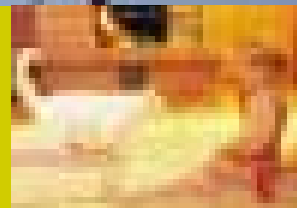
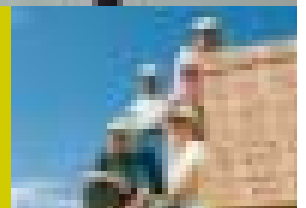




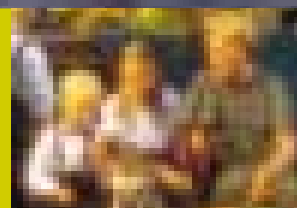
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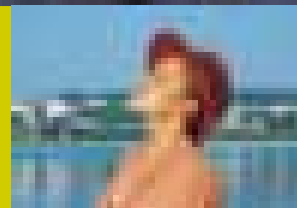
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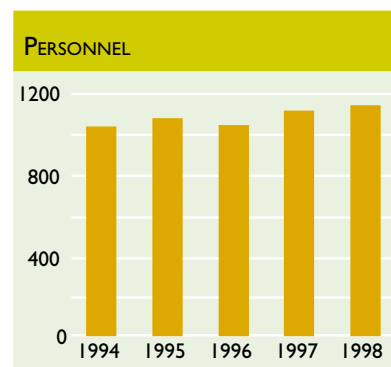
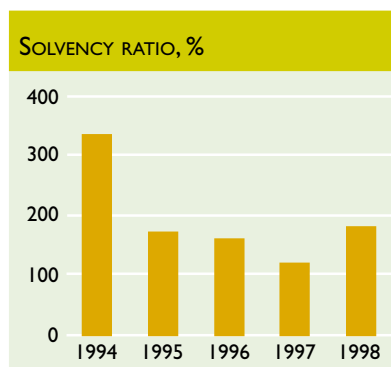
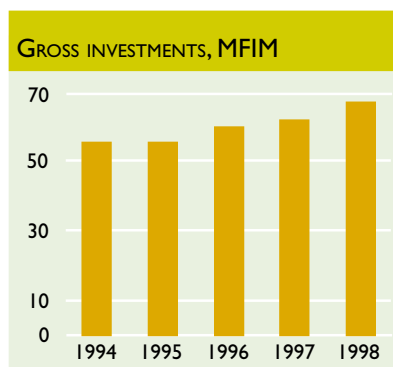
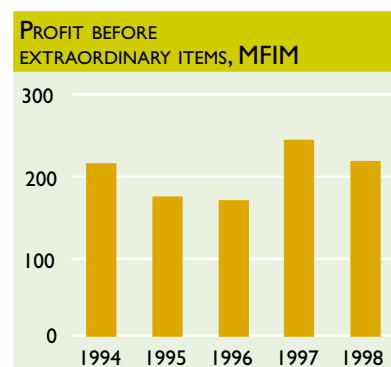
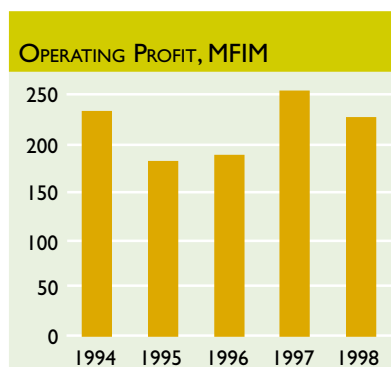
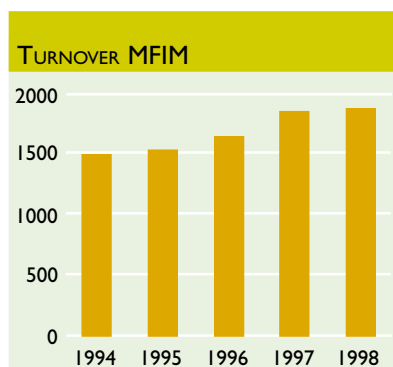
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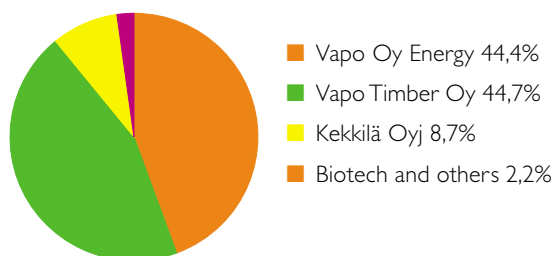
BIOTECH



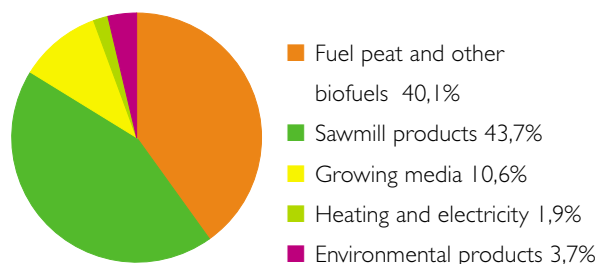
# VAPU GROUP KEY FIGURES



## Turnover by business activity 1998, %



## Breakdown of turnover by main products 1998, %



FIM million	1994	1995	1996	1997	1998
Turnover	1 497	1 535	1 645	1 861	1 879
Growth %	19,1	2,5	7,2	13,1	0,9
Operating profit	231	182	186	253	226
% of turnover	15,4	11,8	11,3	13,6	12,0
Net financial items	-14	-9	-18	-9	-6
Profit before extraordinary items	216	173	168	245	219
% of turnover	14,4	11,3	10,2	13,2	11,7
Taxes	48	59	48	76	62
Profit for financial period	131	106	119	168	159
Dividends distributed	45	36	36	57	75
Balance sheet total	2 246	2 090	2 107	2 239	2 215
Interest-bearing liabilities	499	510	487	387	299
Return on capital invested (ROI)%	16,9	13,2	11,9	15,6	13,7
Return on equity (ROE)%	17,1	10,5	10,4	13,4	11,4
Current ratio	1,69	2,19	2,02	2,37	2,73
Solvency ratio %	55,7	55,3	59,6	62,1	67,3
Gross investments	336	171	161	120	180
% of turnover	22,5	11,1	9,8	6,5	9,5
Average personnel	1 040	1 083	1 046	1 119	1 152
Per-share data					
Number of shares	30 000	30 000	30 000	30 000	30 000
Earnings / share, FIM	5 388,10	4 304,95	4 020,09	5 612,87	5 290,21
Shareholders' equity / share, FIM	33 843,32	36 233,36	38 814,46	43 199,14	46 586,35
Dividend / share	1 500,00	1 200,00	1 200,00	1 900,00	2 500,00
Dividend as % of earnings	27,8	27,9	29,9	33,9	47,3

## VAPO GROUP

### VAPO OY ENERGY

Vapo Energy is Finland's biggest supplier of indigenous biofuels. In addition to fuel peat and wood fuels, Vapo also produces heat and electricity. Fuel peat is used to produce a fifth of Finland's district heating and 8% of all the electricity generated. Vapo Energy is also an important supplier of peat for environmental purposes.

### VAPO TIMBER OY

Vapo Timber is Finland's fourth largest producer of sawn goods, and it ranks among the top ten in Europe. Vapo Timber's sawmills are located in Hankasalmi, Lieksa, Nurmes, Forssa, Paltamo and Ivalo. Their combined production capacity is 700 000 cubic metres, and 80% of total output is exported.

### KEKKILÄ OYJ

Kekkilä Oyj manufactures growing media and fertilizers for the Finnish and export markets. The Kekkilä group includes subsidiaries Stenrøgel Mosebrug A/S in Denmark and VapoGro Ltd. in the United Kingdom. Kekkilä's shares are quoted on the Helsinki stock exchange.

### VAPO OY BIOTECH

Vapo Biotech's business consists of municipal waste handling, sludge treatment, and the marketing of air purification equipment. Biotech has developed plants for composting and processing biowaste which are especially designed for Finnish conditions.

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## PEAT TO BE CLASSIFIED AS A SOLID BIOFUEL

This century's rainiest summer is over and we are again heading for a normal production season. Those who make their living from the peat business saw their livelihood affected by the bad weather; but joint efforts meant that more serious problems could be avoided. Thanks to its stockpiles of peat from previous seasons – which naturally increase costs when compared with competitors – Vapo is able to secure fuel supplies for its contract customers.

A number of factors – the rainy summer; the increase in hydro and imported electricity; profound changes in the electricity markets and the energy taxation policy decisions implemented from the beginning of 1997 – reduced both the amount of electricity generated using peat and the overall consumption of peat. Preliminary estimates indicate that 20.5 TWh of fuel peat was consumed in Finland in 1998, which is 12.9% less than in 1996. To restore peat usage to its previous level would require changes in the taxation of energy: the next time that Finland's energy taxation is amended, all electricity generated using peat would have to be granted an electricity tax refund equivalent to that for electricity generated using wood, and the lower limit at which usage of fuel peat becomes taxable would have to be raised from its present level of 15 000 MWh per calendar year to its former level of 25 000 MWh. Action to facilitate utilization of fuel peat is the best way of increasing usage of wood fuels in district heating and power plants using present technology. This is also a convenient way of somewhat alleviating the effects of the taxation change implemented in autumn 1998, when the tax on fuel peat

was increased by around 84% while in the case of other fuels the increase was only about 24%.

One topic that has often been discussed in the public debate on energy and the environment is whether peat is a fossil fuel or biofuel. Even though fossil fuels were formed under great pressure several hundred million years ago, there are those who would like to consider peat – which is formed as part of the normal cycle of nature – as a fossil fuel. In Finland more peat is accumulating than is being utilized; in particular, the growth of peat in bogs that are being restored to their natural state following peat production is considerably faster than in old bogs. In its carbon binding characteristics and combustion emissions, peat is comparable to wood biomass. Finnish research examining the position of bogs and peat within the carbon cycle, which produced encouraging results from the viewpoint of peat utilization, has not succeeded in convincing everyone in Finland, and – as in other areas of life – confirmation from foreign sources has been awaited. Now, however, sufficient confirmation has been received from the European Union.

The European Commission defines biomass as “any whole or part of vegetable matter which can be used for the purpose of recovering its energy content”. According to the Commission's Energy Directorate, peat cannot be regarded as a fossil fuel like oil or coal, because it consists of organic material formed from the remains of plants and has properties resembling those of wood. The European Standards Committee, CEN, has included peat in the standardization process for solid biofuels because there are many similarities between peat

and biomass. It is now time for people in Finland, too, to believe that as far as taxation and the debate on carbon dioxide emissions and sinks are concerned, fuel peat deserves and will get the same special status as renewable energy sources in general and wood in particular.

In terms of the objectives set for 1998, the Vapo Group's performance can be described as almost satisfactory. Vapo Oy Energy's turnover was slightly below target due to reduced demand for fuels to generate electricity, and Vapo Oy Biotech's turnover decreased due to the rescheduling of projects. However, these shortfalls were compensated by Vapo Timber Oy's record output of sawn goods and its increased turnover. The Kekkilä group exceeded its targets. This year the Vapo Group's employees and contractors will continue their work in processing natural resources for the benefit of society as a whole. The solid backing of our customers and business partners represents the best possible support that we could have in our efforts. ▼

Jyväskylä, 12 February 1999

Esko Muhonen

**Vapo's three wind turbines at Kuvaniemi started to produce electricity in October 1998.**





SEPPÖ SÄNKIAHO, DIVISIONAL DIRECTOR

## A YEAR DOMINATED BY WOOD AND WIND

Securing the availability of peat for our contract customers, doubling shipments of wood fuels, expanding heating operations and construction of the Kuivamatala wind park – these were the highlights of 1998 for Vapo Oy Energy. There were 430 employees in the Division during the year. In addition, peat production and transportation provided work for around 3000 outside contractors and their employees.

**Last year Vapo's Kaikonsuo works at Kiuruvesi manufactured 12 specially designed "HavuHukka" trailers for forest residues. These are used in the production of forest chips at Vapo's terminals.**



In 1998 the use of energy peat in Finland declined by around 12.9% compared to 1996. The decrease is the result of energy taxation and the partial replacement of electricity produced in condensing power plants from fuel peat with hydro and imported electricity. The aim of the new energy tax, which came into force in 1997, was to promote the development and use of indigenous biofuels. In practice the tax has partly led to domestic fuels competing with each other and has not necessarily increased their use. In particular the new tax is not supportive of small regional heating plants.

Nonetheless, the future for peat looks good. Industry is increasing its use of biofuels and this means new opportunities for peat. Examples of the application of peat as industrial energy sources in recent years include the power plants of Enso Oy's Fine Papers Oulu and Kemi mills and of UPM-Kymmene's Tervasaari

and Rauma mills. There were several similar projects in the pipeline at the end of 1998.

Traditionally peat has been used to produce heat and electricity in most inland parts of Finland and in a number of towns and population centres on the west coast. Peat accounts for over 20% of district heat production and 8% of electric energy production.

There has been a notable increase in interest in peat in the European Union, and this bodes well for the future of the fuel. New peat-producing countries have acceded to the EU, and as a biofuel peat is very important locally in the EU's northern regions. The Commission's Directorate General for energy has proposed to the European Standards Committee (CEN) that peat should be included in the future standard for solid biofuels.

The summer of 1998 was exception-

ally difficult for peat production since rain disrupted production almost continually. Under these unfavourable conditions Vapo Oy Energy produced around 23% of its target of 19.6 million cubic metres of fuel and growth peat.

Despite it being a poor year for production, supplies of fuel peat to contract customers are not affected because Vapo built up substantial back-up stocks in previous good summers. Contract customers take priority in peat supplies, but other customers have also received peat in the quantities they require.

Nor will there be any interruption of supplies to contract customers who use sod peat. There are adequate stocks of sod peat, but the quality may be slightly inferior to that after normal summers.

The poor summer affected production of environmental peat throughout Europe, and by the end of the year

there was a shortage of growth peat. In spite of this Vapo Oy's sales of environmental peat grew by a quarter, and supplying the needs of contract customers did not cause any difficulties.

In 1998 Vapo Oy supplied over 1.2 million bulk cubic metres of wood fuel to its customers, almost twice as much as the previous year. Most of the growth was in deliveries of forest chips, which increased to approximately 300,000 bulk cubic metres.

1998 was an eventful year for the heating operations of Vapo Oy Energy. Right at the end of the year Voimavasu Oy, an energy production company, was set up, the Lieksa-based heat producer Lieksan Lämpö Oy was acquired, and agreement was reached on the construction of district heat plants in Joroinen and Paltamo. The outlook for 1999 is promising. During the year under review Vapo also built three wind turbines at Kuivaniemi, near Oulu.

In December 1998 Det Norske Veritas awarded certification to the environmental system of Vapo Oy Energy's Western Finland Business Unit. The system has gained ISO 14001 standard certification.

During the year under review Vapo Oy Energy launched a process planning and development project. The aim is to further improve customer service and upgrade working methods and task flows and to boost efficiency. The key processes of the Division include sales and customer management, heat and electricity operations, logistics, raw materials, procedures and plant improvement and support operations. The processes will be implemented during 1999. ▼

## THREE NEW WIND TURBINES

During 1998 Vapo Oy built three wind turbines at Kuivaniemi, to the north of Oulu. The wind turbines were completed in October and on completion, they were the largest wind power turbines in Finland.

Wind power production is managed by Vapon Tuulivoima Oy, a company owned jointly by Vapo Oy and Kuiva Turve Oy. The energy produced will be used at Vapo's peat production areas and offices at around 200 sites throughout Finland. ▼



**Each wind turbine can produce 750 kilowatts.**

## FOREST CHIP PRODUCTION MACHINERY

In 1998 Vapo Oy Energy invested FIM 8 million in machinery for the production of forest chips. The sum was used to buy 12 "HavuHukka" forest chip trailers and four tractor-mounted chippers. As a result of the investment Vapo will be able to supply its customers with forest chips of consistent quality and to provide additional employment for outside peat contractors in the winter season. The investment programme will continue in 1999. ▼

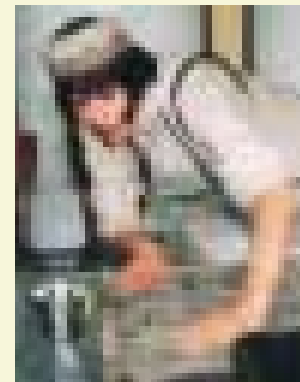
## VAPU OY ACQUIRES LIEKSA LÄMPÖ OY

In October 1998 Vapo Oy acquired the Lieksa-based heat producer Lieksan Lämpö Oy and its district heating network from the town of Lieksa and Pohjois-Karjalan Sähkö. This represents the first heat distribution company that Vapo Oy has acquired. ▼

## BOG AESTHETICS UNITES PEAT PEOPLE

"The Aesthetics of Bogs and Peatlands" conference held in June in Iломantsi, eastern Finland, brought together numerous people interested in peat. A total of 190 participants from a variety of backgrounds in 13 countries discussed and debated the conservation and utilization of peatlands. Important channels of communication were established between researchers and those involved in the practical side of things. Vapo was one of the main sponsors of the event. ▼

**Heidi Greb, German fashion designer.**



## SUFFICIENT PEAT FOR CONTRACT CUSTOMERS

Vapo Oy Energy's contract customers can rest assured that they will receive the quantities of peat they require, even though peat production levels were exceptionally low. Prior to 1998, production was plentiful in the summers of 1994 onwards, so stocks are adequate. ▼

## VOIMAVASU OY TO CONSTRUCT A POWER PLANT

Voimavasu Oy, an energy producer jointly owned by Vapo Oy, Sucros Oy and ABB Service Oy, is to build a peat, wood and recycled fuel-fired power plant at the Salo mill of Sucros Oy alongside the existing plant. When completed, the plant will also produce almost all of the district heat requirements of the town of Salo. Construction is scheduled to start in spring 1999.

The company, set up in December 1998, produces the energy for the sugar mills of Sucros Oy in Salo and Säköylä and of Finnish Sugar Ltd in Porkkala and also manages the related investments. ▼



JUHA TUOMINEN, MANAGING DIRECTOR

## LONG-TERM DEVELOPMENT CONTINUES

The Vapo Timber group recorded a turnover of FIM 845 million and an operating profit of FIM 52.4 million in 1998. Turnover was FIM 24 million up on the previous year while operating profit fell by FIM 49.3 million. Solidity continued to improve. At the end of 1998 Vapo Timber Oy employed 420 people.

**At Vapo Timber Oy's sawmills, the needs of the customer are taken into consideration throughout the organization. The photo shows employees at Hankasalmi Sawmill.**



For the sawmill industry 1998 was a significantly weaker year than the one before. Consumption of sawn goods remained at a high level throughout the year, but the average price of sawn goods fell by over 9 per cent compared to 1997. Uncertainty in the markets caused by abundant supply led to marked fluctuations in demand and had an adverse affect on price development.

The prices of whitewood had already started to fall sharply at the end of 1997 and were at their lowest in the spring of 1998. Towards the end of the year prices rose but did not recover to anywhere near the level that preceded the fall. Prices paid for redwood began to drop later than those for whitewood, the decline that occurred in spring 1998 continuing for the rest of the year.

In addition to the negative trend in market prices, factory prices were forced

down by unfavourable changes in currency rates, especially that of the Swedish crown, at the end of the year.

Throughout the year the quantity of wood available was satisfactory, but the exceptionally rainy summer and wet autumn threatened the supply of raw timber before the onset of winter. The large purchasing requirements and competition for stands of timber marked for summer felling caused a steady rise in log prices towards the end of the year to unprecedented levels.

For the sawmill industry 1999 will be a difficult year to record good results. Timber is still in abundant supply and estimates of consumption are being revised downwards in line with growth forecasts for the various national economies. No significant change in prices is expected during the first half of the year at least. When negotiating log prices

– which have a key influence on profitability – there has to be better correlation with recent trends in sawn goods prices.

The introduction of the euro as an invoicing currency on as wide a basis as possible will reduce costs, exchange rate risks and speculation generally. Customer management, logistics and efficiency are all key aspects of Vapo Timber's business.

The group's six sawmills produced a total of 675,500 cubic metres of sawn goods and further processed products. Production showed an increase of 4.2 per cent over the previous year. Growth in the production of sawn goods for Finland as a whole was in excess of 6 per cent. The Hankasalmi and Kevätniemi sawmills set new production records. Vapo Timber's sawmills used a total of 1.5 million cubic metres of logs.

Vapo Timber's exports amounted to 502,000 cubic metres, which constituted



an increase of 12.5% on the previous year. 80 per cent of the total value of deliveries was exported.

Exports to Germany, France and the Netherlands showed an increase. In Denmark targets were not achieved, and the situation in Southeast Asia had an adverse effect on exports to Japan. In the Finnish market the trend was positive in volume terms.

Vapo Timber Oy boosted its competitiveness by improving customer service and raising the efficiency. For instance, 1998 saw the completion of a customer management system which will be introduced in 1999.

Vapo Timber Oy's solid financing position has permitted the implementation of long-term plans for development despite the variation in results from year to year. Total investments amounted to FIM 30 million.

The single most important investment in 1999 will involve renewal of the sawing line at Nurmes sawmill.

One challenging task in the course of 1998 was construction and certification of the environmental management systems at Kevätniemi and Hankasalmi sawmills, as well as of an environmental and quality management system for wood procurement at Kevätniemi. The environmental management systems conform to ISO 14001 and the quality system to ISO 9002. At the end of the year a start was made on construction of combined quality and environmental management systems conforming to the same standards for the sawmills in Nurmes and Forssa.

No solution to the important question of forest certification, with implications for the whole forest industry, was as yet forthcoming in 1998. However, progress in the formulation of a Pan-European certification model has been rapid, and Vapo Timber Oy is doing all it can to expedite a solution that will permit certification to be started in Finland this year. ▼

Nurmes sawmill's ability to serve its customers has been much enhanced since February 1998, when a new sorting and trimming plant was completed. The new plant allows the quantity of goods sorted by length to be significantly increased.

Investments will continue in the summer of 1999, when the old sawing line at Nurmes will be replaced with a high-capacity chipper canter/circular saw line. At the same time the sawmill's dimensional sorting plant will be fully renovated and covered storage facilities extended. Nurmes sawmill is specialized in producing redwood sawn goods. ▼



**Reino Kukkonen at work in Nurmes sawmill's new trimming plant.**

## CUSTOMER FEEDBACK HELPS TO IMPROVE SERVICE

In 1998 for the second year in succession Vapo Timber Oy conducted a systematic survey of customer satisfaction in the United Kingdom, France, Germany and Finland. Compared to the previous year there had been improvement particularly in matters associated with the level of service. The Vapo Timber group as well as individual sawmills will make full use of this information to bring about further improvement in services and products. The customer satisfaction survey will be conducted annually from now on. ▼

## SAWN GOODS TO 27 COUNTRIES

In 1998 the Vapo Timber group's six sawmills supplied sawn goods to a total of 27 countries. Over 500,000 cubic metres of sawn goods were exported. Goods are largely transported by ship or rail, which account for about 85 per cent of the group's total shipments. The majority of the sawn goods exported are shipped from Varkaus, an inland port, or from Kotka. The goal is to get the shipment to the customer at just the right time and in perfect condition. ▼



**Vapo Timber exports most of its sawn goods by sea.**

## POTENTIAL FOR FURTHER PROCESSING STUDIED

In 1998 Vapo Timber Oy investigated the potential to serve customers in the area of further processed goods. On the basis of the survey conducted a decision has been taken to boost production of further processed goods at the Hankasalmi and Forssa sawmills, which already have established traditions of processing timber into semi-finished products for the furniture and construction industries. At Kevätniemi plans are in hand to expand further processing via a joint enterprise. ▼



MATTI HILLI, MANAGING DIRECTOR

## PROFIT LEVELS CONTINUE TO IMPROVE

In 1998 the Kekkilä group recorded a turnover of FIM 165 million and an operating profit of FIM 11 million. Compared to the previous year turnover was up by FIM 15 million and operating profit by FIM 2 million. During the year under review Kekkilä Oyj employed an average of 140 persons.

**Integrated service is Kekkilä's strength. Product Development Manager Liisa Tainio meets Risto Pirinen at Pirinen Oy Market Garden, where the cucumbers grow in Kekkilä growing boards.**



In the course of 1998 Kekkilä Oyj's profitability improved and both the solvency ratio and liquidity remained at an excellent level. Sales in all business areas as well as those recorded by subsidiaries showed improvement.

Throughout Europe the whole horticulture branch is suffering from the shortage of horticultural peat brought about by the record wet summer. Kekkilä Oyj has been able to fully cover the horticultural peat needs of its partners both at home and abroad as it has done in previous years.

In the domestic hobby gardening market sales grew by eight per cent. The result is a good one, since last summer's rainy weather reduced total demand. The foundation of Kekkilä's success is provided by quality products and a comprehensive product range as well as systematic building of the Kekkilä brand by means of an extensive TV advertising

campaign among other things. These measures have strengthened Kekkilä's position in the distribution chain.

Kekkilä's market-leading position as a supplier of landscaping materials in the greater Helsinki area was reinforced and the company's market share showed an increase. The factors working in favour of success include a ready-to-use product of even quality which is ideal for landscaping purposes as well as related expertise backed up by research and development activity.

In the professional horticulture market the reduction in the number of producers which has been expected for some years now has not materialized and some growers have even invested in new glasshouses. However, the poor weather of summer 1998 reduced production of tomatoes and cucumber – products of key importance to Kekkilä – by 15 per cent compared to the year

before. This had a corresponding effect on demand for fertilizers.

In the professional market Kekkilä Oyj has concentrated on tailor-made fertilizers and closed growing systems i.e. peat growing boards. Maintaining sales of these products at the previous year's level can be considered a satisfactory result. In closed growing systems Kekkilä was able to further increase its market share.

For growers it is of particular importance that Kekkilä can offer a comprehensive service in addition to high-quality products. To bolster sales support and grower advice functions Kekkilä's Superstar club began operations last year. Professional growers have been invited to attend one-day events dealing with a broad spectrum of topics ranging from expertise in cultivation techniques to the latest developments in the branch.

Kekkilä's exports from Finland grew by five per cent. Growth was most ap-

parent in Holland, Sweden and Spain. Success in export markets is founded on long-term cooperation with our partners and the mutual confidence this inspires. The Kekkilä group's subsidiary in the United Kingdom, VapoGro Ltd, put in an impressive performance. The company's sales rose 55 per cent and profitability too was up.

The performance of the Danish subsidiary Stenrøgel Mosebrug A/S also showed improvement although the targets set were not attained. There were two reasons for this: Danish growers lost market share in Europe and the country's general strike in the spring coincided with the best sales period for pot plants, with demand falling as a result.

During the year under review Kekkilä Oyj invested a total of FIM 12 million. In Denmark a peat handling line was modernized and storage areas extended. In Britain production of Ellepot seedling cultivation systems was increased and a pre-processing line for peat was built. In Finland peat production machinery was replaced and a peat site in Karjaa purchased.

Kekkilä's 'quality production' theme was launched in 1998. As a corollary to this construction of a quality and environmental system covering operations in Finland was begun in the spring. The quality system will comply with the ISO 9001 standard while the environmental system complementing it will be designed to ISO 14001.

In the autumn of 1998 common agreement was reached on Kekkilä's corporate culture. Further refining and targeting of operations in line with the agreed values will be continued this year.

In 1999 the Kekkilä group will give particular attention to the continuity of activities and even levels of quality. During the peat shortage of the early part of the year this means that Kekkilä will satisfy partners' needs for high-quality horticultural peat as in normal peat production years. This will provide a firm basis for extending the already close collaboration with importers and wholesalers. ▼

EXPORT PRODUCT ADOPT KEKKILÄ NAME  
Kekkilä has decided to go over to using a single brand for its export products. A decision to this effect was reached in 1998 and in the course of 1999 all

# KEKKILÄ

export products will carry the Kekkilä name. The previously used product name, such as Finnpeat or VapoPeat, will continue to appear on the packs. In the Finnish market the changeover to the Kekkilä brand took place in 1997.

Adoption of a single brand will also be accompanied by changes to the names of export products in line with their intended use. ▼

## PEAT PROCESSING LINE FOR DENMARK

Last year a new peat processing line was completed at Stenrøgel Mosebrug A/S in Denmark. Costing over FIM 2 million, the processing line will ensure the end product is of even quality when using a variety of raw materials. The line will be of particular value especially after poor peat production seasons such as the summer of 1998, when there may be considerable variations in the quality of the raw material. ▼

## ELLEPOT HELPS VAPOGRO TO EXCELLENT RESULTS

VapoGro Ltd's sales in Britain increased by a remarkable 55 per cent in 1998. The speciality of this Kekkilä subsidiary – and one that sells extremely well – is the Ellepot seedling cultivation system. This consists of a peat-based growing medium which is packed in a paper shell which gradually decomposes. Ellepot is an environmentally-friendly solution for nursery growers because there is no need to remove the biodegradable shell when the seedling is planted or transferred to a larger pot. ▼



**The Ellepot growing board for seedlings is environmentally-friendly.**

## KEKKILÄ DEVELOPS NEW GROWING MEDIA

The research and development department of Kekkilä Oyj completed two important product development projects in 1998. The first, a vegetable board, is made of a blend of sphagnum peat and cotton grass. The second, a GM rooting sheet, contains Gliomix, a new additive which prevents root diseases. Research was also done with biodegradable waste in compost mixtures for landscaping. Different waste quantities in composts and fertilizing levels were also studied.

The research and development department also works in co-operation with the Agricultural Research Centre, the University of Helsinki, horticultural colleges, Vapo Oy and growers. ▼

## KEKKILÄ STARTS TO THINK IN EUROS

Kekkilä Oyj's business operations became euro-denominated at the start of 1999. The company decided to go over to the euro as soon as it became the official currency of EMU. The necessary changes to data processing systems were conducted during 1998 and simultaneously measures taken to ensure a smooth start to the new millenium. ▼



KARI MUTKA, SENIOR VICE PRESIDENT

## SIX COMPOSTING PLANTS STARTED UP

For Vapo Biotech, 1998 was marked by the start-up of six tunnel composting plants. In Finland there was a lull in demand for composting plants in 1998. Vapo Oy Biotech's external turnover was FIM 24.5 million. Including internal deliveries, turnover rose to FIM 45.9 million. At the end of the year, there were 25 employees. Of these, 10 are employed by Mustankorkea Oy, which began waste handling in the Jyväskylä area during the year under review.



**The tunnel composting plant supplied by Vapo Oy Biotech proved to be a popular sight at Korkeasaari Zoo.**

During 1998, Finland's first wave of composting plants was completed, and customers then waited to see how the new plants would work. As a result, no new projects were started and only a few tenders were invited, but the decisions for these were postponed until 1999.

However, this is only a temporary state of affairs. Decisions on new composting plants are expected in 1999 and 2000, because the need for composting in plants will grow in the future. The deadline is 2005, after which it will be prohibited to dispose of biodegradable waste in landfill sites.

During the year, tunnel composting plants were completed in Mäntsälä and for Mustankorkea Oy, which is responsible for waste handling for the Jyväskylä

area. The plants were handed over to the customers on schedule in July and August. An order was received from the City of Rovaniemi for a tunnel composting plant in December 1998.

In addition to the Mustankorkea and Mäntsälä plants, Vapo Oy Biotech oversaw the start-up of the composting plants it completed at the end of 1997 for the Helsinki Metropolitan Council, for the towns of Hanko and Varkaus and for Korkeasaari Zoo, Helsinki. Optimizing procedures for these six plants was the biggest and most challenging project of 1998. Successful solutions were found, and a new, more efficient processing method was developed.

Another challenge during the year was the launch of operations of Mustankorkea Oy, a waste handling company

set up in the beginning of 1998. The company is jointly owned by the City of Jyväskylä, Jyväskylä Rural District, Muurame, Laukaa and Vapo Oy, and it exceeded its first year's budget.

The services of Mustankorkea Oy are concentrated at its waste processing centre, where the standard of service improved substantially during the year. A tunnel composting plant was completed at the centre in August. The centre also began to receive and process recyclable building and demolition waste and to receive soil waste with low pollution levels. Mustankorkea Oy has been able to offer these above-average services to its clients at prices below the national average for landfill sites.

Steady progress was made with bio-filters. During the year under review,

Vapo Oy Biotech delivered six biofilters and as of February 1999 there were three plants on order. In total, nearly 40 biofilters have been sold. These are used to treat malodorous gases at composting plants, municipal sewage treatment plants and pumping stations, water treatment plants in the forest industry and in the fodder and food industry in Finland, Sweden, Norway, the UK and the Netherlands.

Customers' interest in service and maintenance contracts increased in 1998. By the end of the year 12 biofilter contracts and three tunnel composting contracts had been concluded. Vapo also utilized the Helsinki Metropolitan Council composting plant.

Interest was also expressed in other countries in Vapo Oy Biotech's tunnel composting technology and biofilters, which have been specially developed for northern climates. An export engineer was employed to formulate an export strategy for Sweden, and these efforts are expected to bear fruit during 1999.

As in the previous year, Biotech provided a sludge treatment service using two spin-dewatering units built on articulated trailers. In northern Finland this service mainly operates outside urban areas, treating septic tank sludge. In southern Finland the service has also been utilized by the potato processing, oil refining and leather production industries.

Vapo Oy Biotech also has an efficient system for dry waste processing and the production of refuse-derived fuels, but the general sentiment in this area in 1998 was to wait and see. This was partly due to the new EU directive on refuse-derived fuels, the full effects of which are not yet known. On the other hand, power producers have been highly cautious towards refuse-derived fuels. In the long run, however, use of these fuels will grow. ▼

## COMPOSTING PLANTS

Composting plant	Capacity, tonnes	Material composted
Helsinki Metropolitan Council	30,000	Biowaste
Mustankorkea Oy, Jyväskylä	25,000	Biowaste and sewage sludge
Hanko	15,000	Industrial sludge and sewage sludge
Varkaus	8,000	Biowaste and sewage sludge
Rovaniemi (on order)	7,600	Sewage sludge
Kitee	2,000	Biowaste and sewage sludge
Mäntsälä	2,000	Sewage sludge
Korkeasaari Zoo	600	Manure, bedding, vegetable waste, biowaste



## FROM PREFABRICATED CONCRETE TO COMPOST

The tunnel composting plant ordered by the City of Rovaniemi at the end of 1998 is to be constructed in an old prefabricated concrete factory, which will become the Rovaniemi waste handling centre. Besides the composting plant, there will also be a sorting facility for refuse destined for recycling and a reception point for hazardous waste. The composting plant will be capable of processing 7,600 tonnes of sludge from the nearby sewage treatment plant annually. ▼

## CLEANING UP THE ENVIRONMENT

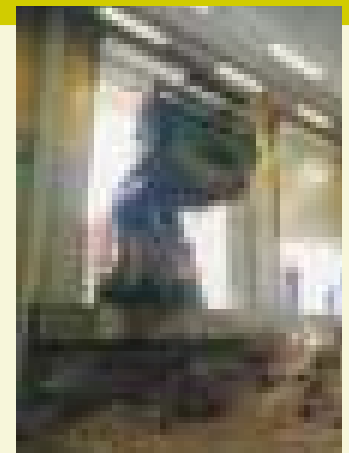
Vapo Oy Biotech has supplied seven tunnel composting plants, and an eighth is under construction. Together these plants can handle over 90,000 tonnes annually of household biowaste, sewage sludge and industrial sludge. The end product of the composting process is soil conditioner, which is used in landscaping.

The 40 biofilters which Vapo Oy Biotech has sold can clean around 240,000 cubic metres of air an hour. ▼

## INTEREST IN MUSTANKORKEA OY

The services of Mustankorkea Oy did not only interest the City of Jyväskylä, Jyväskylä Rural District, Muurame and Laukaa, which are shareholders in the company. By the end of 1998 Mustankorkea Oy was also providing services to the municipalities of Hankasalmi, Joutsa, Korpilahti, Leivonmäki, Suolahti and Äänekoski, the Jyväskylä regional water treatment plant and the Jämsä-Jämsänkoski joint water treatment plant. ▼

**The first batches of biowaste and sewage sludge were loaded into the tunnels of the Mustankorkea tunnel composting plant in the second week of September.**



## SYNERGY BENEFIT FROM THE VAPO GROUP

As part of the Vapo Group, Vapo Oy Biotech is able to offer its customers the assurance and reliability of a large company. If necessary Biotech is capable of handling the marketing of the end product because Kekkilä Oyj is Finland's leading brand in garden composts and Vapo Oy Energy has a national peat retail network, which also markets composts for various purposes. The customer can also benefit from other synergy benefits, such as a reliable supply of stabilizing media and established channels for selling refuse-derived fuels. ▼



PIRKKO SELIN, ENVIRONMENTAL MANAGER

## CONTINUOUS IMPROVEMENT CAN BE SEEN IN ENVIRONMENTAL MANAGEMENT

As a company which processes natural resources in a responsible manner, Vapo wants to identify its own environmental impacts, minimize the adverse effects of its activities and develop its operations in an environmentally acceptable way. These are the central points in the Vapo Group's environmental policy.

**Veli Kouvalainen of Det norske Veritas checks aspects of the environmental system with Kari Kupiainen and Veli Haavisto, two of Vapo's contractors, at the Takaneva peat production site.**



During 1998 Vapo received a lot of media coverage on account of environmental matters. Issues which resulted in positive publicity included the construction of three wind turbines at Kuivaniemi, Vapo Biotech's environmental business, work to develop the after-use of peat production sites, and the preparation of environmental systems.

Vapo also came in for a certain amount of peat production at the Viurusuo site in Outokumpu and, in the early part of the year, Forssa Sawmill's timber procurement activities, attracted critical discussion. The public debates will help to develop operations and to take environmental values more effectively into consideration.

The significance of the greenhouse effect was also a topic of public debate during 1998, and the role of peat in the carbon balance was discussed. An extensive study was carried out, and the research findings were collated to produce background material for the Bonn climate change conference.

The Government's decision to establish conservation areas within the Natura 2000 programme was significant from the point of view of peatland resource management, and it directly affects Vapo. A total of 2 326 hectares of peatland controlled by Vapo falls within the scope of the Natura 2000 decision. In addition, production sites extending to almost 20 000 hectares border Natura areas, and 18 400 hectares of peatland reserved for production are located within three kilometres of Natura sites.

During 1998, as in previous years, Vapo undertook environmental surveys, and company representatives met environmentalists at various public and other meetings. As far as EIA (environmental impact assessment) is concerned, experience has shown that certification of the consultants involved in species assessment could provide benefits. This would ensure that the consultants are competent and their work is acceptable to the various interest groups.

The Aqua Peat research project was concluded in 1998. For the last seven years this project has studied peat production methods and environmental impacts. The results of this extensive project are already being utilized – in the development of new working methods, for instance – and production technology with better environmental compatibility has also been introduced. A good example of this type of equipment is the development of the low-dust pneumatic harvester.

During its last year the project concentrated on the identification of health impacts and the development of methods to control environmental loading. The results show that dust and noise problems caused by peat production are marginal and local.

In 1998 Vapo focussed significant attention on controlling its environmental impacts. This is confirmed by the number of quality and environmental systems that have been completed or are in preparation. ▼

## PEATLANDS REPRESENT A MAJOR CARBON SINK

The EU's internal follow-up measures for the Kyoto agreement on climate change were decided at a meeting in Bonn, Germany, in June 1998. For the first time peat fields were included in the overall calculations.

Finland is committed to reducing its carbon dioxide emissions to the 1990 level by the year 2010. This is a tough target, because the emissions have already risen by around 5.5% since 1990, which is an increase of four million tonnes in terms of carbon dioxide.

According to the SILMU Project, which is funded by the Academy of Finland and studies climate change, carbon binding in peat-forming plants and the draining of peatland reduce methane emissions and decrease Finland's radiative forcing, or the amount of gases in the atmosphere which increase heat radiation. Data from the project shows that in Finland the annual carbon dioxide sink in virgin bogs amounts to some four million tonnes, and in addition that of forestry-drained peatland may be as much as 16 million tonnes. From the point of view of peat utilization it is important to produce energy efficiently and to concentrate production to an even greater extent on peatland that has already been drained.

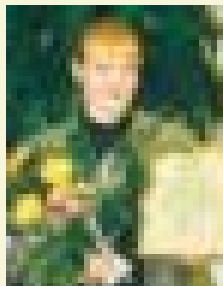
According to the most recent definition, peat is a form of bioenergy, because a virgin peat bog functions in the same way as a forest. In the best case, a peat production site that is being restored into a bog binds carbon dioxide in the same way as a forest does.

Finland's carbon dioxide emissions were around 0.3% of total world carbon dioxide emissions in the base year (1990) specified in the climate change agreement. Carbon dioxide emissions caused by the production, storage and utilization of peat amount to around 8 million tonnes, when calculated in terms of carbon dioxide.

In Finland peat accounts for 9% of greenhouse gas emissions from energy production. At present, more carbon dioxide is bound in the growth of peat in Finland than is released into the atmosphere through peat usage. ▼

In 1998 Vapo undertook a project to clean up the Purola timber treatment plant in Haapajärvi. The project involved removing residual impregnation chemicals which had collected in the soil over the period 1971–1990. These contained arsenic, copper and chrome. The total volume of contaminated soil was some 5 000 cubic metres. This soil was taken to Haapajärvi municipal landfill site for environmentally secure storage. ▼

## ENVIRONMENTAL AWARD FOR WORK ON PEAT BOOK



Vapo's 1998 Environmental Award went to Raija Rinttilä, a researcher involved in special projects at the Eastern Finland Business Unit, for the work she has done to further Vapo's environmental communications. Projects she has contributed to include the book "Environmental Uses of Peat" and an EIA Procedures Manual for the Association of Finnish Peat Industries. ▼

**Raija Rinttilä.**

## FIELD COURSE FOR TIMBER PROCUREMENT EMPLOYEES

Timber procurement employees and foremen responsible for handling incoming logs at Vapo Timber's Kevätniemi and Nurmes sawmills attended a field course in September to learn about wild plants. The course – which is related to the introduction of the environmental systems – was taught by staff from the department of forest and timber economics at North Karelia Polytechnic. ▼

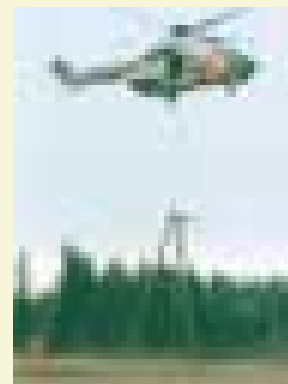
## IMPROVED WASTE HANDLING FOR KEKKILÄ

In conjunction with work to build its environmental system, last year Kekkilä Oyj invested several hundred thousand Finnmarks to upgrade its environmental management. A detailed survey of material flows and the production of waste was undertaken, waste handling operations were improved, and waste sorting and recycling were stepped up at all of Kekkilä's locations. ▼

## HIRVINEVA BIRD SANCTUARY FURTHER IMPROVED

In 1998 Vapo continued work to improve the Hirvineva bird sanctuary, which is located in Liminka. During the spring a 300 metre nature trail with information boards was created on the lake shore. In the autumn a nesting tower for ospreys was constructed at Vapo's Hirvineva machinery depot. ▼

**A nesting tower for ospreys was carried into position at the Hirvineva bird sanctuary using a helicopter from the Finnish Border Guard.**



## CONTACT MAINTAINED WITH INTEREST GROUPS

Conservationists represent one of the groups which Vapo takes into account in its operations. During 1998 Vapo was involved in discussions with the executive of the Finnish Association for Nature Conservation and with other groups. Vapo took part in the public debate on the environment both in the press and at public meetings, and one of the topics discussed was the future of the Viurusuo site in Outokumpu. Other important interest groups include landowners who rent production sites to Vapo, forest owners, people living near Vapo's sites and plants, the media, and the environmental authorities. Vapo also takes into account the environmental values of its own personnel and production and transportation contractors. ▼

## CERTIFICATION FOR VAPO'S ENVIRONMENTAL SYSTEMS

During 1998 four environmental systems and one quality system were certified within the Vapo Group. The environmental systems are based on ISO 14001 and the quality system on ISO 9002. Environmental systems which comply with internationally acceptable standards are part of Vapo's management system and the work to build them is in line with the Group's environmental policy.



In December 1998 SFS-Sertifointi Oy certified the sawmill environmental systems at Hankasalmi and Kevätniemi, and the timber procurement quality and environmental system at Kevätniemi and Nurmes. Hankasalmi and Kevätniemi already have certified ISO 9002 quality systems, which are now complemented by the new environmental systems.

"The instructions contained in the timber procurement quality and environmental system cover logging and transportation, correct disposal of waste materials, and procedures with respect to forest diversity," says Teuvo Heikkinen, the Project Manager responsible for implementing the environmental systems.

In the same way the sawmill environmental systems require optimization of energy and natural resource utilization in production, waste reduction, and waste re-utilization.

In December 1998 Det norske Veritas Oy Ab granted certification to the

environmental system at Vapo Energy's Western Finland Business Unit. This system - together with the ISO 9002 quality system which covers the whole of Vapo Energy - forms a significant part of the management system.

"The environmental system specifies targets for the reduction of watercourse loading and objectives for reducing the noise and dust impacts of peat production. The scope of the system covers the entire peat production cycle from the procurement of the land to its return to other uses," explains Lauri Ijäs, who is responsible for environmental issues at the Western Finland Business Unit.

In spring 1998 Kekkilä Oyj announced that it was going to build its own quality and environmental system. During the year the necessary initial review was performed, environmental and quality principles were drawn up and work was done to study existing environmental impacts.

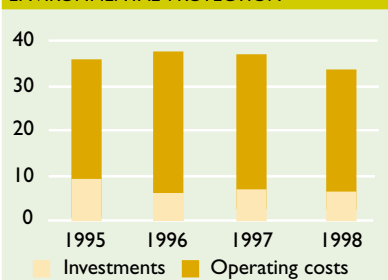
"The basic work is now complete.

**Sari Sahlberg of SFS-Sertifointi interviews Martti Rautiainen, a harvester operator, as part of the certification process for the quality and environmental system at Kevätniemi and Nurmes Sawmills.**

We have defined our targets and work on the system will continue in 1999 with process descriptions and the preparation of instructions," says Production Manager Hannu Jämsä, who is responsible for building the quality and environmental system at Kekkilä.

Work to prepare environmental systems is also continuing in the other business activities. During 1998 Vapo Timber began work on a combined quality and environmental system for Nurmes and Forssa sawmills, as well as for the timber procurement operations at Forssa, and this will continue in 1999. In the future environmental systems will also be built for Vapo Energy's Eastern and Northern Finland Business Units. ▼

VAPO OY ENERGY: EXPENDITURE ON ENVIRONMENTAL PROTECTION



## FIM 40 MILLION ON ENVIRONMENTAL PROTECTION

The Vapo Group's expenditure on environmental protection in Finland totalled FIM 42.1 million.

Vapo Energy spent a total of FIM 34 million on environmental protection. Monitoring costs and water protection work increased due to the rainy summer, and a number of environmental surveys

and environmental impact assessments were also in progress. This increased variable environmental protection costs.

Environmental investments amounted to FIM 6.8 million, and these were mainly accounted for by water protection structures, and machinery and equipment. Vapo Energy's environmental costs



## RAINY SUMMER INCREASES LOAD TO WATERCOURSES

The summer of 1998 was rainy and unfavourable from the point of view of peat production. The rain was exceptionally heavy throughout the country, and particularly in Northern Finland, where over 900 mm of rainfall was recorded. The average precipitation for the year was 719 mm, which is 135 mm more than the long-term average of 584 mm.

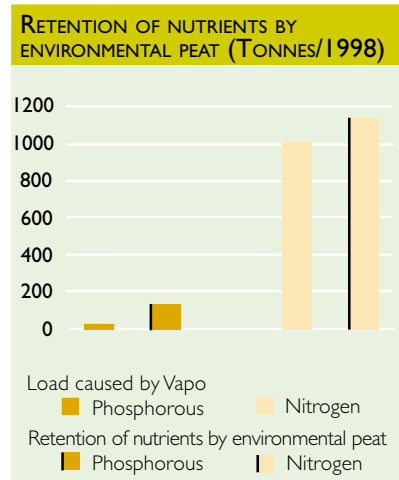
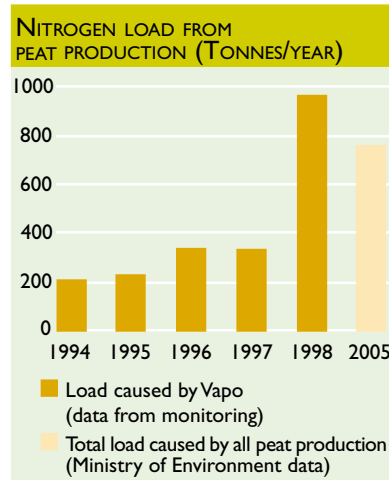
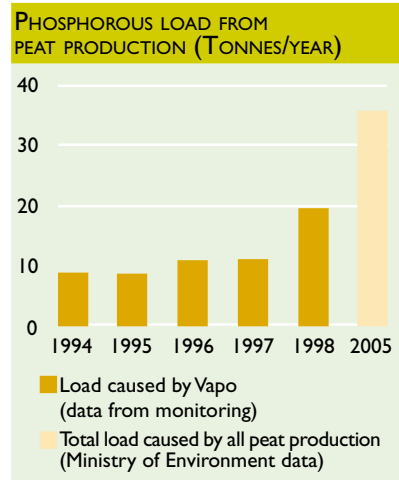
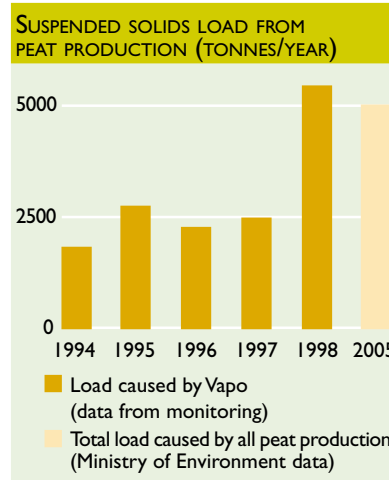
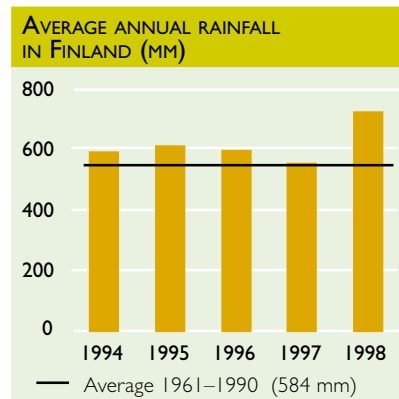
The place recording the highest rainfall was Kaavi, which is located to the east of Kuopio, with 1 020 mm. This is an exceptional figure, because in Finland rainfalls in excess of 1 000 mm are only recorded once every one hundred years on average.

The long duration of the rainy weather increased the load through erosion, even though the additional load from peat production was minor and the water protection structures functioned normally. The loading figures are based on some 1 500 water samples and more than 10 000 separate analyses conducted by nine specialist laboratories.

The basic water treatment methods at Vapo's peat production sites are sedimentation ponds and pipe barriers. Additional methods include overland flow, soil infiltration, control of run-off peaks, chemical treatment and sub-surface drainage.

When considering data on watercourse loading caused by peat production, it should be kept in mind that the use of peat as agricultural bedding or litter and composting material has a favourable impact on overall emissions

of phosphorous and nitrogen. In 1998 Vapo sold some 600 000 cubic metres of environmental and agricultural peat, and this volume of peat will bind considerably more phosphorous and nitrogen than was caused by the loading from the company's peat production activities. ▼



represented 4% of turnover and the environmental investments represented 11.4% of total investments.

Vapo Timber's environmental protection expenditure totalled FIM 2.9 million, not including fire protection costs. The majority of these costs related to the preparation of environmental systems, improved waste handling procedures, and monitoring and soil analysis work. Environmental investments amounted to

FIM 0.82 million, representing the acquisition of waste handling equipment.

Kekkilä Oyj used FIM 1.17 million for environmental protection purposes, which represents 1.4% of turnover. The main cost factors were the commencement of work to build an environmental system and measures to upgrade waste handling. Kekkilä's environmental investments totalled FIM 0.9 million, and the most significant acquisitions were air

filters for the Haukineva and Eurajoki plants.

Vapo Oy Biotech, VAM Vapo Wastech Ltd Oy and Mustankorkea Oy together spent a total of FIM 3.2 million on environmental protection. The majority of these costs related to air and waste water treatment at the companies' own tunnel composting plants, and to costs associated with official permits. ▼

## ELEVEN WATER PERMIT APPLICATIONS PENDING

In 1998 Vapo submitted five new applications for water drainage permits relating to peat production sites. The company also applied for the conditions of three existing permits to be revised, and submitted three other applications relating to existing permits. During the year the Water Rights Courts issued decisions on seven new permits and revised the conditions of two existing permits.

By the end of the year a total of 80 permits had been granted to Vapo and 42 were pending. In some of these cases the permit had already been granted and work begun, but compensation issues had still not been completely settled.

In Finland, a permit from the Water Rights Court is often required for peat-land to be taken into production. This permit allows the water draining from the site to be led into watercourses and specifies the water treatment method.

The permit also stipulates the peat producer's maintenance and monitoring obligations and, possibly, obligations to implement specified measures or provide compensation.

During 1998 Vapo Energy was involved in five statutory environmental impact assessments. Two assessments begun in 1997 – relating to the Viurusuo and Koivusuo-Ruosmesuo sites in Outo-

kumpu and Ilomantsi respectively – were completed. New assessments relating to the Jauhoneva and Julkuneva sites in Veteli and the Turvesuo-Isosuo site in Pieksämäki were begun in 1998 and will continue in 1999. In 1998 the assessment procedure applied to all new sites over 200 hectares being taken into peat production.

In addition Vapo Energy undertook 25 voluntary environmental surveys for its planning work. These focused in particular on the vegetation and bird life at new production sites. ▼

### WATER PERMIT APPLICATIONS BY VAPO OY: APPLICATIONS SUBMITTED AND RESOLVED

Year	1993	1994	1995	1996	1997	1998
Submitted to Water Rights Court	22	10	15	13	6	11
Resolved by Water Rights Court	14	14	16	12	17	13
Resolved by Water Rights Appeal Court	2	12	10	13	5	7
Resolved by Supreme Administrative Court	-	1	1	1	1	5

RAIMO MARTIKKA, MANAGING DIRECTOR, KUOPIO ENERGY:

### “IN ENVIRONMENTAL ISSUES, VAPO SHOWS THE WAY”

Kuopio Energy, which produces electricity and heating mainly from peat, expects Vapo to play a leading role in the public debate on environmental issues and energy production. The company's Managing Director, Raimo Martikka, says that Vapo is such a major player that it should lobby on behalf of the whole sector in the process leading up to decisions affecting peat utilization.

“Together we have to ensure that peat retains its rightful and appropriate position among the various sources of energy,” Raimo Martikka explains.

He believes that Vapo has achieved very good environmental results in such areas as water and air protection, and that the Group has a policy of openly communicating these results to its customers and the general public.

“It is clear that Vapo understands its own responsibilities. As far as environmental management is concerned, Vapo is right at the forefront in Finland,” he states.

Kuopio Energy expects Vapo to continue conducting significant research into



**Raimo Martikka, Managing Director, Kuopio Energy**

the environmental impacts of peat production and utilization. Raimo Martikka says that when dealing with environmental questions, all information used must be firmly grounded in fact.

Kuopio Energy's Haapaniemi power plants supply 45 000 electricity and almost 3 400 district heating users in Kuopio. 90% of the fuel used is peat, and last

year Vapo supplied 1.3 million cubic metres of peat – equivalent to some 12 000 lorry loads – to Haapaniemi.

District heating first came into use in Kuopio in the early 1960s, and around 90% of the city is now served by the district heating network. The business relationship between Kuopio Energy and Vapo intensified in 1972, when the Haapaniemi I power plant came on stream. Peat reserves in the local area meant secure supplies of fuel.

“Those were pioneering days. We were both beginners – Vapo as a peat supplier, and Kuopio Energy as a user. Haapaniemi I was the first power plant in Finland to use peat as its main fuel,” Raimo Martikka recalls.

Certain 'teething troubles' were experienced, but these were overcome by joint efforts, and in a few years the plant was operating smoothly with peat.

“Peat is in a good position in Kuopio. It is an indigenous energy source and it has been accepted by the people of our city,” Raimo Martikka explains. ▼

## HEALTH IMPACTS OF PEAT PRODUCTION ONLY MINOR

The latest research into the dust and noise problems caused by peat production provide reassurances for people living close to production areas. The health impacts caused by the dust and noise are only minor.

Dr Matti Juntunen of the National Public Health Institute in Kuopio says that in principle the dust caused by peat production does represent a health impact, but in practice its effects are almost nonexistent.

"The health impacts of dust close to peat production areas are significantly smaller than in cities, for instance. Exposure times are short, and, in general even when exposure occurs, unfavourable weather conditions are still required," he explains.

Dust does not even cause significant health risks to people working at peat

**Tony Pirkola, a researcher at the University of Jyväskylä's Institute for Environmental Research, measures the noise produced by a levelling screw at the Pajusuo peat production site.**



production areas, Dr Juntunen adds.

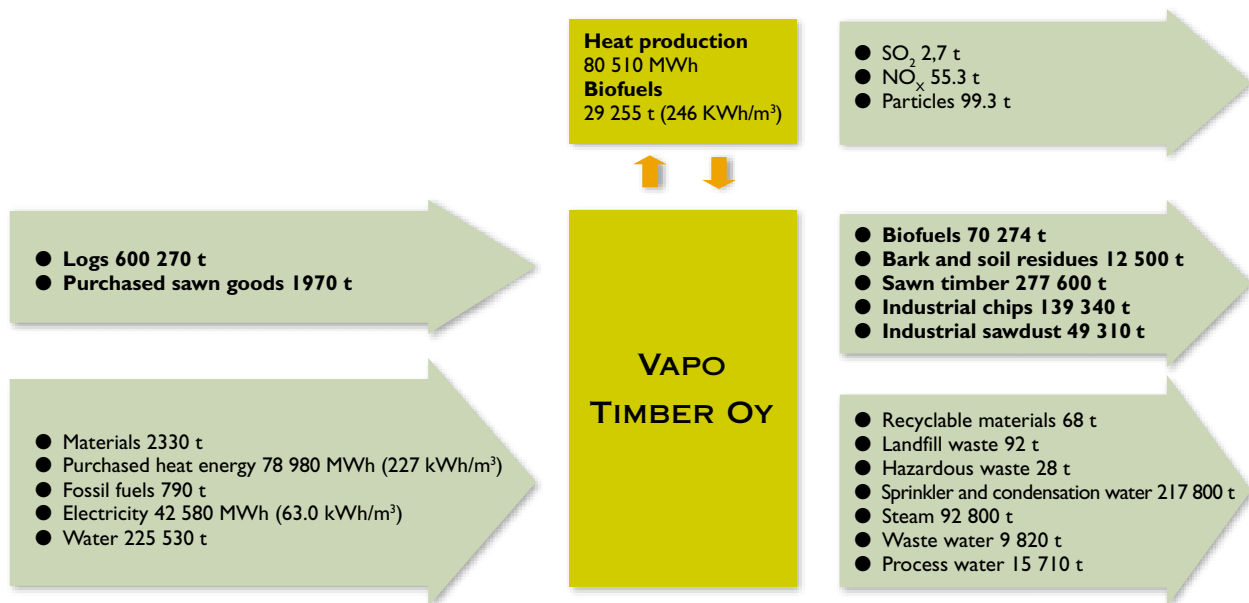
Research has produced similar results with regard to noise. According to the latest studies noise caused by peat production does not represent a significant environmental problem.

In 1997 and 1998 the Institute for Environmental Research at the University of Jyväskylä studied the noise caused by peat production as part of the extensive Aqua Peat 3 Research Project. The results show that overall the noise problems caused by peat production sites are only minor.

Tractors are the chief source of noise at peat production sites. Therefore the noise resulting from activities such as milled peat harrowing and ridging can be compared with that produced when a tractor works a field. Normally the noise remains within the limits set by the Finnish authorities.

Vapo takes research findings into consideration when planning production and developing new production methods. For instance, at production sites close to houses, the noisiest operations are avoided during the night. ▼

## ENVIRONMENTAL IMPACTS OF VAPO TIMBER'S PRODUCTION



In 1998, as in the previous year, Vapo Timber undertook a survey of the main environmental impacts caused by its activities. The results are summarized in the diagram, with the main material flows shown as tonnes of dry matter.

The results will be utilized in work to identify the environmental

impacts of the company's sawn goods production and in the planning of new environmental objectives. The data will also be used in environmental studies and life cycle analyses of Finnish sawn goods being undertaken on a nationwide basis.



TIMO NYRÖNEN, R & D DIRECTOR

## KYOTO PROTOCOL AND COMPOSTING PROCESSES THE MAIN THEMES OF THE YEAR

The research needs created by the Kyoto Climate Change Convention and the inauguration of six tunnel composting plants were reflected in the work of Vapo Oy's Research Department in 1998. At the end of the year there were 18 employees in the Department.

**Compost improvement has been an area of priority for the Research Department**



During the year under review Vapo conducted in-depth research into the influence of peatlands on Finland's carbon balance, and participated in the carbon balance debate both in Finland and in other countries. Together with the University of Helsinki, Vapo Oy began research into the effects of peat formation on the carbon balance. The majority of the measurements and biodiversity studies were conducted at the Aitoneva site in Kihniö.

The other highlight of 1998 was the development and optimization of tunnel composting. Particular emphasis was laid on the development of clear methods for studying the stability of the compost and the maturity of the final product. It is especially difficult to arrive at a definition of stability, for which there are

around 30 different methods in use today. Stabilized compost is a highly degraded product and does not entail odour or run-off problems.

The Research Department also continued work into the development of a biofilter. A solution was sought, among other things, to the purification of volatile organic compounds (VOCs). In research into recycled fuels, Vapo participated in the Kesto programme of the Technology Development Centre (Tekes), studying the corrosion problems for power plants caused by the use of recycled fuels.

In peat production, the major Bioenergy research programme was concluded. It was launched in 1993. In the projects concerned with peat production, new methods were developed

over the five years of the programme for milled and sod peat production as well as new machinery required for those methods. Some of the findings have already been put into practice, but the positive effects of the Bioenergy programme will only be seen in the course of the years.

During the year under review a turning point was reached in a project started in 1995 for manufacturing "bio oil" or pyrolysis oil from indigenous timber and other biomass. The tests being conducted with the pilot apparatus advanced to the point where it is possible to calculate whether construction of a commercial plant is economically viable. A decision on construction of a possible demonstration plant is expected during 1999. The project is a joint initiative

between Vapo Oy and the Technical Research Centre of Finland (VTT).

Within ecological peat products, the emphasis was on cotton grass. Studies on the grass continued at Vapo's peatlands, research was conducted on refining cotton grass fibres for processing needs and a market research study was launched by the Universities of Jyväskylä and Oulu and VTT.

As in previous years, Vapo Oy's laboratory produced analytical services and information for all the units in the Vapo Group. During 1998 the laboratory's efforts were increasingly focused on analyses of Vapo Oy Biotech's composting techniques. There was a similar increase in wood fuel analyses, alongside which the laboratory researched methods for analysing mixed fuels.

Another new area was the analysis of water and slurry samples in connection with ground state surveys of waste tips. Thus water analysis activities were extended to waste water in addition to the natural run-off water of peatlands.

Evaluation studies connected to peat production and use were conducted as normal. In order to gain basic information for after-use, soil mappings were conducted to establish the structure and nutrient content of the ground in areas being released from production. Kekkilä Oyj principally ordered nutrient and structure analyses from the laboratory for its growing media. The results of these are used for quality control and product development.

In addition to analytical services for the Group, the laboratory was involved in joint projects both in Finland and internationally. One of the most important was the development of European CEN standards for growing media. The work on this was conducted together with Kekkilä Oyj. Of the domestic projects, the material balance study of power plants under the multiannual SIHTI 2 programme was concluded. A new project was the SFS standardization of the quality of recovered fuels, which is being led by the General Industry Association (YTL). ▼

## PLANT TESTED AT TIKKAKOSKI

In April 1998 Vapo Oy Energy began testing of its mobile CMR heating plant at Tikkakoski. The tests, which will continue in 1999, focus on the plant's reliability of operation in practical conditions. At the same time the two-megawatt plant has produced heat for the Tikkakoski district heat network. The main parts of the Tikkakoski CMR heating plant are the chemi-mechanical reactor (CMR) burner, developed by Vapo, the circulating fluidized bed (CFB) dryer and a standard boiler. The fuel used is moist sawdust, which is dried by the flue gases before combustion. ▼



**CMR plants offer an alternative to oil for small heating plants.**

## VALUE-ADDED WOOD CHAIN

In 1998 Vapo Timber Oy took an active role in Suomen Puututkimus Oy, which is responsible for co-ordinating the research activities of the sawmill and board industry. Important projects last year included research projects within the technology programme for timber construction and the launch of the nationwide Value-Added Wood Chain technology programme. The aim of the five-year project is to double the gross value of the sales of the timber industry within the next ten years. Vapo Timber Oy is also part-owner of Metsäteho Oy, which conducts research into timber procurement, harvesting and forest growth. ▼

## DRYING OF LOGGING RESIDUES

Logging residues will dry in the stacks of fuel terminals, even in a rainy summer. Last summer's measurements showed that the moisture content of fresh forest residues declines from 50-60% to below 40% in around a month. If the logging residues are properly stored and covered, the moisture content can be retained at this low level over the following winter. The data were gathered from field tests conducted by VTT Energy at Vapo's fuel terminals around Finland from 1997 onwards.

This research forms part of Vapo Oy's wood energy project, which was started two years ago. Within the same project, Vapo has also developed the "HavuHukka", a specially designed trailer that compresses forest residues. The first of a series of 12 "HavuHukka" trailers were made in 1998. ▼



### TERMINAALIHAKKE

**The chips produced by Vapo from logging residues are now referred to as "terminal chips". A logo was also created for this product.**

## NEW METHOD INCREASES COMPOSTING EFFICIENCY

In 1998 Vapo Oy Biotech developed a new method for its tunnel composting plants. The new method, which is based among other things on air circulation, allows more accurate management of the composting process and increases the efficiency of the plants still further. ▼



EERO MÄNTYLÄ, DIRECTOR OF HUMAN RESOURCES DEVELOPMENT

## VAPO EMPLOYEES DEFINE THEIR VALUES

Vapo has defined and set down the values that guide its operations. The process was started in 1997 and agreement was reached on shared values in 1998.



**Vapo invests more in personnel training than the industry average. Jyri Nummela, a development engineer (right), trains interview techniques with reporter Matti Karhu as part of a communications training programme.**

Vapo's expertise is created within the company. Through promoting teamwork and self-leadership the aim has been to reduce direct management control at all levels. Therefore the importance of the underlying values for motivating personnel and keeping sight of the shared objectives has increased. The values are the same for everybody and they provide a basis for the operations of the whole Group.

The values were defined as the result of discussions with employee representatives in all units. There were 12 series of discussions attended by divisional and unit management. Similar discussions were held with representatives of outside peat producers and transport contractors.

### VAPO'S VALUES

- WE OPERATE PRODUCTIVELY
- WE VALUE HUMAN BEINGS
- WE OPERATE IN THE CUSTOMER'S BEST INTERESTS
- WE OPERATE IN A RESPONSIBLE MANNER
- WE AIM TO IMPROVE

The values were published in a booklet which was distributed to all Vapo employees. During 1999 the values will be discussed in the units to see

what has been achieved and what still needs to be done. In 1999 all major employee meetings will begin with a review of the values.

One of the values is the productivity of work. All work is productive even if it cannot be measured in money terms. The results are economic, qualitative and quantitative.

Vapo values people as human beings and not just in profit terms in their work role. The role of a human being comprises work, family and leisure time.

The third value is customer-orientation. Vapo's aim is to have a thorough understanding of the customer's needs and to tailor its service accordingly.

The Group also operates in a responsible manner. Vapo has a social and environmental responsibility.

Responsibility is more than mere treaties and laws.

The fifth value is to embrace development. As a leader in several technologies, it is natural that Vapo embraces development. Personnel skills are supported by job rotations and continuous training.

Vapo Oy provides its staff with greater training opportunities than industry in general. In 1998 around FIM 3400 was invested in training for each employee. In total the Group spent FIM 3.7 million on training, without accounting for salaries for lost working time. Last year Vapo employees spent an average of seven days in training.

In 1998 training in Vapo Timber Oy, Vapo Oy Energy and Kekkilä Oyj focused on environmental quality systems and development of these. The Group also constructed an internal data network linked to the Internet. This made it necessary for all employees working with computers to receive training in the use of data networks.

Besides improving working processes, Vapo Oy Energy implemented a major training programme. The aim was to develop broad-based skills and to improve employees' ability to cope with different and changing tasks. Kekkilä Oyj began a training programme for supervisors, which will continue in 1999.

At the Group level, a motivation and working environment survey was conducted for the second time in all units of Vapo Oy. On the whole, no significant changes were observed. The working atmosphere and motivation at Vapo Timber Oy were observed to have improved compared to the year before. ▼

## EMPLOYEE PARTICIPATION (EP) COMMITTEE MEMBERS 1.7.1997–30.6.1999

### Salaried peat industry personnel

Ilpo Vuorela  
(Lauri Korkeala)

### Peat industry workers

Teuvo Penttinen  
(Ilpo Viinämäki)  
Riku Hakala  
(Kauko Korhonen)

### Sawmill workers

Juhani Nevalainen  
(Juha Palokas)  
Erkki Flink  
(Markku Salonen)

### Forestry workers

Hannu Turpeinen  
(Eetu Karjalainen)

### Salaried forestry personnel

Heikki Miettinen  
(Paavo Kivimäki)

### Sawmill supervisors

Juha Castrén  
(Veikko Manninen)

### Salaried office personnel

Arja Koponen  
(Kirsi Pennanen)  
Merja Katjasalo  
(Rauni Levola)

### Senior salaried personnel

Ilkka Ilmavirta  
(Tenho Ruuska)

## EMPLOYEE REPRESENTATIVES ON IN-HOUSE MAGAZINE EDITORIAL BOARD 1.1.1998–31.12.1999

Pertti Kaksonen,  
senior salaried employees  
Matti Kokkonen, sawmill workers  
Merja Koponen,  
salaried office personnel  
Hannu Laukkanen, supervisors  
Aki Silvennoinen,  
peat industry workers

## EMPLOYEE REPRESENTATIVES IN BUSINESS UNIT MANAGEMENT GROUPS 1.1.1998–31.12.1999

### VAPO OY ENERGY

#### Western Finland



Tapani Koivistoinen  
(Tapio Kamppi)



Marjo Lähteenmaa  
(Heimo Pihlajamäki)

#### Eastern Finland



Teuvo Penttinen  
(Aarno Kuivalainen)



Hannu Laukkanen  
(Merja Koponen)

#### Northern Finland



Jouko Niva  
(Eino Ämmänpää)



Jarmo Tirkkonen  
(Ensio Kauppila)

### VAPO TIMBER OY

#### Hankasalmi



Jari Suuronen



Sauli Viljamaa

#### Kevätniemi



Juha Palokas  
(Armas Ruokolainen)



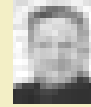
Markku Pyykkö  
(Heikki Miettinen)

#### Nurmes



Eetu Karjalainen  
(Jarmo Naakka)

#### Paltamo



Tuomo Rautiainen

#### Peuravuono



Kalevi Siivikko  
(Mauri Bogdanoff)

#### Forssan Saha Oy



Markku Salonen



Pirjo Jussila

### KEKKILÄ OYJ



Riku Hakala  
(Timo Haavisto)



Ilkka Väre



**Esko Muhonen,**  
Chairman

**Raimo Rantala**

**Juha Tuominen**

## REPORT OF THE BOARD OF DIRECTORS

### Operating environment and business activities

In 1998 the main feature of the energy markets was the abundant supply of reasonably priced electricity in the Nordic countries. Overall energy consumption in Finland grew by around 1% from the previous year to a total of 31 mtoe. Indigenous energy sources accounted for 32% of the total energy consumed, or 9.9 mtoe.

Measures tightening the taxation of fuel peat introduced at the beginning of January 1997 and September 1998, together with the abundant supply of electricity, caused fuel peat usage to decrease by 6% when compared with the previous year and by 12.9% in relation to 1996. Fuel peat represented 6.2% of the total energy consumed and 19% of indigenous energy sources, and it generated over 8% of the electricity and more than 20% of the district heating produced in Finland.

The markets for wood fuel showed little change during the year. Wood-based fuels represented 57% of energy from indigenous sources, which is the same level as in the previous year, and 18% of energy from all sources.

Biofuel deliveries by Vapo Oy Energy totalled 18.5 TWh, which is a decrease of some 4% on the previous year.

In the sawn goods sector the export markets started to slow down at the end of 1997 and this trend continued into 1998. In the case of whitewood the situation levelled out towards the end of the year, but the problems affecting redwood have continued into 1999. Total Finnish exports of sawn timber nevertheless increased by around 11% from the previous year to 8.3 million cubic metres.

Abundant supplies of sawn timber in the Nordic countries and Western Europe have brought instability to the markets, with general expectations of economic growth decreasing at the same time.

Average prices for exports were almost 11% lower than in the previous year.

In the year under review Vapo Timber's sawn goods production totalled 675 500 cubic metres.

There was good availability of raw timber throughout the year, and all of the company's sawmills have received adequate supplies. The high price of logs has nevertheless been a problem.

Growth continued to be slow in the markets for growing media and fertilizers. Trading was delayed and business was reduced by cold weather during the spring, and in the hobby gardening sector in particular, the main sales season was short. In spite of this, Kekkilä Oyj was able to meet the needs of its growing media customers in terms of both quality and quantity.

The general strike in Denmark during the spring disrupted sales. This hindered the operations of our Danish subsidiary and many important customers.

There was continued rapid market growth in the environmental business sector, and this was reflected in particular in the numbers of quotations pending and orders received. Two of Vapo Oy Biotech's tunnel composting plant projects were completed and handed over to the customers: these were the plant for Mustankorkea Oy in Jyväskylä and the Mäntsälä plant.

Work to check the IT systems and prepare them for the year 2000 was continued during the year under review.

### Turnover

The Vapo Group's turnover was FIM 1 879 million (1997: FIM 1 861 million). Turnover was divided between the Group companies as follows: Vapo Oy FIM 868 million (FIM 883 million), Vapo Timber group FIM 845 million (FIM 821 million) and Kekkilä group FIM 1 65 million (FIM 1 50 million).

Of the activities included in the Parent Company, the energy business

had a turnover of FIM 841 million (FIM 837 million) and the environmental business FIM 25 million (FIM 31 million), which includes FIM 16 million in respect of the turnover of Mustankorkea Oy.

### Operating profit

The Vapo Group's operating profit was FIM 226 million, which represents 12% of turnover. In the previous year the Group's operating profit was FIM 253 million or 13.6% of turnover. The Parent Company, Vapo Oy, recorded operating profit of FIM 166 million (FIM 141 million), the Vapo Timber group FIM 52 million (FIM 102 million) and the Kekkilä group FIM 11 million (FIM 9 million). Mustankorkea Oy's operating profit was FIM 1.3 million, stated after charging a FIM 1.5 million provision for environmental purposes.

Planned depreciation for the accounting period amounted to FIM 109 million, or FIM 4 million less than in the previous year.

### Profitability and financing

The Group's profit after financial items was FIM 219 million (1997: FIM 245 million). Net financial expenses for the period totalled 0.3% of turnover or FIM 6 million. The equivalent figures for the previous year were 0.5% and FIM 9 million. The Group's profit before appropriations to reserves and taxes was FIM 223 million (FIM 245 million). Taxes for the period amounted to FIM 62 million. The liquidity position was good throughout the period. The Group operates an employee incentive scheme based on the performance of the separate business activities.

### Investments

The Vapo Group's total investments for the period were FIM 180 million. Of this total, Vapo Oy accounted for FIM 86 million, the Vapo Timber group for





**Mauri Jaakonaho Aarno Heinonen Kari Poikolainen,  
Secretary**

FIM 30 million and the Kekkilä group for FIM 13 million, Lieksan Lämpö Oy FIM 19 million, Mustankorkea Oy FIM 21 million, and the other companies together for FIM 11 million.

### **Changes in Group structure**

In order to promote usage of renewable energy sources, Vapo constructed three 750 kW wind turbines at Kuivaniemi. A new company – Vapon Tuulivoima Oy – has been set up to manage this activity.

At the beginning of November Vapo acquired Lieksan Lämpö Oy, which distributes district heating produced by Vapo's power plant in the town of Lieksa.

Voimavasu Oy was jointly established with Sucros Oy (25%) and ABB Service Oy (25%) on December 21, 1998 to operate the Säköylä, Porkkala and Salo power plants.

The business activities of Karel-Vapo Oy, a peat producing company which operated in the Karelian Republic in Russia, were suspended due to delays in construction of fuel peat utilization projects. The operations of joint venture company PT. Garudatama Sumber Makmur were discontinued due to the internal unrest in Indonesia. The investments in the Russian and Indonesian subsidiaries have been written down in full in the Parent Company accounts.

Mustankorkea Oy, which was established at the end of 1997, started its business operations at the beginning of the year under review. The company was set up to handle waste disposal activities in the Jyväskylä region. This company's other shareholders are the local authorities in the City of Jyväskylä, Jyväskylä Rural District, Laukaa and Muurame, with a total combined holding of 45%.

### **Research and development**

Expenditure on research and development in the Group totalled FIM 28 million in the accounting period, compared with FIM 24 million in 1997. An average of 21 people were employed full-time in R&D, and the Group has also purchased R&D work from universities

and research institutes. Additionally, Vapo Timber Oy is a shareholder in Finnish Wood Research Ltd and Metsäteho Oy.

The main objectives of the development efforts have been to achieve increased sales and better competitiveness for wood and peat as fuels.

The main focus of research into the composting process was to develop clear methods for determining the stability of compost.

The Group also participated in work to plan new research projects for the future once the Bioenergy and other national energy programmes had reached their conclusion.

### **Environmental review**

Environmental issues which were publicly debated during the year were the position of peatland and peat in Finland's carbon dioxide balance, and implementation of the Kyoto protocol, the international climate change agreement, as well as the conservation of peatland and forests and the protection of various species.

In line with Vapo's environmental policy, further work was done to build quality and environmental systems. Vapo Timber Oy was granted ISO 14001 certificates for the Hankasalmi and Kevätniemi sawmills and timber procurement activities. An ISO 14001 environmental certificate was granted to Vapo Oy Energy's Western Finland Business Unit.

During the year under review the Group spent a total of FIM 42 million on environmental protection.

### **The outlook**

The rainy summer meant that peat production was at a record low level. Thanks to its stockpiles Vapo is nevertheless able to meet its customers' fuel needs. Stockpiling requires capital and it is an important aspect of large-scale peat operations.

The continued availability of abundant supplies of hydro and imported electricity has reduced production of electricity at peat-fired condensing power

plants, and this will affect deliveries of peat during 1999 to a certain extent.

The European Union has become considerably more interested in peat as new peat producing countries have joined the EU and peat has great significance as a local biofuel in the northern regions of the Union. As a result the potential opportunities for peat utilization have increased. The European Commission's Energy Directorate does not consider peat to be a fossil fuel and at its initiative the European Standards Committee, CEN, included peat in the standardization process for solid biofuels.

As far as wood fuels are concerned, Vapo is significantly increasing its volumes by developing fuel production and transportation systems and increasing the utilization of these fuels.

In the sawn timber markets it is expected that the early part of the year will see continued weak demand, after which it is believed that a cautious upturn will be seen. Total production volumes are expected to decline in the Nordic countries. The disparity between market prices for sawn goods and the prices for raw logs will affect this business in 1999 and further reduce the industry's profitability.

A shortage of raw peat in the European growing media sector will provide Kekkilä with the opportunity to increase exports during the spring, and with a higher price level it will probably be able to cover cost increases. It is expected that in Finland the hobby sector will grow and the professional sector will remain at the previous year's level.

In the environmental business sector rapid market growth will continue. This is because from the beginning of 2005 it will be prohibited to take organic matter for landfill disposal, and so local authorities and industry will have to resolve biological waste handling issues before then. Several large equipment projects have been forecast to start in 1999.

It is expected that the Vapo Group's turnover will increase during the current year and that its profitability will probably remain at the same level. The Group's profitability will be held back by the slow market for sawn timber. ▼

## ADMINISTRATION 31.12.1998

### Supervisory Board

#### Chairman

Markku Koski, MP

#### Vice Chairman

Aarne Heikkilä, Executive Director

#### Members

Terttu Kangasharju, R & D Engineer

Juha Karpio, MP

Armas Komi, MP

Reijo Laitinen, MP

Christel Liljeström, Farmer

Erkki Pulliainen, MP

Taisto Turunen, Chief Director

Jan Vapaavuori, Master of Laws

### Staff representatives on Supervisory Board

(1.7.1996–30.6.1998)

Kauko Korhonen, peat industry workers

Juhani Nevalainen, sawmill workers

Kaisa Runtti, salaried office personnel

### Staff representatives on Supervisory Board

(1.7.1998–30.6.2000)

Jorma Koivistoinen, peat industry workers

Erkki Flink, sawmill workers

Ilpo Vuorela, salaried office personnel

### Deputy staff representatives on Supervisory Board

(1.7.1996–30.6.1998)

Teuvo Penttinen, peat industry workers

Erkki Flink, sawmill workers

Marja Meriläinen, salaried office personnel

### Deputy staff representatives on Supervisory Board

(1.7.1998–30.6.2000)

Heikki Törmä, peat industry workers

Markku Salonen, sawmill workers

Lauri Korkeala, salaried office personnel

### Board of Directors

Esko Muhonen,

Chairman, Managing Director, Vapo Oy

Juha Tuominen,

Vice Chairman, Managing Director,

Vapo Timber Oy

Raimo Rantala,

Controller, Vapo Oy

Mauri Jaakonaho,

Deputy Managing Director, Valmet Oyj

Aarno Heinonen,

Deputy Managing Director,

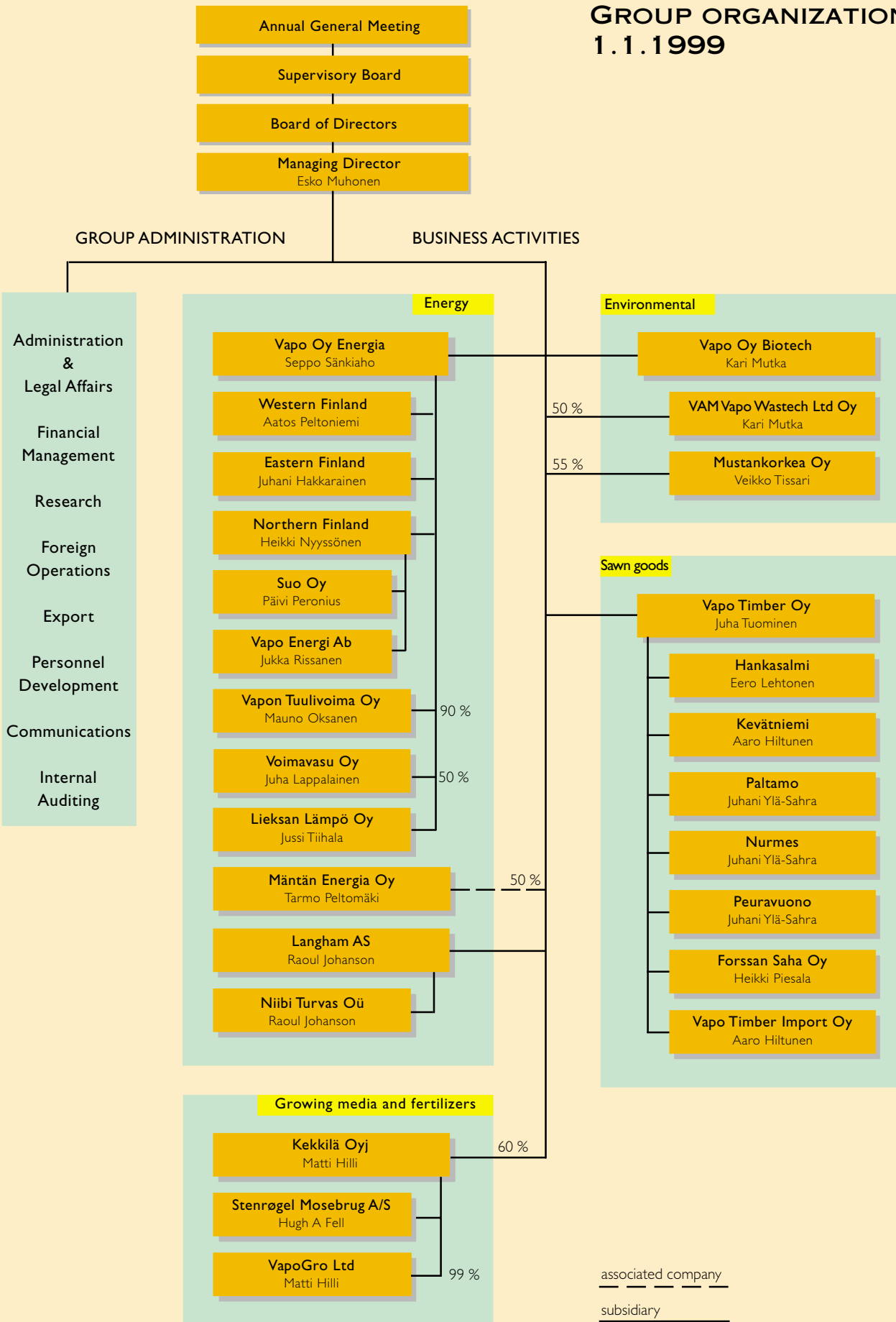
Werner Söderström Oyj

### Auditors

Tuokko Deloitte & Touche Oy,

Certified Public Accountants, Yrjö Tuokko, CPA

# GROUP ORGANIZATION 1.1.1999



**INCOME STATEMENT**

FIM 1000	Notes	Group		Parent Company	
		1.1.-31.12.1998	1.1.-31.12.1997	1.1.-31.12.1998	1.1.-31.12.1997
TURNOVER	1	1 878 794	1 861 276	867 847	883 270
<b>Decrease/increase in inventories of finished goods and work in progress</b>		-130 028	+111 303	-124 181	+59 063
<b>Production for own use</b>		36 264	20 945	20 502	20 714
<b>Share of associated company profit</b>		910	1 182		
<b>Other operating income</b>		10 774	5 810	8 521	5 917
<b>Materials and services</b>					
Raw materials and consumables:					
Purchases during the period		533 194	585 645	55 479	56 281
Decrease/increase in inventories		+12 486	-38 127	-6 266	+559
External charges		430 317	586 469	236 946	405 356
Materials and services, total		975 997	1 133 987	286 159	462 196
<b>Salaries, wages and social expenses</b>	2				
Salaries, wages and remuneration		173 556	166 851	75 689	74 385
Social expenses					
Pension expenses		30 074	26 663	13 011	12 755
Other social expenses		23 177	23 945	9 763	10 308
Salaries, wages and social expenses, total		226 807	217 459	98 463	97 448
<b>Depreciation and write-downs</b>	3				
Planned depreciation		108 045	112 009	74 049	82 251
Amortization of goodwill		1 366	663		
Depreciation and write-downs, total		109 411	112 672	74 049	82 251
<b>Other operating expenses</b>	5	258 598	282 998	148 024	185 835
Expenses, total		1 570 813	1 747 116	606 695	827 730
OPERATING PROFIT		225 901	253 400	165 994	141 234
<b>Financial income and expenses:</b>	6				
Income from holdings in Group companies				31 835	6 041
Income from holdings in associated companies				1 042	1 042
Income from other investments held as non-current assets		541	214	498	177
Interest and financial income					
From Group companies				3 321	3 472
From other sources		12 214	9 071	10 771	7 558
Exchange rate differences		-510	3 752	-435	7 080
Write-downs from investments held as non-current assets		-291		-5 826	-1 106
Interest and other financial expenses					
Paid to Group companies				-1 841	-1 151
Paid to other parties		-18 443	-21 634	-13 560	-18 323
Financial income and expenses, total		-6 489	-8 597	25 805	4 790
PROFIT BEFORE EXTRAORDINARY ITEMS		219 412	244 803	191 799	146 024
<b>Extraordinary items</b>					
Extraordinary income	7	3 426			
PROFIT BEFORE APPROPRIATIONS AND TAXES		222 838	244 803	191 799	146 024
<b>Appropriations</b>					
Change in depreciation difference	4			16 601	31 656
<b>Income taxes</b>		-64 650	-81 183	-58 302	-55 972
<b>Change in deferred tax liability</b>		2 211	5 328		
NET PROFIT BEFORE MINORITY INTEREST		160 399	168 948	150 098	121 708
<b>Minority interest</b>		-1 693	-562		
NET PROFIT		158 706	168 386	150 098	121 708



**BALANCE SHEET**

FIM 1000					
		Group		Parent Company	
SHAREHOLDERS' EQUITY AND LIABILITIES		1998	1997	1998	1997
	Notes				
<b>SHAREHOLDERS' EQUITY</b>	<b>10</b>				
<b>Restricted equity</b>					
Share capital		300 000	300 000	300 000	300 000
Ordinary reserve		118	82		
Translation difference		31	819		
		<u>300 149</u>	<u>300 901</u>	<u>300 000</u>	<u>300 000</u>
<b>Non-restricted equity</b>					
Contingency reserve		179 030	179 030	178 945	178 945
Transferred from voluntary reserves and depreciation difference		325 859	339 522		
Retained earnings		433 646	307 981	278 812	214 104
Translation difference		200	154		
Profit for the period		158 706	168 386	150 098	121 708
		<u>1 097 441</u>	<u>995 073</u>	<u>607 855</u>	<u>514 757</u>
<b>SHAREHOLDERS' EQUITY, TOTAL</b>		<b>1 397 590</b>	<b>1 295 974</b>	<b>907 855</b>	<b>814 757</b>
<b>MINORITY INTEREST</b>		<b>35 112</b>	<b>32 120</b>		
<b>APPROPRIATIONS</b>					
Depreciation difference				356 303	372 904
<b>PROVISIONS</b>	<b>11</b>				
Other provisions		22 968	22 000	21 468	22 000
<b>LIABILITIES</b>					
<b>Long-term</b>	<b>12</b>				
Debenture loans		21 000	21 000	21 000	21 000
Loans from financial institutions		202 546	218 123	152 071	156 105
Pension fund loans		30 056	60 439	24 630	54 509
Deferred tax liability		125 663	127 874		
Contract deposits and other liabilities		11 338	8 175	5 379	6 111
		<u>390 603</u>	<u>435 611</u>	<u>203 080</u>	<u>237 725</u>
<b>Current</b>	<b>13</b>				
Loans from financial institutions		36 453	73 735	25 224	66 050
Pension fund loans		5 054	4 851	4 570	4 325
Advances received		87 121	99 420	86 442	78 857
Accounts payable		133 558	139 158	40 592	36 100
Liabilities to Group companies			7 459	39 917	63 422
Liabilities to associated companies		561		561	
Other current liabilities		14 346	15 229	5 770	4 044
Accrued liabilities		92 197	113 735	64 082	66 834
		<u>369 290</u>	<u>453 587</u>	<u>267 158</u>	<u>319 632</u>
<b>TOTAL SHAREHOLDERS' EQUITY AND LIABILITIES</b>		<b><u>2 215 563</u></b>	<b><u>2 239 292</u></b>	<b><u>1 755 864</u></b>	<b><u>1 767 018</u></b>

## STATEMENT OF SOURCES AND APPLICATION OF FUNDS

FIM 1000	Group		Parent Company	
	1998	1997	1998	1997
<b>SOURCES OF FUNDS</b>				
<b>Finance from operations</b>				
Operating profit	225 901	253 400	160 168	140 128
Planned depreciation	109 411	112 672	79 874	83 357
Interest and other financial income	12 756	13 037	47 467	25 369
Other finance from operations	3 427			
Disposal of fixed assets	6 679	91 528	4 020	89 980
	<u>358 174</u>	<u>470 637</u>	<u>291 529</u>	<u>338 834</u>
<b>Finance from other sources</b>				
Increase in shareholders' equity		1 273		
Increase in minority interest	1 299			
Increase in provisions	968	22 000		22 000
	<u>2 267</u>	<u>23 273</u>	<u>0</u>	<u>22 000</u>
	<u>360 441</u>	<u>493 910</u>	<u>291 529</u>	<u>360 834</u>
<b>APPLICATION OF FUNDS</b>				
<b>Profit distribution</b>				
Interest on liabilities	18 953	21 634	15 836	19 474
Taxes	64 650	81 183	58 302	55 972
Dividends	57 000	36 000	57 000	36 000
	<u>140 603</u>	<u>138 817</u>	<u>131 138</u>	<u>111 446</u>
<b>Investments</b>				
Fixed assets	159 730	116 078	77 378	64 008
Other long-term investments	1 544	4 332	19 142	8 264
	<u>161 274</u>	<u>120 410</u>	<u>96 520</u>	<u>72 272</u>
<b>Repayment of capital</b>				
Decrease in shareholders' equity	90			
Decrease in minority interest		22		
Decrease in provision			532	
Decrease in long-term liabilities	42 797	44 822	34 645	56 986
	<u>42 887</u>	<u>44 844</u>	<u>35 177</u>	<u>56 986</u>
	<u>344 764</u>	<u>304 071</u>	<u>262 835</u>	<u>240 704</u>
<b>BREAKDOWN OF CHANGE IN WORKING CAPITAL</b>				
Increase (+) in liquid assets	+80 339	+78 620	+94 479	+54 132
Decrease (-)/increase (+) in inventories	-148 959	+142 537	-118 259	+58 718
Decrease (+)/increase (-) in current liabilities	+84 297	-31 318	+52 474	+7 280
	<u>+15 677</u>	<u>+189 839</u>	<u>+28 694</u>	<u>+120 130</u>

## ACCOUNTING PRINCIPLES

### Extent of consolidation

The consolidated financial statements include the Parent Company, Vapo Oy, and all active companies in which the Parent Company either owns more than 50% of the voting rights or otherwise exercises control. The financial statements of Karel-Vapo Oy and P.T. Garudatama Sumber Makmur have not been consolidated as they are not material to the Group's financial statements. In the statement of source and application of funds, entries relating to subsidiaries acquired or divested have been shown as net total amounts. The financial statements of Vapon Tuulivoima Oy and Voimavasu Oy, which were established at the end of 1998, have not been included in the consolidation as these companies begin their actual operations in 1999. Associated companies are those in which the Parent Company owns a 20–50% holding.

### Principles of consolidation

Figures for the previous year have been restated in line with the format specified in the new Accounting Act. The acquisition method of consolidation has been adopted. Inter-company transactions, receivables and liabilities, internal margins and distribution of profit within the Group have been eliminated.

Minority interest has been disclosed separately from the Group's net profit and shareholders' equity in the consolidated accounts. Corporation tax credits received by subsidiary companies have

been set off against the tax charge for the period in the consolidated accounts.

The results of associated companies are accounted for in the consolidated financial statements using the equity method.

In the consolidated financial statements the depreciation difference and voluntary reserves have been separated into shareholders' equity and deferred tax liabilities, and that part of the change in depreciation difference and voluntary reserves which has an effect on income is explained in the notes to the accounts.

### Foreign currency items and hedging arrangements

In translating the accounts of overseas subsidiaries into Finnish Marks, income statements have been translated at the average rate of exchange for the accounting period and balance sheets at the Bank of Finland's average rate of exchange at the balance sheet date. Translation differences arising on the translation of these accounts are shown as restricted and non-restricted shareholders' equity.

Foreign currency denominated receivables and liabilities have been translated to Finnish Marks at the Euro conversion rates announced on December 31, 1998, with a related credit or charge to income for the period. Exchange gains and losses arising on the translation of receivables and liabilities have been entered as exchange rate differences in the income statement.

Forward contracts and options used as hedges against currency risks have been stated at the appropriate rate on the balance sheet date. The interest component has been apportioned over the term of the contract, and exchange rate differences arising on contracts to hedge liabilities or receivables have been entered as exchange rate differences in the income statement.

### Inventories

Inventories are valued at the lower of direct cost and net realizable value. Inventories include peat reserves that have been processed ready for sale. Unprocessed peat reserves are included in fixed assets and depreciated according to utilization.

### Fixed assets and depreciation

Fixed assets are stated at original cost less depreciation. Planned depreciation is charged on a straight-line basis against the original cost of the asset. In each case the straight-line depreciation rate is based on the useful life of the asset:

- intangible rights 5–10 years
- buildings and structures 20–40 years
- machinery and equipment 3–15 years
- peat reserves – according to utilization
- other capitalized expenditure 4–10 years
- goodwill 5–10 years



## NOTES TO THE ACCOUNTS

FIM 1000

Note number	Group		Parent Company	
	1998	1997	1998	1997

### 1 TURNOVER BY BUSINESS ACTIVITY

- energy	833 946	834 103	840 744	837 029
- growing media and fertilizers	164 195	148 901		
- sawmills	839 130	815 499		
- environmental business activities	24 753	31 178	8 943	9 269
- other activities	16 770	31 595	18 160	36 972
	<u>1 878 794</u>	<u>1 861 276</u>	<u>867 847</u>	<u>883 270</u>

### TURNOVER BY MARKET AREA

- Finland	1 251 147	1 247 622	853 044	866 428
- Other Scandinavian countries	84 945	92 613	11 490	8 983
- Other European countries	431 667	410 194	2 067	697
- Other markets	111 035	110 847	1 246	7 162
	<u>1 878 794</u>	<u>1 861 276</u>	<u>867 847</u>	<u>883 270</u>

### 2 SALARIES, WAGES AND SOCIAL EXPENSES

<b>Salaries and wages</b>	173 556	166 851	75 689	74 385
Pension expenses	30 074	26 663	13 011	12 755
Other statutory social expenses	19 783	20 001	8 161	7 986
Voluntary social expenses	3 394	3 944	1 602	2 322
	<u>226 807</u>	<u>217 459</u>	<u>98 463</u>	<u>97 448</u>
Taxation value of fringe benefits	2 603	2 245	1 137	895
Total	<u>229 410</u>	<u>219 704</u>	<u>99 600</u>	<u>98 343</u>

#### Salaries and remuneration paid to senior management

Managing Directors	3 834	4 142		
Supervisory Board	238	254	238	254
Board of Directors	205	181	90	90

#### Number of employees

Wage-earning employees, average	675	671	219	212
Salaried employees, average	477	448	314	301
Employees, average	<u>1 152</u>	<u>1 119</u>	<u>533</u>	<u>513</u>

### 3 PLANNED DEPRECIATION

Intangible rights	2 564	2 812	1 930	2 218
Goodwill	1 366	663		
Other capitalized expenditure	2 068	1 955	820	829
Buildings and structures	10 977	10 290	4 490	4 374
Machinery and equipment	63 132	67 089	40 933	47 037
Other tangible assets	29 304	29 863	25 876	27 793
Total	<u>109 411</u>	<u>112 672</u>	<u>74 049</u>	<u>82 251</u>

### 4 CHANGE IN DEPRECIATION DIFFERENCE

Buildings and structures	-722	-1 563	-1 385	-2 129
Machinery and equipment	470	-6 644	-8 777	-22 246
Other tangible assets	-6 550	-6 735	-6 439	-7 281
Total	<u>-6 802</u>	<u>-14 942</u>	<u>-16 601</u>	<u>-31 656</u>

FIM 1000 Note number	Group		Parent Company	
	1998	1997	1998	1997
<b>5 CHANGE IN PROVISIONS</b>				
Other operating expenses – Provision for environmental work	968	22 000	-532	22 000
<b>6 TOTAL DIVIDEND INCOME, INTEREST INCOME AND INTEREST EXPENSE</b>				
Dividend income from Group companies			22 982	4 378
Corporation tax credits			8 853	1 663
Dividend income from associated companies			750	750
Corporation tax credits			292	292
Income from holdings in other companies	402	214	359	177
Interest income	12 268	81 093	14 092	10 052
Interest expenses	18 065	21 191	14 994	19 183
<b>7 EXTRAORDINARY INCOME</b>				
Contract deposits credited to income statement	3 426			
<b>8 FIXED ASSETS BY CATEGORY</b>				
<b>Intangible rights</b>				
Initial cost 1 Jan	21 955	20 007	18 737	17 442
Assets of acquired subsidiary, 1 Nov	370			
Additions	2 554	3 055	1 534	1 888
Disposals	-798	-1 107	-630	-593
Transfers between categories	3 633		2 981	
Initial cost 31 Dec	27 714	21 955	22 622	18 737
Accumulated depreciation 1 Jan	-14 830	-13 124	-12 949	-11 324
Accumulated depreciation in acquired subsidiary, 1 Nov	-56			
Accumulated depreciation relating to disposals and transfers	787	1 106	626	593
Depreciation for period	-2 564	-2 812	-1 930	-2 218
Accumulated depreciation 31 Dec	-16 663	-14 830	-14 253	-12 949
Book value 31 Dec	11 051	7 125	8 369	5 788
<b>Goodwill</b>				
Initial cost 1 Jan	6 648	6 648		
Additions	13 013			
Initial cost 31 Dec	19 661	6 648		
Accumulated depreciation 1 Jan	-4 920	-4 257		
Depreciation for period	-1 366	-663		
Accumulated depreciation 31 Dec	-6 286	-4 920		
Book value 31 Dec	13 375	1 728		
<b>Other capitalized expenditure</b>				
Initial cost 1 Jan	30 896	29 933	21 857	21 561
Assets of acquired subsidiary, 1 Nov	1 868			
Additions	1 762	963	264	296
Disposals	-7			
Initial cost 31 Dec	34 519	30 896	22 121	21 857
Accumulated depreciation 1 Jan	-21 938	-19 983	-17 548	-16 719
Accumulated depreciation in acquired subsidiary, 1 Nov	-584			
Accumulated depreciation relating to disposals and transfers	5			
Depreciation for period	-2 068	-1 955	-820	-829
Accumulated depreciation 31 Dec	-24 585	-21 938	-18 368	-17 548
Book value 31 Dec	9 934	8 958	3753	4309

FIM 1000 Note number	Group		Parent Company	
	1998	1997	1998	1997
<b>Land and water areas</b>				
Initial cost 1 Jan	92 389	89 007	78 975	75 596
Assets of acquired subsidiary, 1 Nov	1 039			
Additions	4 262	3 610	2 675	3 493
Disposals	-3 605	-228	-2 704	-114
Initial cost 31 Dec	94 085	92 389	78 946	78 975
Revaluations	2 500	2 500		
Book value 31 Dec	96 585	94 889	78 946	78 975
<b>Buildings and structures</b>				
Initial cost 1 Jan	215 853	208 532	103 755	101 377
Assets of acquired subsidiary, 1 Nov	3 014			
Assets of divested subsidiary, 1 Jan	-101			
Exchange rate differences	21	2		
Additions	28 759	11 277	4 605	6 121
Disposals	-329	-3 958	-329	-3 743
Initial cost 31 Dec	247 217	215 853	108 031	103 755
Accumulated depreciation 1 Jan	-73 998	-66 342	-44 048	-42 207
Accumulated depreciation in acquired subsidiary, 1 Nov	-289			
Accumulated depreciation in divested subsidiary, 1 Jan	5			
Exchange rate differences	-8			
Accumulated depreciation relating to disposals and transfers	237	2 634	237	2 533
Depreciation for period	-10 977	-10 290	-4 490	-4 374
Accumulated depreciation 31 Dec	-85 030	-73 998	-48 301	-44 048
Revaluations	1 400	1 400		
Book value 31 Dec	163 587	143 255	59 730	59 707
<b>Machinery and equipment</b>				
Initial cost 1 Jan	747 888	839 182	521 598	641 948
Assets of acquired subsidiary, 1 Nov	7 891			
Assets of divested subsidiary, 1 Jan	-5 237			
Exchange rate differences	-264	166		
Additions	66 367	67 625	40 562	34 501
Disposals	-12 141	-159 085	-9 640	-154 851
Initial cost 31 Dec	804 504	747 888	552 520	521 598
Accumulated depreciation 1 Jan	-346 479	-345 776	-265 832	-284 990
Accumulated depreciation in acquired subsidiary, 1 Nov	-1 632			
Accumulated depreciation in divested subsidiary, 1 Jan	2 168			
Exchange rate differences	117	128		
Accumulated depreciation relating to disposals and transfers	11 101	66 258	8 959	66 195
Depreciation for period	-63 132	-67 089	-40 933	-47 037
Accumulated depreciation 31 Dec	-397 857	-346 479	-297 806	-265 832
Book value 31 Dec	406 647	401 409	254 714	255 766
Machinery and equipment, share of book value 31 Dec	284 303	281 129	147 992	144 856

FIM 1000 Note number	Group		Parent Company	
	1998	1997	1998	1997
<b>Preparation of peat reserves and other tangible assets</b>				
Initial cost 1 Jan	685 275	662 265	652 752	631 123
Assets of acquired subsidiary, 1 Nov	9 311			
Assets of divested subsidiary, 1 Jan	-2 346			
Exchange rate differences	-252	336		
Additions	32 143	22 674	21 245	21 629
Disposals	-1 867		-526	
Initial cost 31 Dec	<u>722 264</u>	<u>685 275</u>	<u>673 471</u>	<u>652 752</u>
Accumulated depreciation 1 Jan	-229 027	-199 343	-221 411	-193 618
Accumulated depreciation in acquired subsidiary, 1 Nov	-1 183			
Accumulated depreciation in divested subsidiary, 1 Jan	117			
Exchange rate differences	82	179		
Depreciation for period	-29 304	-29 863	-25 876	-27 793
Accumulated depreciation 31 Dec	<u>-259 315</u>	<u>-229 027</u>	<u>-247 287</u>	<u>-221 411</u>
Book value 31 Dec	<u>462 949</u>	<u>456 248</u>	<u>426 184</u>	<u>431 341</u>
<b>Holdings in Group companies</b>				
Initial cost 1 Jan	3 042	282	131 914	125 688
Additions		2 760	17 980	7 332
Included in consolidated accounts	-2 750			
Write-downs	-292		-5 826	-1 106
Initial cost 31 Dec	<u>0</u>	<u>3 042</u>	<u>144 068</u>	<u>131 914</u>
<b>Shares in associated companies</b>				
Initial cost 1 Jan	3 168	2 737	1 000	1 000
Additions	160	431		
Book value 31 Dec	<u>3 328</u>	<u>3 168</u>	<u>1 000</u>	<u>1 000</u>
<b>Other shares and holdings</b>				
Initial cost 1 Jan	22 785	22 019	19 141	18 657
Additions	1 384	867	1 387	585
Disposals	-61	-101	-12	-101
Transfers between categories	-3 633		-2 981	
Book value 31 Dec	<u>20 475</u>	<u>22 785</u>	<u>17 535</u>	<u>19 141</u>
<b>Taxation values</b>				
Land and water areas	60 166	58 711	53 814	52 147
Buildings and structures	173 378	153 589	73 210	73 391
Shares and holdings	247 426	166 464	216 807	163 960
	<u>480 970</u>	<u>378 764</u>	<u>343 831</u>	<u>289 498</u>
Book value has been used in cases where taxation value is not available.				

## 9 RECEIVABLES FROM GROUP COMPANIES

Accounts receivable	2	2 603	5 303	6 677
Loans receivable			16 160	17 534
Prepaid expenses and accrued income	243	1 604	702	1 993
Total	<u>245</u>	<u>4 207</u>	<u>22 165</u>	<u>26 204</u>

## RECEIVABLES FROM ASSOCIATED COMPANIES

Accounts receivable	<u>4 734</u>	<u>4 892</u>	<u>4 734</u>	<u>4 892</u>
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## PENSION COMMITMENTS

Vapo Oy's Managing Director and those members of the Board of Directors who are Vapo employees have the option of retiring on a full pension at the age of 60–62 years.

FIM 1000 Note number	Group		Parent Company	
	1998	1997	1998	1997
<b>10 RESTRICTED EQUITY</b>				
Share capital	300 000	300 000	300 000	300 000
Ordinary reserve 1 Jan	82			
Exchange rate difference	-7			
Transfer from profits	43	82		
Ordinary reserve 31 Dec	<u>118</u>	<u>82</u>		
Translation difference 1 Jan	819	-23		
Change in translation difference	-788	842		
Translation difference 31 Dec	<u>31</u>	<u>819</u>		
Restricted equity, total	<u>300 149</u>	<u>300 901</u>	<u>300 000</u>	<u>300 000</u>
<b>NON-RESTRICTED EQUITY</b>				
Contingency reserve	<u>179 030</u>	<u>179 030</u>	<u>178 945</u>	<u>178 945</u>
Other non-restricted equity 1 Jan	816 043	685 427	335 812	250 104
Distribution of dividends	-57 000	-36 000	-57 000	-36 000
Transfer from profits to ordinary reserve	-43	-82		
Change resulting from adjustment to depreciation difference in balance sheet		-2 119		
Change in translation difference relating to shareholders' equity of subsidiary companies	236	-397		
Non-restricted equity of subsidiary excluded from consolidation	469	828		
Profit for the financial period	158 706	168 386	150 098	121 708
Other non-restricted equity 31 Dec	<u>918 411</u>	<u>816 043</u>	<u>428 910</u>	<u>335 812</u>
Non-restricted equity, total	<u>1 097 441</u>	<u>995 073</u>	<u>607 855</u>	<u>514 757</u>
<b>BREAKDOWN OF DEPRECIATION DIFFERENCE AND VOLUNTARY RESERVES</b>				
Change in depreciation difference and voluntary reserves recorded as profit for financial period	-6 364	-13 663		
Transfers to shareholders' equity from voluntary reserves and depreciation difference 1 Jan	339 522	325 365		
Transferred from profit for previous period	-13 663	16 276		
Adjustment to depreciation difference in balance sheet		-2 119		
Transfers to shareholders' equity from voluntary reserves and depreciation difference 31 Dec	<u>325 859</u>	<u>339 522</u>		
Deferred tax liability	125 663	127 874		
Included in minority interest	<u>3 638</u>	<u>2 960</u>		
<b>Depreciation difference and voluntary reserves, total</b>	<u>448 796</u>	<u>456 693</u>		

FIM 1000 Note number	Group		Parent Company	
	1998	1997	1998	1997
<b>DISTRIBUTABLE NON-RESTRICTED GROUP EQUITY</b>				
Non-restricted equity per consolidated balance sheet	1 097 441	995 073	607 855	514 757
Reserved for use of Board of Directors	-300	-300	-300	-300
Depreciation difference and voluntary reserves shown as shareholders' equity	-319 495	-325 859		
Positive translation differences shown as non-restricted equity	-200	-154		
Share of associated company profits	-2 328	-2 168		
Other restrictions on distribution	-173			
<b>Distributable non-restricted Group equity</b>	<b>774 945</b>	<b>666 592</b>	<b>607 555</b>	<b>514 457</b>
<b>11 PROVISIONS</b>				
Provision for expenditure on environmental work at sites released from peat production	21 468	22 000	21 468	22 000
Provision for closure of landfill sites	1 500			
	<u>22 968</u>	<u>22 000</u>	<u>21 468</u>	<u>22 000</u>
Deferred tax asset included in provisions	6 431	6 160	6 011	6 160
<b>12 LIABILITIES DUE AFTER MORE THAN FIVE YEARS</b>				
Loans from financial institutions	18 145	38 337	490	26 400
Pension fund loans	10 096	44 942	6 348	40 775
Other long-term liabilities	2 109	6 606	2 109	2 107
Total	<u>30 350</u>	<u>89 885</u>	<u>8 947</u>	<u>69 282</u>
<b>DEBENTURE LOANS</b>				
Debenture loan 1994/1999 - repayable in a single instalment	<u>21 000</u>	<u>21 000</u>	<u>21 000</u>	<u>21 000</u>
<b>CONTRACT DEPOSITS AND OTHER LIABILITIES</b>				
Contract deposits	6 771	1 400	1 400	1 400
Other long-term liabilities	4 567	6 775	2 579	4 711
Total	<u>11 338</u>	<u>8 175</u>	<u>3 979</u>	<u>6 111</u>
<b>13 CURRENT LIABILITIES TO GROUP COMPANIES</b>				
Advances received		2 100		
Accounts payable			871	3 484
Other current liabilities		5 312	38 845	58 736
Accrued liabilities		47	201	1 202
Total		<u>7 459</u>	<u>39 917</u>	<u>63 422</u>
<b>CURRENT LIABILITIES TO ASSOCIATED COMPANIES</b>				
Accrued liabilities	<u>561</u>		<u>561</u>	

FIM 1000	Group		Parent Company	
Note number	1998	1997	1998	1997
<b>GUARANTEES GIVEN</b>				
<b>Mortgages as security for corporate debts</b>				
Credit facilities secured by mortgages	45 255			
Overdraft commitments	25 000		5 000	
Mortgages on land and buildings, total	89 080		5 000	
<b>Guarantees given for corporate commitments</b>				
Charges on assets as security for overdraft facility	1 878		1 878	
Guarantees	<u>2 209</u>		<u>677</u>	
Total	4 087		2 555	
<b>Guarantees given for Group companies</b>				
Mortgages	27 000			
Guarantees	<u>50 402</u>		<u>62 661</u>	
Total	77 402		62 661	
<b>CONTINGENT LIABILITIES AND COMMITMENTS</b>				
<b>Leasing commitments and main notice and redemption provisions</b>				
During current period	414			
During following period	<u>1 111</u>			
Total	1 525			
<b>Contingent liabilities for Group companies</b>				
Total	333			
<b>Other contingent liabilities</b>				
Open forward contracts	<u>56 735</u>		<u>11 000</u>	
<b>Charges on assets, mortgages, commitments and contingent liabilities, total</b>	<u>234 162</u>		<u>81 216</u>	

## PARENT COMPANY SHARES AND HOLDINGS

Group Companies	Parent Company shareholding %	Group share of shareholders' equity		Parent Company shareholding		Profit/loss per most recent financial statement
		FIM 1000	FIM/share	Nominal value	Book value	
Vapo Timber Oy group, Jyväskylä	100	305 463	5000	25 000	71 000	35 623
Biolappi Oy, Jyväskylä	100	55	100	50	140	-2
Suo Oy, Jyväskylä	100	599	150000	150	9	136
Biofilter Oy, Helsinki	100	1 096	60	600	760	217
Kekkilä Oyj group, Eurajoki	60	49 706	1514383	15 144	47 087	6 824
Langham AS group, Haapsalu	100	-53	10	38	1 241	-745
Vapo Energi Ab, Haparanda	100	1 224	10000	600	600	-254
VAM Vapo Wastech Ltd Oy, Jyväskylä	50	2 287	6	600	3 000	255
Mustankorkea Oy, Jyväskylä	55	2 253	275	2 750	2 750	-904
Lieksan Lämpö Oy, Lieksa	100	3 761	379000	3 790	16 256	1
Voimavasu Oy, Jyväskylä	50		1000	1 000	1 000	
Vapon Tuulivoima Oy, Jyväskylä	90		9	225	225	
<b>Total</b>					<b>144 068</b>	
<b>Associated companies</b>						
Mäntän Energia Oy, Mänttä	50	3 328	2000	1 000	1 000	1 820
<b>Other Parent Company owned shares and holdings</b>					<b>17 535</b>	

### CALCULATION OF FINANCIAL RATIOS

Return on capital invested (ROI) %	= 100 x	$\frac{\text{Profit before extraordinary items} + \text{interest and other financial expenses}}{\text{Average capital invested}}$
Return on equity (ROE) %	= 100 x	$\frac{\text{Profit before extraordinary items} - \text{taxes}}{\text{Average of (Shareholders' equity} + \text{reserves} + \text{minority interest)}}$
Solvency ratio %	= 100 x	$\frac{\text{Shareholders' equity} + \text{reserves} + \text{minority interest}}{\text{Balance sheet total} - \text{advances received}}$
Earnings / share	=	$\frac{\text{Profit before extraordinary items} - \text{taxes} - \text{minority interest}}{\text{Average number of shares}}$
Shareholders' equity / share	=	$\frac{\text{Shareholders' equity}}{\text{Number of shares at end of period}}$
Dividend / share (FIM)	=	$\frac{\text{Dividend for period}}{\text{Number of shares at end of period}}$
Dividend / earnings (%)	= 100 x	$\frac{\text{Dividend / share}}{\text{Earnings / share}}$



## PROPOSAL FOR THE DISTRIBUTION OF PROFITS

The Group's non-restricted shareholders' equity is FIM 1 097 million. According to the consolidated balance sheet, distributable funds represent FIM 775 million of this total.

The Parent Company's non-restricted shareholders' equity is FIM 608 million, of which profit for the financial period is FIM 150 million. The Board of Directors proposes that the profit for the period

as shown in the financial statements be utilized as follows:

- a dividend of FIM 75 million or 25% of the registered share capital be paid;
- the sum of FIM 1.5 million be allocated for charitable purposes at the discretion of the Board of Directors;
- a total of FIM 74 million be transferred to the retained earnings account.

Jyväskylä, 16 March 1999

Esko Muhonen

Chairman, Managing Director

Juha Tuominen    Aarno Heinonen    Mauri Jaakonaho    Raimo Rantala

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## AUDITORS' REPORT

### To the shareholders of Vapo Oy

We have audited the accounting, the financial statements and the corporate governance of Vapo Oy for the period 1 January to 31 December 1998. The financial statements, which include the report of the Board of Directors, Parent Company and consolidated income statements, balance sheets and notes to the financial statements, have been prepared by the Board of Directors and

the Managing Director. Based on our audit we express an opinion on these financial statements and on corporate governance. We have conducted the audit in accordance with the Finnish Standards on Auditing. Those standards require that we perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining on a test basis evidence supporting the amounts and

disclosures in the financial statements, assessing the accounting principles used and significant estimates made by the management as well as evaluating the overall financial statement presentation. The purpose of our audit of corporate governance is to examine that the members of the Supervisory Board, the Board of Directors and the Managing Director have legally complied with the rules of the Companies Act.

### In our opinion

- the financial statements have been prepared in accordance with the Accounting Act and other rules and regulations governing the preparation of financial statements,
- the financial statements give a true and fair view, as defined in the Accounting Act, of both the Parent Company's and the Group's result of operations as well as of the financial position,
- the financial statements, with the consolidated financial statements, can be adopted,
- the members of the Supervisory Board, the Board of Directors and the Managing Director of the Parent Company can be discharged from liability for the period audited by us, and
- the proposal by the Board of Directors regarding the distribution of the profit for the accounting period is in compliance with the Companies Act.

Jyväskylä, 16 March 1999

TUOKKO DELOITTE & TOUCHE OY

Certified Public Accountants

Yrjö Tuokko, CPA

## STATEMENT OF THE SUPERVISORY BOARD

The Supervisory Board has examined Vapo Oy's Financial Statements, Consolidated Financial Statements and Auditors' Report for 1998, and has found that these require no comment on the part of the Supervisory Board.

The Supervisory Board recommends the adoption of the Parent Company Income Statement and Balance Sheet and of the Consolidated Income Statement and Balance Sheet and supports the proposal of the Board of Directors as regards the distribution of profits.

The Company's present articles of association stipulate that all the members of the Supervisory Board are elected each year at the Annual General Meeting.

Helsinki, 26 March 1999

Markku Koski

Aarne Heikkilä Terttu Kangasharju Juha Karpio Armas Komi Reijo Laitinen  
Christel Liljeström Erkki Pulliainen Taisto Turunen Jan Vapaavuori

# ADDRESSES

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- Kevätniemi Sawmill  
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- Numes Sawmill  
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- Paltamo Sawmill  
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- Peuravuono Sawmill  
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- Group administration
- Business unit office
- Regional centre unit office
- ✕ Helsinki office
- Peat production site
- Sawmill
- ◆ Kekkilä Oyj
- ▲ Horticultural peat plant
- Power plant
- Heating plant
- Wind power plant
- Heating distribution company

