



Knowledge for the future

 **SINTEF**

Annual report 2005

This is SINTEF

The SINTEF Group is the largest research organisation in Scandinavia. Our vision is "Technology for a better society". Our aim is to contribute to increased value creation, improved quality of life and sustainable development.

SINTEF sells research-based knowledge and associated services based on deep insight into technology, the natural sciences, medicine and the social sciences. Our basic values are honesty, generosity, courage and solidarity.

SINTEF intends to become one of the most respected research institutions in Europe.

The SINTEF Group comprises the SINTEF Foundation, plus five limited companies and SINTEF Holding. We are a competitive research group with significant potential to make a positive contribution to societal development at regional, national and international level.

SINTEF's roles also include improving Norwegian and European competitiveness in a globalised world, and we intend to help make the world a better place.

We help to develop existing knowledge-based work-places and to create new ones. Our business concept is to build a business culture that is closely integrated with our research culture.

Key figures

At the turn of the year the SINTEF Group had 1763 employees, who generated knowledge worth NOK 1.8 billion in 2005.

Contracts for industry and the private sector and project funding provided by the Research Council of Norway account for more than 90% of our income. Just over six percent takes the form of basic grants from the Research Council.

Partners in cooperation

SINTEF cooperates closely with the Norwegian University of Science and Technology (NTNU) and the University of Oslo (UiO). NTNU personnel work on SINTEF projects, while many SINTEF staff teach at NTNU. Our collaboration involves widespread common use of laboratories and equipment, and more than 500 people are jointly employed by NTNU and SINTEF. We are in the process of establishing a similar pattern of collaboration with the University of Oslo.

International activities

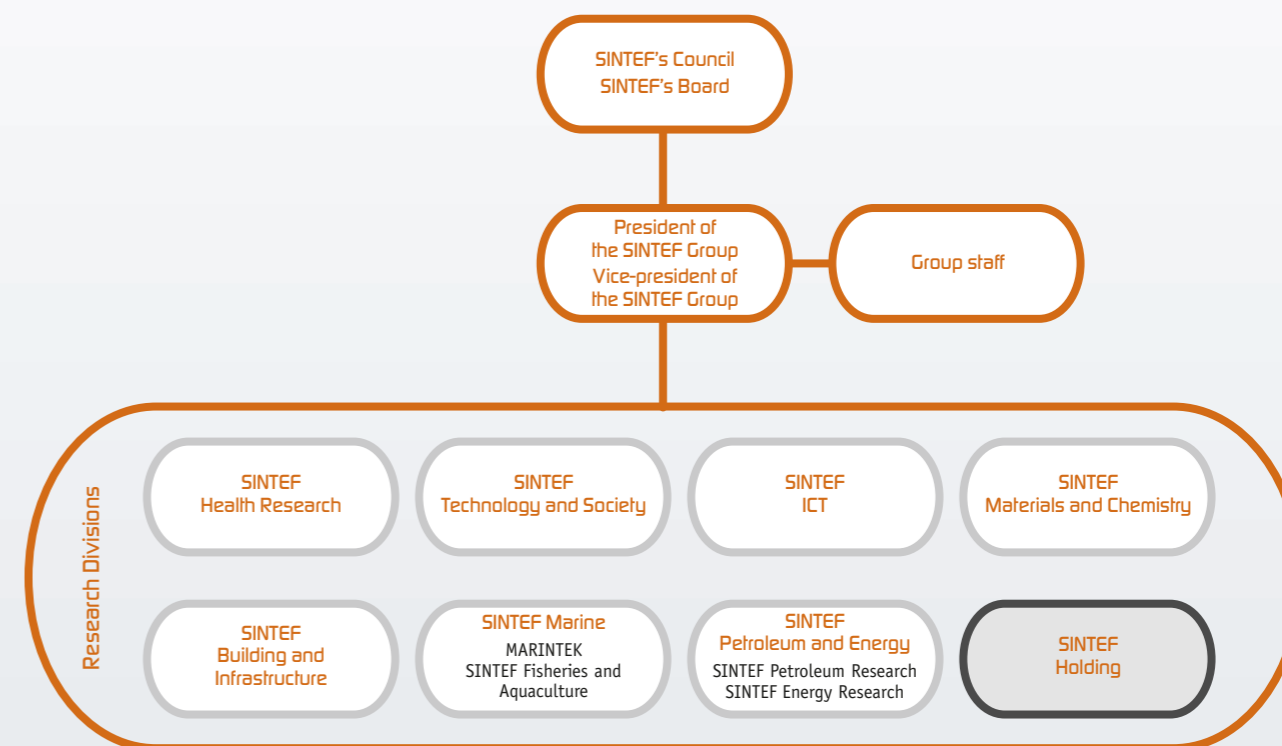
In 2005, 14.7 percent of our turnover derived from international contracts. About one third of our international turnover comes from the EU's research programmes. We give these high priority, because we believe that it is important to participate in multinational knowledge-generation efforts, and because such projects provide access to interesting networks.

The rest of our international turnover comes from normal contract research performed on behalf of overseas clients. Our ambition is to grow in other countries, and for this reason we are investing in areas in which we are particularly strong: oil and gas, energy and the environment, materials technology and marine technology.

Commercial spin-offs

SINTEF also acts as an incubator for new industrial companies. In 2005, we were involved in 18 new companies that had been set up on the basis of technology developed by SINTEF. This activity provide Norway with badly needed knowledge industries. We are active owners of our start-up companies, and we help them to continue their development. Selling our shareholdings in successful spin-offs realises liquid assets that we subsequently invest in the generation of new knowledge. Nevertheless, the most important part of our work is the development of existing industrial companies. Every year, SINTEF helps to develop some 2000 Norwegian and foreign companies via its research and consulting activities.

Our organisation



SINTEF Health Research

SINTEF Health Research is one of the largest health research organisations in Europe. We have wide-ranging solidly-based knowledge of both medical subjects and methods, and are capable of analysing and solving problems in an integrated manner.

SINTEF Technology and Society

SINTEF Technology and Society offers R & D and consulting services in the fields of technology management, working life and transport. The division also has a subsidiary company; SINTEF MRB AS.

SINTEF ICT

SINTEF ICT offers integrated research-based knowledge via access to a broad platform of technology and competence in ICT.

SINTEF Materials and Chemistry

SINTEF Materials and Chemistry possesses top-level expertise in the fields of materials science, applied chemistry and applied biology. We work closely with industry in the development of advanced materials, products, processes and tools. The division also has two subsidiary companies; SINTEF RTIM AS and Molab AS.

SINTEF Building and Infrastructure

The Boards of the Norwegian Building Research Institute and SINTEF have resolved to merge the two institutions. Formal approval is anticipated in spring 2006. The division also has a subsidiary company; SINTEF NBL AS.

SINTEF Marine

SINTEF Marine consists of MARINTEK and SINTEF Fisheries and Aquaculture, and it deals with the challenges involved in exploitation of the marine environment.

SINTEF Petroleum and Energy

SINTEF Petroleum and Energy comprises SINTEF Petroleum Research and SINTEF Energy Research, and operates within the whole of the value chain for petroleum products and sustainable energy systems.

SINTEF Holding

SINTEF has established SINTEF Holding with the aim of establishing a clear interface between our core activities and commercial research and related activities. SINTEF Holding is a tax-paying entity, and it comprises strategic holdings and newly established companies.

SINTEF is a foundation with greater ambitions for society than for itself.

That is why we are working day in and day out towards our vision:

Technology for a better society.

Unni Steinsmo, President of SINTEF

“If we intend to create a sustainable knowledge society, we are dependent on the quality of the interactions that take place between research, industry and the authorities.”

4 *The pillars of the knowledge society are education, research and innovation, all of which improve our competitiveness, quality of life and sustainable development. This is a matter of creating work-places for the future, new medicines and new technologies – all of which are based on knowledge. SINTEF wishes to be a core contributor to the knowledge society at national and international level.*

The core activity of SINTEF is to generate new knowledge. Our strength lies in our ability to turn science into new products, processes and services. As a partner in research and development, we intend to contribute actively to the development of the knowledge-based companies of the future.

SINTEF's highly qualified researchers work closely with industry to deliver good commercial solutions. We focus on our customers' needs without compromising our own high scientific and ethical standards.

We invest our profits in research and laboratories, and we work within a culture characterised by a balance of creative freedom and commercial discipline. Our researchers work hard while observing confidentiality requirements. They deliver on time and at the price agreed.

We wish our knowledge to be an even greater key resource for business and industry in the future, and we are certain that with it, we can create the foundations that will enable important political decisions to be made.

We collaborate closely with the Norwegian University of Science and Technology (NTNU). We share the ambition of NTNU to be a joint force to be reckoned with on the international scene, and we are striving to develop our close relationship even further. SINTEF is also actively engaged in developing its cooperation with the University of Oslo and other Norwegian centres of knowledge. In a small country such as ours, we need to build strong national teams.

Although the Norwegian and European knowledge economy is SINTEF's most important field of operation, we also participate in the global arena. Norway's four core areas of expertise are energy, materials, maritime and marine research, in all of which our research groups are world leaders. Knowledge in the fields of nanotechnology, information technology and biotechnology will be of decisive importance in maintaining our strong international positions. SINTEF both can and will make valuable contributions in these areas as well as in manufacturing processes, building and construction technology, healthcare and the social sciences.

We are making goal-oriented efforts to develop research groups at the international leading edge in a number of disciplines. SINTEF occupies a strong position in national markets. We can maintain such a position only by strengthening our international position. We are pleased that EU projects are making a growing contribution to finance our range of activities.

Internationally recognised laboratories are keystones in the construction of a knowledge economy. We need to build up and develop good laboratories in our new areas of expertise as well as in fields in which Norway traditionally has been at the leading edge. SINTEF has placed high priority on developing a national laboratory infrastructure. We will also continue to link our laboratories with leading European networks.

SINTEF is making serious efforts to be a good partner for both national and international actors. If we intend to create a sustainable knowledge society, we are dependent on the quality of the interactions that take place between research, industry and the authorities. We can point to proud traditions in this respect. Our welfare society and our models for cooperation may well be our most important competitive advantage.

www.sintef.com





Oddvar Aam, President of MARINTEK

“Nansen and Amundsen were pioneers, but now an entire industry is ready to move into the Arctic. We cannot afford to make a false step.”

Trondheim, February 2006. The projector whirrs quietly in the conference room, and an image of the sea appears on the screen. The drawing is divided into four parts: Oil and Gas; Biomarine Resources; Shipping and Safety; Environment. This is all about the Barents Sea.

“These,” says Oddvar Aam as he points to them, “are areas in which the Arctic faces us with challenges. Here we need to think across disciplines. Monitoring fish and biomass is just as important as the flow of oil and gas. We need to find out what we will be able to cultivate in the sea after the oil runs out. The environmental aspect must not act as a shackle but should rather be a competitive advantage. SINTEF can manage this – together with other Norwegian actors. We are going to occupy the ocean space,” says Aam, emphasising the final word.

Oddvar Aam is President of MARINTEK, the SINTEF Group’s flagship in the marine technology sector. MARINTEK tests ship designs, oil rigs and vessels that have yet to see the light of day in what is one of the biggest maritime laboratories in the world. This is where tests and simulations of mile-long oil and gas pipelines destined to be laid in hostile ocean water are carried out. Customers come here from every part of the world. And this is where guidelines are drawn up now that Norway once again is planning to invade the arctic night in the name of knowledge and research. Now, Aam wants to inspire the coming generation of engineers and technologists to join the project he calls ‘Ocean Space Management’.

This is because the argument about whether to drill in the Barents Sea has quietened down. The management plan is already in place. Industry and the politicians are in agreement, and the challenge will be to show the world that we can carry out the plan on the conditions set by the environment.

Aam is in no doubt that the Barents Sea, dark, stormy and packed with biological diversity, will present us with huge challenges when we start to drill for oil and gas.

“This interface is where SINTEF will play a vital role. We want to build bridges between environmental activists, the authorities and industry, by generating knowledge and developing technology that will also be capable of protecting the vulnerable biological diversity of the Barents region.” Aam envisages a marine multiuse environment in the shape of interactions between biomass and technology.

“For example, we can offer continuous real-time monitoring of the whole of the ocean space. Fish stocks and marine species such as sponges, corals, benthic fish and zooplankton can all be monitored. Environmental toxins and ocean currents can be measured. We already possess the technology involved: ICT and control systems, chemistry, sensors and materials technology, nanotechnology, robots and underwater vehicles. The limits are set only by our imagination. But first of all, we have to learn to understand the ecology of the ocean,” he says. “Every petroleum engineer should attend lectures on biomass and value chains in the Arctic before he is allowed to start working. We cannot afford to put a foot wrong.”

Safer flying for Ingri

Ingri often travels on her own to visit her big sister Linn. Now her mother and father can feel even more certain that her flight will be OK. Some of the credit should be given to our scientists, who use their supercomputers to provide turbulence forecasts.
www.sintef.com/math



SINTEF customer and tool-maker Teeness ASA

“Our ambition is to produce the best tools of their sort in the world.”

“Welcome to Trondheim’s best-kept secret,” says Nils Aksel Ruud, Marketing Manager in Teeness ASA. The company is located in old buildings, squeezed between what used to be housing for the city’s industrial class, but is now a colourful urban cluster of houses, and a modern multi-storey housing scheme. Passers-by tend not to notice it. But what happens within its walls has certainly attracted attention well beyond Norway’s borders. In the course of the past two years, the turnover of this Trondheim company has grown by 40 percent, and much of this increase is due to the US market. Today, Teeness supplies products to end-users such as Volvo Aero Norge, Aker Kværner and Airbus. Sales and distribution are handled by the Swedish tool-making giant Sandvik Coromant.

The story leading to the success of Teeness started in 1897, says Ruud, when the company was established under the name of Trondhjems Nagle- og Spigerfabrik: TNS (The Trondheim Nail and Spike Company). And that remained its name, and its business, for nearly 70 years, until the day when Kristian Holmen, a student at the Norwegian Institute of Technology (now NTNU), knocked on the door of the machine shop. In his hands he carried his student cap, an outline of a product and a mathematical formula. This was the start of the turnaround operation that has transformed the company from a traditional industrial player to the market leader in a high-technology product: a vibration-damped machine tool. And that is how TNS became Teeness – a name that sounds better than the three Norwegian letters on the lips of international customers.

The unique drill-stem enables deep holes to be machined with micrometre precision. Vibration damping offers better productivity, raises product quality and lowers noise levels, all of which are features appreciated by demanding industrial managers.

Teeness has put everything into knowledge and quality by recruiting people with a high level of competence, and not least by joining groups that possess such competence. The company has made good use of scientific support from SINTEF on a number of occasions, for example when the cutting head on the drill-stem was in need of product development, when logistics and manufacturing problems needed to be solved, and currently, as a support facility when the company’s future factory is to be designed, tailor-made for production and product development.

There is hectic activity in the production halls, where busy, experienced hands do what they are best at. A sheet of paper pinned to the door bears witness to the good times: ‘Expected bonus for 2005: NOK 28,875.’ Tools of various sizes lie carefully packaged on the floor, ready for shipping to destinations in Canada, the Netherlands and the USA. The largest version can cost NOK 1 million, but that is what it takes to deliver the quality that customers demand. Teeness invests 15 percent of its turnover in machinery and equipment, and a further 12 percent in research and development, investments that have produced results.

www.teeness.com
www.sintef.com/logistics
www.sintef.com/newpraxis





“Traffic research may sound boring,
but traffic is a matter of both emotions and quality of life.”

Trine Marie Stene does research on our attitudes to safety – when we are travelling on two or four motorised wheels. This has just gained her a fresh dr.polit. degree. She doesn't like to take chances herself, perhaps as a result of an unpleasant meeting with a car when she was still a child.

“I remember it well. I was eight years old and had gone down to the motorway with some older girls, when I was run over. The driver managed to skid the car round, but I was hit and thrown several metres. Luckily, I got off with only a few scratches. But what made the most powerful impression on me was the reaction of the driver; an adult man who burst into tears,” says Stene.

When she started her professional career after taking a master's degree in psychology, she decided to go in for safety research rather than practise as a psychologist.

As a researcher, she is interested in the mechanisms that control what we do; the interaction between what is rational and what is emotionally controlled. “How important is learning for the way we behave in traffic, and how important is our emotional state when we make choices?” Interest in questions like these led her to the interdisciplinary doctorate which was a cooperative project between the Departments of Traffic Research and Education at NTNU.

“We just have to realise that emotions are more important than we care to admit. When so many people drive too fast, it is not because we do not know what an 80-kilometre speed limit means,” says Stene. Joie de vivre and a feeling of freedom are other elements that control us. This is something that emerges in particular in interviews with motorcyclists.

Stene has just started a project on how secondary school pupils experience learning relative to their psychological 'daily form'.

She is quite ready to admit that she herself is an emotional person, which means that she puts a lot of herself into her work.

“I am one and the same person whether I am working or not. That is why it is essential for me to work on something that is important, something that I do not have to justify to myself.”

Both SINTEF's vision of “Technology for a better society” and the possibilities of interdisciplinary collaboration make working at SINTEF attractive for Trine Marie Stene. Here there are plenty of different disciplines and people to work with.

“SINTEF has close links to both the University Hospital and to NTNU itself, which makes for a large, interesting professional environment. We need to exploit this even better, because a lot of exciting things are happening at the point where technology, social science and medicine meet.”

This is why Stene is keen to see a guest-researcher scheme being established; a system that would enable researchers to exchange work-places with other departments and subjects for a few months.

“Knowing and relating directly to other people is essential for interdisciplinary work. In practice, it is also a matter of talking over the lunch table or a cup of coffee in the next-door office; a matter of interpersonal relationships”.

Torbjørn Digernes, Rector of NTNU (Norwegian University of Science and Technology)

14 “Our grandchildren will live off the same things as we have done; but they will have to be even smarter at their work than we are.”

Trondheim 2020: Torbjørn Digernes is 73 years old. He is looking forward to having great-grandchildren – and is still a keen follower of the social debate. With a light heart, the elderly academic observes that Norway is still one of the richest countries in the world, and that it is still as good to live here as it was at the turn of the millennium.

Trondheim 2006: A smiling Torbjørn Digernes has been playing at looking into the future. In his relaxed Sunnmøre dialect, he lingers on his prophecies of future well-being. He wants to play his part in realising them – as a supplier of premises to Norwegian research and industrial policy.

His high-ceilinged office brings one’s thoughts to Oxford and Cambridge. Highly visible on the bookshelf lie piles of ‘Norway 2020’, a result of NTNU’s and SINTEF’s industrial policy collaboration project of the same name.

“We have to board the trains that count and assume the leadership wherever we can develop Norway’s areas of strength. We must also take good care of our industrial driving forces – easier than spawning new ones” – just two points of the message between the covers of the book. I give copies to everyone who is working on research and industrial policy,” smiles the Rector.

Unlike many other people, he does not believe that a gap is in the point of appearing between the creation of wealth and our pension obligations.

“Petroleum will keep us going longer than many people believe,” says Digernes. All the same, well-being is not an automatically self-sustaining process. It requires a conscious attitude to how we can realise the knowledge society. If we fail in that, we will soon find ourselves on the slippery slope,” he says.

As Rector of NTNU he has overall responsibility for educating the technologists who will lead us into the society of the future. An inspiring job, according to Digernes. “It is a privilege to be Rector of the most exciting university in Norway.”

Digernes believes that our grandchildren will live off the same things as we have done. The way he sees it, their challenge will lie in having to be even smarter at their work than we are. They will have to utilise ICT, biotechnology and nanotechnology within our classical areas of strength, such as petroleum, fish, energy and materials science, not to mention the health sector. All this will require non-stop efforts in research.

“Then there will also be some exciting new areas of research, although it is not easy to predict what these will be. But I believe that some of them will centre on nanotechnology applications.”

If Digernes could be Prime Minister for a day, he knows what he would do: “I would increase the national research fund to NOK 150 billion,” he says. “And then I would give our schools extra funding. The knowledge society will stand or fall by our ability to recruit new science teachers before the old ones retire!”

www.ntnu.no
www.sintef.com/geminicentres



An independent survey has revealed that nine out of ten SINTEF staff look forward to going to work. We hope that you too will have a nice day!





Steffen Møller-Holst, SINTEF Research Manager

“We mustn’t forget recruitment. It is the children of today who will carry on the development of hydrogen technology and ensure that it brings Norway environmental benefits and value creation.”

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One day he sits in the government building as a special adviser on hydrogen appointed by the government. The next, he is standing in Trondheim Spektrum exhibition and convention centre in front of a specially built doll’s house packed with hydrogen technology.

Steffen Møller-Holst enjoys the range of experience offered by his two roles as a supplier of premises for politicians and an inspirer of children.

He regards his new appointment by two ministries as a vote of confidence. The Strategic Council of the Hydrogen Platform which he is to chair is to draw up an action plan for the country’s future efforts on hydrogen as an energy carrier.

But Møller-Holst believes that it is just as important to spread the word about hydrogen to the younger generation. During the Technoport Technology Fair in Trondheim last autumn hundreds of school pupils gathered around the boyish native of Bergen. With their own eyes they could see a little hydrogen-driven fuel cell light up his doll’s house.

“We mustn’t forget recruitment. It is today’s children who will carry on the development of hydrogen technology and ensure that it brings Norway environmental benefits and value creation,” says Møller-Holst.

If energy companies can manage large-scale hydrogen production without CO₂ emission, cars, trains, ships and aircraft will be able to carry us around without contaminating the environment. While the Americans are doing research on hydrogen in order to become self-sufficient in fuel, it is more in the spirit of Steffen Møller-Holst’s way of thinking that Norway’s hydrogen efforts tend to be based on its environmental advantages.

“I am most interested in the potential for the environmental benefits that new technology opens up,” he says.

The way he sees it, there are a number of good reasons for going in for hydrogen as an energy carrier in the Norway of the future. Hydrogen can be produced from natural gas. When we can send CO₂ from the transformation process down into secure sequestration sites on the continental shelf, we will have an attractive, environmentally friendly way to utilise our enormous gas resources, both for stationary power production and as a source of fuel for the transportation industry.

Hydrogen can also be produced by using electricity to break down water. With the emergence of new renewable energy sources such as wind power, hydrogen is a perfect medium for storing energy during those seasons and times of day when we have no need for wind power – and for use when consumption exceeds production.

Steffen Møller-Holst predicts that new, renewable sources of energy will gradually replace natural gas as the basis of hydrogen production in the course of this century. And last but not least, that hydrogen production will make an important contribution to the value creation that is essential to guarantee the wellbeing of Norway in the post-oil era.

www.sintef.com/hydrogen_h2
www.sintef.com/ecm
www.sintef.com/energy

Sverre Narvesen, Managing Director of SINTEF's subsidiary RTIM

"Raufoss is an excellent example of the saying that rumours of the death of Norwegian industry are greatly exaggerated."

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Industrial activities in the tiny village began when Ibsen was still strolling to the Grand Café in Oslo and Oscar II was King of Norway. Today, more than a century later, industry in Raufoss is still vital, with an extremely vigorous knowledge bank at its centre.

"We are the keystone of the high-technology milieu in the industrial estate," says Sverre Narvesen, Managing Director of the research and development company RTIM (Raufoss Technology and Industrial Management), 50 percent of whose shares are held by SINTEF.

Just a stone's throw from Narvesen's office is the site where 75 men started making cartridges for the legendary Krag-Jørgensen rifle in 1896. This was the start of an industrial fairytale, which many believed had come to an end when Raufoss Ammunisjonsfabrikk closed and Raufoss ASA was wound up a hundred years later.

But not a bit of it! Behind the well-guarded fencing of Raufoss Industrial Estate, 3000 expert workers turn out metal and composite products. In competition with international companies they supply the automotive and defence sectors, to name but two, with 90 percent of production being exported.

"Raufoss is an excellent example of the saying that rumours of the death of Norwegian industry are greatly exaggerated," says Narvesen.

Raufoss is the heart of Norwegian industry's light-metal cluster. With RTIM, this cluster has its own research centre, which has its roots in the Raufoss Group's research and development department. The company helps its clients to select and utilise the most suitable materials for their purpose, and assists in the processes of design and automation of production processes.

"We have expertise in materials technology and industrial automation that individual companies in Raufoss would not find it profitable or useful to maintain themselves," explains Narvesen.

After a difficult birth, two important things happened that affected RTIM. SINTEF increased its involvement on the ownership side and put money into a share issue together with SIVA and four other companies on the industrial estate. At the same time, Erna Solberg, the Minister of Local Government at the time, designated Raufoss as one of three pilot projects for the Norwegian Centre of Excellence (NCE) programme, with RTIM as the lead contractor.

"NCE is a development programme aimed at companies that are already doing well. You might call it industry's 'best practice' theory," smiles the head of RTIM.

To the joy of Narvesen, RTIM has already qualified itself for contracts far beyond the boundaries of the industrial estate. Sunnmøre's furniture industry, aluminium tyre rim manufacturer Fundo and a major manufacturer of roof trusses are among the company's clients, to say nothing of the orders that come in from the company's overseas owners. Sverre Narvesen emphasises that these orders provide impulses and knowledge which benefit the rest of RTIM's clientele.

"At the same time, this gives us the chance to let everyone know that we are not just another needy business that only survives thanks to subsidies!"

www.rtim.com
www.sintef.com/Materials_and_Chemistry





“I never believed that I could become a scientist: I was so bad at maths.”

Ane Elisabet Lothe has just won a prestigious international research prize, for which she can thank a rather poor mathematics exam.

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June 1992: Bergen was displaying the ‘nice’ side of its notorious weather, but the mood of a young university student from Sandane in Nordfjord was miserable. A year of studying maths had gone up in smoke, and her dream of a future in physics was crumbling. At about the same time Gudmund Hernes, the Minister of Education, was implementing one of his ideas by opening a new course of study in geology on Svalbard. Ane, the young lover of the open air, counted up her university entrance points, found that she had sufficient and set course for the most northerly university in the world. A few months later, the 21-year-old had a place on the geology course, a rifle and her own snow scooter. She was ready for field work in the realms of the polar bear.

“My parents were not particularly happy about it. They realised that I was finally rejecting life as a farmer on our family farm,” says Lothe in her characteristic Western Norwegian dialect.

Four years later, she had landed a job with SINTEF Petroleum Research in Trondheim, where she was set to work on a major EU project on CO₂ sequestration under the seabed.

“At that time there was a great deal of pressure for as many people as possible to take a doctorate. When I started in the job, I made it quite clear that was not my goal.”

Once again, however, the young woman changed course. The job became so interesting that when Norsk Hydro advertised for a doctoral student, Ane Lothe accepted the challenge after all. Last summer, her proud parents could read about their daughter’s doctorate and academic success in ‘Firda Tidend’, their local paper.

“EAGE, the international association of petroleum geologists, attracted four thousand scientists to its annual conference in Madrid this year. Great was Ane’s surprise when she was told a month ago that she was to be awarded a prize at the conference,” wrote the paper.

“By relating knowledge gained from doing research on small samples in the laboratory to what we can observe in a sedimentary basin, I brought what we can see on the small scale and the large scale a little closer to each other. But I never expected that it would attract so much attention.”

Nevertheless, the prestigious Falcon Prize for the best scientific article in the journal ‘Petroleum Geoscience’ was awarded to the young scientist and her co-authors.

“Our work resulted in the further development of a computer program that can reveal high pressures in potential petroleum reservoirs. This could be a useful tool both for preliminary studies and during the drilling process itself,” explains Lothe.

Oil companies such as Hydro and Statoil are now using the program to explore for hydrocarbon on domestic and overseas prospects. But in spite of her professional success, the scientist sticks to an eight-hour working day, not least because she loves walking in the mountains and is an active member of the Norwegian Mountain Touring Association’s Mountain Sports Group. And when she is not out climbing mountains, she may well be hanging from an indoor climbing wall. For Ane Elisabet Lothe, mountains are both playground and subjects of research.

Bjørn Skjellaug, SINTEF Research Director

“All ICT research is international by its very nature. In principle, there are no boundaries in cooperation, least of all within Europe.”

As far as Bjørn Skjellaug is concerned, Norway’s research interests do not stop at Svinesund and the border with Sweden, but if anywhere, at the Bosphorus.

Skjellaug leads the Department of Cooperating and Trusted Systems in SINTEF Information and Communications Technology. This department has the highest involvement of any of SINTEF’s units with the EU, with about 70 percent of its activities oriented to Europe. Then again, its staff is highly cosmopolitan; in this department you will find, for example, a database that contains the whole of the Portuguese written language.

As a ten-year-old, Bjørn Skjellaug was given a chemistry set for Christmas. This was just the thing for the highly curious, active little boy, who also found time for football, cross-country and downhill skiing, hang-gliding and bridge. The world of chemistry fascinated him, and it continued to do so, taking him in due course to the University of Oslo, where the young man’s eyes were opened to yet another exciting subject: informatics.

This aroused his interest to such an extent that it brought him into the research group that was developing TORNADO – the first database in the world for technical applications. Since the late 80s, the EU system has been part of his working life. It started with the EUREKA Software Factory, a project that would prove to be the entrance ticket to the study of a series of problems on which Skjellaug’s department is still working.

Many laymen find it difficult to understand the work of Bjørn Skjellaug’s department. It seems to be so abstract that most people find even the Salvador Dalí paintings that he uses as screen savers easier to interpret. On the other hand, European industry and academia have no problems of this sort and are very keen to take part in this type of research.

“In fact, it is not so very complicated,” says Skjellaug. “We develop appropriate tools in order to build good, reliable information systems in software, in the same way as a blacksmith makes tools for different types of handcrafts,” he explains.

Such tools may also contain well-proven building blocks in the form of modules, processes and knowledge that ensure that the software will function as expected in technical and applications terms.

“We are consciously working at the interface between human beings, organisations and technology.”

A clear scientific profile is essential to be an attractive international partner, so “town and gown” need to operate hand in hand.

“Publishing frequently in well-known journals and conference proceedings helps to increase visibility, and lets potential partners know who you are and what you are capable of,” concludes Bjørn Skjellaug.





Leonardo's dream

Leonardo Ilic is in his third year at school. He dreams that his home town of Tuzla will look like this when he grows up.

SINTEF is helping to fulfil his dream.

www.sintef.com/ioe



Tom A. Røtting, Vice President of Powel ASA

“We were a bunch of people who saw that this field was about to take off. But it grew so fast that it became incompatible with doing research in EFI.”

Over the past decade, Powel ASA in Trondheim has changed from being a small company to an international group with 240 employees. The company has little debt and a fat bank balance. Turnover has grown 20 percent a year, and last year the company won an award as ‘Company of the Year’ just as it was being listed on the Oslo Stock Exchange.

However, the story of the company goes back to 1995:

In an office at EFI (the Energy Supply Industry Research Institute; now SINTEF Energy Research) a group of people are sitting round the meeting table. A mixture of scepticism and enthusiasm fills the room. A flipover chart is covered in figures, and EFI’s management team, led by Sverre Aam, has been putting forward its thoughts: software development has really taken off via the NetBas and ID IT systems. The situation is beginning to be incompatible with the research that the Institute is supposed to be doing, and management wants to hive off this type of activity to a separate company. Financial arrangements have been made, with NOK 20 million coming in from the venture capital company Norsk Vekst. Managing Director Aam finishes by offering a carrot: everyone who transfers to the new company will be given NOK 20,000 in shares. Thirty-seven persons in the room make up their minds to take the decisive step.

Today, each bundle of shares is worth NOK 500,000, and Powel ASA is going full speed ahead. Its success products are systems that help power companies to obtain an overview and control of everything from water supplies to electrical calculations. Major companies such as Fortum, Vattenfall and Statkraft depend on Powel’s software. The company is constantly expanding its customer base and has established subsidiaries in the USA, Sweden and Denmark.

One of the group who moved over from EFI to Powel is Tom Røtting, now the company’s Vice President of Power and Trade.

“I was one of the youngest in the group, and was offered a management position as head of development. Doing research was not the same as working in the commercial sector. The demands of the new job changed by the hour, and it was essential to get on with sales and marketing at an early stage.

Today, SINTEF Energy Research is left with 3.5% of the shares in the company. SINTEF’s cuckoo in the nest has become a company full of vitality.

www.powel.com
www.sintef.com/energy

*Duncan Akporiaye, SINTEF Chief Scientist,
and Jennifer Holmgren, Exploration and Fundamentals Manager at UOP, Chicago*

“SINTEF’s research results represented a breakthrough in combinatorial chemistry.”

It was 1997, and a little group of scientists in Oslo reckoned that the time was ripe to link up with an international ‘big brother’. Eagerly, the group leader composed an email and sent it off to Chicago.

Research Manager Akporiaye and his team at SINTEF Materials and Chemistry believed that they had mastered a new technology that was capable of being a central process in the development of new catalysts: combinatorial chemistry. Now they were looking for a partner to help them develop the method further and bring its results out to the global petroleum industry.

The addressee was UOP (formerly Universal Oil Products), one of the largest suppliers of petrochemical industry processes in the world. The reply came promptly and said that they would be welcome. After a few more exchanges of emails and telephone calls, UOP invited their new Norwegian friends to a special seminar at which they could present their results to a group of the company’s leading scientists.

In 1997, Jennifer Holmgren was Manager of UOP’s long-term research programme. Like Akporiaye she was very interested in zeolites, a type of mineral with an infinity of different structural forms and compositions, and which are among the most common materials in catalysts today.

Catalysts are usually developed by searching in the enormous ‘haystack’ of zeolites for combinations that are capable of improving petrochemical processes. Until recently, such exploration has consisted of synthesising zeolites one at a time, and analysing and testing them for their catalytic properties. But Akporiaye and his group have developed equipment that is capable of doing this in large batches of up to 100 combinations at a time.

Every tray of zeolites that goes into the autoclave can mean savings of as much as NOK 500,000, since the whole batch can be produced for more or less the same price as it used to cost to make a single sample.

Immediately after the seminar in Chicago, SINTEF and UOP signed a research collaboration contract. Jennifer Holmgren has been the driving force and anchor person at UOP, and a highly competent scientific adviser in the development process.

“SINTEF’s research results represented a breakthrough in combinatorial chemistry,” says Holmgren, who also emphasises the importance of SINTEF’s precision mechanics workshop for the project.

“This was a factor of the greatest importance for the rapid development of the technology,” she says.

The cooperative project has produced new catalysts for the petroleum industry, and prestigious research prizes for its members.

www.uop.com
www.sintef.com/processchem



Bjørn Svensvik, Executive Vice President of SINTEF Building and Infrastructure

“We are working in highly challenging areas that are just lying waiting for us, both in Norway and all over the world.”

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He led the engineering department on the huge Gullfaks C platform, has been John Cleese’s neighbour in London and has lost part of his heart to Italy.

Now globetrotter Bjørn Svensvik is looking forward to making the apple of his eye – new-born SINTEF Building and Infrastructure – better known out in the big wide world.

Some fifty years ago, a little boy is wandering around among cement mixers and iron re-bars in war-torn Kristiansund. The Germans have bombed his part of the town to bits, and little Bjørn realises what he wants to be when he grows up.

He will be a building contractor like his grandfather, who is helping to reconstruct Nordmøre’s county town after the War.

Although he does not become a contractor as such, he is faithful to the construction industry. In West Germany he qualifies as a civil engineer in concrete structures and takes his doctorate in ‘The redistribution of forces in reinforced concrete structures under long-term loading’ – an education that is tailor-made for the needs of the young oil nation that Norway has become.

In the course of the following 20 years he fills a series of key positions in the rapidly growing concrete industry on which the Norwegian petroleum adventure is literally based.

Norwegian Contractors give him responsibility for engineering on Gullfaks C, the largest ever North Sea platform in terms of volume. Then the giant Troll A – the tallest of all the Condeep platforms – is put into his hands. Svensvik has responsibility for project management and contracts.

His next job is with Kværner. With Svensvik as chief negotiator the Kvaerner Group wins the contract for the concrete foundations for the Heidrun platform. The contract involves Kvaerner building a completely new yard outside Bergen, where Svensvik becomes Project Director, with responsibility for 2500 staff.

During the final three years of the century, Svensvik is Project Director with Kvaerner Oil & Gas International, as one of Kvaerner/Trafalgar House’s 80,000 employees. And now you may well be asking yourself: will it not be something of an anticlimax to take over ‘little’ SINTEF Building and Infrastructure?

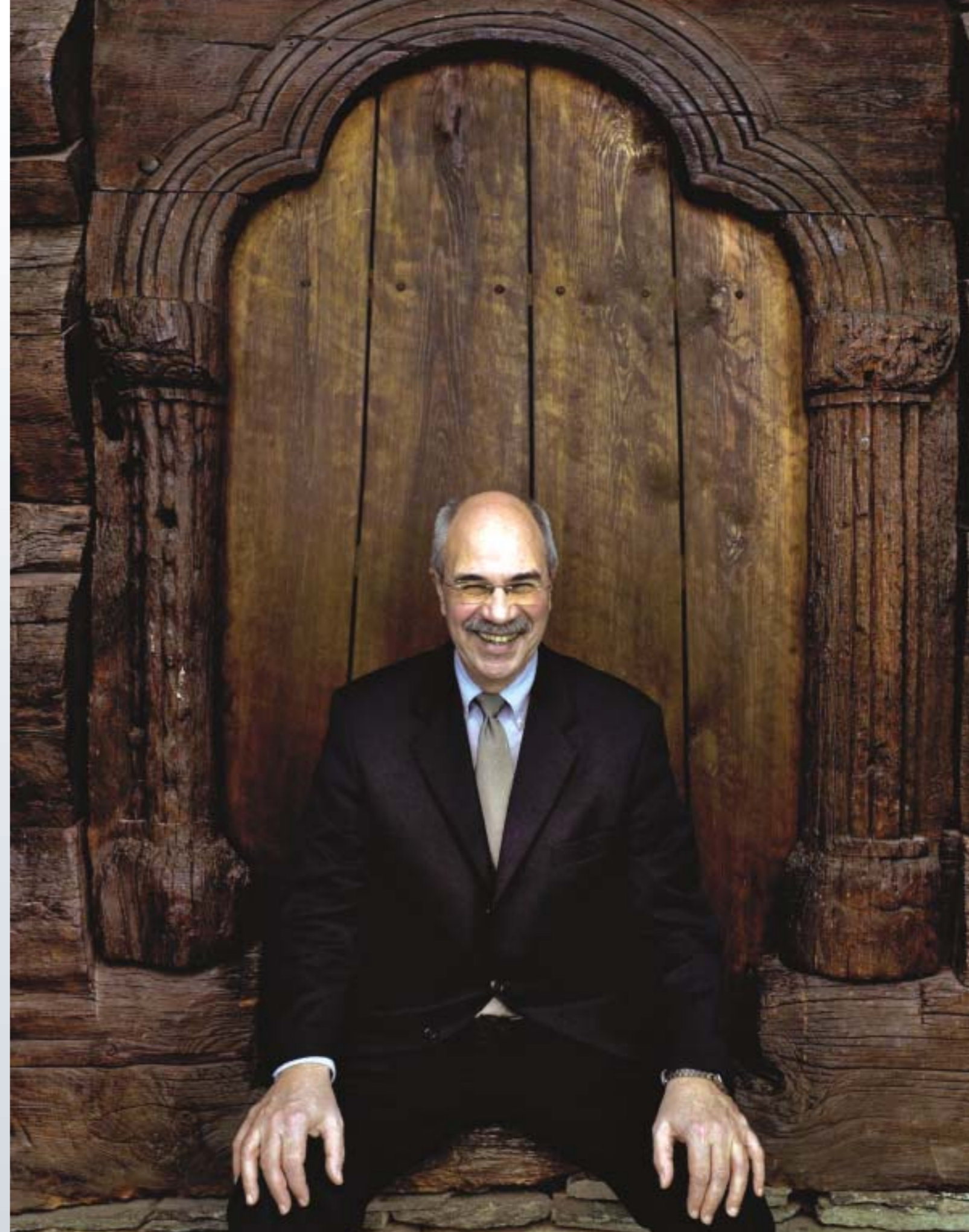
“Far from it,” Bjørn Svensvik assures us. “My colleagues are extremely knowledgeable and highly competent. And they are all doing an important job. We are working in highly challenging areas that are just lying waiting for us, both in Norway and all over the world.”

Svensvik lists these areas: everything from ‘recycling construction waste’ and ‘better indoor climate’ to ‘energy saving in buildings’ and ‘more efficient management, operation and maintenance of buildings and infrastructure’.

His dream is that SINTEF Building and Infrastructure should become the most renowned institute of its kind in Europe.

“More and more is going to take place within a joint European framework. What I want to see is that we will be invited to join European projects because we are an attractive partner and the leader in our fields.”

www.sintef.com/building





Rannveig H. Pedersen, former SINTEF colleague

“The very fact that there was such a firmly rooted value system in SINTEF made it impossible for me to take on just any new job.”

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No-one could accuse her of letting her purse control her choice of career. Rannveig Pedersen recently left a senior management job in SINTEF – to join Fretex, the Salvation Army’s chain of charity shops!

Meaningful work: Pedersen makes no secret of the fact that that is what she is looking for in her career.

When she left her job as Financial Controller with SINTEF Fisheries and Aquaculture to become Manager of Fretex Mid-Norway, she went down in salary. But this is not to say that she had not found the SINTEF job rewarding.

“Research is incredibly important for society. My last employer has meant a great deal for both patterns of settlement and employment on the coast, and for the sustainable development of fishing and aquaculture. That’s something I like to think of,” says Pedersen.

After 17 years working for SINTEF she discovered a need to use other facets of her economics training in her career. Creativity, for example.

“The very fact that there was such a firmly rooted value system in SINTEF made it impossible for me to take on just any new job.”

She believes that it was fate that she found just the advert from Fretex on the Appointments pages when she was reading her copy of the Trondheim newspaper “Adresseavisen” one winter morning last year.

“I was very much on the lookout, and everything fell into place when I found it,” she says.

“It was the recycling philosophy and the environmental aspect of the job that attracted her. Rannveig Pedersen regards herself as environmentally aware, and is a member of Friends of the Earth Norway.

“I am no environmental saint. For example, the family owns two cars. But by working for Fretex, I really feel that I am doing something for green values. We help to keep large quantities of textiles out of the waste tip. And if we can help to reduce the demand for new cotton, for example, we reduce the consumption of sprays and huge quantities of water.”

Like most Norwegians, she did not realise that Fretex also runs a rehabilitation programme until she read the job ad. The Fretex Group is not merely Norway’s largest chain of second-hand shops but is also the country’s largest rehabilitation company.

“Getting the chance to help people to return to working life gives the job extra significance,” she says.

The Fretex Group’s activities generate cash for the Salvation Army’s social work, another aspect that she appreciates.

“Fretex is like a Kinder Egg,” she says. “Recycling, rehabilitation and money for charitable work are all individually important, but we do everything at once!”

Sometimes it is just as
as it is to find the

important to ask questions
answers to them.

We are currently in the process of setting up SINTEF's Ethics Council,
the way we behave and to act as a guide

which is intended to raise the level of consciousness regarding
when we face ethical challenges.

We are on guard in the defence of our basic values.

SINTEF is located in Trondheim and Oslo, and has its principal offices in Trondheim. Via our subsidiaries, we are also active elsewhere in Norway and abroad. 2005 was a good year for the SINTEF Group as far as both our financial position and our research are concerned. Our operations have improved, and our turnover rose by five percent over the level of the previous year. This has enabled SINTEF to increase its internal financing of research in a number of areas of special effort.

It is essential that SINTEF should be nationally and internationally recognised. SINTEF enjoys a strong market position in Norway, and it is a pleasure to observe that EU projects are making a growing contribution to financing our research. These projects are won in tough competition with other European research institutions.

SINTEF still needs to improve its relationships both with important customers and with important scientific allies such as NTNU and the University of Oslo.

The Board has also decided to make considerable investments in the future in building up international leading-edge groups in such areas as marine logistics, combinatorial chemistry, CO₂ handling and pipeline transport.

Technology for a better society

SINTEF's vision is 'Technology for a better society', and our aim is to be an important tool in the development of Norwegian society. SINTEF's roles include that of research and development partner for the public and private sector, generating new knowledge, contributing to the establishment of new knowledge-based companies and acting as a knowledge base for policy design.

SINTEF Health Research has performed a number of studies of how well psychological health-care services and measures function for children and adolescents. One of the aims of these studies was to look at the effects of the national Upgrading Plan for psychological healthcare for these user groups. The studies aimed to identify the factors that affect the availability of the services and how the coordination of various services operates at local authority level. The total range of services offered was also surveyed. These studies will be used in an evaluation of the Upgrading Plan.

SINTEF Technology and Society has carried out a study of improvements in HSE in the fishing industry. The main aim of this study was to develop and test various ways of improving HSE efforts in this industry. SINTEF collaborated with a number of fish-processing companies in this project, helping them to implement improvement processes from their starting point until they reached their goals. We evaluated what went well and what went badly, and used the results in the development of an electronic guide to best practice in HSE efforts.

SINTEF Information and Communications Technology has developed a new concept that combines classical optics with modern microtechnology, in which several optical elements are replaced by a single robust plastic chip that can be manufactured easily and cheaply. The concept is the result of a long-term strategic effort made in cooperation with Tomra ASA, and it will be a platform for the development of competitive new products. The first application of the new concept will be in sorting plastics in waste for more efficient recycling.

SINTEF Materials and Chemistry has successfully developed a process for the production of high-quality carbon nanotubes with the aid of a high-temperature plasma. The process can be scaled up to industrial scale. High-quality carbon nanotubes need to be available at a reasonable price



Back row: Alexandra Bech Gjørvi, Jan Erik Korssjøen (chair) and Elin Grimstad, who joins the Board in Spring 2006. Front row: Frode Rømo, Elisabeth Wille and Kathrine Skretting. Jon Kleppe and Per Ola Grøntvedt, who now leaves the Board, were not present when the photo was taken.

if this material is to be brought into a wide range of applications. If process control and scaling-up are successful, nanotubes are capable of becoming an important new product for Norwegian materials manufacturers.

In order to provide reliable power supply and control functions for the well templates on the Ormen Lange field, subsea cables will be installed from Nyhavna in Aukra out to the field. The requirement for minimum stretching during laying, in an area with powerful currents, offered significant challenges to the installation process. The Norwegian company Subsea 7 therefore developed new installation techniques for this type of cable. MARINTEK was engaged by Hydro to develop software that enables various installation techniques to be analysed and modelled.

In collaboration with Trio Fish Processing Machinery AS, SINTEF Fisheries and Aquaculture has developed an industrial model for deboning fish. An automatic system of knife-blades cuts the roots of the bones in the fillet, after which a specially designed machine removes them. This newly developed method allows the fish to be processed more efficiently before the onset of rigor mortis. The project forms part of efforts to develop technology for more profitable processing of farmed fish.

SINTEF Energy Research has had biomass and waste combustion as one of its long-term strategic areas of effort, and has been developing its scientific competence, advanced scientific equipment and international cooperation. This process has enabled the Institute to take the initiative to launch the EU project called NextGenBioWaste. The Institute is coordinator of the project, which has a total budget of some NOK 250 million, with contributions from 15 partners in seven countries. The project marks the EU's biggest ever research push in the field of bioenergy.

In 2005, SINTEF Petroleum Research carried out a study of the geological history and possible development of petroleum deposits in the Norwegian sector of the Barents Sea. Studies of this type provide extremely useful information when potential resources are being mapped and test drilling is being planned. Several oil companies are making use of the results in their evaluations.

SINTEF regards it as an important aspect of its role in society to contribute to the creation of more companies and jobs. As well as selling knowledge and technology to established companies and projects, we also commercialise research results by establishing our own companies and/or by selling protected technology (patents and licences). In 2005, we carried out 48 commercialisation projects of this sort.

SINTEF has established SINTEF Holding to manage SINTEF's ownership of start-up companies and regional development companies. The aim is to professionalise the operation of such companies and to split off our taxable activities from the core activities of our research institutes. The sale of shares in the company Powel ASA, which was demerged from SINTEF Energy Research in 1996, made a significant contribution to our financial revenues.

More satisfied customers

One of SINTEF's aims is to improve its marketing processes and increase customer satisfaction. We intend to grow both nationally and internationally, and to be a leader in innovation and commercialisation. We are striving to make the 'SINTEF Brand' even better known.

SINTEF grew by five percent in 2005, and we have kept up our good relationships with our largest customers. Although SINTEF is also a partner of many small and medium-sized enterprises, there are still a great many Norwegian companies that are not customers of SINTEF, so it is important for us to widen our Norwegian customer base, and to make an active contribution to regional development. RTIM, SINTEF's company in Raufoss, was selected in 2005 as a pilot company for the government's development of the 'Centre of Expertise' concept. MoLab, which is SINTEF's company in Mo i Rana, does analytical work, and has been delivering good results for many years. In 2005, MoLab's scope of activity was expanded with the opening of a laboratory in Oslo.

Education, research and innovation are the pillars that support the development of a knowledge society. International competition in the market for research and development is increasing,

"Education, research and innovation are the pillars that support the development of a knowledge society."

"A rising proportion of SINTEF's long-term competence development is being financed via EU projects."

and it is a matter of strategic importance for SINTEF to occupy a strong international position in this market. We can only maintain and develop our competence by being competitive in an international market.

Professional quality

SINTEF intends to maintain a high level of professional quality and to be a world leader within certain areas. Strategic collaboration with NTNU is given high priority, and our cooperation with the University of Oslo has been extended. We are working towards the establishment of national strategies and alliances in a number of fields. A series of joint applications to establish Centres for Research-based Innovation is one expression of this strategy.

The Gemini concept is a model for strategic collaboration between research groups working in parallel at SINTEF and NTNU. The concept has also been used as a model for our cooperation with the University of Oslo. In 2005, six new Gemini Centres were set up, and no fewer than 16 have been set up since the start of the scheme in 2003. We have also inaugurated SINTEF Sealab, a joint laboratory and office building for aquaculture research, together with NTNU.

The aim of our alliance with NTNU is 'International Excellence in Partnership'. In 2005, we laid the foundations for the development of joint top-level strategies in such areas as professional development, internationalisation, laboratory activities, industrial and research policy and commercialisation.

The year of 2005 also saw the establishment of group-level scientific investments in such fields as micro-optics, 'smart' clothing, CO₂ handling, pipeline transportation and maritime logistics. These efforts represent an investment of NOK 42 million to be made over three years. The Board intends to ensure that more investments of this sort are made. This is one component of our efforts to generate new knowledge and technology for future markets, and is in every respect in line with our research strategy.

In 2005, high priority was given to the development of a strategic research portfolio that makes room for long-term competence development. A growing proportion of SINTEF's long-term competence development is being financed via EU projects. SINTEF is that Norwegian institution that has the largest portfolio of projects financed by the EU's research programmes. In 2005, contact with the EU has been intensified in connection with the next Framework Programme, in which we intend to be not only an active, but also a leading player within certain areas.

Attractive workplace

SINTEF wishes to be an organisation in which individual employees participate in the development of the organisation's goals and strategies. SINTEF wishes to expand those of its work environments that leave room for initiative and creativity, and for the building of exciting, international leading-edge scientific teams that operate across departmental boundaries.

In 2005, we focused on following up the situation revealed by the 2004 work environment survey. This process has been implemented according to plan.

Another of SINTEF's aims is to contribute to the professional and personal development of the individual. We do so via a wide range of courses and by following up individual members of staff, but primarily by offering them exciting and demanding projects to work on. In the course of the past few years the development of our research managers has been given high priority, and we have developed our own SINTEF concept for the development of tomorrow's research managers.

An attractive workplace is also the result of good management. In 2005, a number of steps were taken to develop our line management staff, both individually and as a team that works together.

HSE is discussed separately later in this report. Sick leave and accident statistics show that HSE needs to be paid even greater attention.

The SINTEF Group had a total of 1763 (1810) employees on 31.12.2005 (numbers in parenthe-

ses refer to 2004), of whom 1082 (1114) were employed by the SINTEF Foundation. Seventy-five members of our research staff (9.6%) left the Foundation in the course of the year to work in industry, the public sector or the universities, while 57 joined us; 39% of the SINTEF Group's research staff hold doctorates.

In 2005, 159 of our employees were from other countries than Norway. A total of 27 nations were represented among them.

Financial freedom of action

SINTEF aims to have a robust economy which will give us freedom of action for our own development and enable us to support the values for which we are responsible.

In 2005, the SINTEF Group made an operating profit of MNOK 24, which is a considerable improvement over the previous year's result. Our aim is to make a profit of at least five percent of our net turnover, in order to make us less sensitive to unanticipated changes in internal and external general conditions, and to create a foundation for future investments. Measures have been implemented to reduce costs in 2005, but close attention still needs to be paid to efficient operation.

As of December 31, 2005, the SINTEF Foundation had an equity capital of MNOK 784 (735), which is equivalent to 60% (57%) of the total capital. This provides a good basis for continued operation, and this is the assumption that underlies the presentation of our annual accounts. The boards of our subsidiary companies have performed similar analyses, and all have concluded that continued operation is justified. The Board of the Foundation, which is identical with the Group Board, is of the same opinion.

The SINTEF Group has established a joint system for placement of the Group's liquid reserves. The investment portfolio is placed in accordance with the 'Rules for Financial Management' of May 2005. SINTEF is exposed to exchange rate fluctuations in that project revenues are in foreign currencies, while all or parts of our project costs are in Norwegian kroner. Most of our exposure is vis-à-vis the Euro and the US dollar. In order to limit this risk we utilise futures contracts in the currencies involved. Please refer to the Annual Accounts and their Notes 2, 12 and 13.

Since the closing of the annual accounts, there have been no developments of significance for the evaluation of the Foundation or the Group. The Foundation's accounting profit for 2005 comes to MNOK 48, of which MNOK 40 is transferred to other equity and MNOK 8 to the reserve for valuation variances.

One important milestone in 2005 was the Board's decision to merge the activities of the SINTEF Foundation in building and construction with those of the Norwegian Building Research Institute. The aim of the merger has been to strengthen the international competitiveness of these centres, to contribute to improved quality and to increase the scope of research related to the building and construction industry. The authorities are expected to provide final approval of the decisions of the Board in spring 2006.

The Iran affair

SINTEF Petroleum Research, which is one of the SINTEF Group's subsidiaries, was reported on June 24, 2005 to ØKOKRIM, the Norwegian National Authority for Investigation and Prosecution of Economic and Environmental Crime, by the NOPEF trade union, for participation in corruption in connection with the company's Iran contracts. ØKOKRIM opened its investigation of the matter on August 15, 2005, and the investigation process is still under way.

Although the legal aspects of the case are being dealt with by the board and management team of SINTEF Petroleum Research, the matter is of great importance for SINTEF as a whole with regard to SINTEF's business ethics guidelines, our awareness of, attitudes to and observation of these, as well as the routines that the Group had established for the performance of its international activities.

The Board wishes to emphasise that SINTEF as a whole maintains a high ethical standard throughout its activities. The Board also points out that the case is still being investigated and that no charges have been lodged. Nevertheless, we have found it necessary to update our routines and instructions and to appoint an ethics ombudsman. A training programme for all our employees will be implemented in order to increase general awareness of ethical considerations.

It should be unthinkable to question SINTEF's commitment to high ethical standards.

SINTEF's governance structures

SINTEF's central management bodies are its Council and Board. Day-to-day management is in the hands of the Group's President.

SINTEF's Council is chaired by the Rector of NTNU, and consists of 32 members drawn from NTNU, the University of Oslo, the Research Council of Norway, our research companies, and representatives of industry and industrial organisations. The Council meets twice a year and it ensures that the objectives of the Foundation are being pursued in accordance with its Articles of Association. The Council appoints the Board for two-year periods as follows: two members who hold full-time positions at NTNU, three members from industry or the public sector and two tenured SINTEF employees. The Council determines the fees to be paid to members of the Board and appoints an auditor.

The Board has full responsibility and authority in all matters that are not the responsibility of the Council. The Board acts in accordance with SINTEF's articles of association, the Foundations Act, and such aspects of company legislation as apply to foundations. The Board appoints SINTEF's President and sets her or his salary and other conditions of employment. The Board held ten meetings in 2005.

The Board of the Foundation is identical with the Board of the SINTEF Group. The activities of the research companies are regulated by articles of association, shareholder agreements and group agreements. Principles for group governance have been adopted, whereby the activities of the research companies are to be coordinated with related activities in other units of the SINTEF Group, and in accordance with the overarching aims and strategies of the Group. The Board and management of the Group are responsible for its management at strategic level. The Group management team comprises the President of SINTEF, two vice-presidents and seven executive vice presidents. Two staff directors and three managing directors also attend Group management meetings.

SINTEF's President runs the company in accordance with the Foundation's Articles of Association and the Companies Act. The President has the authority to act on behalf of the Foundation, with the exception of carrying out purchases, sales or mortgages of real estate and purchases or sales of companies.

SINTEF has launched a major review of its code of governance in view of the fact that the new Foundations Act requires changes in the allocation of roles, authority and responsibilities between the Board and the Council of SINTEF before the end of 2006.

Equal opportunities and family policy

The distribution of the sexes in the SINTEF Foundation is shown in the following table.

The President of SINTEF is a woman.

Percentage	Men	Women
Board	57%	43%
Group management	78%	22%
Chief scientists and middle management	61%	39%
Researchers	74%	26%
SINTEF Foundation	66%	34%

SINTEF participates in arrangements at Norwegian universities in order to profile itself with a

view to recruitment. In such presentations we also emphasise that SINTEF is an attractive workplace for women. When vacant positions are being advertised in groups in which women are under-represented, women are encouraged to apply.

SINTEF performs systematic work environment surveys throughout the Group. In this connection, we also carry out analyses to determine whether there are unreasonable differences between male and female perceptions of the various aspects of the work environment surveyed.

The results of the study in 2004 revealed no significant differences that can be related to gender. A new work environment survey carried out in February/March 2006 will also look at gender differences.

Most SINTEF employees are young people. Combining a career in research with family life can be a challenge. Our aim is to be an attractive workplace for families with two working parents. SINTEF wishes to be an organisation with room for 'whole' people who also have a life beyond SINTEF. For this reason, we implement flexible solutions where these are needed. SINTEF financially supports the operation of kindergartens in Trondheim and Oslo.

Health, safety and the environment (HSE)

In SINTEF, the safety of our employees is the only thing that is more important to us than our relationship with our clients. SINTEF's aims include the enjoyment of a good work environment, the avoidance of injuries and damage to health and non-contamination of the external environment.

The work environment survey that is carried out every second year shows that our staff perceive the work environment as good. Eighty-seven percent of our colleagues had appraisal interviews with their manager in 2005, as against 70 percent in 2004. Our aim is to reach a figure of 100 percent.

The rate of sick-leave remains stable and at a low level. Within the SINTEF Foundation the rate of sick leave was 3.5% in 2005 as against 3.2% in 2004. The corresponding figures for the Group were 3.4% in 2005 and 3.1% in 2004. In 2005, the Foundation signed an 'Inclusive Working Life' agreement with the authorities. This has sharpened management focus on following up sick leave and employees who require special adaptations.

Measures aimed at improving safety standards have been implemented and are given high priority. We are making continuous efforts to root HSE thinking and practices at every level of the organisation and to build up a good HSE culture. Priority measures have included compulsory HSE training for managers, goal-oriented laboratory courses and risk assessments. SINTEF's HSE policy and objectives apply to all SINTEF-related activities – both national and international. In spite of these efforts, SINTEF experienced a rise in the number of personal injuries in 2005, in comparison with previous years. There have also been several serious near-accidents. For this reason, we have put safety in the laboratory and in the field on the agenda.

SINTEF aims to avoid contamination of the external environment. Our laboratories deal with a wide range of chemicals and biological materials. In 2005, we tightened up our routines for handling and storing such substances.

In 2005, the SINTEF Group was licensed by the Norwegian Radiation Protection Authority to use sources of ionising radiation for research purposes. The licence will remain in effect until the end of 2008.

Prospects for the future

Norwegian industry is enjoying a period of economic growth, and new opportunities are appearing as a result of national plans for investment in Arctic development. With its broad knowledge base, SINTEF is in a good position to help to realise the government's ambitions in this region, and we intend to give the Arctic high priority in the future.

"Improved competitiveness requires us to be able to transform knowledge into new products, processes and services. A collaborative process that involves research, industry and the public sector will be of decisive importance."

The concentration of major industrial companies on their own core activities opens up new prospects for research organisations such as SINTEF. However, if we are to exploit this situation we need to be able to cultivate the top-level competence and solutions needed by our customers, and to improve our ability to develop and communicate about our products. The establishment of joint scientific efforts at Group level will facilitate this process.

The public sector is increasing its investment in research and development at national and international level. The aim here is to generate knowledge in order to improve competitiveness, quality of life and sustainable development. We can already perceive the positive results of the White Paper on research that was adopted by the Norwegian Parliament in 2005. Basic grants to research institutes have risen, and we hope that this represents the beginning of a development that will bring us closer to the level of basic finance that is found elsewhere in Europe.

It will also be of decisive importance for us to be able to renew the national laboratory infrastructure to make it competitive in an international arena. Developing and equipping laboratories will require major investments, and this is a national task. SINTEF will collaborate with NTNU in prioritising the positioning of our laboratories in the EU's plans for an integrated laboratory infrastructure.

Improved competitiveness requires us to be able to transform knowledge into new products, processes and services. A collaborative process that involves research, industry and the public sector will be of decisive importance.

Norway possesses important natural advantages, good research groups and technological expertise developed in our institutions and companies, well-established markets and international networks. These have provided us with the foundations that will enable us to build up competitive global positions in such fields as energy, materials, and the marine and maritime sectors. Our industrial companies also need to have access to high-quality generic competence in fields such as biotechnology, nanotechnology, and information technology. SINTEF wishes to be a driving force in the development of a Norwegian knowledge economy.

The Board wishes to thank all members of staff, SINTEF's partners and other helpers for the good work they have done in the course of the past year. The Board has positive expectations with regard to future developments, and looks forward to more good years for SINTEF.

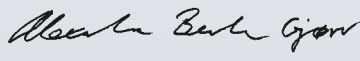
Trondheim, 29 March, 2006



Kathrine Skretting


Per Ola Grøntvedt


Jon Kleppe


Elisabeth Wille


Alexandra Bech Gjør


Frode Rømo


Jan/Erik Korssjøen
Chairman

Twelve thousand thanks!

We have been collaborating with scientists from many other countries to create the world's first vaccine against cancer.

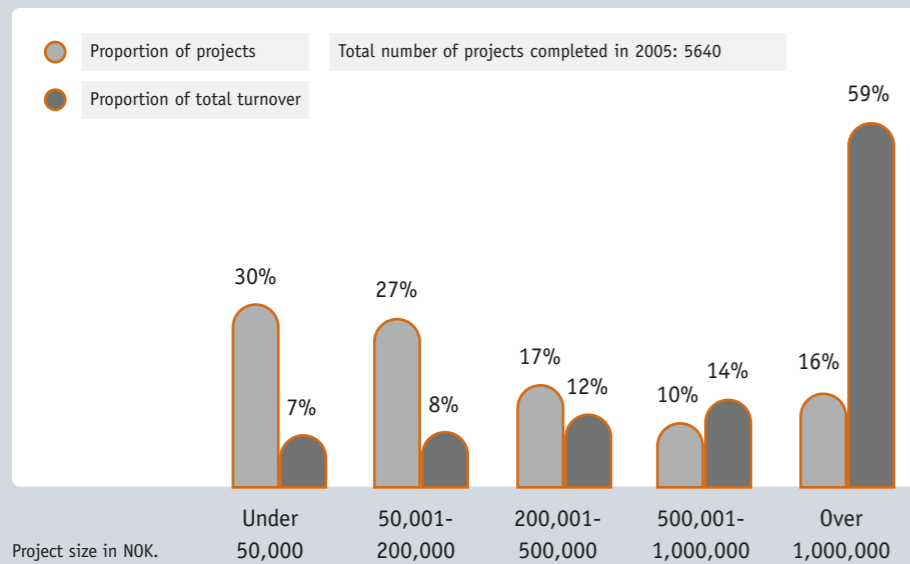
SINTEF wishes to thank the 12,000 women who took part in the study, and who have turned the vaccine against cancer of the cervix into reality.

PS: The international journal MedScape voted the development of the vaccine against cervical cancer one of the three most important advances in medicine in the world in 2005.
www.sintef.com/epidemiology

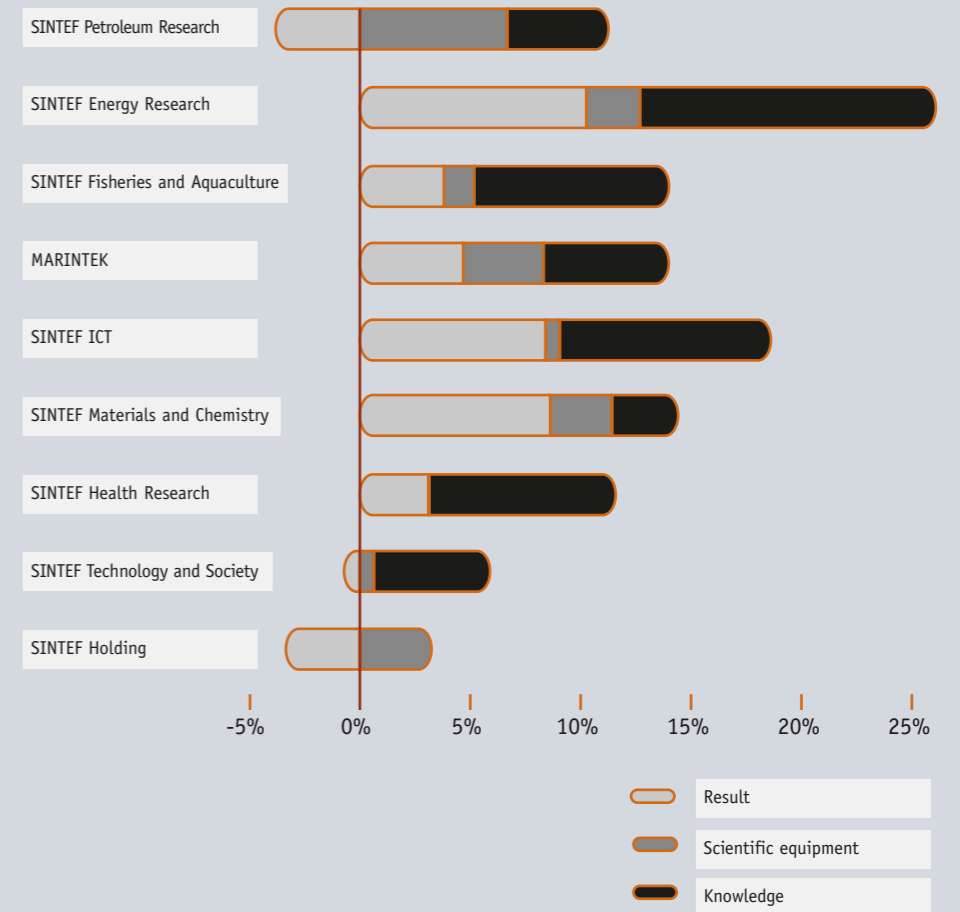
Key financial figures for the SINTEF Group

MNOK	2005	2004	2003	2002	2001
Income statement					
Gross operating revenue	1 785	1 692	1 690	1 618	1 651
Net operating revenue	1 448	1 332	1 316	1 271	1 290
Operating result	24	-30	24	-25	54
Annual result	59	-24	56	-19	120
Balance					
Long-term assets	512	463	484	491	424
Liquid assets	1 181	1 157	1 070	1 030	1 122
Total assets	1 692	1 620	1 554	1 520	1 546
Equity	897	838	855	799	829
Liabilities	795	782	699	721	716
Total equity and liabilities	1 692	1 620	1 554	1 520	1 546
Profitability					
Operating margin %	1.7	-2.2	1.8	-2.0	4.2
Total profitability %	4.3	-0.7	3.7	0.1	0.1
Return on equity %	5.6	-3.1	6.8	-2.3	12.4
Liquidity					
Cash flow from operations	-17	32	54	-19	-42
Degree of liquidity	1.6	1.6	1.8	1.5	1.7
Solidity					
Equity %	53	52	55	53	54
Foundation's working capital (for limited companies, from 2006 only)	82	107	149	288	284

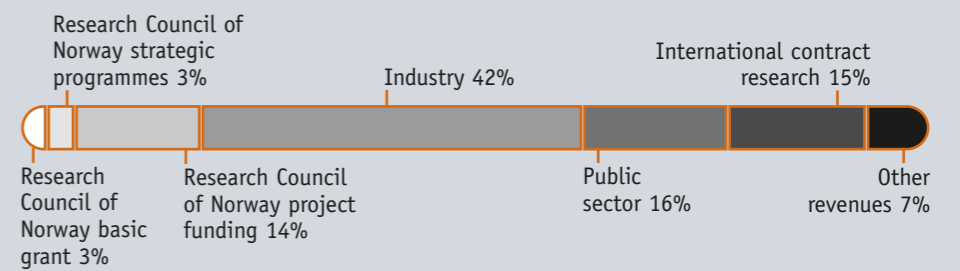
Projects in the SINTEF Group 2005

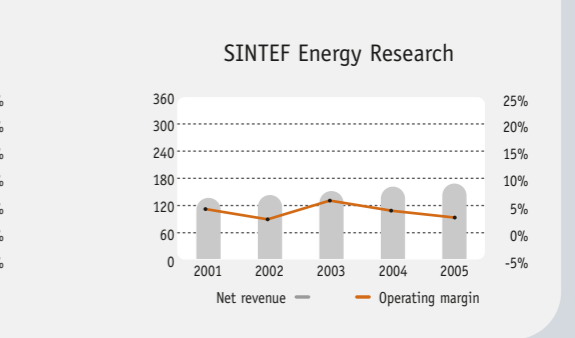
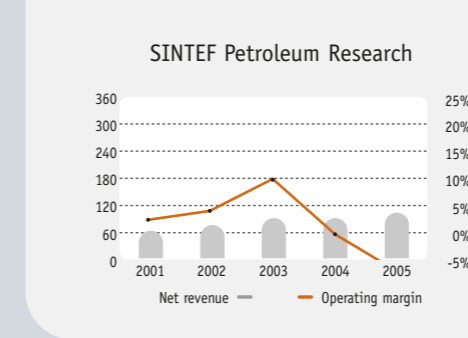
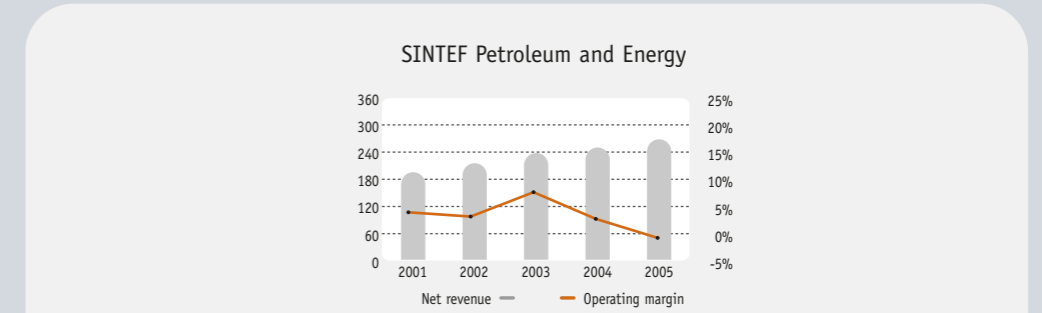
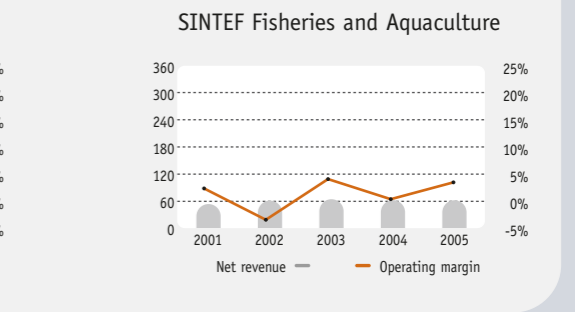
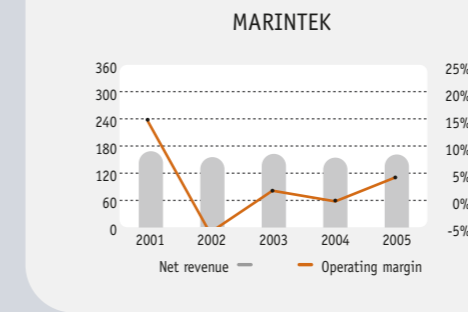
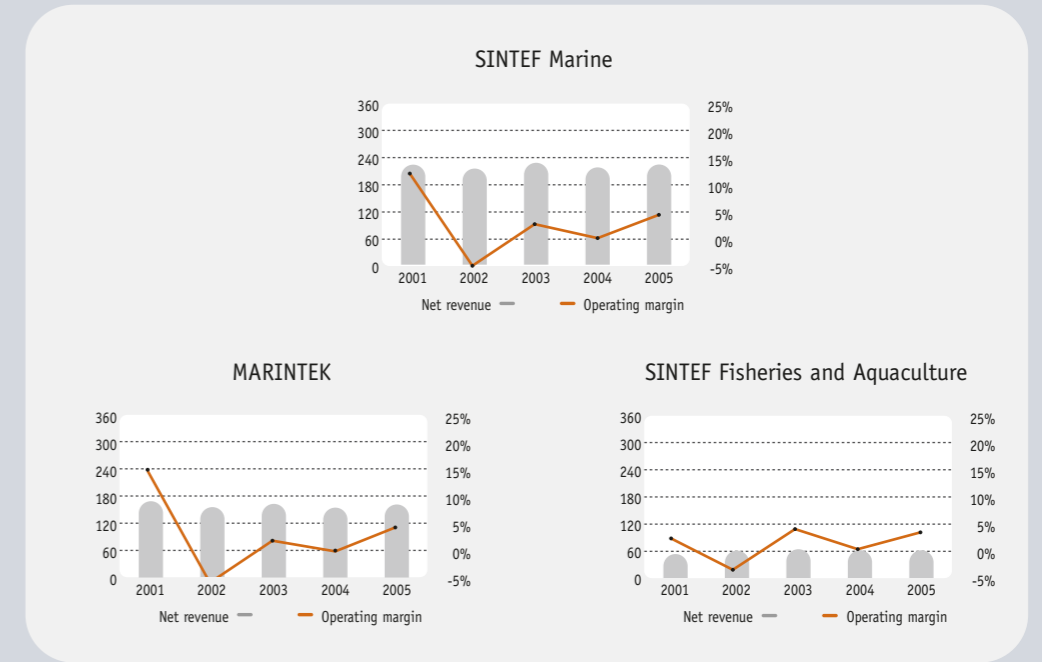
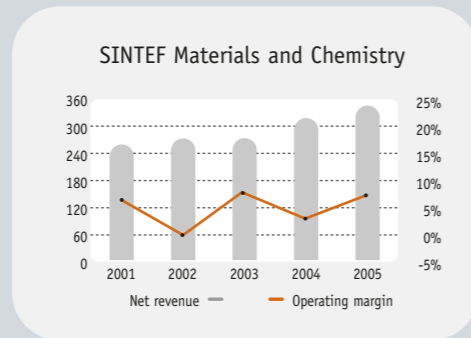
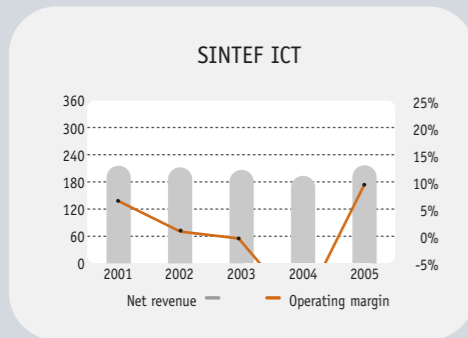
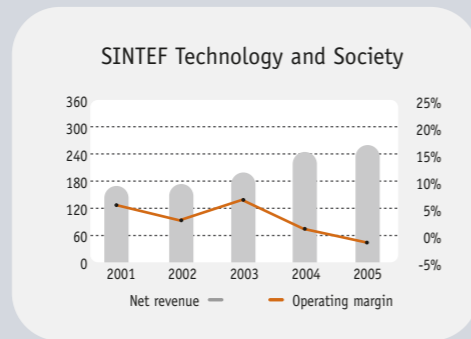
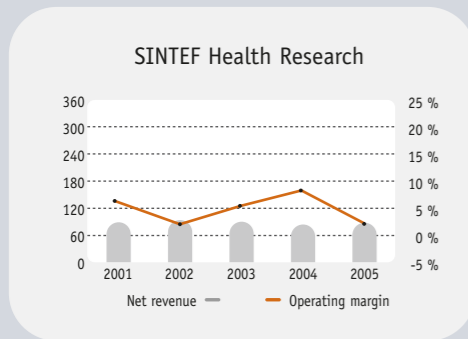
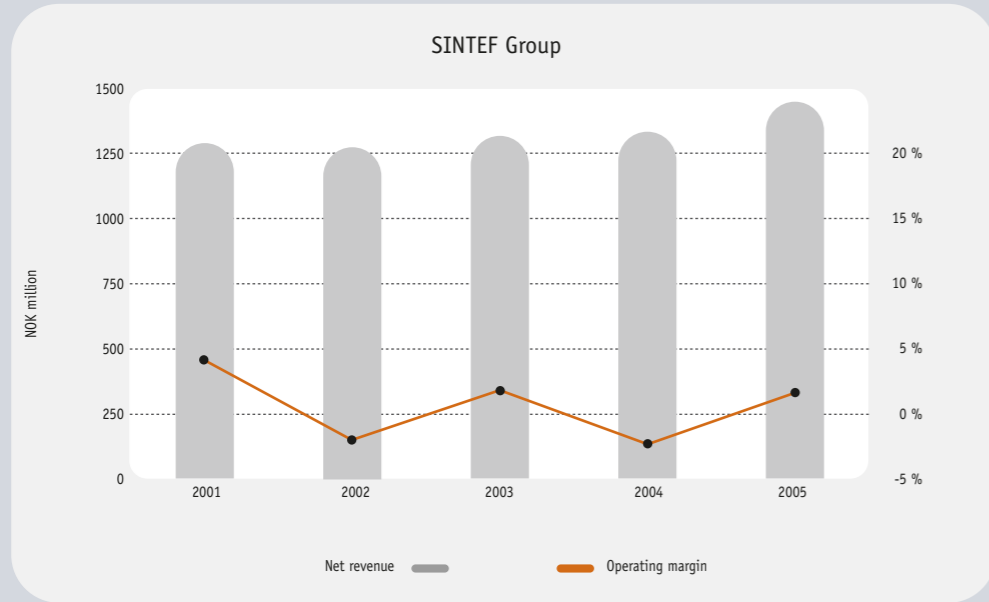


Investments in knowledge and scientific equipment, and results as percentage of net revenue



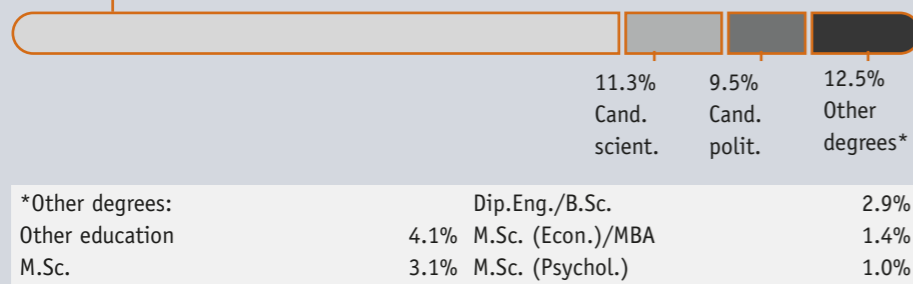
SINTEF Group revenue





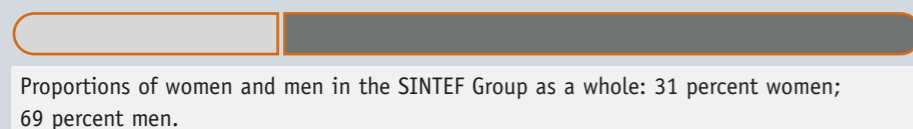
Educational background of academic personnel employed by SINTEF Foundation

66.7% M.Sc. (Eng.), M.Sc. (architecture), M.Sc.



Thirty-nine percent of the 1264 researchers in the SINTEF Group have a doctorate. Of this group, 22 percent are women and 78 percent are men. (31.12.2005)

Equal opportunities



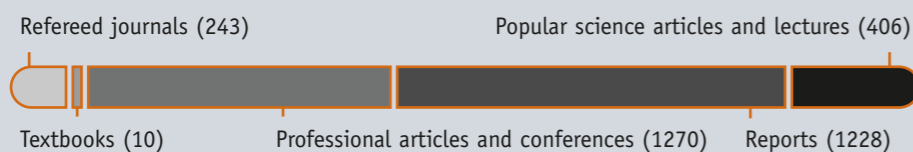
In the main group of our workforce, research personnel, the gender distribution is 23 percent women to 77 percent men. Women fill 37 percent of all positions at chief scientist and middle management level.

The gender distribution in SINTEF's Group management is 22 percent women and 78 percent men (two out of nine representatives are women).

Three of the seven members of the Board of the SINTEF Foundation are women. Three of five external representatives on the board are women.

When vacant positions are advertised in areas in which women are under-represented, women are encouraged to apply. SINTEF performs systematic work environment surveys throughout the Group in the course of which gender differences are identified. The results of the study in 2004 revealed no significant differences that can be related to gender. A new work environment survey will be carried out in 2006.

Publication and dissemination of the SINTEF Group's contributions to knowledge in 2005



Income statement

Figures in NOK thousand

The SINTEF Group			SINTEF	
2004	2005	Notes	2005	2004
OPERATING INCOME AND EXPENSES				
1 206 548	1 350 516	External project revenues	768 089	673 458
367 272	325 838	Projects funded by the Research Council of Norway	241 554	289 618
52 700	53 200	Grants from the Research Council of Norway	33 000	33 000
65 943	55 687	Other revenues	72 006	79 421
1 692 463	1 785 242	4 Gross revenue	1 114 650	1 075 497
360 919	337 127	Direct project expenses	261 016	270 629
1 331 544	1 448 114	Net operating income	853 633	804 867
1 000 377	1 052 601	6 Salaries and social security	625 400	607 242
51 892	53 873	8 Depreciation	29 454	29 135
309 125	317 278	Other operating expenses	180 644	195 822
1 361 394	1 423 752	Operating expenses	835 499	832 199
-29 851	24 363	OPERATING RESULT	18 135	-27 331
FINANCIAL INCOME AND EXPENSES				
18 275	45 117	3 Financial income	23 956	8 946
7 092	8 721	3 Financial expenses	1 722	2 762
11 183	36 396	Net financial income	22 234	6 185
-18 667	60 759	Profit before consolidation of subsidiaries	40 368	-21 147
-	-	9 Share of results of subsidiaries	8 056	-6 475
664	-	9 Share of results of associated companies	-	-
-18 003	60 759	Profit before taxes	48 424	-27 622
5 753	1 305	19 Taxes	-	-1 310
-23 756	59 455	ANNUAL RESULT	48 424	-26 311
2 555	11 031	Minority interests' share of annual result		
-26 311	48 424	Majority interests' share of annual result		
Dispositions:				
		Transferred to reserve for valuation variances	8 056	-6 475
		Transferred to/from other equity	40 368	-19 836
		Total dispositions	48 424	-26 311

Balance on 31.12.

Figures in NOK thousand

The SINTEF Group			SINTEF	
2004	2005	Notes	2005	2004
ASSETS				
Long-term assets				
2 648	1 710	8 Concessions, patents, licences, etc.	-	-
2 437	1 337	19 Deferred tax advantage	-	-
6 611	5 491	8 Goodwill	-	-
11 696	8 538	Intangible assets	-	-
374 112	360 460	8 Real estate, buildings and other fixed assets	322 811	341 423
-	339	8 Buildings under construction	-	-
48 801	54 538	8 Scientific equipment	18 470	17 719
16 196	21 340	8 Other equipment, fixtures, etc.	12 383	5 374
439 109	436 677	Long-term operating assets	353 664	364 516
-	-	9 Investments in subsidiaries	258 590	250 555
6 004	31 652	10 Shares in other companies	50	1 050
2 186	30 357	7 Pension fund	7 391	-
-	-	11 Consolidated long-term receivables	76 845	73 413
4 148	4 379	11 Other long-term receivables	2 310	1 980
12 338	66 388	Financial long-term assets	345 186	326 998
463 143	511 603	Total long-term assets	698 850	691 514
Liquid assets				
2 095	1 874	Inventory of finished goods	1 385	1 728
98 883	110 013	5 Work in progress	64 911	61 064
100 978	111 887	Goods	66 296	62 791
395 457	439 126	Accounts receivable	220 529	221 589
-	-	Consolidated current receivables	23 170	20 606
52 648	41 971	Other current receivables	19 027	39 679
448 105	481 097	Receivables	262 726	281 874
52 244	53 839	10 Shares	-	-
7 914	621	Loans, portfolio companies	-	-
262 944	266 337	12 Bonds and other securities	112 915	128 341
323 101	320 797	Investments	112 915	128 341
284 347	266 943	Cash, bank deposits	159 019	130 887
284 347	266 943	Cash, bank deposits	159 019	130 887
1 156 532	1 180 724	Total liquid assets	600 956	603 892
1 619 675	1 692 326	TOTAL ASSETS	1 299 805	1 295 405

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Balance on 31.12.

Figures in NOK thousand

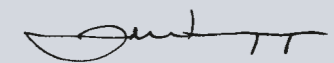
The SINTEF Group			SINTEF	
2004	2005	Notes	2005	2004
EQUITY AND LIABILITIES				
Equity				
62 300	62 300	17 Foundation's equity	62 300	62 300
62 300	62 300	Paid-up equity	62 300	62 300
-	-	17 Reserve for valuation variances	220 481	212 566
673 189	721 472	17 Other equity	500 991	460 623
673 189	721 472	Total earned equity	721 472	673 189
102 254	113 228	Minority interests	-	-
837 742	897 000	Total equity	783 772	735 489
Liabilities				
26 827	23 387	7 Pension liabilities	-	20 781
26 827	23 387	Long-term liabilities	-	20 781
27 781	13 705	14 Other long-term liabilities	11 010	22 702
27 781	13 705	Other long-term liabilities	11 010	22 702
120 474	114 690	Accounts payable	77 354	87 769
-	948	Credit line	-	-
246	88	19 Tax due	-	-
139 553	145 438	VAT, tax deductions, social security	79 074	73 133
273 747	308 992	Advance payments from customers	218 667	194 400
-	-	Consolidated current liabilities	4 341	3 228
100	260	Proposed dividend	-	-
193 204	187 819	18 Other current liabilities	125 588	157 904
727 325	758 234	Current liabilities	505 024	516 434
781 933	795 325	Total liabilities	516 034	559 917
1 619 675	1 692 326	TOTAL EQUITY AND LIABILITIES	1 299 805	1 295 405

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Trondheim, 29 March, 2006

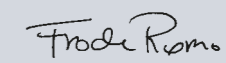

Kathrine Skretting


Jan/Erik Korssjøen
(Chairman)

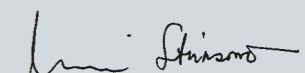

Jon Kleppe


Elisabeth Wille


Alexandra Bech Gjerv


Frode Rømo


Per Ola Grøntvedt


Unni Steinsmo
(President - CEO)

Cash-flow analysis

Figures in NOK thousand

The SINTEF Group		SINTEF	
2004	2005	2005	2004
Cash-flow from operations			
-18 003	60 757	48 424	-27 622
-664	-	-8 056	6 475
51 892	53 873	29 454	29 135
-17 094	140	140	-15 470
-	-8 217	-13 988	-
-23 568	2 305	15 426	-4 720
7 798	-11 130	-3 847	10 626
-	221	343	-
-7 676	-43 669	1 060	2 991
34 367	-5 784	-10 415	31 271
64 761	47 298	13 329	51 546
-12 805	-246	-	-12 609
995	-273	-	-
-22 718	-31 611	-28 172	-11 790
57 284	63 664	43 698	59 834
Cash-flow from investment activities			
-	5 888	5 888	-
-6 858	-	-	-
-51 290	-59 444	-25 050	-26 627
-1 667	-38 009	-120	-11 781
37 021	4 033	420	35 000
3 900	20 895	14 988	-
-	-317	-	-
-18 894	-66 954	-3 874	-3 408
Cash-flow from financing activities			
-12 021	-	-	-
-	-14 076	-11 692	-11 923
-1 125	-100	-	-
6 560	62	-	-903
-6 586	-14 114	-11 692	-12 826
31 804	-17 404	28 132	43 599
252 543	284 347	130 887	87 288
284 347	266 943	159 019	130 887

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1. Accounting principles

General

The annual accounts have been drawn up in accordance with the Norwegian Accounting Act of 17 July, 1998, and are based on Norwegian accounting standards and guidelines for good accounting practice.

Principles of consolidation

The consolidated accounts indicate the overall economic result and financial position when the parent company SINTEF and its shareholdings in other companies are presented as a financial unit. The consolidated accounts include all companies in which SINTEF owns more than 50% of the share capital or in which it has a decisive influence.

In addition to SINTEF, the parent company, the consolidated accounts include:

SINTEF Petroleum Research
SINTEF Energy Research
SINTEF Fisheries and Aquaculture
Norwegian Marine Technology Research Institute (Group)
SINTEF Building and Infrastructure
SINTEF Holding (Group)

Please see also Note 9 concerning subsidiaries.

All significant inter-company transactions, debts and unrealised internal earnings have been eliminated. The minority interests' share of the result forms part of the Group's result and the minority interests' share of equity forms part of the Group's equity.

Principles employed in entering revenue

Project income is entered on a current basis, i.e. as a percentage of the work completed, such that the completed proportion of the earnings expected from a project is treated as income. The degree of completion is based on what has actually been produced.

Where projects are expected to result in a loss, the entire loss is entered as a cost item.

Public-sector support in the form of research council funding, etc. is entered in accordance with basic principles for entering income and expenses, i.e. that funding is entered at the same time as the income it is intended to generate or the cost that it is intended to reduce. Funding to which conditions are attached are not entered as income until it is probable that the conditions have been, or will be, met.

Investments and support items are entered net. Investment support is deducted from the historical cost of the investment item. Licence revenue is entered pro rata for the period of the licence.

Classification

Current assets are items related to project activity or debts due to be repaid within one year, as well as other assets not intended for long-term ownership or use by the company. Other assets are long-term assets. The distinction between short-term and long-term debts is drawn at a due date of one year.

Shares in subsidiaries and other shareholdings of strategic or 'non-financial' character are classified as long-term assets. Other shares are classified as current assets.

Estimates of value of assets

Current assets are valued at historical cost or real value, whichever is lower. Long-term assets are valued at historical cost. If the real value of long-term assets is lower than their book value, and the fall in value is not expected to be temporary, their value is written down to their real value.

Shares in subsidiary companies

Investments in consolidated associated companies are entered in accordance with the equity capital method in the company accounts, which means that the investment is valued as the parent company's share of the subsidiary's equity capital, and the result of the share is entered as revenue or cost.

Other long-term shares and stocks

Long-term shares in companies in which SINTEF does not have a significant influence are balanced at historical cost. Investments are written down to their real value if their fall in value is not temporary. Dividends received and other payments from company surpluses are entered as 'Other financial income'.

Shares in other companies (current shares)

Shares that form part of the business portfolio are valued at their real value on balancing day. Other current shares are valued at mean historical cost or real value on balancing day, whichever is lower.

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Foreign currency Foreign-currency items are valued at the exchange rate on balance day. Incoming and outgoing foreign exchange rate risks are reduced by means of futures contracts directly related to contracts. Unsecured foreign currency payments received are used for current expenses incurred in foreign currencies.

Receivables Accounts receivable and other receivables are valued at their nominal value, with deductions for anticipated losses. Provisions for losses are made on the basis of an individual evaluation of the specific receivable involved.

Work in progress This item includes work done but not invoiced. Accrued hours are valued at invoiceable rates and relative to the percentage of the project actually completed, with deductions for anticipated losses.

Intangible assets The costs of intangible assets, including research and development, are entered as costs in their entirety.

Long-term operating assets Operating assets costing more than NOK 15,000 and with an anticipated economic lifetime of three years or more, are activated and depreciated on purchase. Operating assets are depreciated linearly at the following rates: scientific equipment, office equipment, furniture and vehicles: 33%; buildings: 2–5%.

Tax The Trondheim Superior Tax Commission has declared that the Foundation and its subsidiary companies are liable to taxation. This resolution will be subject of a further appeal, and the effects of tax liability have therefore not been entered into the accounts. On 17.03.06 the Foundation subpoenaed the Norwegian State, represented by Sør-Trøndelag County Tax Office.

Tax on capital imposed on the Foundation and paid by it has been entered for accounting purposes under the item 'other debts'.

Tax in the consolidated accounts consists wholly of tax in SINTEF Holding Group.

Pensions Pension costs are entered in the accounts in accordance with the provisions of the Norwegian Standard for Pension Cost Accounting. Net pension costs consist of the present value of pensions earned in the course of the year plus the cost of interest on pension obligations, less the anticipated yield of the pension fund, and corrected for the distributed effects of changes in the pension plan, estimates and deviations. Net pension costs are entered under 'Salaries and Social Costs'.

The Norwegian Accounting Standard states that a company's pension scheme is to be treated as a compensation plan, in which future pension payments are based on the number of years of earnings and the salary level at age of retirement.

Pension funds are estimated at the end of each accounting year. The estimated value is adjusted annually in accordance with the statement provided by the life-insurance company on the basis of the transferable value of the pension funds.

Measurements of accumulated pension liabilities utilise estimated liability at the end of the accounting year. This estimated value is adjusted annually in accordance with the statement provided by the insurance company regarding accumulated pension liability. Actuarial estimates are made every year by the insurance company on the basis of information provided by SINTEF.

Differences between estimated and actual values that are due to changes in economic or actuarial assumptions are regarded as changes in accounting estimates. The Accounting Standard allows a special method of dealing with such differences in that differences of up to 10% of the larger of pension liability or pension funds may be excluded from the basis for calculating the result. Differences above the 10% limit must be entered in the result over the remaining earnings period. Differences due to changes in the pension plan are distributed systematically over the average remaining earnings period.

In consequence of the fall in long-term interest rates, the discounting rate and interest on anticipated pension fund yield has been reduced by one percent in comparison with 2004. This has brought about a significant increase in pension liabilities and pension costs for the year.

Agreed pension plans (the AFP scheme) are covered by the Standard for Pension Cost Accounting.

The SINTEF Group has a collective pension plan with an insurance company for all its employees. Our liability covers 1082 SINTEF employees and 259 pensioners. The pensions of a further six former employees are paid as part of our operating costs. Contributions by employees towards the partial financing of the pension scheme are treated as a reduction in salary costs and do not affect the pension costs of the period.

2. Financial market risks

The SINTEF Group is exposed to fluctuation in exchange rates in that its project revenues are in other currencies, largely Euros and USD, than some or all of its costs. In order to reduce the exchange rate risks involved the company utilises foreign exchange futures contracts.

The SINTEF Group maintains considerable liquid reserves, which are centrally placed in accordance with the 'Guidelines for Financial Management', which is annually by the Board on an annual basis.

As of 31.12.2005, the market value of the portfolio was MNOK 246. The SINTEF Foundation was responsible for 45.9% of this amount.

Virtually the whole of the portfolio consists of bonds and other securities which as of 31.12.2005 had a duration of 1.1. A one percent change in the rate of interest would have an effect of MNOK 2.7 on the result for the total portfolio. The SINTEF Foundation's share of this risk is MNOK 1.2. The remainder of the portfolio is made up of liquid assets and moderate-risk investments. All investments in foreign funds are insured against exchange-rate fluctuations.

There was a 5% rise in value from 2004 to 2005.

3. Consolidated financial items

Figures in NOK thousand

The SINTEF Group			SINTEF	
2004	2005		2005	2004
2 892	8 853	Bank interest	1 630	978
1 163	2 305	Other sources of interest	2 262	475
1 410	585	Interest on profits on currency exchange	230	595
10 855	9 847	Yield from capital placements	5 846	4 720
-	22 749	Gains on sales of shares ¹⁾	13 988	-
1 955	778	Other financial revenues	-	2 178
18 275	45 117	Total financial revenues	23 956	8 946
-42	-	Remission of debt	-	450
-	3 428	Depreciation of financial liquid assets	-	-
212	-	Non-deductible interest costs	-	212
797	658	Interest costs	245	228
3 225	3 574	Currency exchange losses	1 010	573
177	125	Interest on late payments	121	150
513	396	Bank costs and fees	346	388
2 210	540	Other financial expenses	-	760
7 092	8 721	Total financial expenses	1 722	2 762

¹⁾In 2005, SINTEF Energy Research sold shares in Powel ASA at a profit of MNOK 8.8. SINTEF sold its shares in the Medical Technology Research Centre (MTFS). The profit on this sale came to MNOK 13.9 and is included in SINTEF's financial revenues.

In 2004, SINTEF sold its building section in MTFS. The profit of MNOK 15.5 was entered as operating income.

4. Sales revenues for the SINTEF Group

Figures in NOK thousand

By Division	2005	2004	The SINTEF Group		SINTEF		
			2004	2005	Geographical distribution	2005	2004
SINTEF Technology and Society	305 386	287 729					
SINTEF Health Research	110 293	109 059					
SINTEF Materials and Chemistry	371 512	364 789					
SINTEF ICT	257 001	235 958					
Internal Group services	70 458	77 962					
Total SINTEF Foundation	1 114 650	1 075 497					
MARINTEK	199 282	188 949	1 426 801	1 511 566	Norway	946 143	930 845
SINTEF Fisheries and Aquaculture	83 279	82 239	111 809	113 321	EU	78 558	72 573
Total SINTEF Marine	282 561	271 188	153 853	160 356	Rest of world	89 950	72 079
SINTEF Petroleum Research	130 266	115 043			Total	1 114 650	1 075 497
SINTEF Energy Research	211 020	203 337					
Total SINTEF Petroleum and Energy	341 286	318 380					
SINTEF Holding	145 690	107 513					
Eliminated internal turnover	-98 944	-80 115					
Total SINTEF Group	1 785 242	1 692 463					

5. Work in progress

The amount includes a 7 percent depreciation in the value of the companies' share of work in progress.

6. Salary costs, number of employees, fees, loans to employees, etc.

Figures in NOK thousand

The SINTEF Group			SINTEF	
2004	2005		2005	2004
784 878	794 395	Salaries	467 416	478 088
112 224	126 557	Employers' national insurance contributions	77 889	68 051
78 199	99 753	Pension costs	63 298	53 403
25 076	31 896	Other benefits	16 797	7 699
1 000 377	1 052 601	Total salary costs	625 400	607 242
1 672	1 789	Mean number of employees	1 098	1 116

The SINTEF Group's leading personnel (corporate management) are enrolled in the company's collective pension scheme, but also in a supplementary pension scheme which entitles them to 66% of their full salary from the age of 67. The President is also entitled to an early retirement pension which will cover 66% of her full salary from the age of 60 until she is 67. The President has six months mutual notice of termination of employment, and is also the beneficiary of a post-salary arrangement whereby she will receive 12 months' salary if the Board wishes her to resign from her position. Any other earnings during this period will be deducted from this sum. The salary of the President in 2005 was MNOK 1.381, plus taxable benefits totaling MNOK 0.133. No fees were paid to the Council of SINTEF. Honoraria to SINTEF's Board of Directors amounted to MNOK 0.8 in 2005.

Fees paid to auditors and cooperating companies

	The SINTEF Group	SINTEF
Audit required by law	689	237
Other certification duties	525	373
Tax advice	393	393
Other non-audit services	819	669
Total	2 427	1 672

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Loans to employees

Loans made to employees amounted to MNOK 0.8, of which MNOK 0.5 was within the SINTEF Foundation.

7. Pensions

In 2005, the following figures were used as a basis for calculating pensions in SINTEF and its research companies: ¹⁾

	2005	2004
Annual yield from pension funds	6.0%	7.0%
Discount rate	5.0%	6.0%
Annual growth in salaries	3.4%	3.4%
Annual regulation of basic social security contribution	3.4%	3.4%
Annual regulation of pensions	3.4%	3.4%
Turnover all ages ²⁾		
Average employers' national insurance contributions	14.1%	14.1%
Flexibility in outtake of AFP (early retirement scheme)	2-5%	2-5%

¹⁾ The rates shown here may vary slightly for the smaller companies in the SINTEF Group.

²⁾ Various rates, depending on age and employment category.

Composition of pension costs of period

Figures in NOK thousand

The SINTEF Group			SINTEF	
2004	2005		2005	2004
57 798	70 900	Present value of pensions earned in the course of the year	40 917	34 817
52 516	54 221	+ interest costs of accrued commitments	33 621	32 991
48 311	47 653	- expected return on pension funds	28 809	29 690
10 860	22 283	+ amortisation of difference from estimates	17 569	8 686
72 863	99 753	= Net cost of pensions excluding employment tax	63 298	46 804

Balance as of 31.12.2005, pension commitments

Figures in NOK thousand

The SINTEF Group			SINTEF	
2004	2005		2005	2004
970 392	1 151 150	Estimated pension commitments	739 631	606 153
790 695	869 649	- Estimated value of pension funds	562 898	487 346
158 023	288 390	- Non-entered effects of difference from estimates	184 124	100 594
21 672	(6 889)	Estimated net pension commitments before tax	(7 391)	18 213
2 969	(1 010)	+ Periodised employment tax	(1 042)	2 568
24 641	(7 901)	= Estimated net pension commitments after tax	(8 433)	20 781
24 641	6 970	Net commitments, including:		20 781
26 827	23 387	Underfinanced pension commitments		20 781
2 186	30 357	Over-financed pension commitments	7 391	

8. Long-term operating assets, furniture and buildings

Figures in NOK thousand

The SINTEF Group 2005	Buildings	Buildings under construction	Scientific equipment	Office equipment, inventory and vehicles	Sum
Historical cost as of 01.01.	762 080	300	375 894	113 729	1 252 003
Acquisitions in 2005	-	39	34 984	18 533	53 556
Disposals at historical cost	-2 664	-	-791	-414	-3 869
Historical cost as of 31.12.	759 416	339	410 087	131 848	1 301 690
Total ordinary depreciation	398 955	-	355 548	109 983	864 486
Total depreciation	-	-	-	526	526
Book value as of 31.12.	360 460	339	54 538	21 340	436 677
Annual ordinary depreciation	16 026	-	29 028	7 609	52 663
Economic lifetime	10-50 years		3 years	3 years	
Depreciation plan	Linear		Linear	Linear	
Annual rental costs of operating assets not entered in Balance Sheet	35 595				35 595
Purchases in 2005 < NOK 15,000	46 886	-	9 648	5 533	62 067

The SINTEF Group 2005	Concessions, patents	Goodwill	Total
Historical cost as of 01.01.	2 861	8 277	11 138
Acquisitions in 2005	-	-	-
Disposals at historical cost	-1 061	-	-1 061
Historical cost as of 31.12.	1 800	8 277	10 077
Total ordinary depreciation	90	2 786	2 876
Book value as of 31.12.	1 710	5 491	7 201
Annual ordinary depreciation	90	1 120	1 210
Economic lifetime	20 years	5-10 years	
Depreciation plan	Linear	Linear	

SINTEF 2005	Buildings	Scientific equipment	Office equipment, inventory and vehicles	Total
Historical cost per 01.01.	689 638	213 515	96 339	999 492
Acquisitions in 2005	-	13 177	11 873	25 050
Disposals at historical cost	-5 888	-560	-	-6 448
Historical cost as of 31.12.	683 748	226 132	108 212	1 018 091
Total ordinary depreciation	360 938	207 661	95 829	664 428
Book value as of 31.12.	322 810	11 866	12 384	353 664
Annual ordinary depreciation	11 866	4 864	12 724	29 454
Economic lifetime	10-50 years	3 years	3 years	
Depreciation plan	Linear	Linear	Linear	
Annual rental costs of operating assets not entered in Balance Sheet	24 374	-	-	24 374
Purchases in 2005 < NOK 15,000	-	3 136	5 013	8 150

In 2005 SINTEF rented 22,712 m² from NTNU. SINTEF Energy Research rented an additional 4,290 m². NTNU rented 14,233 m² from SINTEF, in addition to 236 m² in the SINTEF Energy Research building. SINTEF Energy Research has a separate contract with NTNU, but this is administered by SINTEF.

9. Subsidiaries

SINTEF's subsidiaries

Company Subsidiaries	Date of acquisition	Registered office	Share-holding
MARINTEK – Norwegian Marine Technology Research Institute	19.12.1984	Trondheim	56.0%
SINTEF Fisheries and Aquaculture	01.01.1999	Trondheim	96.9%
SINTEF Petroleum Research	01.01.1985	Trondheim	100.0%
SINTEF Energy Research	16.12.1985	Trondheim	61.0%
SINTEF Building and Infrastructure	01.12.2005	Oslo	100.0%
SINTEF Holding	01.01.1988	Trondheim	100.0%

Shareholdings and voting rights are identical.

The companies accounting procedures follow the equity capital method; see following table

Figures in NOK thousand

	MARINTEK Group	SINTEF Fisheries and Aquaculture	SINTEF Petroleum Research	SINTEF Energy Research	SINTEF Building and Infrastructure	SINTEF Holding	Total
Historical cost = equity capital in Balance Sheet at time of purchase	6 500	11 219	9 000	4 600	120	6 670	38 109
Balance as of 01.01.05	53 322	9 493	89 040	78 840		19 860	250 555
Share of result for 2005	4 365	2 297	-3 882	10 345		-5 070	8 056
Paid-up share capital					120		120
Other changes in course of year	263	-57				-348	-142
Balance as of 31.12.05	57 950	11 733	85 158	89 185	120	14 442	258 590

The share of the annual result of kNOK 8,056, less deductions for items transferred directly to equity, kNOK 142, is transferred to the reserve for valuation variances.

SINTEF Holding's subsidiaries

Company Subsidiaries	Date of acquisition	Registered office	Share-holding
SINTEF NBL (Norwegian Fire Research Laboratory)	31.12.2000	Trondheim	100,0%
Molab AS	01.01.1990	Mo i Rana	60,0%
Raufoss Technology & Industrial Management AS (RTIM)	09.02.2004	Raufoss	50,1%
SINTEF MRB AS	01.11.2004	Ålesund	100,0%
Sinvent AS	24.11.2004	Trondheim	100,0%
SINTEF Polska SP. Z.O.O.	01.07.2005	Warsaw	100,0%

Shareholdings and voting rights are identical.

The companies' accounting procedures follow the equity capital method; see following table

Figures in NOK thousand

	NBL	Molab	RTIM	SINTEF MRB	Sinvent	SINTEF Polska	Sum
Historical cost	1 300	1 000	6 991	7 600	10 000	100	26 991
EC in Balance Sheet at time of purchase	1 300	1 500	4 078	2 246	10 000	100	19 224
Goodwill			2 923	5 354			8 277
Balance as of 01.01.05	2 102	11 587	3 275	7 155	9 611	-	33 730
Share of result for 2005	119	825	364	-2 459	33	-	-1 118
Depreciation of goodwill			-585	-536			-1 121
Paid-up share capital						100	100
Dividends		-390					-390
Balance as of 31.12.05	2 221	12 022	3 054	4 160	9 644	100	31 201

SINTEF Holding and its subsidiaries are fully consolidated in the SINTEF Group.

10. The SINTEF Group's shares and holdings in other companies

Figures in NOK thousand

The SINTEF Group	Owner in SINTEF	Holding	Book value
Long-term assets			
ResLab AS	SINTEF Petroleum Research	9.9%	19 199
Leiv Eiriksson AS	SINTEF Holding	20.3%	5 391
Norsk Jern Eiendom AS	Molab	2.0%	3 000
TraceTracker Innovation AS	SINTEF Fisheries and Aquaculture	2.4%	1 999
ConMotion AS	SINTEF Fisheries and Aquaculture	100.0%	1 350
MonAqua AS	SINTEF Fisheries and Aquaculture	33.3%	317
MoTest AS	Molab	49.0%	201
Other shares with book value < 100			195
Total long-term assets			31 652
Liquid assets			
Nacre AS	SINTEF Holding	26.1%	14 550
Såkorinvest Midt-Norge AS	SINTEF Holding	11.9%	7 508
Biosergen AS	SINTEF Holding	50.0%	5 000
Revolt Technology AS	SINTEF Holding	17.0%	4 196
Spider Solutions AS	SINTEF Holding	81.1%	2 356
ResMan AS	SINTEF Holding	26.2%	1 483
Alcon Gruppen AS	SINTEF Holding	22.5%	980
Numerical Objects AS	SINTEF Holding	21.8%	853
Metaphor AS	SINTEF Holding	30.4%	750
Powel ASA	SINTEF Energy Research	3.1%	594
DAT AS	SINTEF Holding	4.9%	575
Crusin	SINTEF Holding	16.5%	440
Comex AS	SINTEF Holding	26.0%	344
Norfood Research AS	SINTEF Holding	50.0%	300
CFD Norway AS	MARINTEK	30.6%	293
KeraNor AS	SINTEF Holding	13.3%	215
Simula Research Lab. AS	SINTEF Holding	10.0%	150
Lodic AS	MARINTEK	25.0%	125
Other shares	SINTEF Holding	< 10.0%	10 890
Other ownership interests			5 699
Other shares with book value < 100			629
General adjustment of value of share portfolio			-10 148
Securities funds (market value)			6 056
Total liquid assets			53 839

SINTEF	Holding	Book value
Long-term assets		
Mandag Morgen Norge AS	0.5%	50

11. Receivables with due date beyond one year

Figures in NOK thousand

The SINTEF Group		SINTEF	
2004	2005	2005	2004
4 148	4 379	76 845	73 413
		2 310	1 980
4 148	4 379	79 155	75 393

12. Securities (portfolio)

Figures in NOK thousand

The SINTEF Group				SINTEF's holding 45,9%
Portfolio distributed as follows	Currency	Historical cost	Book value = market value	
Bank deposits and derivatives	NOK	3 970	3 970	1 822
Interest-bearing securities				
State	NOK	28 974	29 578	13 574
Commercial and savings banks	NOK	34 065	34 019	15 612
Finance and credit companies	NOK	6 196	6 167	2 830
Interest-bearing funds	NOK	89 895	92 577	42 485
Total interest-bearing securities		159 130	162 341	74 501
Indexed bonds	NOK	25 375	30 482	13 989
Indexed/convertible bonds	NOK	6 758	8 531	3 915
Scandinavian unit trusts	NOK	13 696	16 026	7 354
Foreign unit trusts	NOK	4 500	4 678	2 147
Foreign combination funds	EUR	3 037	3 636	1 668
Foreign unit trusts/hedge funds	EUR	14 290	16 384	7 519
Total other investments		67 656	79 737	36 592
Other short-term investments distributed as follows	NOK	20 000	20 291	
Total investments for distribution		250 756	266 337	112 915

13. Foreign exchange

Figures in NOK thousand, local currency

The SINTEF Group									
Currency	EUR	USD	GBP	DKK	SEK	JPY	KWD	CHF	Total
Bank deposits	62 829	26 044	880	1 362	9	149	2 788		94 061
Customer receivables	26 768	13 760		166					40 694
Accounts payable	-10 460	-10 265	-177	-260	-218				-21 380
Futures contracts	-5 364	-12 781		-555	-1 000			-990	-20 690
Net exposure	73 773	16 758	703	713	-1 209	149	2 788	-990	92 685

SINTEF									
Currency	EUR	USD	GBP	DKK	SEK	JPY	KWD		Total
Bank deposits	40 402	10 534	880	1 522	9	149	2 788		56 284
Customer receivables	9 510	4 446		296					14 252
Accounts payable	-9 424	-8 721	-177	-58	-217				-18 597
Futures contracts	-3 969	-7 658		-555	-1 000				-13 182
Net exposure	36 519	-1 399	703	1 205	-1 208	149	2 788		38 757

14. Other long-term debt

	2005	2004
Debt to credit institutions	2 695	3 936
Sum debt to credit institutions	2 695	3 936
Book value of assets posted as collateral for reported debt		
Machinery, etc.	5 000	5 000
Customer receivables	8 142	4 766
Sum book value of assets posted as collateral for reported debt	13 142	9 766

15. Mortgages and guarantees, etc.

The SINTEF Group has signed a contract with Fokus Bank regarding the operation of a common current account system. The parent company and its subsidiaries are jointly liable vis-à-vis the bank for any liability covered by the agreement. According to the terms of the agreement, SINTEF agrees to mortgage its accounts with the Norwegian Registry of Securities (VPS) for investing funds from its capital account in favour of its subsidiaries as collateral for their claims. The VPS account is mortgaged to the participants as a group.

SINTEF is required to post satisfactory security in the form of fixed assets for investing funds from its capital account in joint active management operations. In connection with the loan extended to the Microelectronics Laboratory in Oslo, a negative mortgage clause has been posted.

SINTEF is a party to a number of minor legal cases resulting from its normal activities. SINTEF believes that any liabilities in this connection will be of little importance for SINTEF's results, liquidity or financial position.

16. Offsets between companies within the Group

Internal transactions within the Group amounted to MNOK 100.3 ex. VAT. Intra-Group receivables and debts are shown as a line on the Balance Sheet.

17. Equity capital

Figures in NOK thousand

The SINTEF Group	Paid-up equity	Earned equity		Total equity
			Other equity incl. minority	
Equity capital as of 01.01.05	62 300		775 443	837 743
Annual result of Group			59 455	59 455
Dividend			-260	-260
Items entered directly against EC			62	62
Equity capital as of 31.12.05	62 300		834 700	897 000

SINTEF	Paid-up equity	Earned equity		Total equity
		Valuation variances	Other equity	
Equity capital as of 01.01.05	62 300	212 566	460 623	735 489
Annual result of Foundation		8 056	40 368	48 424
Items entered directly against EC		-142		-142
Equity capital as of 31.12.05	62 300	220 481	500 991	783 772

18. Other current liabilities

The item "Other current liabilities" in the accounts for the SINTEF Group includes provisions for accrued vacations, holiday pay and overtime, provisions for early retirement, bonuses and restructuring, investments in IT systems, obligations regarding invoices entered but unpaid and transiting EU funds.

19. Taxes

Figures in NOK thousand

	The SINTEF Group		SINTEF	
	2005	2004	2005	2004
Ordinary result of the year				
Tax due	-298	-745		
Changers in deferred tax	-1 008	-6 318		
Excess deferred taxes in previous years		1 310		1 310
Tax cast of ordinary result	-1 305	-5 753		1 310

Specification of the tax effect of temporary differences and losses to be carried forward in SINTEF Holding (Group).

	2005		2004	
	Advantage	Obligation	Advantage	Obligation
Operating assets	7 179			10 150
Contracts regarding long-term assets		330		157
Receivables	368		754	
Pension commitments	1 004			
Short-term debt	100			
Gains and losses account		13 874	2 471	
Unused reimbursements on shareholdings	4 679		6 857	
Loss to be carried forward	20 529		15 493	
Total	33 859	14 204	25 575	10 307
Advantage/obligations on deferred tax	5 503		4 275	
Non-balanced deferred tax advantage	4 165		1 838	
Net advantage/obligations on deferred tax in Balance Sheet	1 337		2 437	

Deferred tax advantage is entered on the basis of future revenue.

Deloitte

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To: The Council of the Foundation for Scientific and Industrial Research at the Norwegian Institute of Technology (SINTEF)

Auditor's Report 2005

We have audited SINTEF's annual accounts for 2005, which indicate a profit of NOK 48,424,000 for the parent company and of NOK 59,455,000 for the Group. We have also audited the information provided in the Annual Report regarding the accounts, the assumption of continued operation and proposals for allocation of the profits. The annual accounts consist of the profit and loss account, balance sheet, cash-flow analysis, notes and the Foundation's and the consolidated annual accounts. The annual accounts and the Annual Report have been drawn up by the Board of the Foundation and the President of SINTEF. Current Norwegian legislation and good auditing practice have been employed in drawing up these accounts. Our responsibility has been to express our opinion regarding the annual accounts and other matters under the terms of the Auditing Act.

We have conducted our audit in accordance with current Norwegian legislation and good auditing practice, including auditing standards adopted by the Norwegian Institute of Public Accountants, which requires us to plan and implement our audit in such a way as to be able to confirm with certainty that the accounts did not include material errors or omissions. We have checked selected parts of the material on which the accounts are based, an evaluation of the accounting principles employed and important accounting estimates, and of the content and presentation of the annual accounts. To the extent that good auditing practice requires us to do so, we have also reviewed the Foundation's assets management and accounting and internal control practices. We believe that the audit provides adequate grounds for the following statements.

In our opinion:

- the annual accounts have been drawn up in accordance with current laws and regulations and present a satisfactory picture of the financial position of the Foundation and the Group on 31 December, 2005, as well as of the result and cash-flows in the course of the accounting year, in accordance with good accounting practice in Norway.
- SINTEF's management has fulfilled its obligation to ensure that accounting information has been appropriately and clearly registered and documented, in accordance with the legal requirements and good accounting practice in Norway.
- the information contained in the Annual Report regarding the annual accounts, the assumption of continued operation and the proposals for allocation of the profits are consistent with the annual accounts and are in accordance with good legal requirements and accounting practice.

Trondheim, 29 March, 2006
Deloitte



Harald J. Lydersen
state authorised public accountant

Audit • Tax & Legal • Consulting • Financial Advisory

Member of
Deloitte Touche Tohmatsu

Medlemmer av Den norske Revisorforening
Org nr: 980 211 282

SINTEF's Prize for Outstanding Research for 2005
has been awarded to



Lars Amberg



Ragnvald Mathiesen

for their development of a method that utilises synchrotron x-radiation to study solidification processes in metal alloys, in situ and in real time.

Their results reveal, for the first time, the process of solidification in metals by means of real-time video microscopy, and the publication of these studies has therefore aroused a great deal of international interest.

The method has contributed to an improved fundamental understanding of complex solidification processes in metals, which in turn are an important factor in achieving better control of the microstructure of cast aluminium products. These measurements also offer first-hand empirical insight into phenomena of great interest to mathematical modelling, and thus provide model verification data that is in great demand.

The experiments were performed at the European Synchrotron Radiation Facility in Grenoble. The SINTEF scientists' work is a first-class illustration of how a large-scale experimental infrastructure may lead to significant advances in materials research, and of how Norwegian researchers are capable of making an international impression by using facilities of this type.

The work is a result of close cooperation by SINTEF and NTNU, and has helped to strengthen our international position in this field of research.



In Norway alone, 67 people died in fires last year.
Read about our life-saving fire research at
www.sintef.com/nbl_uk

The SINTEF year in brief

Our subsidiary in Raufoss, RTIM, awarded the status of 'Norwegian Center of Expertise'.

Unni Steinsmo, President of SINTEF, appointed to the Arctic Region Commission.

SINTEF is one of the first research institutes in the world to develop a process for large-scale production of carbon nanotubes.

SINTEF SeaLab opened, giving SINTEF new development potential in fisheries and aquaculture.

The Norwegian Building Research Institute joins the SINTEF Group.

The EU launches the biggest ever bioenergy research project and awards it to SINTEF.

SINTEF's Iran contracts spotlighted by the media, leading to economic crime unit opening investigation of corruption suspicions.

SINTEF spin-off NACRE presents its hi-tech hearing protection device with inbuilt communication system for the White House in Washington, DC.

SINTEF helps to develop world's first vaccine for cancer of the cervix.

SINTEF scientist Steffen Møller-Holst appointed to chair of government's The Strategic Council of the Hydrogen Platform.

SINTEF launches life-saving work clothing for fishermen.

SINTEF sets up spin-off ResMan, which monitors oil wells using tracers, completely eliminating cables.

SINTEF/NTNU research magazine Gemini wins best external magazine award for second year in a row.

SINTEF Polska was established.

Norwegian champion - again!

SINTEF/NTNU's research magazine Gemini has won the Norwegian Communication Society's 'Best external magazine' award for the second year in a row.

Want to become a little bit smarter yourself? Subscribe free to Gemini at gemini@sintef.no

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Snake robot to the rescue • 8

À la Jules Verne • 34

Not so ladylike • 42

A viking age riddle

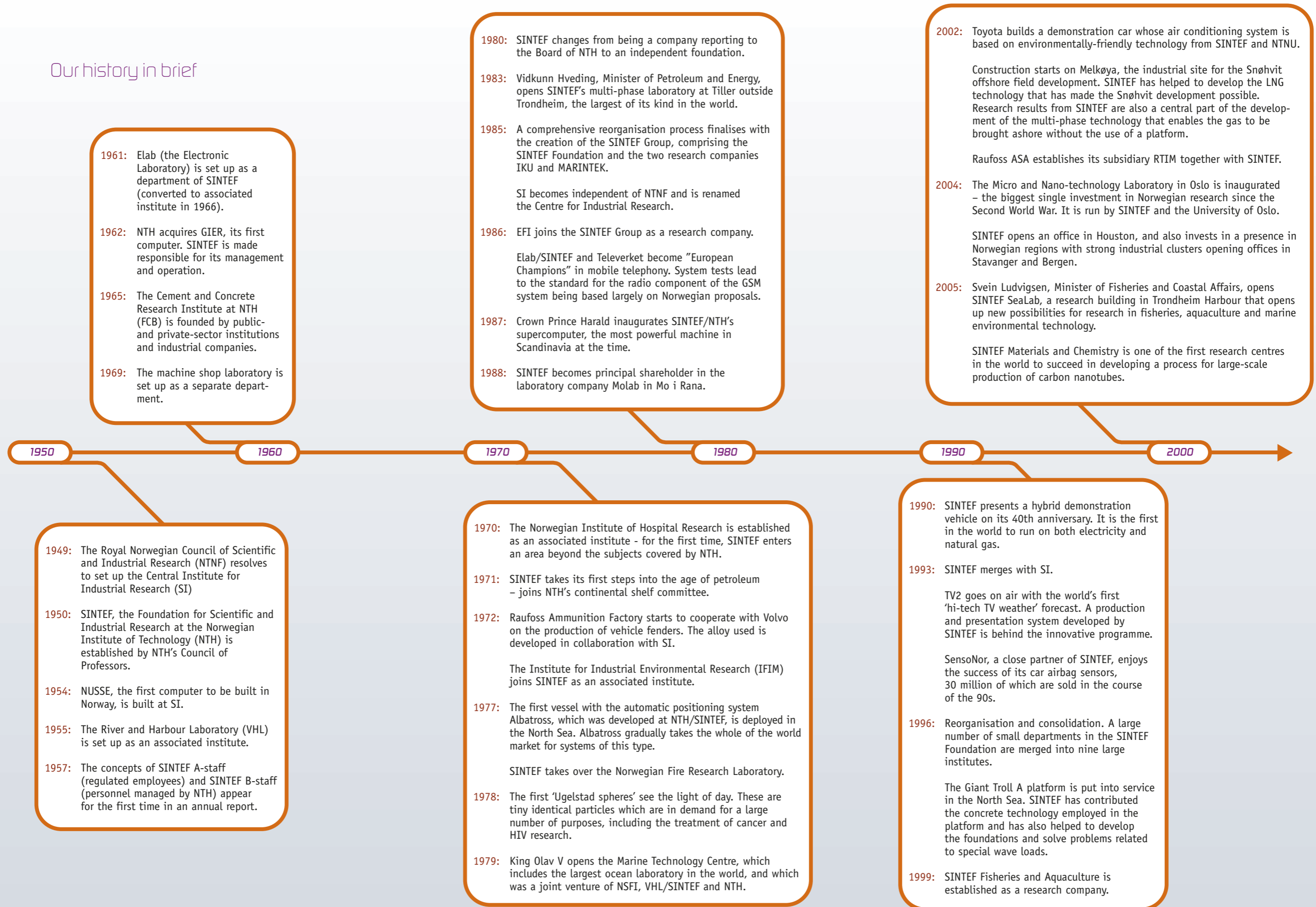
Could this very old pine post date from a king's estate? Dendrochronologist Kjersti Føllesdal is on the case.

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RESEARCH NEWS FROM NTNU AND SINTEF 2005/2006

Our history in brief





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