Influencing our world

ERICSSON ⧩

Contents

This is the ninth consecutive year we have reported on our contribution to sustainable development. Our transition from an Environmental Report - focused on our impact on the natural environment - to a Sustainability Report reflects a broadening of our ambitions. For the first time we are including indicators on the impact that we, as a corporation, and our products have on society in the social and economic dimensions, as well as the environmental one.

The report reviews our progress during 2001 towards attaining established goals, as well as providing information about the values and policies that underpin our activities globally. It explains the thinking behind what we do, and provides insight into the relevance of these activities to the success of our company and of those around us.

Kurt Hellström
President and Chief Executive Officer

In this challenging year 2001, we experienced a downturn in the economy and actively worked with our restructuring activities designed to restore profitability. In spite of this, we have continued to make progress toward our environmental goals and I believe this reflects the seriousness of our commitment. Corporate Social Responsibility, including economic, social and environmental issues, is an integral part of our business strategy.

Our business, communications technology, is key to efficient use of the world's resources. In addition, there is a natural link between our business and the need of developing countries to have communications infrastructure as a base for their development.

As one of the leaders in the telecommunications industry, we have the ability to influence. This commits us to operating in a responsible way everywhere we do business, fairly balancing the needs and concerns of all our stakeholders. We believe this is essential for us to manage a strong, successful and sustainable company.

We have received much recognition for our achievements and our program, Ericsson Response, helping with relief efforts. In 2001, we were named 'the sustainability leader in the communications technology industry' on the Dow Jones Sustainability World Index.

After eight years of environmental reporting, we are publishing our first sustainability report, adding social and additional economic dimensions. Guided by the Global Reporting Initiative Guidelines for Sustainability Reporting, we present our results in a spirit of openness to give you more insight into our progress.
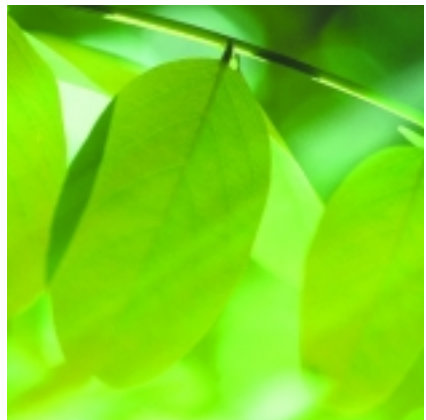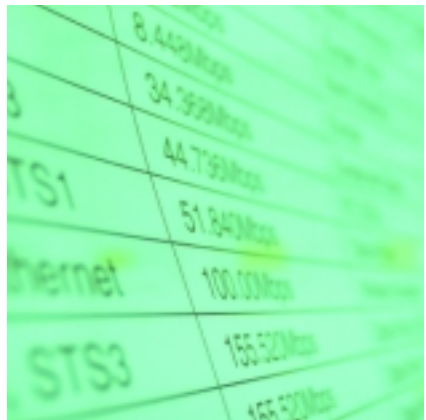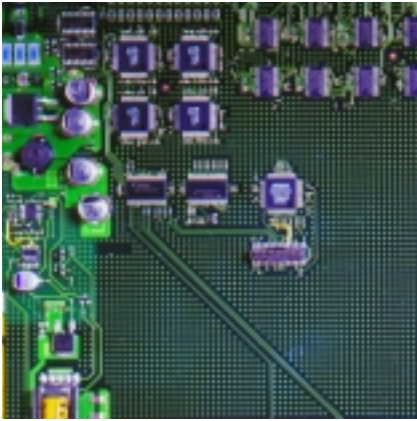
Environmental highlights

- Received the world's first global ISO14001 certification granted by BSI for our environmental Management System, covering manufacturing and non-manufacturing operations.

- Successfully identified new halogen-free flame retardant alternatives for 80 percent of our printed circuit boards.

- Developed lead-free manufacturing processes and component-handling procedures to implement in new lead-free products, during 2002.

- Completed a life-cycle assessment on a third generation mobile network, providing information about the environmental performance of our next generation of products.

- Implemented a central database for collecting detailed materials content information about our products.

- Ranked 'the sustainability leader in the communications technology industry group' in the Dow Jones Sustainability World Index, in 2001.

Ericsson has developed the world's first DC/DC surface mountable power module that is lead-free compliant. This is in response to growing environmental concerns about the use of lead solder in electronic products and the difficulty of ensuring that all products are properly recycled. Legislation requiring lead-free solder is not expected until late in this decade. We have our solution today.

Social highlights

- Adopted a Code of Conduct defining employee rights and working conditions for Ericsson and our supply chain.

- Announced a new stock-savings program to increase employee motivation and involvement via long-term investment in Ericsson shares.

- Established Ericsson University worldwide, for training and development of employees in technical and managerial skills.

- Ericsson Response loaned a MiniGSM system to the United Nations humanitarian organizations and the interim administration in Kabul. This was the first ever GSM network in Afghanistan.

Prescila used to be one of the 4,000 street children in Brazil. She is now completing a two-year apprenticeship at Ericsson, in São José dos Campos, as part of a program in collaboration with the local authorities. With over 50 former street children working at the company, Ericsson is the second largest contributor to this program.
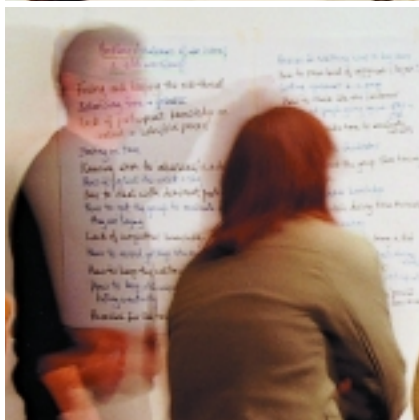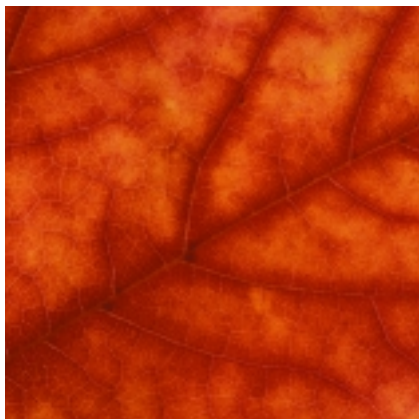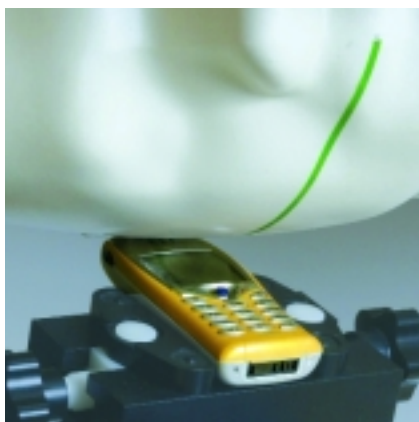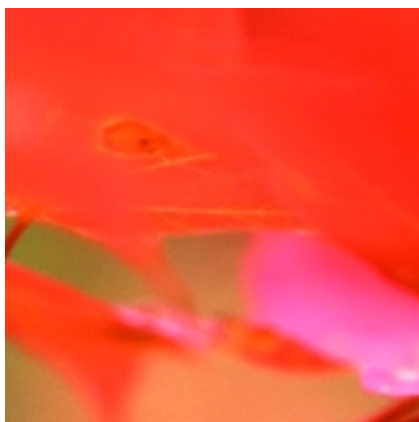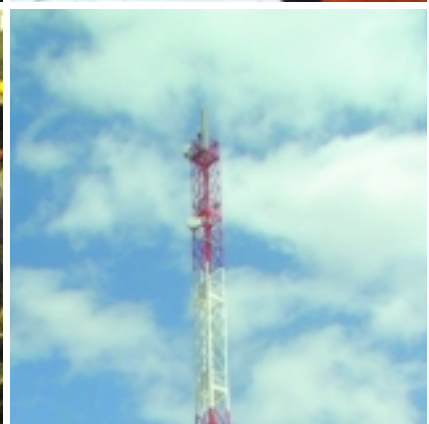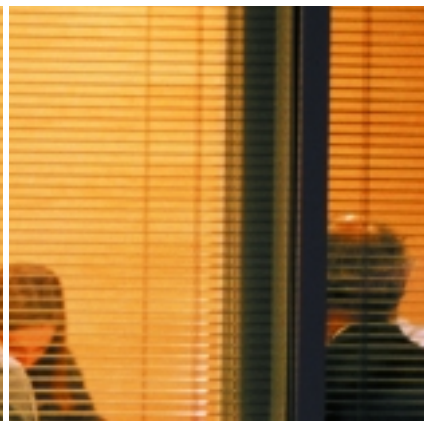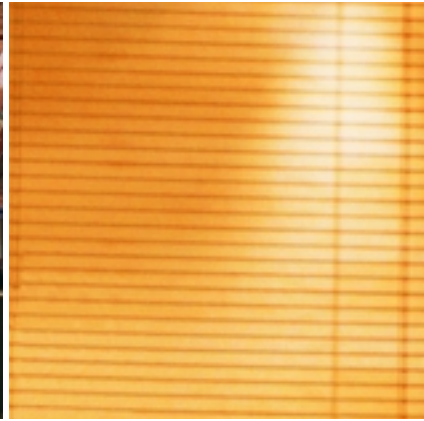
Economic highlights

- The first students graduated from the masters programs initiated by Ericsson in China to support development of business and telecommunications expertise in the region.

- Launched the MiniGSM System – a product ideally suited for the introduction of communications infrastructure in rural areas where no previous infrastructure exists.

- Large-scale deployment of SunSite, our solar powered radio base station, for use in isolated regions without access to electricity.

- Conducted a successful pilot of a new business concept for small stand-alone telecom systems.

The Shanghai government named Ericsson's local research and development company the 'Number one software export company in Shanghai for 2001'. Of the 1,000 software companies considered, the Ericsson unit earned top recognition.

From vision to sustainable solutions

We believe that our industry is sustainable. As a corporation, we contribute to economic growth and social equity and our products enable more efficient use of resources, supporting sustainable development.

Our vision

Our commitment to sustainable development is grounded in our Corporate Vision:

'Ericsson believes in an 'all-communicating' world, in which voice, data, images and video are conveniently communicated anywhere and anytime – **improving quality of life, increasing productivity and enabling a more resource-efficient world'.**

Ericsson contributes to this vision through its products and services as well as by being an employer in over 140 countries.

This report illustrates our progress towards our vision.

Supported by action

Implementing sustainability is not just about business attitude. It's also about demonstrating commitment through action. At Ericsson, we want our vision to be translated through to actual business deliverables, ensuring that sustainability is an active part of all our operations. For example:
• We recently adopted a new Corporate Social Responsibility and Sustainability Policy, which forms the foundation for our business practices globally. Within this framework, Ericsson's activities are steered by directives and guidelines.
• We expanded our environmental network and are working with the expansion of our management system to incorporate the additional social and economic dimensions.
• Ericsson helped found the recently launched Global *e*-Sustainability Initiative (G*e*SI). This global project promotes

sustainable business practises with the support of the United Nations Environment Programme and the International Telecommunication Union.
• We are developing and testing new products and business ideas to facilitate the deployment of telecom access to areas currently unable to afford this service.
• We are encouraging our industry, as a whole, to purify its processes and products, by working to develop a common way of handling materials declarations, and our work with our supply chain on our banned and restricted materials lists.
• We have expanded our support of independent research into electromagnetic field exposure to ensure that we have safe products for a sustainable business.

Global outlook

Ericsson is a major player in the telecommunications industry, one of the few industry sectors that can claim to be sustainable. The total resource consumption for communications products is relatively low compared with other industries. Rapid technological development will continue to increase resource efficiency.

Communications technology can help achieve global sustainable development by enabling organizations and individuals to make more efficient use of their resources. The industry has already made a profound impact on society – changing the production of goods and services, trade and distribution, research, education, information and media.

We believe that our dream of a communicating world is achievable and desirable. Our analyses reveal that the

In Spain today, thousands of insulin dependent patients are receiving remote monitoring and diagnosis through their mobile phone. This reduces stress, travel and expense, allowing patients to continue their normal lives under remote medical supervision.

impact of providing universal telecommunications access would release about two-thirds of 1 percent of the total amount of fossil carbon dioxide emissions that fuel global warming. This is the impact of providing all six billion people in the world with their own mobile phone and access to a network.

This universal communication requires small energy resources but enables significant contributions to overall energy savings, through more efficient use of the world's resources. We believe the benefits far outweigh the cost.

Mobile and Broadband Internet have the greatest potential of all communications developments to balance good quality of life with low resource consumption. As a leader in Mobile Internet development, Ericsson is investing substantially in research and development, making the technology more accessible and better able to deliver the resource efficiency that will benefit us all.

The United Nations Summit in Johannesburg, later in 2002, is likely to heighten this focus even further and encourage us all to play an even greater role in ensuring sustainability in both our work and personal lives.

Developing a 'responsible' culture
We have a global policy that establishes the framework that all our business dealings must support.

Our Corporate Social Responsibility and Sustainability Policy is:

Ericsson supports the creation of a sustainable future for all people and generations to come. Ericsson believes that communication is a basic human need and right. Through our leadership in communications technology, we shall consistently contribute to increasing quality of life and productivity to enable a more resource-efficient world. We shall be a responsible member of society.

This means:

- We believe in each person's value and dignity and reject discrimination.
- We work to create a safe and healthy environment.
- We strive to increase productivity and reduce environmental impacts.
- We promote use of our technology to enable a more resource-efficient world.
- We promote healthy and fair competition and treat our customers with respect.
- We support the United Nations Global Compact.

Every day calls are made to the Estonia State Rescue Services from callers who don't know exactly where they are. Using the Ericsson Mobile Positioning System, dispatchers quickly locate the person in danger, and send the closest rescue team.

Ericsson around the world

Being one of the world's leading suppliers of communication solutions provides us with a unique opportunity to help individuals and businesses harness the power of Mobile and Broadband Internet to reduce environmental impact and increase quality of life.

Our company profile

Ericsson is shaping the future of Mobile and Broadband Internet communications through continuous technology leadership. Our innovative solutions are helping create the most powerful communication companies in the world.

We possess the strongest brand in the mobile infrastructure business and have a 30 percent market share. Our market share for GSM is 40 percent, in sales, and for UMTS it is 40 percent. We have operated internationally for over 125 years. Note: This reflects the 2002 organization.

Our five business units and their areas of operation are:

- Mobile Systems WCDMA and GSM – wireless network infrastructure
- Mobile Systems CDMA – wireless network infrastructure
- Multi-Service Networks and Data Backbone – wireline network infrastructure
- Global Services – systems integration, implementation and management
- Transmission and Transport Networks – microwave and optical networking.

We have four additional units delivering the core technology and supply services providing support across all product groups.

- Service Network and Applications
- Radio Network Development
- Supply and Sourcing
- Core Network Development.

In addition, we have other business operations including

- Ericsson Mobile Platforms
- Ericsson Technology Licensing
- Ericsson Business Innovations
- Ericsson Microelectronics
- Ericsson Microwave Systems
- Ericsson Enterprise
- Ericsson Network Technologies.
- Mobile phones through our partnership with Sony Ericsson Mobile Communications

■ Countries in which Ericsson has companies or offices
■ Countries in which Ericsson is not represented

At year-end 2001, Ericsson employed 85,198 people and had operations in over 140 countries. We managed 24 production sites and had research and development centers in 23 countries. Our market operations are divided into three geographic areas:

- Europe, Middle East and Africa
- Americas
- Asia Pacific.

We organize our business into five units reflecting our major product groups.

2001 update

The year 2001 showed a severe downturn in the global economy and the telecommunications industry faced hard challenges. Ericsson introduced an efficiency program and a new organization in order to restore profitability.

We also took a big step in redefining our mobile phone business. The mobile phone business was merged with Sony's mobile operation, creating a new company, Sony Ericsson Mobile Communications. At the same time, we formed a company, Ericsson Mobile Platforms, to license our core mobile phone technologies to other manufacturers.

We are continuing to strengthen our position by outsourcing non-core activities and developing high-value research and development activities and knowledge-based services.

This report provides a summary of Ericsson's operations during the year. Companies that are not consolidated by Ericsson report separately.

The impact of our mobile phone business is included until the end of September, when Sony Ericsson was created. To further increase transparency, we present the life-cycle environmental profile of our activities, in which we include the relevant suppliers, outsourced operations, consultants, etc.

For further information about Ericsson, please refer to our Annual Report 2001 or visit our website www.ericsson.com.

Our sustainability organization

Ericsson's sustainability work is managed globally through our *Sustainability and Environmental Network*, whose operational steering group reports directly to the company's management team.

The steering group comprises representatives from our business units and is chaired by the Sustainability and Environmental Director. It sets our direction, and uses its strong ties with the operating units to ensure that sustainability activities are on track.

To ensure that this work is anchored in the business, we have created a *Competence Network* of people drawn from all parts of our organization to act as a focus for expertise globally and to work together on common themes across Ericsson. This year, we have broadened our *Environmental Competence Network* to focus on the larger issues of sustainability, and we now have active networks in the following areas:

- Environmental Impacts
- Strategic Planning
- Design for Environment
- Research and Development
- Laws and Standards
- End-of-Life Treatment
- Production
- Sourcing
- Training
- Marketing and Communication
- Human Rights and Ethics
- Ericsson Response
- Product Safety
- Antenna Aesthetics
- Product Approval
- Health and Safety
- Business Development.

Telling our story

Goal: Establish environmental awareness and control throughout Ericsson and encourage employees to take active steps in their work to improve the environment.

A major challenge in building an environmentally aware organization is to help the organization gain an understanding of its impact, raise awareness of the issues and report on progress, both internally and externally.

Since we have operations in over 140 countries globally, it is important to ensure that information and contacts are broadly available to share knowledge, support consistent work and avoid duplication. Part of our awareness program included the development of an intranet site. Internal communication and discussion at all levels is encouraged.

During 2001, we expanded the content of our dotcom site from environment to sustainability and are continuously working to provide material of interest on our policies, projects and progress.

Minimizing environmental impact

Ericsson gathers information on its environmental performance and sets goals to ensure improvement

Inform, engage, involve

Accurate information is key to effective management. To support our environmental initiatives, Ericsson has implemented a global program to deliver key management information, processes and controls and to help set, monitor and achieve our overall sustainability goals.

By providing a practical framework for our operations, this program will ensure that we continue to: drive for energy efficiency, free our products from undesirable substances, and support the closing of the materials loop through proper End-of-Life Treatment (EoLT) solutions.

Our work is guided by our Environmental Directive, which provides a detailed strategy for fulfilling the requirements of our Corporate Social Responsibility Policy.

We set environmental goals as part of our strategic planning process. For a summary of our achievements and future targets, see the table on page 40. In this section we provide details about our achievements.

Environmental Management System
Goals:
- Implement Ericsson's Environmental Management System (EMS) in accordance with with ISO14001.
- All major suppliers are to have an environmental management system complying with ISO14001 or equivalent.

In 2001, we made significant progress in this area by adopting an Environmental Management System (EMS), which is now in operation worldwide.

A single global system enables us to assess our environmental impacts independently of organizational structure and changes. The EMS gives us a clear and consolidated view of all our environmental impacts, and actions. This global view avoids the fragmented sub-optimization that might result from parts of our organization working independently.

Our EMS received the first-ever global ISO14001 certification granted by the British Standards Institution (BSI). This certification covers all of Ericsson's operations – manufacturing and non-manufacturing – and verifies that we have identified the key environmental aspects/indicators to be monitored. It also affirms that we have set relevant targets for continuous improvement and that systems are in place to support these and measure results accurately.

It has taken us just over two years to design and implement our EMS and to have it certified. World events in 2001, a corporate reorganization and the addition of a new manufacturing facility late in 2001 have left some parts of the organization outside of this system. However, our commitment to a global EMS remains strong and we are working to integrate these during 2002.

Not only has Ericsson achieved certification for our EMS, but we now also ask this from our suppliers. Currently 80 percent of our largest suppliers are implementing an EMS, or already have an EMS certified to ISO14001 or equivalent.

Environmental Profile at Work

Initiated in 1999, our Environmental Profile at Work program was designed to increase environmental awareness of all Ericsson employees around the world. This has continued to gain momentum in 2001 and, to date, over 40,000 employees have now participated.

Materials declarations database

Materials declarations are an integral part of environmental work for us as well as our customers. They are a key input to our design efforts and in the development of efficient EoLT processes. In addition, they are used to manage compliance with our list of banned and restricted substances.

Ericsson's materials declarations database contains materials declarations on component level. By year-end 2001, over 10,000 of our components had materials declarations and were entered into the database. The majority of our suppliers were involved in the reporting process. The database is used to produce materials declarations on product level. Examples of more complex products with complete materials declarations are the 3G radio base station and the 3G radio network controller. End-of-Life Treatment information for these products has been created and this information is available for inclusion in customer product information.

To support our suppliers in this work, we conducted three educational seminars, operated a dedicated materials declaration help desk, and assigned personal contacts to

assist them in preparing and supplying information.

As well as investing a considerable amount of resources internally to manage this issue, Ericsson is also a very active member of the Environmental Policy Committee of the European Information, Communications and Consumer Electronics Technology Industry Association. A sub-team of this committee is working to develop a common international approach for reporting material content.

We see this process as vital to enabling consistency and comparability across the whole industry – on the part of both customers and suppliers – ensuring accurate collection and communication of necessary information on the contents of products.

Environmental Directive

Ericsson shall contribute to sustainable development by developing, producing, and offering products and services with excellent environmental performance that enable customers to minimize their environmental impact. This means that we shall:

- Develop our people's and partners' awareness of environmental issues to a level where consideration of environmental impacts becomes a natural part of daily work, driving continual improvement and pollution prevention.
  – Evaluate requirements for, and provide, environmental training.
- Ensure that Ericsson is perceived as one of the most proactive companies in our industry in enabling a more resource-efficient world.
  – Inclusion of environmental issues in our marketing and sales material.
- Actively communicate our environmental work and performance to internal as well as external stakeholders.
  – Perform annual reporting and maintain a dialog.
- Use life-cycle techniques as a means for determining significant environmental aspects and as a basis for actively communicating and continuously improving the environmental performance of our processes, products and services.
  – Evaluate new system platforms and actively pursue this aspect.

- Track and meet legal, customer and other requirements to protect the environment.
  – Form corporate environmental requirements.
- Continually reduce the need for energy during the whole life cycle.
  – Set up goals for new products (requirements for power consumption, maintenance, etc).
- Introduce environmentally-improved processes, products and services.
  – Include corporate Design for Environment requirements in our main requirements specification.
- Take a proactive approach to the supply chain, in order to ensure environmental control of the inputs to our products and processes.
  – Include environmental requirements in our supplier contracts and follow up assessment program.
- Manage our business with one corporate wide Environmental and Sustainability Management System that covers all operations.
  – All units shall be connected to the corporate–wide 'work book', and be included in the corporate assessment program.

Linking each unit's management system to the web-based workbook has allowed us to supplment on-site audits with remote peer reviews. This Global networking, helps to share knowledge, speed implementation and develop a consensus on best practice.

Making energy count

Advancements in core technologies, processes, materials and design are creating a new generation of less 'power-hungry' communication products that will enable us to reap the benefits of greater energy-efficiency in the future.

Saving energy
Goals:
- Continue improvement in developing energy-efficient new products over the whole life cycle.
- Define and implement an Ericsson system for measuring energy consumption at system level.

Ericsson remains at the forefront of low-energy technology developments and continues to focus on its two key operational goals.

Each element in the product chain is regularly assessed to identify potential energy savings – during production, distribution and supply, as well as in installation and operation. We believe that this makes sound commercial as well as social and environmental sense.

We have devised an in-depth life-cycle assessment (LCA) process that can be applied to evaluate energy use, stage-by-stage, in generic tele/datacom systems, including GSM and third generation (3G). This supports the maxim 'if we can measure it, we can improve it'.

Understanding the energy issue
Energy makes the world go round. There is a strong relationship between the amount of energy a country consumes and its social and economic development. World energy use is projected to grow by 59 percent by 2020, according to Electronic Industries Association forecasts. In the immediate future, close to 90 percent of all energy used will be supplied from fossil, carbon-based fuels – oil, gas and coal.

Not only are these non-renewable energy sources, their use also represents a major environmental threat. When burned to release energy, fossil fuels create a by-product, carbon dioxide. Released into the atmosphere in large quantities, this can affect the global climate in a way that poses a serious, and well-documented, threat to present and future generations.

The Kyoto agreement, and subsequent follow-up conferences, attempt to unite world powers and enterprise to address this critical issue in a precautionary way. Organizations, including Ericsson, have taken up the environmental challenge and are championing new ways to understand, address and tackle contributory factors.

The impact of communications
The whole issue of sustainability is closely tied with energy consumption. It is vital that we understand our global energy 'footprints', and how they might change in the future. Ericsson is not alone in seeing information and communication technology as one of the key routes for improved sustainability and, ultimately, reduced energy consumption.

We believe that all people in the world can make use of mobile phone and its services without compromising the resource base of future generations, according to the 'Bruntland' definition of sustainable development.

We created the generic 3G LCA to qualify this statement. As with earlier LCA findings for GSM, energy consumption during system use represents the biggest environmental impact.

Ericsson total LCA CO_2

3% Ericsson

2% E-Transports

74% Use

25% Supply chain

-4% End-of-Life Treatment

CO_2 total from Ericsson's activities and products
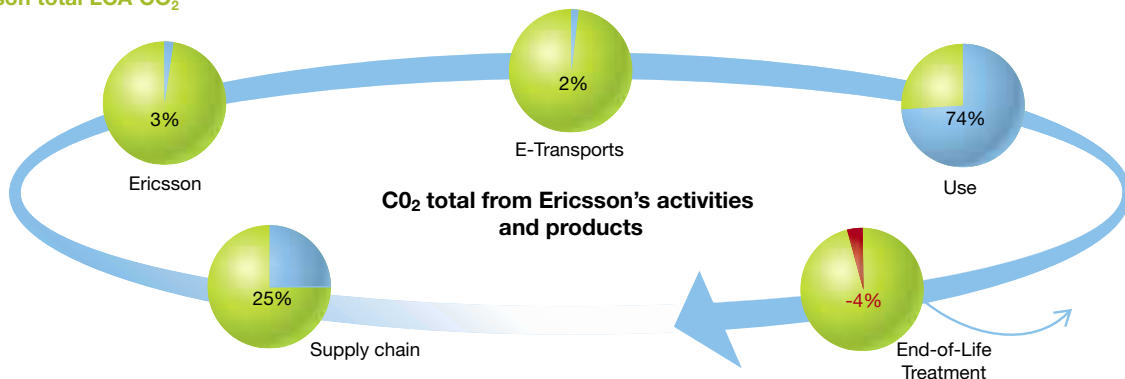
Our results indicate that the total fossil carbon dioxide (CO_2) emission per subscriber, per year, is about 50kg – equivalent to 20 litres of gasoline. To put this in perspective, the equivalent of around 7,800kg of CO_2 per year was released last year by each person on the planet.

Assuming 3G reaches a penetration of 50 percent, or 3 billion people, the maximum global emission of fossil CO_2 from 3G mobile phone use can be estimated at about 0.3 percent of the world's total.

The increased use of communications – rather than being a threat – actually represents a huge opportunity, providing a lower-energy alternative to other energy-hungry activities such as travel.

Consequently, Ericsson is championing the promotion of fixed and mobile telecoms and datacoms applications and services to help reduce energy consumption in society at large. In this respect, the possibilities are endless.

Cost and value

How much fuel does your car use? The answer depends on where you go, and how you drive. We have the same issue where trying to measure mobile communication systems. We measure the energy that a system uses via LCA, but how do we weigh this against the value that the mobile network promises? Our next generation of products provides, in addition to voice services, data services like location information, messaging, online payment, etc. How should we compare our old, more limited, voice-based systems to the next generation of Mobile Internet products?

This has proved to be a challenging task. During 2001, we reached an intermediate result. Now we need to further enhance our definition of energy consumed in a network. This means that we will focus on traffic models and models for area coverage. These items are related to system use, more than the properties of the systems themselves. This work has led us to revise our Generic Guidelines for Measuring and Stating Energy Consumption at System Level.

Communication and social evolution

The advent of the Internet has started to affect the ultimate societal base – the individual – who can now retrieve and use information online. Communication technology and the Internet provide a real-time logistical platform that can deliver business and personal benefits. Mobile Internet and positioning technologies may be considered the ultimate personal, real-time communication and information tools. These technologies help optimize the physical movement of people, information, finance, goods and services and, as a result, hold great potential for decreasing the total emission of fossil CO_2.

As an added bonus, communication technology helps developing countries to leapfrog certain stages of technological and economic development. With costs continually falling, mobile communications, in particular, provide one of the most energy-lean solutions to boosting financial, social and environmental development.

The challenge for the communication industry is to quantify these benefits and, at the same time, address the so-called rebound effect – whereby the time-and cost-savings delivered by communication technology open the door to greater social development, higher production and consumption levels and, therefore, an overall increase in energy use.

The emerging knowledge society, by definition, will be totally dependent on communication technology, and it seems likely that it will have a positive impact on creating a more sustainable, energy-efficient future for us all.

It starts and ends with design

At Ericsson, we believe that environmental and safety issues can be addressed by tackling them at the drawing-board.

Design for environment

Goal: Implement Ericsson's Design for Environment rules

By placing a strong emphasis – at the design stage – on resource optimization and minimization of undesirable substances from our products, we can make real strides towards sustainability.

At the heart of this philosophy are our Design-for-Environment (DfE) rules, which are in place, guiding our development activities through every phase of the product life-cycle. They include focus areas for energy consumption, materials usage and declaration, marking, and End-of-Life Treatment.

As well as adhering to these strict codes, our designers have access to programs to keep them abreast of the latest environmental developments and techniques.

In the rest of this section we report on our goals and achievements.

Lead-free solder

Goal: Use lead-free solder in 80 percent of our new products, from 2002

Since 2000, Ericsson has been running a project specifically to reduce the use of lead-based solder in our products, in view of concerns about toxicity and health hazards.

This has resulted in a 'Lead-Free Solder Process', and the evaluation of all production sub-processes (screen printing, mounting, reflow, inspection and repair). We have conducted seminars for designers and suppliers to increase their knowledge about lead-free soldering processes and techniques.

We have also undertaken extensive investigations to ensure that components and component suppliers can accommodate the new requirements.

As a result, we have many products prepared for lead-free soldering but we are missing some components meeting the temperature requirements. If one component is not approved for lead-free solder, the process cannot be used on that board. In cases when this is not achievable, we are looking for alternative design solutions.

This will enable us to start lead-free production in the second quarter of 2002 for completed boards and then gradually switch for other new boards when our suppliers are ready.

Halogen-free flame retardants

Goal: Eliminate halogenated flame retardants in printed boards in 80 percent of new products, from 2002

Brominated organic flame retardants constitute an ecological threat serious enough for Ericsson to initiate a project for their replacement with nitrogen-phosphorous compounds or inorganic compounds. Begun in 1999, this project has borne fruit in 2001.

Ericsson has defined alternatives to brominated flame retardants for printed boards for more than 80 percent of the board types. The implementation will start, during 2002, with the next release of the 3G radio base station.

We are also evaluating alternatives to change flame retardants for use in our existing product portfolio. This is far beyond the primary goal. It is important for us to create

The power consumption of the new GSM base station, RBS 2206, is 25 percent lower and has a 50 percent smaller footprint, for the same capacity and coverage as the previous generation model RBS 2202.

In focus

- 3G networks are receiving a strong focus, in particular, creating lead-free radio base stations – identified in our life-cycle assessments as the most important nodes. The first printed board assemblies using lead-free solder for 3G radio base stations are going into production in the second quarter of 2002.
- Lead-free ASIC processor packages from various suppliers are being assessed as a priority.

sufficient volumes of these new materials to avoid increased costs. To address this, we are working with our suppliers to develop purchase agreements meeting these criteria.

We are confident of reaching this critical mass, as our drive for the elimination of halogenated flame retardants continues into 2002.

Beryllium oxide elimination
Goal: Eliminate beryllium oxide in all new products, except for Traveling Wave Tubes, from 2002

Beryllium oxide is known to constitute a health risk in the end-of-life stage. Whilst most of Ericsson's products have never used beryllium oxide, a few products have incorporated components containing this compound for heat transfer.

For our mobile telecom systems products, we have now successfully sourced alternative components and design techniques, achieving our goal of eliminating the use of beryllium oxide in new designs released after year-end 2001. One exception to this is Traveling Wave Tubes, in radars, where we are still working to find an alternative, and for that reason we have reworded our goal.

In old designs, a small number of beryllium oxide-containing components are still being used and we are actively working to phase out all of these during 2002.

An example is the RBS2401 GSM radio base station (in full production since 2000), which is totally beryllium oxide-free.

Ericsson willingly shares its knowledge and expertise in the area of environmental design. In 2001, we were

delighted to contribute the Design for Environment chapter in a study book on the *Fundamentals of Microsystems Packaging,* published by McGraw-Hill.

This board uses halogen-free flame retardants and is prepared for implementation in the next version of our 3G radio base station, later in 2002.

Refining End-of-Life Treatment

Ericsson takes responsibility for recycling and disposal of its products and has developed effective and proactive end-of-life treatment programs.

Our strategy

Goal: Develop an end-of-life strategy for each segment.

Evolving effective end-of-life strategies for business-to-business products is a core part of our drive to create a safe and clean environment.

We not only develop our own global End-of-Life Treatment (EoLT) programs, we also encourage others to have high expectations and to assume greater responsibility that positively addresses environmental issues.

Wherever possible, we also promote the creation of cross-industry cooperative frameworks that encourage economically optimized ways of fulfilling EoLT.

'Take-back' infrastructure and initiatives

An important factor in EoLT is knowing the contents of the products being taken back for recycling. At Ericsson, we operate a detailed database of product components for this purpose.

Waste is nothing more than a mixture of organic and inorganic materials, and should be regarded, valued and treated as raw material in a competitive waste-refining industry. This means normal business principles should be applied – including improving resource- and cost-efficiency, and allowing market forces on the product and waste sides to encourage effective EoLT.

In 2001, we have adopted this approach in our stakeholder vision and goal setting processes. Ericsson has implemented special 'take-back' initiatives, including the Ecology Management Service and the Ericsson Enterprise EoLT Offer.

Ericsson's Ecology Management Service project in Europe was completed in early 2001. Now a standard part of equipment offers, the project was responsible for approximately 180 tons of equipment being taken back and effectively recycled (double the amount of the previous year).

The Ecology Management Service will be rolled out globally in 2002, after which we shall be able to provide our customers with both regional and global support for all their EoLT programs.

To implement the Ecology Management Service initiative, we have undergone a process during 2001 to select a specialist recycling service provider with international presence. This process is now complete.

We are pleased to report similar success with the Ericsson Enterprise EoLT Offer. This involves the recycling of enterprise products, such as MD110 PBXs and BusinessPhone terminals and their subsequent replacement with new systems.

Run by Ericsson Enterprise, this program is open to all partners in the EU, Norway and Switzerland, and involves 'free-of-charge' disposal.

Our partner or end-user pays only for transportation of equipment to our collection points. There is no costly administration or paperwork involved, they just collect the waste, mark it 'Recycling' and forward it – at any time – to our collection point. Here it is sorted and dismantled before being sent for smelting and further recycling.

In 2001, we have extended the offer further by combining it with 'new sales' incentives. When a new switch is purchased, we replace, transport, and recycle the old equipment – even if it is another supplier's.
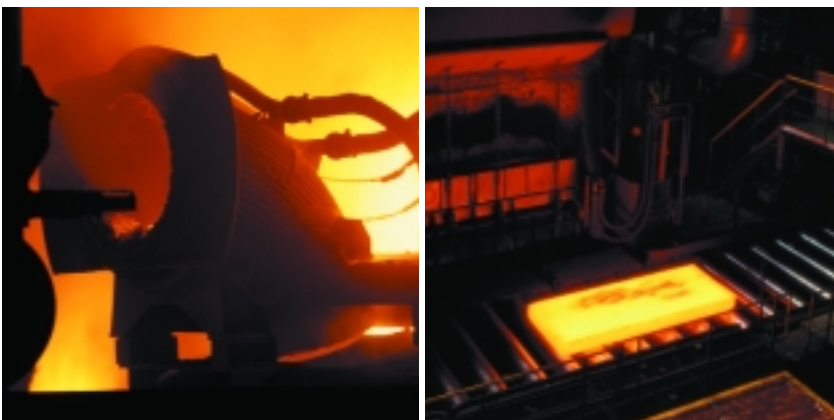
Although operating only in Europe, the Ericsson Enterprise EoLT Offer has resulted in 20 tons of equipment being recycled. We expect to see a doubling of these volumes every year for the next five years.

Instructions to partners and major customers on how to use our recycling service are provided.

Supporting goal-orientated regulation

The United Nations Global Compact calls for greater industry involvement in bridging global divides – recognizing industry's role in building a more sustainable world. Indeed, industry has for many years been moving towards sustainability, as a natural complement to building cleaner, more efficient and profitable operations.

The implementation of Producer Responsibility legislation is a way of assessing and encouraging this contribution.

However, Ericsson believes that the current European legislative approach is unlikely to succeed, as it favors small-scale recycling of organic polymers which, we believe, will result in poor-quality results and will not be economically viable. The legislation will most probably preclude processes like large-scale gasification, which could produce high-quality 'virgin' organic products on a large scale.

We are also aware that while producer responsibility drives sustainability in theory, for it to be effective at a practical level, it must also stand up legally and be addressed to the right organizations at the right stages in the product life-cycle.

In fact, it may be time for a 'Global Compact' initiative – one that is less prescriptive and supports, rather than curtails, future technical invention as the basis for sustainable development.

Integrated resource and waste management
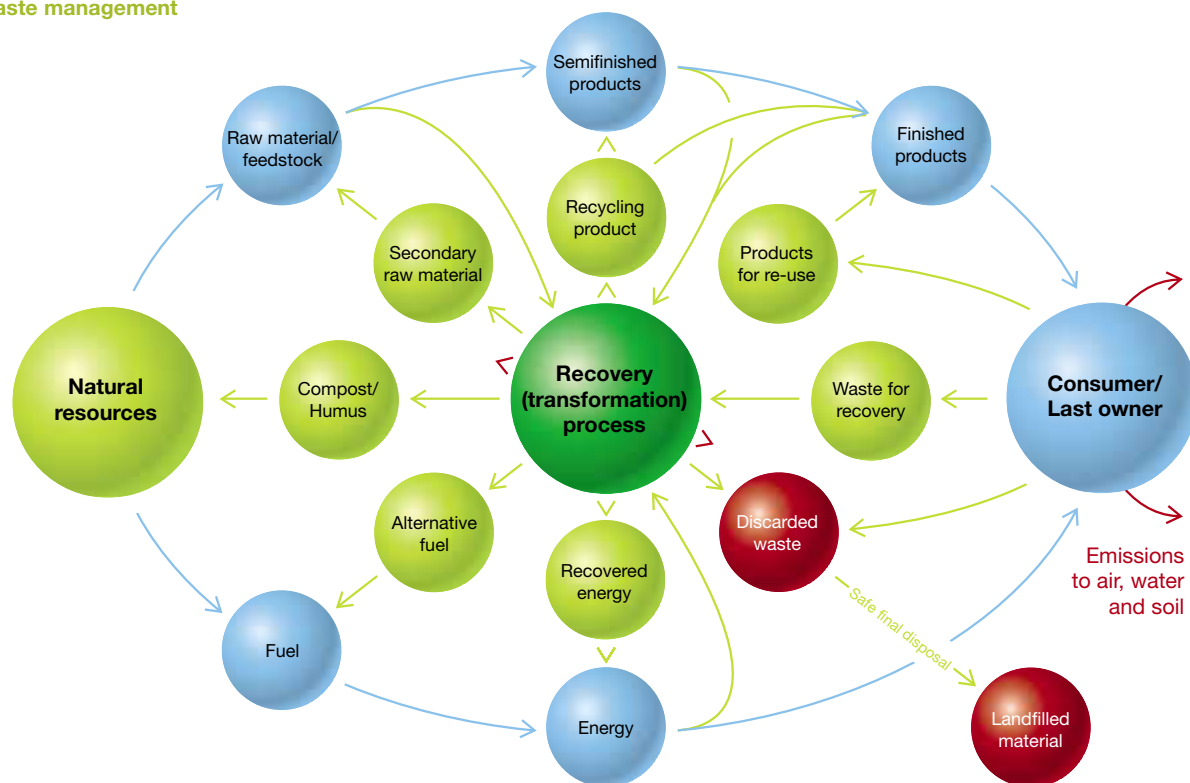
Professionalism, respect and perseverance

We care about the people who take part in all phases of our operation worldwide.

Building for the future

2001 was one of Ericsson's most dramatic and eventful years. Our valuing of professionalism, respect and perseverance have proved particularly important in this challenging environment. We made adjustments in the structure and staffing level of the company in response to the sudden industry downturn. This came quicker than anyone expected, and the world economy went into recession, affecting us and our customers.

In 2000 and 2001, the corporation set out to reduce the run-rate of operating costs by SEK 38b. prior to year-end 2001. We have achieved this objective. This transformation has been a demanding process for us all.

At year-end 2001, we had 85,198 employees – 22,000 fewer than in the first quarter of 2001. This has meant losing valued colleagues and friends, and Ericsson has striven to behave in a responsible and sensitive manner to all those affected.

We have been able to make a large proportion of these redundancies through outsourcing and divestments. Approximately half of those who left Ericsson are now working in other companies, such as Flextronics, or companies that Ericsson has sold. Wherever possible, we are helping many others find new jobs through our different programs.

We believe it is essential to provide a good working environment for our employees and this includes: excellent leadership; clear goals and roles; and opportunities for each employee to influence his or her development and that of the company.

Code of Conduct

Goal: Inform our strategic supplier alliances about the Code of Conduct and their required compliance, by end of 2002

We believe it is important to behave in a socially and ethically responsible way, and we care about the people that work in all phases of our operation worldwide.

During 2001, we revised our Code of Conduct to more clearly define the rights and working conditions applicable to people involved in any aspect of Ericsson's work.

The Code of Conduct is a corporate directive which we apply equally to workers in our suppliers' organizations as well as our own. This is the first step in a process that will establish routines and procedures to ensure that these conditions are met internally and by our suppliers.

The development of the Code of Conduct is one concrete action that has resulted from our signing of the United Nations Global Compact in 2000. It is also based on International Labor Organization conventions and does not change our values regarding the way we conduct our business. It has been revised to clearly define our commitment.

The Code of Conduct covers a broad range of issues, not limited to, but including: basic human rights and the right to have a workplace free of harassment and discrimination based on someone's protected characteristic, such as race, sex, age, etc. It covers observation of standard working conditions like the right to a safe working environment and regular wages.
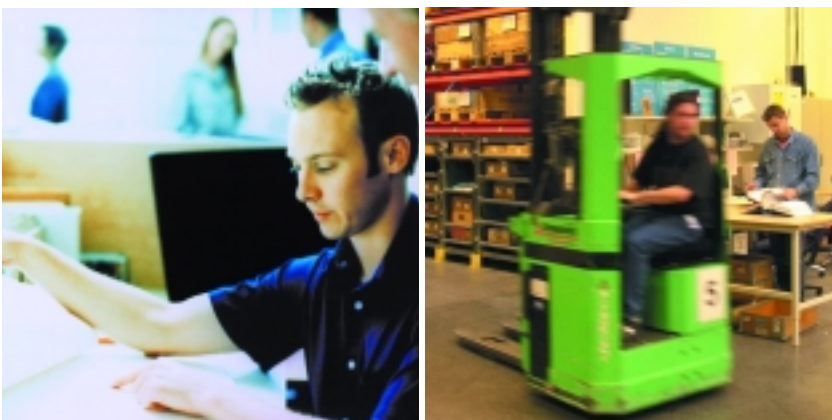
The Code of Conduct calls for trust and cooperation from our workers, suppliers and sub-contractors. It reserves the right to monitor and make unannounced visits to sites where work is done directly or indirectly for Ericsson.

This Code of Conduct has to become part of the fabric of our everyday working lives. We are now defining how we can best develop training and communication to ensure that the words and values it represents are understood and embraced by our staff worldwide.

Part of this development process includes a reporting or auditing system to monitor compliance.

The process of working with our suppliers to ensure compliance with our Code of Conduct has begun. We are developing instructions and audit routines to check compliance and have completed training of the first group of auditors.

At the end of 2001 we tested these tools in our operations and with some suppliers, in Brazil and China. Following modifications and refinements, a new round of audits has begun. This will include several suppliers that represent a broad spectrum of our purchasing activities. It is our objective to ensure that the tools we develop are applicable and relevant to all products we purchase. This will establish a base for our auditing program.

Standards adherence

We apply strict external environmental, health and safety standards – and in their absence develop our own.

Transparency

We shall be transparent in our reporting of business performance, progress and key customer concerns. Evidence of this commitment is that we, for the first time, are reporting on our social performance.

We believe that our presence is contributing to the economic and social development in those countries where we are active. We are convinced that the development of telecommunications encourages contacts and openness between people, encouraging democratization.

Opportunities

Ericsson is an employer of choice, offering opportunities to develop and rewarding achievement.

A culture of performance

We are working hard but how effective are we? We need to continually ask this question. We have implemented a performance management process to help measure our effectiveness and aid in our efforts to encourage a performance culture.

Information for this process is gathered from a variety of sources, including customer satisfaction measurements, employee feedback and key performance indicators. We then measure our performance against our defined objectives to see how well we have done. These results are communicated to our employees – establishing a common understanding of our progress in relation to our customers' expectations.

Competence when it's needed

A challenge for us is having the right competence where and when it is needed. We have a systematic way to benchmark existing competencies against those that we anticipate will be required in five or even ten years' time. As part of this, we conduct a 'gap analysis' to identify future requirements and develop action plans to obtain the necessary competence.

Five years ago, we introduced a competence management process worldwide. Connected to our strategic planning process, this has helped us identify competence gaps to be filled and also where competencies are no longer required.

With the complexity of today's tasks, individual competence is not enough to excel. It is important to work effectively in teams and share knowledge through participation in competence networks. This is increasingly the way work will be completed.

Currently, Ericsson has 12 large knowledge networks, the largest of which has around 1,000 people.

Ericsson is a knowledge-based corporation requiring continuous updating and development of skills. We use a variety of ways to develop the talent of our employees, including formal training provided by Ericsson University through to more informal opportunities for job rotation and international assignments.

Ericsson University was started at the beginning of 2001 to coordinate our education and training activities globally. Our goal is to further enhance the educational output and learning through a coordinated focus on business goals supported by extensive cooperation with academies worldwide.

Ericsson University activities are centrally coordinated from Stockholm with regional hubs delivering technical, management and business training.

Job rotation is frequently used and encouraged as a powerful tool to enhance and broaden the competence of our employees. Open positions are advertised globally on our intranet and employees can apply according to their interests and qualifications.

As a multinational corporation, Ericsson views it as extremely important that our employees can work in a multicultural environment. We use contract assignments as a way of enhancing and developing this skill. At year-end 2001, there were 2,800 employees on assignment outside their home countries.

Most jobs are advertised within the company and all suitably qualified employees are encouraged to apply. Those accepting the opportunity to work abroad are offered a guaranteed return to their 'home' organization. The opportunity to live and work abroad is viewed as a very attractive aspect of employment with Ericsson.

To attract top talent, we must be an attractive employer. The scope of our recruiting is expanding from having a local focus to having a more regional and global scope. We're working to make ourselves known through local market activities, as well as at top business and technical schools around the world.

Sharing the rewards and motivating long-term contribution

Ericsson companies around the world develop local remuneration programs that are competitive in their respective markets and geographic areas. These take into consideration the overall Ericsson policy, including the global incentive plans, as well as local practices in each country.

In addition to wages and benefits paid to employees, Ericsson manages a number of global incentives that are developed and coordinated centrally to motivate performance, reward achievement and encourage long-term commitment to the company.

During 2001, employee incentives included a Short-Term Incentive Plan, a Stock Option Plan and a Stock Purchase Plan.

The Short-Term Incentive Plan rewards achievement of specific targets at business and team levels and defines a

global norm for incentives as a flexible part of renumeration to be applied throughout the company.

The Stock Option Plan and the Stock Purchase Plan both encourage long-term commitment and reward employees with ownership opportunities and related rewards. During 2001, approximately 14,000 employees were granted stock options as 'key contributors'.

We are currently launching an additional stock purchase program with corporate matching called the 1+1 Stock Purchase Plan. This program is available to all employees in the countries where this is possible. It is planned for implementation in 90 countries. With the corporate matching portion beginning after three years, this program shares the benefits of our success with our employees and helps motivate and retain them.

Measuring employee satisfaction

As part of our effort to be a good employer, we actively canvas the thoughts and opinions of our employees through our annual employee survey. This provides us with an in-depth understanding of our employees' attitudes in a variety of areas.

For decades, this has been performed locally. However, in 1999, to obtain more consistent information globally and enable external benchmarking, we began using a tool called Dialog.

With Dialog, each manager receives anonymous feedback from his/her employees and, following discussion, this is used as the basis for planning and improvements. We also benchmark these indices against other technology industries globally.

Leadership

Once someone has been identified as having management potential, his/her background, achievements, experience and development plans are collected in a central database for further assessment.

Newly appointed managers worldwide attend a mandatory 15-day leadership program. Approximately 2,000 managers attend annually to establish a common management platform across our operations.

We are currently reviewing our executive resources population to achieve several objectives: rejuvenation, to ensure fresh approaches and ideas; internationalization, to develop more non-Swedish executives; and female representation to encourage more women into executive management roles.

In addition to Ericsson's own programs, senior executives are offered a range of training and development opportunities developed in conjunction with world-class universities and business schools. Approximately 400 executives participate in these programs annually.

Our Excelerate Global Management Program accepts internal and external candidates and manages the participants through a dynamic program that is a mix of job rotation, projects, theory, literature studies, personal development and international networking. During 2001, we received 3,200 applications for the program and 20 of these were accepted.

In 2001, we were reminded about how unsafe travel can be. For the safety of our employees, we provide a wide range of information about safe travel routines, as well as up-to-date information on the risk of travel to countries or regions that may be volatile. This is easily available on our intranet. In areas where we have identified a risk, we have evacuation plans.

Making a difference

Ericsson is committed to being a responsible member of the global society and contributing positively to the communities in which we operate.

Using our strengths and global presence to help others

One way we can make a significant contribution is by providing resources and expertise in response to human and natural disasters.

We are using our global presence and communications capabilities to support international organizations, such as the International Federation of Red Cross and Red Crescent Societies and the United Nations in their efforts to provide humanitarian relief in areas of urgent need.

Ericsson Response is a global initiative that harnesses and directs our communications expertise and resources to respond to and alleviate human suffering. We regularly contribute skilled staff, technical capabilities and equipment to several relief operations worldwide.

Through our endorsement of the United Nations Global Compact, Ericsson is committed to increasing awareness of the issues associated with disasters around the world. As part of this, we are helping to develop better and faster solutions for disaster preparedness and response.

By taking these positive steps, we believe we can also add value and improve customer relationships, discovering and developing new partnerships and opportunities along the way. In addition, we believe it facilitates recruitment, improves employee retention, and increases employee pride and motivation. Wherever possible, we genuinely encourage and empower our employees to make a positive difference to society.

Whilst there are numerous examples of this philosophy in action, here are just a few highlights from our relief activities in 2001.

Afghanistan

Ericsson has provided a GSM network, for six months, dedicated to supporting the United Nations humanitarian operations in Kabul, Afghanistan.

With capacity to handle 5,000 subscribers, the network is providing critical communications to enable relief workers and aid organizations to coordinate their operations in this highly volatile and sensitive area.

Deployed through the Ericsson Response program, the GSM system works in conjunction with the UN's existing short-wave network. The containerized system – known as a 'MiniGSM' network – includes all the necessary switching and terrestrial radio and satellite communications equipment. Several hundred extra rugged GSM (R250) handsets have also been shipped for use with the system.

Deploying an operational GSM system quickly and in complex and difficult circumstances required good global teamwork and close coordination between many Ericsson locations across the world. It also required dedicated and highly skilled volunteers, from Ericsson Turkey and the Ericsson Response program, to install and set up the GSM and satellite system within Afghanistan itself.

Disaster Management Information System

As well as responding quickly to international incidents, we are also actively helping to prepare, in advance, for future relief efforts through the Disaster Management Information System (DMIS).

Launched at the end of 2001, the DMIS network has been developed by the International Federation of Red Cross

and Red Crescent Societies, to strengthen the emergency preparedness and response capacity for management of disaster situations at national, regional and international levels.

The system consists of a disaster monitoring and emergency system, online databases, statistics, documents and web-based resources. The creation of DMIS would not have been possible without the support of Ericsson Response, which provided volunteers to support the development of the system and its web architecture.

United Nations GSM network

For many years, Ericsson has demonstrated consistent support for the United Nations and many of its international projects. In 2001, we donated an end-to-end GSM mobile communications system to complement the UN satellite network based at its telecommunications center in Brindisi, Italy.

It is envisaged that the GSM mobile communications system will further improve the quality and efficiency of UN humanitarian relief operations worldwide.

Ericsson's donation encompasses network hardware and software, and handsets. We are also providing – at no cost – comprehensive services and support including installation, testing, training and remote support, for a period of two years following the system launch.

Technical support to relief organizations

In addition to our ongoing activities with major international relief organizations, we constantly seek new ways to improve our ability to make a difference. To this end, we have created a Technical Reference Group that meets twice a year to identify needs and develop technical proposals and applications for more efficient disaster response communications.

Voluntary and local initiatives

Complementing the programs and activities originating from Ericsson's corporate office are the many local initiatives championed by our employees around the world. Our local companies support the needs of their communities through Ericsson Response and a broad range of activities, including cultural initiatives: educational and schools programs; regional charities; local community causes; and even the protection and preservation of rare animal and plant species.

Support is provided in the form of financial aid, as well as through non-monetary contributions such as voluntary work and the donations of goods.

Local Red Cross support

In many areas, our international and local relief efforts can work hand-in-hand. For example, as a result of our joint activities with the International Federation of Red Cross and Red Crescent Societies, many of our local offices expressed an interest in developing programs in their own areas in conjunction with their local Red Cross or Red Crescent organizations. Via Ericsson Response, activities are now under way in several countries to support this initiative and provide local employees with a tangible way to make a difference to their local communities.

Ericsson Response – global support in disaster relief efforts

Actions

- Afghanistan, humanitarian aid
- Algeria, response to floods
- Belize, response to hurricane
- Pakistan, humanitarian aid preparedness
- USA, response to New York and Washington DC terrorist attacks
- Peru, response to earthquake
- Africa, telecom assessments
- Vietnam, disaster communications preparedness
- India, response to earthquake
- El Salvador, response to earthquake

Safety is key

We ensure that our products are designed and tested to comply with all relevant safety standards and we support independent research on possible health effects related to wireless communications.

Electromagnetic field exposure

Since our first involvement in the wireless industry, we have not only ensured that our products are designed and tested to comply with all relevant safety standards but have worked to support independent research into electromagnetic field (EMF) exposure. In 2001 alone, Ericsson's total funding of independent bioelectromagnetic research was approximately SEK 8m.

Whilst there have been extensive studies by public health authorities and independent groups, it is important to remember that the balance of scientific evidence does not demonstrate any negative health effects associated with radio wave exposure either from mobile phones or radio base stations.

At the beginning of 2001, two peer-reviewed epidemiological studies were published – neither of them found an association between mobile phone use and cancer.

Furthermore, in 2001, at least seven independent expert reviews on EMF and health were also issued. All of these concluded that, based on current knowledge, exposure to radio frequency (RF) fields from mobile phones or their radio base stations has not been shown to cause any adverse health effects.

Research support

Ericsson, however, also acknowledges the recommendation from expert groups and health authorities that additional research is needed to address identified knowledge gaps and thereby further increase the knowledge about radio waves and health. Although we do not conduct our own medical research, we actively support the efforts of other independent organizations, such as the World Health Organization, which has established a research agenda with prioritized EMF research.

We continue to support ongoing projects and began in 2001 contributing to a new health research program in the UK. The research projects that Ericsson currently supports include:

- INTERPHONE – an international epidemiological case control study on the potential links between cancer and the use of mobile phones. Involving 13 countries, it is part of the European Commission's 5th framework research program.
- PERFORM-A – a series of studies across six European countries into possible health effects related to mobile phones and radio base stations. This is also within the European Commission's 5th framework research program.
- MTHR – Mobile Telecommunications and Health Research Programme, a comprehensive program set up by the UK Government and jointly funded by government and industry.

Mobile phone manufacturers and operators, including Ericsson, contribute approximately half of the SEK 250m. cost of funding these projects.

Information initiatives

We are committed to providing adequate information about health and safety that helps answer questions that people may have.

In July 2001 – eager to address the need for well-defined safety guidelines and measurement procedures – the European Commission published a European standard for specific absorption rate (SAR) testing of mobile phones.

The standard was an important milestone for our industry and a real high-point for Ericsson's commitment to providing relevant and useful information on radio wave exposure and SAR. We are pleased to report that, since its creation in October 2001, Sony Ericsson Mobile Communications has released SAR information for all new mobile phones.

Ericsson has also extended its information package on base stations and health and made it available in different languages to increase accessibility. We are also partnering with telecom operators to ensure dialog with different stakeholders when installing radio base stations and antennae.

Additional information regarding EMF is available from our website (www.ericsson.com/health).

Aesthetics are important

Technological advances combined with other visual solutions can improve antennae aesthetics.

Antenna aesthetics

The mobile revolution has undoubtedly delivered freedom, but the more people use mobile phones, the more antennae are needed to deliver the quality of service and ubiquitous coverage consumers' demand.

Ericsson has always placed importance on being 'aesthetically' sensitive. And we shall continue to minimize the environmental impact of our antennae.

However, this is a growing issue with global subscriber forecasts escalating and 3G systems coming to fruition, the requirement for new radio sites is higher than ever.

The environmental impact of radio masts has always been of interest. In the early days of mobile communication relatively small numbers of base stations were required.

As capacity and coverage have grown, so too has the number of sites and, consequently, public pressure for these to be as discreet as possible.

Design trends

Modern digital cellular technology, operating at higher frequencies, has enabled new levels of design flexibility.

We now have smaller, more discreet units. For example, antennae in the 1710–2170MHz range have only one-third the exposed front surface area of the 900MHz units.

In addition, the introduction of protective covers for antennae has enabled them to be painted different colors to blend in with their surroundings.

There is a limit, however, to how far technology can 'shrink' before function is affected. Similarly, custom painting and camouflage techniques are costly.

Ericsson believes that there is still scope to improve antenna aesthetics. The most obvious is to ensure there are as few antennae as possible by making existing sites more efficient. This can be achieved by optimizing technology, for example through:

- Polarization diversity, can replace two horizontally separated antennae (for space diversity) with a single unit.
- Combining methods, which enable transmitters to be connected to common antennae, while duplexing enables transmitters to use the receiving antennae, typically providing a threefold reduction in antennae per sector.
- System combination – multifunction antennae that combine lower band 824–960MHz with higher band 1710–2170MHz frequencies enable single sites to support two different systems.
- Operator cooperation – antenna systems can be shared by operators who can still utilize their own radio equipment on a combined network.

Ericsson places a strong focus on how antenna parts are mounted and the appearance of ancillary equipment and cabling. We advocate great care to ensure there is no over-dimensioning of masts, towers and supporting poles.

Ericsson's global commitment to tackling aesthetic issues recognizes that there is great local variation in what is deemed acceptable, depending on cultural and legal requirements.

The design, planning and implementation processes must be flexible enough to assess and tailor each antenna installation to local requirements.

The picture on the left shows traditional mast-mounted antennae. The one on the right is an example of how antennae maybe integrated into the surrounding environment.

Ericsson as an employer

Diversity

We are striving to have a diverse workforce. When reviewing our current management we have recognized that we could improve especially in the following areas:

- Rejuvenation
- Internationalization, i.e. more non-Swedish managers
- More female managers.

Today, women constitute nearly 30 percent of our workforce. By striving for a more diversified next generation of managers we work to encourage all our employees to develop their skills within Ericsson. Ericsson has since 1999 been running the Ericsson European Equality Award. The objective is to stimulate actions that support the work for equality within Ericsson.

Discrimination

We have clear and far-reaching policies against discrimination that are respected and part of our company culture.

Employer of choice

According to a yearly survey conducted by Universum, an international research and management consulting company specializing in the career expectations of today's university students and young professionals, Ericsson is ranked the preferred employer in Sweden.

In similar studies conducted in the US and Europe, where Ericsson is less well known than in Sweden, we did not rank as well as in Sweden. However, we see a positive trend in both Europe and the US.

The share of our employees with academic degrees is steadily increasing and, during the period betweeen 1998 and 2001, the share went from 37 to 49 percent.

Employee satisfaction

We survey employee satisfaction globally and measure two important indices annually – the Human Capital Index and the Empowerment Index. The understanding of our employees' attitudes helps us to create improvement projects to reach our goal to beat the industry average. Despite the turmoil in the industry, we see a positive trend in our employee satisfaction figures.

Average length of employment and personnel turnover in figures

At year-end 2001, the average length of employment was seven years. The average personnel turnover during 2001 among the surveyed companies was eight percent.

Note on values and calculations: This is Ericsson's first sustainability report and systems for data gathering for some dimensions are yet to be finalized. Much of the information above is based on a survey covering 80 percent of our employees. Statistical errors may occur and information may be missing. Ericsson is constantly striving to improve the quality of its data.

Average number of employees 1999-2001									
			2001			**2000**			**1999**
Consolidated	**Men**	**Women**	**Total**	**Men**	**Women**	**Total**	**Men**	**Women**	**Total**
Western Europe*	45,223	17,247	62,470	45,229	17,993	63,222	48,597	19,134	67,731
Central and Eastern Europe, Middle East and Africa	3,491	1,181	4,672	3,419	1,182	4,601	3,119	1,062	4,181
North America	6,947	2,910	9,857	8,903	4,532	13,435	8,189	8,189	12,174
Latin America	4,969	1,787	6,756	5,568	2,238	7,806	6,571	2,054	8,625
Asia Pacific	7,894	3,770	11,664	8,497	3,992	12,489	7,826	4,429	12,255
Total	**68,524**	**26,895**	**95,419**	**71,616**	**29,937**	**101,553**	**74,302**	**30,664**	**104,966**
*Of which Sweden	27,703	11,432	39,135	26,726	11,153	37,879	30,254	12,939	43,193
*Of which EU	44,144	16,982	61,126	44,164	17,685	61,849	47,368	18,868	66,236

Ericsson and the world outside

Voluntary contributions via our local markets

Our survey of 20 percent of our organization found contributions of over SEK 16m to good causes in the local communities. This figure represents a significant investment given the financial difficulties we faced this year, but numbers alone don't tell the whole story.

There is no easy way to summarize the thousands of contributions to individual communities by Ericsson and its employees. So we will not try. Instead we would like to give you a flavor of some of the ways in which our employees around the world have enriched their communities. The stories chosen are not the biggest or even the best, but a representative sample of what we do.

Volunteer counseling

In Lynchburg, Virginia, volunteers work with a Big Brothers/Big Sisters program. They are acting as mentors for children who are in a single-parent home or are considered 'at risk', usually academically. Volunteers spend time one-on-one with their Little Brothers/Sisters to help them with homework or to just listen to whatever is on the child's mind at the time.

Helping feed the hungry

In Brazil, employees get together and collect monthly money to buy food baskets and Ericsson matches their contributions. This program has supported the distribution of food baskets to approximately 1,800 poor families, and is partly sustained by donation of printer cartridges for recycling.

Supporting education

This year, in addition to building our second school, Ericsson is working on an ongoing basis with the READ Education Trust and its work toward developing greater speech and debating skills among students across South Africa. This year alone 30,000 learners were equipped with skills for speech and debating.

Preserving wildlife

Ericsson, together with the Administration Bureau of Hoh Xil national nature reserve jointly announced the establishment of the 'Ericsson Earth-Friend Brigade' for protecting Tibetan antelopes.

Hoh Xil has evaded the harsh destruction caused by human activities and kept its highland landscapes intact. In recent years, however, driven by tremendous economic profits, poachers have illegally hunted wild animals without restraint. Official statistics show that the total number of Tibetan antelopes has decreased drastically from more than 100,000 to less than 50,000.

The gift of music

In the Netherlands, Ericsson sponsors a music fund run by the National Children Help Foundation. The fund provides musical instruments to children between 10 and 15 years old who come from disturbed homes.

Voluntary contributions

- Disaster preparedness & other
- Relief efforts & health care
- Education & knowledge transfer
- Social & humanitarian
- Arts & culture
- Environment

Total estimated value 125 MSEK. We have included all corporate programs contributions and figures on local initiatives reported by 28 of Ericsson's over 200 organizations. A more complete inventory of local voluntary contributions will be included in next year's report.

Reaching for global improvement

Through improved communication solutions, Ericsson encourages sustainable economic development in emerging markets across the globe, expanding markets, enriching skills and sharing knowledge.

Bridging the digital divide

Making communications technology more accessible, affordable and scalable to meet the needs of emerging markets plays an essential role in developing sustainable world economies.

Today, 85 percent of the world's population is not Internet-enabled. The majority has no established telecommunications infrastructure and little access to other communications technologies. Over half the world's population has never made a phone call.

Bringing communication capability to isolated regions supports an inclusive society and encourages expansion of local markets. Mobile phones help people avoid unnecessary waiting, searching and traveling. Better communication encourages the transfer of knowledge and helps overcome cultural division.

Addressing these markets is a challenge. We are continually evaluating technologies and business models to expand the availability of communications to a broader number of people, in a greater number of countries.

Our new business models enable us to supply viable solutions to emerging market economies. This is a central part of our global economic support program.

GSM 'emerging markets' solutions

During the past year, we conducted a project – the Ericsson MiniGSM system – that we hope will form the basis of a generic 'emerging markets' solution.

Designed to provide a solid communications network in regional and rural areas, the MiniGSM system helps overcome economic and logistic issues, and provides a viable platform for the creation of common wealth.

The system can either be used as a 'stand-alone' solution – with its own network identity – for local traffic, or as an 'add-on' to an existing GSM system. It fully supports speech and data communication, making it a good start-up solution for a growing economy.

The MiniGSM system is currently being rolled out in India, Russia, Turkey, Uzbekistan and Afghanistan, where deployment is focused mainly on rural areas with no previous telecommunications infrastructure.

MiniGSM is also evolving a new business model to support the Micro Operator Concept. Similar to 'franchising', this allows an independent micro operator to rent the system from the main franchise holder or owner. Components may be rented on a revenue-sharing basis or bought by operators or investors for building their own business solutions.

A successful micro operator trial has already been carried out where 1,300 subscribers are now connected to the franchised system.

Using the sun to help connect the world

A stand-alone or complementary solution to the MiniGSM concept is SunSite, an innovative solar-powered radio base station (RBS) site solution that means lack of electrical power supply is no longer a hindrance to the deployment of mobile services.

SunSite is a solar-driven RBS site solution designed for GSM 900MHz, 1800MHz, or 1900MHz operation with Ericsson's highly power-efficient RBS2302 Micro Base

These pictures show a turnkey SunSite which is an innovative site solution optimized for up to 200W power consumption. On the tower is a radio base station, RBS 2302, a microwave link and antennae.

Station and MINI-LINK™ microwave transmission, which connects the base station to the mobile network.

Ericsson's SunSite solution enables coverage to be rolled out very quickly in many remote and extreme-condition areas, in a cost-effective and environmentally attractive way.

Knowledge transfer

We provide opportunities for the transfer of knowledge and expertise to developing areas, enriching their skill base. Giving people the means to communicate is good, but is not, in itself, sustainable. We must also impart knowledge about the systems we sell. Therefore, we bring our own experts to the area and also invest in educational programs and initiatives. Through these activities, we develop and grow the local skills base.

International skill

Ericsson aims to contribute to the economic development of its markets by continuing to invest in people and skills. More than 18 percent of all employees are currently working in developing countries and Eastern Europe and the Commonwealth of Independent States. About 30 percent of these employees work in manufacturing. This helps to support and raise the local skill level and makes a positive contribution to the economic development of all countries in which we are active.

The development of our people is vital to our success. In our industry, we face many challenges and must constantly adapt to stay ahead in an increasingly competitive world marketplace. Our skills and knowledge are crucial and need constant refreshing to keep up with new technologies and trends. Knowledge sharing at all levels is encouraged and supported with dedicated training and educational programs.

The Chinese experience

A good example of these principles in action is to be found within Ericsson China, operating at the heart of the dynamic Asian communications market. Here, the Ericsson China Academy offers a unique seat of learning that is helping to nurture and grow the region's future infocom leaders and influencers.

The China Academy provides graduate level education for Ericsson's own managers as well as those of telecommunication operators. Through cooperation with Chinese and international universities, the China Academy offers a 'Master of Management in Infocom' and 'Master of International Management'.

Started in 1998, these programs were designed to provide tomorrow's telecoms professionals – who will have to manage a more complex business and value chain – with broad market knowledge and insight into modern management techniques and models. Over 500 students have already enrolled in the master education programs, and 270 have now successfully completed their studies and been awarded a master degree from cooperating universities.

We see the academy's work as vital to providing modern managers and future leaders with the best mix of theoretical insight and practical understanding to prepare them for the challenges of an increasingly privatized, internationalized and converged market.

Supporting supplier sustainability

We work with suppliers and outsourcing companies across the globe – many of them from developing regions. We have a constructive attitude to our suppliers, sharing knowledge and technology with them and ensuring that they have the competence to carry out work for us. We have a number of supplier training courses offering assistance to expand their expertise.

In addition, we encourage them to behave responsibly toward their employees, their communities and the environment. This not only ensures that our products are produced ethically, but also gives our suppliers a healthy, resource-efficient outlook. Sustainable management is good management. Ensuring that the businesses we work with are managed with care is good business for everyone.

Reaching toward our future

To help the world progress toward sustainability, we must think about man's long-term development in partnership with the environment.

We actively develop products and services that support resource-efficiency. In this report we have already highlighted a number of services that save human and environmental resources such as remote heart monitoring systems and solar-powered base stations.

Ericsson believes that the multimedia capabilities of third generation (3G) and coming generations of mobile networks, will encourage significant advances in sustainability – enabling us to use the world's resources more efficiently.

We are a leading force behind the successful development of mobile telephony. This leadership role is supported by extensive R&D commitments that constantly monitor current and future trends – investigating, expanding and evolving new technologies that may be beneficial in both the short- and longer-term.

With the current introduction of General Packet Radio Service (GPRS) and 3G mobile systems – including Wideband Code Division Multiple Access (WCDMA), CDMA2000 and Enhanced Data Rates for Global Evolution (EDGE) – the Mobile Internet has the ability to take this contribution to a new dimension.

Over the next few years, our research will be focused on how to evolve Mobile Internet with higher capacity and novel services. This is a natural progression from our previous and current investments, which continue to drive innovative and more resource-efficient platforms for second and third generation mobile systems.

Planning for the long-term

We analyze future ways of working, changing trends in society and emerging technologies to ensure that our platforms will support solutions for sustainability. To encourage these applications, we engage in business partnerships, joint ventures and collaborations.

Our analyses of long-term issues are key inputs to our strategic planning process. Our corporate futures group, Ericsson Foresight, is a networked 'think-tank' with an outlook of ten years and beyond. The goal is to provide early warnings, create awareness and stimulate conversations about new business opportunities and threats, as part of the strategic scanning process.

The group relies on an external network of leading future thinkers, institutes and academics worldwide, and also on a large internal network of foresight associates across the company.

The ultimate challenge for the communications industry will be to ensure that this technology addresses the needs of a sustainable world. It needs to be easy to access and simple to use – so that mobile users can control and optimize their time and activities – while minimizing costs and resource consumption.

Selected Foresight projects during 2001	
Workforce of Tomorrow	The Future of ICT Power
Macro-trends in China	Foresight Innovation Game.
Future User Interaction	

Afghanistan getting its first ever GSM network. A system loaned by Ericsson Response to the United Nations humanitarian organizations and the interim administration in Kabul.

Economic key figures

The economic and the financial results are not equivalent. The financial concerns the value of transactions that pass through a company's books. The economic, on the other hand, extend beyond the boundaries of the single organization and take into account activities in, and outcomes for, societies at large.

Please see our 2001 Annual Report, available at www.ericsson.com, for more information on our operations and financial performance.

Further details of our research and development, social and educational investments are outlined in the Ericsson Annual Report 2001, which provides in-depth analysis of our financial and economic performance. It also provides information on ownership, Board of Directors and other organization-related statistics.

Net sales 2001 – 1999

MSEK	2001	2000	1999	1998
Net Income	231,839	273,569	215,403	184,438

Net income 2001 – 1998

MSEK	2001	2000	1999	1998
Net Income	-21,264	21,018	12,130	13,041

Return on capital employed (ROCE) 2001 – 1998

Percentage	2001	2000	1999	1998
Return on capital employed	-15.8	26.5	19.0	24.9

Wages and salaries per geographical area 2001 – 1999

MSEK	2001	2000	1999
Western Europe	26,527	25,393	25,159
Central and Eastern Europe, Middle East and Africa	1,381	1,062	839
North America	6,910	6,322	6,360
Latin America	2,572	2,502	1,816
Asia Pacific	3,837	3,692	2,894
Total	41,227	38,970	37,068

Number of employees by quarter – proforma

Reflecting transfer of mobile phone business to Sony Ericsson Mobile Communications

			2001	
MSEK	0103	0106	0109	0112
Systems	75,081	76,636	71,392	67,898
Other operations	18,615	16,167	15,936	15,861
Unallocated	1,264	1,343	1,344	1,439
Total	94,960	94,146	88,672	85,198

Taxes

In addition to the taxes shown in the table, Ericsson pays many other taxes, including: value added tax (VAT), capital taxes, stamp duty and other duties. Only taxes paid directly by Ericsson are included here: employee income taxes are excluded.

Social security expenses 2001 – 1998

MSEK	2001	2000	1999	1998
Social security expenses	14,293	13,161	11,305	10,952

Tax expenditure 2001 – 1998

MSEK	2001	2000	1999	1998
Income taxes for the year	-8,813	7,998	4,358	5,409

Investment

On top of our R&D and other investments, we conduct extensive employee training. Ericsson University is the main vehicle for this, with yearly expenditure amounting to SEK 2,000m.

Research and development and other technical expenses 2001 – 1998

MSEK	2001	2000	1999	1998
Research and development and other technical expenses	46,640	41,921	33,123	28,027

Investments in tangible assets 2001 – 1998

MSEK	2001	2000	1999	1998
Investments in tangible assets	-8,306	12,293	9,085	8,965

Outsourcing

In 2001, we outsourced several operations related to our supply chain. During 2001 Ericsson outsourced some operations resulting in a transfer of 7,000 employees.

Our operations

During 2001, the telecommunications equipment market had a slowdown that influenced our operations environmental profile just as periods of growth does. The important thing is that our eco-efficiency continues to improve across the business cycle.

In monitoring our environmental performance, Ericsson has adopted the carbon dioxide (CO_2) emissions equivalent measurement. This is closely related to energy use and has become commonly accepted as an indicator of environmental performance. It is also linked to other environmental impacts.

Ericsson recognizes that energy use is a pivotal factor in determining our environmental profile. We believe that the energy intensity involved in production is a good indicator of the level of use of the other factors – like water use and emissions escaping to air and water – that have a negative impact on the environment.

Energy use leads to CO_2 emissions. Measuring the ratio of CO_2 emissions to net sales, or turnover, is not only a relevant environmental indicator, but also an important financial guide to overall company performance.

Ericsson's environmental profile can be understood by examining carbon dioxide emission generated through employee activity – such as commuting, work-related travel, telecommuting, electricity used in offices and energy used in manufacturing.

For the purposes of this profile, we have looked at all areas of our business operations where energy is utilized.

Notes on values and calculations

As a knowledge-based company, the environmental performance of our own operations (such as waste volume and energy use) is influenced by both the number of employees and by the volume of products that we ship.
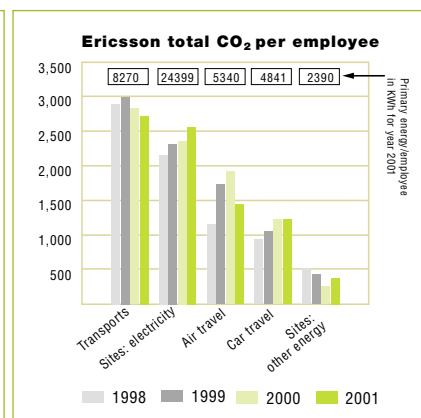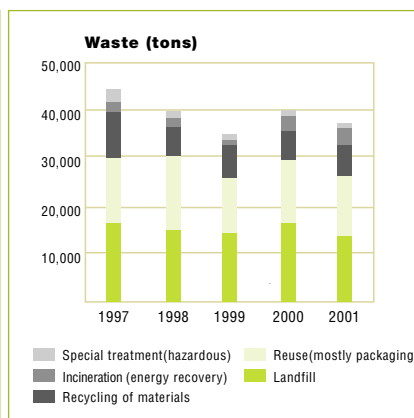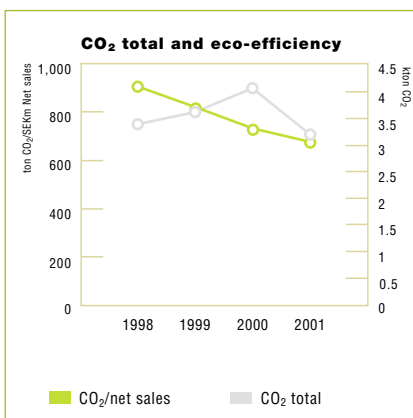
The sharp reduction in staff this year is reflected in the amount of waste and our energy use. Our environmental parameters have not dropped in direct proportion to our reduction of staff due to several factors:

- For the sake of consistency, we have based our calculations on the number of employees at year-end 2001. The average number of employees was significantly higher.
- Many of the facilities needed for the larger staff size are still with Ericsson.
- Closing operations and having people leave the company generates waste. This is a one-time contribution similar to the financial cost of closing down an operation. We expect to see the environmental savings next year.

We are still analyzing these factors.

Our past results may have been extracted from different base figures and estimates. To some extent, all figures are based on estimates. For instance, our materials content figures are based upon analysis of 90 percent by weight of the materials we shipped.

As environmental reporting continues to improve, we get a clearer picture of the environmental challenges facing us – and the actions we need to take to overcome them.

CO₂ total and eco-efficiency

- CO₂/net sales
- CO₂ total

Waste (tons)

- Special treatment(hazardous)
- Incineration (energy recovery)
- Recycling of materials
- Reuse(mostly packaging)
- Landfill

Ericsson total CO₂ per employee

Primary energy/employee in kWh for year 2001: 8270, 24399, 5340, 4841, 2390

- 1998
- 1999
- 2000
- 2001

Ericsson total data 2001 (compared to 2000 and 1999)

	Total			Per employee			Per net sales (MSEK)		
	Absolute figures 2001	Change% from 2000	Change% from 1999	Absolute figures 2001	Change% from 2000	Change% from 1999	Absolute figures 2001	Change% from 2000	Change% from 1999
Employees	85,200 pers	-19	-17	–	–	–	0.37 pers	-4	-23
Net sales	231,840 SEK m	-15	8	2.72 SEK m	4	30	–	–	–
Electricity	877 GWh	-3	-9	10.3 MWh	20	10	3.8 MWh	15	-15
Other energy	167 GWh	19	-33	2.0 MWh	47	-19	0.7 MWh	41	-38
Indoor area	3.3 km²	3	0	39 m²	27	21	14 m²	22	-7
Land area	5.2 km²	-19	nm	61 m²	0	nm	22 m²	-4	nm
Water	2.8 Mton	-16	-20	33 ton	3	-3	12 m³	-1	-26
Air travel	1,024 Mpkm	-39	-30	12,019 pkm	-25	-16	4,417 pkm	-28	-35
Car travel	550 Mpkm	-19	90	6,455 pkm	0	129	2,372 pkm	-5	76
Air transports	275 Mtonkm	-17	-8	3,228 tonkm	3	11	1,186 tonkm	-2	-15
Road transports	150 Mtonkm	-21	-25	1,761 tonkm	-3	-9	647 tonkm	-7	-30
Waste	37,300 ton	-7	0	438 kg	15	21	161 kg	10	-7
Production emissions	26.5 ton	-6	-62	0.311 g	16	-54	0.11 g	11	-65
Production weight	87,500 ton	-33	-30	1.0 ton	-17	-15	0.38 ton	-21	-35
CO_2 – total	710,000 ton	-21	-11	8.3 ton	-3	7	31 ton	-7	-18

nm = not measured
pkm = personal km

Office and production data 2001

	Offices	Production
Office employees	67,600 p	5,600 p
Production employees	–	12,000 p
Electricity	584 GWh	280 GWh
Other energy	106 GWh	47 GWh
Office indoor area	2.3 km²	0.26 km²
Production indoor area	–	0.3 km²
Warehouse indoor area	0.18 km²	0.16 km²
Land area	3.2 km²	2.0 km²
Water	1.5 Mton	1.25 Mton
Air transports	–	275 Mtonkm
Road transports	–	150 Mtonkm
Air travel	1,024 Mpkm	–
Car travel	550 Mpkm	–
Waste	22,450 ton	14,750 ton
Reuse	2,640 ton	810 ton
Recycling	6,550 ton	7,250 ton
Incineration	4,530 ton	2,130 ton
Landfill	8,300 ton	4,060 ton
Special treatment	510 ton	590 ton
Production emissions	–	26,380 kg
Miscellaneous solvents to air	–	25,100 kg
Halogenated hydrocarbons to air	–	40* kg
HCFCs to air	–	1,380 kg
Metals to water	–	40 kg
Shipped product weight	–	87,500 ton
CO_2 – total	424,000 ton	287,000 ton

pkm = personal km
* Estimated figure
All travel has been allocated to offices and all transports to production sites. Offices at production sites are included in the production data

Shipped product weight 2001, divided into different fractions

Product/waste fractions	Weight (ton)	Weight (%)
Mechanics	30,000	34,30
Cables	30,400	34,70
Packaging and documentation materials[1]	18,900	21,60
Printed board assemblies, PBAs	4,400	5,00
Batteries[2]	650	0,74
Others[3]	2,800	3,20

Main materials	Weight (ton)	Weight (%)
Iron and steel alloys	21,500	24,60
Packaging material[1]	18,900	21,60
Plastics[4]	15,700	17,90
Copper alloys	12,900	14,70
Aluminum alloys	12,000	13,70
Other materials[5]	6,500	7,40
Valuable metals (other than copper)	12	136 ppm
Silver	7	80 ppm
Palladium	3	34 ppm
Gold	2	22 ppm
Phase-out sustances/materials[6]	92.5	0.10
Bromine (in flame-retardants)	50	0.055
Lead in the PBAs	42	0.05
Beryllium oxide	0.5	5.5 ppm
Grand total	**87,500**	

1. Plastics, paper and cardboard, wood, galvanized steel
2. Mobile phone batteries
3. Mostly electronic components that are not connected to a PBA.
4. Epoxy, PC/ABS, PE and many other plastics, including minor amounts of PVC and PTFE
5. Nickel, zinc, glass fiber and ceramics are most common in 'Other materials'
6. The most environmentally focused materials that society, customers and we want to phase-out in the near future.

Details on operations

Inputs

Energy – electric and other: Our electricity consumption is approximately at the same level as during the last two years. We have a higher ratio of renewable energy sources (and lower fossil fuel) than the world average.

Water: Water consumption overall has decreased over the past four years. Some of the decrease in water use may be attributed to outsourcing in manufacturing.

Land use: A majority of Ericsson's employees are office workers. This is reflected in indoor area and outdoor land use.

Travel: Air travel fell by a quarter per employee. Ericsson includes all work-related travel, both air and ground-based, in our environmental measurements, including commuting to work.

Transport of goods: Locating production facilities closer to our markets, and producing more compact products requiring less packaging have helped us reduce total transport-related CO_2.

Materials used in products: Ericsson ships hi-tech products that are very complex and contain many different materials. By weight they are mostly metal (iron, copper and aluminum), plastic (in cables, circuit boards and packaging) and paper (in packaging).

Phase-out materials: Ericsson takes the issue of phasing out materials that are harmful to the environment seriously. We are actively working to identify alternative materials for use in production. This relates closely to our total life-cycle perspective of environmental impacts and is linked to the early design stage of our products.

Outputs

Our products: During 2001, Ericsson shipped a grand total of 87,500 tons. This figure includes both products and packaging.

Waste: During 2001, the total volume of industrial waste output was 37,315 – a decrease of 7 percent over last year in absolute figures. Hazardous waste needing special treatment also shows a steady decrease. The amount of waste going to reuse continues to grow even as the total waste falls.
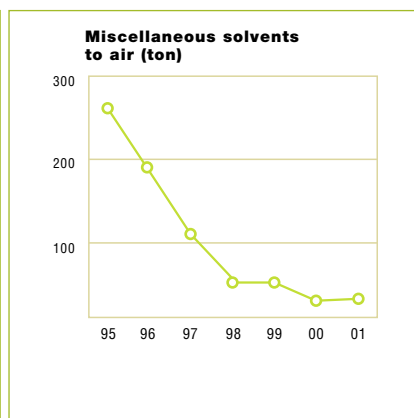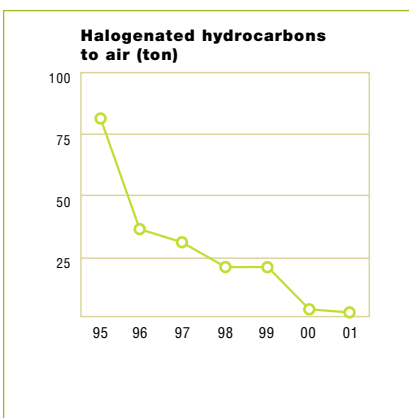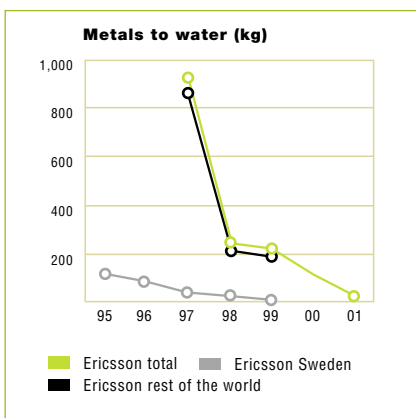
Emissions: Outsourcing accounts for part of the reduction shown. We strive to reduce emissions still further with our production facilities and our suppliers.

Environmentally related accident and fines: Ericsson had no environmentally related fines, penalties or other non-compliance during the year. One environmentally related accident was identified. It was a minor diesel spill with an estimated clean-up cost of less than SEK 1,000.

Suppliers: To date, 80 percent of our largest suppliers are implementing an EMS – or already have an EMS certified to ISO14001 or equivalent.

Suppliers' EMS status

Status	Number	Share%
Certified EMS	58	25
Other EMS	13	6
Developing EMS	34	15
No EMS	12	5
No data	112	49
Total	229	100

Metals to water (kg)

Ericsson total
Ericsson Sweden
Ericsson rest of the world

Halogenated hydrocarbons to air (ton)

Miscellaneous solvents to air (ton)

Our products and systems

This year's launch of the multifunctional 3G products is done whilst matching previous year's eco-efficiency.

In our view, the whole product life cycle must be included in an environmental profile of Ericsson's activities. This philosophy not only gives the most accurate description of the present, but also guides us toward the right strategic decisions. The 3G products have a huge potential to change the society as well as the environment during its life cycle. Our assessments track this potential to help embrace opportunities and manage risks.

All of our new products, including the 3G innovations, have been studied from a life cycle perspective. Ericsson has completed LCAs on our most important volume products in order to provide a meaningful environmental profile. The results of these LCAs have been scaled up from a single product or system to represent the total production for 2001.

Results and conclusions

Ericsson has put our entire production in 2001 into an environmental life-cycle context. We've included things like the mining of iron ore, the coal burned to generate electricity needed to run production plants, our products in operation and the exhaust fumes from the trucks that transport used equipment to recycling facilities.

Although activities outside of Ericsson have by far the greatest environmental impact, we believe it is our corporate responsibility to act on the life-cycle implications when making our products

The results show that most of our direct and indirect CO_2 emissions arise from energy expended by our products in use. The next most significant contributor is our suppliers' manufacturing. It becomes apparent that our most effective

contribution to the environment lies in the way we design products and systems, and who we select as suppliers of components and parts.
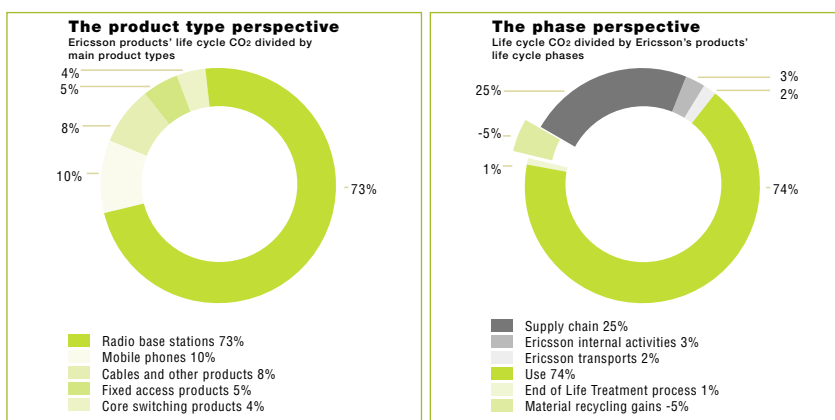
Base stations are the largest product category in Ericsson's sales. The electricity consumed during the use phase generates approximately 85 percent of a base station's life-cycle CO_2. The trend is that total life-cycle impact decreases, especially upstream in the supply chain and less so in the use phase.

There is a marked difference between the environmental profiles for network equipment and those for consumer products such as mobile phones. For the mobile phone, the use phase is not as dominant: CO_2 emissions in the supply chain are relatively larger. Earlier we saw that during the typical use phase, almost three quarters of the CO_2 emissions arose from standby consumption in the charger. What we see now is that as more energy-efficient chargers are sold for all models, the standby losses fall.

During 2001, the majority of Ericsson's mobile phone models were supplied with new energy-efficient chargers.

Conserving energy throughout our products' entire life cycle is the most important environmental goal for us. That means improving energy efficiency during use, and reducing the size of the products, using fewer components and less material, so that there is less to transport.

Of course our life-cycle studies also cover other environmental aspects than energy. The life-cycle philosophy also helps us in our efforts to design to minimize the use of undesired substances, develop supplier requirements and to develop efficient take back policies.

The product type perspective
Ericsson products' life cycle CO2 divided by main product types

- Radio base stations 73%
- Mobile phones 10%
- Cables and other products 8%
- Fixed access products 5%
- Core switching products 4%

The phase perspective
Life cycle CO2 divided by Ericsson's products' life cycle phases

- Supply chain 25%
- Ericsson internal activities 3%
- Ericsson transports 2%
- Use 74%
- End of Life Treatment process 1%
- Material recycling gains -5%

Adding a dimension

When we examine the impact of our products, we now need to add an additional dimension.

Given that more than 90 percent of our business is in data and telecommunications, a standard measure of capacity would be the number of subscribers. In a scientific context the subscriber capacity would be called the functional unit.

Imagine a complete mobile communications system made up of Ericsson products. Individuals using Ericsson mobile phones just don't see the other Ericsson equipment they are using. What is the environmental impact per subscriber?

First of all, a time period of one year is set to normalize the life spans of different products – which typically vary from three to ten years. Also, real operational telecom systems have a built-out, or mature, number of subscribers that is typically 80 percent of the maximum number. This mature number of equivalent lines is the one used in our calculations.

Improvements over time

We have used the life cycle approach for several generations of Ericsson technologies – and we take a degree of pride in the overall improvements in environmental performance this has helped to bring about. In parallel with technical and functional advances there is an improvement in energy efficiency. The chart 'From voice to multimedia' shows improvements for mobile phone systems – the most studied systems when it comes to LCA and environmental performance. The chart also includes the new 3G technology.
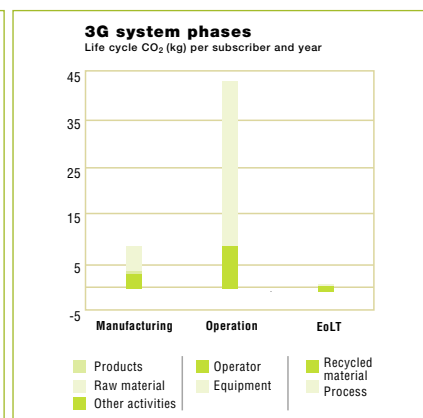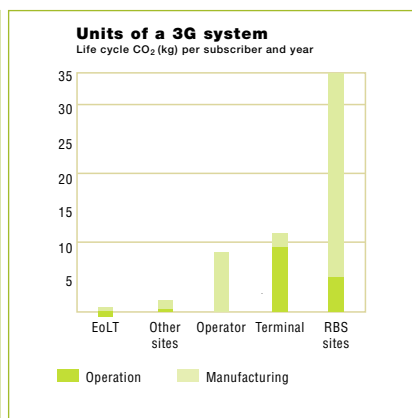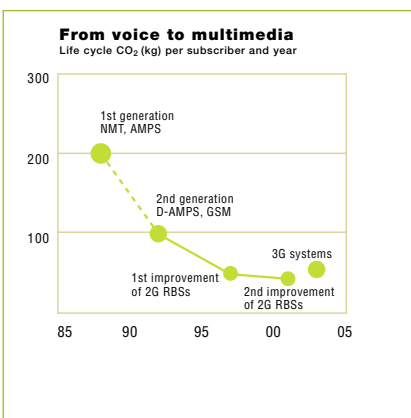
In total, the nine most common environmental indicators were investigated including human toxicity and physical disruption of land. The key environmental indicator we use here is CO_2 emission per average subscriber and year. The studies were made from a true total life cycle perspective and include the supply chain, the operations base and the End-of-Life Treatment. Overheads of our design and development, of operators' sales and service

organizations, etc, at all stages of the life cycle are included. The systems described are based on world averages.

The LCA studies of different generations of mobile communication systems reveal a 40-50 percent reduction in energy consumption over a four-to-five-year period. Advances in microelectronics and the fact that built-out systems use equipment more efficiently can partly explain this reduction. Digitized systems and improved digital signal encoding also require less power.

Continual improvement of energy consumption in mobile communication systems is an increasing environmental challenge – and one that Ericsson is dedicated to. Mobile communications functionality has constantly broadened. For example, 3G mobile networks add significant new data and multimedia capabilities to the traditional voice service. By conducting LCA studies of 3G mobile networks, Ericsson is in a strong position to design future systems using minimal energy to maximum effect for users.

We can use our knowledge to analyze complete systems, on selected parts of a telecommunication system or on specific products in the network. The LCA method can also be used to assess the positive benefits of applications built upon our systems. As a customer focused company Ericsson wants to use this knowledge for real, full-scale, commercial 3G systems, products and applications. Through this we believe we can stimulate environmental and economic improvements for our customers.

From voice to multimedia
Life cycle CO_2 (kg) per subscriber and year

Units of a 3G system
Life cycle CO_2 (kg) per subscriber and year

3G system phases
Life cycle CO_2 (kg) per subscriber and year

Dematerialization

Getting smaller

Information technology contributes to dematerialization of many aspects of society, necessary to achieving sustainable development. The IT products themselves also create opportunities for reduced resource and energy consumption.

Over the past decade or so, dematerialization and improvements in energy consumption in Ericsson's products have been dramatic. The easiest way to see this is to look at handsets. Today's Ericsson T68 is barely one-third the weight of our first GSM phones launched in the early 1990s. This improvement is even more spectacular when you consider the change in standby time (the time you can leave the phone switched on without charging it). Standby time is some ten times longer for today's T68 than for typical mobile phones a decade ago. Back then, the mobile phone typically needed recharging twice each day – whereas once a week is normal for the T68.

The changes in weight and standby time illustrate how dramatically Ericsson GSM mobile phones have improved over the past decade.
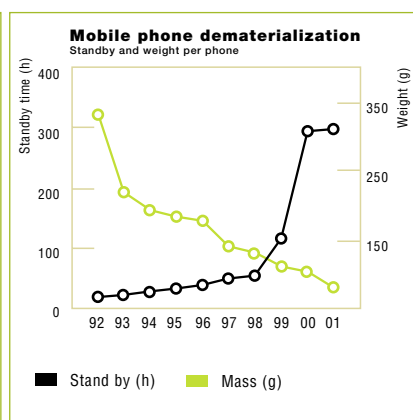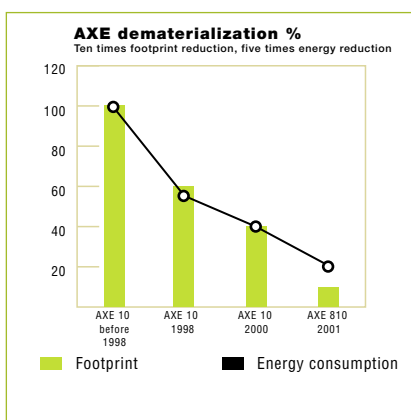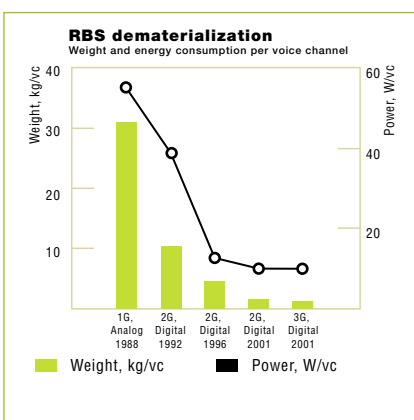
Developments in mobile phone technology have been dramatic – offering functions that could only be dreamed about when the first models hit the market.

For example, the T68 triple band, color screen, GPRS phone can send e-mails, browse the Internet and synchronize with your PC over a Bluetooth wireless connection.

Of course, consumer demand for lighter phones with more functionality was instrumental in bringing about these technological advances. But the need to move toward sustainability by creating opportunities for reduced resource and energy use was also a major incentive.

The two other illustrations show the dematerialization for our other major product categories: switches and base stations. Just as dematerialization of handsets makes them easier for the subscriber to carry and use, the dematerialization of base stations enables our Grow on Site concept. Through it, significantly higher network capacity can be achieved in an existing site whilst making room for more cabinets. This trend towards dematerialization to achieve sustainability is – and will continue to be – a determining factor in the design of all our products.

RBS dematerialization
Weight and energy consumption per voice channel

Weight, kg/vc — Power, W/vc

1G, Analog 1988 | 2G, Digital 1992 | 2G, Digital 1996 | 2G, Digital 2001 | 3G, Digital 2001

AXE dematerialization %
Ten times footprint reduction, five times energy reduction

Footprint — Energy consumption

AXE 10 before 1998 | AXE 10 1998 | AXE 10 2000 | AXE 810 2001

Mobile phone dematerialization
Standby and weight per phone

Stand by (h) — Mass (g)

92 93 94 95 96 97 98 99 00 01

Sustainability goals

Goals	1999	2000	2001	2002	2003	2004	2005	2006	Status	Find more on page(s)
Implement Ericsson's Environmental Management System (EMS) in accordance with ISO14001*									Met	12
All major suppliers are to have an environmental management system complying with ISO14001 or equivalent									80% complete	12
All suppliers are to have an environmental management system complying with ISO14001 or equivalent									On schedule	12
Implement Ericsson's Design for Environment rules									Met	16
Use lead-free solder in, 80 percent of our new products									Deferred to 2002	16
100 percent of our new products									New goal	
Eliminate all use of lead in all our products									New goal	
Eliminate halogenated flame retardants in printed circuit boards in, 80 percent of our new products									Deferred to 2002	16
100 percent of our new products									New goal	
Eliminate halogenated flame retardants in all parts in 100 percent of our new products									New goal	
Eliminate beryllium oxide in all new products except for Traveling Wave Tubes**									Met	17
Establish procedures and an organization to conduct supplier audits for the Code of Conduct									New goal	–
Inform our strategic supplier alliances about our Code of Conduct and their required compliance									New goal	20
Conduct sample audits against the Code of Conduct, perform a risk analysis and set up an audit plan worldwide									New goal	–
Develop an end-of-life strategy (for each segment)*									Met	18
Implement a corporate 'take back' infrastructure and procedures, to all regions where Ericsson is present, using the experience learned in the pilot in Western Europe*									New goal	18
Ongoing goal: continue improvement in developing energy-efficient new products over the whole life-cycle									In progress	14
Ongoing goal: establish environmental awareness and control throughout Ericsson and encourage employees to take active steps in their work to improve the environment									In progress	11
Ongoing goal: actively communicate Ericsson's environmental performance internally and externally									In progress	11
Define and implement an Ericsson system for measuring consumption at system level									Met	14

* reformulated
** changed

Where to find out more

http://www.ericsson.com/sustainability

http://www.ericsson.com

http://www.ericsson.com/health

http://www.ericsson.com/ericssonresponse

Glossary

3G
Third generation mobile communications systems which offer much higher user data rates and multimedia capabilities.

Bruntland
See sustainable development

Beryllium oxide
Beryllium oxide (BeO) combines high thermal conductivity, excellent dielectric properties, corrosion resistance, and moderate mechanical strength. If inhaled it is highly toxic and causes pulmonary problems.

Code of Conduct
Ericsson's corporate directive establishing the framework for workers' rights and working conditions for all Ericsson activities worldwide. This is also applicable for work done on behalf of Ericsson by suppliers.

Corporate Social Responsibility
The term used by Ericsson referring to the concept that an enterprise is accountable for its impact on all relevant stakeholders. It is the continuing commitment by business to behave fairly and responsibly and contribute to economic development whilst improving the quality of life of the workforce and their families as well as of the local community and society at large.

DOW Jones Sustainability World Index
The benchmark index ranking corporations globally on their environmental, economic and social performance.

EMF
Electromagnetic fields.

Emission
Release or discharge of any substances, effluents or pollutants into the environment.

EMS
Environmental Management System – put in place to develop and implement a company's environmental policy.

End-of-life
The point when a product has come to the end of its useful purpose. A focus of Ericsson's environmental policy is on implementing environmentally responsible disposal practises for its products when they have reached their end of life.

EoLT
End-of-Life Treatment

ENGINE
The Ericsson system used in multi-service network infrastructures to allow a mix of voice, data and Internet services to be carried in the most efficient way.

Environmental impact
Any change to the environment, whether adverse or beneficial, wholly or partially resulting from human activities.

Ericsson Response
Ericsson Response is a global initiative aimed at developing a better and faster response to human suffering caused by disaster. Ericsson is in partnership with the United Nations Office for the Coordination of Humanitarian Affairs, the United Nations Development Program and the International Federation of Red Cross and Red Crescent Societies developing disaster preparedness programs around the world.

LCA
Life Cycle Assessment – a management tool for appraising and quantifying the environmental impact of products or activities over their lifetime.

Lead-free solder
Concern about toxicity has led Ericsson to research lead-free solder. The alternative currently being tested is an alloy of tin, silver and copper.

Outsourcing
The transfer of a business function and its resources to a third-party supplier who then sells back the function as a service.

SAR
Specific Absorption Rate – a measure used in the research into exposure to radio waves.

Smartphone
An advanced mobile phone that combines the functions of a personal organizer, electronic notepad, e-mail and WAP-browser into one handset.

Sustainability
A dynamic state of the earth's evolution where a prosperous human global society lives in harmony and with the carrying capacity of the eco-systems.

Sustainable development
Contributions toward sustainability. From the Bruntland Commission's report Our Common Future, to the UN General Assembly in 1987: '...to meet the needs of the present without compromising the ability of future generations to meet their own needs.'

Switch
A device for making, breaking, or changing the connections in an electrical circuit – in this context a telecommunications network.

UMTS
Universal Mobile Telecommunications System – the name for the third generation (3G) mobile standard developed by the European Telecommunications Standards Institute.

World Health Organization
A specialized agency of the United Nations that promotes technical cooperation for health among nations. The WHO carries out programs to control and eradicate disease and strives to improve the quality of human life.

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