



2004 CORPORATE CITIZENSHIP  
**SUSTAINABILITY REPORT**

**VOLVO**  
for life





**“COURAGE AND  
OPENNESS WILL  
ENABLE US TO  
DEVELOP MUTUAL  
SOLUTIONS TO  
MUTUAL  
CHALLENGES”**

This is the fifth sustainability report to be published by Volvo Car Corporation, and deals with the company and all of its wholly-owned subsidiaries. The reporting period is 1 January 2004 to 31 December 2004. The last report was published in May 2004 and the next edition is scheduled for publication in May 2006.

This report is based on the Sustainability Reporting Guidelines developed by the Global Reporting Initiative (GRI), and provides a balanced and reasonable view of the company's economic, environmental and social progress. Unless otherwise stated, all figures are reported in metric units and financial values in Euro (EUR). The report has not been certified by a third party. Information in addition to that contained in this printed version, such as further information on specific indicators or on our corporate citizenship activities in general is available on our web site at [www.volvocars.com/citizenship](http://www.volvocars.com/citizenship).

#### **Our reporting commitment**

To Volvo Cars, sustainability reporting is a way of demonstrating transparency and engaging in dialogue with our stakeholders. The reporting process also provides an opportunity for discussion, evaluation and reflection on an annual basis, supporting our efforts to develop our business in line with the aspiration of sustainable development.

Our intention is to continue to publish an annual sustainability report. In addition to this year's printed edition, we intend to expand our web-based reporting to include more updates and educational material. We are examining the feasibility of developing our reporting to make it more applicable and accessible to various stakeholder groups.

For Volvo Cars, 2004 was a year of progress in which a strong model range, combined with our long-term programmes in the areas of quality, safety and environment, resulted in record sales. This was also the year that the natural disaster in south-east Asia reminded us that we live in a shrinking world. The Asian tsunami demonstrated that the local and global levels of society are interlinked, and emphasised the importance of developing mutual solutions to mutual challenges. 2004 was also the year in which the Kyoto protocol for reducing carbon dioxide emissions was approved.

These are the lessons we take with us into 2005. As a car-maker, we have a duty to contribute to the development of new solutions to mutual problems in consultation with various stakeholders. This aim was expressed as early as in 1972, when Pehr G. Gyllenhammar, then president of Volvo, challenged delegates to the UN's first international conference on the environment to join forces in dealing with the automotive industry's impact on society and the environment. Volvo Cars has always taken its societal role seriously, using dialogue and cooperation with its customers, employees, business partners and the community to develop groundbreaking solutions in car safety, employer responsibility and the environment.

However, this has demanded leadership, with the knowledge and courage to pursue ideas beyond the industry's accepted framework. For example, Volvo's foresight led to the development of the safety belt and the three-way catalytic converter, innovations that were to pass into legislation. The same can be said of our efforts to change the nature of our operations by adopting more humane methods of production (for example, Volvo was first to experiment with large-scale manufacture not involving an assembly line), while employee representation on the company's board was a product of Volvo's leadership. Today, this leadership is expressed by Volvo's promise to its customers of top-class expertise in safety, often beyond established standards. Our leadership also finds expression in our work to promote diversity in the workplace. In 2004, this acquired a visible face in the form of the YCC (Your Concept Car) – the first car project to be managed entirely by women.

For the Volvo Cars of today, social responsibility extends far beyond the company's Swedish roots. In common with all other carmakers, the next few decades will present us with the global challenge of adapting to sustainable transportation systems in which we have conquered the problem of carbon dioxide emissions. So it is a matter for satisfaction that this report indicates that the trend in carbon dioxide emissions from our new cars is pointing in the right direction. Unfortunately, we are still selling too few methane-powered Bi-Fuel cars and we must persuade more of our customers to opt for alternative fuels. We expect that alternative power trains, including both ethanol and hybrids, will undergo further development in the years ahead. And we will also be introducing our first small car – the Volvo C30 – in the near future.

Our local responsibilities extend beyond Göteborg, Uddevalla and Ghent, where our production plants are located. These responsibilities extend to southeast Asia, where we own assembly plants in Thailand and Malaysia. We must also apply our expertise in the areas of car safety, environment and 'medarbetarskap', and adapt it to local circumstances in these communities. This year, for example, it will be ten years since we established a 'suppliers' forum' with our working partners in Thailand, with the aim of further developing their operations, and discussing matters such as car production and social responsibility with them. This also applies to our work to promote safe and sustainable mobility – in which our aim is to help to develop solutions for every local need and context, and bring them to fruition in harmony with our customers and our business environment.

If we all contribute actively – both globally and locally – to solving our mutual challenges, I am convinced that 2005 will be a successful year both for Volvo Cars and the world we live in.



**Hans-Olov Olsson**  
President and CEO, Volvo Car Corporation

## CONTENTS

<b>2</b> World of Volvo Cars	<b>17</b> 3CC concept car	<b>32</b> Suppliers
<b>4</b> Our responsibility	<b>18</b> Quality	<b>36</b> Society
<b>6</b> Corporate citizenship	<b>22</b> Customers and dealers	<b>40</b> Corporate citizenship scorecard, 2004
<b>8</b> Safety	<b>26</b> YCC concept car	<b>41</b> GRI index
<b>12</b> Environment	<b>28</b> Employees	

# WELCOME TO THE WORLD OF VOLVO CARS

All over the world, Volvo Cars stands for safety. This gives us a unique standing among the world's carmakers which also imposes responsibilities and obligations. Just as our founders declared in Volvo's early years that the company's operations should be based on concern for humans, our decisions at all levels today are based on our core values of Safety, Quality and Environment – in both the short and long term.

With a history of over 75 years, Volvo has become one of the best-known car brands in the world and we now enjoy a strong position in the premium car segment. Although most of its operations are located in Sweden, Volvo Cars is an international company with sales in over 100 countries. Our main challenge, now and in the future, is to strengthen our position even further and to become No. 1 in customer satisfaction – in a responsible manner and in harmony with the world in which we operate.



Volvo Cars was founded by Gustaf Larson, an engineer, and Assar Gabriellson, an economist. Series production commenced in Göteborg in 1927 with the Volvo ÖV4, nicknamed the 'Jakob'. Since then, the company has produced over 13 million cars.

The manufacture of cars was concentrated mainly in Göteborg until 1965, when the company's production plant in Ghent, Belgium was commissioned, a year after the opening of its plant at Torslanda, near Göteborg. Cars were also produced in Born in the Netherlands from 1972 until 2004. Production at the Uddevalla plant commenced in the mid-1990s.

In the component sector, we have been manufacturing our own engines in Skövde, Sweden since the 1930s, while we produced our own manual gearboxes in our Köping plant from 1942 to 2004. In addition, production of our own body components has been

carried on in Olofström, Sweden since 1969.

Sweden is – and always has been – an important market for Volvo Cars. In the mid-1950s, the company began to export cars seriously to foreign countries, including the USA, which is now its biggest market.

Volvo Cars was part of the Volvo Group until 1999, when it was sold to Ford Motor Company – one of the world's leading car-makers for over a century.

## Sales and markets

Of the 60.3 million or so cars\* sold worldwide in 2004, about 456,000 were Volvos. More than a quarter of all Volvos are sold in the USA, after which the company's three biggest markets are Sweden, Great Britain and Germany. In terms of sales, 2004 was one of our most successful years ever. Sales for the year totalled 456,224 cars compared to just over 415,000 the year before – an increase of

10%. Overall, Europe accounted for the biggest growth, with increases of 25.8% in Germany, 37.2% in Belgium and 7.4% in Sweden. Sales in the USA increased by 3.4%, reaching a record level of 139,155 units, due mainly to the Volvo XC90 and the compact Volvo S40. However, sales in Japan fell by 5.7%.

In global terms, Volvo Cars is a relatively small carmaker, with market shares of about 1-2% in its principal markets. However, an exception is Sweden, where approximately every fifth car sold is a Volvo.

Our model range comprises sedan (S), versatility (V), SUV/cross-country (XC) and coupé/convertible (C) versions.

Information on our products is available on [www.volvocars.com](http://www.volvocars.com)

\* Total includes 18.9 million 'light trucks', including SUVs

## VOLVO CARS EXECUTIVE MANAGEMENT

**Hans-Olov Olsson**, President and CEO

**Curt Germundsson**, Advisor to executive management

**Gerry Keaney**, Marketing, Sales and Customer Service

**Hans Folkesson**, Research and Development

**Magnus Hellsten**, Manufacturing (from 1 January 2005)

**Steven Armstrong**, Purchasing

**Lena Olving**, Quality and Customer Satisfaction

**Lex Kerssemakers**, Brand, Business & Product Strategy

**Peter Baillière**, Human Resources

**Olle Axelson**, Public Affairs

**Derek Morrison**, Finance (until 28 February 2005)

**Stuart Rowley**, Finance (from 1 March 2005)

**OUR VISION:** To be the world's most desired and successful premium car brand.

**OUR MISSION:** To create the safest and most exciting car experience for modern families.

FIG.1 CAR PRODUCTION BY COUNTRY

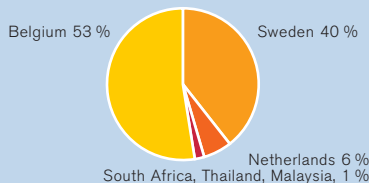
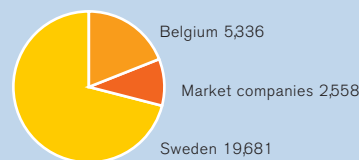


FIG. 2 EMPLOYEES NUMBERS BY COUNTRY



**Production**

Our own car production plants are located in Göteborg, Sweden and Ghent, Belgium. Since 2005, the Pininfarina Sverige AB plant in Uddevalla, Sweden has been owned jointly by Volvo Cars (with 40%) and Pininfarina SpA of Italy (60%). Volvo Cars also operates small assembly plants supplying the local markets in Malaysia, Thailand and South Africa.

In terms of value, approximately 25% of the materials used in Volvo cars is produced at the company's own plants in Sweden, including Skövde (engines), Floby (connecting rods and brake disks) and Olofström (body components). The remaining 75% is purchased from over 400 suppliers in about 20 countries, mainly in Europe. Sweden, Germany and Belgium are the leading supplier countries.

In 2004, the production of manual gearboxes was transferred from Köping to Cologne, Germany. Reorganised as Getrag All-Wheel Drive AB and owned jointly by Volvo Cars and Getrag AG of Germany, the Köping plant now manufactures AWD systems for Volvo Cars, Ford Motor Company and Fiat, and also produces complete wheel assemblies for Volvo Cars. Reorganisation of the Skövde plant for volume production of four-cylinder diesel engines for Ford Motor Company and PSA Peugeot Citroën was commenced in 2004, with production scheduled for 2006. The manufacture of Volvo cars at the Born, Netherlands plant of NedCar – a company independent of Volvo Cars – ceased in May 2004, by which time a total of one million Volvos had been built. The plant continues to produce cars of other makes.

**Growth in China**

At present, China is the car industry's most important growth market. In 2004, Volvo Cars' sales in the Chinese market increased by 3.7% to 2,609 units. Total car sales in China exceeded 2 million during the year and the premium car segment – of which Volvo has a 2.3% share – accounts for only a small proportion of the total. Since imports are tightly controlled by the government, Volvo Cars is examining the feasibility of establishing its

own production facilities in the country. Volvo Cars has 40 dealerships in China and the intention is to expand this number significantly if sales volumes continue to grow.

**Organisation and employees**

The Volvo Cars head office, product development, marketing and administration functions are located in Göteborg. Sales to the company's 100-plus markets are handled by its national sales companies and approximately 2,400 local dealers. Most of the dealerships are independent companies.

At the end of 2004, the Volvo Cars workforce numbered almost 27,600, somewhat less than the previous year. Of the total number, about 19,700 were employed in Sweden. A further 22,500 people are employed in the company's global network of dealers and service workshops.

**Part of Ford Motor Company**

Volvo Cars has been a wholly-owned subsidiary of Ford Motor Company since 1999. Together with Jaguar, Land Rover and Aston Martin, the company is part of the Premier Automotive Group (PAG), Ford's premium car division.

Volvo Cars is a Centre of Excellence for Safety for Ford Motor Company, as well as a Centre of Excellence for Telematics for PAG. The 'Volvo' name is owned by Volvo Trademark Holding AB, which is owned jointly by Ford Motor Company and AB Volvo.

**Financial performance**

The trend in profitability was positive despite the weakness of the dollar. Volvo Cars has recorded a profit each year since the company was acquired by Ford Motor Company in 1999. Ford Motor Company does not publish separate financial information for its individual brands.

Information regarding PAG, of which Volvo Cars is a member, is contained in FMC's Annual Report for 2004, which is available on [www.ford.com](http://www.ford.com)

FIG. 3 CAR SALES\* IN VOLVO'S TEN LEADING MARKETS

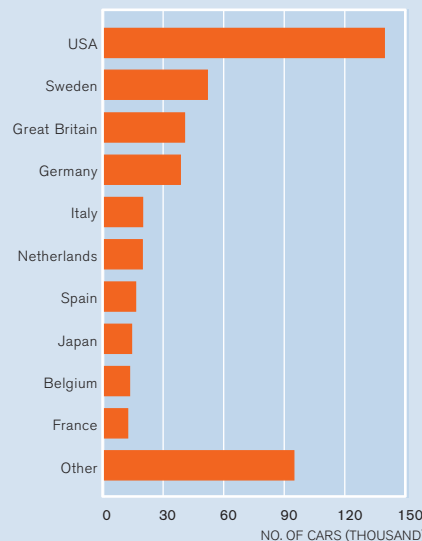


FIG. 4 CAR SALES\*, 2002-2004

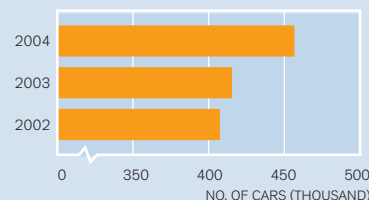
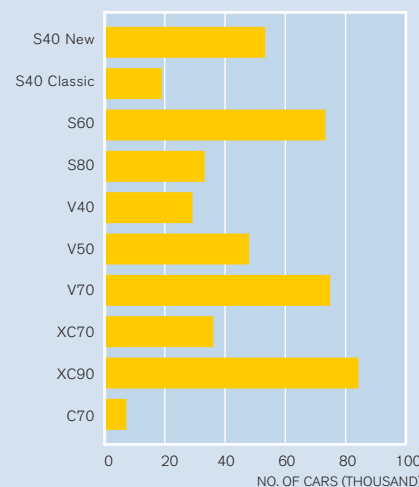


FIG. 5 CAR SALES\* BY MODEL



\* Sales are defined as cars delivered to end customers

# OUR RESPONSIBILITY

AS A CARMARKER



AS A GLOBAL COMPANY



AS A LOCAL PLAYER

Volvo Cars has relationships with various stakeholders\* that influence, or are influenced by, our operations – from customers and employees to business partners and the communities in which we operate. Each of these groups presents a special responsibility and our aim is to be, and to be perceived as, a responsible player in all of our relationships.

Our responsibility may be described in terms of our three most important roles – those of **carmaker, local player and global company**. We realise that it is ultimately our stakeholders that determine how well we shoulder that responsibility. They determine our success by buying our products, working productively and doing business with us.

### Volvo Cars' responsibility as a carmaker

As a means of transportation, the car offers a number of positive benefits to human well-being and socio-economic development. At the same time, however, road traffic has several negative side effects. Actors in society all over the world have a part to play in the challenge of contributing to sustainable mobility.

We realise that as part of the automotive industry we must contribute to positive solutions designed to maintain the benefits of personal mobility while working to eliminate the disadvantages.

At Volvo Cars, this responsibility involves more than developing and supplying technology and knowhow. We also have a responsibility to market sustainable solutions to our customers. Furthermore, in partnership with other players, our aim is to develop solutions to problems that affect both the local and national infrastructures.

Volvo Cars has taken on board the conclusions presented in 'Mobility 2030: Meeting the Challenges to Sustainability'. Published in 2004, this report describes a project initiated and conducted over a period of several years

by twelve of the world's largest automotive and energy companies within the framework of the WBCSD Sustainable Mobility Project. [www.wbcسد.org](http://www.wbcسد.org)

Mobility 2030 identifies seven problem areas that must be considered in working towards sustainable mobility: conventional emissions, greenhouse gas emissions, road safety, noise, traffic congestion, the mobility gap between rich and poor countries, and maintaining or improving mobility opportunities worldwide.

\* Defined as a player who has an influence on or is influenced by our operations.

**SEE THE FOLLOWING SECTIONS OF THE REPORT FOR MORE ON HOW WE RESPOND TO OUR RESPONSIBILITIES:**

**Responsibility as a carmaker:**

Welcome to the world of Volvo Cars, Environment, Safety, Quality, Customers, Society

**Responsibility as a global company:**

Welcome to the world of Volvo Cars, Environment, Quality, Employees, Business partners, Society

**Responsibility as a local player:**

Welcome to the world of Volvo Cars, Employees, Suppliers, Society

**Volvo Cars' responsibility as a global company**

As a global company, we utilise our opportunities to attract expertise and sell our cars all over the world. To us, globalisation is a positive force that has helped us to penetrate markets formerly closed to us and to do business worldwide.

Our supply chains and dealer network provide us with almost global coverage. As a result, our global responsibility extends to everything that we buy and sell. By systematising our work, we try to ensure that we and our business partners live up to high standards – regardless of geographical location.

Our global responsibility is guided by the UN's Global Compact initiative to work in common for human rights, establish good working conditions, take responsibility for the environment and combat corruption. Volvo Cars was one of the first companies to heed the appeal of UN Secretary-General Kofi Annan to become a signatory to the Global Compact.

Globalisation also enables good examples to be disseminated more quickly around the world, and taken on board by more and more companies and business sectors. To Volvo Cars, the Global Compact is a matter of demonstrating leadership. We participate actively in the UN Global Compact Nordic Network, whose purpose is to encourage active Nordic companies to share their know-how and practical experience with other companies in the Nordic region and other parts of the world. The network meets regularly for this purpose.

Volvo Cars also contributed to the formulation of the Global Compact's tenth principle and was represented in New York by its CEO when this was adopted.

**Volvo Cars' responsibility as a local player**

Our main local responsibility is to be a stable and attractive employer. For this reason, we are working to adapt our philosophy of 'medarbetarskap'<sup>\*\*</sup> to suit both existing and new production environments, depending entirely on local conditions. Responsiveness to local needs must also be a feature of the company's business development. Our support for road safety programmes in Thailand is one part of that effort.

As an employer, Volvo Cars has often been ahead of the legislators. As an example, employee representation on the board of the company was adopted as far back as 1974 and only became law in Sweden at a later date. Courage, a pioneering spirit and openness to new demands from different stakeholders are all needed to meet our local commitments.

Local responsibility also requires us to act responsibly in other ways in producing our cars and components. We conduct a continuous dialogue with our business partners to identify the expectations that exist. Our suppliers' fora in Asia are an example of this dialogue.

Our responsibility as a local player is not subject to third-party guidelines similar to those governing our roles of a carmaker and a global company. In their absence, it is important to us to meet regularly with local and national representatives to discuss how the corporate sector and local communities can assure stable employment and a good environment.



**MOBILITY 2030 FOCUSES ON SEVEN SUSTAINABLE DEVELOPMENT GOALS:**

1. Reduce conventional emissions from transport so that they do not constitute a significant public health concern anywhere in the world
2. Reduce GHG emissions from transport to sustainable level
3. Reduce significantly the number of transport-related deaths and injuries worldwide
4. Reduce transport-related noise
5. Mitigate traffic congestion
6. Narrow mobility divides that exist within all countries and between the richest and poorest countries
7. Improve mobility opportunities for the general populations in developed and developing societies.

Visit [www.wbscd.org](http://www.wbscd.org) for information on Mobility 2030.



**THE TEN PRINCIPLES OF THE GLOBAL COMPACT\***

**Human rights**

1. Businesses should support and respect the protection of internationally proclaimed human rights; and
2. make sure that they are not complicit in human rights abuses.

**Labour standards**

3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
4. the elimination of all forms of forced and compulsory labour;
5. the effective abolition of child labour; and
6. the elimination of discrimination in respect of employment and occupation.

**Environment**

7. Businesses should support a precautionary approach to environmental challenges;
8. undertake initiatives to promote greater environmental responsibility; and
9. encourage the development and diffusion of environmentally friendly technologies

**Anti-corruption**

10. Businesses should work against all forms of corruption in all its forms, including extortion and bribery.

<sup>\*\*</sup>'Medarbetarskap' is defined on page 28.

\* Read about the UN Global Compact on [www.unglobalcompact.org](http://www.unglobalcompact.org)

# CORPORATE CITIZENSHIP: CONTRIBUTING TO SUSTAINABLE DEVELOPMENT

For Volvo Cars, sustainable development means seeking to establish a balance between the needs of the company, its customers and future generations. Volvo Cars is a company that has been governed by brand values ever since its foundation in 1927. Our company philosophy provides overall guidance, while operational management is exercised through our business plan.

## OUR ROLE

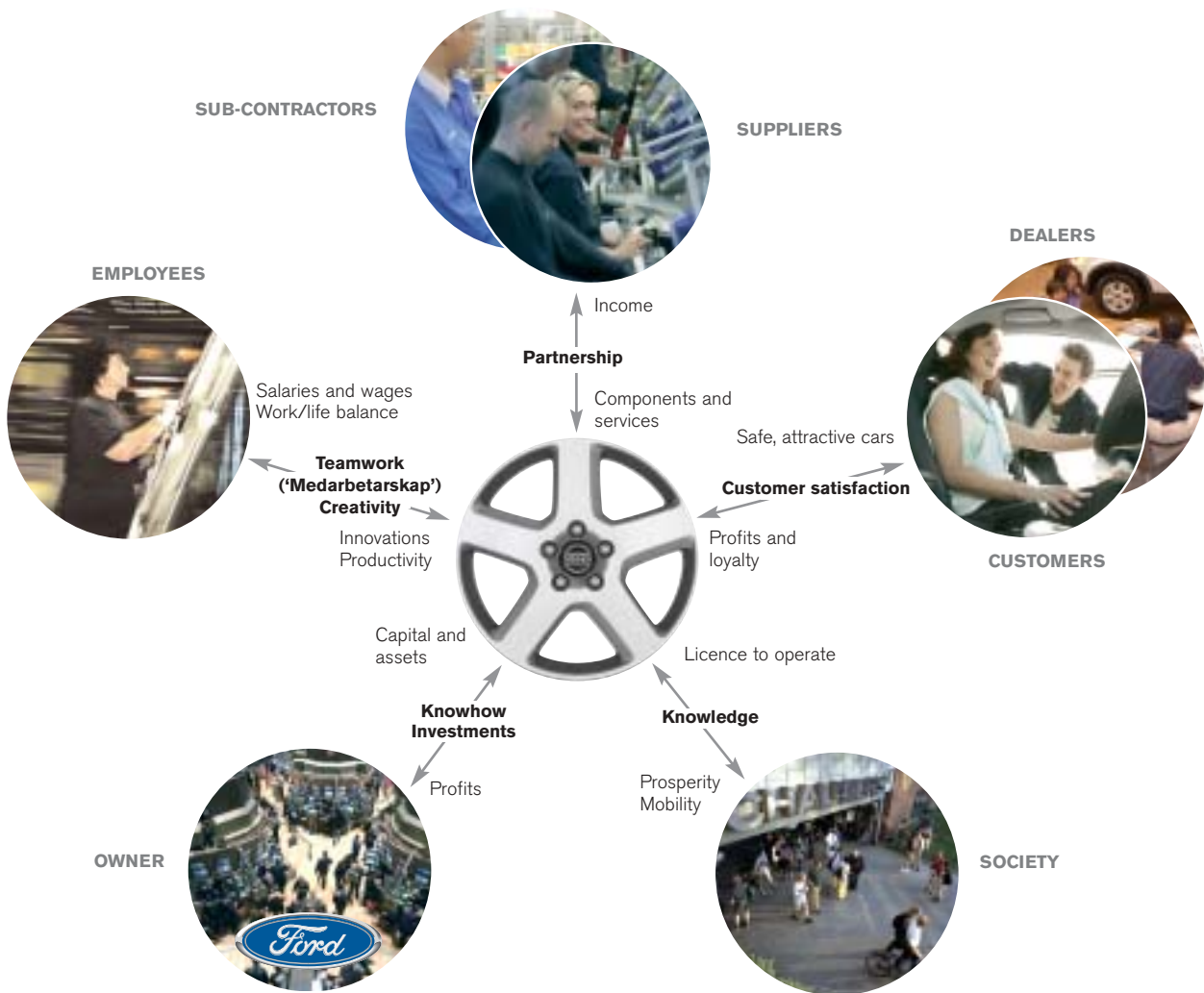
Our vision is to be the world's most desired and successful premium car brand. We market safe and attractive cars offering top-class environmental performance, which can enhance the freedom and quality of life of our customers. Our company philosophy requires us to act in an environmentally and socially responsible manner.

Among other things, this means that we must:

- be a developmental and reliable employer and business partner;
- take account of environmental and social issues in purchasing, production and distribution;
- create employment;

- contribute with knowledge;
- be honest, transparent and active within the communities in which we operate.

Volvo Cars aims to be a leader in corporate citizenship.



## Our most important stakeholders\*

Our success is influenced by our ability to understand our world, and its various needs and requirements. Our most important stakeholders are our customers, employees, suppliers and dealers, Ford Motor Company, and the communities in which we operate. Public agencies, non-governmental organisations (NGOs) and other interests that influence market structures are also important in this context.

\* Defined as a player who has an influence on or is influenced by our operations.



### Our corporate citizenship aims

Our behaviour in society has an influence on how our company and brand are perceived and, by extension, on the demand for our cars. Expectations of Volvo Cars in terms of environmentally and socially responsible behaviour are high. Competition is tough, not only for customers, but also for skills. We know that a good reputation makes it easier to recruit and keep personnel.

We also know that an understanding of the long-term challenges facing society is a force for innovation and the creation of business opportunities.

Our decision to commit actively to corporate citizenship is based on the conviction that it will reinforce our competitiveness in both the short and long term.

### Corporate citizenship the responsibility of all

Volvo Cars is governed by brand values. Corporate citizenship is, above all, a mindset whereby people also consider the social and environmental consequences of their day-to-day decisions.

As the responsibility of every manager and employee, corporate citizenship is based on our company philosophy and on company-wide guidelines.

In operational terms, business planning is the basis on which our activities are planned and managed. Business planning is divided into four areas of priority, of which customer satisfaction is No.1. The other areas are profitable growth, the next generation of cars, and the next generation of leaders and employees. All activities must support these overall priority areas.

Issues relating to the environment, personnel, safety, purchasing, diversity etc. are planned and monitored within the established structures.

This means that results are communicated to the employees concerned in the course of their ordinary work. The workforce as a whole is provided with regular information on the company's programmes through articles in our in-house magazine, Agenda, and the CEO's weekly newsletter, while the overall situation is described in this annual report.

### Development of corporate citizenship

Needs and expectations regarding corporate behaviour vary with time. We have established two fora to develop our understanding of and working approach to corporate citizenship, one of which is an inter-departmental Corporate Citizenship Council representing the main functions within the company (personnel, research and development, purchasing, quality, marketing, sales and service, public affairs and governmental affairs). Reporting to the Corporate Citizenship Steering Committee, the council is led by the Corporate Citizenship Coordinator. The main purpose of the council is to propose cross-functional strategies and objectives related to corporate citizenship.

The other forum, the Corporate Citizenship Steering Committee, is directed by the CEO and another four members of executive management, representing Personnel, Purchasing, Marketing and Public Affairs. The committee deals with strategic issues and development, and reports progress on objectives within the field of corporate citizenship.

The development of our working procedures is also discussed in this forum, together with ways and means of ensuring that corporate citizenship is integrated in our business plan.

### REPORTING OBJECTIVE

This report is our way of presenting and discussing social, environmental, ethical and socio-economic issues as they relate to our business. Our objective is to do this in a transparent manner that also involves our stakeholders.

### Methodology

Since 1999, our report has been structured around our three core values and our four stakeholder groups. This is our method of covering the areas specified in GRI. Information not contained in the report is available on our web site at [www.volvocars.com/citizenship](http://www.volvocars.com/citizenship)

However, financial issues are dealt with only in brief since we are a wholly-owned subsidiary of Ford Motor Company.

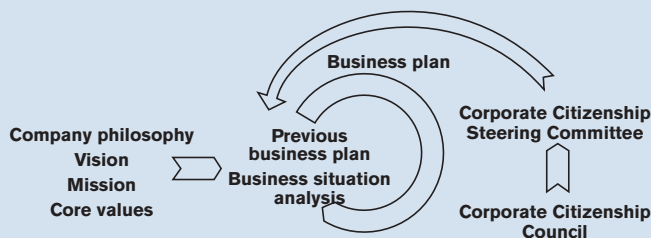
Our reporting process begins with an evaluation of how the previous report was received by our major stakeholder groups, on the basis of which the Corporate Citizenship Steering Committee establishes goals for the forthcoming report. In the next stage, the Corporate Citizenship Council meets to structure the report in accordance with the reporting goals. Finally, the format of the report is approved by the Steering Committee.

### Completeness

Consistency in reporting is important to enable our employees and outside observers to assess our sustainability performance over time. This year, we have made an effort to refine our definitions of our principal stakeholders and their impact on our business. Every year, we weigh the need for consistency against the need to add new perspectives, based on trends in society, the industry and the market.

The scorecard is intended to facilitate the assessment and understanding of our performance in a number of key areas.

This report has not been verified by a third party. Although we regard third-party verification of sustainability reports as an important step towards transparency, we continue to seek an approach that suits Volvo Cars. To us, it is important that third-party verification should reinforce our legitimacy and preserve our owner's integrity, while reflecting the values that our brand represents. We are working intensively to achieve progress in this vital area of transparency.



### Sustainability process part of the business plan

Founded on our company philosophy and core values, our operations are managed with the aid of a business plan. Planning is based on the previous year's plan and on a business situation analysis. Coordination and development in the area of sustainability are supported by a council and steering group. The council monitors developments and identifies the need to develop or refine the company's goals and working methods. Proposals are submitted to the steering group for inclusion in the business planning process.

# “IN THE FUTURE, CAR COLLISIONS MAY BE A THING OF THE PAST”



Speaking in Paris on World Health Day, 7 April 2004, UN Secretary-General Kofi Annan urged the leaders and nations of the world to work for road safety under the slogan 'Road safety is no accident'. The growth in motoring, mainly in the emerging nations, foreshadows a steep rise in accident figures, with severe environmental consequences – unless the world community acts without delay.

“Volvo Cars has always placed safety first and we have never regarded chance as a factor in accidents,” comments **Hans Folkesson**, Vice President, Research and Development at Volvo Cars. “Traffic accidents can be prevented. Volvo's leading position in the safety field is based on a scientific methodology founded on fact. Since 1970, for example, the Volvo Accident Research Team has systematically compiled information on over 35,000 road accidents involving Volvo cars, mainly in Sweden. The resultant data have enabled Volvo to develop and launch safety systems that have since become standard in the car industry as a whole.”

## **Focus on people**

“Cars are driven by people – this is our guiding principle. However, human diversity also presents challenges. Among other factors, traffic behaviour and accident exposure are a function of age, gender, weight, education and cultural background. Our aim is to protect people in different traffic situations.

Since a long-term perspective is important to a carmaker, we work with different future scenarios as part of product development. But whatever the future, our aim is to assure sustainable solutions.

## **Cooperation the key to the future**

We take a holistic view in which road safety and the environment are interrelated. And we recognise that we have a responsibility to work for sustainable development, in partnership with the industry and the rest of society. Dialogue and groundbreaking partnership projects are essential to that. The Volvo Cars' road safety project in Thailand is a good example of constructive cooperation in which the aim of the authorities is to develop expertise in gathering and analysing accident data that can be used to allocate priorities in the

area. We contribute with our methodology and our experience, and train students and personnel in universities, hospitals and the police service. In exchange, we acquire new knowledge as well as new business opportunities.

Through cooperation and knowledge exchange, we help society to establish the conditions for creating a safe infrastructure that can interact with our advanced on-board technical systems. In this way, we can help to prevent many road accidents.”

## ROAD ACCIDENTS AS A GLOBAL ILLNESS

- Every day 3,000 people are killed and 100,000 injured in road accidents.
- Road accidents are the eleventh biggest cause of death worldwide (causing over 2% of all deaths).
- Road accidents are expected to be the third major cause of illness by 2020.

## PROBLEM GREATEST IN LOW-INCOME COUNTRIES

- Eighty-five percent of all fatalities and 90% of all personal injuries occur in low and medium-income countries.
- By 2020, road deaths are expected to fall by 30% in the industrialised nations, but increase by 80% in the rest of the world.

## COST OF ROAD ACCIDENTS

- Road accidents cost USD518 billion globally, of which low and medium-income countries account for USD65 billion.
- The cost is equivalent to 1% of GNP in the industrialised nations, and 1-1.5% of GNP in low and medium-income countries.

Source: 'World report on road traffic injury prevention' by WHO, [www.who.int/world-health-day/2004](http://www.who.int/world-health-day/2004)

## 2004 REPORT

### Holistic view of safety

Our systems have been developed on the basis of holistic view of safety. The overall purpose of preventive safety systems is to prevent accidents from happening.

Protective safety systems are activated if an accident does occur, while post-crash safety systems support the driver and passengers in the wake of an accident.

### PREVENTIVE SAFETY SYSTEMS

#### BLIS (Blind Spot Information System)

Despite large glass surfaces and effective door mirrors, a car's blind spot continues to present a hazard when changing lane and overtaking. At the beginning of 2004, Volvo Cars introduced a world first in the form of BLIS – a side visibility aid that continually monitors the blind spot and helps to alert the driver to vehicles approaching alongside. Digital cameras in each of the door mirrors take a continuous series of pictures toward the rear and compares the images to detect a vehicle in the monitored zones. The driver is alerted by illumination of a lamp in the door post beside the mirror in question. Active at speeds of 10 km/h and over, the system responds to moving vehicles of most types, from motorcycles up.

#### IDIS (Intelligent Driver-Information System)

In critical situations, the driver needs to focus fully on the traffic and on his or her own driving. Under these conditions, information not relevant to actual driving may suddenly present a risk. Volvo Cars' IDIS helps the driver to screen out irrelevant information in certain critical situations. For example, the system can delay incoming calls to the integrated telephone until the situation is calmer. The system continually monitors driver activity and prioritises the information flow on that basis. Launched in 2003, IDIS has been standard in the Volvo S40 and V50 in most markets since 2004.

### Adaptive cruise control

Cruise control contributes to calm and stress-free driving on major roads when traffic rhythms are smooth. However, if the traffic becomes busier, automatic control must be disengaged and the system's advantages are then limited. To overcome this, Volvo Cars has developed an adaptive cruise control system that continually measures the clearance with the vehicle in front, and automatically adjusts the speed and distance accordingly. The maximum speed and minimum clearance settings are selected by the driver himself. It is planned to introduce adaptive cruise control in forthcoming Volvo models.

### Warning system with brake booster and automatic braking

Rear-end impacts and collisions with vehicles at rest are often caused by failure of a distracted driver to react in time. In 2004, Volvo Cars introduced a warning system that helps the driver to detect risks of this type and react more quickly. The heart of the system is a radar that continually observes the area ahead of the car. The safety system is activated in stages depending on the sequence of events.

If the driver fails to react to an obstacle, the system will initiate visual and audible signals. However, if he or she applies insufficient braking – or fails to brake at all – the automatic function will intervene and increase or maximise the braking power as required by the situation. It is planned to introduce the system in forthcoming Volvo models.

### Water-repellent glass

Rain and dirt on side windows and door mirrors impair visibility significantly. In 2004, Volvo Cars introduced water-repellent glass as an option in most of its models. The windscreen glass is provided with a special coating that causes the rain to coalesce into droplets that are blown off by the air flow. On the door mirrors, the water is spread uniformly over the glass to prevent impaired visibility.

## PROTECTIVE SAFETY SYSTEMS

### WHIPS (Whiplash Protection System)

WHIPS is an integrated safety system providing all-in-one protection for the neck and back, combined with an energy-absorbent function and deformation elements between the backrest and seat cushion. In a rear-end impact, the backrest moves backward and also tilts slightly to the rear to reduce the forces on the neck and spine. The feature has been standard on the front seats of all Volvo models since 2000.

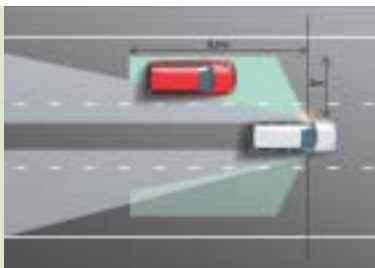
According to the Volvo Cars Traffic Accident Research Team, WHIPS reduces the risks of short and long-term whiplash injury by 33% and 54% respectively. These findings are supported by other independent studies carried out by the Swedish insurance company, Folksam, the Swedish National Road Administration and the US Insurance Institute for Highway Safety (IIHS). In the case of women, the incidence of these injuries was found to be lower by 50% and 70% respectively. In 2004, the International Insurance Whiplash Prevention Group (IIWPG) tested the whiplash protection offered by 208 different cars manufactured in the USA and Europe. In the tests, Volvo Cars was the only carmaker whose entire model range was ranked in the top class and rated 'Best in class'.

### Inflatable curtain for convertibles

Volvo Cars showed an inflatable side-impact curtain (IC) for convertibles – a world first – in 2004. The curtain, which is normally mounted in the roof of the car and deployed downward, is installed in the door in the convertible version. In the event of a side collision, or if the car turns over, the curtain is deployed upward between the head and the side window. The curtain also helps to provide protection if the side windows are down when the accident occurs or if they are broken by the impact. The system will be launched on future models.



**IC**  
Inflatable side-  
impact curtain  
for convertibles



**BLIS**  
Blind Spot  
Information  
System

## POST-CRASH SAFETY SYSTEMS

### Volvo On Call

Volvo On Call, a GSM and GPS-based emergency and assistance system, was offered to customers in several countries, including Sweden, Great Britain and the Netherlands, in 2004. The system, which has been available as an option for some years in the USA, enables the driver to summon assistance in urgent emergency situations at the touch of a button. The features of the system vary from country to country. As an example, when an airbag is deployed in a collision, the system can automatically contact an operator and report the car's precise geographical location. In certain countries, the system can also be used to help the police to track the car if it is stolen.

### Traffic Injury Support

Traffic Injury Support is a long-term project that was started by Volvo Cars in 2003 in partnership with the Volvia insurance company and the Sahlgrenska University Hospital/East Hospital in Göteborg. The Norwegian company, QuestBack, joined the project as a partner in 2004 to conduct Internet-based surveys. The purposes of Traffic Injury Support are to assist people who have been injured in road accidents with advice and guidance, and to gather information on accident causes for use in our product development programmes. Anybody involved in a road accident may seek assistance from the scheme and receive answers to their questions. Customers of Volvia are advised to submit an accident report to the company. Information on Traffic Injury Support is also available from many local health clinics.

Visit [www.vgregion.se/trafikskadestod/](http://www.vgregion.se/trafikskadestod/) for more information.

## CHILD SAFETY

### Small children safest in rear-facing child seat

Opinions regarding the correct way of seating children in cars differ in different parts of the world. The Volvo Cars recommendation is clear: small children should, as far as possible, travel in a rear-facing child seat. It is also important that the safety equipment be appropriate to the child's size.

### Safety belt best protection for pregnant woman and unborn child

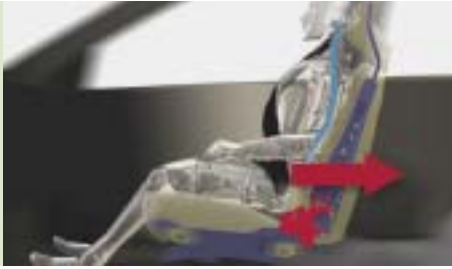
Motor vehicle accidents are the main reason that pregnant women seek emergency hospital treatment in accident situations. Car accidents are also a primary cause of fatalities of unborn children. Since knowledge regarding the risks to pregnant women and their unborn children is relatively limited, Volvo Cars has developed

## LATEST CRASH TEST RESULTS TO 2004 INCLUSIVE

Car safety is a complex area which is assessed on the basis of several different criteria. In addition to our own tests, our cars are tested by a number of independent bodies and insurance companies, and have been awarded the very highest ranking in no less than 31 out of 43 tests. The tests are based on crash testing, accident statistics and expert assessment. The V50 and C70 are not included since these were not tested during 2004.

Test body	Test method	S40 Position	S60 Position	S80 Position	V70 Position	XC70 Position	XC90 Position
<b>EuroNCAP</b>	Frontal impact crash test	1	2	2	n/t	n/t	1
<b>US NCAP</b>	Frontal impact crash test	2	2	1	1	1	2
	Side impact crash test	1	1	1	1	1	1
	Rollover test	2	1	1	2	2	2
<b>IIHS</b>	Frontal impact crash test	1	1	1	n/t	n/t	1
	Side impact crash test	2	n/t	n/t	n/t	n/t	
<b>HLDI</b>	Injury reports to insurance companies	3	1	1	1	n/t	n/t
<b>Folksam</b>	Injury and fatality data	1	1	1	1	n/t	n/t
<b>WHICH?</b>	Expert assessment	1	1	2	n/t	n/t	n/t
<b>IIHS/Thatcham</b>	Whiplash test	1	1	1	1	n/t	1

1 = highest rating  
2 = next highest rating  
3 = average rating  
n/t = not tested



Linda – a virtual pregnant crash dummy that enables us to study how the foetus and mother-to-be can best be protected. Our research shows that the safety belt is the best form of protection for both. For this reason, even pregnant women should use the car's normal protection system, such as the safety belt, and like everybody else, should know how to wear the belt correctly.

## KNOWLEDGE DEVELOPMENT

### Safe solutions are based on knowledge and cooperation

Technically, the car is becoming more and more sophisticated and the traffic environment more and more complex – but man remains the same. Volvo's safety philosophy is based on the interaction between man, vehicle and traffic environment. Our solutions are based on a knowledge of materials and technology, as well as human behaviour.

Since the 1970s, the Volvo Accident Research Team has studied about 35,000 Swedish traffic accidents involving newer Volvo cars. We have structured this information successively to build a unique knowledge database that serves as a resource, both to our design engineers and our specialists at the Volvo Car Safety Centre – one of the most advanced crash test laboratories in the world.

Visit [www.volvocars.com/citizenship](http://www.volvocars.com/citizenship) for more information.

## LOWER INSURANCE PREMIUMS FOR VOLVO OWNERS

Our Canadian sales company has successfully secured lower insurance premiums for Volvo owners in Canada following a dedicated campaign to inform insurance companies of the advantages of Volvo's whiplash protection system (WHIPS). The campaign was undertaken in response to steep premium rises applied by Canadian insurers to cover what they maintain are the increased costs of meeting claims from victims of soft tissue injuries, such as whiplash. The immediate result was an offer by all of the companies of the Aviva Canada Inc. Insurance Group to drop premiums by 5%.

## Research into children and accidents

CHICC (Child Safety In Car Crashes) is a joint research project that has been conducted since 2003 by Volvo Cars, Chalmers University of Technology, Saab Automobile, Queen Silvia's Children's Hospital and Vinnova (Swedish Agency for Innovation Systems). Since children have special requirements in cars, one aim of CHICC is to establish guidelines for the development of new protection systems, and recommendations for the use and development of tools (virtual models) for system analysis and evaluation. This work continued in 2004 and the project is expected to reach completion in 2006.

A study has been made of statistics from Volvo Cars' own accident database concerning accidents to children between 1987 and 2004. This shows that the smallest children travel most safely facing the rear and that children up to 10-12 years of age require special protection to ensure that the safety belt is positioned correctly. The findings indicate that a high proportion of Swedish motorists use child protection and that this can be improved by using the correct equipment until the maximum possible age.

We are active participants in FICA (Factors Influencing the Causation of Accidents), an extended national research project to study patterns of human behaviour preceding road accidents. Last year, we established the GVSCC (Göteborg Vehicle Safety Centre at Chalmers) in collaboration with the Swedish automotive industry and Chalmers University of Technology, Göteborg.

## "PEOPLE WILL NOT ACCEPT JUST ANY SOLUTION"

"We are involved in an ongoing partnership in traffic safety with Volvo Cars and other companies in the automotive industry, as well as with the Swedish Road Administration and the University of Linköping," says Per Lövsund, professor of traffic safety at Chalmers University of Technology, Göteborg. "This venture is unique and gives us an opportunity of developing fundamental solutions based on expertise in engineering, medicine and behavioural sciences. Knowledge of what a human being can achieve and accept, both physically and mentally, is a condition for satisfactory technical solutions.

Today, safety is increasingly concerned with systems that prevent accidents from happening. In the future, cars will be able to communicate both with other cars and the traffic environment – and even with pedestrians. The systems will be able to keep track of and avoid accident risks. In other words, we foresee a type of intensive technical development that will call for continued, wide-ranging cooperation, with the focus on psychological factors. The human being must not be forgotten in the midst of all the technology.

In today's real world, motoring – and with it the number of traffic victims – is increasing dramatically in certain countries. Together with partners such as Volvo Cars and the Asian Institute of Technology in Bangkok, we are attempting to raise the level of road safety knowledge and initiate a systematic safety programme in Thailand. Another form of knowledge exchange is taking place at Chalmers with the aid of lecturers from Volvo Cars, in which students from many different countries, particularly from Asia, are taking a masters degree in automotive engineering. These students are working on projects and graduate theses generated by and designed to benefit the automotive industry."



**Per Lövsund,**  
Professor of Traffic Safety  
Chalmers University of Technology,  
Göteborg, Sweden

# “SUSTAINABLE, SAFE MOBILITY A WINNING STRATEGY”

One of the major challenges facing the automotive industry is to develop products that both attract customers and encourage sustainable development.

“The challenges of sustainability can be transformed into business opportunities by focusing on energy efficiency, health and mobility solutions” comments **Lex Kerssemakers**, Senior Vice President, Brand, Business and Product Strategy at Volvo Cars. “Tomorrow’s winners will be those companies that can deliver solutions assuring the continued mobility of our customers that is both environmentally and socially sustainable, and is attractive to the customer.”



Transport and personal mobility are prime means of creating economic and social welfare, while also enhancing the individual's personal freedom to live where and in the manner he or she chooses. However, mobility also has adverse effects, such as climatic disturbances, impaired air quality, increased oil dependency and traffic congestion. Sustainable mobility means preserving the benefits of personal mobility while working to eliminate its disadvantages.

“Our role is to offer safe, high-class mobility consistent with the need to protect human health and the environment,” says Lex Kerssemakers. “Environment is one of our core values, and our customers expect Volvo Cars to take the initiative in developing safe, attractive and ecologically sustainable mobility solutions. Our latest concept car – the 3CC – is an example of how such a vehicle might look.”

Volvo Cars has developed a new strategy for sustainable mobility. The objective is to manage business processes, projects and product development in line with the aspiration of sustainable

development. The strategy is in line with a four-year study\* of transport systems of the future carried out by the automotive industry under the auspices of the WBCSD (World Business Council for Sustainable Development). According to the study, sustainable mobility is a matter of global importance that calls for inputs from all sectors of society.

“We cannot achieve sustainable mobility on our own,” explains Lex Kerssemakers. “Since we want to be constructive and realistic, we have opted to focus our efforts on the areas in which we can make the best contribution – energy efficiency, health and personal mobility.”

Volvo Cars is exploring a variety of solutions designed to arrest the greenhouse effect in both the short and long term, among other things by participating in Ford Motor Company's research programmes in biofuels and hybrid technology, as well as hydrogen and fuel cells. And the company can contribute to a more healthy environment both inside and outside

the car by adopting innovative technical solutions and materials. Volvo Cars is also monitoring the shift in the global market from traditional car ownership to the idea of using different cars for different needs.

“Our own research in the USA, Europe and Asia shows that consumers are showing increasing acceptance of new, smart mobility concepts,” says Lex Kerssemakers.

“Adopting the idea of ‘a car for every need’ would have the same impact on the world's view of car ownership as the Sony Walkman has had on the audio world.

We want to achieve sustainable mobility together with our customers, but also with the rest of the automotive industry, public agencies and various stakeholder organisations. We want to match our safety reputation by becoming the environment leader among makers of premium cars and offering our customers the most attractive solution in terms of sustainable mobility.”

\* The Mobility 2030 study was carried out by twelve automotive industry companies (including tyre and fuel producers as well as automakers) that are members of the WBCSD (World Business Council for Sustainable Development) – a grouping of about 170 global companies with a shared commitment to sustainable mobility. Visit [www.wbcd.org](http://www.wbcd.org) to download the Mobility 2030 report.



#### BI-FUEL INCENTIVE

Volvo Cars is helping in various ways to increase the advantages of a methane-powered Volvo Bi-Fuel model. One is by undertaking groundbreaking partnership projects with representatives of public authorities and business, another by encouraging company employees to choose Bi-Fuel models as company cars. At present, Volvo employees in Göteborg are driving about 700 methane-powered cars, contributing to the growing popularity of methane as an automotive fuel in western Sweden.

## 2004 REPORT

### Greatest environmental impact while in use

Approximately 90% of the lifetime environmental impact of a car is generated while the vehicle is in use, for example as emissions of carbon dioxide and other exhaust gases. For this reason, we have opted to report our environmental impact with the emphasis on the car's useful life phase, based on the three key areas of Volvo Cars' new sustainable mobility strategy – Energy efficiency, Health and Mobility concepts.

Visit [www.volvocars.com/citizenship](http://www.volvocars.com/citizenship) for environmental data on Volvo Cars' production of cars and car components.

## ENERGY EFFICIENCY

### Carbon dioxide emissions down in 2004

The net amount of the greenhouse gas, carbon dioxide, that a car emits to the atmosphere is a direct function of its consumption of fossil fuel, such as petrol or diesel oil. By virtue of our membership of ACEA (Association des Constructeurs Européens d'Automobiles), we are committed to successively reducing carbon dioxide emissions from new cars sold in Europe. ACEA's common target, to which all of its members are party, is to lower average fuel consumption by 25% by the year 2008 compared with the base year of 1995. By the end of 2004, we at Volvo Cars had reduced average fuel consumption by 11%. To a great extent, this was due to the market success of the new, compact Volvo S40 and V50, and to an increase in the proportion of new Volvo cars sold with diesel engines.

### Increased sales of diesel cars

A diesel engine uses about 30% less fuel than a petrol engine and emits about 20% less carbon dioxide. As a result, a higher proportion of diesel engines makes a significant contribution to lower carbon dioxide emissions. All of our top-selling models are available with diesel engines. In 2004, we sold 120,465 diesel cars, an increase of 24% over 2003.

In addition, the proportion of diesels in our car sales to the European market as a whole increased from 47% to 52%. The proportion in countries such as France, Italy and Portugal is 90% or higher.

### First Volvo engine with consumption below 5 litres/100 km

Volvo Cars' most fuel-efficient engine ever was launched at the end of 2004. In mixed driving with a manual gearbox, the new 1.6D diesel used in our new compact models has a fuel consumption of 4.9 l/100 km in the Volvo S40 and 5.0 l/100 km in the Volvo V50 (with CO<sub>2</sub> emissions of 129 g/km and 132 g/km respectively). The engine can also be equipped with a particle filter.

### Lower sales of Bi-Fuel cars

Our European customers have had the option of buying methane-powered Bi-Fuel cars since 1995. A total of 1,478\* Volvo Bi-Fuel cars was sold in Europe in 2004, mainly in Sweden, Germany, the Netherlands and Great Britain – a fall of 24% compared with 2003.

Major initiatives to increase sales of Bi-Fuel cars include intensified marketing and further cooperation with authorities to create the appropriate economic incentives for the end users.

During the latter half of 2004, we dropped the price of our Bi-Fuel models to reduce the price differential between these and their petrol-driven counterparts. The price reduction was offered initially in Sweden. Further measures will be introduced in 2005, in partnership with Swedish vehicle gas suppliers, to make it even more economically attractive to drive on methane. Together with the City of Göteborg, the Västra Götaland Region and the Volvo Group, we are also involved in the 'Biogas Cities' project – a groundbreaking venture designed to promote the establishment of an infrastructure for methane in general and biogas in particular (see page 39 for further information).

### Green light for ethanol in Sweden

Ethanol is a renewable fuel which, like biogas, contributes practically no additional greenhouse gases to the atmosphere when the car is driven. To offer our customers a greater choice of environmental car options, we have decided to develop an ethanol-powered engine for the compact Volvo S40 and V50. In the Swedish market, these cars will be available in the 'Flexifuel' version (using E85, a blended fuel containing up to 85% ethanol in petrol) from autumn 2005 on. Another efficient way of using ethanol is to blend it in low concentrations with petrol. For example, all 95-octane petrol now sold in Sweden contains 5% ethanol.

\* Including 286 Bi-Fuel LPG (Liquefied Petroleum Gas) models, a version phased out at the beginning of 2005.

### Energy Conservation Year 2004

Volvo Cars' total operations-related energy consumption fell by 2% in 2004, due to the sale of the company's Köping plant and despite an increase in production time to meet the higher production demand for the year. Heating, ventilation and lighting account for a significant proportion of total energy demand. At our Swedish facility in Torslanda, energy consumption is divided equally between production and development. 2004 was declared Energy Conservation Year, to increase the company's focus on energy issues and to reduce energy usage.

## HEALTH

### Engines with lower emissions

During the year, the proportion of cars sold complying, as a minimum, with the strict Californian ULEV (Ultra Low Emission Vehicle) limits or the European Euro 4 emission control standard (which came into force in 2005) increased from 52% to 63%. Engines complying with standards equivalent to ULEV are available in all markets, regardless of local legislation. Four of our five-cylinder petrol



#### ODOUR TESTING

Volvo Cars' odour testing panel consists of eight specially selected 'standard noses' whose task is to help the design engineers to specify interior trim materials from an odour perspective.

#### VOLVO CARS' STATED POSITIONS

Our stated positions on a series of environment-related issues are published on the Internet. Visit [www.volvocars.com/citizenship](http://www.volvocars.com/citizenship) for more information.

engine variants, as well as our new V8 unit, also comply with the voluntary, and even stricter, ULEV II standard. In 2004, the proportion of cars sold with these engines accounted for 26% of total sales.

A specified percentage of the vehicles sold by carmakers in California must be equipped with engines with extremely low exhaust emissions – either ZEV (Zero Emission Vehicle) or PZEV (Partial Zero Emission Vehicle). As the third entrant, Volvo Cars was early in the field with a PZEV engine. In 2004, we sold 6,937 PZEV cars in California and six other US states, an increase of approximately 30% compared with the year before.

According to CARB (California Air Resources Board), the emissions of carbon monoxide, hydrocarbons and nitrogen oxides from PZEV cars are as low as those from electric cars. The engines are equipped with more advanced exhaust gas treatment facilities and a fuel system with a steel fuel tank that reduces evaporative emissions to an extremely low level. All of this is monitored by one of the most sophisticated diagnostic systems in the car industry. Although PZEV cars are more costly to manufacture, the price to the customer is the same as a conventional car.

#### Volvo XC90 V8 first in class to meet ULEV II

Powered by a V8 engine, the Volvo XC90 SUV (Sport Utility Vehicle) was launched in 2004, mainly for the US market. This entirely new, all-aluminium engine was developed especially for the Volvo XC90. A new exhaust gas treatment system with four catalytic converters – two mounted directly on the exhaust manifold – and an optimised engine management system also make the unit the first petrol-driven V8 to comply with California's strict ULEV II emission limits.

#### New generation of diesels with particle filter

Although the diesel engine is more energy-efficient than the petrol engine, it also has disadvantages in the form of higher levels of nitrogen oxides (NOx) and particulate matter in the exhaust gases. Nitrogen oxides contri-

bute to the formation of tropospheric (ground-level) ozone, which can be injurious to plant, animal and human life. Research shows that the exhaust particles can cause or aggravate respiratory ailments, such as asthma, bronchitis and pneumonia. In addition, carcinogenic substances in the exhaust gases can adhere to the particles.

To reduce particle emissions, we introduced a particle filter for the Volvo S40 and V50 2.0D in 2004. A self-cleaning unit that removes over 90% of the emission particles, this feature will be offered on most of our other diesel engines in 2005. The next challenge is to achieve even more efficient reduction of the nitrogen oxide levels and we are involved in the development of various devices for trapping NOx emissions from diesels.

#### PremAir® ozone converter

A contributor to smog, typically in major conurbations, and a potential cause of respiratory irritation and breathing difficulties, ground-level ozone is formed by chemical reaction between airborne pollutants in the presence of strong sunlight. In 1998, Volvo Cars became one of the first carmakers to tackle the problem of ground-level ozone in a new way with the introduction of PremAir®, a catalytic radiator coating that can convert ozone in the air flowing through the radiator into pure oxygen. PremAir® is most effective when the concentration of ground-level ozone is highest, such as in heavy traffic in hot, sunny weather. PremAir® is a trademark of Engelhard Corporation.

#### Higher focus on allergies and asthma

A motorist who drives 15,000 kilometres a year spends about 24 hours a month in the car – and probably twice as long if he or she lives in a major city with busy traffic. So offering a cabin that is clean and healthy, even for people with asthma and allergies, follows naturally from our safety philosophy and is an important environmental goal. Approximately 45%\* of the population of the western world is affected by some kind of hypersensitivity and one in ten women suffers from nickel allergy, while allergic asthma is also increasing

rapidly. To deal with these challenges, Volvo Cars is focusing on five areas: cabin air quality, the quality of the air admitted by the climate system, contact allergies, odours, and the certification of textiles and leathers under the Oeko-Tex 100 standard.

A healthy cabin environment is an area in which we aim to achieve a position of leadership in the car industry. With this in view, we intend to successively introduce innovations in both current and forthcoming models that will make life easier for asthma and allergy sufferers. Visit [www.volvocars.com/citizenship](http://www.volvocars.com/citizenship) for more about our work in this area.

\* Source: Professor Tomas Sandström, MD, PhD, Department of Respiratory Medicine and Allergy, Norrland University Hospital, Umeå, Sweden

#### MOBILITY CONCEPTS

##### Concept cars for sustainable mobility

In 2004, Volvo Cars unveiled two concept cars designed to illustrate how traffic volumes and carbon dioxide emissions might be reduced in future. Both models were developed by the company's think tank at the Volvo Monitoring and Concept Center (VMCC) in Camarillo, California. The first of these – the 'Tandem' – is a slim, energy-efficient, two-seat passenger transport with a footprint 50% smaller than today's cars. Named the '3CC', the second model was shown at the annual Michelin Challenge Bibendum competition which, in 2004, was held in Shanghai, China. To Volvo Cars, the 3CC is a means of demonstrating how clean, safe and efficient cars can be developed in the future (see page 17 for more).

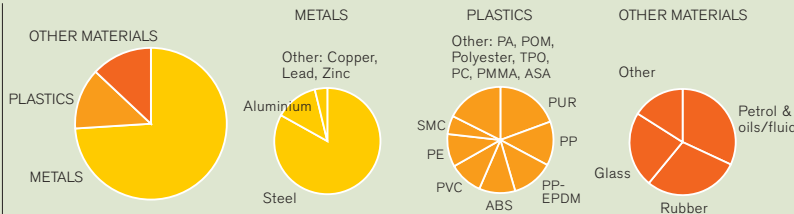
##### SunFleet car pool expands

Since 2001, we have been operating the SunFleet Carsharing car pool in Sweden in cooperation with car rental company Hertz. As the only car pool in Europe based exclusively on environmental cars, SunFleet gives companies, communities and organisations access to environmentally compatible and easily accessible personal transport. The aim is to provide employees with a new, safe car with advanced environmental performance close to their workplace or at home. The members of the car pool pay only a subscription and the run-



**ENVIRONMENTAL DATA ON OUR CARS**

**FIG. 9 MATERIAL COMPOSITION OF A VOLVO V70**



**85% BY WEIGHT OF CAR RECYCLABLE**

A Volvo V70 is comprised of metals (74%), plastics (13%) and other materials (13%). Accounting for 85% of the car's weight, metals, oils, fluids, rubber and certain plastics can be recycled. This level of recycling accords with the post-2006 provisions of the EU End-of-Life Directive. Every Volvo car is designed to be recyclable at the end of its useful life.

ning costs of the car. The fleet consists of electric hybrid, ethanol and methane-driven cars, including Volvo Bi-Fuel models.

Twenty-four companies, organisations and public bodies, with a total of 1,300 users, were subscribers to the Swedish SunFleet car

pool in 2004 – an increase of no less than 175% compared with the year before. Over 1,100 journeys per month are completed in SunFleet cars.

Further information is available on [www.sunfleet.com](http://www.sunfleet.com)

**WBCSD MOBILITY REPORT LOOKS TO COLLABORATIVE FUTURE**

"Society will have to overcome a series of interrelated problems to develop sustainable mobility within the rapidly growing world economy. This is the message from the WBCSD (World Business Council for Sustainable Development), which has engaged with the issue in its final report on the 'Mobility 2030: Meeting the Challenges to Sustainability' project. The report stresses that economic growth is essential if future generations are to enjoy sustainable mobility, while observing that growth will suffer if mobility is neglected.

Focusing on road transportation and carried out over a four-year period, Mobility 2030 involved twelve major energy and transport companies, together with a number of specialists, including a group of researchers at Massachusetts Institute of Technology (MIT). While the parties were not always agreed on the timetable or the most effective methods to be employed, they were able to share their differing views. In the report, these differences are treated in a manner that advances the main goal of identifying different approaches to sustainable mobility. The role of the transportation sector, and how it can collaborate with other sectors, is also elucidated.

The principal message is that global society must make a contribution if sustainable mobility is to be achieved. Cooperation is vital in three key areas: Making transportation more efficient, increasing the demand for sustainable alternatives and reducing the adverse effects of existing transportation systems – especially by introducing new technology."

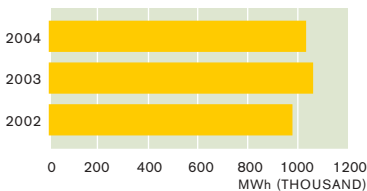
Report courtesy of MIT Laboratory for Energy and the Environment.

Visit [www.mit.edu](http://www.mit.edu) and [www.wbcds.org](http://www.wbcds.org) for more information.

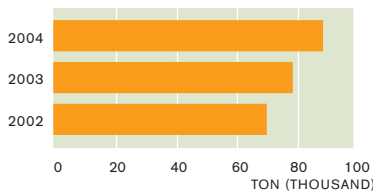


**Professor John Heywood, MIT**, consultant to Mobility 2030 – a global project dealing with trends and needs in the area of sustainable mobility between now and 2030.

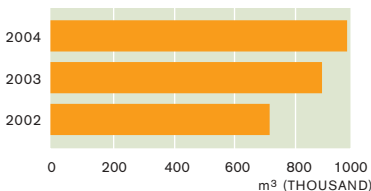
**FIG. 1 DIRECT ENERGY CONSUMPTION IN PRODUCTION**



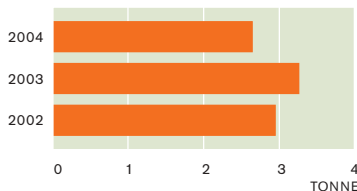
**FIG. 5 DIRECT EMISSIONS OF CARBON DIOXIDE FROM PRODUCTION**



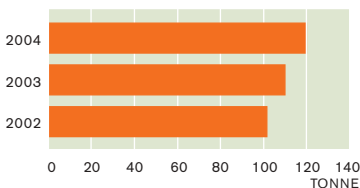
**FIG. 2 WATER CONSUMPTION IN PRODUCTION**



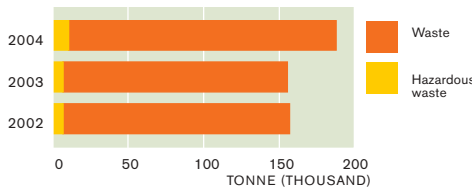
**FIG. 6 SULPHUR DIOXIDE EMISSIONS FROM PRODUCTION**



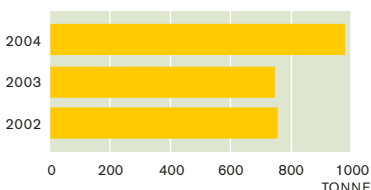
**FIG. 3 NITROGEN OXIDE EMISSIONS FROM PRODUCTION**



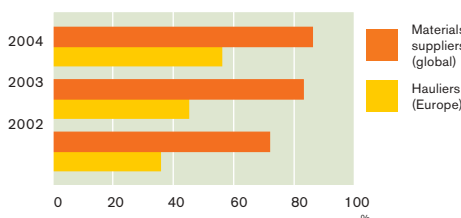
**FIG. 7 WASTE FROM PRODUCTION**



**FIG. 4 SOLVENT (VOC) EMISSIONS FROM PRODUCTION**



**FIG. 8 SUPPLIERS WITH CERTIFIED ENVIRONMENTAL MANAGEMENT SYSTEMS**



Visit [www.volvocars.com/citizenship](http://www.volvocars.com/citizenship) for more environmental data.

# GLOBAL WARMING: REALISTIC SOLUTIONS NEEDED TO MEET AUTOMOTIVE INDUSTRY'S BIGGEST CHALLENGE

Anthropogenic emissions of carbon dioxide contribute to global warming. Means of transport, such as cars, trucks, aircraft and ships, account for about 27%\* of these emissions and transportation is the only sector in which they continue to increase.

"The Volvo Cars approach is to focus mainly on realistic solutions for which customers are prepared to pay," says Anders Kärrberg, environmental director of Volvo Cars. "These may well take the form of new fuel concepts, although they should not be completely dependent on subventions of various kinds."

During the 21st century, the Earth's mean temperature is expected to rise by as much as 6.5°C\*\* – an increase unprecedented in the last thousand years. One contributory factor is the intensified greenhouse effect, which experts around the world are agreed is caused by anthropogenic emissions of greenhouse gases, such as carbon dioxide. Arresting this phenomenon is a global concern that cannot be postponed. And even if greenhouse gas emissions are curtailed, the climate system will respond only slowly and the ecosystem will take many years to recover.

"International agreements such as the Kyoto protocol affect all automakers," comments Anders Kärrberg. "In addition, several countries are exerting pressure on the automotive industry through legislation and various programmes for lowering carbon dioxide emissions. This is now happening, for example, in Europe, Japan, China, Australia, Canada and US states such as California."

## Volvo Cars' role

Private cars account for about 12%\* of the total net addition of greenhouse carbon dioxide. Volvo Cars is collaborating actively with the rest of the automotive industry, fuel producers, public authorities and researchers with the aim of reducing these emissions. As a subsidiary of Ford Motor Company, Volvo Cars is a member of ACEA (Association des Constructeurs Européens d'Automobiles), the representative body of the European automotive industry, which has concluded a voluntary agreement with the EU Commission to reduce average CO<sub>2</sub> emissions from new cars sold in 2008 by 25%, compared with the base year of 1995.

"Within ACEA, we are also working for a more integrated approach to the greenhouse effect," continues Anders Kärrberg. "An effective reduction in carbon dioxide levels calls for a holistic view of transportation that also includes infrastructures, fuel quality and customer preferences."

## Rapid results with diesels

Since the accelerating trend in the greenhouse effect demands fast and effective action to cut carbon dioxide emissions, Volvo Cars is prioritising solutions that are practicable in infrastructural as well as commercial terms.

"The most effective way of meeting the European carbon dioxide targets is to increase the proportion of diesel engines," says Anders Kärrberg. "At present, diesel cars account for 52% of our sales in Europe and we expect that figure to rise with the launch of our latest generation of diesel engines."

"With the benefit of a particle filter, diesel is a fuel with a high environmental performance. However, unlike other European countries, Sweden – our second biggest market – has not realised its full potential for CO<sub>2</sub> reduction since sales of diesel cars have not yet taken off. This is partly down to customer attitudes to the diesel, but also to an unfavourable tax regime. However, given our new diesel engines and good prospects for a more harmonised system of fuel taxation, we believe that the proportion of diesel cars will increase significantly in Sweden also."

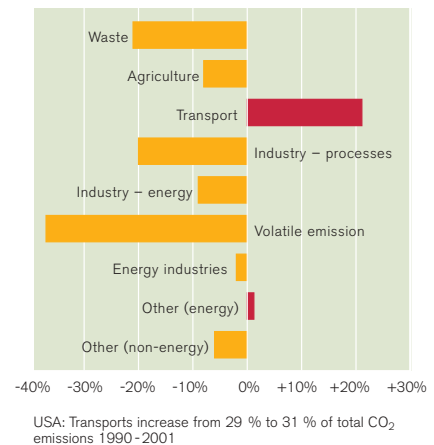
## Refined technology – and hybrids in the long term

Other areas in which Volvo is working to minimise the fuel consumption of its cars include weight reduction, aerodynamics, rolling resistance and the further development of existing power trains.

"In the USA – our biggest market – petrol is the predominant fuel, while American customers also prefer more powerful engines," says Anders Kärrberg. "The best short-term action we can take there to save fuel is to make our petrol engines even more efficient."

"However, hybrid technology based on a combination of electric drive and petrol is beginning to make a breakthrough in the USA. As part of Ford Motor Company, we enjoy

FIG. 1  
CHANGE IN GREENHOUSE GAS  
EMISSIONS FROM DIFFERENT  
SECTORS IN EU, 1990–2001



access to expert knowhow in the area and we expect to be able to offer a Volvo hybrid in the near future."

## Realistic alternative fuel options

Since 1995, Volvo Cars has been selling Bi-Fuel cars powered by methane with petrol as a backup fuel in European countries with a methane (natural gas and biogas) refuelling infrastructure.

"Several of our best-selling models are available with Bi-Fuel engines, which is an efficient way of cutting carbon dioxide emissions," notes Anders Kärrberg. "This applies especially to biogas which, in practice, makes no net carbon dioxide addition to the greenhouse effect." Volvo Cars is contributing its expertise, through partnerships at both local and national level, to further the development of methane, especially in the infrastructural context.

Another important step towards widespread acceptance of alternative fuels is that the European Commission's biofuels directive is now being applied. Under the directive, 8% of the petrol and diesel used in cars is to be replaced by biofuels (such as biogas and ethanol) by 2020. The European Commission also aims to replace a further 10% by natural gas and 5% by hydrogen.

Volvo Cars also aims to broaden its range of environmental cars in Sweden. Thus, Volvo S40 and V50 models powered by ethanol (E85\*\*\*) will make their appearance in the Swedish market in 2005.

"Initially, political incentives will be necessary to create the demand for new fuel concepts," declares Anders Kärrberg. "At the same time, clearly-defined playing rules will be required to provide the stability needed to stimulate long-term investment. This is absolutely essential to us as carmakers, as well as to our customers and society in general."

\* Source: World Business Council for Sustainable Development (WBCSD), 2004

\*\* Source: Swedish Environmental Protection Agency/IPCC  
\*\*\* E85: A fuel blend containing up to 85% ethanol in petrol

# A SAFE AND SPORTY ENVIRONMENTAL CAR

Volvo Cars' most recent concept car – the 3CC – was shown for the first time on 12 October 2004 at the Michelin Challenge Bibendum in Shanghai. The 3CC was developed by designers, engineers and business developers at the Volvo Monitoring and Concept Center (VMCC) in California. The assignment was to create a car of the future with the focus on safety and sustainable mobility, while offering attractive design and powerful performance. The result was a sporty, versatile and compact electric car for up to three adult passengers – or two adults and two children – offering comfort and space of a standard comparable to a bigger car. With the 3CC's electric motor drive, aerodynamic shape and unique front-impact protection, Volvo Cars demonstrated one possible approach to future development.



## Compact and safe family car

Despite its compact format – barely 390 cm long and just over 160 cm wide – the 3CC offers a feeling of space, thanks to its bright colours, translucent roof panels and good all-round visibility for all of the occupants. Accommodating two adults in front and one adult or two children in the rear, the flexible three-seat configuration is unique. When the doors are opened, the dashboard slides forward to facilitate entry and exit.

The 3CC is equipped with the Volvo Safety Ride Down Concept – a new, intelligent, frontal impact protection system. In a collision, the shortness of the front end is compensated for by the use of adaptive dampers to brake the forward movement of the seats along their guide rails.

## Regenerative braking

The 3CC can be adapted for different drive-lines, including petrol, diesel, biogas and electric hybrid drive. Packaged in the thin composite floor, the battery's lithium ion cells (the same as those used in a laptop computer) provide an operating range of about 300 km. Under normal driving conditions, approximately 20% of the electrical energy used is recovered in the form of regenerative braking.

With electric motor drive, the top speed is 135 km/h and acceleration from 0 to 100 km/h is achieved in 10 seconds – without any exhaust emissions.



## DEVELOPING SUSTAINABLE CONCEPTS

A team of designers, engineers and business developers at the Volvo Monitoring and Concept Center (VMCC) in Camarillo, California is working on the development of new, groundbreaking car concepts. What distinguishes their working methodology is the effort to identify solutions that transcend traditional values such as style and design – solutions that also have roots in social diversity, in different trends and in different ways of thinking.

“Other design studios attempt to copy us,” says Geza Loczi, head of design at VMCC. “The difference is that we were first and that we have the ability to do things in a non-conventional way. Our strategy is escape from ingrained patterns.”

The secret of the VMCC's success lies in its mix of different kinds of expertise in the areas of design, engineering and business development. Applying specialist know-how in different fields creates the conditions for developing holistic solutions that will stand the test of time.


“It is not the individual parts of the car that we consider, rather its overall, balanced effect,” explains Geza Loczi.

The studio's capacity to predict the trends that may be current in ten, twenty or thirty years is crucial to the solutions that it develops. Example of models developed from that perspective include the Volvo S80, S60 and XC90, as well as the safety and environmental concept cars (SCC and ECC) and the recent 3CC.



**Geza Loczi**, chief design engineer at the Volvo Monitoring and Concept Center.

# “QUALITY IS PART OF OUR CORPORATE CULTURE”



“All around the world, Volvo stands for safety, quality and environment. Since these are our core values, people have very high expectations of us – and our aim is to exceed those,” declares **Lena Olving**, Senior Vice President, Quality and Customer Satisfaction at Volvo Cars.

“Customer satisfaction is the ultimate testimony to our quality programmes. We keep continuous track of customer attitudes in the form of surveys carried out both by ourselves and independent agencies like J.D. Power & Associates. And we interview our customers on a regular basis to ensure that their needs are incorporated in product development.

“Volvo Cars has a long tradition of reliability, backed by a quality philosophy that has consistently characterised both its cars and services in the sales and service sectors. However, the demands that a future, more sustainable society

will make not only of the car industry in particular, but of industry as a whole, will present huge challenges to our view of quality.

“We have always taken a holistic view of quality and the customer’s overall experience, in particular, will become increasingly important. The purpose of our quality programmes is to contribute to the quality of life of our customers, and to do so in a manner that also benefits more people than those who own and drive our cars. For this reason, a systematic quality approach must permeate not only our design, manufacturing and service activities, but everything that we do. To us at Volvo Cars,

corporate citizenship ultimately comes down to the quality of our relations with the world around us.

“The goal of Volvo Cars is to become No.1 in customer satisfaction in the premium car segment. This assumes that the promises we make to our customers are also fulfilled in their encounters with our products, services and actions. This, in turn, is based on the ongoing development and quality assurance of our company culture, creating an involvement that makes quality an integral part of every employee’s job.”

## WHAT DOES J.D. POWER & ASSOCIATES MEASURE?

**Sales Satisfaction Index (SSI):** Measured after 3 months of ownership – describes dealer performance from initial contact to delivery of car

**Customer Service Index (CSI):** Measured after 3 years of ownership – describes quality of service and repairs provided by dealer

**Initial Quality Study (IQS):** Carried out after 3 months of ownership – describes quality of car (problems per hundred cars)

**Vehicle Dependability Study (VDS):** Carried out after 3 years of ownership – describes reliability of different cars. Replaced VDI in 2003

**Vehicle Dependability Index (VDI):** Carried out after 4-5 years of ownership – describes reliability of different cars.

Visit [www.jdpower.com](http://www.jdpower.com) for more information

## 2004 REPORT

### Systematic quality activities

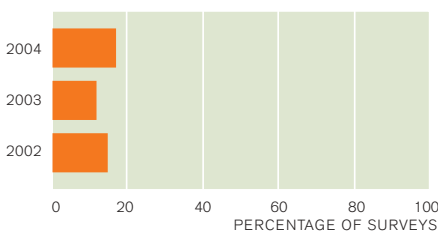
We operate a structured quality and improvement programme based, among other things, on customer satisfaction surveys, the incidence of critical faults and customer interviews.

### Customer satisfaction

All of our quality activities are focused on creating satisfied customers. The results of about 25 independent quality surveys carried out in our principal markets are used to derive a cumulative indicator of customer satisfaction. Our aim is to be ranked as No. 1 in customer satisfaction in the premium segment of the car industry.

In 2004, Volvo Cars was ranked among the top three in 17% of the surveys, up from the 2003 figure of 12%. We were also ranked among the ten best car brands in 71% of the surveys – an increase compared with 50% in 2003.

FIG. 1  
CUSTOMER SATISFACTION,  
RANKING 1 - 3



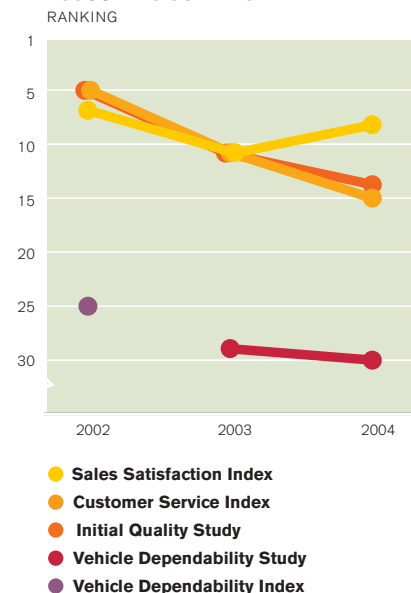
Percentage of independent surveys in which Volvo is ranked among top three car brands (%)

The IQS survey carried out by J.D. Power and Associates to determine the level of customer satisfaction with their new cars three months after purchase is among the most influential in the North American market. In 2004, we slipped from eleventh to fourteenth place among all brands.

The trend in the USA in terms of our rankings against our competitors was positive in terms of customer perceptions of our dealers (SSI). However, the trends relating to their perceptions of our service workshops (CSI) and quality after three years of ownership (VDS) were negative.

The picture in our European markets was somewhat different. The level of customer satisfaction three months after purchase was positive in many markets, while customer perceptions of our dealers were better in most cases. In terms of satisfaction with our service workshops, improvement was recorded in most markets.

FIG. 2  
CUSTOMER SATISFACTION,  
2004 RESULTS OF J.D. POWER &  
ASSOCIATES SURVEYS



See panel at top of page for definitions.

## AUTOMOTIVE CONSUMER EXPECTATIONS IN THE INFORMATION AGE

"As we progress through the Information Age, rising consumer expectations and the widespread availability of information have transformed the competitive landscape of entire industries. During the past decade, numerous companies in the travel, banking, healthcare, and telecommunications industries were forced to re-evaluate their value proposition. Although the automotive industry – one of the pillars of the Industrial Age – is not immune to these challenges, it has been somewhat resistant to embrace these changes.

The extensive adoption and use of the Internet has accelerated the pace of change in society. Consumers now have access to a virtually unlimited supply of information: they can read extensive product reviews, find ratings from a variety of reputable sources, or 'chat' with those who have owned the products or services they are considering. In business today, one thing is clear: gaining an in-depth understanding of consumer perceptions is a key driver of success.

To survive and, more importantly, to thrive in this environment, companies must make decisions faster than ever. Precise, real-time information is a critical element in the strategic planning and decision-making process, and having access to the right information can create a significant competitive advantage. Organisations that are fast and nimble enough to truly understand and respond to the needs of their customers will enjoy a greater advantage than ever before."



J.D. Power III  
Chairman of the board,  
J.D. Power & Associates

FIG. 3  
**RECALLS,  
2002-2004**

Recalls are defined as activities to recall cars or other items.

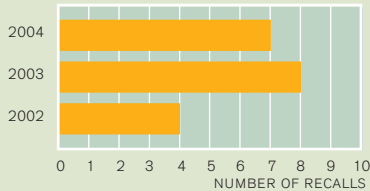
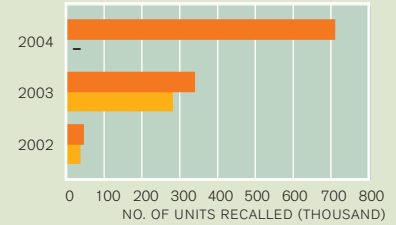


FIG. 4  
**NO. OF UNITS RECALLED**

Cars Other

Recalls are reported by calendar year, not model year. A vehicle may be subject to several recalls. 'Other' includes items such as instruction manuals and accessories.



Italy and Spain were markets that recorded consistently high results for both dealers and service workshops. The results of our in-house Customer for Life survey, in which markets such as Germany, Great Britain and France showed significant improvement compared with the previous year.

### Management of critical faults

Trust and loyalty on the part of customers and stakeholders are fundamental to Volvo Cars' operations. Both customers and official agencies require that the time required to process critical faults reported to the company be reasonable. Volvo Cars believes that it meets this criterion through systematic procedures.

In the USA and Japan, a recall notice is issued if a car fails to meet legal requirements or exposes its occupants to an unacceptably high risk. The incidence of recalls in the car industry in these countries has increased with more frequent model changes, more advanced technology, more complex production measures and stricter legal requirements.

Seven recalls involving a total of 714,100 units were initiated by Volvo in 2004. Of these, about 65% were due to electric cooling fan problems, just 15% to a faulty master light switch and a little over 14% to ball joint nuts on front control arms. Other problems related to a vacuum hose routing label, a fuel pump-fired engine coolant heater and child seats.

The recalls demonstrate that Volvo Cars recognises its responsibility as a quality-conscious carmaker.

### Complaints database

Every year, Volvo Cars records a total of approximately 120,000 customer contacts and receives about 20,000 technical reports, either from its markets or in the form of direct complaints from customers. The resultant information is used by company personnel working on quality issues.

Problems that cannot be solved locally within the market are processed by our Global Customer Service unit. In 2004, the unit was contacted by a total of 3,107 customers – an increase on the previous year – from 111 countries. Of these, 46.8% were complaints or requests for information relating to the car itself, while 40% concerned issues not related to the car. A further 10% were about dealers and 2% about importers. Most contacts were initiated by customers in the USA (13%), Great Britain (13%) and Germany (7%).

The information received from customers is recorded in a database for reuse in quality and development work. Since mid-2004, all employees can order statistics on warranties, service, dealers and other areas for their own key areas, and receive them monthly by e-mail.

### Action to improve customer satisfaction

The figures for 2004 indicate that we improved our position in 22 of 28 customer surveys carried out in various markets. The trend was especially positive in the European sales and service sectors, and in sales in the USA. In other areas, however, the rate of improvement is too low relative to our competitors.

Volvo Cars' executive management has decided on a number of measures to further improve the level of quality awareness. In 2004, all business managers were required

to sign a personal commitment detailing their own concrete action proposals for contributing to the company's principal goal – to become No. 1 in customer satisfaction. All of these proposals will be followed up by company management.

We have introduced a programme for systematically reducing the incidence of faults within Vehicle Line Management. We have also continued with our customer clinics, which enable us to interact directly with our customers and gather information that helps us to take the appropriate action. We have implemented BSAQ (Balanced Single Agenda for Quality), a programme used very successfully by Ford Motor Company. In addition, we have developed a method designed to improve the precision with which car development projects are executed. Together, these measures will certainly result in an improvement in quality and a reduction in the number of faults.

### In-house training

We have also launched an in-house training programme for managers and new employees, as well as new channels of direct communication between our product developers and our customers. Closer cooperation has been initiated between Volvo Cars management and our sales companies to lend added weight to our quality activities.

A total of 390 projects was completed in 2004 as part of the 'Consumer Driven Six Sigma' quality programme. Over 80% of these were related to Volvo Cars' principal objective of becoming No.1 in customer satisfaction. Towards the end of the year,



#### CONTINUOUS QUALITY IMPROVEMENTS

Debbe Yeager of Ford Motor Company is responsible for global implementation of the Six Sigma quality programme. Measure, systematise and revise are her guiding principles.

"Volvo Cars' people have an openness that makes it easier to develop quality improvements."

work on these projects to create more satisfied customers was intensified, particularly at the research and development stage. Compared with 2003, the number of Six Sigma projects increased by 17% and total savings for 2004 totalled USD44.7 million.

To date, approximately 5,700 employees have undergone the first stage of Six Sigma training (Green Belt), while 266 have progressed to Black Belt and a further 540 have completed some other form of Six Sigma training. The target for 2005 is for 75% of all salaried staff to achieve Green Belt, increasing to 100% by the end of 2006.

#### Internal controls

The Public Company Accounting Reform and Investor Protection Act of 2002 (the Sarbanes-Oxley Act) was enacted in July 2002 largely in response to major corporate and accounting scandals involving several prominent companies in the United States. One of the most challenging aspects of the Act's requirements involves a company's responsibilities for internal controls. Section 404 stipulates that public companies must take responsibility for maintaining an effective system of internal control, in addition to reporting on the system's effectiveness. Most public companies (which meet certain market capitalization requirements) were required to comply with Sarbanes-Oxley 404 requirements in 2004. Volvo Car Corporation, as part of Ford Motor Company, implemented and met these requirements.

#### New policy on bribery

All decisions taken within Volvo Cars must be based solely on business considerations. We support the UN Global Compact and the tenth, anti-corruption principle. In 2004, our own policy on bribery was superseded by Ford Motor Company Policy Letter No. 3, which specifies in detail the rules governing gifts and what an employee may accept. The policy, which also deals with the treatment of insider information, is available on line to all employees.

#### VOLVO CARS QUALITY AWARD 2004

The aim of the Volvo Cars Quality Award is to reward work teams that develop solutions contributing in a systematic and measurable way to the improvement of the company in its areas of focus: Customer satisfaction; Profitable growth; Next generation of cars, and Next generation of leaders and employees.

Since the winning solutions are announced to the entire organisation, the competition acts as a spur to all employees to strive for improvement in their own work.

Eighty-one teams took part in the 2004 competition. Twelve of these went forward to the finals in Göteborg, where the six winners were selected. Three of the winning teams were from Göteborg, two from Ghent and one from Skövde. The winners were awarded a trip to Germany to visit the VW Autostadt in Wolfsburg and take part in the Ritz Carlton Service Philosophy Seminar.



Six teams of two competed for the Volvo Cars Quality Award at the finals held in Göteborg on 4 June 2004.

# RELATIONSHIP WITH CUSTOMERS AND DEALERS

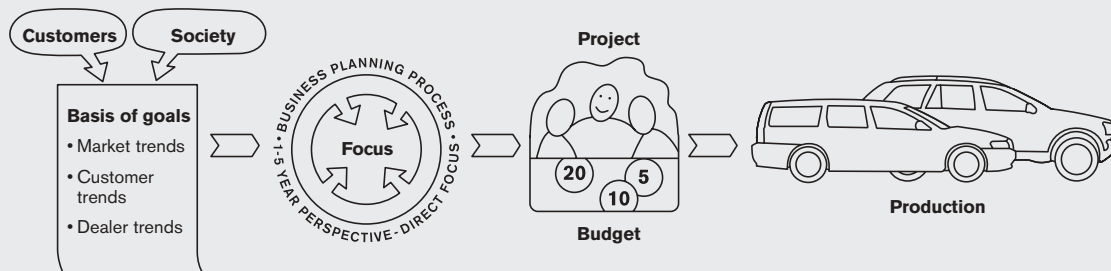


Customer focus is a basic business principle. To us, this means listening to our customers and translating their needs into products and services that exceed their expectations. Communication plays a major role in this process.

Communication is also an important motivating force in the development of a sustainable society. It is not sufficient to develop sustainable concepts and systems for the future; it is up to every player in society to communicate them – to make people aware of the alternatives and to create a demand.

We use communication as a systematic tool to assure the status of our brand in the marketplace and we follow up by measuring. We maintain a continuous dialogue with our customers through our sales companies, dealers and our market department, and we structure the information for use in our product development and quality programmes.

Among other things, this contributed to an increase in total sales from 415,000 cars in 2003 to 456,000 in 2004.



### Customer needs govern our operations

Volvo Cars regards both the individual and society as a whole as its customers. Prior to every new year of operations, we formulate a number of goals based on the needs of the individual and society. This ensures that the entire corporate process – from management decision to production – is governed by customer needs.



## DIVERSITY AND CUSTOMER DIALOGUE

Yener and Erdal Agdas of Karlstadt am Main is one of the most successful Volvo Cars dealerships in Germany – and the only one with Turkish origins. Their Turkish customers often prefer German brands as a mark of successful integration – a challenge for Volvo Cars.

Asgard (Midlands) Ltd. is one of our most successful British dealers, with a local market share of 3.1% in the Wolverhampton area. For example, 12.5% of Wolverhampton's 326,000 inhabitants are of Asian origin, as are 19 of Asgard's 148-strong workforce. As a result, 15-18% of the company's customers have Asian backgrounds – a significant proportion compared with its competitors.

## 2004 REPORT

### Understanding customer needs

A customer's strongest motivation for buying a Volvo lies in the values associated with the brand – safety, reliability and value for money. In recent years, attractive design has also become an increasingly important motivating factor, especially in European markets.

The decision to buy a Volvo represents the start of a long relationship. It is our responsibility to make that relationship trouble-free, uncomplicated and stimulating for the customer. In all, there are about 6 million Volvo owners around the world.

Regular customer clinics are held with various customer groups to obtain feedback on our cars and services, present and future. In 2004, the opinions of about 300,000 customers were compiled in the form of surveys and telephone interviews. Of these, about 3,000 were in-depth interviews in the form of focus groups, customer clinics etc. on topics including the environment and quality perception. The findings show that while a customer may be aware of the importance of environmental care, this is rarely, in itself, a decisive reason for buying a particular car. In fact, it is something that is taken for granted in the case of a carmaker like Volvo.

### Action to improve customer satisfaction

Integrating the needs of our customers and stakeholders with our technical expertise in a systematic manner is an important element of our effort to become No. 1 in customer satisfaction. In 2004, in pursuit of this aim, we established a unit with responsibility for our brand, business and product strategy, as well as a committee to ensure that product development is more customer-driven.

Volvo Cars developed its 'Customer for Life' programme to create a database for a dedicated campaign to create satisfied customers. Since the programme's inception four years ago, customers in all major markets have been systematically surveyed to

ascertain their personal experiences of our dealers. The findings are published on an ongoing basis on an internal web site where dealers can follow them up as a basis for their work to improve customer satisfaction. See 'Quality' (page 18) for a more detailed discussion of the results of this programme.

The 1,000,000th customer was interviewed in 2004. The information in the database is based on surveys of about 450,000 customers in the USA, 146,000 in Germany, 90,000 in Great Britain and 24,000 in Japan.

### Diversity in sales

Diversity is everything that makes people different, such as gender, ethnic origins, age, sexual orientation, education, interests, income etc. A salesperson that talks the same language, has a similar background and shares similar value judgements as the customer has a greater chance of generating the trust needed to conclude a deal.

Diversity also strengthens our brand as a progressive and customer-oriented carmaker in the premium segment. The aims of Volvo Cars' systematic diversity activities are to inspire the organisation with respect for the equal worth of every human being, and to increase sales through better customer communication and a greater understanding of his or her needs.

Every business unit of Volvo Cars conducts diversity programmes based on its own conditions. In 2003, we established indicators to

show the effect of diversity activities on car sales, and in 2004 we integrated diversity in a number of advertising campaigns and sales drives. In North America, for example, our sales company and our dealers continued to communicate with certain ethnic minorities.

### Road traffic training for Volvo owners

A total of about 300 Chinese Volvo customers underwent road safety training in Göteborg in 2004. This included a visit to the Volvo Car Safety Centre, a course in practical driving techniques, and a review of the Volvo Cars safety philosophy and in-car safety systems.

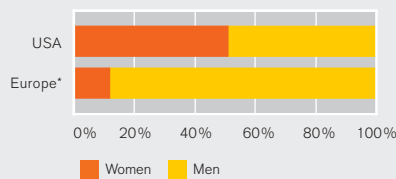
### Child safety seminars in Asia

In 2004, Volvo Cars organised a number of child safety seminars in Asia, including the Philippines, China, Malaysia, Singapore, Taiwan and Thailand. Conducted by safety experts from Volvo Cars and targeted mainly at journalists, the seminars provided information on how children of different sizes and ages should be carried in the car, and what factors should be considered in relation to pregnancy and driving.

### Communication that reflects core values

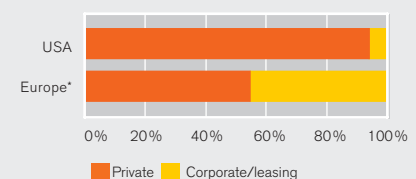
Persuading customers to make conscious choices favouring the development of sustainable mobility solutions is a long-term goal that imposes new demands on our capacity for communication. In this context, it is not

FIG. 1  
VOLVO'S CUSTOMERS, 2004  
CLASSIFIED BY GENDER



\* Defined as Germany, Great Britain, France, Spain and Italy

FIG. 2  
VOLVO'S CUSTOMERS, 2004  
CLASSIFIED BY TYPE OF OWNERSHIP



enough simply to transmit information and knowledge – we also need to develop an understanding that will lead the customer through a learning process. This calls for new and unconventional communication procedures.

In 2004, in our biggest brand campaign to date, we launched a series of documentary films on the Internet dealing with interesting and authentic human stories. Interest in the media has been considerable. Based on the Volvo principle that 'Cars are driven by people', the films feature people who reflect the company's brand values as expressed by their lifestyles. Among the participants are a German industrial designer, a British artist, a Brazilian architect, a millionaire and former homeless person, and a female American jockey – all strong characters that have achieved change in their lives.

## OUR DEALERS

As the company's representative in the marketplace, the Volvo dealer is the most important interface between us and our customers. For this reason, we are working constantly to develop our relationship with our business partners, whose understanding of and ability to live up to the company's values is crucial to our success. At the same time, dealers must clearly perceive that we are responsive to their needs and are contributing in various ways to the development of their business.

Our dealer network consists of more than 2,300 authorised dealerships around the world, with a combined workforce of over 20,000. About 1,500 of these dealers are located in Europe and 400 or so in North America. Almost all dealerships are owned and operated as private businesses. In addition to new car sales, dealer activities include sales of accessories and parts, workshop services, sales of preowned cars and financial services of various kinds.

## Dealer satisfaction

Our objective is to reach a high level of satisfaction among our business partners. We believe that the commitment, visions, value judgements and responsibility for customer care of our dealers, together with their strong management capabilities, motivates them to achieve high levels of performance and recognition which, in turn, generates satisfaction. In Europe, we participate in a syndicated study known as the Dealer Satisfaction Survey (DSS), which reports independent information on dealers' opinions of manufacturers, and on the support they provide. The results of the study cannot be communicated outside the participating companies, but provide us with input for improvement.

## Dealer development

We employ a range of programmes, processes and tools to assure quality within our dealer network. The primary aim is to ensure that our customers are equally satisfied, regardless of which dealer they approach for advice and service, or to buy a Volvo. Another aim is to ensure that operations, personnel matters and environmental issues, among other things, are managed in a satisfactory manner by our dealers. The relevant conditions are contained in the Volvo Dealer Standards, which detail the requirements with which dealers must comply. In 2004, the standards were revised to ensure harmonisation with the EU's ten new accession markets, and assure effective and consistent action in all European markets.

Performance Analysis Coaching Tool (PACT) is the tool we use to review and monitor dealer performance relative to our market standards.

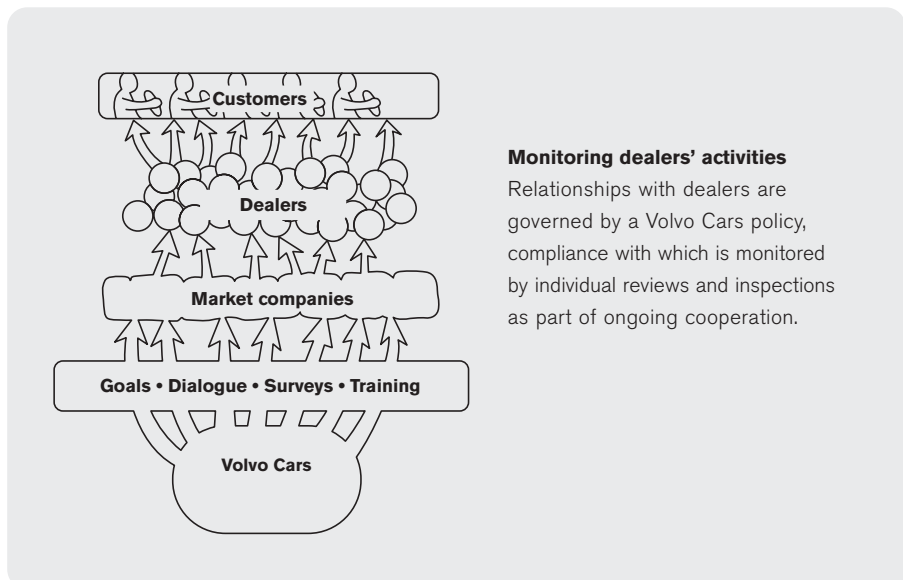
PACT enables us, our sales companies and our dealers to follow up the results of the annual audits that form part of our quality programmes within the dealer network. Application of the Volvo Cars dealer standards is now being extended successively to markets outside Europe, including South Africa and Asia.

Since 2003, all dealer personnel in contact with customers have been undergoing an Internet-based environmental training programme known as the 'Volvo Cars Environmental Driving Licence' to learn how to advise customers to make good environmental choices. To date, over 7,000 of the total of 20,000 employees of the dealer network have completed the course.

## Environmental tour by Volvo Cars management

In 2004, members of the Volvo Cars executive management group, as well as the company's public affairs, environmental and marketing departments, visited the sales companies in our key markets of Sweden, Germany and Great Britain. The purpose of the tour was to expand our dialogue with the market to focus on appropriate environmental activities and identify the type of support that the sales companies may need in their environmental programmes.

Many of our markets have also established environmental committees as a platform for continuous dialogue on crucial issues, such as marketing and sales, IT support, customer service and business development.



### Creating a better sales environment

Volvo Next Face is a showroom interior design programme that has been developed to reinforce our brand image at retail level, demonstrate Volvo's brand values and Scandinavian heritage, and contribute to the customer's total experience of the dealership.

The design concept is flexible in structure to enable it to be adapted to different sales environments, including multibranding situations. Volvo Next Face is also designed to provide a pleasant and stimulating working environment for dealer personnel. To date, over 80 dealers have upgraded their facilities under the programme and the aim is to have the complete network upgraded by 2008.

### VISTA (Volvo International Service Training Award)

VISTA is an international competition and a unique training venture that has been run by Volvo Cars since 1972. Designed for all after-market personnel and not just mechanics, the purpose of the programme is to improve personnel skills as a means of increasing customer satisfaction. In 2004, 196 winners from 44 countries were selected from the 17,000 participants who entered the competition, which ran from August to December 2003. The winners received a diploma and medal, and were invited to a VISTA conference in Göteborg.

Competing in six different vocational categories, the entrants answer questions on practical problems that they may encounter in their work.

**“WE ARE  
STARTING A  
NEW DIALOGUE  
WITH OUR  
CUSTOMERS”**



“Listening to our customers and trying at all times to exceed their expectations is the motivation for everything we do,” says **Jana Wignell**, who works with product strategy at Volvo Cars. “But as a responsible car-maker, we cannot simply continue to supply just what customers want at a particular time. To be successful in the long term, we also need to know what their requirements will be in future.”

“We foresee problems associated largely with a significant increase in motoring all around the world. Higher emission levels, an increasing accident trend and an ageing infrastructure are problems that affect everybody – not just car buyers – especially those living in the major cities of the developing nations.

While our main task is to develop and market top-class products, we also have a responsibility to work for solutions offering sustainable mobility. To achieve success, we need to encourage customers' willingness to pay for common 'goods', such as environmental protection and safety.

This autumn, we will be initiating a process of dialogue to develop a better understanding of the type of solutions that customers want, starting with the area of environment. The purpose is to gain a greater knowledge of what will be demanded in eight to ten years time and, on that basis, to create products that people are willing to pay for. Working in collaboration with our customers and other stakeholders, we are convinced that we can develop attractive products that will be good both for the individual and society as a whole.”

# “COURAGEOUS MANAGEMENT SUPPORTS OUR CONCEPT”

“In October 2001, we held a workshop on the theme of ‘Women as customers’, which was addressed by the American lecturer Marti Barletta,” recalls YCC team communicator Tatiana Butovitsch Temm. “Barletta’s involvement gave birth to a daring concept on the part of two of the participants: What if we design a car for women by women?”

A team of women from various disciplines was formed to test and develop the concept. Market surveys had shown that women who buy premium-segment cars not only give equal priority to performance and quality – they also make higher demands.

“We asked ourselves what those demands meant,” says Tatiana. “What problems do women experience with cars, driving and ownership. This formed the basis for the entire YCC project.”

Women represent a growing group of Volvo Cars customers. Over 50% of the company’s customers in the USA are women. In Europe, the average figure is 14% – and is rising steadily.

“Listening to what the customer wants is sound business.”

## Different priorities

Among other things, surveys show that women want cars that are easy to get into, easy to park and offer good visibility, regardless of the driver’s height. Other important attributes are generous storage space and the freedom to personalise the interior – even after purchase – by selecting individual colour schemes and materials.

“Also high on the list are minimum maintenance requirements. As a result, the windscreen washer fluid is topped up from outside, while the paintwork is dirt-repellent and the tyres can be driven with a puncture.”

## Green light

In March 2002, the team was invited to present its concept personally to Hans-Olov Olsson, CEO of Volvo Cars. The appointed date was 3 June, and the group outlined its ideas and rehearsed its presentation.

In August, executive management also gave the green light for a pilot study and, in December, the project proper was approved. “At this point, we had 14 months to have the car ready for its premiere in Geneva on 2 March 2004,” recalls Tatiana.

The development work now gathered real pace and the working title – originally ‘Caring Car’ and later ‘Car by Women for People’ – was changed to ‘My Concept Car’ (MCC). In March 2003, Volvo Cars publicly announced the project which, by then, was already attracting considerable international attention. And in July, the title of ‘Your Concept Car’ (YCC) was finally adopted to indicate that this was a car for both women and men.

## Unprecedented response

The publicity received from the car’s premiere at the Geneva Motor Show in March 2004 was enormous. The nine women in the YCC team gave about 200 interviews during the two days of the show. During the year, the vehicle was also exhibited at the New York and Sydney shows, with the same success. During the year, the team toured 17 world cities to meet journalists and VIP customers.

“We wanted to reach journalists and target groups other than the converted,” says Tatiana. “And we succeeded in that. In the space of six weeks, the YCC was the subject of no less than 1,700 articles in all kinds of publications in the USA and Europe – to a media value of SEK863 million. By the end of the year, it had been described in 3,700 articles, amounting to almost two column-kilometres. Of all the articles, about 65% were considered favourable, 32% neutral and a few percent negative.”

The YCC is a concept car that is not intended to be driven, but to inspire reflection and change on the part of others. In this context, the involvement of the media is decisive.



## INFLUENCE OF YCC PROJECT ON CAR INDUSTRY

**Giving a group of the company’s female specialists a free hand not only stimulated fresh thinking and a series of exciting innovations; the media attention that surrounded the YCC clearly shows that the industry must pay closer attention to women’s requirements.**

**"If you meet the expectations of women, you will exceed those of men."**

**Marti Barletta**

### YCC's best features as seen by women and men\*

#### WOMEN

1. Storage space between front seats
2. Run-flat tyres
3. Dirt-repellent paintwork
4. External windscreen washer top-up
5. Automatic opening doors

#### MEN

1. Dirt-repellent paintwork
2. Storage space between front seats
3. Run-flat tyres
4. External windscreen washer top-up
5. Lockable storage space in door posts

\* Based on a survey of 2,500 people, half of whom were women, in Sweden, USA, Russia, Switzerland and Great Britain.



The nine women who took the YCC decisions. From left: Maria Widell Christiansen, design project manager, Eva-Lisa Andersson, project manager, Elna Holmberg, technical project manager, Maria Uggla, colour and upholstery designer, Camilla Palmertz, project manager, Cynthia Charwick, interior designer, Anna Rosén, exterior designer, Lena Ekelund, deputy technical project manager and Tatiana Butovitsch Temm, team communicator.

# RELATIONSHIP WITH EMPLOYEES



“Cars are driven by people”. This is how the humanistic principle that has consistently been the foundation of Volvo’s safety philosophy was introduced by the company’s founders. That cars are also produced by people is an equally self-evident tenet of how we see the men and women who form our company.

Volvo Cars’ heritage is one of the company’s most important assets. Safety, Quality and Environment are the core values of our business, while Energy, Passion and Respect for the individual are the cornerstones of our corporate culture. Our fundamental value judgements are summed up in the terms **‘Medarbetarskap’, Leadership** and **Teamwork**.

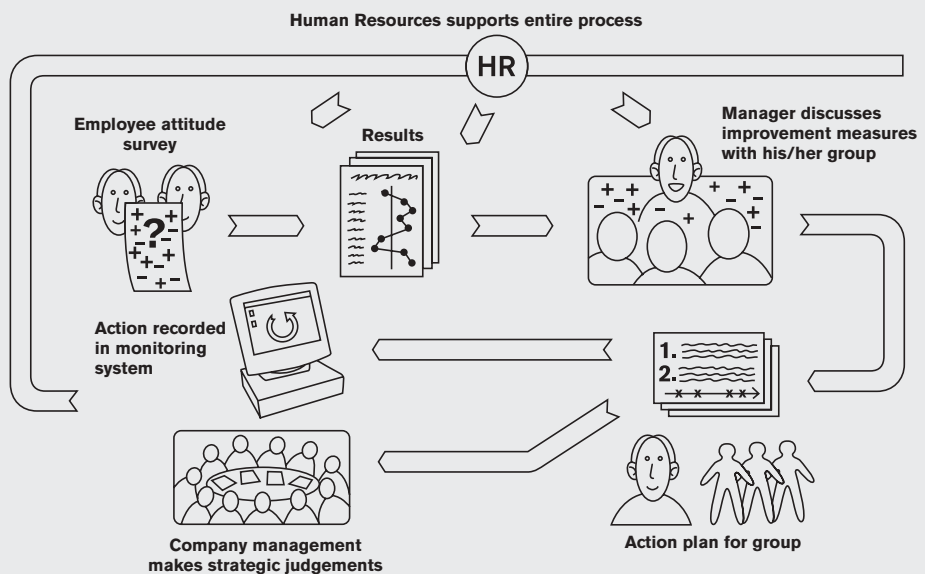
**‘Medarbetarskap’** is a Swedish concept that expresses the principle of being active and participative, recognising that learning and development are part of the job. Our view of every employee is that he or she is both able and willing to improve our business.

**Leadership** involves courage and the capacity to formulate goals and strategies, and promoting involvement in these among employees.

**Teamwork** means that people working together achieve better results. Diversity is a strength and an asset to teamwork – more approaches offer better solutions.

### Employee attitudes form the basis of ‘medarbetarskap’

The Volvo Cars concept of ‘medarbetarskap’ stems from the company’s employees. Systematic development of the concept is ensured by regular attitude surveys, dialogue between managers and employees, and improvement measures.



## What challenges do you expect to face as a woman and a manager in a male-dominated industry?



"I have not encountered any additional challenges within Volvo Cars as a woman and a manager. In Malaysia, there are many female managers in other male-dominated businesses. When all comes to all, it is competence and experience that count."

**Wei Thing How**  
Volvo Car Malaysia



"Although the company may be male-dominated, our customers are not all men, nor are car-buying decisions made only by men. In my job, I focus on dealers, marketing and my colleagues. And I expect my male colleagues to do the same."

**Maria Stenström**  
Volvo Automobiles France

## 2004 REPORT

### EMPLOYEE DEVELOPMENT

The Volvo Cars corporate culture is the product of consistent and dedicated work based on our corporate philosophy.

The Volvo Cars Way – a project designed to revitalise the Volvo Cars corporate philosophy – was initiated in October 2004 on the initiative of the CEO. One reason for the initiative was the change in ownership – we are no longer a Swedish company but a subsidiary of a US group. Another was the fact that business is becoming increasingly global and competition ever tougher. The aim of the project is to clarify our corporate identity internally, and generate the type of personal involvement and individual behaviour that will promote the success of Volvo Cars.

In the introductory phase of the project, executive management discussed the company's fundamental value judgements, and the CEO informed the workforce through his weekly newsletter and the company's in-house magazine. Stakeholder dialogues were also conducted with owner representatives, union delegates and business partners. In addition, we held a large number of group meetings at management level and throughout the organisation at large to encourage employees to contribute to the review of the corporate philosophy. Internal marketing of The Volvo Cars Way will commence in autumn 2005.

### Working climate

Creating an attractive working climate is an important success factor in recruiting and retaining employees and achieving good results. Our most recent Attitude Survey, which is conducted among all employees worldwide, shows that the working climate is rated at the same level as last year, with the 'Satisfied employee index' at 79%. According to the latest results, high respect from immediate superiors and colleagues,

familiarity with the goals of the working group and the freedom to express one's opinion within the group continued to be our strongest areas. However, despite positive trends, competence development and personal feedback remain important areas for improvement.

### Training

Training is an important aspect of employee development and is carried out in many areas. The following are some examples:

All employees of our British sales company underwent a training course in safe and considerate driving. This was based on the statistic that 65% of all company cars in Great Britain are involved in accidents and that 30% of people killed in traffic accidents are driving company cars. Conducted by RAC Risk Management, the course provided all drivers of company cars with practical training in driving, while other employees took part in seminars.

Since 1 January 2004, our plant in Uddevalla has been carrying out an 18-month development project as part of the production change-over from the present Volvo C70 to the next generation of convertibles. Designed to develop the organisation and its employees, the project is based on a holistic view of the relationship between health, a low level of sick leave, leadership, job satisfaction and involvement. At management level, training is focused on a knowledge of stress and measures to prevent it. Since a major sub-goal is to reduce sick leave, we are working in collaboration with among others the Swedish National Insurance Office and the labour organisations. Supported by the EU, the project includes the secondment of personnel to other plants to safeguard employment.

All new employees of Volvo Cars undergo in basic environmental training course to raise the level of environmental awareness within the company. Various aspects of environmental care are also included in the company's

further training programmes, especially for product developers and designers. For example, a full-day environmental seminar for about 500 of the company's product developers was held in 2004. This dealt with a series of technology-related environmental issues, such as weight reduction, fuel economy, emissions, recycling and materials specification.

### Internal communication

The role of the Volvo Cars Internal Communication department is to provide all employees with information on what is happening in the company, and to facilitate communication between management and employees. The department's overall goal is to ensure that the employees are aware of the company's goals and know how they should contribute to their achievement. Published in three languages, the company's in-house magazine 'Agenda' is issued 11 times a year and is distributed to all employees worldwide.

Information about the company, such as the weekly CEO newsletter and regular on-line dialogue with management, is published on our intranet. Internal Communication also supports company operations in various ways in the area of communication, for example with training. In addition, a network of internal communicators meets on a regular basis to discuss strategic issues.

### Attractive employer

We need to work continually to attract and retain a wide range of competence in order to develop and achieve our goals, for example in terms of customer satisfaction and profitability. Our aim is to be among the three most attractive employers in Sweden to certain strategic disciplines, such as newly-qualified graduate engineers. In 2004, Volvo Cars was ranked as the most attractive employer in an independent annual survey carried out among undergraduates of Swedish universities and institutes of technology.

## What challenges do you expect to face as a woman and a manager in a male-dominated industry?



"Male domination is a challenge. In some countries, you also have to deal with social and cultural differences – like when meeting business contacts that are not used to women in high positions. In that situation, you have to rely on your self-confidence and show that your team has the competence to deliver."

**Mariella Delgado**  
Volvo Auto de Mexico



"Since it's a man's world, women have to be even more competent. It's also more difficult for us to establish contacts and mix as colleagues in the same way as men."

**Jennifer (Hyanglim) Lee**  
Volvo Car Korea

## HEALTH AND SAFETY

Compared with the previous year, the number of notified occupational injuries causing an employee to be absent from work for more than one day fell by 16% during the first seven months of the year. Our production plants in Skövde and Torslanda, our facilities in Olofström and Uddevalla, and Customer Service all contributed to this improvement. This striking trend reversal is a result of our systematic health and safety programmes, which include specified action and follow-up procedures. In November, representatives from our Skövde and Torslanda plants received the Ford President Health and Safety Award for this methodical work.

Total sick leave from our plants in Sweden and Belgium was down slightly from the previous year's figures, while the number of occupational injuries and accidents relative to total hours worked also fell in 2004.

Visit [www.volvocars.com/citizenship](http://www.volvocars.com/citizenship) for more information on our systematic working environment activities.

### Informational stress

Our aim is to be world class in terms of the health and safety of our employees, and the quality of their working environment. Informational stress is an occupational problem that is caused by factors such as the growing level of electronic communication created by e-mail, the Internet and local networks. In 2004, Volvo Cars launched a working environment project designed, firstly, to alleviate informational stress and, secondly, to improve efficiency. The first stage was to define the problems, while the second will be concerned with the evaluation of different solutions of both a technical and educational/informational nature.

### Drug testing of new employees

The use of narcotics is both a safety risk and a working environment issue. A company that requires its employees to be drug-free is a company that cares for its employees' health and security. All applicants for jobs (including

holiday work) at Volvo Cars in Sweden are obliged to undergo drug testing. In summer 2004, applicants for jobs at the Torslanda plant and in Customer Service were tested over an eleven-week period for five substances classified as narcotics. Only 0.7 per thousand of those tested revealed traces of the preparations in question and were refused employment. The positive results were probably due to the fact that most of the applicants were aware of Volvo Cars' compulsory drug testing programme.

## DIVERSITY

Diversity is everything that makes people different, including gender, age, ethnic and cultural background, religion, education etc. Diversity within the company is a strength that contributes to better customer understanding and more innovative solutions, increasing our competitiveness and profitability. Diversity is part of our management training programmes and we have, for example, developed a tool for equal opportunities planning.

Among our activities in 2004, we updated and improved our diversity directive, introduced new forms of evaluation and formulated new goals based on a one to four-year time-scale. Local diversity goals established in locations such as Skövde and Ghent plants included increasing the proportion of female managers, mapping and equalising differences in remuneration, carrying out comparative studies with other companies and developing diversity-related leadership.

### Zero tolerance towards discrimination

All work at Volvo Cars is characterised by respect for the individual and we do not accept any form of special treatment. Volvo Cars has a policy of zero tolerance towards discrimination and bullying in the workplace. All new employees and newly appointed managers are instructed in the company's approach and policy in these matters. Every employee with responsibility for other personnel undergoes continuous training in anti-discrimination meas-

ures and programmes. We have implemented procedures for detecting signs of unsatisfactory working conditions and correcting them at an early stage.

One case of discrimination was brought and will be considered by the Swedish Labour Court during 2005. Volvo Cars in Sweden has never been convicted by a third party of responsibility for discrimination or bullying of any employee in the workplace.

### Training programmes

'Car assembler' is a training programme that has been under way since 2002 in collaboration with the City of Göteborg, the Swedish Workers' Educational Association (ABF), Göteborg Regional Technical High School (GTG) and the Swedish Metalworkers Union. The purpose is to equip newly-arrived immigrants with high-school level qualifications in certain core and practical subjects. Alternating with practical training at the Torslanda plant, the course improves the students' prospects of employment as an important prerequisite to their integration in the community.

A group of 22 people underwent training in 2002, increasing to 34 in 2003 and 36 in 2004.

### Gender equality

Our target is to ensure that women account for 25% of our managerial staffs by 2008. The trend in recent years has been positive, with the percentage of female managers increasing from 12% in 2002 to 16% at the end of 2004. Nevertheless, the rate of increase is too slow if we are to achieve our targets and we are planning a series of measures to accelerate the process.

In 2004, women were appointed as managers of four Volvo Cars sales companies around the world – Volvo Automobiles France, Volvo Car Malaysia, Volvo Car Korea and Volvo Auto de Mexico. Anne Belec was also appointed manager of Volvo Cars North America during the year and will take up her appointment in 2005.



# “OUR CORPORATE CULTURE IS A COMPETITIVE ADVANTAGE”



“The Volvo Cars corporate philosophy has always been the basis of the way we do business – and that will remain unchanged,” says **Nic Bähler**, who is responsible for business strategy at Human Resources. “Our present philosophy was formulated in the mid-1990s and is still our guideline. But a great deal has happened since then, particularly the fact that we are now owned by Ford Motor Company. This has prompted company management to initiate ‘The Volvo Cars Way’ to refine and revitalise the meaning of the corporate philosophy.”

“One purpose of the project is to strengthen our corporate identity among our employees. To this end, we have discussed our identity and our values within the executive management group, as well as with our employees and the labour unions, to identify what makes Volvo Cars unique and successful. We have discovered that many people find it interesting to discuss the philosophy, and that they are prepared to safeguard fundamental value judgements like ‘medarbetarskap’, leadership and teamwork. In other words, the project is not about modifying the company’s vision, mission or brand strategy – these have already been defined.”

“The Volvo Cars Way was conceived as a means of generating forward movement in the company as a whole, based on the premise that all employees know the meaning of successful behaviour – to create a corporate culture that not only reflects, but also reinforces the company’s identity. In this way, The Volvo Cars Way becomes a competitive advantage – a strategic tool helping us to translate words into action.”

“Because in the end, it is the result of our actions that our customers buy. The brand is never stronger than the corporate culture – never stronger than what we, as employees, think and feel deep down.”

FIG. 1  
**AGE DISTRIBUTION AT VOLVO CARS IN SWEDEN AND BELGIUM**

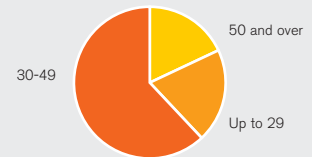


FIG. 2  
**GENDER DISTRIBUTION AT VOLVO CARS IN SWEDEN AND BELGIUM**

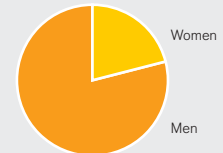


FIG. 3  
**PERCENTAGE OF WOMEN IN LEADING POSITIONS**

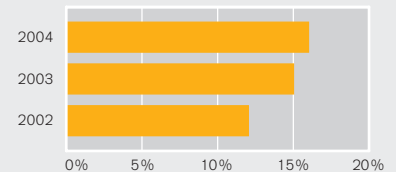


FIG. 4  
**SICK LEAVE AT VOLVO CARS PLANTS IN SWEDEN AND BELGIUM**

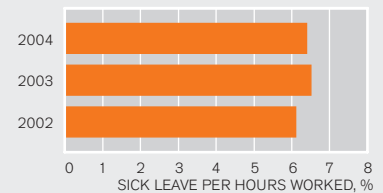
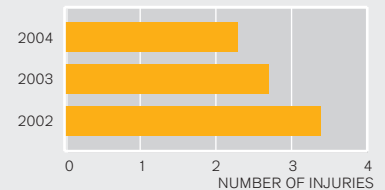
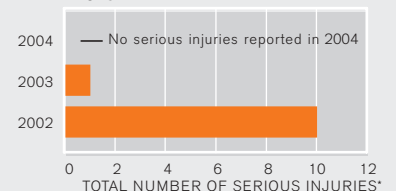


FIG. 5 A  
**INJURIES\* AT VOLVO CARS PLANTS IN SWEDEN AND BELGIUM**



\* Defined as injuries resulting in a least one day of sick leave per hours worked x 200,000 (equivalent to 100 man-years)

FIG. 5 B



\* Defined as fractures, unconsciousness etc.

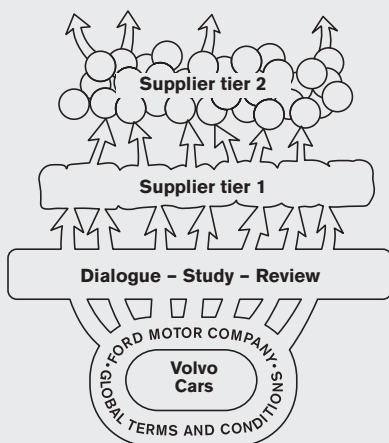
## RELATIONSHIP WITH SUPPLIERS



Measured in terms of cost, three-quarters of the added value in producing our vehicles is manufactured by independent suppliers. To safeguard Volvo's core values of Safety, Quality and Environment, it is essential that our suppliers share the same value judgements as ourselves.

We are also convinced that the things which characterise our working approach – humanistic and democratic 'medarbetarskap', as well as industrial leadership – are features that are attractive to our business partners. For this reason, we seek a form of cooperation characterised by dialogue and mutual exchange. In this way, we can share our view of responsible and successful corporate citizenship, and derive the fullest benefit from our suppliers' competence and experience.

To ensure that our business partners act in accordance with international human rights principles and our own purchasing policy concerning deliveries and social responsibility, we have developed instruments and methods for communicating and embedding goals, as well as review and corrective action procedures.



### Social responsibility in the supply chain

The Volvo Cars' approach to suppliers regarding business and social issues is governed by Ford Motor Company policy. Compliance with guidelines and principles by our suppliers is part of our ongoing collaboration. Individual reviews and inspections are used to follow up compliance.



### **THIRD-PARTY AUDITS AT SUPPLIERS' PREMISES**

Audits of the premises and working conditions of three suppliers in Malaysia and three in Thailand were carried out in 2004.

## **2004 REPORT**

### **Close cooperation**

About one-quarter of the car's material value, including engines and body components, is manufactured by Volvo Cars itself. The remainder, such as instrument panels, interior trim and electrical systems, is purchased from over 400 independent suppliers located in around 20 countries.

Of the production materials in the form of car components that we purchased in 2004, approximately 20% of the added value originated in low-cost economies. This is an increase of a few percent on the previous year. Of these purchases in low-cost regions, the countries of the former eastern Europe accounted for 60%, and southeast Asia and China for 25%.

Close cooperation with our suppliers has been crucial to Volvo's success ever since the company's foundation. Many suppliers are involved right from the design stage of a new car model, allowing us to shorten the development and production lead times.

Growing numbers of suppliers have chosen to locate close to Volvo Cars plants to reduce transport times and inventories. A number of suppliers deliver in sequence with a maximum delivery time of four hours. Several components are also supplied as complete assemblies, shortening the final assembly time.

Regardless of their geographical location, Volvo Cars imposes high standards on its suppliers in terms of quality, product development, cost effectiveness, delivery capacity and environmental care. Among other things, all production-related suppliers must possess environmental certification under ISO 14001 verified by a third party. In 2004, Volvo Cars purchased materials to a value of just over USD9.8 billion. Seventy percent of all Volvo Cars transactions are in Euro.

### **Human rights and good working conditions**

Based on the principles of the UN Global Compact and the Ford Motor Company Code of Basic Working Conditions, our vision is that good working conditions shall prevail and that human rights shall be respected throughout our value chain. In 2004, Volvo Cars began to systematically apply the Ford Motor Company Global Terms & Conditions and Social Responsibility Guide in all purchasing and supplier evaluation activities. We expect our suppliers to act in accordance with these principles. Our updated terms and conditions for suppliers of production materials became effective on 1 January 2004. Our contract terms require suppliers to comply fully with local legislation and regulations.

### **Third-party audits in Malaysia and Thailand**

Third-party audits of six suppliers – three in Malaysia and three in Thailand – were carried out in 2004. No major issues were observed in the operations. Improvement proposals were made in respect of minor issues parties.

An audit document was sent to selected suppliers before the actual audit took place. The company in question was then visited by independent consultants and Volvo Cars personnel who, among other things, met with company management, and inspected the premises and working conditions. The party also examined agreements, paylists and other documentation, as well as interviewing workers and supervisors. The observations were discussed with the management and an action plan, including follow-up procedures, was drawn up. In the future, independent audits will be used to ensure that standards are maintained as our business grows.

### **New supplier directive on gifts and benefits**

A supplier may not, at any time, offer Volvo Cars personnel gifts or benefits of any kind. Neither may suppliers issue dinner invitations to personnel if this is considered unacceptable for ethical reasons. Since last year, Ford Motor Company Policy Letter No. 3 governs what and how much employees may accept from suppliers. All suppliers have been notified in writing of the implications of this document.

### **Suppliers' forum in southeast Asia**

Ten years ago, Volvo Cars initiated a joint forum for suppliers in Thailand, numbering about fifty companies. The purpose was to develop these companies into export suppliers through seminars and information programmes. The forum's discussions now include not only production engineering topics, but also issues of a more social and global character. In general, the companies display considerable interest in the Volvo Cars' view of the importance of corporate citizenship and 'medarbetarskap'.

Known as the Volvo Cooperation Club, the forum is conducted by the suppliers themselves with the support of Volvo Cars. The forum organises about six seminars and meetings annually, as well as 3-4 board meetings. The seminars deal with current business issues, such as future conditions for the car industry and suppliers. Annual awards are made to honour the best suppliers to Volvo Cars' local production operations.

A well-attended event was held in conjunction with the club's tenth anniversary in 2004, at which we had an opportunity of outlining our view of the company's social responsibility to the top management of the supplier companies.

During the year, guidelines were drawn up for a similar forum in Malaysia and our suppliers were invited to an inaugural meeting at the beginning of 2005.

### Supplier dialogue on human rights and working conditions

As part of our effort to intensify knowledge exchange between ourselves and our suppliers, we held a stakeholder dialogue meeting with 12 suppliers, in collaboration with representatives of the Volvo Group and Scandinavian Automotive Suppliers, on 7 May 2004, under the chairmanship of Steven Armstrong, Senior Vice President, Purchasing of Volvo Cars. The topic was human rights and working conditions in the supplier chain. The purposes of the dialogue were several: to increase the level of knowledge of Volvo Cars' core values, to inform the meeting about the UN Global Compact, to show that car buyers care about human rights and working conditions, and to clarify Volvo Cars' demands and expectations of its suppliers in this respect.

Among other things, the delegates analysed the results of reviews of employment contracts, health and safety standards, and overtime working carried out at three supplier companies. One of the conclusions drawn from the dialogue was the importance of involving company management in these issues, and formulating action plans and follow-up procedures.

Volvo Cars, for its part, will monitor how the goals of the dialogue are followed up by the suppliers.

### Graduate thesis highlights need for education

In 2004, Volvo Cars assigned a university undergraduate to write a thesis on the results of the strategy initiated by the company to communicate the importance of assuming social responsibility, both within Purchasing and in relation to the company's suppliers. The thesis examines how a number of suppliers have successfully embodied the concept of social responsibility in their operations. In general, however, the interviews indicate that the suppliers do not have specific strategies or action plans for social responsibility, and that the level of relevant knowledge area is low. Many suppliers quote tougher market

conditions, demands for price cuts and relocation of production as reasons for this. Another observation made was that Volvo Cars purchasers stress these issues only to a very limited extent.

The thesis concludes that Volvo Cars needs to intensify its activities and ensure that social responsibility is integrated into daily operations. Volvo Cars should develop the requirements that it imposes on its suppliers and communicate them more clearly. More training is needed both internally and among the suppliers

### Undergraduate study indicates importance of clear environmental standards

Another undergraduate study indicates that Volvo Cars imposes tough environmental standards on its suppliers. However, these are not clearly formulated and need to be clarified. The study compares Volvo Cars' standards with those imposed on suppliers by five other carmakers, and also reports the results of interviews with about ten suppliers to determine their views on the Volvo Cars requirements.

The findings of both the above mentioned university studies will be followed up to identify possible improvements.

### Diversity in the supplier sector

We have traditionally carried out technical and environmental development work in collaboration with our suppliers. Now, as society and our workplaces undergo change, we and five of our suppliers have taken a further step in our work on diversity, competence development and anti-discrimination. Within the framework of the Swedish DISI (Diversity in Swedish Industry) project, we can learn from each other. Working together, we believe that we can improve the company's competitiveness and profitability through an improved working environment, more effective utilisation of our employees' skills, and better and more innovative products and services.

### VOLVO CAR CORPORATION AWARD OF EXCELLENCE

The Volvo Car Corporation Award of Excellence is part of the company's systematic efforts to become No. 1 in customer satisfaction. Suppliers are part of our team and play a vital role in our success. In addition to encouraging our suppliers, the award is designed to highlight Volvo Cars as an attractive and professional principal. By tradition, Volvo Cars is a supporter of deep and enduring supplier relationships, distinguished by straightforward and open dialogue.

#### The 2004 winners were:

Fundo Wheels AS (alloy wheels)  
Hitachi Metals Ltd, Japan  
(exhaust manifolds)  
Johann Borgers GmbH & Co, KG  
(carpets and soundproofing materials)  
Behr GmbH & Co, KG (climate systems)  
Forsman & Bodenfors (publicity)  
Lapple Ireland Ltd. (press dies)

#### 'We have been using recyclable raw materials since 1986'

"We started out as suppliers to taxicab builders and, back then, we were already using textile waste as a raw material," says Werner Borgers of Johann Borgers GmbH & Co. KG. "Since the 1960s, we have been supplying carpets and soundproofing materials to the car industry. In the 1990s, we developed Propylat – a new material based on textile waste and natural fibres – that can be reused at all stages of the manufacturing process. Propylat possesses superior acoustic properties, and is stiffer and lighter than earlier materials. Our Low Mass Concept is a paper-based product that replaces plywood in the luggage compartment. Low weights contribute to safety by shortening braking distances and favour the environment by reducing fuel consumption. Volvo Cars is a partner that really gives us the freedom to develop new ideas."



Werner Borgers and Peter Dahlström represented Johann Borgers GmbH & Co. KG at the award ceremony in Göteborg.

# “SOCIAL INVOLVEMENT IMPROVES PROFITABILITY”



“As a global player and principal with a network of suppliers worldwide, Volvo Cars has a social responsibility. We cannot regard our suppliers as entities beyond our control. We aspire to contribute to improve the working conditions throughout our supply chain, even if we are not their employers on paper,” says **Catharina Ström**, who is responsible for purchasing strategy at Volvo Cars.

“We cannot close our eyes to the potential risk that companies may violate human rights, for example by refusing to permit unionisation, or using child labour or bonded labour. As principals, we can influence and stimulate development in our supply chain by inspiring our partners to share our values and work with us, not just for us. In this way we contribute to knowledge development and dissemination of good practice among our partners.

A recent graduate thesis clearly shows the need to intensify the work of communicating principles and value judgements within the supplier chain. One good example of smoothly

functioning and systematic cooperation is the supplier’s club in Thailand – which is conducted by the suppliers themselves with support from Volvo Cars, and in which we meet regularly with our suppliers to hold a dialogue and learn from each other.

The advantages of corporate citizenship and social involvement are not merely ethical, but also economic. A company that includes environmental and social considerations in its business approach will enhance its reputation, and will ultimately reap the benefits in terms of greater competitiveness and profitability.

FIG. 1  
**TOP TEN SUPPLIER COUNTRIES, 2004**  
(AS PERCENTAGE OF TOTAL PURCHASES)

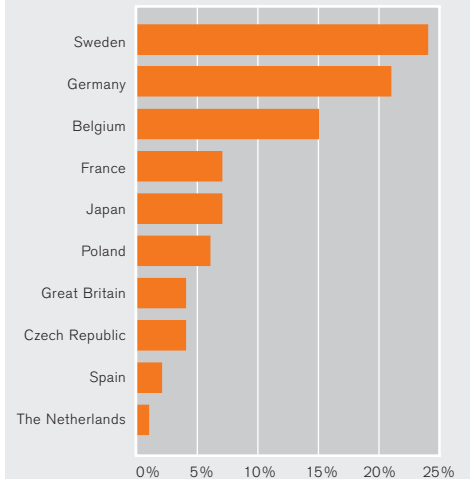


FIG. 2  
**TOP TEN SUPPLIERS, 2004**

**Aisin AW**  
Automatic transmissions  
[www.aisin.com](http://www.aisin.com)

**Benteler**  
Wheel assemblies  
[www.benteler.com](http://www.benteler.com)

**Bosch**  
Control modules, alternators, engine components  
[www.bosch.com](http://www.bosch.com)

**Continental**  
Tyres and TRACS  
[www.conti-online.com](http://www.conti-online.com)

**Faurecia**  
Interior trim panels, catalytic converters  
[www.faurecia.com](http://www.faurecia.com)

**Getrag**  
Gearboxes, wheel assemblies  
[www.getrag.com](http://www.getrag.com)

**Johnson Controls**  
Seats  
[www.johnsoncontrols.com](http://www.johnsoncontrols.com)

**Lear Corporation**  
Seats, instrument panels  
[www.lear.com](http://www.lear.com)

**SAS Automotive**  
Instrument panels  
[www.sas-automotive.de](http://www.sas-automotive.de)

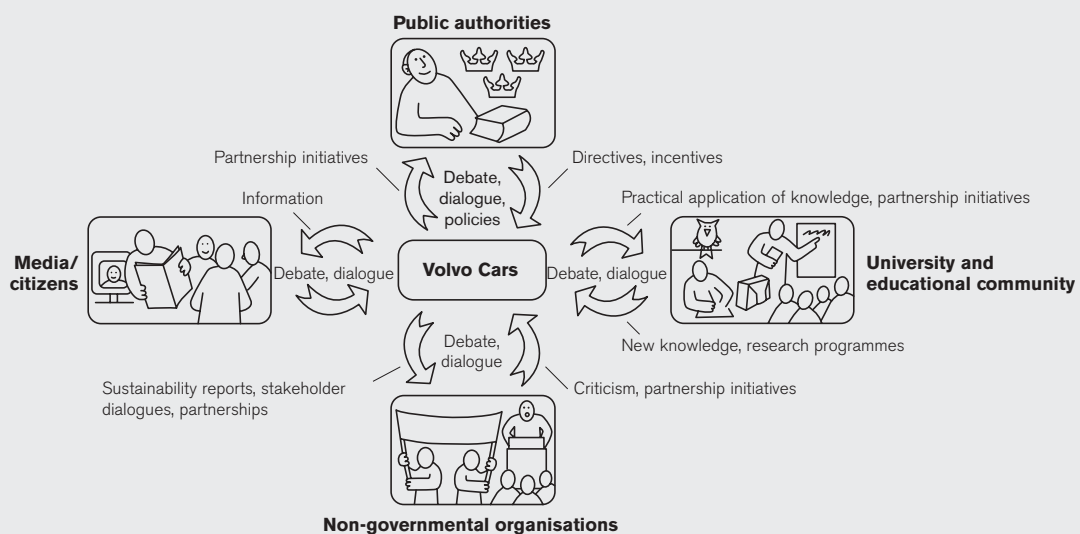
**Valeo**  
Climate control and lighting systems  
[www.valeo.com](http://www.valeo.com)



# RELATIONSHIP WITH SOCIETY

Volvo Cars relates to society through the stakeholder groups that influence or are influenced by its operations, knowhow, products and brand. In this context, our definition of society will be confined to four main stakeholder groups: Public authorities; NGOs and international organisations; University and educational community; and Media and citizens.

By exchanging information and ideas with these groups through ongoing dialogue and communication, we strive to achieve cooperation and partnerships. Cooperation is essential to the acquisition of the knowledge and understanding we require to develop the cars that society needs, and to act as a responsible company. We aspire to be a driving force in society – one that benefits societal development in general, as well as individual people in the locations where we operate.



### Volvo Cars is part of society

All units within Volvo Cars communicate directly or indirectly with the community as part of an ongoing process. Stakeholder dialogues provide us with guidelines, knowledge and information that influence our own development of products and services.



#### **VOLVO ENVIRONMENT PRIZE**

Instituted in 1988, the Volvo Environment Prize was first awarded in 1989. The prize is intended to provide a link between the research world and industry by honouring men and women who have significantly increased our understanding of environmental and sustainability issues. In November 2004, the prize was awarded for the 15th year in succession to laureates Dr. Luisa Molina and Dr. Mario Molina (not pictured), Mr. Jamie Lerner and Dr. David Satterthwaite. A common aspect of their work has been the effort to develop solutions to the environmental problems resulting from the migration of increasing numbers of people to major cities, especially in developing countries. The Volvo Environment Prize is awarded jointly by the Volvo Group and Volvo Cars. Read more on [www.environment-prize.com](http://www.environment-prize.com)

## **2004 REPORT**

### **PUBLIC AUTHORITIES**

Volvo Cars' relations with public authorities are based on open dialogue, and on an active effort to develop partnership and knowledge exchange. In Sweden, we maintain contacts with public agencies at both local and national level. Examples include our recent talks with Sweden's Minister for Industry and Trade, Thomas Östros, which has resulted in the launch of a joint project involving representatives of government, the research community and Volvo Cars. The aim of the project is to develop a strategy for the development of environmentally compatible power trains while contributing to increased employment and competitiveness.

We also have well-established relations with a number of authorities within the EU sphere and with various individual countries, such as Belgium, Great Britain and Italy. Dialogue with these is focused mainly with identifying solutions to mobility-related problems, with particular reference to aspects involving safety and the environment. Areas of discussion with these agencies during the year included child safety, side collision protection and whiplash injuries. Discussions were also held on issues relating to product safety and agreement with the positions of government agencies in different countries, such as the USA and Japan. Volvo Cars has published position papers on issues related to environment and safety. **These positions can be accessed on [www.volvocars.com/citizenship](http://www.volvocars.com/citizenship)**

### **NON-GOVERNMENTAL ORGANISATIONS**

Volvo Cars regards established, independent and credible non-governmental organisations (NGOs) as important drivers for sustainable development. NGOs help to change attitudes by getting involved and moulding public opinion on major societal issues, thus drive development forward. Our relations with NGOs are based primarily on knowledge exchange and partnerships in which we are responsive to their standpoints and criticisms. This provides us with crucial information which, for instance, helps us to base our decisions regarding the active use of our products to develop a more sustainable society.

Our membership of the Nordic Partnership, a network founded by WWF (World Wildlife Fund) and the Danish think tank, Mandag Morgen (Monday Morning), continued in 2004. This has now expanded into a network that includes several NGOs and companies in the Nordic region. The main purpose of the partnership is to promote sustainable production and consumption, and to work towards global goals, such as the UN Millennium Development Goals (MDG). In 2004, the Nordic Partnership published its 'Paths to Sustainability in Supply Chain Management' and 'In Business We Trust' reports. **Visit [www.nordicpartnership.org](http://www.nordicpartnership.org) for more information.**

The SEC Belt Campaign is an information campaign initiated by the European Transport Safety Council, whose mission is to increase the level of knowledge of road safety among public agencies and the public alike, mainly in southern European countries. The purpose of the campaign, which includes both seminars and publicity activities, is to raise the level of traffic safety awareness in southeastern and central Europe.

### **UNIVERSITY AND EDUCATIONAL COMMUNITY**

Volvo Cars believes that in-depth partnership with both universities and schools offers the fastest way to knowledge. Last year, for example, we established a Swedish centre of excellence – the Göteborg Vehicle Safety Centre at Chalmers – with partners including Chalmers University of Technology, the Swedish automotive and electronics industries, and IT companies. The work of the centre is carried out by a number of reference groups that inventory the companies' common needs and initiate various safety projects based on these needs.

We have also implemented a programme of direct knowledge exchange with Chalmers University of Technology in automotive engineering, vehicle electronics and, in particular, vehicle safety. As an example, Volvo Cars personnel work as instructors and experts with Chalmers' own accident research team. We are also involved in projects with other universities and third-level institutions, such as the Göteborg School of Economics, Royal Institute of Technology, Stockholm (KTH) and University of Halmstad. About 200 graduate theses are produced annually by undergraduates at Swedish universities of technology and economics on assignment from Volvo Cars. These provide valuable contact interfaces and knowledge sharing between the universities and business to the benefit of all concerned.

Together with the Volvo Group and the City of Göteborg, we run the Göteborg Technical High School, whose purpose is to offer attractive education with the focus on industrial production. To us, this is a way of assuring our future recruitment needs. We also support various initiatives to increase the level of interest in technical careers among young people who have not yet chosen their second or third level course options.

Academic collaboration in the area of road safety is of particular importance to us for two reasons: to disseminate our knowledge in an area of importance, and to receive feedback



#### **VOLVO ADVENTURE ENVIRONMENTAL AWARD**

In partnership with the United Nations Environment Programme (UNEP), Volvo Cars holds an international competition for school children with the aim of encouraging teachers and pupils to start their own environmental projects in their school or neighbourhood. In 2004, the first prize of USD10,000 to fund continued environmental work went to a project from the National Public School of Indiranagar, India entitled 'Turning over a new leaf – from Environment to Empowerment'. The aim of the project is to solve the environmental problems caused by the burning of leaves. Visit [www.volvoadventure.com](http://www.volvoadventure.com) for more information.

in the form of new experience and knowhow. All of this reinforces our brand, our position and our profitability while attracting new, highly-qualified employees. For example, the results in 2004 of an independent annual survey showed that newly-qualified graduate engineers regard Volvo Cars as the most attractive employer in Sweden.

#### **Road safety project in Thailand**

TARC – the Bangkok Traffic Accident Research Center – is a joint project of Volvo Cars, the Thai Ministry of Transport and the Global Road Safety Partnership (GRSP). The main purpose of the project is to acquire greater knowledge of various road safety problems by gathering and analysing traffic accident information. Every year, 25,000 people die in Thailand traffic. With over 30 years of experience in this area, Volvo Cars is ideally placed to contribute knowhow, methodologies and training to the venture. In the longer term, the intention is to scale down our involvement in TARC and transfer responsibility to the Thai authorities.

The purposes of TARC are twofold. The first is to build a knowledge database from data gathered by a team of experts from real-life accident sites, initially within an area north of Bangkok, and then analysed by them. The second is to provide decision makers with information from the database with the aim of prioritising traffic-safe solutions and ultimately reducing the number of accidents.

In 2004, experts from Volvo Cars and Chalmers University of Technology delivered courses in road and vehicle safety in Thailand. During the year, a student exchange programme was initiated between the Asian Institute of Technology and Chalmers, with provision for practical training with the Volvo Cars and Chalmers accident research teams.

#### **MEDIA AND CITIZENS**

Since the media are the channels of communication that penetrate furthest into all areas of society, an open and honest relationship with them is important to Volvo Cars. Although we

cannot control the media or influence what is written, we can produce and supply them with accurate information on our products, methods and experience.

#### **Volvo for Life Awards**

In addition to our work with the various stakeholder groups, we are working to reward individual initiatives that bring improvements to society. One example is provided by the Volvo for Life Awards, which were instituted in 2002 by our North American sales company. The awards are made annually to recognise and reward individuals who have made an exceptional impact in everyday life to the benefit of other people or the environment. 'Everyday heroes' who have made a contribution in the areas of safety, quality of life or the environment may be nominated on the Internet.

Nominations for 2004 totalled 3,014 – an increase of almost 50% over the previous year. The year's winner was Earnestine Russel-Drumgold, who founded the Baychester Youth Council in 1986 to combat violence, drug abuse and criminality in a deprived area of the Bronx in New York City. Visit [www.volvoforlifeawards.com](http://www.volvoforlifeawards.com) for more information.

#### **Volvo Cars main sponsor of international environmental conference**

In 2004, for the first time, Volvo Cars became a main sponsor of the 13th international World Clean Air and Environment Protection Congress, which is held every three years. Held in London, the 2004 conference was attended by over 1,000 researchers from all over the world, who met to discuss and share the most recent advances in environmental research. Volvo Cars opened the conference together with representatives of the United Nations Environment Programme (UNEP), and hosted seminars on topics including allergies and biofuels. Other main sponsors were British Petroleum (BP) and Johnson Matthey, whose products include catalytic converters. The conference was organised by the National Society for Clean Air and Environmental Protection (NSCA) in Great Britain.

#### **PARTNERSHIP PROJECTS WITH CROSS-SECTORAL STAKEHOLDER CATEGORIES**

Although cooperation between Volvo Cars and individual stakeholder groups has yielded satisfactory results, we nevertheless believe that partnerships involving a number of stakeholder categories, with each party working for similar goals, have been the most successful.

#### **Volvo Cars contributes to new ISO standard for social responsibility**

In 2004, Volvo Cars was asked to take the vice-chair of the working group appointed to develop the new ISO standard on social responsibility. This offers us an opportunity to contribute to social responsibility by being part of the development of guidelines for use by various players in society. The new standard – ISO 26000 – will be ready in three years. Visit [www.iso.org/sr](http://www.iso.org/sr) for further information.

#### **Cultural sponsorship and philanthropy**

Volvo has been a sponsor of the Gothenburg Symphony Orchestra and the Göteborg Opera for many years. We also support local cultural or sporting activities in other production locations, while several of our sales companies have opted to become involved in philanthropic projects of various types. For example, our Swedish sales company supports the World Childhood Foundation by making a contribution to it for every car sold. An initiative of HM Queen Silvia of Sweden, the purpose of the foundation is to safeguard the rights of children to a secure childhood and, in particular, to work for better living conditions for children in vulnerable environments all over the world. Our North American sales company sponsors the Art for Life event held annually for many young New Yorkers with an interest in art. The event is organised by the RUSH Foundation, which works to give children and young people in some of the toughest environments in the USA an opportunity to develop their creativity.



# “PARTNERSHIP THE BEST ANSWER TO THE CHALLENGE OF SUSTAINABILITY”



“To us, partnership with various players in society united by common goals is the only way to achieve long-term results in the area of sustainability.” So says **Niklas Gustavsson**, governmental affairs manager with responsibility for environmental issues at Volvo Cars. “Our successful ‘Biogas Cities’ project is a clear example of this – and the secret of its success lies precisely in our unique style of cooperation and taking joint responsibility.”

“All of the project partners have contributed to making the use of biogas in vehicles advantageous,” comments Niklas Gustavsson. The City of Göteborg has provided free parking for methane-powered cars, offered incentives to environmental taxi cabs and helped to provide a good methane refuelling infrastructure. Volvo Cars and the Volvo Group have committed to the development of methane technologies for both cars and buses. Together, we have produced an offer that is attractive to customers – something that no one party could have achieved on its own.

“The question is how to spread success stories and learning of this kind so that they do not become just more isolated examples,” adds Niklas Gustavsson. “On this basis, we at

Volvo Cars have taken the initiative of launching a project in which the experience we have gained from the biogas project is disseminated to other cities around the world.”

To date, representatives from California and a number of British cities have visited Göteborg and Volvo Cars to study the technology and the factors underlying the success of the project. In 2005, the project experience will be shared with stakeholders in countries such as Canada, France and Germany.

“This is our way of ensuring that local successes become known at global level,” concludes Niklas Gustavsson. “It also enables us to learn more about various aspects of partnership projects in countries where conditions are different from those in Sweden.”

## **BIOGAS CITIES – PROMOTING THE USE OF BIOGAS ACROSS BOUNDARIES**

Biogas Cities is a cooperative model initiated by Volvo Cars in partnership with the City of Göteborg, the Västra Götaland Regional Authority and the Volvo Group. The aim is to demonstrate how cooperation between vehicle manufacturers, gas utilities, local authorities and public agencies can promote the use of methane as a sustainable alternative fuel.

In western Sweden, one result has been the creation of a commercial market for methane, including 19 methane filling stations, and 3,000 cars and 115 buses powered by the fuel. In addition, about 40% of the methane used in the region consists of biogas which, in practice, makes no net contribution to the intensified greenhouse effect.

One major success factor has been a mutual understanding of the need for cooperation across all of the boundaries between the private and public sectors. In this context, political support has proved to be decisive. Mass transportation and other forms of public transport have been assigned priority as the basis for a methane market, while the private sector must be invited on board at an early stage to enable investment in the new market to be considered.

The process will become easier as more major cities and regions establish a methane refuelling infrastructure. Biogas Cities offers one way of supporting that development, among other things by highlighting good examples like western Sweden, and assisting other cities and regions with their sustainability activities.

In 2004, as a first step, representatives of a number of local and regional authorities from different countries were invited to make a three-day working visit to Sweden. The purpose of the programme was to demonstrate examples of the production and distribution of biogas, and to initiate discussions on political and commercial strategies. Delegations from California and London made the visit during the year, and further activities are planned in the near future with Toronto, Canada and several major European cities.



In June 2004, official representatives from California familiarised themselves with the Swedish biogas programme in the course of a three-day working visit.

# CORPORATE CITIZENSHIP SCORECARD, 2004

CREATING VALUE	2002	2003	2004	TREND	MORE INFO*
<b>Customer satisfaction, rankings</b> Percentage of independent surveys in which Volvo cars were ranked in the top three makes (%)	15	12	17	+	Page 23
<b>Employee satisfaction</b> Index showing weighted percentage satisfaction within prioritised areas**	79	78	79	=	Page 29
<b>Total sales</b> Number of cars sold (thousand)	407	415	456	+	Page 3
ASSUMING SOCIAL RESPONSIBILITY					
<b>Health</b> Sick leave per hours worked (%)	6.1	6.5	6.4	=	Page 30
<b>Occupational injuries</b> Number of injuries resulting in at least one day of sick leave per 100 man-years	3.4	2.7	2.3	+	Page 30
<b>Working/private life balance</b> Percentage of employees reporting a satisfactory balance between work and leisure (%)	63	59	60	=	-
<b>Gender balance</b> Percentage of women in leading positions (%)	12	15	16	+	Page 30
<b>Diversity</b> Number of employees that believe the work group/company is working actively to promote diversity (%)	-	-	51***	n/c	Page 30
PROMOTING ECOLOGICAL SUSTAINABILITY					
<b>Fuel efficiency</b> Reduction in average carbon dioxide emissions from Volvo cars since 1995 (as defined in ACEA agreement) (%)	12	9	11	+	Page 13
<b>Harmful emissions</b> Percentage of Volvo cars sold complying with Euro 4 / ULEV standards (%)	34	52	63	+	Page 13
<b>Alternative fuels</b> Number of Bi-Fuel (gas-burning) cars sold	3,529	1,939	1,478	-	Page 13
<b>Energy consumption in car production</b> (MWh/car)	2.24	2.23	1.7	+	Page 15
<b>Carbon dioxide emissions from car production</b> (kg/car)	428	437	360****	+	Page 15
<b>Solvent emissions from car production</b> (kg/car)	2.52	2.22	1.95	+	Page 15
<b>Environmental management, Volvo Cars</b> Percentage of employees working in facilities with ISO 14001 certification	94	95	96.5	+	-
<b>Environmental management, suppliers</b> Percentage of production material suppliers with ISO 14001 certification (%)	72	83	86	+	Page 15

\*\* Read more about index definition and prioritised areas on [www.volvocars.com/citizenship](http://www.volvocars.com/citizenship)

\*\*\* New question in our annual Employee Attitude Survey as of 2004.

\*\*\*\* New calculation basis as of 2004. Adjusted CO<sub>2</sub> figures for different types of fuel in accordance with prevailing practice. CO<sub>2</sub> values refer to carmaking plants. Figures for 2002 and 2003 adjusted for comparison purposes.

n/c = Not comparable

\*The scorecard has also been published on [www.volvocars.com/citizenship](http://www.volvocars.com/citizenship). Click on an indicator for information regarding its definition, the reasons for choosing it and other details. Information is also provided on indicators which have been deleted since the previous year (dealer satisfaction, customer satisfaction).

## GRI-INDEX

– Signpost to corporate citizenship

GRI (Global Reporting Initiative) is an independent institution that develops global guidelines for reporting sustainability performance. The guidelines are voluntary and are developed continuously through dialogue with stakeholders. One major aim of the guidelines is to facilitate comparison between companies. Our report accords with the GRI guidelines and areas of coverage. The table provides an overview of where the information is reported in this publication and/or on our web site at [www.volvocars.com/citizenship](http://www.volvocars.com/citizenship)

GRI INDICATOR (additional indicator)	AREA COVERED	PAGE(S) IN THIS REPORT	WEB SITE ONLY
<b>Vision &amp; Strategy</b>			
1.1.	Vision & strategy for sustainable development	4-7	
1.2	CEO statement Profile	1	
2.1-9	Organisation	2-3, 6	
2.10-16	Report scope	0:2, 41	2.14-16
2.17-22	Report profile	0:2	2.19-20
<b>Governance, structure and management systems</b>			
3.1-8	Structure and governance	6-7	3.2-6, 3.8
3.9-12	Stakeholder engagement	6, 23-39	
3.13-20	Policies and management system	6-7, 12-17, 21, 30, 33-34	3.13, 3.15, 3.17, 3.19
<b>GRI index</b>			
<b>Economic performance indicators</b>			
EC 1-2	Customers	3	
EC 3-4 (11)	Suppliers	33, 35	EC4
EC5	Employees		EC5
EC 6-7	Providers of capital		EC6-7
EC 8-10	Public sector		EC 9-10
<b>Environmental performance indicators</b>			
EN 1-2	Materials	15	EN2
EN 3-4	Energy	15	EN4, EN17
EN 5	Water	15	
EN 6-7 (23)	Biodiversity		EN6-7 (EN23)
EN 8-13	Emissions, effluents and waste	15	EN8 Indirect emissions, EN9, EN12-13, (EN31)
EN 14-15	Products and services	12-17	
EN 16	Compliance		EN16
(EN 33)	Suppliers	15	
(EN 34)	Transport		(EN34)
(EN35)	Overall		(EN35)
<b>Social performance indicators</b>			
LA 1-11	Labour practices and decent work	2-3, 29-31	LA2-6, LA8-9
HR 1-7	Human rights	32-35	HR5-7
SO 1-3(4)	Society	21, 36-39, 41	SO3
PR 1-3 (8)	Product responsibility	8-11, 18-24	PR3

Visit [www.globalreporting.org](http://www.globalreporting.org) for further information on GRI.

## PRIZES AND DISTINCTIONS

– related to corporate citizenship

### AWARDED TO VOLVO CARS IN 2004

#### 'Best Manufacturer' – British Insurance Car Security Awards

Volvo Cars was named 'Best Manufacturer' in the British Insurance Car Security Awards – a competition organised by the British insurance industry.

#### Ford President Health and Safety Award

Our plants in Skövde and Torslanda received the Ford President Health and Safety Award for their systematic health and safety programmes, which have significantly reduced the number of reported occupational injuries.

#### Agenda Magazine – best in-house magazine in Sweden

The Volvo Cars in-house magazine, Agenda Magazine, won the Swedish Publishing Prize in the 'Personnel magazines, business' class as "an excellent strategic tool for internal communication". The magazine was awarded the maximum of 10 points in all categories: design, text and visual content.

#### Ten gold medals at Michelin Challenge Bibendum in Shanghai

The Michelin Challenge Bibendum is an annual international environmental car event and conference to promote alternative fuels and sustainable mobility. At the 2004 event in Shanghai, the 3CC concept car won first prize for design, while the Volvo S80 T6 and S60 PZEV (Partial Zero Emission Vehicle) were awarded gold medals for environmental performance. In all, Volvo Cars won ten gold and six silver medals.

#### Woman of the Year 2004

The nine women of the YCC team were honoured collectively as 'Woman of the Year 2004' by Automotive News Europe. In Sweden, Anna Rosén and Maria Uggla, who were responsible respectively for the model's exterior and interior design, were named 'Women of the Year' by the magazine Damernas Värld.

### AWARDED BY VOLVO CARS IN 2004

**Volvo Environment Prize:** See page 37

**Volvo Adventure Award:** See page 38

**Volvo for Life Awards:** See page 38

**Volvo Car Corporation Award of Excellence:** See page 34

**Volvo International Service Training Award:** See page 25

**Volvo Cars Quality Award:** See page 21

## CONTACT US

Further information on specific indicators, or on our sustainability activities in general, is available on our web site at [www.volvocars.com/citizenship](http://www.volvocars.com/citizenship).

Questions and views on the report and on sustainability issues may be addressed to Catarina Munck af Rosenschöld, by e-mail to [citizen@volvocars.com](mailto:citizen@volvocars.com) or by telephone to +46-31-59 00 00.