



# ENVIRONMENTAL REPORT 2000

SCANIA

The English version of the Environmental Report is a translation of the Swedish language original. Translation: Victor Kayfetz, Scan Edit.

## Audited by Det Norske Veritas

Det Norske Veritas (DNV) has audited the facts presented, with an emphasis on the figures, in the Scania Environmental Report concerning 2000 and can state that these have been gathered with the appropriate care from operating units and agree with the source data on which the Environmental Report is based. In the judgement of DNV, the account of environmental conditions and the results achieved provides a true and fair picture of the portions of the company's operations that are presented.

Stockholm, 28 February 2001

Anders Johnson
*Lead manager*
DNV


Printed on environmental-suited paper 341 073

# Environmental thinking throughout the organisation

At Scania we are constantly working to reduce our impact on the environment. Our own ambitions, customer demands and political initiatives inspire new and better solutions all the time.

Without question, consideration for the environment is an important competitive tool. Environmental thinking is therefore an ever-present theme in our roles: as a manufacturer, a supplier, a customer and an employer.

As a manufacturer, we are continuously striving to decrease the resources that go into producing each vehicle, and to reduce the accompanying emissions and wastes.

As a supplier, we want to offer our customers the best environmental performance in the market. First and foremost by including consideration for the environment in every stage of our product development, but also by ensuring the environmental performance of our vehicles throughout their service life, given the right service and maintenance. In addition, Scania is working to find ways to improve the environmental characteristics of older vehicles by upgrading and retrofitting them.

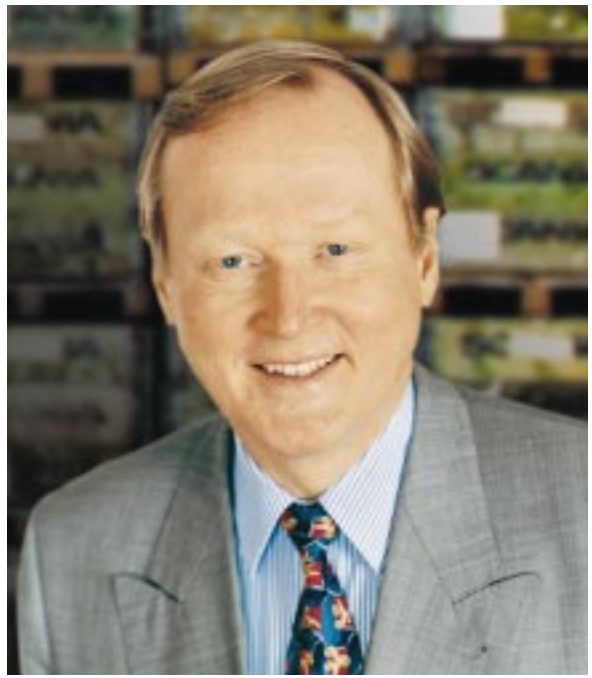
As a customer, we make vigorous efforts to reduce the environmental impact of our own transport work. The procurement of a new logistics system for Scania (Euronet 2000) will enable us to improve haulage efficiency between our production sites by nearly 20 percent. We are also introducing ever-stricter controls on chemicals by implementing detailed phase-out plans for certain substances and making clear demands on our suppliers.

As an employer, we obviously have to ensure that everyone has the tools and development opportunities needed for a day-to-day environmental commitment.

At Scania we have every reason to be proud of our environmental work. Scania has a complete range of engines that are certified according to the latest European Union emission standards, Euro 3. Our organisation has well-established environmental management systems that meet the ISO 14001 international standard.

But the biggest challenges lie ahead of us. In the foreseeable future, with the help of engine development and information technology we will see entirely new kinds of heavy transport solutions. Meanwhile our responsibility to customers is evolving more and more towards the delivery of comprehensive service-related packages. Success in these areas will require both continued active environmental work and more intensive efforts to promote our “softer” values. It is therefore natural that beginning this year, we are expanding the Environmental Report to show how we at Scania promote our ethical and social values as well.

In our day-to-day work, these values are on our minds.



Leif Östling
*President and CEO*

International economic growth increases the demand for transport services by air, on the road, by rail and across the water. Transport services are necessary in order to improve our well-being, but they also have an impact on the environment in the form of traffic congestion, noise and emissions.

# Transport services – indispensable for everyone

Mobility for people and goods is fundamental if our day-to-day life is to function. Boats, trains, aircraft, buses and trucks are important elements of an increasingly international transport network. There is also an increasing need for actions to counter the negative impact of transport services on the environment.

## Smoother collaboration boosts efficiency

Different modes of transport are dependent on each other to move goods in the most efficient way. But trucks do what no other mode of transport can – deliver from door to door.

Smoother collaboration between trucks and railways, for example, could optimise transport flows.

Until today this has been difficult, since railways have been governed by separate national rules. The European Union (EU) has therefore approved a new railway policy aimed at enabling railway companies from all of Europe to utilise the rail networks of the various member countries. Part of the network may open as early as 2002.

## A growing EU means new transport flows

The development and enlargement of the EU have both positive and negative environmental consequences. When former East bloc countries become members, trade in the EU single market will double, which in turn will increase transport volume. Meanwhile, EU environmental requirements will encompass these countries, too. This includes the introduction of common fuel quality and emission requirements.

## Political decisions lead to regulations

Environmental laws and standards differ between regions and continents. EU regulations alone include some fifty directives that specify such characteristics as emissions, noise and the technical design of heavy vehicles.

In the heavy vehicle industry, product development takes a long time. It is therefore important to know as early as possible what legal requirements will be applicable in the future. It is consequently positive that the EU's Euro 4a and 4b emission regulations, which take effect in 2005 and 2008 respectively, provide clear directives about what approach will apply.

The EU plans to tighten its requirements on the use of chemicals suspected of being hazardous to health and the environment. This new chemical policy will further diminish the use of certain chemicals and substances in manufacturing.

Efforts are also underway in the EU to improve the environmental characteristics of products throughout their life cycle by means of the “Integrated Product Policy” (IPP). The aim is to ensure that the products of tomorrow will consume less energy, have a lower environmental impact and generate less wastes.

## Increased market demands

Customer demands are often more far-reaching than those of political decision-makers. ISO 9001-certified quality management systems and ISO 14001-certified environmental management systems are now established in many companies. This has encouraged clearer demands to minimise the impact of their own transport services on the environment.

Mexico City, with 26 million inhabitants, is one of the world’s most polluted metropolitan areas. To reduce emissions, the authorities want to improve public transport, both by modernising the fleet of 12,000 buses and by introducing alternative fuels. Scania is participating in an ethanol-powered bus trial, represented here by bus driver Enrique Peña Valencia.

Increased environmental awareness among the general public is another important driving force. Companies cannot afford to ignore the environmental characteristics of their products. Environmental image is linked to the way people feel about a company’s brand name. Good environmental performance is considered a basic requirement, which is factored together with quality, safety, price and brand perception in choosing a product.

## Cities important meeting points

Road traffic accounts for about 80 percent of energy use in the transport systems of cities. Urban political decision-makers are therefore important players in the procurement of cleaner, more energy-efficient vehicles.

A number of European cities are discussing the introduction of environmental zones where Euro 3 engines would be a minimum requirement. In the future, there will probably be even tighter local and regional standards for transport services in built-up areas.

In the world’s megacities, the environmental situation is often very complex. The United Nations and the World Health Organisation, together with the World Bank, are sponsoring various projects to improve the environment of the world’s most severely affected metropolises. By working with these organisations and local authorities, for instance through programmes to modernise public transport, vehicle manufacturers can contribute to a better big-city environment.

## Mobile information technology

Information technology (IT) will play an ever-increasing role in changing the goods transport system. Connecting a vehicle with telecom services and the Internet creates improved communication opportunities between the vehicle, the transport company and customers. This will boost capacity utilisation, thereby benefiting both the environment and the profitability of transport companies.

**Heavy duty vehicle directive emission limits**

| Emission limits g/kWh | Euro 3 2000 | | Euro 4a 2005 | | Euro 4b 2008 | |
|---|---|---|---|---|---|---|
| | ESC | ETC | ESC | ETC | ESC | ETC |
| Nitrogen Oxides ($NO_X$) | 5.0 | 5.0 | 3.5 | 3.5 | 2.0 | 2.0 |
| Particulates (PM) | 0.10 | 0.16 | 0.02 | 0.03 | 0.02 | 0.03 |
| Carbon monoxide (CO) | 2.1 | 5.45 | 1.5 | 4.0 | 1.5 | 4.0 |
| Hydrocarbons (HC/NMHC) | 0.66 | 0.78 | 0.46 | 0.55 | 0.46 | 0.55 |
| Methane ($CH_4$) | n.a | 1.6 | n.a | 1.1 | n.a | 1.1 |

ESC (European Steady-state Cycle) for diesel engines.

ETC (European Transient Cycle) for gas-powered engines plus diesel engines with advanced after-treatment.

By establishing ground rules for the vehicle industry, EU regulations on emissions from heavy duty vehicles will have a positive impact on the environment in Europe.

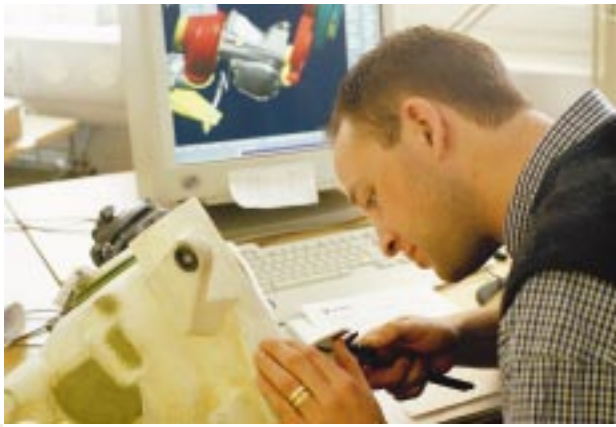
# Life-cycle philosophy is the base

Scania shall decrease the environmental impact of its products throughout their life cycle. Cleaner products, cleaner production and more efficient resource use are central issues.

Day-to-day environmental work is based on the life cycle of products. Every individual contribution is evaluated, no matter how small it may seem. Scania's model closely resembles the "Integrated Product Policy" (IPP) that the EU is currently crafting.

## Research and development

The final outcome can never be better than the design allows. More than 90 percent of a Scania vehicle's impact on the environment occurs during its service life. It is thus important to introduce environmental aspects right from the development stage, thus making it possible to improve material content and fuel consumption, as well as reduce emissions throughout the lifetime of a vehicle.




## Recycling

Scania aims at "design for recycling". This means that a vehicle is designed for simpler, more efficient dismantling and sorting, making increased reuse and recycling possible.

### Material selection and procurement

Scania is working to eliminate unsuitable materials even before they reach the “factory gate”, without sacrificing quality and performance. As a consequence, the company is focusing more and more attention on the environmental work of its suppliers.

### Manufacturing

By working systematically through management systems, developing new technology and improving existing processes, Scania has continuously been able to streamline its resource use while minimising emissions and residual products.

## Strategic environmental work

Keeping all the elements of the life cycle together requires a philosophy that integrates the whole process. This, in turn, requires a management system that takes a holistic approach. Scania works and is certified according to the ISO 14001 standard.

### Service and maintenance

Properly performed servicing is important in preserving a vehicle’s environmental characteristics. The groundwork for making this possible is laid during the development of new vehicles. More than 1,500 Scania service points around the world then take care of the rest.

### Service life

Scania helps its customers choose the right vehicle for a given transport need. By optimising such factors as the cab and engine from the time of purchase, customers save weight and thus fuel throughout the vehicle’s service life. Scania also provides support by supplying a declaration containing information on the vehicle’s environmental characteristics, as well as driver training, service programmes etc.

Staffan Garås, head of the chassis assembly in Södertälje, Sweden:

"The ISO system means structure, which is good. It is an excellent platform for continuous improvements."

### Environmental work in the chassis assembly

For every process at the chassis workshop in Södertälje, there is an environmental team that discusses possible improvements, large and small, at regular meetings. During 2000, for example, the dust separation system in the engine painting box was changed. This resulted in lower emissions, less residual material, decreased energy consumption and safer maintenance.
The chassis workshop also has a system for measuring solvent wastes and emissions. A specially designed report has been integrated into the IT system. It tracks consumption, emissions and targets in graphic form, month by month.

# Every day – an environmental day

Environmental work is part of the day-to-day work of Scania's more than 26,000 employees around the world. With ISO 14001 as the foundation, every operating unit works systematically to introduce continuous environmental improvements. Overall environmental targets are broken down into concrete local targets and activities.

### The environment a management parameter

Environmental work is an integral part of Scania's organisation. Environmental consideration is among the controlling parameters in each field of operations, along with safety, quality, delivery assurance, economics and training.

### ISO 14001 provides structure

The environmental management system provides a structure that supports Scania's own philosophy of continuous improvements.

The ambition is to achieve a common environmental philosophy and integrated environmental work that not only encompasses Scania's own production system, but the

Scania's production unit in Brazil is one of all the units that is ISO 14001-certified.

entire chain from sub-contractors to service workshops and dismantling.

The whole Scania industrial system (including development resources, production units and corporate marketing staff units) has been ISO 14001-certified since 1999.

Scania is also endeavouring to introduce environmental management systems in its distribution and service network, as well as among its suppliers.

## Line responsibility and networks

Day-to-day work occurs in the line organisation. Environmental aspects are identified in Scania's own operations, and local targets and action programmes are devised. These are then aggregated into Group-wide environmental targets.

The environmental organisation is structured as a network. At the local level, each respective environmental coordinator works with environmental committees that develop and seek employee support for practical actions. Common items of business are prepared by the Environmental Committee, where Scania's environmental coordinators from various operations meet under the leadership of the head of the Quality and Environment department.

Environmental issues of strategic importance to Scania are dealt with by the Environmental Board, which includes several Group Management representatives.

## All employees environmentally trained

A basic environment training course entitled "The Many Small Steps" is mandatory for everyone who works at Scania. After that, individual employees together with their immediate supervisors are responsible for further training. For example, there is a supplementary course entitled "Environmentally Adapted Product Development" for product developers.


**Continuous exchange of experience**

Environmental coordinators from around the world (a total of 45 people) gathered for Scania's annual environmental seminar in Frankfurt, Germany, in September 2000. The lectures, discussions and workshops dealt, among other things, with how Scania views and is viewed by its surroundings, and what continued environmental work following ISO 14001 certification may entail.

Vera Tavares, who is in charge of Scania's management systems at the São Paulo production unit:

"The challenge is to make everyone aware that small actions can also yield good environmental results."

All employees at Scania undergo the company's basic environmental training course, "The Many Small Steps".

# Tomorrow's solutions are being tested today

Scania's life-cycle philosophy is the foundation for its research and development work. The Scania Technical Centre in Södertälje pursues the long-term task of developing future generations of engines and vehicles. The focus is on lower fuel consumption and reduced emissions. Selecting the right materials and decreasing the weight of vehicles without sacrificing quality, cargo capacity and performance are other high-priority areas.

## Environmental consideration in development work

Vehicle development, from the first sketches to the finished manufactured product, is defined and controlled by Scania's production development (PD) process. Environmental consideration is one of several parameters taken into account. By including environmental aspects in product development at an early stage, the environmental impact of a product can be reduced throughout its life cycle.

During 2000, most Scania product engineers received training in environmentally adapted product development. This training course focuses on the various phases of the life cycle in order to identify the environmental aspects of a development project at an early stage. Scania has tested a number of methods for determining the environmental impact of products during their life cycle, among other things by using Design for environment (Dfe) and Environmental Effect Analysis (EEA). A doctoral student in industrial engineering is working on behalf of Scania to develop new methods adapted to the company's conditions.

## Continuous development of engines and combustion technology

Scania's engine development work focuses on identifying optimal solutions from both an environmental and a cost perspective. Scania's own ambitions and future EU emission threshold limits are not alone in inspiring this work. Customers are also pushing to integrate new technology into their transport operations. New combustion technology and various emission control methods are continuously being tested in order to identify both short- and long-term solutions.

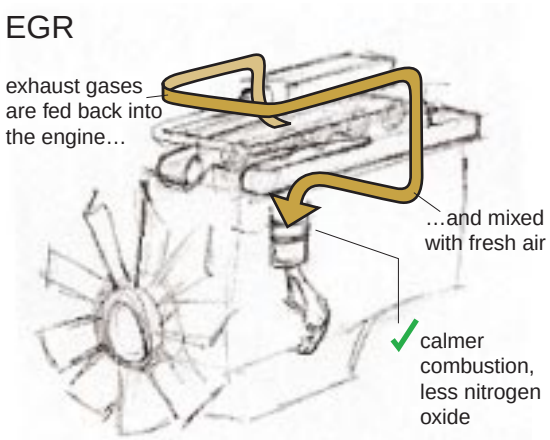
### *EGR*

One high-priority technology in Scania's engine development work is Exhaust Gas Recirculation (EGR). In this technology, a certain quantity of exhaust gases is cooled and then fed back into the engine to fill the cylinders again, together with fresh air. Mixing these gases into the combustion air lowers the temperature and speed of combustion. This diminishes nitrogen oxide (NOx) formation without increasing fuel consumption. However, EGR leads to higher particulate emissions, which can be offset with a particulate trap.

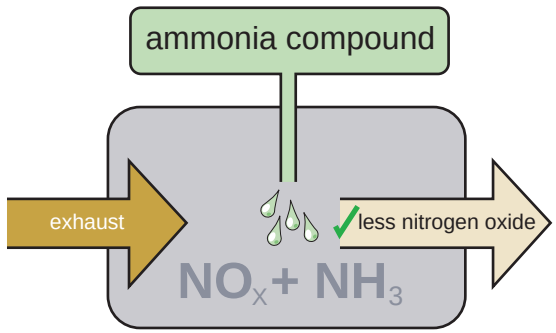
### *SCR*

Selective Catalytic Reduction (SCR) is another technique that Scania is testing to reduce nitrogen oxide emissions. An ammonia compound is used as a reduction agent and is led into the exhaust system from a separate tank. SCR has some disadvantages, however, for example the risk of ammonia leaks. It will also require the establishment of a whole new network for distribution of ammonia.

EGR



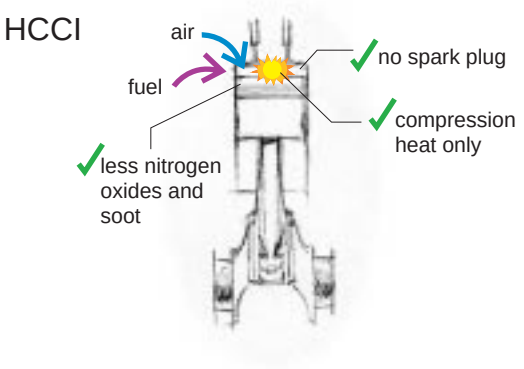

SCR




Scania is developing a hybrid bus with fuel cell propulsion, built in Silkeborg, Denmark.

*HCCI*

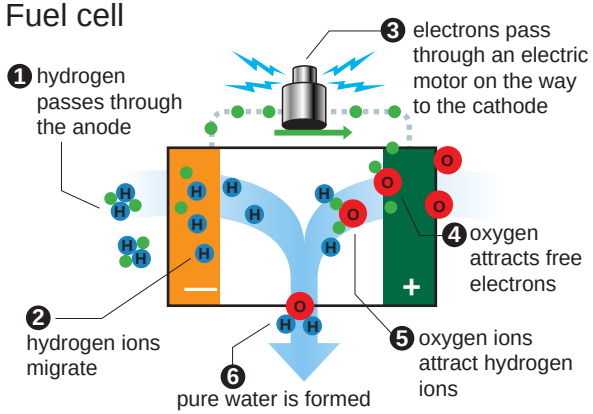
Scania is working both in-house and in collaboration with the Lund Institute of Technology and the Royal Institute of Technology in Stockholm to realise Homogeneous Charge Compression Ignition (HCCI) in future generations of vehicles. This technology is based on mixing air and fuel, then utilising the compression heat for ignition. In that case, no spark plug is needed. Somewhat simplified, HCCI can be described as midway between a petrol engine and a diesel engine. Nitrogen oxide and soot emissions can be decreased to only one hundredth as much as today's diesel engines, while maintaining high efficiency.

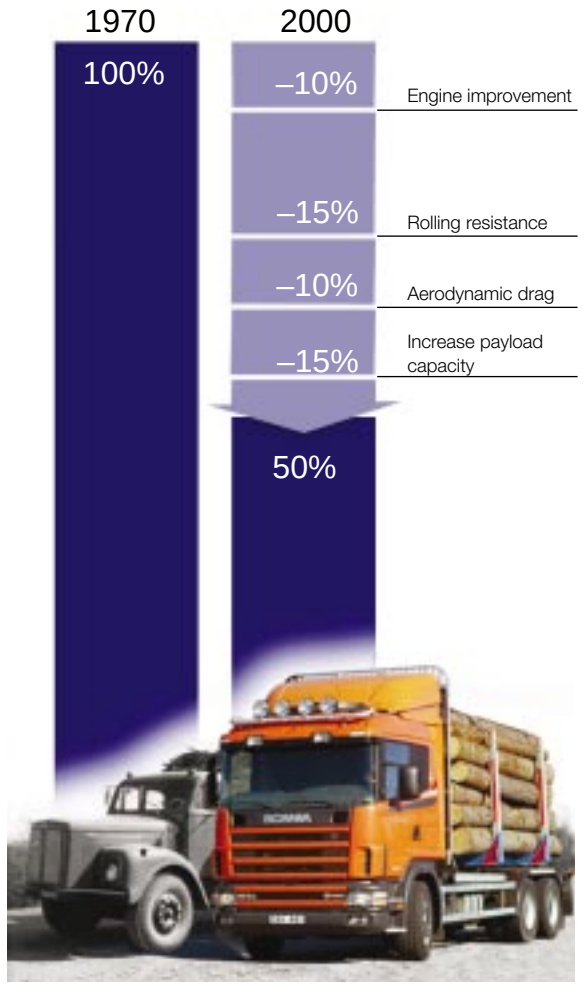



*Fuel cells*

The fuel cell, which is based on harnessing the energy released when hydrogen is mixed with oxygen, is another research field for the vehicles of tomorrow. This technology may initially go into use in local distribution vehicles and central city buses.

As part of an EU-financed project, Scania is developing a hybrid bus with fuel cell propulsion. The bus is expected to be ready for test driving during 2001.




## Fuel consumption halved in 30 years

Fuel consumption for a given transport task has been cut in half over the past 30 years, thanks to continuous development work in combustion technology, decreased rolling resistance and aerodynamic drag as well as weight savings. During the same period, nitrogen oxide emissions declined by about 90 percent and particulate and hydrocarbon emissions by 50 percent.

### The Green Vehicle

During 2000, Sweden's vehicle industry started an R&D project in partnership with the Swedish government. The programme runs for six years. Among its purposes is to develop techniques for exhaust gas treatment. At the signing ceremony before the project began, the participants included Leif Östling, Scania's President and CEO, and Björn Rosengren, Minister of Industry, Employment and Communications.

Scania has wide-ranging collaboration with institutes of technology, universities and other research institutes. This includes making test results and facilities available as well as inviting students to carry out graduation projects and doctoral research assignments at Scania.

## Lower weight

Various projects are underway at Scania to decrease vehicle weight without sacrificing important characteristics such as safety, quality and performance. This includes studying the potential for replacing certain steel and cast iron components with lighter metals such as aluminium or magnesium. A larger proportion of light metals in the vehicle eliminates weight that can instead be used for cargo. Other possibilities may be to replace metallic materials with composite materials or use thinner, higher-strength steel plate, for example in the cab structure.

## Decreased air resistance

Aerodynamic characteristics have a major impact on fuel consumption. When a long-haul truck drives 80 km/h on a flat road, air resistance accounts for half of total resistance while driving. Scania is continuously refining the aerodynamic shape of its vehicles. The front of a truck and the passage of air around and over the cab are important elements in minimising the disruption of air currents. But air flow under the truck, behind the cab and along the sides is also important. The greatest potential is in better design of the rear edge of the superstructure and trailer.

Testing mainly assumes the form of wind tunnel experiments, using both full-scale trucks and smaller models.

## Lower noise level

Scania is continuously working to reduce vehicle noise. With quiet-running components and effective noise encapsulation of the engine, noise is within the 80 dB limit established by the EU. At speeds above 35 km/h, however, tyre noise dominates. External noise levels could therefore become even lower by reducing tyre noise.

Scania lowers the internal noise level in the cab primarily by attacking noise and vibrations right at their source, and secondarily by encapsulating or isolating it. As a result of this development work, Scania's cabs are among the quietest in the market.

New aerodynamic solutions are mainly tested by means of wind tunnel experiments.

Continuous work is underway to further decrease the noise level in cabs.

The weight of the vehicle can be reduced by optimising structures.


Scania's full-scale 2010 concept truck is a rolling laboratory that tests the solutions of the future.

Engine characteristics are studied in long-term engine test cells.

External noise levels are measured both by means of laboratory experiments and field tests.

Advanced electronic management systems are tested to improve the interplay between vehicle and driver.

# Scania as a customer

Procurement of the right materials, products and components is fundamental to Scania's environmental work. Gradually decreasing the environmental load even before the "factory gate" will improve the environmental performance of Scania vehicles throughout their life cycle. Scania's procurement department is working to invent suppliers for the purpose of decreasing the use of materials and substances with a heavy environmental load.

## Scania is tightening its requirements

Scania is requiring that suppliers of products and components will be ISO 14001-certified by the end of 2001. Those that fulfil Scania's requirements will be included in the company's Qualified Supplier List. Today one fourth of Scania's suppliers are certified.

## Fewer and better suppliers

Scania shall work with fewer, but more qualified suppliers. Through close collaboration, these suppliers can contribute to the further refinement of Scania's products.

During 1999, Scania introduced the Supplier Evaluation Model, an assessment tool for developing collaboration with its suppliers. With the help of this model, Scania assesses suppliers on the basis of certain parameters, of which quality and the environment are key criteria.

## Scania's purchasers work together globally

The Scania Supplier Evaluation Model is part of the work being pursued by the company's Global Procurement Councils. These councils are found at different levels in the Scania organisation. Their purpose is to create a more efficient supplier structure.

The work now underway includes reviewing the existing supplier contracts, conducting common global procurement negotiations and following up supplier performance. This will make it possible to coordinate global procurement needs and more easily compare suppliers in different markets.

## Blacklisted substances gone by 2004

Scania's black- and graylists are also important. The blacklist specifies chemical substances and materials that will be prohibited in the company's production system and products. The graylist specifies substances whose use should be curtailed. The lists include lead and lead compounds, halon and organic chlorine solvents. During 2000, Scania inventoried substances and chemicals in the products and production processes of its suppliers.

The target is that all use of substances on the blacklist in the Scania production system shall cease by 2004.


Scania's own logistics system ensures that all haulage occurs as efficiently as possible, with the highest possible payload and as few empty runs as possible. One example is the transport of components by truck from Great Britain to the axle assembly unit in Falun, Sweden. In Falun, finished axles are loaded on the same truck for transport to the assembly plant in Angers, France, via a ferry from Gothenburg, Sweden, to Ghent, Belgium.

The new Euronet 2000 system enables Scania to take the logistics chain one step further. In the above case, this might involve loading the same rig with finished products in Angers for final delivery to customers.

# The right place at the right time

Scania is a sizeable purchaser of transport services. Globally, Scania buys nearly SEK 1.2 billion worth of transport services per year, and road haulage accounts for about 80 percent of this. By coordinating its material flows even better, Scania's aim is to reduce the number of trips.

## New logistics system

An advanced logistics system ensures that the entire transport chain from suppliers via Scania's production units to final delivery works efficiently. In the ongoing Euronet 2000 logistics project, Scania goes one step further. In Scania's European operations, the number of transport service suppliers will be reduced from about 20 to one or at most a few full-service suppliers. Procurement of these services was underway during 2000 and is scheduled for completion during the second quarter of 2001.

## Better capacity utilisation

By using a small number of logistics providers that can take a holistic approach to Scania's complex European logistics chain from Luleå, Sweden, in the north to Angers, France, in the south, Scania is aiming at 10-20 percent better capacity utilisation in its transport flow.

This improvement will not only reduce Scania's costs, but also spare the environment. Transport and logistics suppliers will have free hands when it comes to choosing transport modes and routes. The main thing is that the transport solution meets Scania's requirements in terms of safety, environment, quality, delivery precision and economics.

## Intercontinental transport services

Shipments between Latin America and Europe mainly move by sea and are already delegated to outside suppliers. Since Scania switched to a larger type of container in 1999, capacity utilisation has risen by about 10 percent. In collaboration with the supplier, Scania is endeavouring to increase capacity utilisation further.

## All packaging is recycled

Packaging and materials handling are other areas included in Euronet 2000. The purpose is to enable the logistics supplier to handle the coordination of packaging materials and packaging services as well. Scania owns its packaging materials and they are recyclable. The technical service life of a loading pallet may be up to 5 years, and for a plastic box 10 years.

# Being a good corporate citizen

Sustainable development means satisfying the needs of today's society without jeopardising the living conditions of future generations. But it is not enough to focus exclusively on ecological considerations. Values related to economic development, ethics and social responsibility are becoming ever more important in the way people perceive a company. Of course, Scania must be a good corporate citizen.

## A brand is more than products

A number of research studies indicate that Scania is one of the world's strongest brand names for trucks and buses. Scania's products – vehicles, service-related products and customer financing – play a major role in its identity. At least equally important are common values and working methods throughout the organisation. This applies not only to product development and production, but also to the way Scania treats its customers and other stakeholders. Scania bases its operations on a socially and environmentally responsible approach.

## Respect for the individual

Scania's actions must be permeated by respect for the individual. This applies to everyone who is affected by Scania's operations. Respect for the individual obviously means that Scania complies with the universal declarations of both the UN and the EU on fundamental human rights. Scania rejects all discrimination based on gender, skin colour, religion, political opinions, functional impairments, age or other factors. At Scania, it goes without saying that women and men are offered the same opportunities to grow in their professional roles, regardless of what country Scania is operating in. Individual performance and needs are what counts.

The photo shows Suzana Martin, head of production at the Scania engine assembly plant in São Paulo, Brazil.

- Scania has manufacturing and assembly operations in 18 countries.
- The company is represented in about 100 countries via 1,000 local distributors and 1,500 service points.
- In 2000, the average number of Scania employees was 25,456 working in 44 different countries. In addition, about as many people work in Scania's independent distribution and service organisation.
- Of these employees, 22,220 were men and 3,236 women.

## Common principles

Scania operates according to common philosophies, principles and priorities. This applies not only to its production system, but also to health, safety and environmental responsibility for all its operations in different parts of the world.

At all of its manufacturing sites, Scania encourages various leisure activities aimed at promoting health, well-being and social contacts between its employees.

## One step further

A large proportion of Scania's employees live in Sweden, where the laws and practices related to such issues as labour rights and employee influence in the corporate decision-making process are very far-reaching. This reduces the need for company-specific policies. The national labour legislation that is in force naturally represents a minimum level for Scania in other countries where the company also has employees. But Scania often chooses to apply more far-reaching principles.

In Sweden, for example, Scania gives its employees extra benefits during parental leave. Scania supplements the government-financed parental insurance benefit to bring total benefits up to 80 percent of normal wages or salary for 180 days for those earning up to SEK 45,000 per month.

## Tolvskillingshjälpen

Scania is one of the founders of Tolvskillingshjälpen, a charitable organisation that raises funds for children's education and development in developing countries. Almost 100 percent of all Scania employees in Södertälje contribute to Tolvskillingshjälpen. Since its founding in 1960, Scania employees have raised more than SEK 13 m. altogether.

## Demands on suppliers…

Scania requires that its suppliers comply with the provisions of the UN universal declaration of human rights concerning employee health, safety, wages and working conditions. Scania's operations are relatively complex, and in practice they require trained employees. This means that compared to many other sectors of industry, it is easier for Scania to monitor its suppliers to ensure that no improper work practices occur.

## … and customers

Scania respects and complies with UN rules. The company manufactures civilian vehicles, which can be adapted for military uses, for example as mine clearing trucks with extra shielding to protect them against shrapnel.

## Scania can exert an influence – and it does

Locally, Scania is often a major employer. Concern for the local community is of particularly great importance in regional development areas, where Scania's operations have a sizeable influence on economic growth.


## One million vehicles

In July 2000, Scania presented its millionth vehicle, a three-axle tractor unit, to the International Red Cross (ICRC). Employees from each of Scania's production units worldwide worked together to manufacture this vehicle, and 22 of them were present when it was handed over.

By inviting these employees from different countries to participate in the ceremony, Scania underscored the value of collaboration among people around the world. The Red Cross is now using the truck in its relief efforts in the Balkans.

# Lower resource use…

Scania's manufacturing facilities endeavour to achieve cleaner, increasingly resource-efficient, streamlined, cost-effective production and to deliver products of increasingly high quality.

## Doing it right the first time

When manufacturing a truck, bus or engine, Scania transforms raw materials into finished products. During this process, it uses resources such as raw materials, energy and water as well as chemicals and other input materials. Residual materials and emissions occur as by-products.

Scania's production system is designed according to four main principles:

- A standardised working method that achieves a balanced flow throughout the production chain
- "Doing it right the first time", with all employees regarding the next stage of the manufacturing process as their customer
- Consumption-controlled production: not beginning production until the customer has signalled a need
- Continuous improvements, in order to create a new, better normal situation and avoid waste

These production principles, together with Scania's environmental management system, have enabled the company to reduce both its resource use and emissions from the production system year after year, while significantly increasing its production volume.

## Material use

Scania endeavours to make its use of raw materials and input materials more efficient, and also replace dangerous, hazardous materials and chemicals.

> *In 2000, raw material use totalled about 3.2 tonnes per vehicle manufactured.*
>
> *During the year, chemical consumption totalled 86 litres per vehicle manufactured. This represents a decrease of 6 litres since 1999.*

## Focus on energy conservation

Vehicle manufacturing is an energy-intensive activity. Today electricity comprises most of the energy Scania uses.

In most operations, there are energy management and heat recovery systems today. Scania has conducted extensive surveys of conservation opportunities, and the task of implementing them is yielding results.

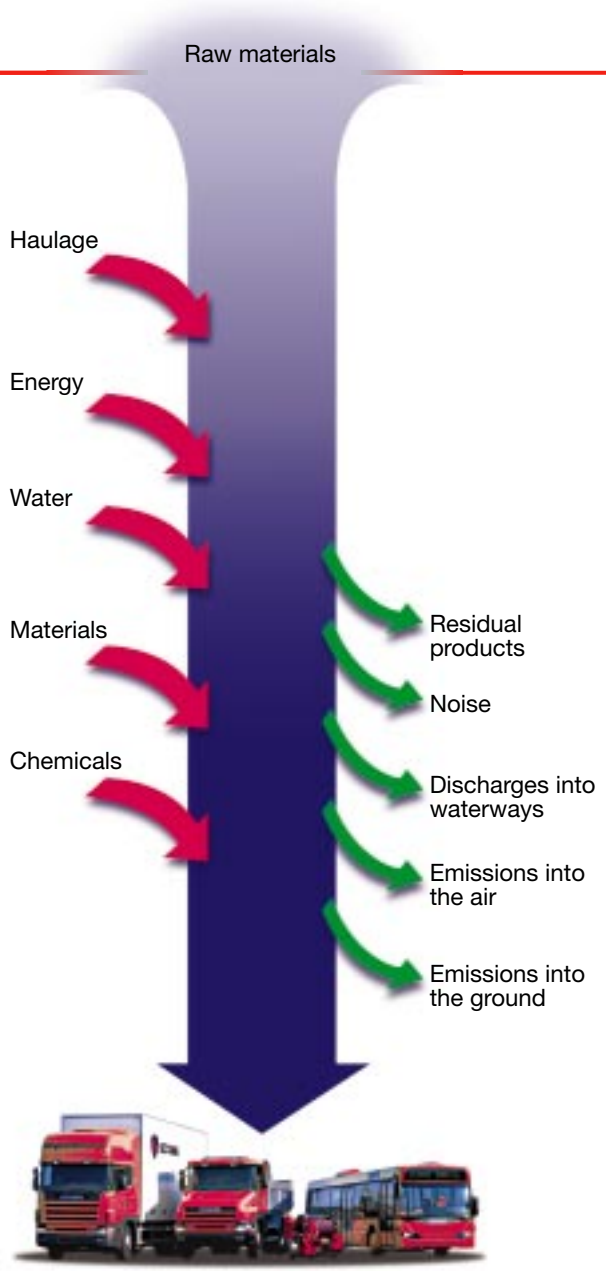
> *During 2000, energy use totalled about 11 MWh per vehicle manufactured. This represents a decrease of 35 percent since 1996.*
>
> *Carbon dioxide emissions from Scania's production system totalled 1.3 tonnes per vehicle during the year. This represents a decrease of nearly 35 percent since 1996.*

In Södertälje, Sweden; Zwolle, the Netherlands; and Angers, France, Scania has introduced water-borne paint for engines and gearboxes. This minimises the use of volatile organic compounds (VOCs).

## Water in closed-cycle processes

Scania's ambition is a production process largely free of industrial wastewater emissions. Efforts are continuously underway to reduce these emissions, among other things by means of longer service lives for process baths and increased recycling.

> *During 2000, water use totalled about 11 cubic metres per vehicle. Since 1996, Scania has nearly halved its water use per vehicle.*




By minimising the inflow of resources and input goods, Scania decreases the outflow of environmentally hazardous residues. This is both economically and ecologically preferable to large-scale emission controls and waste disposal.

# …and reduced emissions

## Continuous decrease in emissions

Scania's emissions into the air come mainly from the use of solvents in painting and rust-proofing, as well as from gases formed in various combustion processes. Emissions of organic solvents are being limited by reducing their use and by switching to products with less or no solvent content. Among other things, the introduction of new painting methods has reduced emissions of organic solvents per vehicle by more than 35 percent since 1996.

Improved engine performance, better fuel and shorter engine acceptance testing runs have decisively reduced diesel emissions. Projects are underway to make possible a further decrease in nitrogen oxide emissions.

*Organic solvent emissions from painting and rust-proofing totalled about 8.6 kg per vehicle during the year, a 35 percent decrease since 1996.*

## Recycling

Most of Scania's residual products consist of foundry sand and metal processing chips.

Scania's efforts focus on minimising the occurrence of residual products, introducing greater at-source separation and reducing the quantity of hazardous wastes. A number of projects aimed at increased recycling of materials and energy are underway. The long-term target is that no residual products should need to be deposited in landfills.

*During 2000, the quantity of residual products totalled about 63,000 tonnes, excluding foundry sand. Of this volume, 82 percent is recycled. Foundry sand is used as a material for covering landfills.*

In Oskarshamn, cabs are surface-treated before painting by means of phosphatising, which improves corrosion protection and the adherence of surface paint. During 2000, a new chemical system was introduced and the use of chromium ended completely.

# A product for every need

Scania functions as a partner and adviser when customers are choosing their vehicles. Together they create the best solution for the transport need in question. This lays a good groundwork for economically efficient, environmentally sound transport work.

## Customer demands set the pace

More and more of Scania's customers, and its customers' customers, are engaged in active environmental work. This includes reducing emissions and improving fuel consumption as well as adapting vehicles for driving in sensitive milieus. And customer demands often go beyond what the law requires.

## Optimised vehicles

Scania's well-developed modular system makes it possible to specify a vehicle both in terms of a customer's particular transport needs and environmental performance requirements. To support this, Scania has developed environmental declarations for both trucks and buses.

## Complete Euro 3 range

All of Scania's new engines, from the 230 hp 9-litre engine to the 580 hp 16-litre, meet the EU's Euro 3 emissions standards for heavy vehicles.


Dave Timson, Technical Development Controller, Safeway Stores, Great Britain:

"We have business reasons for thinking about the environment. Many of our deliveries occur in urban areas with strict noise and emissions reduction standards. Cleaner, quieter trucks are important in that context."

Scania's new V8 – the most powerful Euro 3 engine in the market – and the new 6-cylinder 470 engine with turbo-compounding and high pressure fuel injection demonstrate that it is possible to combine high performance and good fuel economy without sacrificing demands for low nitrogen oxide and particulate emissions.

## When the environment is extra important

For passenger and goods distribution services in urban settings, it is often desirable to lower emissions and noise levels beyond existing legal requirements. This can be achieved by equipping vehicles with particulate traps and catalytic emissions control systems, or by choosing a fuel other than diesel.

During 2000, Scania launched a new gas-powered engine for buses and distribution trucks, adapted to Euro 3 requirements.

Today Scania is the world's largest supplier of ethanol-powered buses. A large number of ethanol-powered OmniCity buses are in service, for example, in Stockholm, Sweden. During 2000, test operation of ethanol buses was underway in Mexico City and the first ethanol-powered buses were delivered in Australia.

Also underway is the test operation of a hybrid bus equipped with fuel cells.

## Off the road

Scania's industrial and marine engines are often built into products manufactured by others. About half of the deliveries are for generator sets. One third are marine engines for ships and pleasure craft. The remaining engines are installed, for example, in earthmoving and agricultural machinery.

There are numerous different environmental requirements for the various application areas. The trend, however, is towards international harmonisation. While awaiting more uniform requirements, Scania ensures that the engines delivered to each individual customer meet the existing requirements in each market and field of application.

## Tailor-made solutions

In collaboration with its customers, Scania can adapt vehicles and engines for specific needs. In Beddington outside London, England, for example, an experiment is underway to create a "sustainable" urban environment. A Scania

engine modified to operate on producer gas will generate heat and electricity. And in Rotterdam, the Netherlands, there is one electricity generator that is powered by waste vapours from the loading of oil tankers.

## Transporting hazardous cargoes

One important environmental aspect is to protect the surroundings from hazardous substances that are being transported. Scania has developed various special-purpose vehicles with high levels of safety and good operating economy that can be adapted to specific situations.


London's classic red double-decker buses have been successively equipped with efficient new Scania engines, which produce substantially lower emissions than the original engines.

In Stockholm, Sweden, Scania trucks are used for cleaning streets and roads, among other applications.

Australia is Scania's largest market for gas-powered buses. Late in 2000, Scania began delivering 120 buses that are part of a major effort to improve the air quality in Brisbane.

In California, Scania engines are used as back-up power sources at wind-power stations. These engines operate on ethanol.

In Denmark, specially manufactured Scania tanker trucks are on the road. They meet high safety standards and at the same time they are specially adapted for easier access to customer premises.

In Guangdong province, China, fuel transport services employ Scania trucks with a tanker volume of 48,000 litres. Scania is also responsible for service and repairs, since the infrastructure in the area is not fully adapted to the required level of safety.

# Forty tonnes and 200 Megabytes


**Trip Analyser provides flexibility**

The system's handheld computer stores data on fuel consumption and average road speed, for example.

For Scania's mobile IT services, the focus is on function and user-friendliness. Information technology can help optimise vehicle use and driving techniques, thereby reducing the impact on the environment as well as safety.

## The future is full of possibilities

Scania is developing a number of advanced mobile IT services that can improve transport companies' profitability as well as the environment. One service that will be available is a direct mobile Internet-based connection with every vehicle. With the aid of a positioning system, transport companies know exactly where their vehicles are located. This enables them to redirect their trucks in order to take advantage of empty cargo space. Other possible applications are advanced route planning and continuous monitoring of vehicle service and repair needs, as well as support systems for optimising driving techniques.

Together, this will contribute to better capacity utilisation and better fuel consumption, which in a longer perspective translates into less impact on the environment and enhanced road safety.

## Mobile information technology

Scania's subsidiary Infotronics specialises in developing mobile communication and Internet products and services for the transport industry. During 2001 its first products are entering the market under the Fleet Analysis System name. The company's Trip Analyser software stores and displays information from different parts of a vehicle, for example fuel consumption and average road and engine speeds. After each trip an office-based PC, or Fleet Analyser, can study the performance of both the vehicle and the driver.

When the driver returns to the office, the information stored in the handheld computer is synchronised with the Fleet Analyser in the office PC. Based on these reports, the transport company can then compare trip data from different vehicles or drivers.

## Open interface

Scania's interface with the vehicle database employs "open architecture", making it easy to utilise all the advances in telecom and computer technology. It also gives customers the freedom to choose software and hardware from different suppliers.

The open interface makes it possible to work with other vehicle makes, which is advantageous for those Scania customers that have a fleet consisting of more than one make.

# Green driving saves money

Taking maximum advantage of cargo capacity – while driving and taking care of a vehicle in the best possible way – saves money and spares the environment. Helping customers achieve better profitability and environmental performance is an important and growing element of Scania's business operations.

Scania's Master Driver training course enables drivers to improve their knowledge of driving, both in practice and theory. One day of driver training can improve fuel consumption as much as five years of engine development.


**Service facilities become environmental centres**

The task of environmental adaptation is underway at Scania's service facilities, among other things through their selection of materials and minimisation of waste products. Scania's vehicle centre just outside of Luzern, Switzerland, is one of the most modern in that country. For example, its wastewater is biologically purified using a bacterial process.

## Support for drivers

Uniform and planned driving means less impact on the environment and better operating economy. One step in this direction is Scania's international driver training course, Master Driver, which teaches techniques for driving fuel-efficiently. Drivers also learn to handle their vehicle the right way, which reduces both the need for service and the risk of unnecessary wear.

Another support for drivers is Scania's Opticruise automated gearchanging system, whose advantages include optimisation of fuel economy.

## Preserving the good characteristics

If a Scania vehicle is to continue delivering the highest quality, it is important to follow the stated instructions for maintenance and service. The simplest way is to rely on one of Scania's more than 1,500 service points around the world. This guarantees that the vehicle's original characteristics are preserved and lengthens its service life.

Users sometimes try to tune the engine on their own in order to achieve lower fuel consumption, using "chip tuning". If this is done, engine performance deteriorates and the engine will no longer meet legally mandated environmental requirements. Scania advises against all do-it-yourself engine tuning. Otherwise the warranty and certification will not be valid.

## Scania takes total responsibility

It is increasingly common for transport companies to focus on solving their customers' logistic problems and to hand over full responsibility for vehicle operation to Scania. In that case, Scania supplies not only a physical product, but a full-service, functioning transport solution. In exchange for a fixed kilometre-based charge, Scania provides vehicles, service and repairs. This also enables Scania to decrease the load on the environment by means of sensible vehicle management.

# End of the life cycle
# beginning of the ecocycle

## Towards 100 percent recycling

Scania shall design vehicles that can be reused and recycled to the greatest possible extent. When they are manufactured, components are labelled to facilitate their identification when vehicles are dismantled. A dismantling manual is also available.

The actual degree of recycling in a given country is controlled by what is economically justifiable and technically possible to recycle today. Some components may become part of a service-exchange system. The materials in others can be recycled and used for new production. Certain other components can be used for energy recycling.

Scania is preparing for future producer liability requirements for vehicles. As a first step, it is voluntarily assuming producer liability for the OmniCity bus model in the Swedish market.

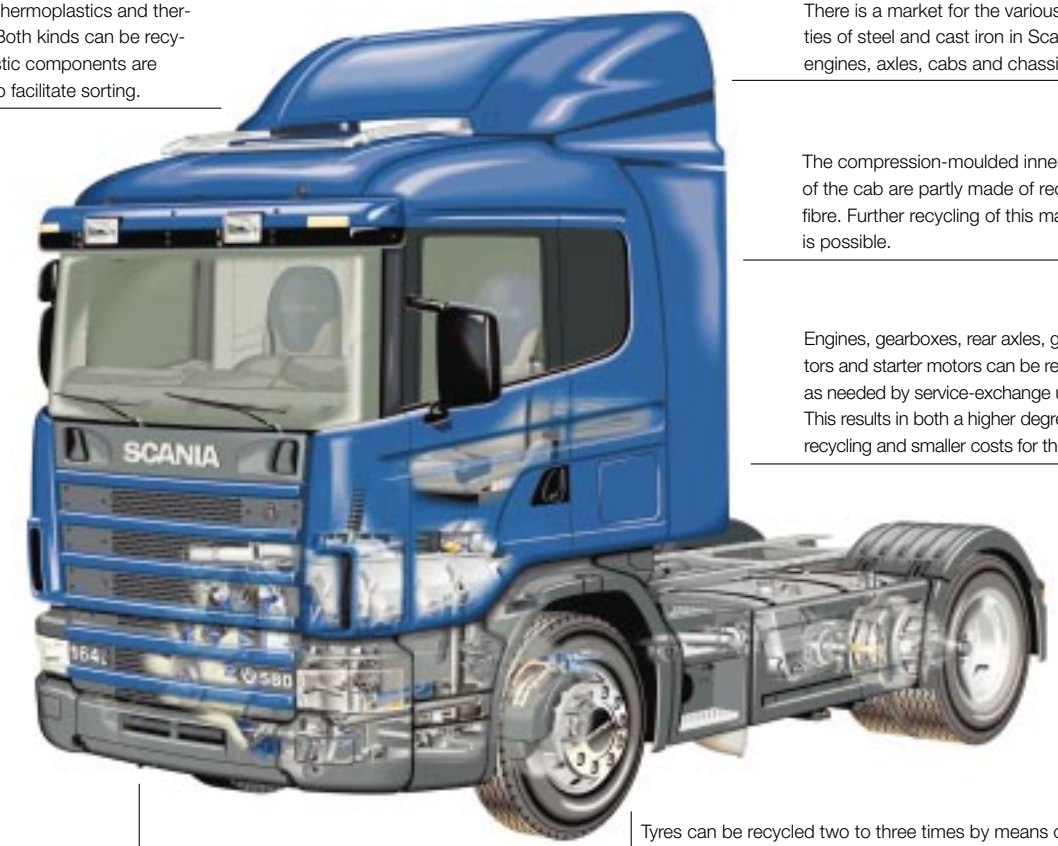
## Factory reconditioning

The Scania service-exchange system means that worn-out components can be replaced with factory-reconditioned components. This is less expensive for the customer, but it also reduces the impact on the environment.

In conjunction with a service exchange, the vehicle's environmental performance can also be improved. For example, the engine can be upgraded to a higher environmental category.

Scania primarily uses two types of plastics: thermoplastics and thermosets. Both kinds can be recycled. Plastic components are labelled to facilitate sorting.

All metal components can be recycled. There is a market for the various qualities of steel and cast iron in Scania engines, axles, cabs and chassis.




The compression-moulded inner walls of the cab are partly made of recycled fibre. Further recycling of this material is possible.

Engines, gearboxes, rear axles, generators and starter motors can be replaced as needed by service-exchange units. This results in both a higher degree of recycling and smaller costs for the owner.

Wiring is recycled in order to utilise the copper.

Tyres can be recycled two to three times by means of reconditioning. It used to be difficult to dispose of tyres once they were worn out. Today there is a process that can recover their energy without causing air pollution.

## Follow-up of some Scania environmental targets for 2000

- An environmental study of Scania's knocked-down (KD) kit assembly plants was completed. Activities are being planned on the basis of the study's findings. During 2001, among other things, KD assembly workers will receive further information on Scania's overall environmental ambitions.
- A procedure for inventorying land and groundwater will be completed during the first half of 2001. This procedure will ensure that systematic inventories of ground conditions and of the historic environmental load are performed before future ground investigations.
- An analysis of the flows of packaging materials was completed at a number of production units. Since environmental consideration is now part of the selection of packaging and a reduced quantity of wastes is one of Scania's environmental targets, there is no need to complete the analysis of the total flow of packaging materials in and out of Scania.
- Dismantling instructions for trucks were completed. The development of dismantling instructions for buses will be completed during 2001.
- During the year, Scania's product development and procurement departments established phase-out plans for blacklisted substances in purchased components and materials. A project aimed at decreasing the amount and range of chemicals will reduce the number of suppliers during 2001. This will decrease the number of chemicals.
- A "whitelist" to facilitate the selection of chemicals was established during 2000.
- Phase-out plans for blacklisted substances in purchased components and materials were established during 2000.
- A procedure for control and follow-up of accidents and abnormal operations, including classification systems as well as reporting procedures, was developed during 2000.

## Some of Scania's environmental targets during 2001–2004

- Land and groundwater inventories shall be implemented during 2001.
- Dismantling instructions for buses shall be completed during 2001.
- A project to reduce the number of chemical suppliers shall be completed during 2001.
- The use of energy shall have decreased to 10 MWh per manufactured vehicle by 2004.
- The use of water shall have decreased to 10 cubic metres per manufactured vehicle by 2004.
- The amount of waste deposited at landfills shall have decreased to 50 kg per manufactured vehicle by 2004.

# Environmental thinking – economic benefits

In recent years, Scania has improved its reporting of environmental economics. Based on Scania's environmental key figures, common definitions and reporting procedures have been devised. The aim is to create a better link between environmental savings and financial results.

Scania shares are quoted on the OM Stockholm Stock Exchange and the New York Stock Exchange. Environmental reporting by listed companies is an important part of analysts' evaluation of these enterprises.

## Environmental reporting

Beyond its continuous reporting in each operation, Scania conducts annual follow-ups of such items as raw material, chemical, energy and water use. There is also an annual follow-up and revision of Group-wide environmental targets. The new targets that were established for 2001–2004 raise Scania's level of ambition. Targets, actions and outcomes are presented each year in Scania's Environmental Report.

## Manufacturing

During 2000, Scania's costs for raw material, chemical, energy and water use totalled about SEK 1,750 m., or 3.3 percent of sales.

## Investments

Environmental investments are those that lead to a clear reduction in external environmental impact. An environmental investment may be justified for environmental reasons alone, or it may be part of a larger investment.

During 2000, Scania's investments in property, plant and equipment totalled SEK 1,825 m. Of these outlays, SEK 23 m. were investments made for purely environmental reasons.

## Development

Research and development efforts often result in better environmental performance. Scania has chosen not to report the environment-specific portion separately. Scania's research and development expenses totalled SEK 1,621 m. during 2000.

## Operating permits

Most of Scania's facilities around the world are required to have operating permits. In Sweden, Scania's operations at all six of its production units require permits under the Environmental Code. All production units have been examined in recent years to receive new permits.

During 2000, the wholly owned subsidiary Ferruform in Luleå, Sweden, was granted a permit to introduce a new corrosion protection method, phosphatising.

Ferruform has also applied for a new permit to expand its production. The plant in Oskarshamn, Sweden, was granted new conditions related to discharges into waterways, enabling it to introduce a more environmentally adapted chemical system for phosphatising. Scania's facilities in Södertälje, Sweden, are undergoing a regulatory review of new conditions for nitrogen oxide emissions from engine testing and improved final purification of various types of wastewater. In Zwolle and Meppel, the Netherlands, and in Södertälje, measures are being taken to decrease noise levels for environmental reasons and meet tighter regulatory requirements. Action plans are being developed for Scania's assembly units in order to reduce their environmental impact.

## Industrial sites

A ground survey of Scania's industrial sites is underway. The aim is to inventory all production facilities by the end of 2001. In Zwolle and Meppel, preparations are underway for


In 2000, Scania's sales were SEK 53.8 billion. Operating income was SEK 5.1 billion and income after financial items SEK 4.5 billion.

soil decontamination. This task will include decontamination of 1,000 cubic metres of soil at an estimated total cost of SEK 3.8 m.

## Risk management

Environment-related insurance for sudden, unforeseen environmental damage falls under general liability and producer liability and is not reported separately. Scania is currently studying the possibility of insuring itself for accumulated environmental liabilities. For example, such insurance would apply to any expenses for soil decontamination on industrial sites or restoration of surrounding environments.

Scania's risk management focuses on preventive measures to protect employees and the company's collective assets. Every unit at Scania therefore has an emergency plan for managing disruptions and responding to any alarms and accidents.

Scania recently developed a common procedure to integrate issues related to risks of environmental damage with other risk management.

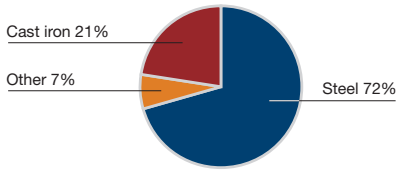
During 2000, no incidents were reported that had a significant impact on the environment.

# SUMMARY OF ENVIRONMENTAL PERFORMANCE, SCANIA PRODUCTION SYSTEM

| Year | 2000 | 1999 | 1998 |
|---|---|---|---|
| **Number of vehicles manufactured** | 55,600 | 49,500 | 50,000 |
| **Sales of Scania products, SEK m.** | 47,200 | 41,600 | 39,700 |
| **Raw material consumption** | | | |
| Per vehicle, kg | 3,200 | 3,400 | – |
| Total, tonnes | 180,000 | 170,000 | – |
| Total cost, SEK m. | 1,470 | 1,330 | |
| **Chemical consumption** | | | |
| Per vehicle, cu m | 0.086 | 0.092 | – |
| Total, cu m | 4,800 | 4,500 | – |
| Total cost, SEK m. | 120 | 120 | |
| **Energy use** | | | |
| Per vehicle, MWh | 11 | 12 | 13 |
| Total, GWh | 580 | 590 | 640 |
| Total cost, SEK m. | 154 | 160 | |
| **Carbon dioxide emissions** | | | |
| Per vehicle, kg | 1,300 | 1,500 | 1,550 |
| Total, tonnes | 71,000 | 74,000 | 78,000 |
| **Water use** | | | |
| Per vehicle, cu m | 11 | 13 | 16 |
| Total, 1,000 cu m | 600 | 620 | 800 |
| Total cost, SEK m. | 9 | 15 | |
| **Solvent emissions from painting/rust-proofing** | | | |
| Per vehicle, kg | 8,6 | 9,2 | 9,5 |
| Total, tonnes | 480 | 460 | 470 |
| **Management of residual materials*** | | | |
| Recycling: | | | |
| Per vehicle, kg | 940 | 1,100 | 1,100 |
| Total, tonnes | 52,000 | 53,000 | 53,000 |
| Revenues, SEK m. | 18 | 18 | |
| Sent to landfills/other off-site disposal: | | | |
| Per vehicle, kg | 200 | 200 | 230 |
| Total, tonnes | 11,000 | 10,000 | 12,000 |
| Total cost, SEK m. | 17 | 17 | |

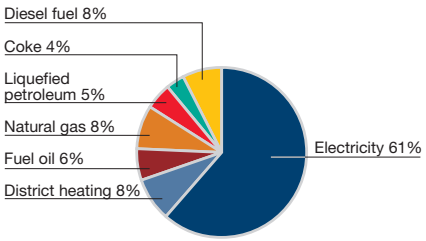
*) Excluding foundry sand, about 25,700 tonnes.

## Raw material consumption



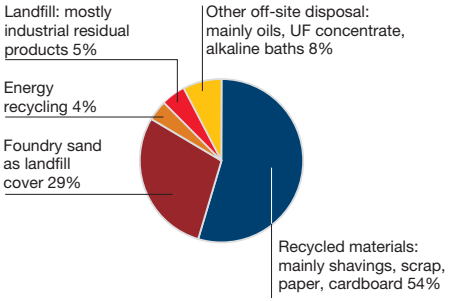

In 2000, total raw material consumption was about 180,000 tonnes, or 3.2 tonnes per vehicle.

## Energy use by type



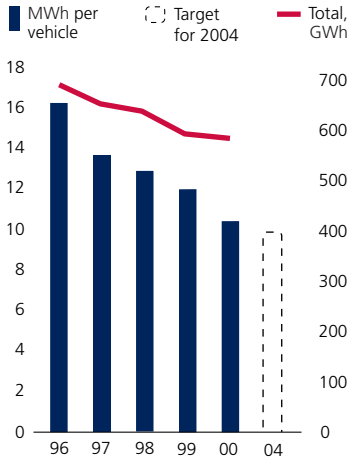

During 2000 most of Scania's energy consumption consisted of electricity.

## Management of residual products



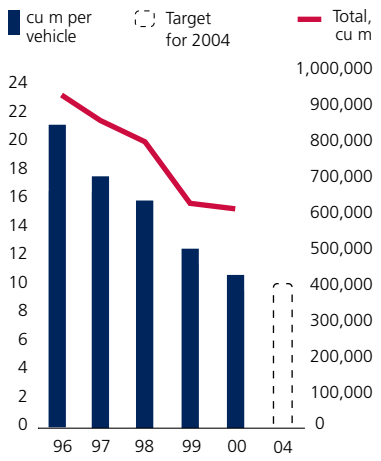

Most residual products are recycled. During 2000, the quantity of residual products totalled 89,000 tonnes.

## Energy use



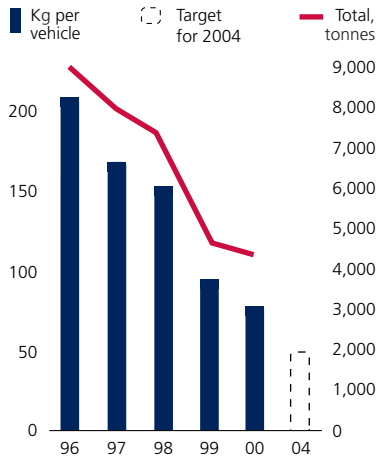

During 2000, energy consumption totalled about 580 GWh, equivalent to some 11 MWh per vehicle.

## Water use



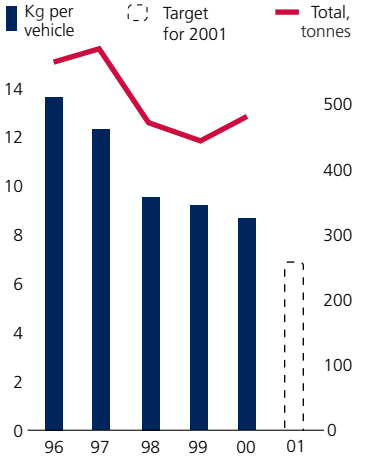

During 2000, water consumption was about 600,000 cubic metres, equivalent to 11 cubic metres per vehicle.

## Residual products sent to landfills



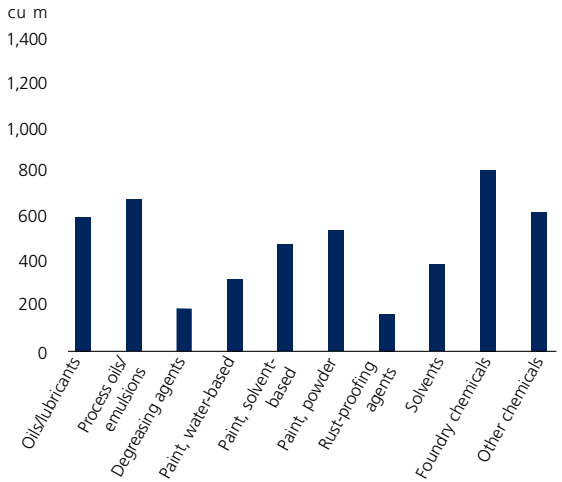

Residual products sent to landfills during 2000 totalled about 4,300 tonnes, or 77 kg per vehicle, excluding foundry sand.

## Organic solvent emissions




In 2000, organic solvent emissions from painting/rust-proofing totalled some 480 tonnes, or 8.6 kg per vehicle.

## Chemical consumption




The consumption of chemicals in 2000 was about 4,800 cubic metres, equivalent to 86 litres per vehicle.

## Carbon dioxide emissions

| | Energy consumption, GWh | | Carbon dioxide emissions, Ktonnes | |
|---|---|---|---|---|
| | **2000** | 1996 | **2000** | 1996 |
| **Electricity** | **360** | 360 | **22** | 23 |
| **District heating** | **50** | 130 | **3** | 9 |
| **Fossil fuels** | **180** | 200 | **46** | 51 |
| **Total** | **580** * | 690 * | **71** | 83 |
| **Per vehicle** | **11 MWh** | | **1.3 ton** | |

*) Each item and the total are rounded off to the nearest ten.

In 2000, carbon dioxide emissions from Scania's production system amounted to 1.3 tonnes per vehicle, or a total of 71,000 tonnes.


### Design and technology in harmony

Scania commenced the new century with blazing colours. A truck became a work of art by Bengt Lindström. The power and dynamics of this Swedish painter's artistry correspond well with what Scania's products stand for.

# SCANIA PRODUCTION UNITS AND OTHER FACILITIES FROM AN ENVIRONMENTAL STANDPOINT

| | Södertälje | Luleå | Oskarshamn | Falun | Sibbhult | Katrineholm | Angers | Zwolle/ Meppel | Silkeborg | Słupsk |
|---|---|---|---|---|---|---|---|---|---|---|
| **Number of employees** | 5,844 | 673 | 1,821 | 704 | 499 | 798 | 564 | 2,112 | 315 | 257 |
| **Raw material use** | | | | | | | | | | |
| Cast iron, tonnes | 9,400 | 4,900 | 0 | 6,700 | 5,400 | 0 | 0 | 0 | 0 | 0 |
| Steel, tonnes | 22,100 | 47,800 | 30,700 | 14,100 | 2,300 | 100 | 0 | 0 | ~ 0 | 0 |
| Other materials, tonnes | 10,700 [2] | 0 | 0 | 0 | 1,500 | ~ 0 | 0 | 0 | 200 | 0 |
| **Energy use** [1] | | | | | | | | | | |
| Electricity, MWh | 159,100 | 33,700 | 40,800 | 30,600 | 15,900 | 7,200 | 4,300 | 18,300 | 2,000 | 700 |
| District heating, MWh | 25,300 | 10,000 | 0 | 0 | 0 | 10,200 | 0 | 0 | 2,000 | 1,300 |
| Fuel oil/natural gas MWh | 800 | 0 | 26,900 | 6,300 | 0 | 0 | 5,600 | 18,700 | 1,200 | 0 |
| Other energy sources, MWh | 82,400 | ~ 0 | 0 | 0 | 5,600 | 0 | 0 | 2,400 | 0 | 0 |
| **Chemical use** | | | | | | | | | | |
| Oils/lubricants, cubic metres | 224 | 115 | 15 | 41 | 47 | 0 | 0 | 12 | 2 | 1 |
| Process oils/emulsions, cubic metres | 328 | 35 | 0 | 77 | 70 | 0 | 0 | 5 | 0 | 0 |
| Degreasing agents, cubic metres | 44 | 27 | 4 | 28 | 11 | 1 | 0 | ~ 0 | 0 | 2 |
| Paint, water-based, cubic metres | 27 | 23 | 0 | 207 | 0 | 0 | 32 | 36 | 0 | 0 |
| Paint, solvent-based, cubic metres | 60 | 40 | 144 | 14 | 0 | 7 | 6 | 103 | 2 | 8 |
| Paint, powder, tonnes | 75 | 92 | 252 | 0 | 0 | 0 | 0 | 67 | 0 | 0 |
| Rust-proofing agents, cubic metres | 7 | 0 | 72 | 0 | 0 | 3 | 0 | 19 | 11 | 1 |
| Solvents, tonnes | 46 | 24 | 61 | 3 | 6 | 4 | 3 | 95 | 8 | 3 |
| Other chemicals, tonnes | 1,210 [2] | 5 | 112 | 37 | 8 | 8 | 0 | 22 | 11 | 0 |
| **Chemicals delivered with the product** | | | | | | | | | | |
| Diesel fuel, tonnes | 621 | 0 | 0 | 0 | 0 | 104 | 900 | 2,640 | 35 | 254 |
| Oils etc., tonnes | 1,720 | 0 | 0 | 796 | 55 | 144 | 591 | 1,260 | 7 | 130 |
| **Emissions into the air** | | | | | | | | | | |
| Organic solvents (VOC) tonnes[3] | 49 | 10 | 119 | 27 | 0 | 8 | 7 | 87 | 13 | 6 |
| CFC, HCFC, HFC, kg[4] | 374 | 0 | 27 | 10 | 62 | 0 | ~ 0 | 28 | 0 | 0 |
| **Discharges into waterways** | | | | | | | | | | |
| Water use, cubic metres | 201,800 | 31,100 | 63,800 | 30,300 | 12,900 | 11,600 | 9,300 | 44,200 | 5,000 | 2,800 |
| COD, tonnes | 180 | n.a | 6.8[5] | 9.3 | 6.9 | 8.9 | 0.35[5] | 24 | n.a | n.a. |
| Oil, tonnes | 0.82 | n.a | 0.03[5] | 0.24 | 0.002 | 0.20 | 0.003[5] | n.a | n.a | n.a. |
| Zinc, tonnes | 0.165 | n.a | 0.001[5] | 0.018 | 0.002 | 0.003 | n.a. | n.a | n.a | n.a. |
| **Management of residual products** | | | | | | | | | | |
| Material recycling, tonnes | 11,600 | 9,090 | 13,900 | 4,540 | 2,120 | 360 | 170 | 1,020 | 180 | 70 |
| Energy recycling, tonnes | 1,580 | 170 | 130 | 250 | 90 | 200 | 450 | 240 | 100 | 0 |
| Landfill, tonnes | 1,460 [6] | 310 | 680 | 20 | 10 | 30 | 180 | 640 | 50 | 60 |
| Other off-site disposal, tonnes | 1,590 | 1,160 | 760 | 1,020 | 820 | 40 | 40 | 770 | 40 | 10 |

n.a = information not available
[1] Excluding vehicle testing and transport work
[2] Primarily foundry raw materials and foundry chemicals
[3] Related to painting/rust-proofing

| Tucumán | São Paulo | San Luis Potosí |
|---|---|---|
| 686 | 2,545 | 66 |
| | | |
| 3,000 | 8,100 | 0 |
| 5,700 | 6,600 | 0 |
| 200 | 0 | 0 |
| | | |
| 14,200 | 31,700 | 400 |
| 0 | 0 | 0 |
| 18,000 | 6,200 | ~ 0 |
| 0 | 3100 | 0 |
| | | |
| 83 | 56 | 0 |
| 56 | 112 | 0 |
| 10 | 51 | 0 |
| 1,0 | 0 | 0 |
| 3,0 | 98 | 0 |
| 0 | 52 | 0 |
| 8 | 47 | 0 |
| 51 | 77 | 0 |
| 19 | 8 | 0 |
| | | |
| 81 | 322 | 18 |
| 129 | 683 | 7,0 |
| | | |
| 6 | 148 | ~ 0 |
| 54 | 300 | 0 |
| | | |
| 63,200 | 114,100 | 12,000 |
| n.a | 113 | n.a |
| 3.35 | 3.80 | n.a |
| 0.060 | 0.070 | n.a |
| | | |
| 1,230 | 4,070 | 150 |
| 0 | 380 | 0 |
| 250 | 630 | 0 |
| 280 | 300 | 10 |

[4] Quantities refilled, excluding vehicle refills
[5] Excluding sanitary water
[6] Excluding foundry sand, about 25,700 tonnes

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## Scania's Environmental Policy

As a global manufacturer and distributor of heavy commercial vehicles, engines and related services, Scania is committed to develop products that pollute less and consume less energy, raw materials and chemicals during their life cycle.

### In order to achieve this

- we strive to maintain a lead in commercially applicable technologies
- we work well within legal demands and promote internationally harmonised, effective environmental requirements
- we prevent and continuously reduce the environmental impact through development and products, services and production processes.
- we take the environmental aspects and objectives into account in our daily work
- we have an open and regular communication with our interest groups regarding our environmental work

By this we contribute to economical and ecological advantages for our customers and for society. Proactive environmental work is therefore of vital importance to Scania.

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1594515/13/KREAB , Trosa Tryckeri AB, 2001