers in Finland are served.

The ratio of employees per 1,000 network customers in Vattenfall is 1.6, which is less than Sweden in general, and less than half of the figures for Norway and Finland.

Business transformation at Vattenfall includes strategic investment in new technology, focusing on new IT applications. A completely new, customer-oriented operation-monitoring system will be introduced in 1999 and taken fully into operation in the year 2001. This is expected to lead to a radical improvement in the level of customer service.

Price and Reliability

Since deregulation, several network customers have voiced complaints concerning the pricing of network services. Many of these cases were handled by the Swedish National Energy Administration in 1998 and no objections have been raised to the prices applied by Vattenfall's network companies.

Reliability was satisfactory in 1998. Vattenfall paid SEK 9 million (14) in service guarantees to customers in connection with power failures.

Investments

Vattenfall makes acquisitions when the price is reasonable in relation to possible structural benefits. During 1998, majority shareholdings were acquired in Flens Energinät AB, AB Ryssa Elverk and Östra Roslags Elverk AB. In early 1999, the acquisition of Säffle Elverk AB was completed. In total, these companies represent about 58,000 network customers. At the same time, network areas representing almost 5,000 customers were disposed of.

Europe

Vattenfall's strategy in Europe, outside the Nordic region, is to actively participate in electricity sales, distribution, district-heating and one-stop energy solutions. In 1998, this business area supplied 0.5 TWh of electricity and 0.5 TWh of heat.

Operations have been established in Germany, Poland, the Netherlands, Estonia, Latvia, Lithuania and the Czech Republic.

During 1998, Vattenfall increased its stake in VASA Energy to 75 per cent. The company owns CHPs representing a total of 210 MW of

electricity and 180 MW of heat (not including reserve capacity), and is actively promoting the deregulation process in Germany. Several power agreements were signed during 1998. A site has been acquired for the project development of a large gas-fired power plant.

In Poland, a 16 per cent shareholding in the district-heating company in Ostrow, with 100 MW in installed capacity, was acquired. In Lithuania, 5 per cent of the shares in Lithuanian Power Co (LPC) were acquired. The company owns the electricity supply in Lithuania, excluding the Ignalina nuclear power plant. In Latvia, the thermal plant for the Riga airport was inaugurated in November. Vattenfall owns just over 8 per cent of the Czech electricity distribution company, Vychodoceska Energetika a.s. (VCE). The privatization process has ceased, following the change of government in the Czech Republic. Therefore, Vattenfall has been able only to consolidate its position in VCE through actively participating in the work of the board.

Vattenfall is a shareholder of Baltic Cable AB (1/3) and SwePol Link AB (48 per cent). SwePol Link has obtained all of the required permits in Sweden to construct a 600 MW direct current link between Karlshamn in Blekinge and the town of Slupsk in Poland. The total investment is estimated at SEK 2.8 billion. The design is based on metallic return wires where the current is conducted through a cable instead of through water. The project will improve supply reliability in the Swedish and Polish power systems and will have a positive impact through reduced fossil-fuel combustion in Poland. Considerable progress has been made in the construction work on land and it is expected that underwater cable laying will start in May 1999. Startup is scheduled for year-end 1999.

International

Vattenfall focuses on three segments outside Europe: generation, consulting and electricity market products. Services are also provided to hydro power and thermal power plants.

Nordic Power Invest

Investments outside Europe are made through the Nordic Power Invest (NPI) subsidiary. At year-end 1998, the market value of the total investments (SEK 700 million) was about SEK 1,200 million.

Vattenfall owns 7 per cent of the Thai company, COCO, which is listed on the Bangkok stock-exchange. During 1998, a further 200 MW in capacity was added, bringing the total generation capacity to 770 MW of electricity and 930 tonnes of steam per hour.

The Theun Hinboun hydro power plant (210 MW) in Laos was taken into commercial operation in 1998. Vattenfall has an indirect 10 per cent interest in the company and is responsible under contract for operation and maintenance for ten years.

Together with the US power company, NRG, Vattenfall owns 96 per cent of the hydro power company Cobee in Bolivia, via the Dutch company, Tosli Investments B.V. During 1998, production capacity increased from 171 to 187 MW.

SwedPower

Following the acquisition of Sydkraft's shares in SwedPower, Vattenfall's holding in the company is now 85 per cent. This will enhance opportunities to market Vattenfall's own products via SwedPower.

Some of these photographs were taken by Vattenfall employees while others come from Vattenfall's archives.

Natural Gas and Engineering Companies

Vattenfall Naturgas

In Europe, the natural gas and electricity markets are becoming integrated. This process is reinforced by the climate policy, resulting in a changeover from coal to natural gas. Natural gas is expected to have an increasingly significant role in market development, including the Northern European market. Therefore, Vattenfall is actively participating in the integration process.

Vattenfall's natural gas business has entered a new phase. Ownership of Vattenfall Naturgas was expanded in 1997, through new shareholders in the company (Norwegian Statoil, German Ruhrgas, Finnish Neste and Danish DONG). Vattenfall's stake is 51 per cent. The focus is now on marketing and customer orientation in the existing natural gas network. In 1998, Vattenfall Naturgas reported SEK 928 million in sales.

In 1998 a new and large supply agreement was signed with Sydgas AB concerning deliveries to a gas turbine in Helsingborg.

A partly EU-funded feasibility study on the expansion of the Nordic gas grid was presented in October. Vattenfall Naturgas participated in the study, which is based on the supply of natural gas from Russia and the Norwegian part of the North Sea. The study shows that it is technically and financially feasible – in an initial stage by the year 2005 – to expand the natural gas infrastructure in the Nordic region, in order to accommodate the deregulated natural gas market. The study shows that additional natural gas in Sweden would not compete with the limited potential of biofuels since this would be fully utilized in any case. An increased use of natural gas would thus help to reduce greenhouse gas emissions. The study has attracted interest on Europe, since there is a lower penetration of the natural gas market in the Nordic region than in the rest of Europe.

A Russian-Finnish study on the feasibility of laying a pipeline via the Baltic Sea to transport Russian gas to the continent will be presented in 1999. If the natural gas infrastructure is expanded, it would be an advantage for the pipeline to cross Sweden. New opportunities for natural gas supply to Sweden will increase in importance with the deregulation of the natural gas market in the European Union in the year 2000.

Engineering and Consulting

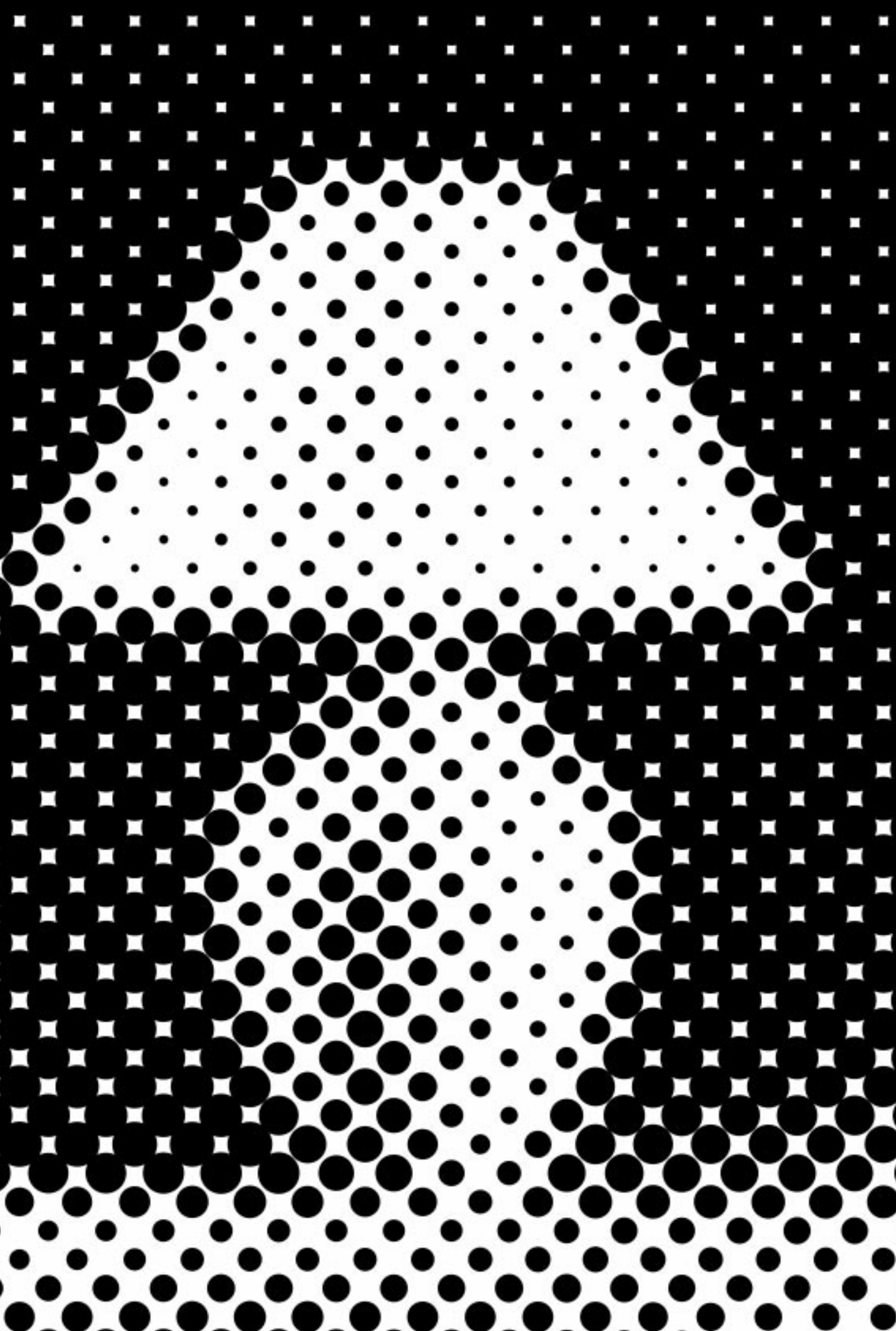
Consulting within the areas of efficient and environmentally-adapted energy solutions, electricity transmission and electricity generation is provided by the subsidiaries, Vattenfall Energisystem, Vattenfall Hydropower and Vattenfall Transmission. In 1998, Vattenfall Energisystem was environmentally certified in accordance with ISO 14001. In 1998, the companies had SEK 358 million in combined sales.

In 1999, the three Engineering companies will merge into one company in order to streamline operations and increase competitiveness. The new company, which will have 430 employees initially, will operate on the internal and external market.

Service Companies

Since 1992, six service companies have been primarily responsible for providing services to the Group. Some of them, Vattenfall Data, Vattenfall Fastigheter, Vattenfall Support and Vattenfall Utveckling, also have external customers. In 1998, the companies – which have a total of just over 800 employees – had combined sales of SEK 1,372 million.

Business operations conducted by Vattenfall Treasury AB (publ) are described in Financial Risk Management, page 34.



preparing for the future

Vattenfall's future will be determined by its ability to develop and sell new services and products and to increase internal efficiency.

Organization and Change

The rapidly changing nature of energy markets the world over places demands on those market players intending to maintain long-term success. New trading patterns, the development of new products and services, new customer relations and structural changes demand an organization that can embrace change and rapidly adapt to new conditions.

Vattenfall is conducting an extensive internal development project which aims at reinforcing the competitiveness of the Group. The work focuses on four processes – procurement, plant, business administration and human resources. By using information technology and by sharing processes and systems, the Group can ensure higher quality and efficiency than before.

Skills Swap Programme

For Vattenfall's employees, a rapidly changing market means greater demands on continuous development. To contribute fully, everyone must adjust to the changes by adapting their work methods and developing their skills. This is the challenge created by labour market conditions in the nineties and Vattenfall's employees are not exempt from the challenge. Each employee must actively take the initiative for his or her own personal development.

In 1997, the Vattenfall Group launched a project to accommodate the continuous development of its human resources. The aim of the Skills Swap programme is to facilitate change and development for about one thousand of the Group's employees. A significant portion of the one billion kronor that were set aside in the 1997 accounts for restructuring will be allocated to this project.

After completing their part of the programme, many employees will go on to new jobs within Vattenfall while others will be given assistance in finding suitable employment outside the Group.

Human Capital

The Internal Efficiency Improvement and Skills Swap programmes will lay the necessary foundation for Vattenfall to realize its potential.

The demands of the market are also placing demands on leadership skills at all levels within Vattenfall's organization.

For Vattenfall, it is essential that our managers can unlock and use all of the knowledge and potential for creativity of our employees. There are a large number of specialists and well-educated employees within the Group who must be encouraged to actively participate in product development and to come up with solutions which create added value for customers and for Vattenfall. This is vital if Vattenfall is to take advantage of the growth potential of the open Nordic and European electricity markets.

Internal Efficiency Improvement Programme

Although competent employees and efficient processes are two of the cornerstones of Vattenfall's development, this by itself is not enough. Vattenfall must also actively work towards reducing the level of expenditure within its operations. The target of Vattenfall's

A strong brand name is a vital asset on a deregulated, open market. We have worked towards building public awareness and trust in Vattenfall, emphasizing our environmental responsibility. Vattenfall stands for reliability, expertise, innovation, openness and caring.

Internal Efficiency Improvement programme is to reduce total costs by a minimum of one billion kronor by the year 2000. Vattenfall must establish a cost framework which promotes continued competitiveness and profitability.

One of the consequences of the programme is employee redundancy. Redundant employees are transferred to a special unit set up for the purpose of helping individuals who risk losing their jobs at Vattenfall to find new employment within or outside the Group.

Development

A large number of changes are occurring within the energy sector, in Sweden and in most other countries. New market conditions, more stringent and added environmental requirements, new market players, internationalization and increased competitive pressure are a few examples. Vattenfall views investment in research and product development as a critical factor for success on the market.

The aims of Vattenfall's research and development work are twofold:

- To improve efficiency and develop electricity generation and network operations.
- To develop new products and services to improve the customer's competitiveness, environment and quality of life.

The Sustainable Energy Project is a long-term, multi-year project to develop new technology and a product range for a sustainable energy system.

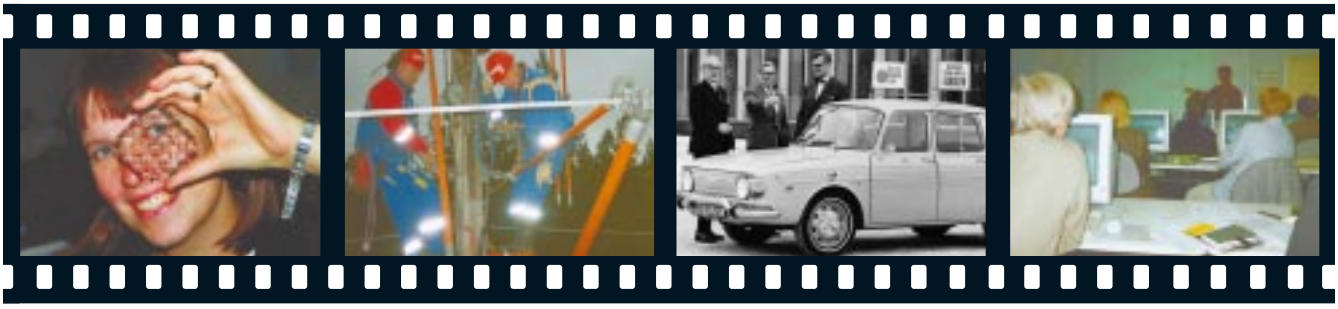
A total of SEK 527 million (460) was invested in different forms of research and development in 1998.

Efficiency and Development of Generation and Network Operations

Technology and environmental development is often an integrated process. Improved technology leads to improved environmental performance and improved financial performance. One example of this is the new technology now being demonstrated at Vattenfall's facility in Porjus, where a new hydro power unit, developed in partnership with ABB, Kværner and Vattenfall, has been installed for development purposes. The turbine features new environmentally-sound technology. The Powerformer generator design is completely new, allowing the generator to be connected directly to the electricity network without a transformer. Since Powerformer does not need a transformer or generator switch gear, it uses less materials and requires fewer components. Efficiency and capability are increasing, while maintenance costs are decreasing. Vattenfall and ABB have conducted a Life Cycle Assessment (LCA) of environmental data and have found that Powerformer has a significantly lower environmental impact than traditional generators with transformers.

In the network operations area, development work is under way to increase operational efficiency, reduce environmental impact and develop new products. 14 projects involving new products have been launched during the year. New electromagnetic field (EMF) reduction methods have been developed. The method of shielding the field near to the source has been improved and new baffle plate joining methods have led to field reduction. Mitigation

Some of these photographs were taken by Vattenfall employees while others come from Vattenfall's archives.



of the magnetic fields using a cable loop in parallel with the power lines has proven to be a promising method.

A method is being developed to clean up oil from collecting areas beneath transformers and from hydro plants. Another example is a method which allows maintenance work to be carried out on energized plant components, a new low-voltage oscilloscope and a new type of environmentally-adapted ground cable.

On the island of Gotland, the network was reinforced by new direct current distribution for the wind power stations which will be installed on the southern part of the island (see page 28).

In 1993, Vattenfall started preparing LCA for electricity generation which is also used in environmental product declarations. Work on the environmental aspects of hydro power has been in progress for a long time. Thanks to both activities, Vattenfall is now the first power company to obtain a certified environmental product declaration for electricity generated by hydro power plants (see page 14 as well as Note 9, page 78 on the environmental declaration of electricity from the Lule River).

Spent Nuclear Fuel and Radioactive Waste

During 1998, work on a final disposal system for spent nuclear fuel reached an important milestone with the inauguration of a new laboratory at Äspö near to Oskarshamn, where SKB will develop spent fuel encapsulation methods. In 1998, SKB submitted a new Research, Development and Demonstration Programme where one of the targets is to identify, by the year 2001, two sites for investigation relating to the siting of a deep repository for spent nuclear fuel.

Product Development in Focus

Since 1996, Vattenfall has continually increased its work on new product development. A special process and organization has been set up within the Group to identify new ideas for business. A number of different product areas are involved. Within Energy Efficiency, products have been developed which target companies and market partners, e.g. Electricity agreements with savings guarantees (see also page 69). Energy Solutions now offers the following products: Färdig Värme (heating), Färdig El (electricity), Färdig Kyla (cooling), Färdig Tryckluft (compressed air) and Färdig Klimat (indoor climate control). These products involve Vattenfall assuming the responsibility for supplying energy, to an industry or municipality, with a certain agreed reliability and environmental performance. One example of this is Bulten in Kalix, which signed an agreement for Färdig Värme and Färdig Kyla and now has a new energy solution offering both financial and environmental benefits. Other similar examples are Ånge Energi which reduced its costs by 20 per cent after an agreement with Vattenfall for Färdig Värme. At Lugnvik's sawmill outside Kramfors, Vattenfall has not only taken over heat generation, but also the entire chain from fuel transport to monitoring the wood driers. LCA services and tools are being developed within a special pro-

ject. Vattenfall sells source-specified VattenEl (hydro), VindEl (wind) and KärnkraftEl, (nuclear), all backed by environmental declarations.

During 1998, 40 new products were developed.

Development Contributing to Customer Competitiveness and the Environment

Vattenfall is a large supplier to industrial companies in the entire Nordic region. To maintain and develop its position on this market, besides offering customers electricity at competitive prices, Vattenfall must help to improve the efficiency and environmental aspects of the customer's energy production, energy use and processes. The development of technology and system solutions must result in increased efficiency with lower fuel consumption, reduced production costs and lower emissions.

Vattenfall has assisted the SSAB steel works in Oxelösund in process design to improve furnace efficiency in the new "Valsverk 2000" rolling mill. At Utansjö works, which belongs to the Rottneros Group, Vattenfall is implementing and financing energy efficiency measures. Together with Cementa AB, and on the basis of a model developed jointly with LKAB, Vattenfall has provided energy efficiency training for the staff at the Slite plant. The aim of the training was to make staff aware of energy use and to cut the energy cost per tonne of manufactured cement. At Bolidens copper mine in Aitik, in a joint project with Boliden Mineral AB, LKAB, Vattenfall and an equipment supplier, experiments have been conducted to make the dewatering of mineral slurry more efficient. At the Lafarge Braas Svenska Tak brickyard in Vittinge, Vattenfall has installed new drier equipment which has reduced electricity consumption by 20 per cent at the same time that rejects have been cut by one per cent. Many examples can be mentioned of areas where Vattenfall is working towards improving the energy efficiency and environmental performance of customers' processes.

Equipment used at offices, hospitals and in industry is increasingly sensitive to poor electricity quality. Vattenfall is developing new solutions to analyze and improve the quality of the electricity supplied. One example is Alvesta municipality where the clocks speeded up as a result of the poor quality of electricity caused by induction furnaces at a foundry. In this case, the problem was solved by changing the electricity supply system to the foundry.

Vattenfall has developed methods, equipment and expertise for monitoring the state of different components in electricity plants. Plant state monitoring can optimize the lifetime of equipment and components so that the right type of maintenance is carried out at the right time. This reduces maintenance costs and improves reliability and safety for the customer at the same time that reinvestments can be postponed.

R&D Contributing to Customer Quality of Life

Two-way communications on the electricity network will make life easier, safer and more comfortable for the customer. Several functions for one customer can be linked over the electricity network, such as an indoor climate system, lighting, household appliances etc. The customer will be able to control and monitor his or her home remotely and will no longer have to worry about the possibility of damage or other incidents.

Vattenfall is developing systems which

Some of these photographs were taken by Vattenfall employees while others come from Vattenfall's archives.

allow data communications with household appliances to be conducted via the electricity network. The consumer will be able to check exactly how much electricity is being consumed by specific appliances in the home. Intelligent electricity metering will also enable the customer to use appliances more efficiently and in ways that are less harmful to the environment.

Two-way communications on the electricity network will offer corporate customers new ways of conducting business. One example is a new Internet-based service, Ebba, which allows companies and municipalities to obtain an overview of their energy consumption. Each user is given a home page displaying billing, meter values and consumption profiles. Another example is Flexibel El which allows the customer to buy electricity anywhere and to be charged via the regular billing system. For example, electricity can be purchased anywhere and used for market stalls, car engine heaters or even to run the electric motor cars of the future. Vattenfall has patented Flexibel El in Sweden, Australia and the USA. A patent for the European Union is expected to be obtained during the first half of 1999.

Development Relating to Customer Behaviour

In order to survive on a highly competitive market, it is essential for Vattenfall to understand existing and potential customers – how they view the company, what they expect and, above all, their explicit and implicit needs. The ability to integrate this knowledge into product and service development will give companies of today and tomorrow an essential competitive advantage. Vattenfall is conducting development work in this area with a number of institutions and universities, in Sweden and abroad.

Sustainable Energy Solutions

Energy companies of the future will be characterized by their conservation of resources and environmental responsibility. In January 1998, a multi-year project, Sustainable Energy Solutions, was launched to consolidate Vattenfall's position as a leading energy company. The project involves all stages in the energy chain – production, distribution and use. The solutions under investigation will enable Vattenfall to develop sustainable energy systems together with its customers.

Several smaller projects – some of which have been in progress for a few years – are now being conducted within the Sustainable Energy Solutions Project. One such example is the development work at Vattenfall's biofuel-fired CHP plant in Nässjö. Several combustion-related measures have been introduced which have improved plant efficiency and environmental performance. The plant was also the first of its type to have unmanned operations and to have a closed cycle system with ash being recycled to the forest. The final report of the EU project "Total Costs and Benefits of Biomass in Selected Regions of the European Union – Biocosts" was submitted in 1998. Nässjö was evaluated as the most competitive bioenergy system of those covered in the study.

Vattenfall is participating, together with Volvo Aero, ABB STAL and Elforsk (the Swedish electrical utilities R&D company) in the "Evaporative Gas Turbine" project which is being conducted at Lunds University of Technology and the Royal Institute of Technology, Stockholm. The project aims at demonstrating a gas turbine facility equipped with a unit for humidifying supplied air in order to improve efficiency cost-effectively. The results of initial

experiments conducted in the facility in Lund at 600 kW are promising.

Local electricity and heat generation will become increasingly attractive as the cost of small-scale technology is reduced and as surveillance and control systems are rapidly developed. Together with ABB STAL and Volvo Aero, Vattenfall has developed a CHP package comprising a small gas turbine directly connected to a high speed generator. Vattenfall's High Speed Generation (HSG) demonstration plant in Papyrus in Mölndal has shown a high performance and capability.

Vattenfall is also testing fuel cells for local heat and electricity generation. In autumn 1997, a 200 kW heat and 200 kW electricity facility was taken into operation in Varberg. The facility has operated satisfactorily for just over one year.

Vattenfall has invested in wind power over many years. During 1998, the evaluation of Näsudden II, which is a 3 MW unit supplied by Kværner, was completed. The wind power plant has had a high capability and holds the world record in energy output for one year (7.7 GWh). During the year, a 600 kW wind power plant was constructed in Suorva in Lappland. The aim is to test wind power under arctic conditions. The turbine is equipped with a heating system which prevents ice formation on the blades.

For 20 years, R&D on solar energy has been conducted via Vattenfall Utveckling. The focus is on developing and demonstrating solar heating as a component in a heat supply system for housing areas. One interesting result of the R&D work is a solar panel which has been developed for optimum performance in a Nordic climate. This solar panel is now being tested at various local district-heating systems.

Direct current distribution is a technology which can offer both technical and environmental advantages in a future electricity system with greater locally based generation. With the existing electricity network, which is adapted for large-scale electricity production, transmission limitations can arise when a large share of small-scale and local production units are established. In view of this difficulty, the Gotland HVDC-Light (High Voltage Direct Current) Project is being conducted. Vattenfall, Gotlands Energiverk, ABB and the Swedish National Energy Administration are constructing a pilot facility for intermediate voltage (80 kV), using a new type of inverter station and a new type of direct current cable. The project will make it possible to install at least 50 MW of additional wind power on southern Gotland, where the limit is now reached in terms of installed capacity. During 1998, project planning, system studies, manufacturing and testing of components and cable laying were carried out. The facility will be taken into operation in summer 1999.

It is becoming increasingly important to help customers to use energy more efficiently. The Sustainable Energy Solutions programme develops solutions for different industries and sectors, including saw mills, which have a significant energy need for the wood-drying process.

"Carbon dioxide-free electricity" from natural gas may become technically, financially and environmentally attractive in the long run. Vattenfall is currently participating in an EU project which is following up experiments involving the separation and disposal of carbon dioxide below the seabed.

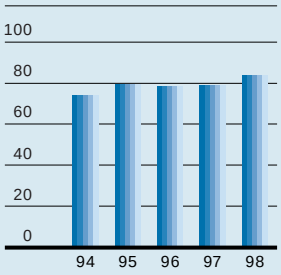
Some of these photographs were taken by Vattenfall employees while others come from Vattenfall's archives.

annual accounts 1998

administration report

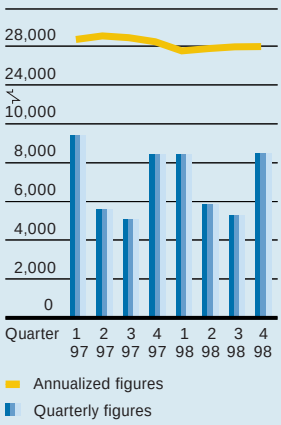
The Board of Directors and President of Vattenfall AB (556036–2138) hereby submit the annual accounts and consolidated accounts for 1998 (pages 29–63).

Electricity sales (TWh)



Electricity sales have increased over the past five-year period. Of sales in 1998, electricity exchanges accounted for 10.9 TWh.

Net sales (SEK m)



Sales vary considerably during the year. The decrease in 1998, compared with 1997, is mainly due to a lower volume of sales during the first quarter.

Group

The 1998 financial year was the third year of open competition on a deregulated Swedish electricity market. The supply of electricity is currently very high at the same time that market growth is low. The abundant supply of hydro power during 1998 and continued tough competition depressed electricity exchange prices. Net sales decreased by 2 per cent to SEK 27,957 million. However, the volume of electricity sales increased by 5.1 TWh to 83.8 TWh, of which 10.9 TWh (4.4) was sold on electricity exchanges. Profit before tax and minority interests amounted to SEK 4, 448 million (5,439).

Net Sales and Performance

Net sales amounted to SEK 27,957 million (28,458). The decrease is mainly due to reduced revenues from electricity sales as a result of lower market prices. A decrease in direct sales to customers in Sweden, mainly to energy companies, has been compensated for by increased sales on electricity exchanges. Net sales outside Sweden increased to 19 per cent (12).

Operating profit amounted to SEK 6,067 million (7,376). Operating profit as a percentage of net sales (operating margin) was 21.7 per cent (25.9). The decline in operating profit is mainly due to reduced margins as a result of lower prices. A net amount of SEK 163 million in items affecting comparability is included in profit for 1997, see Note 6.

Financial income and expenses – net, which is the net amount of other interest income and interest expense, amounted to SEK –1,618 million (–2,098). The improvement is due to a charge in 1997 of SEK 238 million for the prepayment of National Debt Office loans and to the refinancing at lower interest rates during the year of prepaid loans as well as loans reaching scheduled maturity. The interest cover amounted to 3.3 times (3.2). The long-term target is an interest cover of at least 3 times.

Profit before tax and minority interests amounted to SEK 4,448 million (5,439), resulting in a pre-tax profit margin of 15.9 per cent (19.1).

Taxes amounted to SEK –1,816 million (–2,011), of which SEK 1,316 million (1,498) is attributable to tax on profit for the year and previous years.

Net profit for the year was SEK 2,664 million (3,399), resulting in a return on equity after full tax of 8.4 per cent (11.3).

Financial Position

Tangible fixed assets increased by SEK 2,113 million to SEK 57,781 million, mainly as a result of assets in acquired group companies.

Liquid assets amounted to SEK 4,439 million (3,961), which corresponds to 15.9 per cent (13.9) of sales. Liquid assets comprise SEK 2,007 million (1,591) in investments involving refinancing risk arbitrage transactions. During the year, the average volume of liquid assets was about SEK 4,600 million (6,200). About SEK 2,400 million (1,300) of this amount comprised investments involving interest arbitrage transactions.

Equity amounted to SEK 32,325 million which is an increase of SEK 1,167 million. The equity/assets ratio was 39.7 per cent (40.3). Since 1991, the equity/assets ratio has increased by 13 percentage points. Vattenfall's target is to maintain an equity/assets ratio of 35–40 per cent.

Interest-bearing provisions and liabilities amounted to SEK 27,876 million, which is an increase of SEK 1,565 million. Interest-bearing liabilities increased by SEK 1,273 million to SEK 23,985 million. The net debt, i.e. interest-bearing liabilities less liquid assets, increased to SEK 19,546 million (18,751).

Vattenfall has three Commercial Paper programmes and two Medium Term Note programmes which, together, allow for more flexible financing options. The short-term Commercial Paper programme is backed up by a Revolving Credit Facility of USD 600 million, which falls due in the year 2003. In addition, there is a USD 525 million back-up in the form of 364-day credit facilities.

The maturity profile of Vattenfall's loans is

shown in the diagram on page 34. About 82 per cent of the total loan portfolio consists of foreign loans.

Vattenfall has high credit ratings, which are the highest possible short-term rating, P-1 from Moody's and A-1+/K-1 from Standard & Poor's. Vattenfall has been awarded an Aa3 by Moody's and AA by Standard & Poor's for international long-term borrowing.

Non-interest-bearing provisions increased by SEK 869 million due to higher deferred tax liabilities mainly as a result of reported deferred tax liabilities on surpluses arising from company acquisitions.

Financing and Investment

Internally generated funds during the year amounted to SEK 6,767 million (7,869), which resulted in a degree of self-financing of 1.5 times (1.6). Changes in the working capital, less liquid assets, were SEK –2,158 million (2,659).

The Group's investments amounted to SEK 4,528 million (4,877), of which company acquisitions comprised SEK 1,286 million (902), associated companies 469 million (470) and other long-term securities SEK 208 million (549). SEK 2,554 million (2,953) was invested in tangible fixed assets. SEK 899 million (1,328) was invested in electricity production facilities and SEK 825 million (888) in electricity networks. In the heating segment (district-heating, Färdig Värme and power and heat), investments amounted to SEK 366 million (335). The remaining investments mainly concerned equipment, tools, fixtures and fittings. SEK 11 million (3) was invested in intangible assets.

Long-term interest-bearing liabilities increased by SEK 4,361 million. Long-term borrowing for the year amounted to SEK 5,732 million, of which SEK 964 million came from minority shareholders. The average maturity of new loans is 9.3 years, extending the average maturity of the loan portfolio from 3.8 to 5.1 years.

Structural Changes

In 1997, the shareholding in Gullspång Kraft AB, owned via Gullspång Intressenter AB, was sold to Imatran Voima Oy. In January 1998, in accordance with this agreement, 49 per cent of the shares in the Finnish hydro power company, Pamilo Oy, were acquired. Rights to the production capacity in the Finnish electricity generation company, Etelä-Pohjanmaan Voima Oy, were also obtained through an agreement.

In December 1997, an agreement was signed to acquire 99.7 per cent of the shares in Flens Energinät AB, which includes the subsidiary, Flens Energi AB. Ownership was transferred in February 1998.

In January, all of the shares in the electricity sales company, Nacka Energimarknad AB, were acquired. The company delivers electricity to about 24,000 customers in Nacka municipality.

In addition, in January, the remaining shares in the subsidiary, Kraftledningar i Bergslagen 130 kV AB were acquired. The company subsequently merged with Vattenfall Regionnät AB.

In April, 40 per cent of the shares in Gestrikekraft AB were acquired. In January 1999, the remaining 60 per cent were acquired. Gestrikekraft delivers about 1.3 TWh of electricity to about 80,000 customers.

In March and April, 63 per cent of the shares in AB Ryssa Elverk were acquired. The company has 24,000 customers and conducts network operations, mainly in the Orsa, Mora and Älvdalen municipalities.

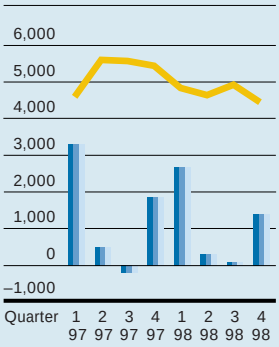
As of July, the German company, VASA Energy, and subsidiaries, was consolidated since a further 25 per cent were acquired, bringing Vattenfall's stake in the company to 75 per cent. VASA Energy operates on the German market and develops power and heat production as well as electricity and heat distribution.

During September, Vattenfall increased its ownership of SwedPower AB by 27 per cent to 85 per cent, through the acquisition of Sydkraft's shares in the company.

In Europe, Vattenfall's acquistions included 5 per cent of the shares in Lithuanian Power Company as well as participations in two heating companies in Poland. Furthermore, additional shares were acquired in the Czech electricity distribution company, Vychodoceska Energetika a.s., bringing Vattenfall's stake in the company to just over 8 per cent.

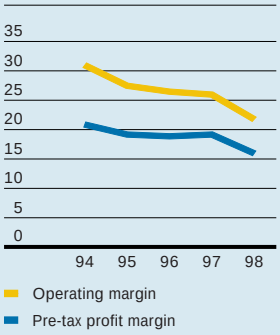
In December, just over 90 per cent of the shares in Östra Roslags Elverk AB were acquired.

Profit/loss before tax and minority interests (SEK m)



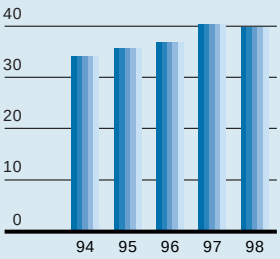
The figures for the year are highly dependent on results for the first quarter.

Operating and pre-tax profit margin (%)



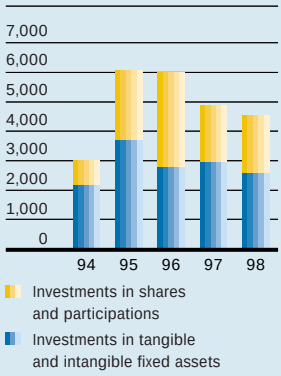
The operating and pre-tax profit margins have both decreased over the past five-year period.

Equity/assets ratio (%)



The equity/assets ratio has improved since 1994 and is now 39.7 per cent.

Investments (SEK m)



Since 1995, investments in shares and participations have represented a significant portion of the Group's investment volume.

The company includes Östra Roslags Elförsäljning AB, and comprises about 15,000 customers.

In January 1999, Säffle Kommuns Förvaltnings AB and its subsidiaries, Säffle Elverk AB and Säffle Energi AB, were acquired. The companies have about 7,600 customers.

Personnel

The average number of employees increased by 149 to 7,996. Salaries and remuneration amounted to SEK 2,644 million (2,531). For further information on the average number of employees, salary costs as well as remuneration to the senior management, see Note 34.

A decision was made to start a pension foundation during 1999.

Research and Development (R&D)

Vattenfall's R&D activities are integrated into its business operations. This means that each business area and service company is responsible for conducting its own R&D, with an emphasis on the potential commercial benefits of the work. R&D for the Group is co-ordinated by Corporate Development & Environment.

In 1998, total investments in R&D amounted to SEK 527 million (460), of which the Swedish Nuclear Fuel and Waste Management Co accounted for SEK 194 million (139). R&D costs comprised 1.9 per cent (1.6) of net sales.

Negotiations with the Swedish State

During 1998, Vattenfall negotiated with the Swedish state concerning the sale of capacity at Ringhals nuclear power plant as a part of a possible settlement concerning the Barsebäck nuclear power plant which, is owned by Sydkraft AB.

Year 2000

The management of Vattenfall started preparations at an early stage to ensure that its computer systems are Year 2000 compliant. The aim is to enter the new millenium with the delivery guarantees that normally apply.

During 1997, work on auditing all IT-dependent systems was initiated. A total of 14,000 systems have been audited.

The resources needed for the entire project are estimated at 150 full-time employee years. The project is expected to cost several hundred million kronor, including maintenance and certain investments which will be made earlier than scheduled, as they cannot be separated from the additional costs associated with the Year 2000 preparations.

Business Segments

Nordic Countries – Electricity

Net sales amounted to SEK 18,576 million (19,376). Income from electricity sales declined somewhat in spite of an increased sales volume. The reduced income can be explained by lower market prices. Direct sales to customers in Sweden, mainly energy companies, have decreased by 4.1 TWh, while sales on electricity exchanges have increased by 6.5 TWh. Sales to customers and electricity exchanges amounted to 83.3 TWh (78.7) distributed as 72.4 TWh (74.3) and 10.9 TWh (4.4), respectively.

In addition, 9.0 TWh (8.0) has been delivered to parties with minority interests in power plants etc.

The total electricity input amounted to 95.5 TWh (89.8) , of which 83.3 TWh (79.1) was generated internally and 12.2 TWh (10.7) was purchased. In total, 34.9 TWh (36.0) of hydro power, 48.3 TWh (43.0) of nuclear power and 0.1 TWh (0.1) of thermal power etc. were generated. Of the total input, 3.2 TWh (3.1) was consumed internally, mainly to cover network losses.

As a result of abundant rain and snowfall during 1998, the reservoir inflow was very high.

Operating profit amounted to SEK 4,130 million (5,219). The lower operating profit is largely due to lower margins as a result of lower prices.

Nordic Countries – District-heating

Net sales amounted to SEK 809 million (781). The volume of district-heating sold came to 2.1

TWh (1.9), due to expansion within the existing district-heating systems. Operating profit was SEK 140 million (110).

Nordic Countries – Energy Services
Net sales amounted to SEK 1,171 million (1,108). Sales of Färdig Värme totalled 2.0 TWh, which is an increase of 0.2 TWh. Operating profit was SEK 105 million (79).

Nordic Countries – Network Services
Net sales amounted to SEK 7,039 million (6,918). Transmission volumes totalled 124 TWh. Operating profit was SEK 1,629 million (1,614).

Nordic Countries – Natural Gas
Net sales amounted to SEK 928 million (1,012), corresponding to a sold volume of 9.3 TWh (9.3), of which 0.3 TWh (0.3) was sold internally. Operating profit decreased to SEK 54 million (116), mainly as a result of depreciation on the 1997 revaluation of the natural gas network.

Europe
Net sales amounted to 341 million (0) with the VASA group mainly accounting for sales. Electricity sales to customers came to 0.5 TWh (0), of which 0.4 TWh (0) was generated at Vattenfall-owned facilities. Heat sales amounted to 0.5 TWh (0). Operating loss was SEK –57 million (–89).

International
Net sales amounted to SEK 92 million (132). The Asian crisis has had a negative impact on sales. Operating loss was SEK –41 million (–87).

Parent Company

Net sales for the parent company amounted to SEK 19,230 million (20,312). Net profit for the year was SEK 1,514 million (3,730). Investments totalled SEK 4,785 million (3,282). Liquid assets came to SEK 223 million (126). Funds in the group account managed by Vattenfall Treasury AB amounted to SEK 9,749 million (10,996).

Board of Directors and Work Procedures
Vattenfall's Board of Directors consists of eight members and two alternates, elected by the Annual General Meeting, as well as three employee representatives, with a corresponding number of alternates appointed by the trade union members. The President is a Board Member. Other company employees participate in board meetings as rapporteurs. The secretary is a Vattenfall employee.

During the 1998 financial year, the Board held 13 meetings, including 6 scheduled meetings, one of which was the meeting following election. The work of the Board follows an annual plan devoted to fulfilling the Board's need for information and is otherwise influenced by the procedures adopted by the Board. The Board meets with the company's auditors once every year.

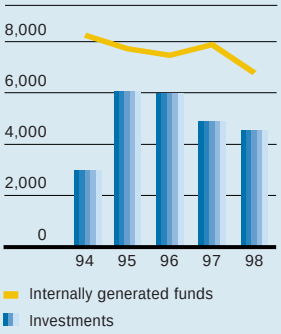
Proposed Distribution of Profits
According to the consolidated balance sheet, the Group's non-restricted equity amounts to SEK 4,888,539,000 (4,171,857,000). Of this amount, SEK 50,000 is expected to be transferred to restricted reserves. Thus, the total profits at the disposal of the Annual General Meeting are SEK 5,586,819,127. The Board of Directors and the President propose that the profits be distributed as follows:

– dividend to shareholder	SEK	1,500,000,000
– to be carried forward	SEK	4,086,819,127
	SEK	5,586,819,127

This is equivalent to an unchanged dividend of SEK 11.39 per share.

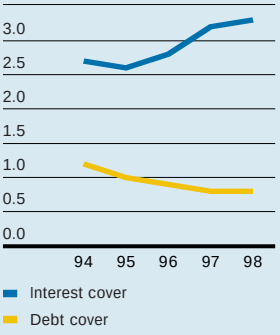
100 per cent of the shares in Vattenfall AB are owned by the Swedish state.

Self-financing (SEK m)



The degree of self-financing for 1998 is 1.5 times, a somewhat lower figure than for 1997, but higher than the figures for 1995 and 1996 when significant investments were made.

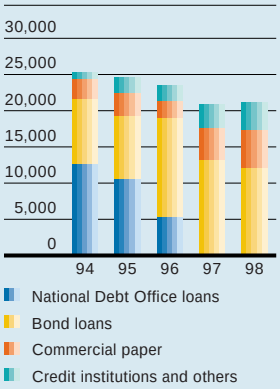
Interest cover and debt cover (times)



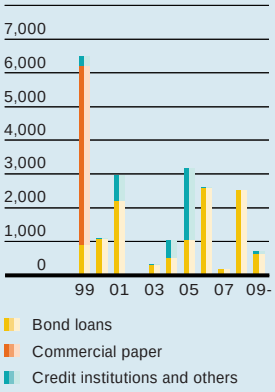
The interest cover and debt cover have improved as interest-bearing liabilities have decreased.

financial risk management

Total borrowings (SEK m) *



Maturity profile (SEK m) *



** Excluding loans from minority owners.*

Vattenfall's financial management operations are conducted by the wholly-owned subsidiary, Vattenfall Treasury AB (publ.), which is responsible for the Group's investments and funding operations and for the management of the associated financial risks. Vattenfall Treasury AB is a service company and serves as the Group's internal bank with just over 80 accountholders among the companies and units within Vattenfall. A centralized treasury function has the advantage that it allows the units of the Group to focus on their core business.

Vattenfall Treasury AB operates in accordance with the guidelines and risk limits established by Vattenfall's Board of Directors and Management concerning interest rate and currency exposure, counterparty risk, liquidity and the availability of funds. Internal security and controls are given very high priority.

Financing Risk

The Group's operations are capital-intensive, with major liquidity fluctuations during the year, which places demands on the availability of funds on the short and long term. The target for short-term liquidity is to always have no less than 10 per cent of the Group's sales in the form of liquid assets or committed credit lines. Long-term availability of funds is measured in terms of the average remaining maturity of the portfolio. This has been extended and, at December 31, 1998, amounted to 5.1 years (3.8). The maturity profile is shown in the adjacent diagram.

Interest Rate Risk

Interest rate risks relating to long-term borrowings are managed using a portfolio method, whereby the average fixed interest rate term is not allowed to fluctuate more than 12 months on either side of a certain norm. Other interest rate risks are managed within the overall risk limit established for the Group.

Currency Risk

The exposure of the Group to currency risk is related to the effects of exchange rate movements on future cash flows (transaction exposure) and on the value of the net assets of foreign subsidiaries (translation exposure). Transaction exposure mainly arises in connection with exports and imports and borrowing in foreign currencies. As a rule, no currency risk is permitted in the long-term loan portfolio. Virtually all currency risks in other forms of transaction exposure are hedged through matching and different types of derivatives. Any remaining exposure is then managed together with the interest rate exposure within the overall risk limit established for the Group. Translation exposure mainly rises with respect to the Finnish subsidiaries. To reduce the translation exposure, major net investments are hedged through loans in foreign currencies and forward exchange contracts. In the consolidated accounts, any exchange rate differences relating to these loans are offset against translation differences in equity.

Counterparty Risk

Counterparty risks associated with investments, derivative contracts etc. are managed within the limits set on the basis of external credit assessments. Only a number of major Nordic banks and credit institutions as well as parties with very high credit ratings are accepted as counterparties. Furthermore, before entering into long-term swap agreements, an International Swaps and Derivatives Association agreement must be signed with the counterparty. Counterparty risks in derivatives are constantly quantified through mark-to-market valuations as well as a standard mark-up for future value changes in accordance with the method stipulated by the Swedish Financial Supervisory Authority for institutions which are required to calculate capital ratios. Vattenfall has been awarded the same high credit rating for counterparty risks relating to derivative contracts as for long-term international borrowing (AA from Standard & Poor's and Aa3 from Moody's).

consolidated income statement

		Group	
SEK million	note	**1998**	1997
Net sales	1, 2	**27,957**	28,458
Cost of products sold	4, 5	**–18,963**	–18,604
Gross profit		**8,994**	9,854
Selling expenses		**–1,315**	–1,064
Administrative expenses		**–1,614**	–1,580
Research and development costs		**–527**	–460
Items affecting comparability, net	6	**—**	163
Other operating income		**604**	850
Other operating expenses		**–166**	–472
Participations in the result of associated companies	7	**91**	85
Operating profit	8	**6,067**	7,376
Result from other long-term securities held	10	**–1**	161
Other interest income and similar profit/loss items	11	**289**	400
Interest expense and similar profit/loss items	12	**–1,907**	–2,498
Profit before tax and minority interests		**4,448**	5,439
Tax	14	**–1,816**	–2,011
Minority interests in the profit for the year	15	**32**	–29
Net profit for the year		**2,664**	3,399

Business Segments

	Net sales		Operating profit/loss	
SEK million	**1998**	1997	**1998**	1997
Nordic countries				
Electricity	**18,576**	19,376	**4,130**	5,219
District-heating	**809**	781	**140**	110
Energy Services	**1,171**	1,108	**105**	79
Network Services	**7,039**	6,918	**1,629**	1,614
Natural Gas	**928**	1,012	**54**	116
Europe	**341**	—	**–57**	–89
International	**92**	132	**–41**	–87
Other and eliminations	**–999**	–869	**107**	414
Total	**27,957**	28,458	**6,067**	7,376

consolidated balance sheet

SEK million	note	Group Dec. 31, 1998	Dec. 31, 1997
Assets			
FIXED ASSETS			
Intangible assets			
Concessions, patents, licences, trademarks and similar rights	16	**388**	306
Renting and similar rights	16	**794**	815
Goodwill	16	**575**	187
Total intangible assets		**1,757**	1,308
Tangible assets			
Land and buildings	17	**18,821**	18,953
Plant and machinery	17	**36,521**	34,590
Equipment, tools, fixtures and fittings	17	**877**	790
Construction in progress	17	**1,347**	1,231
Advance payments for tangible assets	18	**215**	104
Total tangible assets		**57,781**	55,668
Financial assets			
Participations in associated companies	19, 20	**2,917**	2,716
Receivables from associated companies	18	**1,337**	1,022
Other securities held as fixed assets	19, 20	**1,181**	805
Other long-term receivables	18	**1,463**	1,571
Total financial assets		**6,898**	6,114
Total fixed assets		**66,436**	63,090
CURRENT ASSETS			
Inventories etc.	21	**5,440**	5,513
Current receivables	22	**7,041**	6,308
Investments		**2,465**	2,031
Cash and bank balances		**1,974**	1,930
Total liquid assets		**4,439**	3,961
Total current assets		**16,920**	15,782
Total assets		**83,356**	78,872

consolidated balance sheet

SEK million	note	Group Dec. 31, 1998	Dec. 31, 1997
Equity, provisions and liabilities			
Equity	24		
Restricted equity			
Share capital		**6,585**	6,585
Revaluation reserve		**313**	341
Equity method reserve		**573**	512
Other restricted reserves		**19,965**	19,549
Non-restricted equity			
Non-restricted reserves		**2,225**	772
Net profit for the year		**2,664**	3,399
Total equity		**32,325**	31,158
Minority interests in equity		**2,213**	2,304
Interest-bearing provisions	25	**3,891**	3,599
Non-interest-bearing provisions	26	**10,811**	9,942
Total provisions		**14,702**	13,541
Long-term interest-bearing liabilities	27	**17,488**	13,127
Long-term non-interest-bearing liabilities	28	**1,485**	2,101
Total long-term liabilities		**18,973**	15,228
Current interest-bearing liabilities	29	**6,497**	9,585
Current non-interest-bearing liabilities	30	**8,646**	7,056
Total current liabilities		**15,143**	16,641
Total equity, provisions and liabilities		**83,356**	78,872
Pledged assets	31	**3,431**	1,527
Contingent liabilities	32	**6,437**	7,754
Commitments under consortium agreements	33		

consolidated statement of cash flows

	Group	
SEK million	**1998**	1997
Internally generated funds from the year's operations		
Profit before tax and minority interests excl. capital gains/losses	**4,378**	5,161
Depreciation according to plan	**3,793**	4,248
Taxes paid	**–1,316**	–1,498
Participations in the result of associated companies	**–91**	–85
Translation differences not carried in the income statement	**3**	43
Total funds internally generated by the year's operations (cash flow)	**6,767**	7,869
Change in working capital, excluding liquid assets		
Decrease (+) / increase (–) in inventories	**73**	–214
Increase in current receivables	**–733**	–25
Decrease (–) / increase (+) in current liabilities	**–1,498**	2,898
Total change in working capital excl. liquid assets	**–2,158**	2,659
Cash flow before investments	**4,609**	10,528
Investments and sales		
Acquisition of group companies	**–1,286**	–902
Investments in participations in associated companies and other securities held as fixed assets	**–677**	–1,019
Investments in tangible fixed assets	**–2,554**	–2,953
Investments in intangible fixed assets	**–11**	–3
Change in group composition	**–2,288**	29
Disposal of group companies	**—**	392
Sale of participations in associated companies and other securities held as fixed assets	**17**	1,645
Sale of intangible fixed assets	**386**	198
Translation differences	**449**	–8
Cash flow after investments	**–1,355**	7,907
Financing, dividends etc.		
Increase (–) / decrease (+) in advance payments to suppliers	**–111**	86
Increase in receivables from associated companies and long-term receivables	**–207**	–554
Increase in provisions excl. deferred tax	**26**	991
Increase (+) / decrease (–) in long-term liabilities	**3,745**	–7,245
Contributions from minority shareholders	**—**	—
Dividend to minority shareholders	**–120**	–45
Dividend	**–1,500**	–1,500
Change in liquid assets	**478**	–360
Liquid assets		
Brought forward from the previous year	**3,961**	4,321
Change in current investments	**434**	–1,460
Change in cash and bank balances	**44**	1,100
Carried forward to the following year	**4,439**	3,961

parent company income statement

		Parent company	
SEK million	note	**1998**	1997
Net sales	1, 2, 3	**19,230**	20,312
Cost of products sold	4, 5	**–15,331**	–15,395
Gross profit		**3,899**	4,917
Selling expenses		**–691**	–656
Administrative expenses		**–783**	–1,202
Research and development costs		**–272**	–270
Items affecting comparability, net	6	**—**	381
Other operating income		**329**	284
Other operating expenses		**–98**	–221
Operating profit	8	**2,384**	3,233
Result from participations in group companies	9	**301**	1,037
Result from participations in associated companies	7	**–1**	11
Result from other long-term securities held	10	**814**	882
Other interest income and similar profit/loss items	11	**435**	458
Interest expense and similar profit/loss items	12	**–1,761**	–1,673
Profit before appropriations and tax		**2,172**	3,948
Appropriations	13	**–210**	–197
Group contributions, net		**29**	1,020
Profit before tax		**1,991**	4,771
Tax	14	**–477**	–1,041
Net profit for the year		**1,514**	3,730

parent company statement of cash flows

	Parent company	
SEK million	**1998**	1997
Internally generated funds from the year's operations		
Profit before appropriations and tax excl. capital gains/losses	**2,213**	1,195
Depreciation according to plan	**1,302**	1,993
Tax	**–489**	–1,053
Total funds internally generated by the year's operations (cash flow)	**3,026**	2,135
Change in working capital, excluding liquid assets		
Increase in inventories	**–206**	–70
Decrease (+) / increase (–) in current receivables	**913**	–3,257
Decrease (–) / increase (+) in current liabilities	**834**	–901
Adjustment of working capital due to merger	**—**	–302
Total change in working capital excl. liquid assets	**1,541**	–4,530
Cash flow before investments	**4,567**	–2,395
Investments in intangible and tangible fixed assets	**–961**	–935
Investments in group companies, associated companies and other securities held as fixed assets	**–3,824**	–2,347
Sale of intangible and tangible fixed assets	**224**	259
Disposal of group companies, associated companies and other securities held as fixed assets	**1,965**	5,811
Cash flow after investments	**1,971**	393
Increase in long-term receivables	**–135**	–267
Decrease (–) / increase (+) in provisions excl. deferred tax	**–107**	932
Increase (+) / decrease (–) in long-term liabilities	**–161**	–520
Group contributions	**29**	1,020
Dividend	**–1,500**	–1,500
Change in liquid assets	**97**	58

parent company balance sheet

		Parent Company	
SEK million	note	**Dec. 31, 1998**	Dec. 31, 1997
Assets			
FIXED ASSETS			
Intangible assets			
Concessions, patents, licences, trademarks and similar rights	16	**20**	21
Renting and similar rights	16	**706**	736
Total intangible assets		**726**	757
Tangible assets			
Land and buildings	17	**13,181**	13,426
Plant and machinery	17	**10,250**	10,621
Equipment, tools, fixtures and fittings	17	**202**	206
Construction in progress	17	**687**	618
Advance payments for tangible assets	18	**59**	43
Total tangible assets		**24,379**	24,914
Financial assets			
Participations in group companies	19, 20	**7,481**	5,861
Receivables from group companies	18	**123**	300
Participations in associated companies	19, 20	**669**	585
Receivables from associated companies	18	**630**	336
Other securities held as fixed assets	19, 20	**662**	531
Other long-term receivables	18	**123**	121
Total financial assets		**9,688**	7,734
Total fixed assets		**34,793**	33,405
CURRENT ASSETS			
Inventories etc.	21	**2,016**	1,810
Current receivables	22	**15,356**	16,269
Investments		**49**	59
Cash and bank balances		**174**	67
Total liquid assets	23	**223**	126
Total current assets		**17,595**	18,205
Total assets		**52,388**	51,610
Equity, provisions and liabilities			
Equity	24		
Restricted equity			
Share capital (131,700,000 shares at a par value of SEK 50 each)		**6,585**	6,585
Statutory reserve		**1,316**	1,316
Non-restricted equity			
Profit brought forward		**4,073**	1,843
Net profit for the year		**1,514**	3,730
Total equity		**13,488**	13,474
Untaxed reserves	13	**11,317**	11,107
Interest-bearing provisions	25	**3,041**	2,864
Non-interest-bearing provisions	26	**627**	923
Total provisions		**3,668**	3,787
Long-term interest-bearing liabilities	27	**7,336**	6,889
Long-term non-interest-bearing liabilities	28	**5,224**	5,832
Total long-term liabilities		**12,560**	12,721
Current interest-bearing liabilities	29	**3,206**	2,872
Current non-interest-bearing liabilities	30	**8,149**	7,649
Total current liabilities		**11,355**	10,521
Total equity, provisions and liabilities		**52,388**	51,610
Pledged assets	31	**—**	—
Contingent liabilities	32	**46,045**	48,402
Commitments under consortium agreements	33		

notes to the accounts

Accounting Policies and Valuation Principles

Consolidated Accounts

The consolidated accounts cover the parent company and companies in which Vattenfall held more than 50 per cent of the voting power or in any other way had a controlling influence at the year-end.

The consolidated accounts have been prepared in accordance with the Swedish Financial Accounting Standards Council Recommendation, RR 1:96.

The consolidated accounts have been prepared using the purchase accounting method. This means that the group equity only includes that portion of the subsidiary's equity earned after the acquisition date. The surplus values arising after market valuation in connection with the acquisition of the company's assets and liabilities are attributed to the appropriate item. Deferred tax is taken into account in these surplus values except for water rights which are not amortized. Remaining differences in relation to the acquisition prices are reported as goodwill.

Companies acquired during the year are included in the consolidated income statement as of the time of acquisition. Divested companies are included in the consolidated income statement up to the time of disposal.

Intercompany profits on sales between group companies are eliminated in their entirety, taking into account deferred tax.

Associated companies are accounted for in accordance with the equity method. The Group's share of an associated company's pre-tax profit, net of any amortization of surplus values, is reported in the consolidated income statement under "Participations in the result of associated companies". The Group's portion of an associated company's reported tax expense and deferred tax liability in untaxed reserves is included in the tax expense for the Group.

For practical reasons, the results of associated companies are included in Vattenfall's accounts after a slight delay, normally one calendar quarter. Dividends from associated companies are not included in profit for the Group. The book value of the Group's interest in an associated company is adjusted to take account of the Group's share of the company's profit after tax, less any amortization of surplus values and dividends received.

Foreign Currencies

When preparing the consolidated accounts, all items in the income statements of a foreign subsidiary are translated into Swedish kronor at the average exchange rate for the year, while all balance sheet items, apart from net profit/loss for the year, are translated at the exchange rates prevailing at year-end (closing rate). The changes in group equity arising from variations in the closing rates compared with the rates the previous year, directly affect equity and are reported as an equity item, among restricted and non-restricted reserves. The difference arising in the consolidated balance sheet through the translation of a foreign subsidiary's net profit/loss into Swedish kronor on the basis of the average exchange rate affects non-restricted reserves for the Group.

Receivables and liabilities denominated in foreign currencies are valued at the closing rate, in the accounts of the individual group companies as well as in the consolidated accounts. When hedging, the spot exchange rate on the date that the currency was hedged is used in the valuation of the underlying receivable or liability.

Exchange rate differences arising on loans and other financial instruments denominated in foreign currencies used to hedge net assets at a foreign subsidiary are set off, taking into account the tax effects, against translation differences in the subsidiary's equity.

Exchange rate differences are divided into operational and financial differences. Operational differences are included in operating profit.

The most important exchange rates used in the consolidated accounts are provided below:

Key exchange rates applied in the consolidated accounts

		Average rates		Closing rates	
Country	**Currency**	**1998**	1997	**Dec. 31, 1998**	Dec. 31, 1997
Denmark	DKK	**1.1873**	1.158	**1.2685**	1.154
Finland	FIM	**1.4892**	1.475	**1.5885**	1.453
Norway	NOK	**1.0565**	1.082	**1.0730**	1.072
Germany	DEM	**4.5223**	4.417	**4.8295**	4.398
USA	USD	**7.9567**	7.609	**8.0650**	7.870

Appropriations, Deferred Tax Liability and Untaxed Reserves

Tax legislation in Sweden and in certain other countries allows companies to defer tax payments through appropriations to untaxed reserves.

In the consolidated balance sheet, untaxed reserves are divided into deferred taxed liability and equity. The deferred tax liability is reported as provisions and the equity portion is included in restricted equity. The tax liability in the untaxed reserves is calculated on the basis of the anticipated tax rate for the following year in each country (in the case of Sweden, 28 per cent).

The consolidated income statement does not include any appropriations. The tax expense for the Group is calculated as the sum of the reported tax expenses in the individual group companies, adjusted for the effects of transfers to/from untaxed reserves. This adjustment is equivalent to the year's change in the tax liability in the untaxed reserves, which is included in the deferred tax liability in the consolidated balance sheet.

The individual companies (including Vattenfall AB) disclose untaxed reserves on the balance sheet as a separate item. In the income statement, transfers to/from untaxed reserves are reported under "Appropriations". The reported tax expense comprises the tax payable on profit after appropriations.

Net Sales

Net sales does not include value-added tax and indirect taxes (primarily energy tax). Charges paid by customers for connection to the electricity network, are taken up as revenue at the time of connection.

Research and Development

R&D costs are charged against income as they are incurred.

Depreciation and Amortization

Depreciation according to plan is calculated on a straight-line basis over the estimated useful life of an asset. Depreciation according to plan is distributed according to function in the income statement. Furthermore, accelerated depreciation is reported by the parent company under appropriations in the income statement and under untaxed reserves in the balance sheet.

Depreciation rates (years)

	Plant and equipment	Buildings	Land improvements
Plants in operation			
Properties	30	25–50	25
Hydro power plants	40	50	25
Thermal power plants*	25	25	25
Gas pipelines	20	—	—
Power lines and transformer stations**	30	30	30
Equipment etc.	3–10	—	—

* *15 years for reinvestment in nuclear power plants, see also Note 6.*
** *25-35 years for local distribution networks.*

Intangible fixed assets are amortized over an appropriate period but no longer than the length of any underlying agreement. Goodwill acquired before 1997 is amortized over no more than 10 years, while goodwill acquired in 1997 and 1998 is amortized over no more than 5 years with certain exceptions.

Fixed Assets

Intangible and tangible fixed assets are valued at cost (acquisition value) plus revaluation increases less accumulated depreciation according to plan. Revaluation increases are reported taking into account deferred tax. The cost of large plants, built for the Group's own account, includes interest accrued during the construction period. Interest is capitalized, in the case of plants with a cost in excess of SEK 100 million.

Inventories etc.

Inventories are valued at the lower of cost or net realizable value in accordance with the first-in/first-out principle. The consumption of nuclear fuel is calculated as a depletion of the energy content of the fuel rods and is based on the cost of each batch of fuel loaded into the core. The value of the energy stored in the form of water in reservoirs is not reported as an asset.

Work in Progress and Revenue Recognition

Contracts are carried out on a cost plus and fixed price basis. The former are recognized as revenue as invoices are issued, while the percentage of completion method is applied to the latter.

Work in progress is valued as the direct costs incurred plus a reasonable proportion of indirect costs. Bad

debts are written off in their entirety irrespective of the degree of completion of the contract in question.

Receivables

Receivables are carried at the amount likely to be received.

Current Asset Investments

Current asset investments include bonds, commercial paper and other interest-bearing financial instruments. Current asset investments are valued at the lower of cost and market value at balance sheet date. Unrealized losses are set off against unrealized gains. Where losses exceed gains, the net amount is reported in the income statement; where gains exceed losses, the surplus is not included in income.

Pensions

When Vattenfall became incorporated, the Group took over the relevant pension liabilities accrued by the state. In the case of most of the municipal electricity companies acquired by Vattenfall, the Group has taken over the relevant pension liabilities accrued by the municipality. Pension liabilities accrued by active personnel are now organized into the pension plans and insurance schemes standard in the markets in which Vattenfall operates. This applies to employees at the Swedish companies and some employees at foreign subsidiaries. The provision reported in the balance sheet has been calculated using actuarial methods.

Leasing

The Group's accounting for material contracts is mainly based on the Swedish Financial Accounting Standards Council's recommendation RR6 "Accounting for Leases". This means that, at the inception of the lease, a finance lease is recognized as an asset and reported as a tangible fixed asset purchase as well as reported among other current liabilities and other long-term liabilities.

Contracts entered into with customers concerning the leasing of assets, classified as finance leases, are reported in the consolidated balance sheet as long-term and current receivables. The lease payments received are treated as repayment of principal, which reduces the receivable, and as interest income, reported in the income statement.

note 1

Net sales

	Group		Parent company	
	1998	1997	**1998**	1997
Sales including indirect taxes	**29,678**	29,874	**20,510**	21,255
Indirect taxes	**–1,721**	–1,416	**–1,280**	–943
Net sales	**27,957**	28,458	**19,230**	20,312

note 2

Net sales by business segment

	Group		Parent company
	1998	1997	**1998**
Nordic countries			
Electricity	**18,576**	19,376	**15,274**
District-heating	**809**	781	**323**
Energy Services	**1,171**	1,108	**682**
Network Services	**7,039**	6,918	**2,883**
Natural Gas	**928**	1,012	**—**
Europe	**341**	—	**—**
International	**92**	132	**—**
Other and eliminations	**–999**	–869	**68**
Total	**27,957**	28,458	**19,230**

Sales in Sweden accounted for 81 per cent (87) of net sales and the other Nordic countries accounted for 17 per cent (12).

note 3

Intra-group transactions

Transactions with group companies accounted for 8 per cent (9) of the parent company's income from sales and 43 per cent (40) of its costs.

note 4

Cost of products sold

Direct costs include SEK 1,811 million (1,629) in production taxes and duties for the Group and SEK 1,104 million (1,038) for the parent company as well as SEK 1,133 million (1,390) in property taxes for the Group and SEK 924 million (1,124) for the parent company.

note 5

Cost of nuclear waste management

	Group		Parent company	
	1998	1997	**1998**	1997
Fees to Nuclear Waste Fund – own high-level waste *	**624**	560	**249**	214
– SVAFO **	**72**	64	**37**	32
Provisions for the future expenses of managing low and intermediate level waste	**50**	59	**27**	37
Total	**746**	683	**313**	283

* *According to the Act (1995:1544) on the Financing of Future Expenses of Spent Nuclear Fuel etc., the holder of a licence to own or operate a nuclear reactor must pay, as long as the reactor is in operation, an annual fee to finance the management of spent nuclear fuel and other radioactive waste. The fee is paid to the Nuclear Waste Fund and is based on the energy delivered by the reactor. The Fund reimburses these fees in the form of government grants as the nuclear power company incurs costs for (a) the handling and final disposal of spent fuel and radioactive waste from its reactors, after the fuel and waste have been removed from the reactors, (b) the decommissioning and dismantling of the unit and (c) for the research and development necessary in order to fulfill the obligations in (a) and (b).*

During 1998, SEK 409 million (355) was disbursed from the Fund in respect of costs for which the Vattenfall Group is liable. At December 31, the market value of the Vattenfall Group's share of the Fund was SEK 14,135 million (13,324). SEK 233 million (197) has been disbursed from the Fund in respect of the parent company's share. The market value for the parent company's share of the fund was SEK 7,719 million (7,390).

*** According to the Act (1988:1597, latest amendment, 1995:1545) on the Financing of the Management of Certain Radioactive Waste etc., the holder of a licence to own and operate a nuclear reactor must pay a fee as a contribution to the activities conducted at Studsvik AB, relating to the development of the Swedish nuclear power programme. This fee is also based on the energy delivered from the reactor and is paid to and administered by the Nuclear Waste Fund.*

note 6

Items affecting comparability, net

	Group		Parent company	
	1998	1997	**1998**	1997
Capital gain on sale of holding in generation facility	**—**	1,930	**—**	1,930
Change in depreciation rates	**—**	–752	**—**	–699
Restructuring provision	**—**	–1,015	**—**	–850
Total	**—**	163	**—**	381

The deferred income which arose in 1996 in respect of the sale of a minority holding in Kraftgården AB to i/s Sjællandske Kraftværker was reclassified as income in 1997, giving the Group and parent company a capital gain of SEK 1,930 million.

The estimated useful life of reinvestments in nuclear power plants was changed in 1997 from 25 to 15 years, resulting in a one-off increase in depreciation of SEK 752 million. The impact on the parent company was SEK 699 million.

The rapid transformation of the electricity market necessitates changes in the Group's skills profile and in efficiency. During 1997, the Group made SEK 1,015 million in provisions for these restructuring measures and the parent company, SEK 850 million.

note 7

Participations in the result of associated companies

	Group		Parent company	
	1998	1997	**1998**	1997
Share of profits	**91**	85	**—**	—
Dividends	**—**	—	**9**	11
Capital gains on sales proceeds	**—**	—	**–10**	—
Total	**91**	85	**–1**	11

note 8

Depreciation classified according to function

	Group		Parent company	
	1998	1997	**1998**	1997
Cost of products sold	**3,683**	3,367	**1,274**	1,260
Selling expenses	**44**	51	**22**	23
Administrative expenses	**62**	77	**6**	10
Research and development costs	**4**	1	**—**	1
Items affecting comparability	**—**	752	**—**	699
Total	**3,793**	4,248	**1,302**	1,993

note 9

Result from participations in group companies

	Parent company	
	1998	1997
Dividends	**348**	302
Shareholder's contribution	**–34**	–28
Write-downs	**–13**	–265
Capital gains on sales proceeds	**—**	1,028
Total	**301**	1,037

note 10

Result from other long-term securities held

	Group		Parent company	
	1998	1997	**1998**	1997
Dividends	**9**	97	**6**	4
Interest income	**—**	—	**808***	813
Capital gains/losses on sales proceeds	**–10**	64	**—**	65
Total	**–1**	161	**814**	882

** Includes SEK 746 million (754) in interest income from subsidiaries.*

note 11

Other interest income and similar profit/loss items

	Group		Parent company	
	1998	1997	**1998**	1997
Interest income	**282**	374	**416***	399
Exchange gains	**7**	26	**19**	59
Total	**289**	400	**435**	458

** Includes SEK 416 million (399) in interest income from subsidiaries.*

note 12

Interest income and similar profit/loss items

	Group		Parent company	
	1998	1997	**1998**	1997
Interest expense *	**1,865**	2,467***	**1,545****	1,569
Exchange losses	**42**	31	**216**	104
Total	**1,907**	2,498	**1,761**	1,673

** In accordance with the Swedish Institute of Authorised Public Accountants (FAR), the interest element in pension provisions has not been charged to operating profit but has, instead, been reported as an interest expense.*
*** Interest expense to subsidiaries amounted to SEK 1,386 million (1,421).*
**** The prepayment of National Debt Office loans at year-end 1997 led to an interest charge of SEK 238 million.*

note 13

Appropriations and untaxed reserves

Parent company 1998	Jan. 1	Transfer to/ Transfer from (–)	Dec. 31
Accelerated depreciation	9,098	**–172**	**8,926**
1996 tax allocation reserve	363	**—**	**363**
1997 tax allocation reserve	931	**—**	**931**
1998 tax allocation reserve	715	**—**	**715**
1999 tax allocation reserve	—	**382**	**382**
Total	11,107	**210**	**11,317**

Untaxed reserves added through mergers have been divided into a deferred tax liability portion and an equity portion.

The following changes occurred in untaxed reserves in 1997: SEK 518 million in accelerated depreciation was transferred from the reserve, SEK 715 million in provisions were transferred to the 1998 tax allocation reserve.

note 14

Taxes

	Group		Parent company	
	1998	1997	**1998**	1997
Direct tax on profit for 1998 and previous years	**1,316**	1,498	**489**	1,053
Share of tax at associated companies	**39**	23	**—**	—
Deferred tax	**461**	490	**–12**	–12
Total	**1,816**	2,011	**477**	1,041

The year's tax expense of SEK 1,816 million (2,011) comprised 41 per cent (37) of profit before tax and minority interests.

The parent company's unrecorded deferred tax expense relating to appropriations amounted to SEK 59 million (55).

Deferred taxes recoverable relating to the previous year's restructuring provision have not been taken into account.

Like many other major Swedish companies, Vattenfall companies have been subject to regularly scheduled tax audits. The tax authorities' opinions have been evaluated.

note 15

Minority interests in profit for the year

	Group	
	1998	1997
Minority interest in profit before tax	**–41**	24
Minority interest in tax	**9**	5
Total	**–32**	29

note 16

Intangible fixed assets

	Concessions and similar rights		Renting and similar rights		Goodwill		Total	
	1998	1997	**1998**	1997	**1998**	1997	**1998**	1997
GROUP								
Acquisition values								
Acquisition values brought forward	**539**	408	**929**	925	**563**	515	**2,031**	1,848
Companies acquired	**147**	133	**7**	3	**446**	48	**600**	184
Investments	**1**	1	**10**	2	**—**	—	**11**	3
Disposals	**—**	—	**—**		**–132**	—	**–132**	—
Translation difference	**15**	–3	**6**	–1	**36**	—	**57**	–4
Accumulated acquisition values carried forward	**702**	539	**952**	929	**913**	563	**2,567**	2,031
Accumulated depreciation according to plan								
Depreciation brought forward	**–233**	–190	**–114**	–68	**–376**	–351	**–723**	–609
Acquired companies	**–1**	—	**–1**	–3	**–17**	–2	**–19**	–5
Depreciation for the year	**–76**	–44	**–41**	–43	**–75**	–24	**–192**	–111
Disposals	**—**	—	**—**	—	**132**	—	**132**	—
Translation difference	**–4**	1	**–2**	—	**–2**	1	**–8**	2
Accumulated depreciation carried forward	**–314**	–233	**–158**	–114	**–338**	–376	**–810**	–723
Residual value according to plan carried forward	**388**	306	**794**	815	**575**	187	**1,757**	1,308
PARENT COMPANY								
Acquisition values								
Acquisition values brought forward	**198**	198	**806**	806	**—**	—	**1,004**	1,004
Investments	**6**	—	**2**	—	**—**	—	**8**	—
Accumulated acquisition values carried forward	**204**	198	**808**	806	**—**	—	**1,012**	1,004
Accumulated depreciation according to plan								
Depreciation brought forward	**–177**	–169	**–70**	–37	**—**	—	**–247**	–206
Depreciation for the year	**–7**	–8	**–32**	–33	**—**	—	**–39**	–41
Accumulated depreciation carried forward	**–184**	–177	**–102**	–70	**—**	—	**–286**	–247
Residual value according to plan carried forward	**20**	21	**706**	736	**—**	—	**726**	757

note 17

Tangible fixed assets

	Land and buildings		Plant and machinery		Equipment, tools, fixtures and fittings		Construction in progress		Total	
	1998	1997	**1998**	1997	**1998**	1997	**1998**	1997	**1998**	1997
GROUP										
Acquisition values										
Acquisition values brought forward **	**27,332**	27,073	**65,394**	62,616	**2,906**	2,586	**1,231**	1,295	**96,863**	93,570
Companies acquired	**222**	80	**3,336**	1,053	**44**	45	**16**	—	**3,618**	1,178
Investments ***	**30**	17	**367**	363	**323**	248	**1,834**	2,325	**2,554**	2,953
Transfer from construction in progress	**222**	183	**1,494**	2,118	**18**	62	**–1,734**	–2,363	**—**	—
Sales / disposals	**–113**	–42	**–920**	–601	**–175**	–149	**—**	–7	**–1,208**	–799
Reclassifications	**152**	27	**164**	–114	**104**	119	**—**	–19	**420**	13
Companies sold	**—**	–3	**—**	–1	**—**	–1	**—**	—	**—**	–5
Translation differences	**33**	–3	**435**	–40	**26**	–4	**—**	—	**494**	–47
Accumulated acquisition values carried forward	**27,878***	27,332	**70,270**	65,394	**3,246**	2,906	**1,347**	1,231	**102,741**	96,863
Accumulated depreciation according to plan										
Depreciation brought forward	**–8,438**	–7,858	**–31,734**	–28,723	**–2,116**	–1,839	**—**	—	**–42,288**	–38,420
Companies acquired	**–24**	–32	**–581**	–165	**–29**	–31	**—**	—	**–634**	–228
Depreciation for the year	**–529**	–557	**–2,703**	–3,275	**–318**	–305	**—**	—	**–3,550**	–4,137
Sales / disposals	**30**	21	**690**	332	**162**	139	**—**	—	**882**	492
Reclassifications	**–161**	–13	**–178**	82	**–49**	–82	**—**	—	**–388**	–13
Companies sold	**—**	—	**—**	1	**—**	—	**—**	—	**—**	1
Translation differences	**–7**	1	**–123**	14	**–19**	2	**—**	—	**–149**	17
Accumulated depreciation carried forward	**–9,129**	–8,438	**–34,629**	–31,734	**–2,369**	–2,116	**—**	—	**–46,127**	–42,288
Revaluations										
Revaluations brought forward	**59**	61	**930**	—	**—**	—	**—**	—	**989**	61
Revaluations for the year	**—**	—	**—**	931	**—**	—	**—**	—	**—**	931
Write-downs for the year of previous revaluations	**–1**	—	**–50**	—	**—**	—	**—**	—	**–51**	—
Other changes	**8**	—	**—**	—	**—**	—	**—**	—	**8**	—
Translation differences	**6**	–2	**—**	–1	**—**	—	**—**	—	**6**	–3
Accumulated revaluations carried forward, net	**72**	59	**880**	930	**—**	—	**—**	—	**952**	989
Residual value according to plan carried forward	**18,821**	18,953	**36,521**	34,590	**877**	790	**1,347**	1,231	**57,566**	55,564

* *Includes non-depreciable cost of land and water rights amounting to SEK 8,864 million (8,865).*

** *Government grants received at Jan. 1: SEK 2,697 million (2,546).*

***Government grants received during the year: SEK 135 million (158).*

continued

	Land and buildings		Plant and machinery		Equipment, tools, fixtures and fittings		Construction in progress		Total	
	1998	1997	**1998**	1997	**1998**	1997	**1998**	1997	**1998**	1997
PARENT COMPANY										
Acquisition values										
Acquisition values brought forward**	**18,664**	18,770	**22,108**	20,890	**682**	728	**618**	592	**42,072**	40,980
Merged facilities	**—**	86	**—**	413	**—**	1	**—**	4	**—**	504
Investments***	**—**	—	**36**	52	**74**	52	**843**	831	**953**	935
Capitalized result of merger	**—**	—	**—**	124	**—**	—	**—**	—	**—**	124
Transfer from construction in progress	**135**	87	**633**	670	**6**	52	**–774**	–809	**—**	—
Sales / disposals	**–73**	–280	**–798**	–24	**–27**	–167	**—**	—	**–898**	–471
Reclassifications	**–9**	1	**19**	–17	**–10**	16	**—**	—	**—**	—
Accumulated acquisition values carried forward	**18,717***	18,664	**21,998**	22,108	**725**	682	**687**	618	**42,127**	42,072
Accumulated depreciation according to plan										
Depreciation brought forward	**–5,238**	–4,944	**–11,487**	–9,829	**–476**	–536	**—**	—	**–17,201**	–15,309
Depreciation for the year	**–328**	–354	**–866**	–1,537	**–69**	–62	**—**	—	**–1,263**	–1,953
Merged facilities	**—**	–9	**—**	–136	**—**	–1	**—**	—	**—**	–146
Sales / disposals	**27**	70	**613**	8	**17**	129	**—**	—	**657**	207
Reclassifications	**3**	–1	**–8**	7	**5**	–6	**—**	—	**—**	—
Accumulated depreciation carried forward	**–5,536**	–5,238	**–11,748**	–11,487	**–523**	–476	**—**	—	**–17,807**	–17,201
Residual value according to plan carried forward	**13,181**	13,426	**10,250**	10,621	**202**	206	**687**	618	**24,320**	24,871
Accumulated accelerated depreciation	**–16**	–16	**–8,738**	–8,909	**–172**	–173	**—**	—	**–8,926**	–9,098
Book value	**13,165**	13,410	**1,512**	1,712	**30**	33	**687**	618	**15,394**	15,773

* *SEK 6,839 million (6,833) in non-depreciable acquisition values for land and water rights are included.*

** *Government grants received, balance brought forward, SEK 2 million (2).*

*** *Government grants received during the year amounted to SEK 0 million (0).*

Tax assessment values

	Group		Parent company	
	1998	1997	**1998**	1997
Buildings	**47,380**	47,531	**31,330**	31,543
Land	**37,549**	37,242	**31,579**	31,268
Total	**84,929**	84,773	**62,909**	62,811

Transmission lines and transformer stations are not subject to tax assessment values.

note 18

Advances and long-term receivables

	Advance payments to suppliers, tangible fixed assets		Receivables from group companies		Receivables from associated companies		Other long-term receivables	
	1998	1997	**1998**	1997	**1998**	1997	**1998**	1997
GROUP								
Balance brought forward	**104**	190	**—**	—	**1,022**	425	**1,571**	1,614
Acquired companies	**—**	—	**—**	—	**1**	—	**2**	3
New advances / receivables	**139**	46	**—**	—	**538**	1,069	**2**	14
Payments received	**—**	—	**—**	—	**–262**	–584	**–4**	–75
Capitalized advances	**—**	–43	**—**	—	**—**	—	**—**	—
Write-downs / write-offs	**—**	—	**—**	—	**—**	—	**—**	–1
Exchange rate differences	**—**	—	**—**	—	**32**	12	**—**	—
Reclassifications	**–28**	–89	**—**	—	**6**	100*	**–108**	16
Balance carried forward	**215**	104	**—**	—	**1,337**	1,022	**1,463**	1,571
PARENT COMPANY								
Balance brought forward	**43**	97	**300**	303	**336**	35	**121**	98
New advances / receivables	**36**	47	**149**	20	**258**	210	**1**	14
Payments received	**—**	—	**–133**	–23	**—**	–22	**–4**	–76
Capitalized advances	**—**	–12	**—**	—	**—**	—	**—**	—
Write-downs / write-offs	**—**	—	**—**	—	**—**	—	**—**	–1
Exchange rate differences	**—**	—	**—**	—	**33**	13	**—**	—
Reclassifications	**–20**	–89	**–193**	—	**3**	100*	**5**	86
Balance carried forward	**59**	43	**123**	300	**630**	336	**123**	121

* *Reclassified from current receivables.*

note 19

Participations in group companies, associated companies and other securities held as fixed assets

	Participations in group companies		Participations in associated companies		Other fixed asset securities	
	1998	1997	**1998**	1997	**1998**	1997
GROUP						
Balance brought forward	**—**	—	**2,716**	2,950	**805**	1,080
Companies acquired	**—**	—	**9**	1,505	**136**	44
Investments	**—**	—	**469**	465	**208**	494
New issues and shareholder's contribution	**—**	—	**—**	5	**—**	55
Disposals	**—**	—	**–12**	–1,520	**–5**	–125
Reclassifications	**—**	—	**–303**	–754	**23**	–741
Change in value, associated companies	**—**	—	**3**	36	**—**	—
Translation differences	**—**	—	**35**	29	**14**	–2
Balance carried forward	**—**	—	**2,917**	2,716	**1,181**	805
PARENT COMPANY						
Balance brought forward	**5,861**	4,931	**585**	2,098	**531**	786
Investments	**945**	768	**116**	—	**106**	494
New issues	**—**	59	**—**	3	**—**	—
Shareholder's contribution made *	**2,657**	1,023	**—**	—	**—**	—
Shareholder's contribution repaid	**—**	–1,495	**—**	—	**—**	—
Disposals*	**–1,944**	–522	**–7**	–21	**—**	–749
Mergers of shareholdings	**–25**	–133	**—**	—	**—**	—
Reclassifications	**—**	1,495	**–25**	–1,495	**25**	—
Write-downs	**–13**	–265	**—**	—	**—**	—
Balance carried forward	**7,481**	5,861	**669**	585	**662**	531

* *Shareholder's contribution made and disposals mainly refer to restructuring within the Group.*

note 20

Shares and participations

The following is a list of the main shares and participations held directly or indirectly by the parent company.

GROUP COMPANIES

	Corporate id. no.	Reg. office	% holding	Number	Book value
AB Ryssa Elverk *	556012-2458	Mora	23	141,733	127
Bastusels Kraft AB	556117-7279	Malå	72	4,932	151
Flens Energinät AB	556131-8758	Flen	100	99,740	194
Forsaströms Kraft AB	556010-0819	Åtvidaberg	100	400,000	294
Forsmarks Kraftgrupp AB	556174-8525	Östhammar	74.5	223,500	223
Försäkrings AB Vattenfall Insurance	516401-8391	Stockholm	100	200,000	200
Gotlands Energiverk AB	556008-2157	Visby	75	112,500	13
Kraftbyggarna Entreprenad AB	556333-2468	Luleå	100	38,000	46
Kraftbyggarna Invest AB	556497-6917	Stockholm	100	1,000	121
Ljusfors Kraft AB	556042-3351	Norrköping	99	1,089	13
Nacka Energimarknads AB	556528-2562	Nacka	100	3,000	81
Nordic Power Invest AB	556377-2861	Stockholm	100	218,000	672
Svensk Kärnbränslehantering AB **	556175-2014	Stockholm	36	360	0
SwedPower AB	556192-6212	Stockholm	85	3,400	19
Vattenfall Bohus-Dal Elnät AB	556022-0369	Trollhättan	100	600	437
Vattenfall Bråviken AB	556507-8572	Nyköping	100	200	33
Vattenfall Bränsle AB	556440-2609	Stockholm	100	100	96
Vattenfall Data AB	556439-0614	Stockholm	100	100	10
Vattenfall Deutschland GmbH	(HRB) 62659	Stockholm	100	2	151
Vattenfall ElnätService AB	556417-0859	Trollhättan	100	16,000	18
Vattenfall Energimätning AB	556329-0757	Motala	100	500	15
Vattenfall Energisystem AB	556383-5627	Stockholm	100	10,000	10
Vattenfall Engineering AB	556383-5643	Stockholm	100	160,000	199
Vattenfall Estonia OÜ	10142764	Tallinn	100	100	0
Vattenfall Fastigheter AB	556438-5952	Sundsvall	100	100	120
VGS Thermal AB	556013-1574	Stockholm	100	150,000	16
Vattenfall Hydropower AB	556333-2476	Ludvika	100	5,000	5
Vattenfall Hånö AB	556249-7494	Nyköping	100	120,000	15
Vattenfall Latvia SIA	(LV) 0003 18006	Riga	100	100	0
Vattenfall Lithuania UAB	(UI) 94-130	Vilnius	100	100	1
Vattenfall Mälarnät AB	556438-0268	Uppsala	100	100	1,162
Vattenfall Naturgas AB	556181-1034	Stockholm	51	161,210	10
Vattenfall Norge AS	(NO) 978-641423	Oslo	100	80,000	108
Vattenfall Norrnät AB	556437-8502	Luleå	100	100	283
Vattenfall Poland Sp. zo.o.	A-7069	Warszawa	100	40	23
Vattenfall Oy	1071366-1	Helsingfors	100	10,000	1,202
Vattenfall Regionnät AB	556417-0800	Stockholm	100	8,000	11
Vattenfall Reinsurance S.A.	(B) 49528	Luxemburg	100	12,999	13
Vattenfall Support AB	556438-6026	Stockholm	100	100	1
Vattenfall Transmission AB	556383-5619	Stockholm	100	12,500	15
Vattenfall Treasury AB (publ)	556439-0606	Stockholm	100	500	6
Vattenfall Utveckling AB	556390-5891	Älvkarleby	100	14,000	17
Vattenfall Östnät AB	556215-7494	Söderköping	100	1,000	1,020
Västerbergslagens Energi AB	556194-9784	Ludvika	58	89,726	19
Östra Roslags Elverk AB	556036-2526	Norrtälje	91	8,690	237
Other companies					74
Total parent company					**7,481**

** The Group holds a further 40 per cent via Vattenfall Mälarnät AB and Vattenfall Regionnät AB.*

*** The Group owns a further 22 per cent via Forsmarks Kraftgrupp AB .*

Major shareholdings held by group companies	Reg. office	% holding
Hämeen Sähkö Oy	Tavastehus	100
Lapuan Sähkö Oy	Lappo	100
VASA Energy GmbH & Co KG	Hamburg	75
Vattenfall AS	Oslo	100
Vattenfall Indalsälven AB	Bispgården	74

ASSOCIATED COMPANIES

	Corporate id. no.	Reg. office	% holding	Shares	Book value Group	Book value Parent company
Direct holdings						
i/s Avedøreværket 2	(LEV) 221005	Gentofte	40	n/a	14	14
Bullerforsens Kraft AB	556036-4514	Falun	37	111,000	169	161
Gestrikekraft AB	556476-9858	Gävle	40	40,000	111	111
Gulsele AB	556001-1800	Skellefteå	35	84,000	331	332
Baltic Cable AB	556420-6026	Malmö	33	10,000	123	1
Bodens Energi AB	556200-9117	Boden	40	20	54	1
Fagersta Energi AB	556159-4432	Fagersta	35	32,300	26	8
Luleå Energi AB	556139-8255	Luleå	30	54,000	141	4
AB Pite Energi	556330-9227	Piteå	50	70,000	162	7
Preem Gas AB	556037-2970	Stockholm	30	750	7	7
Ström A/S	A/S 250526	Gentofte	50	40,000	5	5
Tierps Fjärrvärme AB	556249-4723	Tierp	40	1,000	5	1
SwePol Link AB	556530-9829	Stockholm	48	288,000	3	3
Älvkarleby Fjärrvärme AB	556246-1425	Älvkarleby	49	980	6	1
Others					9	13
Indirect holdings						
A-Train AB	556500-3745	Stockholm	20	1,000,000	72	—
California Polar Power Brokers, LLC	–	San Francisco	26*	530,250	12	—
Hafslund ASA	(NO) 912230252	Sarpsborg	12**	13,658,200	717	—
Pamilo Oy	95.710	Uima Harju	49	265,580	355	—
Tosli Investments BV	33.262.554	Amsterdam	50	9,000	531	—
Stadtwerke Eilenburg GmbH	(HRB) 12673	Leipzig	37	1	12	—
Suomen Voimateknikka Oy	0959028-9	Harjavalta	33	1,800	19	—
Åtvidabergs Fjärrvärme AB	556543-1607	Åtvidaberg	50	10,000	10	—
Others					23	—
Total					**2,917**	**669**

** 33 per cent of voting power*
*** 20 per cent of voting power.*

OTHER SECURITIES HELD AS FIXED ASSETS

	Countries	% holding	Shares	Book value Group	Book value Parent company
Direct holdings					
Jämtkraft AB	Sweden	20*	13,000	23	23
Lithuanian Power Company	Lithuania	5	9,183,000	91	91
NESA A/S	Denmark	12	155,003	351	351
Energibolaget i Botkyrka Salem AB	Sweden	2	421	10	10
Vychodoceska Energetika a.s.	Czech Republic	8	191,699	179	179
Others				8	8
Indirect holdings					
Dala Kraft AB	Sweden	12	22,678	48	—
Etelä-Pohjanmaan Voima Oy	Finland	11	504	132	—
Fredrikstads Energi AS	Norway	8	750	76	—
Spjutmo Kraft AB	Sweden	19	3,000	75	—
The Cogeneration Co Ltd (COCO)	Thailand	7	59,576,522	146	—
Others				42	—
Total				**1,181**	**662**

** 16 per cent of voting power.*

note 21

Inventories etc.

	Group		Parent company	
	1998	1997	**1998**	1997
Raw materials and consumables				
Nuclear fuel *	**4,554**	4,800	**1,602**	1,541
Oil	**266**	272	**246**	255
Coal etc.	**7**	6	**3**	4
Materials and spare parts	**613**	435	**165**	10
Total	**5,440**	5,513	**2,016**	1,810

* *Including stockpile.*

note 22

Current receivables

	Group		Parent company	
	1998	1997	**1998**	1997
Accounts receivable – trade	**4,622**	4,691	**2,873**	3,123
Receivables from group companies	**—**	—	**10,605**	12,134
Receivables from associated companies	**1,294**	485	**1,272**	451
Other receivables	**503**	680	**397**	395
Prepaid expenses and accrued income	**622**	452	**209**	166
Total	**7,041**	6,308	**15,356**	16,269

Specification of prepaid expenses and accrued income:

	Group		Parent company	
	1998	1997	**1998**	1997
Prepaid insurance premiums	**51**	88	**21**	57
Prepaid expenses, other	**262**	197	**105**	57
Prepaid expenses and accrued income, electricity	**113**	47	**33**	34
Accrued income, other	**196**	120	**50**	18
Total	**622**	452	**209**	166

note 23

Liquid assets

The parent company's liquid asset investments, cash and bank deposits are handled by the subsidiary, Vattenfall Treasury AB. Deposits in the group account amounted to SEK 9,749 million (10,996), and are reported under current assets as receivables from group companies.

note 24

Equity

	Share capital	Revaluation reserve	Equity method reserve	Other restricted reserves	Non-restricted equity
GROUP					
Jan. 1	6,585	341	512	19,549	4,171
Dividend	—	—	—	—	–1,500
Transferred to restricted reserves	—	–10	—	18	–8
Change in revaluation reserve	—	–18	—	—	18
Transfers between reserves	—	—	61	276	–337
Translation differences	—	—	0	122	–119
Net profit	—	—	—	—	2,664
Dec. 31	**6,585**	**313**	**573**	**19,965**	**4,889**

Total untaxed reserves in companies within the Group amounted to SEK 30,327 million, of which accelerated depreciation accounted for SEK 26,306 million. The equity portion is included in restricted reserves, see Accounting Policies, page 42.

SEK 50,000 of the non-restricted equity at year-end is expected to be transferred to restricted reserves as proposed by the boards of subsidiaries.

	Share capital	Statutory reserve	Non-restricted equity	Total
PARENT COMPANY				
Jan. 1	6,585	1,316	5,573	13,474
Dividend	—	—	–1,500	–1,500
Net profit	—	—	1,514	1,514
Dec. 31	**6,585**	**1,316**	**5,587**	**13,488**

Vattenfall AB's share capital comprises 131,700,000 shares, each with a par value of SEK 50.

note 25

Interest-bearing provisions

Interest-bearing provisions comprise pension provisions and similar commitments which Vattenfall AB and group companies are liable to pay.

	Group		Parent company	
	1998	1997	**1998**	1997
Pension commitments with state guarantee	**2,307**	2,344	**2,307**	2,344
FPG/PRI pensions	**1,255**	976	**610**	462
Other pensions	**329**	279	**124**	58
Total	**3,891**	3,599	**3,041**	2,864

note 26

Non-interest-bearing provisions

	Group		Parent company	
	1998	1997	**1998**	1997
Provisions for deferred tax liabilities	**10,114**	8,979	**24**	35
Other provisions	**697**	963	**603**	888
Total	**10,811**	9,942	**627**	923

Other provisions mainly comprise restructuring provisions for the Skills Swap programme. During 1998, just less than half of the provisions for the Group had been used for pension agreements and competence improvement measures. A provision for low and intermediate level nuclear waste management which has been used to fund a Final Repository for Radioactive Operational Waste (SFR) is also included.

note 27

Long-term interest-bearing liabilities

	Group		Parent company	
	1998	1997	**1998**	1997
Bond loans	**11,056**	8,624	**—**	—
Liabilities to other credit institutions	**3,596**	2,451	**—**	—
Liabilities to minority owners	**2,802**	1,820	**—**	—
Liabilities to group companies	**—**	—	**7,331**	6,679
Other liabilities	**34**	232	**5**	210
Total	**17,488**	13,127	**7,336**	6,889

Of the above liabilities, in respect of the Group, the following amounts do not fall due for at least five years: Bond loans SEK 7,462 million (4,710), Liabilities to other credit institutions SEK 2,766 million (1,446), Liabilities to minority owners SEK 2,264 million (1,737), Other long-term borrowings SEK 16 million (225).

In respect of the parent company, SEK 202 million (193) in Liabilities to group companies does not fall due for at least five years.

Liabilities to group companies mainly concern long-term borrowings from Vattenfall Treasury AB.

Virtually all borrowings in foreign currencies are hedged.

note 28

Long-term non-interest-bearing liabilities

	Group		Parent company	
	1998	1997	**1998**	1997
Liabilities to associated companies	**—**	186	**—**	186
Liabilities to group companies	**—**	—	**4,420**	4,807
Other liabilities	**1,485**	1,915	**804**	839
Total	**1,485**	2,101	**5,224**	5,832

Of the above liabilities for the Group, the following amounts do not fall due for at least five years: Liabilities to associated companies SEK 0 million (186), Other liabilities SEK 264 million (368). For the parent company, the following do not fall due for at least five years: Liabilities to associated companies SEK 0 million (186), Other liabilities SEK 171 million (0).

Liabilities to group companies mainly comprise long-term liabilities to Forsmarks Kraftgrupp AB and others relating to power charges. In the case of Forsmarks Kraftgrupp AB, the credit is an interest-free loan.

note 29

Current interest-bearing liabilities

	Group		Parent company	
	1998	1997	**1998**	1997
Bond loans	**910**	4,458	**—**	—
Commercial paper	**5,276**	4,377	**—**	—
Liabilities to credit institutions	**193**	716	**—**	—
Liabilities to minority owners	**2**	2	**—**	—
Liabilities to associated companies	**26**	3	**—**	—
Liabilities to group companies	**—**	—	**3,203**	2,870
Other liabilities	**90**	29	**3**	2
Total	**6,497**	9,585	**3,206**	2,872

note 30

Current non-interest-bearing liabilities

	Group		Parent company	
	1998	1997	**1998**	1997
Advance payments from customers	**2,267**	15	**—**	4
Accounts payable – trade	**1,850**	2,044	**502**	632
Liabilities to group companies	**—**	—	**5,875**	4,533
Liabilities to associated companies	**50**	58	**50**	55
Tax liabilities	**197**	1,004	**—**	731
Other liabilities	**2,161**	1,782	**970**	951
Accrued expenses and deferred income	**2,121**	2,153	**752**	743
Total	**8,646**	7,056	**8,149**	7,649

Specification of accrued expenses and deferred income:

	Group		Parent company	
	1998	1997	**1998**	1997
Accrued personnel costs	**593**	603	**185**	298
Accrued nuclear-related fees and taxes	**281**	232	**87**	69
Accrued interest expense	**329**	492	**2**	3
Other accrued expenses	**638**	526	**385**	—
Deferred income and accrued expenses, electricity	**100**	160	**76**	184
Other deferred income	**180**	140	**17**	189
Total	**2,121**	2,153	**752**	743

note 31

Pledged assets

	1998	1997
GROUP		
For own liabilities and provisions		
Liabilities to credit institutions:		
Floating charges	**476**	487
Property mortgages	**2,950**	1,028
Others	**5**	6
Other pledged assets		
Others	**—**	6
Total	**3,431**	1,527

The parent company has no pledged assets.

note 32

Contingent liabilities

	1998	1997
GROUP		
Guarantees	**5,624**	6,398
Other contingent liabilities	**813**	1,356
Total	**6,437**	7,754
PARENT COMPANY		
Guarantees of which:		
for Vattenfall Treasury's lending to subsidiaries and associates	**19,162**	20,213
subsidiaries and associates	**19,564**	19,840
subordinated guarantees	**1,495**	1,620
Nuclear Waste Fund	**4,491**	5,211
Contract guarantees	**1,085**	1,342
Others	**248**	176
Total	**46,045**	48,402
Other contingent liabilities		
Compensatory and free power supplied:		
Wholesale power supplied		
– Number of commitments	**16**	16
– Capacity in MW	**222**	222
– Energy supplied in TWh/year	**0.9**	0.9

SEK 43,034 million (44,515) of the parent company's contingent liabilities relate to its subsidiaries. The parent company has guaranteed Vattenfall Treasury AB's commitments.

On some rivers, hydro power plants share regulation facilities. The owners of the plants are each liable for their share of the regulation costs.

Under Swedish law, Vattenfall has a strictly unlimited liability for third party losses as a result of dam accidents. Together with other hydro power producers in Sweden and Norway, Vattenfall has taken out liability insurance cover which will pay out a maximum of NOK 5 billion for this kind of loss.

As a natural part of the Group's business, in addition to those specified above, additional guarantees are put up for the fulfillment of contractual commitments.

note 33

Commitments under consortium agreements

Power plants are often built on a joint venture basis. Under the consortium agreements each owner is entitled to electricity in proportion to its share of ownership and each owner is liable – irrespective of output – for an equivalent proportion of the joint venture company's costs.

Vattenfall's investments in heating and other companies often entail a liability for costs in proportion to its share of ownership.

note 34

Average number of employees and personnel costs

Average number of employees	1998 Men	1998 Women	1998 Total	1997 Men	1997 Women	1997 Total
GROUP						
Sweden	**5,925**	**1,643**	**7,568**	5,920	1,572	7,492
Finland	**222**	**106**	**328**	208	86	294
Norway	**15**	**6**	**21**	11	2	13
Other countries	**56**	**23**	**79**	45	3	48
Total	**6,218**	**1,778**	**7,996**	6,184	1,663	7,847
PARENT COMPANY						
Sweden	**2,205**	**677**	**2,882**	2,151	633	2,784
Other countries	**12**	**—**	**12**	10	1	11
Total	**2,217**	**677**	**2,894**	2,161	634	2,795

Personnel costs	Group 1998	Group 1997	Parent company 1998	Parent company 1997
Salaries and other remuneration	**2,644**	2,531	**991**	938
Social security expenses	**1,628**	1,508	**806**	712
(of which pension costs)	**(752) ***	(672) *	**(458)****	(394)
Total	**4,272**	4,039	**1,797**	1,650

** SEK 7 million (6) of the Group's pension costs relate to presidents, executive vice presidents and former executive vice presidents. The Group's outstanding pension commitments in respect of these officers total SEK 41 million (35).*

*** The parent company's pension costs include SEK 2 million (1) for presidents, executive vice presidents and former executive vice presidents. The company's outstanding pension commitments in respect of these officers total SEK 21 million (20).*

None of the board members receive any pension benefits in connection with their board duties.

Salaries and other remuneration	1998 Board members and presidents *	1998 Other employees	1998 Total	1997 Board members and presidents*	1997 Other employees	1997 Total
GROUP						
Sweden	**39**	**2,490**	**2,529**	37	2,382	2,419
Finland	**4**	**83**	**87**	3	85	88
Norway	**1**	**9**	**10**	1	5	6
Other countries	**3**	**15**	**18**	—	18	18
Total	**47****	**2,597**	**2,644**	41**	2,490	2,531
PARENT COMPANY						
Sweden	**7**	**980**	**987**	8	926	934
Other countries	**—**	**4**	**4**	—	4	4
Total	**7*****	**984**	**991**	8***	930	938

** Board members and presidents also include alternates, executive vice presidents as well as former board members, alternates, presidents and executive vice presidents.*

*** Includes bonuses of SEK 2.7 million (1.8).*

****Includes bonuses of SEK 1 million (0.6).*

Remuneration of the senior management of Vattenfall AB

In 1998, the Chairman of the Board received a fixed fee of SEK 110,000.

During 1998, the Chief Executive Officer, who is also the President of Vattenfall AB, received a salary and other emoluments, including the value of a company car, of SEK 2,597,000, including a bonus in respect of 1997 of SEK 456,000. The Chief Executive Officer's future pension comprises pension benefits under the applicable ITP plan plus additional benefits. The Chief Executive Officer, who turned 60, has the right, at his own request, and a duty, at the company's request, to take early retirement and receive an early retirement pension equivalent to 75 per cent of his final salary. Should his employment be terminated by the company, the Chief Executive Officer is entitled to the early retirement pension as set out above.

For other senior officers of the Group – executive vice presidents, business area and senior group management executives – the future pension is based on the existing pension plans or equivalent terms. Several of the above – mentioned officers have the right, at their own request, and a duty, at the company's request, to take early retirement on reaching the age of 60. Should their employment be terminated by the company, they are entitled to their salary during the period of notice (6–12 months) plus a severance payment of 18–24 months' salary.

note 35

Leasing

LEASING EXPENSES

Equipment leased through finance leases (where the group company is the lessee) and which is reported as a tangible fixed asset comprises:

	1998	1997
Acquisition value		
Equipment	**33**	—
Accumulated accelerated depreciation		
Equipment	**–13**	—
Residual value according to plan	**20**	—

Future payment commitments within the Group at December 31, 1998 for lease contracts and rental contracts are distributed as follows:

	Group		**Parent company**
	Finance lease	Operating lease	Operating lease
1999	15	60	10
2000	7	45	10
2001	4	18	1
2002	2	11	1
2003	1	10	1
2004 and beyond	0	8	0
Total	**29**	**152**	**23**

The year's leasing expenses in respect of group assets amounted to SEK 103 million. For the parent company, the corresponding figure was SEK 15 million.

LEASING INCOME

Certain group companies lease equipment to customers.

At December 31, 1998, the acquisition value of assets reported under Operating lease amounted to SEK 1,035 million. Accumulated depreciation amounted to SEK 143 million and the net investment to SEK 892 million.

Future lease payments for leased equipment (where the group company is the lessor) is distributed as follows:

	Group Operating lease
1999	81
2000	53
2001	41
2002	39
2003	37
2004 and beyond	37
Net investment	**288**

The Group has not yet fully applied the Swedish Financial Accounting Standards Council's recommendation RR6 "Accounting for Leases".

Stockholm, February 23, 1999

Lars Rekke
Chairman

Helge Eklund — Ivar Franzén — Lars Hjorth

Göran Johansson — Bo Marking — Christina Striby

Johnny Bernhardsson
(Employee representative)

Lars Carlberg
(Employee representative)

Ronny Ekwall
(Employee representative)

Carl-Erik Nyquist
President

Audit Report

To the general meeting of the shareholders of Vattenfall AB Corporate identity number 556036-2138

We have audited the annual accounts on pages 29–63, the consolidated accounts, the accounting records and the administration of the board of directors and the president of Vattenfall AB for the financial year 1998. These accounts and the administration of the company are the responsibility of the board of directors and the president. Our responsibility is to express an opinion on the annual accounts, the consolidated accounts and the administration based on our audit.

We conducted our audit in accordance with generally accepted auditing standards in Sweden. Those standards require that we plan and perform the audit to obtain reasonable assurance that the annual accounts and the consolidated accounts are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the accounts. An audit also includes assessing the accounting principles used and their application by the board of directors and the president, as well as evaluating the overall presentation of information in the annual accounts and the consolidated accounts. We examined significant decisions, actions taken and circumstances of the company in order to be able to determine the liability, if any, to the company of any board member or the president and whether they have in any other way acted in contravention of the Companies Act, the Annual Accounts Act or the Articles of Association. We believe that our audit provides a reasonable basis for our opinion set out below.

The annual accounts and the consolidated accounts have been prepared in accordance with the Annual Accounts Act, and, consequently we recommend

that the income statements and the balance sheets of the parent company and the group be adopted, and

that the profit of the parent company be dealt with in accordance with the proposal in the administration report.

The board members and the president have not committed any act or been guilty of any omission which, in our opinion, could give rise to any liability to the company. We therefore recommend

that the members of the Board of directors and the President be discharged from liability for the financial year.

Stockholm, February 24, 1999

Ernst & Young AB
Lars Träff
Authorized Public Accountant

Filip Cassel
Authorized Public Accountant
National Audit Bureau

Consolidated Accounts excluding Minority Interests in Electricity Generation Companies

Basis of Accounting

Joint work in Vattenfall's electricity generation subsidiaries is regulated by consortium agreements, where each partner's rights to a particular plant's output and liability to meet the plant's costs and financing are proportional to the partner's participating interest.

The following review shows the financial impact of these consortium agreements on the accounts of the Vattenfall Group. The consolidated accounts have been restated in accordance with the proportional consolidation method, i.e. only the Group's portion of subsidiaries' income statements and balance sheets are included.

The reason for applying the proportional method is that Vattenfall's interests in these companies are strictly limited to its participating interests. This method gives a true and fair view of the Group, compared with accounting in accordance with traditional consolidation methods.

Profit

The restated operating profit is SEK 5,886 million, SEK 181 million lower than that based on traditional consolidation methods. Profit before tax and minority interests was SEK 4,471 million, SEK 23 million higher than that based on traditional consolidation methods.

Balance Sheet

The balance sheet total was SEK 76,944 million, SEK 6,412 million lower than that based on traditional consolidation methods. This has increased the equity/assets ratio by 3.4 percentage points because the restated balance sheet includes only those portions of the generation companies' assets and liabilities that are actually owned by the Group.

Income Statement

SEK million	1998	1997
Net sales	**26,221**	26,696
Cost of products sold	**–17,502**	–17,366
Gross profit	**8,719**	9,330
Selling expenses, research and development costs and administrative expenses	**–3,335**	–3,013
Items affecting comparability, net	**0**	381
Other operating income and other operating expenses, net	**411**	379
Participations in the result of associated companies	**91**	85
Operating profit	**5,886**	7,162
Financial income	**241**	520
Financial expenses	**–1,656**	–2,236
Profit before tax and minority interests	**4,471**	5,446
Tax	**–1,754**	–1,929
Minority interests in the profit for the year	**–53**	–118
Net profit for the year	**2,664**	3,399

Balance Sheet

SEK million	Dec. 31, 1998	Dec. 31, 1997
Assets		
Fixed assets	**61,540**	57,879
Current assets, excl. liquid assets	**11,337**	10,678
Liquid assets	**4,067**	3,580
Total assets	**76,944**	72,137
Equity, provisions and liabilities		
Equity		
Restricted equity	**27,437**	26,987
Non-restricted equity	**4,888**	4,171
Total equity	**32,325**	31,158
Minority interests in equity	**643**	649
Provisions and liabilities		
Interest-bearing provisions and liabilities	**24,619**	22,916
Non-interest-bearing provisions and liabilities	**19,357**	17,414
Total equity, provisions and liabilities	**76,944**	72,137

Key Ratios

	1998	1997
Return on capital employed, %	**10.9**	14.0
Return on equity after full tax, %	**8.4**	11.3
Return on assets, %	**8.2**	10.7
Pre-tax profit margin, %	**17.1**	20.4
Equity/assets ratio, %	**43.1**	44.2
Interest cover, times	**3.7**	3.4
Asset turn, times	**0.34**	0.37

Definitions and Calculation of Key Ratios:

Figures for the Group in 1998 (SEK million).

Return on capital employed

Operating profit including financial income relative to average total assets less non-interest-bearing liabilities and provisions.

Operating profit plus financial income	6,355
Average capital employed	61,094
Return on capital employed, per cent	10.4

Return on equity after full tax

Net profit for the year relative to the average of equity at the start and at the end of the year.

Net profit for the year	2,664
Average equity	31,742
Return on equity after full tax, per cent	8.4

Return on equity after standard tax

Profit before tax and minority interests less minority interests and tax at standard rate (28 per cent) relative to the average of equity at the start and at the end of the year.

Profit before tax and minority interests less tax at standard rate (28 per cent) and minority interests	3,235
Average equity	31,742
Return on equity after standard tax, per cent	10.2

Return on assets

Operating profit including financial income relative to the average of total assets at the start and at the end of the year.

Operating profit including financial income	6,355
Average total assets	81,114
Return on assets, per cent	7.8

Operating margin

Operating profit relative to net sales.

Operating profit	6,067
Net sales	27,957
Operating margin, per cent	21.7

Pre-tax profit margin

Profit before tax and minority interests relative to net sales.

Profit before tax and minority interests	4,448
Net sales	27,957
Pre-tax profit margin, per cent	15.9

Equity/assets ratio

Equity relative to total assets at the end of the year less interest-arbitrage transactions.

Equity	32,325
Total assets less interest-arbitrage transactions	81,349
Equity/assets ratio, per cent	39.7

Debt cover

Interest-bearing liabilities and provisions plus minority interests in equity less liquid assets relative to equity at the end of the year.

Interest-bearing liabilities plus minority interests in equity less liquid assets	25,650
Equity	32,325
Debt cover, times	0.8

Interest cover

Operating profit including financial income relative to financial expenses

Operating profit including financial income	6,355
Financial expenses	1,907
Interest cover, times	3.3

Degree of self financing

Internally generated funds relative to total investments for the year.

Internally generated funds	6,767
Total investments	4,528
Degree of self-financing, times	1.5

Asset turn

Net sales relative to the balance sheet total at the end of the year.

Net sales	27,957
Total assets	83,356
Asset turn, times	0.34

Five-year Review

SEK million	1998	1997	1996	1995	1994
Income statement					
Net sales	**27,957**	28,458	29,030	26,796	24,575
Items affecting comparability	**—**	163	—	–250	—
Operating profit	**6,067**	7,376	7,672	7,354	7,600
Financial income	**288**	561	746	930	556
Financial expenses	**–1,907**	–2,498	–2,957	–3,158	–3,050
Profit before tax and minority interests	**4,448**	5,439	5,461	5,126	5,106
Net profit for the year	**2,664**	3,399	3,725	3,576	3,718
Balance Sheet					
Liquid assets	**4,439**	3,961	4,321	3,099	3,052
Equity	**32,325**	31,158	28,875	26,305	24,084
Minority interests in equity	**2,213**	2,304	1,990	1,097	1,094
Interest-bearing provisions and liabilities	**27,876**	26,311	28,825	29,253	29,728
Non-interest-bearing provisions and liabilities	**20,942**	19,099	18,923	17,425	15,631
Total assets	**83,356**	78,872	78,613	74,080	70,537
Key financial ratios (in per cent unless otherwise specified)					
Return on capital employed	**10.4**	13.3	14.5	14.9	14.8
Return on equity after full tax	**8.4**	11.3	13.5	14.2	16.3
Return on equity after standard tax	**10.2**	13.0	14.1	14.5	16.1
Return on assets	**7.8**	10.1	11.0	11.5	11.7
Operating margin	**21.7**	25.9	26.4	27.4	30.9
Pre-tax profit margin	**15.9**	19.1	18.8	19.1	20.8
Equity/assets ratio	**39.7**	40.3	36.7	35.5	34.1
Debt cover, times	**0.8**	0.8	0.9	1.0	1.2
Interest cover, times	**3.3**	3.2	2.8	2.6	2.7
Degree of self-financing, times	**1.5**	1.6	1.2	1.3	2.8
Asset turn, times	**0.34**	0.36	0.37	0.36	0.35
Other information					
Dividends, SEK m	**1,500***	1,500	1,500	1,500	1,343
Total investments, SEK m	**4,528**	4,877	5,984	6,043	2,992
Internally generated funds, SEK m	**6,767**	7,869	7,455	7,711	8,238
Electricity sales, TWh	**83.8**	78.7	78.4	79.3	74.0
Average number of employees	**7,996**	7,847	8,263	8,460	9,071

** Proposed dividend.*
The figures for 1994 – 1995 have not been restated in line with the change in accounting policy (equity method).

Board of Directors

Lars Rekke
Appointed Chairman in 1997.
Born 1944. Under-secretary of State, Ministry of Industry, Employment and Communications. Chairman of Förvaltnings AB Stattum.

Carl-Erik Nyquist
President and Chief Executive Officer.
Born 1936. Director-General of Vattenfall 1985-91. President and Chief Executive Officer since 1992. Board member of the public utility from 1985 to 1991 and of Vattenfall AB since 1992. Board member of Telia AB and the Federation of Swedish Industries. Chairman of the Swedish Power Association and the Swedish Energy Employers Association.

Helge Eklund
Born 1944. President and Chief Executive Officer of SÖDRA. Board member since 1997. Board member of the Swedish Forest Industries Association and the Employers' Federation of Swedish Forest Industries.

Ivar Franzén
Born 1932. Estate Manager. Board member since 1992. Chairman of AB Haninge Bostäder and Eksta Bostads AB, Vice Chairman of SABO.

Lars Hjorth
Born 1943. Executive Vice President of KF. Board member since 1997. Chairman of MeritaNordbanken, Stockholm region.

Göran Johansson
Born 1945. Municipal Councillor. Board member of the public utility, 1982-91 and board member of Vattenfall AB since 1995 (alternate 1992-94). Chairman of the Municipal Executive Board in Göteborg. Board member of SKF AB and Liseberg AB.

Bo Marking
Born 1937. Former President. Board member since 1996. Vice Chairman of Lithuanian Development Bank. Board member of Nordiska Investeringsbanken, N&T Argonaut AB and SBAB.

Christina Striby
Born 1944. Senior Legal Advisor at Posten AB. Board member since 1997. Board member of Postfastigheter AB.

Johnny Bernhardsson
Born 1952. Employee representative, SIF trade union. Board member since 1995.

Lars Carlberg
Born 1943. Employee representative, CF trade union. Board member since 1998.

Ronny Ekwall
Born 1953. Employee representative, SEKO trade union. Board member as of 1999 (alternate in 1998).

Alternates

Hans Christer Olson
Born 1944. Assistant Under-Secretary, Ministry of Industry, Employment and Communications. Board member of LKAB and Celsius AB.

Kent Ögren
Born 1955. Municipal Councillor in Jokkmokk. Chairman of Jokkmokks Värmeverk AB.

Lars Carlsson
Born 1951. Employee representative, SIF trade union.

Per-Ove Lööv
Born 1961. Employee representative, SEKO trade union.

Stig Lindberg
Born 1946. Employee representative, Ledarna trade union.

Lars Rekke, Carl-Erik Nyquist

Lars Hjorth, Bo Marking

Göran Johansson, Helge Eklund

Christina Striby, Ivar Franzén

Kent Ögren, Hans Christer Olson

Ronny Ekwall, Johnny Bernhardsson, Lars Carlberg

Auditors

Ernst & Young AB
Lars Träff, authorized public accountant.

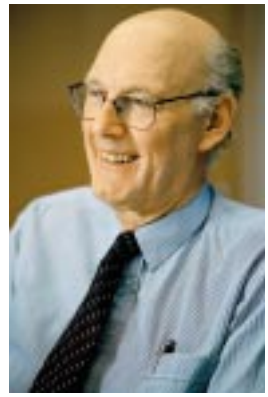
Filip Cassel, authorized public accountant
Swedish National Audit Bureau.

Alternate

Staffan Nyström, authorized public accountant
Swedish National Audit Bureau.


Bertil Tiusanen


Alf Lindfors


Carl-Erik Nyquist


Jan C Johansson


Inger Holmström-Lindgren


Berndt-Olof Helzén


Stig Göthe


Lennart Billfalk


Staffan Nordin


Bertil Agrenius


Mats Fagerlund


Gunnar Vallin


Lars Segerstolpe

Group Management

Senior Executives

Carl-Erik Nyquist
Born 1936. President and Chief Executive Officer.

Bertil Tiusanen
Born 1949, Deputy Chief Executive Officer and Chief Financial Officer.

Berndt-Olof Helzén
Born 1943. Executive Vice President, Director of Vattenfall Network Operations.

Jan C Johansson
Born 1954. Executive Vice President, Director of Vattenfall Energy Market.

Staffan Nordin
Born 1939. Executive Vice President, Director of Vattenfall Electricity Generation.

Other Senior Officers

Bertil Agrenius
Born 1944. Senior Vice President. Director of Natural Gas and Engineering.

Gunnar Vallin
Born 1943. Senior Vice President. Director of Vattenfall Europe and Vattenfall International.

Lennart Billfalk
Born 1946. Senior Vice President, Corporate Development & Environment.

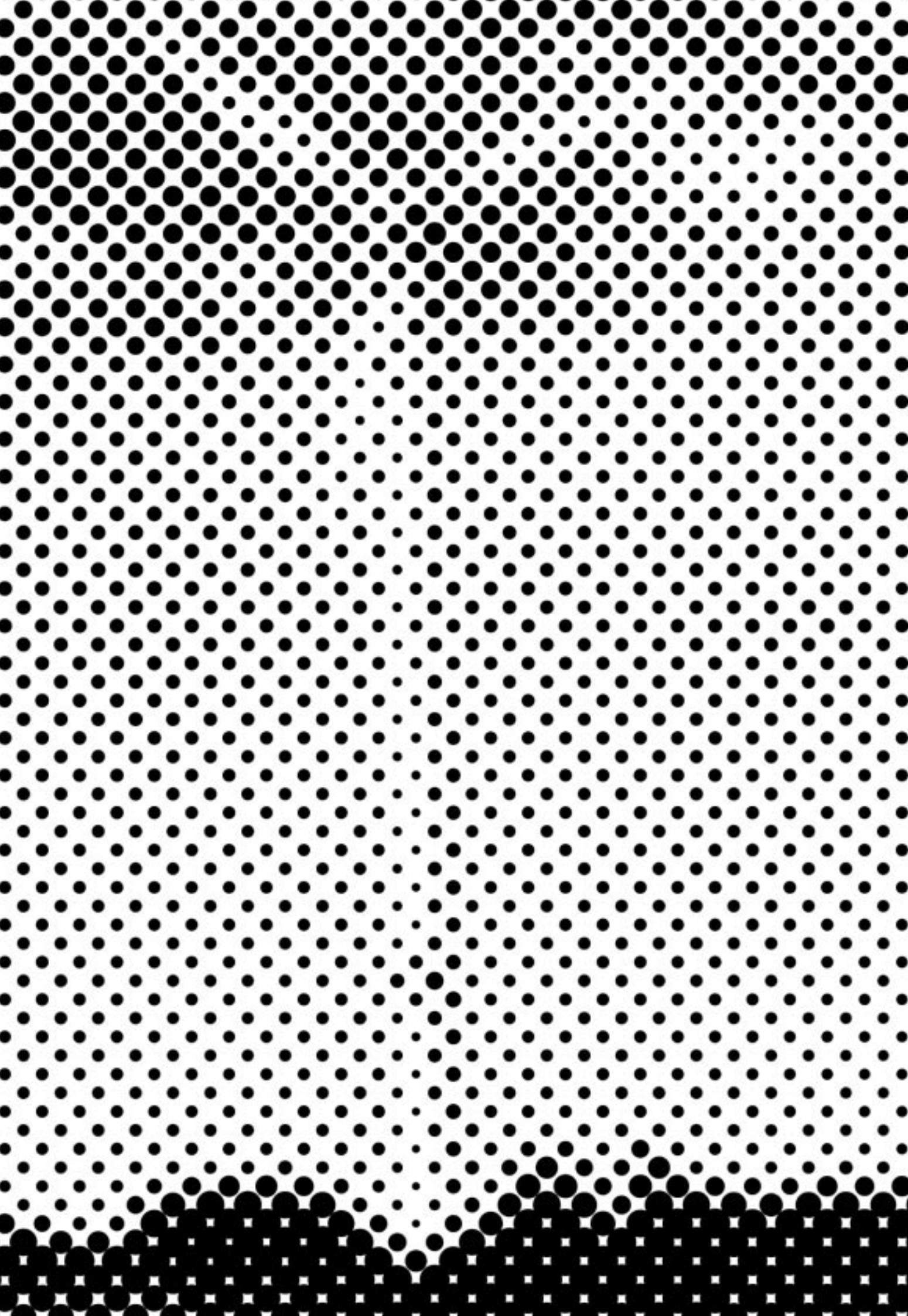
Mats Fagerlund
Born 1950. Senior Vice President, General Counsel.

Inger Holmström-Lindgren
Born 1948. Senior Vice President, Corporate Communications.

Alf Lindfors
Born 1946. Senior Vice President, Human Resources & Organization.

Stig Göthe
Born 1941. Senior Vice President, IT Strategy and European Union Affairs.

Lars Segerstolpe
Born 1941. Senior Vice President, Internal Auditing.



Vattenfall and the environment

Vattenfall and the environment

Vattenfall's aim is to contribute to improving the environment and quality of life. This is why Vattenfall integrates environmental considerations into its business activities. A part of this year's annual report is devoted to the environment. The environmental aspects of Vattenfall's business are reviewed in Business and Markets, Business Activities 1998 and Preparing for the Future. A report on Vattenfall's internal environmental work and the Group's environmental accounts are presented on the next few pages. For further information and subsequent updates, visit Vattenfall's web site at www.vattenfall.se.

Important Environmental Issues

Important environmental issues are described on the basis of the Group's activities in Sweden, since Vattenfall only conducts operations on a limited scale in other countries. Quantitative data on Vattenfall's environmental performance as well as other disclosures are presented on pages 73–77.

Vattenfall's mission is to provide services that help our customers to solve their environmental problems and to deal with our own internal environmental problems in ways that reinforce the trust of our customers and the public. In identifying important environmental issues, not only do we take into account our own expertise and research findings, we also take stock of critical issues in the world around us. A summary of important external environmental issues is provided in the table below.

In normal circumstances, Vattenfall's business has a low impact on the environment. The most important factor in the external environment is safety: nuclear power plant safety, hydro power plant dam safety and electrical safety. Electricity is often an environmentally superior form of energy for the user. Electricity can solve

Environmental issues	Vattenfall's impact on the environment
Resource usage (finite resources)	Primarily in the form of fuels – uranium, oil and natural gas as well as metals and chemicals.
Chemicals	Heavy metals and environmentally hazardous substances, e.g. mercury, PCBs, creosotes and arsenic.
Waste	Waste from energy production – including radioactive waste – as well as waste generated by offices.
Biodiversity	Changes in the ecosystem in rivers used for hydro power production and in power line tracks.
Landscape	Hydro power control equipment, power plants and other buildings and power lines.
Greenhouse effect	Carbon dioxide emissions from combustion facilities and transport.
Acidification	Sulphur and nitrogen oxide emissions from combustion facilities and transport.
Ozone depletion	CFCs and HCFCs in heat pumps and in indoor climate and cooling facilities.
Radioactivity	From nuclear power plant operation and waste storage and disposal.
Electromagnetic fields	From power lines and electrical equipment.

Some of these photographs were taken by Vattenfall employees while others come from Vattenfall's archives.

the customer's environmental problems related to energy conversion processes. However, for electricity to be a sustainable solution, the energy conversion process in power plants must be shown to be safer and more reliable than alternative processes. Furthermore, the customer must also be convinced that this is the case.

Vattenfall keeps track of international research on possible environmental and health hazards associated with electromagnetic fields (EMF). Vattenfall also supports research in this area and applies the precautionary principle with respect to concern about health hazards. During the year, the Swedish Institute for Working Life published the final report on electricity and the environment. This is the most comprehensive study on the working environment carried out in this area. The findings of the study do not support the view that EMF is an occupational hazard.

Environmental Management Systems Soon in Place

Environmental management systems based on the ISO 14001 standard are the most vital instrument in the environmental work of the Vattenfall Group. It was Vattenfall's intention to implement the system throughout the Group no later than in 1998. However, due to the restructuring of several business areas, the deadline has been postponed somewhat. Nevertheless, by year-end 1998, environmental management systems had been introduced in about 80 per cent of Vattenfall's activities. Those units for which certification represents clear business benefits have made the greatest progress. Forsmark and Ringhals nuclear power plants as well as Vattenfall Energisystem have been ISO 14001 certified. Forsmark has been registered under EMAS.

Responsibilities and Organization

Vattenfall has a decentralized environmental organization. Environmental management systems are integrated into normal business management activities. Consequently, each operational manager is responsible for identifying the environmental aspects of his or her business, for setting environmental targets, for formulating environmental programmes and for implementation and follow-up work. Objectives and targets are determined by each activity, mainly on the basis of market-specific conditions and bearing in mind that environmental work is a cornerstone of Vattenfall's business. Few targets are set at group level and those that exist are of a general nature.

The Senior Vice President of Corporate Development & Environment reports to the senior group management on environmental issues and is assisted by the Environmental Manager, who is responsible for the co-ordination of environmental issues at group level. Each business area and company is responsible for ensuring that environmental issues can be competently handled within the specific activity. Resources in the form of environmental specialists and consultants are made available to the Group as a whole.

EMF-related issues are handled by a special task force reporting to the Network Operations business area. Life Cycle Assessment (LCA) is currently being developed to improve environmental work and for business development. A chemicals project, which is being conducted on a group level, aims at minimizing the health and environmental hazards relating to chemical product handling.

An Intranet-based environmental information system was introduced at year-end to provide data of adequate quality for environmental management and for environmental accounting. The system is currently being run on a trial basis. Work on the environmental management systems, quality management and the working environment are being increasingly coordinated in different parts of the business. An integrated management system has already been implemented for electricity generation operations.

Environmental Policy

The environmental policy expresses our intention to take ***responsibility*** for improving the environment, give consideration to future generations and contribute to sustainable development. By means of ***openness*** and involvement in environmental issues throughout our entire organization we intend to create confidence in our activities on the part of customers, owners, employees, the public and authorities.

Environmental issues shall be integrated into all aspects of our activities. By means of highly-skilled employees and continuous development of our knowledge about the energy system's effects on health and the environment, we can achieve a ***comprehensive approach*** to environmental issues. We comply with the ICC's Business Charter for Sustainable Development, which we adopted in 1992.

The ten points listed below clarify our position in more concrete terms:

1. We will lead the development of environmentally compatible and efficient energy solutions.
2. We will, by means of a holistic approach, continuous improvement and quantifiable environmental targets, endeavour to cause minimum impact on the environment.
3. We will, in all our operations, economize on natural resources and energy.
4. We will attach key importance to human health and safety.
5. We will, in Swedish, Nordic and international markets, more than comply with legal requirements and regulations relating to the environment.
6. We will analyse in advance the environmental impact of all new activities.
7. We will train, inform and stimulate our staff with a view to motivation, involvement and responsibility in environmental work.
8. We will place the same high environmental demands on our suppliers, contractors and business partners as we place on our own operations.
9. We will be able to discuss environmental issues with our customers from an overall perspective and promote electricity's environmental benefits.
10. We will openly report on our environmental work and our impact on the environment, and conduct a close dialogue with various interested parties on environmental issues important to our activities.

Each operational manager will ensure that the environmental policy is put into practice. The policy may be supplemented or adapted in specific cases in order to reinforce its effect.

Work Environment Policy*

A safe and stimulating working environment is a prerequisite for the Vattenfall Group to be able to comply with its mission statement and achieve its vision.

Our working practices shall be characterized by respect for the individual. Vattenfall's operations shall be conducted in a working environment which promotes an improved quality of life for its employees and ensures that the group becomes known as an attractive employer.

**Vattenfall's ability to manage the external environmental impact of its activities is highly dependent on its ability to manage the internal working environment.*

Some of these photographs were taken by Vattenfall employees while others come from Vattenfall's archives.

Environmental Policy Implementation

Here are a few practical examples of how Vattenfall is implementing the environmental policy:

1 To consolidate its leading role in developing environmentally-adapted and efficient energy solutions, Vattenfall invests in research on sustainable energy solutions and new systems. One example is the establishment of a special laboratory at Älvkarleby for efficient energy use.

2 By integrating environmental management systems with its business management systems, Vattenfall ensures continual improvement and low environmental impact. Life Cycle Assessment is used to maintain an integrated, holistic approach.

3 Vattenfall's Electricity Agreement which carries a savings guarantee, promising reduced energy use and lower costs for the customer, is an example of a product that is designed to conserve natural resources and energy.

4 Human health and safety are taken into account by eliminating carcinogenic substances from the working environment and by cutting back on the use of allergens. Other examples include investments to increase the safety of hydro power plant dams, demands on uranium supplier compliance with environmental and occupational safety requirements and the safety and radiation protection work carried out at nuclear power plants.

5 Vattenfall takes action on all fronts to ensure that the impacts from its activities are well within the limits stipulated in environmental regulations.

6 During the year, the procedures for analyzing and documenting environmental issues prior to investment decision-making and acquisitions were found to be deficient. Steps to remedy the situation will be taken in 1999.

7 Education in environmental issues is a part of the continuous development of all employees. Induction training is provided for new employees and environmental issues are integrated into management training programmes.

8 Vattenfall's Procurement Manual provides help and guidelines to promote good environmental practice in connection with purchasing. Environmental issues are currently being integrated into an ongoing review, at group level, of the procurement policy and the procurement organization. Continuous education, aimed at maintaining an integrated approach to vital issues, is a fundamental step in promoting sound environmental practice among suppliers and partners. Over a number of years, Vattenfall has developed a broad base of knowledge about the increased use of environmentally-sound biofuels.

9 Vattenfall markets energy services aimed at helping customers to use energy efficiently and to monitor their environmental impact. Environmental declarations and Life Cycle Assessment are tools used to discuss environmental issues and solutions with customers.

10 Vattenfall's environmental performance and the focus of its environmental work are disclosed in this year's annual report and in the environmental reports for previous years. Vattenfall maintains a close dialogue with stakeholders concerning environmental issues. Through continuous support to the Elvira Environmental Foundation, Vattenfall has created a forum for developing and testing new energy technologies for the future.

Long-term Strategy

Vattenfall's long-term environmental strategy can be summarized as follows:

- Continual progress towards sustainable energy solutions.
- Integration of environmental issues with business activities.
- Integration of environmental management systems into business management.
- Continual reduction of the environmental impact of Vattenfall's business activities.
- Products that help customers to solve their own environmental problems.
- Products that help customers to conserve energy.
- The use of Life Cycle Assessment to improve knowledge and as a tool in identifying and verifying cost-effective improvements to minimize environmental impact.
- Environmental declarations and environmental reports that provide facts on the environmental impact of products and activities.

Environmental performance targets are formulated on the basis of market-specific conditions for each business activity. Vattenfall's product range will become increasingly environmentally sound. Customized environmental products are continually developed as an option to customers.

Vattenfall is committed to providing information which fosters openness and transparency. By keeping customers informed about the type of energy that they purchase and its environmental impact, customers are empowered to make a choice based on their own judgement.

Environmental Targets

As part of the environmental management systems, specific environmental targets will be set continously for each activity within Vattenfall. At group level, the Chief Executive Officer determines the environmentally-related business targets and overall objectives. As part of the environmental management systems, specific targets are set to limit the environmental impact of each activity, taking into account the Group's business and environmental targets. The specific environmental targets are a combination of targets for the Group as a whole and individual activity targets. The 1997 Environmental Report stated that the Group's environmental work would focus on a number of areas, including continuous environmental training and the preparation of guidelines and objectives for procurement.

During 1998, the management principles were changed. With the environmental management systems in place, it is up to the individual business areas and companies to themselves determine the focus of their environmental work. While in the long run, this approach is more effective than the former centralized approach, it means that Vattenfall cannot measure its performance for 1998 in relation to the original objectives and targets.

However, the preparation of environmental guidelines and other objectives for procurement is still in progress. A review of the entire procurement process, with due consideration of the requirements of the Swedish Public Procurement Act, has now been completed. Furthermore, Vattenfall is still actively working towards meeting the objective of minimizing the use of carcinogenic and allergenic chemicals, e.g.by replacing methods involving the use of isocyanates for joining cables.

Some of these photographs were taken by Vattenfall employees while others come from Vattenfall's archives.

Environmental targets	Dead-line	Reached	Not reached	Comment
Group				
• All employees will undergo at least half-a-day of environmental training.	**1997**	✓		Considered reached. Difficult to measure with 100 per cent accuracy as a result of constant employee changes.
• Environmental management system introduced in all activities.	**1998**		•	80 per cent of the activities have environmental management systems up and running.
• ISO 14001-cerification of 15 activities.	**1999**			
• All activities will be prepared for potential ISO 14001 certification or EMAS registration.	**2000**			Forsmark, Ringhals and Vattenfall Energisystem have been certified.
Market				
• Detailed environmental declarations for all of Vattenfall's products and services	**1999**			Can already be provided for all electricity products.
• Certified environmental product declaration for Lule River	**1998**		•	Ready in 1st quarter of 1999.
Nuclear power				
• 10 per cent reduction in low level waste in landfill	**1999**			Concerns Forsmark.
• 25 per cent reduction in total volume of treated drainage water	**2002**			Concerns Forsmark.
• 30 per cent reduction in unseparated industrial waste and scrap compared with 1996	**1999**	✓		Concerns Ringhals.
• Plant operated to ensure maximum collective dose of 4.6 manSv	**1999**			Concerns Ringhals.
• Radioactive releases, including C-14, may not not exceed 8.5 per cent of one norm release	**1999**			Concerns Ringhals.
Hydro power				
• EMAS registration of 2 facilities	**1998**		•	Work in progress.
• EMAS registration of 5–6 facilities	**1999**			
Electricity networks				
• Inventory and phase-out plan for mercury	**1997**		•	Work in progress, 55 per cent ready.
• Phase-out plan for CFCs	**1999**			Work in progress, about 15 kg remaining.
• Phase-out plan for HCFCs	**2001**			Work in progress, one company ready.
• Established system for recovery of metals for re-use	**2003**			
Heating				
• EMAS registration of Vattenfall Drefviken	**1999**			
• Phase-out of CFCs in heat pumps	**1998**	✓		
Natural gas				
• ISO 14000 certification of Vattenfall Naturgas	**1998**		•	Work in progress.
Buildings				
• Energy use in offices	**2000**	✓		See note 1, diagram 4 (page 74 and 75).

Economic Aspects of the Environment

The need to improve the measurement of the relationship between environmental consequences and business practice and performance is the focus of considerable discussion nowadays. In spite of the lack of criteria for relevant information, environmentally-related financial measures are reported by businesses. However, such reporting is often arbitrary and the reader is unable to evaluate the information presented. For example, how can the reader judge whether high costs for environmental protection measures are positive or negative? Most companies integrate environmental issues into their normal business activities. Solutions are chosen which significantly improve productivity as well as the internal and external environment with the aim of enhancing the company's competitive advantage. In such cases, a separate disclosure of environmental expenditure or revenues would be unnatural and the information is instead incorporated into the company's balance sheet and income statement.

A more useful approach would be to attempt to track future potential environmental expenditure and revenues which are not captured by regular financial reporting. The concept of sustainable development is central to the environmental debate. Related to this concept is the view that society is developing a growing environmental debt, which will encroach upon the potential for life of future generations.

One way of counteracting this tendency would be the stringent application of the "Polluter Pays" principle. Sustainable development, at the corporate level, can then be described as a situation where business is developed without the accumulation of a long-term environmental debt, and where the company generates a positive value which exceeds the overall cost.

The environmental debt concept is based on the assumption that, due to the lack of knowledge or the will of companies or society, environmental problems are not fully taken care of. It is interesting to consider the case of the waste generated by nuclear reactors from this perspective. Funds are continually accumulated to meet future expenses of the management of this type of waste. This is a practice that is lacking with respect to other activities.

In 1998, Vattenfall initiated a review of the company's "environmental debt" and an analysis of the concept. However, work was interrupted due to inadequate procedures for preparing a relevant basis for judgement. The intention is to resume work once the necessary procedures have been established.

Environmental Expenditure 1998 (1997)

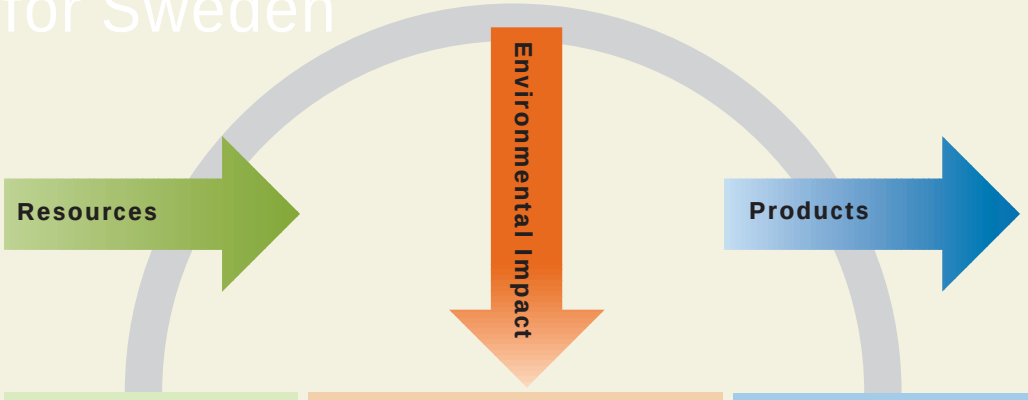
			1998 (SEK m)	1997 (SEK m)
Environmental investments according to Statistics Sweden (incomplete)	External processes		**2.7**	3.9
	Internal processes		**116.2**	–*
Running costs for environmental protection, accord-according to Statistics Sweden (incomplete)	Fish stock replenishment and related fees	Voluntary replenishment	**0.7**	–**
		Legally required replenishment	**25.5**	–**
		Control of replenishment obligations	**1.1**	2.9
		Fishing fees	**2.5**	2.8
	R&D	Sustainable energy solutions	**100**	–*
		Other (environmental technology, environmental management etc.)	**6.3**	–*
	Environmental taxes, fees and subsidies, according to Statistics Sweden	CO_2	**87.8**	77
		NO_x	**0.23**	–1.6
		S	**2.4**	1.9
Cost of nuclear waste management	See Note 5 page 44, "Annual Accounts".			

The environmental expenditure etc., estimated for 1997 and 1998 on the basis of data obtained from Statistics Sweden, is disclosed here. Information on environmental investment and running costs is incomplete.

–* *n/a*

–** *The estimate in the 1997 environmental report was found to be incorrect.*

environmental accounts for Sweden



Use of Resources

Fuel, for electricity and heat generation, note 1.
135 (159) tonnes of enriched uranium
43,100 (41,000) tonnes of oil
110 (200) tonnes of gas turbine fuel
33,100 (26,000) tonnes of gas
521,000 (382,000) tonnes of biofuel
13,000 (14,800) tonnes of waste
23,100 (31,700) tonnes of coal and peat

Electricity and heat purchases (for customers + own consumption)
12.2 (10.7) TWh of electricity (see page 16)
0.15 (0.22) TWh of heat

Other, note 2
Metals
Concrete
Plastic
Chemicals
Process chemicals
Lubrication and hydraulic oils
Fuel for own transport
Fresh water 1,660,000 (–*) m^3

Offices
Office supplies, furniture, computers, copying machines, cleaning chemicals etc.

Transport
Business travel
Goods transport

Environmental Impact

Emissions to air (contributes to ...) note 3, 8
259,000 (237,000) tonnes CO_2 *(greenhouse effect)*
110 (72) tonnes sulphur, *(acidification, health hazards)*
880 (820) tonnes NO_x *(acidification, tropospheric ozone, health hazards)*
125 (132) tonnes of dust *(health effects etc.)*
4 (10) tonnes of methane *(greenhouse effect, tropospheric ozone, health effects).*
–* (0.7) tonnes CFCs/HCFCs *(greenhouse effect, ozone depletion)*
–* (0.02) tonnes of halon *(greenhouse effect, ozone depletion)*
SF_6 *(greenhouse effect) tonnes*
Emissions from own transports

Emissions to water, note 4
Heated cooling water
33 (54) tonnes of hypochlorite
0.9 (0.8) tonnes of BOD
9 (8.8) tonnes of COD
1.7 (10) tonnes of oil

Waste, note 5
Hazardous waste 610 (–*) tonnes
Deposited waste 1,050 (–*) tonnes
Recycled waste 1,200 (–*) tonnes

Radioactive waste, note 5
167 (159) tonnes of spent nuclear fuel to CLAB
636 (134) tonnes of intermediate level waste to SFR
1,034 (638) tonnes of low level waste to landfill

Radioactive releases, note 6
Radiation dose 0.010 (0.009) mSv Ringhals, 0.00003 (0.0005) mSv Forsmark
Energy losses
Electromagnetic fields
Land use
Impact on biodiversity, note 7

Products, note 9, 10

Electricity 83.3 (79.1) TWh (in the Nordic region) of which
Unspecified electricity, 81.0 (77.0) TWh
Average production mix:
45 per cent, hydro,
53 per cent, nuclear,
0.2 per cent, coal
2 per cent, other thermal sources
0.1 per cent, wind
Source-specified electricity, 2.3 (2.1) TWh of which
1.78 (1.78) "Kärnkraftel" (nuclear)
0.46 (0.21) "VattenEl" (hydro)
0.1 (0.1) "Biobränsleel" (bio fuels)
0.007 (0.002) "VindEl" (wind)

Heat 4.1 (3.8) TWh

Natural gas 9.0 (9.0) TWh

Electricity distribution

Other products and services, note 11

Data in brackets refer to 1997.

–* *n/a*

The figure summarizes products and services, resources used and the environmental impact of emissions to air and water as well as waste generated for all business activities conducted by the Vattenfall Group in Sweden. Since the disclosures are limited to Vattenfall's own activities during the year, this is not a Life Cycle Assessment. The figure refers to the notes and comparisons presented on the next few pages. Detailed information and subsequent updates on specific activities will be provided at Vattenfall's web site, *www.vattenfall.se*. The scope and limitations of the collected data and accounting methods are described in the accounting principles on page 79. Economic aspects of the envitonment are presented on page 72.

No major accidents or undesirable events have occurred at Vattenfall's facilities during 1998. However, all activities have reported minor incidents, transgressions and complaints. Information on these will be made available at our web site. Since these are viewed seriously, Vattenfall is also taking steps to review related working procedures.

notes to the environmental accounts

Diagram 1
Use of enriched uranium

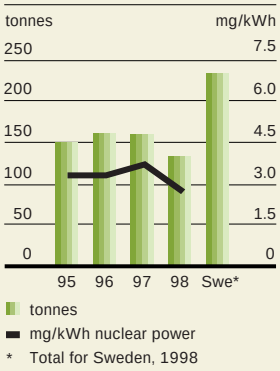


Diagram 2
Use of fossil fuels (oil, coal, peat, waste, LPG, natural gas) (kilotonnes)

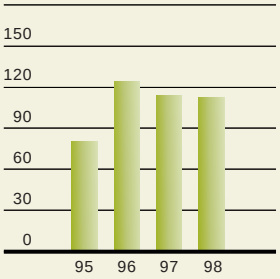
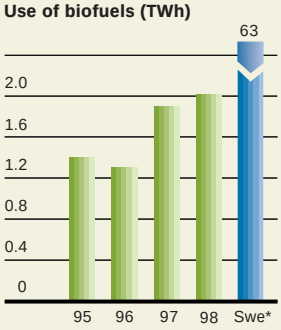


Diagram 3
Use of biofuels (TWh)



* Energy sector in Sweden, 1998

Use of Resources

note 1

Fuel for electricity and heat generation

An essential component of the environmental impact of Vattenfall's business is the resource usage, e.g. fuel consumption.

The figures in diagram 1 only refer to nuclear fuel. The accounting system for uranium use changed somewhat as of 1998 in connection with ISO certification and EMAS registration. A long-term underlying tendency towards reduced uranium use per kWh can be seen, due to continually improved fuel efficiency.

The Vattenfall Group accounts for about 70 per cent of Sweden's total nuclear power production and uranium use.

Compared with previous years, the use of coal, peat and waste has decreased (diagram 2) in favour of a greater use of gas and biofuels. During 1998, standby oil-fired plants which previously provided much of the reserve capacity were mothballed.

Biofuels (diagram 3) are primarily used in thermal plants and to a certain extent in combined heat and power plants. Vattenfall's use of biofuels has increased considerably over the past few years and Vattenfall is one of the largest users in the Swedish energy sector. In total, Vattenfall accounts for about 3 per cent of total use.

Vattenfall's energy use (diagram 4) is reported only for office premises. The use of electricity and heating in production facilities is not included. The figures for 1998 concern the 15 largest offices while the figures for previous years apply to the 10 largest. This is due to improvements in reporting from smaller offices. The 1998 estimate for the ten largest offices is 87.1 kWh of electricity and 43.2 kWh of heat per square meter of office space.

The reported energy use is low, due to energy efficiency measures within the Group. The target of reducing the total energy use by 5 per cent per year up to the year 2000 has been attained ahead of schedule. In 1998, energy use decreased by 7 per cent and the decline is expected to continue.

note 2

Other resources used

Vattenfall consumes different types of materials in connection with construction and refurbishment of power plants as well as in pylons, cables and transmission lines for electricity distribution. Life cycle inventories provide a good indication of the types of material and the quantities used. A detailed report is provided in Vattenfall's "Life Cycle Assessment – Electricity & Environment" and in the "Life Cycle Assessment for Electricity Networks" brochures.

Nuclear power plants and maintenance work on electricity networks account for the largest chemical usage. The chemical consumption data are incomplete. No information concerning the total transport-related fuel consumption for the Group has been compiled. A reporting system is currently being established.

Environmental Impact

note 3

Emissions to the Atmosphere

Vattenfall's emissions of carbon dioxide (CO_2, diagram 5), nitrogen oxide (NO_X, diagram 6) and sulphur (S, diagram 7) are mainly generated by the combustion of fuels for heat production.

Reported CO_2 emissions have increased during 1998, in spite of a somewhat reduced use of fossil fuels. The figures for 1998 are considered to be more reliable than previous years.

S and NO_X emissions have also increased as a result of the overall increase in combustion. The relatively large increase in S is due to improved reporting of S in 1998, compared to 1997. Previously, sulphur emissions from small facilities were not reported.

Vattenfall's NOx emissions correspond to just over 2 per cent and CO_2 and S emissions correspond to less than one per cent of total emissions from the Swedish energy sector (data from 1997). Dust emissions have declined since more facilities are equipped with dust precipitators and lighter fuel oils and gases are used to a greater extent than in 1997. In general, large combustion plants have lower specific dust emissions and switching from oil to biofuels in small plants results in higher specific emissions.

No figures are as yet available for Vattenfall's transport-related emissions to the air. An estimate of transport-related CO_2 emissions – for the maintenance and overhaul of lines, goods transports to and from facilities as well as business-related travel – made in 1996 showed that these accounted for about 5 per cent of the combined CO_2 emissions from Vattenfall's activities.

CFCs and HCFCs are mainly used in indoor climate control equipment. Vattenfall is continuing to phase out CFCs. Figures on CFC emissions for 1998 were not available, however, information is available on phased-out quantities and remaining quantities. In 1997, Vattenfall's CFC and HCFC emissions accounted for less than one per cent of Sweden's total emissions of these substances.

note 4

Emissions to water

Besides heated coolant (120–170 m^3/sec at full power, an 8–10°C temperature increase), Vattenfall's emissions to water comprise hypochlorite (diagram 8) which is used for algae control as well as inadvertent emissions of lubricating oil from hydro power plants. Reported oil emissions (diagram 9) amounted to 1.7 tonnes and the total emissions are therefore minor and lower than the previous year. Minor emissions of BOD and COD (diagrams 10 and 11) mainly originate from nuclear power plant effluent treatment facilities.

Diagram 4
Energy use in offices (kWh/m^2 gross surface space)

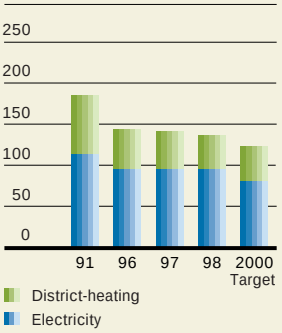
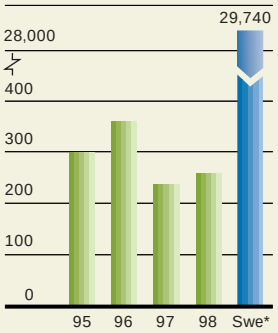
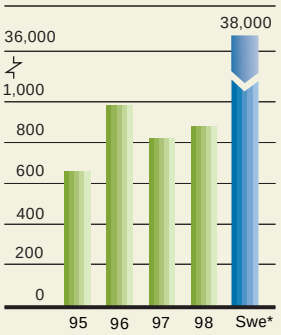


Diagram 5
Emissions to air, CO_2 (kilotonnes)



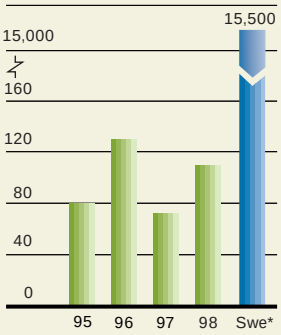
* Energy sector in Sweden, 1997

Diagram 6
Emissions to air, NO_X (tonnes)



* Energy sector in Sweden, 1997

Diagram 7
Emissions to air, S (tonnes)



* Energy sector in Sweden, 1997

Diagram 8
Emissions to water, hypochlorite (tonnes)

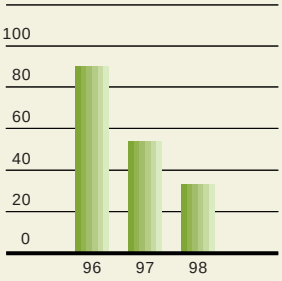
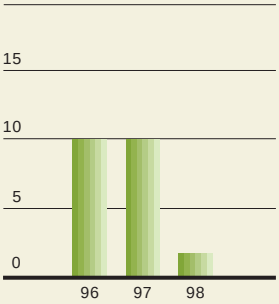


Diagram 9
Emissions to water, oil (tonnes)



note 5
Waste

Oil and solid fuel combustion generates waste in the form of ash and oil slag. Experiments are currently in progress to recycle biofuel ash to the forest. Due to the closure and mothballing of standby power plants, the quantity of oil slag has decreased.

Separation at source of office and household waste was introduced several years ago and the system is running smoothly at all of Vattenfall's large offices. However, since the inventory of purchased and consumed amounts is incomplete, these cannot be related to quantities of separated waste.

A number of cables have been replaced during 1998. A previous inventory identified minor quantities of PCBs in five light oil-filled cables. Two of the cables were replaced in 1997 and another was removed in 1998.

The quantity of low and intermediate level waste has increased (diagram 12) due to extensive reinvestment work as well as a waste disposal campaign at the Ringhals landfill. The high-level waste primarily comprises spent nuclear fuel which is delivered to the central interim storage facility (CLAB). About one-fifth of the fuel in the core is replaced each year.

note 6
Radioactivity

In total, the average Swede receives a radiation dose from natural sources (the cosmos, soil, bedrock) and housing (radon etc.) of 4 mSv per year. The limit established by the Swedish Radiation Protection Institute (SSI) for populations in the vicinity of Swedish nuclear power plants corresponds to 3 per cent of this dose (diagram 13). The total release of radioactive substances, including C-14, from Ringhals, corresponds to a maximum radiation dose of 10 per cent of SSI's limit and, from Forsmark, 0.4 per cent of SSI's limit.

SSI has also set a limit for the maximum permissible radiation dose from nuclear power plants to the population of the whole world. This limit is 5 manSv per installed GWe. The average value for Ringhals and Forsmark is 4.3 manSv per installed GWe. For further information, see Forsmark's and Ringhals' own environmental reports.

note 7
Biodiversity

Of all of Vattenfall's activities, hydro power and electricity distribution have the most significant impact on biodiversity. Of Sweden's flora, 1,479 are on the endangered list. In the case of 83 of these plants, hydro power is a threat. Of the endangered fauna, a total of 2,022 species, 86 are threatened by hydro power. Electricity distribution is a threat to four species of birds. On the other hand, electricity distribution is not a threat to flora.

For a few years, Vattenfall has been conducting studies into the impact of land used for power line tracks on biodiversity. The aim is to quantify

the impact as well as to draw up plans for tending flora and fauna in order to reinforce the positive impact of the power lines. Endangered plants and animals have been found to thrive in the environment of the power lines and in hydro power plant reservoirs. Vattenfall is looking into ways of promoting the survival of these species.

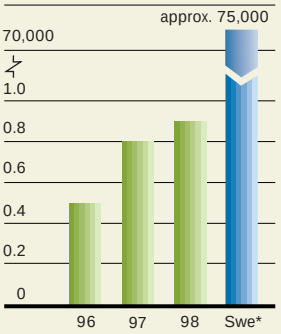
Vattenfall's work on Life Cycle Assessment (LCA) for hydro power has underlined the need to quantify the impact on biodiversity as a result of land use. Vattenfall has developed the "Biotope Method" for this purpose and is actively promoting its use. The method is practiced in the work with the certified environmental product declaration for electricity from the Lule River.

note 8

Comparisons with other electricity producers

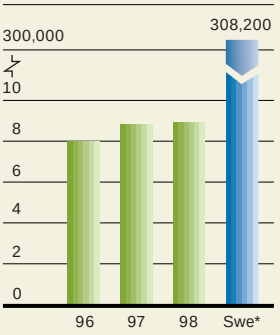
In the tables below, Vattenfall is compared to a number of major electricity producers in the Nordic region. The comparison is based on information for 1997 disclosed in the environmental reports of these companies and in Statkraft's annual report. The specific emissions (g/kWh) of sulphur, NO_X and CO_2 have been calculated by dividing the emissions from electricity generation by the amount of electricity generated – in those cases where the specific emissions are not directly stated in the reports. It has not been possible to calculate the emission data for Sydkraft using this method.

Diagram 10
Emissions to water, BOD (tonnes)



* Total for Sweden, 1995

Diagram 11
Emissions to water, COD (tonnes)



* Total for Sweden, 1995

Comparison with electricity producers

	Electricity generated (TWh)	Main production mix (%) Nuc	Hydro	Wind	Fossil	Bio	CO_2 (g/kWh)	S (mg/kWh)	NO_x (mg/kWh)
Vattenfall (Sweden)	79.1	54.4	45.5	0.02	0.1		0.14	0.07	0.40
Sydkraft (Sweden)	26.5	62	37	0.06	0.02	0.01	–	–	–
Graninge (Sweden)	2.7		100				0	0	0
Statkraft (Norway)	27.5		100				0	0	0
IVO (Finland)	22	35	39		22	4	160	120	280

Analysis comparing total sales with total CO_2 emissions (electricity and heat generation).

Company	Total CO_2 emissions (tonnes)	Total sales (SEK billion)	CO_2/total sales (tonnes/SEK m)
Vattenfall (Sweden)	237 x 10^3	28	8.5
Sydkraft (Sweden)	803 x 10^3	15	55
Graninge (Sweden)	34.1 x 10^3	3	11
Statkraft (Norway)	–	7	–
IVO incl. Gullspång	7.1 x 10^6	20	355

Diagram 12
Radioactive waste (tonnes)

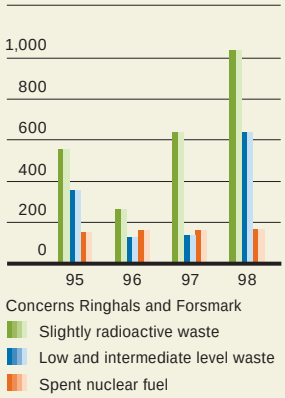
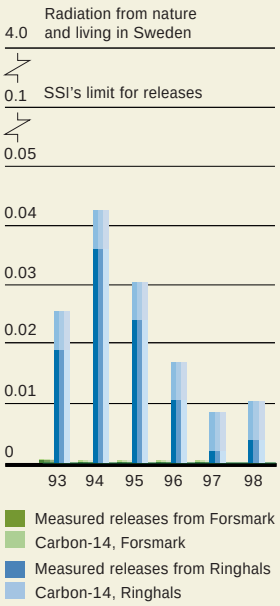


Diagram 13
Radioactivity, mSv/year (radiation dose)



Products

note 9

Vattenfall's environmental declarations

Vattenfall provides environmental declarations for its products, with relevant and factual information concerning the environmental aspects of the manufacturing and use of the product in question. The environmental declaration also includes information on resource usage, pollutants and waste generated. Quantitative LCA data are reported for electricity. In the case of other products, the environmental declaration is mainly qualitative since several of Vattenfall's products are customized. Environmental declarations for different products and services can be readily obtained from the sales organization concerned.

During 1998, Vattenfall has worked on developing a certified environmental product declaration, EPD(™), for electricity from the Lule River. This type of declaration provides certified and third-party approved information on the use of resources and the environmental impact of products and services, based on the life cycle approach. The EPD(™) system is administered by the Swedish Environmental Management Council, which is the official body for environmentally certified companies, organizations, products and services. The Council is the official body for EMAS registration in Sweden. The declaration is expected to be published in early 1999 at the Council's web site, *www.miljostyrning.se*.

note 10

Sales of source-specified or eco-labelled electricity

Sales of source-specified electricity amounted to 2.25 TWh, thereby accounting for 2.7 per cent of the total electricity generated by Vattenfall in the Nordic region, 83.3 TWh. The sale of source-specified nuclear power accounts for the largest share. Sales of VindEl (electricity from wind power plants) and VattenEl (electricity from hydro power plants) are increasing. All VindEl is sold with the Swedish Sound Environmental Choice label and the share of eco-labelled VattenEl is increasing. Vattenfall's generation and sales of environmentally sound electricity will be examined by external auditors during spring 1999.

note 11

During 1998, Vattenfall sold a number of different products and services which reduce the customer's energy use and minimize the environmental impact. One such example is Electricity Agreements with savings guarantees. This product has been purchased by the tools manufacturer, Luna, in Alingsås. In this agreement, Vattenfall guaranteed a 5 per cent reduction in oil use. An adjustment of Luna's existing heat recovery system led to a 13 per cent reduction. Luna has thereby managed to cut its oil use by 90 m^3 per year.

Accounting Principles
Environmental Accounts

Scope

These accounts have been compiled for units in Sweden where Vattenfall is a majority shareholder. Minority interests are also included. The accounts apply to:

- Both nuclear power plants, even though Vattenfall only owns 74.5 per cent of Forsmark,
- All hydro power plants,
- All electricity-generating combustion facilities,
- All wind power plants,
- Swedish electricity distribution companies (815,000 customers),
- Thermal power plants owned by the parent company and subsidiaries,
- The whole of Vattenfall Naturgas AB, even though Vattenfall only owns 51 per cent of the company.

Furthermore, facilities for "Färdig Värme", leased and operated by Vattenfall to deliver heat to customers, are included.

Data on Vattenfall's activities in other countries are not included in the accounts.

Changes in the scope of the activities of the Group (acquisitions and disposals) have not been taken into account in year by year comparisons for Vattenfall. Changes in group composition have mainly occurred within the electricity distribution and heating operations.

Data only refer to the environmental impact of our own production and do not include data from suppliers. Therefore, the input/output analyses are not fully based on the LCA approach. Where the use of resources cannot be quantified, only resource flows are shown.

Environmental Information System

An environmental information system for the Group has been introduced and is now being tested for the first time, in parallel with manual data collection from the different activities.

In the case of certain chemicals, purchased quantities are specified instead of the annual usage. Consequently, quantities may vary considerably from one year to the next, depending on when the purchase was made.

Calculation Principles

In the case of combined heat and power plants, the fuel used and emissions have been distributed between electricity and heat according to the amount of each type of energy generated.

Emissions from small heating facilities (<10 MW) are calculated on the basis of standard values or inspection values. Emissions for large combustion facilities are mainly measured values. Ash quantities are estimated.

CO_2 emissions only refer to the net amount entering the atmosphere from the combustion of fossil fuels. CO_2 emissions from the combustion of biofuels are not included since these emissions are considered part of the ecocycle.

The same definitions and calculation methods were used in 1998 as in 1997. The values for 1997 are specified in brackets.

Energy units

Power

A measure of the rate of work.
Expressed in watts (W).
1 kW (kilowatt) = 1,000 W
1 MW (megawatt) = 1,000 kW
1 GW (gigawatt) = 1,000,000 kW

Electrical energy

A measure of power over time.
1 kWh (kilowatt-hour) = 1 kW for one hour
1 MWh (megawatt-hour) = 1,000 kWh
1 GWh (gigawatt-hour) = 1,000,000 kWh
1 TWh (terawatt-hour) = 1,000,000 kWh

Voltage A measure of electrical potential.
1 kV (kilovolt) = 1,000 volts (V)

Energy units in practice

1 kWh is enough to run a car's heater for an hour or a 60 watt bulb for almost 17 hours.

1 MWh is enough to heat a house for a couple of weeks and can be generated in 20 minutes at Vattenfall's largest wind farm in windy weather.

1 GWh is enough to meet the energy needs of an average town with a population of 90,000 for 8 hours and can be generated in one hour at the Harsprånget hydro plant or in 20 minutes at the Forsmark nuclear plant.

1 TWh is enough to run two large newsprint machines for a year or to power all of Sweden's railways, subways and trams for 5 months and can be generated by the Ringhals nuclear plant in 12 days.

Glossary

BOD Biological Oxygen Demand. The quantity of dissolved oxygen in water consumed in connection with biological degradation of the organic substances in a water sample.

CFCs Chlorofluorocarbons. A cooling medium used in heat pumps, also known as freon, which is a trade name. CFCs deplete the stratospheric ozone layer, resulting in serious risks to health and the environment. CFCs also contribute to the greenhouse effect.

CHP plant Combined heat and power plant. Plant which supplies both electricity and district heating. Often known as a backpressure plant if linked directly to an industrial process.

CLAB Central interim storage facility for spent nuclear fuel. The facility is located at Oskarshamn.

COD Chemical Oxygen Demand. Cf. BOD.

Compensatory power Power supplied from the owners of one power plant to the owners of another plant on the same river pursuant to a Water Rights Court ruling.

Consortium power Output from a power plant to which several parties have rights.

Conversion efficiency Measure of how much of the energy in a fuel is converted into electrical energy.

Creosote A toxic wood preservative with low biodegradability. The oil is produced by distilling coal tar.

Derivative Financial instrument whose value or change in value is related to an underlying instrument. Derivatives (options, forward contracts and swaps) are often used for risk management (hedging).

District heating Large-scale central heating system – based on hot water or steam covering many different buildings in a particular area.

EL-EX The Finnish electricity exchange.

EMAS Eco-Management and Audit Scheme. European Commission regulation for environmental management and auditing.

EMF Electromagnetic fields.

EMU European Monetary Union.

Färdig El Special one-stop management service where Vattenfall assumes full responsibility for a customer's electricity facilities, including maintenance, and works with the customer on environmental factors and energy efficiency.

"Färdig-products" Name used for a range of Vattenfall products and services, such as Färdig El. Other Vattenfall product lables include Flexibel El as well as electricity where the source is specified, such as VindEl (windpower) and VattenEl (hydro power).

HCFCs Incompletely halogenated CFCs. Used as a coolant in heat pumps. Not as degrading to the ozone layer as CFC but contributes to the greenhouse effect.

Installed capacity The total rated generation capacity of a power station.

ISDA agreement A bilateral framework agreement in accordance with guidelines issued by the International Swap Dealers Association. The agreement regulates the parties' legal obligations in derivative transactions.

ISO 14001 International standard for environmental management systems.

Kraftledningar i Bergslagen 130 kV AB A regional network company.

LCA Life Cycle Assessment, a way of measuring (life cycle inventory) and evaluating (life cycle analysis) the environmental impact of a product or process from cradle (extraction of raw materials) to grave (disposal or recycling).

Local network Electricity distribution network with a voltage of 0.4–20 kV.

mSv, millisievert Unit used to measure the radiation dose to humans.

manSv, mansievert The collective dose which is the average radiation dose, multiplied by the number of individuals in a particular population.

NordPool The joint Norwegian-Swedish electricity exchange.

NO_x Nitrogen oxides are formed during combustion and these contribute to acidification, eutrophication and the formation of tropospheric ozone. Can be hazardous to health.

Ozone, O_3 *1.* Tropospheric ozone can be formed by nitrogen oxides together with hydrocarbons and sunlight. Ozone damages the cell membranes in plants, animals and humans. *2.* The ozone layer in the stratosphere protects the Earth from ultraviolet radiation from the sun. Ozone-layer depletion can cause environmental and health problems.

PCBs Polychlorinated biphenyls are found in the insulating fluid which was previously used in condensers. PCBs are an environmental toxin.

Pool trading Trading on a power exchange or equivalent.

Regional network Electricity distribution network with a voltage of 40–130 kV.

S, Sulphur. Sulphur emissions (e.g. sulphur dioxide) are converted into sulphuric acid in the atmosphere and contribute to acidification.

SF_6 Sulphur hexafluoride is an inert gas used in the insulation of switch gears. SF_6 leakage contributes to the greenhouse effect.

SFR Final repository for radioactive operational waste, located at Forsmark.

SKB Svensk Kärnbränslehantering AB (Swedish Nuclear Fuel and Waste Management Co.). Responsible for the management of radioactive waste.

Spot market Short-term trading on an exchange in electricity for immediate rather than future delivery.

SSI Swedish Radiation Protection Institute.

Thermal power Electricity generated by a gas turbine or steam process.

Transmission income Prices paid by suppliers, customers and network owners for the transmission of electricity over a network.

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