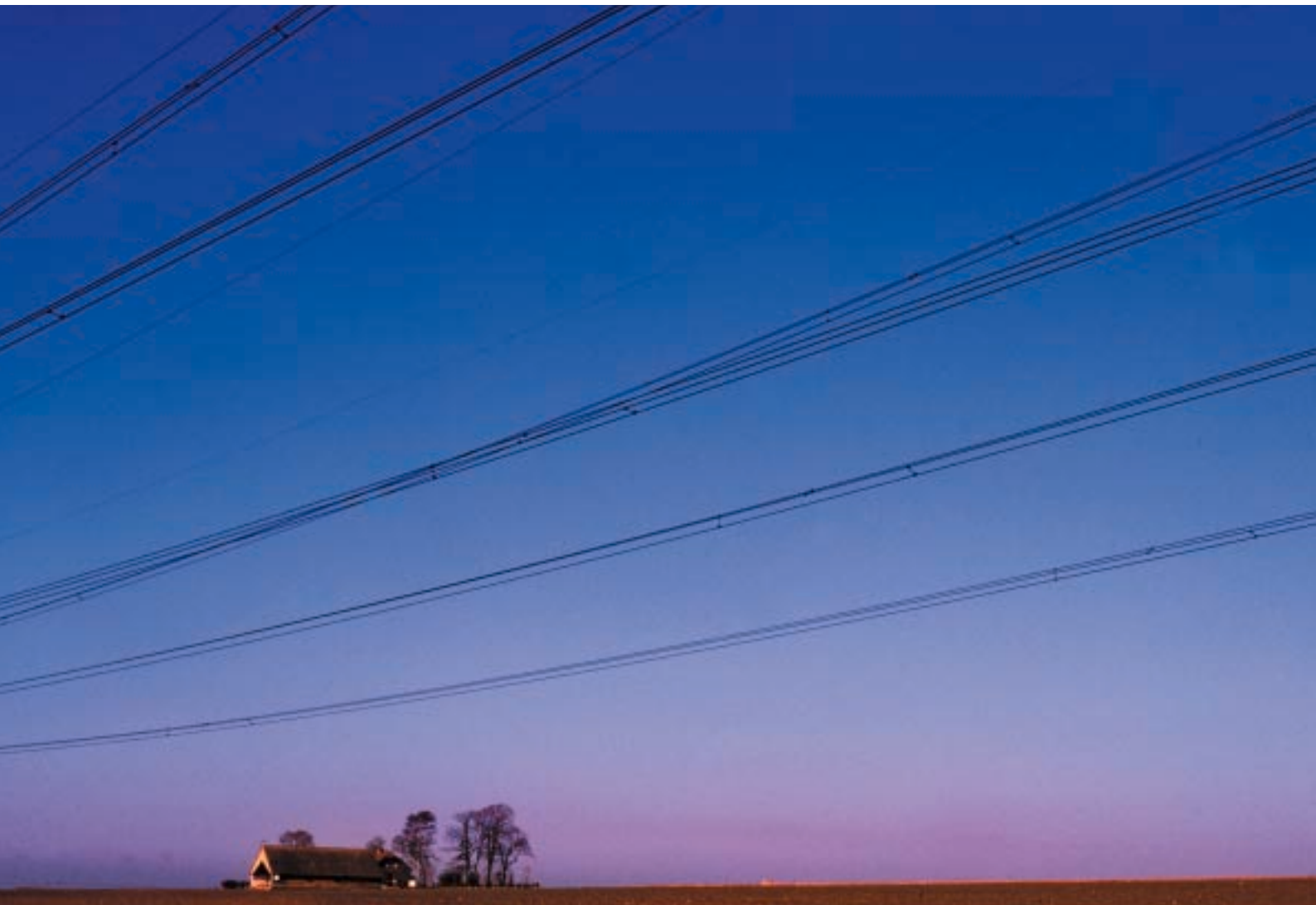
Svenska Kraftnät
Annual Report 2001

Svenska Kraftnät



Our mission

- To offer safe, effective and environmentally adapted transmission of power on the national grid.
- To perform our system responsibility cost-effectively.
- To promote an open and competitive Swedish, Nordic and European electricity market.
- To work towards a robust and flexible electricity supply during times of crisis and war.

Svenska Kraftnät in outline

Svenska Kraftnät is a state-owned utility and was established on 1 January 1992. The company administers and operates the national electrical grid, consisting in total of approximately 16,000 kilometres of 200 kV and 400 kV lines together with stations, interconnectors to neightbouring countries and IT systems. Its duties include system responsibility, making sure that the electricity system is in short-term balance and that its installations work together in an operationally reliable way. Its operations are primarily financed through the fees that power producers and network owners pay to transmit power via the grid.

The number of employees is around 260, the majority of whom work at our head office at Vällingby, Stockholm. We also have offices at Sundsvall, Sollefteå and Halmstad, as well as a training centre at Åsbro. Svenska Kraftnät provides employment for hundreds more people via contract work on the operation and maintenance of the grid, all over the country.

During 2001, the Svenska Kraftnät Group consisted of three subsidiaries and seven associated companies in Sweden, Norway and Finland. In January 2002, another associated company joined the Group, Nord Pool Spot AS.

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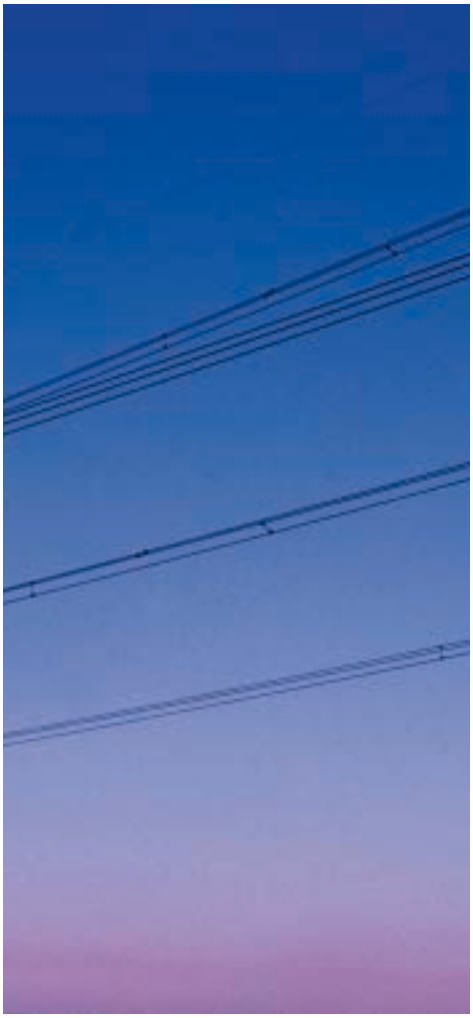

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The year 2001 in brief

Operation during the year

Energy fed into the grid amounted to 125.1 (116.8)[1] TWh. The number of service disruptions on the grid was 211 (194), of which 14 (5) entailed supply outages for customers. Energy non-deliverable due to disruptions amounted to 23 (91) MWh.

Financial facts in brief

- The total operating revenue for the Group were MSEK 2,938 (2,724).
- The specific transmission cost on the grid amounted to SEK 0.0123 (SEK 0.0139)/kWh, a fall of 12%.
- The consolidated income for the year was MSEK 730 (763).
- The Group's return on adjusted equity, after 28 % tax equivalent, was 10.7 (11.3) %.
- The Group's equity/assets ratio was 46.6 (45.1) %.
- Investment in the Group was MSEK 363 (998). Of this, MSEK 255 (418) went into the grid, MSEK 2 (442) into the Swe Pol Link and MSEK 106 (125) into fibre-optic links.

[1] Figures in brackets refer to 2000.

Important operational events

January

- A new 400 kV line went into service between Alvesta and Hemsjö. This boosted the transmission capacity to southern Sweden by approximately 500 MW.

February

- On Monday 5 February 2001, the consumption of electricity in Sweden hit the record level of approximately 27,000 MW due to the severe cold. A high price on the spot market and an appeal by Svenska Kraftnät cut consumption by about 2,000 MW during the critical period.

June

- In order to obtain a uniform network structure, Svenska Kraftnät bought Sydkraft's stake in the 400 kV link to Zealand and sold the corresponding 132 kV link to Sydkraft.
- The cost of maintaining the grid has been further reduced due to a new maintenance procurement for a three year period.

November

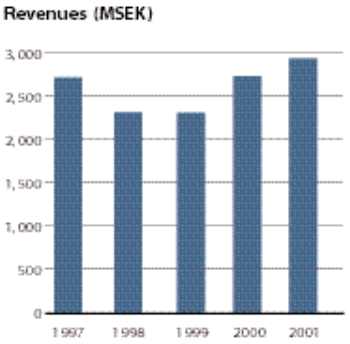
- A new distributing substation at Borgvik in western Sweden went online. The new station will boost the capacity for transmission to Norway by approximately 300 MW.
- A peaking power reserve supplement of approximately 500 MW was purchased following a government decision on 29 November 2001. On the instructions of the government, Svenska Kraftnät is also to make a proposal regarding how the issue of peak power supply might be solved in the long-term. This assignment is to be reported upon in the autumn of 2002.

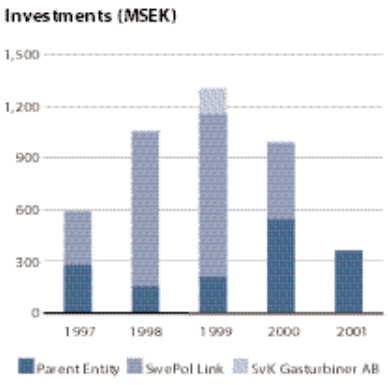
During the year

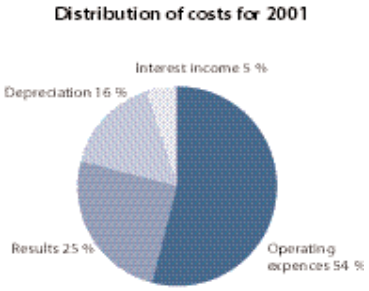
- About 200 caterpillar tractors and diesel generators have been transferred from the Swedish Armed Forces and are being leased to network operators to boost these companies' capability of repairing damaged lines.
- Together with nine Swedish power producers Svenska Kraftnät is taking part in a testing phase for trading in green certificates under RECS (the Renewable Energy Certificate System).

Starting in 2002

- Grid tariffs will be adapted to the Nordic and European electricity markets. The aim is to create similar competitive conditions for the Nordic electricity producers and pave the way for a single European electricity market.







A word from the Director General:

Ten years at the heart of Sweden's power supply

The year 2001 was Svenska Kraftnät's tenth year of operations. It has been a time of rapid evolution for the electricity market, and for us. Svenska Kraftnät's brief has gradually been expanded and new tasks have been added. Nowadays, our operation does not just include the "core activity", the national grid and the electricity system. It also includes national settlement, contingency planning, the power exchange operation in the Nordic area and Europe, the national communications system EDIEL, dam safety, remaining electrification work, consultancy work, heavy haulage, the operation of gas turbines and the expansion of countrywide fibre-optic networks, etc.

Good operational reliability and strong finances

Sweden's national grid is robustly built and can cope with considerable stress and strain. The operational reliability of the network was good throughout 2001, as during the previous year. "Non-delivered energy" because of faults on the grid amounted to 23 MWh, i.e. 0.00002 % of the electricity transported on the grid.

Our financial result was MSEK 730, corresponding more than adequately to the yield requirement. This result has been achieved with unchanged grid tariffs and reduced overseas tariffs.

Peak and supplementary power

On Monday 5 February, a new consumption record was set in Sweden. Consumption peaked at 27,000 MW. This could be met by utilizing virtually all of Sweden's production resources, and via imports. The power reserve we had procured in collaboration with the trade organisation Svensk Energi and the balance providers was utilized. The high spot price and Svenska Kraftnät's appeal to the public for restraint cut electricity consumption by approximately 2,000 MW during the critical period.

In the run up to the winter of 2001–2002, the question of whether we have sufficient production capacity in our electricity system was raised once again. On 29 November, the government gave Svenska Kraftnät the task of augmenting the power balance, in both the short and long-term. In December, we procured a power supplement of approximately 500 MW. Our long-term task is to devise a "comprehensive and satisfactory system for dealing with the power problem". A proposal is to be submitted by 1 October this year at the latest.

The motive for these measures is the assessment that Sweden's electricity companies on their own do not have the production capability necessary to cope with supplying electricity when it is very cold. This means that the state has *de facto* expanded its responsibility for the long-term evolution of the electricity supply. In our opinion, such a change to the responsibility scenario should be regulated by law. In all probability, extended powers will be needed if Svenska Kraftnät, as system operator, is also to be responsible for the long-term evolution of the electricity system.

Nordic and European electricity market

Capacity between Norway and Sweden was increased through the reinforcement of the switchyard at Borgvik, in Värmland, which was completed at year-end. Through this and equivalent measures on the Norwegian side, the capacity in-

creased by approximately 300 MW in both directions. During the year, we also decided to invest in a new transformer for the grid in Västerbotten and to take some further steps towards increasing the transmission capacity of the interconnectors to our beighbouring countries.

Through Svenska Kraftnät acquiring half of Sydkraft's previous stake in the cables between Sweden and Denmark across Öresund, we obtained an improved structure, thereby facilitating the continued development of the open Nordic electricity market.

In August 2001, Svenska Kraftnät made a decision about the grid tariffs for the coming year based upon an agreement between the Nordic grid operators dealing with the harmonisation of tariffs. This entails a shift of just over 5 % (MSEK 100) of the grid tariff from entry to exit fees. This measure is taken with the aim of creating more homogeneous conditions for the generating companies on the Nordic electricity market. The new tariff also constitutes an adaptation to the trend occurring all over the European electricity market. For Svenska Kraftnät, this tariff alteration will not impact upon revenue.

During the year, the EU failed to implement the harmonisation of legislation and rules of play on the European electricity market, which many had hoped for. Nevertheless, the deregulation of the electricity market continued.

Our associated company, Nord Pool ASA, is playing an important role in the development of the power exchange operation in Germany and will become a joint-owner of the German power exchange currently being set up.

Fibre-optic expansion

Svenska Kraftnät and the collaborating companies have now connected around 190 municipalities to the countrywide fibre-optic network, which we have been commissioned by the government to install. During the autumn, it became clear that expansion in the remaining parts of the country would not be able to occur along commercial lines.

We have now embarked upon closer collaboration with the Swedish Rail Administration to try to reduce the need for new investment. The government has appointed a negotiator whose brief is to try to find "tailor-made" solutions in discussions with those municipalities which cannot be connected along commercial lines.

Through the fibre-optic expansion, which is primarily being financed through leasing to external customers, we will obtain the basis for an effective communications network for the grid and the electricity system.

Good work

An operation like ours is greatly dependent on skilled and committed co-workers. This is particularly true since Svenska Kraftnät is a relatively small organisation and works to a great extent via contractors. The benchmarking studies carried out show that this is an effective organisational form. In several studies like this, Svenska Kraftnät has shown itself to be one of the world's most efficient grid operators, a position which we intend to keep. I would like to thank all our co-workers for their good work during 2001.

Stockholm, Sweden, February, 2002
Jan Magnusson

The Svenska Kraftnät Group

Subsidiaries

SwePol Link AB

The company's brief is to operate and maintain a DC link between Sweden and Poland. The link has a capacity of 600 MW. 2001 was the first full year of operation for the link. Total exports to Poland were approximately 1,700 GWh.

Svenska Kraftnät's stake in the share capital is 51 %, Vattenfall AB owns 48 % and Polish grid operator Polskie Sieci Elektroenergetyczne SA owns 1 %.
Turnover during 2001 was MSEK 198.

A wholly-owned subsidiary of SwePol Link AB is **SwePol Link Poland Sp.z.o.o.** which owns the part of the DC link located in Polish territory.
Turnover during 2001 was MSEK 101.

Svenska Kraftnät Gasturbiner AB

The company was established at the end of 1999 to enable Svenska Kraftnät to safeguard resources in the long-term if disruptions arise in the power system. The company is wholly-owned by Svenska Kraftnät.

During the year, the company bought the gas turbine power plant at Hallstavik from Vattenfall. The power plant is to go online during 2002–2003 and will have a capacity of approximately 120 MW.
Turnover during 2001 was MSEK 50.

Svenska KraftKom AB

The company is wholly-owned by Svenska Kraftnät and conducts certain development and marketing operations in the telecom sector on behalf of the utility.
Turnover during 2001 was MSEK 2.

Associated companies

Nord Pool ASA

Nord Pool acts as an agent in the trading of electrical power on behalf of the players on the Nordic electricity market. The head office is in Oslo and there are branch offices in Stockholm, Helsinki and Odense. Nord Pool is also active on the European market, for instance via a 35 % co-ownership of Leipzig Power Exchange which is expected to merge, at the beginning of 2002, with the other German power exchange EEX in Frankfurt.

During 2001, turnover on the physical spot market amounted to approximately 112 TWh. Turnover on the futures market amounted to approximately 910 TWh and in the clearing operation to 1,748 TWh.

Svenska Kraftnät owns 50 % of Nord Pool ASA, the other 50 % being owned by Statnett SF.
Turnover during 2001 was MNOK 21,304.

Nord Pool Spot AS

In January 2002, physical trading (the spot market) was hived off to a separate company, Nord Pool Spot AS.

The company is currently owned by Svenska Kraftnät, Statnett SF and Nord Pool ASA in equal parts. The intention is that the other Nordic system operators, Fingrid Oyj, Elkraft System a.m.b.a. and Eltra a.m.b.a. will be offered joint-ownership of Nord Pool Spot AS.

Nord Pool Consulting AS

The company sells consultancy services on deregulated electricity markets. Assignments are carried out using both inhouse staff and experts on loan from the owners. The company has its offices in Oslo adjacent to Nord Pool's head office. Major assignments during 2001

included deregulation surveys in Japan and Slovenia.

Svenska Kraftnät owns one third of the company. Other co-owners are Nord Pool ASA and Statnett SF.
Turnover during 2001 was MSEK 7.

EL-EX Sähköpörssi Oy
The company operates a power exchange for hourly trading (Elbas) and acts as intermediary for Nord Pool's power exchange products in Finland. Hourly trading is used by Swedish and Finnish electricity market players to adjust their electricity balances after the spot market has closed. The mediation and marketing of Nord Pool's products in Finland includes the electricity spot market, electricity futures trading and clearing.

During the year, a new trading system was developed and taken into service. The new system has enabled an improved level of service to customers through trading now being conducted around the clock.

The company is owned in equal parts by Svenska Kraftnät and Fingrid Oyj.
Turnover during 2001 was MEUR 1.6.

Triangelbolaget D4 AB
On behalf of the co-owners, the company administers the opto links Stockholm-Oslo-Gothenburg-Malmö-Stockholm. Revenues from leasing go directly to the co-owners. Its first customers put their links into service at the beginning of 2001.

The company is owned in equal parts by Svenska Kraftnät, Vattenfall Connection AB, Birka Nät AB and Sydkraft Bredband AB.
Turnover during 2001 was MSEK 17.

Kraftdragarna AB
Kraftdragarna AB's primary task is to secure, on behalf of its owners, transportation readiness regarding transformers, reactors and other heavy components forming a part of our electricity supply.

Kraftdragarna has built up its collaboration with Statnett heavy haulage in order to further strengthen its readiness preceding breakdown transportation.

Svenska Kraftnät owns 50 %, Vattenfall AB 25 % and Vattenfall Regionnät AB 25 %.
Turnover during 2001 was MSEK 14.

STRI AB
The company conducts R&D in the power transmission sector, mainly as commissioned by its co-owners. The biggest assignments for Svenska Kraftnät during 2001 were forecasts on the loading capacity of power lines, as well as field measurements of, among other things, telecom interference on the newly built power line Alvesta-Hemsjö.

Svenska Kraftnät owns 25 %, ABB AB 50 %, Statnett SF 12.5 % and Vattenfall AB 12.5 %.
Turnover during 2001 was MSEK 49.

Elforsk AB
Elforsk conducts joint R&D operations for Sweden's power industry.

Svenska Kraftnät is primarily involved in the parts which concern the transmission of power and the evolution of the electricity market. The most important focal points are environmental issues, the maintenance and renewal of installations and support for doctoral candidate projects.

Svenska Kraftnät owns 25 % and Svensk Energi owns 75 %.
Turnover during 2001 was MSEK 106.

Report of the Board of Directors

Reported figures are for 2001, with comparative figures for 2000 in brackets.

Organisation and operations

During 2001, the Svenska Kraftnät Group consisted of three subsidiaries and seven associated companies in Sweden, Norway and Finland. In January 2002, a further associated company, Nord Pool Spot AS, was added.

Svenska Kraftnät's main brief is to manage and operate Sweden's national grid and interconnectors. Svenska Kraftnät is also the systemresponsible authority under the Electricity Act, which entails being responsible for the day-to-day instantaneous electricity balance and the overall operational reliability of Sweden's power system. Additionally, Svenska Kraftnät is also the contingency planning authority under the Power Contingency Act, being responsible for the energy supply sub-function within the civil sector of the total defence. Another of Svenska Kraftnät's tasks is coordinating the country's dam safety work.

Svenska Kraftnät's business operations

The objectives the government has set for Svenska Kraftnät's business operations in the government appropriation document for 2001 are described below.

Yield objective

Svenska Kraftnät must achieve an average earning capacity on adjusted equity, after deductions for tax equivalent, of 7 %. Costs for remaining electrification work, approx. MSEK 10 per annum, are deducted from the yield requirement.

The earning capacity was 10.6 (11.3) % on adjusted equity, entailing that the objective of 7 % was surpassed.

	2001	2000	1999	1998	1997
No. of service disruptions on the grid	211	194	228	207	291
As above but entailing power outages	14	5	10	8	9
Non-delivered energy, MWh/annum	23	91	96	84	279

Operational reliability

Operational reliability is on a par with recent years, which is deemed reasonable from a socio-economic point of view.

The number of service disruptions on the grid was 211, of which 14 entailed supply outages for customers. The outages were primarily due to a high occurrence of thunderstorms during the summer. Non-deliverable energy amounted to 23 MWh, down on last year. The table below shows service disruptions on the grid over a five-year period.

Cost-effectiveness

Our cost-effectiveness must, in compliance with government requirements, be on a par with comparable companies. Our effectiveness is constantly being measured in comparative studies with other equivalent companies. These studies, known as benchmarking, show that Svenska Kraftnät is one of the most cost effective grid operators in the world.

Research and development

Svenska Kraftnät's research and development (R&D) work is primarily carried out via assignments to the jointly-owned development companies STRI AB and Elforsk AB. Additionally, Svenska Kraftnät contributes to and supports doctoral candidate projects and degree work at universities of technology.

Svenska Kraftnät and ABB are collaborating in the development of the transformer stations of the future. A demonstration project has been conducted at the Untra power station using new technology deemed capable of leading to reduced maintenance requirements, among other things. Rationalisation is also the goal for several other projects, e.g. new weather forecasting models in order to increase the utilization of lines and power station equipment while retaining operational reliability.

Svenska Kraftnät, together with Elforsk AB, the industry and the Swedish National Energy Administration, is collaborating in the ELEKTRA programme. This annually supports 40 or so doctoral candidates, primarily within the field of electrical engineering.

During 2001, MSEK 19 went into R&D.

Nordic and European collaboration

Within the Nordic transmission system operators' coordinating body, Nordel, a number of collaboration projects are being conducted. During 2001, the following issues have been dealt with.

A harmonisation of the tariff systems of the Nordic countries has been implemented in order to ensure a more level playing field with regard to competition for the players on the Nordic market.

The work of devising a compensation system for transmitting power through third party territories in the Nordic area has been a prioritized task during the year. This has resulted in an agreement between the system operator companies regarding compensation for grid losses arising during 2002 as a result of such transmissions. The next step is to develop a model that also covers compensation for investment costs.

A joint IT system has been produced to enable the market players to trade in green certificates under RECS (the Renewable Energy Certificate System). RECS is a voluntary system for international trading in green certificates.

The European cooperation organization, European Transmission System Operators (ETSO), is working towards finding a more harmonised system of rules in order to advance the development of the single European electricity market. Work has until now primarily focused on reimbursement for the transmission of electricity through third party territories, known as transiting, and methods for dealing with bottlenecks. An initial step has been taken through producing a model for covering system operators' costs for such transmissions. A payment system between system operators enables the removal of current trade barriers in the form of border charges. In its initial stage, the system primarily concerns continental Europe, but also includes imports from adjacent countries, among these the Nordic ones. The system will be introduced via an agreement between the system operators concerned. It is intended to come into force on 1 March 2002, and then remain in force for the rest of the year.

Electrification scheme

The subsidised scheme for connecting remote households to the public electricity network has been managed by Svenska Kraftnät as an assignment since 1999. A decision was made in March 2001 concerning subsidies totalling MSEK 19.9 for electrifying 28 properties.

Svenska Kraftnät's contingency planning

Measures implemented in Svenska Kraftnät's contingency planning during 2001 are set out below.

Command organisation

The current organisation that assumes command of operations in the event of a heightened state of preparedness has the necessary action readiness. Within the electricity industry, a new collaboration structure has been created for severe disruptions to the supply. During 2002, this organisation will be developed into a contingency organisation which can be used during all types of disruptions during peacetime and wartime. To increase the electricity supply's ability to deal with severe disruptions, training courses have been held for around 450 participants from various power companies.

Technical contingency measures

The possibilities of transferring to local production in the event of severe disruptions during heightened preparedness, known as island operation, have been improved. For example, this has been achieved via:

- the conditions for island operation having been analysed through technical tests conducted at power stations and measures implemented at installations
- two gas turbines at Hallstavik being purchased.

Contingency measures are to be devised in such a way that they can also be implemented in the event of severe disruptions during peacetime.

Svenska Kraftnät's disruption reserve, which is needed for grid operation as well as contingency purposes, is financed to two thirds by grid charges and to one third by contingency funds.

Communications

A study has been carried out to ascertain the mutual dependency of the power and telecom functions on each other. Measures will be implemented to strengthen the resilience of the telecommunications system.

Support for affected electricity companies

Svenska Kraftnät has taken over around 200 caterpillar tractors and just as many diesel generators from the Swedish Armed Forces. The caterpillar tractors have been leased to the network operators at cost price in order to boost these companies' capability to repair damaged lines. Experience of disruptions during the winter of 2001/2002 shows that this measure has improved the network companies' prerequisites for rapidly rectifying faults on networks.

Repair resources and international efforts

The capability to repair damaged equipment has been improved through changes being made to both the organisation and the equipment. Additionally, mobile repair units have been trained.

The repair units are acquiring the competencies that will also allow them to be used for international peace-making and humanitarian efforts. One of the units has taken part in the exercise Nordic Peace 2001 in Norway.

Dam safety and high flows

A handbook has been produced to simplify the county administrations' supervision of dam safety. To aid the work of reducing damage during high flows, Svenska Kraftnät has also produced a report based upon the floods in southern Norrland and western Sweden during 2000. The report describes the causes and analyzes the possibilities of reducing damage in the future. Additionally, a computer-based river simulator has been developed. The simulator can be used as a tool for training operating staff and for analysing the flow dynamics of regulated rivers in greater depth.

International collaboration

Collaboration between the energy and contingency planning authorities and the system-responsible network companies in the Nordic area is constantly evolving.

Risk and environmental analysis

The commercial risks for Svenska Kraftnät are considered limited.

The transmission operation is both long-term and stable. The customer base mainly consists of well-established and stable companies with good equity/assets ratios. Our foreign currency exposure is limited. Svenska Kraftnät's equity/assets ratio is high and the required volume of borrowing is low. Consequently, interest charges are low and the interest-rate risk is slight.

Svenska Kraftnät has the system responsibility for Sweden's electricity system and is also responsible for balance settlement vis-à-vis the balance providers. In order to reduce the credit risk posed by national balance settlement, Svenska Kraftnät demands financial security from the balance providers. This system is currently under review as recently proposed legislation will be better able to regulate the situation should a balance provider become insolvent.

The fibre-optic activities are being conducted in compliance with the government assignment of August 2000. In the inquiry carried out in the autumn of 1999, and which forms the basis of the assignment, Svenska Kraftnät called attention to the fact that there was a risk that expansion to include some municipalities would not be economically justifiable. This assessment has been borne out by the recession in the telecom sector. During the autumn of 2001, Svenska Kraftnät informed the government of this.

The risk of operational disruptions entailing consequences that are more serious for customers on the grid is considered slight. The grid is robustly built and has good possibilities for reserve feeds, entailing that if a line is disconnected power can take other routes to the customer.

The risk of power shortages was reduced by way of the temporary agreement reached in the autumn of 2000 between Svenska Kraftnät and trade organisation Svensk Energi, and which will improve the power balance by approximately 1,000 MW. Furthermore, supplementary power of approximately 500 MW has been purchased following a government decision during the autumn of 2001. Svenska Kraftnät has additionally been commissioned by the government to make a proposal regarding how the issue of the power supply might be solved in the long-term. The assignment is to be reported on in the autumn of 2002.

Group summary for 2001

Turnover in the Svenska Kraftnät Group rose by MSEK 214, or 7.8 %, from MSEK 2,724 to MSEK 2,938. Of this amount, network and system revenue rose by MSEK 188, fibre-optic operation revenue by MSEK 16 and government grant for the contingency planning operation by MSEK 11.

Group operating expenses amounted to MSEK 2,092 (1,903). The rise in operating expenses is largely due to commercial operation of the SwePol Link having been under way for the whole year, compared with only five months during 2000.

Staff costs rose by MSEK 18, among other things due to a larger allocation to the pension liability. A repayment from Alecta (formerly SPP), booked as income during 2000, reduced social charges for the year.

Other operating expenses for the Group rose by MSEK 85. The cost of the newly established power reserve of 1,000 MW was MSEK 150. Costs for energy losses during transmission on the grid evolved beneficially, falling by MSEK 108. Furthermore, costs fell for the control centre operations, nowadays under our own management at Råcksta and Sollefteå.

Group depreciation for the year on tangible fixed assets rose by MSEK 86. The largest impact was by subsidiary SwePol Link.

Share of income from participations in associated companies amounted to MSEK 37, MSEK 16 up on 2000. Nord Pool ASA has largely contributed with this entire result. Depreciation of goodwill is included at just over MSEK 3 (3).

The operating income for the Group is MSEK 883, an improvement of MSEK 41 on 2000.

Group interest income rose by MSEK 6 during 2001 since the liquidity of the subsidiaries was higher during this year than last. Interest charges amounted to MSEK 159 (75), as a result of costs for financing loans for the SwePol Link being MSEK 77 higher than during 2000.

Net income for the year, MSEK 730 (763), entails an earning capacity of 10.7 (11.3) % on adjusted equity.

Reporting by business segment

Here the results of business operations, as regards transmissions on the grid, the system responsibility, companies exposed to competition and the opto operation, are accounted for and commented upon. The result for the contingency planning operation is accounted for separately in this section.

Of all the business segments, transmission on the grid is the entirely dominant one. It accounts for 89 % of the total revenues for the year.

Transmissions on the grid – Network Services

The grid tariff consists of a usage portion and a capacity portion. The capacity fee is based on yearly accounts for entry and exit power at each connection point. The fee varies geographically across the country in a way that mirrors costs. For 2001, the fee for entry power was SEK 38/kW in the north, falling linearly with latitude to SEK 2/kW in the south. For exit power, the relationship was the reverse.

During the year, it was decided to change the tariffs for 2002. This means that the basic structure of the tariff will be retained, but the relationship between entry and exit fees on the grid will change from approximately 35/65 % to approximately 25/75 %.

Revenue from transmission

During the year, transmissions on the grid have amounted to 122.3 TWh. Network fees raised MSEK 1,780. Of these, the capacity fee accounted for around 55 (55) % and the usage fee for around 45 (45) %.

Revenue from transmission to/from other countries fell as the special fees on the overseas interconnectors were gradually removed. During 2002, these revenues will cease entirely, according to plan.

The table below shows transmission revenues, broken down into grid, interconnectors and miscellaneous.

Revenue from transmission	**2001**	**2000**
Grid		
Capacity fees	983	1,003
Usage fees	797	808
Subtotal	1,780	1,811
Overseas interconnectors		
Capacity fees	1	43
Usage fees	72	103
Subtotal	73	147
Miscellaneous revenues	164	216
Total revenues	2,017	2,173
No. of customers connected to the grid	**29**	**28**

Transmission costs

One broad objective for Svenska Kraftnät is to have the lowest possible transmission costs combined with good operational reliability. A key figure when following the cost trend is the specific cost in öre*/kWh, shown in the table below.

Transmission cost, öre*/kWh	**2001**	**2000**
Grid, in total	1.23	1.39
of which grid losses	0.33	0.45
Excluding network losses	0.90	0.94

*1 öre = SEK 0.01

As indicated in the table, the specific transmission cost has fallen from 1.39 to 1.23 öre/kWh, i.e. by 12 %.

Power transmission via the grid and energy losses

The total number of entry accounts has risen slightly during the year. The total number of exit accounts has fallen slightly. This is primarily due to electricity companies rationalising their accounts. The transmitted volume of energy has been greater than during 2000.

Power transmission	**2001**	**2000**
Subscribed capacities, grid		
Entry accounts, MW	20,226	20,140
Exit accounts, MW	21,294	21,708
Entry energy grid, TWh	125.1	116.8
Exit energy grid, TWh	122.3	113.8
Max. exit power from grid, GWh/h	19.5	18.9

The table below shows the transmission losses on the grid:

Grid	**2001**	**2000**
Energy losses, TWh	2.8	3.0
Proportion of exit energy, %	2.2	2.7
Max. power losses, MWh/h (hour of max. energy losses)	753	712

Energy losses for the year were 7 % down on 2000, which was a wet year with periodically substantial transmissions from northern to southern Sweden.

System responsibility with balance settlement – the Balance Service

System responsibility includes managing the national balance between the production and consumption of electricity. This is achieved via the Balance Service at Svenska Kraftnät, which operates round the clock.

At the turn of the year 2000/2001, Svenska Kraftnät had balance responsibility agreements with 36 companies – balance providers – in Sweden. These companies are responsible for routinely planning the balance between entry and exit power. Settlement and financial adjustment of the imbalances is then carried out after the event.

The difference between the bought and sold balance power, i.e. net earnings from the Balance Service, amounted to MSEK 138 (112). The increase can be explained by large imbalances at the beginning of 2001 and periodically high regulating power prices. The cost of system operation services was MSEK 162 (161). Several cost items are, however, difficult to distribute between transmission on the grid and the system responsibility.

The network owners' reporting of preliminary and final load profile shares to Svenska Kraftnät is now mainly carried out on time, but not always electronically, as specified by the current stipulations.

The reporting of hourly measured values from the network owners to Svenska Kraftnät is to an increasingly greater degree working, with regard to both time and quality, in compliance with current stipulations. Svenska Kraftnät reports both the balance power and the final power in compliance with the times agreed upon with the balance providers in the balance obligation agreement.

Sums which have been redistributed upon final settlement have varied between MSEK 11.4 (January 2000) and MSEK 1.7 (June 2000). The finally settled volumes of power constitute approximately 1 % of the profile deliveries.

During the year, twelve balance providers have ceased trading. Two of them have been terminated by Svenska Kraftnät for non-payment. This has led to credit losses for Svenska Kraftnät totalling MSEK 5. Three new companies have been added to the number of balance providers during the year.

Operations exposed to competition

Companies exposed to competition in the Group are Nord Pool ASA, Nord Pool Consulting AS, EL-EX Oy and Kraftdragarna AB. These are associated companies and are reported using the percentage of capital method. Shares of earnings for 2001 amounted to MSEK 37, compared with MSEK 21 for the same period in 2000. Nord Pool accounts, by and large, for the entire share of earnings.

The fibre-optic operation

Svenska Kraftnät, together with other fibre-optic network owners, has been commissioned by the government to connect all of the country's major municipal centres to a new fibre-optic backbone. At year-end, 188 of Sweden's 289 municipalities had been connected to the network. At present, inquiries are being conducted into the possibilities of and prerequisites for connecting the remain-

ing municipalities. Among other things, the possibility is being investigated of coordinating the expansion of municipal IT infrastructure on the regional and local levels with the expansion of the fibre-optic backbone. Furthermore, close collaboration has been entered into with the Swedish Rail Administration with the aim of reducing the need for new investment.

Svenska Kraftnät is planning to put a new fibre-optic link into service between Stockholm and Haparanda during 2002. It will be supplemented during the year by an inland link through Norrland from Luleå via Porjus at Luleälven to Västerås. Additionally, certain minor expansions are being planned in order to cope with the communications requirements of the grid.

The commercial fibre-optic operation's revenues rose by MSEK 16 to MSEK 45, due to the customer base increasing during the year. The operating result was MSEK 22, an improvement of MSEK 3 on last year. During the year, maintenance costs of a non-recurrent nature impacted on the operating result to the tune of MSEK 5. Depreciations for the year rose by MSEK 4 as a result of additional investments. At cost of capital of 7 % on capital employed, the operating result for the year is –2 (0). Investments amounted to MSEK 106 (125).

The external opto operation has been conducted in such a way that it has, in the main, broken even. To this must be added the benefit to the grid operation of being able to build a modern telecommunications network at low cost.

Contingency planning

This operation is financed via subsidies and is thus neutral with regard to Svenska Kraftnät's results. The annual subsidy has been approximately MSEK 200 for the last five years. The funds available for the year of MSEK 283, which include previous years' non-utilized subsidies, have largely been utilized.

Svenska Kraftnät's costs for contingency measures at grid installations are not covered by subsidies. The costs for these measures amounted to MSEK 6 during 2001.

Allocated and utilized sums per subsidy item are reported in the section below.

Government grant

In a departure from the subsidies ordinance (1996:1189), the transferred sums brought forward have been determined in accordance with special government decisions.

The table at the bottom of this page shows the allocated and utilized sums per grant item (kSEK).

Dividend paid in together with a residual item for small-scale energy are reported against a revenue heading linked to the national budget, as shown in the table below (kSEK).

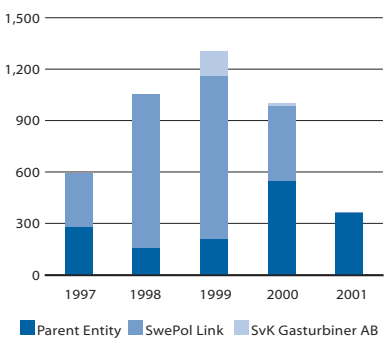
Revenue heading, kSEK

	Sum to deliver	Delivered sum
2116 Utility Svenska Kraftnät's delivered dividend		
- dividend	496,000	496,000
- residual item, small-scale energy	–643	–643
Revenue heading in total	495,357	495,357

Investments

The Svenska Kraftnät Group's investments for the year amounted to MSEK 363 (998).

Investments (MSEK)



The new system for controlling and monitoring the grid went into limited service during the year. This project has not been capitalized, but charged to expenses. Costs have so far amounted to MSEK 124.

Investments can be broken down as follows (MSEK):

	2001	2000
Network investments	255	418
Fibre-optic links	106	125
SwePol Link AB	2	442
Svenska Kraftnät Gasturbiner AB	0	13
Total	363	998

Financing and liquidity

Utility Svenska Kraftnät finances its operations using equity and loans from the National Debt Office. At the end of 2001, borrowing amounted to MSEK 535 and liquid funds to MSEK 130 (104). Svenska Kraftnät's cheque account with the National Debt Office can be used up to a limit of MSEK 1,500.

SwePol Link AB has signed an agreement with Vattenfall AB regarding a loan of up to MSEK 2,750, which is valid until June 2002. The intention is that this loan will be replaced by loans on the financial market and, if required, to a lesser extent using co-owner loans. Svenska Kraftnät has requested and been given authorization by the government to issue co-owner loans of up to MSEK 500 to SwePol Link AB. The government has additionally authorized the National Debt Office to issue a guarantee of up to MSEK 1,000 for loans which SwePol Link AB needs to take out on the financial market.

Borrowing by Svenska Kraftnät Gasturbiner AB fell during the year from MSEK 212 to MSEK 203. This financing took place entirely on the open financial market.

Liquid funds in the Group amounted to MSEK 212 (139).

Government grant, kSEK

Expenditure group 6:13 – Energy supply

	Transferred amount brought forward	Amount assigned for year according to official document	Total liquid assets	Expenditure	Transferred amount carried forward
Grant item 2 - Preferential funds	4,568	9,597	14,165	–9,820	288
Grant item 3 – Contingency planning measures	76,919	200,000	276,919	–273,561	6,000
Government grant	81,487	209,597	291,084	–283,381	6,288

Environment

Svenska Kraftnät is working long-term with environmental issues in the areas of energy consumption, climate and ozone-impacting gases, heavy metals, chemicals and environmental impact. For these sectors, there are comprehensive environmental goals.

In 2000, Svenska Kraftnät was commissioned by the government to introduce an environmental management system. All the preparatory parts have already been implemented, e.g. an environmental survey, policy and objectives. During the year, there has been an investigation into how to improve the monitoring of our environmental work. During 2002, special emphasis will be placed on monitoring environmental standards in investment projects during the procurement of contracts.

During the year, Svenska Kraftnät has also participated in preparations for trading in green certificates under the voluntary international system RECS (the Renewable Energy Certificate System). Green certificates are issued for electricity production based on renewable sources of energy.

During 2001, several environmental measures have been implemented at station installations. Among other things, jointing compound containing PCB has been inventoried and cleared from buildings, the survey of quicksilver has continued and more refrigerating machines using the refrigerant HCFC have been decommissioned.

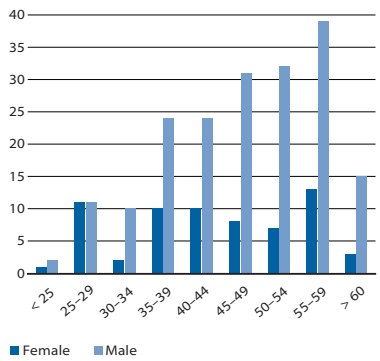
During the year, the operating department has conducted a survey of the environment-impacting emissions arising from Svenska Kraftnät's power deals.

Network concessions for power lines are normally granted for a period of 40 years. At the very latest two years before the concession expires, an application for extending the period of validity must be submitted to the Swedish National Energy Administration. Once an application has been submitted, the concession continues to be valid until the matter has been conclusively dealt with. For all of Svenska Kraftnät's lines, there are valid concessions. During the coming four years, new concessions for around one third (5,650 km) of our distribution system will have to be applied for. In these cases, the precautionary principle for electrical and magnetic fields recommended by the authorities will be applied. This is done by selecting solutions that limit these fields, when this can be done at reasonable cost.

Svenska Kraftnät follows and supports research into magnetic fields and risks to health, in addition to participating in development projects aiming to produce designs that restrict magnetic fields. Together with STRI AB, a compact pylon for 400 kV lines has been developed with magnetic fields that are less than half those that exist around a conventional pylon. Together with industry designers, some new models of pylon have been devised which are especially suitable for built-up areas.

Employees

The number of employees at year-end was 258 (255), of whom 191 (186) were male and 67 (69) female. The average age at the company is approximately 46. Staff turnover is about 8 (6) %. A breakdown by age and gender can be seen in the table below.



A two-year leadership development programme for around 25 managers and "management material" which focused on the outside world, strategy, communications and leadership was completed during the autumn.

The gender ratio at Svenska Kraftnät is uneven and a large number of people will be retiring during the coming ten-year period. As a partial solution to the problems this may entail, an expertise development project started up during the year with the aim of:

- devising routines and aids for further developing staff competencies
- providing all employees with an opportunity for target-oriented development
- enabling a target-oriented and effective recruitment effort.

During the year, approximately SEK 17,000 per employee went into training in project management, languages, IT, economics and internal coordination.

The trainees of the year are three women and three men, who began work in September 2001. Two of them have an MSc, three are graduate engineers and one is a graduate economist and bachelor of business administration.

Incentive programme for increased focus and involvement

Since 2000, an incentive programme has been in place at Svenska Kraftnät. The programme applies to all staff except the Director General, whose financial conditions are laid down by the government.

The goals assessed in the programme are operational reliability, financial results and economic efficiency. The intention is to create strong commitment in order to meet Svenska Kraftnät's primary objective: an operationally reliable and efficient grid.

The incentive programme will evolve over a three-year period in such a way that the maximum result for 2000 was half a month's wages, for 2001 three quarters of a month's wages and for 2002 a full month's wages. The requirements have been set in such a way that the average result can be 70–80 % of the maximum result. During 2000, the result was 80 % of half a month's wages. The result for 2001 is 60 % of a month's wages. The allocation for 2001 is MSEK 5.3, including social charges.

The Board

Svenska Kraftnät's Board during 2001 consisted of nine members, including two staff representatives. Three new members took office on 1 July 2001. During the year, the Board held four ordinary meetings, and work has primarily focused on:

- the economic efficiency of our operations
- major investments
- the introduction of a new system for controlling the power system
- the fibre-optic expansion
- the power issue
- the trend on the power exchange and Nordic collaboration.

Income Statements

MSEK

	Note	Group 2001	Group 2000	Parent entity 2001	Parent entity 2000
Operating revenue					
Network and system revenue	1	2,598	2,410	2,297	2,289
Revenue		45	29	45	29
Government grant for contingency planning	2	283	272	283	272
Capitalized work for own account	3	12	13	12	13
Total operating revenue		**2,938**	**2,724**	**2,637**	**2,603**
Operating expenses					
Payroll expenses	4	–168	–150	–165	–149
Other operating expenses	5	–1,434	–1,349	–1,421	–1,352
Depreciation of tangible fixed assets		–490	–404	–355	–343
Total operating expenses		**–2,092**	**–1,903**	**–1,941**	**–1,844**
Share of income in associated companies	10	37	21	–	–
Operating income	6	**883**	**842**	**696**	**759**
Income from financial investments					
Dividend from shares in associated companies		–	–	0	4
Interest income	7	14	8	8	8
Interest expenses	8	–159	–75	–26	–19
Translation gains/losses on consolidation		0	–7	–	–
Income after financial items		**738**	**768**	**678**	**752**
Tax on income for the year	9	6	0	–	–
Minority shares		–14	–5	–	–
Net income for the year		**730**	**763**	**678**	**752**

Comments on income statements

Operating revenue and costs

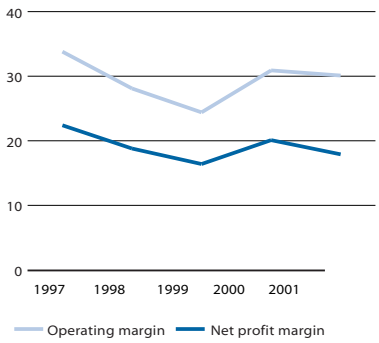
Group operating revenue rose by MSEK 214, or 7.8 %, amounting to MSEK 2,938 (2,724). The increase in revenue is primarily due to the addition of the SwePol Link at MSEK 183, whose exports were 3.5 times greater than during the five months of operations during 2000. The newly established power reserve has provided MSEK 138 in revenue. Transmission revenue on the grid fell by MSEK 31, while revenue from transmissions on the overseas interconnectors fell by MSEK 73, as these tariffs have been reduced during the year. Fibre-optic revenue rose by MSEK 16, as new customers have joined. Government grant for the contingency planning operation have been added at MSEK 283, MSEK 11 up on 2000.

Payroll expenses rose by MSEK 18, among other things due to a higher allocation to the pension liability than last year at MSEK 5. In 2000, a repayment from Alecta (formerly SPP) of MSEK 4 was booked as income, thereby reducing social costs. The number of staff in the Group rose by 3 persons or 1.2 %.

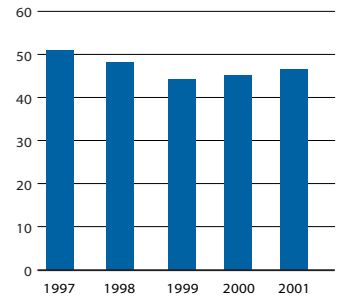
Other operating expenses for the Group rose by MSEK 85. The cost of the newly established power reserve of 1,000 MW was MSEK 150. Costs for energy losses during transmission on the grid evolved favourably, falling by MSEK 108. Additionally, costs for the control centres fell. These are nowadays under our own management at Råcksta and Sollefteå.

Depreciation of tangible fixed assets rose by MSEK 86. The increase in depreciations in the Group is due to the fact that commercial operation of the DC cable – operated by subsidiary SwePol Link – started in August 2000 and had twelve months' depreciation in 2001.

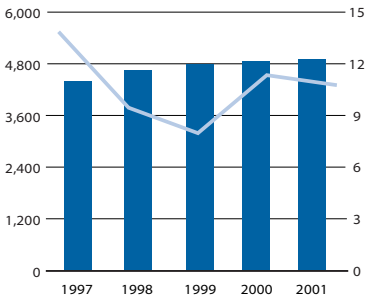
Operating and net profit margin



Equity/asset ratio (%)



Adjusted equity (MSEK) **Return on adjusted equity(%)**



Group operating expenses amounted to MSEK 2,092 (1,903).

Operating income

The operating income for the Group rose by MSEK 41 to MSEK 883. The operating income consists of the day-to-day running of the Group's various business segments plus the income from shares in associated companies. The operating income includes the Group's depreciation.

The main business segment of Svenska Kraftnät's operations is the network operation/system responsibility. In 2001, this segment accounted for 93 % of the operating income or MSEK 824. The business segment has grown in connection with the addition of the SwePol Link.

The fibre-optic operation added to the operating income by MSEK 22, compared with MSEK 19 last year.

Companies exposed to competition in the Group are Nord Pool ASA, Nord Pool Consulting AS, EL-EX Oy and Kraftdragarna AB. Since all are associated companies, only Svenska Kraftnät's share in earnings in each respective company is included in the Group result. Shares in earnings amounted to MSEK 37, compared with MSEK 21 for the previous year. Nord Pool ASA accounts for the entire share in earnings.

The operating margin for the Group was 30 %, which is 0.9 percentage points down on last year.

Net financing

Group interest income amounted to MSEK 14, an increase of MSEK 6. The liquidity of the subsidiaries was slightly higher in 2001 than during last year. Interest expenses were MSEK 159, rising by MSEK 84. The major part relates to costs for financing loans in SwePol Link, which increased by MSEK 77 on last year. The parent entity has had a larger borrowing requirement during the first half of 2001, compared with the same period in 2000, which explains the remaining increase of MSEK 7.

The interest coverage ratio was 5.6 (11.2).

Net income for the year

The net income for the year was MSEK 730, MSEK 33 down on 2000. The net income entails a return of 10.7 (11.3) % on adjusted equity. The net profit margin, with deductions for standard taxation, was 17.9 %, a fall of 2.3 % on 2000.

Balance Sheets

MSEK

	Note	Group 2001-12-31	Group 2000-12-31	Parent entity 2001-12-31	Parent entity 2000-12-31
ASSETS					
Fixed assets					
Intangible fixed assets					
Land rights	11	159	152	159	152
Total intangible fixed assets		**159**	**152**	**159**	**152**
Tangible fixed assets	12				
Buildings and land		649	799	205	204
Machinery and equipment		8,495	8,149	6,420	6,088
Investments in progress		280	615	237	573
Total tangible fixed assets		**9,424**	**9,563**	**6,862**	**6,865**
Financial fixed assets					
Shares and participations in Group companies	13	–	–	12	12
Shares and participations in associated companies	14	150	113	71	71
Tax claim		2	–	–	–
Long-term receivables		26	16	26	2
Total financial fixed assets		**178**	**129**	**109**	**85**
Total fixed assets		**9,761**	**9,844**	**7,130**	**7,102**
Current assets					
Inventories etc					
Inventories		62	63	–	–
Total inventories		**62**	**63**	**0**	**0**
Current receivables					
Accounts receivable		430	264	417	264
Receivables from Group companies		–	–	7	26
Other receivables		26	210	11	81
Receivable from Government cheque account	15	48	–	48	–
Deferred expenses and accrued revenues	16	211	198	193	187
Total current receivables		**715**	**672**	**676**	**558**
Cash and bank balances		**212**	**139**	**130**	**104**
Total current assets		**989**	**874**	**806**	**662**
Total assets		**10,750**	**10,718**	**7,936**	**7,764**

	Note	Group 2001-12-31	Group 2000-12-31	Parent entity 2001-12-31	Parent entity 2000-12-31
EQUITY AND LIABILITIES					
Equity	17				
Restricted equity					
Government capital		600	600	600	600
Restricted reserves		3,394	3,356	3,314	3,314
Total restricted equity		**3,994**	**3,956**	**3,914**	**3,914**
Unrestricted equity					
Unrestricted reserves		1,995	1,766	2,033	1,778
Net income for year		730	763	678	752
Total unrestricted equity		**2,725**	**2,529**	**2,711**	**2,530**
Total equity		**6,719**	**6,485**	**6,625**	**6,444**
Minority interests		**27**	**12**	**–**	–
Deferred tax liability		**0**	**0**	**–**	–
Interest-bearing provision					
Pensions	18	168	141	168	141
Interest-bearing long-term liabilities	19	2,968	3,249	535	589
Non interest-bearing long-term liabilities					
Advances from customers		104	32	104	32
Interest-bearing current liabilities	20	138	132	0	0
Non interest-bearing current liabilities					
Accounts payable		440	442	316	330
Liabilities to Group companies		–	–	24	9
Other liabilities		64	10	46	5
Liability to Government cheque account	15	–	40	0	40
Accrued expenses and deferred revenues	21	122	175	118	174
Total non interest-bearing current liabilities		**626**	**667**	**504**	**558**
Total equity and liabilities		**10,750**	**10,718**	**7,936**	**7,764**
Pledged assets, etc		**None**	**None**	**None**	**None**
Contingent liabilities	22, 23	**20**	**10**	**20**	**10**

Comments on the balance sheets

Balance sheet total

The balance sheet total for the Group was MSEK 10,750 (10,718), an increase of MSEK 32.

Fixed assets

Svenska Kraftnät's fixed assets primarily consist of power lines, stations, buildings, land, fibre-optic links and other technical installations, plus investments in progress. The value of the tangible fixed assets amounted to MSEK 9,424 (9,563), a fall of MSEK 139. Net investments during the year have been lower than depreciation.

The financial fixed assets mainly consist of shares in associated companies. These have risen by MSEK 37, which is equal to the share in income in the income statement.

Current assets

Current assets for the Group amounted to MSEK 989 (874). The increase primarily relates to increased accounts receivable in December 2001, when the newly established power reserve was invoiced at MSEK 138. Liquid assets at year-end amounted to MSEK 212, rising by MSEK 73. The increase is primarily due to improved liquidity in subsidiary SwePol Link during the year.

Equity

Equity at year-end was MSEK 6,719 (6,485), of which MSEK 2,725 (2,711) constituted unrestricted reserves. During the year, MSEK 496 (814) has been distributed to the owner. Profit for the year in the Group was MSEK 730 (763).

Provisions

Provisions to pensions amounted to MSEK 168 (141), i.e. an increase of MSEK 27. The provision is based on an actuarial calculation by the National Government Employee Pensions Board. The provision includes general employment tax at 24.26 % on the pension liability.

Liabilities

Long-term interest-bearing liabilities for the Group consist of the financing of the utility by the National Debt Office at MSEK 535 (589) and external financing of the subsidiaries at MSEK 2,433 (2,660). The borrowing requirement of the Group fell during 2001 by MSEK 281. The current part of this borrowing is MSEK 138 (132). The average rate of interest on loans was 4.9 % for the Group.

Non interest-bearing long-term liabilities consist of advances from customers in the fibre-optic operation and amount to MSEK 104 (32). Contract periods vary between 15 and 25 years and the advances are booked as income during this time.

The net debt liability fell by MSEK 321 and amounted to MSEK 3,062.

Cash Flow Statement

MSEK

	Group		Parent entity	
	2001	**2000**	**2001**	**2000**
The year's operation				
Operating income before depreciation	1,336	1,225	1,051	1,102
Dividend, from associated companies	0	4	0	4
Adjustment for items not included in cash flow	51	19	33	19
Net interest paid	–157	–118	–23	–65
Translation difference	0	–7	–	–
Cash flow from operations	**1,230**	**1,123**	**1,061**	**1,060**
Increase (-)/decrease (+) in inventories	1	–63	–	–
Increase (-)/decrease (+) in current receivables	–43	–281	–118	–190
Increase (-)/decrease (+) in current liabilities	–41	180	–54	80
Cash flow before investments	**1,147**	**959**	**889**	**950**
Investments				
Tangible and intangible fixed assets	–363	–998	–361	–543
Increase in long-term receivable	–12	–14	–24	–
Sale of fixed assets	–	7	–	7
Net investments	**–375**	**–1,005**	**–385**	**–536**
Cash flow after investments	**772**	**–46**	**504**	**414**
Financing				
Change in interest-bearing loans	–275	–437	–54	–911
Advances from customers	72	32	72	32
Dividend	–496	–814	–496	–814
Total financing	**–699**	**–1,219**	**–478**	**–1,693**
Changes in liquid assets				
Liquid assets incl. current investments at beginning of year	139	1,404	104	1,383
Liquid assets incl. current investments at year-end	212	139	130	104
Change in liquid assets	**73**	**–1,265**	**26**	**–1,279**

Comments on the cash flow statement

The purpose of the cash flow statement is to describe the Svenska Kraftnät Group's ability to generate liquid assets in order to continue with its operations. It is a complement to the description of profitability and financial standing in the income statement and balance sheets. Liquid assets means cash and bank balances.

Day-to-day operations

Cash flow from operations increased by MSEK 107 to MSEK 1,230. Cash flow before investments amounted to MSEK 1,147 (959). The increase is primarily due to the improved income before depreciation.

Investments

Group investments amounted to MSEK 363 (998). The investments were made in the parent entity over and above the MSEK 2 in SwePol Link. Last year, investments were made in the parent entity at MSEK 543, and in the subsidiaries SwePol Link, at MSEK 442, and Svenska Kraftnät Gasturbiner AB, at MSEK 13.

Financing

Interest-bearing liabilities in the Group fell by MSEK 275 (437). In the parent entity, the interest-bearing liabilities fell by MSEK 54, and in the subsidiaries SwePol Link, by MSEK 213 and in Svenska Kraftnät Gasturbiner AB, by MSEK 8.

Advances of MSEK 72 have been received from customers regarding the future utilization of Svenska Kraftnät's fibre-optic backbone. Dividend has been paid to the owners at MSEK 496 (814).

Five-year Financial Review

Financial key figures
The table below shows the trend for key figures over the last five years.

The yield requirement regarding earning capacity on adjusted equity was reduced from 9 % to 7 % in 1999.

Group	2001	2000	1999	1998	1997
Return on adjusted equity after standard tax, %	10.7	11.3	7.9	9.4	13.8
Return on total assets, %	8.3	7.7	5.8	7.3	10.6
Return on capital employed, %	10.7	9.7	7.4	9.5	14.0
Equity/assets ratio, %	46.6	45.1	44.2	48.2	51.0
Self-financing ratio, %	338	117	68	92	201
Interest cover ratio, %	559	1,117	808	843	822

Financial results etc for the five-year period
For the last five-year period, the following statements of income are reported in summary for the Group.

Summary of Income Statement	2001	2000	1999	1998	1997
Operating revenue	2,938	2,724	2,307	2,312	2,772
Operating expenses	–1,602	–1,499	–1,409	–1,318	–1,521
Depreciation	–490	–404	–350	–352	–344
Share of income in associated companies	37	21	15	7	9
Operating income	**883**	**842**	**563**	**649**	**916**
Interest income	14	8	35	37	43
Interest expenses	–159	–75	–74	–81	–117
Translation gains/losses on consolidation	0	–7	7	–	–
Tax on income for year	6	–	–	–	–
Minority share	–14	–5	–5	–	–
Net income for year	**730**	**763**	**526**	**605**	**842**

A summary of the balance sheet for the corresponding period is shown below.

Summary of Balance Sheet as at 31/12	2001	2000	1999	1998	1997
Fixed assets	9,761	9,844	9,226	8,245	7,541
Current assets, excl. liquid assets	777	735	398	451	502
Liquid assets	212	139	1,404	1,070	934
Total assets	**10,750**	**10,718**	**11,028**	**9,766**	**8,977**
Equity	6,719	6,485	6,536	6,313	6,125
Loan [1]	3,133	3,393	3,826	2,666	2,309
Other liabilities and pension provision	898	840	666	787	543
Total equity and liabilities	**10,750**	**10,718**	**11,028**	**9,766**	**8,977**

[1] Inclusive of minority interests

Accounting Principles

During 2001, the Svenska Kraftnät Group consisted of the parent entity Svenska Kraftnät, which is a public utility, three subsidiaries and seven associated companies. In January 2002, another associated company was added, Nord Pool Spot AS. The subsidiaries and the associated companies are limited companies.

One of the subsidiaries, SwePol Link AB, has in turn a wholly-owned subsidiary in Poland.

Accounting regulation

Svenska Kraftnät's financial statements are prepared in accordance with the state accounting ordinance (2000:606), with the regulations and general advice of the Swedish National Financial Management Authority. The ordinance corresponds to the Accounting Act, but is adapted to the particular circumstances of public authorities and utilities. The financial statements have been drawn up, with certain exceptions as specified in official appropriation documents, in compliance with the ordinance governing financial statements and supportive data for budgets (2000:605), with the regulations and general advice of the Swedish National Financial Management Authority. Part of Svenska Kraftnät's operations – contingency planning – is financed via government grant. To this operation, the subsidy ordinance (1996:1189) is also applicable. This regulates, among other things, the principles for subsidy settlement as well as how unutilised funds may be transferred between different budget years.

Applicable to the companies of the Group are the Accounting Act, the Annual Accounts Act plus corresponding special legislation, primarily the Companies Act. Of the associates, two are Norwegian and one is Finnish. For the foreign companies, the corresponding national legislation is applicable.

The supervisory authority for the network operation is the Swedish National Energy Authority.

Consolidated accounts

The consolidated accounts embrace Svenska Kraftnät and all its subsidiaries and associated companies, both in Sweden and abroad. The term subsidiary denotes a legal entity wherein Svenska Kraftnät holds, or has at its disposal, more than half the votes, or owns stakes in the legal entity and has the sole right to bring a major influence to bear on this by virtue of a contract or other provision. The term associated company denotes a legal entity that is not a subsidiary, but in which Svenska Kraftnät owns stakes and brings a major influence to bear on the legal entity's operational and financial governance.

The consolidated accounts are prepared in accordance with the purchase method, which in brief means that the acquisition cost of shares in the subsidiary is eliminated against the equity existing in the subsidiary at the time of acquisition. The Swedish Financial Accounting Board's recommendations in respect of consolidated financial statements are applied.

Minority participations in the net operating profit and equity in partly-owned subsidiaries are reported separately when calculating the Group's net operating profit and equity.

Internal profits and transactions within the group are eliminated in the consolidated accounts.

Associated companies are reported in accordance with the percentage of capital method. This means that the book value of shares and participations in associated companies in the consolidated accounts is valued at the Group's stake in the associated company's equity and non-amortized goodwill. By reason of this, Group results include Svenska Kraftnät's stake in the associated company's result less goodwill amortization and rendered dividend. The stake is included in the restricted reserves.

Accounting for foreign currency

Accounts payable and receivable in foreign currency

Accounts payable and receivable in foreign currency have been valued at the rate of exchange at year-end. Unrealized exchange rate gains and losses are included in the results.

Translation of foreign subsidiaries and associated companies

Subsidiary SwePol Link's Polish subsidiary's final accounts have been translated to SEK in accordance with the monetary method, which entails that monetary items are converted to the rate of exchange at year-end and non-monetary items to the rate of exchange at the time of investment. The translation difference in monetary assets and liabilities is included in the results for the year and reported in the statement of income.

The monetary method is used because the Polish company's operations are regarded as an integrated part of SwePol Link AB's operations.

Major currencies used in the consolidated financial statements are specified below.

Accounting for revenue

Svenska Kraftnät's network revenues consist of both account fees and energy-dependent fees. Account fees or power fees are fixed annual fees that are recorded as revenue linearly across the period that the fee is intended to cover, while the energy-dependent fee is recorded as revenue as Svenska Kraftnät's services are utilized.

Revenues from the balance service are designated as system revenues and recorded as the net between sold and purchased balance power, including fees.

Other operating revenues are recorded as revenue in connection with providing the service. To a certain degree, customers can pay in advance. The advance will then be settled against revenues in step with the service being rendered.

Intangible fixed assets

Intangible fixed assets consist of land rights in particular. Land rights are recorded at their acquisition value. No depreciation of these assets has so far been carried out.

Tangible fixed assets

Tangible fixed assets, in particular consisting of machinery, plant and equipment, buildings and ground installations, are recorded at the acquisition value with deductions for accumulated depreciations. Investments are considered to include new construction work, as well as extensions and rebuilds which in the long-term raise the standard, quality or performance. Maintenance includes the work required to enable the facility to be used in the originally intended way, but which does not increase its performance or manifestly extend its lifespan. Maintenance is charged to expenses using the current account method.

External contributions to investments reduce the investment's acquisition value by the corresponding amount.

Interest during the construction period has been capitalized during the construction of installations at significant sums. Such capitalization occurred, for instance, in the case of the SwePol Link project.

Depreciation according to plan

Depreciation according to plan are calculated linearly on assets' original acquisition values with depreciation times, which are determined following the assessment of the assets' economic and technical lifespan. Annual depreciation rates are:

Lines, excl. marine cables and associated lines	2.5 %
Marine cables, excl. SwePol Link and lines associated with this	3.3 %
SwePol Link	5.0 %
Control facility sections at stations	6.7 %
Miscellaneous station sections	3.3 %
Fibre-optic links	4.0 %
Reserve materials	6.7 %
Telecom and information systems	6.7 – 20.0 %
Gas turbine plants	5.0 %
PCs and machinery & equipment	33.3 %
Goodwill	10.0 %

During 1995, a major review of the economic lifespan of the fixed assets was carried out. For the bulk of the lines, this entailed the economic lifespan being extended from 30 to 40 years. For the control facility sections of stations, the economic lifespan was shortened from 30 to 15 years. In addition, the depreciation times for sections of the telecom and information systems were also shortened from 15 to 10 years. For installations in service as at 1 January 1995, depreciation is carried out by linearly distributing the residual value as at 1 January 1995 across the remaining lifespan.

Taxes

Svenska Kraftnät's subsidiaries are obligated to pay income taxes for limited companies while Svenska Kraftnät is exempt from income tax. Deferred tax for differences between recorded and fiscal results are not reported by the parent entity or the Group, with the exception of SwePol Link Poland and untaxed reserves in the Swedish subsidiaries.

Inventories

The inventories have been valued at the lower of either the acquisition value or the market value.

Pensions

The capital value of pension commitments is calculated in accordance with technical bases and recorded as an allocation. The calculation has been made based upon a recommendation by the Board for State Collective Bargaining Insurance. The interest portion of the pension costs for the year is reported under financial costs.

Svenska Kraftnät pays a special payroll tax on pensions paid in accordance with the ordinance governing the determination of special payroll tax on state pension costs (1991:704), and is not based on the pension allocation. As the pension liability relates to future pension payments, a provision for special payroll tax is made which is based on the size of the pension liability.

		Average exchange rate		Closing rate	
Country	**Currency**	**2001**	**2000**	**2001-12-31**	**2000-12-31**
Finland	EUR	9.2516	8.4465	9.4190	8.8570
Norway	NOK	1.1497	1.0415	1.1835	1.0715
Poland	PLZ	2.5201	2.1200	2.6900	2.3000

Notes to the Financial Statement

These notes are expressed in MSEK, unless otherwise stated. Amounts in brackets refer to 2000.

1 Network and system revenue

	Group		Parent entity	
	2001	2000	2001	2000
Capacity fee, grid	983	1,003	983	1,003
Usage fee, interconnectors	1	43	1	43
Energy-dependent fee, grid	797	808	797	808
Energy-dependent fee, interconnectors	72	103	72	103
System revenue, net	138	116	138	116
Power reserve	138	–	138	–
Capacity fees	99	145	99	145
Transmission to Poland	299	116	–	–
Other operating revenue	71	76	69	71
Total	2,598	2,410	2,297	2,289

Capacity fees are constituted by bottleneck revenue when the Nordic electricity market was divided up into separate price segments.

2 Government grant for contingency planning

The government grant refers to the funding utilized in financing the contingency planning operation. The funds correspond to an equally large operating expense for the contingency planning operation.

3 Capitalized work for own account

This item refers to labour costs for Svenska Kraftnät's own staff capitalized against investment projects. By capitalizing the expense as revenue, we obtain a gross report of staff costs.

4 Payroll expenses

The average number of employees in the Group during 2001 was 258 (253), of whom 253 (250) worked in the parent entity, 3 (2) worked in the SwePol Link Group and 2 (1) worked in Svenska KraftKom AB.

The gender ratio at year-end is shown in the table below.

	Group		Parent entity	
	2001	2000	2001	2000
Female	67	69	65	67
Male	191	186	188	184
Total	258	255	253	251

Total payroll expenses for the Group amounted to 100 (93) of which social security expenses comprised 58 (48) and pensions 24 (17). In 2000, 4 was booked as income relating to corporate funds from Alecta (formerly SPP).

Remunerations have been paid to the Board of the parent entity as follows:

(kSEK)	2001	2000
Per-Olof Eriksson, Chairman	75	73
Viktoria Aastrup	24	–
Christer Berggren	24	48
Yvonne Gustavsson	48	48
Sussi Kvart	48	48
Christel Nettelvik Söderberg	24	–
Pia Nilsson	24	48
Christer Samuelsson	24	–
Bengt Söderström	24	48
Total	315	313

To other Board Members, who are employees of Svenska Kraftnät, no remunerations were paid over and above ordinary salaries. The Director General's salary was 1.0 (0.9). For the Director General, pension terms and conditions are applicable in accordance with the ordinance governing the pensions of heads of state corporations. The director's remuneration for the Chairman of the Board is kSEK 72 (72).

5 Other operating expenses

	Group		Parent entity	
	2001	2000	2001	2000
Purchase of loss-energy	406	514	406	514
Maintenance, operational measures and leases on installations	260	249	217	218
System operation services	162	161	182	161
Power reserve	150	–	158	–
Control centres	7	39	7	39
Own contingency measures	6	8	6	8
Research and development	19	16	19	16
Disposal losses	6	5	6	5
Contingency costs	272	262	272	262
Other expenses	146	95	148	129
Total	1,434	1,349	1,421	1,352

The item Other expenses includes fees to auditors at the following amounts.

	Fees and expenses			
	Group		Parent entity	
	2001	2000	2001	2000
The National Audit Bureau with appointed accountant	1.0	1.1	1.0	1.1
Other auditors	0.5	0.3	–	–
Total	1.5	1.4	1.0	1.1

All fees concern auditing assignments. This refers to review the annual accounts and bookkeeping, as well as the Boards' and the Director General's/Managing Directors' stewardship and other duties incumbent upon the parent entity's/company's auditor to carry out.

Notes to the Financial Statement

6 The Group's business segments

	Group Operating revenues		Parent entity Operating income	
	2001	2000	2001	2000
Network operation and system responsibility	2,598	2,410	824	802
Fibre-optic operation	45	29	22	19
Operation exposed to competition	–	–	37	21
Contingency planning (stare subsidy)	283	272	0	0
Total	2,926	2,711	883	842

The Group's main operation are included within the network operation/system responsibility.

The operating income includes the business segment's external revenue and costs.

With a cost of capital of 7 % on employed capital, the operating income for the fibre-optic operation is –2 (0). The reason for the operating result for 2001 being worse is increased capital expenditure as a result of a larger amount of employed capital.

7 Interest income

	Group		Parent entity	
	2001	2000	2001	2000
Cash and bank deposits	12	6	6	6
Government bonds, National Debt Bills and deposits	–	1	–	1
Other financial income	2	1	2	1
Total	14	8	8	8

8 Interest expenses

	Group		Parent entity	
	2001	2000	2001	2000
National Debt Office loans	20	17	20	16
Other loans	136	55	3	–
Pension provision	3	3	3	3
Total	159	75	26	19

9 Tax on income for the year

	Group	
	2001	2000
Deferred tax	1	1
Current tax	5	–1
Total	6	0

10 Share of income in associated companies

	Group	
	2001	2000
Nord Pool ASA	37	20
EL-EX Sähköpörssi Oy	–	1
Total	37	21

The share in income in associated companies is reported after tax and includes amortization of goodwill at 3 (3).

The share in income in the other associated companies was less than MSEK 1.

11 Intangible fixed assets

Intangible fixed assets are made up of land rights in the form of easements and line rights.

	Group and Parent entity Land rights
Acquisition values brought forward	152
Acquisitions	–
Reclassifications	7
Planned remaining value	159

Land rights are not being depreciated at present; see the section on "Accounting principles" above.

12 Tangible fixed assets

Group	Buildings and land	Machinery and other technical installations	Ongoing new installations	Total
Open acquisition values	1,017	14,118	615	15,750
Investments	–	6	357	363
Sales/disposals	–2	–28	–	–30
Reclassifications	–121	806	–692	–7
Closing accumulated acquisition values	**894**	**14,902**	**280**	**16,076**
Opening depreciation	218	5,969	–	6,187
Sales/disposals	–	–25	–	–25
Reclassifications	–7	7	–	0
Depreciation for the year	34	456	–	490
Closing accumulated depreciation	**245**	**6,407**	**–**	**6,652**
CLOSING PLANNED RESIDUAL VALUE	**649**	**8,495**	**280**	**9,424**
Depreciation, previous accounting year	28	376	–	404

Parent entity	Buildings and land	Machinery and other technical installations	Ongoing new installations	Total
Open acquisition values	404	12,014	573	12,991
Investments	–	4	360	364
Sales/disposals	–2	–28	–	–30
Reclassifications	13	676	–696	–7
Closing accumulated depreciation	**415**	**12,666**	**237**	**13,318**
Opening depreciation	200	5,926	–	6,126
Sales/disposals	–	–25	–	–25
Depreciation for the year	10	345	–	355
Closing accumulated depreciation	210	**6,246**	**–**	**6,456**
CLOSING PLANNED RESIDUAL VALUE	**205**	**6,420**	**237**	**6,862**
Depreciation, previous accounting year	10	333	–	343

The item Machinery and other technical installations includes, in particular, lines, marine cables, control installation sections, the fibre-optic operation as well as telecom and information systems. The retirement of assets primarily arises in conjunction with the commissioning of installations following reinvestment. The rateable value of properties in the Group amounts to 162 (161). Government grant of 30 have been received for investment in gas turbines.

Notes to the Financial Statement

13 Shares in Group companies

Company	Company registration number	Domicile	Share of equity, %	No.	Nominal value	Book value
Svenska KraftKom AB	556575-7274	Stockholm	100	1	0	0
Svenska Kraftnät Gasturbiner AB	556451-0260	Stockholm	100	900	9	9
SwePol Link AB	556530-9829	Stockholm	51	306,000	3	3
Total					12	12

14 Shares in associated companies

Company	Company registration number	Domicile	Share of equity, %	No.	Book value Group	Book value Parent entity
Nord Pool ASA	NO 965662952	Lysaker	50	25,000	131	54
Nord Pool Consulting AS	NO 880321862	Lysaker	33	2,000	2	2
STRI AB	556314-8211	Ludvika	25	375	5	4
Kraftdragarna AB	556518-0915	Västerås	50	5,000	4	1
EL-EX Sähköpörssi Oy	FO 0985459-8	Helsinki	50	20,000	8	10
Elforsk AB	556455-5984	Stockholm	25	750	0	0
Triangelbolaget D4 AB	556007-9799	Stockholm	25	525	0	0
Total					150	71

15 Liability/receivable from Government cheque account

The liability of 40 carried forward consists of the difference between withdrawn/deposited funds from the Government's cheque account and settled charges/delivered income against the national budget in accordance with the following:

(kSEK)	Group and Parent entity 2001	2000
Opening balance	–39,559	659
Settled against national budget: Grant	283,381	272,670
Income headings, dividend and small-scale energy	–495,357	–1,015,629
Settled against Government cheque account: Grant withdrawn	–250,000	–259,000
Dividend paid in and fee for small-scale energy	549,245	961,741
Closing balance (receivable +, liability -)	47,710	–39,559

16 Prepaid expenses and accrued income

	Group 2001	Group 2000	Parent entity 2001	Parent entity 2000
Accrued network revenue	119	103	119	103
Accrued revenue, balance service	62	61	62	61
Prepaid fixed cost, gas turbines	–	–	–	11
Advances from suppliers	–	4	–	4
Other	30	30	12	8
Total	211	198	193	187

17 Equity

Group January 1, 2001	Treasury capital	Restricted reserves	Unrestricted reserves	Result for year
Opening equity brought forward	600	3,356	1,766	763
Allocation of earnings in accordance with government decision:				
– brought forward	–	–	763	–763
– dividend	–	–	–496	–
Transfer between restricted and unrestricted reserves	–	38	–38	–
Net income for year	–	–	–	730
December 31, 2001	600	3,394	1,995	730

Parent entity January 1, 2001	Treasury capital	Restricted reserves	Unrestricted reserves	Result for year
Opening equity brought forward	600	3,314	1,777	752
Allocation of earnings in accordance with government decision				
– brought forward	–	–	752	–752
– dividend	–	–	–496	–
Net income for year	–	–	–	678
December 31, 2001	600	3,314	2,033	678

18 Provision for pensions

	Group and Parent entity	
	2001	2000
Opening balance	141	120
Pensions paid	–1	–1
Annual increase	23	16
Correction of previous pension liability	–	2
Provision for payroll tax	5	4
Closing balance	168	141

19 Long-term liabilities, interest-bearing

	Group		Parent entity	
	2001	2000	2001	2000
Liability to National Debt Office	535	589	535	589
Liability to credit institution	192	201	–	–
Loans, other external	2,241	2,459	–	–
Total	2,968	3,249	535	589

Of the above loans, 150 (158) falls due after five years for the Group, as well as 0 (0) for the parent entity.

20 Current liabilities, interest-bearing

	Group		Parent entity	
	2001	2000	2001	2000
Liability to credit institution	11	11	–	–
Loans, other external	127	121	–	–
Total	138	132	–	–

21 Accrued expenses and prepaid income

	Group		Parent entity	
	2001	2000	2001	2000
Interest charges	6	6	6	6
Balance service	47	57	47	57
Loss-energy	7	45	7	45
Investment	2	2	2	2
Prepaid revenues	8	8	8	8
Holiday pay, compensatory leave etc.	21	15	21	15
Leases on installations, maintenance	13	11	13	11
Contribution, fuel storage	0	6	0	6
Consultants' fees	2	3	2	3
Other	16	22	12	21
Total	122	175	118	174

22 Contingent liabilities

A guarantee has been issued for a loan of 20 to STRI AB regarding the purchase of a property.

23 Future leasing commitments

	Group and Parent entity	
	2001	2000
Within one year	355	275
Later than one year but within five years	447	749
Later than 5 years	37	44
Total	839	1,068

Proposed Disposition of Earnings

The Group's unrestricted equity amounts to MSEK 2,725, of which the net income for the year is MSEK 730. There are no proposed appropriations to restricted equity.

Of the parent entity's unrestricted equity of MSEK 2,711, of which the net income for the year is MSEK 678, it is proposed that MSEK 474 be allocated to dividend and that MSEK 204 to be carried forward to new account.

Stockholm, Sweden, February 26, 2002.

Per-Olof Eriksson	*Chairman*
Jan Magnusson	*Director General*
Viktoria Aastrup	
Yvonne Gustafsson	
Sussi Kvart	
Christel Nettelvik Söderberg	
Christer Samuelsson	
Agata Persson	*Staff Representative*
Lisa Björkling	*Staff Representative*

Audit Report

The National Audit Office (NAO) has reviewed parent entity Svenska Kraftnät's annual accounts, consolidated accounts and underlying accounts, as well as management and administration for the accounting year 2001.

The management of parent entity Svenska Kraftnät is responsible for conducting operations efficiently and constitutionally. Responsibility includes providing the government with a reliable report of operations through the annual accounts.

It is the NAO's responsibility, in accordance with good accounting practice, to review parent entity Svenska Kraftnät's annual accounts, consolidated accounts and underlying accounts with the aim of assessing whether or not the accounts are reliable and the books true and correct, as well as verify that management administration is in agreement with the applicable ordinances and special government decisions.

The review has been carried out in accordance with good auditing practice. This means that the review has been planned and conducted with the aim of obtaining a reasonable basis for assessing whether or not the annual and consolidated accounts are true and correct. The review has thus been directed towards a selection of significant transactions and management decisions.

The review carried out provides a reasonable basis for the statement below.

The annual and consolidated accounts have been drawn up in compliance with the ordinance concerning the annual accounts and budget data, government appropriation documents and other rulings relating to parent entity Svenska Kraftnät.

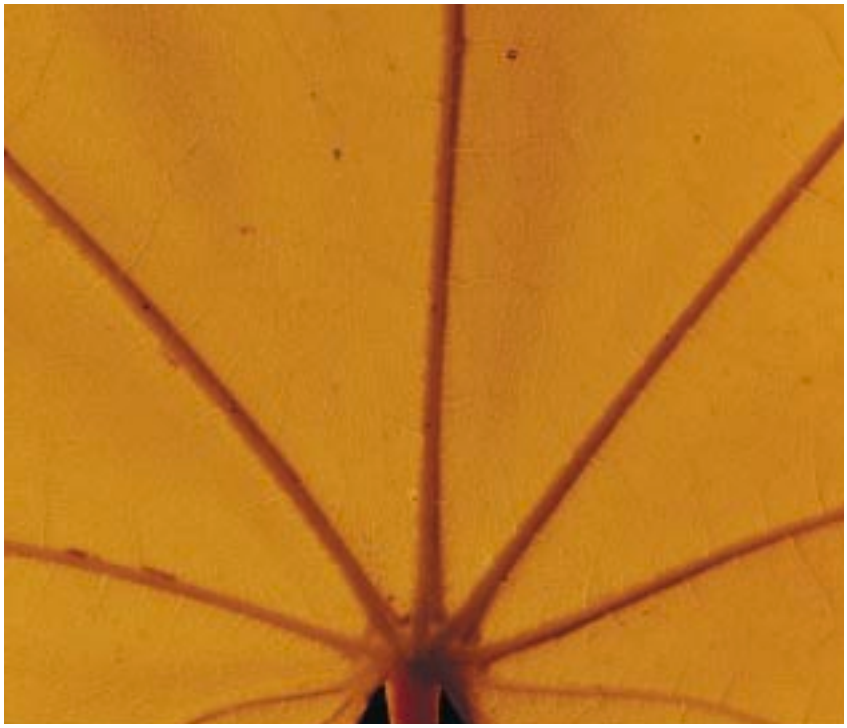
The NAO deems the annual and consolidated accounts to be substantially true and correct, which is why it is in favour of ratification of the income statement and the balance sheet, as well as the consolidated income statement and the consolidated balance sheet.

Director of Auditing Kerstin Jönsson has passed judgement in this matter. Chief Auditor Filip Cassel has participated in the final processing. Chartered Accountant Tommy Mårtensson has acted as the especially appointed submitter.

The National Audit Office auditor's report was submitted on February 28, 2002.

Kerstin Jönsson	Tommy Mårtensson
Director of Auditing	*Chartered Accountant Arthur Andersen AB*

Svenska Kraftnät and the environment



- For the first time, we can account for the environmental impact of our procurements of power.
- Several new models of pylon have been developed during the year.
- We have inventoried and removed jointing compound containing PCB.
- More cooling plants containing CFCs have been decommissioned.
- Trade with green certificates has started up.
- An environmental survey has been conducted for Svenska Kraftnät Gasturbiner AB.
- We are improving the monitoring of our environmental work.

Environmental efforts in many different areas

The environmental issues most important for us to work with lie within the sectors of energy consumption, climate and ozone-impacting gases, heavy metals, chemicals and environmental impact. The following describes how we have been working during the year in these sectors to live up to our environmental policy and to achieve our environmental goals.

The environmental impact of supportive power deals

One goal for the year has been to report on the magnitude of the environment-impacting emissions caused by the power deals we make for balance regulation and counter-trade. Balance regulation is the increase/decrease in production or consumption carried out by Svenska Kraftnät's balance service in order to preserve the equilibrium between production and consumption in Sweden. Counter-trade is a special type of regulation for relieving overloaded constraints on the grid.

We have gathered emission data for each respective production facility in Sweden. With regard to the deals we have made with other countries (Denmark and Poland), standard emission values have had to be used. The magnitude of the emissions is nevertheless correct.

Conducting a survey of our emissions has given us the supportive data to assess the environmental impact of our power deals.

Overall emissions are shown below:

	MWh	S (kg)	NO_x (kg)	CO_2 (tonnes)
Balance power	11,800	3,900	5,492	6,492
Power for counter-trade	9,022	1,810	4,978	5,979

Our policy in magnetic field issues

Despite the fact that research has been going on for many years, we still know fairly little about how weak magnetic fields affect people. As magnetic fields exist around our facilities, it is important for us to carefully monitor research into magnetic fields, and any health risks. It is important, not least, to be able to provide objective information to the people who get in touch with us asking questions. Through Elforsk AB, we also support every year research in this area. We are also participating in various development projects to contribute towards the design of lines and pylons that entail the containment of magnetic fields.

Each year, we also help people living close to our power lines by carrying out measurements or calculations of magnetic fields free of charge.

We apply the precautionary principle for electrical and magnetic fields recommended by the authorities. This we do by choosing solutions that entail containment of the fields when this can be achieved at reasonable cost.

Environmental issues in licensing cases

During the next four years, we will require new licences for a third (5,650 km) of our network of lines. Several of these licensing cases will be dealt with in the same way as new construction work cases, entailing that consultation must be carried out and environmental impact surveys for different alternative solutions devised.

Our goal is to work towards environmental improvements in consensus with municipalities and other involved parties in connection with applying for new licences for lines.

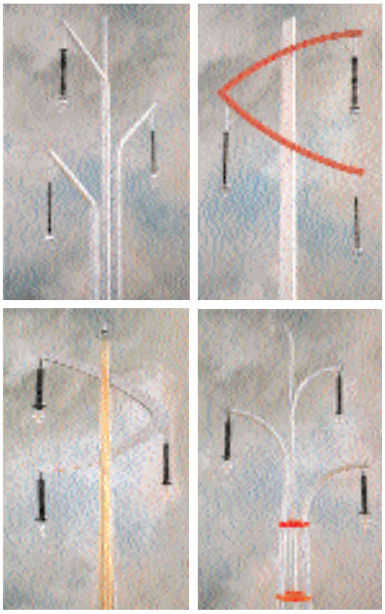
Sometimes, it is difficult to find solutions acceptable to all parties. In those cases, we can contribute towards achieving the best possible solution by carrying out, as carefully as possible, a survey of the various alternatives on offer. In this way, we provide the licensing authority with good supportive data for its decision.

Pylons of new design and colour

Two years ago, we started collaborating with some industrial designers in order to develop a new pylon for our 400 kV lines.

The models we have been working with have been given an expressive design language and are especially suitable for location in urban environments. The pylons – through their design with the phases closely grouped in a triangular form – give rise to considerably weaker magnetic fields than conventional pylons. They are also narrow and do not have stays, thus occupying little space. The idea is that the pylons will be an alternative to traditional ones, the interesting design being able to provide intrinsic value. It is our hope that they will more easily be accepted by local residents and the public.

We plan in due course to test the pylons as possible alternatives during the consultation process of a future power line project.



The new pylons are made of steel painted in an optional colour, steel tubing, concrete and laminated wood.

Experiments with the compact pylon

Through the R&D company STRI, we have produced a very compact 400 kV line. The width of the pylon is only about 6.5 metres. By locating the phases closely together in a triangle, the magnetic fields will be less than half those surrounding conventional pylons. The isolators are made of composite materials and the upper isolator has a mechanically supporting section in the form of a glass fibre reinforced epoxy tube. The line has no skywire and is thus low, only 19 metres.

Important environmental measures at our installations

We have made an inventory of our buildings from 1956–1973 which may contain jointing compound containing PCB. During that period, PCB was used as a softening agent in jointing compound for sealing crevices and joints, especially in buildings made of concrete panels. The inventory showed that only one of the buildings contained this jointing compound. It was removed by a certified contractor.

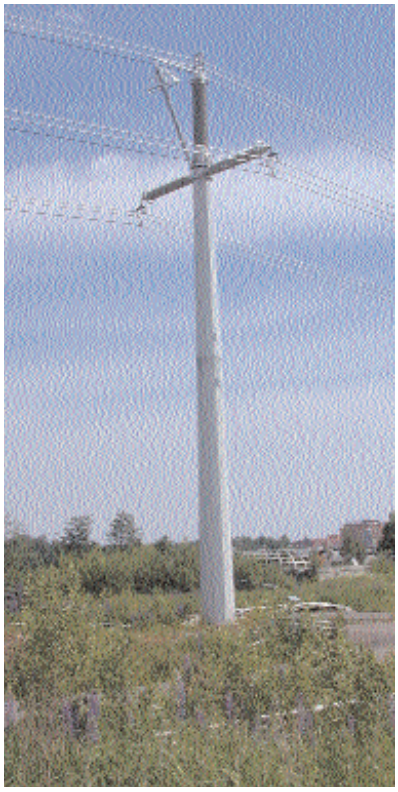
The survey of quicksilver at our installations has been continuing since last year through our compiling a list of components possibly containing the metal. Such components are found in building installations, primary equipment, control installations and telecom equipment. The list will be routinely updated if more components containing quicksilver come to our attention.

During the year, several cooling plants containing the refrigerant HCFC have been decommissioned. In cases where it has been assessed that refrigeration will also be necessary in the future, a non ozone-impacting refrigerant has been substituted.

The previously set goal that fuel consumption in basic maintenance would be reduced by 10 % during the coming three-year period will be achieved. This will take place by reducing, in the recently implemented procurement of maintenance, the extent of assignments and thus fuel consumption as well by more than 10 %.

RECS – green certificates

By issuing certificates for a certain production method, the production of electricity from renewable energy sources can be promoted. The certificate principle means that – besides the physical value of electricity (the price per kWh that the producer can charge) – there is also a supplementary value in the form of a evidence, confirming the production method.



The compact pylon has three phases which are located closely together in a triangle. This considerably reduces the magnetic fields. The line pictured is a test run built on the STRI site at Ludvika.

During the year, Svenska Kraftnät – together with the other Nordic grid operators – has produced a joint Nordic register for managing green certificates under RECS (the Renewable Energy Certificate System). RECS is a voluntary system for trading in green certificates via internationally harmonised rules.

RECS is organised via national groups consisting of market players and an independent organisation with the task of issuing certificates and monitoring the RECS process. This independent role is held in Sweden by Svenska Kraftnät. The first RECS certificates were issued in January 2002 during the test period that will continue to the end of 2002.

There is a draft report on the introduction of a Swedish electricity certification system for promoting the production of renewable energy starting in

2003. According to the report, Svenska Kraftnät will, among other things, issue and maintain a register of holdings of these certificates.

Monitoring – an important part of environmental management work

In our ongoing environmental management work, we have focused during the year on how we can more efficiently monitor environmental work and evaluate the company's environmental performance. We have identified important target groups for environmental information. Conceivable environmental indicators (key figures) have been listed and from this extensive list a number of indicators will be chosen which are easy to begin monitoring. The majority of environmental indicators relate to our comprehensive environmental goals, while some will provide information about how well the company's environmental management work is functioning.

In 2000, we were commissioned by the government to introduce an environmental management system. Previously, we have implemented all the preparatory parts of the environmental management system, e.g. an environmental survey, goals and policy. During 2001, we have supplemented previous environmental surveys for the parent entity and subsidiary SwePol Link with an environmental survey for subsidiary Svenska Kraftnät Gasturbiner AB.

During 2002, we will continue the work of improving our environmental work monitoring. One area where we will be placing particular emphasis is investment projects and monitoring whether the environmental standards set during the procurement of contracts are really being adhered to throughout all phases of the project.

We will also be monitoring the extent of our travel and we will endeavour to reduce this.

Environmental policy

- Our operations must have the minimum possible impact on the environment within the framework of what is technically feasible and financially reasonable.
- Through consistent and long-term environmental work, we wish to contribute to lastingly sustainable social development.
- Environmental work must be integrated into all of our operations.
- All staff must have sufficient knowledge of environmental issues.
- We will monitor and support R&D in the environmental sphere and make use of new findings.
- We will always show openness regarding the environmental conditions accompanying our operations.
- Prior to all decisions, the environmental impacts will be investigated.
- During all procurement, the environmental aspects will be given a high priority.

Environment and finances

Below we report on the costs we have incurred during the past year for reducing the different kinds of environmental impact. Besides reporting direct environmental costs, we have also made an assessment of the environment-related investments made during the year. We apply the definitions that Statistics Sweden uses in its surveys of the environment protection costs incurred by companies. Only investments where the main objective is to reduce environmental impact have been included.

Some environmental data

	2001	2000
Energy losses, TWh	2.8	3.0
Energy losses, compared with exit energy, %	2.2	2.7
Emissions by CO2, own gas turbines, tonnes	2,287	1,819
Emissions of sulphur, own gas turbines, kg	1,238	947
Emissions of nitric oxides, own gas turbines, kg	5,263	4,123
Quantity of replenished SF6 gas, kg	19.8	242
Emissions of SF6 gas, compared with installed volume, %	0.1	1.4
No. of business trips per employee per annum	11.0	12.2

Environmental costs for 2001 (kSEK)

Environmental management:	
Parent entity	119
Environmental survey Svenska Kraftnät Gasturbiner AB	100
PCB inventory and removal, building joints	90
Decommissioning, conversion of refrigerants	404
Decommissioning of oil tanks, land decontamination	80
Land surveys, gas turbine installation	12
EMF-related measures	300
Environmental surveys re. fish, SwePol Link	616
R&D:	
Electric and magnetic fields	303
Design, urban pylon	223
STRI pylon	338

Environment-related investments in 2001 (kSEK)

New 400 kV line, Alvesta-Hemsjö	725

Comprehensive environmental goals

Our comprehensive environmental goals indicate the areas most important for us to work with. Our goals are long-term and show the focus we will have in our environmental work. We will:

- Aim for efficient energy usage, a low consumption of fossil fuels and low transmission losses.
- Limit the use of greenhouse gases and keep our emissions at the lowest level possible.
- Limit the use of heavy metals and stop using them whenever possible.
- Limit the use of environmentally-destructive chemicals.
- Aim for a low environmental impact from new installations.
- Set environmental standards during all procurements.
- Ensure that environmentally-destructive substances are safely disposed of.

Renewal and future

Augmenting the network during the last decade – from a national to a Nordic perspective

One crucial factor for the functioning of the electricity supply is that the transmission of electricity on the grid is operationally reliable and of sufficient capacity. We have a strong and reliable grid as a lot of work has regularly been put into strengthening and rationalizing transmission, both domestically and between adjacent countries.

The time prior to deregulation – from 1990 up until 1996

During the first half of the 1990s, the expansion of the grid was largely controlled the same way as during preceding decades. Collaboration between the operator of the grid (a part of Vattenfall) and the former energy companies (with a network operation and production/trading) was regulated via a grid agreement. This, among other things, defined how the grid was to be used and how costs and fees were to be shared. One important point was the account applications that the companies made. The applications were binding and valid for five years ahead. The grid operator then ensured that there was sufficient capacity.

The grid operator thus obtained access far in advance to forecasts of future transmission requirements in different parts of the grid. The forecasts enabled the investigation in good time of different expansion alternatives and the juxtaposing of capacity requirements, investment costs and loss reductions etc. Choosing the right expansion alternative was then quite straightforward.

During the beginning and middle of the 1990s, a number of augmentations of the country's transmission capacity were implemented through the construction of new lines. One example is the transmission capacity to southern Sweden being augmented in two stages by way of a new 400 kV line being built along the west coast. In 1994, the route Ringhals – Halmstad was built and then extended to Helsingborg in 1996. The line was built in the same power lane as an earlier 400 kV line. On certain routes, the same pylons were used for both lines to reduce the impact on the environment. In total, the line increased the transmission capacity to southern Sweden by approximately 600 MW.

Several new transformer stations and distributing substations were also built in the 400 kV network. These were needed in order to increase the feed reliability to the regional networks and to increase the operational reliability of the 400 kV network.

During this time, the interconnectors to our Nordic neighbours were not as significant as they are today. The available capacity was enough for existing transmission requirements and no major changes were made. A major event

was the Nordic electricity system gradually beginning to be more closely linked to the continent by way of the HVDC interconnectors being built between Sweden and Germany (Baltic Cable) and Zealand and Germany (Kontek).

The time following deregulation – after 1996

In conjunction with the deregulation of the electricity market in 1996, conditions changed in several respects. The grid agreement ceased to be valid and the entire tariff structure was changed into a tariff system based on a point-of-connection charge. The previous requirement for account applications five years ahead disappeared. Free trade also led, however, to more changeable flows of power and new operational situations arising. Consequently, there was an increased focus on, among other things, the transmission capacity requirement between the Nordic countries. Deregulation also led to power plants being decommissioned which were previously available to deal with peak loads.

Improved transmission capability to southern Sweden

The capability to transmit electricity to southern Sweden in what is known as "constraint 4" (an imaginary line from Oskarshamn to Varberg) has increased sharply during the first part of the present decade and will further increase during coming years. What has primarily propelled this is the decision to decommission the nuclear plant Barsebäck 1 and the proceedings to close down Barsebäck 2 in 2003. To boost capacity in constraint 4, a new 400 kV line went into service in 2001 between Alvesta and Hemsjö, and network protection was also installed. Additionally, a new switchyard will be built at Hemsjö, as well as another station in southern Sweden during 2003.

Another major change in southern Sweden is the linking up of the Nordic electricity system with the continent through the SwePol Link cable with a capacity of approximately 600 MW.

Capacity augmentations towards Norway the most important thing

The greatest pressure for improving capacity has been towards Norway. This became very clear during the dry year 1996 when Norway was in great need of imported power. To boost the capacity for transmitting power southwards via the west coast to Norway, the lines on the west coast north of Ringhals were augmented and network protection was installed during 1998–99.

To boost export capacity towards Norway, a switchyard was rebuilt at Borgvik outside Karlstad so that a 400 kV line from Norrland, which previously bypassed the station, could now be connected.

Augmentations are planned for other links to Norway as well. Measures are expected to be completed in 2004.

The Norwegian grid operator Statnett has also implemented augmentations to boost export capacity towards Sweden, among other things using network protection.

Augmentation of capacity towards Finland as well

On the links to Finland, the export and import capability was augmented through the capacity being boosted on the two 400 kV lines between northern Sweden and Finland and the HVDC link between Sweden and Finland (FennoSkan).

There are plans for further measures on the 400 kV lines.

Fingrid – Svenska Kraftnät's counterpart in Finland – has also implemented internal changes to its network in order to increase the export potential from Finland to Sweden.

Links with Denmark largely unchanged

Links with Denmark have remained largely unchanged during this period. Svenska Kraftnät purchased Sydkraft's stake in the 400 kV marine cables to Zealand during 2001 and is now the sole owner of the Swedish section. Svenska Kraftnät has decided to renew KontiSkan 1 between Sweden and Jutland while at the same time moving the station on the Swedish side to the same location on the coast where KontiSkan 2 lies. This will also provide a boost in capacity towards Jutland.

The trend is towards a shorter planning horizon

In summary, it can be said that the planning of the grid has gone from long-term and clear forecasts regarding future transmission requirements to greater flexibility and a shorter planning horizon. This, together with heightened cost consciousness, has meant that a lot of the augmentation work is based upon utilizing the transmission system more flexibly and efficiently.

Deregulation and the trend towards a single Nordic and European electricity market have given rise to demands for increased transmission capacity towards our neighbouring countries. As a consequence of this, the focus of augmentation work has changed from internal links to links between adjacent countries. A trend that looks like continuing in the future – towards a single European electricity market.

As the switchyard at Borgvik was in need of improvement, a new one was built with a higher level of operational reliability. Allan Lundberg of Svenska Kraftnät cut the ribbon during the opening ceremony. He was ably assisted by Per Segerström (at right) of ABB Utilities.

Continued development of the telecom operation

Expansion of fibre-optic links

The work of connecting the country's 289 major municipal centres to a national broadband network continued during 2001. So far, 188 zones have been connected to the fibre-optic backbone, which has jointly been built with the regional network owners Vattenfall, Sydkraft and Birka. During 2001, expansion work continued on several routes. The route between Södertälje and Bredäng in south Stockholm was completed and work was started on the route connecting Porjus, Midskog, and Ljusdal in northern Sweden. The routes connecting Norrköping with Kalmar and Enköping with west Stockholm became operational during the year. Additionally, the fibre-optic rectangle in southern and central Norrland was completed for through traffic along the entire route. Today, Svenska Kraftnät's fibre-optic network is around 5,500 km in length.

In August 2000, the government gave us the task of ensuring that all of Sweden's major municipal centres are connected to a national broadband network before the end of 2002.

According to this task, expansions are to be carried out along strictly business lines. As the market trend in the telecom sector has been weak during 2001, the expansions work has been slowed down.

During the autumn, representatives of Svenska Kraftnät visited 40 or so municipalities. The purpose of the visits was to inform and to try to coordinate national and regional expansion work. Municipal interest has been considerable in our expansion plans for the national broadband network.

Great need for antenna sites – 3G is creating new opportunities

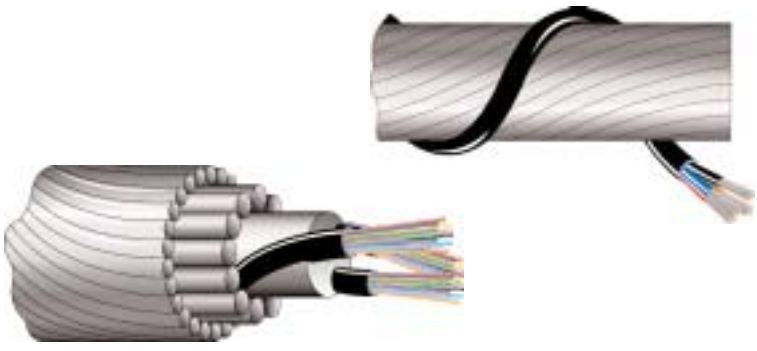
The expansion of wireless communication means new opportunities for us. There is a need for a large number of antenna sites for new communications systems. As it is advantageous to make use of existing buildings or masts for antennas, our pylons make an interesting alternative. Next in line is the expansion of the 3G mobile systems. Altogether, up to 10,000 new masts will be needed for these new systems.

We own around 57,000 pylons with a height of 25–60 metres, which are excellent locations for base station antennas. Additionally, we have just over 30 masts which are at present being used as antenna sites. Antenna sites on power line pylons already exist in other countries, e.g. Denmark, Norway, the UK and the USA.

In Sweden, ten or so installations have been carried out for the GSM system. As the pylons and masts are already in place, all that is needed is planning permission for the container which holds the transmitter and receiver. Our assessment is that around 100 antenna sites can be set up during 2002 and 2003. One advantage is that the coordinates of all of Svenska Kraftnät's pylons and masts have been calculated, simplifying the planning work of our customers. To obtain straightforward and quick processing, we have drawn up a standardised offer to the operators.

There are further advantages to using pylons and existing masts as antenna sites, e.g. environmental ones as there is no individual impact on nature. Installations can also be carried out quickly and cost-effectively.

A GPS antenna has been fitted to one of Svenska Kraftnät's pylons at Viksjö outside Stockholm.



Fibre-optic cables

Svenska Kraftnät uses two methods of installing fibre-optic cables on its power lines. The cable is either wound around the skywire, which is an earth wire intended to protect underlying power lines from lightning, or the skywire is replaced with a new one containing a cocooned fibre-optic cable (OPGW). The wound cable can be installed while the power line is in service.

Nordic grid tariffs undergoing harmonisation

For the national grid, Svenska Kraftnät applies a tariff system based on a point-of-connection charge. Our customers are the regional networks and electricity producers.

The predominant flow of power on the grid is from north to south. The network has largely been built in order to convey hydropower from northern Sweden to the major areas of consumption in central and southern Sweden. In order for the grid fee to be right cost-wise, it has been made dependent upon the geographic location of entry and exit power. In northern Sweden, entry fees are high since this increases the load on the grid, while the exit fees are low. The reverse applies to southern Sweden. The cost of transmitting electricity on the grid is, on average, SEK 0.012/kWh. Surveys show that this is the lowest in Europe.

Competition on the increase between producers

One objective for the Nordic grid operators is harmonising the market conditions for feeding power into the Nordics grids, thus guaranteeing a level playing field for the players. To this end, Svenska Kraftnät has made changes to the tariff from 2002.

These changes mean the relationship between entry and exit fees on the Swedish grid shifting from approximately 35/65 % to approximately 25/75 %. In doing so, we are adapting to the situation that applies in most European countries, where entry by the electricity producers accounts for a smaller share of the grid fee.

The new tariff reduces the competitive disadvantage that Swedish electricity producers have been faced with in comparison with Finnish and Danish producers. The changes are also in line with the recommendation currently being developed for the entire European electricity market.

The risk of "locking in" is reduced

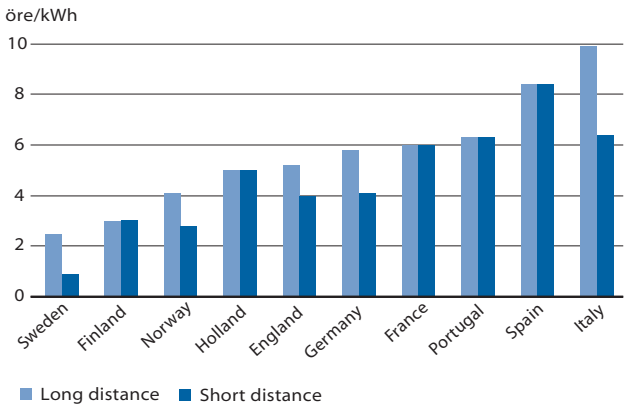
The new tariff additionally reduces the differences between entry fees in the north and south, i.e. the tariff is being "squeezed together". This means avoiding the risk of 'locking in' hydropower in northern Sweden.

As far as Svenska Kraftnät is concerned, the changed tariff is neutral as regards revenue. It has been devised in such a way that the accumulated charging of fees remains the same as under the old tariff system.

The result is improved resource utilization and price squeezing

The reduction in the entry fees will be compensated for by an increase in the exit fees. The increase in the exit tariff, which applies to the regional network operators, is the same throughout the country. The change, i.e. the reduction for electricity production and the increase for the regional networks, will be approximately SEK 0.0015/ kWh on average.

This harmonisation of the grid tariffs is a further step in the evolution towards a better functioning Nordic electricity market. The intention is that a larger market, similar preconditions and increased competition will contribute towards improved resource utilization and price squeezing, to the benefit of our customers.



A comparison has been made between the grid fees of ten European countries and Sweden is in best position. As far as Sweden is concerned, fees are shown after the tariff changes in 2002.

Safety and reliability

Our control centre is on duty day and night – all year round

Each year, between 200 and 300 disruptions of varying magnitude occur on the grid. Most disruptions do not involve any consequences for consumers, thanks to our power system being robust and having, among other things, automatic protection systems. Extensive analysis and planning work is carried out for future events, both planned and probable, for instance due to the weather.

The national control room has four functions: comprehensive monitoring of the grid and the interconnectors, connections at our installations, maintaining the balance and monitoring communications and data systems. During the day, the national control room is normally staffed by six people simultaneously – at night there are two.

In addition to the national control room at Råcksta, there is a control centre at Sollefteå which is responsible for northern Sweden. Here two people usually work during the day.

Another year has passed – 2001 in the control room

Winter

The winter of 2000/2001 was initially milder than usual. Together with the abundantly filled reservoirs, this made prices moderate during December 2000 and January 2001. Power transmission worked normally, both domestically and on the overseas interconnectors.

On Friday 2 February, a new consumption record of approximately 26,700 MW was set. The previous record, set on 7 February 1996, was 26,300 MW. In southern and central Sweden, the temperature was between –9 and –11 °C.

Temperature forecasting showed that Monday 5 February 2001 would be very cold. Our forecast for domestic consumption was approaching 29,000 MW. According to plan, we could not count on any appreciable imports from either Norway or Jutland. The power balance showed that we would need to utilize our disruption reserve to cover the anticipated consumption. Consequently, there would be a shortage of "normal" power. We decided to issue a "red alert" in our information system via our website and to send a warning of power shortages to the balance centres.

On the Monday morning, it turned out that the temperature was lower than forecast, but no special measures needed to be taken. Our operational status did not show any signs of strain as all nuclear power and other major power plants were online and imports were quite high. Furthermore, there were no shutdowns on the networks or transmission faults. Consumption was approximately 27,000 MW between 8 and 9 – setting a new Swedish record. The reason for consumption not being any higher was the high spot prices and the public's good response to our appeal via mass media to exercise restraint when using electricity.

Spring

Our operational status during the year's initial months was undramatic. The situation was characterized by a dry year being predicted in Norway and the market falling in behind this. Electricity prices were considerably higher than during last year, increasing imports from Denmark and Germany. Norway largely imported as much electricity as it could.

Summer

Sweden's reservoirs were at normal levels, whereas this was not the case in Norway. Electricity prices during the summer season were higher than during recent years. The prevailing situation in the power balance of the Nordic area made the export of electricity to Norway at night and at weekends considerable and exports to Denmark and Germany less than last year.

The number of disruptions on the grid during the period was unusually large during the summer; 120 as opposed to 70 – 80 in normal cases. The great majority were due to lightning. A number of faults occurred when tall trees in power lanes caused flashovers to earth.

On Tuesday 19 June, a disruption occurred which led to a sharp fall in frequency on the Nordic system. The automatic protection systems disengaged no less than five 400 kV and 300 kV lines in Norway. Four of these start out from Hasle, which is the hub of the transmission constraint between southern Norway and Sweden. This disengagement isolated southern Norway from the rest of the system, allowing the frequency there to rise to 50.4 Hz.

In the rest of the Nordic system, the frequency fell to 49.4 Hz due to a shortfall in production arising of approximately 1,300 MW. When rapid and sudden disruptions occur, many measures are applied automatically. In this case, six gas turbines of approximately 220 MW started up. Additionally, we obtained automatic emergency power of 210 MW from Jutland via the KontiSkan DC link.

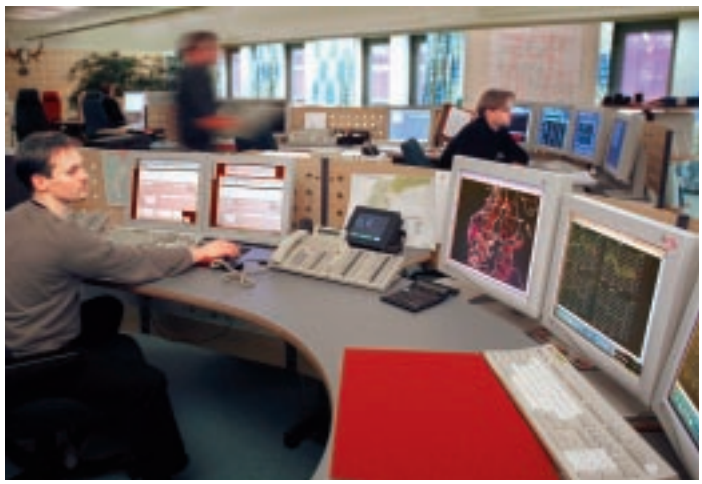
The loss of four important lines is an event which the system is not dimensioned for and which can lead to a more extensive disruption. There were, however, extra margins for coping both with the drop in frequency and the southbound transmission of hydropower from Norrland.

The preliminary cause of the disruptions was a flashover between line and tree on the Norwegian route Hasle – Röd, which simultaneously started a forest fire. The fact that other lines were disengaged was due to a faulty relay protection function at Hasle and faults resulting from this.

Autumn

Reservoir levels in Norway normalised while Sweden's reservoirs were well filled. This caused electricity prices to fall during the autumn.

On Wednesday 31 October, there was a storm on the west coast. In the afternoon, Ringhals nuclear power plant indicated that high levels of salt had been detected on switchyard equipment and that hosing down with water had not given the desired result. There was an apparent risk of flashovers and the nuclear power block needing to be disengaged. The other Nordic system operators were informed of the situation. A counter-trade was carried out with Norway to boost the margin in the Hasle constraint. Before Ringhals had started coastdown, the wind quickly abated, however, and the risk of lost production ended.



During this session, Fredrik Lindén (closest camera) is the balance engineer. Per Vikström (at right) is the duty engineer.

Control room functions

The Duty Engineer (DE) has the overall responsibility for monitoring the grid and interconnectors. One important day-to-day task is determining the capacity of the various constraints on the grid and interconnectors.

The Balance Service Engineer (BSE) is responsible for maintaining the frequency. When production and consumption are in a state of balance throughout the country, the frequency is stable at around 50 Hz. If consumption suddenly exceeds the current level of production, the BSE has to ensure that the balance is restored. This is achieved by taking in regulation bids from electricity producers. Producers regulate their production upwards or downwards depending on whether there is a shortage of electricity or not. This is called balance regulation. The regulation bids are priced and subordered by Svenska Kraftnät in accordance with what is needed to normalize the situation.

The Control Centre Operator (CCO) is responsible for all connections on the network and for voltage regulation. Maintaining the grid voltage on the same level is important for operational reliability and for keeping transmission losses low. The consumption pattern can vary sharply and this can also cause the grid voltage to vary sharply. This in turn means losses increasing and operational reliability suffering, under certain circumstances.

The Telecom Control Engineer (TCE) monitors the communications and data systems for operating the power system. These consist of broadband and the data communications that we ourselves have with the installations and control equipment.

How dams can be made safer and damage reduced during high flows

Svenska Kraftnät is the central coordinating authority for dam safety in Sweden. Our task includes monitoring and participating in dams becoming safer and the reduction of damage during high flows. We also support R&D in dam safety and hydrology. It is the dam owners – mainly electricity producers – who are primarily responsible for their dams being safe and it is the county authority that checks whether dam owners are facing up to their responsibilities. In our dam safety work, we collaborate with the county administrations, the Swedish Rescue Services Agency, the Swedish Meteorological and Hydrological Institute, the Swedish Environment Protection Board and trade associations, etc.

Less damage from high flows in the future

The floods of recent years have caused great damage to infrastructure and developed areas. To aid the work of reducing damage during high flows, we have produced a report based on the floods in the south of northern and in western Sweden during 2000. The objective was to describe the causes and analyse the possibilities of reducing damage in the future. Dam safety, flood attenuation and reservoir lowering, the structure of regional coordination, consideration to flooding risks during physical planning and climatic conditions are all examples of important areas dealt with in the report.

River simulator makes regulated rivers safer

During 2001, a PC-based river simulator has been produced for the catchment area of Umeälven. Development work has been jointly financed by Svenska Kraftnät and the power industry. Using this initial prototype as a departure point, simulators can now be produced for the other major regulated rivers as well. Using the simulator, operating staff at regulating and power companies can practice their ability to manage extreme flow situations. The simulator also increases our possibilities of studying the effects of alternative regulation strategies.

We simplify supervision and increase public insight

During the past year, we have also produced a paper on dam safety. It includes, besides legal and technical information, concrete proposals for routines that will simplify the county administrations' supervision of dam safety. Among other things, it is proposed that dam owners annually inform the county administration about planned and implemented self-checks. This can involve, for instance, in-depth evaluations of dam safety and inspections. Moreover, dam owners will, according to the proposal, be obliged to submit a report if there have been any problems of a more serious nature regarding dam safety at an installation. In this way, Svenska Kraftnät is making its contribution towards creating an improved overview of dam safety and providing an improved base for the planning of the rescue services. At the same time, the public are also being provided with increased insight into dam safety efforts.

Damaged bridge over an unregulated river in northern Sweden.

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Sussi Kvart


Christel Nettelvik Söderberg


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Jan Magnusson


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Agata Persson
Staff representative.
Union representative of the Swedish Confederation of Professional Associations.

Lisa Björkling
Staff representative.
Union representative of the State Employees' Union.

Power industry terms

Balance power
The imbalance that the balance provider has caused in the national electricity system.

Balance provider
Power trading company that has entered into a balance responsibility agreement with Svenska Kraftnät. Balance providers are obligated to ensure that a state of balance exists between the supply and withdrawal of power in respect of their undertakings.

Balance settlement
Svenska Kraftnät's calculation of the balance providers' imbalances on an hourly basis (balance power). It results in a financial settlement carried out half-monthly in the form of an invoice (Svenska Kraftnät has a receivable) or an authorization of payment (the balance provider has a receivable).

Constraint
A constraint can be a congested sector on the grid where the line capacity is not always sufficient, limiting the power capable of being transmitted through the constraint.

Counter-trade
A power deal that reduces the transmission of electricity in a constraint on the grid where there are transmission restrictions. Through counter-trade, customers do not suffer from transmission restrictions.

Final power
The difference between the actual read values after 14 months and the preliminarily calculated data about consumption.

Final settlement
Svenska Kraftnät calculates the difference between the balance providers' actual deliveries to profile customers (customers whose consumption is not measured on an hourly basis) and their preliminarily calculated deliveries to these customers. Final settlement means that the costs are redistributed between the balance providers.

Island operation
Island operation entails an electricity system within a limited geographic area being operated locally (production, transmission and consumption). The area may have been disengaged spontaneously from the rest of the network or may have been planned for island operation. Within the area, there is always a state of balance between production and consumption.

Load frequency control
Svenska Kraftnät is responsible for maintaining the frequency of the electricity network at around 50 Hz. Discrepancies are compensated for by the rapid regulation of production.

Network protection
A system which reacts to low voltage, leading to a number of different measures. For example, there is network protection on the DC interconnectors from southern Sweden. Network protection immediately reduces exports on the DC interconnectors if transmissions in constraint 4 (an imaginary line from Oskarshamn to Varberg) risk becoming too high.

Point of connection tariff
Fee for connection to the grid. The fee is based on the circumstances at the point of connection.

Power exchange
Marketplace for power deals. Nord Pool, with its head office in Oslo, acts as an intermediary in the trade in electrical energy between different players on the Nordic electricity market.

Profile settlement
A model for keeping tabs on and distributing the volume of consumed electricity not measured on an hourly basis so that deliveries can be correctly distributed among the players concerned.

Spot market
Nord Pool's spot market, which is a marketplace for power. Agreements are made at lunchtime for all 24 hours of the following calendar day.

Supportive power deal
Deal that Svenska Kraftnät makes in order to buy power for counter-purchasing or maintaining the balance.

System operation services
Procured services primarily from power producers which are necessary for the technical operation of the system, primarily frequency regulation and access to gas turbines as a disruption reserve.

System-responsible company
Company responsible for the operational reliability and balance of the national electricity system. Svenska Kraftnät has this role in Sweden.

Transit
The transmission of electricity through a third party country.

Transmission losses
Energy losses in a network.

Financial definitions

Degree of self-financing
The degree of self-financing is defined as cashflow prior to changes in operating capital and investments in relation to investments for the year.

Earning capacity of adjusted equity
The earning capacity is defined as the income for the year with deductions for standard tax, divided by adjusted equity defined as the mean value of the sum of treasury capital at the start of the year and at year-end plus 72 % of restricted and unrestricted reserves and the income for the year.

Earning capacity of employed capital
The result for the year plus interest charges in % of the average employed capital, i.e. the balance sheet total less non interest-bearing liabilities including deferred standard tax in equity, except treasury capital.

Earning capacity of total capital
This earning capacity is defined as the ratio between the income for the year plus interest charges, and the total average capital.

Equity/assets ratio
The equity/assts ratio is defined as the adjusted equity at year-end divided by the total capital. Adjusted equity is defined under Earning capacity of adjusted equity above.

Net loan liability
Allocation and interest-bearing liabilities with deductions for financial interest-bearing assets.

Net profit margin
The income for the year with deductions for standard tax at 28 % in relation to operating revenues.

Operating margin
Operating income in relation to operating revenues.

Times interest earned
The income for the year plus interest charges divided by interest charges. Specifies how much greater the income is compared with the interest charges.

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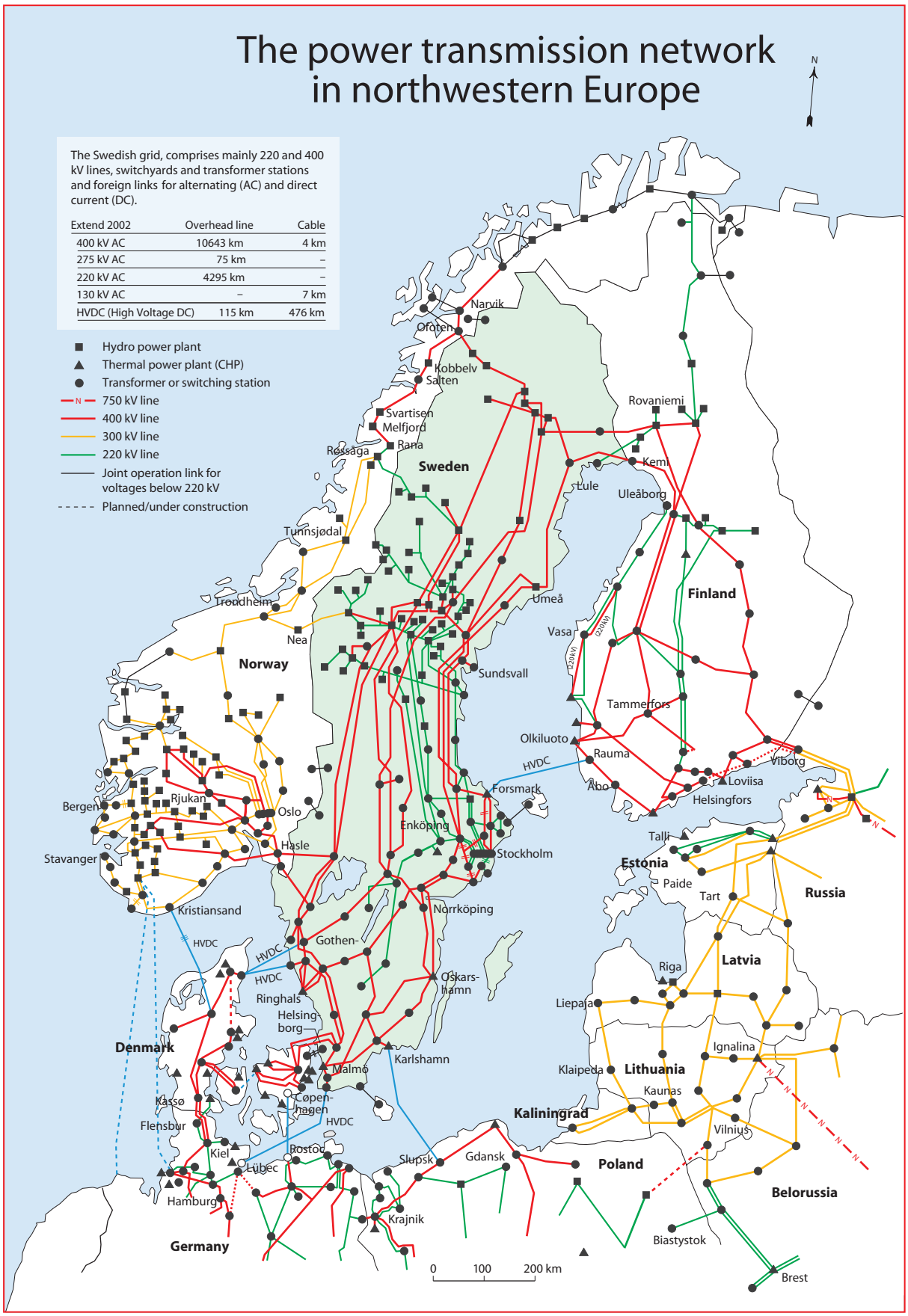
The power transmission network in northwestern Europe



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