Volvo Car Corporation

# 2009/10 CORPORATE REPORT WITH SUSTAINABILITY





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By 2020, no one shall be killed or injured in a new Volvo car. Volvo Cars breaks new ground with the new Volvo S60 with safety systems that protect pedestrians and drivers.

More than 30 years of environmental pursuits have already generated results. Volvo's DRIVe cars are award-winning and carbon emissions from our cars are declining. Environmental efforts continue in line with the three main principals: efficiency enhancements to existing technology, electrification and alternative fuels.





Volvo Cars believes in the electric car. Accordingly, Volvo is focusing wholeheartedly on the market that has the future on its side and will be a key element of sustainable mobility.





Clean air, efficient use of water and low energy consumption. Volvo Cars' focus on the climate impact of its production has resulted in a 50-percent reduction in total carbon emissions from Volvo plants since 2007.

"CARS WILL DEFINITELY
HAVE A FUTURE IN
A CLIMATE-SMART
SOCIETY. THE CHALLENGE
LIES IN OVERALL
SOCIAL PLANNING"

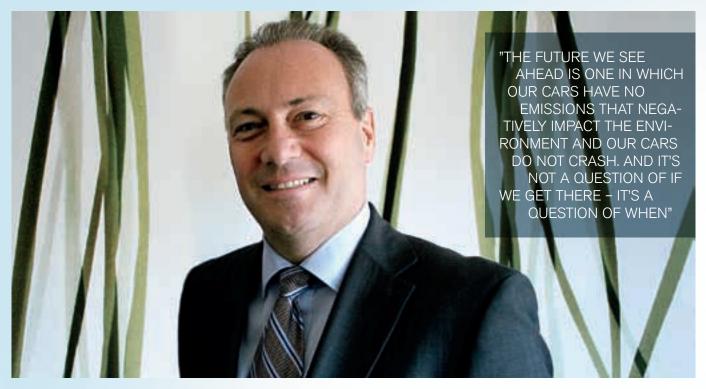
Anders Wahlén, Manager Brand and Core Values, Volvo Cars Sweden

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Restructuring activities that were conducted in 2008 made it exceptionally important to focus on our employees in 2009. An historic agreement was reached with the trade unions, with training courses held for laid-off employees and salary reductions made to save jobs. The results were positive – the percentage of satisfied employees rose.



# STRONG COMMITMENT TO SUSTAINABLE MOBILITY



WE HAVE PUT ANOTHER TURBULENT YEAR BEHIND US AND STARTED 2010 WITH POSITIVE DEVELOPMENTS IN TOTAL SALES AS WELL AS MAJOR PRODUCT LAUNCHES. I FEEL THAT WE HANDLED THE CHALLENGES WE HAVE FACED WELL AND EMERGED FROM THE AUTO INDUSTRY CRISIS STRONGER THAN EVER BEFORE, WHILE ATTHE SAME TIME MANAGING TO BUILD A SOLID PLATFORM TO SECURE A SUSTAINABLE FUTURE FOR VOLVO CAR CORPORATION.

Climate change and not least sustainable mobility remain at the top of the agenda for society as a whole and for the car industry in particular. At Volvo Cars, we firmly believe in our core value of environmental care and we have worked extremely hard throughout the year to achieve the necessary technological advances to reduce our products' carbon footprint.

Our commitment goes beyond the tailpipe emissions of our cars – we believe our responsibility starts with our supplier chain, through production, use and recycling of our products, encompassing a holistic environmental approach. We also define

sustainable mobility as much more than merely the environmental impact of our cars. As a carmaker with extensive heritage in safety, we integrate all our improvements in environmental care with leading safety technology. Our latest safety innovation was proudly presented in March at the Geneva Motor Show with the launch of the all-new Volvo S60 – a world-first pedestrian detection system with automatic braking that deploys if a pedestrian steps in front of the car.

#### Challenging market situation in 2009

In 2009 we recorded global sales of 334,808 cars, a decline of 10.8 percent compared with 2008. The full-year financial result showed a loss of 653 million dollars, an improvement of 729 million dollars compared with the preceding year. The positive development is primarily explained by the restructuring programme initiated in 2008 that has yielded results, combined with increased sales and market shares towards the end of the year, improving revenue. The all-new Volvo XC60, launched in 2008, quickly became the best selling Volvo with 61,667 units sold in 2009. Customer demand for environ-

mental performance continues to increase, resulting in our fuel-efficient, low-emission DRIVe products selling a record 46,632 units.

As a whole, 2009 remained a very challenging market for the auto industry. Although car registration levels did start to improve somewhat in the latter half of 2009, this recovery commenced from historically low levels. It is clear that it will take years for sales volumes to fully recover to the levels recorded in 2007 in Europe and the US. This continues to affect revenues and profits, at the same time as the transition to green technologies demands higher investment levels than ever before

#### Investing for a sustainable future

In 2006, Volvo Cars launched an SEK 11 billion investment programme in green technologies. The results have far exceeded expectations, with the 2009 launch of the first Volvo model with  $CO_2$  emissions below 100 g/km – the Volvo C30 DRIVe.

We will now launch the next investment phase to deliver on our DRIVe towards Zero commitment. During 2010-2015, Volvo Cars will spend SEK 17

billion in product development and investments to further improve the environmental performance of our cars. A substantial level of our product development spending has now been earmarked for  $\rm CO_2$  reduction technology, with our main track being powertrain electrification.

In 2009, we announced that our first series-produced plug-in vehicle will be on the market as early as 2012. This is a car that has all the attributes and advantages of an ordinary Volvo, but with the added benefits of emissions below 50 g/km and extremely low running costs. We also showed the Electric Volvo C30 – an all-electric battery powered car.

#### Importance of our partners and stakeholders

To me, it is clear that to ensure credible and effective solutions to the threat of climate change, we must work in partnership with all our stakeholders and indeed with society as a whole. Together with our partners, we will develop new innovations that ensure sustainable mobility for years to come. The future we see ahead is one where our cars have no emissions that negatively impact the environment and where our cars do not crash. And it's not a question of if we will get there – it's a question of when.

This year's Corporate Report is again integrated with our sustainability report to demonstrate how sustainability issues are part of all daily operations within Volvo Cars. The report is divided according to the main focus areas of our operations – Environmental Care, Safety and Profitability. In each of these areas we discuss our approach to a sustainable future and the challenges we foresee in moving forward. You can also read more about our societal commitments, our suppliers and employees. In the data section, you can follow our progress in the scorecard and a full GRI report is available on our website.

I would like to reiterate our commitment to the ten principles of the Global Compact and I welcome any suggestions you may have to further develop sustainability work at Volvo Cars.



Stephen Odell President and CEO

### SIGNIFICANT EVENTS



#### ■ Environmental cars - Seven new DRIVe models

In 2009, the DRIVe family was expanded by seven exceptionally fuel-efficient diesel cars with extremely low  $\mathrm{CO}_2$  emissions. All of the cars are at the top of their respective market segments in terms of fuel efficiency and  $\mathrm{CO}_2$  emissions. During the year, the second-generation Volvo S40 DRIVe was named Environmental Car of the Year by the British buyers' guide "What Car?".

#### ■ Plug-in hybrid in the market by 2012

By 2012, Volvo Cars will be mass-producing plug-in hybrids: cars that can be charged through an ordinary electrical outlet. Electric power is expected to meet the daily transport needs of 75 percent of Europe's drivers. Diesel engines will be used for longer trips.  ${\rm CO_2}$  emissions will average 49 grams per kilometre and fuel consumption will be 1.9 litres per 100 kilometres.

#### ■ Stock Purchase agreement signed with Geely

On March 28, 2010, it was announced that Zhejiang Geely Holding Group Co. Ltd. had signed a binding acquisition agreement with the Ford Motor Company to acquire 100 percent of Volvo Car Corporation. Since they must await the approval of the appropriate authorities, the two companies expect the transaction to be completed in the fourth quarter of this year.

#### ■ Volvo XC60 best seller

The Volvo XC60 was the year's best seller with 61,667 units sold. The model also won a number of international accolades for design, safety and innovation, including "International truck of the year" in the US – one of the world's most prestigious automotive awards. The Volvo V50 secured second place on the sales list with 54,062 units sold.

#### ■ Pedestrian Detection in Volvo S60

The global innovation Pedestrian Detection is a pioneering technological solution to protect pedestrians in urban environments. In a single instant, the system can detect pedestrians who step in front of the car, warn the driver and brake at full force, if the driver does not react in time. Initially, Pedestrian Detection will be available in the new Volvo S60.

# OUR PHILOSOPHY COMBINES VALUES AND PROFITABILITY

VOLVO CARS' COMPANY PHILOSOPHY, OUR TOMORROW, DESCRIBES THE VALUES THAT GUIDE THE COMPANY AND RELATES THEM TO PROFITABILITY AND CUSTOMERS' DEMANDS.

The company looks forward to the future with confidence and points to the strong brand – one of the world's most famous. What makes Volvo Cars unique in the automotive world is its focus on human values in life. Caring about yourself and others; the safety concept encompasses not only the passengers of the car, but also passengers in other cars, and pedestrians. Environmental care goes beyond legislation – and consideration for customers shall imbue the entire company.

Competition in the premium segment is intense and growing fast. It is difficult to challenge the best. To succeed, we must raise our sense of purpose, work in unison and bear responsibility for our actions.

The prioritisation of values is illustrated in a pyramid. It is the sum of all of the pyramid's levels that gives Volvo Cars its competitive advantage.

At the top of the pyramid is safety, Volvo's bestknown core value and the value with which the company wants people to associate Volvo first. On the next level are Environmental Care and Modern Scandinavian Design. These are areas in which the company differentiates itself from the competition. These areas are becoming increasingly important for customers in the premium segment who want to have cars with an attractive design and that have as little impact on the environment as possible.

The base of the pyramid comprises the entry keys into the premium segment: Premium Quality, Customer Experience and Driving Dynamics. Without these attributes, the most discerning customers will not be interested.

#### Brand promise

Volvo Cars has summarised its values in one brand promise: We create cars for a better life.

Design is more than just aesthetics. Design is the collaboration between styling and engineering. Two disciplines that work in unison to create beautiful cars with sophisticated content. And our Swedish heritage means that the design will be inspired by our relationship to nature.

Creating exceptional cars is our passion. They are premium in terms of aesthetics and driving. They are safe. They were manufactured in consideration

of people and the surrounding environment. We create the best solutions for travelling together.

We believe in the future and are working hard to make it brighter for our customers. Sustainability is a key term for us as a company and we take a long-term approach. We believe that the car and mobility will also be decisive for a functioning society in the future. We care about the environment in which our customers live and want them to feel even safer. Our driving dynamics provide a journey that everyone in the car can appreciate. And the manner in which we care for our customers convinces them that they made the right decision. They have chosen a car company that makes a difference.

# WE CREATE CARS FOR A BETTER LIFE.

WE BELIEVE IF YOU FEEL SAFE YOU CAN HAVE MORE FUN

WE BELIEVE MOBILITY AND CARE FOR THE PLANET CAN BE COMBINED

WE BELIEVE THAT BEAUTY AND FUNCTION WORK TOGETHER

WE ARE CONVINCED YOU CAN HAVE A PREMIUM CAR AND A CLEAR CONSCIENCE





"THE CHALLENGE FACING THE AUTOMOTIVE INDUSTRY IS REALISING A TRANSITION TO ENVIRONMENTALLY-COMPATIBLE TECHNOLOGY AND SECURING LONG-TERM SUSTAINABLE MOBILITY AT A REASONABLE COST"

Stephen Odell

## VOLVO CARS' APPROACH TO SUSTAINABILITY

Sustainable development encompasses three elements: Economy, Environment and Social Responsibility. For Volvo Cars, this entails the following priorities:

**SAFETY** is Volvo Cars' guiding principle. The aim is to create cars in which no one will die or be injured.

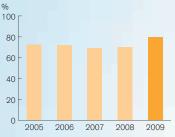
**ENVIRONMENTAL CARE** is based on a holistic perspective, in which the car's entire life cycle is environmentally adapted. Ultimately, Volvo Cars aims to create cars that are free of harmful emissions.

**PROFITABILITY** for Volvo Cars means good, long-term business for the company, customers and society at large.

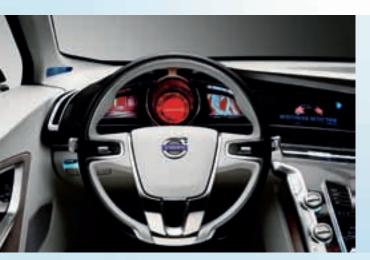
"SUSTAINABLE DEVELOPMENT IS DEVELOPMENT
THAT MEETS THE NEEDS OF THE
PRESENT WITHOUT COMPROMISING THE ABILITY OF
FUTURE GENERATIONS TO MEET THEIR OWN NEEDS."

Brundtland (Our Common Future, 1987)

#### Number of cars with full marks in safety test



In 2009, Volvo Cars had full marks in 44 of 55 tests



### SAFETY

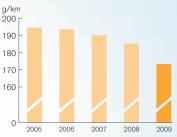
Some 1.2 million individuals currently die in traffic accidents annually. Volvo Cars has a goal of no serious injuries or deaths in or by a new Volvo car by the year 2020, in line with a long tradition of focusing on safety. Safety efforts are based on behavioural science research and knowledge gained from actual traffic situations, which has paved the way for new, successful innovations. The path towards Volvo Cars' goal 2020 consists of two parts: its own development of safety efforts and partnerships with other key players in society.

### **ENVIRONMENTAL CARE**

In 2009, Volvo Cars took great strides towards a sustainable future with its new climate-adapted cars. New products and technologies were launched and a new Volvo is now available with carbon-dioxide emissions as low as 99 grams per kilometre. Average emissions from Volvo cars sold in the EU was reduced by a full nine grams during the year, from 182 grams per kilometre to 173 grams per kilometre. The sights have been set on a future free of harmful emissions in which electrification is a key technology, and already in 2012, Volvo Cars will mass produce its first plug-in-hybrid.

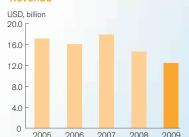


#### Average CO<sub>2</sub> emissions for the EU fleet



Volvo Cars' average emissions level in Europe decreased from 182 to 173 g CO<sub>2</sub>/km. With the help of DRIVe and electrical hybrid technology, we anticipate significantly reducing emissions in the coming years.

#### Revenue



Volvo Cars' revenue fell to USD 12,400 million, a decline of 16 percent compared with the preceding year.



### **PROFITABILITY**

The goal of Volvo Cars is to sell cars profitably in the premium segment. The key to success for Volvo Cars is to listen to customers and to be a driving force and flexible in a changing world. Collaborating with other players in society creates the right conditions for manufacturing cars that meet customers' demands, in terms of safety, environment and comfort. Sustainable profitability will be achieved by translating the company's and society's values into attributes that customers want and for which they are prepared to pay.

### GLOBAL DRIVING FORCES



IN 2009, THE WORLD WITNESSED THE TROUGH OF THE SEVERE GLOBAL RECESSION. TOWARDS YEAR-END, MANY COUNTRIES NOTICED AN ECONOMIC IMPROVEMENT. OF THE MAJOR EMERGING MARKETS, IT WAS NOTED THAT BRAZIL, INDIA AND CHINA HAD A MILDER DOWNTURN AND SHOWED EARLY SIGNS OF RECOVERY.

From a climate perspective, 2009 was the year in which global leaders were meant to reach an agreement on a new, ambitious and long-term climate agreement. Intense preparations were underway throughout the year prior to a summit in Copenhagen in December. The US aims to reduce its emissions by 17 percent by the year 2020, compared with 2005. Europe's climate and energy pact aims to reduce greenhouse-gas emissions by 20 percent by the year 2020. The EU ultimately wants to decrease its emissions by 80–95 percent by the year 2050, compared with 1990.

The European Commission also wants to begin reducing global greenhouse-gas emissions by not later than 2020 and that emerging markets reduce their emissions by between 15 and 30 percent by 2020 compared with no action being taken.

In July, the G8 countries agreed that global warming cannot exceed two degrees and that global emissions must be cut in half. In September, Japan also announced a key decision pledging to reduce greenhouse-gas emissions by 25 percent by the year 2020, compared with 1990.

The summit in Copenhagen did not produce the results that the world had been hoping for, but contributed to a strong focus on the environment in debates during the year.

#### Turmoil for the automotive industry

For the automotive industry, 2009 was a turbulent year marked by the financial crisis. The registration volume of passenger cars declined gradually during the period 2007 through 2009. In Europe, sales of new cars fell by about 1.5 billion cars and it is expected to take until 2014 before the market returns to the level of 2007. The number of cars in the premium segment declined by 700,000 in 2007-2009. Sales of new cars in the US declined by nearly six million in the same period and there was an 800,000-car reduction in the premium segment in the US. Russia was also affected by a heavy decline, with volume being halved during the period.

Through government support for the scrapping of cars in the US, certain countries in Europe, Japan and Russia, the decline was slowed somewhat in 2009. Scrapping subsidies had the greatest impact on cars outside the premium segment. In 2010, a certain negative effect is expected on car sales in countries where the scrapping subsidies had the greatest impact in 2009.

#### Macro economy

During the spring, oil and raw materials prices were at a low level, but recovered during the latter part of the year. Oil prices rose from USD 40 per barrel to USD 70-80 per barrel in the final months of the

year. Inflation rates fell throughout the world and were negative in, for example, China and several G7 countries for some of 2009.

The SEK strengthened during the year by 9 percent against the USD, by 6 percent against the EUR and by 11 percent against the JPY. Several central banks implemented large interest-rate cuts and in some countries, the rate was close to zero.

### Breakthrough for the transport sector in Sweden

According to the Swedish Environment Protection Agency (EPA), during the first six months of 2009, carbon emissions further declined from new cars in Sweden, down 3.1 percent compared with the full-year 2008, from 174 to 169 grams per kilometre. This is the first time since international reporting began in 1990 that the climate impact declined from the Swedish transport sector as a whole. One explanation for this is that Swedes are buying more fuel-efficient cars. Another explanation is that the share of renewable fuel in the transport sector is rising, while fuel consumption is declining dramatically.

The Swedish industry organisation BIL Sweden reported that the percentage of environmental and diesel vehicles reached record levels in 2009.

#### EU studies ethanol

In the largest study ever of its kind, the EU surveyed ethanol vehicles and ethanol fuel over a four-year period in eight countries, including China and Brazil. Fuel consumption was lower than was theoretically assumed. At best, ethanol vehicles only require 14

percent more E85 compared with gasoline-powered vehicles. This would indicate that the energy content of the fuel is more efficiently used in ethanol cars than in petrol-driven cars.

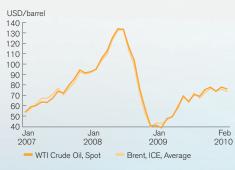
In Sweden, signs are now emerging that the interest in ethanol and gas-powered cars among drivers of company cars is dwindling since the future of the higher tax benefits associated with them is unclear.

#### Swedes committed to climate issues

The Swedish EPA's annual study regarding the public's opinion of climate change indicates that Swedes' willingness to reduce their own greenhouse-gas emissions remains at a very high level. An increasing number of people believe that extra taxes and fees on petrol, oil and air-travel would be positive. A full 69 percent of Swedes prefer to purchase goods and services from companies that strive to limit climate change, up from 62 percent a year ago. Nine out of ten Swedes consider themselves climate-conscious, every second Swede can feel guilty about doing something that may have a negative effect on the climate, and an increasing number have done something in their everyday lives to reduce their climate impact.

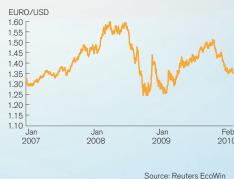
In December, the Swedish Energy Agency reported the final outcome of its five-year energy efficiency enhancement programme. It shows that 87 energy-intensive Swedish industrial companies have achieved electricity efficiency enhancement of 1.4 TWh, which corresponds to the annual electricity consumption of about 80,000 electrically heated single-family homes.

#### Crude oil prices

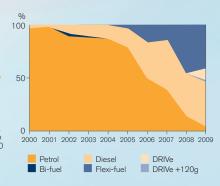


Source: Reuters EcoWin

#### Spot rates



#### Fuel mix. Volvo Cars sold in Sweden



# STAKEHOLDER DIALOGUE GENERATES LONG-TERM SUCCESS

AN OPEN AND CONSTRUCTIVE DIALOGUE BETWEEN STAKEHOLDERS IS CENTRAL TO VOLVO CARS' CONTINUED SUCCESSES. WITH THE HELP OF BUSINESS INTELLIGENCE AND STAKEHOLDER ANALYSIS, THE COMPANY IS WORKING IN A STRUCTURED AND MOTIVATED MANNER TO CONSIDER AND BALANCE STAKEHOLDERS' DEMANDS AND EXPECTATIONS TO THE GREATEST EXTENT POSSIBLE.

THE OBJECTIVE IS FOR EACH STAKE-HOLDER GROUP TO FEEL THAT THEY HAVE THEIR SAY AND THAT THEIR SAY MATTERS. AN EXAMPLE OF THIS IS THE COMPANY'S SUSTAINABILITY ISSUES, IN WHICH A SELECTION OF STAKEHOLDERS HAVE CONTRIBUTED TO IDENTIFYING THE AREAS AND ASPECTS THAT THEY VIEW TO BE OF THE HIGHEST PRIORITY IN TERMS OF OPERATIONAL SUSTAINABILITY.

In addition to employees, customers, owners and suppliers, Volvo Cars has well-established relations with trade unions, universities and research, the media, non-profit organisations and authorities in other segments of the public sphere.

#### Owners

Volvo Cars reports back on a continuous basis to its principal owner, the Ford Motor Company, and, through continuous dialogue, develops ambitions and focus in strategic areas, such as sustainability.

#### **Employees**

Volvo Cars pursues a committed and inclusive culture. Routine employee surveys and employee discussions are important tools for listening and creating an open culture, which create the means for continuous development. The company conducts an annual competence management process that encompasses setting objectives, performance reviews and fulfilling objectives.

#### Non-profit organisations

The dialogue with non-profit organisations provides additional perspectives and is an important source for identifying topical social issues. Partnerships with organisations that represent various interests promote a shared understanding of challenges facing society.

#### Suppliers

Suppliers are a central part of our operation and are of considerable significance to the company's successes. Volvo Cars employs an active and long-term approach with suppliers through such measures as training courses and follow-ups. Volvo Cars' social responsibilities include imposing clear demands on

suppliers and supporting them in the implementation of high standards in such areas as labour conditions and environmental care.

#### Research and universities

Volvo Cars' success is deeply dependent on groundbreaking technological and conceptual development. This particularly applies to the areas of safety and the environment.

Volvo Cars conducts extensive research in the areas of climate change, as well as other environmental and social issues. Volvo Cars participates in several research and knowledge projects and works to direct resources to those solutions that generate the best effect for society, the environment and the economy. Long-term sustainable solutions are based on active cooperation between industry and research.

#### **Authorities**

Volvo Cars maintains an ongoing dialogue with authorities regarding various issues that might impact operations, including the environment and safety. Volvo Cars has, for example, initiated long-term cooperation with the Swedish National Road Administration to jointly create the necessary prerequisites for improved traffic safety in the future.

#### Customers

Volvo Cars has, as its primary task, to actively listen to its customers and fulfil their wishes and expectations. This occurs through various interfaces with customers and through different surveys on customer attitude, preferences and satisfaction. It is about identifying the wishes of both existing and potential customers.





## READER SURVEY - FUEL EFFICIENCY AND SAFETY MOST IMPORTANT

Volvo Cars maintains a close and committed dialogue with the company's stakeholders. One element of this effort is the reader survey, which is regularly conducted to assess how well the Corporate Report is responding to stakeholders' demands and expectations through relevant and accessible content.

The 2009 reader survey indicates that climate change and safety issues continue to come in at the top of the stakeholders' agenda. It also showed that fuel efficiency strengthened its position as the principal individual issue, while diversity and equal opportunity issues declined in significance compared with earlier surveys.

In general, the new design of the report, which was launched in 2008/2009, was appreciated, as

was the possibility of accessing more in-depth knowledge on the company's website. Stakeholders were also pleased with information concerning safety, business environment reporting, profitability and the presentation of the company and its philosophy.

More specifically, external stakeholders would like to see more space devoted to suppliers and the interaction with the company's stakeholders, which in this year's report was emphasized in an interview with the President of the Scandinavian Association of Automotive Suppliers. External stakeholders would also like to see greater focus on the customer perspective, as well as more in-depth information regarding sustainability and the ideas behind sustainable mobility. These are addressed in the chap-

ter on profitability and the environmental section in this year's report.

Volvo Cars' internal stakeholders wanted more reporting about how the financial crisis resulted in the largest reorganisation in the company's history, and a focus on the competitiveness of the automotive industry. These views were addressed in the 2008/09 issue of the Corporate Report in the business environment analysis and the employee chapter.

The reader survey also showed that all stakeholders want to read more about the customer perspective; a section that is integrated with the profitability section in this year's report to emphasize the connection between customer-oriented products and the demands of the market.

## "I LIKE THE CLEAR, SIMPLE LAYOUT AND THE EMPHASIS ON DISTINCT GOALS FOR THE FUTURE"

## "FOCUS ON A SUSTAINABLE ENVIRONMENTAL APPROACH HAS BEEN SHOWN"





### **AUTOMATIC PEDESTRIAN DETECTION**



Pedestrian Detection with Full Autobrake is a revolutionary technological solution. It can detect pedestrians that step in front of the car, warn the driver and automatically activate full braking power, if the driver does not react in time.

This technology advances Volvo's automatic braking system from 50 percent to full braking power.

In case of an emergency, the driver is first alerted by a warning signal combined with a blinking light on the wind-shield's head-up display. The car's brakes are simultaneously preloaded. If the driver does not react to the warning and a collision is imminent, full autobrake is activated. The system uses information from a radar and an advanced camera that detects human shapes and movement patterns.

Pedestrian detection with full autobrake can avoid collisions with pedestrians at speeds of up to 35 kilometres per hour unless the driver personally reacts in time.

At higher speeds, it is a matter of reducing the car's speed as much as possible prior to colliding.

Lower speed on collision reduces the risk of serious injuries. If the speed is reduced from 50 kilometres per hour to 25 kilometres per hour, the chance of the pedestrian surviving increases by 85 percent.

# SAFETY VISION PREVENTS ACCIDENTS AND SAVES LIVES

VOLVO CARS' GOAL FOR 2020 IS THAT NO ONE SHALL BE KILLED OR INJURED IN A NEW VOLVO CAR. THE LONG TERM VISION IS TO CREATE CARS THAT CANNOT CRASH AT ALL.

For Volvo Cars, safety is the most important core value – an area in which Volvo has been the leader for more than half a century. The first vision of safety came already in Volvo's youth, when the founders stated that: Cars are driven by people. Therefore the guiding principle behind everything we make at Volvo is – and must remain – safety. In 1959, Volvo launched the three-point belt – an invention that is considered to have saved the most lives in the area of traffic safety.

Efforts to make safer cars influence every department at the company and are conducted at Volvo Cars Safety Center, where about 400 employees work with safety and all aspects thereof. The work is based on a methodology that continuously evaluates accidents involving existing car models, analyses causes and bases the next generation of cars on this knowledge.

The strategy for the next step in safety advancement rests on three pillars: method development, technology development, and collaboration and delegation of responsibility with other players.

#### Phases of the safety effort

five phases.

The method for working on safety has progressed from reducing the effects of a collision to working preventively and avoiding the actual accident. **Before the collision:** The first step involves keeping the driver well-informed and alert, thus avoiding many accidents.

If a situation arises, the car's dynamic safety system takes control and ensures that evasive manoeuvres are safe and predictable.

If an accident is imminent, and it is too late for the driver to perform an evasive manoeuvre, the car assumes control and independently brakes with full power. This takes place about 0.8 seconds before the moment of impact.

If the situation is such that not even the car can avoid the accident, which is about 0.4 seconds before the estimated moment of impact, the car prepares to reduce the effects of an accident.

**The moment of impact:** A collision takes 0.07 seconds. A small timeframe in which many protective systems in the car work in unison.

**After the collision:** the objective now becomes seeking medical attention for the injured as quickly as possible. The car facilitates this by sending for an ambulance on its own.

The path to the 2020 goal faces a number of challenges:

- This only leaves ten years to develop new systems
- · That is only two car generations
- We must gather a vast amount of new knowledge to develop systems that avoid accidents
- We must still develop the protective safety systems
- We must collaborate with others to achieve compatibility between the infrastructure and other vehicles

#### The human factor

To avoid accidents, we must understand what causes them. Most accidents are currently caused by human shortcomings. Volvo Cars does not believe that it is possible to avoid the human factor or to change people, but instead develops systems that are based on human behaviour and support and supplement people in areas in which their capacity is insufficient. The four top causes of accidents are driver distraction, driver drowsiness, influence of alcohol or drugs and insufficient driver capabilities. The most frequent causes of death in traffic are not wearing a seat belt, driving too fast and being under the influence of alcohol.

A number of behavioural scientists work at Volvo Cars Safety Centre to provide greater clarity as to what people do in traffic.

In 2009, Volvo Cars' initiated a study to observe drivers' reactions and behaviour. Hundreds of cars were equipped with instruments that detect where the driver is looking, combined with cameras that were facing forward, backward and on the drivers' feet. If an accident were to occur, the drivers' behaviour before and after the accident could be recreated. Were the drivers not looking? Were they not concentrated? Tired? Distracted?

The study will take 1.5 years and is financed with EU support.

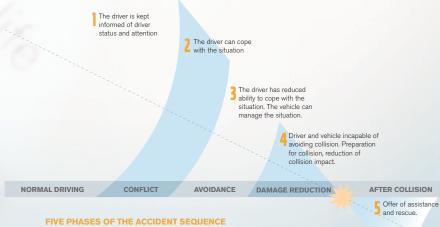
#### **Partnerships**

Partnerships are key to safety efforts. How does the car communicate with other cars and with infrastructure?

Volvo Cars is convinced that the path toward the vision is based on partnerships and participates in or heads a number of research partnerships, that work on the causes or avoidance of accidents. These partnerships include:

ACAT Advanced Collision Avoidance Technologies, TARC Thailand Accident Research Centre, and FICA Factors Influencing the Causation of Accident and incidents.

Volvo Cars' also has a partnership with the Swedish National Road Administration through what is known as the VV-VPV Partnership. Through this partnership, the participants discuss matters including: Is it possible to eliminate accidents through infrastructure, such as highway dividers? Is it possible to make a traffic environment completely safe?



The sequence of events for a traffic accident can be divided into five phases

- from the normal driving situation to the time after the accident has occurred. Volvo Cars develops new, and improves existing, safety solutions based on these

## PLATOONING TO BE TESTED ALREADY IN 2011

AUTONOMOUS DRIVING MAY BE A FUTURE STEP FOR THE TECHNOLOGY ON WHICH TODAY'S ADVANCED SAFETY SYSTEMS ARE BASED. THIS INVOLVES THE CAR TAILING A LEADER CAR AND FOLLOWING IT AT A VERY SHORT DISTANCE. PLATOONS OR ROAD TRAINS MAY BE TOMORROW'S SUPPLEMENT TO INDEPENDENT DRIVING.

#### SARTRE - THE EU PROJECT

Road trains are being developed within the framework of the EU project Sartre, Safe Road Trains for the Environment. The project is financed by the European Commission under the seventh framework programme. Also working with Sartre are Ricardo UK Ltd, Idiada and Robotiker-Tecnalia in Spanien, Institut für Kraftfahrwesen Aachen (IKA) (Institute of Automotive Engineering) in Germany, and SP Technical Research Institute in Sweden, Volvo Cars and Volvo Technology in Sweden.

Scenario: It is 2020: You just bought a coffee to take away to an energy station between Brussels and Paris. You have no particular desire to drive and would rather put the finishing touches to the report that you have to deliver tomorrow. On the GPS, you notice that the next road train is arriving in six minutes so you reserve a space. You drive onto the highway and soon see the truck coming, that leads the platoon. You allow all the vehicles to drive by and connect at the back. Your car measures the distance, speed and direction and adjusts to the car in front. You shift the steering wheel to the side, take a sip of coffee and open the report. In three hours, you arrive.

As early as next year, the first road train will engage in a trial run on a public road and in 2010, the system will be fine-tuned. Volvo Cars' approach to road trains is a long-term advancement on today's adaptive cruise controls, which maintain the car at a set distance to the vehicle in front. In other words, there are already automatic systems in production for maintaining distance, accelerating and decelerating. Established technology is available in the

market for automatic steering.

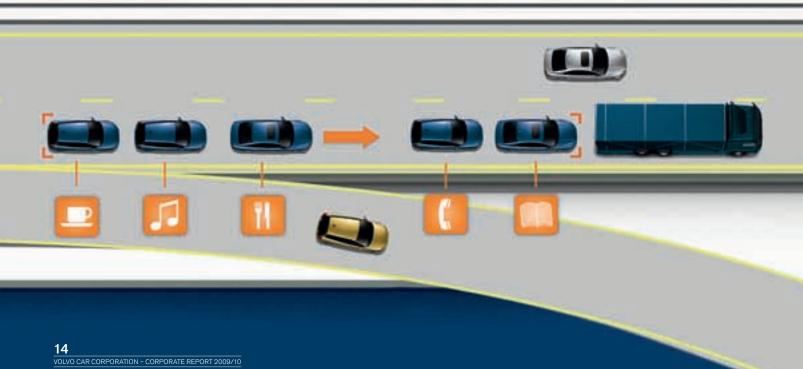
"A great deal of the technology is available," says Erik Coelingh, who is the engineering specialist for the project. We are now mostly reviewing added value for the customer and the business potential.

The driver in the lead vehicle is a professional driver who takes responsibility for the entire procession, just like bus drivers are responsible for their passengers. The cars in tow pay a fee to the lead car for following. The lead vehicle may be a truck or bus, which naturally have professional drivers and often drive long distances. Trucks can also follow the lead vehicle.

For customers who take the platoon, the trip will become safer, more fuel efficient and free up time for other matters. Many of Volvo's customers are often in a hurry and are willing to pay to save time.

Road trains have distinct societal advantages. The number of accidents should decline, since the human factor is largely eliminated. Cars in the procession consume less fuel and have fewer emissions. Since they drive extremely close to each other, congestion will also be reduced on the highways. In addition, the system is entirely based on the vehicles communicating with each other and does not require any change in infrastructure.





## PLUG-IN HYBRID IN PRODUCTION BY 2012

AS EARLY AS 2012, VOLVO CARS PLANS TO MASS PRODUCE A PLUG-IN HYBRID THAT COMBINES BATTERY OPERATION WITH A FUEL-EFFICIENT DIESEL HYBRID ENGINE. THE BATTERY WILL BE CHARGED THROUGH A REGULAR ELECTRICAL SOCKET, SUCH AS AN ENGINE HEATER OUTLET.

THE SOLUTION GIVES THE CUSTOMER THE BEST OF BOTH WORLDS: THE OPPORTUNITY TO DRIVE ON ELECTRICITY AND THE RELIABILITY THAT THE DIESEL ENGINE WILL TAKE OVER IF THE ELECTRICITY RUNS OUT.

The combination gives the car a total range of 1,000 kilometres, from Hamburg, Germany to Verona, Italy. The electricity has a range of up to 50 kilometres, a distance that covers the daily driving needs for slightly more than 75 percent of drivers in Europe. At a fuel cost of only about SEK 8 per day.

The environmental advantages are obvious. For a Volvo V70 plug-in hybrid, the average carbon emissions will be 49 grams per kilometre and fuel consumption will be 1.9 litres per 100 kilometres.

"To really generate a net improvement for the environment, the source of the electricity must be known," says Johan Konnberg, Project Manager for hybrid development. "If the electricity derives from renewable resources such as water or wind power, the environmental impact is very low. However, if the electricity derives from brown coal or oil sand, the energy consumption must be actively balanced to achieve lower net carbon emissions."

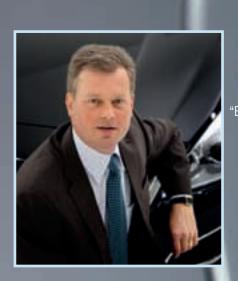
No compromises are being made in terms of the qualities of the Volvo car, which is offered with the same driving dynamics, comfort and world-class status regarding safety as a normal Volvo model. Customers can rest assured in selecting an environmentally compatible solution, without having to forego other demands.

The plug-in hybrid is an element of Volvo Cars' electrification strategy. In 2009, as part of the industrial partnership with the Swedish Energy Agency and Vattenfall, the joint-venture V2 Plug-in-Hybrid Vehicle Partnership was formed and shall develop, test, market and sell plug-in technology.

#### **BATTERY TECHNOLOGY**

The technology is based on a lithium battery that powers an electric engine. The battery can be charged through a normal electrical wall outlet. The braking energy is also used. The electric engine only requires a quarter of the energy of a combustion engine for the same work. An average-sized wind turbine can supply between 1,000 and 2,000 plug-in hybrids with average annual energy consumption.

If 15 percent of Europe's car fleet comprised plug-in hybrids, it would entail a total increase in electricity demand of 1 to 3 percent, which is easily equivalent to the planned expansion of renewable energy.



'ELECTRIC OPERATION IS A NEW AREA FOR THE AUTOMOTIVE INDUSTRY
AND WE ARE ACQUIRING NEW KNOWLEDGE EVERY DAY.

EVERYTHING FROM WHAT SOCIETAL INCENTIVES WILL

LOOK LIKE, TO HOW OFTEN THE CUSTOMERS CAN BE EXPECTED

TO CHARGE THEIR CARS AND WHO WILL PAY FOR THE ELECTRICITY."

Johan Konnberg, Project Manager for hybrid development

#### SIX CRITERIA FOR SELECTING NEW FUELS

When a car manufacturer decides to develop cars that can operate on new fuels, this is done with the help of six criteria:

- Climate impact. The most important factor and the whole reason for indentifying fuels other than diesel and petrol.
- The cost of converting the car to the new fuel must be reasonable. Tanks for gaseous fuels and batteries for electric operations remain expensive.
- 3. The production cost of the fuel. Hydrogen gas and synthetic diesel are examples of fuels that are expensive to produce.
- Customer acceptance. A new fuel may not eliminate other qualities of comfort. A gas tank or battery that occupies the entire boot is an example of solutions that customers do not want.
- 5. The possibility to expand infrastructure. The cost of developing a national network for fuel is decisive to success. For a filling station, it is ten times more expensive to install a pump for gaseous fuels than for ethanol and an ethanol pump is, in turn, ten times more expensive than an electricity charging post.
- Political support. Without political support, it is difficult to gain acceptance for a new fuel during the initial phase.



## EMPLOYEES TEST DRIVE PLUG-IN HYBRIDS



The first prototype of Volvo's upcoming plug-in hybrid is being test-driven by Volvo Cars and Vattenfall employees in 2010.

"I'm no technology expert; I represent the average customer," says Heléne Cato, one of the Volvo employee test drivers.

She says that there is a great deal to take into consideration and quite a few stages that have to be completed in the right sequence for the car to start.

The battery in the test car is estimated to have a range of 30 kilometres when fully charged. At the press of a button, the diesel engine takes control of the operation and increases the range to about 300 kilometres. In the fully developed car, the total driving range will be significantly longer and the diesel will be deployed automatically when necessary.

The prototype has two cords. One for fully recharging over five hours from a normal electrical outlet (10A) and one for quick charging at a charging station (32A).

"It is convenient to plug the cord into the outlet when I come home and in the morning, the car is ready to drive," says Heléne Cato.

# CONTINUED REDUCTION OF CAR FLEET'S CARBON EMISSIONS

VOLVO CARS' CARBON EMISSIONS DECLINED FROM 182 GRAMS PER KILOMETRE IN 2008 TO 173 GRAMS IN 2009, BASED ON AVERAGE CO<sub>2</sub> EMISSIONS FROM THE CAR FLEET IN THE EU. THE EU GOAL IS THAT NEW CARS WILL COMSUME AN AVERAGE OF 95 GRAMS NOT LATER THAN 2020.

Environmental work at Volvo Cars is in an intense phase and follows three main principles:

- · Efficiency enhancements of existing technology
- Electrification
- Alternative fuels

The environment has been an area of focus for Volvo since the UN environment conference in Stockholm in 1972. At that time, the focus was on emissions from Volvo's plants, and major investments were made, primarily in the paint shops, which introduced cutting-edge technology in the wastewater treatment facility and became the world's cleanest paint shops. Today, both society and Volvo Cars are focusing on reduced carbon emissions. In society, the climate issue has been in focus with a lively debate that culminated during the COP15 summit in Copenhagen, where hopes for a new global climate agreement unfortunately broke down.

Volvo Cars' vision for the environmental effort is defined by its Drive Towards Zero programme and means that the company is pursuing a car fleet with zero carbon emissions. This means that efforts to reduce carbon emissions from Volvo's model programme are assigned high priority and this has been the case in recent years. This focus has resulted in highly tangible changes.

In 2001, 98 percent of the cars Volvo sold in its domestic Swedish market were exclusively gasoline powered. In 2009, that figure was 4 percent. In other words, the interest in alternative fuels has not only exploded, but customers have also put their money where their mouth is and purchased cars that are powered by alternative fuels. An expansive

customer base generates a positive commercial aspect in the development of the next generation of environmental vehicles.

To meet the carbon challenge, several alternative fuels are needed in combination or on their own and the possibility of combining old and new technology.

In the short term, the company has primarily concentrated on enhancing the efficiency of existing models. The DRIVe models were created by combining a highly fuel-efficient diesel engine with a number of technological measures in various parts of the car.

Since its launch in 2008, more than 46,000 DRIVe units have been sold. Read more about DRIVe on page 20.

In early 2009, a micro hybrid was introduced, which is a start/stop technology that turns the engine off instead of just running idle, reducing fuel consumption as a result. In 2009, the Volvo C30 DRIVe was also launched, which emits only 99 grams of carbon dioxide per kilometre.

All current DRIVe cars are diesel powered. In North America, diesel is rarely used as passenger-car fuel, which means that all Volvo cars that are sold in that market are gasoline-driven. This results in major differences in auto manufacturers'  $\rm CO_2$  emissions in various regions. Legislation regarding  $\rm CO_2$  emissions is being tightened in many regions. The benchmark is average emissions for the vehicle fleet that are sold during the year. In parallel with the development of fuel-efficient diesel cars for DRIVe, an extensive effort is underway concerning the development of alternative fuels.

#### Flexifuel

Volvo Cars has one of Europe's most expansive Flexifuel car programmes. A Flexifuel car can be operated on bio ethanol (E85), petrol or a combination of these two fuels. Filling up with E85 can reduce fossil-fuel based carbon emissions by up to 80 percent, from a lifecycle perspective.

### that are powered by alternative fuels Sales per fuel type, no. of cars

	2009	%	2008	%
Petrol	147,544	44	179,350	48
Diesel	129,372	39	169,176	45
Methane* (Bi-fuel)	43	0	8	0
Bioethanol (Flexifuel)	11,217	3	25,763	7
DRIVe**	46,632	14	451	_
Total	334,808	100	374,297	100

<sup>\*</sup> The manufacture of Bi-Fuel cars ceased in 2007 owing to poor demand, but can since 2008 be adapted through an external supplier in some markets.

This fuel has been widely discussed from an ethical point of view, since the raw material also doubles as a foodstuff, but Volvo Cars believes that it is a strong fuel to have in the product mix that is required to rapidly reduce carbon emissions.

#### Biogas

In such countries as Sweden, the Volvo V70 can be converted in the aftermarket to operate on vehicle gas. Tanks made from composite materials are attached under the floor of the boot, which is raised 15 centimetres, and leave the petrol tank intact. This gives the car a range of over 1,000 kilometres, of which about 300 kilometres is powered by vehicle gas. The performance has been raised to 231 horsepower, while fuel consumption has been reduced from 9.2 to 8.8 litres per 100 kilometres.

#### Electrification

A key component in achieving the zero-emissions vision is the work with electrification. In this area, two concepts are being developed simultaneously:

- A plug-in hybrid that is powered by a combination of an electric and a combustion engine. The battery can be charged directly at an electrical wall outlet.
- An electric car that is exclusively powered by an electric engine, without any combustion engine. The plug-in hybrid will be put into production already in 2012. In the first quarter of 2011, the first 50 clean electric cars will be delivered to a number of selected trial customers in Sweden and Belgium. Volvo will study the customers' driving patterns and behaviour to understand more about how electric operation works in practice. For Volvo Cars, the development of electric cars is dependent mainly on two factors:
- 1. Technology battery advances
- Incentives electric cars will initially be expensive and require support and societal incentives to become acceptable to customers in terms of price.

#### DRIVe carbon emissions and fuel consumption

Volvo C30	3.8 I/100 km	99 g CO <sub>2</sub> /km
Volvo S40	3.9 I/100 km	104 g CO <sub>2</sub> /km
Volvo V50	3.9 I/100 km	104 g CO <sub>2</sub> /km
Volvo V70	4.5 I/100 km	119 g CO <sub>2</sub> /km
Volvo S80	4.5 I/100 km	119 g CO <sub>2</sub> /km
Volvo XC60	6.0 I/100 km	159 g CO <sub>2</sub> /km
Volvo XC70	6.0 I/100 km	159 g CO <sub>2</sub> /km

Volvo's new DRIVe cars are best in their segments.

<sup>\*\*</sup> The DRIVe programme comprises Volvo's fuel-efficient diesel cars.



# VOLVO CHOOSES A PATH TOWARD SUSTAINABLE PROFITABILITY

IN THE MIDST OF THE SEVERE RECESSION, VOLVO CARS HAS SELECTED A PATH AND ESTABLISHED AN AGGRESSIVE BUSINESS PLAN FOR THE DEVELOPMENT OF ENVIRONMENTALLY COMPATIBLE TECHNOLOGY. IN THE COMING FIVE YEARS, THE COMPANY WILL INVEST A TOTAL OF SEK 17 BILLION ON ENSURING THE TRANSITION TO SUSTAINABLE MOBILITY.

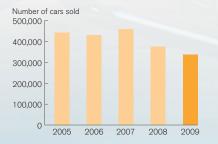
Maintaining momentum and looking to the future is more important than ever in challenging times. The year 2009 began in the face of adversity for Volvo Cars with falling volume and growing losses. A rebound occurred at the six-month mark and the fourth quarter showed a distinct improvement in earnings.

#### Sustainable profitability

Volvo Cars' goal is to achieve sustainable profitability. Although a loss was posted in 2009, during a year that was characterised by a financial crisis and a global recession, a gradual rise was noted in the number of cars sold during the second half of the year and the subsequent improvement in profitability.

A loss of USD 32 million was posted in the fourth quarter, which was a strong recovery compared with the fourth quarter of 2008 when the company posted a loss of USD 736 million. On a full-year basis, losses also declined, ending at a loss of USD 653 million, a clear improvement on 2008 when a loss of USD 1,465 million was posted. A considerable portion of this improvement was attributable to the extensive restructuring programme initiated by Volvo Cars in late 2008 when the crisis became a fact. Costs were reduced by more than USD 1 billion in 2009 compared with the preceding year.

#### Sales



#### A distinct choice of path

For Volvo Cars, there is a distinct correlation between profitability and fulfilling customers' demands for environmentally compatible products. Large parts of the rise in late 2009 were attributable to the models offered by Volvo striking the right chord among customers – particularly with the offering of DRIVe models. Many customers are also willing to pay for fuel-efficient, safe cars with an attractive design.

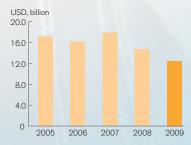
Volvo Cars is a minor player in the global automotive industry. This position carries advantages and disadvantages. One advantage is that small companies are more manoeuvrable and can be repositioned at shorter notice. One disadvantage is that they lack the resources to develop parallel systems and that the company must instead make decisions regarding direction.

An example of this is the issue of new fuels. A minor player must choose the path that research and development will primarily follow. In addition to working on efficiency and alternative fuels, Volvo Cars has chosen to place significant emphasis on electrification in forthcoming products.

Choosing direction also involves some risks. Electrification and the advancement of batteries are costly and will lead to a higher initial price for the car. One possibility is that society's motivations by way of political monetary incentives disappear, which are a must for customers to initially invest in an electric car.

The interest in environmental cars and alternative fuels has been considerable in recent years. Volvo also expects customers to henceforth be interested in solutions other than the traditional gasoline engine. The problem for the automotive industry is the long development time. The technology that is being developed today will not be seen on the roads until mid-decade. Few companies know what customers want – not even the customers themselves.

#### Revenue



#### Profitable offerings in line with the times

Certain offerings have been entirely aligned with Volvo Cars' strategy, yet have still not sold in sufficient volumes to be economically feasible. The earlier biogas-powered Bi-fuel cars were discontinued in 2007. However, Volvo Cars can offer gas-driven cars in Sweden that are converted by a small company located in the plant area.

Climate compensation for ethanol cars is another example of an offering that has not proven to be economically sustainable. The cost amounted to nearly SEK 15 million but customers did not find the added value attractive.

However, the DRIVe cars have been enthusiastically received, and in 2009, every fourth Volvo car that was sold in Europe was a DRIVe.

#### Volvo XC60 sales engine

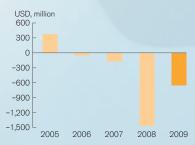
In 2009, the multiple award-winning Volvo XC60 became a worldwide best seller and captured key market shares in the growing Compact Premium SUV segment. During the year, 61,667 Volvo XC60 units were sold.

The largest markets in Europe generated strong earnings as a result of high demand for the fuel-efficient DRIVe models. During the second half of the year in North America, Volvo managed to increase sales in a shrinking market. Two key factors behind this were the XC60 and a popular customer offering with generous service and warranty terms and conditions.

Sales in China continued to grow rapidly and the new long-wheelbase Volvo S80L, which is only produced in China, was very well received by the market. Sales in Brazil and Australia also outperformed the preceding year.

In 2009, Volvo Cars sold a total of 334,808 cars, which was a decline of 10.6 percent from 2008.

#### **Profit before tax**



## DRIVe CARS WITH LOW CARBON EMISSIONS

IN 2010, THE VOLVO C30 DRIVE WILL ARRIVE; THE FIRST VOLVO CAR WITH CO. EMISSIONS OF LESS THAN 100 GRAMS PER KILOMETRE. THE MODEL WAS LAUNCHED AT THE AUTO SHOW IN FRANKFURT IN 2009.

IT IS THE RESULT OF BORDER-TRANSCEND-ENT TEAMWORK IN WHICH NEARLY EVERY DEPARTMENT AT PRODUCT DEVELOPMENT OPTIMISED ITS DELIVERIES IN TERMS OF FUEL EFFICIENCY.

ULF NORDSTRÖM WAS THE DRIVING FORCE AND MANAGER BEHIND THE EFFORT, WHICH GENERATED BETTER RESULTS THAN ORIGI-NALLY ANTICIPATED.

"Making fuel-efficient cars means keeping an eye on all the details. Every improvement does not make a vast difference on its own. But overall, we have truly succeeded," says Ulf Nordström.

For the Volvo V50 and Volvo S40, the goal was 107 grams of carbon emissions per kilometre, but the team achieved 104 grams in the first round. For the Volvo C30, the goal was 104 grams - which was also exceeded by the team. The new Volvo C30, which will be launched in 2010, has CO<sub>2</sub> emissions of only 99 grams per kilometre. For large cars, the improvement was significant, with the Volvo S80 and Volvo V70 emitting as little as 119 grams, which is equivalent to a fuel consumption of 4.5 litres per 100 kilometres. All DRIVe products are at the top of their respective segments when compared with the

The following areas have been in focus:

Rolling resistance - low rolling resistance tyres. Aerodynamics - lowered chassis by 10 millimetres; polished rims; front spoiler under the floor; covered engine grill, etc.

Engines - the engines' software has been optimised toward lower consumption.

Gearbox - altered exchange, which generates fewer RPMs and thus lower fuel consumption; improved oil in the transmission, which leads to less

Electricity impact - reviewed the peripheral systems that impact fuel consumption. For example, electro-hydraulic power steering and more intelligent battery charging, whereby the generator only charges during low usage; reduced fuel consump-

Weight - a number of weight actions taken. Start/Stop - turns off the engine when the car is not in motion, such as by traffic lights, instead of

allowing it to run idle.

"We have made enhancements here and there, the results of which were overwhelming," says Ulf Nordström. He says that the single largest factor in reducing fuel consumption was low-rolling resistance tyres:

"The fuel consumption of a DRIVe car is reduced by up to 20 percent when a normal 17-inch tyre is replaced with a low-rolling 16-inch tyre and a few additional percent if replaced with a 15-inch tyre. This is due to a reduction in rolling resistance."

Ulf Nordström's project has had the wind in its sails; the focus on reduced fuel consumption is timely with the global environmental and climate debate bringing a new focus also at Volvo Cars.

"We simply have to work harder on fuel consumption because it is what customers demand. Earlier, many customers felt that environmental cars were important based on someone else driving them. Now many people want their own low-emissions car, which will automatically generate low fuel consumption thus creating a win-win situation for your wallet and the environment."

DRIVe cars have reduced consumption but retained the driving dynamics. Top speeds are limited to 190 kilometres an hour, a speed that few customers will ever reach.

"Only a small percentage of the Autobahn has no speed limit. Otherwise, the speed limit is about 130 kilometres an hour," says Ulf Nordström.

The response from customers has exceeded expectations. Fifteen months after the sales launch, 25 percent of Volvo cars sold in Europe are DRIVe



## MODEL PROGRAMME

People choose a car with their hearts. Our driving dynamics are based on some key principles – refined control and responsive performance. This ensures an engaging drive and ride. These principles are there to make Volvo drivers feel confident and in command and for their passengers to feel

relaxed and secure, regardless of weather or road conditions.

The brand new Volvo S60 and V60 will be launched in 2010 – Volvo's sportiest and most dynamic cars in the model programme.

### Sedans for a variety of tastes







## X Lifestyle cars for all roads







### Coupés and convertibles à la Volvo



### Versatile estates



# ENVIRONMENTAL RESPONSIBILITY IN PRODUCTION

VOLVO CARS TAKES A HOLISTIC APPROACH TO ENVIRONMENTAL ISSUES IN ITS OPERATIONS AND HAS BEEN WORKING PROACTIVELY IN THE AREA FOR MORE THAN 40 YEARS. ENVIRONMENTAL PROTECTION EFFORTS ENCOMPASS ALL OF THE COMPANY'S OPERATIONS, INCLUDING DEALERS AND WORKSHOPS THROUGHOUT THE WORLD.

Volvo Cars' environmental efforts can be divided into two areas. A considerable part of the effort is focused on improving the cars' actual environmental impact, since this is equivalent to about 85 percent of the product's total environmental impact from a lifecycle perspective. Another part of the effort continuously focuses on improving Volvo Cars' operations from an environmental perspective to ensure minimal environmental impact during the entire lifecycle of the car.

The company currently has an environmental policy in place and an overriding environmental strategy with distinct goals being developed for 2020. In 2009, a comprehensive environmental assessment was conducted that, among other conclusions, showed that Volvo's plants are well organized today. The plants have been ISO 14001-certified since the early 1990s.

The greatest focus in the operational effort is on the plants, but the environmental impact from other operations shall also be minimized. Small dealers without workshops can also contribute through such measures as conserving energy.

Volvo Cars endeavours to be one step ahead of legislation in each country. To provide guidance and support, there is a central environmental protection department and local environmental coordinators have been appointed for each operation.

#### Further responsibility

Volvo Cars also works with wastewater treatment plants and other players that are further down the chain. In partnership with the municipal wastewater treatment plants in Sweden, the company works to make the digested sludge from the plant clean enough to use in agriculture again. In 2009, Volvo Cars invested in a sludge press at the wastewater treatment plant that separates organic sludge from non-organic sludge. The organic sludge can be composted or can be used as fuel by district-heating plants, and the non-organic sludge is sent for landfill.

#### **Transports**

Every year, hundreds of thousands of tons of production material are transported into Volvo Cars' plants and hundreds of thousands of finished cars are delivered to dealers. To reduce the climate impact from these goods transports, the company is working actively on logistics solutions to reduce its carbon emissions by 20 percent by the year 2010, based on the 2006 level. By 2008, emissions had been reduced by 12 percent. One element of this reduction is due to the transition from trucks to trains for daily deliveries between Germany and Sweden.

Continuous efforts are made to reduce the total environmental impact of transports, through such measures as increasing the capacity level and optimising packaging and transport solutions.

#### Further improvements in energy efficiency

Energy consumption comprises a significant share of the company's total climate impact, and is thus the company's most prioritised environmental goal. In 2009, total energy consumption was reduced by 13 percent compared with 2008.

In addition to energy efficiency enhancements, the company works actively on reducing the climate impact from of its energy supply by selecting climateneutral energy sources. Since January 2008, the company has been purchasing EPD (Environmental Product Declaration) certified electricity based on hydropower. Waste heat from proprietary operations and other industries are used to a significant extent for heating. An active partnership is underway with the company's district-heating suppliers to convert to climate-neutral district-heating supplies as soon as possible, with a target of achieving 100 percent climate-neutral supplies by 2020.

Since 2007, the plants' total carbon emissions have been reduced by 50 percent to a level of 70,000 tonnes.

#### Air - Volvo Cars is the best in the world

In terms of the air emissions of Volatile Organic Compounds (VOC), the painting plants in Gothenburg and Ghent are among the best in the world.

When the painting plant in Gothenburg was remodelled in 1991, the most advanced environmental technology available at the time was chosen in terms of filtration technology and paint chemicals. Nearly 20 years later, that filter holds its own against the competition. The painting plant in Gothenburg is

among the top three in the world and has only 17 grams of VOC emissions per square metre of painted bodies. The average value for all of Europe's car-body painting plants is about 40 grams.

#### Water - an increasingly important issue

To decrease global pressure and improve access to clean water, everyone must reduce their direct and indirect water consumption. In the international climate debate, the focus is increasingly on industry's use of water.

The company currently consumes about three cubic metres of water per car produced; a figure that Volvo Cars is now focusing on further decreasing.

Water management is divided into two areas: the grey water footprint, meaning the quality of the water that is released from plants, and the blue water foot print, which refers to the quantity of water used in production.

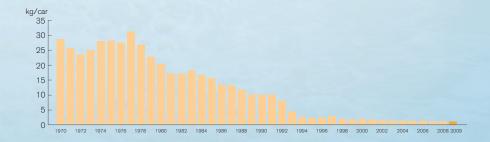
Volvo Cars has worked long and conscientiously to reduce its water emissions and strives to be the unequivocal leader in the automotive industry.

"When we use clean water in our processes we also ensure that it is returned in the best possible quality to nature again," says Sammy Tanhua, Director Environmental Protection. "Our goal is to recycle the water to the greatest extent possible through the use of closed systems and by selecting the best treatment technology available."

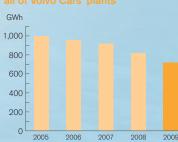
A solid example of this is cutting fluid, which is used to a considerable extent in the production of engines. A cutting-fluid system can last up to six or seven years prior to be cleaned and replaced. The used cutting fluid is purified through ultra-filtration and reverse osmosis, and subsequently reused for such applications as cooling-tower facilities.



VOC emissions at the Volvo Cars' plant in Torslanda



The energy consumption at all of Volvo Cars' plants



# ATTRACTIVE EMPLOYER ASSUMES RESPONSIBILITY

THE DOWNTURN IN THE GLOBAL ECONOMY HIT THE AUTOMOTIVE INDUSTRY HARD AND VOLVO CARS WAS NO EXCEPTION. ALL EMPLOYEES HAVE IN SOME WAY BEEN AFFECTED BY THE MAJOR CHANGES UNDERGONE BY THE COMPANY.

The most specific was that 3,400 employees – most of them in Sweden – left the company in 2009 as a result of lay-off notices issued in 2008.

Volvo Cars has long-term and very strong relationships with the trade-union organisations and the parties have assumed joint responsibility for minimising the effects of the terminations.

In Sweden, Volvo Cars and the trade-union organisations reached an historic agreement. In 2009, the entire workforce contributed to reducing the company's costs by postponing salary reviews, taking away shorter working hours or reducing salaries by 3 percent. Company management took a 5-percent salary reduction and no bonuses were paid to managers or other employees in 2009. In return, the company promised not to terminate any employees in 2009. The decision was positively received in the media and very well received by employees.

#### Strong employeeship

The well-being of all employees who remain in the organisation is equally important. The year's Volvo Attitude Survey showed that commitment among employees remained strong. Although the study was conducted in October, before the economy began to recover, the number of satisfied employees increased to 82 percent (80 percent in 2007).

The key to success lies in Volvo Cars' employees and their ability to learn, create new opportunities and quickly implement changes. By utilising a clear Competence Management Framework, Volvo Cars has created a tool that details the competencies required for every position at the company as well as enabling the formulation of a development plan.

"You are personally responsible for your own competence management, while it is the company's task to create the means for employees to advance and take the next step," says Erica Wikman Senior Manager Competence Sourcing at Volvo Cars.

The "Everyday Learning" model expands the learning concept to encompass more than traditional skills development. An example of this is the spreading of knowledge between employees through such activities as shadowing, mentorships and opportunities for new experiences.

#### Attractive employer

In 2009, the company developed a strategy and an action plan to attract the key employees of the future. The emphasis is on actively listening to the students' criteria for selecting an employer and ensuring that Volvo Cars stays ahead of the game and lives up to students' expectations. In 2010, Volvo Cars Graduate Program will also continue through the recruitment of some 40 recent university graduates.

#### Increase children's interest in technology

The Matena Project aims to stimulate interest among children and young people in higher education in engineering and natural sciences, and is being conducted in partnership with AB Volvo, SKF and AstraZeneca. For Volvo Cars, the Matena Project involves a number of employees coaching and collaborating with teachers at the primary and secondary school level in 2010.

#### Diversity opens doors

Volvo Cars actively pursues a culture that values and appreciates individual distinctions and views distinctions as an opportunity for commercial success. With diversity at a company, the base of knowledge becomes more expansive and in-depth, the environment becomes more creative, solutions become smarter, cars are improved and customers more satisfied.

In 2009, company management adopted a new plan for diversity and inclusion. The focus is broader than before and the plan now also encompasses external diversity efforts – all in the aim of meeting customers' expectations for products and offers. In 2010, work on diversity matters will be integrated into operations with the help of specific plans and benchmarks.

In the area of equality, the company is working intensively to achieve its target of 25 percent female managers, an objective that may take longer than desired due to the recession and the recruitment stop. In 2009, the share of female managers was 18.7 percent. Each unit has target figures and is reviewed regularly by the management group.

Examples of activities include the mentor programme for women, and that no managerial position can be appointed without at least one female candidate being included in the recruitment process.



#### Technology Woman of the Year

Anna-Maria Saméus, Product Manager at Volvo Cars, was named Technology Woman of the Year in Sweden for her ability to unite technology, commercialism and leadership with the customer in focus. The award was presented by the defence and security company, Saab.

"I am of course highly pleased to receive this award and hope that it will inspire other women to work with technology, business and leadership," says Anna-Maria Saméus.

As product manager for a forthcoming car model, Anna-Maria Saméus is responsible for merging the markets' demands with new technological solutions. In 2009, she also developed the business concept for a forthcoming car model.



#### Intrapreneur of the Year 2009

Ulf Nordström, Technical Project Manager at Volvo Cars, was named "Intrapreneur of the Year" in Sweden for his decisive role in the development of the fuel-efficient DRIVe models. The award was presented by the recruitment company Talentia and rewards entrepreneurship in established organisations.

"It is naturally highly gratifying to be recognised in this manner. However, I am not the one who won the prize, but rather my whole team and Volvo Cars. We fought hard," says Ulf Nordström.

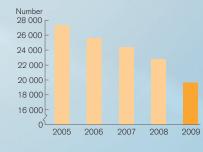
The jury commended the way in which Ulf, "with the company's best interests in mind," inspired his colleagues to create the technologically, environmentally and commercially successful DRIVe family of cars, which after two years in the market accounts for approximately 20 percent of the company's sales. Read more about DRIVe on page 20.



#### Volvo Cars' work-culture pyramid



#### Total numbers of employees



#### Percentage of women in senior position



# RECOVERY AFTER AN INTENSE YEAR

THE FINANCIAL CRISIS AND ITS EFFECTS ON THE AUTOMOTIVE INDUSTRY HIT HARD AGAINST SUPPLY COMPANIES, WHICH TOOK TOUGH ACTION AND CUT BACK ON CAPACITY. UNTIL FEBRUARY 2010, 23,300 PEOPLE IN SWEDEN HAD RECEIVED NOTIFICATIONS OF TERMINATION AND 19 COMPANIES HAD GONE BANKRUPT. HOWEVER, MOST OF THESE COMPANIES ARE ON THEIR FEET AGAIN IN ONE FORM OR ANOTHER, INCLUDING THE MAJOR VEHICLE COMPONENT COMPANY PLASTAL.

"The year 2009 led to cutbacks in terms of volume to approximately the same extent as vehicle manufacturers. In 2010, a generally weak recovery is expected. International forecasts for vehicle production predict that the industry will not reach 2007 volumes, meaning global production of 70 million vehicles, until 2015," says Svenåke Berglie, President of FKG (Scandinavian Association of Automotive Suppliers).

The trend in 2010 is that the banks are still highly restrictive regarding loans to the automotive industry. Last year's decision by the Swedish Government to grant a grace period for tax payments, and this year's decision for a continued extension, were thus very welcome.

"In our dialogue with decision-makers, we still emphasise the need to facilitate loan financing also for the major companies. Small companies can receive assistance from Almi, a financing consortium, but what we really need is a solution for large companies as well. It is hard to comprehend why Sweden is taking a different approach than, for example, Germany and France in this matter."

### SCANDINAVIAN ASSOCIATION OF AUTOMOTIVE SUPPLIERS

The industry organisation, the Scandinavian association of Automotive Suppliers, is the spokesperson for slightly more than 300 member companies, from what are known as global Tier 1 suppliers and midsized engineering companies to small start-up companies that are often based on a single innovation. Also included are raw materials manufacturers, sales companies, construction and design companies, software companies and companies that work exclusively with service, as well as several major global consulting companies.



### LONG-TERM PARTNERSHIPS

VOLVO CARS IMPOSES HIGH DEMANDS ON QUALITY, PRODUCT DEVELOPMENT, COST EFFICIENCY, THE ABILITY TO DELIVER AND ENVIRONMENTAL CARE – RESPONSIBILITIES THAT ALSO ENCOMPASS THE SUPPLY CHAIN. AN EXAMPLE OF THIS IS THAT ALL SUPPLIERS RELATED TO PRODUCTION MUST HAVE ISO 14001 ENVIRONMENTAL CERTIFICATION.

One of the environmental areas of focus in 2009 was compliance with the EU's new chemical regulation, REACH\*. Volvo Cars is what is known as a downstream user of chemicals, meaning an industry that uses a chemical substance in a production process/proprietary operation, and is thus affected by the new legislation. In late 2008, the first elements of the legislation, which concern advance registration and registration of chemicals, became effective.

In 2009, Volvo Cars continuously monitored the development of the legislation and maintained a continuous dialogue to ensure REACH compliance in the supply chain. The new regulation will be successively introduced through 2018 and Volvo Cars continues to monitor the development of the legislation to rapidly meet the standards that it imposes.

Volvo Cars' long-term collaboration with suppliers throughout the world is of great significance to the company's successes. About 400 companies currently supply components to cars and an additional approximately 3,000 suppliers provide Volvo Cars with other products and services. In total, about 70 percent of the car's value comes from suppliers.

Many of the suppliers are located in proximity of Volvo Cars' plants, which reduces transport time and inventory storage. In many cases, partnerships are initiated with suppliers as early as the construction stage of new models – all in an effort to shorten lead-times in terms of development and production

### Human rights and working terms and conditions

Volvo Cars endeavours to operate a responsible business through the entire value chain – and here, suppliers comprise a key component. Accordingly, the company's values, such as human rights and healthy labour standards, are emphasised as distinct demands on suppliers. The requirements that Volvo Cars imposes on its proprietary production units also apply to suppliers.

Slightly more than a third, 34 percent, of components are manufactured in low-cost countries, primarily in Southeast Asia, Eastern Europe and China. Volvo Cars supports responsible leadership among its suppliers by continuously pursuing healthy labour standards in the areas in which Volvo Cars has the ability to exercise influence. An example is the Code of Conduct regarding basic labour standards that is communicated to suppliers through Volvo Cars' terms and conditions and social responsibility web guide. Volvo Cars also works with trade unions and other representatives to disseminate standards in this area. The Code is based on internationally recognised principles regarding human rights in the workplace, including the International Labour Organisation's core conventions.

#### Training and follow up

To date, 1,520 suppliers have been trained in the global training programme covering basic labour standards that were implemented by our owner, the Ford Motor Company. The primary purposes of the training programme are to emphasize the importance and value of strong labour standards and to clarify Volvo Cars' expectations for its suppliers. As a result of the partnership, the long-term relationship between the company and the suppliers is also strengthened.

Current and prospective suppliers are monitored by independent sources based on the standards of the Code of Conduct. Reviews are randomly conducted pursuant to an evaluation template. Employees are interviewed and the documents of the business are reviewed with the aim of gaining a grasp and overview of the actual conditions. To date, 615 suppliers have been reviewed in 20 countries through audits by the Ford Motor Company. Following the review, an action programme was developed that focused on continuous improvements.

The potential for improvement primarily pertains to such areas as health and safety and stipulations pertaining to establishing salaries, benefits and working hours. However, in the area of human rights, the deviations have been marginal. In these cases, an action plan has immediately been developed with the aim of improving the identified areas. The action plan has subsequently been followed up through audits to ensure that the actions have been implemented and that change has occurred.

#### Geographic distribution of suppliers, 2009 (2008)



\* Poland, 4% (3) – Spain, 3% (3) – Czech Republic, 3% (2) Italy, 2% (2) – Turkey, 2% (–) – Others, 13% (7)

#### **EU CHEMICALS PROGRAMME**

\*REACH

- Registration, Evaluation, Authorisation and Restriction of CHemicals

Based on the principle that suppliers, importers and downstream users are the ones responsible for ensuring that the chemicals that they manufacture, release into the market or use, have no harmful health or environmental effects. Source: The Swedish Chemicals Agency.

# VOLVO CARS' SOCIAL RESPONSIBILITY



### Climate researchers received Volvo's environmental award

Her research into the threat to the ozone layer impacted an entire world. Since then, the winner of Volvo's environmental award, Susan Solomon, has devoted her life to researching how the world's atmosphere and climate are affected by humans.

Over the course of several Antarctic expeditions during the 1980s, Susan Solomon mapped the mechanisms behind the hole in the ozone layer. Ground breaking research that led to international agreements banning the use of CFCs, chloride gases that were previously found in aerosol cans and refrigerators. She is currently one of the world's leading atmospheric researchers and devotes a great deal of energy to researching climate change. She has played a key role in the work group on the UN climate panel that helped the world appreciate the severity of climate change.

Volvo's environmental award is one of the world's most respected environmental awards and is presented to people who, through their research, contribute to a more sustainable world. The award is financed by Volvo but is awarded by an independent foundation. In 2009, the award was presented for the 20th time.

In its commendation, the jury, which included several leading international researchers, proclaimed that "Dr. Susan Solomon is an outstanding



Dr. Susan Solomon received the Volvo Environmental Prize 2009.

atmospheric chemist and physicist, whose pioneering scientific contributions have had major impact on crucial environmental policy measures."





Students Francisco Chuc, Griselda Gambrielson, Julio Martinez, Sugeily Pech and Vianey Kantún were hailed when they took the stage at the Volvo Hall in Gothenburg.

### Young Mexicans won Volvo Adventure 2009

A group of young people from the Yucatan coast in Mexico won the eighth series of the Volvo Adventure, the world's largest environmental contest for young people. The winning project, the "Hunab campaign" was aimed at creating sustainable development in the wetlands in their home region. This was the first time that a team from Central America claimed the first prize of USD 10,000.

The group created small dams in which they employed sustainable methods to harvest fish, shellfish and vegetation. By replanting they simultaneously preserved the biological diversity in the area. The project demonstrates that financial and environmental responsibility lead to success – an impressive effort that benefited the group's families, environment and local economy. The initiative also spread to surrounding villages.

Volvo Adventure is a training programme, which, in cooperation with the UN environmental program UNEP, influences future decision makers by promoting environmental training, practical projects and actions.



SUSTAINABILITY DATA						
PREATING VALUE	2009	2008	2007	2006	Trend	Comment
CREATING VALUE Customer satisfaction, rankings						
Percentage of independent surveys in which Volvo Cars						
vas ranked among the top five carmakers (%)	33	29	22	21	(+)	А
Employee satisfaction (%)	82	n/a	80	81	(+)	В
Total Sales (retail deliveries)	334,808	374,297	458,323	427,747	(-)	С
,						D
Revenue – excl special items (million USD) Profit Before Tax – excl special items (million USD)	12,442 -653	14,679 -1,465	17,859 -164	16,105 -39	(-)	D
Total Boloto Tax Scoropodia Romo (million 665)	000	1,100	101		(1)	
ASSUMING SOCIAL RESPONSIBILITY						
Product Responsibility						
Safety test results						
Share of independent tests where Volvo Cars received the highest rank (%)	80	70	69	72	(+)	E
Occupational Health and Safety						
Health						
Sick leave per hours worked (%)	4.7	5.0	5.5	5.9	(+)	
Occupational injuries						
Number of injuries resulting in at least one day of sick						
eave per 100 employees per year	0.5	0.9	1.5	1.9	(+)	
Diversity and Equal opportunity						
Gender balance						
Share of women in leading positions (%)	18.7	18.5	18.0	18.0	(+)	
Gender balance					, ,	
Ratio of basic salary of women to men (blue collar; average for grade levels SG2-SG6)	0.994	0.947	n/a	n/a	(+)	
Ratio of basic salary of women to men (white collar, average for grade levels SG2-CG2)	1.034	1.027	n/a	n/a	( <del>+</del> )	
	1.034	1.027	11/ a	11/ a	(-)	
Employment Workforce						
	10.050	00.700	04.004	05.550	( )	
otal workforce	19,650	22,732	24,384	25,553	(-)	
urnover						
Rate of employee turnover	12.8	9.2	9.1	n/a	(-)	
nvestment and Procurement Practices						
Number of significant suppliers and contractors						
hat have undergone screening on human rights	615	476	n/a	n/a	(+)	F
PROMOTING ECOLOGICAL SUSTAINABILITY						
missions from product						
Fuel efficiency						
Fleet average CO <sub>2</sub> in EU (g/km)	173	182	190	193	(+)	G
Harmful emissions						
Share of Volvo cars sold complying with Euro 4/ULEV standards (%)	99	98	99	99	(+)	
Alternative fuels						
Number of alternative fuels cars sold	11,260	25,771	10,899	10,846	(-)	
Energy use in car production						
Total energy consumption in car production						
(MWh)	713,079	816,581	916,669	949,850	(+)	
MWh/car)	1.71	1.59	1.42	1.63	(-)	
Emissions from production						
otal carbon dioxide emissions						
tonnes)	58,980	68,367	126,735	136,806	(+)	
kg/car)	158	151	311	333	(-)	
NOx emissions	.00	.01	311	230	\ /	
tonnes)	71	90	101	120	(+)	
60x emissions	- 11	30	101	120	(+)	
	_1	-1	1	9.1	(_)	
tonnes)	<1	<1		3.1	(=)	
/OC emissions	507	740	740	000	(.)	
tonnes)	527	712	740	883	(+)	
(n/car)	1.80	2.01	1.66	911	(1)	

1.80

5,594

90

2.01

9,320

90

1.66

90

11,395

2.11

11,841

90

(+)

(+)

(=)



(kg/car)

Hazardous waste

**Environmental Management** 

 ${\bf Read\ more\ at:\ www.volvocars.com/sustainability/GRI}$ 

Share of employees working in facilities with ISO 14001 certification (%)

# COMMENTS ON SUSTAINABILITY FACTS

#### A. Customer satisfaction

In 2009 Volvo Cars' efforts focused on further increasing customer satisfaction through such measures as introducing new environmentally adapted car models and further intensifying focus on the quality of the products. In order to better reflect Volvo Cars' position and ambition as a global brand, independent surveys on customer satisfaction have been conducted in different countries. Volvo Cars was ranked among the top five car manufacturers in 33 percent of the independent surveys conducted in 2009 (a total of 46 surveys were performed covering 11 countries). Compared with 2008, the 2009 survey was conducted in China instead of Japan, and also in Russia, the Netherlands and Belgium, which meant that 80 percent of Volvo's market was covered.

#### B. Employee satisfaction

Every year an extensive survey among all employees is conducted by Volvo Cars to determine their attitudes and opinion concerning issues as communication, individual development and work environment. The result of the employee survey performed in 2009 was an 82 percent employee satisfaction and the number has been relatively stable with approximately 80 percent employee satisfaction in recent years. No employee survey was conducted in 2008 due to significant organisational adjustments made by Volvo Cars.

#### C. Sales

During the global financial crisis, demand for new cars was weak during the first half of 2009 while a recovery was seen in the second half, although growing from low levels. Total global retail sales for

Volvo Cars were 334,808 units which represented a 10.6-percent decline versus 2008. The multiaward winning Volvo XC60 quickly became the globally best-selling Volvo model, reaching no fewer than 61,667 units for the full year. The main markets in Europe performed well thanks to high demand for Volvo's range of fuel-efficient DRIVe models. In the important US market Volvo managed to grow in a shrinking market in the second half, both thanks to Volvo XC60 and a successful campaign offering customers an attractive service and warranty package. China grew rapidly for Volvo Cars mainly thanks to two new products - the all-new Volvo S80L and the Volvo XC60. Among the Volvo Cars Overseas markets Brazil and Australia stood out with sales results exceeding 2008 levels.

#### D. Revenue

The year 2009 was a difficult year for the car industry as a result of the financial crisis and recession. Volvo Cars' revenue fell to USD 12.4 billion, down 15 percent compared with the preceding year. By launching new models and increasing awareness of the Volvo brand, the company's goal is to stabilize and improve its revenue and financial results.

#### E. Safety

In the quest for the ultimate vision of an accident-free traffic environment, Volvo Car Corporation's short-term target is that no one will be killed or injured in a new Volvo car by year 2020. In recent years, focus has shifted from protection to prevention and continuous progress is being made. New technologies in Volvo cars such as Collision Warning with Auto Brake and City Safety represent the next step in Volvo's continuous development of technol-

ogy to uncover risky situations and assist the driver in avoiding accidents. In 2009, Volvo Cars received the highest possible score in 44, or 80 percent, of the 55 tests conducted, an improvement of 12.5 percent since 2008.

#### F. Human rights

In 2003, Ford Motor Company started a global training and screening program which also includes Volvo Cars' suppliers of direct materials. To date, a total of 615 significant suppliers and contractors in 20 countries have undergone screening on human rights within this program carried out by the Ford Motor Company.

#### G. Fuel efficiency

Volvo Cars' environmental work and focus on developing powertrains designed to reduce carbon dioxide emissions is beginning to generate results. The average emissions level for the company's models in the EU dropped from 182 to 173 g CO<sub>2</sub>/ km and will continue to decrease over the coming years due to continuous improvement of our products. Examples of these improvements are the current and future DRIVe vehicle versions and development of fuel efficient technology, such as hybrid technology. Volvo Cars presented seven fuel-efficient DRIVe models with best-in-class CO emission levels. The extremely low figures for the Volvo C30, S40 and V50 have been achieved thanks to an advanced Start/Stop system. The latest version of the Volvo C30 DRIVe uses only 3.8 liters of diesel per 100 km which equals just 99 grams of CO<sub>o</sub>/km. The 104-gram Volvo S40 1.6D DRIVe was named Green Car of the Year at the prestigious 2009 What Car? Green Car Awards.





# TRANSPARENCY AND COMPARABILITY

VOLVO CARS VIEWS THE SHIFT TOWARDS INCREASED TRANSPARENCY AND COMPARABILITY IN THE WORK ON SUSTAINABLE DEVELOPMENT AS A POSITIVE TREND.

For Volvo Cars, it is important to be reliable and live up to being a visionary company with wholesome ideas. Volvo Cars gives its explicit support to several important international initiatives aimed at fostering conditions for increased clarity in the company's sustainability efforts and sustainability reporting. The two initiatives below provide the framework and guidelines needed to conduct appropriate and effective sustainability efforts.

#### **Global Reporting Initiative**

Global Reporting Initiative (GRI) is an independent institution that develops global guidelines for sustainability reporting. The guidelines are voluntary and are developed on an ongoing basis in dialogue with stakeholders. Volvo Cars applies and complies with GRI's international standards, which helps ensure transparent and clear accounting based on content that is important to stakeholders.

Volvo Cars conducts its accounting in accordance with GRI's third-generation guidelines G3 at the B level, which means that a number of criteria for strategies and profiles are accounted for, along with at least 20 outcome indicators, of which at least one shall come from each of the following areas: economy (EC), environment (EN), labour (LA), human rights (HR), social responsibility (SO) and product responsibility (PR). A GRI index and a full GRI report are available on Volvo Car Corporation's website: www.volvocars.com/sustainability/GRI.



www.volvocars.com/sustainibility/GRI.

#### **Global Compact**

The Global Compact also sets requirements for increased transparency. Volvo Cars was one of the first companies to sign the Global Compact, the UN's initiative for companies to promote human rights, good working conditions, taking responsibility for the environment and fighting corruption. Volvo Cars also participates in the Global Compact Nordic Network, an association of Nordic companies that meets regularly to discuss and share experiences within the framework of the Global Compact's ten principles.

#### Materiality analysis - basis for the report

Volvo Cars bases its sustainability efforts on an active stakeholder dialogue and regular follow ups of the questions that stakeholders feel are the most important, which is known as a materiality analysis. The results of the latest survey from 2009 show that the issues that stakeholders assign the highest priority are climate change and safety, along with fuel efficiency. Internal stakeholders make similar priorities, while emphasising financial results as a very important issue. Water consumption is also a matter that is considered increasingly important. This is reflected in the fact that safety, the environment and profitability are the three principal areas in the sustainability report. Environmental responsibility in production was expanded to include water consumption. The stakeholders believe that Volvo Cars' stakeholder commitment is of even greater importance now compared with the 2007 survey.

### GLOBAL COMPACT'S TEN PRINCIPLES

#### **Human rights**

Principle 1

Businesses should support and respect the protection of internationally proclaimed human rights within their sphere of influence; and

Principle 2

make sure that they are not complicit in human rights abuses.

#### Labor standards

Principle 3

Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;

Principle 4

the elimination of all forms of forced and compulsory labour;

Principle 5

the effective abolition of child labour; and

Principle 6

the elimination of discrimination in respect of employment and occupation.

#### Environment

Principle 7

Businesses should support a precautionary approach to environmental challenges;

Principle 8

undertake initiatives to promote greater environmental responsibility; and Principle 9

encourage the development and diffusion of environmentally friendly technologies.

#### Anti-corruption

Principle 10

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

## THE PAST YEAR IN FIGURES

		-		
Profit	before	tax.	USD	million

2009	-653
2008	-1,465
2007	-164
2006	-39
2005	377

Revenue, USD million	
2009	12,442
2008	14,679
2007	17,859
2006	16,105
2005	17,109

#### Sales figures for past ten years, no. of cars

2009	334,808
2008	374,297
2007	458,323
2006	427,747
2005	443,947
2004	456,224
2003	415,046
2002	406,695*
2001	412,390
2000	409,059
1999	401,509
* As of 2002, sales are defined as	cars delivered to end

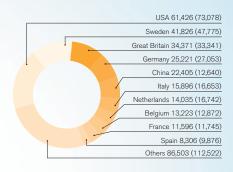
<sup>\*</sup> As of 2002, sales are defined as cars delivered to end

#### Sales by model total, no. of cars

Jaies by illouei							
	2009	2008	%				
XC60	61,667	6,954	786.8*				
V50	54,062	62,085	-12.9				
V70	45,836	59,152	-22.5				
S40	36,954	48,950	-24.5				
XC90	32,754	52,872	-38.1				
C30	32,409	39,966	-18.9				
S80	28,171	31,114	-9.5				
XC70	18,032	32,676	-44.8				
S60	14,131	26,148	-46.0				
C70	10,792	14,381	-26.0				
Total	334,808	374,297	-10.6				
* 0000 : ludes 4 that les lu							

<sup>\* 2008</sup> includes 4 months' sales only.

### Ten biggest markets 2009 (2008), no. of cars



The US is Volvo Cars' biggest market. In Sweden Volvo maintains a market share around 20 percent. Sales are defined as cars delivered to end customers.

#### Sales per fuel type 2006-2009, no. of cars

	2009	%	2008	%	2007	%	2006	%	
Petrol	147,544	44	179,350	48	262,622	57.3	259,997	61	
Diesel	129,372	39	169,176	45	184,802	40.3	156,904	36	
Methane* (Bi-fuel)	43	0	8	0	1,217	0.3	3,793	1	
Bioethanol (Flexifuel)	11,217	3	25,763	7	9,682	2.1	7,053	2	
DRIVe**	46,632	14	451	_	_	_	_	_	
Total	334,808	100	374,297	100	458,323	100	427,747	100	

<sup>\*</sup>The manufacture of Bi-Fuel cars ceased in 2007 owing to poor demand, but can since 2008 be adapted through an external supplier in some markets.

#### Cars production by model and plant 2009, no. of cars

Total	102,762	9,124	183,869	15,145	117	396	311,403
C70		9,124	_			_	9,124
C30		_	31,216	_			31,216
XC90	27,988	_		_	_	50	28,038
XC70	14,694	_	_	_	_	_	14,694
XC60	_	_	66,757	_	_	_	66,757
V70	43,074	_	_	_	_	_	43,074
V50	_	_	52,130	_	_	78	52,208
S80L	_	_	_	8,919	_	_	8,919
S80	17,006	_	_	_	117	25	29,809
S60	_	_	6,287	_	_	_	6,287
S40		_	27,479	6,226	_	242	33,947
	Gothenburg	Uddevalla	Ghent	Chongqing	Thailand	Malaysia	Total

(Production 2008: 366,249 cars)

Number of employees					
	2009	2008	2007	2006	2005
Sweden	13,9281)	16,573	17,616	18,212	19,844
Belgium (Ghent)	3,685	3,791	4,110	4,537	4,691
Thailand*	0	1	256	264	329
Malaysia	187	228	274	374	468
Market companies	1,850	2,139	2,128	2,163	2,007
Total	19,650	22,732	24,384	25,550	27,339

<sup>\*</sup>The production plant in Thailand was divested in December 2008.

For additional company facts, refer to the Volvo Cars Pocket Guide 2010.

1) Sweden	2009
Torslanda plant	2,974
Gothenburg - Other	7,686
Skövde incl. Floby	1,863
Olofström	1,405
Total	13,928

<sup>\*\*</sup> DRIVe cars are Volvo's series of best-in-class low-emission and fuel-efficient diesels.

# THIS IS VOLVO CARS

THE FIRST SERIAL PRODUCED VOLVO CAR WAS BUILT IN 1927. SINCE THEN, VOLVO CARS HAS DEVELOPED INTO ONE OF THE BEST-KNOWN CAR BRANDS IN THE WORLD. ALTHOUGH MOST OF THE OPERATIONS ARE LOCATED IN SWEDEN, VOLVO CARS IS AN INTERNATIONAL COMPANY WITH SALES IN OVER 100 COUNTRIES.

In Sweden, almost every fifth car sold is a Volvo. In 2009, we sold a total of 334,808 cars, a reduction of about 10 percent compared with the previous year's 374,297 cars. Our best-selling model was the Volvo XC60 with 61,667 cars sold, with most going to the USA (9,261). This was followed by the Volvo V50 and V70 with 54,062 and 45,836 cars respectively.

Volvo Cars is a relatively small producer, with market shares of 1-2 percent in its main markets. Our model range comprises sedans (S), versatile estates (V), SUV/Cross Country vehicles (XC) and

coupé/convertibles (C). Our largest market, the US, represented some 18 percent of sales volume in 2009, followed by Sweden (12.5 percent), the UK (10 percent), Germany (7.5 percent) and China (6.7 percent).

Volvo Cars main production plants are situated in Gothenburg, Sweden and Ghent, Belgium. Production at the Uddevalla plant commenced in the mid-1990s but is today jointly owned by Volvo Cars (40%) and Pininfarina SpA (60%). In 2006 Volvo Cars set-up manufacturing in a company owned jointly by the Chinese company run by Changan, Ford and Mazda – Changan Ford Mazda Automobile Corporation Ltd (CFMA) in Chongqing, China.

Since the 1930s Volvo Cars has been manufacturing engines in Skövde, Sweden. In addition, body components have been produced in Olofström, Sweden since 1969.

The Volvo Cars head office, product development, marketing and administration functions are all located in Göteborg. Sales are handled through approximately 2,300 local dealers from around 100 national sales companies. Most of the dealerships are independent companies. In addition to new-car sales, activities include the sale of accessories, parts, workshop services, pre-owned cars as well as financial services of various types. At the end of 2009, the Volvo Cars work-force numbered 19,650 employees, of whom 13,928 were employed in Sweden.

#### **VOLVO CARS' HISTORY**

Volvo Cars was founded in Gothenburg, Sweden in 1927 by the engineer Gustaf Larson and the economist Assar Gabrielsson. Series production commenced that same year with the Volvo ÖV4, nicknamed the "Jakob", which rolled out from the production plant on April 14. Since then, the company has produced over 15 million cars.

#### **Component manufacturing**

Skövde Floby Olofström

#### **Design centre**

Gothenburg
Barcelona, Spain
Camarillo, California

**Employees** (December 31, 2009) 19,650

### Head office, product development, marketing, administration

Represented in about 100

countries worldwide

2,400 local dealers

Gothenburg

#### Car production

Gothenburg Ghent, Belgium Uddevalla (Pininfarina Sweden) Chongqing (Changan Ford), China

#### Assembly plants

Kuala Lumpur, Malaysia Bangkok, Thailand

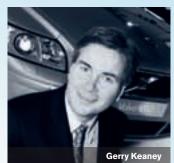
Car production	2009	%	2008	%
			. ,	
Gothenburg, Sweden	102,762	33.0	165,129	45.1
Uddevalla, Sweden	9,124	2.9	12,800	3.5
Ghent, Belgium	183,869	59.0	181,425	49.6
Chongqing, China	15,145	4.9	5,811	1.6
Assembly plants				
Malaysia	396	0.1	474	0.1
Thailand	117	0.1	610	0.1
Total:	311,403	100%	366,249	100%

### **MANAGEMENT**























#### Stephen Odell

President and Chief Executive Officer

#### **Elisabet Wenzlaff**

Senior Vice President, General Counsel

### **Steven Armstrong**Chief Operating Officer

**Gerry Keaney**Senior Vice President,
Marketing, Sales and Customer Service

#### Stuart Rowley

Senior Vice President, Chief Financial Officer

#### Olle Axelson

Senior Vice President, Public Affairs

#### Magnus Hellsten

Senior Vice President, Manufacturing

#### Bengt Banck

Senior Vice President, Quality and Customer Satisfaction

#### Magnus Jonsson

Senior Vice President, Product Development

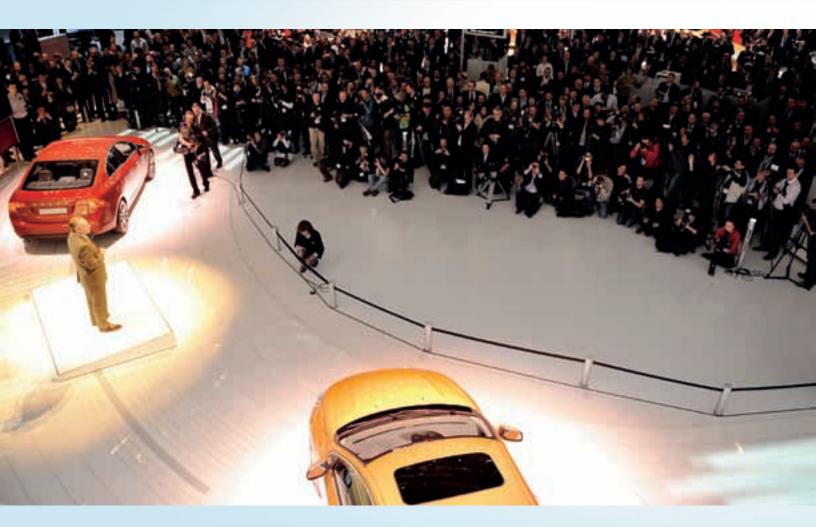
**Björn Sällström** Senior Vice President, Human Resources

#### Bernt Ejbyfeldt

Senior Vice President, Purchasing

# AUTO SHOWS 2010/2011

City	Press
Beijing	23-24 April 2010
Paris	30 September-1 October 2010
Detroit	10-11 January 2011
Shanghai	19–20 April 2011
New York	20-21 April 2011
Frankfurt	13-14 September 2011
Tokyo	19–20 October 2011



#### Contact us

This is the ninth report of its kind published by Volvo Car Corporation. Our aim is to cover issues that are important to our stakeholders, and also to us as a company. We welcome feedback on the report and will gladly answer any questions you have regarding Volvo Car Corporation's work with sustainable development.

You are welcome to contact us by e-mail: citizen@volvocars.com or Telephone: +46 (0)31-59 00 00.

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