# Sustainability Report 2002

ERICSSON

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**Carl-Henric Svanberg**
President and Chief Executive Officer

In spite of the downturn in the last couple of years, 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.

We believe companies should act in a responsible way, maintaining high standards in corporate governance, employee and supplier conduct, sustainability and the environment, and humanitarian aid. Ericsson has joined the UN Global Compact initiative and will adhere to its nine principles. We see these principles as a prerequisite for sound, long-term business.

As one of the leaders in the telecommunications industry, we have the ability to influence. Ericsson is continuously striving to reduce the environmental impact from products and processes. 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.

# Environmental highlights

- Successfully concluded a comprehensive 3G life cycle assessment program, providing Ericsson with in-depth knowledge about mass and energy flows within our industry.
- Further reduced energy consumption of our products while in use.
- Continued phase out of banned and restricted materials.
- Continued to implement a worldwide Ecology Management recycling scheme through which we take back and recycle our customers' phased-out equipment.

# Social highlights



- Ericsson joined the UN Global Compact initiative in 2000 and participated in its Johannesburg summit in 2002
- Assisted the International Federation of Red Cross and Red Crescent Societies (IFRC) in responding to food crises in Malawi, Zambia, Zimbabwe, Lesotho and Swaziland.
- Ericsson in the Netherlands sponsored the building of a house for sick children in Tilburg.
- Over a period of three years, Ericsson has made donations to the Qinghai Kekexili National Level Nature Reserve Administration for the protection and breeding programs of the Tibetan antelope.

# Economic highlights

- Ericsson was an active participant in the United Nations World Summit on Sustainable Development in Johannesburg. Ericsson put forward concrete proposals to work with African countries within the framework of the UN with mobile solutions that address the specific needs of emerging markets.

- Continued development of new business models that will give people access to telecommunications in areas that are currently unable to afford this service.

- Implementing Ericsson's Ecology Management Service globally. This enables us to provide our customers with both regional and global support for all their end-of-life treatment programs, making it a standard part of equipment offers.

- Continued success for Ericsson Enterprise's extended end-of-life treatment offer. In special campaigns Ericsson replaces, transports and recycles all old equipment such as MD110 PBXs and Business-Phone, whenever a new one is purchased. In 2002, 100 tons were taken back for recycling.

# Committed to act upon a vision

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

### Our vision

Our commitment to sustainable development is based on 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 well over 100 countries.

This report illustrates our progress toward our vision.

### Supported by action

Implementing sustainability is not just about business attitudes. It is also about demonstrating commitment through action. At Ericsson, we want our vision to be translated through to actual business deliverables, ensuring that sustainability and corporate responsibility are active parts of all our operations. For example:

- Ericsson was one of the first companies to support the UN's Global Compact initiative. Ericsson Response provides leading disaster response organizations, like the UN and Red Cross, with telecommunications systems and the know-how to use them in operations for fast deployment anywhere in the world. The Ericsson Response program was highlighted by the Secretary General as a good example of practical cooperation between the UN and the business community. During 2002, Ericsson and the International Red Cross signed a unique Active Partnership Agreement breaking new ground in the way the private sector and humanitarian aid organizations work together.
- Ericsson is developing and testing new products and business ideas to facilitate the deployment of telecom access to areas currently unable to afford this service.
- Ericsson encourages our industry as a whole to purify its processes and products. This is achieved 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.
- Ericsson supports independent research into electromagnetic field exposure to ensure that we have safe products for a sustainable business.

### Cooperation is key

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 an all communicating world is achievable and desirable.

This universal communication requires a small

amount of 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.

Ericsson co-founded the Information and Communication Industry (ICT) sector initiative, the Global e-Sustainability Initiative. This initiative addresses the digital divide and its social aspect.

The United Nations World Summit on Sustainable Development in Johannesburg in August 2002 highlighted this focus even more. Ericsson took an active role in the Summit with concrete proposals.

Through addressing the specific needs of developing countries, the telecom industry can play an important role in bridging the gap between rich and poor. Ericsson presented mobile solutions that are small, affordable and scaleable, a downsized mobile technology called MiniGSM. But to gain mass-market impact, a suitable business infrastructure must be put in place. It requires a broader mindset among telecom vendors, operators and licensing authorities. Based on the MiniGSM system, Ericsson developed a new business model where renting, franchising, simplicity and step-wise scalability are key words. It would give people in rural areas access to education, health information, on-line banking and market crop prices to facilitate business.

Ericsson is optimistic about the possibility of moving forward and creating a world market based on inclusiveness. This can be done by forming the right partnerships, including governments, international financial institutions, local communities and non-governmental organizations. In Johannesburg, Ericsson put forward proposals to work with African countries within the framework of the UN.

In doing this, Ericsson wanted to underline the importance of mobile communication as a way for developing countries to leapfrog technology development and use the most cost- and energy-efficient communication solutions.

A communications infrastructure is key for both economic and social development in emerging economies. Thus, development projects in the basic areas of health, food, agriculture, water, energy and so on are dependent on working communication systems to be successful from a sustainability standpoint.

# Ericsson is maintaining the global environmental management system.



### Working with suppliers

To successfully minimize our environmental impact we have to consider our entire supply chain. This is why we place stringent environmental requirements upon our suppliers. Three requirements are particularly important:

- An environmental management system according to ISO 14001 or equivalent
- Compliance with Ericsson's lists of banned and restricted substances
- Preparedness to deliver materials declarations upon request

These requirements are incorporated in our purchasing routines and are part of our standard supplier contract templates.

More information on Ericsson's environmental requirements for suppliers can be found at: www.ericsson.com/sustainability/supplier_guides.shtml

### Environmental Management System

Ericsson is maintaining a global Environmental Management System (EMS) in accordance with ISO14001.

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 Ericsson's non-manufacturing operations, 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. Our factories have separate certificates.

Some parts of Ericsson are still outside of this system. However, our commitment to a global EMS remains strong and we are working to integrate them as soon as possible.

### A growing database of substances

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 end-of-life treatment 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 a component level. The majority of our suppliers are involved in the reporting process. By the end of 2002, 12,000 components had a declaration in the database. The database is used to produce materials declarations on a product level. Examples of more complex products with complete materials declarations are the 3G radio base station and the 3G-radio network controller.

Ericsson is participating in the work toward a common international approach for reporting material content. This work is conducted in the European Information, Communications and Consumer electronics Technology Industry Association (EICTA) and its American and Japanese counterparts.

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

### Material declaration of RBS 3202

The material declaration of RBS 3202 has been used as input to determine the environmental impact of the raw material production phase and end-of-life treatment phase in the 3G LCA study. It is also the main source for eco-declarations, customer questions related to materials and end-of-life treatment information.

# Using energy efficiently

## The new generation of less 'power-hungry' communication products enables us to keep the total electricity consumption on the same level, despite a significantly higher capacity in terms of information.

### Saving energy

Ericsson remains at the forefront of low-energy technology developments. Each element in the product chain is regularly assessed to identify potential energy savings. This takes place 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.

Ericsson's in-depth life-cycle assessment (LCA) process 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 predicted 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 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 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 people throughout the world can benefit from mobile phone technology and its services without compromising the resource base of future generations.

For mobile systems, energy consumption during system use represents the biggest environmental impact.

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

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.

### Forecasting 3G energy usage

How much fuel does your car use? The answer depends on when you go, and how you drive. We have the same issue when trying to measure mobile communication systems.

Our next generation of products provides, in addition to voice services, data services like location based information, messaging, online payment, to just name a few. How should we compare our old, more limited, voice-based systems to the next generation of mobile services products?

Ericsson believes that it is possible in the long-term to keep the total electricity consumption at the same level, despite a significantly higher amount of sending and receiving information. Reliable knowledge about technology's potential supports this belief. Besides, there are life-cycle analyses on a number of system generations including GSM and the coming 3G systems. The analyses show that energy use per subscriber has shrunk by more than five times during the past 15 years.

# Design for environment

## Ericsson has come a long way in applying proactive design methods addressing environmental issues from the very first stage of product development.

### 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 toward reducing environmental impact.

At the heart of this philosophy are our Design-for-Environment (DfE) rules, which guide 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.

### Banned, restricted and observation lists

To manage use of substances in our products Ericsson has lists of banned and restricted substances and substances for observation.

The banned list defines substances that are banned to be used in Ericsson products and production. The restricted list defines substances that shall be phased out no later than the date specified in the list. The observation list includes substances that shall be substituted as soon as technically, economically and environmentally acceptable alternatives are available. The lists are available at: www.ericsson.com/sustainability/supplier_guides.shtml

### Lead-free solder

Ericsson initiated a project 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.

### Halogenated flame retardants

It is Ericsson's ambition to also phase out halogenated flame-retardants in its existing as well as new products. The speed of this process is determined by parameters such as availability of environmentally and economically sound alternatives.

### Beryllium oxide

Beryllium oxide is known to constitute a health risk in the end-of-life stage and has successfully been phased-out from new products.

# Growing the end-of-life treatment business

## Ericsson's market driven approach to recycling and disposal of products has developed into a growing business. End-of-life treatment programs are now offered on a global scale.

### Our strategy

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. Ericsson has developed its own global end-of-life treatment (EoLT) programs.

### Tracking the waste

An important factor in EoLT is to have a good knowledge of 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.

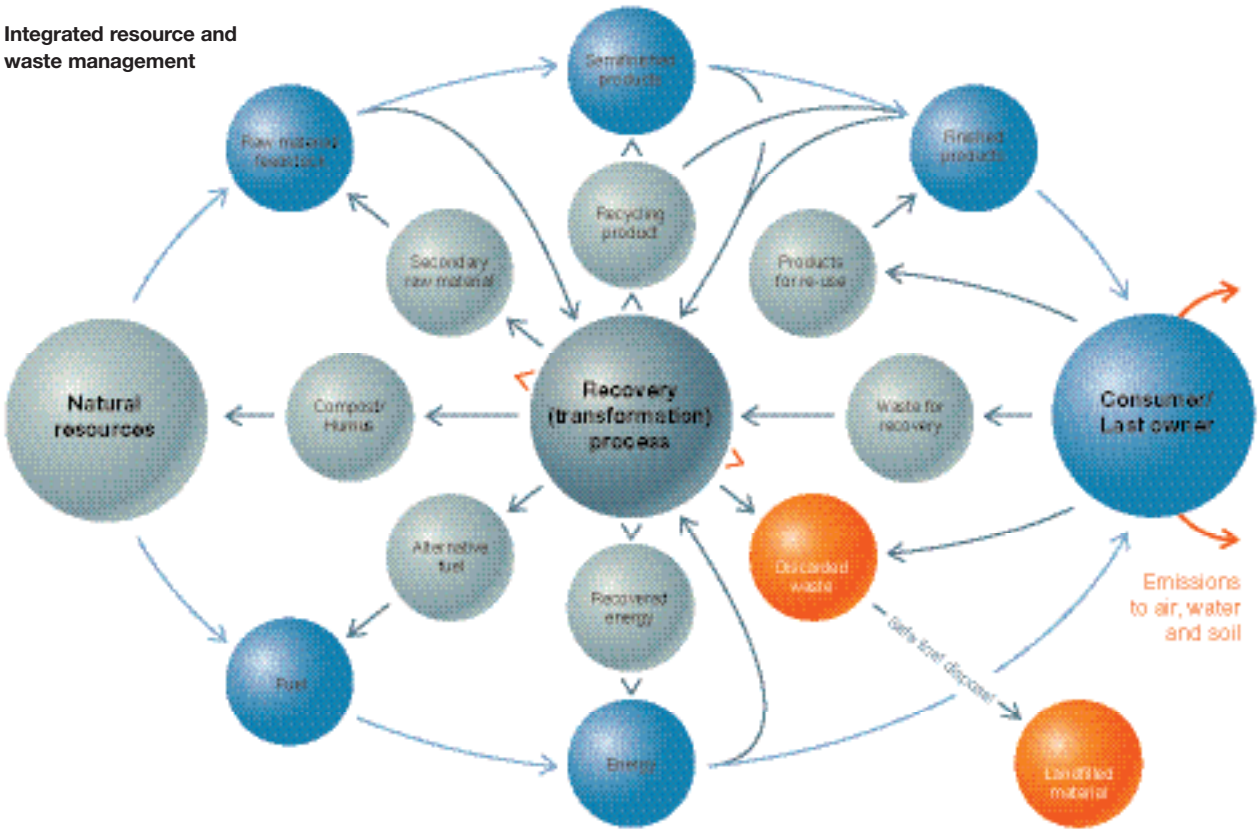
We adopted this approach in our stakeholder vision and goal setting processes in 2001. Ericsson implemented special 'take-back' initiatives, including the Ecology Management Service and the Ericsson Enterprise EoLT Offer.

Ericsson's Ecology Management Service project started in Europe and has now been extended globally, meaning that we are able to provide our customers with both regional and global support for all their EoLT programs. It has become a standard part of equipment offers. This year, Ericsson's Ecology Management Service was responsible for over 600 tons of equipment being taken back and effectively recycled, compared to 180 tons at the end of 2001.

We now have recycling service providers appointed throughout the world. The service, originally designed to meet the needs of customer requests, has gradually become an internal service for the various Ericsson units.

Ericsson Enterprise also offers EoLT. This involves the recycling of enterprise products, such as MD110 PBXs and BusinessPhone terminals and their subsequent replacement with new systems. In 2002, 100 tons were taken back for recycling. The extended EoLT offer, combined with new sales incentives, has continued to be a success. In special campaigns, Ericsson replaces, transports and recycles all old equipment whenever a new one is purchased.

**Integrated resource and waste management**



# Code of Conduct



As a global leader in the telecom industry, Ericsson believes it is important to act in a socially and ethically responsible way. Ericsson believes that people whose work contributes to our success should not be deprived of their basic human rights, nor be forced to suffer physically or mentally from their work in any way.

Ericsson expects employers to respect fundamental human rights, to treat their workforce fairly and with respect.

We base our social and ethical policies on the Global Compact UN directive. In order to make this commitment clear to our staff, our suppliers and other affected parties, we have documented our Code of Conduct. As an international company we must secure respect for and compliance with this Code of Conduct all over the world.

### Ongoing activities to secure compliance to Code of Conduct

It is important to secure compliance to our Code of Conduct from all participating parties. The process is ongoing through:

- New agreement templates covering our Code
- Educate and train local Code of Conduct Auditors
- Identification of risk areas to focus on
- Internal and external Code of Conduct audits

### Standards adherence

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

# Equal 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 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 performed. These results are communicated to our employees – establishing a common understanding of our progress in relation to our customers' expectations.

### Competence when it is 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 the near future. As part of this, we conduct a 'gap analysis' to identify future requirements and develop action plans to obtain the necessary competence.

The competence management process, introduced six years ago, 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 five large knowledge networks for efficient internal and occasionally external sharing of information and learning. The largest has around 1,000 people and is built for customer services employees.

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 preferred suppliers to more informal opportunities for job rotation and international assignments.

Our goal is to further enhance the educational output and learning through focus on business goals supported by cooperation with academies worldwide. Ericsson also provides learning opportunities through net-based modules on the intranet. Job rotation is 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 2002, there were almost 1,400 employees on long-term 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 recruitment is expanding from having a local focus to having a more regional and global scope. We are 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, coordinated centrally. They are developed to motivate performance, reward achievement and encourage long-term commitment to the company. During 2002, 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 rem uneration 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 2002, approximately 12,700 employees were granted stock options as 'key contributors.'

During 2002 we implemented a 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 with regard to legal and/or exchange control reasons. With the corporate matching portion beginning after three years, this program shares the benefits of our success with our employees and it supports motivation and retention.

# Safety is key

## We continue to design, test and install our products pursuant to all relevant safety standards and 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 on electromagnetic field (EMF) exposure and health. In 2002, Ericsson's total funding of independent EMF research was approximately SEK 9 million (Euro 1 million).

While 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.

In the last ten years nearly 400 studies have been conducted, which are directly related to mobile communications. Recently, several expert groups and health authorities worldwide reviewed this research. The World Health Organization (WHO) summarized the current status in the following manner: "None of the recent reviews have concluded that exposure to RF fields from mobile phones or their base stations causes any adverse health consequence."

During 2002 the Dutch Health Council issued an update of the research status with respect to the health and safety of mobile telephony. They concluded that the balance of scientific evidence does not demonstrate that there are any negative health effects associated with radio wave exposure either from mobile phones or radio base stations. These conclusions are in agreement with the previous expert reviews.

The Swedish Radiation Protection Authority (SSI) commissioned a review in 2002 of available epidemiological studies regarding mobile phone use. This review stated: "Overall, the epidemiologic and laboratory studies to date rule out with a reasonable degree of certainty that cellular telephones cause cancer, at least for durations of use up to five years."

### Research support

However, Ericsson 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.

Currently Ericsson sponsors in excess of 50 different ongoing or planned projects in Europe, USA and Asia with a total cost of more than Euro 40 million. Ericsson's yearly contribution to EMF and health research is about Euro 1 million.

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 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.

Since 2001 relevant information about radio wave exposure, including the measured maximum SAR value, is provided with all new mobile phone models. The information is also available on Sony Ericsson Mobile Communications' web site (www.sonyericsson.com).

In 2002, the European Commission published a European standard for base station products, providing standardized procedures for the assessment of conformity with the European Union's RF safety requirements and limits. Ericsson has implemented this standard, and RF safety guidelines are now included in the documentation for all Ericsson GSM and UMTS products.

Ericsson has also further extended its information package on mobile infrastructure and health. We are also partnering with telecom operators to ensure dialogue with different stakeholders when installing radio base stations and antennae.

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

# 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.

The share of our employees with academic degrees is steadily increasing and, during the period between 1998 and 2002, the share went from 37 to 50 percent. In some countries in Central Europe and Asia, the share is sometimes as high as 80 percent.

### 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 discussions, 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. The purpose is to establish a common management platform across our operations and in 2002 approximately 250 managers completed this training.

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

### Average length of employment and personnel turnover in figures

At year-end 2002, the average length of employment was seven years. In Sweden, the figure was 11 years. During 2002, Ericsson has been downsizing the number of employees. The non-voluntarily personnel turnover was therefore the main part of this. The voluntarily leave from Ericsson in Sweden was less than six percent.

**Note on values and calculations:** This is Ericsson's second 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.

# Ericsson and the world outside



### Voluntary contributions via our local markets

There is no easy way to summarize the thousands of contributions to individual communities by Ericsson and its employees. So we will not attempt to do this. Instead we would like to provide 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.

### Reaching out

In Ontario, Canada, as part of a comprehensive safety plan, mobile phones are supplied to women at risk of abuse. This program is called SupportLink and is a program Ericsson, together with the Government of Ontario and Rogers AT&T Wireless, sponsors.

### Raise money for research

In Plano, Texas, Ericsson participated in the walk to raise money for Juvenile Diabetes Research. Ericsson has been involved with this particular charity for the last 13 years. USD 0.85-0.87/dollar raised goes to research.

### Supporting education

Ericsson established eight Project Hope Schools in five provinces in China, including Guangdong, Hebei, Anhui, Sichuan and Chongqing. Ten Ericsson employees go to the schools during the weekend to be volunteer teachers.

### Preserving wildlife

Ericsson continued to make donations to the Qinghai Kekexili National Level Nature Reserve Administration for the protection and breeding programs of the Tibetan antelope. This very rare antelope is on the verge of extinction due to poachers. The program, called the 'Ericsson Earth-Friend Brigade,' runs for a period of three years.

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.

### Contributing to society

Ericsson in the Netherlands sponsored the building of a new Ronald McDonald house in Tilburg. A Ronald McDonald house offers parents of seriously ill children a home close to the hospital. Parents who live far from the hospital are given the possibility to be with their children as often as they can.

# Encouraging a world of inclusiveness

## Telecommunications has an important role to play in developing sustainable economies across the globe. By addressing the specific needs of emerging markets, Ericsson is helping to create a world of communication for all.

### Bridging the digital divide

Over half the world's population has never made a phone call. Making information and communications technology (ICT) 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. 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.

### Lowering the investment threshold

During the past years, we conducted a program – Ericsson Communication for All – that we hope will form the basis of a generic 'emerging markets' solution. This program developed, among other things, the Ericsson MiniGSM system and the Ericsson Communication Centers.

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

The MiniGSM 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 has been deployed mainly in rural areas with no previous telecommunications infrastructure in India, Russia, Turkey, Uzbekistan and Afghanistan, to just name a few.

Ericsson Communication for All is also evolving a new business model to support the Micro Network Manager concept. Similar to 'franchising', this allows an independent entrepreneur or sub-operator to rent the system from a main operator, investor, NGO or from another form of authority. Components may be rented on a revenue-sharing basis or bought by operators or investors for building their own business solutions.

A Micro Network Manager trial has already been carried out where 1,300 subscribers were connected to the franchised system. Other trial systems in several countries are to be expected in the very near future as well.

### Solar powered base stations

Ericsson's SunSite is an innovative solar-powered radio base station (RBS) site solution designed for GSM 900MHz, 1800MHz, or 1900MHz operation with Ericsson's highly power-efficient RBS2302 Micro Base Station and MINI-LINK™ microwave transmission, which connects the base station to the mobile network.

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

### Globally sharing skills and knowledge

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, Eastern Europe and the Commonwealth of Independent States. 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. Knowledge sharing at all levels is encouraged and supported with dedicated training and educational programs.

A good example of these principles in action is to be found within Ericsson China. 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'.

Ericsson works with suppliers and outsourcing companies across the globe – many of them from developing regions. We share knowledge and technology with our suppliers and ensure that they have the competence needed. Ericsson has a number of supplier training courses offering assistance to expand the suppliers' expertise.

# Ericsson managed to further improve environmental performance during 2002.

In monitoring our environmental performance, Ericsson uses carbon dioxide ($CO_2$) emission measurements as our primary environmental indicator. $CO_2$ emissions is closely linked to fossil energy use, and fossil energy use is closely linked to many other environmental impact categories, such as human toxicity and photo-oxidant generation through emissions of nitrous and sulphur oxides, particles, benzene and formaldehyde (the most important emissions in these categories).

Ericsson recognizes that energy use is a pivotal factor in determining our environmental profile. Main sources of fossil energy use at Ericsson have been identified to be (in order of importance): transports to and from Ericsson, operation of offices and production sites, work related travel by air and car. These are the main sources of $CO_2$ emissions Ericsson has direct control over.

Not only energy and $CO_2$ is measured of course, we also measure water and land use, waste fractions, emissions to air and water, use of chemicals and materials in production and products. We even take the measurements one step further with life cycle assessments, covered in the section, Our products and systems.

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. A more concrete environmental indicator for Ericsson is the ratio of $CO_2$ emissions to produced capacity/functionality.

**Notes on values and calculations:**

- Net sales were calculated differently in 2002, and cannot be compared to the reported net sales in the past. Net sales in 2000 and 2001 have been recalculated according to the new method to make the three last years comparable (see the 2002 annual report).
- Total number of employees has been set to the average number of employees during 2002, and not total number of employees at year-end as before.
- About 75 percent of all Ericsson activities around the world is included in the measurements. The other 25 percent is estimated based on measurements on similar activities

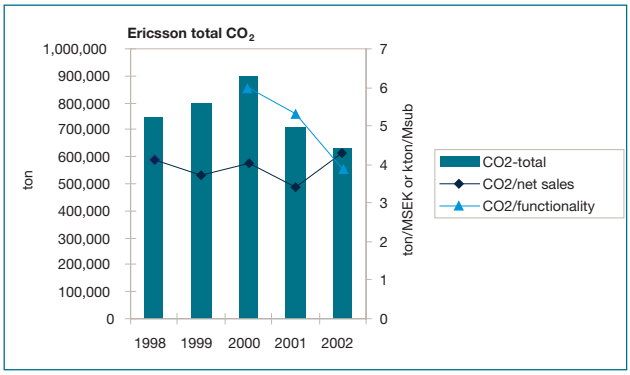
## Ericsson total figures

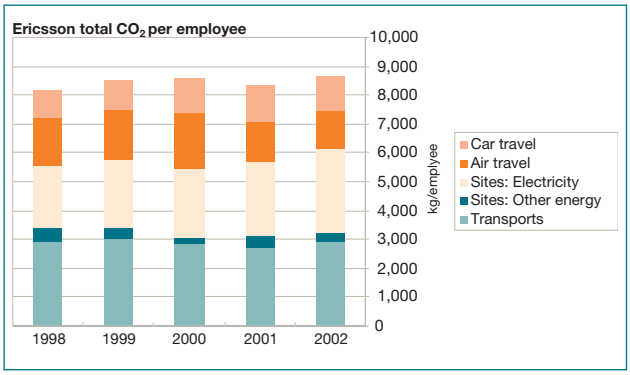
| | 2002 | 2001 | 2000 | |
|---|---|---|---|---|
| Employees | | | | |
| • Average | 73,400 | 95,400 | 101,500 | pers |
| • Year-end | 64,600 | 85 200 | 105,000 | pers |
| Net sales | 146,000 | 211,000 | 222,000 | MSEK |
| Electricity | 729 | 877 | 900 | GWh |
| Other energy | 146 | 167 | 140 | GWh |
| Indoor area | 3,2 | 3,3 | 3,2 | km2 |
| Land area | 5,5 | 5,2 | 6,4 | km2 |
| Water | 2,5 | 2,8 | 3,4 | Mton |
| Air travel | 795 | 1 024 | 1,680 | Mpkm |
| Car travel | 470 | 550 | 680 | Mpkm |
| Air transports | 256 | 275 | 330 | Mtonkm |
| Road transports | 110 | 150 | 190 | Mtonkm |
| Waste, total | 29,900 | 37,300 | 39,950 | ton |
| Production emissions, total | 15 | 27 | 28 | ton |
| Produced weight | 77,500 | 87,500 | 130,500 | ton |
| Produced capacity | 165 | 135 | 150 | Msub |
| CO2-total | 640,000 | 710,000 | 900,000 | ton |
| • Office activities | 386,000 | 424,000 | 565,000 | ton |
| • Production and trp | 248,000 | 287,000 | 335,000 | ton |

## Improvements over time:

| Total figures | 2002 | | 1997 | |
|---|---|---|---|---|
| Ericsson | | | | |
| Employees | 73,400 | pers | 78,650 | pers |
| Energy consumption | 875 | GWh | 990 | GWh |
| Air transports | 256 | Mtonkm | 375 | Mtonkm |
| CO2-emissions | 630,000 | ton | 700,000 | ton |
| Produced weight | 77,500 | ton | 125,000 | ton |
| Produced capacity | 165 | Msub | 40 | Msub |

More then four times the capacity where produced 2002 compared to 1997. This was achieved with less number of employees, less energy consumption, less produced weight and then less air transports required. Ericsson emitted 17.5 kton $CO_2$ per Msub capacity produced in 1997, but only 3.9 kton in 2002.



# Details on operations



## General trends

**Product dematerialization:** Network products get smaller and consume less energy while the capacity/functionality is enhanced with each new product generation. New products require first of all less manufacturing facilities and less transport space, but also less administration.

**Outsourcing and downsizing:** Outsourcing may be seen as a shortcut to better environmental performance, but to merge and close down ineffective sites is in general good for the environment. Any effects of outsourcing are covered by our life cycle measurements (see next chapter). The reduction of employees influence travel figures directly but to close down offices is a slower process. We expect to see a further decrease in figures connected to building operation in the near future as offices can be closed.

**Ericsson total:** Just about every total figure shows a decrease in 2002 except produced capacity, which is good since our environmental performance could be measured as: total figure/produced capacity.

**Per employee:** The measurements show status quo or a small increase, except a decrease in air travel, see point below.

## Inputs

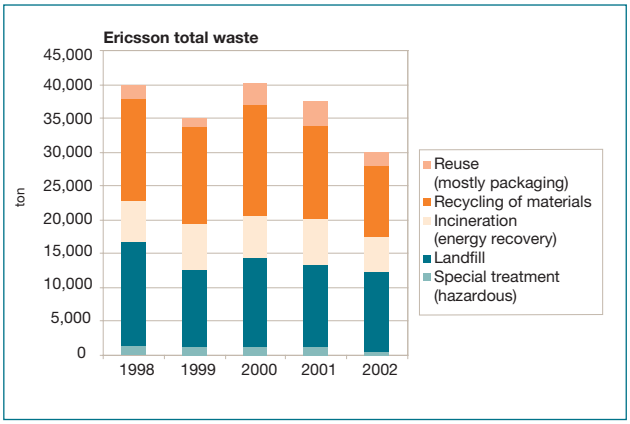
**Transports:** Includes transports of products by air and road to and from Ericsson sites. The most important transports are by air from Ericsson to customers.

**Electricity and other energy:** The total energy consumption fell by 170 GWh (-16%) compared to 2001/2000. We have a higher ratio of renewable energy sources (and less fossil fuel sources) than the world average.

**Air and car travel:** Air travel has decreased by more then 50% totally and by 1/3 per employee since 2000. Car travel is on the same level per employee. About 75% of the car travel is commuting.

**Water and land use:** Mainly connected to our daily office work. Compared to other industries we are a very small user of water and land.

**Suppliers:** We are monitoring the EMS status of our suppliers and request material declarations of supplied products.



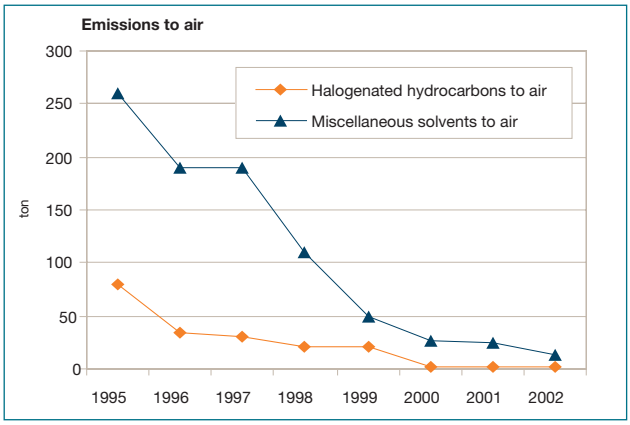

## Outputs

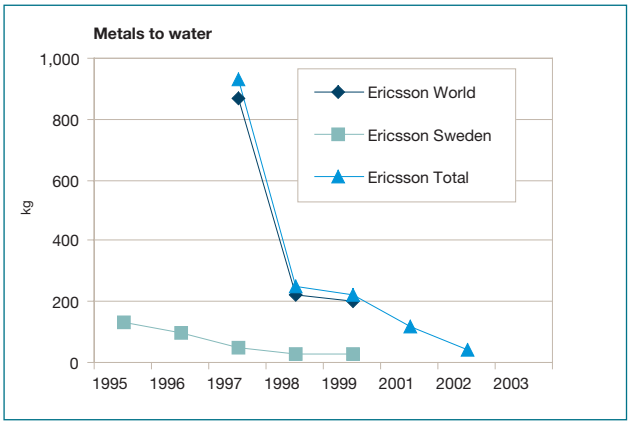
**Products:** During 2002, Ericsson shipped a grand total of 77,500 tons. This figure includes both products and packaging. While the produced weight has decreased by 40 percent since 2000, the produced capacity is higher. Material declarations and LCA information for many products can be provided.

**Waste:** During 2002, the total volume of industrial waste output was 29,900 ton – a significant decrease.

**Emissions to air and water:** Investments in closed systems and cleaning technology have helped us reduce our total emissions with a factor of more then 100 in the last 10 years. Product dematerialization and outsourcing accounts for part of the reduction. When emissions have been reduced to such low levels, the authorities no longer require measurements in some cases (see the emission diagrams).

**Environmentally related accident and fines:** Ericsson had no environmentally related fines, penalties or other noncompliance during the year. Minor environmentally related accidents, such as oil and water leakages, occurred with an estimated clean-up cost of less than SEK 100,000.



# Ericsson's environmental profile covers the whole life cycle of our products.

Environmental life cycle assessment (LCA) is a technique for assessing the environmental aspects and potential impacts associated with a product or a service. LCA studies the environmental impacts throughout the whole life cycle of the study object, i.e. from raw material acquisition through production, use and disposal.

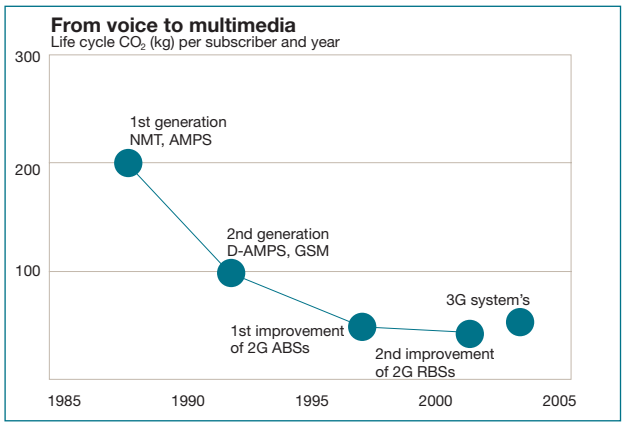
In our view, the whole product life cycle must be included in an environmental profile of Ericsson's activities. This philosophy not only gives the most accurate description of the present, but also guides us toward the right strategic decisions in the future. Ericsson has completed LCA's on our most important volume products in order to provide a meaningful environmental profile – a LCA for the whole of Ericsson.

The results show that most of our indirect carbon dioxide (CO2) 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 whom we select as suppliers of components and parts.

## Improvements over time

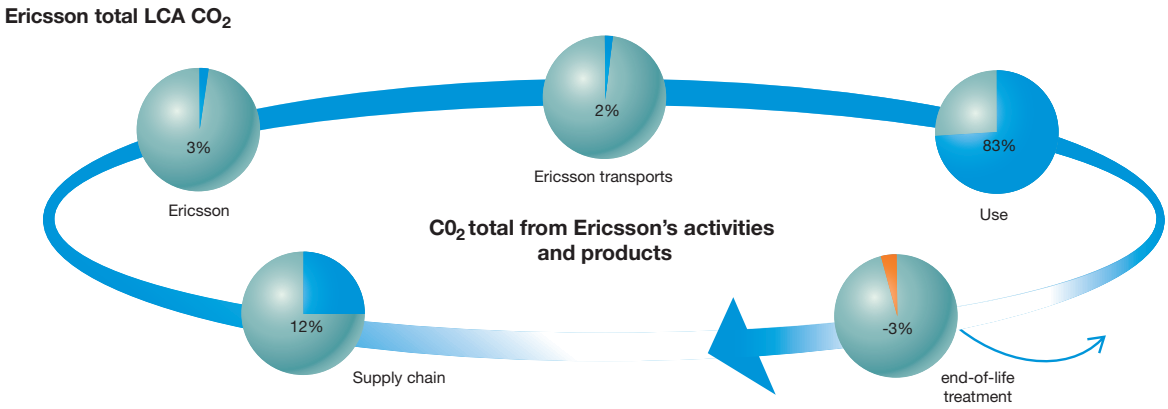
We have used the life cycle approach for several generations of Ericsson technologies – and we take a degree of pride in the overall improvements in environmental performance this has helped to bring about. In parallel with technical and functional advances there is an improvement in energy efficiency.

The chart 'From voice to multimedia' shows improvements for wireless systems – Ericsson's largest business and the most studied systems. The chart also includes the new 3G technology, which is described in depth in the next section. All systems are based on world averages and use the same LCA methodology.




The chart reveals 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.

An average subscriber in a modern wireless system emits about 50 kg life cycle $CO_2$ a year. This amount equals driving an average car 200 km (20 l), something you normally do in just a few days. And production is included in the wireless figure, of the terminal for example, while production of the car itself, roads, gasoline, gasoline stations etc., is not included in the car figure. Continual improvement of energy consumption in mobile communication systems is an increasing environmental challenge – and one that Ericsson is dedicated to.



# LCA case study: 3G system

Within the 3G LCA project, a unique telecom LCA model with an extensive LCA database has been created. Its open modular structure let us easily create operator specific scenarios with changed energy systems, specific hardware configurations and receiving environments. The 3G system discussed in this case is a global average scenario for 1.5 million subscribers.

The following major products and their life cycles are included in the 3G LCA study: 3G terminals, radio base stations, radio network control stations, microwave links and transmission cables, antenna towers and site housings including power and climate equipment. Office activities at Ericsson and the operator are also included. The product life cycles are "from cradle to grave", from raw material extraction to end-of-life treatment, and we see the study as a true holistic LCA.

A time period of one year is set to normalize the life spans of different products – which typically vary from three (terminal) to twenty years (towers, housings). To further divide by number of subscribers in the system gives the functional unit one year's average subscription.

12 different environmental impact categories have been studied and the results show that categories related to fossil energy use are the most important ones. The climate change indicator expressed in CO2-equivalents is most suited to use as a key indicator of the results.

### Results and conclusions

The results can be summarized as a 3-point guideline, for what Ericsson as a supplier of 3G systems should focus on, or as a guideline for what an operator of a 3G system should focus on (or request of us – the supplier):

Electricity consumption in the use phase – Operation of radio base stations dominates the use phase. Low power design and choice of cooling solution are important.

Manufacturing activities in the supply chain – Choice of components and suppliers together with a small and effective product design is important. The terminal and especially its electronic components is the most important hardware to look into.

Office activities – R&D, marketing & sales, customer relations, administration and maintenance require buildings, equipment and travel, especially by the operator, but also by Ericsson.

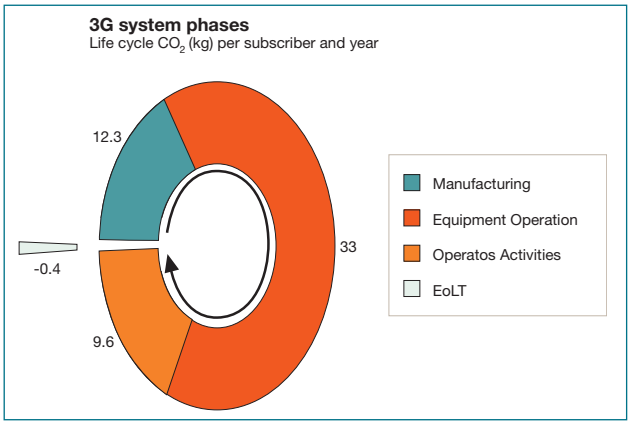
The result per average subscriber can be compared with the total environmental impact per capita in the world. Which is equal to the impact a global 3G system would add (as if every human got a 3G subscription):

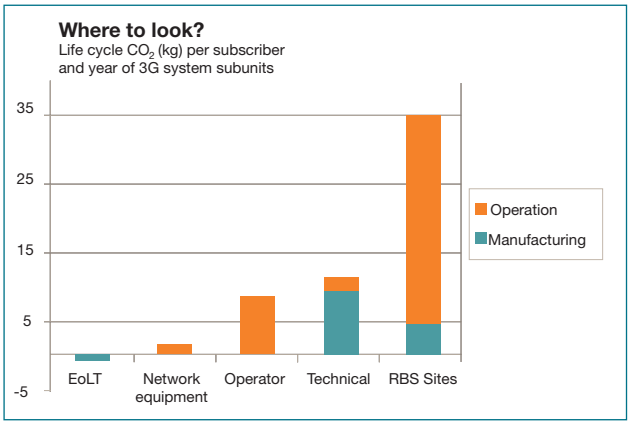
(+) 0,06 percent Raw material resources depletion (+) 0,7 percent Energy resources depletion and climate change (+) 0,004 percent.

### Use of land resources

These numbers further emphasis the environmental importance of energy use, and not materials or land use for a 3G system. Naturally, uncertainties are associated with trying to quantify the world's total environmental impact.

Anyhow, we dare to state that a global 3G system could be built and used without depleting the world's resources and environment. In telecom lies the possibility to offset impacts from other activities (travel, buildings) and it might be the only way to make education, social and health information and a market place accessible to all the world's citizens.



# Glossary

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

**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.

**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 practices for its products when they have reached their end of life.

**EoLT**
end-of-life treatment

**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.

**Msub**
Million subscribers

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

**pkm**
Person kilometer

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

**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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