

An aerial photograph of Earth from space, showing a vast expanse of white clouds over a dark blue ocean. The perspective is from a high altitude, looking down at the planet's surface. The clouds are dense and cover most of the visible area, with some darker patches of water visible between them. The overall tone is cool and serene.

**VOLVO GROUP'S  
SUSTAINABILITY REPORT 2009**

## **OUR SUSTAINABILITY REPORT 2009**

**The Volvo Group takes a holistic approach to sustainable development by delivering long-term profitability and value. This report addresses how the Volvo Group works to contribute to sustainable development, in economic, environmental and social terms.**

**The objective is to present our work in a straightforward, transparent and informative way for a wide audience. We present how the work is organized, what we are doing and our ambitions for the future, together with key data. Our challenges and opportunities related to a sustainable development are an important theme in this report.**

**This document is a report containing text and key data from our web based report. On [www.volvogroup.com](http://www.volvogroup.com) you will find the complete report, along with links to further reading and more information regarding sustainability performance at Volvo Group in general.**

**The Volvo Group consists of many different companies offering a wide range of transport products and services. A substantial part of their sustainability work is carried out independently.**

**The Volvo Group's financial performance and work with corporate governance is presented in the Annual Report 2009.**

**This sustainability report is a platform for internal and external dialogues with customers, suppliers, investors, employees, general public and other stakeholders. We therefore welcome and value your feedback.**

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## CEO COMMENT



Leif Johansson,  
President & CEO,  
Volvo Group

2009 was indeed a dramatic year for the Volvo Group. Never before in the Group's history have so many markets simultaneously been severely affected by a downturn. The exceptional situation forced us to take action to adjust the Volvo Group to considerably lower cost levels. Savings were implemented at all levels and in all parts of the Group. We were also unfortunately forced to lay off many colleagues — in total 18 000 people since mid-2008, a very painful process. Decisions directly affecting individual employees are the most difficult to make and something you never become accustomed to. It is also a challenge to find the right balance between necessary cost reductions to safeguard the future and the fact that the market will recover and we will once again require access to committed and competent employees.

In this regard and with respect for all colleagues, before redundancy notice was issued, a number of other measures were taken. We cooperated closely with politicians, trade unions and authorities to mitigate the consequences of the economic downturn. We have tried to find solutions to avoid layoffs and to launch stimulation packages for the automotive industry, based on national conditions. These endeavours also resulted in an agreement with unions in Sweden for work-time and salary reductions in some plants and offices. In France, Belgium and Germany, we have used various forms of short-time work weeks financed by governments, employees and the company.

Managing the downturn required effective leadership and communication. During this period all managers in the Group have had a very important task – to inform colleagues and listen to their questions, then respond. Information must be shared the moment it is available and managers have received training and assistance to enable them to handle the situation in the best possible way.

I have also received many comments from colleagues all over the world, both criticisms and suggestions for improvements. I appreciate this open dialogue and the willingness to understand the relationship between the market impact on the Group and individual work situations. I hope that in the future we can look back and say that we did everything we could to support all colleagues who were affected by actions we had to take.

Even in difficult times it is essential to maintain a long-term view of the business operation and of products and services that will be profitable in the future. I am proud to say we have done this. In 2009 we continued to invest in research and development to allow us to launch competitive products in the years ahead. By focusing on developing increasingly more energy-efficient engines and complete vehicles that can operate on renewable fuels and by introducing hybridisation we are taking a lead in the market. More than 98 % of energy use in the transportation sector is from fossil fuels. This will not last forever. Rising fuel prices have a large impact on our customers' economy and the necessity of combating climate change becomes increasingly urgent. So developing fuel-efficient vehicles is of the highest priority for us. Our more energy-efficient engines and alternative drivelines have a positive impact on our customers' financial situation — and less impact on the environment.

Our involvement goes beyond our products. In order to create sustainable mobility it is necessary to cooperate with different actors in society. That is why we are participating in a number of projects for the advancement of future transports. To promote sustainable transportation solutions, several stakeholders must partner and work towards a common goal. We can offer the necessary technology, but we cannot create sustainability alone. We need to find more efficient ways to pool resources from industry, governments and academia to address the major environmental and societal challenges we are facing.

An example of an important societal issue is traffic safety. According to a modest estimate by the World Health Organization, more than 1.2 million people are killed and 50 million are injured every year in traffic. We have a long tradition of working with traffic and product safety. The protection of human life in the case of accidents has been a top priority for us for more than 80 years. Let me take this opportunity to launch our safety vision: "Zero accidents with Volvo Group products". This vision shows our increased ambition for the future and the responsibility we take as one of the world's largest manufacturers of commercial vehicles.

This report gives you a view of our strategies and commitment to sustainable development. It also shows our commitment to the principles of the United Nation's Global Compact initiative and in our Code of Conduct. Our values and commitment to sustainability are, and will continue to be, reflected, promoted and implemented in Group strategy, decisions and actions.

I have an optimistic view of the Group's future potential. In spite of the financial crises, the fact that heavy-duty transports and building infrastructure are the foundation of modern society remains unchanged. The Group's products and services contribute to the development of society, and I cannot see anything in the financial crises of the past year that changes my positive view of the Group's long-term development possibilities. Sustainability efforts are an important component of the Volvo Group's competitiveness and our ability to create value for customers, shareholders and future generations.

## SCORECARD 2009

Sustainability is a part of our business. This means integrating environmental, social and economic development dimensions in our everyday operations. To be successful it is important to measure and follow up certain indicators.

This scorecard presents some of our key sustainability performance indicators at a Group level. More indicators and follow-up measurements regarding our sustainability efforts are presented in this sustainability report.

The Volvo Group consists of many different companies offering a wide range of transport products and services. A substantial part of their sustainability work is carried out independently. Many important data and performance indicators are therefore measured and followed-up at company level.

The Volvo Group's financial performance and work with corporate governance are presented in the Annual Report 2009.

	2007	2008	2009
<b>Economic responsibility</b>			
<b>Net sales, SEK M</b>	285,405	304,642	218,361
<b>Growth in net sales, %</b>	10	6	- 28
<b>Operating margin, %</b> Operating income divided by net sales	7.8	5.2	- 7.8
<b>Number of vehicles delivered</b> Light, medium and heavy duty trucks, plus buses and bus chassis	246,272	261,088	137,538
<b>Cash flow, Billion SEK</b> Industrial operation	15,2	- 2,7	-11,4
<b>Environmental care</b>			
<b>CO<sub>2</sub> emissions, ton/SEK M</b> From production plants, industrial operations	1.0	1.0	1.0
<b>CO<sub>2</sub> emissions, g/ton km</b> for a Volvo Truck FH 12, 40 ton, with a 26 ton load <sup>1</sup> . Extrapolated values from 2006	28.5 <sup>1</sup>	28.0 <sup>1</sup>	27.5
<b>Energy consumption, MWH/SEK M</b> in production plants per net sales	9.6	8.6	9.1
<b>Water consumption, m<sup>3</sup>/SEK M</b> in production plants per net sales	27.9	27.8	31.8
<b>Certified environmental management system, %</b> Percentage of employees at production units working in accordance with the certified environmental systems, primarily ISO 14001:2004	96	96	96
<b>Stakeholder relations</b>			
<b>Satisfied employees, %</b> Employee Satisfaction Index in the Volvo Group Attitude Survey	84	86	85
<b>Women employees, %</b>	17	17	17
<b>Women managers, %</b> Presidents and other senior executives	15	17	19
<b>Employees that believe the company works actively to improve diversity*, %</b>	71	74	70
<b>Awareness of Code of Conduct, %</b> Percentage of employees who indicate they have received information on the Code of Conduct*	74	81	NA
<b>Supplier self-assessment, %</b> Percentage of suppliers that have completed self-assessment regarding CSR requirements	NA	NA	22

\*Results from the Volvo Group employee Attitude Survey

## **Performance analysis**

2009 was a very dramatic year, characterized by comprehensive measures designed to rapidly adapt the operations to the exceptionally sharp downturn that occurred in most of our markets and by an intensive work to reduce the Group's costs to a new level matching lower demand. During 2009, the Volvo Group's sales decreased by approximately SEK 90 billion compared to the preceding year. The Volvo Group's orientation is on continued growth with a focus on sustainable profitability and to grow by 10% annually over a business cycle.

Since several environmental performance indicators are measured in relation to net sales these indicators show a negative trend compared to last year, even though improvements have been achieved. Even though energy consumption and water consumption have decreased, it is not to the same extent as production decline, therefore we need to focus even in the future on identifying waste in our resource use.

In the Group-wide employee survey Volvo Group Attitude Survey (VGAS), all employees are provided an opportunity to express their views on their jobs and what needs to be improved. The results for 2009 indicate that employee satisfaction is maintained despite the challenging year.

22 % of our direct material suppliers have completed self-assessment regarding CSR requirements since the launch in October 2009. We will continue to focus on the suppliers in countries identified as high risk from a CSR perspective.



## ABOUT THE VOLVO GROUP

Our vision is for the Volvo Group to be valued as the world's leading supplier of commercial transport solutions.

Transports are essential for development and our responsibility is therefore to provide society with transport solutions that reduce negative environmental impact and contribute to social development.

The Volvo Group is one of the world's leading manufacturers of trucks, buses and construction equipment, drive systems for marine and industrial applications, aerospace components and services. The Group also provides complete solutions for financing and service.

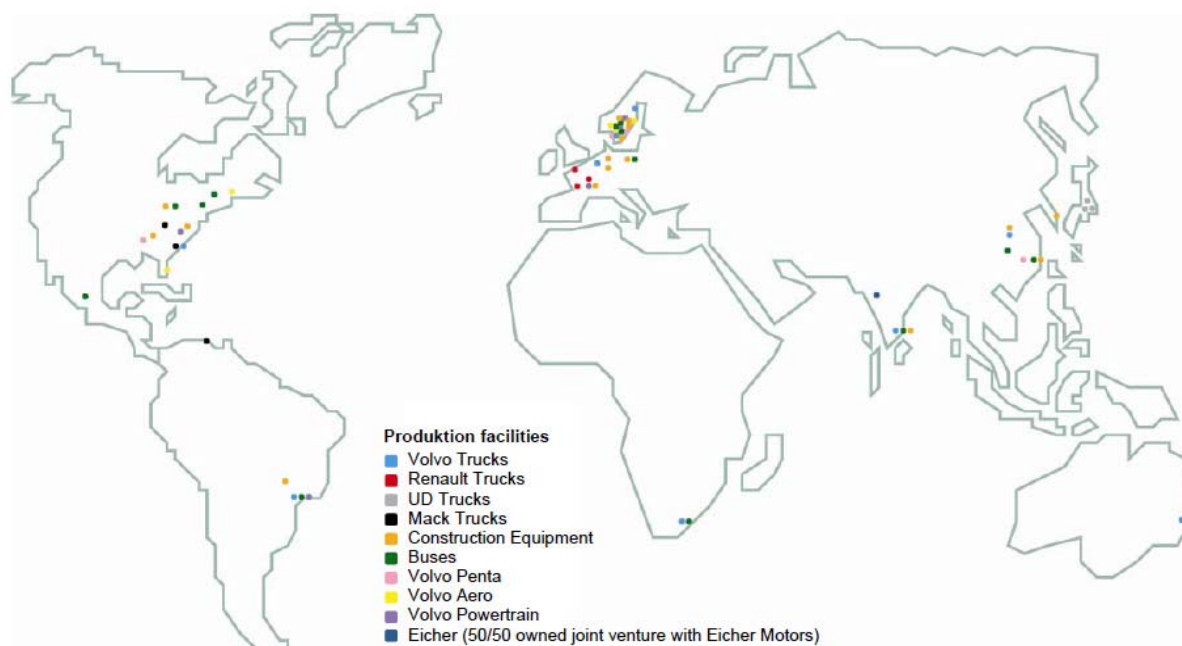
### Size and sales

The Volvo Group has about 90 000 employees, most in Sweden, France, Japan, US, China, Brazil and South Korea. The Volvo Group has production facilities in 19 countries and sells its products in more than 180 markets, mainly in Europe, Asia and North America. Group sales of products and services are through both wholly owned and independent dealers.

The Volvo Group's product-related companies in six different segments work closely with customers and Group-wide resources are efficiently utilized. Approximately 70% of the Group's 90,000 employees work in product-related companies and 30% in business units.

Annual sales of the Volvo Group in 2009 amounted to about SEK 218 billion compared with SEK 304 billion in 2008. The Volvo Group is a publicly traded company headquartered in Gothenburg, Sweden. The Volvo share is listed on the NASDAQ OMX Nordic.

Approximately two thirds of the Volvo Group's net sales are related to the sale of new vehicles and machines; the rest is from soft products such as service, financing and spare parts. In 2009, 127,681 trucks were sold compared with 251,151 in 2008. The number of sold buses and bus chassis was 9,857 for 2009 compared with 9,937 in 2008.



Volvo Group global operations 2010



## CSR – PART OF OUR BUSINESS

The Volvo Group's vision is to be valued as the world's leading supplier of commercial transport solutions. We take a holistic approach to sustainable development by delivering long-term profitability and value in a conscious way. We take responsibility for what we do and for being leaders in quality, safety and environmental care.

Corporate Social Responsibility (CSR) for the Volvo Group is integrated in everything we do. We aim to be a good corporate citizen and contribute to sustainable development by taking social, ethical, economic and environmental responsibility for our business within our sphere of influence.

### **The four cornerstones of our responsibility**

- Economic Responsibility – creating value for customers, we also create long-term value for shareholders and for the societies we operate in.
- Stakeholder Relations – working to create long-term relationships and provide the best benefits for stakeholders: employees, suppliers, and others.
- Societal Engagement - working with organizations, universities and local authorities to contribute to society's positive development. We encourage local initiatives, projects, sponsorships and volunteer activities.
- Environmental Care – a commitment to significantly reducing environmental impact. We develop technology, renewable fuels, more efficient transport solutions and other aspects of production and processes.

In keeping with our values and the principles in our Code of Conduct, we build trust and confidence among customers, suppliers, partners, authorities and other stakeholders in society. We conduct our business with integrity.

## Main challenges and opportunities

In our efforts to contribute to sustainable development, we focus on materiality. That means areas where we have significant impact or influence, or that imply significant risks or opportunities for our business.

Our main issues comprise environmental care as well as social and economic perspectives. A prerequisite for our presence on a global market is that our products are compliant with emissions regulation. One of the greatest challenges for the Volvo Group at present concerns the contribution of carbon dioxide emissions to climate change, together with the approach of peak oil, leading to rising fuel prices. Developing environmentally enhanced alternatives is therefore top priority for the Volvo Group in our striving to provide the most fuel-efficient products as well as to enhance CO<sub>2</sub> neutral transports.

A related focus area is the need for competence to continue to enhance our development of sustainable products. We know that a strong company culture can be the prime competitive advantage in today's global market. That is why our policy, the Volvo Way, enhances corporate values, business efficiency and contributes to good business behavior. We know our unique company culture is a significant advantage and contributes to our reputation as an attractive employer that offers competitive conditions and opportunities for individual development.

Economic responsibility is a prerequisite for our contribution to society as well as being a sustainable company. The present global economic recession has had a major impact on our industry sector. The Volvo Group's strategy to maintain stability is internal efficiency in developing environmentally enhanced products and conducting responsible business.

## Guided by our Code of Conduct

The Volvo Group's commitment to sustainable development is reflected and implemented in Group policies, decisions and actions. The Code of Conduct is our group policy for appropriate business behavior and responsibility to employees, business partners and other stakeholders as well as to the environment. The Code applies to all employees within the Volvo Group and the members of the Board of Directors. There are also a number of policies related to CSR issues on a more detailed level, such as the Volvo Group Environmental Policy, financial policies and procedures, and the Anti-corruption Policy.

All employees must be familiar with the Code of Conduct. Volvo Group managers are responsible for communicating and demonstrating the content and spirit of the Code and encouraging employees to reveal behavior that may be non-compliant with the principles of the Code. Training and communication material has been developed to support the work of managers and increase awareness of Code of Conduct issues.

### **Decision structure for CSR issues**

In the beginning of 2009, a new decision structure was implemented within the Volvo Group to benefit from synergies and accelerate the pace of development and the process of change within the Volvo Group, by introducing horizontal Group Issues Boards (GIB) for areas of concerns. The chairman of each GIB is a member of the Volvo Group Executive Committee.

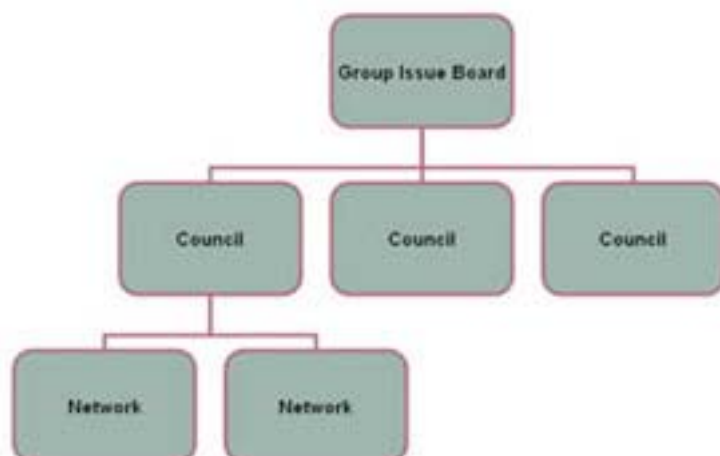
CSR issues are handled by the GIB Public Affairs and Corporate Values chaired by Jan-Eric Sundgren, Senior Vice President.

Councils prepare strategy, process plans and targets in the assigned areas as decided by respective GIBs. In regard to the GIB Corporate Values and Public Affairs, two main councils are handling CSR issues: the Environmental Council and the Public Affairs Council. Council members are function managers from our companies with the authority and mandate to take decisions on behalf of their company organizations.

CSR within Volvo Group comprises many aspects: financial legal issues, environmental care, human resources, human rights, purchasing, etc. A coordination network called the CSR Committee has been formed. Its members are representatives from the support functions on a group level, e.g. the Environmental Manager of the Volvo Group, the global process owner of the working environment. This committee handles policy and guideline issues, strategic and process issues, risk management, objectives and follow-up, reporting and stakeholder dialogue, implementation, communication and training.

To advise and coordinate the CSR work in our supply chain, a CSR Purchase Advisory Board has been established. The different companies within Volvo Group which have purchasing organizations are represented. The group reports to the CSR Committee and to a decision forum in the purchasing organization.

## GIB structure



## Organization and responsibility

The Volvo Group's Code of Conduct is approved by the Board of Directors. The members of the board have a good knowledge of CSR issues and evaluate performance on a regular basis.

Jan-Eric Sundgren, Senior Vice President and member of the Group Executive Committee is responsible for CSR issues, our corporate values (quality, safety and environmental care), university and governmental relations.

The following members of the Group Executive Committee are responsible for specific principles covered by the Code of Conduct;

- Stefan Johnsson, Senior Vice President — human resources and supply chain issues.
- Eva Persson, Senior Vice President and General Counsel of the Volvo Group – legal, compliance, tax and security issues.

The Environmental and Public Affairs Department at Volvo Group headquarter has responsibility from the Board to implement, follow up and develop CSR work.

Responsibility for CSR performance and legal compliance follows ordinary business responsibility.

There are group functions within the organization supporting and following up the managers' responsibility for the principles in the Code of Conduct, for example HR functions.

## **Monitoring and follow-up**

The Volvo Group's Internal Audit Department and Internal Control Department has the Code of Conduct in its scope and monitors compliance through audits.

### **Management control**

The Management control, a self-evaluation tool to discuss how well critical policies have been implemented and enforced. Each year a survey is conducted among managers for the 230 largest management teams within the Volvo Group. Two questions correspond to implementation and management of the Code of Conduct. The result from 2009 showed:

1. 95 % of the managers were approved based on their actions in promoting and communicating the Volvo Way and Code of Conduct to the employees.
2. 92 % of the managers were approved for discussions they have on the risks of fraud and violations of the Code of Conduction and for actions taken based on the result.

Managers are responsible for communicating and demonstrating the content and spirit of the Code of Conduct within their organizations. To assist them, a web-based training module of ethical dilemmas was developed in 2005. The purpose is to reflect on your own attitudes and behavior in different situations and to deliver immediate feedback. No personal data is stored but results are registered to see which principles need greater attention to increase compliance. Almost 24 000 employees have completed the web-based training. The training module is also available as a workshop with open discussions.

We also follow up how well the guidelines work and compliance with them, through annual attitude surveys that go to all employees (the response rate in 2009 was 94% of all employees).

There are Group-wide processes and management systems for quality, internal control, environmental care, the Volvo Production System, etc. Almost 100 % of employees work in accordance with ISO 9001. 96% work in accordance with systems certified by ISO 14001.

Environmental care, health and safety control are integrated in VPS (Volvo Group Production System).

The effectiveness of our processes is monitored and followed-up by KPI and environmental, human resource and financial data. This data and the collection process are verified by a third party.

We monitor our suppliers' work related to Quality Assurance and self-assessment by the supplier, part of our demand elements.

## **A unique strategy process**

Each company within the Volvo Group annually receives a strategic challenge from the CEO. Corporate values and CSR issues are part of the challenge.

Group policies, focused agenda and operation status for the respective areas are the foundation of our strategies, objectives and actions. For each three-year period a Focused Agenda is developed containing the most important issues and projects for the period. The policy and the agenda are the base for the challenges.

The challenges are discussed and followed up in the strategy dialogues and also included in the companies' business plans.



#### **Challenge/strategy process, quality:**

At the end of each year a new challenge is developed by the Volvo Group Quality Council and distributed to companies at the beginning of the year. The challenge is based on the quality policy, the quality focused agenda, operation status and strategic objectives. The first corporate value dialogue is conducted during spring. During this dialogue the companies evaluate the challenge and a feedback letter is sent from the chairman of the council in the beginning of the summer. In autumn, good performances are shared within the Group through conferences, seminars or reports. At year's end, the result is analyzed and reported in conference to the Group Executive committee.

#### **Follow up**

All companies conduct a self-assessment yearly to map adherence to the quality policy. The results are used in strategic dialogues and discussed in the quality council to assess common needs. Each company breaks down the result and makes implementation plans.

All companies report on six Group-wide KPIs twice a year. The result is analysed and followed up on an aggregated level.

## TRANSPORT DEVELOPMENT

**The Volvo Group's core business is providing transport solutions and services.**

**The transport system could be described as the blood circulation system of the economy in our modern society and is a basis for social welfare.**

**Consequently we participate actively in discussing and promoting transport development and policy in different forums worldwide.**

### Contributing to future infrastructure

The Volvo Group's core business is providing transport solutions and services. Consequently, we seek to participate actively in discussing transport development and policy in different forums worldwide.

The transport system could be described as the blood circulation system of the global economy and is a base for social welfare. Currently, we are facing an expected world population increase to approximately 8 billion by 2020, which leads to an increased need for public and transport-related services around the world. This population increase is parallel with a growing urbanization, which makes it important for large cities to have efficient urban transportation- reducing accidents and avoiding congestion, which in turn reduces emissions, as well as developing public transportation.

The present transport infrastructure for both freight and public transports will have to be more efficient and better utilized; this is a Volvo Group priority.

#### **Bus Rapid Transport**

Bus Rapid Transit, BRT is a highly effective public transport concept designed to meet growing transport demands in cities around the world. The key elements of BRT are high-capacity buses, exclusive bus lanes, off-board ticketing, level boarding, priority at intersections, traffic control and passenger information. Bus Rapid Transport is one solution offered by Volvo Buses and is especially developed for Latin America. Volvo Buses was one participant in the first BRT system in the world, in Curitiba, Brazil. We have delivered more buses for BRT systems than any other supplier. Among the cities where we work on BRT systems: Bogotá in Colombia, Mexico City in Mexico, Gothenburg in Sweden and York in Britain.

#### **Intelligent Transport Systems**

One concept that will contribute to more efficient use of infrastructure and transport systems in the future is Intelligent Transport Systems (ITS). Through real-time traffic information, remote monitoring, and communication between transport vehicles and the infrastructure, transport systems can reduce impact on the environment, and increase safety and security. The Volvo Group participates in Swedish ITS projects as well as in the EU ITS action plan.

#### **Green corridors**

Different transport modes in a logistics system will also have to be co-coordinated in integrated transport systems where different modes have their respective usefulness. The Volvo Group started developing similar systems as early as the 1980s. The latest implementation was Viking Rail, an intermodal system based on eco-liners and eco-liner wagons connecting Germany and Gothenburg. Integrated transport systems could be corridors in highways, sea routes and railways where one mode complements another. Such corridors could fit the EU definition of Green Corridors.

The challenge will be to reduce environmental impact even further and the Volvo Group is committed to the Swedish action program for Green Corridors as well as contributing competence at EU level. Harmonized standards and module-based transport equipment will be required for optimum utilization of Green Corridors between nodes; for instance, longer train-sets and trucks. We are

promoting and developing a holistic approach, taking driver, vehicle, infrastructure, and transport equipment into account.

In the future, Green Corridors can connect to terminals called Green Cross Dock Nodes just outside cities. Between the Green Cross Dock Nodes and city centers, cargo can be transported via Green City Lanes on zero-emission, light commercial vehicles that produce neither noise nor pollution. The Green City Lanes could also serve as a sustainable solution for bus traffic systems and could be the ultimate solution for urban mobility.



## STAKEHOLDER DIALOGUES

**As a global company Volvo Group is part of society. Our stakeholders' views and opinions are invaluable and dialogue with stakeholders allows us to develop our business in general as well as sustainability issues in particular. One of the principles in our Code of Conduct states that "the Volvo Group encourages an ongoing dialogue with stakeholders". This exchange is best presented through some of our major commitments. However, the descriptions below are an incomplete picture of our vast stakeholder map.**

**This sustainability report is an important platform for dialogue with different society actors. To pinpoint the main target groups for the report we conducted an internal stakeholder dialogue. The report highlights the issues of greatest relevance for the identified target stakeholders. Among our priority issues are our economic performance, the environmental impact of our products and production, and our role as an employer.**

## Our stakeholders

### **Customers**

We have long-term relationships with most of our customers. We collaborate closely to develop product and services that improve our customers' productivity, flexibility, cost-efficiency and profitability. Customer satisfaction will depend not only on the quality and performance of our products, but also on how customers are treated and how service is delivered. We meet with customers in daily operations, organize dialogue forums such as customer focus groups in product development phase, and conduct regular customer surveys that provide important feedback. Some of the Group's companies have also started to use social media for dialogue with customers.

#### *Customer Satisfaction Index*

The Volvo Group follows up on the respective companies' customer satisfaction position in that specific industry and on relevant markets. We compare our position with other brands on the same market. Customer Satisfaction is measured by established surveys.

### **Employees and trade unions**

We all communicate with each other during daily work but also in formalized forums such as personal development plan discussions and yearly attitude surveys. All employees can pose questions directly to the Group's CEO via the intranet. For top-down communication we often practice cascading from manager to manager. There are also other channels for information from the company to the employees such as: the intranet, in-house magazines, team meetings, films. Internally, we communicate in many different languages. We believe that open dialogue contributes to improvements.

The Volvo Group maintains close relationships with a number of unions both in formal and in informal forums.

### **Suppliers**

The Volvo Group works closely with suppliers. We value long-term relationships and the transfer of knowledge and understanding of each other's processes, procedures and values. Forums for formal communication are our supplier portal, training sessions, dedicated supplier days and awards.

### Capital market

We have regular communications with shareholders, other investors and financial analysts as well as the business media. Investor Relations issues regular publications and press releases, annual reports, interim reports every three months, and the delivery release for trucks each month. In addition to the Annual General Meeting, a capital market day is held at least once a year and investor meetings regularly.

### Decision makers

The Volvo Group communicates with politicians, authorities and institutions on an ongoing basis in order to get early access to information on proposed legislation and activities and exchange of information on the implications of legislation, incentives, etc., to support and enhance our business. Communication is mostly through personal meetings.

### Non Governmental Organizations

The Volvo Group has well-developed relations with NGOs. We have approximately 100 different cooperation projects with NGOs around the world. Many of the projects achieve positive change on a local basis. We also dialogue with NGOs to review our business. We try to answer and explain. In 2010 we will develop a strategy on cooperation with NGOs.

### Universities and research institutions

The Volvo Group sells products of a high technical standard. Cooperation with universities and academia is therefore vital for creating synergies in the research forefront. The Volvo Group is involved in a comprehensive series of cooperative ventures with research bodies and academic institutions to advance the technologies needed for future product development. One example is the Academic Partner Program.

Our engagement with universities is also important for creating relationships with students and potential employees.

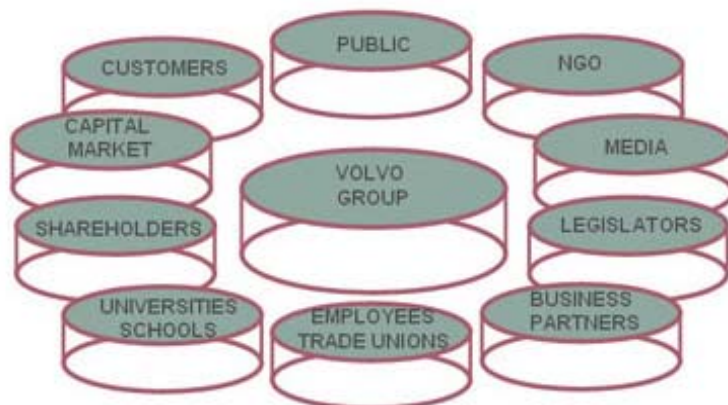
### Education/schools

The Volvo Group supports secondary and upper secondary school education in a number of ways at multiple locations around the world and has a continual dialogue about educational issues on local, national and international levels.

The Group is placing special focus on school partnerships to promote interest in maths, science and technology education and careers.

### Media

Media is central in our information-intense society. The Volvo Group works with regular proactive and reactive communications to share our viewpoint on current issues. Many of our stakeholders are influenced and informed by the daily and trade media.



*Volvo Group's stakeholders*

## **The Volvo Group takes a position**

To participate actively in society and to recognize new business opportunities, knowledge of the surrounding world and future trends in legislation is essential. The Volvo Group's objective is to comply with legislation related to emissions, noise, vehicle weight and similar issues and always advance new technology in product development. To speak with one voice, we issue Volvo Group position papers on questions of importance for our business.

The Volvo Group participates in different trade organizations and forums such as ACEA (European Automobile Manufacturers' Association) and CECE (Committee for European Construction Equipment) in Europe as well as EMA (Engine Manufacturers Association) in the US and JAMA (Japan Automobile Manufacturers Association) in Japan. Through proactive interaction and by keeping informed about society's ambitions such as future legislation and taxation schemes, the Volvo Group wants to create long-term competitive business conditions while contributing to sustainable development together with other actors in society.

## ECONOMIC RESPONSIBILITY

### Significant events of 2009

- A year of a dramatic fall in demand and internal adaptation to the lower demand.
- Savings have been implemented in all parts of the Group, designed to reduce the annual cost level by SEK 21 billion.
- Adoption and launch of strategic objectives for 2010-2012, focusing on profitable growth, product cycle management
- Launch of the Volvo Group Anti-Corruption Compliance Program.

### Our economic responsibility

Today's global market implies many challenges that affect the Volvo Group's financial performance. The crises in the automotive industry and the world economic recession have strongly impacted our business. To meet challenges, business planning maintains a long-term perspective, efficiency is maximized in operations, and well-organized risk-handling methods are strictly adhered to.

We have been forced to adapt and take measures such as reducing the number of permanent, temporary employees and consultants by 18 000 persons since mid-2008. This has been demanding for everybody involved and before personnel reductions, a number of other measures were taken, including the use of flexible staffing solutions.

Creating value for our customers today and tomorrow requires sustainable solutions. Corporate Social Responsibility (CSR) for the Volvo Group means good corporate citizenship and contributes to sustainable development by taking social, ethical, economic and environmental responsibility for our business where we can. This creates long-term value for customers, society and shareholders. It is the basis for our economic sustainability and success.

Key ratios	2008	2009
Net sales Volvo Group, SEK M	304,642	218,361
Operating income Volvo Group, SEK M	15,851	(17,013)
Operating income Industrial operations, SEK M	14,454	(16,333)
Operating income Customer Finance, SEK M	1,397	(680)
Operating margin Volvo Group, %	5.2	(7.8)
Income after financial items, SEK M	14,010	(20,573)
Income for the period, SEK M	10,016	(14,685)
Diluted earnings per share, SEK	4.90	(7.26)
Dividend per share, SEK	2.00	0 <sup>1</sup>
Return on shareholders' equity, %	12.1	(19.7)

<sup>1</sup> According to the Board's proposal.

## Creating long-term value

Even in difficult times, it is important to maintain a long-term view of business operations and what will generate profitability in the future. Accordingly, the Volvo Group continues to invest in product development programs for the future. As one of the world's largest manufacturers of commercial vehicles, we have a responsibility to reduce the environmental impact from our production and from the use of our products – a responsibility that we take very seriously. Engines that consume less fuel reduce our customers' costs and enhance their competitiveness, while simultaneously curtailing the environmental impact. We need profitable growth to be able to invest in research and development, fulfill our responsibility as an employer and supplier and to fully contribute as an actor in society.

### Profitable growth increases society involvement

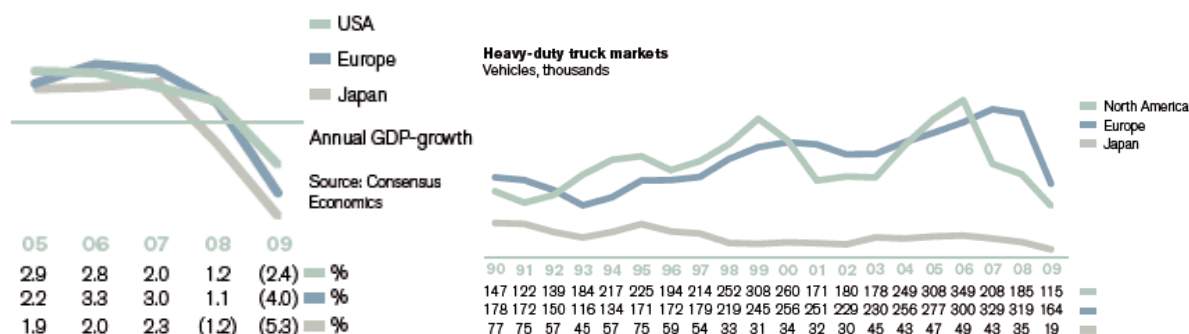
Our goal is to grow by 10% a year for an entire business cycle while focusing on profitability. During 2004-2008 the Volvo Group's annual growth averaged 10.6%. In 2009, however, the trend changed and sales decreased by 28%.

Profitable growth is a necessary condition for competitiveness and to assure investments in research and development of new products and services.

Through profitable growth, we also contribute more to the societies we are involved in by paying taxes and social charges. Studies on an EU level shows that the multiplier effect of one direct employee in the automotive sector ensures at least five more at suppliers and in related sectors and retail. The industry is also the largest private investor in research and development in the EU and thereby a driver of innovation and economic growth. Profitable growth also facilitates social initiative efforts beyond ordinary business operations.

Furthermore, demand for transport capacity and therefore for trucks is closely linked to development in GDP. The recent GDP drop has been significant in large parts of the world, especially in Europe and North America, which are important markets for us (constituting 63 % of our Group net sales 2009). This resulted in a significant reduction in the need for transportation and consequently for demand for new trucks. In 2009 our net sales dropped by 28% as a result of the dramatic decline in demand for our products.

### Economic growth in the U.S., Europe and Japan



## Creating sustainable value

An increasing number of investors are assessing companies not only for their financial performance and outlook but also from a sustainability perspective. Thanks to PRI (Principles for Responsible Investments) and other initiatives more and more investors include long-term perspective and sustainable performance in their investment criteria. The Volvo Group welcomes this development.

In the beginning of 2010 the Volvo Group was amongst the highest ranked on the Sustainable Value Creation Initiative (Hållbart Värdeskapande), a survey of responsible business practices conducted by Sweden's largest institutional investors. The survey studied the 100 largest corporations on the Stockholm Stock Exchange (OMX), covering four main categories: guidelines and commitments, implementation and compliance, communication and reporting, and the board's responsibility. The Volvo Group was the only corporation top-ranked in all four categories.

For the first time in eight years the Volvo Group is not on the Dow Jones Sustainability Index World (DJSI). The index consists of the 10% of most sustainable companies in the world, making competition tough. Volvo Group did not succeed in explaining the return on our philanthropy commitments, bringing down our score even though our total score in the assessment was higher compared to the previous year. We have taken action to improve our result for the next assessment, with the aim of getting back onto the index.

## **Risk management**

The Volvo Group manages risks centrally within the strategy process with the risk procedure reviewed by external auditors. Risk assessment is conducted on the corporate level and for each company in the group. Risks are analyzed and ranked based on occurrence and potential consequences. They are reported to the Board of Directors and serve as input for the business plan process.

There are several kinds of risks related to workplace safety, financial performance and business management status, etc. Risks can be regulatory, physical or related to other aspects such as trends and public opinion. To successfully manage risks, strategic long-term planning combined with internal and external communication is important.

### **Compliance with regulation**

A prerequisite for our presence on a global market is that our products meet the more and more stringent international and national environmental legislation. Today, we are working on meeting the future Euro VI standard to be introduced in 2013 in Europe. We continuously monitor the legislation development with focus on CO<sub>2</sub> requirements in China, US, EU and Japan.

### **Tackling climate change**

The greatest risks and also an opportunity for the Volvo Group at present concern the role of carbon dioxide emissions in climate change and the approach of peak oil, leading to rising fuel prices. More than 98% of energy use in the transport sector is from fossil fuels (97% from crude oil) and the pending shortage is creating a demand for alternative fuel solutions. Developing alternatives which are fuel-efficient and can be operated on renewable fuels is therefore a priority for the Volvo Group. A related risk is our need for expertise and competent engineers to continue, and enhance, development of sustainable products. We meet this challenge by offering our employees attractive conditions and opportunities for development.

One important way of spreading risk and reducing vulnerability is to continue developing our soft products — i.e. products and services that enhance the customer's experience and satisfaction, other than the sale of new vehicles, equipment and engines. This includes spare parts, accessories, tools and services such as leasing and insurance.

## **Risk assessment and responsibility**

### **General risks**

The Corporate Audit consists of approximately 35 internal auditors globally. Internal auditors perform audits and special assignments requested by management in accordance with the annual audit plan

and issue periodic reports to the Audit Committee and management, summarizing the results. The audits aim at improving the effectiveness of risk management, control, and governance processes. They also cover an organization's compliance with policies and procedures, use of resources, etc.

### Safety risks

The Volvo Group has a process for handling issues related to workplace safety such as fire protection, emergency evacuation, etc. The Volvo Blue Risk assessment is a key tool used in site inspections. This assessment is reviewed and supported by the Corporate Security function.

Managers at all levels share the responsibility of guaranteeing the high level of safety that our employees, suppliers and visitors expect. Volvo Group managers are responsible for keeping all workplaces free of potential risks and for seeing that corrective actions are promptly carried out if a risk is identified.

### Environmental risks

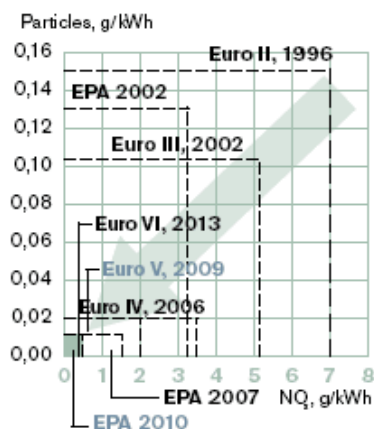
Risks related to environmental issues are discussed within the strategy process. Upcoming regulations on environmental issues related to our production sites are handled in the Environmental Council. All sites have been audited by the Environmental Manager for Volvo Group in order to identify risks. Furthermore all production sites within the Volvo Group have an environmental manager responsible for working preventively and actively to limit the consequences of an accident if it occurs. 96% of employees work in certified systems in accordance with ISO 14001. This means that risks are handled systematically and preventively.

Within the Volvo Group we handle upcoming emission legislation related to our products in the Regulatory Management Committee.

### Financial and business risks

More about the Volvo Group's risks and uncertainties from a business perspective are found in the Annual Report 2009.

### Emissions regulations for trucks and buses





## Investments for the future

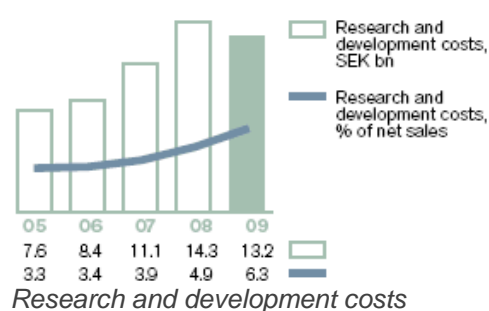
### Investments in research and development

To remain competitive and offer environmentally enhanced and more sustainable products, it is crucial to have the right competences and invest in research and development. Therefore, despite the economic downturn, our investments in R&D have remained constant. In 2009, the investments amounted to SEK 13 193 M. Most of the investments in R&D are related to engine emission reduction and lower fuel consumption.

During 2009 investments in property, plant and equipment amounted to SEK 7.7 billion.

In 2009, governmental grants amounting to SEK 810 M were received and SEK 567 M has been accounted for in the income statement. Research and development credits are included with SEK 305 M. The grants were mainly from the European Commission, the Swedish government and US Department of Energy. In 2007, Volvo Buses received a grant of SEK 116 M from the Swedish Energy Agency for the development of hybrid technology. Of the SEK 116 M, 25 M were reported in 2009.

During 2009, the services and aftermarket products business represented approximately 40% of the Group's total sales.



### Fuel efficiency

Transport is a key component in modern society and a precondition for welfare and growth but it also contributes to climate change. In providing transport solutions, we realize that we are a part of the problem as well as part of the solution. It is therefore important that we identify our related business opportunities.

The Volvo Group's customers use our products and services in their businesses. Fuel accounts for approximately one third of the cost for a typical customer in Europe and every measure that can reduce their fuel costs will result in improved profitability while reducing environmental impact. Creating fuel-efficient solutions thus creates value for our customers with less environmental impact. For many years we have been focusing on fuel-efficiency in our products. Now and in the future we will see the benefits. Since 1975 fuel consumption in a Volvo Truck has dropped by 40%. The Volvo Group plays a leading role in this general development.

We have also launched products with alternative drivelines and vehicles that can be operated on renewable fuels. We believe we are well prepared to meet the demand from our customers for environmentally enhanced products.

## **Investing in our employees**

Investing in our employees is an important part of staying competitive, sustainable and profitable. Recent years have been demanding for our employees due to layoffs; we have therefore given priority to supporting them through this period.

At the same time we have retained the long-term focus on creating an attractive workplace.

Our strategic focus areas include skills, leadership and culture. This comprises both our physical and mental working environments. Our ambition is to offer unique opportunities and a company culture that helps us attract and retain the best people, whoever they are and wherever we do business. In 2009, a new version of The Volvo Way was developed, involving many employees from blue collar workers to top management in the process.

## **Focus on internal efficiency**

Our strategy ahead focuses less on acquisitions and mainly on organic growth, since we have attained critical volume in most markets and in most product segments. We will devote development resources to the design of cost-effective products based on shared architecture and technology. A particular aim will be significantly improved internal efficiency and productivity in all parts of the Group in order to improve profitability.

Furthermore a resource-efficiency approach is well integrated in our culture and is an important priority ahead. For many years we have been measuring and following up resource-efficiency in the production system. So when the prices of raw material and other resources have risen, both our financial situation and the environment have benefited. We will continue to strategically develop this work.

## Committed to responsible behavior

Around the world, the Volvo Group enjoys a invaluable reputation for corporate trustworthiness because we consistently do business with integrity and in compliance with laws and regulations. Sound corporate governance in terms of transparency, reliability and ethical values is a fundamental base for trusting relationships and economic profitability. This strengthens our brand both internally and externally. Sound business ethics have always been a guiding principle for the Volvo Group.

As part of a global company, the Volvo Group's employees engage with business partners all over the world. Expectations on our employees come from different stakeholders but also from the company culture, values and the Code of Conduct.

### The Volvo Group Code of Conduct

In developing and sustaining relations with business partners, all employees must keep in mind what is expected of them as our representatives. The Volvo Group Code of Conduct provides guidelines for what we see as appropriate business behavior.

#### Background

In 1982 we launched our first organizational code with ethical principles. In 2001, the Volvo Group became one of the first companies to sign the United Nations' Global Compact, which aims to align business practices with internationally accepted principles of human rights, labor practice, the environment and anti-corruption. The Volvo Group is committed to responsible business practices outlined in the Group policy Code of Conduct. The Code was adopted in 2003, based on the principles of the Global Compact. It is applicable to all employees and the Board of Directors. The Code of Conduct establishes the principles the Volvo Group applies in relation to employees, business partners and other stakeholders.

#### Content

The Code includes responsible business practice, environmental care and human rights, and workplace practices. The policy encourages the Volvo Group's business partners to adopt the principles — e.g. support human rights, observe political neutrality, report on environmental performance, and provide a safe and healthy work environment for all employees in the Volvo Group's sphere of influence.

#### Implementation and follow-up

Managers are responsible for communicating and demonstrating the content and spirit of the Code of Conduct within their organizations. A whistleblower function facilitates reporting of behavior that deviates from our Code of Conduct.

Failure to comply with the Codes provisions can result in disciplinary actions that can differ from a warning to demotion, dismissal and/or a police report. Our ambition is to investigate all incidents as quickly as possible with full respect for the involved parties.

### Political involvement

"The Volvo Group observes neutrality with regard to political parties and candidates. Neither the names nor the assets of Volvo Group companies shall be used to promote the interest of political parties or candidates." This is stated in our Code of Conduct and applies to all employees within the Volvo Group as well as the Board of Directors. This means that we do not give financial nor in-kind contributions to political parties or related institutions.

The Volvo Group Public Affairs Department works to establish access to politicians, authorities and institutions through building and maintaining relations and creating trust, in order to provide the Volvo

Group with early indications and input regarding legislation, development and trends within society, as a basis for strategic decisions. We have corporate-level public affairs offices in Sweden, Belgium and the United States.

## How we do business

### Conflicts between countries

The Volvo Group believes that international conflicts are issues for elected politicians and diplomats. We comply with laws and regulations pertaining to for example trade measures.

### Conflict of interest

Our Code of Conduct describes how to avoid conflict between private interest and the company's. Employees and members of the Board of Directors of the Volvo Group shall conduct their private and other external activities and financial interests in a manner that does not conflict or appear to conflict with the interests of the Group.

### Defense materiel products

The Volvo Group sells defense materiel as defined in Swedish legislation governing military products and related regulations. The Volvo Group complies with governing legislation and with regard to the sale of defense materiel we apply for permits to the particular public authority in each country in which business is conducted. We do not sell defense materiel to countries on the United Nations' embargo list. In 2009 the Volvo Group sold defense materiel, as defined in the Swedish Military Equipment Ordinance (1992:1303) section A, amounting to 0.7% of net sales.

### Joint ventures

Investment decisions, such as entering a joint venture, are guided by financial policies that include our Code of Conduct. Issues of environmental and social responsibility are taken into account before investment agreements are made. On Dec 31, 2009, Volvo Group held shares in the following joint ventures:

	Holding percentage
Shanghai Sunwin Bus Corp, China	50%
Xian Silver Bus Corp, China	50%
Dong Feng Nissan Diesel Motor Co, Ltd, China	50%
VE Commercial Vehicles, Ltd, India	50%

## Remuneration policy

The Annual General Meeting of 2009 decided on principles for remuneration and other employment terms for the members of Volvo's Group Executive Committee ("Remuneration Policy"). The accepted principles can be summarized as follows: The guiding principle is that remuneration and other employment terms for company management shall be competitive to ensure that the Volvo Group can attract and retain skilled persons in the Group Executive Committee. The fixed salary shall be competitive and shall reflect the individual's area of responsibility and performance.

Members of the Group Executive Committee and a number of senior executives receive variable salaries in addition to fixed salaries. Variable salaries are in most cases based on the fulfillment of certain improvement targets or financial targets.

## Anti-corruption

In 2009 an updated Volvo Group Anti-Corruption Compliance Policy was adopted by the Audit Committee. Steering documents have also been developed that together with the policy make up the Anti-Corruption Compliance Program.

### **Building our credibility**

Work against corruption is in line with our identity at the Volvo Group. We do not accept corruption in any part of our business. This may sound simple. However, being a global company operating in more than a hundred different countries with many cultures and norms, it is a demanding challenge. In a short-term perspective, following our principles could affect some business opportunities. But in the long term, sound business practices are economically profitable. Not only do we strengthen our brand internally and externally, we also contribute to fair market competition, letting the best products and brands prosper. This benefits us.

### **Steering documents**

Within our Code of Conduct the following principles guide our work in anti-corruption:

- Regarding legal compliance: "In every country in which we operate, the Volvo Group shall abide by the law and regulations of that country. In situations where the law does not give guidance, the Group applies its own standard based on its corporate values and standards. In cases of conflict between mandatory law and principles contained in this code, the law shall prevail."
- Regarding relationships with business partners: "The Volvo Group shall not offer customers, potential customers, governments, agencies of governments, or any representatives of such entities, any rewards or benefits in violations of either applicable law or reasonable and generally accepted business practice."

The Code of Conduct applies to all employees within the Volvo Group as well as to members of boards of directors of Volvo Group companies. In keeping with the above, the Volvo Group shall not participate in corrupt practices. The company shall also take reasonable steps to prevent its business partners from taking part in such practices.



## **The Anti-Corruption Compliance Program**

The Anti-Corruption Compliance Program consists of a number of actions aimed at preventing the Volvo Group or any of its business partners from taking part in corrupt activities. The program fundamentally consists of three parts: preventing corruption, detecting corruption and responding to corruption. The Volvo Group Anti-Corruption Compliance Program is a unique investment in sound and ethical business, putting the Volvo Group in the forefront.

### **Definition of corruption**

Corruption is defined as to directly or indirectly offer, promise, accept or solicit anything of value or an advantage as an inducement for an action which is illegal or a breach of trust in the conduct of the Volvo Group's business.



### **Preventing Corruption**

The Audit Committee, a part of the Board of Directors, has issued the Anti-Corruption Compliance Policy and exercises oversight. The General Council of the Volvo Group has the overall responsibility for other policies related to anti-corruption. In 2009 a new position was created in the Volvo Group, the Chief Compliance Officer, responsible for overseeing the implementation of the program, leading and participating in training and audits and leading investigations into alleged non-compliance. In addition, within the legal network of the Volvo Group, persons with responsibility for anti-corruption issues in each Business Area have been appointed. The Chief Compliance Officer reports three times a year on current incidents and investigations to the Audit Committee. In addition, yearly reports are provided to the Audit Committee on the activities in the Anti-Corruption Program. Regular reporting is also made to the group management.

### **Creating awareness**

In some parts of the world corruption may be seen as an accepted part of doing business. It is therefore a challenging task to conduct business in the same way in all our markets. We believe, however, that this is possible and we also believe that it is possible to change the markets we do business in. Our overall aim is to contribute to reducing corruption in the world. Therefore we need to communicate our views on how to run a business in a correct and fair way.

It is essential that our employees in all parts of the world understand the purpose of the policies and how to interpret them in everyday business. All white collar employees will participate in e-learning on the Code of Conduct and Anti-Corruption every three years. There will be on-site training for selected

groups every year. It is crucial to communicate both the advantages of doing business in the right way - and the potential consequences of non-compliance. Personal meetings and discussions are important for creating awareness. In the coming years thousands of employees will receive on-site training from the Chief Compliance Officer or other members of the compliance network.

### **Detecting and responding**

In 2003 the first whistleblower procedure was adopted by the Audit Committee and reviewed in 2005. The procedure states that all employees within the Volvo Group are expected and encouraged to report suspected violations of law and internal policies to their direct superior and the accounting department in their respective companies. If the procedure is inconsistent with applicable laws or regulations of the country in which their respective company is located, they should act in the manner dictated by that company.

In the event a report is not taken seriously, or if an employee does not feel comfortable reporting the matter to his or her superior, the employee should take the matter to senior management.

Any employee may submit an anonymous complaint regarding questionable accounting or auditing matters to the chairman of the Audit Committee. In accordance with our Code of Conduct, retaliation against a person for making good-faith complaints of improper behavior will not be tolerated.

### **Investigating and responding**

Internal audits, whistleblowers or management reports can draw attention to potential irregularities in the way we do business.

Suspicion of irregularities always leads to investigation. The consequences or sanctions for the individual relate to the gravity of the action. It can differ from a warning to demotion, dismissal and/or a police report. Our ambition is to investigate all incidents as quickly as possible with full respect for the involved parties.



## ENVIRONMENTAL CARE

### Significant events in 2009

- Introduction of a new generation diesel engines, the Volvo Group's most fuel-efficient, and with the lowest emissions of nitrogen oxides and particulate matter ever launched in Europe.
- Field tests with hybrid buses in Gothenburg and Stockholm, Sweden and London, England. First hybrid bus delivered to customer.
- Volvo Trucks and Mack Trucks engines were the first in the world to be certified by US'10 emission standard.
- BioDME joint venture project to demonstrate the full technology chain for production and distribution of DME from biomass.

### Towards sustainable mobility

Efficient transport is crucial for society and its economy. At the same time, transportation has a negative impact, through emissions that contribute to climate change.

The Volvo Group takes the lead in the development of sustainable mobility, focusing on energy-efficient transport solutions and renewable fuels. Climate-neutral transport is not just a utopian dream.

### Strategic challenge

The Volvo Group's focused environmental agenda continuously identifies the most important environmental issues, concentrating on the projects that provide the most business value.

Group-wide environmental objectives are part of the annual strategic challenge from the CEO of the Volvo Group to the companies. These objectives and the necessary actions are then implemented in the business plans.

The areas in the focused environmental agenda for 2007-2010 are:

- Energy efficiency - high fuel efficiency in products and production
- Climate change - high fuel efficiency in products and low emissions for all transport work, making Volvo Group sites CO<sub>2</sub> neutral
- Alternative fuels - solutions for alternatively fuelled power trains and products
- Communication - communication to the market and society of environmental features

### A holistic approach for environmental performance

The Volvo Group Environmental Policy is the foundation for our environmental work and includes four strategies:

- Holistic approach – the environmental impact of products shall be seen from a lifecycle perspective – from concept to disassembly.
- Continual improvement – environmental programs must be integrated and monitored in all operations.
- Technological development – environmental requirements are to be met through active research and development.
- Efficient resource utilization – the entire lifecycle of products and processes must be taken into account to ensure optimum resource utilization.

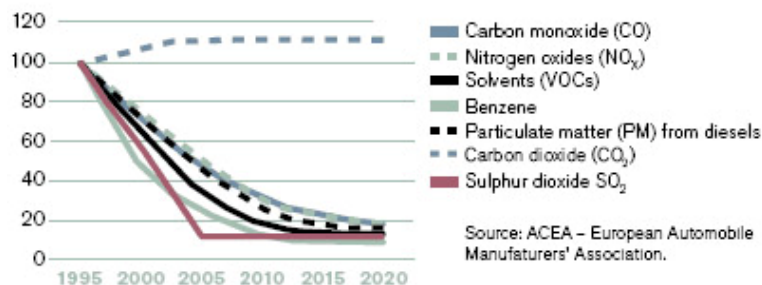
Environmental care is one of the Volvo Group's corporate values. In 1972 Volvo participated in the United Nations conference on Human Environment in Stockholm, Sweden. Volvo's preparatory work resulted in a document on Environmental politics called "Mobility and the Environment". This was the start of Volvo's environmental work. Since then we have communicated and trained employees and management in environmental issues. Today, environmental issues are an integrated part of our business strategy as well as daily work. Over 80% of our employees believe that we work in accordance with our corporate value: Environmental Care.

## Tackling climate challenge

Climate change is one of the most complex and challenging issues of our time. Transport is a key component for society and a precondition for welfare and growth — but also a major contributor to climate change. As a leading provider of transport solutions, we are part of the problem and part of the solution.

### Greenhouse gases must decrease

On European Union level, the target for reducing emissions of greenhouse gases is 20% by 2020. To reach this goal, EU has also given the transport sector specific objectives. Transport is responsible for approximately 13 % of the total greenhouse gas emissions caused by humans. However in the EU, transport is responsible for approximately 20% and in the US transport sources account for 29%. Goods transports on roads account for about 4% globally.



Within the EU all road transport emissions except for CO<sub>2</sub> are expected to decrease in the future. This is the result of stringent emission regulations.

*Image: Road transport emissions in the EU*

In the long-term, emissions need to decrease dramatically. According to the United Nations' Climate Panel (IPCC), greenhouse gases must decline by 50-80% between 2000 and 2050.

The Volvo Group strives to minimize climate impact from our activities by focusing on:

- Reduction of energy consumption and departure from fossil fuels in production processes
- Developing alternative drivelines and working with renewable fuels
- Decreasing CO<sub>2</sub> emissions from our internal transports.

## The Volvo Group at COP15

The purpose of the UN climate conference in Copenhagen between December 7-18, 2009, was for nations to agree on a new international treaty to reduce climate change. 15 000 delegates from 192 countries participated. No legally binding agreement was achieved however a number of large economies, including the US and China, entered into a voluntary agreement to reduce or cap growth in CO<sub>2</sub> emissions.

### Impact on the Volvo Group from the Copenhagen deal

Volvo Group is convinced that climate change will continue to be a top priority issue on the political agenda. The transport sector will be affected by efforts to reduce global GHG emissions. We can see results of this already, in e.g., upcoming CO<sub>2</sub> legislation on many of our important markets like the US, China, Japan and EU.

For the Volvo Group, there's no immediate effect from the delay which will be a result from insufficiently tangible results in Copenhagen. We will continue to reduce our impact on the climate. We will still focus on the fuel efficiency of our products and we'll continue to develop vehicles which operate on renewable fuels. The environmental challenge for our own operations will remain as ambitious as ever when it comes to energy-efficiency improvement and actions aimed at CO<sub>2</sub> neutral production.

New funding for actions in developing countries might be an opportunity for the Volvo Group. We can contribute to new projects with transport solutions and low carbon technology.

The Volvo Group sent representatives to COP15 to monitor the negotiations and participate in side events at the conference. Two products from Volvo Group companies were also presented in Copenhagen:

**Commute Greener™**

Commute Greener™ is a mobile-based application developed by Volvo IT with an external partner to transform cell phones into a personal carbon dioxide calculator. The application provides a way to measure the carbon dioxide emissions generated during a daily commute. The aim is to raise awareness and provide a tool to reduce individual climate footprint.

**Smart windows from ChromoGenics**

ChromoGenics, the Swedish developer and manufacturer of smart sun-blocking windows for vehicles and buildings, demonstrated its technology during COP 15. Efficient sun-blocking reduces fuel consumption since less air condition is needed. Volvo Technology Transfer is one of the investors in ChromoGenics.

A local operator in Copenhagen drove Volvo hybrid demonstrator buses in commercial traffic during COP 15.

## Sustainable product development

The Volvo Group's product development is inspired by changes in society, legislation and customers' needs as well as new technology. We want to reduce the environmental impact of our products and are developing better business solutions for our customers to contribute to a sustainable society.

The environmental aspect is of great significance in all product development. Alternative drivelines and lower fuel consumption provide double benefit – less impact on the environment and lower costs for customers. The Volvo Group is a driving force in the areas of environment and energy efficiency. The undertaking involves a gradual transition from fossil fuels such as oil and natural gas to fuels from renewable sources and from conventional drivelines to hybrids.

We have three parallel approaches for product development:

1. Attain high fuel efficiency and low emissions throughout the life cycle.
2. Develop alternatives that complement the diesel engine, such as hybrid drivelines that offer potential energy storage.
3. Identify and develop engine and vehicle technology for renewable fuels.

### Environmental consideration in every step

Our product development cycle has six stages. Each stage has different environmental, quality and safety objectives that need to be met to proceed to the next stage. Consideration for the environment is present from the first drawings to end product.

Work is organized in multifunctional teams, taking advantage of different experiences and skills from the global organization.



Image: GDP overview

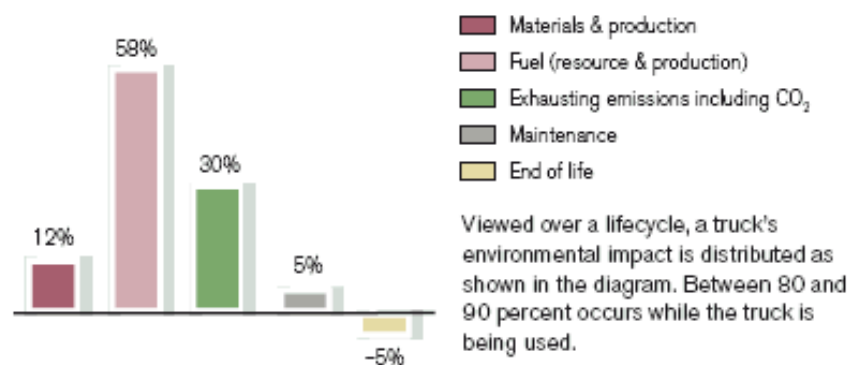
### Specified knowledge through LCA

The Volvo Group's objective is to comply with legislation and always enhance new technology in product development. Each new product should have less environmental impact than the one it replaces. We discover a product's environmental impact through Life Cycle Analysis (LCA). Results indicate that 80–90% of environmental impact comes from the use of the products. Therefore, we focus mainly on reducing the environmental impact of the products in use.

Results from the LCAs are adapted into Environmental Product Declarations (EPD) intended for customers. EPDs are available for several products. The declarations have three sections:

“Production” provides information about energy consumption, emissions and waste during production of our products. “Use” presents fuel consumption, emissions and spare parts utilization during the use phase of our products. The third section “End of Life” deals with scrapping and recycling of our products.

### Environmental impact assessment of truck in long-haul operation



### Leading research and development

Research and development (R&D) at the Volvo Group relies on the combined expertise of different companies within our organization. Substantial economies of scale are created by coordinating R&D initiatives as well as general processes and tools.

About 50% of the Volvo Group's R&D is conducted in Sweden, with the remainder distributed between locations in Europe, the US, Asia and South America.

The Volvo Group is involved in a comprehensive series of cooperative ventures with authorities, research bodies and academic institutions to advance the technologies needed for future product development.

### New strategic sourcing program

In 2009, the Volvo Group's purchasing organization for components to our trucks launched a strategic sourcing program. By addressing EUR 4,000 billion in spend across multiple categories we will select competitive and innovative suppliers to take part in developing future platforms and securing continued growth. Deeper relationships with a smaller number of key suppliers will benefit Volvo 3P and its suppliers.

### Low emissions

Different authorities are imposing increasingly stringent requirements on emissions of nitrogen oxides (NO<sub>x</sub>) and particulate matter (PM) from road transport. The latest emission regulation in the EU is Euro V, introduced in October 2009. In the US, the latest regulation, US'10, became effective in 2010. The Volvo Group's products sold on these markets comply with or exceed current product regulations.

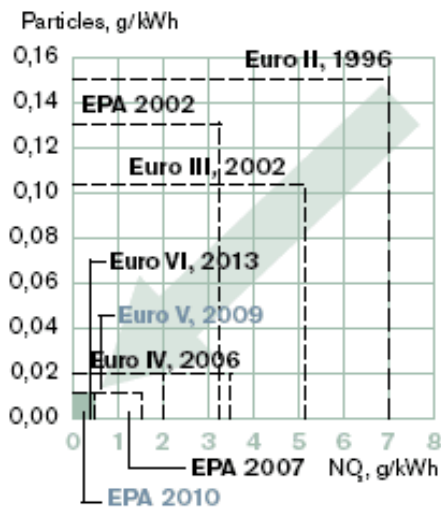
We support global harmonization of emission regulations and, when competitively neutral, any joint international initiative and or regulation. The Volvo Group is working on meeting the future Euro VI standard to be introduced in 2013. We continuously monitor legislation development with focus on CO<sub>2</sub> requirements in China, US, EU and Japan.

The diesel engine is the Volvo Group's focus since it is currently the most efficient energy converter for heavy-duty transports. In 2009, the first vehicles with US'10 certified engines were delivered to

customers. The vehicles that meet the demanding requirements of US'10 are equipped with both EGR (Exhaust Gas Recirculation) and SCR (Selective Catalytic Reduction). EGR lowers the amount of oxygen in the combustion chamber, reducing combustion peak temperature and in doing so lowers the formation of nitrogen oxides (NOx). With SCR technology, diesel exhaust fluid, a water solution of urea, is injected into the exhaust stream to convert nitrogen oxide (NOx) into harmless nitrogen and water vapor.

### Volvo Trucks first in the world to meet US'10

In November 2009 it was announced that Volvo Trucks and Mack Trucks were the first manufacturers to have their engines certified by the U. S. Environmental Protection Agency and the California Air Resources Board as meeting 2010 diesel emissions standards, the most stringent in the world. On November 17, Talon Logistics, Inc., USA, took delivery of its first EPA 2010-certified trucks from Volvo Trucks in North America.



Emission Regulation	Reduction in PM	Reduction in NO <sub>x</sub>
Euro IV -reference Euro III	80 %	30 %
Euro V -reference Euro III	80 %	60 %
US'07 - reference US'02	40 %	80 %
US'10 - reference US'02	80 %	90 %

Emissions regulations for trucks and buses

Reduction in PM and NO<sub>x</sub>

### High fuel efficiency

Comparing a fully loaded truck with a fully loaded environmental passenger car, the truck has approximately 10 times lower carbon dioxide emissions per ton km. The fuel consumption for a Volvo Truck FH, the most sold truck, is approximately 3 liter per 10 kilometers. This fuel consumption corresponds to a carbon dioxide emission of approximately 30 g per ton kilometer.

### Fuel savings – taking the whole picture into account

Looking at the possibilities of further improving the driveline, design, weight and tiers, the estimated fuel saving potential for a standard truck is 15% in 2020 compared with fuel consumption in 2005. The other possible fuel saving possibilities can be seen as additional. Using a hybrid driveline can further improve fuel saving by up to 30%.





### Achievements so far - and potential

Since 1975 fuel consumption for a Volvo truck has been reduced by 40%, while regulated emissions of nitrogen oxides and particulate matter have fallen by some 90%. NOx and PM will be reduced by 97% from the early 1990s for the coming Euro VI, thereby reaching sustainable levels. The new hybrid driveline in our vehicles can further improve fuel savings by up to 30%.

### Fuel efficient offer from Renault

In May 2009, Renault Trucks introduced a comprehensive package aiming at improving fuel efficiency with Renault Premium Optifuel: a state-of-the-art driveline combined with aerodynamics and accessories, vehicle management software and ecodrive training. The fuel reduction is at least 6% compared to a standard truck.

## Recycling of vehicles

The Volvo Group's products are largely recyclable, since by weight they consist of almost 85% metal — mostly iron, steel and aluminum. The additional materials are mainly plastic, rubber and material from electronics components. The total weight of a truck, such as a Volvo FH tractor, is approximately 7 000 kg of which approximately 35% are made of recycled material. To support the optimal way to recover materials, handbooks are available for most products to show how to disassemble the vehicle. There are disassembly stations where trucks and buses can be disassembled to be recycled while harvesting reusable product parts. The vehicle is assessed to decide what parts will be recycled, reused or scrapped. Remaining substances such as oil, diesel and coolant are emptied from the vehicle and the vehicle is disassembled.

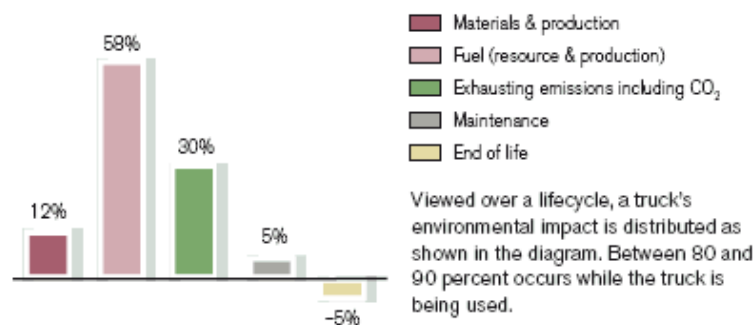


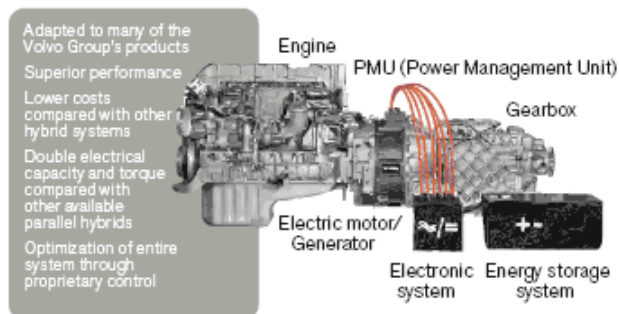
Image: environmental impact assessment of a truck in long-haul operation

## Remanufacturing

To save resources and costs for our customers, remanufactured spare parts are offered as an alternative to new ones. Before a part is remanufactured, it undergoes a stringent quality control process to ensure that our remanufactured parts meet the strictest tolerances.

## Progress in hybrid technology

It saves fuel. It reduces emissions. And it can be used together with alternative fuels. Hybrid technology is one of the most promising and competitive technologies for commercial vehicles. It fits best in urban operations since the most suitable vehicles for hybrid drivelines are those operating in continuous stop-go conditions, such as buses and refuse or distribution trucks.



## Our unique hybrid solution

Hybrid technology, with its large potential for saving fuel, means lower costs and increased profitability for customers while providing substantial environmental benefits. Tests have shown fuel savings of 15-20% for distribution trucks, up to 30% for city buses and 10% for wheel loaders. If the hydraulic system is also hybridized, fuel savings can be significantly higher in construction machinery.

The Volvo Group is a leading player in hybrid technology for heavy-duty vehicles, with a unique solution that offers considerable fuel savings while reducing CO<sub>2</sub> emissions.

The Volvo Group has been testing various types of hybrid solutions since the 1980s and Volvo unveiled the first commercially viable hybrid solution for heavy vehicles in March 2006. Our solution is based on a concept known as I-SAM (Integrated Starter Alternator Motor). This solution entails an electric motor and a diesel engine working in parallel, whereby each of them can be used where they are most effective. This increases the capacity compared with series hybrids, while reducing fuel consumption and improving driving characteristics – simultaneously. Since it is based on a platform solution, the market prospects for the Volvo Group's hybrid technology are favorable. The solution can be used for many different Volvo Group products and applications, thus reducing production costs and

facilitating volume manufacturing. Today about 20 different hybrid vehicles have been demonstrated based on the Group's hybrid solution, including wheel loaders, buses and refuse collection trucks.

## Broad range of hybrid vehicles

The Volvo Group has been testing various types of hybrid solutions since the 1980s and Volvo unveiled the first commercially viable hybrid solution for heavy vehicles in March 2006. The Volvo Group's solution is based on a concept known as I-SAM – Integrated Starter, Alternator Motor. This solution can be used for many different Volvo Group products and applications, thus reducing production costs and facilitating volume manufacturing. The Volvo Group has demonstrated about 20 different hybrid vehicles, including wheel loaders, buses and refuse collection trucks.

The development of hybrids continued in 2009 with hybrid buses in field tests in Stockholm and Gothenburg, Sweden and London, England. In April, the Volvo 7700 Hybrid city bus had its world premiere.

### World premiere for Volvo's hybrid bus

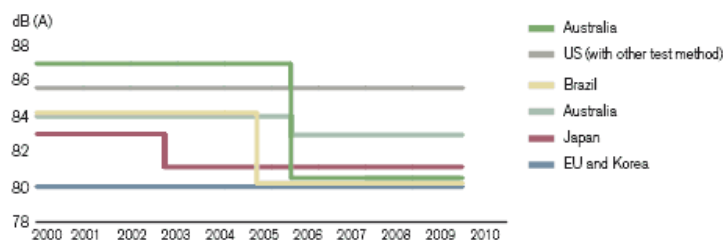
Volvo's new hybrid bus first carried passengers in Gothenburg. The Göteborgs Spårvägar transit company is participating in a field test with a hybrid bus that delivers major fuel savings as a result of electrical drive and engine shut-down at bus stops.

In October, the Volvo Group's hybrid projects took another big step forward, when the first commercially sold hybrid bus was handed over to a customer, Sales-Lentz in Luxemburg. Also on the truck side, development continues with hybrid refuse trucks in field tests in Gothenburg, Lyon and New York.



### Less noise emissions

Noise emissions are a growing problem in urban areas. In electric mode, vehicles equipped with hybrid technology are practically noiseless. There are different regulations around the world for noise emissions for the transport sector. EU and South Korea have the strictest noise level regulations: 80 decibels for heavy-duty vehicles. Other countries are steadily approaching the same level. Volvo Group products meet these regulations.



Noise emission requirements for heavy duty vehicles

## **Environmentally enhanced products**

The presentation below shows a selection of the Volvo Group's environmentally enhanced products. Some are already commercially viable while others are under development. The fuel savings are equal to the decrease in carbon dioxide emissions.

### **Volvo Trucks**

Volvo Trucks will be the first manufacturer with an efficient diesel engine fuelled by a mixture of methane gas and diesel. The engine meets the strict Euro V exhaust emission standards introduced in 2009. Field testing will start in Sweden and the UK in 2010. This new technology could reduce carbon dioxide emissions by up to 80% in the long term compared to traditional diesel operation, if biogas and biodiesel are used, calculated over the whole fuel chain, from production to use on roads.

### **Renault Trucks**

In 2009, Renault Trucks delivered a number of pre-series electric vehicles from the new Maxity Electrique concept, to pilot customers. The start of sales of this vehicle is planned for 2010. Maxity Electric is a light commercial vehicle, run on Li-Ion batteries with an average range of more than 100 kilometers. It produces no CO<sub>2</sub> emissions and no noise pollution in use.

### **UD Trucks**

In June 2009, UD Trucks launched the new Condor light truck, which meets the 2015 requirement for fuel-efficient vehicles set up by the Japanese government to support the sale of environmentally enhanced vehicles.

### **Mack Trucks**

Mack Trucks delivered a diesel-electric hybrid refuse truck to the city of New York in 2009. The engine met the stringent US'10 emission regulations on nitrogen oxides and particulate matters since the diesel engine is equipped with Selective Catalytic Reduction (SCR) exhaust after-treatment technology. The hybrid system, when fully optimized, is expected to improve fuel economy by up to 30%, with a corresponding greenhouse gas emissions benefit.

### **Construction Equipment**

Volvo Construction Equipment continues to reaffirm its position as a leader in fuel efficiency with a range of fuel saving solutions that encompass engines, systems, operator behavior and hybrid technology. Most recently the introduction of OptiShift technology – a driveline system designed to increase operator comfort and durability, as well as optimizing fuel savings by up to 15 %, highlights this commitment.

### **Volvo Buses**

The Volvo 7700 Hybrid is a so-called parallel hybrid, featuring diesel and electric power that can operate independently. The electric motor is used to start and accelerate the bus up to about 20 km/h, while the diesel engine takes over at higher speeds. Results from a field test are very satisfactory; the promised fuel savings of up to 30% have been achieved and in some cases surpassed. At the same time, exhaust emissions have been lowered by as much as 50%.

### **Volvo Penta**

Volvo Penta's IPS (Inboard Performance System) is a propulsion system for high-performance boats. Thanks to forward-facing propellers, fuel consumption can be cut by up to 30% compared with conventional technologies. The new technology also makes the boat quieter, along with providing superior performance and maneuvering characteristics.

### **Volvo Aero**

Volvo Aero's unique technologies – which include lightweight design – are becoming increasingly important in the aerospace industry, since fuel economy and environmental issues are in focus. Lightweight structures have a major impact on fuel consumption and thus also on aircraft emissions. Lightweight structures, simulation and patented manufacturing methods cut development lead times, while simultaneously making engines quieter and reducing weight.

## CO<sub>2</sub> neutral transports within reach

CO<sub>2</sub> neutral vehicles are powered by fuel produced from renewable raw materials such as biomass. Vehicles that operate on renewable fuels do not add extra carbon dioxide to the atmosphere. From the Volvo Group point of view, climate-neutral transport solutions are not a utopian dream.

### **Change from fossil fuels to renewable fuels**

There are convincing reasons to make the changeover from fossil fuels such as oil, coal and natural gas to renewable fuels. Fossil fuels contribute to raising the levels of greenhouse gases in the atmosphere. The growing demand for oil, and its limited supply, will also lead to continually rising prices. More than 98% of all energy used in the transport industry is derived from fossil fuels. This shows the importance of investing in alternatives.

### **We have the technology**

The Volvo Group has pioneered the development of seven different demonstrator vehicles that can be operated without extra emissions to the atmosphere of climate-impacting carbon dioxide. The vehicles have modified diesel engines that can be run on renewable fuels. A major advantage of the diesel engine is that it can be adapted to run on a wide range of renewable fuels. The diesel engine is one of the most efficient energy converters available.

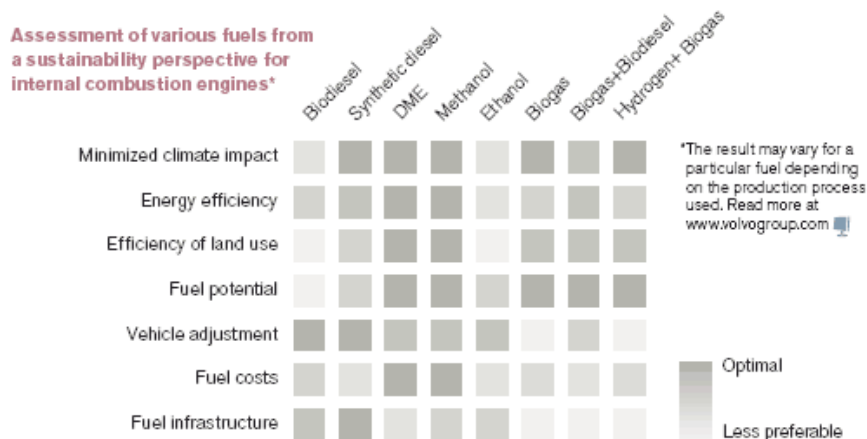
This, together with improvements in energy efficiency and advances in hybrid technology, proves that CO<sub>2</sub> neutral transport is not just a utopian dream - and that the Volvo Group is meeting the challenge.

### **Creating discussions**

In 2008 the vehicles were presented at several locations, including in the U.S. at the Washington International Renewable Energy Conference. The object of showcasing the vehicles in various arenas was to create discussions with different actors in society. The Volvo Group has shown that we have the technology and knowledge to develop vehicles for renewable fuels, but we cannot finish the puzzle by ourselves. Through active cooperation with politicians, government agencies and fuel producers, we can make CO<sub>2</sub> neutral transports a reality in the future.

## **Research on renewable fuels**

The Volvo Group has conducted research on seven renewable fuels assessed from seven aspects and from a well-to-wheel perspective. All seven renewable fuels have the potential to reduce CO<sub>2</sub> emissions from transports. Their advantages and disadvantages are presented in the illustration below. One important factor is that methods used to produce these fuels have to be sustainable, for example production of the raw material/biomass. In the short term, the best solution is to mix currently available renewable fuels with today's fossil fuels. Renewable fuels are one part of the solution moving towards a sustainable society. The Volvo Group believes that no single renewable fuel will replace oil globally; different regional solutions will be used based on regional prerequisites. Since we know that biomass will be a limited resource, it is very important to choose the most energy-efficient alternative from a well-to-wheel perspective.



## BioDME a strong candidate

The Volvo Group sees DME (dimethylether) as one of the strong future alternatives to fossil fuel; it is energy-efficient and has proven good environmental performance.

In cooperation with other actors, we are taking a further step with a project covering the full chain of production of renewable fuel. The BioDME project is a joint venture to demonstrate the full technology chain involved in the production and distribution of DME from biomass to its use as fuel in vehicles. The project includes building a pilot facility, distribution and filling stations, fuel specification and project evaluation. The Volvo Group is project coordinator and will contribute by developing demonstration vehicles for field tests between 2010 and 2012.

The field test is being made possible through a broad-based joint project involving, among others, the EU, the Swedish Energy Agency, fuel companies and the transport industry. The aim is to assess the potential of DME as a vehicle fuel.

DME produced from biomass, known as Bio-DME, has both high energy-efficiency and low greenhouse gas emissions all the way from the source to the wheel. The raw material used is black liquor, an energy-rich, highly viscous by-product of the pulp industry. With Bio-DME instead of diesel, carbon dioxide emissions are cut by 95%.

Volvo Trucks is contributing trucks for tests by selected customers at four locations in different parts of Sweden between 2010 and 2012. The first field-test truck is being currently unveiled in Piteå, where the production of Bio-DME will take place.

### BioDME - future potential

From an EU perspective, Bio-DME has the potential for replacing a significant part of today's diesel oil in heavy road transport by 2030. The biggest challenge lies in creating an infrastructure for distribution.

## This is DME

DME (dimethyl ether) is a clean, colorless gas that is easy to liquefy and transport. It has remarkable potential for use as an automotive fuel, for electric power generation, and in domestic applications such as heating and cooking.

DME can be derived from many sources, including renewable materials (biomass, waste and agricultural products) and fossil fuels (natural gas and coal).

DME has been used for decades as a benign aerosol propellant, and for the production of ultra-pure glass (because DME burns without soot formation), and is now increasingly being exploited for use as a clean burning alternative to LPG (liquefied petroleum gas), diesel and gasoline.

DME is gaseous at normal temperature and pressure, but liquefies when subjected to modest pressure (just 5 bars) or cooling. This easy liquefaction makes DME easy to transport and store. This and other properties, including a high oxygen content, lack of sulfur or other noxious compounds, and ultra clean combustion make DME a versatile and promising solution in the mix of clean renewable and low-carbon fuels under consideration worldwide.

## **Methane and diesel a promising combination**

Volvo Trucks will be the first manufacturer to have an efficient diesel engine fuelled by a mixture of methane gas and diesel. About 50-80% of the diesel can be substituted by methane.

The engine meets the strict Euro V exhaust emission standards introduced in 2009. Field-testing will start in Sweden and the UK in 2010.

Methane gas is an accessible fuel as an alternative to diesel. There are larger reserves of natural gas than oil.

Calculated over the whole fuel chain, from production to use on roads, the new technology could reduce carbon dioxide emissions by up to 80% in the long term compared to traditional diesel operation, if biogas and biodiesel are used.

## **Cooperation and society involvement**

The Volvo Group has shown that we have the technology and knowledge to develop vehicles for renewable fuels but we cannot finish the puzzle by ourselves. For example, a developed and functioning infrastructure for production and distribution of new fuels is needed. Active cooperation with politicians, government agencies and fuel producers is required to make CO<sub>2</sub> neutral transports a reality. The Volvo Group is active in forums discussing transport development and policy, as well as in bilateral projects with authorities and other stakeholders.

*“The necessary technology and products are already available but what is needed is increased collaboration between public authorities, transport customers, operators, infrastructure owners and vehicle producers to make possible cost-effective transport solutions that take due account of efficiency and the environment.”*

Leif Johansson, CEO

## Environmental impact from products in use

Between 80–90% of the total environmental impact from the Volvo Group's products arises when they are in use, mainly through fuel consumption. The Volvo Group actively contributes in different ways to reducing fuel consumption through technological solutions as well as driver training. We also participate actively in discussing and promoting transport development and policy in different forums worldwide.

### Eco Driving

Human behavior is an important factor in sustainable transports. The driver's attitude and behavior regarding speed and driving patterns significantly affect the impact on the environment, fuel consumption and traffic safety.

The Volvo Group actively contributes to raising awareness and knowledge for a safer and environmentally enhanced way of driving.

Eco driving is a way of driving that helps reduce the negative impact on the environment and saves money by reducing a vehicle's fuel consumption. Additional benefits are emissions reductions, less wear and tear on the vehicle and a way for the driver to plan journeys better, reducing the risk of accidents.

A number of Volvo Group companies worldwide offer driver training to improve vehicle knowledge while addressing safety issues and fuel consumption reduction.

#### **Volvo Trucks' customers saved 50 000 ton of carbon dioxide**

Driver training is an increasingly important part of Volvo Trucks' total offer towards our customers, says Mikael Lidhage, Manager Fleet and Driver Development Services at Volvo Trucks. Correctly applied driver training is a powerful tool to reduce fuel consumption and environmental impact. On average drivers can save 5-10% in fuel consumption after participating in a course in fuel-efficient driving. In 2009 we trained about 10 000 drivers; if a conservative estimate is an average fuel saving of 5% and that the driver does 120 000 km per year, this would correspond to a CO<sub>2</sub> reduction of more than 50 000 tonnes annually. Driver training is a service that corresponds well with the Volvo Group's core values: environment and safety. Besides saving fuel our driver training program is also designed to contribute to increased safety and security as well as improved health and well-being for the truck drivers, and meets the requirements for the EU-directive requiring professional truck drivers to undergo 35 hours of periodic training each 5-year period.

### Fuelwatch

The Volvo Group finds solutions that help customers use products in the most efficient way. Fuelwatch is a concept for various fuel-saving products and fuel-management techniques. They include Fuel Management Service, product maintenance, upgrading of engines and transmissions and the Dynafleet system. The information on vehicle and driver performances derived from these products helps customers reduce costs and is vital for developing driver training. Research shows that fuel savings between 5 and 15% are possible and payback time is calculated at less than one year, while reducing fuel consumption, costs and environmental impact.

#### **Volvo Construction Equipment - Care track**

CareTrack is a telematic system, used to manage productivity and work availability in heavy machines. The operation and utilization of the machine can be optimized by monitoring fuel consumption, location, hours, speed and upcoming service intervals by using GPRS (cellular) or satellite technology to send information that is secure and instantly available wherever there is an online connection.



## Environmental performance in production

The Volvo Group has production facilities in 19 countries, covering a wide range of production processes. Regardless of size and location, all production units must comply with our minimum requirements for environmental performance and an improvement program. The requirements include monitoring of energy consumption, waste levels and emissions to air and water, as well as specifying maximum emission levels to air and water.

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At the end of the year 2009, the Volvo Group had 60 majority-owned production plants around the world that are included in the environmental data reporting. A few newly acquired plants (during 2009) are not included. The environmental impact of these facilities and the environmental programmes conducted by them vary depending on the nature of the operation concerned, the size of the plant, local conditions and the length of time the plant in question has belonged to the Volvo Group.

The Volvo Group has since 1995 reported detailed environmental data as a supplement to firstly the Environmental Report and from 2002 also as an extension of the Annual Report, that is included in the information on Internet. The data reporting is based on the global environmental standard for production plants that was introduced in 2000 by Group management. The standard focuses on a number of key areas, such as use of chemicals, energy and water consumption, emissions to air and water, waste and noise, and also specifies minimum requirements for the organisation of environmental activities in accordance with Volvo's environmental policies and strategies.

### **Environmental impact of Volvo Group operations**

#### *Environmental management systems and environmental audits*

The implementation of environmental management systems improves the quality of our environmental programmes and helps to assure the quality of the reported data. Internal monitoring and control are important elements of this activity.

Environmental audits are also carried out under the direction of the Group's environmental auditor as a means of monitoring environmental activities. In addition, the auditor is responsible for the examination of environmental data. This is carried out as part of the normal plant audits and when reporting environmental data prior to the publication of the Group's annual report. During the year 2009, besides more than 60 environmental audits under the certified environmental management systems installed in all Volvo Operations, 5 corporate environmental audits, most related to acquisitions and divestments were carried out.

The audit programme for 2009 will follow the Group's rolling plan for the periodic monitoring of environmental activities. However, priority will be given to auditing of acquired operations and to the operations, which begin to implement environmental management systems during the year. The work of implementing environmental management systems covers the whole value chain, including product development, purchasing, sales and service. By 31 December 2009, all Volvo production plants had been awarded ISO 14001 certification.

The Volvo Group has an ongoing remediation program for old and new acquired properties that deals with any contaminations, for example soil and groundwater, which are, e.g., discovered in acquisition audits or in internal assessments. Contaminations discovered in refurbishment or rebuilding projects are dealt with immediately. Installations that pose the greatest risk for causing soil and groundwater contaminations, such as underground storage tanks and underground piping systems, have been targeted for rebuild in an internal directive focusing such installations.

#### *Consumption and emissions*

This supplement to the Volvo Annual Report for 2009 and to the Volvo Group Sustainability Report for

2009 contains information on annual consumptions and emissions for all of Volvo's majority-owned plants worldwide. The charts show the figures for a six year period, 2004-2009. For reference purposes, the figures are also plotted as a function of the Volvo Group's net sales. Environmental data, which have not been verified by quality assurance, are not included in the report. For this reason individual figures from some plants have been excluded.

Due to the recession 2009 shows a dramatic decrease in production figures. The Volvo Group net sales was 208,5 Billion SEK a decrease from 2008 with 86,4 BSEK or almost 30%. The actual number of products produced are even lower than the net sales since this value also includes the sale of inventory products and soft products. The environmental data figures show similar decrease however not linear to the changes in production volumes since a production system consumption of neither energy and other materials nor emissions and discharges never can have a direct correlation due to the basic load needed to run the system.

#### *Energy related indicators*

Many of the parameters in the data report refer to environmental impact from the use of energy in heating and production processes. The foundries in Skövde, Venissieux and Hagerstown are large energy users, with ca 23% of the total energy consumption. Emissions of carbon dioxide, nitrogen oxides, and sulphur oxides are dependent on the fuels used.

#### *Energy consumption and carbon dioxide emissions*

Efficient energy utilisation means both reducing costs and lowering emissions of atmospheric pollutants, especially of carbon dioxide, but also of other substances (see below). In 2009, the Volvo Group's energy consumption totalled 1,865 GWh, a decrease of 665 GWh compared with 2008. Emissions of carbon dioxide decreased, from approximately 291,000 tonnes to approximately 213,000 tonnes. Relative to net sales, both energy consumption and CO<sub>2</sub> emissions decreased. The energy use decreased from 2,530 GWh to 1,865 GWh, a decrease with 665 GWh a decrease by 26%.

#### *Emissions of sulphur dioxide and nitrogen oxides*

The emissions of sulphur dioxide and nitrogen oxides are continuously reduced by the use of low-sulphur fuels and/or purification equipment. Emissions of sulphur dioxide increased from 64 tonnes in 2008 to approximately 38 tonnes 2009, or by 40%. Nitrogen oxides decreased from 800 to 322 tonnes, or by 60%. Relative to net sales, emissions of nitrogen oxides decreased while sulphur dioxide emission were almost constant. These emissions are very much dependent on the use of energy and the big changes were expected in absolute numbers

#### *Emissions of solvents (VOCs)*

The continuous reduction of emission of solvents from painting and surface treatment processes is a high-priority issue and is subject to statutory control in most countries. In 2009, solvent emissions totalled 1435 tonnes, representing a decrease of 510 tonnes from 2008, or by 26%. Relative to net sales, the emissions of solvents decreased.

#### *Water consumption*

During the year, the total water consumption increased from 8,205,000 m<sup>3</sup> to 6,641,000 m<sup>3</sup> a decrease by 1,564,000 m<sup>3</sup>, or by 19%.

#### *Waste*

Waste is usually classified as hazardous or non-hazardous, although the definitions vary from country to country and changes over time. Even if our total amount of waste decreases over time these changes in definitions have caused an increase in the amount of waste classified as hazardous past years. Last year was a break in this trend and this year there is a big reduction. The quantity of hazardous waste decreased again in 2009 and the total amount is now 17,557 tonnes, which is a decrease by 37%.

#### *Emissions to water*

All of Volvo's majority-owned plants have either installed their own treatment facilities or discharge their effluents to external treatment plants. More and more plants are also installing closed process water systems. This is often done at major change of installations, like at the Umeå plant recently, in the new paint shop project. The new standard specifies maximum permissible values for emissions of various metals, as well as treatment requirements for organic impurities.

### *Chemicals usage*

To restrict the use of chemicals, the Volvo Group has, since 1996, maintained a 'black list' of prohibited chemicals and a 'grey list' of products whose use must be limited. To facilitate the choice of chemicals, Volvo maintains a database (MOTIV), containing detailed information on over 6,000 chemical products. At present there is strong focus in preparing for the European Reach legislation. Volvo is mainly a down stream user of chemicals and relies upon the suppliers of chemicals to report according the new legislation.

### *Noise*

Noise levels from most Volvo plants are either extremely low or non-existent. The target is to ensure that the external noise level measured at the nearest residential property does not exceed 60 dB(A).

Inge Horkeby  
Environmental Auditor, AB Volvo

## **Cutting energy consumption**

Reducing energy consumption per manufactured unit is a priority environmental target. Since 1995 the Volvo Group has worked systematically to improve energy efficiency. Between 2003 and 2008 the target for energy savings in production was 50% per unit produced. Energy efficiency initiatives such as controlled lightning and ventilation, turning off equipment from idle running and replacing old machinery have saved on average 43% per unit produced. We are proud of the results and continue to chase energy savings. The objective for 2009-2012 is an additional reduction of 15%. There will be a specific follow-up of energy losses related to idle running of machinery and equipment in production.

### **Halved energy consumption at Renault Trucks**

Renault Trucks is committed to reducing the environmental impact of its activities. Apart from innovative solutions for reducing CO<sub>2</sub> emissions from the trucks themselves, Renault Trucks cut energy consumption per vehicle produced by almost 50% between 2003 - 2008. This has been achieved by modernizing plants and installing solar or photovoltaic panels on buildings.

### **Passive house in Ghent**

In 2008 Volvo Logistics in Ghent moved into the Volvo Group's first office that can be defined as a passive building. The evaluation of energy consumption shows significant savings. The extra investment costs will be compensated within 10-15 years.

## **Aiming at CO<sub>2</sub> neutral production**

Our long-term ambition is to make our production CO<sub>2</sub> neutral, with no contribution of extra carbon dioxide to the atmosphere.

### **CO<sub>2</sub> neutral dealership facility**

In 2008 Volvo Trucks presented the first CO<sub>2</sub> neutral dealership facility in Verona, Italy. The aim is to have more dealers follow the Verona example.

### **CO<sub>2</sub> neutral production plant**

In 2007, Volvo Trucks unveiled the world's first CO<sub>2</sub>-neutral automotive plant in Ghent, Belgium. Investments in wind power and a biofuel plant provide electricity and heat that emit no additional CO<sub>2</sub> to the atmosphere. Measurements at the Ghent plant show a decrease of 14 000 ton of CO<sub>2</sub> annually.

In Sweden the two plants in Tuve, Gothenburg, and in Umeå are close to becoming CO<sub>2</sub> neutral.

## Responsible use of material and chemicals

In 2009, a new target for efficient use of material was set. The objective is to further improve material efficiency and responsible use of resources, and encourage a more active follow-up of waste related to specific raw materials.

Black and grey lists for chemicals have been fixed to limit and eventually phase out hazardous substances from products and production processes. The black list indicates chemicals never to be used; the grey list indicates chemicals to be used with restriction. An internal task force has been formed to implement the EU legislation REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) within the company's functions. This involves registering and replacing chemicals with better alternatives from the perspective of health and environmental risk. If uncertainty exists concerning a substance's hazardous environmental impact, it should be deemed hazardous and replaced.

As part of Volvo's intensified focus on chemicals, these lists will be supplemented with an extensive new list of substances that are either prohibited or must be declared in newly designed components of Volvo Group products. This new list, known as GADSL (Global Automotive Declarable Substance List), was drawn up by collaboration between global automotive manufacturers and subcontractors.

## Environmental data

### CO<sub>2</sub> neutral dealership facility

#### Environmental performance of Volvo production plants, Industrial operations

Absolute values related to net sales	2005	2006	2007 <sup>1</sup>	2008	2009
Energy consumption (GWh; MWh/SEK M)	2,683; 11.6	2,612; 10.5	2,426; 9.6	2,530; 8.6	1,988; 9.1
CO <sub>2</sub> emissions (1,000 tons; tons/SEK M)	292; 1.3	282; 1.1	242; 1.0	291; 1.0	213; 1.0
Water consumption (1,000 m <sup>3</sup> ; m <sup>3</sup> /SEK M)	7,419; 32.1	7,596; 30.6	7,067; 27.9	8,205; 27.8	6,637; 31.8
NOx emissions (tons; kilos/SEK M)	672; 2.9	606; 2.4	542; 2.1	800; 2.7	322; 1.5
Solvent emissions (tons; kilos/SEK M)	1,960; 8.5	2,048; 8.3	1,979; 7.8	1,945; 6.6	1,435; 6.9
Sulphur dioxide emissions (tons; kilos/SEK M)	209; 0.9	69; 0.3	58; 0.2	64; 0.2	38; 0.2
Hazardous waste (tons; kg/SEK M)	23,590; 102	26,987; 109	27,120; 107	27,675; 94	17,558; 84
Net sales, SEK bn	231.2	248.1	253.2	294.9	208.5

<sup>1</sup> Excluding UD Trucks and Ingersoll Rand Road Development.

Volvo Group Environmental data Report can be found on [www.volvogroup.com](http://www.volvogroup.com)

Volvo Group follows about 40 indicators in order to get the view of the total environmental impact of the operations. The complete indicator data set has been gathered for a very long time, since 1994, giving us valuable consecutive data sets. In order to give clearer figures we have here made the series shorter and give you the last 6 years data for comparison

## Risk management

Environmental risk is one of the factors in the Volvo Group's enterprise risk process. The Volvo Group has insurance to cover costs related to accidents that negatively affect the environment. In 2009 no major accidents occurred and no disputes are in progress.

All production plants must fulfill the Group's requirements concerning use of chemicals, energy use, emissions to air and ground, waste management, organization of environmental work, and work on continuous improvements. All plants have been audited by the Group environment manager.

When assessing possible acquisitions of companies and real estate, audits take into account environmental and social factors in addition to financial and legal aspects. The information provides the basis for action plans, if needed to ensure that the acquired companies can fulfill the Volvo Group's minimum requirements. We have no activities in areas listed as sensitive or protected with regard to biodiversity. The material used in the Volvo Group's products might have an indirect impact on biodiversity when extracting the raw material.

Our business activities generate transports to and from the plants. These transports are continuously monitored to identify potential ways to reduce environmental impact.

#### *In Sweden*

All production plants have the required environmental permits. In Sweden, 17 facilities require permits that cover waste, noise and emissions to land, air and water. No permissions need to be renewed in 2010. An annual inventory is made of polluted land on our properties. In 2009, remedial operations were conducted at 2 plants. A few minor spillages were reported in 2009. There were no major incidents or legal complaints.

## **Water management**

As early as 1992 Volvo initiated water management projects. In our environmental report from 1992 we wrote "Water - not an inexhaustible resource". Further we described the problem with water as over utilize resource and contamination. To tackle the problems, we initiated several of after treatment and recycling projects in Sweden, Belgium and Peru with the aim to reducing consumption and effluent emissions. We measured and follow up on water consumption and emissions to water since 1990 and we still do. During the years we have been conducting several of water projects and we also have minimum requirements on water regarding substances in process water and that process water with organic content must be treated chemically or by equivalent method.

As showed in the environmental data sheet the water consumption compared with the net sale has deceased every year, but due to the extreme situation in 2009 the trend was broken. In 2009 the water consumption was 6,637,318 m<sup>3</sup> for Volvo Group industrial operations.

## **Environmental management system in place**

By the end of 2009, 96% of the total workforce at Volvo Group production plants was working in accordance with the certified environmental management system ISO 14001:2004, the same percentage as in 2008. In 1996 Volvo was one of the first companies in the world to received ISO 14001:1996 certification.

Since 1980, environmental audits have been conducted to ensure that plants observe the environmental policy. As of 1990, environmental data from production sites is collected annually.

## Role model in logistics

Volvo Logistics provides the entire Volvo Group and other customers with logistics solutions. To minimize environmental impact, we focus on smart logistics, reduced emissions, renewable fuels, energy efficiency and knowledge-enhancement.

### CO<sub>2</sub> challenge

Volvo Logistics has been challenged by its customers in the Volvo Group and Volvo Car Corporation to lower carbon dioxide emissions from land-based transports to and from the plants by 20% by 2010 compared with the 2006 level.

Measurements from 2008 show that the CO<sub>2</sub> emissions have been cut by 12% per ton kilometer. The 2009 result will be published in the second quarter of 2010.

## Environmental audits and surveys

Volvo Logistics puts demands on suppliers of road transport solutions with regard to engine emission requirements, fuel-efficient driver training and continuous improvements. The requirements are followed up by random sample audits and an annual Carrier Survey. The data from the 2008\* survey shows that 93% of the engines used in truck fleets in Europe are equipped for Euro III or later emission requirements — an improvement of 3% compared with the previous year.

Some 86% of road suppliers in Europe are certified in accordance with the environmental standard ISO 14001. Globally, the corresponding figure is 89%. From 2009, social and ethical requirements are included in supplier requirements, in accordance with the Group's stipulation.

### Calculating environmental impact

Volvo Logistics plans the logistics for material flows from suppliers to the Volvo Group's plants and the transport of new vehicles from the plants to the dealers. A tool called EnvCalc is used in calculating the environmental impact for new or changed transport routes or for choice of carriers.

The EnvCalc calculation is based on volume of goods, distance and transport mode. The result is presented to the customer as ELU, Environmental Load Units, or separated into amounts of emissions of CO<sub>2</sub>, nitrogen oxides, sulfur oxides and Particle Matters.

We also offer customers a Logistics Emission Report for a specified transport scope, for example all inbound and outbound transports for a specific plant over one year. In 2009, Logistic Emission Reports were delivered to Volvo Construction Equipment's Swedish plant in Hallsberg and Volvo Aero's plant in Trollhättan.

*\*Data for 2009 will be presented Q2, 2010.*

## Volvo Packaging System

The Group uses a system of returnable packaging for transport of goods from suppliers to our plants, as well as for use within the plants. The packaging can be stacked, taking minimal space when freighted and in turn minimizing environmental impact. The system consists of over 100 types of packaging in different materials.

Around the world, Volvo Logistics has terminals for collecting and cleaning packaging materials that are reused until they no longer meet quality standards. All packaging is ultimately scrapped with most parts recycled to become new materials or energy.

In 2009, a global project was started to secure and develop recovery of all scrapped packaging. The project also ensures that assigned recycling contractors fulfill the Volvo Group's environmental demands as well as the legislation in their respective markets.

Environmental impact is a vital aspect in the product development of new packaging. In 2009, Volvo Logistics started development of a new Life Cycle Assessment tool for comparing environmental impact between different packaging materials. This assessment will be a good complement to the current environmental impact analysis procedure.

## **Clean shipping and intermodal transports**

More than 70% of our transports, measured in ton kilometers, are by sea. In 2009, the work with the Clean Shipping Project was intensified. From 2010, all contracted sea carriers are required to report the environmental impact of each of their vessels.

The driving force in the Clean Shipping Project is a network of 23 of the biggest export and import companies in Sweden. The main objective with this project is to catalyze a process towards well-functioning techniques for clean shipping and to place stringent but reasonable health and environmental demands on ship transport.

The group has environmental demands on shipping operators regarding chemicals, water, fuel and waste control, CO<sub>2</sub>, nitrogen oxides, sulfur oxides and particle matter, formulated in a clean shipping index.

### **A mix of transports**

Viking Rail is a set-up based on mega trailers and mega trailer wagons connecting Germany and Gothenburg. It is an excellent example of intermodal transports where two or more modes combine. Intermodal transports are essential in a sustainable transport mix.

Viking Rail was launched in October 2008 by Volvo Logistics. Due to the recession, the concept had to be redesigned in February 2009 to adapt to decreased volumes. The new set-up has been developed in cooperation with other rail freight actors moving freight from Germany to Sweden.

Viking Rail was awarded the Swedish Logistics Award for 2009 in the category Innovation of the Year – Rail Freight. This successful concept has been selected as a case study by BestLog, an initiative of the European Commission to coordinate and spread state-of-the art competence in the field of logistics.

## **Longer trucks**

The Volvo Group is in favor of longer trucks in Europe. In Sweden, the maximum length for truck and trailer is 25.25 meters, in the rest of Europe 18.75 meters. Increasing the length in Europe would mean that two trucks could carry what three trucks currently carry. This would benefit the environment and reduce congestion on European highways.

Volvo Group is running a field test in Sweden with the longest truck in the country, with the objective to reduce CO<sub>2</sub> emissions. A 32 meter long vehicle shuttles between our terminal and the Port of Gothenburg. This means that two 40 ft containers can be transported instead of one, a reduction of 20g CO<sub>2</sub> per ton kilometer.

## **Partnership for CO<sub>2</sub> neutral transportation**

Within the framework of KNEG (Climate Neutral Freight Transportation) a large number of Swedish companies, researchers, organizations and public authorities have joined forces to work towards a shared goal: to reduce the climate impact of goods transport on Swedish roads.

The participating companies have the objective to half the emissions from the typical Swedish long haul transport operation by 2020 compared with 2005.

**Volvo Logistics' commitment to KNEG is to:**

- Demand that all drivers be trained in fuel-efficient driving by 2010
- Be the transport buyer leader in promoting alternative fuels
- Actively work for better infrastructure and longer vehicles, and recommend an increase of the maximum vehicle length in Europe to 25.25m
- Always include sea and rail when considering new transport flows
- Increase the filling rate every year and constantly improve the efficiency of logistic systems
- Cooperate with other buyers of logistic services for increased efficiency and better balance.



## STAKEHOLDER RELATIONS

### Significant events of 2009

- Lay off of 18 000 permanent and temporary employees and consultants since mid 2008, due to the economic down-turn.
- Launch of new version of The Volvo Way, with emphasis on customer focus.
- Agreement between Mack Trucks and the United Auto Workers for establishment of independent trust, providing healthcare for retired employees.

The Volvo Group aims to be a good corporate citizen and an attractive partner for stakeholders. Acting responsibly and building long-term relationships with employees, suppliers, customers and society at large is crucial to our ability to create value.

We strive to provide the best benefits for our stakeholders. We want them to actively assess us and choose to work with us on the basis of the Volvo Group's vision, values and corporate culture.

Key figures	2008	2009
Number of employees at year-end	101,380	90,208
Share of women, %	17	17
Share of women, Board Members, %	10	11
Share of women, Presidents and other senior executives, %	17	19
<b>Absence due to illness in the Group's Swedish companies</b>		
Total absence due to illness of regular working hours, %	4.6	3.6
of which continuous sick leave for 60 days or more, %	39.1	35.8
Absence due to illness (as percentage of regular working hours) by gender		
Men, %	4.4	3.5
Women, %	5.4	3.9
Absence due to illness (as percentage of regular working hours) by age		
29 years or younger, %	4.6	2.7
30-49 years, %	4.6	3.6
50 years and older, %	4.8	3.7

## Attractive employer

The Volvo Group's aim is to be an attractive and responsible employer for both current and future employees. Every employee is expected to take an active part in the Group's development and future. We work in a variety of areas such as health and well-being, work environment, leadership training and we follow up on employee opinions.

Investing in our employees is a fundamental part of staying competitive, sustainable and profitable. Recent years have been demanding for our employees due to layoffs; we have therefore given priority to supporting them through this period. At the same time we have retained long-term focus on creating an attractive workplace. Our strategic focus areas include skills, leadership and culture. This comprises both our physical and mental working environments. To follow how our employees experience their working days we measure internal attractiveness and attitudes. Our ambition is to offer unique opportunities and a company culture that help us attract and retain the best people, whoever they are and wherever we do business.

## A demanding year

The crises in the automotive industry and the world economic recession had a great impact on the Volvo Group. In view of weak demand, actions were taken to align the Group to a lower cost level. Savings were implemented at all levels and in all parts of the Group. These savings were designed to reduce the annual cost level by approximately SEK 21 billion when their full impact was felt in 2010. At the end of 2008, the Group had 101,380 fixed employees. In addition, there were 8,234 temporary employees and consultants. During 2009, the number of fixed employees was decreased to 90,208 and the number of temporary employees and consultants to 6,074. Among other measures, we were forced to lay off many employees due to the sharp decline in demand.

Redundancies are difficult and demanding for everyone involved. It is highly important to address issues relating to labor legislation, ethics and communication. Affected employees are entitled to information the moment it is available and managers receive training and assistance to handle such situations. The rules for notice periods follow national laws and regulations and vary from country to country.

Before any layoffs are decided, extensive efforts are made to find alternative solutions. In these situations, the Volvo Group works closely with representatives of unions, governments and other authorities. For example, during the second quarter of 2009 agreements on work-time reduction were reached in some plants in Sweden. In addition, in countries where this is possible, such as France, Belgium and Germany, the Volvo Group uses various forms of short-time work financed partly by governments.

## Cooperation with unions

The Volvo Group recognizes everyone's right to freedom of association, and maintains a close relationship with a number of unions. In Europe, the Volvo European Works Council was formed in 1996 as a forum for employer-employee dialogue. The forum meets once a year and the chairman is the Volvo Group's CEO. In addition to this forum, employee representatives have two meetings each year. Representatives from outside Europe are invited every two years. In 2008, the Works Council meeting was held in China, to enhance understanding and share experience of labor practices.

Cooperation with unions follows national laws and regulations in each country. Collective bargaining agreements are used in many places, including the ten countries where we have our largest activities. There are two employee representatives on the AB Volvo Board of Directors.

## A unique company culture

Company culture is a competitive advantage. Our culture and values demonstrate what is important to us as a group and how we want to be judged internally and externally.

Culture is a critical factor for sustainable growth. Unlike technologies, strategies, organizational structures or business models, culture is difficult for a competitor to copy. It would be equally difficult for us to replicate the culture of a competitor.

We are convinced that a cohesive culture based on global values strengthens our brands and makes the Volvo Group a more attractive employer, business partner, industry leader and trusted corporate citizen.

The Volvo Way shows what we stand for and aspire to; the Code of Conduct is our group policy and general reference document for appropriate business practices and it constitutes the minimum level for our performance, while the corporate values – quality, environmental care and safety - are the foundation of the Volvo Group.

*In the employee attitude survey 2009, over 80 % of the employees believe that the company works in accordance with the corporate values (table below)*

Question in employee attitude survey	% Positive answers
Does your company operate in accordance with the Group's values in terms of quality?	82
Does your company operate in accordance with the Volvo Group's values in terms of safety?	85
Does your company act in accordance with the Volvo Group's values in terms of care for the environment?	83



## The Volvo Way

The Volvo Way expresses the cohesive culture, behavior and values shared across the Volvo Group. The principles in The Volvo Way guide our daily efforts to realize business strategies effectively, assuring long-term and sustainable success. This is the way we conduct business and deliver results. This is how we partner with customers and suppliers, how we work and change, and how we build the future together.

In 2009, many employees from all parts and levels of the organization were involved in developing a new version of The Volvo Way. The objective was to prepare for future challenges, with customer focus and a clear emphasis on operational excellence. During the development of The Volvo Way, employees in five countries were asked to share their experiences of Volvo Way values and behaviors in practice. The resulting films - The Volvo Way Stories - were used to communicate the values.

A reworked The Volvo Way was unanimously adopted by the Group Executive Committee in August 2009. Six weeks later all managers received a copy translated into 11 languages and a workbook to support managers' assimilation and understanding of the new Volvo Way. Communication to employees started in mid-December. Before June 2010, all employees are to conduct dialogues and group discussions within their working teams, supported by The Volvo Way Stories.

The shared values described in The Volvo Way, the participatory culture and employee commitment make the Volvo Group culture unique.

## Diversity enhances our business

Our sustainability and performance are built upon the skills, values and ethics of our employees. To succeed in today's global environment we need to recruit and retain a broad spectrum of employees with different backgrounds, experiences and perspectives. Diversity and inclusion have long been prioritized within the Volvo Group. We actively recruit from a diverse spread of candidates and recognize that our strength lies in our differences.

Diversity is a catalyst for innovation and a source of competitiveness and profitability. By expanding our knowledge base, skills and understanding, we become more responsive to customer needs and strengthen our market position. Diversity is promoted in the Volvo Group's Code of Conduct, which stipulates behavior that is non-discriminatory with regard to gender, race, religion, age, sexual orientation, nationality, political opinion, union affiliation, disabilities and social or ethnic origin. Working actively with diversity also nurtures a healthy company culture, thus attracting the most competent people.

In the 2009 employee attitude survey our employees were asked if they believe that the company works actively to improve diversity. 70 % of the employees within the Volvo Group thought so.

## Enhancing diversity

Working with diversity means working with attitudes. This demands different approaches. Several initiatives on the local and global level address diversity in the Volvo Group. Traditionally, it has been hard for the automotive industry to attract women.

We work actively to balance diversity in leadership positions and in other employee categories. One way is to focus on diversity at the recruitment stage. Our policy is to improve and profit from the diversity of our global workforce by requiring at least one woman and one man on each recruitment panel. However, skill is the determining factor when choosing final candidates.

We work actively for gender-balance in all parts of the company and we aggregate data on different levels to check for success.

*The gender-split in management has remained approximately the same: approximately 85 % men and 15 % females. The share of female employees in the group is slightly higher, 17 %.*

	2008	2009
Number of employees, total Volvo Group	101 381	90 208
Number of managers	13 362	11 640
Women managers, %	16.7%	15.2%

Women employees, %	17.1%	17.3%
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*Image: Aggregated data shows that the proportion of females in management position on higher levels is increasing.*

We have also launched a network for females in leadership positions:

*Volvo GLOW* is an executive network for females in group key positions. It was launched during the year as a strategic initiative to increase diversity in leading positions and to develop the global leadership.

*Tekla* is a support network for females in technical positions within Volvo as a forum for new ideas, personal development, competence development and support. The network was established in Gothenburg, Sweden in November 1996, with membership open to all Volvo employees. Tekla arranges seminars, study visits and other social activities.

### **Diversity and Inclusive Leadership**

Another global initiative for diversity, Diversity and Inclusive Leadership, was implemented in 2009. The objective is to raise managers' awareness of inclusiveness. An inclusive work climate enables all employees to contribute to their fullest potential irrespective of gender, nationality, ethnic origin, sexual orientation or age. Tools are provided to identify and address exclusion behavior and managers learn how to be role models.

### **Tool for succeeding in international business**

GlobeSmart is an interactive web-based tool helping employees develop the multicultural skills we need to work effectively and do business with people from other countries. It is available to all employees.

GlobeSmart provides information from about 30 different countries and helps to explore a specific country. The tool also supplies a number of interactive features to help employees assess their own cultural preferences and interaction style and to compare with people from other countries.

## **The Volvo Group as employer**

The Volvo Group wants to be an attractive employer. By offering a unique company culture, interesting possibilities for development and competitive compensation, we attract and retain the best people. The competence and commitment of our people create our sustainable success.

We are very proud to be among the leaders in international benchmarking as both attractive employer and respected company. The current recession and layoffs have negatively affected our standing in other, similar surveys, but we are committed to rebuilding and further strengthening our reputation as an employer. We work with competitive compensation and interesting opportunities and career paths to attract and retain the best people to contribute long-term to our common development.

A specific challenge is to build our attractiveness in Asia where our operations are expanding fast. Young people with skills in English are highly attractive for all companies in the region.

### **Volvo recognized as one of the best companies to work for in Brazil**

For the fifth time, 2009 Volvo do Brazil was top-ranked in a study conducted by a Brazilian magazine. The 150 Best Companies to Work for Guide is considered the most in-depth study of work environments in Brazilian companies. The survey has been run for 13 years by Editora Abril, one of Latin America's largest and most influential publishing groups.

Volvo placed third in this year's ranking, posting a Work Satisfaction Index of almost 91.

## Employee attitude survey

Once a year, all employees worldwide are invited to participate in the Volvo Group Attitude Survey (VGAS). This is a good way to measure our attractiveness internally. The survey consists of 58 questions. Five key areas are: respect, co-operation, delegation, feedback and information. Managers subsequently get reports on the results related to their working groups. The reports include comparison with the previous year and a norm value indicating a minimum level below which there is a negative impact on profitability and the working climate.

The feedback process is the most important part of the survey. Employees and their managers discuss the results and dialogue on how to build on the strengths in the report, and areas for improvement. The process should always result in an action plan with activities throughout the year to improve the working climate.

### Results 2009

Based on a number of key questions in the survey an Employee Satisfaction Index (ESI) takes shape. The questions are related to the local working climate. In 2009, 94% of Volvo Group employees participated in VGAS and 85% stated they were satisfied with their workplace. The satisfaction rate has been steadily increasing. Even during this demanding year the result has remained largely stable. This is proof of the success of our strategic investments in our colleagues. The high response rate indicates strong interest and a desire among employees to express their opinions about the working climate.

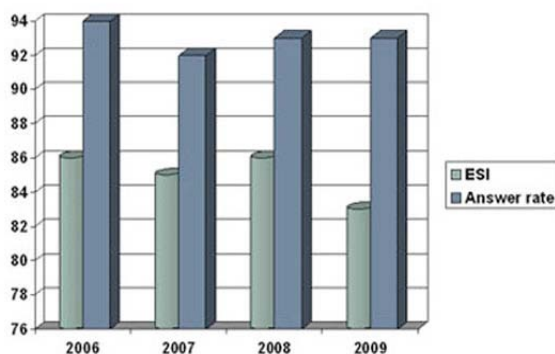


Image: Employee Satisfaction Index

The result from 2009 on an aggregated level shows that employees thought there were fewer conflicts within the working groups. They appreciated their managers more and believed that teamwork had improved. The employees were less satisfied, compared to previous years, with job-specific training and with support in personal development from managers. This result was expected due to the business situation.

#### Five core questions in the employer attitude survey

Question	Score (% positive answers)
Do you feel respected by your immediate supervisor/manager?	81
Is your working group/team free from conflicts that have a negative impact on work?	66
Can you influence your work situation?	72
Do you receive regular feedback on your performance?	64
Does your immediate supervisor/manager keep you well informed?	73

Another index based on the questions in the survey is CLI (Communication Leadership Index), measuring the communication skills of managers in the Group. The results are delivered to managers as five strengths and (up to) five improvement areas. The aim is to support managers in their communication and dialogue with their co-workers. Well-functioning internal communication and dialogue is crucial for the Volvo Group.

## **Career opportunities**

The Volvo Group is a learning-oriented organization, adapted to effective sharing of knowledge and experience, on both micro and macro scale. This advances the innovation the Volvo Group is famous for. Interesting and challenging opportunities help our employees achieve their full potential.

The ability to enhance and develop co-worker capacity and competencies is one of Volvo Group's success factors.

Working within the Volvo Group means working in an international environment with committed individuals from all over the world. It opens opportunities for international careers. It is important that every employee knows how to contribute to moving our company forward.

The most effective development, however, comes from work assignments in different forms e.g. international projects. We look for employees enthusiastic about moving between roles and companies within the Volvo Group. We have a well-developed program for managing international assignments, designed to make intra-country moves a productive and enriching experience for employees, their families and the Volvo Group.

## **Individual competence development**

To be competitive and attractive it is essential for us to secure and enhance competences within our operations. Relevant training is continuous. A wide variety of training programs at all levels are available for employees, in specific professional areas as well as for stimulating personal growth. The activities range from traditional and e-based training to individual coaching and mentoring.

The basis for individual competence development in the Volvo Group is a process involving personal business plans. The aim is to facilitate discussions between individuals and their managers and ensure that employees clearly understand their role in the team and what is expected of them. The personal business plan has business-related and competence-development targets. Personal business plans are reviewed annually and provide feedback essential for both short-term and long-term career paths.

All white-collar employees have personal business plans and follow-up is on company as well as corporate level. In 2009 implementation of the personal business plan process began for some industrial workers, to be implemented in all companies in 2011.

We have a rich talent pipeline and diverse career paths for effective succession planning. This ensures our competitive edge.

Mapping our strategic competences is another important part of our strategy for securing skills for the future. Strategic competences are annually aggregated on a Group level to identify the most important for future needs.

### **Training for the future**

Volvo CE (Construction Equipment) in Sweden is continuing to train employees in spite of the challenging business situation. The target is to be ready when the market recovers. Volvo CE has set up an industrial school in Arvika in Sweden in collaboration with the local authority, the region, the government and the local university, but due to the difficult business situation, investments in training have not been able to offset the company's need to reduce the number of employees.

## **Leadership training**

Our leaders must be team players who can enhance both individual and team performance. Managers at all levels need good leadership and communication qualities, but also competence and knowledge regarding for example regulations and legislation. The Volvo Group has a number of training programs to support managers in different phases of leadership. Examples include:

- preparation for new managers
- efficient conflict management
- leading multicultural organizations
- benefits from diversity and a global environment
- self-evaluation in ethical dilemmas
- labor law
- coaching for experienced managers

## **Compensation and benefits**

The compensation and benefits policy at Volvo is based on the Group's fundamental values and principles as expressed in The Volvo Way. Salaries and benefits are part of improving the company's opportunity to recruit, develop and retain skilled and motivated co-workers. The guiding principle is the employee's right to equal pay for work of equal value. Individual salaries are to be based on position, the market and the employee's performance in relation to the requirements for the job. Co-operation, commitment and internal mobility are highly valued.

In addition to fixed and variable salaries, other customary benefits are usually offered such as a health plan. Management resident in Sweden are offered, in addition to retirement benefits as provided by law or by collective agreements, a defined-contribution pension arrangement. Managers who are resident outside Sweden or resident in Sweden but substantially connected with another country or who have been resident in another country are offered pension solutions competitive in that country.

The Volvo Group also has Variable Salary Programs to increase the commitment of managers working in different business areas and business units across the world. This is intended to improve co-operation and strengthen management by objectives by rewarding the contributions that managers make to the organization's key objectives based on financial performance.

## **Health, safety and well-being**

The Volvo Group is committed to developing health-promoting workplaces. Healthy, energetic employees are better equipped for life and work. A workplace that promotes health attracts new employees and those already employed want to stay. An attractive workplace, higher productivity, maintaining quality in products, and reducing costs, are strong reasons for making health and employee well-being a priority.

The Volvo Group seeks to provide all employees with access to information and support in reducing or eradicating health risks associated with work, lifestyle or emotional strains. Managers have the responsibility of placing these issues on the agenda. The objective is to make the Volvo Group's



employees among the healthiest in the world.

## Systematic health and safety

A safe workplace is the foundation for productive and efficient work. The necessary conditions for a safe and healthy working environment are communicated to all employees and established by the principles in our Code of Conduct. Managers at all levels share the responsibility of guaranteeing the high level of safety that employees, suppliers and visitors expect. A manager is responsible for safety precautions.

Workplace safety is based on national demands and regulations, so policies, guidelines and training material are adjusted to national laws and regulations.

In the Volvo Production System, ensuring a safe and productive work environment is a cornerstone.. VPS provides tools such as occupational risk assessment, safety and health KPI, methodology for systematic work and ergonomic workplace assessment.

Five production plants within the Group are certified in line with OHSAS 18001 and five additional facilities plan to reach certification by the end of 2010. OHSAS 18001 (Occupational Health and Safety Assessment Scheme) is an international standard specifying a process for controlling and improving company safety and health performance

All accidents and all incidents must be reported so that events causing or contributing to them can be investigated thoroughly and corrective action taken immediately.

Information is the key to thorough investigation so it is the responsibility of every employee to inform the company when an accident or incident occurs. The information gathered will be used in analysis so that the most effective, long-term corrective action(s) can be taken.

A new global “workplace safety, health and well-being policy” is under development and will be implemented in the Volvo Group. The subsequent steps will be monitoring and follow-up.

Figures relating to injuries and absence due to illness are collected on a country level, based on national legislation. We do not aggregate those figures to corporate level.

<b>Key figures</b>	2008	2009
Number of employees at year-end	101,380	90,208
Share of women, %	17	17
Share of women, Board Members, %	10	11
Share of women, Presidents and other senior executives, %	17	19
<b>Absence due to illness of regular working hours, %</b>		
Total absence due to illness of regular working hours, %	4.6	3.6
of which continuous sick leave for 60 days or more, %	39.1	35.8
Absence due to illness (as percentage of regular working hours) by gender		
Men, %	4.4	3.5
Women, %	5.4	3.9
Absence due to illness (as percentage of regular working hours) by age		
29 years or younger, %	4.6	2.7
30-49 years, %	4.6	3.6
50 years and older, %	4.8	3.7

*Text to table: Number of employees at the end of 2009. Absence due to illness is measured for employees in Sweden.*

### New agreement between Mack Trucks and UAW

On May 30, 2009 members of the U.S. trade union, the United Auto Workers, approved a new 40-month Master Agreement with the Volvo Group’s subsidiary Mack Trucks. The agreement includes the establishment of an independent trust that will provide healthcare for retired employees, their surviving partners and dependent family members, as well as for UAW members who retire in the future.

## Promoting health

The Volvo Group's health and well-being work is divided into six processes:

### 1. *Medical examinations*

Medical examinations are performed in accordance with legal requirements as well as being part of health risk assessments and health promotion programs.

### 2. *Rehabilitation of injuries and illness*

Strong evidence indicates that the sooner one can return to work after illness or injury the better for individual well-being and personal health. When needed, rehabilitation is a well-defined and well-managed process, planned and executed in partnership between the individual, the company and third parties.

### 3. *Health risk assessment, analysis and reduction and promotion of a healthy lifestyle*

The aim is that all employees have access to information and assistance in identifying, reducing or eradicating health risks, related to the physical or psycho-social working environment or to lifestyle factors such as stress, smoking, excess weight and exercise. Programs are in place in different countries. In Brazil for example, employees' families also are included in health improvement programs. Assistance is accessible from our websites, from health coaches/champions/ambassadors within the company or from occupational health units or other resources.

### 4. *Employee Assistance Programs*

Employee assistance programs are aimed at assisting employees in challenging situations in their lives, for example in dealing with the emotional and psychological stress of personal or work-related problems. The Employee Assistance Program is a strictly confidential assessment of concerns that may include work stress, family and parenting decisions, anxiety, depression, anger management, alcohol or drug dependency, marriage difficulties, loss of a loved one or common life changes. The program offers assistance to clarify the problem, identify options and help develop a plan of action.

### 5. *Ergonomics in close cooperation with those involved in physical work*

Our goal is that no one should suffer medical problems from a poorly designed workplace, process or product. Ergonomics needs to be considered as early in our processes as possible – for example, when choosing a manufacturing process or designing production and office facilities.

Those responsible for these areas, such as global manufacturing/engineering and production managers, need to be aware of the ergonomic implications and opportunities at work.

We want those responsible for the Global Development Process and Global Development Instructions to be involved early and we want development to be collaborative. Good ergonomics is crucial for our employees to perform at their best.

### 6. *Travel Medicine and Health*

The increasing global spread of Volvo Group operations means frequent foreign travel and extended periods living abroad have become part of working life for many.

Managing this involves helping individuals to anticipate and address potential health risks. Practical, medical and psychological support for assignments abroad or for business travel is an important focus area for Volvo Group Health & Well-being.

### **Volvo Health and Well-being Award**

To promote projects and initiatives that improve the health of our employees, the Volvo Group Health & Well-being Award was founded in 2006. In 2009, Volvo Group Australia won for its vitality program, promoting better employee health through exercise and improved eating habits.

### **Volvo lauded for employee wellness program**

The Volvo Group was one of 63 winners of the *Best Employers for Healthy Lifestyles* award on June 24, 2009 in Washington, D.C. The Volvo Group, one of only 17 companies to receive the highest-level trophy, was given a Platinum Award for its wellness program.

“As one of 63 companies recognized this year for their employee health and wellness programs, Volvo is at the vanguard of a national movement to promote a system-wide culture of health emphasizing prevention, exercise, and eating right,” said Helen Darling, president of the National Business Group on Health. “More than ever, a healthy workforce is critical to helping America’s large employers compete in the global marketplace.”

## **HR organization**

On a corporate level, the Volvo Group Human Resources function works to secure and develop our employees, our culture and the organization. The work is organized into the following areas:

- Talent Management
- Competence Development
- Compensation and Benefits
- Labor Relations – including workplace safety, health and well-being, labor and employee relations
- Organization Development and Change
- Business Office – driving global Human Resources strategy development

There are three functional units within Human Resources both on corporate and national level:

- Shared Service Center: managing the administrative processes
- Business Partner: supporting managers and implementation
- Center of Expertise: focusing on long-term strategic issues

## Close relationships for shared success

Responsible supply chain management means managing risk and building long-term relationships with suppliers to improve social, environmental and business ethics in the supply chain. Our high demands on suppliers and partners promote responsible and sustainable enterprise.

### **We want our business partners to develop with us**

The Volvo Group works closely with suppliers. We create long-term relationships through the integration of knowledge and understanding of each other's processes, procedures and ideals. The Volvo Group's aim is that sales to the Volvo Group should constitute less than 30 percent of a supplier's turnover. This decreases a supplier's vulnerability. The recent years of recession have highlighted the importance of independent suppliers during times of economic difficulty for the Volvo Group.

### **The Volvo Group's expectations**

The expectations on Volvo Group suppliers come from different stakeholders and from the company culture. Quality requirements have long been in place and are well-integrated in our relationships and joint development programs with suppliers. In 1996, the Volvo Group started imposing demands on suppliers' environmental performance. In 2006, ethical requirements were introduced and in October 2009 the requirements were updated. Since 2008 we have had a clause in our master agreements with suppliers obliging them to comply with our Code of Conduct.

## Evaluating our suppliers' CSR performance

The Volvo Group's suppliers can be divided into two groups:

1. suppliers for automotive products (direct material)
2. suppliers of non-automotive products (indirect material).

CSR requirements are the same for all suppliers but the process is different. To be able to communicate, track and evaluate our suppliers' CSR performance, the issue is integrated into the purchasing processes in each business area and business unit within the group. We have two different processes for CSR in the supply chain: one for already existing suppliers and another for potential suppliers.

#### *Existing suppliers:*

To evaluate CSR performance, the supplier is asked to fill in a self-assessment report covering CSR requirements. If the suppliers do not fulfill our requirements they must develop an action plan.

#### *Potential suppliers:*

All new suppliers are evaluated using the Supplier Evaluation Model which also includes CSR requirements. Potential suppliers who fail a stopping parameter are not chosen.

### **Results from Self-Assessments 2009**

Our objective is that all suppliers will complete the Self-Assessment program by the end of 2010. At the end of 2009, 22% (1 337) of our total of 6 000 suppliers (of product-related goods and services) had completed the self-assessment; 52 % passed. Suppliers that do not pass are asked to develop an action plan. The main reason for failing is not deploying the requirements further down the supply chain. The evaluation of suppliers of non-automotive products started at the end of 2009 and results are being compiled.

Looking at the spend on suppliers of direct material, more than 80% was from suppliers that are certified in accordance with ISO 14001 or equivalent.

### **Defining high risk areas**

Most of our suppliers have sound business practices, so we focus on high-risk areas, concentrating efforts where they are needed and most likely to effect change. We have a risk methodology for identifying risk-zone suppliers from a CSR perspective based on country, segment and size.

## CSR requirements for suppliers

The document on Corporate Social Responsibility includes both requirements and a self-assessment:

The requirements are:

- to comply with the laws and regulations of the countries where the supplier operates; when local laws and regulations are lacking, the principles in the Code are to guide
- the principles described in the Code of Conduct should be the minimum level used in relations with suppliers' employees, business partners and other stakeholders
- to take responsibility for subcontractors deploying the requirements throughout their supply chain
- to maintain an open dialogue with Volvo Group companies concerning achievements, trends and possibilities for improvements in the area of Corporate Social Responsibility
- to systematize compliance with the Volvo Group's Code of Conduct
- to have a senior executive responsible for compliance with the UN Global Compact.

The self-assessment program is an opportunity for giving the supplier an overview of performance compliance with the Volvo Group Code of Conduct. The assessment asks approximately 40 questions about issues such as social performance, the working environment and conditions, workforce rights, child and forced labour, freedom of association, discrimination, environmental care and business ethics. We have included stopping parameters and a requirement for an action plan if the supplier does not pass.

Since being formed in 1996, the environmental requirements are communicated in a dedicated document. The requirements entail for example third party certification (ISO 14001), compliance with the Volvo Group's standpoint on hazardous substances and improvement plans.

## Key element procedures

Volvo Group requirements for our suppliers are described in seven different documents called Key Element Procedures:

**General requirements** include an acceptable level in the SEM and the supplier's approval of the conditions in the Volvo Purchasing Agreement.

**Quality requirements** cover for example quality target commitment and preventive quality management.

**Production and engineering requirements** concern production and engineering activities including quality assurance in product development.

**Cost management requirements** highlight the need for cost-transparency to ensure a fair price is reached between the Volvo Group and its suppliers.

### Environmental requirements

### Corporate Social Responsibility requirements

**Logistics** define the inbound supply chain aspects and responsibilities of the Volvo Group and its suppliers.

## Organization and implementation

Instruction material for suppliers covering the Volvo Group's Code of Conduct, the requirements and evaluation process, is available at the Supplier Portal website.

For implementation to succeed, we must also raise awareness of these issues within purchasing organizations. Instruction materials are available to them as well.

### **Responsibility for supplier evaluation**

Each business area or business unit of the Volvo Group is responsible for evaluation of the requirements for its suppliers as well as for maintaining a contact person and channels of information to suppliers.

Purchasing organizations in the Volvo Group are organized in a CSR purchase advisory board. This network coordinates and monitors CSR requirements and improves CSR processes, communication and education. The network is coordinated by a purchasing representative who reports to the Global Purchasing Council (GPC) and the Volvo Group CSR Committee.

### **On the agenda**

In 2010, we are continuing the implementation of Key Element Procedures on CSR focusing on completed self-assessments from high-risk suppliers identified in our CSR risk model. We will further develop instructions for suppliers that do not fulfill our requirements.

A third-party auditor and representatives from the Volvo Group will visit suppliers to verify that the assessment process gives the expected result. This might result in changes in the requirements or in the process, and will also be used as input for further guidelines on audits and training material.

We will also look deeper into how environmental requirements are used by our organization. The environmental requirements were developed and launched in 1996. Since then there have been changes in our business as well as in legislation and it is important to check and update our processes and demands.

## Supporting human rights

To support and protect human rights is important to the Volvo Group. Respect for the individual is part of our culture as well as part of our social responsibility in all company-stakeholder relations. Support for the UN Declaration of Human Rights is stated in our Code of Conduct and communicated to each employee. All employees are familiar with the human rights issue since it is included in the Code of Conduct training.

From the Code of Conduct: "Within our sphere of influence, the Volvo Group supports and respects the protection of internationally proclaimed human rights and ensures that it is not complicit in human rights abuses." Our principles include non-discrimination; non-tolerance for forced, compulsory or child labor; freedom of association and the right to collective bargaining, and the right of all employees to a healthy and safe work environment.

Respect for Human Rights is included in the Master Agreements with suppliers. We follow up on our suppliers' performance in the self-assessment program and in our assessments of potential suppliers.

## Towards zero accidents

Traffic accidents are one of the world's major public health problems. According to the World Health Organization, more than 1.2 million people are killed and 50 million are injured in traffic every year. Among those affected are people of all ages as drivers, passengers, pedestrians and others outside the vehicles. Road traffic accidents are the most common cause of death among young people in many parts of the world.

### **Safety is our guiding star**

The Volvo Group is dedicated to putting its expertise to use to create safer roads for everyone. Safety has been our guiding star since 1927. We know that it is possible to dramatically reduce the number of killed and injured on our roads. In the EU, for instance, the number of fatalities in traffic has been approximately halved since 1990. A major factor has been safer vehicles.

We will continue developing safer trucks and buses. That ambition applies equally to construction equipment, marine engines and all other products from the Volvo Group. We cooperate with vigor with authorities, governments, organizations and individuals that share our dedication to safety. Together we can make a real difference.

### **Our vision: Zero accidents with Volvo Group products**

Our ultimate goal is zero accidents with Volvo Group products. We cannot guarantee that a bus or truck from the Volvo Group will never be in an accident but we are working on systems that prevent accidents from happening in the first place. Driver Alert Support monitors and analyses a truck driver's lane-keeping behavior and kicks in when the driver shows signs of being tired. Limited awareness is one of the most common causes of traffic accidents and it is a high priority to find ways of reducing the risk of accidents caused by driver fatigue or inattention.

Should an accident occur, our products are built to reduce the consequences. Our Traffic Accident Research Team has investigated accidents on-site for 40 years, building up a unique bank of knowledge and experience from more than 1 500 accidents. These experiences in combination with our own research and test programs have given us good insight into the causes of accidents and injuries — and what can be done to prevent them.

## Traffic safety on the international agenda

Traffic safety needs to be prioritized on the international agenda. The Volvo Group strongly supports the decision of the United Nations General Assembly to proclaim 2011-2020 a Decade of Action for Road Safety aiming at saving five million lives over 10 years.

In Europe, The Volvo Group strongly supports ambitious targets for reducing road deaths and serious injuries by 2020. We advocate a goal of a reduction in road deaths by at least 40% between 2010 and 2020.

The Volvo Group is active in the development of an international Road Traffic Safety Management System (ISO 39001). This is a voluntary tool, complementary to legislation, and can be used by all organizations that directly or indirectly use the roads. The ultimate goal is elimination of death and serious injury in the road transport system.

### **Making people communicate**

In more than 90 % of traffic accidents, the human factor is decisive. Tired, distracted or alcohol-affected drivers are a major part of the problem. Speed and non-use of seat belts are significant factors. The most advanced safety technology cannot compensate fully for shortcomings in drivers'



attitudes and behavior. We cooperate energetically with different stakeholders on safety-awareness issues like alertness, safety belt use, alcohol and speed. We try to make people communicate and to discuss safer transport.

The Safe & Sober campaign is run by the independent, not-for-profit European Transport Safety Council (ETSC) with active support from Volvo Trucks. The aim is to reduce the number of deaths and injuries in Europe caused by drunk driving.

Another example is driver training. In India, for instance, at least two customer drivers are trained with every Volvo truck sold. Drivers need to pass a test to qualify for the training program. Over 23 000 Indian drivers have been trained till date. Training segments includes Sense of Responsibility, Fuel Efficient Driving and Traffic Safety.

The Volvo Research and Educational Foundations are financing a competence center on Road Safety & Urban Transport Planning in New Delhi. The center explores a wide range of transportation questions, from increased safety for pedestrians to traffic planning and policy-making.

In Brazil, Volvo do Brazil founded the Volvo Traffic Safety Program in 1987 to reduce the number of traffic accidents. The program has involved thousands of people and has been based on conferences, symposiums, seminars, safety video production, training for professional drivers and interaction with schools, cities and communities.

## **Making machines communicate**

The welfare of human beings is paramount in everything we do. But we use modern communication and information technology. The Volvo Group is leading part of the development of intelligent vehicles.

We have worked hard to develop vehicles that can “see” — for example, by detecting lane markers and obstacles. The next step is to make the vehicles “talk”. Many accidents could be prevented if vehicles on the road could communicate with each other and with infrastructure. Intelligent Co-operative Systems increase the quality and reliability of information available to drivers about the immediate environment. Road operators benefit from co-operative systems by receiving information about the vehicles, their position and the road conditions. This will lead to safer and more efficient use of our roads. Intelligent Co-operative Systems are already implemented in some of our research trucks. The Volvo Group demonstrated trucks with various intelligent transport systems at the ITS World Congress in September 2009.

### **Tomorrow’s technique in Volvo trucks today**

Co-operative systems are still mainly at the research and demonstration stage. We believe that we will ultimately see full-scale systems in parts of the world. The technology will open up new ways of travelling, like vehicles that can drive themselves in long road trains on motorways. Driving in a close-formation convoy would improve traffic flow and journey times, offer greater comfort to drivers, reduce accidents, and improve fuel consumption and hence lower CO<sub>2</sub> emissions.

## TOGETHER WE MOVE SOCIETY FORWARD

To the Volvo Group, contributing to sustainable development means taking social, ethical, economic and environmental responsibility. Our CSR work should be given the same importance in all of our three roles as a company:

- As a local actor with focus on our role as employer and in the local community
- As provider of commercial transport solutions with focus on sustainable mobility
- As a global corporation contributing to global development by sharing knowledge, working in partnerships with customers, business partners, authorities and other stakeholders.

In all areas of our CSR work we also focus on outreach and contributing to society through sharing knowledge. Our society involvement includes contributing to local communities and education, encouraging environmental awareness and increasing road safety awareness.

### **Strengthening relations**

The reasons for our engagement outside of our own direct operations are many and differ according to the types of activities. We believe that society engagement strengthens our relations with stakeholders such as employees, customers, neighbors and local authorities. It also improves our understanding of the different contexts and cultures we operate in.

Also important is to demonstrate for current and future employees that the Volvo Group is committed to contributing to society. In our culture, employees can engage in local communities on their own initiative. We maintain and actively support this culture, and encourage all companies in the Volvo Group to support society engagement.

Our efforts strongly contribute to our overall brand image and credibility as well as to our own learning process as a company.

### **Interacting with local communities**

From Sweden to China, from Brazil to South Africa, we have an impact on local communities first and foremost as an employer, but also in other ways. We strive to be actively involved in local societies and support a wide range of activities and projects important to our employees, partners and communities.

Interacting with local communities provides opportunities to meet people and groups with diverse views, experiences and expertise, and learn from them. Working together, we find ways to move society forward.

## Committed colleagues

The success of our society involvement is due to the many committed colleagues within the Volvo Group around the world. Most activities are initiated by employees who understand their communities and the communities' needs as well as the type of projects we can support — projects that also fit our company culture and values and contribute to them.

Let us present a few of our projects and the proud people behind them.

### Preventing HIV in South Africa

The Umlazi area outside Durban is the location of one of Volvo's factories and of one of the largest Volvo dealers in the region. It is also where many of Volvo's and the dealer's employees live and where their children go to school. This region and its schools are facing many challenges, such as high rates of absenteeism, teenage pregnancy and HIV/AIDS.

Three years ago AB Volvo and Volvo Trucks started to support a program called Star for Life, an HIV/AIDS-prevention program targeting young people in Southern Africa. For example by in-school efforts, where coaches work to increase pupils' HIV awareness and help them find hope for the future.

We sponsor this program in eight schools in Umlazi and reach out to more than 10 000 pupils.

"After three years of coaching these young people, we are happy to be receiving positive feedback. In 2009 we checked back on the Volvo-sponsored schools and the results look great. For example absenteeism has decreased by more than 50% in these schools and they show much higher levels of awareness of HIV and AIDS," Anders Lindblad proudly reports.

"It is important for us at Volvo to take social responsibility seriously. And more importantly we should do it where we can really make a difference. These local communities are a good example of that," says Anders Lindblad.

Anders Lindblad adds: "This year, four teachers from these schools have joined our trainee program and we want to continue to develop such co-operation."

### Small contributions make a large difference

The Volvo Employees' Aid Association was initiated in 1976 by the employees and its funds are raised through donations from people working within the Volvo Group in Sweden. The employees who support this initiative make monthly donations directly via their paychecks or for example by donating their 50th birthday gift or their retirement gift. Since the start, a total of nearly 15 SEK M has been collected and distributed to more than 200 projects worldwide.

For more than 20 years, Ingrid Ihlenius at Volvo in Gothenburg has been on the board of the association, now as president. She is proud of all that has been done so far and grateful to all those who have made donations.

"To give you some examples, since the start in 1976 we have built and now run an orphanage in Curitiba in Brazil, we have given support to hospitals and health care institutions in Ethiopia, Tanzania and Romania, and partly funded a project in India teaching women dairy production. In 2009, among other projects, we supported the building of a school in Nepal and in 2010 we have so far focused on collecting support for the people of Haiti," says Ingrid Ihlenius.

"We receive reports on all our projects. It is very rewarding for us to see what can be achieved thanks to our efforts and important for us to see that our funds are being used correctly," says Ingrid and summarizes: "It is all about contributing to self-help. Even though these often are small projects, funded by many small contributions we see that they make a big difference."

## **Raising awareness of road safety**

"This will be really long talk because we have so much to be proud of!" says Solange Fusco when asked about Volvo's society engagement in Brazil. "We have done so many different things, especially related to road safety," she continues.

Solange Fusco is Corporate Communications Manager for Volvo in South America and has been involved in a number of projects and programs in the region.

In 1987, when Volvo celebrated 10 years in Brazil, it was decided to mark the anniversary with a contribution to society. So the Volvo Traffic Safety Program (VTSP) was created. It is now the longest traffic education campaign ever in the history of Brazilian industry, as Volvo has worked with this program for more than 20 years.

"In 1986 Brazil had the most traffic deaths in its history, and one of the highest death rates in the world, with more than 40 000 estimated fatalities. It was those numbers that triggered Volvo's commitment. We realized we could play a very useful role," says Solange Fusco.

Over the years conferences and seminars have been held, videos have been produced, driving courses have been developed and traffic safety has been promoted in school, cities and communities.

"Looking back we believe that we have helped reduce the number of accidents, so there are some victories. But there is still much work to be done. In 2008 we launched an additional program, the TransForm Program, together with the Volvo dealership network. This program puts extra focus on educating truck drivers. In 2009 we received our first results and they looked very good. They show that we are on the right track with this type of safety program," says Solange Fusco and concludes: "It is also clear that our long term commitment to these issues has helped strengthen our brand image in South America."

## Examples of this year's activities

The Volvo Group's engagement with society takes many shapes. We encourage and reward groundbreaking research on environmental issues; we contribute to schools for disadvantaged children; we help build homes for the homeless; and we support the development of cutting-edge solutions for future transport systems.

We have collected some of the activities conducted by Volvo Group employees around the world. We call it Moving Society Forward. More about our activities to move society forward are found at our responsibility site at [www.volvogroup.com](http://www.volvogroup.com).

In 2009 35.4 SEK M were distributed through the Volvo Research and Educational Foundation, the Volvo Environment Prize foundation and Assar Gabrielsson's foundation for clinical cancer research.

### **Volvo Environment Prize 20 years**

Environmental issues have always been central to internal CSR work and our outreach. The Volvo Group is committed to raising awareness for the environmental challenges that we all face, and does so through many different activities. An example is the Volvo Environment Prize, which celebrated its 20<sup>th</sup> anniversary in 2009. It is an annual award to individuals who explore the way to a sustainable world. The prize is awarded by an independent foundation. Since the first award in 1990, thirty-six pioneer scientists have been commended. Among them are many well-known names and three Nobel Prize winners.

The Volvo Environment Prize is awarded for "Outstanding innovations or scientific discoveries which in broad terms fall within the environmental field." Through the prize the Volvo Group highlights and supports cutting edge research and initiatives, thereby raising awareness. The prize also provides an international arena for dialogue on current sustainability issues.

The 2009 laureate was Dr Susan Salomon, Senior Scientist at the Chemical Sciences Division, National Oceanic and Atmospheric Administration in Boulder, Colorado, USA. She is an outstanding atmospheric chemist and physicist whose pioneering scientific contributions have had major impact on crucial environmental policies.

Over the last 20 years the Volvo Environment Prize has become one of the scientific world's most respected environmental prizes. We have captured the essence of the first 20 years of the Volvo Environment Prize in a 10-minute film.

## Research and educational foundations

The Volvo Research and Educational Foundations (VREF) is a generic term for four independent foundations funding a research program called Future Urban Transport (FUT). The foundations support the program by providing funds for research and educational projects.

FUT has three cornerstones:

### 1. Centers of excellence

Through the FUT program, VREF currently finances seven Centers of Excellence in four regions of the world. Some examples:

- The China Urban Sustainable Transport Research Center (CUSTReC) in Beijing is working to find solutions that are applicable at both technical and policy levels.
- Research and Training in New Delhi, India was launched in April 2003. Research has been carried out in a number of areas, including Bus Rapid Transport Systems (BRTS), pedestrian behavior at intersections, air quality in Delhi, and helmet optimization.
- The African Centre of Excellence in Public and Non-Motorized Transport (ACET), located in Cape Town South Africa, aims to produce better analytical methods and models of transportation systems, for infrastructural development in a region where pedestrians and para-transit are important.

### 2. Supporting Smaller projects

More than 40 Smaller Projects have been granted funding since the FUT program was initiated in 2000. The purpose is to make use of ideas that VREF finds valuable but that do not justify the establishment of a new Center of Excellence. Usually the projects receive funding for two years.

### 3. Conferences

The purpose is to facilitate the sharing of knowledge and experience between researchers and practitioners in the field of Future Urban Transports. An international conference is arranged every third year.

Each year through the Foundation for Transportation Research, Håkan Frisinger, former CEO of the Volvo Group, awards a scholarship to a prominent researcher. The award is currently SEK 250,000.

## Education

The Volvo Group supports secondary and upper secondary school education in a number of ways at multiple locations around the world. Inspirational talks in classrooms on current and future technology, class field trips to our facilities and short-term young apprentice positions put education in a meaningful life and career context and provide role models and career information.

In Sweden, in addition to smaller partnerships, the Volvo Group is involved in extensive school collaboration in a number of locations where we have production facilities such as:

- Göteborgs Tekniska Gymnasium - The Volvo Group, the Volvo Car Corporation and the City of Gothenburg jointly own and support the upper secondary school specialised in maths, science and technology.
- MATENA - The Volvo Group is a key stakeholder in MATENA – a program being developed to encourage and support effective collaboration between schools and businesses to increase interest in maths, science and technology education and careers.
- The Industrial High School - The Volvo Aero Corporation and the Local Education Authority of Trollhättan have jointly developed the Industrial High School – a 3-year upper secondary

school education where Volvo Aero is responsible for a third of the theoretical and practical tuition. Students are educated to become operators with special skills for aviation and space vehicle production work.

### **Special focus on maths, science and technology**

The Volvo Group is technology-intensive and dependant on being able to recruit colleagues with internationally competitive degrees. This need is attracting the Group's attention to a number of challenges in maths, science and technology (MST) education. A workforce deficit in MST is emerging in Europe. Therefore, the Group is placing special focus on school partnerships in MST to promote interest in MST education and careers.

## **Keeping Europe competitive**

The number of people in Europe graduating with degrees in mathematics, science and technology continues to decline, and the trend could have an effect on Europe's future competitiveness and prosperity.

The European Round Table of Industrialists (ERT) brings together many of Europe's business leaders to generate ways to ensure that the region stays competitive at a time when global economic power is being redistributed. ERT was formed to advocate policies at national and European levels to create conditions for creating jobs and growth in Europe.

The Volvo Group's CEO Leif Johansson is chairman of ERT and works alongside more than 40 executives from other major European industries. ERT has working groups active on topics such as energy and climate change, society change and foreign economic relations.

## **Help activities for Haiti**

On January 21, 2010 an earthquake struck Haiti causing great loss of lives and leaving many injured. The earthquake also caused major damage to the country's infrastructure, destroying buildings, roads and ports and affecting millions of lives. Locally through Volvo Group companies, several fundraising activities have been initiated. The Volvo Group has also offered to help the United Nations by providing heavy trucks, construction equipment, buses, engines for electrical power generation, marine engines and other products.

## **Planning ahead**

Our vision is for the Volvo Group to contribute to sustainable development. Society involvement is becoming more and more important. We will continue to develop and evaluate our commitments and initiatives, moving society forward together with our stakeholders.

We are fortunate to have many enthusiastic and committed individuals who find ways for us to get involved in, and contribute to society change.

We can look back at a long history of such efforts and continue to move societies forward. We have identified a need to map past and current efforts so we can learn from what has been achieved so far.

In 2009 the Volvo Group initiated a project with that aim. The project has improved knowledge of our initiatives and their results, so that we can improve further. The Volvo Group has also put more focus on communicating our work on society involvement externally. Through dialogue, external stakeholders also contribute to our learning process. For example, in 2009 we launched a new website section, Moving Society Forward, now the main source of information about our projects for external stakeholders.

## GRI INDEX

The GRI (Global Reporting Initiative) is an independent organization with a global framework for sustainability reporting. The framework sets out principles and indicators for measuring and reporting economic, environmental and social performance. The framework is voluntary. The table below provides a GRI perspective of where the information is available in the sustainability report. For some indicators we also refer to the Volvo Group annual report and responsibility website.

GRI indicator	Area	Information in the sustainability report
<b>Strategy and analysis</b>		
1.1	Statement from CEO	CEO comment
1.2	Sustainability impact, risks and opportunities	Issues in focus
<b>Organizational profile</b>		
2.1-8	Organization	The Volvo group
2.9	Changes in reporting	No significant changes during the reporting period
2.10	Awards received	Awards and engagements
<b>Report parameters</b>		
3.1-3.12	Report profile and scope	GRI
3.13	External assurance	GRI
<b>Governance, Commitments and Engagements</b>		
4.1-7, 9,10	Corporate governance	Annual report, chapter corporate governance
4.8	Business concept, vision, values	Organizing our CSR work Business ethics Company culture
4.11-13	Commitment to external initiatives	Code of conduct ISO 14001 Volvo group at cop 15
4.14-17	Stakeholder's engagement	Dialogues for development
EC1-4	Economic performance	The Volvo group Creating long-term value
EC5-7	Market presence	The Volvo group
EC8-9	Indirect economic impacts	Contributing to future's infrastructure
<b>Environmental performance</b>		
EN1-2	Materials	Recycling of vehicles Use of materials and chemicals Returnable packaging
EN 3-7	Energy	Energy efficiency
EN8-10	Water	Risk management
EN11-15	Biodiversity	Risk management
EN16-25	Emissions, effluents and waste	Production Logistics
EN26-27	Products and services	The climate challenge Product development Products in use Environmental care > renewable fuels



		Returnable packaging
EN28	Compliance	Risk management
EN29	Transport	Logistics
EN30	Expenses and investments	Investments for the future
<b>Social performance</b>		
LA1-LA3	Employment	The Volvo Group A demanding year
LA4-LA5	Labor/Management Relations	Cooperation with unions
LA6-LA9	Occupational health and safety	Health and safety
LA10-LA12	Training and education	Competence development Leadership training
LA13-LA14	Diversity and equal opportunity	Diversity
<b>Human rights</b>		
HR1-HR3	Investment and procurement practices	Suppliers
HR4-HR9	Non-discrimination, freedom of association and collective bargaining, child labor, forced and compulsory labor	Human rights
<b>Society</b>		
SO1	Community	Society engagement
SO2-SO4	Corruption	Code of conduct Anti-corruption
SO5-SO6	Public policy	Political involvement
SO7	Anti-competitive behavior	Not followed up at Group level
SO8	Compliance	Not followed up at Group level
PR1-PR2	Customer health and safety	Traffic and product safety
PR3-PR54	Product and service information	Product development
PR5	Customer Satisfaction	Our stakeholders
PR6-PR9	Marketing communications, Customer privacy, Compliance	Not followed up at Group level

### Reporting period

The Volvo Group published its Sustainability Report 2008 in April 2009. Sustainability information and the Sustainability Report are available at Volvo Group's website; [www.volvogroup.com](http://www.volvogroup.com). This report covers operations for the financial year 2009. The Volvo Group will publish yearly sustainability reports.

### Report scope and boundary

Unless otherwise stated, this report encompasses all companies in the Volvo Group. Information regarding the Volvo Group's Corporate Governance is available in the Annual Report 2009 and at [www.volvogroup.com](http://www.volvogroup.com).

The Volvo Group has published Environmental Reports since 1990. These reports initially covered environmental issues and were subsequently expanded to a wider perspective regarding sustainability, and from the perspective of what has occurred in the business world and following dialogue with stakeholders.

The process for defining the 2009 report content, focus and target groups, included an internal workshop with key CSR representatives from the Volvo Group, conducted in December 2009.

### **Compilation of data and computations**

This sustainability report is based on the framework provided by GRI. The GRI summary above refers to where the information may be found. This report was not audited by a third party. Although we acknowledge the value of an audit, we have in current circumstances opted to give priority to developing our in-house process in an effort to further develop our sustainability efforts.

This report covers our sustainability work governed and followed-up at Volvo Group level.

The Volvo Group consists of many different companies offering a wide range of transport products and services. A substantial part of their sustainability work is carried out independently. Many important data and performance indicators are measured and followed-up at company level, and not aggregated at Group level.

### **Additional information**

- Annual Report 2009
- Detailed and comprehensive sustainability information on [www.volvogroup.com/responsibility](http://www.volvogroup.com/responsibility)

### **Contact person:**

If you have questions regarding this report or the Volvo Group's CSR work, please contact:

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