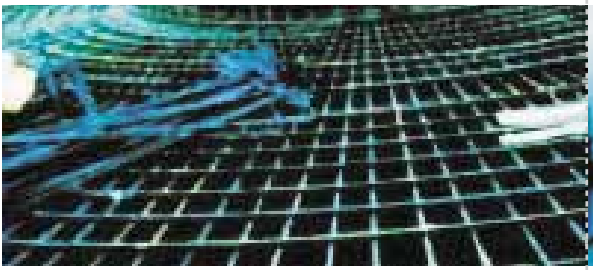
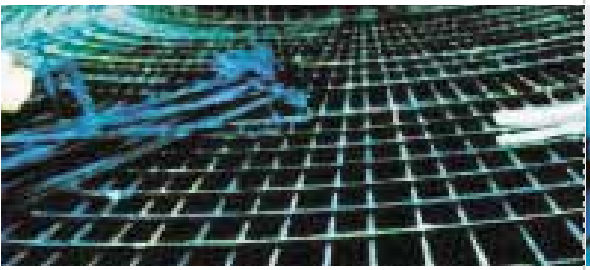
POHJOLAN VOIMA OY



THE ENVIRONMENTAL YEAR 2002

KEY EVENTS 2002

- Pohjolan Voima made a new electricity acquisition record. 21,372 GWh of electricity was supplied to the shareholders
- The Jämsänkoski biofuel power plant (46 MW electricity, 130 MW heat) was completed
- The Kuusankoski biofuel power plant (76 MW electricity, 180 MW heat) was completed
- The Ristiina biofuel power plant (10 MW electricity, 65 MW heat) was completed
- Construction of the Savonlinna biofuel power plant (17 MW electricity, 53 MW heat) continued
- Construction of two wind power plant units (2 MW electricity) was started at Kokkola
- An investment decision was made to build a soda boiler power plant (140 MW electricity, 400 MW heat) at Pietarsaari (Jakobstad)
- The process power plants of Veitsiluodon Voima Oy and Oulun Voima Oy were sold to Stora Enso Corporation
- Construction of a heat accumulator for district heating was started at Ylivieska
- The gasification plant for recycled fuels at Martinlaakso in Vantaa received its environmental permit
- Parliament ratified the Government's decision in principle to approve construction of a new nuclear power plant unit
- The environmental impact assessment report related to the off-shore wind power study at Kokkola was completed
- Experimental cultivation of reed canary grass for power plant fuel was started
- Construction of a disposal site for ash was started at Lålby in Kristinestad
- Sulphur emissions from thermal power plants exceeded the target level set by corporate management
- The environmental certificate held by the hydroelectric power production was renewed and will be valid until 2005
- Pohjolan Voima received an award for its several years of high-quality reporting in an annual comparison of reports on environmental issues and social responsibility
- Oy Alholmens Kraft Ab and Timberjack Energy Technology were jointly placed second in the Energy Globe Award 2002 competition



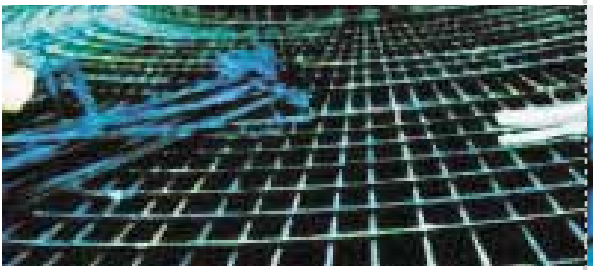
THE ENVIRONMENTAL YEAR 2002

OPERATING ENVIRONMENT

The EU council of ministers of the environment attained political consensus on the emissions trading directive. Emissions trading is scheduled to begin in 2005. Parliament ratified the Government's decision in principle to approve construction of a new nuclear power plant unit. Parliament attached four statements to the policy decision, requiring the Government to take action in matters such as reducing the use of coal in a controlled manner, as well as promoting energy conservation and renewable sources of energy.

EU regulations in the national implementation phase included the directive on large combustion plants, the framework directive in the field of water policy and the directive on the incineration of waste.

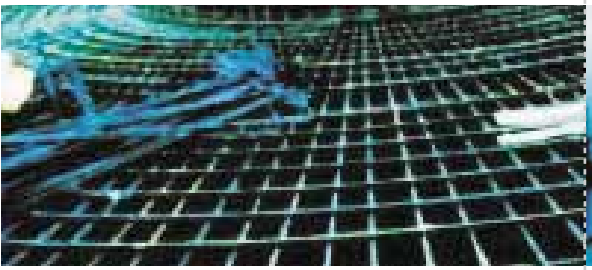
Electricity consumption in Finland increased by 3.3 per cent on the previous year. Due to reduced hydroelectric power production in the Nordic countries attributable to inadequate precipitation, the market price of electricity increased sharply towards the end of the year. This also brought concerns of the sufficiency of electricity into public discussion.



PRODUCTION AND EMISSIONS

Pohjolan Voima made a new production record of, 16 628 GWh. After a summer with only a little rain, hydroelectric power production fell significantly short of the average. The situation with water was poor all over the Nordic countries and, contrary to several previous years, there was no inexpensive electricity available in the market. This meant that Pohjolan Voima's thermal power production increased by 16%. Most of the increase was produced in biofuel power plants producing electricity and heat. Production of condensing power increased less than 10 per cent. The greatest relative increases were in natural gas and oil-based production.

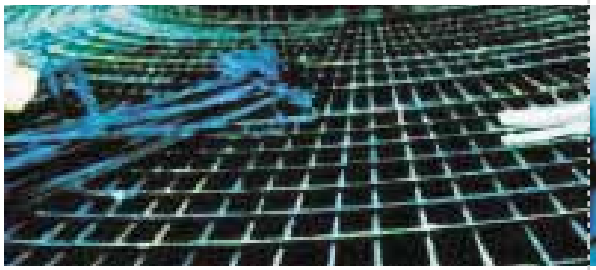
The high load factors of the thermal power plants and the introduction of new plants brought an increase in emissions to the atmosphere. Emissions of greenhouse gases increased by one million tonnes on the previous year, corresponding to 8 per cent of all such emissions in Finland. The emissions of sulphur- and nitrogen oxides increased as well, even though the total was clearly less than the amounts allowed by the permits. Particle emissions decreased despite the increase in production, amounting to no more than 15 per cent of the amounts allowed by the permits.



BY-PRODUCTS AND WASTE

Increased use of fuels also increased the amount of by-products by 18 per cent compared to the previous year. The rate of utilisation remained high at 75 per cent. A Government decree aimed at promoting the use of the by-products in earth construction is stuck in preparation at the Ministry of the Environment.

Despite efforts, the outlook for utilisation is not good. Therefore PVO-Lämpövoima started the construction of a disposal site for the by-products at Kristinestad and prepared for similar projects at other locations as well.



THE ENVIRONMENTAL YEAR 2002

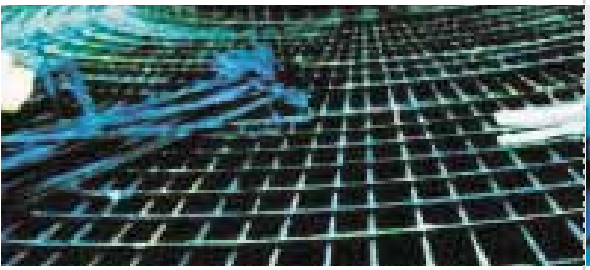
ENVIRONMENTAL MANAGEMENT

The certificate held by the hydroelectric power production was renewed and will be valid until 2005.

Thermal power production did not reach the target for specific emissions of sulphur dioxide set by the management. Most of the other targets were attained. Energy analyses were started at the last plants included in the energy conservation agreement.

Monitoring of the realisation of targets and objectives, included in the environmental management systems, was found to be inadequate. The systems need to be unified and simplified.

There were no significant deviations from the permit conditions of the production plants and no severe environmental accidents.



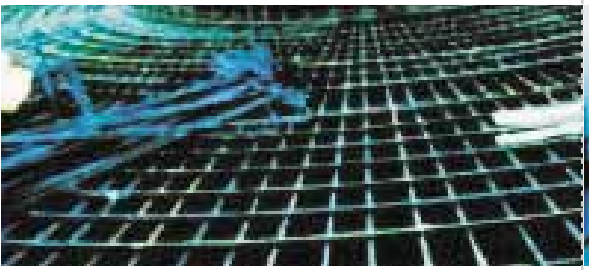
THE FUTURE

The operations of Pohjolan Voima are strongly directed towards the future. The biofuel power plants at Kuusankoski, Jämsänkoski and Ristiina were completed, and construction of a similar plant at Savonlinna continued. Construction of a soda boiler power plant was started at Pietarsaari (Jakobstad). The company is further developing the acquisition and use of biofuels in accordance with an extensive bio-energy programme.

Experimental cultivation of reed canary grass for power plant fuel was started. The development of a gasification and gas purification process for recycled fuels was completed, and the construction of a pilot plant at Martinlaakso in Vantaa received its environmental permit. Construction of the first wind power plant units was started, and preparations were underway to build several units more.

Teollisuuden Voima started the preparations for building a new nuclear power plant unit once Parliament had ratified the approving decision in principle.

In several recent years, abundant rainfall has made lots of hydroelectric power available in the Nordic electricity market, reducing the need for fuel-burning power production and the level of emissions. The drought that started in the latter half of 2002 is expected to have impacts well into the year 2003. As consumption of electricity is increasing, no decrease in emissions to the level of previous years can be expected.



NATURAL RESOURCES

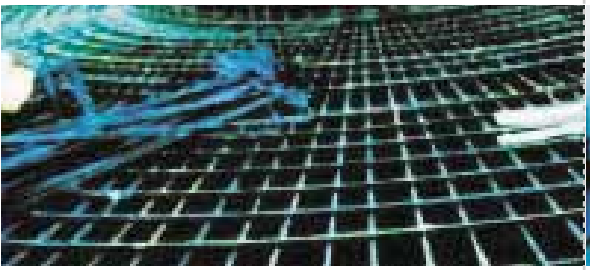
The introduction of new power plants brought a sharp increase in the use of wood and peat compared to the previous year. The use of coal remained at the approximate level of the previous year. Natural gas was also competitive when the market price for electricity was high, and its use increased on the previous year. Total use of fuels increased by 28 per cent.

The distribution among different fuels was as follows:

	Change on the previous year	%
Coal	1.5 million tonnes	+ 3
Wood	1.4 million tonnes	+ 54
Peat	1.6 million tonnes	+ 34
Natural gas	123 million m3	+ 25
Oil	0.07 million tonnes	+ 467

Compared to fuels, the use of other natural resources was minor. 700 million cubic metres of water were used for cooling at the power plants. 26,000 tonnes of limestone was used for desulphurisation.

The demand for fuels can be influenced by increasing energy efficiency. PVO-Lämpövoima completed an energy analysis at the Kristinestad power plant. Similar work was started at the Nokia power plant. PVO-Lämpövoima joined an energy conservation agreement in 1997.



THERMAL POWER

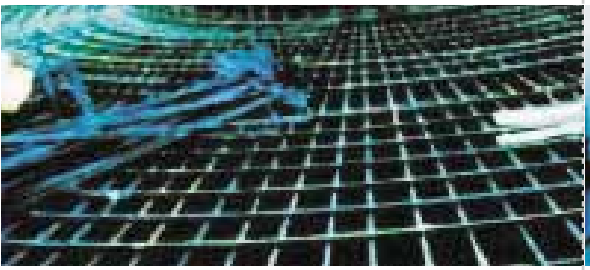
Greenhouse gases

Pohjolan Voima's greenhouse gas emissions amounted to 6 million tonnes, which equals 8 per cent of all such emissions in Finland. The emissions increased by one million tonnes on the previous year. The largest increases were due to the high load factors of the plants, the introduction of new power plants and the fact that the supply of wood-based fuels was inadequate. Lots of peat and coal had to be used at the new plants.

However, specific emissions per units produced were lower than in 1997, the year when production at the condensing power plants was highest before the reporting year 2002.

Greenhouse gas emissions can be decreased by developing the structure of production and energy efficiency. An energy analysis was completed at the Kristinestad power plant and started at Nokia. The energy analyses are based on an energy conservation agreement between the Ministry of Trade and Industry and Finergy, which Pohjolan Voima joined in 1997.

New biofuel power plants were completed at Jämsänkoski, Ristiina and Kuusankoski. The main fuels used in them are wood and peat. Investment decisions were made on the construction of a biofuel power plant at Savonlinna, a soda boiler power plant at Pietarsaari (Jakobstad) and two wind power plants at Kokkola. In addition, a decision was made to build a heat accumulator for district heating at Ylivieska.

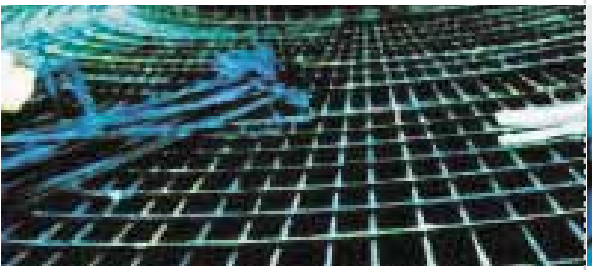


THERMAL POWER

Acidification

Pohjolan Voima's sulphur emissions increased approximately 30% on the previous year, amounting to 8,600 tonnes. Emissions per units of fuel consumed were also on the increase, and the target set by management was not reached. The main reason for increased emissions was operating disturbances at desulphurisation plants. However, emissions remained at approximately 35% below the level allowed by the environmental permits. Specific emissions from electricity production were 424 mg/kWh, which is approximately one third of the 1990 level. Pohjolan Voima's emissions constituted 10% of Finland's Finlands total emissions.

Emissions of nitrogen oxides increased by a fifth to 11,000 tonnes. The main reason for increased emissions was high load of the plants. However, total emissions remained at 15% below the amounts allowed by the environmental permits. Specific emissions from electricity production were also on the increase but remained at approximately 40% of the 1990 level. Pohjolan Voima´s total emissions constitute approximately 5 % Finland´s total emissions.



THERMAL POWER

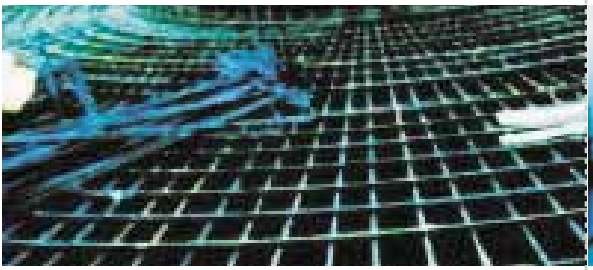
Emissions to bodies of water

Plants belonging to the Pohjolan Voima Group used 700 million cubic metres of cooling water. A total of 21,000 TJ of heat was conveyed to the sea and 3,470 TJ to inland waters. The heat load increased by a total of 16%. These numbers do not include the Olkiluoto nuclear power plant.

The Group's own peat production amounted to 680,000 MWh. Small rainfall in the summer helped to reduce the burden on bodies of water, which reached a record-breaking low. The average burdens were approximately one half of the previous year's figures and less than a fifth of the targets set by the Ministry of the Environment. The actual burdens were:

- Phosphorus 0.08 kg/ha
- Nitrogen 2.1 kg/ha
- Solid matter 11.5 kg/ha

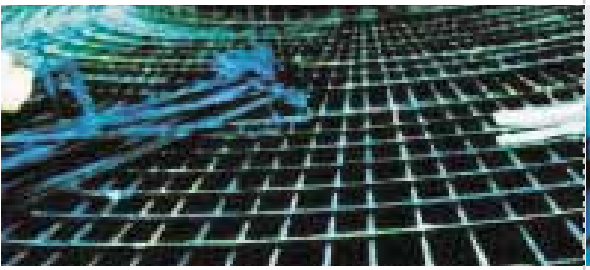
In order to reduce the burden on bodies of water, a surface runoff field was introduced at one peat bog, and structures for controlling the flow were planned. Preparations were started for the decommissioning of some production areas in the near term.



THERMAL POWER

Particle emissions 2002

Despite increased production, Pohjolan Voima's particle emissions continued to decrease. Total emissions stood at 331 tonnes, 15% of the level allowed by the permits. Specific emissions from electricity production were 16 mg per each kilowatt-hour of electricity produced by thermal power.



THERMAL POWER

By-products and waste 2002

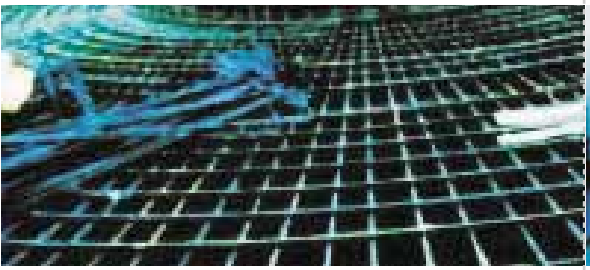
Plants belonging to the Pohjolan Voima Group generated a total of 385,000 tonnes of flue dust, bottom ash and desulphurisation gypsum, which is 18% more than in the previous year. Of these, 295,000 tonnes or 75% were utilised. At the end of the year, 124,000 tonnes were in intermediate storage, waiting for utilisation or disposal. By-products delivered to landfills amounted to 96,000 tonnes. 120 tonnes of desulphurisation gypsum were dumped to landfills due to quality defects.

Ash was utilised in the construction of roads and a harbour field, in landfill structures and in the manufacture of cement and concrete. Gypsum was utilised in the gypsum board industry.

370 tonnes of hazardous waste were delivered for processing. 4,260 tonnes of filterpress cake from the desulphurisation process were recycled back to the process, making the contents end up in flue dust. Conventional waste amounted to 2,500 tonnes.

The permit procedure for a landfill intended for the use of the Alholm power plant at Pietarsaari (Jakobstad) was underway in Vaasa Administrative Court. The appeal is seeking a solution to what kinds of structures may be legally required at ash disposal sites. The first phase of the Pirilö landfill is in use.

PVO-Lämpövoima started to construct a disposal site for power plant ash at Lålby in Kristinestad. For the first time, the sealing structure at the bottom is built of fibre clay generated when de-inking recycled paper. The company and the authorities have different views on the required thickness of the fibre clay layer. The matter will be settled by appeal procedure.



HYDROELECTRIC POWER

Environmental care 2002

Due to the exceptionally poor water situation, the ecological regulation instructions for regulating the head waters of River Iijoki could not be observed. There were no deviations from binding permit provisions.

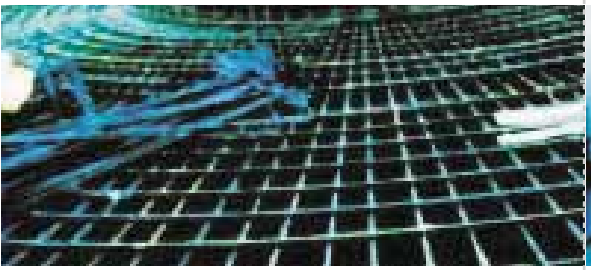
Actions required by the Act on Dam Safety were carried out in accordance with current programmes. Periodic inspections were carried out on the dams at the Jumisko and Kierikki power plants, the Irni and Kosto regulation dams and the dams at the Maunujärvi and Taljajärvi natural nutrition ponds.

The landscaping programme regarding the dry valleys to the downstream of River Iijoki proceeded to the final stages. The programme comprises 26 bottom sills with associated landscaping work. The programme started in 1991 and has been implemented jointly with the Northern Ostrobothnia Environment Centre and the municipality of Yli-Ii.

The functionality of the environmental system was verified by several internal and external audits. The management of chemical matters was improved by means of a chemical inventory and the outsourcing of storage and logistics to an external expert company.

Various types of reconditioning of banks and drainage systems, as well as landscape preservation work, were carried out at approximately 200 sites. Most of these constituted erosion protection of banks. These were constructed on a total of 23 kilometres of bank, using a total of 24,000 m3 of protection material.

The company also participated in the planning and implementation of an environmental management programme for River Iijoki headed by the Northern Ostrobothnia Environment Centre. The programme is built on funding from the EU. The company utilised its expertise by carrying out repairs of regulation damage for Koillis-Pohjan Sähkö Oy at Pintamojärvi in Taivalkoski.



HYDROELECTRIC POWER

Fish preservation 2002

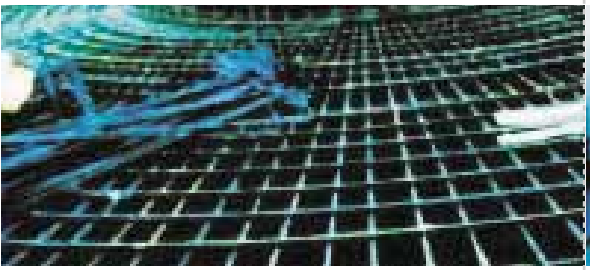
On behalf of PVO-Vesivoima, Voimalohi Oy planted a total of 2.7 million fry into the water systems of River Kemijoki and River Iijoki, as well as into the sea. The implantations were realised almost as planned. The cultivation of grayling failed, probably due to the warm and dry summer. The previous year's shortage of lamprey transplantation could not be filled. The implantation balances for almost all other species show a surplus.

The State Provincial Office in Oulu received a complaint on Voimalohi's whitefish cultivation, alleging that the fry starve in the natural nutrition ponds. The State Provincial Office stated that the operations of Voimalohi did not violate the laws on the protection of animals. The complaint filed by MP Erkki Pulliainen at the end of 2001, regarding the excessively small size of whitefish fry planted in the sea, was pending with the Chancellor of Justice. The complaint also regarded the composition of the quality workgroup appointed by the Ministry of Agriculture and Forestry. A judgement was issued in January 2003. It requires the Ministry of Agriculture and Forestry to monitor the realisation of the obligation for implantations and the results, and take any actions it considers necessary according to the situation.

Voimalohi published supervision reports covering five-year periods in the inland water areas of River Kemijoki and the sea in front of River Kemijoki and River Iijoki.

The Environmental Permit Authority for Northern Finland changed the original whitefish plantation obligation in Lake Kostonjärvi to a payment obligation.

The two workgroups appointed by the Ministry of Agriculture and Forestry continued their work. One of the groups provides instructions for carrying out obligations related to fishery, while the other determines the quality of the implanted fish. The latter workgroup completed the preparation of preliminary conversion factors for different sizes of implanted whitefish.



THE ENVIRONMENTAL YEAR 2002

ENVIRONMENTAL MANAGEMENT SYSTEMS 2002

The certificate held by the hydroelectric power production was renewed and will be valid until 2005.

An annual management review of thermal power production is conducted each May. The management review of thermal power production in 2003 found out that the target for specific emissions of sulphur dioxide set by the corporate management team had not been reached. A decision was made that maintenance of the desulphurisation plants must be more effective.

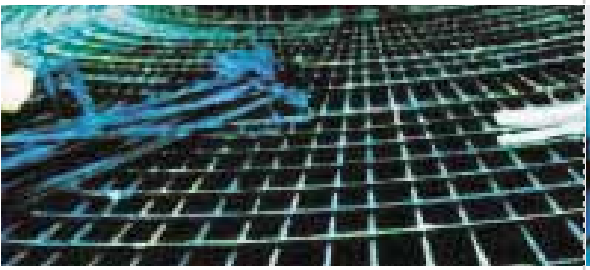
The practice decided by the management team had been observed when acquiring coal. The energy conservation agreement signed in 1997 had been observed. Energy analyses have been completed at all plants included in the agreement. The decisions made in the previous management review had mainly been realised. For example, utilisation of ash had been promoted, internal auditors had been trained and the unification of environmental management systems had been started. A decision was made to abandon the development of common indicators until further notice and use plant-specific indicators.

Audits of the power plant organisations had revealed problems in the monitoring of the realisation of targets and objectives. A decision was made to develop the operations on the basis of experience. Most of the targets set by the power plant organisations had been reached. Minor deviations were present at almost all plants, and corrective measures had been carried out appropriately.

There were no significant environmental accidents. At Mussalo, some flue dust spread outside the plant area with wind. At Tahkoluoto, a disturbance in ash conveyor equipment forced the pumping of ash sludge to the yard. The events did not cause any damage.

With the exception of hydroelectric power, there were only a few cases of feedback from interest groups. The most significant of these addressed dust nuisance from ash handling at Tahkoluoto. The possibilities for improvement will be investigated.

Firefighting and rescue drills were arranged at the power plants and peat bogs.



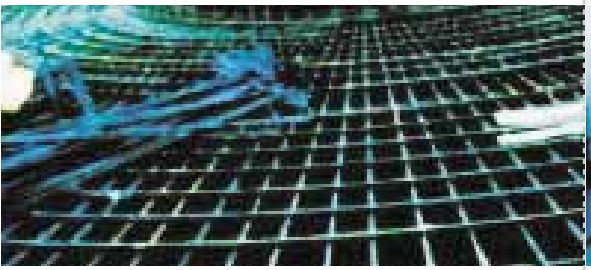
PERMITS AND DEVIATIONS 2002

Conformance of the operations in 2002

There were no significant deviations from the permit conditions of the production plants in 2002. The following incidents were reported to the authorities:
The particle emission limit was momentarily exceeded at the Seinäjoki power plant twice. The total duration of excessive emissions was 20 minutes.
At Mussalo, some flue dust spread outside the plant area with wind. The event did not cause any damage.

Major permit issues in 2002:

- Oy Alholmens Kraft Ab's appeal on the environmental permit for a disposal site for power plant ash is pending in Vaasa Administrative Court.
- The Western Finland Environment Centre granted a permit for the disposal of power plant ash in Kristinestad. PVO-Lämpövoima Oy filed an appeal on the permit provisions with Vaasa Administrative Court.
- The Southern Savo Environment Centre granted an environmental permit for the Savonlinna power plant.
- The Environmental Permit Authority for Western Finland granted Powest Oy and Vapo Oy a permit to construct a gasification plant for recycled fuels in Vantaa.
- An application regarding adjustments to the environmental permit of the Tahkoluoto power plant is pending in the Environmental Permit Authority for Western Finland.
- An application regarding a planned sea cable between Finland and Estonia was pending in the Environmental Permit Authority for Western Finland. The judgement was issued in February 2003.
- The Ministry of Trade and Industry granted a cross-border connection permit in accordance with the Electricity Market Act for the sea cable.
- The environmental impact assessment procedure associated with the maritime wind power study at Kokkola continued.
- An environmental impact assessment procedure associated with the disposal of power plant ash was started in Vaasa.



THE ENVIRONMENT AND THE ECONOMY IN 2002

The environmental costs of hydroelectric power production decreased slightly on the previous year, amounting to 3 million euro. Costs per megawatt-hour produced amounted to 1.85 euro. The largest costs originated in obligations related to fishery, while the rest consisted of environmental management work, obligations related to water resources, supervision of dam safety and research. PVO-Vesivoima Oy has carried out various voluntary reconditioning projects jointly with the regional environment centres and municipalities for a long time. The partners have provided a total of 3.6 million euro of funding for these since 1992. In 2002 the share of the partners was 170,000 euro.

The environmental costs of thermal power plants amounted to 4.9 million euro, which is 0.82 euro per megawatt-hour. The new biomass power plants are not included in this figure. Environmental income originated from the sales of by-products, but the amount was minor in proportion to the costs.

Teollisuuden Voima paid 11.6 million euro to the national nuclear waste fund.

The largest environmental investment was the construction of an ash disposal site in Kristinestad. The first-phase costs were 2.3 million euro. At Seinäjoki, investments in the improvement of efficiency and peat production areas totalled 0.6 million euro. The value of the environmental investments in the new power plants introduced in 2002 is calculated to be 8.4 million euro. Other environmental investments in thermal power production were not significant.

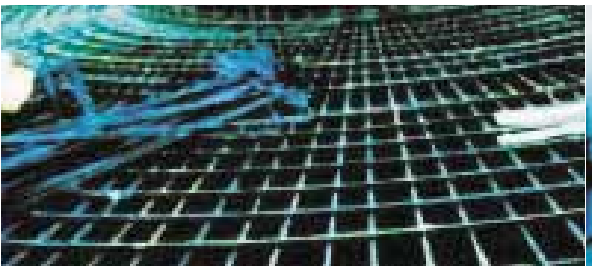
Teollisuuden Voima made 0.8 million euro of environmental investments at Olkiluoto. The investments further reduced emissions to the water.

PVO-Innopower started the construction of the first wind power plants at Kokkola. The value of the investment is 2.6 million euro.

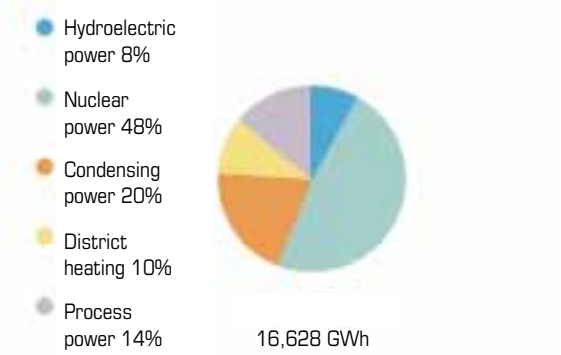
The Group's research and development costs were 12.8 million euro. Most of this was spent on research related to the disposal of spent nuclear fuel.

The Group does not have any such environmental liabilities that would require provisions in accounting.

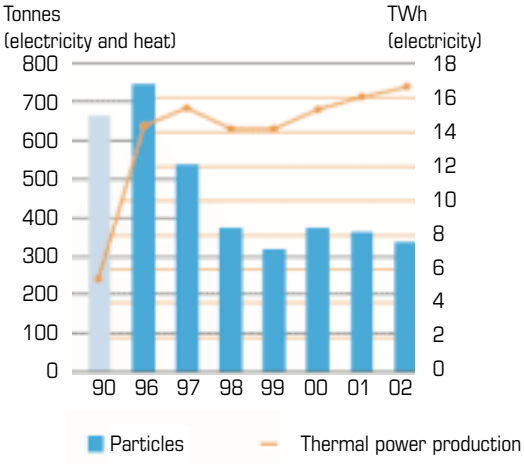
POHJOLAN VOIMA OY



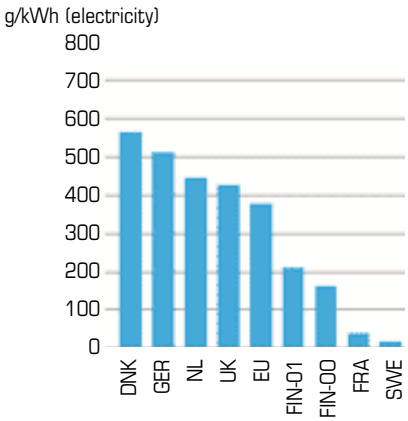
STRUCTURE OF POHJOLAN VOIMA'S ELECTRICITY PRODUCTION 2002



POHJOLAN VOIMA'S PARTICLE EMISSIONS



POHJOLAN VOIMA'S SPECIFIC EMISSIONS OF CARBON DIOXIDE



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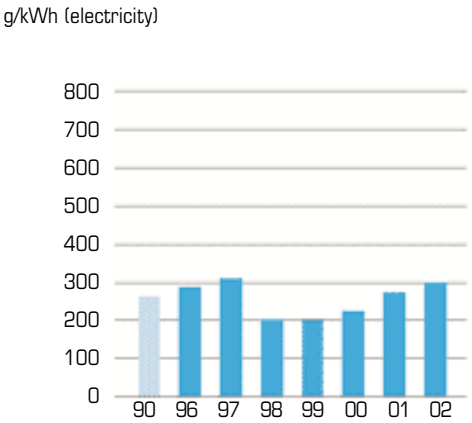
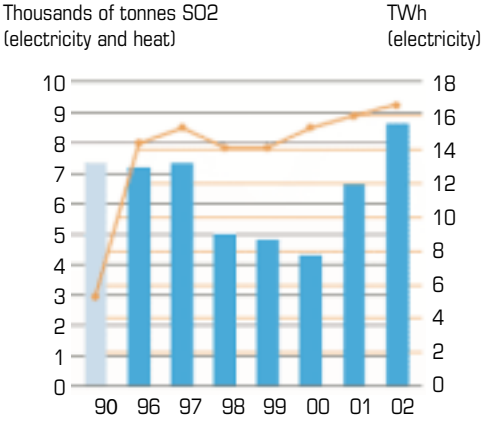
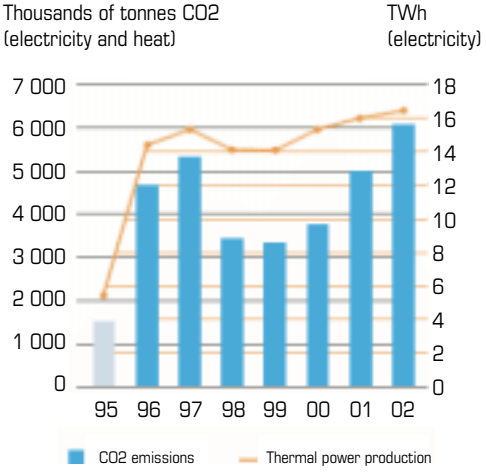
POHJOLAN VOIMA'S SPECIFIC EMISSIONS OF CARBON DIOXIDE



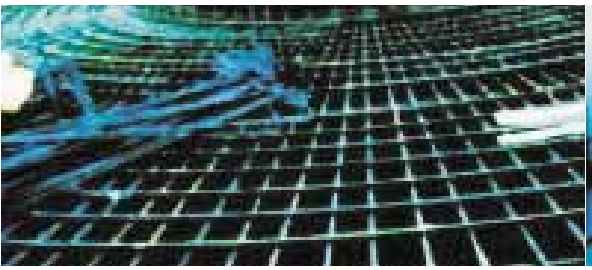
SPECIFIC EMISSIONS OF SULPHUR DIOXIDE



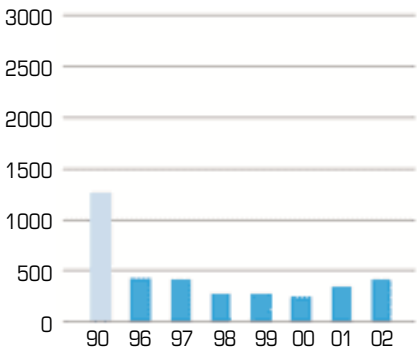
POHJOLAN VOIMA'S SPECIFIC EMISSIONS OF CARBON DIOXIDE



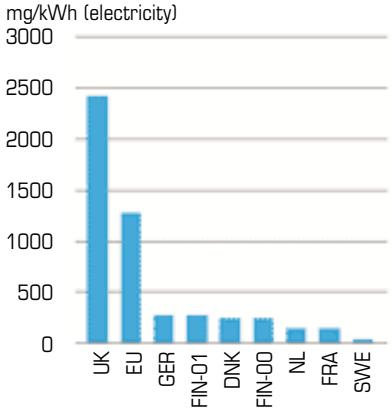
POHJOLAN VOIMA OY



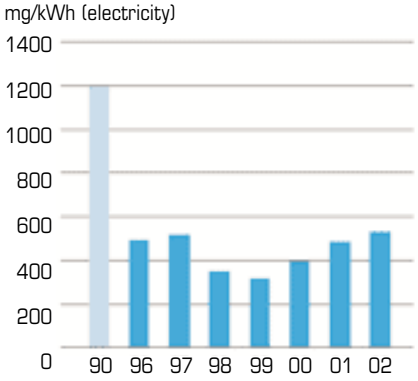
POHJOLAN VOIMA'S SPECIFIC EMISSIONS OF SULPHUR DIOXIDE



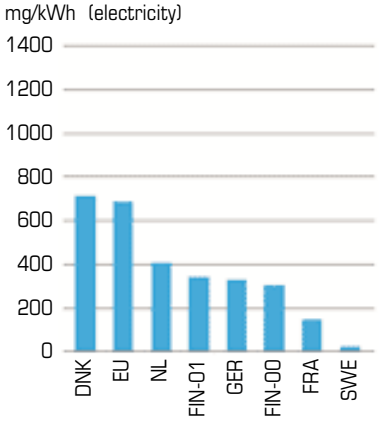
SPECIFIC EMISSIONS OF SULPHUR DIOXIDE 2000



POHJOLAN VOIMA´S EMISSIONS OF NITROGEN OXIDES

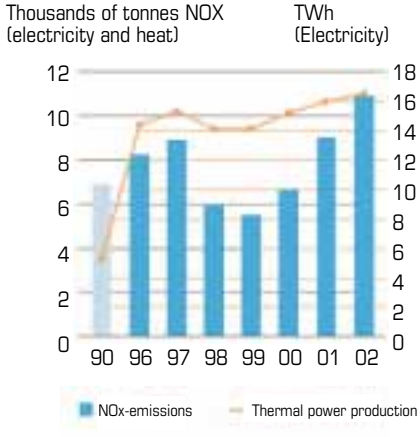


EMISSIONS OF NITROGEN OXIDES 2000

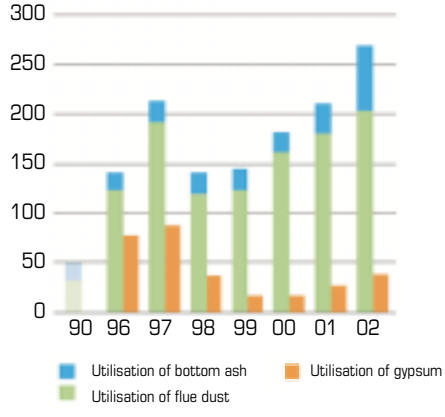


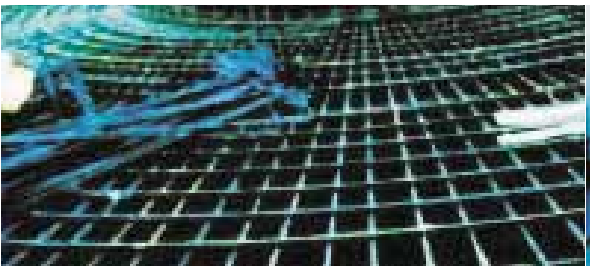
Source:

POHJOLAN VOIMA'S EMISSIONS OF NITROGEN OXIDES

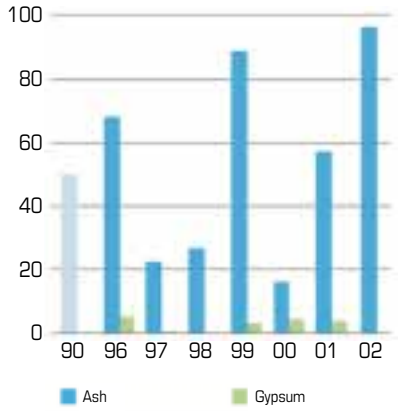


UTILISATION OF BY-PRODUCTS





DUMIPING OF BY-PRODUCTS
Thousands of tons



USE OF FUELS
Thousands of TJ