



VOLVO
CAR GROUP

SUSTAINABILITY
REPORT 2012





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Our achievements in 2012: Highlights

OUR ACHIEVEMENTS IN 2012: HIGHLIGHTS

Leadership in safety

Our vision for 2020 is that no one should be killed or severely injured in a new Volvo car. To achieve this goal, we continued our long tradition of research and other efforts to enhance security in and around the cars throughout 2012. Extensive independent safety testing is part of this ambition. Our highlights for 2012 are listed below:

- Our most significant product announcement of 2012 was the launch of the All-New Volvo V40 in the spring of 2012. It offers two world-first safety systems – the innovative Pedestrian Detection system and the ground-breaking Pedestrian Airbag Technology.
- The V40 received the top rating of five stars in the European New Car Assessment Programme (Euro NCAP) collision test – the overall result was the best ever recorded by the institute.
- The large-scale European Field Operational Test on Active Safety Systems (EuroFOT) final report confirms that our systems to help drivers avoid incidents and collisions deliver significant benefits. A car with adaptive cruise control and collision warning reduces the risk of colliding with the vehicle in front on a motorway by up to 42%. One hundred Volvo V70 and XC70 models, with a total of 263 drivers, participated in the EuroFOT research project. All cars were fitted with cameras and sensors that registered every second of every journey for 18 months, which meant that every little incident and situation could be studied and evaluated.
- The China-Sweden Research Centre for Traffic Safety in Beijing, China was inaugurated. Apart from Volvo Cars, the other research partners in the project are Volvo Group, Chalmers University of Technology in Gothenburg, the Chinese Ministry of Transport's Research Institute of Highway and Tongji University in Shanghai. The research centre focuses on a number of areas, such as improving traffic safety in Sweden and China and promoting the exchange of technology and knowledge between both countries. The Centre will also act as a platform for research into traffic safety and supporting government decision-making in matters relating to traffic safety.

Improved care for the environment

Care for the environment characterises all operations within our company, from development to sales and service. We are pursuing our environmental goals by increasing fuel efficiency in our conventional cars, introducing electrification and making our manufacturing more efficient. In 2012, we focused on minimising the energy loss by developing efficient engines, transmissions and electrical systems. Furthermore, we continuously seek perfection in aerodynamic shape while at the same time reducing weight and minimising mechanical losses of our cars. We have an overall target to continuously reduce our total energy consumption, and our aim is to be climate-neutral. We also took far-reaching steps to cut water consumption in the production process and to minimise emissions to groundwater, air and soil. Highlights in this area are listed below:

- We have a zero tolerance policy towards environmental accidents. During 2012 no serious environmental incident was reported.

- It was announced in Geneva in February 2013 that the Volvo V40 is now available in a manual D2 version with CO₂ emissions down to 88 g/km, which translates into fuel consumption of 3.4 l/100 km.
- Our fleet average of CO₂ decreased with 5.3%. On a yearly basis, car makers get individual CO₂ targets per brand from the European Union. In 2012, the average fleet CO₂ emission for newly registered Volvo cars in the EU was 144 g/km and we are well on track to meet the 2012-2015 EU target.

New technology

We aim to be a leader in autonomous driving and plug-in hybrid technology and we are investing heavily in new technology, such as cars powered by electricity. Highlights for 2012 include:

- The European SARTRE (Safe Road Trains for the Environment) project, in which we are the first and only participating car manufacturer, was successfully completed in 2012. The road train offers the best of two worlds – enjoying all the multi-tasking possibilities of public transportation, behind the wheel of the customer's own car, while also contributing to lower CO₂ emissions and a safer driving environment.
- The Volvo V60 Plug-in Hybrid reached the first customers in the autumn of 2012, with the first 'Pure Limited' cars sold out even before they reached the showrooms. The V60 Plug-in Hybrid is the world's first diesel-powered plug-in hybrid. It is an electric car, a highly economical hybrid and a powerful high-performance car – all rolled into one.
- During the Detroit Auto Show in January 2012, we revealed the Volvo XC60 Plug-in Hybrid Concept – a unique blend of gasoline and electric power.
- The strategic partnership between Volvo Cars and Siemens was continued during the year with the intention to jointly spearhead the development of electric cars. We started testing a new fast-charger for electric cars that cuts recharging time to an outstanding 1.5 hours – six times faster than today's on-board devices.

Volvo Cars - An attractive place to work

Working at Volvo Cars means working for a global employer in an international setting. Since 2009, we have seen an overall positive trend in terms of our internal employer attractiveness. The possibility of training and development is something that our employees highlight as an advantage of working at Volvo Cars. Many employees say that their colleagues and the atmosphere at work are the main reasons why they want to work and continue working at Volvo Cars. During 2012, we also saw a positive trend in terms of our external employer attractiveness. For the first time ever, we made it onto the list of the world's most attractive employers. According to the Universum global talent attraction index: 'The World's Most Attractive Employers 2012', Volvo Cars is ranked 43rd among career seekers with an engineering background from the world's 12 greatest economies.



Our achievements in 2012: Highlights

We aspire to achieve world-class performance when it comes to the health and safety of our employees. Sick leave among Volvo Cars' employees in Sweden and Belgium has been falling slowly but steadily over the past few years. In 2012, Volvo Cars recorded two consecutive years of the all-time low figure of 4.4% sickness absenteeism in Sweden. Work-related accidents are monitored and followed up to avoid future occurrences. In 2012, we reached a result of 0.55 LTCR (the number of injuries resulting in at least one day of sick leave per 200,000 hours worked).



- **Best Compact Car Of The Year (Import)** – Auto Motor und Sport, 2013, Germany
- **Compact Car Of The Year**, AMI Insurance & Autocar New Zealand, 2013, New Zealand
- **Compact Family Car Of The Year** – Irish Motoring Writers Association, 2013, Ireland
- **Safest Car Of The Year** – Croatian Automotive Journalist Association, 2013, Croatia
- **Award for Safety** – Croatian Automotive Experts Association, 2013, Croatia
- **Paul Pietch Award for Outstanding Innovation for Pedestrian Airbag** – Auto Motor und Sport, 2013, Germany

Awards received

In the reporting period, we received the following awards for our products. Full details can be found on the web, via the Volvo Car Group Global Newsroom www.media.volvocars.com

- **Technical Innovation Of The Year: Pedestrian Airbag** – Czech Car Of The Year Jury, 2013, Czech Republic
- **Trophée De La Sécurité** – L'Automobile Magazine, 2013, France
- **Car Of The Year** – Greek Car Of The Year Jury, 2013, Greece
- **Premium Car Of The Year** – Chilean Association of Automotive Journalist, 2013, Chile
- **Business Car Of The Year 2013** – Business Denmark Union & Jyllands-Posten, 2013, Denmark
- **Golden Steering Wheel** – Auto Swiat, 2013, Poland
- **Golden Steering Wheel Award** – Auto Bild Magazine, 2013, Croatia
- **Most Attractive Small and Compact Car** – Auto Tip/Auto Bild Design Award, 2013, Czech Republic
- **Favourite Compact Car** – 'Readers Car' award, Editorial Prensa Ibérica & La Vanguardia, 2013, Spain
- **Winter Car Of The Year** – Tekniikan Maailma magazine, 2013, Finland
- **Safety Award for World's first Pedestrian Airbag** – Scottish Car of the Year Awards, 2012
- **Executive Hatchback Award** – Scottish Car of the Year Awards, 2012
- **Top choice for Safety and best in Small Family class 2012** – Euro NCAP, 2012



- **Best Performing Family Car** – Allianz Asian Auto-VCA Industry Award, 2012, Malaysia



- **Car Of The Year** – Best Safety Technology, Bangkok International Motor Show, 2012, Thailand
- **Full-sized Sedan of the Year** – Car & Bike Awards, 2012, India
- **Automotive Technology of the Year** – ET Zigwheels Awards, 2012, India



Our achievements in 2012: Highlights

KEY SUSTAINABILITY DATA							
	2012	2011	2010	2009	2008	2007	Trend ¹
Creating value							
Total sales (retail deliveries)	421,951	449,255	373,525	334,808	374,297	458,323	(-)
ASSUMING SOCIAL RESPONSIBILITY							
Product responsibility							
Safety test results							
Share of independent tests where Volvo Cars received the highest rank (%)	95	89	88	80	70	69	(+)
Occupational health and safety							
Health							
Sick leave per available hours (%)	4.4	4.4	4.5	4.7	5.0	5.5	(=)
Occupational injuries							
Number of injuries resulting in at least one day of sick leave per 200,000 worked hours	0.55	0.7	0.6	0.5	0.9	1.5	(+)
Diversity and equal opportunity							
Gender balance. Share of women in leading positions (%)	21.3	21	19.6	18.7	18.5	18.0	(+)
Gender balance. Ratio of basic salary of women to men (white collar; average for eight salary grade levels. 'SGD' – 'SGK')	0.97	0.97	0.790	0.994	0.974	n/a	(=)
Ratio of basic salary of women to men (bluecollar; average for five salary grade levels "41-42" – "49-50")	0.99	0.99	1.010	1.034	1.027	n/a	(=)
Employment							
Total workforce	22,715	21,512	19,494	19,650	22,732	24,384	(+)
Rate of employee turnover	2.8	2.3	3.3	12.8	9.2	9.1	(=)
PROMOTING ECOLOGICAL SUSTAINABILITY							
Emissions from product							
Fuel efficiency							
Fleet average CO ₂ in EU (g/km)	143	151	157	173	182	190	(+)
Energy use in car production							
Total energy consumption in car production (MWh)	798,487	815,301 ²	837,785 ²	713,079	816,581	916,669	(+)
Emissions from production							
Total carbon dioxide emissions (tonnes)	61,670	62,922 ²	67,585	58,980	68,367	126,735	(+)
NOx emissions (tonnes)	72	80	85	71	90	101	(+)
SOx emissions (tonnes)	<1	<1	<1	<1	<1	1	(=)
VOC emissions (tonnes)	796	828	738	527	712	740	(+)
Hazardous waste (tonnes)	10,837	11,439	9,087	5,594	9,320	11,395	(+)

1 Trend indicates our progress in relation to Volvo Cars' goals and vision. A plus sign (+) indicates that the company is moving in the right direction toward our goals, a minus sign (-) indicates that actions need to be taken for the company to develop towards our desired direction.

2 Restated.



LETTER FROM OUR CEO



Dear Stakeholder,

It is with great pride that I share with you Volvo Car Group's accomplishments in the field of sustainability during 2012. We are a relatively small car maker, but our brand is strong and so is our heritage in the areas of environment and social awareness. At Volvo Cars, we want to utilise our strengths in technical excellence and innovation – represented by our co-workers – to push the envelope in terms of sustainable mobility. I strongly believe we will make it. However grim the global economy, especially in Europe, it does not affect our determination. We are transforming our company to become a solid premium brand, with China as our second home market and where sustainable mobility is an important part of the brand and product delivery, today and in the years to come.

I strongly believe we will make it. However grim the global economy, especially in Europe, it does not affect our determination.

Håkan Samuelsson
President & CEO
Volvo Car Group

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We believe strongly that our combination of fuel efficiency and efficient manufacturing with intuitive human-centred design and safety innovations serves both our customers and society. We continue the exciting path on our electrification strategy. Our innovative, world-first diesel Plug-in hybrid reached the first customers during the year. These cars sold out before they reached the showrooms. This unique car is the product of close cooperation with the Swedish electricity supplier Vattenfall. In terms of production, it has been successfully integrated in the established production flow together with other conventional car models at the plant in Gothenburg. Together with our partner Siemens, we are securing a leadership position in electromobility. The first fleet of our C30 electric generation II with a new electric engine will be on the roads in 2013. These cars will have been upgraded with a new electric engine and a new inverter from Siemens and will have an extended range and better and faster charging capacity. In terms of fuel efficiency, we are also very proud that our V40, launched in 2012, is currently our most efficient model with CO₂ emissions down at 88 g/km.

During 2012, we confirmed our leadership in safety by introducing the world's first pedestrian airbag technology in our new V40. This car delivered on our safety promise by receiving the best ever result recorded by the Euro NCAP institute.

The SARTRE project (Safe Road Trains for the Environment), involving seven European partners where we were the first and only participating car manufacturer, was successfully completed in 2012. This unique project features the potential for implementing road trains on conventional highways, with platooned traffic operating in a mixed environment with other road users.



Letter from our CEO

Our human-centric culture is also one of the most important means of attracting the right people.

Håkan Samuelsson
President & CEO
Volvo Car Group

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Our human-centric culture is also one of the most important means of attracting the right people. The past year we have been expanding our company, welcoming new members to our global team primarily as part of our China growth. In 2012, we proved that we are an attractive employer from a global perspective when we made it onto a list of the top 50 most attractive employers among engineers.

We have recently established a new function in the company – the Corporate Compliance & Ethics office. This function will strengthen the Compliance and Ethics programme with the overall objective to support everybody in the organisation in understanding the ethical norms and legislation that are relevant for our business in all our operations globally.

Ever since the foundation of Volvo Cars in 1927, the human-centric approach has prevailed. Putting people in the centre of our business has resulted in Volvo Cars' world leadership in safety. This approach is also the guiding principle in how we treat our employees and our approach to society in general. Recognising and actively trying to minimise the negative impact our products and operations have on the environment is one effect of our culture. We acknowledged it back then and we are still acknowledging right now that we have a great responsibility.

In 2013 we will inaugurate our first Chinese manufacturing plant in Chengdu. An international team of experienced co-workers from Sweden and Belgium together with new Chinese colleagues has been leading this project. The first cars will leave the plant at the end of 2013, with the same precision as the cars produced in our other plants in Europe. Our engine plant in Zhangjiakou

is also under construction and will supply engines to the Chengdu production. Establishing domestic production is the basis for sustainable growth in China and we will do so according to our existing standards and ambitions in terms of sustainable and responsible business.

In 2013, most of the cars in our range will have been upgraded significantly in terms of both design and improved functionality. Later in 2013, an entirely new engine family, VEA (Volvo Engine Architecture) will be launched with improved fuel economy, considerably lower emissions and high performance output.

Ever since the foundation of Volvo Cars in 1927, the human-centric approach has prevailed. Putting people in the centre of our business has resulted in Volvo Cars' world leadership in safety.

Håkan Samuelsson
President & CEO
Volvo Car Group

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We are in a stage of intensive development during which we will continue to build this company and the Volvo brand. We will continue to invest in technology and people that will help solve the big challenges, but also identify new opportunities, in order to contribute to a more sustainable future.

Håkan Samuelsson

President & CEO Volvo Car Group
Gothenburg, May 2013



Our way of engaging with stakeholders

OUR WAY OF ENGAGING WITH STAKEHOLDERS

At Volvo Cars, we see an on-going and trustful interaction and dialogue with our stakeholders as key to provide guidance as to how we shall develop our work with sustainability. Following the disintegration of Ford Motor Company in 2010, we are still developing the methods and the ways to interact with key stakeholders in this aspect. One of the objectives is to gather inputs on which sustainability issues we should work on, and how we should work with these issues. Another objective is to develop an on-going two-way discussion that can lead to collaboration on specific issues and mutual benefits.

In addition to our on-going stakeholder engagement activities, we organised two structured stakeholder consultations in 2012. The first one was conducted as part of the development of our sustainability positioning. As a part of this process, we held interviews with Key Opinion Leaders from important stakeholder groups and conducted a workshop where we invited external experts representing different thematic areas and markets.

The second engagement was part of our sustainability reporting process, and it aimed to identify the issues that stakeholders see as most relevant for us to work with and report on. In this engagement process, we conducted two internal workshops around two themes: our environmental performance and our social performance. In these workshops we engaged our internal experts to identify the most important issues within these themes. Furthermore, we asked 23 external stakeholders to provide us with their in-depth views and opinions on how we work with sustainability. We interviewed these stakeholders about our sustainability performance, our communication about sustainability, and about the issues they see as most relevant for us to work with and report on.

Our stakeholders

We maintain relationships with various stakeholders that influence or are influenced by our operations – from customers and employees to business partners, organisations and the communities in which we operate. Each of these groups represents a special responsibility and our goal is to be, and to be perceived as, a responsible partner in all of our relationships.

Our approach to stakeholder engagement

Knowing what our most important stakeholders think and expect of their relationships with Volvo Cars is the key to our progress as a company. We know we can't find solutions in isolation, so we have to build and nurture open partnerships with a wide range of stakeholders. Our aim is to establish open channels and hold regular meetings with our major stakeholders. We believe in good relations and mutual understanding towards all stakeholders. For this reason, we participate in various networks, seminars and conferences to hear the views of others and to inform them about our work. We also encourage interested parties to contact us, for example, through our website or at citizen@volvocars.com

Customers

Our success as a company is built on satisfied customers. When we plan our products and services, we do this on the basis of careful analyses of different customers' needs and desires. During the development phase of a product, we perform tests on how the proposed solutions are perceived by our consumers. When our cars have reached the market, we follow closely how they are received by media, through feedback from dealers, and by holding a dialogue with our customers.

An important question for the automotive industry is the development of urban communities which will increase significantly. It is unclear what kind of mobility will evolve, but it is likely that we will move less and use digital and web-based solutions to reduce travelling time. Our future infrastructure needs to be sustainable and resource efficient and needs to be built upon a circular energy and resource supply efficiency, where energy and materials are recycled and flow back into the system.

**Johan Rockström
Professor and Executive Director
Stockholm Resilience Centre**

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Employees

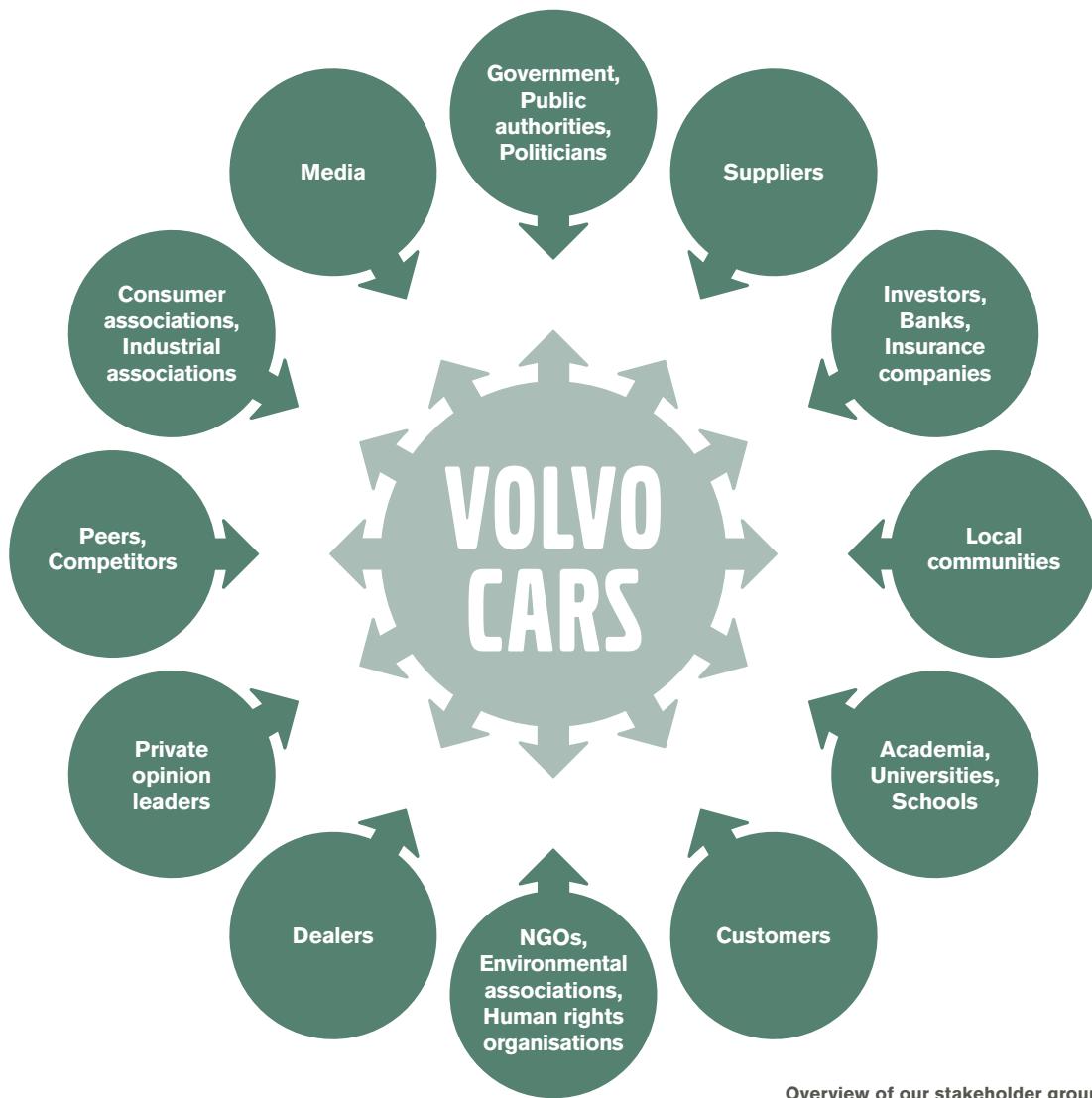
Good relations between managers and co-workers are fundamental to a good corporate culture within the company. Regular development meetings between employees and their immediate superiors are used to develop personal development plans. Every year, we conduct an extensive, anonymous survey among all employees. The results are discussed with the employees' immediate superiors, out in the organisation's teams – a process that includes developing action plans in areas requiring improvement. To ensure good relations between the company and its employees, we hold regular discussions with organisations representing the workforce, at the local and central level. The Board includes three employee representatives whose role is to ensure that their members' interests and experiences are represented at the highest level. Engineering and economics undergraduates from universities are surveyed annually to measure their perception of Volvo Cars as a potential future employer.

Dealers

The national sales companies (NSCs) represent the main interface between the dealer network and Volvo Cars. Dealers and sales companies exchange views and information on an on-going basis, providing us with valuable information on the dealers' situation and the specific conditions of the local market. We participate in a syndicated study known as the Dealer Satisfaction Survey, which reports independent information on dealers' opinions regarding manufacturers and the support they provide.



Our way of engaging with stakeholders



Suppliers

Volvo Cars was founded in 1927 and some companies have been supplying us since then. We have approximately 450 suppliers delivering components to our cars and we value long-standing relationships and prefer to have one main supplier for each component area. Much of our product development is carried out in cooperation with suppliers in joint projects. Daily liaison is essential if we are to understand our suppliers' expectations of us and vice versa. The negotiations preceding each new agreement with a supplier are also a major opportunity to exchange information and feedback. Another important interface involves our supplier open days, at which all suppliers can exchange information and establish contacts.

Owners

Since August 2010, Volvo Cars has been an independent company under the ownership of the Zhejiang Geely Holding Group. Many interfaces exist between the parties in terms of overall strategic issues and joint projects. Zhejiang Geely Holding evaluates Volvo Cars' performance in both financial and non-financial terms through the Board of Volvo Car Group.

Local communities

In communities where we are a major employer, we hold regular meetings with local representatives. We inform them of our plans and learn how the community seeks to develop. We also assess opportunities for cooperation.

I believe in continuous work on safety and progressive work with the environment, especially with focus on emissions from the cars. It is really about a broader definition of safety; in a long-term perspective it is about our planet and in the short term safety concerns people.

Anneli Hultén
Mayor of the City of Gothenburg

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Non-profit organisations and authorities

We are represented in a large number of groups and organisations pursuing or monitoring various issues at local, regional and national levels. We maintain on-going dialogue with authorities on various issues such as the environment and safety.



Our way of engaging with stakeholders

Issues and concerns raised by our stakeholders

The table below presents an overview of the issues stakeholders raised in our stakeholder consultations in 2012.

STAKEHOLDER GROUP	Key issues identified	How we are addressing these issues
Employees	<ul style="list-style-type: none"> • To ensure social and environmental sustainability throughout supply chain. • To measure and follow up supplier performance. • To develop partnerships between business and society. 	See 'Suppliers and partners as part of our sustainability work' and 'Our way of engaging with stakeholders'
Suppliers	<ul style="list-style-type: none"> • To develop technologies to reduce (CO₂) emissions. • To ensure sustainability throughout the whole supply chain. • To include environment, health, safety and social issues in marketing strategies. 	See 'Towards climate-neutral production', 'Suppliers and partners as part of our sustainability work' and 'Marketing our products'
Academia	<ul style="list-style-type: none"> • To work towards fuel efficiency. • To develop a new, circular and climate-smart business model. • To work with LCAs to get a picture of the environmental impact of all car models. 	See 'Reducing the CO ₂ emissions of our cars', 'Mobility of the future' and 'Managing our environmental impacts'
Peers/competitors	<ul style="list-style-type: none"> • To take a holistic approach to sustainability. 	See 'Our impact on sustainability'
Dealers	<ul style="list-style-type: none"> • To take responsibility for the environment in production, use and recycling phase of a car. 	See 'Managing our environmental impacts'
Authorities	<ul style="list-style-type: none"> • To continuously develop safety and responsibility issues. • To see environmental issues in the long run as a safety issue as well. 	See 'Always one step ahead - Our product responsibility' and 'Financial implications of climate change'
Owner	<ul style="list-style-type: none"> • To maintain world-class safety performance. • To make a great contribution to the environment. 	See 'Always one step ahead - Our product responsibility' and 'Our responsibility towards the environment'
Investors	<ul style="list-style-type: none"> • To keep up high environmental and safety standards and meet future consumers' expectations. • To ensure a good working environment for all employees. 	See 'Always one step ahead - Our product responsibility' and 'Health and Safety of our employees'
NGOs	<ul style="list-style-type: none"> • To develop a zero emission fleet. • To have the same environmental performance standards for production sites and suppliers around the world. 	See 'Reducing the CO ₂ emissions of our cars' and 'Suppliers and partners as part of our sustainability work'
Media	<ul style="list-style-type: none"> • To retain image as a premium brand with a high safety track record. 	See 'Leadership in safety'
Industry and consumer associations	<ul style="list-style-type: none"> • To produce reliable products. • To secure the good and trustworthy reputation of the brand. 	See 'Always one step ahead - Our product responsibility'



Our impact on sustainability

OUR IMPACT ON SUSTAINABILITY

Sustainable profitability is a key success factor for our company. However, our short-term challenges in the current business climate and the demands on balancing costs and revenue remain. Global economic uncertainty is likely to continue to affect consumer confidence and the tough competition in the car industry will continue. 2013 is expected to be a challenging year in terms of margins and growth. In the short- to mid-term, increasing investments in new products and markets will affect profitability. Additionally, continued volatility in raw materials and exchange rates may impact results. As a result of this, we had to adapt production capabilities especially in our factories.

In 2012, we continued to expand our **Chinese operations**. Our current full-fledged business operations in Shanghai include product development, design, purchasing and staff support functions. The expansion of our Chinese retailer network and industrial system goes hand in hand with the recruitment of talented people to add the competence needed. A new manufacturing plant in Chengdu is the next step and will be a milestone in Volvo Cars' ambitious industrial strategy. This plant will be up and running in the second half of 2013. Our expansion in China will have an impact on sustainability. We are committed to have equal environmental, safety and labour standards in China compared with our current operations and our Chinese suppliers will face equal demands when it comes to sustainability. Where and when needed, we will invest in trainings and other supporting activities for both our employees and our suppliers.

In the long term, we see that the demand for cars will be increasing as the world population is growing and **urban, middle-class incomes** are rising rapidly – especially in countries like China. We are determined to contribute to this development in a responsible and sustainable way, by helping customers to make sustainable, conscious choices when it comes to mobility. Our objective is to create a car that is both sustainable and meets the customer's needs and expectations concerning design, safety, quality and comfort.

We will also continue to develop our work on reducing our impact on **resource scarcity** – an issue that we see as a high risk for our business. The foreseen shortages in raw materials such as aluminium, as well as energy shortages and increases in fuel prices, will seriously affect our business. Therefore, we are committed to contribute to the development of a circular economy. We have invested in reuse and recycling of raw materials and energy in our operations and will increase our efforts in this field. The long-term strategy for reducing material intensity within the operations is to increase the amount of sustainable material; in other words renewable and recycled content.

Motor vehicles and other forms of transport have a significant impact on the environment, particularly due to the role of carbon dioxide (CO₂) emissions in **climate change**. We are committed to our vision of developing cars entirely free from harmful exhaust emissions and environment-impacting CO₂. Our customers can now choose between a range of models with CO₂ emissions below 120 g/km or even lower. The Volvo V40 is now available with CO₂ emissions down to 88 g/km.

We are aware that there is an enormous challenge ahead of us if we are to reach the expected EU goal of a maximum 95 gCO₂/km by 2020. Efficiency and electrification are key to achieving this goal. The new Scalable Product Architecture (SPA) and the new engine range Volvo Engine Architecture (VEA) are two examples of how we are approaching this in terms of investments for the future. Limiting CO₂ emissions and curbing climate change also encompass the environmental effects of our production facilities and logistics flows.

What we call Corporate Social Responsibility today, started at Volvo Cars with commitments towards safety and the environment. These commitments are assets that our owner Geely Holding sees as valuable. The commitments now need to be fully embraced by our Chinese operations – especially in terms of the environment, social responsibility and development of technology.

Hans-Olov Olsson
Vice Chairman of the
Volvo Car Group Board

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Road accidents are a serious problem; as many as 50 million people are injured in road accidents annually and approximately 1.3 million die as a result of such accidents. For this reason, we have a strong commitment to continue strengthening our work with **safety and product responsibility**. We want to offer cars that are safe for all people in all imaginable traffic situations. The key to success in this respect is to design safety systems that are smart and that interact with one another. We base our research on a variety of parameters, including data obtained from actual road accidents, with the vision of building cars that do not crash. In the shorter perspective, the aim is that by 2020 no one should be killed or injured in a new Volvo car.

Another important issue is the improvement of the **in-car environment**, such as the reduction of nickel and of allergens in the passenger cabin and improved air quality. There are no societal standards for in-car air, so we have created our own in-car air quality requirements that are used when developing new Volvo models. Our systematic work in this area has resulted in the Swedish Asthma and Allergy Association now recommending several Volvo models.

Violations of **human rights** entail a risk factor. We believe the best way to generate long-lasting improvement and thereby reduce potential risks is by combining a clear Code of Conduct with continuous dialogue, training and audits. During 2010, we started to update our Code of Conduct and in 2011 it was communicated to employees, suppliers and other business partners. During 2012, we conducted Supply Chain Responsibility training for suppliers. This supplier training raises awareness and promotes sound working conditions, environmental responsibility and business ethics at supplier facilities and in supply chains. We have also developed an audit plan covering both direct and indirect material suppliers that will be implemented in 2013.



RESPONSIBLE BUSINESS



For us at Volvo Cars, sustainable development means seeking to establish a balance between the needs of the company, our customers, the society and future generations. Our business objectives and sustainability commitments should complement one another; we believe in creating value in our business and society alike.

Our customers and employees have high expectations of Volvo Cars in terms of environmental care and social responsibility. Competition is tough – not only for customers, but also for skills. We know that having a good reputation strengthens our brand and correspondingly makes it easier to recruit and retain employees. We also know that an understanding of the long-term challenges facing society is a force for innovation and generates business opportunities. Our decision to commit actively to sustainability is based on the conviction that this will reinforce our competitiveness in both the short and long term. Ultimately, we realise that our stakeholders determine how well we live up to our responsibility. They determine our success by buying our products, working productively and doing business with us.

Our sustainability mission

Sustainability is central to all our decisions and investments; it is the key to successful and ethical business. As the responsibility of every manager and employee, sustainability is based on our mission and on company-wide guidelines. Above all, it is a mind-set whereby we as individuals consider the social and environmental consequences of our day-to-day decisions. Our company mission requires us to act in an environmentally and socially responsible manner. Among other things, this means we must:

- Be a reliable employer and business partner
- Take environmental and social issues into account in product development, purchasing, production and distribution

- Create employment
- Contribute to knowledge
- Be honest, transparent and active within the communities in which we operate
- Create value for Volvo Cars as well as for the society

Our responsibility

We see our responsibility towards sustainability in terms of three important roles – those of a car maker, a global company and a local player.

Responsibility as a car maker

As a car manufacturer, we provide personal transport solutions that benefit individual freedom and wellbeing, as well as contributing to socio-economic development. However, we acknowledge that cars also contribute to negative mobility issues, such as congestion, noise and air pollution. It is our responsibility to minimise the negative impact of our products through sustainable product strategies.

Responsibility as a global company

The reputation of the Volvo brand is one of our greatest assets. It helps us attract expertise from around the world and source the best components to build the highest quality cars. Our supply chain and dealer network provide us with global coverage. As a result, our global responsibility extends to everything that we buy and sell. Through systematic efforts, we seek to ensure that both we and our partners live up to high standards – regardless of geographical location. Volvo Cars' commitment to these issues can for example, be seen in the stringent policies in our supplier agreements with regard to environmental controls, the treatment of staff and respect for human rights.



Responsible business

Responsibility as a local player

Our employees, the communities in which we operate and local authorities are our most important local stakeholders. As an employer, we have a responsibility to provide a safe and healthy work environment. We achieve this through systematic efforts on health and safety, by sharing knowledge and by carefully considering the social and environmental impact of purchasing, production and distribution. Local environmental impact is an issue that we take very seriously. All of our production facilities are certified according to the ISO 14001 environmental management system. Examples of environmental measures at our production plants include on-going work to enhance energy efficiency and switching to electricity produced from renewable resources. Some of the ways in which we identify key issues in our role as a local player are through our employee attitude survey, dialogues with the local community, and cooperation with local authorities.

Sustainability in our day-to-day business

In operational terms, business planning forms the base on which we manage our sustainability activities. Our sustainability strategy is integrated in our Business Strategy and most important business processes. Issues of environment, personnel, safety, purchasing, diversity, etc., are planned and monitored according to the structures, policies and guidelines in our Business Management System. This means that sustainability results are communicated to the employees concerned in the course of their ordinary work. The workforce as a whole is kept up to date on the company's programmes through our intranet, articles in our in-house magazine *Agenda*, newsletters, and direct email communication with managers; managers in turn are responsible for communicating with their teams. The overall situation is described annually in this report.

Our executive management team consists of experienced members representing all sections of the value chain and certain support functions. A number of councils have been established at the overall company level to monitor and pursue issues related to sustainability. We have established a Sustainability Steering Committee with members from the Executive Management team (Corporate Communications, Legal and Human Resources) as well as the head of the Environmental Committee, the Chief Compliance & Ethics Officer and the Director of Sustainability Communication.

At the operational level, the appropriate officer or function (e.g. the Health and Safety Director or the Diversity Manager, etc.) is responsible for ensuring that relevant issues are discussed at the level at which decisions on strategies, goals and actions can be taken.

Our decisions in the area of sustainability are supported by a number of company policies. Central among these are the policies on environment, safety and quality. Several of our policies are undergoing updates, or have been updated during the past few years. Based on the principles of the UN Global Compact and our Code of Conduct, our vision is that good working conditions shall prevail and that human rights shall be respected throughout our value chain. Our suppliers' compliance with guidelines and principles represents part of our on-going collaboration. During 2011, we developed our first Code of Conduct as a standalone company following the separation from Ford Motor Company in 2010.

The code is aimed at all company employees, all suppliers that Volvo Cars does business with, all dealers that sell the products of Volvo Cars and all other representatives that conduct business on behalf of the company.

Our commitments to sustainability

In 1999, we were one of the first companies to heed former UN Secretary General Kofi Annan's appeal to become a signatory to the principles of the UN Global Compact. Having signed the UN Global Compact in 2000, we have since then supported the precautionary principle. Our decisions are made on the basis of the information available on each particular occasion. Nonetheless, inadequate or unreliable information is often a strong indication that caution is advisable, both from a business perspective and in a broader, societal context.

Internally and in cooperation with stakeholders, we are pursuing a wide range of actions to help us understand and manage the way our products interact with the environment. Our 'Clean Compartment' work is an example of efforts in line with the precautionary principle. This reduces health risks for passengers with asthma or allergies by replacing interior trim with materials exceeding the requirements of current legislation.

The UN Global Compact is not our only commitment. Our Code of Conduct stands as a general endorsement of the following human rights frameworks and charters:

- The eight core conventions of the UN agency the International Labour Organisation: Child Labour (138 and 182), Forced Labour and Compulsory Labour (29 and 105), Equal Remuneration and Discrimination (100 and 111), Freedom of Association and Collective Bargaining (87 and 98)
- The 10 principles of the Global Compact
- The Universal Declaration of Human Rights
- UN Convention on the Rights of the Child
- OECD guidelines for multinational companies

Our economic performance

Full-year sales for Volvo Cars amounted to 421,951 cars in 2012, a deterioration of 6.1% versus 2011. Europe is the largest region in terms of number of sold cars, while the US is the largest single market. Several markets reported significant improvements, particularly emerging and overseas markets, while the economic situation in mature markets and regions adversely affected consumer demand for new cars. The phase-out of the Volvo C30, S40 and V50 models impacted sales during the year as the new Volvo V40 was launched towards the end of the year and therefore did not reach full effect in affected markets. This factor, as well as the economic situation in Europe, is the main explanation behind the deterioration in full-year sales.

Operating income for 2012 was MSEK 18, compared to MSEK 2,017 in 2011. Profitability was affected by a weaker sales situation, in particular in the European markets, as well as increased costs to support the expansion plans of Volvo Cars. The long-term financial objective for Volvo Car Group is to deliver top industry return on invested capital. To support this long-term objective of sustainable profitability, the Group is currently in a heavy investment phase delivering new technology and new market opportunities in China, for example.

To read more about our financial performance, please see our financial report 2012. www.volvocars.com/financials



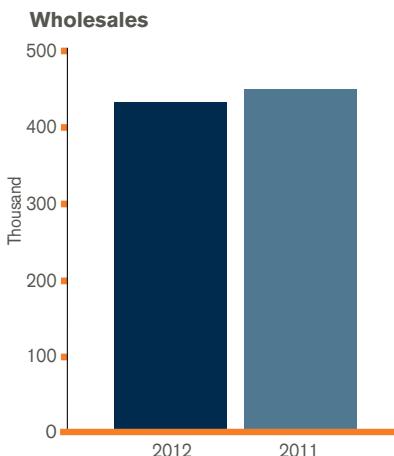
Financial implications of climate change

Climate change is one of the greatest threats to our planet. Currently, some 24% of global anthropogenic greenhouse gas emissions come from transport. About half of these are from road transport (according to the IEA and the OECD). To be environmentally sustainable, the vehicles of the future will have to be very efficient and capable of running on renewable fuels. Responding to the challenges of climate change is fundamental for us. The question is given highest priority and is addressed at our senior governance level. Reducing energy consumption and the dependence on fossil fuels is critical to our survival as a company.

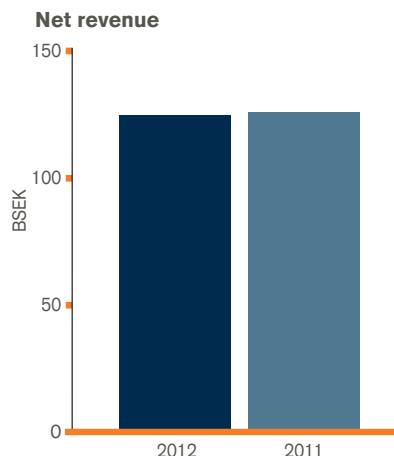
Potential economic risks to our business operations that affect profitability include increased raw material prices, rising oil prices and currency exchange fluctuations. Increased awareness and concern among consumers about human-induced climate change, combined with rising fuel prices, has led to greater consumer interest in more fuel-efficient vehicles. Increased demands are also being made by decision-makers, with the EU regulations limiting emissions from new cars to no more than 130 gCO₂/km from 2015, with phase-in requirements already effected in the past year.

Limiting CO₂ emissions and curbing climate change is a tough challenge. However, we are determined to meet this challenge and we also expect other key players to contribute. Although our environmental improvements and efforts to reduce climate impact focus mainly on vehicle development, they also encompass the environmental effects of our production facilities and logistics flows. Limiting climate change and making the best possible use of the Earth's resources will require innovative cooperation between all stakeholders – nationally and internationally. Climate change therefore poses a major challenge but also a great opportunity for technical development. We have a long tradition of developing systems and functions for our cars that have benefited society in general. The Lambda sensor (a three-way catalytic converter) and the three-point seat belt are Volvo Cars inventions that have become standard in cars worldwide.

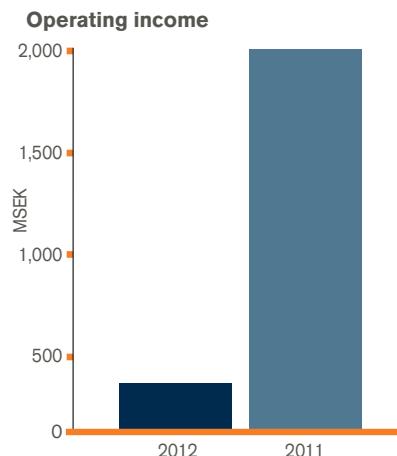
TOTAL SALES, REVENUE AND OPERATING INCOME



Sales were affected by a challenging market environment and fell by 6.1 per cent. Wholesales, sales to dealers, fell to 432,950 units.



Revenue fell to BSEK 124.5 with lower sales volumes partly offset by positive exchange rate developments



Operating income decreased to MSEK 18 due to lower revenues and sales and increased costs due to expansion plans.



Feature: The Volvo Adventure

Now in its 12th year, Volvo Adventure, an educational programme run in partnership with the United Nations Environment Programme, encourages teenagers to identify a local environmental problem and come up with creative solutions. The global competition is aimed primarily at young people aged between 13 and 16 who take part in teams of 2 to 5 participants.

Volvo Adventure is an excellent example of our dedication to environmental issues outside our own operation – we help make a difference.

Erica Wikman
Director Sustainability
Communication

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For the organisers it is always a difficult challenge to select the year's finalists. From among the hundreds of fantastic, innovative and exciting contributions, the 10 best are chosen and go on to the finals in Gothenburg. "When the contributions start coming in it's a bit like Christmas Day – we receive fun drawings, beautiful books and project descriptions that move us to tears. It's a very difficult, but at the same time, a very rewarding job to go through them," says Kikki Hugestrand, Corporate Events at Volvo Cars with responsibility for Volvo Adventure.



The conditions for entry to the competition are high. A detailed account of the project must be submitted, explaining how it fits in locally. Since the competition entries come from all parts of the world, where the prerequisites for the various participants can differ immensely, it is sometimes very difficult to compare them. That is why considerable importance is attached to assessing the projects in their local contexts. For instance, if an entry is submitted from the USA or Sweden and it deals with recycling, the jury will take into account that these countries have already made considerable progress in this area. A similar project from Nairobi, on the other hand, where there are no recycling stations at all, may therefore be of greater interest.

Just as significant as the chance to win are the lessons that the youngsters learn on the way. There are plenty of reports of how participation in Volvo Adventure has been the start of something really big. Youth leader Wayne Talbot is responsible for the competition's educational content: "Last year's winners came from Paraguay and ran a project that dealt with combating dengue fever. When the youngsters returned from the awards ceremony, there was an outbreak of dengue fever in Paraguay. The country's president got in touch with the project leader and their project is being implemented throughout Paraguay. It's an absolutely fantastic development," says Wayne Talbot.



"We have seen many great examples of projects that have been started up and proven to work over time – they have led to real change. Sustainable change. From the team from Macedonia whose project to save threatened water buffalo has resulted renewed efforts to safeguard the species, to one of our teams from the USA who are now working with their peers in Paraguay and Brazil to implement their programme from 2012. The young people who take part in the competition say they do not care about the prize money but that it is the recognition of their work that is most important," says Wayne Talbot.

We have seen many great examples of projects that have been started up and proven to work over time – they have led to real change. Sustainable change.

Wayne Talbot
Educational Specialist

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Volvo Adventure provides tomorrow's decision-makers with an arena for smart thoughts and ideas on how to create a better world.



Our responsibility towards the environment

OUR RESPONSIBILITY TOWARDS THE ENVIRONMENT

Managing our environmental impacts

Our Environmental Strategy is not only an integrated part of the overall Business Strategy – it is also included in all our projects and daily operations. The Environmental Strategy is updated annually according to current business development and global challenges in order to achieve a competitive environmental performance. Specific focus areas, goals and key activities are defined for both products and operations.

Focus areas - Product:

- Energy consumption and emissions
- Electrification and alternative fuels
- Interior environment
- Materials and recycling

Focus areas - Operations:

- Zero environmental accidents
- Water conservation and water emission performance (water footprint)
- Energy efficiency and climate-neutral operations
- Emissions to air
- Total waste management
- Soil and ground water management
- Sustainable transport

Environmental policy

Our environmental policy includes the following statements:

We shall endeavour to reduce the environmental impact from our products by:

- Continually improving fuel efficiency of our vehicles
- Developing alternative solutions for vehicle propulsion
- Reducing carbon footprint by use of sustainable materials

We shall endeavour to reduce the environmental impact from our operations by:

- Constantly seeking energy-efficient processes
- Decreasing our complete footprint concerning water
- Minimising waste
- Working towards sustainable transport solutions

You can read our Environmental policy online.

<http://www.volvocars.com/intl/top/corporate/volvo-sustainability/Documents/Environmental%20Policy%202013.pdf>

Our environmental objectives

Goals for both areas, products and operations, have been defined. We shall work proactively to avoid environmental accidents and when it comes to water conservation, water emission performance, energy efficiency and climate-neutral operations, we want to be among the industry's leaders. We have also developed local environmental targets for operations to encourage the whole company to work continuously with the Environmental Strategy.

At Volvo Cars, we strive for continuous improvements in our environmental performance. We continually follow up environmental objectives and action plans of our operations. We also report continually on these objectives in the systematic target-setting process. There is a systematic connection between the management and shop-floor level, which stimulates a strong commitment from all employees. As part of the strengthened environmental target-setting process throughout our company, we report quarterly to the Executive Management Team (including results of environmental accidents, energy efficiency projects and water consumption). Furthermore, we have implemented a process that clearly incorporates the environment in the start-up phase of a project. In the very early phases of a project, standardised tools are used to secure environmental performance and compliance throughout the project.

Our responsibilities and compliance

The Senior Vice President Manufacturing is the executive management representative for environmental issues within the Executive Management Team. Volvo Cars Environmental Committee, a cross-functional committee, manages the Environmental Strategy and environmental targets related to operations. Common environmental issues covering product, operations and communication are handled within the Committee, such as environmental strategy and targets, audits, educations and reports. Each quarter the Environmental Committee reports to the Executive Management Team.

Product-related issues are governed by the Product Board, headed by the Senior Vice President Product Strategy and Vehicle Line Management. The Attribute Managers at Research & Development have the operative responsibility. The Director of Environmental Protection monitors compliance by Volvo Cars' plants worldwide with applicable environmental legislation. We work proactively to meet upcoming legislation and also to shape it as a part of a review process from policy-makers.



Our responsibility towards the environment

We have a programme for internal audits concerning the environment, the operational management system and legal compliance as well as dangerous goods, to monitor our operations and thus find scope for improvement. We work intensively to really improve our operations, as quality has a high impact on the environmental performance. Remediation plans are created for all audit findings. Major audit findings get highest priority.

Volvo Cars has been ISO 14001 certified since the early 1990s. As required in the ISO 14001 standard, we have implemented a Business Management System (BMS) where a description of how Volvo Cars manages and runs the business is documented. The environmental focus areas (see above) are an integral part of the ISO 14001 system. There is an annual review process to ensure the BMS is fully up to date. Every year an external auditor performs audits at Volvo Cars to ensure that the standards are being met and opportunities for improvement are being identified.

Training and awareness raising

At Volvo Cars, we strive to make environmental issues a natural part of all relevant training and educational initiatives within the company. For example, a specific part of the competence development programme followed by all employees who are training to become production team leaders, relates to environmental issues. The expert competence within specific environmental issues is continuously kept up to date.

During 2012, we also held training for our own employees on sustainability and responsibility in general, including information about the supply chain. This training was mandatory for newly hired employees. For more information on supply chain, please refer to the chapter titled 'Suppliers and partners as part of our sustainability work', on page 38.

External communication

We communicate our work and our environmental performance from the product perspective continuously through press releases and other communication material available on our website. At our manufacturing site at Torslanda, Sweden, we have an exhibition about our commitments to Environment & Safety that is open to the public.

Fuel efficiency is probably the number one sustainability topic for a vehicle manufacturer – including Volvo Cars. The industry recognises its responsibility to deliver on-going environmental improvements. In recent years, vehicle manufacturers have been investing huge resources in developing lower-emitting vehicles and technologies. In setting emission targets, a balanced approach is required that considers environmental, economic and social factors.

Monika Bomba
Technical Manager Environment,
The Society of Motor Manufacturers
and Traders Limited (SMMT), UK

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Reducing the CO₂ emissions of our cars

Our approach

Limiting CO₂ emissions of vehicles is a challenge for everyone in the automotive business. Different countries and regions set up different regulations on energy or fuel use and CO₂ emissions. Planning our product range therefore involves a careful analysis of the need to meet future legal regulations, in combination with a thorough analysis of foreseen customer expectations of our products. This is a demanding task as the automotive industry has very long lead-times, where many years pass between initial planning and the launch of a new product. We annually monitor and follow up the progress in regard to CO₂ emissions from our products.

Reducing fuel consumption of diesel and petrol engines

We think that the most effective way to cut our product range's total CO₂ emissions in the short term is to reduce the fuel consumption of the diesel and petrol engines of our cars. This is because cutting the emissions of many cars sold in large volumes will have a bigger total effect and bring favourable results more quickly than making huge cuts in a small number of cars. We have introduced a range of high-efficiency diesel models with very low CO₂ emissions. In addition, really efficient diesel engines featuring start/stop technology will be introduced across the entire product range in the coming years.

We offer a series of extremely fuel-efficient diesel models. The V40 is currently the most efficient model with fuel consumption (EU combined) down to 3.4 l/100 km and CO₂ emissions at 88 g/km. The Volvo S60 and V60 have CO₂ emissions of just 103 g/km and 108 g/km respectively – corresponding to fuel consumption of 3.9 and 4.1 l/100 km respectively.

These low fuel consumption and emission levels are the result of a number of technological improvements, such as:

- Friction between gearbox components has been reduced
- The engine and gearbox software has been modified
- The start/stop system cuts off the diesel engine when the car is still rolling (below 5 km/h)
- All electrical systems have been optimised to create lower energy consumption
- The grill shutter in V40, S60 and V60 reduces fuel consumption, due to improved aerodynamic and faster warm up of engine plus transmission

Our efficiency work also includes improvements to the petrol engines. By optimising the four-cylinder, 1.6-litre T3 engine (150 hp), which is available in the Volvo V40, S60 and V60, we have managed to bring fuel consumption down to 5.3 l/100 km in the V40. This corresponds to CO₂ emissions at 124 g/km. Our new engine range, known as VEA – Volvo Engine Architecture consists solely of four-cylinder engines which, in certain configurations, will benefit from enhanced performance through electrification or other spearhead technology. The VEA engines will be introduced later in 2013. We will furthermore develop four-cylinder engines with higher performance than today's six-cylinder units, along with lower fuel consumption than the current generation of four-cylinder engines. We are also introducing a new 8-speed automatic gearbox, which gives the driver a refined drive and excellent fuel economy.



Our responsibility towards the environment

CO₂ emissions of our cars

Under the EU Cars Regulation, the EU fleet average to be achieved by all new cars is 130 gCO₂/km by 2015 and expected to be 95 g/km by 2020. The 2015 target is being phased in from 2012. On a yearly basis, car makers are given individual targets per brand, depending on the actual sales volume average mass of its fleet. If car makers do not meet the targets, they have to pay 'excess emissions premiums'. The foreseen CO₂ limit for Volvo Cars for 2015 is 146 g/km. We are well on track to meet the 2012–2015 EU target.

The average CO₂ emission in all new Volvo Cars' vehicles sold in 2012 in all markets declined by 36% compared to 1995. Our fleet average (EU 15) of gCO₂/km decreased from 151 in the previous year to 143 in 2012 (5.3%).

FUEL EFFICIENCY

Reduction achieved in average carbon dioxide emissions in all new Volvo Cars vehicles sold during a year¹ (%) Fleet average (gCO₂/km)

2012	36	143
2011	33	151
2010	30	157
2009	23	173
2008	19	185
2007	16	190
2006	14	193

¹ EU 15. Monitored under the ACEA voluntary agreement to achieve a 25% reduction, industry wide, from 1995 level by 2008.

Harmful emissions, other than CO₂

Euro 5 is the EU classification regulating harmful emissions from the product, other than CO₂ (for example NOx, SOx). The percentage of sold Volvo cars that complied with Euro 5/ULEV in 2012 increased by 4.2% compared to 2011, leading to a 98.2% compliance rate.

HARMFUL EMISSIONS FROM PRODUCTS, OTHER THAN CO₂

2012 2011 2010

Share of Volvo cars sold complying with Euro 5/ULEV ¹ standards (%)	98.2	94	54
1 ULEV stands for 'Ultra-Low Emission Vehicle', and is an environmental classification in force in California that has set even higher demands for lower emissions than Euro 5 does.			

¹ ULEV stands for 'Ultra-Low Emission Vehicle', and is an environmental classification in force in California that has set even higher demands for lower emissions than Euro 5 does.

Electrification

Electrification represents an important and promising technological step on our way to create cars with reduced environmental impact. Our electrification strategy involves all levels – from hybrids to all-electric cars.

We have been demonstrating leadership in this area through the introduction of the world's first diesel plug-in hybrid car and the development of all electric cars. We continue to focus on advanced green technology and are therefore investing heavily in new technology such as cars powered by electricity.

The speed and intensity of electrification depends on legislation, the technical development, the energy supply and customer demand. The environmental impact of electric-charged vehicles depends heavily on the source of the electricity used for recharging by the car users.



Plug-in-hybrid cars

Since 2012, customers have been able to buy the Volvo V60 Plug-in Hybrid, which can be recharged via a regular household electric socket. The Volvo V60 Plug-in Hybrid is the world's first diesel-powered plug-in hybrid, giving owners an electric range of up to 50 km (30 miles) and fuel consumption of 1.8 l/100 km (120 miles per US gallon) in hybrid mode (European Certification driving cycle NEDC). It integrates the best properties from three different car types into an attractive sports wagon – by simply pressing a button the driver can choose which car he or she wants to drive: an electric car with a range of up to 50 kilometres, a high-efficiency hybrid with carbon dioxide emissions averaging just 48 g/km, or a muscular performance car.



Pure electric cars – C30 Electric

Electric cars are zero carbon emissions vehicles during use. Any emissions created are indirect (coming from the original source of the electricity). Given that the batteries of electric cars are charged using the local power grid, electric cars are as clean as that grid. Further emissions are created during production of the cars and during their end-of-life processes.

In 2011, we started low scale production of the Volvo C30 Electric. The fleet of 250 cars is leased to customers in selected European countries and they are also currently operating in demonstration programmes in China, Sweden, Belgium, France, Holland and other European countries. The Volvo C30 Electric has a 24 kWh battery that is recharged from a regular household power socket. A full recharge takes 8 to 10 hours and the operating range is up to 150 kilometres per full charge.



Our responsibility towards the environment

Volvo Cars and Siemens have a strategic cooperation on electric cars and during 2013 we will deliver a new demo fleet of another 100 improved pure electric C30 cars. These cars will have been upgraded with a new electric motor and a new inverter from Siemens and will have an extended range and better and faster charging capacity. In this project we introduce the world's first fast-charger that operates on a three-phase supply and is small enough to be fitted in the car. A full charge takes 1.5 hours with a range of 164 km, while a 10-minute plug-in adds power for another 20 kilometres of driving. This will support our aim to develop electric cars targeting no compromises. Siemens will be our supplier of electric engine technology in our coming car models on the SPA (Scalable Product Architecture) platform.

Renewable fuels

Alternative fuels, i.e. biofuels, are foreseen to be a necessary part of the global renewable energy strategy and an important means to reduce CO₂ emissions. We believe that biofuels offer the opportunity to significantly reduce CO₂ emissions in an efficient way; depending on how the fuels are produced.

We support clear and harmonised fuel quality standards in order to ensure car and engine compatibility with increase in low blending level of biofuels. We need to ensure affordability for consumers as well as feasibility for us as a manufacturer; the infrastructural capacity is also crucial in this regard.

Europe's bioethanol refuelling infrastructure is expanding, partly as a result of constructive cooperation between the car industry and several EU countries. Our track to increase the use of renewable fuels includes car models that are tailored to run on multiple fuels. We offer models that are powered by petrol, diesel, ethanol and natural gas/biogas. Volvo Cars offers one of the car world's broadest ranges of Flexifuel models. What is more, on several European markets there are aftermarket-converted gas models that can run on up to five fuels – natural gas, biogas, hythane (biomethane with low-blend hydrogen), E85 and petrol. Biogas in particular offers excellent environmental properties. Within the next few years, second-generation biofuels such as synthetic diesel will also be able to be used in Volvo's cars. Filling up with E85 instead of petrol can significantly reduce a car's fossil carbon dioxide emissions.

Materials and recycling

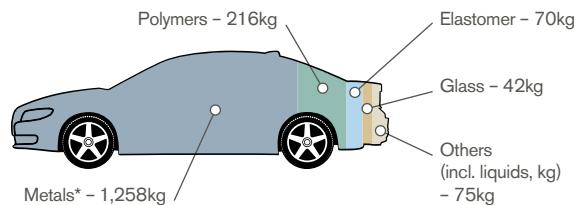
Our material usage is determined by the design requirements for each and every part in our cars. We use the global Restricted Substance Management Standard (RSMS) to prohibit substances toxic to human health or the environment. In addition, suppliers report the material content of all parts in detailed data sheets.

Amongst other goals, it was our aim to unify the material breakdowns of our car models in 2012 in order to allow for comparison within our portfolio. We partially achieved this goal. The following table shows the breakdown of 5 of 12 car models. These figures refer to standardised vehicle models. The breakdowns can vary slightly depending upon customised features.

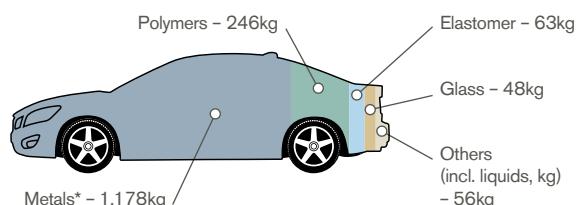
One of the overall goals in our work with product material is also to reduce the total vehicle weight, partly because this lowers fuel consumption and leads to a reduction of the overall CO₂ emissions when the vehicle is used. Increased use of lightweight metals and composite materials is one approach to achieving this goal. The upcoming SPA (Scalable Product Architecture) models will be significantly lighter than current models of the same size.

TOTAL MATERIAL BREAKDOWN

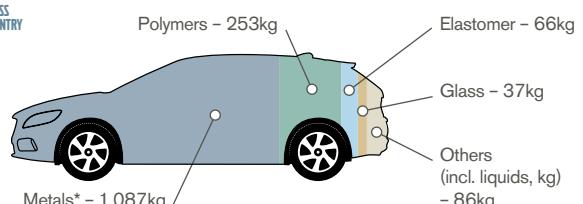
S80



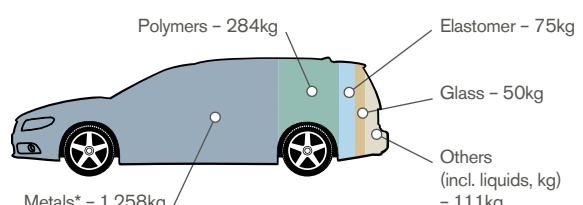
S60



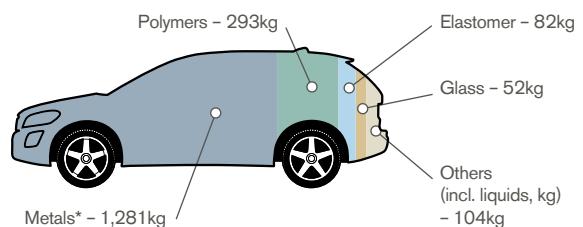
V40 CROSS COUNTRY



V70



XC60



*Metals breakdown

	S80	S60	V40 CROSS COUNTRY	V70	XC60
Ferrous metal (kg)	1,040	955	855	1,029	1,057
Magnesium (kg)	7	11	3	7	7
Aluminium (kg)	167	165	179	174	168
Copper (kg)	27	23	25	24	24



Our responsibility towards the environment

95% of the weight of a Volvo can be recovered and 85% can be recycled.

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Recycling

The long-term strategy for reducing material intensity within our operations is to increase the amount of sustainable material; in other words renewable and recycled content. Recycled input materials are divided into metallic and non-metallic materials. The current Volvo models consist of 10 to 15 kg recycled non-metallic materials (such as post-industrial plastics in wheel arch liners, the engine cover and sound absorbers), depending on the specification of the car.

We have no direct influence on the reclaiming and scrapping process of cars in the end-of-use phase. The percentage of Volvo cars sold that are reclaimed is currently not known. However, in compliance with EC Directive 2005/64, metals, oils, fluids, rubber and certain plastics corresponding to at least 95% of the weight of a Volvo can be recovered and 85% can be recycled. Volvo calculates the recyclability rate and the recoverability rate of its cars according to the ISO 22628:2002 method. Metallic materials are reused, but the exact amount is not measured due to the complexity of the process.

Zero environmental accidents in our production

At Volvo Cars we have a zero tolerance policy towards environmental accidents. We therefore have advanced processes and technical installations in place to prevent such accidents. Four examples illustrate this:

- To prevent environmental spillage and incidents, we have developed a risk analysis process. Regular risk analyses are performed at all sites where environmentally hazardous activities are carried out (in line with the definition in the Swedish Environmental Code).
- We carry out accident drills on a regular basis in order to test procedures and train staff. Environmental aspects are part of these exercises in order to ensure emergency preparedness.
- All our plants must report serious environmental incidents and 'near-misses' to our Environmental Protection Department in Gothenburg, Sweden.
- We conduct internal environmental audits to monitor our operations and find scope for improvement. The audit programme addresses the operational management system, compliance with environmental law, and the handling of dangerous goods.

In the past 18 years, we have not been notified or found culpable of any breach of environmental standards or operating licences in any of our plants. All of our environmental activities are conducted in compliance with applicable legislation and permits.

During 2012, no serious environmental accidents were reported.

Minimising our water footprint

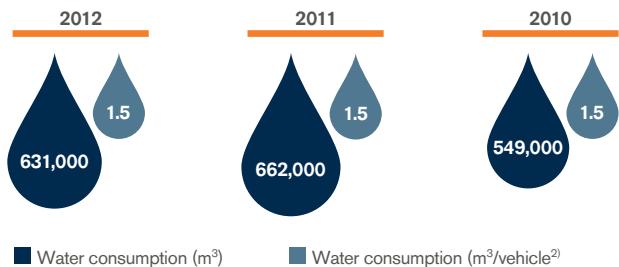
At Volvo Cars, we work in a targeted manner to reduce our emissions to water and we are endeavouring to be among the leaders in the automotive industry in this respect. The Environmental Protection Department has calculated our water footprint based on the Global Water Footprint method, in order to gain a comprehensive overview of Volvo Cars' impact on water.

Fresh water management

Based on the Water footprint calculations, we identified sites where water conservation has highest priority. Our ambition is to take the lead in water conservation activities in areas with fresh water scarcity and to contribute with our competence and know-how in waste water treatment processes and closed loop systems. In such areas we work proactively to secure minimal environmental impact, for example when building the new engine plant in China.

Moreover, based on our environmental strategy we have established a structured approach to reduce water consumption in each plant and to implement a Global Corporate Water Protection Standard in all our operations.

WATER CONSUMPTION IN VOLVO MANUFACTURING PLANTS¹



1 Manufacturing plants are Volvo Cars Torslanda, Volvo Cars Ghent and Malaysia.
2 KPI water consumption/vehicle is based on the number of produced cars in manufacturing plants.

Waste water management

In most of our operations we have an in-house waste water treatment process – so that we can close the water system and reuse it again.

Municipal waste water treatment facilities impose restrictions on the water they will accept for treatment, what contaminants the water may contain and their concentrations. We consciously cooperate with municipality and local waste water treatment organisations. Our objective is to have as optimal treatment of our waste water as possible. Our company's discharges of water consist of internally pre-treated process water, and waste water discharged from catering and restroom facilities to the domestic water systems in our plants. These discharges of water are not judged to be significant.

In China too, we work very actively on the waste water issue in order to ensure that we fulfil our global standards, which are significantly stricter than the local legal requirements.

Towards climate-neutral production

At Volvo Cars we have an overall target to continuously reduce our total energy consumption. Our aim is ultimately to be climate-neutral. At our headquarters, we have dedicated employees working solely on our energy and climate change related issues. In addition, at each local site one person has been given responsibility for energy issues. Their task is to coordinate all activities relating to energy use.

We have performed an inventory of energy use in most of our buildings and operational processes. This is an important step towards reducing energy consumption. Remedial programmes have been performed at several sites and information campaigns have been held to educate employees on the importance of energy saving and efficiency. Check lists are to be used at team level, clarifying when and how to turn the various pieces of equipment on and off.



Our responsibility towards the environment

Our total energy consumption

During 2012, our total energy consumption from direct and indirect energy use decreased.

ENERGY CONSUMPTION IN VOLVO CARS' WHOLLY OWNED PLANTS (MWh)¹

Year	Total energy consumption (direct and indirect)	Direct energy ²	Indirect energy ³
2012	798,487	274,727	523,760
2011	815,301 ⁴	359,614 ⁴	455,687
2010	837,785 ⁴	351,004 ⁴	486,781
2009	713,079	283,875	429,204
2008	816,581	319,123	497,458
2007	916,669	345,589	571,080
2006	949,850	388,369	561,481
2005	1,002,596	206,168	796,428
2004	1,028,210	353,939	674,271
2003	1,055,082	373,488	681,594
2002	974,368	334,022	640,346
2001	981,036	323,519	657,517

1 The Volvo Cars facilities included in the data are Volvo Cars Torslunda Plant (Gothenburg, Sweden), Volvo Cars Ghent Plant (Ghent, Belgium), Kuala Lumpur (Malaysia), Volvo Cars Skövde – Engines (Skövde, Sweden), Volvo Cars Floby (Floby, Sweden) and Volvo Cars Olofström – Body Components (Olofström, Sweden).

2 Energy produced for own consumption.

3 Purchased electricity and heating.

4 Restated.

Our indirect energy consumption

Our indirect energy consumption is through purchased electricity and district heating for our facilities. There are various ways of describing the primary energy source of the electricity purchased in a given country during a certain period. The European electricity grid is interconnected and all electric power generated is delivered to the same network. Therefore, it is impossible to say where an individual kilowatt-hour is generated, but by demanding certified renewable energy from electricity providers, we encourage the move towards greater renewable energy production. All the electricity that we buy and use in Europe is certified hydro-powered electricity and wind power. In Malaysia, we assume that 100% of our electricity is generated from coal. These assumptions provide a sufficiently (although not totally) accurate reflection of how the electricity we use is generated.

In 2012, our consumption of purchased electricity decreased.

INDIRECT ENERGY CONSUMPTION: ELECTRICITY BY PRIMARY ENERGY SOURCE (MWh)¹

Electricity from:	2012	2011	2010	2009	2008
Nuclear power	0	0	0	0	0
Hydropower	408,815	424,128	366,886	361,986	422,777
Wind power	14,315	14,049 ²	-	-	-
Condensing coal-fired plants	5,588	5,093	4,122	2,797	5,394
Total	428,718	443,270	370,988	364,783	428,171

1 The Volvo Cars facilities included in the data are Volvo Cars Torslunda Plant (Gothenburg, Sweden), Volvo Cars Ghent Plant (Ghent, Belgium), Kuala Lumpur (Malaysia), Volvo Cars Skövde – Engines (Skövde, Sweden), Volvo Cars Floby (Floby, Sweden) and Volvo Cars Olofström – Body Components (Olofström, Sweden).

2 Restated.

Our direct energy consumption

In our direct energy consumption, we use energy in the form of natural gas, LPG (liquefied petroleum gas), diesel oil and petrol for direct production purposes. This energy is used to power machines, such as machines for painting surfaces, computers, lighting, tools, ovens and other equipment. We aim for a transition from LPG and natural gas to biogas to take place as soon as possible, but at present there are no suppliers that can deliver the quantities we need.

Via district heating, our indirect energy consumption for heating originates from waste-to-energy, waste-heat-recovery and renewable bioenergy sources. Our energy consumption of district heating increased by 9% in 2012 compared to 2011. This is mainly due to more extreme climate conditions.

INDIRECT ENERGY CONSUMPTION: DISTRICT HEATING BY PRIMARY ENERGY SOURCE (MWh)¹

Primary energy source	2012	2011	2010	2009	2008
Waste heat	66,900	62,392	77,695	40,844	47,597
Biofuels	15,380	12,233	12,163	11,597	10,399
Fossil fuels + electricity	12,762	15,169	25,935	11,980	11,291
Total	95,042	89,794	115,793	64,421	69,287

1 The Volvo Cars facilities included in the data are Volvo Cars Torslunda Plant (Gothenburg, Sweden), Volvo Cars Ghent Plant (Ghent, Belgium), Kuala Lumpur (Malaysia), Volvo Cars Skövde – Engines (Skövde, Sweden), Volvo Cars Floby (Floby, Sweden) and Volvo Cars Olofström – Body Components (Olofström, Sweden).

2 Restated, as 2011 figure referred to biomass instead of non-biomass.

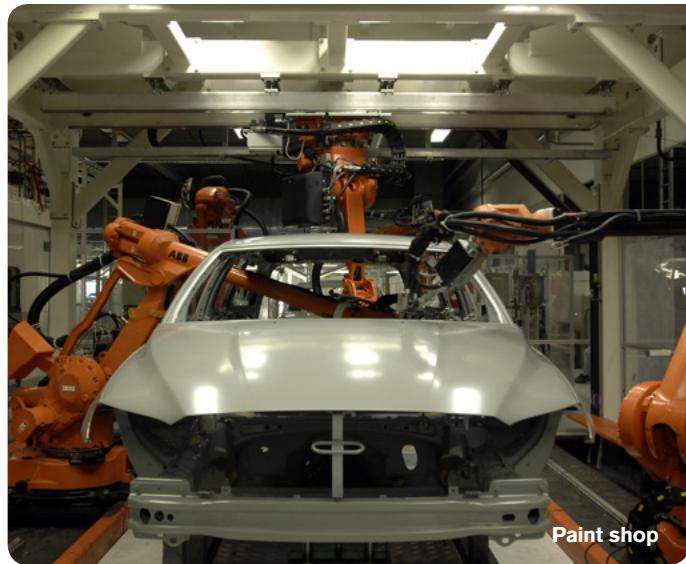


Our responsibility towards the environment

Managing our emissions to air

Our plants produce direct and indirect emissions of several types. We actively manage and reduce our VOC and CO₂ emissions as well as other greenhouse gas emissions.

CO₂ emissions: In order to reduce CO₂ emissions from our operations we continue to manage our consumption of energy as described in the section titled 'Towards climate-neutral production', on page 18/19.



Paint shop

Volatile Organic Compounds (VOC): VOC emissions are caused mainly by painting operations. Since it was commissioned in 1991, the Torslanda paint shop has proved to be one of the very best in the world in terms of minimising the quantity of hydrocarbons emitted per unit of painted surface. In 2007, the European Union imposed a limit of 60 g/m² of painted surface on hydrocarbon emissions from existing automotive paint shops. Our paint shop in Torslanda emits approximately 13 g of hydrocarbons per m² of painted surface, and our Ghent paint shop approximately 18 g per m² of painted surface. We will continue our efforts to further reduce emissions. Our ambition is that our other paint shops will also become best in class.

Other greenhouse gases: Other greenhouse gases include CH₄, N₂O, HFCs, PFCs and SF₆. Of these, our operations only emit minor quantities of HFCs – the biggest source of HFCs being our cooling equipment. We are phasing these emissions out and we intend to successively introduce completely chlorine-free alternatives as systems are refilled.

SO_x and NO_x: Our plants produce emissions of sulphur oxides (SO_x) and nitrogen oxides (NO_x). Emissions of sulphur oxides have been reduced significantly over a long period, mainly as a result of our change from oil to district heating and gas. The improvement is also due to the use of cleaner fuel oils at those locations where oil is still used for heating purposes. Emissions of nitrogen oxides are mainly caused by combustion temperature. High combustion temperatures generally yield low emissions of CO and VOC, although the opposite is true of nitrogen oxides. This is the situation in the paint shop in order to reduce the level of CO and VOC. All other combustions are at boiler houses and they are low-NO_x combustions.

During 2012, our total emissions of greenhouse gases decreased compared with the previous year.

ESTIMATED DIRECT AND INDIRECT EMISSIONS OF CO₂ IN CAR PRODUCTION^{1,2}

Year	Direct emissions of CO ₂ (tonne)	Indirect emissions of CO ₂ from electricity (tonne) ²	Indirect emissions of CO ₂ from district heating (tonne)	Total emissions of CO ₂ (tonne)
2012	54,565	4,240	2,865	61,670
2011	55,958	3,870 ³	3,094	62,922 ³
2010	58,912	2,968	5,705	67,585
2009	53,169	1,870	3,941	58,980
2008	60,618	3,883	3,866	68,367
2007	62,568	59,780	4,387	126,735
2006	71,581	60,535	4,691	136,807

1 The Volvo Cars facilities included in the data are Volvo Cars Torslanda Plant (Gothenburg, Sweden), Volvo Cars Ghent Plant (Ghent, Belgium), Kuala Lumpur (Malaysia), Volvo Cars Skövde – Engines (Skövde, Sweden), Volvo Cars Flyby (Flyby, Sweden) and Volvo Cars Olofström – Body Components (Olofström, Sweden).

2 Indirect emissions are estimated based on our assumptions for the primary energy sources for the countries in which we operate, as described under EN4. The primary energy source for electricity in Europe is hydropower, which is climate-neutral, while the primary energy source in Malaysia is assumed to be coal (720 kg CO₂/MWh).

3 Restated: incl. emissions from electricity production Malaysia.

In the EU, we do not use chlorofluorocarbons (CFCs) in any application, although HCFCs are used to some extent in air conditioning systems. Since 2002, no new systems have been filled with HCFCs in Sweden. The actual quantities of HCFCs in stock, converted to CFC-11 equivalents, are shown in the table below.

EMISSIONS OF HFCs¹

Year	Emissions of HFCs (kg)	CO ₂ equivalent (tonne)
2012	357	428
2011	385	462
2010	431	517
2009	496	595
2008	588	705
2007	676	811

1 Sweden only.

STOCKS OF OZONE-DEPLETING SUBSTANCES IN EU

Year	HCFCs, kg	CFC equivalent, kg
2012	432	21
2011	486	24
2010	630	31
2009	703	35
2008	718	36
2007	733	37



Our responsibility towards the environment

Emissions of SOx, NOx and VOC

Year	Emissions of SOx (tonne) ¹	Emissions of NOx (tonne) ²	Emissions of VOC (tonne) ³
2012	<1	72	796
2011	<1	80	828
2010	<1	85	738
2009	<1	71	527
2008	<1	90	712
2007	1	101	740

1 SOx emissions are calculated on the basis of the sulphur content in the fuel.

2 The NOx emissions are calculated based on the quantity of fuel. Spot tests are also performed.

3 Calculations of VOC emissions are based mainly on the amount of solvents in materials used and on measurements of the degree of purification of the equipment.



Reducing waste in our production

At Volvo Cars, we work continuously to reduce our waste, applying the following priorities: 1. Avoidance and prevention of waste, 2. Material recycling, 3. Energy recovery from waste, 4. Landfill or destruction. In order to do so we implemented a new waste management process at all sites, including new initiatives to avoid waste.

We weigh and classify all waste in accordance with the European Waste Catalogue (EWC), which classifies waste materials and categorises them according to what they are and how they were produced. Over 99% of Volvo Cars' production waste originates in our plants in Sweden and Belgium. Compared to 2011, our total waste decreased.

WASTE MATERIALS BY TYPE¹ (TONNE)

Year	Total waste	Hazardous waste
2012	213,905	10,837
2011	230,167	11,439
2010	169,746	9,087
2009	123,186	5,594
2008	171,872	9,320
2007	195,045	11,395
2006	182,952	11,841

1 Until 2011, the figure included Sweden and Belgium. The Volvo Cars facilities included in the data for 2012 are Volvo Cars Torslunda Plant (Gothenburg, Sweden), Volvo Cars Ghent Plant (Ghent, Belgium), Kuala Lumpur (Malaysia), Volvo Cars Skövde – Engines (Skövde, Sweden), Volvo Cars Flyby (Flyby, Sweden) and Volvo Cars Olofström – Body Components (Olofström, Sweden).

WASTE MATERIALS BY TYPE¹(%)

	2012	2011	2010	2009	2008
Metals	89.1	88.7	94.5	94.7	94.4
Hazardous waste²	5	5	3	3.1	3.2
Other	2.2	2.7	0.2	0.1	0.3
Stone & cement	0.7	0.7	0.002	0.002	0.002
Paper & cardboard	0.7	0.7	0.4	0.3	0.3
Sludge	0.5	0.5	0.5	0.4	0.3
Wood	0.7	0.6	0.5	0.7	0.7
Plastics	0.2	0.3	0.3	0.2	0.2
Construction waste	0.5	0.5	0.2	0.1	0.1
Domestic refuse	0.4	0.3	0.4	0.4	0.5
Electronics	-	-	0.02	0.02	0.02

1 Sweden and Belgium.

2 Since 2011, electronics have been included in hazardous waste.

METHODS OF PROCESSING WASTE¹

	Materials recovery, %	Energy recovery, %	Landfill, %
Incl. Metals 2012	94	5.5	0.5
Incl. Metals 2011 ²	94	5.5	0.5
Incl. Metals 2010	94	5.5	0.5
Incl. Metals 2009	93	6.5	0.5
Incl. Metals 2008	94	5.5	0.5
Excl. Metals 2012	37	50	13
Excl. Metals 2011 ³	38	49	10
Excl. Metals 2010	25	68	7
Excl. Metals 2009	24	68	8
Excl. Metals 2008	25	67	8

1 The Volvo Cars facilities included in the data are Volvo Cars Torslunda Plant (Gothenburg, Sweden), Volvo Cars Ghent Plant (Ghent, Belgium), Kuala Lumpur (Malaysia), Volvo Cars Skövde – Engines (Skövde, Sweden), Volvo Cars Flyby (Flyby, Sweden) and Volvo Cars Olofström – Body Components (Olofström, Sweden). The figures are provided by Volvo Cars' waste disposal contractor.

2 Restated.

3 Excluding 0.8% and 3% of waste fluids treated in evaporator and other waste fractions respectively.



Our responsibility towards the environment

Hazardous waste from Volvo Cars production plants includes: waste water sludge, oils, cutting fluids, paint sludge, adhesive residues and solvents. Our target is to reduce hazardous waste and we therefore remain focused on this.

Our operations in protected areas

We have manufacturing facilities in three countries on two continents. Volvo cars are also produced at Changan Ford Automobile Company Ltd, Ford Motor Company's passenger-car joint venture in Chongqing, China.

Conservation International, an environmental organisation based in Washington DC, has developed a list of global 'biodiversity hotspots'. One of our plants is located in such an area: the Swedish Motor Assemblies SDN BHD in Kuala Lumpur, Malaysia (50,000 m²), which is located in the Sundaland Hotspot. This hotspot is quite large, extending over 1.5 million square kilometres. It covers the western half of the Indo-Malayan archipelago. Politically, Sundaland covers a small portion of southern Thailand; nearly all of Malaysia; Singapore; all of Brunei Darussalam; and the entire western half of the megadiverse country of Indonesia. The Nicobar Islands, which are under Indian jurisdiction, are also included.

As with all our other plants, the Malaysian operation is located at traditional industrial sites in or in close proximity to urban areas. All of our plants have implemented environmental management systems in accordance with ISO 14001. In this process, all of our operations have been inspected in terms of their impact on the environment. Based on this, we have concluded that there are no individual substances or material used in our processes or products that present a direct threat to any individual species or type of biota.

Our other plants are located in the proximity of Natura 2000 areas.

Sustainable transport

Transport logistics

At Volvo Cars, we are attaching ever-greater importance to Logistics and Transport processes. High-volume and long-distance transportation is particularly suitable for switching to alternative transport modes other than traditional trucks. Truck transportation has been optimised for many years, resulting in a high degree of full loads, a better loading factor (more parts per pallet/rack) and an increased proportion of balanced loads. We are continuously exploring better alternatives and means of cooperation, for example regarding train transport. Our goal is to use sustainable transport solutions not only to connect our stamping facilities with our car plants, but even more to connect operations in Asia and Europe. This effort encompasses both sea and land transport.

In 2012, we took over the commercial responsibility for inbound and outbound transportation. This means we will be able to control, measure and improve the environmental impact of the transportation of our products in a better way.

Business travel and staff mobility

At Volvo Cars, we have a policy of managing the environmental impact of our business travels. Employees must always choose the most suitable route and choice of transport from the company's point of view. Although costs and time constraints must be considered, the impact on the environment must be considered as well. Environmentally friendlier means of transportation (e.g. train instead of flight for domestic travel) must be considered as far as possible and if reasonable from a time perspective.



Feature: Sustainable driving – What does it take?



Much of today's society is built for cars. Yet we have reached a point where conventional cars represent not only freedom, but also noise, emissions and a growing bad conscience. At Volvo Cars, we are aware of this. And we are working hard to do something about it.

To us, everything starts with people. This includes making it possible for you to drive a Volvo, feeling that you have made a good environmental choice without having to compromise on the car's other characteristics.

"We want to be a visionary leader and a driving force. Time is ripe for change, in harmony with our customers and society," says Mårten Levenstam, Strategy Director at Volvo Cars.

As the world has solved many of humanity's toughest challenges, the issue of transporting people and goods without harming the planet is yet to be solved.

"It takes cooperation; no one can do this alone. We are spearheading the development of new technologies and creative partnerships. And if all players involved do their utmost, working together, we can definitely succeed," Levenstam says.

Electric vehicles have many benefits to the local environment – blissfully silent and with no tailpipe exhausts. To make these benefits global, the power supplied to the car must be clean too. In many parts of the world, this means that coal-powered plants must be much cleaner than today. In addition, customers need a smart infrastructure for charging their cars. These are just a few examples that call for large-scale cooperation.

In other words, sustainable mobility takes more than engineering genius. It demands cross-boundary cooperation between carmakers, customers and society alike.

"We want to create value for all three. I'm not saying it'll be easy, but we've managed to move mountains before. We're a stubborn lot, and our world-first plug-in diesel hybrids and the unique solutions in the C30 Electric demo fleet are great examples of our efforts so far," Levenstam says.

The Volvo Cars electrification strategy involves all levels – from hybrids to all electric cars. In parallel with our focus on electrification, we continue to reduce emissions and fuel consumption in our conventional cars. Innovative trials also include safe road trains, where cars travel in convoys led by a lead vehicle.

To us, everything starts with people. This includes making it possible for you to drive a Volvo, feeling that you have made a good environmental choice without having to compromise on the car's other characteristics.

Mårten Levenstam
Strategy Director

“ ”

"At Volvo we are constantly on the go, striving to make a positive difference by improving our products in all possible ways. From the efficiency of a single water pump to an expansion of our electrification offer. This shows our dedication to sustainability and our strong will to collaborate with others in this needed transformation for the future."



MOBILITY OF THE FUTURE – ACHIEVEMENTS IN THE PAST YEAR

Motor vehicles and other forms of transport have a significant impact on the environment and on society. Our overriding objective is therefore to develop cars that are both safe and environmentally sound, but we cannot do this alone. We will lead the debate and actively innovate so that sustainable mobility is an attractive, scalable and tangible solution.

We are determined to persistently work towards sustainable mobility. We are pursuing this by increasing fuel efficiency in our conventional cars, introducing electrification and making our manufacturing more efficient. At Volvo Cars, we also aim to offer cars that are safe for all people in all imaginable traffic situations.

Autonomous driving technology

We aim for leadership within autonomous driving technology. To achieve this goal, we are working on several different parallel projects. One of the autonomous driving projects is the new traffic jam assistance system, by which a car automatically follows the vehicle in front in slow-moving queues. Autonomous driving support helps the driver stay in their lane and follow the rhythm of the traffic if queues build up. Using data from a camera and radar sensors, the car can follow the vehicle in front. The engine, brakes and steering respond automatically. If the vehicle in front is forced to make a quick move because of an obstacle in the road, the driver is assisted by the steering system, which makes the car veer in the same direction. The traffic jam assistance technology will be introduced in 2014.

Another project is the European road train project SARTRE (Safe Road Trains for the Environment), in which we are the first and only participating car manufacturer. The project began formally in September 2009 and was successfully completed in 2012. The SARTRE project focused on the possibility of taking the driver's hands off the wheel and the eyes off the road on long motorway trips. A road train consists of a lead vehicle driven by a professional driver followed by a number of vehicles. Building on Volvo Cars' and Volvo Technology's existing safety systems – including features such as cameras, radar and laser sensors – the vehicles monitor the lead vehicle and also other vehicles in their immediate vicinity. By adding in wireless communication, the vehicles in the platoon 'mimic' the lead vehicle using autonomous control; accelerating, braking and turning in exactly the same way as the lead vehicle. The road train embodies both our safety and environmental commitments and offers the best of two worlds – enjoying all the multi-tasking possibilities of public transportation behind the wheel of the customer's own car, while also contributing to lower CO₂ emissions and a safer driving environment. The environmental impact is reduced since cars follow close behind each other and benefit from lower air drag. The energy saving is expected to be as much as 20% depending on vehicle spacing and

Our vision for 2020 is that no one should be killed or severely injured in a new Volvo car. Achieving this will be challenging and the key to success in this respect is to design safety systems that are smart and that interact with one another.

This chapter outlines some of the achievements in 2012 of our research projects in these areas.



geometry. The system will also enable road capacity to be utilised more efficiently. Moreover, autonomous driving also serves as an important tool in Volvo Cars 'Vision 2020' where the aim is that nobody should be killed or suffer serious injuries in a new Volvo car by the year 2020.

In 2012 Volvo Cars and the Embassy of Sweden hosted a seminar entitled "Policy Implications of Autonomous Vehicles." The seminar which was held in Washington, DC was a panel discussion format and focused on the policy opportunities and challenges of autonomous vehicles. David Strickland, Administrator National Highway Traffic Safety Administration (NHTSA) and Peter Mertens, Volvo Cars were the keynote note speakers and the panel discussion also included representatives from Google, Stanford University, USA today, and the Nevada department of Motor Vehicles. Attendees included representatives from the Obama administration, Capitol Hill staffers, NGOs, industry, media and not for profits.

Avoiding collision

During 2012 and the first quarter of 2013, we have launched the following new technologies with the aim to avoid collisions:

- Cyclist detection
- Radar-based BLIS (Blind Spot Information system)
- Cross Traffic Alert
- Lane Keeping Aid

One of the most recent of these technologies is the world-first Cyclist Detection. This functionality is an enhancement of the present detection and auto brake technology. All cars equipped with pedestrian detection will also incorporate cyclist detection. According to accident data, about 50% of all cyclists killed in European traffic have collided with a car – a number that will be counteracted by this new technology. New advanced software, including more rapid vision processing, has made it possible to extend the present detection and auto brake technology to cover certain cyclist situations. The advanced sensor system scans an area ahead. If a cyclist heading in the same direction as the car suddenly swerves out in front of the car as it approaches from behind and a collision is imminent, there is an instant warning and full braking power is applied.



Animal detection



Pedestrian and Cyclist detection

Another functionality is being developed for future cars and serves to avoid collisions with wild animals. Accidents involving wild animals are a major international traffic problem – out in the countryside and in more remote areas there are many serious collisions involving wild animals. We are therefore working on Animal Detection, a system that detects and automatically brakes for animals both in daylight and in the dark. Accidents with wild animals often take place at cruising speeds. The aim is to reduce the speed of impact from about 100–110 km/h to below 80 km/h. The system is trained to recognise the shapes of animals and their movement patterns via a vast amount of collected data. Since wild animals have in many respects mastered the art of staying out of sight, this is a complex process. Success in projects like this requires close cooperation with the relevant public authorities, insurance companies and other car manufacturers in order to achieve the vision of an accident-free traffic environment.

Strategic partnerships for future vehicle technologies

Creating the sustainable mobility solutions of the future is not something we, as a small player in the car market, can do on our own. We therefore believe in partnerships and collaboration with other players in the market. In May 2012, it was revealed that we had chosen electronic equipment supplier Mitsubishi Electric Corporation as partner for the next-generation infotainment system for future Volvo cars. Mitsubishi's world-leading knowledge and experience will bring the infotainment system in future Volvo cars up to a world-class level. In the area of automotive internet services, we joined forces with Ericsson with the aim of advancing the technical development of industry-leading, cloud-based innovations.

In 2012, we also signed a Memorandum of Understanding with the members of the CAR 2 CAR Communication Consortium regarding implementation of shared technology for communication between cars in 2016. Further steps were also taken in the partnership with Siemens to continue the development of electrification technologies with the intention to jointly spearhead the development of electric cars.



VOLVO CARS – AN ATTRACTIVE PLACE TO WORK

By the end of 2012, Volvo Cars employed about 22,700 people globally, and as an employer we have a great responsibility for safeguarding and developing our personnel. All employers are responsible for ensuring that the work environment does not pose risks to health or accidents to employees. At Volvo Cars, we translate this into protecting our employees' health by preventing the risk of accidents, tackling work-related health issues, and improving employee engagement and diversity. Volvo Cars Senior Vice President Human Resources is the most senior position responsible for labour practices and decent working conditions.

Our Employees

At Volvo Cars, we view the different skills, experience, ages, gender, and nationalities of our people as an asset. By utilising these differences as opportunities we can cope with the constant changes within and outside our company. We represent reliability, safety, respect for the individual, and the world in which we live. With a secure work environment we can live up to these standards. We have committed to comply with national legislation on working hours.

NUMBER OF EMPLOYEES PER EMPLOYMENT TYPE (SWEDEN AND BELGIUM ONLY)

	White-collar ¹		Blue-collar ²	
	2012	2011	2012	2011
Sweden	7,510	6,662	8,293	8,486
Torslanda plant	222	208	2,990	3,133
Gothenburg – Other	6,490	5,725	1,973	1,721
Skövde incl. Floby	415	363	1,776	1,894
Olofström	383	366	1,554	1,738
Belgium (Ghent)	279	234	5,608	4,339
Total	15,299	13,558	22,194	12,825
	Full-time ³		Part-time ⁴	
Sweden	15,203	14,892	600	166
Torslanda plant	3,133	3,303	79	38
Gothenburg – Other	8,065	7,400	398	46
Skövde incl. Floby	2,113	2,201	78	56
Olofström	1,892	2078	45	26
Belgium (Ghent)	5339	4431	548	142
Total	35,745	19,413	1,748	308

Identification of contract type and full-time/part-time status of employees is based on the definitions applied in the national laws of the country where they are based.

1 White-collar employees are those whose employment is regulated by the TeknikavtaletUnionen/SverigesIngenjörer/Ledarna collective agreements, which are agreed between Teknikarbetsgivarna and Unionen/SverigesIngenjörer/Ledarna.

2 Blue-collar employees are those whose employment is regulated by the collective agreement Teknikavtalet IF Metall, which is agreed between Teknikarbetsgivarna and IF Metall.

3 A 'full-time employee' is defined according to national legislation and practices regarding working hours (e.g. in Sweden, national legislation defines 'full-time' as a minimum of nine months per year and a minimum of 30 hours per week).

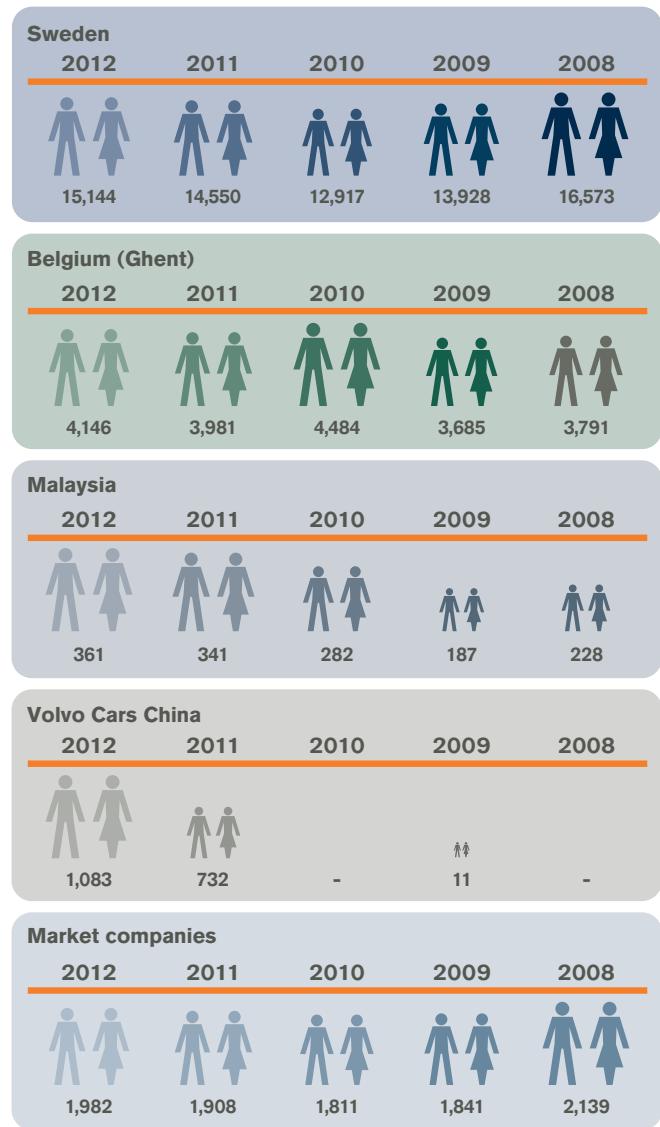
4 A 'part-time employee' is an employee whose weekly, monthly or annual working hours are less than 'full-time' as defined above.

TOTAL* NUMBER OF VOLVO EMPLOYEES WORLDWIDE



* Volvo Cars products are also produced in Chongqing (China) and Uddevalla (Sweden) and assembled in Bangkok (Thailand). At these locations, only a few people are directly employed by Volvo Cars.

TOTAL NUMBER OF VOLVO EMPLOYEES BY LOCATION





Volvo Cars - An attractive place to work

Respecting labour rights

At Volvo Cars, we recognise the right of all employees to form or join associations of their own choosing concerning the relationship between the employer and the employees, and to bargain collectively. The company does not tolerate disciplinary or discriminatory actions from the employer against employees who choose to peacefully and lawfully organise or join an association. We respect voluntary organisation by, for example, allowing the collection of union dues on company premises, the posting of trade union notices, distribution of union documents, and provision of office space. Approximately 80–85% of our employees with permanent contracts are covered by collective bargaining agreements. All employees in Sweden and Belgium are covered by collective bargaining agreements.

Child labour is not accepted in any of our businesses. At Volvo Cars we do not accept the use of child labour by any supplier, dealer or subcontractor. In no event will we employ any person below the age of 15, unless this is part of a government-authorised job training or apprenticeship programme that would be clearly beneficial to those participating. Furthermore, forced labour is not accepted in any of our businesses. We shall not engage in or support the use of forced labour, nor shall any employee be required to deposit identity papers when commencing employment with the company. Volvo Cars guarantees that all working conditions comply with all statutory requirements.



Employee engagement

The ability to present an inspiring vision of the future and create optimism around its implementation is the most important behaviour to navigate a company culture through any market environment. Our top management is a role model for the company values and behaviours to achieve success. It is fundamental for all employees to believe in our top management. At Volvo Cars, our managers must hold regular development discussions with Volvo Cars employees and these discussions are used to draw up personal development plans, which are monitored and evaluated.

Every year we conduct a survey called the Global People Survey (GPS). The purpose of the GPS is to determine the level of engagement among our employees. The level of engagement is measured by the percentage of employees who consistently speak positively about the company both inside and outside, desire to be a member of the company, and exert extra effort in behaviours that contribute to business success. We changed supplier and methodology for this survey in 2012.

During 2013, the work to develop employee input into actions will continue, in order to improve and sustain the engagement and improve that engagement score. Engagement affects business results in a positive way.

With the new supplier we can measure how we perform in relation to other companies and countries and to our Aspired Culture, which is characterised by engagement. The results are shown in the table below.

PERCENTAGE OF EMPLOYEES WITH A HIGH LEVEL OF ENGAGEMENT

Volvo Cars	59%
Automotive in Asia	54%
Automotive in Europe	47%
China	55%
Belgium	48%
Sweden	48%
Top Global Companies	79%

Attracting and retaining talent

To attract, engage and retain talent we choose to invest in employer branding. Employer branding is about communicating what makes us unique as an employer. This will help us create a strong internal identity that will foster engagement and the retention of current employees. It will also help us build our external reputation as an employer to enable us to attract even more talented people. Our employer brand strategy is aligned and connected to the brand, people and product strategies at Volvo Cars. It has its base in the corporate strategy 'Designed around you' as well as in our Aspired Culture.

Since 2009, we have seen an overall positive trend in terms of our internal employer brand attractiveness status, which is measured by the Employee Net Promoter Score (eNPS). The eNPS tells us how many of our employees would recommend Volvo Cars as an employer. We obtain the eNPS by asking our employees, 'How likely is it that you would recommend Volvo Cars to a friend as a place to work?' The analysis that is conducted also reveals the drivers behind our eNPS so we know what to focus on to be able to increase the engagement in the organisation and the numbers of employees who promote Volvo Cars as an employer. Examples of key drivers behind the eNPS include the organisation's capability to engage and motivate employees and provide opportunities for them to do their best work and achieve their goals.



During 2012, we also saw a positive trend in terms of our external employer brand attractiveness status. For the first time ever, Volvo Cars made it onto the list of the world's most attractive employers. The 2012 Universum survey reveals that Volvo Cars is ranked 43rd according to career seekers with an engineering background from the world's 12 greatest economies.



EMPLOYEE TURNOVER AT VOLVO CARS IN SWEDEN (%)						
Type of employee	2012	2011	2010	2009	2008	2007
Blue collar male	2.2	1.7	3.7	13.2	11.0	7.6
Blue collar female	3.1	1.9	6.2	22.1	14.7	9.5
Total blue collar	2.4	1.8	4.2	14.8	11.7	8.0
White collar male	3.3	2.9	2.1	5.9	5.9	11.3
White collar female	3.0	2.9	2.2	8.9	7.3	8.5
Total white collar	3.2	2.9	2.1	9.1	6.2	10.7
Total Volvo Cars	2.8	2.3	3.3	12.8	9.2	9.1

Strengthening diversity and inclusion

Diversity and inclusion are important for Volvo Cars. We will not tolerate any instance of abusive discrimination against anyone within the company. Our policies on discrimination are covered by Volvo Cars' Harassment at Work Directive. This Directive describes definitions of discrimination, responsibilities and internal quality assurance audits, and guides managers and employees on procedures when an incident of harassment has occurred at the workplace.

As a company, we have a strong focus on becoming a diverse global corporation with diversity as a 'red thread' perspective in everything we do. In 2012, diversity within our Executive Management team increased. Furthermore, the proportion of women in leadership positions (managers with direct reporting responsibilities, programme managers, project leaders and specialists in leading positions) increased from 12% in 2002 to 21% by the end of 2012. The number of people of foreign origin has increased from 17% to 24% during the past two years.

Our diversity index increased one step from 2011 to 2012 on an aggregated level. This index is a part of the Global People Survey (GPS, see page 27) and measures every Volvo Cars team on composition by gender, age and foreign origin as well as manager and team inclusion. The diversity index scores are followed up by our Executive Management Team and the Board of Directors. The new desired work culture and the new corporate strategy will make us an even more diverse and inclusive corporation.

Our Diversity Plan

Our Diversity Plan 2013–2015 includes a series of activities to accelerate progress towards increasing diversity and to utilise diversity within the company. Since 2010, we have provided an extensive diversity training programme for managers. This training continues during 2013 and early 2014 for all employees. A number of mentoring programmes will be initiated. Female candidates are also in focus within our succession planning process. Career development discussions are held within each People Board to enable each unit to identify resources and actions needed to reach their specific diversity targets. The People Boards are committees within each business unit, overseeing resources and identifying actions needed to ensure competence gaps are not overlooked. They are meeting and discussing all topics from competence needs and career development to recruitment.

For 2013, we have identified the following cascaded focus areas in our Diversity Plan:

1. Improvement of our Diversity and Inclusion Communication – Clear global communication on our vision and mission with Culture, Diversity and Inclusion.
2. The development of a Gender Diversity plan focusing on recruitment processes and tangible targets per business unit.
3. Following up on results from the Global People Survey relating to Valuing People, Career, Working Climate and Inclusion.
4. Strengthening our Zero tolerance Harassment policy: Communication and training in terms of global legal requirements and processes will be made more readily accessible and clear for all employees.

These cascaded areas will be reviewed and followed up at each Global Diversity Council meeting.

The Global Diversity Council

Our Global Diversity Council consists of 15 'Diversity Champions' who meet bi-monthly. A Diversity Champion has been appointed for each business area in the company with the aim of integrating diversity work into the company's daily operations more effectively. The Global Diversity Council is chaired by the Diversity Manager, and its role is to pursue diversity issues in the company and support our diversity efforts, focusing on concrete actions. Apart from the Council, we have also established a Diversity Steering Committee with the aim of securing continuous improvement of diversity work. Members are the Diversity Manager, three representatives from the Executive management team, and two from the Global leadership team.

Diversity in numbers

The Volvo Car Group Executive Management team consists of 14 people: 12 men and 2 women. The board of directors consists of 13 people: 11 men and 2 women. At Volvo Cars, we face a challenge in that the ratio of women attaining senior positions is lower than that of men. However, there is a trend towards a better gender balance in leading positions. As part of Volvo Cars Diversity Plan 2013–2015, we will focus on improving the ratio of women and men in senior positions.

PERCENTAGE OF WOMEN IN LEADING POSITIONS^{1,2}

	2012	2011	2010	2009	2008	2007
%	21.3	21.3	19.6	18.7	18.5	18.5

1 'Leading positions' covers managers with direct reporting responsibilities, programme managers, project leaders and specialists in leading positions.

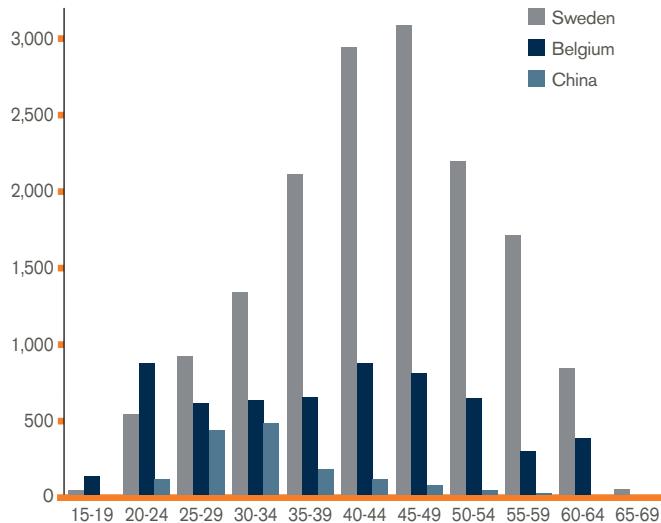
2 Data for 2012 represent China, Belgium and Sweden, while previous years' data represent global numbers.



AGE DISTRIBUTION - WHITE COLLAR												
2012	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	
Sweden male	-	16	240	417	821	1,094	1,068	905	690	374	22	
Sweden female	-	7	108	229	350	396	395	201	126	49	1	
Belgium male	-	-	2	1	13	34	55	69	29	36	-	
Belgium female	-	-	-	-	6	13	7	9	2	3	-	
China male	1	18	226	320	124	82	51	21	13	6	-	
China female	-	33	151	137	40	17	7	6	-	-	-	

AGE DISTRIBUTION - BLUE COLLAR												
2012	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	
Sweden male	25	400	464	537	723	1,159	1,273	926	741	348	10	
Sweden female	4	107	104	164	229	312	374	170	155	68	-	
Belgium male	95	728	532	550	557	729	681	541	248	334	4	
Belgium female	35	149	72	85	74	93	59	26	11	5	-	
China male	1	45	44	22	7	7	3	1	-	1	-	
China female	-	7	4	2	-	-	-	-	-	-	-	

AGE DISTRIBUTION 2012, WHITE COLLAR AND BLUE COLLAR



Fair and equal treatment

To ensure fair treatment and respect of all employees, we have implemented a clear salary policy and a structured salary process. Wages and benefits shall always be fully comparable with legal or industry standards. Information on wages and benefits shall be available to employees in accordance with applicable law. In connection with the annual salary revision, we conduct an analysis of salaries together with the trade unions represented at our facilities. The aim of this work is to identify and adjust any discrepancies in the salary structure. Discriminatory salary inequalities between men and women are included among the follow-up parameters.

The salary comparisons in the tables on the next page show that there is a slight tendency towards lower salaries for women throughout all of the categories for white-collar workers. The discrepancy is the highest in the most senior position category. We work continuously to eliminate salary discrimination by gender. For example, we have a gender-neutral salary policy and in the annual salary revisions there is a requirement to allocate at least the same proportion of salary increase to women as to men. The differences that do exist can be explained by the fact that women have a lower average age within each salary group, and that women in general progress faster between different salary groups and have therefore participated in fewer revisions within each group. Within the group of blue-collar workers, salaries between women and men are levelled.



BASIC SALARY RATIO BETWEEN WOMEN AND MEN BY EMPLOYEE CATEGORY (WHITE-COLLAR WORKERS)¹

2012	D	E	F	G	H	I	J	K
Basic salary women (SEK per month)	29,132	31,150	35,281	39,218	46,040	51,289	62,459	73,083
Basic salary men (SEK per month)	29,497	31,697	35,226	40,636	46,790	52,537	64,909	80,848
Ratio salary ²	0.98	0.98	1.00	0.96	0.98	0.97	0.96	0.90
Women's age	46	45	42	42	44	45	45	45
Men's age	48	44	44	46	47	47	49	50
Ratio age ³	0.95	1.02	0.95	0.91	0.93	0.95	0.91	0.90
% of population ⁴	57%	34%	24%	22%	22%	24%	23%	14%

1 SG D-SG K indicates salary grade according to increasing level of qualification. SG D-SG K mainly indicates managerial positions according to increasing level of qualification.

2 Salary ratio indicates women's salary in relation to men's in each SG group.

3 Age ratio indicates women's age in relation to men's in each SG group.

4 % of population indicates the proportion of women in relation to the total population in each SG group.

BASIC SALARY RATIO BETWEEN WOMEN AND MEN BY EMPLOYEE CATEGORY (BLUE-COLLAR WORKERS)¹

	43-44	45-46	47-48	49-50
Basic salary women (SEK per month)	26,951	27,379	27,995	31,117
Basic salary men (SEK per month)	26,320	27,573	29,063	30,771
Salary ratio ²	1.02	0.99	0.96	1.01
Women's age	44	43	38	47
Men's age	43	44	46	46
Age ratio ³	1.02	0.97	0.82	1.02
% of population ⁴	25.0%	16.7%	3.4%	8.2%

1 '43-44'-'49-50' indicates salary grade according to increasing level of qualification.

2 Salary ratio indicates women's salary in relation to men's in each group.

3 Age ratio indicates women's age in relation to men's in each group.

4 % of population indicates the proportion of women in relation to the total population in each group.

Category

Category	Definition
SG D	Administrative Service
SG E	Administrative Assistant, Engineer entry position
SG F	Engineer experienced
SG G	Engineer senior, Supervisor production
SG H	Group Manager, Qualified professional
SG I	Group Manager, Appointed Specialist, Project Manager
SG J	Section Manager
SG K	Department Manager
IPE	International Position Evaluation
41-42	Assembly line worker
43-44	Administrative service, Logistics
45-46	Skilled Worker
47-48	Highly Skilled Worker
49-50	Highly Skilled Worker

Combating discrimination

In 2012, zero incidents of discrimination were reported in our operations in Sweden and China. In our Belgian operations, three cases of discrimination were reported to the organisation; one based on religion, one based on race/belief and sexual preference and one based on sex. We have reviewed all three incidents. In the case based on religion, routines and dress code have been discussed with the unions and fine-tuned to be more efficient. We have also enhanced our communication regarding these types of issues. In the other two cases, company-specific processes have been followed. These include confrontation, mediation, case-specific action plans and follow-up after three months.





Health and safety of our employees

At Volvo Cars, we want to create a suitable, structured working environment jointly with our employees. Our employees participate in work environment matters by reporting risks, ill health, accidents and potential accidents. This leads to remedial actions and provides feedback on measures. It is important that we reach an agreement with our employees as to how joint action can be achieved on working environment measures. This could entail workplace meetings and joint assessment of the working environment.

Our safety officers function as representatives of our employees and must work to promote a satisfactory work environment. At Volvo Cars Sweden, our safety officers and union representatives are involved in the planning and implementation of measures. This involves studying working conditions, planning remedial actions and conducting an annual follow-up. Volvo Cars' safety officers are vital project resources and agents of change, and must take part in the initial stages of such measures.

Corporate health and safety comprises a professional resource within our company to achieve legal compliance and meet our goals within this area. Relevant activities include investigations, risk assessments, proposals for remedial measures and personnel training. Each division is required to employ a health and safety specialist to coordinate and manage health and safety efforts. In addition, we contract an external health service company with medical and technical professionals who assist us with surveys, assessments and advice.

How we work with health and safety

To guarantee our commitment towards the safety and health of our employees, we have established the following structures and procedures:

- The Work Environment Committee:** The committee's mission is to develop the company's working environment policy and to ensure compliance. The committee also encourages the line organisations to develop goals and action plans relating to the work environment, and works to enhance cooperation within the company and the industry.
- The Safety Review Board:** The Safety Review Board (SRB) has full management authority to review and take decisions on all aspects of health and safety within its purview. The intention is to standardise this forum as a management safety tool throughout Volvo Cars.
- Volvo Cars Work Environment Directive:** Our work should be characterised by respect for human beings and by employee empowerment with the opportunity for constant development. Our policies on labour practices and decent working conditions are covered by Volvo Cars Work Environment Directive. This Directive aims at improving the work environment, health and safety. It describes organisational responsibility, work environmental programmes, job adaptation and rehabilitation, company health care and future work environment.
- Volvo Cars Work Place Management Systems:** Our management system for systematic work with, and follow-up of, working environment issues. All workplaces are screened regularly by managers and safety officers and deviations are corrected. Risk assessments on different levels and topics are standard procedures and used throughout the company.
- The Green Cross:** The Green Cross (GC) tool provides a visual means for following up workplace injuries. The overall purpose of the tool is to ensure that the risk of workplace injuries is minimised through investigations, preventive actions and reporting. The tool can be used by all units, levels and departments.

Health and safety in numbers

Sick leave among our employees in Sweden and Belgium has been slowly but surely decreasing over the past few years as a result of our systematic health and safety efforts. We succeeded in our ambition and achieved an all-time low sickness absenteeism level of 4.4% in 2011 and 2012.

SICK LEAVE PER AVAILABLE HOURS (%)							
	2012	2011	2010	2009	2008	2007	2006
Sweden	3.5%	3.6%	3.7%	3.8%	4.3%	4.9%	5.6%
Volvo Cars total	4.4%	4.4%	4.5%	4.7%	5.0%	5.5%	5.9%

Training and preventive measures

At Volvo Cars, we conduct company-wide injury prevention programmes. This means that we, as an employer, are responsible for organising and conducting our operations in a manner designed to prevent accidents and work-related illnesses. All employees are responsible for reporting injuries and serious incidents to their immediate superior. We compile an annual report of all reported injuries and incidents, which provides a vital basis for our preventive programmes. Our action plan for work environment activities places particular emphasis on reporting incidents which might have resulted in personal injury.

Our injury prevention programmes are conducted by working environment committees which, together, cover all units and operations in Sweden, as well as our production units in Belgium and Malaysia. The task of these committees is to survey and evaluate the risks present in the working environment, and to propose action to minimise them. Over the years we have worked systematically to reduce occupational risks, with the focus on high-risk areas and personal behaviour. In the past 10 years, there has been a downward trend in the risk of sustaining a work-related injury or illness. A comprehensive training programme for managers and safety officers is one of the means adopted to achieve this aim.

NUMBER OF ACCIDENTS							
	2012	2011	2010	2009	2008	2007	2006
Injuries ¹	0.55	0.7	0.6	0.5	0.9	1.5	1.9
Serious injuries ²	9	15	6	6	8	4	2

¹ Defined as number of injuries resulting in at least one day of sick leave per 200,000 hours worked (equivalent to 100 man years).

² Defined as total number of injuries leading to fractures, unconsciousness, etc.

Our ambition is to implement a system which will allow us to monitor near-misses, accidents and incidents in all our operation sites.



Employee development

At Volvo Cars, we believe that investing in the continuous development of our employees will create value for our company. Our overall learning vision is to make employees more active in driving their own development, while the company moves from being a learning provider to being a learning enabler and promoter of knowledge sharing.

Through public funding such as European Social Funding, we had the opportunity to allocate more resources to training and competence development in 2012. We hope to continue to work with public funding in the future, to devote more resources to competence development and improve collaboration and cooperation with other companies and suppliers in the same market.

Training our managers

Training and supplementary training on the work environment is offered to safety representatives and all first-line managers. Middle managers are offered two days of working environment training and senior managers a half-day introduction. During 2012, approximately 125 people participated in a training programme for new managers, which included courses on diversity, discrimination law and psychosocial work environment.

In 2012, we launched a new leadership programme called Aspired Leadership Programme (ALP) with 134 participants. ALP received good reviews and provided participants with insight and concrete actions to cascade to their teams. The key take outs were courage, commitment and engagement, and that as Global Leadership Team members, they should not 'wait for instructions'.

Training our employees

Every employee in our company has a personal development plan, developed in dialogue with his or her immediate superior. The purpose is to ensure the employee's continuous development and that it is in accordance with the business needs. Development plans may lead to training or other forms of competence development.

During 2012, we offered 592 different courses at 2,916 sessions, with a total of 56,347 participants. We conducted a total of 457,248 hours' training, an average of 8 hours per employee. The areas were: product-related issues (engineering); IT, systems and tools; leadership and organisational development; process-related manufacturing; safety, health and environment. At Volvo Cars, we offer blended learning solutions, communication tools and resources that enable the employee's self-directed learning. The statistics on training courses are related to traditional classroom training only. The above-mentioned statistics do not include other efforts, such as competence development activities like mentoring, project work, job rotation and literature studies.

E-Learning

During 2012, the use of our internally developed e-learning increased, with several new e-learning courses. During the year 5,327 e-learning courses were completed. The aim of e-learning is to increase the accessibility of education for employees and facilitate the rapid implementation of new working methods and systems. In November 2012, we launched a new portal with 100 generic e-based learning courses available for all employees anywhere.



FEATURE: OUR PEOPLE IN THE SPOTLIGHT



Anu wants to make a difference

For more than 80 years now, people have remained the true purpose and inspiration at Volvo Cars. In our mission to simplify people's lives with intuitive, safe and sustainable cars, we need co-workers with passion and a drive to innovate.

Anu Lippinen started building engines at the Volvo Cars Engine plant. Two decades later, she is logistics manager and acting deputy plant manager at the Torslunda factory in Gothenburg.

"I want to make a difference and here at Volvo, I've always been able to. To me, leadership is about understanding people. By listening to and involving different co-workers and their knowledge, we bring out the full potential of the team and find the best solutions together," she says.

Today, Volvo Cars is more global and diverse than ever before, and yet there is much left to do. While Anu is a great example, we still need to increase the amount of female leaders, knowing that diversity – in all aspects of the word – opens for broader understanding, new perspectives and smarter solutions.

In this needed transformation for the future, we need to attract and retain co-workers that share our commitment to people and cars. This includes leaders that live the Volvo Cars' values and inspire others to do so as well. An important part is role modeling – being a good example for others to follow. To Anu, leadership is all about presence.

"To be there; inspiring, involving and challenging with highly set targets and allowing people to grow. You don't have to know everything, but you need to ask the right questions and be a good example in everything you do," Anu says, and adds.

"We've been very clear about our journey ahead and that it starts with you! We talk about passion now, which is incredibly inspiring. Whether you fasten a high voltage battery or head the factory, it's about finding your own passion in what you do". challenges of tomorrow.

I want to make a difference and here at Volvo, I've always been able to.

Anu Lippinen

**Logistics Manager & Deputy Plant Manager
Torslunda**

“ ”



Jimmy enjoys his work

Jimmy Sjöö started as an 18-year-old, fitting front wings to the Volvo Amazon in the Torslunda plant. Now he is 67 years old and works as an SQM, Supplier Quality Manager, with a strong focus on China.

Jimmy had just returned home when we met him at Purchasing in Gothenburg. He was due to return to China the following week to visit suppliers. "I'm fine with travelling as part of the job now. It's worse having to do it when you're

old," he says with a laugh. Jimmy looks back on a long and varied working life with the company. Among much else, he has worked as department manager at the prototype workshop and as pre-production engineer at Manufacturing Engineering. Now he has been asked to stay on as SQM for another year. "I accepted without hesitation. I've always liked my job. One of my tasks is to coach new SQMs or purchasing engineers in China. It's fun to pass on one's knowhow," he says.

He is an excellent example of the way knowledge is passed on and fine-honed in the company in many different ways – from in-house training courses to further education during

working hours. "I've always felt it's enjoyable to learn new things, to take on new challenges. Volvo has always been good in that respect. There have been opportunities and I've taken them." Jimmy particularly emphasises teamwork as a source of inspiration and enjoyment. "You cannot succeed on your own, you have to work together. That's what delivers success – that the members of a good team both complement and support one another."

Jimmy started working at Volvo in 1964. Back then the Torslunda plant built the Amazon (Volvo 121), P1800 and Duett.

That's what delivers success – that the members of a good team both complement and support one another.

**Jimmy Sjöö
Supplier Quality Manager**

“ ”



Feature: Our people in the spotlight



Jing is part of a team

"I enjoy every single day." Jing Fu, chassis engineer, has worked at Volvo Cars China in Shanghai for 18 months.

This is her first job after graduating from university in Shanghai. From the very beginning her aim was to work for an international company with a strong brand image – and Volvo Cars fit the bill perfectly. "The environment here is dynamic and supportive. Many people here work really hard, and at the same time it's really cool the way the leadership shares responsibility and the benefit of its experience," says Jing Fu.

It's a bit like a large family – one that also includes colleagues from Sweden. Everyone works together towards a common goal. Jing Fu's specialist area is brakes in the field of active safety and chassis. She is part of a small team totalling three people. They work closely together and learn a lot from one another. Last autumn she visited Volvo Cars in Gothenburg to learn more about the job and about the company in general. It has also been very educational to work in the fast-growing China organisation. "I've learned a whole lot on the job, I've gained a lot of new knowledge and learned how to be a professional in an organisation."

Working with cars is enjoyable, and it's great fun to work for a well-known car maker. Having said that, Jing does feel the brand's image in China would benefit from being somewhat sharper. "There are things to improve. In my father's generation, Volvo is well-known as a luxury brand, but people of my generation often choose among the competition."

Research & Development in Shanghai is a fast-growing organisation. "That boosts the dynamics and makes work more enjoyable," says Jing Fu.

The environment here is dynamic and supportive. Many people here work really hard, and at the same time it's really cool the way the leadership shares responsibility and the benefit of its experience.

Jing Fu
Chassis Engineer Shanghai



Freddy likes the variation

The motivation comes from his colleagues, the job and, not least, the products. "I'm really proud of our cars, I always have been." Freddy Strobbe has worked at Volvo Car Ghent for 30 years. "When I started the cars were solid, robust and safe. Now they have good design, great drivability and are still safe." He works with improving processes and working methods in Trim & Final. Previously, he had several different

jobs in the plant's quality organisation, from analysis to inspection. He has also worked as team leader and assistant to the production supervisor. "Right now this is the perfect job for me. This is how I maintain my level of motivation; it's more fun if you don't work too long at the same task." Freddy emphasises the strength of teamwork. Working together, it is possible to solve most problems.

"You have to use the skills of the operators. In order to come up with a good solution you have to be prepared to listen, to discuss. That's how you learn new things and grow, both as an individual and as a team." When Freddy started working at the Ghent plant in 1982, assembling doors to the 240 among his other tasks, he thought he would stay at the company for a few months. Now he would not consider working for any other company. "The job's really interesting, every day's a new day that brings with it new

challenges. One thing leads to another. I've also worked a whole lot in Gothenburg; I was involved in the production launch of the S40, V50, C30 and XC60."

Freddy has two beauties at home, an XC60 and an 850, but he cycles every day to work at the plant – a distance of about 45 km each way.

In order to come up with a good solution you have to be prepared to listen, to discuss.

Freddy Strobbe
Trim & Final
Ghent





BUSINESS ETHICS: INTEGRITY IS NEVER COMPROMISED

At Volvo Cars, we strive to combine business advantages with social and environmental responsibility. Our ethical values can be captured in one sentence: 'Integrity is never compromised'. Our commitment to responsible business is described in our Code of Conduct.

Our Code of Conduct

To reach our goals it is not only important what we do, but also how we do it. Our reputation and in the end our growth and profitability is affected by the way employees act within the company or in relation to external parties. It is important that we always act with a high degree of ethics and integrity. The Volvo Car Group Code of Conduct sets out the compliance and ethics topics which are relevant for business and makes reference to important policies and instructions relating to, for example, anti-competitive behaviour, social responsibility and corruption. The Code of Conduct rests on international conventions for human rights and labour rights. More specifically, the Code of Conduct sets out to comply with the eight core conventions of the UN agency the International Labour Organisation, the ten principles of the Global Compact, the Universal Declaration of Human Rights, the UN Convention on the Rights of the Child and the OECD guidelines for multinational companies.

The Code of Conduct is aimed at all our employees, all suppliers the company does business with, all dealers that sell the products of Volvo Cars and all other representatives that conduct business on behalf of the company. The Code of Conduct is decided by the board and communicated to all employees and, together with requirements and expectations, to all suppliers. All employees must know and comply with all company policies and instructions relevant to their work. A handbook with guidelines on how to behave when confronted with dilemmas such as gifts or favours, entertainment and social events, relations with suppliers, dealers and other customers as well as relations with governments and other policy-makers, was launched to all employees of the company in February 2012. The Code of Conduct is available to all employees both on the intranet and at www.volvocars.com/sustainability

In 2013, we are planning an update of the Code of Conduct since we regard it as a living document that needs to be updated regularly, taking into consideration new or changed legal and ethical requirements and expectations from our stakeholders.

Grievance mechanisms

All our employees have a responsibility and are expected to report any non-compliance with the Code of Conduct to the appropriate representative within the company.

During 2012, we introduced an external 'whistle-blowing' function for suppliers, which is publicised on our public supplier portal site. On our intranet we have reporting tools for internal reporting through an email, which is read only by the Chief Compliance & Ethics officer, as well as an incident

reporting tool for unusual events which is owned and managed by the security office. We have a policy of non-retaliation, which implies that retaliation is forbidden towards any employee who raises an issue in good faith, or who cooperates in a company investigation of an issue. All employees have the right to report any non-compliance anonymously.

The most senior positions responsible for issues related to corruption, public policy, anti-competitive behaviour and compliance are the General Counsel, Senior Vice President Group Legal and the Senior Vice President Corporate Communications. In 2012, a Corporate Compliance and Ethics Office was established with a Chief Compliance & Ethics Officer who reports to the General Counsel and also to the Board's Audit Committee and the Global Compliance Committee. The Compliance and Ethics Office is responsible for implementing an effective Compliance & Ethics programme and, as part of this programme, to investigate alleged breaches against the Code of Conduct and suggests disciplinary actions for decision by the Global Compliance Committee.

Training our employees in compliance and ethics

Training, education and communication are a large and important part of our Compliance and Ethics programme. We have developed web-based training on our Code of Conduct which is mandatory to all employees. This training will be rolled out globally in April 2013.

In addition to the mandatory e-learning training, we also have so-called classroom training on our Code of Conduct with targeted audiences such as new leaders, all our employees in China, new employees, management teams and specific functions which are considered more exposed to risk. We have also developed training on combating bribery, which is mandatory for all white-collar employees. This training aims to give employees insight and practical examples regarding the prevention of corruption. We will continue to expand the portfolio of training both in e-learning and in classroom settings. Our Compliance and Ethics Office also uses ambassadors in the global organisation to more effectively push trainings out to as large an audience as possible.

In 2012, Volvo Cars Purchasing Department conducted training in corporate social responsibility, sustainability, United Nations Global Compact and business ethics. The purpose of this training is to raise awareness of social responsibility and human rights in general and specifically in relation to our supply chain, as well as to increase employees' risk awareness within the area.

This training is mandatory for all newly employed employees. Training was held in Gothenburg, Sweden (5) and Shanghai, China (2), with a total of 293 hours and 32% (195 employees) of Volvo Cars Purchasing Department attending. Training materials have been distributed to all Volvo Cars Purchasing Department employees. We will continue to train and inform Volvo Cars Purchasing Department employees on our work procedures on human rights and supply chain in accordance with our set strategies.



Responsible business: Integrity is never compromised

Ethical business and anti-corruption

At Volvo Cars, it is our policy not to engage in any act that could possibly be construed as giving or taking a bribe, or in any kind of corruption. Our Code of Conduct includes the company's policy regarding bribery and corruption and details on conflict of interest, gifts and entertainment. Corrupt business practices is a global problem and Volvo Cars is present in many so called high-risk countries. To address this risk we are reaching out in the different regions with both general training on the Code of Conduct as well as specific trainings on corrupt business practices. We have a compliance & ethics officer based in China who is conducting class room and face-to-face trainings with all employees in the purchasing and sales/marketing departments and who is available to answer questions and address concerns. We are further establishing compliance and ethics ambassadors in relevant countries who will be supporting a local implementation on global trainings and who can support in identifying local concerns. All matters that come to the attention of the Compliance and Ethics office are investigated and reported to the Global Compliance Committee and the Board's Audit Committee. Disciplinary actions are proposed when relevant and decided upon by the Global Compliance Committee. Out of the cases reported internally in 2012, only a few cases were found to be substantiated and appropriate actions have been taken.

Fair competition

We are committed to comply with competition and anti-trust laws, and fair competition is vital to our company's success. We want to compete vigorously, aggressively and fairly and without any anti-competitive understandings or agreements with our competitors. We are also committed to comply with competition laws that apply to dealers and other independent businesses that deal with company products. Such competition laws protect the distributors' right to conduct their business independently. The Corporate directive 'Compliance with Competition Laws' is our guiding policy for anti-competitive behaviour, anti-trust and monopoly practices. It summarises the principles that should guide employee conduct in relationships with competitors, customers and suppliers. The Code of Conduct also explains our policy on anti-trust, equal competition and integrity, especially with regard to relations with governments, suppliers, business relations and the use of company information and community involvement and overall non-compliance.

No legal actions for anti-competitive behaviour, anti-trust or monopoly practices were initiated against Volvo Cars in 2012. We have not identified any non-compliance with laws and regulations in 2012.

External audits undergone

In 2012, Volvo Cars went through an external audit regarding ethical trade. The audit was requested by a global company, as part of their fleet car procurement procedure. This audit was based on the Sedex SMETA four pillars model, which includes environment, labour standards, health and safety and business practice. The results raised 10 non-conformities, 4 observations for self-monitoring, and 10 good examples. We are proud to be the first approved car company meeting the Sedex SMETA 4-Pillar requirements for that global company as a result of this audit. Sedex is a not-for-profit membership organisation dedicated to driving improvements in ethical and responsible business practices in global supply chains. Sedex stands for Supplier Ethical Data Exchange and SMETA is Sedex Members Ethical Trade Audit.

Public dialogue and leading change

As a company, we are affected by political decisions that are made in all of the countries where we operate. Therefore, we work continuously to establish access to politicians, authorities and institutions through dialogue in order to obtain information regarding important legislation and regulations that impact our strategic decisions and plans. Through this dialogue, we share knowledge and experiences that we believe will drive societal developments in a favourable way.

At Volvo Cars, we do not have a formal policy on public policy development or lobbying, but our Code of Conduct states that the name of the company shall not be used in political campaigns or for the benefit of a specific political interest. In our dialogues with various stakeholders, we do not differentiate between authorities and other types of organisations, but act in the same way to establish access to politicians, authorities and institutions.

Our work to impact political decisions and processes can be summarised as memberships in trade associations, proactive dialogue with authorities, communication with NGOs and other institutions, initiatives in public debates and public events held in 2012 focusing on autonomous drive, economic incentives from the government to encourage a greater number of electrical cars on the market, creation of a long-term regulation on greenhouse gas emissions and insurance premium discounts for cars with advanced safety technologies.



FEATURE: BUSINESS ETHICS BEYOND REGULATION



A sustainable business takes responsibility for people, the planet and the way it earns its profits. At Volvo Cars, we know that our reputation and future growth depend on our actions. Not only what we do, but also how we do it. Here, business ethics play an important part.

"Every company has an active choice: You can settle with abiding laws and regulations, or you can take the next step. To us at Volvo Cars, business ethics is a responsibility beyond regulation," says Michaela Ahlberg, Chief Compliance and Ethics Officer at Volvo Cars.

Michaela manages a new function, initiated to strengthen the Compliance and Ethics programme at Volvo Cars. The overall aim is to support everybody in the organisation in understanding the ethical norms and legislation that are relevant for our business. To help co-workers navigate in today's complex business environment, there must be clear written policies and guidelines available. Dialogue, training and tools are other key components to create awareness in the organisation, as well as following up misconduct and making sure it is not tolerated.

Our historic values of safety, quality and environmental care make for a solid foundation. The Code of Conduct further strengthens the message. Still, there is always room for improvement, and we are presently strengthening our policies within social responsibility and data privacy – the latter a rapidly developing area touching both legislative and ethical demands.

Responsible business throughout

"We don't want to speak of 'zero tolerance' or 'doing the right thing', and pretend it's easy, when it actually is very hard and time consuming. It takes more than guidelines to understand and handle the consequences of 'zero' or 'right' in any legal or ethical dilemma," says Ahlberg.

Realising the need for continuous and evolving efforts, Volvo Cars runs comprehensive training programmes and follow-up meetings to ensure that the message is anchored. In the past year, we have also developed our whistle-blowing email function with direct access to the Compliance and Ethics office.

More and more companies realise that the responsibility of a sustainable and ethical company stretches further than its customers and co-workers; it also includes suppliers, and in Volvo's case passengers, pedestrians, bikers and everyone else who comes in contact with our products.

"Only by acting with a high degree of ethics and integrity, can we earn and maintain the trust of our customers, our stakeholders and the communities in which we are operating," Michaela Ahlberg says, adding that we should, however, not simplify the task.

"Corruption, for example, is a big global challenge. A responsible company may have to be willing to give up short-term profits by refusing to take part in corrupt business practices. The reward, however, is long-term profit and the knowledge of conducting the business honestly and fairly – in everything we do."

Only by acting with a high degree of ethics and integrity, can we earn and maintain the trust of our customers, our stakeholders and the communities in which we are operating.

Michaela Ahlberg
Chief Compliance and Ethics Officer

“ ”

In 2013, the Compliance and Ethics programme will focus on promoting human rights and reducing corruption, as we believe the ability to 'do good' creates significant business opportunities while creating a positive societal impact. This work will, amongst other efforts, entail an update of the Code of Conduct, to adapt it to changing expectations from stakeholders and to new or adapted legislation. An E-learning training programme for employees will be launched to raise awareness of the Code of Conduct.



SUPPLIERS AND PARTNERS AS PART OF OUR SUSTAINABILITY WORK



At Volvo Cars, we realise that sustainable and responsible business practices are not created and implemented in isolation. To meet our sustainability goals we need to work together with our suppliers. Approximately 40% (by value) of the materials needed for our cars are manufactured in our own facilities. The remaining 60% are purchased from external sources. We have approximately 450 business partners producing components for our cars, and a further 3,300 delivering other products and services.

The total life cycle of our products and their environmental footprint as well as respecting and honouring human rights are important to our company and operations. The provisions and guidelines on human rights, found in our Code of Conduct guides our operations and are also expected to be followed by our suppliers and dealers, as well as all other representatives that conduct business on behalf of the company. Our demands and expectations are incorporated in the different Terms & Conditions used in Volvo Cars, and cover topics such as:

- Diversity and equal opportunity
- Health and Safety
- Child labour
- Forced labour
- Freedom of association and collective bargaining
- Compensation
- Working hours
- Environmental management

The Senior Vice President Purchasing is responsible for supporting and managing social responsibility and environmental issues related to the supply chain.

Engaging our suppliers

We communicate our human rights and environmental demands on suppliers through Volvo Cars' Supplier Portal. This portal aims to streamline communication with our suppliers. The portal supports acceleration of information flow with our suppliers which improves transparency in our collaboration. The portal contains information about our demands and expectations on suppliers as well as our work procedures and tools in a range of areas, accessible for suppliers to download and use. Our Code of Conduct, our Global Environmental Policy and the Environmental Self-Assessment form are other examples of information that is available at the supplier portal. One of the environmental requirements for suppliers is that they must be third-party certified according to the ISO 14001 environmental management standard. An Environmental Self-Assessment must also be filled in by each supplier and sent to Volvo Cars upon request. We also communicate and follow up our expectations through the Volvo Cars Quality Award through Excellence (VQE), in which environmental management and performance are one aspect that is evaluated.

In 2012, a total of 821 supplier visitors were registered on the supplier portal Environmental and Social Responsibility sites.



Suppliers and partners as part of our sustainability work

Collaboration with partners

During 2012, we conducted Supply Chain Responsibility training for suppliers. This supplier training raised awareness and promoted sound working conditions, environmental responsibility and business ethics at supplier facilities and in supply chains. We conducted this training in collaboration with other automotive OEMs (Original Equipment Manufacturers) and the AIAG (Automotive Industry Action Group) in selected countries. The selection of countries for these trainings was based on a CSR country risk assessment. During 2012, training was carried out in Mexico (8 suppliers) and China (50 suppliers). During 2013, Volvo Cars plans to focus on Chinese suppliers as a result of the newly established production site. We are also part of a collaboration with a group of European automotive manufacturers. The mission of the group is to work together to improve the social and environmental performance of automotive supply chains, e.g. to share experiences on sustainability issues in the automotive supply chain as well as develop and apply common tools.

Screening of suppliers

In our supplier agreements, we reserve the right to conduct an audit upon advance written notice to all units producing goods or services for Volvo Cars, at any time. We also reserve the right to appoint an independent third party of our choice to conduct audits in order to evaluate compliance with Purchasing Terms & Conditions, the Company's Social Responsibility and Environmental web guide and our Code of Conduct. The Supplier Quality Management within our Purchasing Department carried out a total of 641 Manufacturing Site assessments in 2012 (in which health and safety aspects were included). We are also currently investigating the possibilities of integrating working conditions into this assessment.

By the end of 2012, a tool for evaluation of new suppliers was introduced. This tool contains sections related to:

- Working conditions and Business Ethics which addresses issues such as forced labour, child labour, discrimination, wages and compensations, work hours, anti-corruption and sub-supplier management.
- Environment demands, which are aligned with appointed environmental strategic areas within Volvo Cars.

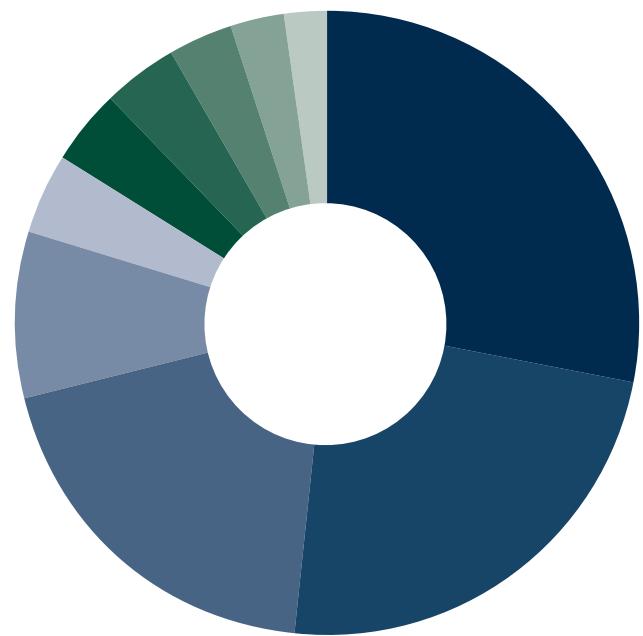
In 2012, Volvo Cars went through an external audit regarding ethical trade (see also page 36). The results raised 10 non-conformities; one of them was that Volvo Cars does not perform checks on suppliers regarding fulfilment of the demands stipulated in our Terms & Conditions. Our Purchasing Department has taken this into consideration and has, as a result, extended the developed audit plan for 2013 to cover both direct and indirect material suppliers. The implementation of the plan will inform the future development of our Purchasing Department's strategic work with audits.

Respecting human rights

Our strategy is to integrate human rights related activities in our day-to-day business tools. One example is the Volvo Cars manufacturing site assessments (see above). In 2012, our Purchasing Department also developed a company-specific strategy for our continued activities with our supply chain relating to human rights: the CSR Country risk segmentation model. This model is developed from a Corporate Social Responsibility perspective and is an initiative to mitigate human rights risk. The purpose of the model is to identify the risk level in countries where our suppliers operate and to prioritise activities. The model is based on four indicators:

- Conflict or extreme political instability
- Lack of democracy and civil & political rights
- Living standards
- Corruption

MAIN SUPPLIER COUNTRIES 2012



Belgium	25.00%	Poland	3.53%
Germany	21.00%	Czech Republic	3.42%
Sweden	17.50%	Spain	2.92%
United Kingdom	7.50%	Turkey	2.53%
France	3.80%	Netherlands	1.83%

ALWAYS ONE STEP AHEAD - OUR PRODUCT RESPONSIBILITY



Crash testing

At Volvo Cars we take responsibility for our products very seriously. Our policies stipulate our responsibility to ensure adherence to our procedures, with the aim of meeting our product-related goals. One example of such a goal, relating to product safety, is that in 2020 no one will be killed or injured in a new Volvo. Product responsibility is shared operationally between our Research & Development and Quality departments.

Research and collaboration

To fully understand what makes accidents happen in the first place, we conduct internal and external research projects together with other actors from the automotive industry. In the EuroFOT project, for example, Volvo V70 and XC70 cars are equipped with cameras and computers to monitor the driver's behaviour to gather knowledge on how we react in complex traffic situations. The DRIVE C2X research focuses on communication among and between vehicles and roadside and back-end infrastructure system.

External competence development campaigns are also directed towards our dealers. Furthermore, we organise seminars and lectures for journalists and government authorities on how we work with safety issues. Some examples of our collaboration with partners on specific projects are listed below.

Chalmers University of Technology

Our cooperation with Chalmers University of Technology has the aim of sharing our own knowledge about car safety issues and creating a forum where we can gain knowledge ourselves. The SAFER project is a platform in which different stakeholders can channel research issues relating to safety

as well as obtain further qualifications within safety research. Our employees, students, researchers and teachers meet to discuss safety issues at an academic level.

Swedish Asthma and Allergy Association

To ensure that the materials used inside the vehicles are not harmful to human health or the environment, as well as to avoid using asthma-inducing and allergenic substances in our car interiors, we perform careful measurements in the first few years of the vehicles' life. We cooperate with the Swedish Asthma and Allergy association (AAF) to continuously improve the interior of our vehicles. We measure our performance against the World Health Organisation's (WHO) recommended levels. We fulfil the AAF demands by ensuring that incoming air fulfils the WHO Air Quality Guideline, relating to NO₂, particulate matter, CO, benzene, ozone and SO₂.

The China-Sweden Research Centre for Traffic Safety in Beijing

This research centre was inaugurated in December 2012. Apart from Volvo Cars, the other research partners in the project are Volvo Group, Chalmers University of Technology in Gothenburg, the Chinese Ministry of Transport's Research Institute of Highway and Tongji University in Shanghai. The research centre focuses on a number of areas, such as improving traffic safety in Sweden and China and promoting the exchange of technology and knowledge between both countries. The Centre will also act as a platform for research into traffic safety and supporting government decision-making in matters on traffic safety.



Always one step ahead - Our product responsibility

Marketing our products

Our in-house guidance states that all of our products and services shall be marketed and sold in a fair and honest manner. Marketing of products and services, dealer marketing included, should always comply with national legislation and be conducted in an honest and fair manner in relation to the characteristics of the product or service. Our Corporate Marketing Instruction provides guidance on the preparation and documentation of company advertising and PR material, such as, but not limited to, press releases and launch material. The instruction reaffirms the commitment of the company that its advertising and PR material shall be accurate, truthful and in good taste. Our Corporate Marketing Instructions were produced in accordance with applicable laws and regulations, and in line with our own applicable guidelines.

Reviewing our communication

At Volvo Cars we continuously review our marketing communication. This responsibility lies within the Legal, Global Communications and Safety communication departments. Each market worldwide is responsible for its own marketing and for ensuring that the marketing initiatives are carried out in accordance with our Marketing Instruction. There were no incidents of non-compliance with regulations and voluntary codes concerning marketing communications during 2012.

Quality for a Scandinavian premium brand

Quality is a focus area for our company. A new Quality Policy was decided in 2012. Adherence to this policy will ensure that we continuously strive to provide our customers with premium products and services of the highest quality.

Quality Transformation

We are currently in the midst of a major change programme for Quality & Customer Satisfaction. It is a company-wide initiative to raise the quality of the company's products and processes, both internally and externally.

The aim of 'Quality Transformation' is to reach *Excellence in Customer Satisfaction* by:

- Having customer satisfaction rooted in all decision-making processes
- Establishing effective and manageable Quality structures and processes
- Increasing customer satisfaction awareness in every co-worker's everyday work

The objective is both very simple and very difficult: Volvo Cars shall achieve top-level Customer Satisfaction in products and services. 'Quality Transformation' is the biggest quality-improvement programme in our company's history.

Designed Around You

Our success is built on satisfied customers. In our development of our products and services, we therefore carefully analyse different customers' needs and desires by organising customer clinics and also by performing tests to determine how the proposed solutions will be perceived by our customers. By combining these customer evaluations with our own tests, we continuously develop our products to be the best for our customers.

We monitor our customers' feedback through surveys, media, feedback from dealers, and, most importantly, by holding a dialogue with our customers. This gives us as a company the best information to improve our products. Every year, Volvo Cars engages an external information service provider to conduct workshops and seminars on customer experiences, feedback and improvements. Since 2010, we have developed our own product quality survey measuring customer satisfaction on our products.

Our monitoring pays off. For example, the number of customers who are likely to recommend Volvo as a brand has increased since 2011. We are also noticing clear improvements when it comes to customer loyalty in terms of an increased Net promoter score (customer loyalty metric) where we currently are above target. Furthermore, the amount of warranty repairs for new vehicles has decreased constantly since 2007.

Globally, our quality is built on continuous improvements. In 2012, we further developed our global approach for Customer Feedback with the purpose of enhancing customer satisfaction.

Leadership in safety

As many as 50 million people are injured every year in road accidents and approximately 1.3 million die as a result of these accidents. For this reason, safety is a core value to us and since the foundation of Volvo in 1927 we have worked continuously on enhancing safety, not only for the occupants of our cars, but also for those in their vicinity.

Our safety policy states that we should provide our customers with the highest level of safety and maintain our leadership in safety in the car industry. Safety is one of Volvo Cars' core values. We work hard to stay at the forefront of the industry by taking an overall approach to safety, which has proven effective to the customer in real traffic situations. We consider numerous aspects of safety and develop them continuously. We created intelligent and innovative solutions aimed at preventing accidents and reducing the consequences when they nonetheless occur. Our strategy includes a comprehensive dialogue with several stakeholder groups in society. We choose to cooperate with the best partners possible when it comes to academic institutions and we maintain a very close dialogue with local authorities around the world.

Our strong commitment to safety has resulted in an extensive range of safe premium-class cars. All cars, accessories and relevant services must not only meet, but exceed, our customers' expectations when it comes to safety. Our broad in-depth knowledge is the foundation of our development efforts and derives from real traffic situations. Our close collaboration with the Swedish insurance company Volvia has helped provide detailed information about incidents and the outcome of accidents with Volvo cars in Sweden. We strive to understand how and why the different situations occur. Our Traffic Accident Research team, established in 1970, collects accident data from more than 40,000 accidents involving Volvo cars in Sweden. We apply this valuable information when designing new Volvo cars. Performing accident reconstructions in our state-of-the-art crash laboratory gives us unique knowledge for further development.



Safety highlights

Volvo Accident Database shows that the risk of being injured in recent Volvo models has decreased by two-thirds compared to the risk of being injured in old car models.

Volvo Cars' Safety Research works towards our vision to design cars that do not crash. In the shorter perspective the aim is that no one should be killed or injured in a new Volvo. Examples of three important areas to focus on are staying safely in the current lane, avoiding accidents at crossroads and junctions, and avoiding collisions with wild animals.

The large-scale European Field Operational Test on Active Safety Systems (EuroFOT)

final report confirms that Volvo Cars' systems to help drivers avoid incidents and collisions deliver significant benefits. A car such as the Volvo V70 or XC70, with adaptive cruise control and collision warning, reduces the risk of colliding with the vehicle in front on a motorway by up to 42%.

Volvo S60 achieved top results in Insurance Institute for Highway Safety (IIHS) new small overlap frontal test. At the launch of the method the S60 was one of two cars to earn best rating in the test.

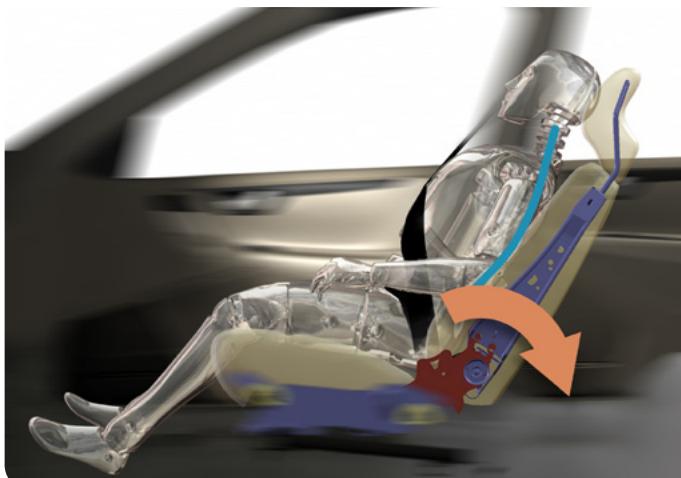
Volvo V40 awarded the 'Best Small Family Car 2012' in Euro NCAPs 'Best in Class Cars 2012'. The Volvo V40 achieved the highest combined score of any car previously tested by Euro NCAP. It is the most IntelliSafe Volvo model ever designed featuring the world-first Pedestrian Airbag Technology.

Volvo V60 Plug-In Hybrid achieved five stars in Euro NCAP with the highest ever score for an electrified car tested by Euro NCAP.

The new Active Safety Test facility is being built next to Volvo Cars' existing proving ground at Hällerid, Sweden and operated by the company Active Safety Test Area AB (ASTA). The new facility will provide Volvo Cars with tools for the development of tomorrow's intelligent safety and driver support systems and play an important role for Volvo Cars' continued leadership in the field of safety.

The Chinese Prime Minister Wen Jiabao visited the Volvo Cars Safety Centre and witnessed a demonstration of a live crash test.

The China-Sweden Research Centre for Traffic Safety in Beijing, China was inaugurated. Apart from Volvo Cars, other research partners in the project are Volvo Group, Chalmers University of Technology in Gothenburg, the Chinese Ministry of Transport's Research Institute of Highway and Tongji University in Shanghai. The research centre focuses on areas such as promoting the exchange of technology and knowledge between both countries and improving traffic safety in Sweden and China. The Centre will also act as a platform for research into traffic safety and supporting government decision-making in matters relating to traffic safety. Hans Nyth, former Director of the Volvo Cars Safety Centre, will assume the position of Director of the Research Centre starting Q1 2013.



Our safety performance

Our customers can monitor our cars' safety performance through independent rating programmes. Crash performance tests are executed by rating institutes, and field ratings are based on real-life accident data provided by insurance companies. In 2012, Volvo Cars' models were awarded highest ranking in 81 out of 85 independent car safety tests.

SAFETY TESTS	2012	2011	2010	2009	2008	2007
Share of independent tests where Volvo Cars received the highest rank (%)	95	89	88	80	70	69



Always one step ahead - Our product responsibility

RESULTS OF INDEPENDENT CAR SAFETY TESTS 2012

Latest results of independent car safety tests on our models. The results are shown in the form of rankings, with '1' denoting the highest ranking, '2' the second highest, '3' average rating and 'n/t' not tested.

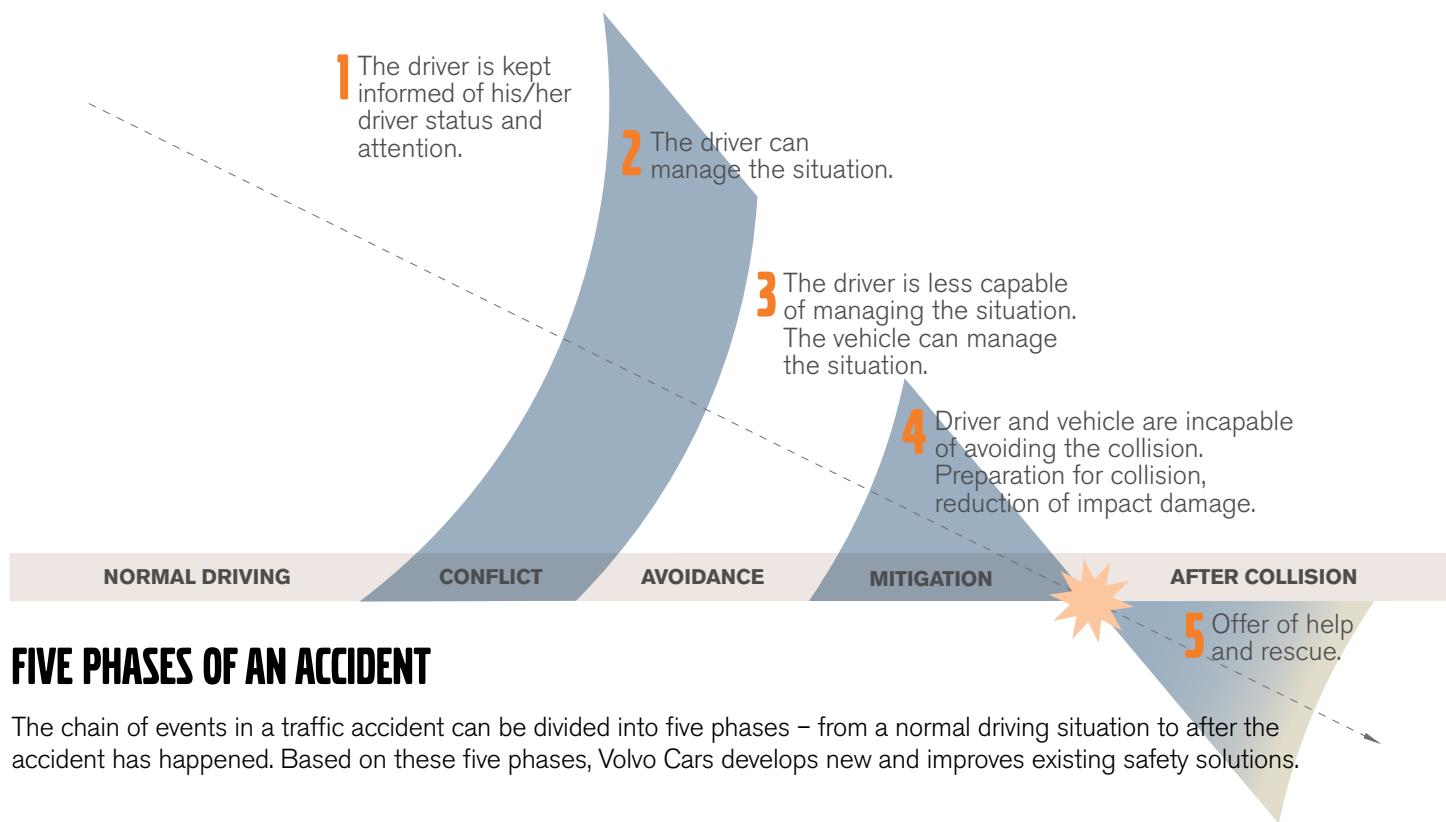
Test body	Test method	C30	C70	S40	S/V60	S80	V40	V50	V60 Hybrid	V70	XC60	XC70	XC90
Euro NCAP	Combined	1	n/t	n/t	1	n/t	1	n/t	1	1	1	n/t	n/t
US NCAP	Combined	n/t	n/t	n/t	1	n/t	n/t	n/t	n/t	n/t	1	n/t	n/t
	Frontal crash test	n/t	n/t	n/t	1	n/t	n/t	n/t	n/t	n/t	1	n/t	n/t
	Side crash test	n/t	n/t	n/t	1	n/t	n/t	n/t	n/t	n/t	1	n/t	n/t
	Rollover test	n/t	n/t	n/t	1	n/t	n/t	n/t	n/t	n/t	2	n/t	2
IIHS	Top Safety Pick	1	n/t	n/t	1	1	n/t	n/t	n/t	n/t	1	n/t	1
	Moderate overlap frontal crash test	1	1	1	1	1	n/t	n/t	n/t	n/t	1	n/t	1
	Small overlap frontal crash test	n/t	n/t	n/t	1	n/t	n/t	n/t	n/t	n/t	1	n/t	1
	Side impact crash test	1	1	2	1	1	n/t	n/t	n/t	n/t	1	n/t	1
	Rear/Whiplash	1	1	1	n/t	n/t	n/t	n/t	n/t	n/t	1	n/t	1
	Roof strength	1	n/t	2	1	1	n/t	n/t	n/t	n/t	1	n/t	1
China NCAP	Combined	n/t	n/t	1	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Australasian NCAP	Combined	1	n/t	1	1	n/t	1	n/t	n/t	1	1	n/t	1
Folksam	Safe car choice	1	n/t	1	1	1	n/t	1	n/t	1	1	n/t	1
	Injury and fatality data	n/t	n/t	1	n/t	n/t	n/t	1	n/t	n/t	n/t	n/t	n/t
Thatcham	Whiplash	1	1	1	1	1	n/t	1	n/t	1	1	1	1

In 2012, there were no incidents of non-compliance with regulations and voluntary codes concerning health and safety impacts of products and services which resulted in a fine or penalty. Hence, there was no monetary value of significant fines incurred.



Holistic view of safety – five phases to improve vehicle safety

At Volvo Cars, our work to improve vehicle safety is carried out in five phases from normal driving to after collision. These five phases shown in the diagram below are Normal driving, Conflict, Avoidance, Crash/Mitigation and After collision.



FIVE PHASES OF AN ACCIDENT

The chain of events in a traffic accident can be divided into five phases – from a normal driving situation to after the accident has happened. Based on these five phases, Volvo Cars develops new and improves existing safety solutions.

Normal driving

The driver is well informed and alert. Good lighting and visibility are important to help him or her to detect danger and avoid an accident. Comfortable seating and ergonomic controls enable the driver to concentrate on driving. Examples of Volvo Technologies: Driver Alert Control, IDIS, BLIS, Hill Descent Control, Alcoguard, Active Bi-Xenon, Active High Beam Control and Road Sign Information.

Conflict

Technology helps the driver to handle difficult situations. If the unexpected happens, the car can help to warn the driver, be easy to manoeuvre and must have effective brakes. Examples of Volvo Technologies: DSTC, RSC, Trailer Stability Assist, Collision warning with auto brake/Collision warning, Emergency Brake Lights, Lane Departure Warning and Cross Traffic Alert.

Avoidance

The car acts automatically to avoid a collision if the driver fails to react. Examples of Volvo Technologies: City Safety, Collision Warning with Auto Brake, Pedestrian Detection and Lane Keeping Aid with Haptic Steering.

Crash/Mitigation

The car's safety systems help to reduce the crash energy in order to minimise the effect on the occupants and other road users. Examples of Volvo Technologies: Patented Front Structure, SIPS, WHIPS, ROPS, Child Safety and Pedestrian technology.

After collision

The car automatically calls for assistance and facilitates the rescue work. Examples of Volvo Technologies: Volvo on Call.



About Volvo Cars

ABOUT VOLVO CARS

This report covers Volvo Car Group. Volvo Cars was owned by the Ford Motor Company until 2 August 2010, when it became an independent company under the ownership of Zhejiang Geely Holding Group. The Volvo brand is owned jointly by Volvo Cars and AB Volvo through Volvo Trademark Holding AB.

Our cars are marketed and sold by regional market companies and national sales companies through approximately 2,300 local dealers in about 100 countries. Most of the dealerships are independent companies.

Volvo Cars employed a total of 22,715 people as of 31 December 2012. The company sold a total of 421,951 cars in 2012.

Our products

At Volvo cars, we produce premium cars in the following body types: Sedans, Estates/Sportswagons, Cross Country vehicles and SUVs.

S



S80

V



V70

XC



XC90



S60



V60



XC70



V40



XC60



V40 CROSS COUNTRY



About Volvo Cars



A global company

Our cars are sold in more than 100 countries. In 2012, retail sales amounted to 421,951 cars, a deterioration of 6.1% versus 2011. In 2012, the US was Volvo Cars' largest market, accounting for approximately 16% of total retail deliveries; Sweden was second (approximately 12%), followed by China (approximately 10%).

Volvo Cars' head office, product development, marketing and administration functions are mainly located in Gothenburg, Sweden. The Volvo Cars China headquarters in Shanghai includes a Technology Centre and functions such as sales and marketing, manufacturing, purchasing, product development and all other supporting functions.

Our cars are built in four countries, with the largest manufacturing plants, in terms of production volumes, located in Torslunda, Sweden and Ghent, Belgium. Volvo cars are also manufactured under licence in Chongqing in China (CMA, Changan Ford Automobile). Volvo Cars has its own production facilities for the manufacture of engines and engine components in Skövde and Floby, Sweden, a factory for body components in Olofström, Sweden and a smaller assembly plant in Kuala Lumpur, Malaysia.

We are building up our manufacturing footprint in China. The first manufacturing plant is built in Chengdu. Start of production is planned for the second half of 2013. This plant will produce Volvo cars for the Chinese market.

We also have manufacturing in Uddevalla, Sweden, through Pininfarina Sverige. Up until late December 2012 Pininfarina Sverige in Uddevalla was owned jointly by Pininfarina S.p.A of Italy (60%) and Volvo Cars (40%). Volvo Cars has announced its intention to cease production in Uddevalla in 2013.

Significant events in 2012

New President and CEO

On 18 October the Board of Directors appointed Håkan Samuelsson the new President and CEO of Volvo Cars, replacing Stefan Jacoby. Håkan Samuelsson had been a member of the Board for the preceding two years and brings with him broad experience from the industry.

Uddevalla plant

In late December 2012, Volvo Cars took complete ownership of Pininfarina Sverige AB. Volvo cars have been built in Uddevalla since 2005, in a joint venture with Pininfarina S.p.A., the latter being the majority shareholder. As a result of the transaction, Pininfarina Sverige AB has been renamed Volvo Car Centre Uddevalla AB and has become a 100% subsidiary to Volvo Car Corporation. The ownership transfer follows from an earlier agreement between the parties in March 2011. Due to low volumes, production of the Volvo C70 Convertible at the Uddevalla plant will cease in July 2013.

China expansion

In 2012, Volvo Cars continued to expand its Chinese operations. Volvo Cars' full-fledged business operations in Shanghai include product development, design, purchasing and staff support functions. The expansion of the retailer network and the industrial system goes hand in hand with the recruitment of talented people to add the competence needed. Around 700 people were recruited during 2012. The industrial footprint will consist of two car manufacturing plants and an engine plant.

Product development for next-generation Volvo cars

Volvo Cars' future as a strong, independent car maker was reinforced with the intensive development work with SPA – Scalable Product Architecture and VEA – Volvo Engine Architecture. SPA is a flexible, scalable product architecture that will cover most of Volvo's future car models. With lower costs for development and parts designed to be shared by all models, there will be more capacity left for focusing on individual details that are important to customers. The new engine range, VEA – Volvo Engine Architecture, will consist solely of four-cylinder engines. Combined with electrification and other spearhead technology, the VEA range will deliver higher performance than today's six-cylinder units, along with lower fuel consumption than today's four-cylinder engines. The first car model based on the new architecture is the next-generation Volvo XC90.



About Volvo Cars

Investments in the manufacturing system

As part of the significant investments in the new SPA and VEA projects, construction of the new body shop in the Torslanda vehicle plant in Gothenburg, Sweden, is ongoing and will be completed during the second half of 2013. In addition, there will be significant investments in the body components plant in Olofström, Sweden, as well as the engine plant in Skövde, Sweden.

Loan agreement with China Development Bank

In late 2012, Volvo Cars and China Development Bank signed a loan agreement under the umbrella of a strategic partnership, as announced in the Memorandum of Understanding of 24 April 2012. The loan agreement is testament to China Development Bank's belief in the strength and viability of the Volvo Cars global business plan and corporate strategy. As a first step under the agreement, the parties have signed a EUR 922 million loan with maturity in 2020.

Our governance structure

At the management level we have a Sustainability Steering Committee with members from the Executive Management team (Corporate Communications, Legal and Human Resources) as well as the head of the Environmental Committee, the Chief Compliance & Ethics officer and the Director Sustainability Communications. The purpose of this cross-functional committee is to establish strategies and guidelines relating to corporate sustainability and responsibility and follow up and communicate on progress and performance. The members of the committee have the mission to ensure that the sustainability dimension is included in the overall business and that company decisions are in line with the overall sustainability strategy.

At the operational level, the appropriate officer or function (e.g. the Health and Safety Director or the Diversity Manager, Director Environmental Protection, etc.) is responsible for ensuring that relevant issues are discussed at the level at which decisions on strategies, goals and actions can be taken. The chair of our highest governance body, the Board of Directors, is not an executive officer within Volvo Cars.

Since 2 August 2010, Volvo Cars has been an independent company under the ownership of the Zhejiang Geely Holding Group. The company is managed by a Board of Directors comprising independent Board members, owner representatives, Volvo Cars and the employee organisations. Meetings are held six times annually and the Board's main task is to provide a forum for the company's strategies, business orientation, product plan, major investment plans and budget.

Together, the members of the Board of Volvo Cars form a global board with vast experience from the car industry and business development:

- Mr Li Shufu (1963) is the Chairman of the Board of Volvo Cars and is the founder of Zhejiang Geely Holding.
- Mr Hans-Olov Olsson (1941) is the Vice Chairman of the Board of Volvo Cars and started his career at Volvo in 1966. From 2000–2005 Olsson was CEO of Volvo Cars and was responsible for the Ford Motor Company's global marketing between 2005 and 2006.
- Mr Håkan Samuelsson (1951) has been the President and CEO of Volvo

Cars since October 2012. He has 35 years of experience from leading positions in the automotive industry, most recently as Chairman and CEO of MAN SE between 2005 and 2009. Since 2010, he has been an independent member of the Board of Directors of Volvo Car Group.

- Dr Herbert Demel (1954) is a member of the Volvo Cars' Board of Directors and started his career with Bosch in 1984. He has experience from working with companies such as Audi, Volkswagen and Fiat. Since 2010, Demel has been the Managing Director for Magna in China, South East Asia, India, Africa and South America.
- Ms Lone Fønss Schrøder (1960) is a member of the Board of Directors of Volvo Cars and was formerly employed at the Møller-Maersk shipping company. Schrøder was Managing Director of Wallenius Lines from 2005–2010. She is currently also a Board member of Vattenfall and Handelsbanken.
- Ms Winnie Kin Wah Fok (1956) is a member of the Volvo Cars' Board of Directors and has extensive experience of the financial market. Fok is at present working as advisor to Investor and is also a Board member of SKF and G4S.
- Dr Peter Zhang (1966) is a member of Volvo Cars' Board of Directors, and comes most recently from Geely Automotive Holdings, Ltd., where he was the Vice President from 2007–2010. Zhang has extensive experience and over the past 10 plus years has worked for major multinational companies, such as the BP Group and Shell.
- Mr Daniel Li (1970) has been a member of the Volvo Cars' Board of Directors since April 2012. He is the CFO & Vice President of Zhejiang Geely Holding Group and has extensive experience within the automotive sector, both with OEMs and automotive suppliers.
- Mr Carl-Peter Forster (1954) became a member of the Volvo Cars' Board of Directors in January 2013. He has extensive experience within the automotive sector. He has been Group CEO of Tata Motors and President of GM Europe.

The relevant trade unions are represented in the Board. This is one way in which we ensure that employee interests are communicated to the highest governance body. Employee representatives in the Board are the following:

- Mr Glenn Bergström is a union representative of Volvo Cars' Board (IF Metall), and has been working with Volvo since 1974.
- Mr Sören Carlsson is a union representative of Volvo Cars' Board (Unionen). He has worked with Volvo since 1985.
- Mr Marko Peltonen is a union representative of Volvo Cars' Board (IF Metall). He has been with Volvo since 1984.
- Mr Magnus Sundemo is an alternate union representative of the Board (Akademikerna). He has worked for Volvo since 1979.
- Mr Björn Ohlsson is an alternate union representative of the Board (IF Metall). He has worked for Volvo since 1981.



About Volvo Cars

As environment and safety are bound up with our company's core values, these aspects of our products form part of our strategic direction and are discussed as such. Working conditions, health and safety and diversity issues are addressed at our daily operational meetings and considered on a case-by-case basis. Processes for reviewing working conditions, as well as environmental and product safety and legal compliance issues, are part of our business management system. There is no stated process for evaluating the highest governance body's work with respect to environmental and social performance. However, managers are evaluated according to criteria including corporate governance and corporate citizenship.

Executive remuneration

Executive remuneration at Volvo Cars has four components: fixed salary, short-term incentive programme, long-term incentive programmes and other benefits (e.g. car, healthcare insurance and pension benefits). Volvo Cars applies a short-term global cash-based incentive programme for all employees. For senior managers and executives, the Volvo Short-Term Incentive is based on achievement of short-term financial performance, market development and quality as well as individual performance. For senior managers and executives, Volvo Cars also applies a long-term cash-based incentive programme based on long-term value creation of the company.

Handling of conflicts of interest

Volvo Cars regulates the handling of conflicts of interest. The Volvo Cars' Corporate instruction 'Report of financial or other interest' stipulates that conflicts of interest must be reported to the Legal Department. Volvo Cars' Code of Conduct includes guidelines on how to avoid conflicts of interests that potentially could occur in various situations.



About our sustainability reporting

ABOUT OUR SUSTAINABILITY REPORTING

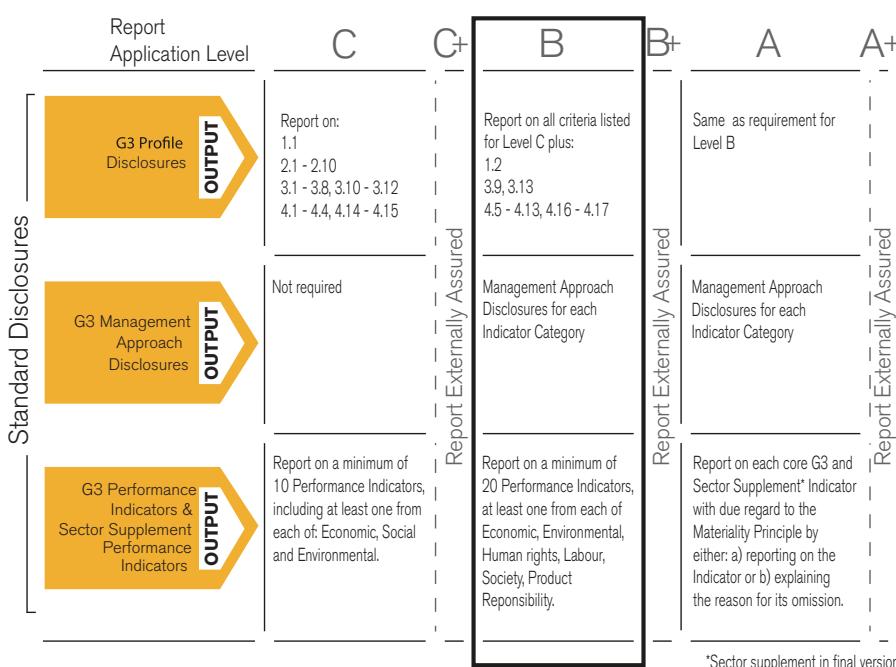
Volvo Cars has been reporting on environmental, health and safety aspects of its products and production since 2000. In 2003, we produced our first Sustainability Report in line with the international reporting guidelines from the Global Reporting Initiative (GRI). By applying and living up to the GRI's international guidelines for sustainability reporting, we aim to ensure transparent reporting based on content which is relevant to our stakeholders. For 2012, we report at GRI level B (self-declared).

Volvo Cars reports on an annual basis. This report's sustainability data covers the period 1 January to 31 December 2012. The 2011 report was issued in May 2012 and is available at Volvo Cars' website.

This report deals with Volvo Cars and all wholly-owned operations throughout 2012. These comprise offices mainly in Sweden, China and Belgium,

research and development in Sweden, manufacturing in Sweden, Belgium, and Malaysia, as well as sales companies worldwide. Definitions regarding boundaries for each performance indicator are given in respect to the indicator concerned. We report only direct environmental impacts, except in the case of CO₂ from energy production for which we also report indirect emissions from electricity generation and district heating. Definitions regarding boundaries for each performance indicator are given in respect to the indicator concerned.

The Volvo Cars' GRI report 2012 has not been verified by a third party. However, we are considering this for the future as we regard third-party verification as another important step towards transparency.



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GRI INDEX

● Indicator completely covered (according to definitions given in the GRI guidelines)

○ Indicator partially covered (according to definitions given in the GRI guidelines)

1. STRATEGY & ANALYSIS			
Indicator	Description	Coverage	Page
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1.2	Descriptions of impacts, risks and opportunities.	●	9

2. ORGANISATIONAL PROFILE			
Indicator	Description	Coverage	Page
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3.6	Boundary of the report	●	49
3.7	Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations, and other entities	○	49
3.8	Data measurement techniques and the bases of calculations	●	49
3.9	Explanation of the effect of any re-statements of information provided in earlier reports	●	49
3.10	Significant changes from previous reporting periods.	●	49
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4. GOVERNANCE, COMMITMENTS AND ENGAGEMENT

Indicator	Description	Coverage	Page
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4.3	Number of members of the highest governance body that are independent and/or non-executive members	●	47
4.4	Mechanisms for shareholders and employees to provide recommendations or direction to the highest governance body	●	47
4.5	Linkage between compensation for members of the highest governance body, senior managers, and executives and the organisation's performance	●	48
4.6	Processes in place for the highest governance body to ensure conflicts of interest are avoided	●	48
4.7	Process for determining the qualifications and expertise of the members of the highest governance body for guiding the organisation's strategy on economic, environmental, and social topics	●	11
4.8	Internally developed statements of mission or values, codes of conduct, and principles relevant to economic, environmental, and social performance	●	11
4.9	Procedures of the highest governance body for overseeing the organisation's identification and management of economic, environmental, and social performance	●	11
4.10	Processes for evaluating the highest governance body's own performance, particularly with respect to economic, environmental, and social performance	●	11
4.11	Explanation of whether and how the precautionary approach or principle is addressed by the organisation	●	11
4.12	Externally developed economic, environmental, and social charters, principles, or other initiatives to which the organisation subscribes or endorses	●	11
4.13	Memberships in associations	●	11
4.14	List of stakeholder groups engaged by the organisation	●	7
4.15	Basis for identification and selection of stakeholders with whom to engage	●	6
4.16	Approaches to stakeholder engagement	●	6
4.17	Key topics and concerns that have been raised through stakeholder engagement, and how the organisation has responded to those key topics and concerns	●	8

MANAGEMENT APPROACH

Category	Description	Coverage	UNCG principle	Page
General Sustainability & Economic	Management Approach with reference to economic performance, market presence and indirect economic impacts	●		9
Environmental	Management Approach with reference to materials, energy, water, biodiversity, emissions, effluents and waste, products and services, and compliance	●	7,8,9	14
Labour Practices & Decent Work	Management Approach with reference to employment, labour/management relations, occupational health and safety, training and education, and diversity and equal opportunity	●	1,3,6	26
Human Rights	Management Approach with reference to investment and procurement practices, non-discrimination, freedom of association and collective bargaining, abolition of child labour, prevention of forced and compulsory labour, complaints and grievance practices, security practices and indigenous rights	●	1,2	35
Society	Management Approach with reference to community, corruption, public policy, anti-competitive behaviour and compliance	●	10	36
Product Responsibility	Management Approach with reference to customer health and safety, product and service labelling, marketing communications, customer privacy and compliance	●	1,8	40



Performance indicators

ECONOMIC			Description	Coverage	Page
Category	Indicator				
Economic Performance	EC1	Direct economic value generated and distributed		●	12 and financial report
	EC2	Financial implications and other risks and opportunities for the organisation's activities due to climate change		●	12
	EC3	Coverage of defined benefit plan obligations		●	See financial report

ENVIRONMENT					
Category	Indicator		Description	UNCG principle	Page
Materials	EN1	Materials used by weight or volume		●	8 17
	EN2	Percentage of materials used that are recycled input materials		●	8,9 18
Energy	EN3	Direct energy consumption by primary energy source		●	8 19
	EN4	Indirect energy consumption by primary source		●	8 19
Water	EN6	Initiatives to energy-efficient or renewable energy based products		●	8,9 16
	EN8	Total water withdrawal by source		●	8 18
Biodiversity	EN11	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas		●	8 22
Emissions, Effluents, and Waste	EN16	Total direct and indirect greenhouse gas emissions by weight		●	8 20
	EN19	Emissions of ozone-depleting substances by weight		●	8 20
	EN20	NOx, SOx, and other significant air emissions by type and weight		●	8 21
	EN21	Total water discharge by quality and destination		●	8 18
	EN22	Total weight of waste by type and disposal method		●	8 21
	EN23	Total number and volume of significant spills		●	8 21
Products and Services	EN26	Initiatives to mitigate environmental impact of products and services		●	7,8,9 16
	EN27	Percentage of products sold and their packaging materials that are reclaimed by category		●	8,9 18
Monetary Fines	EN28	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations		●	8 18
Transport	EN29	Significant environmental impacts of transporting goods		●	8 22

LABOUR PRACTICES AND DECENT WORK					
Category	Indicator		Description	UNCG principle	Page
Employment	LA1	Total workforce by employment type, employment contract, and region		●	26
	LA2	Total number and rate of employee turnover by age group, gender, and region		●	6 29
Labour relations	LA4	Percentage of employees covered by collective bargaining agreements		●	3,5 27
Occupational Health and Safety	LA7	Rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities by region		●	1 31
	LA8	Education, training, counselling, prevention, and risk-control programmes in place to assist workforce members, their families, or community members regarding serious diseases		●	1 34
Training	LA10	Average hours of training per year per employee by employee category		●	1 34
Diversity and Equal Opportunity	LA13	Composition of governance bodies and breakdown of employees per category		●	1,6 28
	LA14	Ratio of basic salary of men to women by employee category		●	1,6 28



HUMAN RIGHTS					
Category	Indicator	Description	Coverage	UNCG principle	Page
Human Rights	HR2	Percentage of significant suppliers and contractors that have undergone screening on human rights and actions taken	●	1,2	39
	HR3	Total hours of employee training on policies and procedures concerning aspects of human rights	●	1,2	36
	HR4	Total number of incidents of discrimination and actions taken	●	1,2	30

SOCIETY					
Category	Indicator	Description	Coverage	UNCG principle	Page
Anti-corruption	SO3	Percentage of employees trained in organisation's anti-corruption policies and procedures	●	10	36
	SO4	Actions taken in response to incidents of corruption	●	10	36
	SO5	Public policy positions and participation in public policy development and lobbying	●	10	36
	SO7	Total number of legal actions for anti-competitive behaviour, anti-trust, and monopoly practices and their outcomes	●	10	36
	SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations	●	10	36

PRODUCT RESPONSIBILITY					
Category	Indicator	Description	Coverage	Page	
Customer Health & Safety	PR1	Life cycle stages in which health and safety impacts of products and services are assessed for improvement	●	41	
	PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning health and safety impacts of products	●	43	
Product and Service Labelling	PR5	Practices related to customer satisfaction, including results of surveys measuring customer satisfaction	●	41	
	PR6	Programmes for adherence to laws, standards, and voluntary codes related to marketing communications	●	41	
	PR7	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications	●	41	
Compliance	PR9	Monetary values of significant fines for non-compliance with laws and regulations concerning the provision and use of products	●	43	

In addition to the above-mentioned indicators, there are a number of indicators we would like to report on (because we consider them material aspects) but were not able to do so in this reporting period due to difficulties in collecting the necessary data: EC5, EC6, EN9, EN10, LA6, HR1 and SO2.



Glossary

GLOSSARY

ACEA: The European Automobile Manufacturers Association, founded in 1991, represents the interests of the fifteen European car, truck and bus manufacturers at EU level.

Code of Conduct: Principles, values, standards, or rules of behaviour that guide the decisions, procedures and systems of an organisation in a way that contributes to the welfare of its key stakeholders, and respects the rights of all constituents affected by its operations.

Chlorofluorocarbons (CFCs): Gases formed of chlorine, fluorine and carbon. CFCs cause the breakdown of the ozone layer that protects the earth from the sun's ultraviolet (UV) radiation.

CO₂ emissions: Carbon dioxide emissions are those stemming from the burning of fossil fuels and the manufacture of cement. They include carbon dioxide produced during consumption of solid, liquid, and gas fuels and gas flaring.

Electric cars: Automobiles that are propelled by one electric motor or more, using electrical energy stored in batteries or another energy storage device.

EuroFOT: European Field Operational Test on Active Safety Systems.

Flexifuel cars: Alternative fuel vehicles with an internal combustion engine designed to run on more than one fuel, usually gasoline blended with either ethanol or methanol fuel, and both fuels are stored in the same common tank.

Greenhouse gas emissions other than CO₂: water vapour, methane, nitrous oxide, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF6).

Global Compact: The United Nations' Global Compact is a strategic policy initiative for businesses that are committed to aligning their operations and strategies with ten universally accepted principles in the areas of human rights, labour, environment and anti-corruption.

Global Reporting Initiative: The Global Reporting Initiative (GRI) is a non-profit organisation that promotes economic, environmental and social sustainability. GRI provides all companies and organisations with a comprehensive sustainability reporting framework that is widely used around the world.

Hazardous waste: Any waste or combination of wastes with the potential to damage human health, living organisms or the environment. Hazardous waste usually requires special handling and disposal procedures which are regulated by national and international laws.

HCFCs: Hydrochlorofluorocarbons (HCFCs) are a large group of compounds whose structure is very close to that of Chlorofluorocarbons (CFCs), but including one or more hydrogen atoms. The most significant releases of HCFCs occur as leakage from cooling appliances which contain them, both during their manufacture, use and disposal. HCFCs cause the breakdown of the ozone layer that protects the earth from the sun's ultraviolet (UV) radiation.

International Energy Agency (IEA): The IEA is an autonomous organisation which works to ensure reliable, affordable and clean energy for its 28 member countries and beyond.

ISO 14001 standard: International standard for an environmental management system that can be certified to.

LCA: Life Cycle Analysis or Life Cycle Assessment (eco balance, or cradle-to-grave analysis) is a technique to assess environmental impacts associated with all the stages of a product's life.

Natura 2000 areas: The European Union has built up a vast network of 26,000 protected areas in all the Member States with a combined area of more than 750,000 square kilometres, which makes up 18% of the EU's land area. This network is called Natura 2000 and is the largest network of protected areas in the world.

Nitrogen oxides (NOx): Nitrogen oxides refers to nitric oxide gas (NO) and nitrogen dioxide gas (NO₂) and many other gaseous oxides containing nitrogen. The main sources of these gases in urban areas are motor vehicle exhaust and indoor gas stoves and kerosene heaters. These gases are also partly responsible for the generation of ozone, which is produced when nitrogen oxides react with other chemicals in the presence of sunlight.

OECD guidelines for multinational companies: The Organisation for Economic Co-operation and Development's far-reaching set of recommendations for responsible business conduct that 44 adhering governments encourage their enterprises to observe wherever they operate.

Plug-in-hybrid cars: Vehicles that utilise rechargeable batteries, or another energy storage device, that can be restored to full charge by connecting a plug to an external electric power source (usually a normal electric wall socket).

SARTRE (Safe Road Trains for the Environment) project: SARTRE, funded by the European Commission, aims to encourage a step change in personal transport usage through the development of safe environmental road trains (platoons).

Sulphur oxide (SOx): An oxide of sulphur, such as sulphur dioxide and sulphur trioxide. They are formed primarily from the combustion of fossil fuels and are major air pollutants and cause of damage to the respiratory tract as well as vegetation.

SPA (Scalable Product Architecture): SPA is Volvo's new mother platform, which will allow it to manufacture cars with different size, body style and specifications on the same production line. The largest benefit arising from this set-up would be lower costs due to parts sharing across different models and lower production costs due to a common production line.

UN Global Compact: The UN Global Compact is a strategic policy initiative for businesses that are committed to aligning their operations and strategies with ten universally accepted principles in the areas of human rights, labour, environment and anti-corruption.

VEA (Volvo Engine Architecture): Volvo-developed engine family with four-cylinder petrol and diesel engines that reduce both carbon dioxide emissions and fuel consumption. The engine is approximately 40 kg lighter than today's engine and improves fuel economy by 15–35%, depending on the model. The VEA engines combine high performance with lower emissions.

Volatile Organic Compounds (VOCs): Organic chemicals that have a high vapour pressure at ordinary, room-temperature conditions. Some VOCs are dangerous to human health or cause harm to the environment.