

### VOLVO CAR GROUP SUSTAINABILITY REPORT

2014

### **CEO COMMENT**

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#### Dear Stakeholder,

Our vision is to be the world's most progressive and desired premium car brand. To reach this vision, a firm commitment to sustainability is a prerequisite. We started making cars in 1927 because we believed that nobody else was making them safe enough, and ever since we have strived to protect what's important to people and to make their lives less complicated.

Volvo Cars has defined a number of strategic change themes that will lead us towards our vision and our corporate objectives. In each of these strategic change themes, sustainability is a core element. For example, to reinforce our product strengths, we aim to increase the share of hybrid drivetrains in our model range. Ever-stricter emission regulations in all major automotive markets mean that manufacturers have to constantly improve the fuel efficiency and emission levels of their cars and engines. And for Volvo Cars things are happening quickly.

With all present cars to be replaced in the next four years, Volvo Cars stands at the beginning of an unprecedented revitalisation of its product portfolio. The first milestone on this endeavour was reached with the presentation of the all new XC90 in August 2014. By offering a twin-engine powertrain, combining electric and petrol power, unprecedented low carbon emissions were reached.

For Volvo Cars, the constant changes in the surrounding world are to be seen as possibilities rather than challenges. By understanding why and how the world around us is changing, we can not only adapt but use new challenges as drivers for our continued business success. For example, research shows that attitudes among young consumers towards owning a car are changing.

Consumers are also showing us that connectivity options are becoming more and more important when they make their purchase decisions. Increased connectivity between our cars and surrounding infrastructure and vehicles can also bring improvements in terms of safety, fuel economy and avoiding congestion. I am therefore proud to say that Volvo Cars is spearheading the development of autonomous driving technologies. The Drive Me pilot project, arguably the most ambitious autonomous drive project in the world will have 100 self-driving cars on public roads in 2017, driven by normal customers.

Being able to define the challenges and opportunities depends on our success in having the right talent and competence in our team.

"To reach our vision, a firm commitment to sustainability is a prerequisite."

As cars become increasingly connected and packed with technology, we are in direct competition with large technology players in finding and recruiting digital engineering talent. The market for traditional engineering talent is also highly competitive. This issue has been of particular relevance in 2014 as we grew worldwide in terms of employees. In order to attract the right employees and create a high-performance organisation, Volvo Cars has made a strategic decision to integrate health in all aspects of our global operations. This includes building an attractive and stimulating organisation and work environment for our employees. I believe that by having this human-centric focus we have an advantage in securing the competence needs of tomorrow.

During 2014 we made efforts to strengthen our commitments to sustainability and take these future trends into consideration by starting the development of our new Sustainability Framework. It defines our responsibilities, focus areas and goals in three dimensions: our direct impact as a company, the impact of our vehicles, and our role in society. It is our conviction that we need to

have sustainability in mind in order to achieve long-term business success. We will continue to develop the framework in 2015 and set objectives within various focus areas. A clear example of this is our vision that no one should be killed or seriously injured in a new Volvo car by 2020.

Volvo Cars works in collaboration with a wide range of partners and stakeholders and we will continue to do so. Collaboration and a strong commitment towards sustainability have guided Volvo Cars since 1927 and is an important part of our heritage.

In this report, you can read all about our achievements in more detail; achievements that have been created by our dedicated employees and of which I am incredibly proud.

#### Håkan Samuelsson

President and Chief Executive Officer

### SUSTAINABILITY SCORE CARD

KEY SUSTAINABILITY DATA	2007	2008	2009	2010	2011	2012	2013	2014	
CREATING VALUE									
Total Sales (retail deliveries)	458,323	374,297	334,808	373,525	449,255	421,951	427,840	465,866	7
ASSUMING SOCIAL RESPONSIBILITY									
PRODUCT RESPONSIBILITY									
Safety test results									
Share of independent tests where Volvo Cars received the highest rank (%)	69	70	85 <sup>2)</sup>	83 <sup>2)</sup>	95 <sup>2)</sup>	95	95 <sup>2)</sup>	95	7
PEOPLE RESPONSIBILITY									
OCCUPATIONAL HEALTH AND SAFETY									
Health									
Sick leave per available hours (%)	5.50	5.00	4.70	4.50	4.40	4.40	4.50	4.50	$\rightarrow$
Occupational injuries									
Number of injuries resulting in at least one day of sick leave per 200 000 worked hours	1.5	0.90	0.50	0.70	0.70	0.55	0.62	0.34	7
DIVERSITY AND EQUAL OPPORTUNITY									
Gender balance									
Share of women in leading positions (%)	18.00	18.50	18.70	19.60	21.00	21.30	22.90	24.50	Z
Ratio of basic salary of women to men (white collar; average for grade levels)	n/a	0.97	0.99	0.97	0.97	0.97	0.96	0.98	7
Ratio of basic salary of women to men (blue collar; average for grade levels)	n/a	1.03	1.03	1.01	0.99	0.99	1.01	1.00	7
EMPLOYMENT									
Total workforce per year end	24,384	22,732	19,650	19,494	21,512	22,715	23,579	26,080	7
Rate of employee turnover <sup>3)</sup>	9.10	9.20	12.80	4.90	3.20	3.00	3.80	3.70	
PROMOTING ECOLOGICAL SUSTAINABILITY									
EMISSIONS FROM PRODUCT									
Fuel efficiency									_
Fleet average CO <sub>2</sub> in EU (g/km)	190	182	173	157	151	143	131	125	
ENERGY USE IN CAR PRODUCTION									
Total energy consumption in car production (MWh)	916,669	816,581	713,079	837,785	815,301	798,487	776,587	745,557	Z
EMISSIONS FROM PRODUCTION									
Total carbon dioxide emissions (tonnes)	126,735	68,367	5,898	67,585	62,922	61,670	59,729	49,918	7
NOx emissions (tonnes)	101	90	71	85	80	72	76	77	
SOx emissions (tonnes)	1	<1	<1	<1	<1	<1	<1	<1	$\rightarrow$
VOC emissions (tonnes)	740	712	527	738	828	796	724	675	<u></u> 
	11,395	9,320	5,594	9,087	11,439	10,837	9,760	10,614	、 、

<sup>1)</sup> 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 move in our desired direction.

 $^{\mbox{\tiny 2)}}\,$  Restated due to changes in calculation methodology.

<sup>3)</sup> Total rate of employee turnover between 2007 and 2012 is based on figures from Belgium and Sweden. Total rate of employee turnover from 2013 and onwards is based on Belgium, China and Sweden figures.

#### **Recognition and awards**

In 2014 Volvo Cars was named the best car maker for the fifth year in a row in the Sustainable Brand Index<sup>™</sup>, Scandinavia's largest brand study on sustainability. It is an annual study covering the 907 largest brands in Sweden, Norway, Denmark and Finland. Volvo Cars ended up 11th of the 253 most sustainable brands in Sweden, as perceived by the 9,500 consumers who participated in the study.

Volvo Cars remains on top when it comes to automotive safety awards. Volvo Cars earned top results in 2015 IIHS Top Safety Pick+, the Volvo V40 won the Safest Car category in Carbuyer's Best Car Awards 2015 in the UK and the V40 Cross Country was named Safest Car of the Year by Top Gear Baltics during 2014. In 2014 Volvo Cars, together with Volvo Group, also received the 'Climate Comet of the Year' environmental award from Green Cargo. Green Cargo presents this award to a company which has made major improvements to the climate impact of its logistics operations. Volvo Cars and Volvo Group received the award for their shipments from Umeå, Sweden in the north to Ghent, Belgium in the south, by which, according to the Green Cargo, they contribute to and promote green transport solutions in Europe.

Volvo Cars has made good progress towards its goal of becoming an employer of choice. Volvo Cars is on the Universum list of the world's most attractive employers, in which students around the globe are asked about their ideal employers. In 2014, Volvo Cars was ranked 40th on the list of most attractive companies according to engineering students in the world's 12 largest economies, up from 49th in 2013.

For more awards, see: https://www.media.volvocars.com/global/en-gb/awards



## THIS IS VOLVO CARS

The first Volvo car rolled off the production line back in 1927. Today, Volvo Car Group produces a premium range of cars, including sedans, wagons, sports wagons, cross country cars and SUVs.

We are a well-known and respected car brand, with sales in over 100 countries. Since 2010, Volvo Cars has been owned by Shanghai Geely Zhaoyuan International Investment Co. Ltd., which is ultimately owned by Zhejiang Geely Holding Group Ltd. (Geely). The company is headquartered in Gothenburg, Sweden, and production takes place in Sweden, Belgium, China and Malaysia.

In 2014 around 2,300 Volvo dealers sold approximately 470,000 cars in 100 countries around the world. As of December 2014, Volvo Cars employed about 26,000 people.

To read more about Volvo Cars, please see www.volvocars.com





BELGIUM	
Ghent: Car production	

DENMARK Copenhagen: R&D centre

#### SWEDEN

Gothenburg: Head office, Product development, Design centre, Marketing, Administration, Car production Skövde, Floby and Olofström: Component manufacturing





Chengdu: Manufacturing plant

MALAYSIA Kuala Lumpur: Assembly factory

## **CORPORATE STRATEGY**

#### **Company purpose**

Everything we do starts with people. We understand people. We protect what's important to them and want to make them feel special. We take pride in our role within society and recognise our commitment towards the environment. We innovate to make people's lives better and less complicated. Our human-centric focus is what makes us different from all other car companies. And, it is at the heart of everything we create. This is why Volvo cars are designed around you.

Vision

Our vision is to be the world's most progressive and desired premium car brand.

#### Mission

Our global success will be driven by making life less complicated for people, while strengthening our commitment to safety, quality and the environment.

#### **Corporate objectives**

#### Provide cars people want

- Be a lean and nimble company
- Have a top tier premium auto brand perception
- Be the employer of choice

- Which will lead to
- Sales of over 800,000 vehicles globally
- Top car industry profitability

#### Strategic change themes

In order to meet the Corporate Objectives there is a need for renewal and a change in the way of doing business. Volvo Cars' corporate strategy therefore includes six Strategic Change Themes which guide the daily operations and business initiatives and enable Volvo Cars to make that change.

- Emphasise profitability and efficiency
- Revitalise the Volvo brand with customer centricity throughout the value chain
- Reinforce our product strengths based on focused innovation, smart architecture and win-win collaboration
- Capture global growth and sourcing potential, leveraging the presence in China
- Secure profitable growth in core segments in Europe and North America
- Build a global organisation with performance and health, able to act in a fast, smart and nimble way

#### **Our Core Values**

At Volvo, everything we do starts with people. So our mission to make people's lives easier, safer and better is something that comes naturally to us. It's the Volvo way. Today, we're still as focused as ever on our three Core Values: safety, quality and care for the environment.

#### Safety - Maintain leading competence

To strengthen our commitment to, and maintain leadership in safety, we aim for top performance, in real traffic situations as well as in official safety ratings. We do that by creating our safety offers in an intelligent and innovative way based on actual traffic situations. We also promote wellbeing by helping to prevent collisions and reduce injury when a collision is unavoidable.

#### Quality - Focus on the customers' needs

Quality is an expression of our goal to offer reliable products and services. In all aspects of our operations the focus shall be on customers' needs and expectations. With a customer focus based on everyone's commitment and participation, combined with a process culture, our aim is to be number one in customer satisfaction.

#### Environmental care -

#### Respect for the individual, society and nature

Our environmental work is based on respect and concern for the individual, society and nature. The environmental efforts within our company are based on a holistic approach, life cycle management and global concern. It is part of our business strategies and relevant

decisions. People's health, energy efficiency and resource efficiency are the main areas of our focus.

Read more about our Core Values at: http://www.volvocars.com/ intl/about/our-company/core-values

#### **Our brand promise**

Our human-centric approach is what makes us different from virtually every other car company. We start every project out of a love for humankind. Every project is based on a culture that is genuinely interested in understanding and anticipating the real needs, wants and lives of our consumers. This leads to the three customer promises that guide everything we do:

#### "We understand you"

 Understanding more about how people use cars allows us to create intuitive and user-friendly technology and innovations.

#### "We protect what's important to you"

- With legendary durability, superior safety, enduring value and technologies that limit environmental impact.

#### "We make you feel special"

 With Scandinavian design, natural high-end materials and thoughtful 21st century premium in look, feel, style and service.



### SUSTAINABILITY MANAGEMENT

Our human-centric perspective is an essential element of what sustainability means to us. It's about protecting what's important to you.

Looking back on Volvo Cars' heritage, it is apparent that people has always been a central word for Volvo. Assar Gabrielsson and Gustaf Larson, Volvo's founders, stated in 1936: 'Cars are driven by people. Therefore, the guiding principle behind everything we make at Volvo, is – and must remain – safety.'

Customers and employees have high expectations of Volvo Cars in terms of environmental care and social responsibility. We believe that committing to sustainable development creates business opportunities and will reinforce Volvo Cars' competitiveness. Ultimately, Volvo Cars realises that its stakeholders determine how well it lives up to its responsibility. They determine Volvo Cars' success by buying our products, working productively and doing business with us. The sustainability agenda for Volvo Cars is described in four dimensions: a people dimension, a societal dimension, an economic dimension and an environmental dimension. Together, these four dimensions and their connected topics lead Volvo Cars' work towards a sustainable future. Each of the dimensions has focus areas and Key Performance Indicators (KPIs). The ambition, targets and KPIs for each of the focus areas are set and progress is followed up by the Volvo Cars Sustainability Board. Activities to improve performance within the sustainability focus areas are integrated throughout Volvo Cars' functions on all levels. The results are described throughout this report.



#### PEOPLE

- Diversity & inclusion
- Health & safety of our employees
- Employee engagement
- Training & competence development

#### SOCIETAL

- Compliance & ethics
- Anti-corruption, anti-trust & fair competition • Progress towards our Safety Vision 2020
- Value chain development
- Stakeholder dialogue

LONG-TERM PROFITABILITY

#### ECONOMIC

- Job creation
- Transfer of technology and knowledge
- Payments to the public sector
- Mobility and infrastructure contributions
- R&D for future mobility

#### **ENVIRONMENTAL**

- Energy efficiency
- Zero environmental accidents
- Harmful emissions from production & cars
- Water & waste management
- Materials & recycling



## SUSTAINABILITY GOVERNANCE

Responsibility at the heart of everything we do – sustainability is central to all Volvo Cars' decisions and investments. It is key to successful and responsible business.

As the responsibility of every manager and employee, sustainability is based on Volvo Cars' mission and on company-wide guidelines. Above all, it is a mind-set whereby all employees as individuals consider the social and environmental consequences of their day-to-day decisions.

Sustainability at Volvo Cars is governed through the Sustainability Board. Volvo Cars' Sustainability Board is a decision-making board responsible for Volvo Cars' sustainability matters from a strategic point of view as well as the governance, communication and reporting functions. It is also responsible for the continuous follow-up of progress and performance on sustainability. The members of the board have the mission of ensuring that the sustainability strategy is aligned with the Corporate Strategy and the Volvo Cars Business Plan and that the company operates in line with Volvo Cars' values, the Code of Conduct and the overall Sustainability Strategy. The Board consists of the President and CEO as well as other key Executive Management Team (EMT) members.

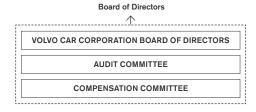
Sustainability aspects related to corporate compliance and ethics are handled by the Corporate Compliance & Ethics Office, which is supervised by the Global Compliance Committee consisting of members from the EMT who make decisions and provide guidance. The Global Compliance Committee supervises the development and implementation of the Compliance Programme for the Volvo Car Group, as well as reviewing policies, directives and other procedures related to compliance and ethics. The Committee also reviews and decides how to handle compliance cases reported by the Corporate Compliance & Ethics Office, events reported by Security as well as matters reported by Internal Audit.



#### **Commitments to Sustainability**

In 1999, Volvo Cars was 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, Volvo Cars has since supported the precautionary principle. Volvo Cars' 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. The UN Global Compact is not the only commitment. Volvo Cars' Code of Conduct stands as a general endorsement of the following human rights frameworks and charters:

- The eight core conventions of the UN agency, ILO (the International Labour Organization):
  - 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.



#### EXECUTIVE MANAGEMENT TEAM (EMT)

[	MARKET AND PRODUCTION	PRODUCTS AND SERVICES	PEOPLE AND TOOLS		EXTERNAL STAKEHOLDER
[	Volume Decision Board	Product Board	People and Organization Board		Geely Volvo Project Governance Board
[	Brand Management Meeting	Quality Board	IT Board		Volvo Trademark Holding
		Strategic Product Board	Sustainability Board		Volvo Event Management Golf Board
		Design Board	Global Compliance Committee		Volvo Ocean Race Board
					CMA Steering Committee
		$\checkmark$			$\checkmark$
		Decision Boards Internal Stakeholders			Decision Boards External Stakeholders

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SUSTAINABILITY REPORT 2014 | VOLVO CAR GROUP

### **STAKEHOLDER ENGAGEMENT**

We cannot find solutions in isolation. We will build and nurture open partnerships with a wide range of stakeholders.

Volvo Cars maintains relationships with various stakeholders that influence or are influenced by its operations – from customers and employees to business partners, organisations and the communities in which the company operates. Each of these groups represents a special responsibility and Volvo Cars' goal is to be, and to be perceived as, a responsible partner in all of its relationships.

Volvo Cars sees an ongoing and trustful interaction and dialogue with its stakeholders as key to providing guidance on how it should develop its work with sustainability. Volvo Cars has been developing various methods of interacting with key stakeholders over several years. One of the objectives is to gather inputs on the sustainability issues Volvo Cars should focus its work on, how it should handle these issues and communicate about them in the sustainability report. Another objective is to develop an ongoing two-way discussion that can lead to collaboration on specific issues and mutual benefits.

#### Approach and outcome

Volvo Cars believes in open communication channels and holds regular meetings with its major stakeholders. For this reason, Volvo Cars participates in various networks, seminars and conferences to listen to the views of others and to share information about Volvo Cars' work. Volvo Cars also encourages interested parties to provide input and pose questions whenever they wish; for example, through its website or at citizen@volvocars.com.

In addition to its ongoing stakeholder engagement activities, during 2014/15 Volvo Cars carried out a stakeholder consultation with a group of internal and external stakeholders, many of whom have an established relationship with Volvo Cars. These stakeholders are located in Volvo Cars' most important markets (Sweden, China and other Asian countries, Belgium and other European countries). They were invited to share their views on Volvo Cars' general sustainability performance, sustainability focus areas and sustainability communication through an online survey. The results of the survey show that Volvo Cars' stakeholders have a positive perception of the company's sustainability work, and indicate that its sustainability focus areas overall are material to the consulted stakeholders. The results will provide important input to Volvo Cars' sustainability management in future. Moreover, Volvo Cars will extend the survey in order to get even more input from a broader stakeholder base.

For a detailed overview of our ongoing dialogues with Volvo Cars' stakeholders, please see appendix 1 and 'Societal engagement' on page 72.







### ECONOMIC PERFORMANCE

Driven by the complete renewal of our product range in the next four years, we aim to double sales by 2020 while improving profitability.

This long-term strategy, which is expected to lead to sales of around 800,000 vehicles annually in 2020, is based on sustainable profitability and a strong focus on the key regions of Europe, China and the US. With the ownership of Geely, Volvo Cars has the operational, strategic and financial capability to achieve that strategy.

#### A year of growth and expansion

During 2014 Volvo Cars took several important steps towards reaching these goals. Our first new car, the XC90, in a series of nine new cars saw the light of the day. The XC90 and all of the eight following cars will be built on an entirely new, in-house developed Scalable Product Architecture (SPA) technology that improves driveability, provides a wider range of design options and will over time generate significant economies of scale, improvement in productivity and improved profitability. Furthermore Volvo Cars' new Drive-E Powertrain family will power the majority of the vehicles to come. Volvo Cars is thus positioning itself as the only premium car manufacturer to move away from large engines and fully focus on four-cylinder engines or smaller. To read more about the positive environmental effects of these technologies, please see page 20.

Year 2014 was also a year of growth and expansion for Volvo Cars in terms of investments and production capacity. In Torslanda, Volvo Cars prepared for the start of production of the new XC90 by opening a brand new, SPA-prepared body shop. This new facility expands the capacity of Torslanda to 300,000 cars per year. This, in conjunction with a stronger demand for existing Volvo car models, also means that Volvo Cars will re-introduce a third shift in the spring of 2015, and for that purpose will recruit around 1,300 additional employees. In China, the Chengdu plant had its first full year of S60L production and started production of the XC60, which meant an increase of around 500 employees. Meanwhile, the Daqing plant commenced production of the XC Classic, a China-only version of the original XC90. The Daqing plant also started preparing to manufacture cars based on the SPA platform. The plant in Ghent had its highest capacity utilisation within Volvo Cars' manufacturing footprint, with a full-year production of 264,200 cars, which made 2014 the second most successful year in the history of the plant.

Volvo Cars made significant sales progress on the Chinese market in 2014. China, which is Volvo Cars' second home market, became Volvo Cars' largest market in terms of sales in 2014, accounting for 17% of Volvo Cars' total sales during the year. In Sweden, Volvo Cars' home market, sales grew by 17.4% compared to 2013. Volvo Cars was the fastest-growing brand among the main premium players in Europe in 2014, with strong growth in its key markets such as the UK and Germany. However, Volvo Cars did face a challenging year in the US market, with sales decreasing to 56,371 units in 2014, despite positive car industry development in the US. Volvo Cars' sales performance in other markets was mixed. In Russia, Volvo Cars managed to keep its sales in line with 2013 levels, even though economic sanctions and geopolitical tensions placed severe pressure on the domestic car market. Sales in Japan fell considerably, as the Japanese car market suffered from, among other things, tax policies that were unfavourable for the car industry.



During 2014 Volvo Cars also took important steps in its development of autonomous driving. In 2014 the first test cars in Volvo Cars' 'Drive Me' project, which features self-driving Volvos on public roads in everyday conditions, were rolled out around the Swedish city of Gothenburg. This project is an important step towards Volvo Cars' aim of having 100 self-driving cars in the hands of the customers on selected roads around Gothenburg by 2017. For more information about Volvo Cars' developments, projects and technologies in terms of Future Mobility see page 66.

#### Key facts & figures

#### Growing sales

2014 was a record year for Volvo Cars in terms of sales. Retail sales increased by 8.9% in 2014 compared to 2013, reaching record sales of 465,866 (428,840) units. Volvo Cars' sales success was mainly driven by significant growth in China and the European markets.

#### Income up

Operating income in 2014 was MSEK 2,252, up from MSEK 1,919 in 2013. This resulted in an operating margin of 1.7% compared with 1.6% in 2013.

#### Employees worldwide

As of December 31, Volvo Cars worldwide employed 26,080 people.

#### **Progress in China**

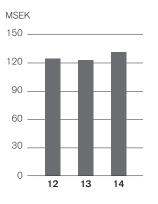
Volvo's continued journey globally took a huge leap forward in 2013, when our Chengdu plant opened in China. And in 2014, China overtook the United States to become Volvo Cars' largest single market.

Detailed information on the company's economic results, including performance against the profitability target, is presented in Volvo Cars' Annual Report on the company website: www.volvocars.com/investor-relations.

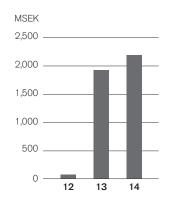
#### Indirect economic impact

Though Volvo Cars is a relatively small company, its brand is global and so is Volvo Cars' influence. Through its operations Volvo Cars has significant direct and indirect economic impact. Volvo Cars directly impacts suppliers, sub-suppliers, dealers and employees. Volvo Cars for example generates an economic base for local contractors, consultants and workers. Indirectly, Volvo Cars also has indirect economic impact through investments, research and collaboration projects and through municipal tax revenues. Volvo Cars' operations for example foster private purchasing power and local small businesses. Volvo Cars actively manages and discusses its indirect economic impact – by engaging with external stakeholders, amongst other methods. For more information on Volvo Cars' stakeholder engagement, see page 12.

#### NET REVENUE



#### OPERATING INCOME



#### **KEY FIGURES**

2012	2013	2014
421,951	427,84	465,866
41,989	61,146	81,221
68,079	61,233	56,371
227,027	218,567	243,514
51,832	52,26	61,357
84,856	86,894	84,76
432,950	419,728	465,382
124,547	122,245	129,959
66	1,919	2,252
-542	960	834
-4,929	109	-4,131
0.1	1.6	1.7
8,082	9,057	9,183
28.5	28.1	29.9
	421,951 41,989 68,079 227,027 51,832 84,856 432,950 124,547 66 -542 -4,929 0.1 8,082	421,951         427,84           41,989         61,146           68,079         61,233           227,027         218,567           51,832         52,26           84,856         86,894           432,950         419,728           124,547         122,245           66         1,919           -542         960           -4,929         109           0.1         1.6           8,082         9,057

### **MANAGING ENVIRONMENTAL PERFORMANCE**

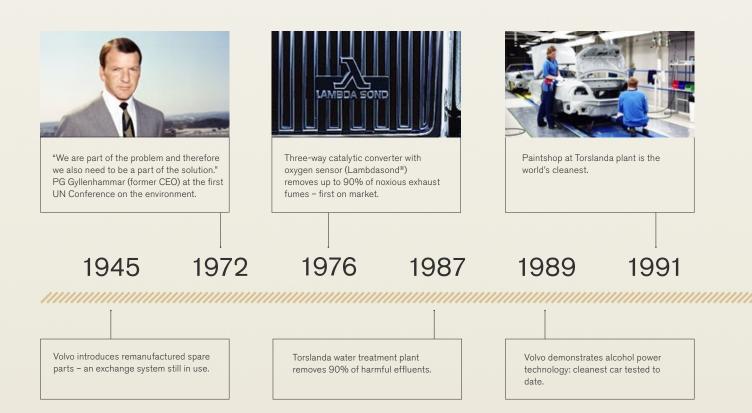
Responding to the challenges of climate change is tough. Our response is to continue creating wise and responsible products and services, to our customers and the world.

Volvo Cars acknowledges the enormous impact that climate change has on nature, on people and, of course, on its own business. A large portion of global anthropogenic greenhouse gas emissions come from transport. About half of these are from road transport. To be environmentally sustainable, the vehicles of the future will have to be very efficient and capable of running on renewable energy. Responding to the challenges of climate change is fundamental for Volvo Cars. The issue is given highest priority and is addressed at senior governance level; it is also a major focus of the research and development work carried out by Volvo Cars. Reducing energy consumption and dependence on fossil fuels is critical to the survival of Volvo Cars as a company.

Increased awareness and concern among consumers about human-induced climate change, combined with rising fuel prices, have led to greater consumer interest in more fuel-efficient vehicles. Increasing demands are also being made by decision-makers, with the EU fleet average regulations limiting emissions of new cars sold to no more than 130 g CO<sub>2</sub>/km from 2015, with phase-in requirements already in effect in 2012.

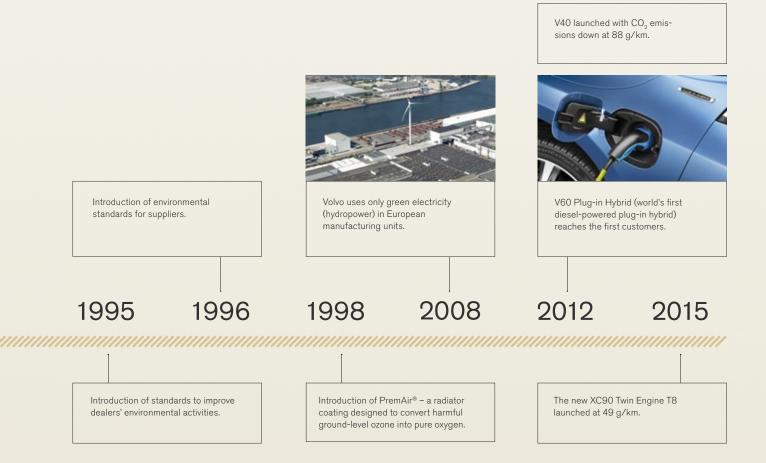
#### ENVIRONMENTAL HERITAGE:

The following timeline shows some of the highlights of Volvo Cars' work on environmental issues over the years.



Limiting CO $_2$  emissions and curbing climate change is a tough challenge, but also a great opportunity for technical development. Volvo Cars has a long tradition of developing systems and functions for cars that have benefited society in general. One such innovation is the Volvo Cars invention the Lambdasond (a three-way catalytic converter), which has become standard in cars worldwide. Volvo Cars is developing leading innovations with regard to energy efficiency, with the aim that such innovations will become new standards.

Volvo Cars' Environmental Strategy encompasses the car's environmental impact throughout its life cycle – from development, use and service to recycling when the car is scrapped. Our greatest focus is on the actual use of the car because this affects the environment the most. A particularly significant factor is fuel consumption. For this reason alternative fuels and Powertrains are a high priority for research within Volvo Cars. Although Volvo Cars' environmental improvement efforts to reduce climate impact focus mainly on vehicle development, they also include the environmental effects of all production facilities and logistics flows.



#### **Environmental strategy**

Volvo Cars' Environmental Strategy is based on a holistic approach in which environmental considerations form part of all operations. The Environmental Strategy is not only an integrated part of the overall Business Strategy – it is also included in all 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 (see below). The different strategy areas are:

#### Products:

- Energy efficiency including electrification
- Emissions
- Alternative fuels
- Interior environment
- Materials and recycling

#### **Operations:**

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

The Environmental Strategy for Operations has been implemented as targets and activities within different units, such as Purchasing & Manufacturing, Research & Development and the Aftermarket organisation. By doing so, Volvo Cars aims to increase efficiency and to encourage the whole company to improve the environmental performance.

Volvo Cars continuously follows up on environmental objectives and action plans in its operations. Refined targets were set in 2014 within the areas listed above, which include energy savings (GWh) generated by specific projects and reduction of water used in operations. It has been concluded that while Volvo Cars did progress in these areas during 2014, there is a need to focus on sustainable transportation and waste management. Stretched targets for these areas will be established during 2015. As part of the strengthened environmental target-setting process throughout the company, Volvo Cars continuously reports its performance against its Environmental Strategy to the Executive Management Team and the Board of Directors.

#### **Core Value Statement - Environment**

In addition to the Environmental Strategy, Volvo Cars also has a Core Value Statement – Environment (previously called Environmental Policy). To read the Core Value Statement, please see: www.volvocars.com/intl/about/our-company/core-values



#### **Environmental governance**

The Senior Vice President Purchasing & Manufacturing is the representative for environmental matters within the Executive Management Team (EMT). Operational environmental issues within Volvo Cars are governed and driven by an Environmental Committee, which is chaired by the Head of Manufacturing. The Environmental Committee has the authority to make decisions on issues such as environmental audits, environmental communication, consequences of new/changed legal demands, permits, site assessments and environmental insurance. It also makes recommendations to the Sustainability Board and/or EMT on environmental strategy, targets, policy, governing documents and environmental management systems. The Environmental Committee reports to the EMT.

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

### Environmental training, awareness raising and communication

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

Volvo Cars communicates the environmental performance of its products and operations continuously through press releases and other communication material available on its website. At the manufacturing site at Torslanda, Sweden, an exhibition about Volvo Cars' commitments to environment and safety is open to the public.



## ENVIRONMENTAL PERFORMANCE - PRODUCTS

At Volvo Cars, we understand the impacts cars have on the environment – that's why we develop and build cleaner cars.

Volvo Cars' approach to improving the environmental performance of cars is focused on six themes:

- 1. Environmental innovation
- 2. Reducing the  $CO_2$  emissions of cars
- 3. Increasing the use of renewable fuels in cars
- 4. Weight reduction, management of substances and materials
- 5. Interior environment Clean Compartment
- 6. Recycling and remanufacturing

### Innovation with a positive impact on the environment

Volvo Cars works continuously to improve the environmental performance of its products. In the past few years Volvo Cars have focused on innovation and development, but now is the time to turn ideas into action. With nine new cars to be released in the next five years, Volvo Cars stands at the beginning of an unprecedented revitalisation of its product portfolio.

The development of Volvo Cars' new product portfolio marks a clear commitment to its environmental heritage. By continuing to improve fuel efficiency and provide alternative solutions, Volvo Cars takes the lead in meeting the growing demand from customers to provide not only safe but also more energy efficient cars.

There are two main areas when discussing fuel efficiency. The first includes the hard, technical solutions, such as improving aerodynamics, rolling resistance, engine efficiency, gearing and gearbox losses. This is traditional engineering territory and Volvo Cars works continuously in this area to make the cars better. The second one is 'soft' and has to do with how a car is driven: the speed you drive at, what roads you take, when you choose to drive and how you plan your driving. Volvo Cars continues the work of making cars smarter, so that in future they will be able to make these decisions for you.

In 2014 and before, a number of innovations were launched that have a positive impact on the environmental performance of Volvo Cars' products, as outlined below.

#### New Drive-E Powertrain family

Volvo Cars' Drive-E Powertrain family has been developed in-house and will power the majority of the vehicles to come. The Drive-E Powertrains are a modular family of four-cylinder, two-litre petrol and diesel engines which offer a range of possibilities in terms of output. With their uncompromising performance when it comes to fuel efficiency and  $CO_2$  emissions they allow Volvo Cars to lead the way in reducing  $CO_2$  emissions. The Drive-E engines



are also prepared for electrification, which opens up further possibilities to reduce environmental impact via plug-in hybrid drivetrains. In short, Drive-E technologies give the customer high performance, improved fuel economy, considerably lower emissions and a powerful sound character.

#### Launch of S60L T6 Twin Engine - 50 g CO<sub>2</sub>/km

In 2014, Volvo Cars revealed the Volvo S60L T6 Twin Engine Concept Car. The petrol plug-in hybrid – an electric car, hybrid car and high-performance car all rolled into one – features the same electrification technology as the Volvo V60 Plug-in Hybrid, the world's first diesel plug-in hybrid. The production version of the S60L T6 Twin Engine, with a  $CO_2$ -efficient 238 horsepower Drive-E petrol turbo and plug-in hybrid technology, was launched in China early 2015 and is produced at the Chengdu plant. In this car, the driver selects the required driving mode via three buttons that give the car three entirely different temperaments: Pure, Hybrid or Power. In the default hybrid mode, the carbon dioxide emissions are about 50 g/km. This corresponds to a fuel consumption of just 2.0 I/100 km.

#### Launch of XC90 T8 Twin Engine - 49 g CO<sub>2</sub>/km

The all-new XC90 is the first of nine new cars to be released in the next five years by Volvo Cars. The XC90 captures Volvo Cars' future design direction, incorporates its own range of new technologies and utilises its new SPA technology and its highly efficient two-litre, four-cylinder Drive-E Powertrain family.

The T8 Twin Engine variant of the XC90 combines an electric motor with Volvo Cars' supercharged and turbocharged Drive-E four-cylinder engine for a hybrid system that can run in electric-only mode for zero-emissions driving or combined with the ICE for increased power. In other words, the XC90 T8 is a plug-in electric car, hybrid car and high-performance car all rolled into one. This complicated combination of electric and petrol power allows drivers to use their car in five separate modes, only emitting 49 g/km of  $CO_2$ . As the world's cleanest and most powerful SUV, the XC90 T8 joins a long list of Volvo Cars' innovations designed to create a more comfortable driving experience, a cleaner environment and safer roads. The new technologies were not developed for the XC90 alone: all following models in the 90 and 60 cluster in the next few years will benefit from these technologies.

#### Pure electric cars - C30 Electric

Electrification represents an important and promising technological step on the way to creating cars with a reduced environmental impact. Electric vehicles have many benefits for the local environment – blissfully silent and with no tailpipe exhausts. 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.

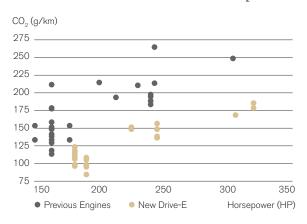
In 2011, Volvo Cars started low-scale production of the Volvo C30 Electric. The fleet of 250 cars is leased to customers in selected European countries and they are also currently operating in demonstration programmes in China, Sweden, Belgium, France, Holland and other European countries. The Volvo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

In 2013 the first demo fleet of the C30 electric generation II with a new electric engine was launched. These cars have been upgraded with a new electric engine and a new inverter from Siemens, and have an extended range and better and faster charging capacity. In this fleet, Volvo Cars introduced 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 the partnership's aim to develop electric cars with no compromises. The running of the test fleet has continued during 2014 for further data collection.

#### New innovations in electrification technologies

In the past few years, Volvo Cars has worked on a number of innovations in the field of electrification as part of its constant drive to further develop its electrification technologies. One example is Volvo Cars' participation in an advanced research project studying the possibilities of inductive, cordless charging for electric vehicles.



In accordance with the strategy, the ratio between  $\rm CO_2$  emissions and horsepower has been significantly lowered for the Drive-E powertrains.

#### NEW DRIVE-E VS PREVIOUS ENGINES, CO,/HP

The results showed that this technology for transferring energy via an electromagnetic field has a promising future. A Volvo C30 Electric test car could be fully charged in around 2.5 hours, by placing the car on top of an electromagnetic field in a charging base station.

In another promising project, Volvo engineers developed a concept for lightweight structural energy storage components that could improve the energy usage of future electrified vehicles. The material, consisting of carbon fibres, nanostructured batteries and super capacitors, offers lighter energy storage that requires less space in the car, cost-effective structure options and is eco-friendly. The research project took place over 3.5 years and resulted in energystorage car panels on a Volvo S80 experimental car.

Volvo Cars has also been studying the possibilities offered by Flywheel KERS (kinetic energy recovery systems). The results show that this technology has the potential to significantly reduce fuel consumption, while also giving drivers an extra boost in terms of horsepower. Volvo Cars is now evaluating how the technology can be implemented in upcoming Volvo models.

Volvo Cars is also continuously exploring possibilities for development of inductive charging technologies. Data has been collected throughout 2014 and will be analysed during the coming year.

#### Drive Me - self-driving cars for sustainable mobility

Volvo Cars is working towards developing autonomous driving technologies - not only for the sake of safety, but also because it

has positive impacts on the environmental performance of cars. The present systems for auto braking, lane keeping aid and adaptive cruise control are examples of the first steps towards autonomous driving. The next step is technology that follows the car in front at higher speeds, allowing the driver to take their hands off the steering wheel while still surveying the drive. This in turn paves the way for the introduction of Highly Autonomous Cars that hand over responsibility to the vehicle, which handles all driving functions at the driver's discretion.

Volvo Cars is now working on what is arguably the most ambitious autonomous drive project in the world: the Drive Me pilot taking place in Gothenburg, Sweden. The project, which will see 100 self-driving Volvo cars on public roads in 2017, is moving forward rapidly. The first test cars, chauffeured by Volvo Cars engineers, started driving around Gothenburg in the spring of 2014 and the sophisticated Autopilot technology has been performing well. For more information about Volvo Cars' efforts within autonomous driving, see Future Mobility on page 66.

#### **Emissions and fuel efficiency**

Limiting  $CO_2$  emissions is a challenge for all in the automotive business. Volvo Cars works hard to reduce emissions and increase fuel efficiency.

**Volvo Cars' approach to reducing the CO<sub>2</sub> emissions of cars** Meeting the different legal requirements on CO<sub>2</sub> emissions in all markets is a considerable challenge from a product planning perspective. Planning Volvo Cars' product range therefore involves



# **82** GRAMS

Reduced  $CO_2$  emissions from 129 to 82 g/km in the last 7 years.

Jan Olausson Programme Quality Manager, R&D

**Krister Broo** Programme Vehicle Engineering Manager, R&D Lloyd Neiberg Programme Office Manager, R&D

**Ulf Nordström** Chief Programme Engineer and Project Leader, R&D careful analysis of the need to meet future legal regulations. This is done in combination with a thorough analysis of foreseen customer expectations on products. It 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.

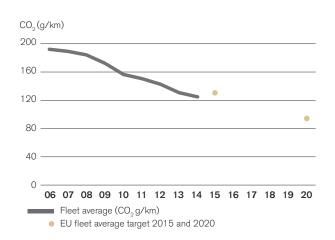
Volvo Cars does, however, see this challenge as an opportunity to offer driving pleasure with a good conscience. Volvo Cars believes that the most effective way to cut its product range's total CO<sub>o</sub> emissions in the short term is to reduce the fuel consumption of the diesel and petrol engines of its 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. Volvo Cars has therefore introduced a range of high-efficiency diesel models with very low CO<sub>2</sub> emissions. The V40 is currently the most efficient model with fuel consumption (EU combined) down to 3.2 I/100 km and  $CO_{2}$ emissions at 82 g/km. The Volvo S60 and V60 have CO<sub>2</sub> emissions of just 97 g/km and 99 g/km respectively - corresponding to fuel consumption of 3.4 and 3.6 I/100 km respectively. The XC60 and XC90 are market leading offers in their respective segments. The XC60 with the Drive-E diesel engine has CO<sub>2</sub> emissions of 117 g/km and the XC90 with similar Powertrain, automatic gearbox and all-wheel drive has CO2 emissions of 149 g/km. Volvo Cars' 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, Volvo Cars has managed to bring fuel consumption down to 5.3 I/100 km in the V40. This corresponds to  $\rm CO_2$  emissions at 124 g/km.

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

- The number of cylinders has been reduced to four in the new Drive-E Powertrains
- Internal gearbox friction 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 reduce energy consumption
- The grill shutter in V40, S60 and V60 reduces fuel consumption, due to improved aerodynamic and faster warm-up of the powertrain.

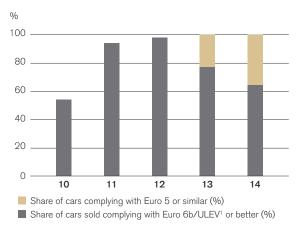
#### CO<sub>2</sub> emissions of Volvo cars

Under the EU Regulation on  $CO_2$  emissions from new passenger cars, the  $CO_2$  EU fleet average to be achieved by all new cars is 130 g/km by 2015 and 95 g/km by 2020. The 2015 target was 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 their fleet. If car makers do not meet the targets, they have to pay 'excess emissions premiums'. The  $CO_2$  limit target for Volvo Cars for 2014 was 146 g/km. Volvo Cars' fleet average of g  $CO_2$ /km fell from 131 g/km in 2013 to 125 g/km in 2014 (-4.6%). This is a strong improvement compared to previous years, mainly due to the introduction of the Drive-E Powertrains, and strong sales of the V40 D2 model. The average  $CO_2$  emission in all new



#### FLEET AVERAGE, 2006-2020

### COMPLIANCE WITH EU REGULATION FOR HARMFUL EMISSIONS



<sup>1</sup> 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.

Volvo Cars' vehicles sold in 2014 in all markets declined by 44% compared to 1995. The EU 2020 legal requirement for Volvo Cars' fleet average is projected to be 100–110 g/km, which means that further improvements have to be achieved in the next few years.

#### Tailpipe emissions other than CO<sub>2</sub>

European emission standards (Euro) define the acceptable limits for exhaust emissions other than  $CO_{\circ}$  of new vehicles sold in EU member states. The emission standards are regularly upgraded and include increasingly stringent standards in terms of air pollution caused by road vehicles. The newest emission regulation, Euro 6, came into force on September 1, 2014. After September 2015 all new registrations of cars within EU member states should comply with Euro 6. Main limits covered by the standard are for hydrocarbons (HC), nitrogen oxides (NOx), carbon monoxide (CO) and particulate matter (PM). These emissions are, however, not related to fuel consumption or level of CO2 emissions. In other words, regardless of a car's CO<sub>2</sub> level, cars have to meet the same limits for HC, NOx, CO and PM emissions. Euro 6 has set even lower emission limits than its predecessor, Euro 5. For example, all vehicles equipped with a diesel engine will be required to substantially reduce their emissions of nitrogen oxides. In 2014, the share of Volvo Cars sold complying with the Euro 6 standard or better had reached 35%. Some of Volvo Cars' ongoing development areas in terms of meeting future upgrades of the Euro standards include continuously lowering emissions from diesel engines and decreasing emissions of particulates from gasoline engines.

During 2014 Volvo Cars also started certifying cars to one of the world's toughest emission regulations, the California Low-Emission Vehicle Program (LEV III). The certification is based on the average emissions of a car company's total sales and gets more stringent for each model year up to year 2025. As an example of the stringency in the regulation, a car that has run 240,000 km should still meet the same emission limits as a brand new car. In Japan, Volvo has certified variants to the Super ultra-low emission vehicle (SULEV) standard that are 75% below the legal requirement. In 2014 a total of 80% of Volvo cars sales in Japan were SULEV variants.

#### Noise emissions

Volvo Cars recognises that noise emissions from cars can be a significant problem, especially in urban and high-traffic areas. Therefore, all Volvo Cars vehicles are developed in line with our strategic intention to decrease noise levels from the engine, tyre rolling and wind through system and component optimisation.



#### **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  $CO_2$  emissions. Volvo Cars believes that biofuels offer the opportunity to significantly reduce  $CO_2$  emissions in an efficient way, depending on how the fuels are produced. Volvo Cars supports clear and harmonised fuel quality standards in order to ensure car and engine compatibility, considering the increase in low blending level of biofuels. There is a need to ensure affordability for consumers as well as feasibility for Volvo Cars; 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.

Volvo Cars offers models that are powered by petrol, diesel, ethanol and natural gas/biogas and has one of the 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 has excellent environmental properties. Within the next few years it will also be possible to use second-generation biofuels such as synthetic diesel in Volvo's cars.

#### **Materials**

Volvo Cars' material usage is determined by the design requirements for each and every part in its cars. The following table shows the breakdown of 6 of 12 car models. These 6 cars were selected to represent Volvo Cars' entire car fleet and refer to standardised vehicle models. The breakdowns can vary slightly depending upon customised features. Amongst other goals, it is Volvo Cars' aim to unify the material breakdowns of its car models to allow for comparison within its portfolio. Another goal in Volvo Cars' work with product material is to reduce the total vehicle weight, because this lowers fuel consumption and leads to a reduction of the overall  $CO_2$  emissions when the vehicle is used. Increased use of lightweight metals and composite materials is one approach to achieving this goal. The all-new XC90 model, for example, will be approximately 100 kg lighter with the new SPA (Scalable Product Architecture) architecture compared to the previous model.

#### Restricted substances and rare materials

Volvo Cars uses the global Restricted Substance Management Standard (RSMS) to prohibit substances toxic to human health or the environment. In order to make sure that it complies with legal requirements Volvo Cars works with a material database called IMDS. Suppliers report the material content of all parts in detailed data sheets, which are uploaded to IMDS by suppliers and then reviewed by Volvo Cars. Thus IMDS enables Volvo Cars to track a certain substance.

This way, Volvo Cars managed to phase out Decabromodiphenyloxide (Deca-BDE), which is bioaccumulative, persistent and toxic to both humans and the environment. Volvo Cars is ahead of legal requirements with this phase-out, which is required no later than 2015. Volvo Cars also used IMDS when analysing where in the car models rare earth minerals can be found. The analysis was carried out in collaboration with Chalmers University of Technology. The demand and therefore the price for rare earth minerals is increasing rapidly. The project revealed that due to electrification in Volvo's cars, the use of such minerals is rising. The analysis marks the beginning of a new approach – in the future rare earth minerals will be reused.

#### TOTAL MATERIALS BREAKDOWN

TOTAL MATERIALS BREAKDOWN	S80	S60	V40 CROSS COUNTRY	V70	XC60	ALL-NEW XC90
Polymers (kg)	216	246	253	284	293	329
Elastomers (kg)	70	63	66	75	82	168
Glass (kg)	42	48	37	50	52	63
Others (incl. liquids, kg)	75	56	86	111	104	113
Metals* (kg)	1,258	1,178	1,087	1,258	1,281	1,363

*METALS BREAKDOWN	S80	S60	V40 CROSS COUNTRY	V70	XC60	ALL-NEW XC90
Ferrous metal (kg)	1,040	955	855	1,029	1,057	974
Magnesium (kg)	7	11	3	7	7	9
Aluminium (kg)	167	165	179	174	168	314
Copper (kg)	27	23	25	24	24	31

### Interior environment: air quality and contact allergies

Volvo Cars' work with the interior environment can be divided into two main areas: air quality and contact allergies. The main objective is to make the environment inside the cabin cleaner than the air outside. There are no societal standards for in-car air, so Volvo Cars created its own in-car air quality requirements that are used when developing new Volvo models. This includes the air entering via the climate system as well as the emissions from the materials inside the cabin. Volvo Cars has developed two systems, Interior Air Quality System (IAQS) and Clean Zone Interior Package (CZIP), to cover this area.

IAOS monitors the quality of the incoming air and automatically closes the air vents if the levels of harmful substances become too high. A multi-filter removes particulates and pollen but also uses a layer of active charcoal to remove odours and ground-level ozone. The system automatically closes the air vents when, for example, driving through a tunnel. The CZIP technology ensures that the air in the car is automatically vented out within one minute from the time the car is unlocked with the remote control.

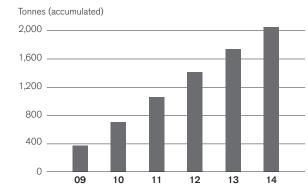
A second aim is to improve the in-car environment in order to ensure that the materials used inside the vehicles are not harmful to human health or the environment, as well as to avoid using asthmainducing and allergenic substances in car interiors. Volvo Cars performs careful measurements during the design phase of car models and in the first few years of the vehicles' life. An example of how Volvo Cars improved the in-car environment of its cars is the fact that all textiles fulfil stringent requirements, making sure that the materials do not include harmful substances. Metallic components, such as handles, buttons and keys are tested for nickel leakage.

Volvo Cars' 'Clean Compartment' work is an example of efforts in line with the precautionary principle. This work reduces health risks for passengers with asthma or allergies by replacing interior trim with materials exceeding the requirements of current legislation. Volvo Cars measures its performance against the World Health Organization's (WHO) recommended levels. Volvo Cars fulfils the WHO Air Quality Guideline, relating to NO<sub>2</sub>, particulate matter, CO, benzene, ozone and SO<sub>2</sub>.

#### Recycling

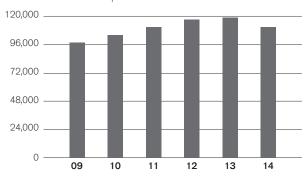
The IMDS database also makes it possible to calculate how much of the total weight of the car components consist of fluids, metals, and other materials. This database enables Volvo Cars to analyse which proportion of a car is recyclable. The long-term strategy for reducing material intensity within Volvo Cars' 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.

#### ALUMINIUM SAVINGS FROM REMANUFACTURING



#### REMANUFACTURING DEVELOPMENT

Amount of remanufactured parts sold



Volvo Cars has 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 the RRR Directive 2005/64/EC on type approval of vehicles for reusability, recyclability and recoverability, metals, oils, fluids, rubber and certain plastics corresponding to at least 95% of the weight of a Volvo car 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.

#### Remanufacturing

Around 15% of Volvo Cars' spare parts sales consist of parts included in the Volvo Cars' Parts Exchange System. Dealers connected to the Parts Exchange System have a return obligation for replaced parts included in the exchange product range. The parts that meet the requirements are then remanufactured by external suppliers according to Volvo Cars' original specifications. After the industrial remanufacturing process the parts are handled as a regular spare part and distributed in the ordinary logistic flow. Today, Volvo Cars Exchange System contains an even larger number of components – it includes everything from gearboxes to injectors and electronic components.

Remanufactured spare parts are a cost-efficient and environmentally friendly alternative to newly manufactured parts. The remanufactured spare parts fulfil the same quality standards, specifications and warranty as newly made components.

A remanufactured part requires up to 85% less raw material and 80% less energy compared with a newly made product. In 2014, Volvo Cars saved approximately 300 tonnes of aluminium and 800 tonnes of steel, which is equivalent to reducing approximately 4,000 tonnes of  $CO_2$  emissions.

Volvo Cars continuously strives to further increase the product areas included in the Exchange System and the proportion of remanufactured parts sold. However, as shown in the graph below, the number of remanufactured parts sold decreased in 2014 compared to the previous year. The two main reasons for this are that customer demand for basic remanufactured components that more automatically bring higher sales figures was lower compared to previous years and that the quality of Volvo Cars components has improved in recent years, which means a decrease in warranty sales of remanufactured parts.

During 2014 Volvo Cars increased the portfolio of Exchange Product Areas from 41 to 43, underlining that remanufacturing and life cycle management of products is of continued strategic importance to Volvo Cars. In 2015 and onwards, we will look into how we can strengthen this work further.

at any

## **ENVIRONMENTAL PERFORMANCE - OPERATIONS**

Our production plants are more than factories; They are proof points to our social and environmental commitments.

Volvo Cars strives for continuous improvements in all its operations. The company strongly believes that the environment needs to be a part of the existing efficiency work within the organisation. Environmental issues are not handled separately by a central organisation; they are a natural part of our operations that is integrated in the day-to-day work. Some of our achievements are highlighted below.

#### **Belgium: Ghent**

- Climate-neutral electricity from certified hydroelectric sources.
- Own wind turbines produce approx. 15% of the needed electricity.
- Paint shop has one of the lowest levels of emissions of solvents to air in the world.

#### Sweden: Torslanda

- Climate-neutral electricity from certified hydroelectric sources.
- Waste heat from nearby oil refinery used for heating.
- Paint shop has one of lowest levels of emissions of solvents to air in the world.

#### Floby

- Climate-neutral electricity from certified hydroelectric sources.
- Climate-neutral district heating from biomass.

#### Skövde

- Climate-neutral electricity from certified hydroelectric sources.
- Low carbon district heating.
- Plant designed for environmental protection, e.g. risk management, waste and chemical handling.

#### Olofström

- Climate-neutral electricity from certified hydroelectric sources.
- On site generation of hydroelectric power.

#### China: Zhangjiakou

- Designed for closed loop water treatment system which means no emission of industrial polluted water.
- Full facility equipped with LED lights.

#### Chengdu

• Waste water treatment plant with both chemical and biological treatment steps.

#### ISO 14001 and beyond

Globally, Volvo Cars manufacturing operations have been ISO 14001 certified gradually since 1996 and the environmental management system is a part of the overall management system within Volvo Cars. In 2013, Volvo Cars' Executive Management Team (EMT) took a decision to extend the ISO 14001 certifications to all corporate functions. Every year an external auditor conducts audits at Volvo Cars to ensure that the standards are being met and opportunities for improvement are being identified. Remediation plans are created for all audit findings, but major audit findings (if any) get the highest priority.

In 2014, Volvo Cars continued implementing Volvo Cars management systems in its China operations in order to set the same standard as within the rest of the organisation. Other initiatives during 2014 included a gap analysis of Volvo Cars' China operations to prepare these locations for ISO 14001 certification. The target is to start to certify Volvo Cars' China plants in 2015. As 2015 will be the first year of full production capacity in the Chinese plants, data from Volvo Cars' China operations will be included in the 2015 sustainability report. Volvo Cars also has a programme for internal audits relating to environment, the operational management system and legal compliance as well as handling of dangerous goods. The aim of this programme is to monitor Volvo Cars' operations and thus find improvement areas. Volvo Cars works intensively to improve the effectiveness of its operations. In 2014, focus areas of the internal audits included the handling of chemicals and environmental targets.

#### **Towards climate-neutral production**

Car manufacturing requires large amounts of energy, which potentially could have a negative impact on the environment. Volvo Cars has the overall target to continuously reduce its total energy consumption and ultimately become climate-neutral. At its headquarters, Volvo Cars has employees dedicated to work solely on energy and climate change related issues and at each site one person has been given the responsibility for energy issues. In addition, full-time employees are working with energy optimisation to improve efficiency even more at all operational sites.

Volvo Cars has performed an inventory of energy use in most of its buildings and operational processes. This is an important step towards reducing energy consumption. Remedial programmes have been performed at several sites and information campaigns conducted to educate employees on the importance of energy saving and efficiency. Checklists are used at team level, clarifying when and how to turn the various pieces of equipment on and off. Minor activities such as these complement larger energy-saving projects. In 2014, several energy-saving projects were conducted, resulting in savings of 39.6 GWh, including the following:

#### Torslanda Plant

- Closing of a body wash, saving approx. 3 GWh per year.
- Optimisation of heating and ventilation, saving approx. 7 GWh per year.

#### **Ghent Plant**

• Optimisation of heating and ventilation, saving approx. 13 GWh per year.

#### **Olofström Plant**

• Optimisation of ventilation, saving approx. 5 GWh per year.

#### Skövde Plant

• Recycling of heat, saving approx. 3 GWh per year.

Thanks to these and other initiatives, together with the fact that 2014 was a relatively warm year, Volvo Cars was able to reduce total (direct and indirect)  $CO_2$  emissions in 2014 to 49,918 tonnes compared to 59,729 tonnes in 2013 – a reduction of 16.4%.



#### **Energy consumption**

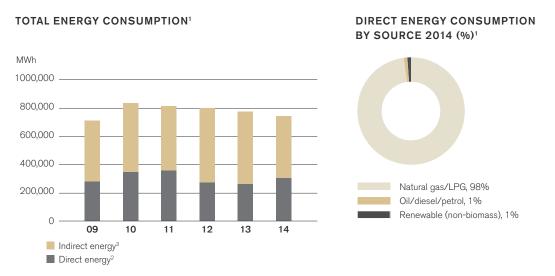
In its energy consumption, Volvo Cars uses energy in the form of natural gas, LPG (liquefied petroleum gas), diesel oil and petrol for production purposes. This energy is used to heat ovens and other equipment. Volvo Cars aims for a transition from LPG and natural gas to biogas to take place as soon as possible, but at present there are no suppliers that can deliver the quantities Volvo Cars needs.

As shown in the graph below, although Volvo Cars' total energy consumption decreased in 2014, its direct energy consumption increased compared to 2013 due to higher production volumes.

#### Indirect energy consumption

Volvo Cars' indirect energy consumption is through purchased electricity and district heating for its 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, Volvo Cars encourages the move towards greater renewable energy production. All the electricity that Volvo Cars buys and uses in Europe is certified hydropowered electricity and wind power. In Malaysia, it is generated from coal. In China, the supply of renewable energy is still under development, but it is expected to grow strongly in the years to come. Volvo Cars follows this development closely and aims to contribute to the shift from traditional to renewable sources of energy.

In 2014, due to higher production volumes, Volvo Cars' consumption of purchased electricity increased, as shown in the graph above. Hydropower accounts for around 95% of Volvo Cars' indirect energy consumption and was the type of energy use that increased the most in 2014. However, there was also a slight increase in the use of energy from condensing coal-fired plants in Malaysia.



<sup>1</sup> 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 Floby (Floby, Sweden) and Volvo Cars Olofström – Body Components (Olofström, Sweden). <sup>2</sup> Energy produced for own consumption

<sup>3</sup> Purchased electricity and heating



# **40** GWH

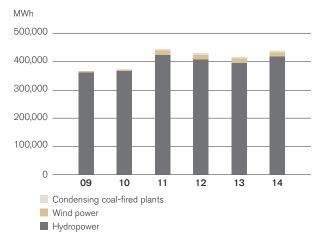
Energy savings of almost 40 GWh were achieved in 2014.

(The equivalent of 24,000 barrels of oil)

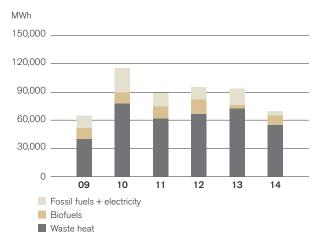
**Sofia Boyagi** Operational Development Manager, Environmental Care

Mihkel Laks Director, Environmental Technical Operations

#### INDIRECT ENERGY CONSUMPTION: ELECTRICITY BY SOURCE<sup>1</sup>



#### INDIRECT ENERGY CONSUMPTION: DISTRICT HEATING SOURCE<sup>1</sup>



<sup>1</sup> 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 Floby (Floby, Sweden) and Volvo Cars Olofström – Body Components (Olofström, Sweden).

#### Managing emissions to air

Volvo Cars' plants produce direct and indirect emissions of several types. Volvo Cars actively manages and reduces its Volatile Organic Compounds (VOCs) and  $CO_2$  emissions as well as other greenhouse gas emissions.

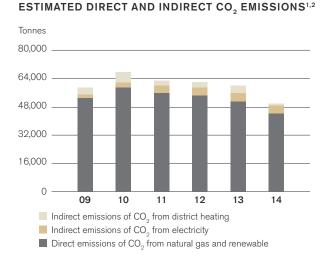
 $\rm CO_2$  emissions: In order to reduce  $\rm CO_2$  emissions from operations Volvo Cars continues to manage the consumption of energy as described in the section 'Towards climate-neutral production', on page 29. In 2014, this work led to a significant decrease in direct and indirect  $\rm CO_2$  emissions, as shown in the graphs below.

Volatile Organic Compounds (VOCs): VOC emissions are caused mainly by painting operations. Since the commissioning of the Torslanda paint shop in 1991, this shop has proved to be one of the very best in the world in terms of the level of hydrocarbons emitted per unit of painted surface. In 2007, the European Union imposed a limit of 60 g/m<sup>2</sup> of painted surface on hydrocarbon emissions from existing automotive paint shops. Volvo Cars' paint shop in Torslanda emits approximately 13 g/m<sup>2</sup> of painted surface, and the

Ghent paint shop approximately 14 g/m<sup>2</sup> of painted surface. The paint operations in the Chengdu plant are based on the use of mainly water-borne paints and the same state-of-the-art paint application equipment that is used in Torslanda and Ghent. Volvo Cars will continue its efforts to further reduce emissions with the ambition to make all paint shops best-in-class.

SOx and NOx: Volvo Cars' plants produce emissions of sulphur oxides (SOx) and nitrogen oxides (NOx). Emissions of sulphur oxides have been reduced significantly over a long period, mainly as a result of Volvo Cars' 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. Paint shops normally use high combustion temperatures, which yield low emissions of  $CO_2$  and VOC, but higher levels of nitrogen oxides, whilst other combustions take place at boiler houses with low NOx emissions.

During 2014, Volvo Cars' total emissions of greenhouse gases decreased compared with the previous year. Volvo Cars calculates



<sup>1</sup> 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 Floby (Floby, 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 CO\_2/MWh).

#### EMISSIONS OF SOX, NOX AND VOC

	2009	2010	2011	2012	2013	2014
Emissions of SOx (tonnes) <sup>1</sup>	<1	<1	<1	<1	<1	<1
Emissions of NOx (tonnes) <sup>2</sup>	71	85	80	72	76	77
Emissions of VOC (tonnes) <sup>3</sup>	527	738	828	796	724	675

<sup>1</sup> SOx emissions are calculated on the basis of the sulphur content in the fuel. <sup>2</sup> The NOx emissions are calculated based on the quantity of fuel. Spot tests are also performed.

<sup>3</sup> 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.

#### STOCKS OF OZONE-DEPLETING SUBSTANCES IN EU

	2009	2010	2011	2012	2013	2014
Installed amount HCFC (kg)	703	630	486	432	358	256
CFC equivalent (kg)	35	31	24	21	17	12

the  $\rm CO_2$  emissions according to the EUETS system. The total amount of  $\rm CO_2$  equivalents is currently not calculated.

Volvo Cars does 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.

#### Water management

Volvo Cars works in a targeted manner to reduce emissions to water and water use, and endeavours to be among the leaders in the automotive industry in this respect.

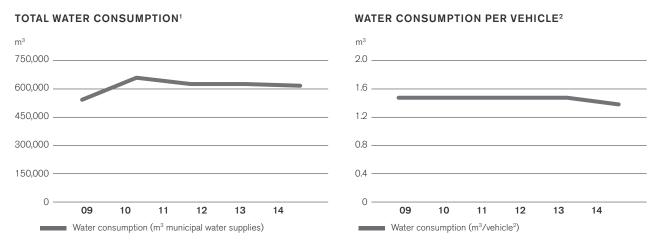
#### Fresh water management

Volvo Cars uses municipal water supplies only. Based on the Water Footprint calculations, Volvo Cars has identified sites where water conservation has highest priority. In such areas, Volvo Cars works proactively to secure minimal environmental impact. It is Volvo Cars' ambition to take the lead in water conservation activities in areas with fresh water scarcity and to contribute with competence in waste water treatment processes and closed loop systems. In 2014, this was done for example when building the new engine plant in China.

#### Waste water management

In order for waste water to be treated by municipal waste water treatment facilities it must meet various requirements in terms of, for example, contamination levels. Volvo Cars therefore cooperates with municipality and local waste water treatment organisations in order to optimise waste water treatment as much as possible. Volvo Cars' 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 the plants. The volume of recycled and reused water is currently not measured; neither is the volume of discharges of water judged to be significant.

In China, Volvo Cars works actively with waste water management to ensure that it fulfils its global standards, which are significantly stricter than the local legal requirements. The waste water treatment plant in Chengdu is designed with both chemical and biological treatment steps before the water is released to a municipal waste water treatment facility. This treatment level exceeds local legal requirements in China.



<sup>1</sup> Manufacturing plants are Volvo Cars Torslanda, Volvo Cars Ghent and Malaysia.

<sup>2</sup>KPI water consumption/vehicle is based on the number of produced cars in manufacturing plants.

Examples of measures taken in 2014 to improve waste water management include the closing of a body wash in the Torslanda plant which will reduce water consumption by approximately 60,000 m<sup>3</sup>/year. In total, Volvo Cars' water consumption decreased in 2014 to 617,000 m<sup>3</sup> compared to 626,000 m<sup>3</sup> the year before. Further initiatives to reduce water consumption will be taken in 2015.

#### Waste management

Volvo Cars works continuously to reduce waste by applying the following priorities:

- 1. Avoidance and prevention of waste
- 2. Material recycling
- 3. Energy recovery from waste
- 4. Landfill or destruction

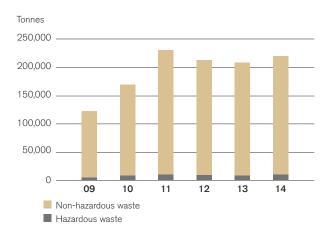
#### WASTE MATERIAL BY TYPE AND PROCESSING METHODS<sup>1</sup>

2014 (tonnes)		Treatment by a professional contractor						
	Recycled incl. Metal scrap	With energy recovery	Without energy recovery	Landfill	TOTAL			
Non hazardous waste	204,216	4,565	342	343	209,466			
Hazardous waste	1,535	2,265	6,219	595	10,614			
TOTAL	205,751	6,830	6,561	938	220,080			

<sup>1</sup> 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 Floby (Floby, Sweden) and Volvo Cars Olofström – Body Components (Olofström, Sweden). The figures are provided by Volvo Cars' waste disposal contractor.

<sup>2</sup> Hazardous waste from Volvo Cars production plants includes: waste water sludge, oils, cutting fluids, paint sludge, adhesive residues and solvents. The target is to reduce hazardous waste.

#### WASTE MATERIALS BY TYPE<sup>1</sup>



<sup>1</sup> Until 2011, the figure included Sweden and Belgium. The Volvo Cars facilities included in the data for 2012 are Volvo Cars Torslanda 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). For Volvo Cars, the biggest waste category is metal waste stemming from car production in Sweden, all of which is recycled. During 2014 a project was launched to improve the waste management even further. The project has resulted in increased awareness and means to decrease waste. The project will be continued during 2015 focusing on implementing defined improvement actions, such as improved fraction cleanliness and a reduction of hazardous waste by 60% in Skövde engine plant, as well as strengthening the focus on avoiding waste in early phases. Waste increased by around 5% between 2013 and 2014, due to rising production volumes.

#### Preventing environmental accidents for 20 years

Volvo Cars works proactively to minimise the environmental risks in its operations. Advanced processes and technical installations are in place to prevent such environmental accidents. Two examples illustrate this:

- To prevent environmental spillage and incidents, Volvo Cars has 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).
- All plants report environmental incidents and 'near-misses' to Volvo Cars' Environmental Protection Department in Gothenburg, Sweden.

In the past 20 years, Volvo Cars has not been notified or found culpable of any breach of environmental standards or operating licences in any of its plants. All environmental activities are conducted in compliance with applicable legislation and permits. No serious environmental accidents requiring reporting to the authorities occurred in 2014.

#### **Transport and logistics**

In 2011, Volvo Cars set out a strategy to restructure its logistics operations to better control and manage this core activity. Since then it has been attaching ever-greater importance to logistical activities and processes. In 2012, Volvo Cars insourced the commercial and operational responsibility for global outbound transportation, which is the distribution of finished vehicles to dealers and customers worldwide. During 2014 another major milestone in Volvo Cars' logistics strategy was achieved in setting up the inbound logistics operations as an in-house function. Inbound logistics comprises the transportation of production material and spare parts from suppliers to factories, warehouses and other sites.

Taking over these responsibilities enables Volvo Cars to better plan the logistics strategies and directly procure logistics services for material arriving at factories and cars leaving to dealers. With a dedicated team it is now easier to design, control, measure and improve Volvo Cars' transportation and logistics requirements. In line with this ambition to streamline transportation Volvo Cars has, since 2012, been designing an inbound network that is as efficient as possible. The overall aim of the network is to achieve optimal transport mode as well as concept selection, together with improved utilisation of trucks. An improved logistics network will not only have a positive financial impact but will also result in lower environmental impact per shipment.

Volvo Cars has made significant investments in terms of resources and IT systems to enable it to perform network planning and operational management more efficiently. It is also equipped for continuous optimisation. Managing the logistics activities with an in-house organisation has resulted in increased efficiencies and reduced environmental impact.

#### Key enablers to sustainable logistics solutions

The biggest environmental impacts from transportation consist of emissions to air and water (such as  $CO_2$ , SOx & NOx) from the different modes of transport. Besides emissions, noise from transportation as well as injuries from accidents during the logistics process are focus areas for a sustainable transport and logistics operation.

#### Focus on reducing waste in transport:

In line with Volvo Cars' lean manufacturing approach the Logistics organisation aims for the highest possible efficiencies when choosing and setting up transport and warehousing operations. Volvo Cars has a complete focus on reducing waste in the logistics network and in the entire logistics organisation. The examples below demonstrate how Volvo Cars strives for greener and more environmental friendly logistics services:

- 'Ship direct': This principle aims at minimising transportation distance between two locations and to avoid multiple handling and reloading activities. Both large-scale and small-scale adjustments to the logistics network resulted in shorter transportation distances in 2014 and thus had a positive environmental impact.
- Eliminating unused capacity: Better planning and constant optimisation helped Volvo Cars achieve up to 15% better utilisation of the transport capacity and has resulted in reduced emissions. Volvo Cars has teamed up with other shippers of cargo and the combined volumes help to better fill up the available capacity and enable highly efficient transport solutions.
- Reduce empty driving by utilising trucks on the return route: Volvo Cars is in constant discussion with logistics service providers to seek opportunities to better use available equipment. Dynamic optimisation of routes and pick-up dates enable a certain degree of flexibility to make efficient round trips.

#### Focus on sustainable logistics providers:

Besides focusing on internal improvements Volvo Cars is committed to creating sustainability beyond its own operations. Therefore Volvo Cars requires its logistics service providers to meet its sustainability standards and minimise their emissions.

In order to achieve its sustainability objectives Volvo Cars carefully selects logistics providers and together with them reviews how efficient and eco-friendly solutions can be implemented and developed. Volvo Cars also demands that its suppliers should be ISO 14001-certified and that they operate a truck fleet with Euro 5 and higher emissions standards. These standards are regularly reviewed and measured.

#### Initiatives that contribute to environment and sustainability

The new inbound logistics organisation and network started operations in 2014. This included setting up over 20 new logistics providers and establishing almost 5,000 new routes. The emphasis in the first half of the year was to stabilise the operations and ensure that processes and systems were running reliably. The second half of the year was devoted to structural fine-tuning of the network and set-up, in order to realise a 15% improvement in efficiency and cost, which also directly decreases emissions.

On top of the new logistics set-up Volvo Cars has invested and taken control of returnable materials from the packing of parts that are shipped from around 1,500 suppliers' sites to our factories and warehouses. The purposes of the new packaging solution are to secure safe transport, support ergonomic handling and also to avoid one-way packaging and reduce the environmental impact of disposing or recycling packaging material. Packaging pool locations have been implemented to sort, clean and distribute the packaging back to suppliers.

The distribution of cars has been handled by an in-house organisation since 2012 and during 2014 Volvo Cars worked hard to further improve the logistics network and develop better routings. Over 50% of the logistics contracts have been carefully re-evaluated and this has already led to improved efficiencies and will reduce emissions by over 6.5% when these contracts come into effect in January 2015.

Volvo Cars started to manage the vehicle distribution yard in Ghent with internal resources during 2014. This change enables Volvo Cars to directly verify the emission level of trucks transporting Volvo cars. It also enables Volvo Cars to plan the loads and thus have better control over the utilisation of trucks, which in turn leads to reduced emissions.



#### Plans for 2015

In recent years Volvo Cars has seen significant growth in vehicles produced and sold in China. It is our objective to produce vehicles where we sell them and source parts where we produce cars. Our production in China has an enormous impact on reduced emissions vis-à-vis vehicles produced in Europe and shipped to China. Our aim is to ensure we run as efficient and focused a logistics operation in China as we do in Europe. We foresee starting a similar initiative as we have done in Europe in recent years and plan a large-scale project to restructure our logistics network. The aim is to streamline the logistics flows, to better utilise the equipment employed and to establish contracts that consider sustainability and emissions with the Chinese logistics supply base. During 2015 we will re-evaluate the logistics routes for about 50% of our in-bound transports and for finished vehicles for 10-12 European countries. We aim to find better routings and better utilisation of trucks, and therefore reduce the environmental impact on transports.

#### **Parts Supply & Logistics**

The Parts Supply & Logistics (PS&L) network supports the Volvo Car Customer Service business by distributing parts and accessories with high availability and short lead times. The Central Distribution Centre (CDC) in Gothenburg stores more than 75,000 different part numbers which are supplied to dealers globally, mainly via 45 Distribution Centres around the world. PS&L cooperates with a number of external third-party logistics providers for both warehousing and transportation. All of these have the same demands and requirements in terms of sustainability as Volvo Cars' own operations. The PS&L department launched a number of improvement initiatives during 2014 that cover sustainability and environmental aspects. However, PS&L continuously seeks new ways of reducing energy consumption. By improving the lighting in the CDC for example, Volvo Car Customer Service has saved 2 million SEK per year in energy costs. As for the other outbound transport carriers, PS&L puts sustainability demands on these partners as well. All carriers are contractually obliged to be ISO 14001 certified or have equivalent certification. Environmental initiatives within this area also include investigations on alternative fuel cars/truck fleets, improvement of filling ratio, as well as using train transport instead of road transport to reduce environmental impacts.

#### **Business travel and commuting**

Volvo Cars actively reduces the impact from employees' business travel and commuting. The necessity of any trip must be evaluated and the possibility of conducting a telephone or video conference call as an alternative must be considered. Employees must always choose the most suitable route and type of transport from Volvo Cars' point of view. 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.

As of 2014, Volvo Cars can measure and manage the  $CO_2$  emission per passenger/kilometre and the total  $CO_2$  emission for all trips booked through the corporate travel agency. These figures will build the baseline for setting targets for emissions from business travel in the future.



### **PEOPLE VISION AND STRATEGY**

We need the best people to create premium. That means giving our employees the means to be challenging and daring, yet without compromising our values.

Volvo Cars has a clear vision: to be the world's most progressive and desired premium car brand. Volvo Cars' employees are the people who will make this happen. This is why Volvo Cars aims to become an employer of choice that attracts and retains the people who will build the future for Volvo Cars. Part of this is enabling those people to work together in an efficient way and create a high-performing organisation. To achieve this, Volvo Cars has made it a strategic target to become a lean and nimble company that challenges traditional ways of doing things. In practice this means becoming a healthy organisation aligned around a compelling vision and strategy, having the ability to execute that strategy and the ability to renew and adapt to changes in the external environment, yet never compromising the respect we have for each other.

#### **Organisational health**

Volvo Cars builds a global organisation based on a balance between performance and health. Organisational health is defined as our ability to align, execute and renew ourselves faster than the competitors and thus ensure that Volvo Cars has the capabilities to build strong performance over time and realise the corporate strategy. In other words, organisational health encompasses all aspects of the organisation's inner workings – direction, leadership, culture, accountability, coordination and control, capabilities, motivation, external orientation and innovation and learning. Ultimately it is about realising the full potential of Volvo Cars and fulfilling Volvo Cars' company purpose.

The Organisational Health Index (OHI) is a data-driven model and survey used to understand the current status and derive corrective actions. According to the OHI, Volvo Cars' current strengths lie in the areas of direction, motivation and external orientation. That means Volvo Cars' employees have a clear sense of where the company is heading, how to get there and what it means to all Volvo Cars employees across the world; that employees are motivated and exert extraordinary effort to perform at their very best; and that we have a high quality engagement with our customers and other external stakeholders. Examples of what the company focused on during 2014 include communication and on-boarding of Volvo Cars' corporate strategy; carrying out leadership programmes in Research & Development, Purchasing & Manufacturing, and Marketing, Sales and Service; further implementing Volvo Cars' new Resource and Competence Centre, which aim at increasing flexibility and mobility within Volvo Cars, as well as continued roll-out of Volvo Cars' activity-based workplace concept 'Designed Around You @ Work'.

#### An employer of choice

An important part of organisational health is providing a good working environment. During 2014, Volvo Cars made good progress towards its goal of becoming an employer of choice. Volvo Cars is on the Universum list of the world's most attractive employers, in which students around the globe are asked about their ideal employers. In 2013, Volvo Cars was ranked 49 on the list of most attractive companies by engineering students in the world's 12 largest economies, and in 2014 its ranking was number 40. During 2014, Volvo Cars was also recognised by the public as a top employer brand in the three countries where it has the most employees: Belgium, China and Sweden. In Belgium, Volvo Cars Ghent has been part of the Randstad Award survey since 2010, in which a representative sample of employees and job-seekers between the ages of 18 and 65 are asked for their views on the 150 largest companies in the country. Volvo Cars Ghent has increased its ranking from number 117 in 2010 to number 49 in 2013. In China, Volvo Cars China was named the Best Employer of 2014 by major recruitment social media in China. Volvo Cars China was for example named 'The Top 30 Shanghai Best Employer of 2014' by Zhaopin.com, one of the biggest job search websites in China. Furthermore, Volvo Cars China was named as 'The Top 100

China Best Employer of 2014' by Dajie.com, a new recruitment social media. In Sweden, Volvo Cars rose sharply in Universum's list of most attractive employers according to engineering students from colleges and universities across Sweden: from number 26 in 2012 to number 13 in 2013 and number 8 in 2014. Moreover, Volvo Cars was ranked as Sweden's fourth most attractive multinational employer by Randstad Award.

#### **The Volvo Cars Culture**

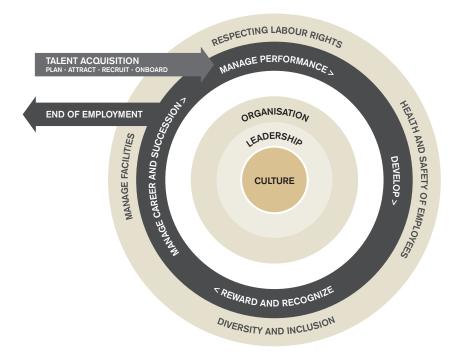
The Volvo Cars Culture is expressed by three cultural values that all employees should live by: Passion for Customers & Cars; Move Fast, Aim High; and Real Challenge & Respect. Our Volvo Cars Culture unites us as a company and it starts with our commitment to making a difference in people's lives. We define our culture by three values:

- Passion for customers and cars: Being curious and customer oriented in everything we do.
- Move fast and aim high: Seeing and seizing opportunities.
- Real challenge and respect: Taking initiative and acting on your experience.

#### The worldwide Volvo team

Around the world Volvo Cars employs about 26,000 people. Employees have opportunities to work cross-functionally in a dynamic global organisation. The diversity of personal backgrounds, skills and experiences not only makes the company strong in a global business environment – it also enriches the daily working life at Volvo Cars. In 2014, Volvo Cars expanded the business by welcoming new members to the global team. This included close to 300 new employees from one of our subcontractors, Johnson Controls Interior, from which the assembly business for headliner and tunnel consoles was insourced into our plants in Ghent and Torslanda. At the Ghent plant the majority of the insourced assembly workers are female, which contributes to increased diversity within the plant. In Torslanda, the opening of a brand new, SPA-prepared body shop, in combination with stronger demand for existing cars, means that Volvo Cars will re-introduce the third shift in the spring of 2015. This related recruitment of around 1,300 employees further underlines the role of Volvo Cars as one of the largest employers in Sweden. Volvo Cars also expanded its China operations in 2014 and increased the number of employees at the Chengdu plant by around 500.

Volvo Cars experiences low employee turnover rates (3.7% in 2014). The higher employee turnover rates in China compared to Sweden and Belgium are due to general labour market trends. The average employee tenure at Volvo Cars is 14 years, which indicates that employees who join Volvo Cars stay for many years.



In recent years Volvo Cars has expanded its global operations, which has led to an increasing number of employees who have worked for Volvo Cars for less than five years.

#### The people value stream

To become a healthy and high-performing organisation and enable our employees to build the future of Volvo Cars we need to offer an attractive and stimulating work environment. This is done by leveraging on Human Resources main processes shown in the People Value Stream (see figure above).

Firstly, as shown in the middle circle, we secure the flow of employees in the organisation – by understanding the competence needs of tomorrow and making sure we attract, recruit and retain the right employees.

Secondly, as is shown in the inner circles, we build the culture and leadership needed to develop a high-performing organisation.

Thirdly, as shown in the outer circle, Volvo Cars has identified three fundamental areas. These are Health & Safety, Diversity & Inclusion, and Respecting Labour Rights. These areas underpin our People Policy, which aims to ensure that Volvo Cars adheres to and respects labour rights, offers a safe and sound working environment, from a physical as well as a psychosocial perspective, and gives all employees equal opportunities.

The implementation and integration of the people value stream processes will largely determine the health of the organisation and Volvo Cars' competitive advantage in terms of human capital vis-àvis competitors. In this chapter, more elaborate descriptions are provided on the middle circle of the model – People and Competence. The areas that form the outer circle will be discussed in later chapters.

#### People and competence

Volvo Cars invests in the continuous development of its employees to create value for the company. This entails having an understanding of the competence needs of today and tomorrow in order to both develop the competence of our current colleagues and attract the right external candidates and business partners. The overall learning vision is to enable employees to be active in driving their own development, while Volvo Cars moves from being a learning provider to being a learning enabler and promoter of knowledge sharing. This is what composes the middle circle in the People Value Stream model and how Volvo Cars aim to secure the flow of people and access to competence: by offering continuous performance management, professional development, reward and recognition to employees, and career management support.

#### Performance management

The Volvo Cars corporate culture is the foundation on which its employee performance management framework is based. Every employee is responsible for defining personal goals and development activities in order to support the business and prepare themselves for future challenges. The manager's responsibility lies in enabling this process by leading, managing and coaching with relevant feedback and support. During 2013, a new method of performance rating was launched. The main purpose of the rating is to give a reflection of the extent to which employees fulfil the main requirements in their job descriptions, thereby identifying future development needs, career opportunities and reward (salary, bonus, etc.). The rating is done once a year and all employees are expected to use the rating system unless there are legal obstacles to doing so.

#### **Developing leaders**

Strongly connected to developing and maintaining Volvo Cars Culture is leadership. To us, leadership is about ensuring that the company's leaders share a common vision for the future and that they provide good role models for employees to follow. Therefore

#### RATE OF EMPLOYEE TURNOVER 2014 BY GENDER AND EMPLOYMENT TYPE

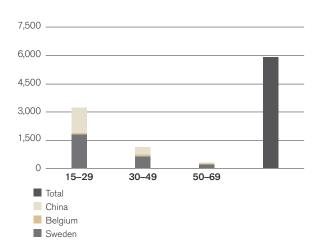
Turnover %	Female	Male	Blue collar	White collar	Total
Total					
2013	N/A	N/A	N/A	N/A	3.8%
2014	N/A	N/A	N/A	N/A	3.7%
Sweden					
2013	2.8%	3.1%	2.5%	3.5%	3.0%
2014	2.7%	3.0%	2.5%	3.6%	3.1%
Belgium					
2013	5.5%	5.1%	4.9%	6.4%	5.1%
2014	5.1%	4.9%	5.3%	2.6%	4.9%
China					
2013	N/A	N/A	6.5%	10.9%	9.6%
2014	N/A	N/A	7.7%	10.7%	9.1%



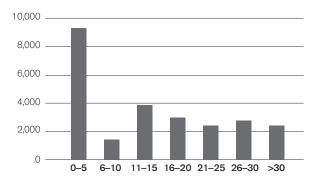
#### NUMBER OF EMPLOYEES PER EMPLOYMENT TYPE

	White collar	Blue collar	Total
Global	11,391	14,689	26,080
Sweden	7,643	8,340	15,982
Belgium	392	3,773	4,165
China	1,654	2,244	3,898
Thailand	25	0	25
Malaysia	27	314	341
Market Companies	1,931	18	1,669
Sweden			
Torslanda plant	247	3,182	3,429
Gothenburg excluding Torslanda plant	7,077	1,911	8,770
Skövde incl Floby	367	1,663	2,029
Olofström	170	1,584	1,754

#### NEW HIRES AND REHIRES 2014 BY AGE<sup>1</sup>



#### EMPLOYEE TENURE<sup>2</sup>: NUMBER OF YEARS WITH VOLVO CARS



<sup>1</sup> New hires and rehires include regular, temporary and International Service Employee (ISE) inbound employment.

<sup>2</sup> As per December 31, 2014; Sweden, Belgium and China; white collar and blue collar.

we aim to develop leaders for a global market who are courageous, accountable and empowering, and who apply our six humancentric leadership behaviours in the daily work: Create Meaning, Customer Focus, Show Courage, Make Things Happen & Innovate, Believe in People, and Challenge & Support.

Volvo Cars believes that our managers have a fundamental role to play in attaining our business objectives and in the engagement and development of all our employees. To equip them for this task, all new managers go through a 13-day Introduction to Management (ITM) programme when they start their new role. The aim of the programme is to make all managers aware of relevant procedures and methods within Volvo Cars, and to give them access to tools that might be of assistance in their daily work. During 2014, approximately 260 managers participated in this training, which included courses on diversity, discrimination law and the psychosocial work environment. The Swedish programme is used as a basis for the US and European programmes and was last updated in 2011. The Belgian programme is developed and delivered locally, as is the Chinese programme. All our procedures and regulations are updated regularly by the relevant experts in Sweden, Belgium and China. The programme has consistently scored above five points on a six-point scale in participants' evaluations.

During 2014, all Global Leadership Team members (150 most senior managers) participated in a mentoring initiative called 'Go Out and See', in which each senior manager set up a mentoring relationship with three cross-functional managers. This enables senior managers to hear first-hand about the realities in different parts of Volvo Cars, and provides first-line managers with the opportunity to learn more about the company strategy and the challenges the company is facing.

#### **Developing employees**

Volvo Cars strives to understand the competence needs of tomorrow and act on them today. Our goal is for each employee to have a personal development plan, developed in dialogue with his or her manager. Development plans will lead to a variety of development activities – education, training, courses, skills development, leisure studies, knowledge sharing or just pure experience. The purpose is to ensure we develop our people based on what is best for individual employees and the business as a whole.

During 2014, Volvo Cars offered approximately 500 different courses in 3,000 sessions, with a total of almost 40,000 participants. The main training areas included: product-related issues (engineering); IT systems and tools; leadership and organisational development; process-related manufacturing; compliance and Code of Conduct; and safety, health and environment. Volvo Cars also offered competence development activities such as mentoring, project work, job rotation and literature studies, which are important parts of the learning model.

With public funding such as the European Social Fund, Volvo Cars has had the opportunity to allocate even more resources to training and competence development in recent years. In future, Volvo Cars will continue to work with public funding through partnerships with suppliers and other companies, with the aim of making available even more resources for competence development and improving collaboration and cooperation with relevant stakeholders. We use the 70/20/10 concept – 70% on-the-job experience, 20% learning from others, e.g. mentorship, and 10% courses and education.

Volvo Cars also provides employees with international opportunities to develop between different Volvo Cars operations and locations. For example, Volvo Cars offers opportunities for exchange programmes between Volvo Cars China and Sweden. Within these programmes, Volvo Cars' employees get the opportunity to work in China and vice versa for a specified period. The purpose is to strengthen individual and functional competence, enable sharing and learning across different locations, build networks for continuous collaboration within Volvo Cars and to support its development into a coherent global organisation. In 2014, around 20 employees from the Purchasing and Research & Development units participated in the exchange programmes. Other initiatives include short- and long-term International Service Employee (ISE) assignments and shadowing programmes whereby a Volvo Cars' employee gets the opportunity to observe another employee or manager in a different operation or location.

Career and succession management at Volvo Cars is about identifying, developing and maximising career opportunities for our employees, making Volvo Cars the employer of choice and ensuring we have the people we need to build the future for Volvo Cars.

#### The Volvo Car Academy

The Volvo Car Academy is a department established in 2013 to work as a platform for training within Volvo Cars. Its main task is to develop new learning activities as well as translate strategic competence needs within the organisation to training activities and to deliver corporate leadership training. Through these training activities, the Academy supports transparency and builds synergies between different functions within the organisation. The learning activities are developed in partnership with business units and at regular intervals with business schools, technology schools and universities in order to provide relevant and quality assured training according to the various needs across different functions within Volvo Cars. The Volvo Car Academy oversees and governs supplier training, and is the provider for an online portal where all employees can find various training material, information and e-learning.

#### **Reward and recognise**

Volvo Cars has two global incentive programmes: a global cashbased short-term incentive programme (STI) for all employees and a long-term incentive programme (LTI) for executives and senior managers. The design and pay-out of these programmes are subject to the Board of Directors' annual approval. Both programmes have common targets for all employees and are not subject to individual differentiation. The purpose of the STI programme is to strengthen global alignment among employees around Volvo Cars' vision, objectives and strategies and to encourage all employees to achieve and exceed the business plan targets in order to reach the long-term targets. The purpose of the LTI programme is to attract, motivate and retain key competence within Volvo Cars. The LTI programme is based on calculated market value of Volvo Cars. Pay-outs were made for both the STI and the LTI programmes in 2014.

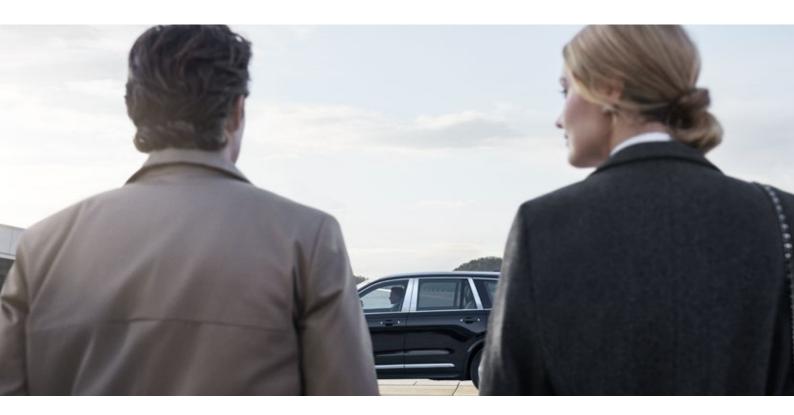
#### Pension and insurance policies

Against the background of the aspiration to be the employer of choice and being a responsible company, Volvo Cars started a project to develop a global pension and insurance policy in 2013. The policy was approved at the end of 2013 and implementation commenced in 2014. According to the policy all employees at Volvo Cars shall be sustainably and respectfully insured and all employees shall:

- Have financial security in cases of disability, work injury and during company travel
- Know that there is an existing survivor's policy in case of death.
- Know that occupational pensions are long-term and sustainable
- Know that Volvo Cars' old age pension benefits are competitive in the market and in the country of residence.

To implement the new policy, Volvo Cars developed the Volvo Cars' Global Pension & Insurance Strategy. As a first action in the strategy Volvo Cars successfully developed a new global Business Travel Insurance. The new insurance is valid from January 1, 2015 and covers all employees all over the world when travelling for business. In 2015, further steps will be taken to implement the global pension and insurance policy. The focus will be on investigating to what extent employees have financial security in case of disability or work injury, as well as on existing survivors' policy in case of death. When the mapping has been carried out, decisions on next steps will be taken.

In Sweden employees' occupational pensions are managed through the Swedish corporate pension fund (Volvo Personvagnars Pensionsstiftelse VPPS), which is a separate legal entity. VPPS has incorporated ethical considerations regarding environment, consumers, employees and communities in its investment policy. These considerations are derived from Volvo Cars' Code of Conduct and will be further developed during 2015.



## HEALTH AND SAFETY OF EMPLOYEES

Health encompasses all aspects of our organisation and is a crucial factor in delivering performance now and in the future.

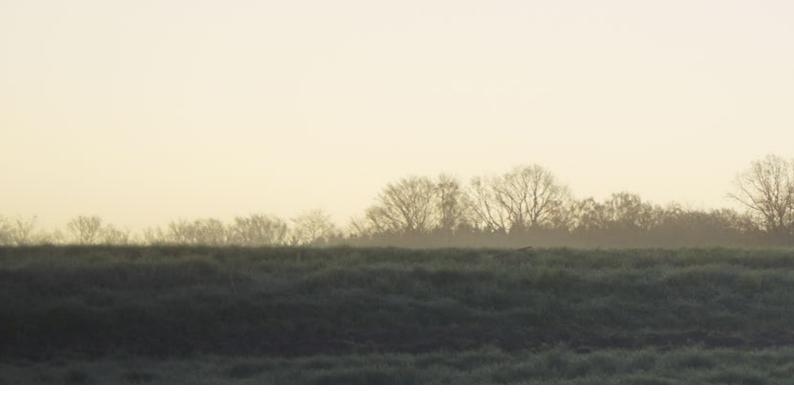
Volvo Cars' ambition is to create a suitable, structured working environment jointly with its employees. All Volvo Cars operations globally should meet the same safety compliance standards. The same tools and health and safety organisation applies to all of Volvo Cars' operations. It should be as safe to work at a production unit in China as it is to work at a similar unit in for example Sweden.

#### Health & safety governance

Volvo Cars' corporate health and safety department ensures legal compliance and monitors the company ambition of being the employer of choice. Each division is supported by health and safety specialists who coordinate and manage health and safety efforts. Volvo Cars also contracts an external health service company with medical and technical professionals who assist with surveys, assessments and advice. To guarantee its commitment to the health and safety of all employees, Volvo Cars has established the following structures and procedures:

• Volvo Cars Work Environment Directive covers Volvo Cars' policies on labour practices and working conditions. The directive aims to improve the work environment, health and safety. It describes organisational responsibility, work environmental programmes, job adaptation and rehabilitation, company health care and future work environment.

- The Work Environment Committee has the mission to develop Volvo Cars' work environment policy and to ensure compliance. The committee also encourages line organisations to develop goals and action plans relating to the work environment, and works to enhance cooperation within Volvo Cars and the industry. All committees are driven by local management. In 2014, committees were established in China.
- The Safety Review Board 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.
- Leadership Safety Walks are opportunities for managers to discuss safe behaviour and ways of improving safety with employees in their actual job function.
- Health & Safety integrated in Volvo Car Business Management System is the management system for systematic work with, and follow-up of, work environment issues which brings about opportunities for continuous improvements and maintains the focus on work environment issues on a daily basis in manufacturing operations. 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 Volvo Cars.



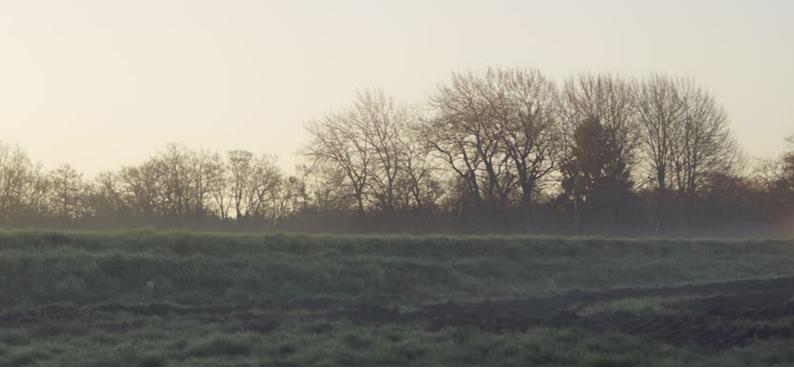
- Volvo Cars' Safety Officers function as representatives of all employees and must work to promote a satisfactory work environment. At Volvo Cars Sweden, Safety Officers and union representatives are involved in the planning and implemention of measures. This involves studying working conditions, planning remedial actions and conducting annual follow-ups. Volvo Cars' Safety Officers are vital project resources and agents of change, and must take part in the initial stages of such measures.
- The Green Cross 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.

#### **Safety leadership**

Volvo Cars acknowledges that as an employer it is responsible for organising and conducting its operations in a manner designed to prevent accidents and work-related illnesses. In the past ten years there has been a downward trend in the risk of sustaining a work-related injury or illness at Volvo Cars. Employee participation is one of the cornerstones in Volvo Cars' health and safety approach, and for this reason Volvo Cars conducts company-wide injury prevention programmes. As part of this programme all employees are responsible for reporting injuries and serious incidents to their immediate superior. Volvo Cars compiles an annual report of all reported injuries and incidents, which provides a basis for our preventive programmes. The action plan for work environment activities places particular emphasis on reporting incidents which might have resulted in personal injury. Volvo Cars' injury prevention programmes cover all units and operations in Sweden, as well as the production units in Belgium and Malaysia. China will be covered during 2015.

Volvo Cars will also monitor near-misses, accidents and incidents in all its operation sites through the TIA system. This is an internet-based system used for reporting incidents and risk observations, in terms of health and safety and environmental issues, directly into any computer nearby. When fully operational, the system will be an important additional tool for preventing risk. In 2013, the TIA system was available at Volvo Car Customer Service (VCCS) and Volvo Cars Torslanda (VCT). As part of the Aspired Safety Culture programme, the TIA system was rolled out further in 2014 and will be implemented globally in 2015. In 2014, the near-misses and risk observations reported through TIA consisted of 46,311 cases.

Over the years Volvo Cars has worked systematically to reduce occupational risks through training programmes with a focus on high-risk areas and personal behaviour. A comprehensive training programme for managers and Safety Officers is one of the means adopted to achieve this aim. Training and supplementary training on work environment is offered to Safety Officers and all first-line managers. Middle managers are offered two days of working environment training and senior managers a half-day introduction.



In 2014, Volvo Cars kept up its efforts on training for new employees in health and safety leadership.

Volvo Cars' new 'Aspired Safety Culture' leadership programme is part of a broader leadership programme and includes training and coaching in proactive safety culture. The programme aims to encourage greater team involvement in incident reporting and an increased focus on preventive ways of working, through, for example, improved risk observations. A pilot started in Volvo Cars Body Components and Volvo Cars Ghent in the second quarter of 2014. In 2015, the Aspired Safety Culture programme will be rolled out globally throughout Volvo Cars including China.

#### Safety in numbers

Volvo Cars' goal is to achieve a lost time case rate (LTCR) of 0.1 by 2020. To reach this goal, Volvo Cars will work intensively to achieve behavioural change through the Aspired Safety Culture programme, along with continuous development of reporting tools, corrective actions and organisational structure. In 2014, the lost time case rate (LTCR) reduced by 45% and was at an all-time low of 0.34, with a total of only 65 cases. This means that injuries have reduced by 77% since 2007.

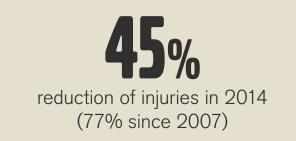
Volvo Cars also has high ambitions to reduce accidents, injuries and near-misses among its suppliers. In 2014, Volvo Cars engaged 450 suppliers in 300 reconstruction projects in Sweden. Volvo Cars' representatives cooperate on site with suppliers in each reconstruction project, to identify and mitigate health and safety risks. During 2014, no serious injuries occurred in any of the reconstruction projects. However, three injuries were sustained among contractors during 2014.

#### **Health in numbers**

Sick leave among employees in Sweden and Belgium has been decreasing as a result of Volvo Cars' systematic health and safety efforts. Volvo Cars achieved a continued low sickness absenteeism level of 4.5% in 2014. Variations in sick leave on this low level are natural not necessarily a cause for concern. In general the factors contributing to the low sickness levels at Volvo Cars are a combination of efforts in terms of internal procedures, governmental regulations and behavioural change. Outside Europe, sick leave is measured differently. Volvo Cars' ambition is to unify measurement and reporting over its entire operations.

#### Supporting a sustainable work-life balance

The automotive market puts high demands on Volvo Cars, which means that the employees of Volvo Cars need to be able to work at a high tempo and adapt quickly to new demands and changing circumstances. To prevent employees from suffering stress-related illnesses, Volvo Cars recognises the need to support the organisation, management and employees in achieving a sustainable work-life balance. In 2014, Volvo Cars focused primarily on providing preventive health measures to employees to support a sustainable work-life balance. A pilot project was carried out in which health coaches were appointed for white collar employees in the Quality and Customer Service functions. The purpose of the health coaches is to engage and support employees in their respective units in preventive health issues. The coaches are employees who have applied and been appointed by managers within their units. They dedicate time and resources to support their units and conduct common activities such as walks during lunch and testing new sports activities. All health coaches appointed receive education and support from Volvo Cars' partner organisation, Feelgood, which specialises in occupational health services. The project will continue in 2015.



'Sustainable Work Life' is a project that started in 2013 and continued throughout 2014. The aim of the project is to ensure that manufacturing sites and office facilities are better suited for Volvo Cars' ageing workforce. In 2014, Volvo Cars conducted ergonomic reviews of the Ghent assembly line, as a part of this project. Reviews will also be conducted in the production stations to better understand how each activity is performed and what type of physical strengths are needed to perform it.

Volvo Cars is currently revising its health care plans, organisation and tools to improve the way it deals with issues such as psychosocial health, stress, and social environment among white collar employees.

#### Designed around you @ work

In 2013, Volvo Cars rolled out a change programme called 'Designed Around You @ Work' that involves 10,000 employees at Volvo Cars in Sweden and Belgium. This change programme entails redesigning the Volvo Cars workspaces along activity-based lines. Employees will have redesigned workspaces with ergonomic equipment and updated technology. The change programme also encourages changes in behaviour. With more open spaces and more areas to meet and socialise, Volvo Cars employees have better opportunities to collaborate and learn from each other. The vision is to create a workplace that can support Volvo Cars' long-term goals; increasing customer orientation, innovation, productivity, product quality and internal collaboration. The pilot project with an office building in Gothenburg, Sweden was well received and Volvo Cars' IT office moved into an activity-based work space in January 2014. In 2015, Volvo Cars plans to extend this programme further and implement it in other countries of operation as well.

#### **Chemicals management**

Volvo Cars carefully manages the use of chemicals within the company at all stages – from substances used by research and development (R&D), to substances used in car production until the chemicals become waste. The overarching ambitions are to:

- minimise the use of hazardous chemicals
- reduce the negative impact of chemical substances on the environment
- · ensure the safe handling of chemicals

Every chemical substance used at Volvo Cars has undergone a risk assessment and approval process before being introduced. Upon approval, safety instructions are created for every workplace and every product. Once a year, all sites conduct an inventory of chemical substances. In 2014, no chemical accidents were reported.

Volvo Cars has implemented cross-functional working groups and tools to manage the use of chemical substances. The working groups, in which all production sites are represented, work closely with R&D, the purchasing department and the aftermarket organisation. Volvo Cars also participates in external task forces such as the REACH task force of the European Automobile Manufacturers' Association (ACEA). The tools (such as Chemsoft and the IMDS – see above) support Volvo Cars not only in minimising and phasing out certain substances, but also in their communication obligations (such as REACH reporting), and also in managing the implications of changing legislation. During 2014 Volvo Cars translated and implemented Chemsoft in China. One resource has also been appointed for chemicals management in China.

During 2013 a reorganisation project for chemical management was initiated. The objective of this project is to streamline the processes of chemical management by interconnecting the different functions working with chemicals in a better way. The new process, effective as of 2014, will also include definitions and control KPIs.

#### TOTAL NUMBER OF ACCIDENTS

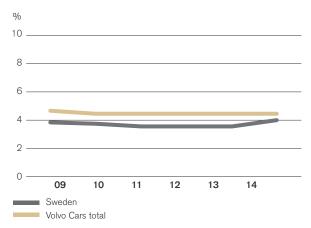
	2009	2010	2011	2012	2013	2014
Injuries <sup>1</sup> (LTCR)	0.5	0.6	0.7	0.55	0.62	0.34
Serious injuries <sup>2</sup>	6	6	15	9	6	1
Injuries <sup>3</sup> contractors	_		17	21	9	3
Fatalities	0	0	0	0	1	0

<sup>1</sup> LTCR is defined as the number of work/occupational accidents and illnesses reported and at least one day sick leave, divided by 200,000 hours worked (equivalent to 100 man years).

<sup>2</sup> Defined as total number of injuries leading to fractures, unconsciousness, etc.

<sup>3</sup> Lost time case (LTC) figures only, worked hours for contractors is not measured therefore no figures for LTCR for contractors.

#### SICK LEAVE PER AVAILABLE HOURS (%)



## **DIVERSITY AND INCLUSION**

We have a global talent approach, based on holistic diversity that will be visible on all levels throughout our company.

Our ambition is to create a work environment in which any individual or group can be and feel welcomed, respected, supported and valued. Our belief is that an inclusive and welcoming climate embraces differences and offers respect in words and actions, which in turn enables all people to fully participate in our organisation and support our vision and mission.

#### **Diversity governance**

The new People Policy was implemented in 2014 and outlines the values and expectations that we have for diversity and equal opportunities within our organisation. Volvo Cars' Diversity Steering Committee was established with the aim of securing continuous improvement of diversity work. Members of the Committee are the Diversity Manager, three representatives from the Executive Management Team, and two from the Global Leadership Team. Volvo Cars' Global Diversity Council consists of 18 Culture and Diversity Champions who meet bi-monthly. A Culture and Diversity Champion is appointed for each business area in Volvo Cars, with the aim of integrating the diversity work more effectively into its daily operations. The Global Diversity Council is chaired by the Diversity Manager, and its role is to pursue diversity issues in Volvo Cars and support diversity efforts, focusing on concrete actions.

#### **Diversity targets**

Volvo Cars is focusing on improving and incorporating a global perspective on culture, diversity and inclusion in all processes throughout the organisation. In 2015, we will focus efforts on selected global HR processes with the aim of ensuring that diversity and inclusion perspectives are integrated in them. Volvo Cars' specific diversity target is to achieve 35% women in leading positions by the year 2020. In order to achieve this, we have set a target for 2015 that 40% of those recruited for leading positions during the year should be women. The specific activities launched to reach these targets are defined in our Diversity Plan.

#### **Diversity plan**

Volvo Cars' Diversity Plan 2013–2015 includes a series of activities to accelerate progress towards increasing diversity and to utilise diversity within the company. The Diversity Plan has four focus areas:

- Improvement of diversity and inclusion communication: we will continue to improve our internal communication regarding our vision and work within the areas of company culture, diversity and inclusion. In 2014, the communication on our intranet was significantly improved in this regard. Ongoing communication also takes place through our internal employee magazine Agenda.
- The development of a Gender Diversity Plan: a Gender Diversity Plan focusing on recruitment processes is under development. The plan includes tangible targets for every business unit, and each unit drives their activities to reach their targets.

During 2014 we also launched an initiative aiming to identify and nominate Volvo Cars culture role models. The idea behind this initiative is to showcase the great variety of people, competencies and roles within our organisation with the aim not only to foster a sense of inclusion for all employees but also to highlight the need for diversity if we are to succeed as a company. People who are nominated are featured in Volvo Cars' employee magazine, Agenda.

#### Outlook 2015

As Volvo Cars' current Diversity Plan is valid for 2013-2015, we will focus during the coming year on developing targets and planning activities for 2016-2018. This includes setting more elaborate KPIs for both diversity and avoidance of harassment.

A main focus during 2015 will be to achieve the target that 40% of recruitments to leading positions during the year should be women. Connected to this, another major focus for the coming year will be to integrate diversity, inclusion and culture perspectives in selected global HR processes. We will also continue our efforts to attract female graduates to increase the number of women in leading positions, and we will review our strategy for attracting new employees with diverse backgrounds.

#### **Diversity in numbers**

In 2014, the Volvo Cars Executive Management team consisted of 11 people: 10 men and 1 woman. The Board of Directors consisted of 13 people: 11 men and 2 women. Thus Volvo Cars

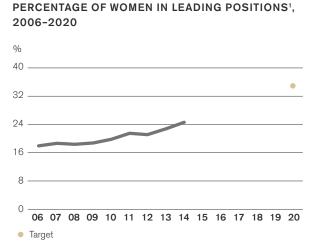
faces the challenge that the ratio of women attaining senior positions is dramatically lower than that of men. We regard this to be a significant concern, which is why we see it as a top priority to address the imbalance.

In March 2015, the Board of Directors took the decision to have a balanced composition when it comes to gender and by 2020 it is the ambition that each gender shall have a share of at least 40% of the board members elected by the Shareholders' Meeting. The Unions represented on the Volvo Car Board of Directors will be encouraged to apply the corresponding goal when appointing their representatives.

The proportion of women in leading positions (managers with direct reporting responsibilities, programme managers, project leaders and specialists in leading positions) increased from 18% in 2006 to 24.5% at the end of 2014. This is the result of dedicated work over a long period, which will be continued during the coming years.

#### Fair and equal treatment

An important aspect of diversity is to ensure fair and equal treatment of all employees. Volvo Cars has implemented clear remuneration principles and a structured salary process to ensure fair and equal payment. According to the Volvo Cars People Policy, wages and benefits shall always be at least equivalent to legal or industry standards. Information on wages and benefits shall be available to employees in accordance with applicable law.

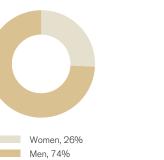


<sup>1</sup> 'Leading position' covers managers with direct reporting responsibilities, programme managers, project leaders and specialists in leading positions. As of 2014, the data includes China, Belgium and Sweden.

### VOLVO CARS - GENDER DISTRIBUTION WHITE

COLLAR - GLOBAL









The salary comparisons in the tables below show that there is a slight tendency towards lower salaries for women throughout all of the categories of white collar workers. The discrepancy is the highest in the most senior position category. Volvo Cars works continuously to eliminate salary discrimination by gender. For example, we have a gender-neutral salary policy and require that the same proportion of salary raise is allocated to women and men in the annual salary revisions. The differences that still 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, meaning that they have participated in fewer revisions within each group. Within the group of blue collar workers, salaries between women and men are levelled within the employee category overall.

#### **Training in diversity**

Since 2010, Volvo Cars has provided an extensive diversity training programme for managers. In 2013, Volvo Cars decided to conduct training for Diversity Champions and Managers on harassment, discrimination law and equal opportunities. During 2014 a total of 160 people attended this training, which included 75% of all Diversity Champions. The training will continue during 2015 in selected functions.

In identified functions, extra focus on harassment training has been completed during 2014.

#### **Diversity initiatives in 2014**

Volvo Cars sees diversity as 'business as usual', but it also has certain activities that are aimed at supporting its diverse workforce and environment. Those initiatives include, for example, a Swedish mentor programme that aims to create opportunities and networks for people with other backgrounds than Swedish, and a Swedish employee-founded initiative with the purpose of increasing awareness within Volvo Cars about co-workers living with children with disabilities and special needs (Disability parenthood network). Volvo Cars also established a female committee within the trade union in Volvo Car China. The committee is devoted to ensuring equal rights for female employees. During 2014, the committee set up nursing rooms in Jiading and Pudong offices for female employees who have recently returned from maternity leave. In Belgium, diversity initiatives include facilitating awareness of different nationalities among Volvo Cars employees through a cultural awareness programme. Other initiatives include Volvo Cars' Business Women's Advisory Board and the Business Women's Network (BWN), which both aim at encouraging women's networking activities and knowledge sharing. Initiatives to support young unemployed people are also driven by Volvo Cars, such as the Volvo Experience Programme.

#### Volvo Experience Programme

The Volvo Experience Programme (VEP) is an internship programme open to long-term unemployed people in Sweden between the ages of 18 and 24. By providing the opportunity to carry out a seven-month internship at Volvo Cars, the aim of the VEP is to provide useful work experience that can help young unemployed people to get a job or inspire them to enter further education in the future. To that end, 15% of the working time within the programme consists of mentoring and training activities. Volvo Cars' aim is that the yearly number of interns should be equivalent to 1% of its total Swedish workforce, which amounts to about 150 interns every year.

The VEP was initiated by Volvo Cars President & CEO Håkan Samuelsson and launched (together with the Swedish Employment Service) in 2013. The programme has developed during 2014, and a fourth intake with 60 interns will be run in 2015. From 2015 it will be possible to get an internship as part of the Volvo Experience Programme in various blue collar positions.

For 2015 further initiatives within the area of diversity are planned, such as PEPP, which is a mentor programme targeting girls and women at university and high school level to raise interest among females in training and working within the field of engineering. Volvo Cars is also preparing for another mentoring initiative in cooperation with 'Öppet Hus' (a Swedish organisation with a diversity focus) that aims at helping young people to enter the Swedish labour market.

#### BASIC SALARY RATIO BETWEEN WOMEN AND MEN BY EMPLOYEE CATEGORY (WHITE COLLAR WORKERS)<sup>1</sup>

2014	Administrative service	Administrative assistant, Engineer entry position	Engineer experienced	Engineer senior, supervisor production	Group Manager, Qualified professional	Group Manager, Appointed Specialist, Project Manager	Section Manager	Department Manager
Ratio salary <sup>2</sup>	1.02	1.00	1.01	0.98	0.99	0.98	0.97	0.85

<sup>1</sup> Extract: Sweden only.

 $^{\rm 2}$  Salary ratio indicates women's salary in relation to men's in each employee category.

#### BASIC SALARY RATIO BETWEEN WOMEN AND MEN BY EMPLOYEE CATEGORY (BLUE COLLAR WORKERS)<sup>1</sup>

2014	14 Administrative service, logistics		Highly skilled worker 1 <sup>3</sup>	Highly skilled worker 2 <sup>3</sup>	
Ratio salary <sup>2</sup>	1.02	1.00	0.98	1.00	

<sup>1</sup> Extract: Sweden only.

<sup>2</sup> Salary ratio indicates women's salary in relation to men's in each employee category.

<sup>3</sup> Highly skilled workers are divided into two different categories based on salary grade according to increasing level of qualification.



## **RESPECTING LABOUR RIGHTS**

For Volvo Cars' future success it is of greatest importance to attract and retain skilled and motivated employees. Adhering to and respecting labour rights is a prerequisite for this.

#### Labour rights governance

Volvo Cars' efforts to ensure that we respect labour rights throughout our operations worldwide are governed by our People Policy. This policy, which was approved by the Board of Directors and launched in 2014, is about getting the basics right in terms of working conditions. The People Policy covers all units globally and is guided by international human rights standards, including the Universal Declaration of Human Rights, the International Labour Organization's Declaration on Fundamental Principles and Rights at Work, and the United Nations Global Compact.

To strengthen this work further, a new Global Labour Affairs Directive was developed and approved at the end of 2014 The Directive will be launched during spring 2015. The purpose of the Directive is to ensure that all units globally meet or exceed requirements in labour law legislation and applicable collective labour agreements, as well as encouraging a sound dialogue with trade unions or other employee representatives. A yearly self-evaluation process is managed by Volvo Cars' Global Labour Affairs coordinator.

#### Freedom of association and collective bargaining

Volvo Cars' People Policy clearly states that all employees have the right to form or join associations of their own choosing concerning the relationship between the employer and the employees and to bargain collectively. Volvo Cars does not accept disciplinary or discriminatory actions against employees who choose to peacefully and lawfully organise or join an association.

In the China Operations a trade union employee labour dispute coordination mechanism was developed during 2014 and launched at the beginning of 2015, with the purpose of protecting the interests of each employee and ensuring that employees are treated fairly. The trade union in China Operations also plays an important role in organising social activities and health activities for their members.

Volvo Cars follows national legal or collectively bargained information duties and minimum notice periods regarding significant operational changes. In Sweden approximately 100 people, consisting of representatives from Human Resources, trade unions and local safety representatives, were trained in the legal negotiation process for major changes at the workplace, an initiative that was started during 2013. In 2014, globally, approximately 80% of Volvo Cars' employees were covered by collective bargaining agreements, a decline from 85% due to the growing number of employees in China, where employees are not currently covered by collective bargaining agreements.

Looking outside our own organisation, our Code of Conduct requires that all our suppliers uphold freedom of association and the right to collective bargaining in their operations, where legally possible. For further information about Volvo Cars' labour rights management in the supply chain, please see page 68 in this report.

#### Child labour and forced labour

Child labour is not accepted in any of Volvo Cars' businesses. Volvo Cars will not employ any persons below a country's legal minimum working age and never a person below 15 years old, even if the legal minimum working age in a country is below 15 years. Government-authorised job training or apprenticeship programmes that are clearly beneficial to the participating individuals may be exceptions.

Furthermore, forced labour is not accepted in any of Volvo Cars' businesses. We do not engage in or support the use of forced labour, nor shall any employee be required to deposit identity papers at the start of employment. Employees are free to leave their employment after a notice period, as required by law and contract. Volvo Cars shall guarantee that all working conditions comply with all statutory requirements. All employees have the right to have written contracts, in a language that they can easily understand, specifying their terms of employment.

As made clear by our Code of Conduct, we do not accept child or forced labour at our suppliers, dealers and subcontractors. During 2014 Volvo Cars Indirect Purchasing carried out a pilot for an extended Supplier Evaluation Model, where questions regarding child labour, forced labour, harassment and discrimination, among others, were added to the self-evaluation for suppliers. For further information about Volvo Cars' labour rights management in the supply chain, please see page 68 in this report.

#### Harassment and discrimination

As part of Volvo Cars' commitment to having a diverse and inclusive workplace, Volvo Cars have zero tolerance towards discrimination, harassment and bullying. All employees are expected to treat one another with respect, dignity and common courtesy. The overall regulation is found in Volvo Cars' People Policy, with the underlying Discrimination and Victimization at Work Directive which gives definitions of harassment and discrimination, responsibilities and internal quality assurance audits, and guide managers and employees on procedures when an incident of harassment or discrimination has occurred at the workplace. These efforts strongly connect to our ambition to enhance diversity throughout our organisation and ensure equal opportunities for all our employees. For more information about this work, please see the chapter on Diversity and Inclusion in this report (page 48).

In 2014, eight cases of suspected harassment and discrimination were reported globally to local Human Resources. The cases were carefully investigated by local Human Resources or central Employee Affairs; two are still under investigation. In three instances corrective and supportive actions were taken and in one case the employment was terminated as a result of harassment. In the last two cases no evidence of wrongdoing could be found.

Non-discrimination is also an integral part of Volvo Cars' Code of Conduct, meaning that this principle also applies to all our suppliers and other business partners. For further information about Volvo Cars' labour rights management in the supply chain, please see the chapter on Value Chain Management in this report (page 68).

## **ETHICS AND INTEGRITY**

Volvo Cars expects all our employees to champion ethics and integrity in their daily work.

#### Ethics and integrity governance

Ethics and integrity are prerequisites for Volvo Cars' success as a company. Therefore, Volvo Cars addresses these issues on the highest level. The most senior position responsible for issues related to corruption, anti-competitive behaviour and compliance is the General Counsel and Senior Vice President Group Legal. The Corporate Compliance & Ethics Office was established in 2012 with the aim of promoting coordination in Volvo Cars' work on compliance, business ethics and integrity. The Compliance & Ethics Office is headed by the Chief Compliance & Ethics Officer who reports to the General Counsel and to the Board's Audit Committee. The Compliance & Ethics Office is responsible for implementing and maintaining an effective global Compliance & Ethics programme covering the areas of anti-corruption, anti-trust and competition law, data privacy and export control within Volvo Cars.

Historically, the organisation has been subject to multiple group-wide risk assessments every year by different corporate functions. For example, risk assessments have normally been conducted by Internal Audit, Compliance and Internal Control. A cross-functional collaboration has been launched to integrate these processes so that joint risk assessments can be performed covering all the various risk assessment needs. In this way, overall risk interviews can be done once rather than multiple times in different functions creating a more nimble process.

In 2014 the Compliance & Ethics Office also established a cross-functional Responsible Business Network with participants from different Volvo Car Group functions. The main purpose of this network is to ensure global alignment in sustainability and compliance issues and to be a sounding board for policy development, implementation and communication in these areas. This network played an essential part in the global roll-out of the Code of Conduct during 2014. The Compliance & Ethics Office also has an ongoing collaboration with the global network of Legal Counsels which enables global reach of the Compliance Programmes as well as local expertise in compliance-related matters.

#### Code of conduct

Volvo Cars strives to combine business objectives with social, ethical and environmental responsibility. This commitment is described in the Volvo Car Group Code of Conduct. The Code of Conduct applies to all employees, and Volvo Cars expects that all of its business partners will be governed by the same or similar principles as stipulated in our Code of Conduct. Volvo Cars updates the Code of Conduct regularly to comply with changing requirements and stakeholder expectations. The latest review of the Code of Conduct and its underlying policies and directives was completed in 2014. As part of this process, Volvo Cars conducted a risk assessment survey to identify legal and ethical risks that it is exposed to. The main risk areas identified were: Bribery & Corruption, Gifts & Events, Conflict of Interest, Health & Safety, and Intellectual Property. Following this work, updated corporate policies and a new version of the Code of Conduct were approved by the Board of Directors and launched in 2014. To make the documents more user friendly, the updated documents are shorter, easier to understand and more relevant to all employees and business units.

The updated Code of Conduct is based on the relevant international conventions and standards relating to corporate responsibility. More specifically, the Code of Conduct sets out to comply with the eight core conventions of the International Labour Organization (ILO) on labour rights, 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.

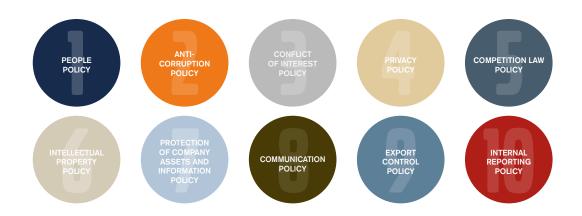
The Code of Conduct sets out the compliance and ethics topics which are relevant for Volvo Cars' business, and makes reference to important corporate policies. All employees must know and comply with all company policies and directives relevant to their work. The Code of Conduct is available both on the intranet and publicly at: http://www.volvocars.com/sustainability

#### Training employees in compliance and ethics

Training and internal communication represent an important part of Volvo Cars' Compliance & Ethics programme. Before implementing and communicating the new version of Volvo Cars' Code of Conduct in the spring of 2014, we challenged ourselves with the following questions: How do we generate real engagement in Volvo Cars, and how do we focus attention on ethical questions in a corporate environment? To address these questions we started a collaboration with Guido Palazzo, professor in Business Ethics at University of Lausanne in Switzerland, who developed a face-toface training concept on the theme 'Ethical blindness - Why do good people make bad ethical decisions?' This training forms the platform for the global implementation of our new Code of Conduct. In 2014, the 150 most senior managers (Volvo Cars' Global Leadership Team) and about 5,000 employees from all parts of the organisation around the world participated in the faceto-face training.

#### CODE OF CONDUCT

The Code of Conduct is our tool to help ourselves conduct business honestly and with integrity. Ethics is everyone's responsibility, starting from the top. By acting with integrity, we each do our part to create a company where we are proud to work.





'Ethical blindness' refers to the temporary inability to see the ethical dimension of a decision. The training concept explores the various psychological forces and effects that drive ethical blindness, and teaches basic knowledge on the content of the Code of Conduct and corporate policies. It aims to help employees understand not only why we need a Code of Conduct to guide us, but also how and when it should be used.

Part of the training is to play the 'Volvo Cars Dilemma game' in small groups. In the game, questions are asked about ethical dilemmas and every player chooses one of several options/ solutions, which is followed by a discussion about the rationale for their decision-making. Through this exercise the participants learn that there might be more than one way to solve an ethical dilemma and that different people approach things differently. It is not always about 'common sense'.

The training has created engagement and attention and increased awareness among our employees of our Code of Conduct. It has also been important for the understanding of risks and risk management as part of the Compliance Risk Assessment process within Volvo Cars, as the training includes a part where the participants share the ethical dilemmas that they have experienced in their own business situations.

In 2015, more training sessions will be held in additional units and countries and we will launch a new dilemma-based eLearning.

#### Bribery and corruption

Volvo Cars does not tolerate any form of bribery or corruption and it is the company's absolute ambition to comply with all applicable laws, rules and regulations in all countries where it operates. At Volvo Cars, it is policy not to engage in any action that could possibly be perceived as taking part in any kind of corruption. Volvo Cars' Code of Conduct includes clear provisions relating to bribery, corruption, conflicts of interest, gifts and entertainment.

Corrupt business practice is a global problem and Volvo Cars is present in many so-called high-risk countries. To address this risk Volvo Cars is reaching out in the different regions with internal training on the Code of Conduct as well as specific training on business ethics and anti-corruption. In November 2014, a supplier convention was held in China for 170 suppliers at which Volvo Cars' senior management emphasised the importance of 'clean business'. Business ethics and anti-corruption requirements are also included in contractual agreements with business partners, suppliers and dealers. Volvo Cars has a Compliance & Ethics Officer in China and will strengthen the presence in China with one additional resource in 2015. The governance is also strengthened with dual reporting to both the China Executive Management Team and the Compliance & Ethics Office on group level. Volvo Cars has started to establish a network of compliance and ethics ambassadors in its business organisation in relevant countries. These ambassadors will be supporting local implementation of training and assist in identifying local concerns.

In 2014 Volvo Cars implemented compliance with the Code of Conduct as a criterion for pay-out of employee incentives. This means that any confirmed breaches of the Code of Conduct by the employee may impact the employee's right to incentive pay.

# 5,000

employees from all parts of the organisation around the world participated in the face-to-face Code of Conduct training.

#### **Grievance mechanisms**

All employees at Volvo Cars have the responsibility, and are expected, to report any serious violation of the Code of Conduct to the appropriate representative within the company. In cases where employees do not feel comfortable reporting in this way, they have the option of sending a report to an email address managed by the Compliance and Ethics Office. This email address is communicated on Volvo Cars' intranet and website. In addition, a new 'Tell Us' system will be implemented during 2015 that will also make it possible to file reports on the web or by phone. The Tell Us system will be managed by an external supplier. Since 2012, suppliers and other business partners of Volvo Cars have been able to report Code of Conduct violations through our supplier portal website or on the corporate website.

Volvo Cars has a policy of non-retaliation, which clearly states 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 anonymously, where legally permitted.

The Compliance and Ethics Office is responsible for investigating reported violations of the Code of Conduct. All reported violations of the Code of Conduct that come to the attention of the Compliance & Ethics Office are investigated and reported to the Global Compliance Committee and the Board's Audit Committee. In 2014, 34 reports were recorded and investigated by the Compliance and Ethics Office. 60% of the reports were received through Volvo Cars' internal reporting email address. The most frequently reported issue was suspicions of bribery and corruption, followed by various conflicts of interests. Violations of Volvo Cars' People Policy were also frequently reported. After investigations, disciplinary actions were proposed when relevant and decided upon by the Global Compliance Committee. In a few serious cases, the result of the investigation has led to termination of employment.



## **PRODUCT RESPONSIBILITY**

Our safety vision: no one should be killed or seriously injured in a new Volvo car by the year 2020.

Traffic safety is one of Volvo Cars' Core Values, and should thus permeate our organisation, our products and our way of working. Our goal is to maintain a leading position in these areas. To strengthen our commitment to, and maintain leadership in safety, we aim for top performance, in real traffic situations as well as official safety ratings. We do that by creating our safety offers in an intelligent and innovative way based on actual traffic situations. We also enhance wellbeing by helping to prevent collisions and reduce injury when a collision is unavoidable.

#### Safety vision: towards zero crashes

Volvo Cars applies a knowledge-driven approach to safety – combining research on driving behaviour with research on safety optimisation and development. The safety of everyone inside, and outside, a Volvo car is part of the philosophy that the founders of Volvo Cars introduced as far back as 1927. Over the years, technology developed by Volvo Cars, ranging from the three-point safety belt and rear-facing child car seat to active safety solutions such as City Safety and Pedestrian & Cyclist Detection, has helped save over one million lives.

Continuing to build on our heritage, our long-term vision is to design cars that do not crash. Our short-term goal is that no one should be killed or seriously injured in a new Volvo car by the year 2020. To this end, Volvo Cars is dedicated to keep on creating innovative, smart and integrated safety solutions that address passengers in our vehicles but also other road users. All Volvo cars, accessories and relevant services must not only meet, but exceed, customers' expectations when it comes to safety.

Internationally, Volvo Cars is regarded as the role model for traffic safety. This is something that we are proud of. We are committed to maintain leadership through:

- creating safety features in an intelligent and innovative way based on real traffic situations
- helping to prevent collisions and reducing injuries when a collision is unavoidable
- · maintaining industry-leading competence in safety

#### Safety highlights 2014

In 2014, new Volvo models are available with the very latest safety technology. Examples of technological solutions include City Safety, Run-Off Road Protection, Adaptive Cruise Control and Inflatable Curtain (IC,) which is also active in several types of angled frontal collisions.

#### City Safety

City Safety is the umbrella term for all of Volvo Cars' auto brake functions. The continuously enhanced collision-avoidance and mitigation technologies, which are standard in the XC90, include yet another Volvo world first: automatic braking if the driver turns in front of an oncoming vehicle. The system is active at all speeds from 4 km/h. The auto brake at intersections is a world first that



deals with a common scenario at busy city crossings as well as highway crossings, where the speed limits are higher. City Safety is based on a combined camera and radar unit integrated at the top of the windscreen, in front of the interior rear-view mirror. The latest technology upgrade is a smarter and faster high-sensitive, megapixel image camera combined with advanced exposure control. This makes the detection and auto brake technology work effectively even when driving in darkness.

#### **Run-Off Road Protection**

Run-off road is a common accident type with different causes, such as driver inattentiveness, fatigue or poor weather conditions. The run-off road protection solution in the all-new XC90 detects the run-off road scenario and makes the front safety belts tighten automatically to keep the occupants in position. To help prevent spine injuries, energy-absorbing functionality between the seat and seat frame deforms mechanically to cushion the vertical forces that can arise when the car encounters a hard landing in the terrain.

#### 50 years of dedication to child safety

Volvo Cars' dedication to protecting the smallest and most vulnerable car occupants celebrated its 50th anniversary in 2014. This ground-breaking work started with the world's first rear-facing child seat prototype in a PV544 back in 1964 – and the latest innovation is an Inflatable Child Seat Concept, described below. The differences in anatomy between children and adults form the foundation for Volvo Cars' child safety developments in terms of both car integrated features and accessories. Children are not small versions of adults, which is why children need special restraints when travelling in cars.

#### Inflatable Child Seat Concept

In 2014, Volvo Cars designed a lightweight and inflatable rearwardfaced child seat concept using ground-breaking technology. The seat is safe, easy to pack and carry and will enable parents to use it in many situations not practical with the seats on the market today. The innovation, which is still in the development stage, is easy to install and can be tucked away in a small bag when not in use. This means that the child seat can be easily transferred between cars and the bag even fits in carry-on luggage when flying or travelling.

#### 360° view technology

In December 2014, the four-year Non-Hit Car and Truck project came to a close, leaving as its crowning achievement the development of next-generation sensor fusion technologies that provide a seamless 360° view around a car. The 360° view is enhanced by the manoeuvre generator, a new safety feature that uses software to identify collision-free escape routes in all traffic scenarios. The system, which works by constantly analysing threats around the car, can even assist drivers with auto braking and steering. With the development of a new safety feature that

locates collision-free escape routes, Volvo Cars has taken one of the final steps towards realising its vision that by 2020 no one should be killed or seriously injured in a new Volvo car.

#### **Drive Me**

In 2013, Volvo Cars initiated a Swedish pilot project with selfdriving cars on public roads – the first project of its kind in the world. The ground-breaking project 'Drive Me – Self-driving cars for sustainable mobility' is a joint initiative between Volvo Cars, the Swedish Transport Administration, the Swedish Transport Agency, Lindholmen Science Park and the City of Gothenburg. Drive Me will feature 100 self-driving test cars on public roads in everyday driving conditions driven by Volvo Cars' customers by 2017. This public pilot will provide valuable insight into the societal benefits of making autonomous vehicles a natural part of the traffic environment. In 2014 the first test cars were rolled out around the Swedish city of Gothenburg, and the sophisticated Autopilot technology is working well.

#### AstaZero

AstaZero is the world's first full-scale proving ground for future traffic safety solutions. Its opening has brought Volvo Car Group a step closer to realising the vision that by 2020 no one should be killed or seriously injured in a new Volvo car. An important step towards achieving this goal will be the development of active safety systems, which will help to prevent accidents. One of the facility's greatest assets is its flexibility, with a design that permits the construction of unique, customised environments. The AstaZero facility will serve as an open, international platform for all interested stakeholders like vehicle manufacturers, suppliers, legislators,

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#### VISION 2020 IN SIGHT - WITH REAL-LIFE IN FOCUS

road agents, universities, and technical institutes from around the world. AstaZero's industry partners are Volvo Car Group, Volvo Group, Scania, Autoliv and Test Site Sweden.

#### **Driver State Estimation**

Volvo Cars conducts research to develop driver sensors in order to create cars that get to know their drivers. The sensors are placed on the dashboard to monitor aspects such as the direction the driver is looking in, how open their eyes are, and their head position and angle. Analysis of the driver's state, known as Driver State Estimation, makes it possible to develop precise safety systems that detect the driver's state and are able to adjust the car accordingly. This also means that the car will ensure that it does not stray out of the lane or get too close to the car in front when the driver is not paying attention, as well as being able to wake a driver who is falling asleep. This technology is already installed in test vehicles. Volvo Cars is also conducting research together with partners including Chalmers University of Technology and Volvo Group to identify effective methods for detecting tiredness and inattention.

#### 2014 IIHS Top Safety Pick+

In December 2014, Volvo Cars' S60, V60, S80 and XC60 were awarded Top Safety Pick+ grade. Volvo Cars was the only European brand with more than two models on the list. The Top Safety Pick+ award criteria have become tougher in the last 12 months, with increased demands around the standard for front crash prevention. To meet the new criteria, cars making the Top Safety Pick+ grade must offer the ability to stop or slow down without driver intervention before hitting a target in IIHS tests at 12 mph, 25 mph or both. Volvo Car's front crash avoidance technology, City Safety, which is standard in all new Volvos, effectively helps to detect and brake automatically to mitigate or prevent a car-to-car rear end collision without driver intervention. Volvo's City Safety technology has been shown to reduce insurance claim frequency by 16%.

#### Safety around you -

#### a knowledge-driven process of real-life safety

Product safety is incorporated in every phase of developing a Volvo car. This means that we are constantly aware of the safety requirements of our customers and collect real world data to guide our product development efforts.

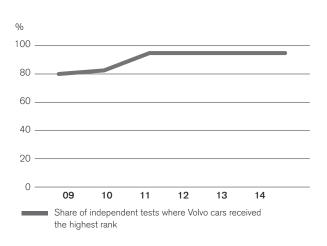
#### Real world data

Volvo Cars bases its research on a variety of parameters, with the ultimate aim of finding new technologies to help fulfil the Volvo Cars' Safety Vision. It is therefore essential to carry on Volvo Cars' long history of obtaining unique data by investigating actual road accidents and incidents.

Volvo Cars' Traffic Accident Research Team, established in 1970, has collected statistical accident data from more than 40,000 accidents involving Volvo cars in Sweden. The team conducts



#### **INDEPENDENT TESTS RESULTS<sup>1,2</sup>**



<sup>1</sup> The figures include test results from the following test bodies: Euro NCAP, US NCAP, China NCAP, NCAP, IIHS and Folksam.

<sup>2</sup>Restated due to change in calculation methodology

in-depth studies of accidents and Field Operational Tests (FOT) to evaluate the safety performance of our vehicles. In addition, our collaboration with the Swedish insurance company Volvia has helped even further to provide detailed information about incidents and the outcome of accidents with new Volvo cars in Sweden.

The 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.

#### Safety requirements

All modern Volvo cars meet or exceed current statutory requirements set by governments for car manufacturers. In 2014, there were no incidents of non-compliance with regulations or voluntary codes regarding safety that resulted in a fine or penalty. In fact, by pushing technological boundaries, Volvo Cars has reduced the risk for Volvo drivers and passengers of being hurt in an accident by 50% since 2000.

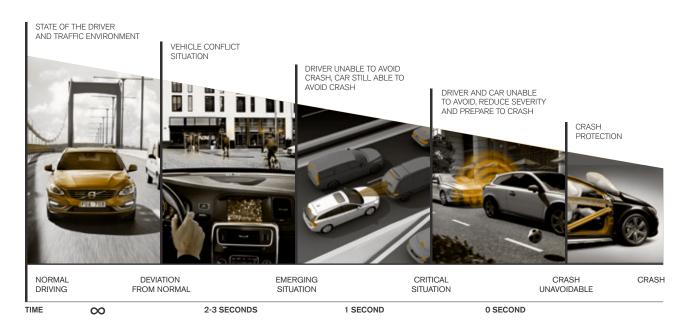
Volvo Cars' customers can monitor their cars' safety performance through independent rating programmes. Laboratory crash tests are executed by rating institutes, and field performance based on real-life accident data is provided by, for example, insurance companies.

#### From product development to verification

During the development phase, all components, systems and complete cars are extensively tested by computer stimulated programmes. We also perform simulated accident reconstructions in our state-of-the-art crash laboratory which provides additional knowledge that is applied when designing and developing new cars. Third-party and governmental crash tests often include only front, rear and side impacts on one test vehicle, at one impact speed from one angle. Real crashes are more complex than that, which is why Volvo Cars looks at the entire scope of possibilities. This working method helps Volvo Cars decide what areas to focus on to further enhance safety for customers. We can see that our approach works, not only in real-life crash statistics, but also in third-party and governmental crash tests, as can be seen in the graph below.

Volvo Cars takes a holistic approach to safety. Many of the new technologies are tailored to the way drivers behave in the modern traffic environment. In a pilot project, Volvo test cars using cloud-based communication detect icy or slippery road conditions and transmit information to other approaching vehicles, which will make it possible for the drivers to take action to avoid a critical situation. Other examples of safety research areas in focus are:

- · autonomous driving
- · avoiding collisions with wild animals
- intelligent interventions to avoid accidents, including steering and/or auto braking adaptive occupant protection.



#### THE HOLISTIC APPROACH TO SAFETY

#### Working with vehicle safety

Working with vehicle safety within Volvo Cars requires different types of competences. Among other partners, Volvo Cars works with academia to ensure the company can make use of the best knowledge available. Within Volvo Cars Research and Development, there is a range of special competencies ranging from PhD students to adjunct professors who are involved in areas such as driver behaviour, the human-machine interface, biomechanics, automatic control and advanced materials.

Volvo Cars also actively disseminates its knowledge to its stakeholders. For example, external competence development campaigns are directed towards Volvo Cars' dealers. We also organise seminars and lectures for journalists and government authorities on how Volvo Cars works with vehicle safety.

#### **Collaboration for enhanced safety**

Volvo Cars acknowledges that it cannot find solutions in isolation. The company therefore aims to build and nurture open partnerships with a wide range of societal stakeholders. Some examples of Volvo Cars' collaboration with partners on specific projects are listed below.

#### Drive-Me - Self-driving cars for sustainable mobility

'Drive Me – Self-driving cars for sustainable mobility' is a joint initiative between Volvo Cars, the Swedish Transport Administration, the Swedish Transport Agency, Lindholmen Science Park and the

City of Gothenburg. The project is endorsed by the Swedish Government. The aim is to pinpoint the societal benefits of autonomous driving and position Sweden and Volvo Cars as leaders in the development of future mobility. See page 59 and page 66 for more information on this project.

#### **Chalmers University of Technology**

Volvo Cars' cooperation with Chalmers University of Technology has the aim of sharing knowledge about car safety and creating a forum where the company can itself gain knowledge. The SAFER project is a platform in which different stakeholders can channel research issues relating to safety as well as obtain further qualifications in safety research. Volvo Cars' employees, students, researchers and teachers meet here to discuss traffic safety at an academic level.

#### The China-Sweden Research Centre for Traffic Safety in Beijing

This 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 also acts as a platform for supporting government decision-making in matters relating to traffic safety.

Apart from Volvo Cars, the other research partners in this project are Volvo Group, Chalmers University of Technology, the Chinese Ministry of Transport's Research Institute of Highway and Tongji University in Shanghai.



### "NO ONE SHOULD BE KILLED OR SERIOUSLY INJURED IN A NEW VOLVO BY 2020."

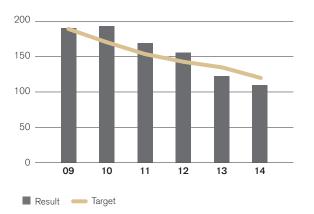
**Cecilia Larsson** Director, Volvo Cars Safety Centre

### Partnership with China Automotive Technology and Research Centre (CATARC)

In 2013, Volvo Cars and CATARC agreed to initiate joint research and discussions in three key areas: safety, environment and wellbeing (cabin air quality solutions). In this cooperation, Volvo Cars shares its global experience and knowledge with CATARC to promote better understanding of new possibilities in the three key areas. Both parties co-host seminars to discuss common goals and a technology roadmap with regard to new solutions, standards, regulations and policy development in the industry.

#### The China-Sweden Research Centre for Traffic Safety (CTS)

The China–Sweden Research Centre for Traffic Safety (CTS) in Beijing is an initiative led by Volvo Cars together with RIOH, Tongji University and Chalmers University of Technology. In 2014, CTS initiated a close-up study of driving behaviour in the Chinese megacities Beijing and Shanghai. As part of the study, a large number of real customers in Beijing and Shanghai will drive the cars during a ten-month test period The insight into how drivers handle these exceptionally busy traffic environments will be an important part of Volvo Cars' aim to develop safety systems that help drivers all over the world to avoid accidents. The collected material, approximately 5 terabytes of data from about 100,000 km of driving, will be analysed during 2015.



#### WARRANTY CLAIMS<sup>1</sup>

<sup>1</sup> Warranty targets and performance: Repairs/1,000 cars, 3 months in service in all cars and all markets

### Partnership with high-tech sports gear developer POC to explore new safety ideas

In 2014, Volvo Cars established a partnership with the Swedish company POC, which develops high-tech protective gear for gravity sports athletes. The two companies will exchange knowledge in order to explore new ideas within safety and design. The new partnership will explore and use the possibilities to extend the safety knowledge and product offer for Volvo Cars as well as POC. The initial research and development project will focus on communication between cars and cyclists.

#### Non-Hit Car and Truck project

The Non-Hit Car and Truck project, an 80 million SEK endeavour started by Volvo Cars and its partners in September 2010, was concluded in December 2014. The focus has been on developing technologies to reduce accident risks for both passenger cars and commercial vehicles. Partners include: Volvo Cars, Volvo Group, ÅF (sensor fusion development), HiQ (sensor fusion development, threat assessment), Mecel (sensor supplier) and Chalmers University of Technology (sensor fusion development, driver adaptation). The Non-hit Car and Truck project is associated with the SAFER Vehicle and Traffic Safety Centre.

### Partnership with Swedish Transport Administration and the Norwegian Public Roads Administration

In 2014, Volvo Cars, the Swedish Transport Administration (Trafikverket) and the Norwegian Public Roads Administration (Statens Vegvesen) joined forces in a pilot project in which road friction information from individual cars is shared within a cloudbased system. The real-time data about slippery patches on the road are used to warn vehicles nearby, at the same time as they contribute to making winter road maintenance more efficient. For example, when the Volvo test car detects an icy or slippery road patch, the information is transmitted to Volvo Cars' database via the mobile phone network. An instant warning is transmitted to other vehicles approaching the slippery area, making it possible for the drivers to take immediate action to avoid a critical situation.

#### **Quality management**

Volvo Cars' Quality Management is guided by the Core Value Statement for quality, expressing our goal to provide products and services designed around people's needs, giving them an experience that makes them feel that we care for them, and simplify their lives. Therefore globally, all Volvo Cars manufacturing facilities are certified according to the ISO 9001 quality management system. During 2013, Volvo Cars' Executive Management Team (EMT) took a decision to extend the ISO 9001 certifications to all corporate functions. Read more about our Core Values on page 7.

#### **Quality Transformation**

Volvo Cars' Quality Transformation programme, which began in 2011, still plays the leading role as a company-wide initiative to improve the quality of its products and services, both internally and externally. The programme, now entering its second phase with 23 work streams running, is a change programme designed to achieve the aim expressed in the Core Value Statement. The aim 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 co-workers' everyday work.

The objective is both very simple and very difficult: Volvo Cars shall achieve top-level customer satisfaction in products and services. Volvo Cars is determined to reach the target and has established several KPIs to track improvements. There is also a designated project manager who is responsible for driving the Quality Transformation programme.

In 2014, under the governance of the Quality Transformation programme Volvo Cars continued to improve on all our quality performance indicators. For example, by increasing supplier quality we improved reliability in terms of warranty repairs by 20% during 2014. This meant that both product and service satisfaction increased significantly. Our ability to solve customer concerns has also improved continuously and lead times to solve customer issues were at an all-time low in 2014. Volvo Cars' target for 2014 was to come up with an interim solution to 90% of customer concerns within 14 days; in the event a level of 87% was achieved. Translated into lead times, this means that the average lead time for reaching an interim solution to a customer concern was 16 days in 2014 compared to 49 days in 2011.

As the transformation programme continues more focus will be placed on developing a new management system, based on excellence models, and on maximising the operational strength of the Volvo Cars value chain and its supporting processes.

#### **Customer satisfaction**

Customer satisfaction is a key to successful business. Volvo Cars aims to reach excellence in customer satisfaction as defined by its holistic view on customer experience. This means that we want to understand the full picture of how our customers perceive Volvo Cars, including satisfaction levels in terms of product quality and performance, sales and service, financial offer and website services. Volvo Cars collects direct feedback from customers through surveys and, importantly, by engaging in dialogue. Social media is becoming an increasingly important channel in this regard, both for collecting feedback and communicating with customers. We will therefore continue to develop our capacity and methods for social media communication with our customers. As well as engaging in direct customer dialogue, we continuously collect indirect feedback from various sources, including the media and Volvo dealers across the globe.

Volvo Cars' customer satisfaction goals are updated yearly and reflect our overall long-term ambitions. Volvo Cars' current KPIs when it comes to customer satisfaction are Vehicle Net Satisfaction and Sales and Service Satisfaction, which are monitored by different surveys. Disclosure of these KPIs and results will be available in the next sustainability report.

To emphasise the importance of customer satisfaction to Volvo Cars, selected customer satisfaction metrics are part of an incentive programme that includes all Volvo Cars' employees. In 2014, the customer satisfaction related goals in the employee incentive programme were met to 100%.

#### Automotive regulatory compliance

Laws and regulations concerning cars and car parts are complex. Requirements can vary by region and market, and might change rapidly. It is therefore crucial to have a good understanding of the scope and impact of regulatory requirements in every country where a Volvo product can be bought. By managing regulatory requirements Volvo Cars minimises the risks of being late to adapt to the market and of suffering the effects of non-compliance. Volvo Cars has the aim of always going beyond regulatory compliance (in particular in the safety area) – the Volvo Standard defines internal requirements for the different parts and functions of its car models.

Volvo Cars manages automotive regulatory compliance along three pillars. The Volvo Regulatory Affairs Department constantly monitors automotive regulatory developments and makes sure that information is made available to all relevant functions within the organisation. The Regulatory Compliance Project Team acts as an interface towards R&D to ensure the regulatory compliance of research and development projects. The Certification Group on the other hand handles type approval and homologation processes, during which Volvo cars (and car parts) are approved by authorities in order to be registered for sale.

Volvo Cars is in constant dialogue with authorities and government agencies in all markets where we have a presence. Volvo Cars also participates in different external working groups, which discuss regulatory changes and their implications. Volvo Cars contributes to policy and legislation development in all major markets. For more information see the section on 'Public authorities and politicians' on page 72.

#### Product labelling and owner manual

Volvo Cars actively informs customers about risks, hazards and the proper use of its products and services. All car models are required by law to have safety-related labels regarding airbags, fuel type and tyre pressure. Moreover, there are additional labels that are required by specific markets only, such as fuel economy labels for China, the USA and Canada. Besides labelling information, Volvo Cars' website provides extensive technical information for each car model, such as fuel consumption and  $CO_2$  emissions. Volvo Cars also issues recycling information and comprehensive safety information about the safety rating of its products.

Volvo Cars provides each customer with an owner manual. This includes guides for energy conservation while driving as well as safety information, e.g. about airbags, child seats and safety belts. Labels and information provided in the owner manuals are verified during the product development process by both company audits and government authorities within the homologation process. This is done to ensure that all customers worldwide receive accurate information.

Volvo Cars also publishes information on particular topics. For example, in 2013 it issued a safety manual 'Children & Cars' (downloadable at http://esd.volvocars.com/site/TopNavigation/ About%20Volvo/Safety/safetymanual2013\_eng.pdf) to help all those who carry child passengers – parents, taxi drivers, or anyone else – gain a better understanding of child safety matters.

There were no incidents of non-compliance with regulations and voluntary codes concerning product and service information and labelling during 2014.

#### Marketing of products and services

Volvo Cars' in-house guidance states that all 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 way in relation to the characteristics of the product or service. Volvo Cars' Corporate Marketing Instruction provides guidance on the preparation and documentation of the company's advertising and PR material, such as, but not limited to, press releases and launch material. The instruction reaffirms the commitment of Volvo Cars that its advertising and PR material shall be accurate, truthful and in good taste. Volvo Cars Corporate Marketing Instructions were produced in accordance with applicable laws and regulations, and in line with its own applicable guidelines. Volvo Cars continuously reviews its marketing. This responsibility lies within the Global Communications and Safety Communication departments supported by Group Legal. Each market worldwide is responsible for its own marketing and for ensuring that marketing initiatives are carried out in accordance with Volvo Cars' Marketing Instruction. There were no incidents of non-compliance with regulations and voluntary codes concerning marketing communications during 2014.

#### Fair competition

Volvo Cars is committed to comply with competition and anti-trust laws, and fair competition is vital to the company's success. Volvo Cars wants to compete vigorously and aggressively - but fairly and without any anti-competitive understandings or agreements with competitors. Volvo Cars also expects its business partners such as dealers and other independent businesses engaged in selling the company's products to comply with competition laws that apply to them. Such competition laws protect the distributors' right to conduct their business independently. The Competition Law Policy summarises Volvo Cars' internal rules related to 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 Volvo Cars' Code of Conduct, an important binding internal document for our employees, also explains the company's 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 noncompliance. No legal actions for anti-competitive behaviour, anti-trust or monopoly practices were initiated against Volvo Cars in 2014. Volvo Cars has not identified any non-compliance with laws and regulations in 2014.

## **FUTURE MOBILITY**

We will lead the debate and actively innovate so that sustainable mobility is an attractive, scalable and tangible solution.

#### Outlook

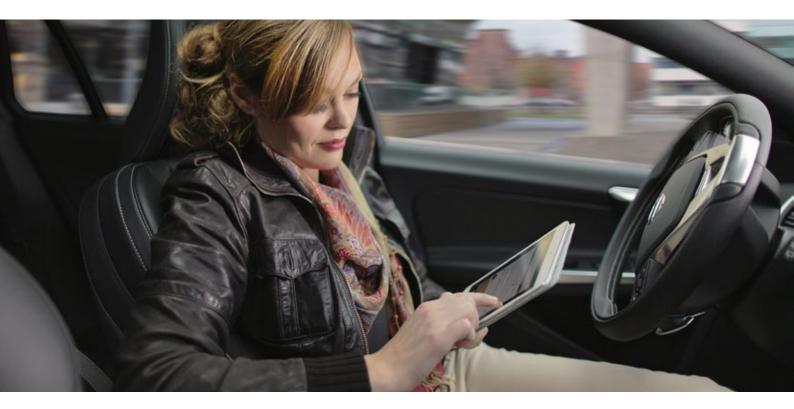
Megatrends such as the growing global population and the rise of megacities bring extensive social and environmental challenges that also have a significant impact on Volvo Cars. For example, continued urbanisation will lead to impaired mobility and congestion, but also brings the need to provide safe transportation, and to reduce pollution and  $\rm CO_2$  emissions. Moreover, increased connectivity is likely to change future perceptions of personal mobility, vehicle usage and ownership as an increasing number of people start to explore common ownership structures and other solutions for shared mobility.

We strongly believe that these challenges in fact present significant business opportunities to our company. By being in the forefront of technology development and innovation, Volvo Cars can and will be a part of finding the solutions to current and future challenges. We aim to do this by following our overriding objective to develop cars that are both safe and environmentally sound. Volvo Cars is determined to lead the debate and actively innovate so that sustainable mobility is an attractive, scalable and tangible solution now and in the future. The company is pursuing this by, for example, introducing electrification of vehicles whilst also increasing fuel efficiency and the use of renewable fuels in conventional cars. Moreover, we aim to make our manufacturing processes as efficient and sustainable as possible. But we also acknowledge that we cannot do all this on our own – we need to work together with all our stakeholders.

Volvo Cars aims to offer cars that are safe for all people in all imaginable traffic situations. Volvo Cars' aim 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 this is to design safety systems that are both smart and integrated. Current data show that Volvo Cars is on the right track to fulfil the vision and the short-term aim for 2020.

#### Autonomous driving

Autonomously driving cars can be part of the solution to many of modern society's challenges. For example, autonomous driving can reduce fuel consumption by up to 50% in certain situations, thereby helping reduce environmental impact. In terms of traffic safety, statistics show that about 90% of all accidents are caused by distracted drivers. By leaving the driving to the car itself, autonomous driving will significantly improve safety for passengers and other people in the traffic. Autonomous driving will also allow



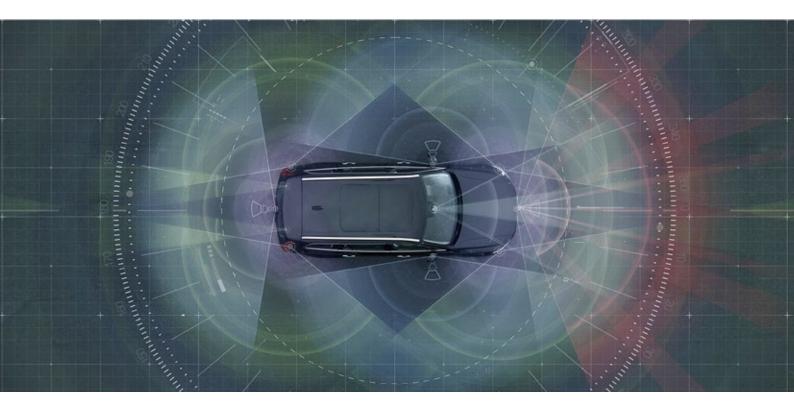
future Volvo drivers to plan their drive with a mix of autonomous and active driving, allowing for efficient use of the daily journey. In a more long-term perspective, autonomous driving might also facilitate car sharing by allowing parked cars to travel without drivers to the locations of different users.

Autonomously driving cars are not far from realisation. The first steps towards autonomous driving are underway through systems such as automatic braking, lane keeping aid, adaptive cruise control, 360° view technology and park assist pilot. These systems are paving the way for the Highly Autonomous Cars that will enable the driver to hand over the driving to the vehicle, which takes care of all driving functions.

Volvo Cars' ground-breaking 'Drive Me' project features selfdriving Volvos on public roads in everyday driving conditions. In 2014, the first test cars were rolled out around the Swedish city of Gothenburg with the sophisticated Autopilot technology. The test cars are able to handle lane following, speed adaption and merging traffic all by themselves. Selected Volvo Cars' customers will drive the 100 test cars on approximately 50 kilometres of selected roads in and around Gothenburg, characterised by motorway conditions and frequent queues. This project is an important step towards Volvo Cars' aim to produce cars that will be able to drive the whole test route via Autopilot – on a highly autonomous mode. The Drive Me public pilot will provide valuable insight into the infrastructure requirements, the societal and economic benefits of making autonomous vehicles a natural part of the traffic environment, and how Volvo Cars designs technical solutions for future vehicles. As the project enters its second year, Volvo Cars is moving rapidly towards the aim of placing 100 self-driving cars in the hands of customers on selected roads around Gothenburg by 2017.

Volvo Cars' smart vehicles are a key part of the solution to many of society's challenges in terms of transportation. However, a broader societal approach is also vital to offer sustainable personal mobility in the future. Drive Me focuses on the need for cross-functional cooperation between the various actors in traffic to create mobility in a sustainable society. Drive Me is a joint initiative between Volvo Car Group, the Swedish Transport Administration, the Swedish Transport Agency, Lindholmen Science Park and the City of Gothenburg. The Swedish Government is endorsing the project.

For more information and a short video on the sustainability of autonomous driving, see: www.media.volvocars.com.



## **VALUE CHAIN MANAGEMENT**

Ongoing and trustful interaction throughout Volvo Cars' value chain is key to providing guidance on how we will develop and work with sustainability.

#### Supplier management and key facts

Volvo Cars has approximately 500 business partners delivering production material for serial production and roughly 3,500 preferred suppliers delivering indirect products and services.

Volvo Cars' cooperation with our suppliers is vital not only in terms of business continuity and effectiveness but also in managing sustainability. The majority of the components used in our vehicles are manufactured by suppliers, therefore their environmental and social responsibility footprint is very important to Volvo Cars. The foundation of Volvo Cars Purchasing operations strategy is to incorporate and adapt sustainability activities into Purchasing's dayto-day processes and tools. The Senior Vice President Purchasing & Manufacturing is responsible for supporting and managing environmental and social responsibility related to the supply chain.

#### Sustainability country risk assessment

Volvo Cars Purchasing uses a model for rating our supplier countries and potential supplier countries from a sustainability risk point of view. The model assesses countries based on three aspects relating to social responsibility:

- · lack of democracy, civil and political rights
- living standards
- corruption.

The risk country model is valid for Direct Material (DM) and Indirect Purchasing (IDP) and is updated annually. The model is mainly used to prioritise activities such as supplier training and supplier audits. Because of the extensive variety of purchased commodities in the IDP supplier category, Volvo Cars uses two additional models: a risk rating model related to the supplier's environmental impact at Volvo Cars operations and a social responsible risk rating model on commodity level.

#### Social and environmental requirements on suppliers

Volvo Cars' sustainability requirements on suppliers are formulated in our Terms and Conditions for suppliers, our Code of Conduct and our Social Responsibility and Environmental web guides. Volvo Cars expects that the Supplier – as a business partner of Volvo Cars – is governed by the same or similar principles as those set out in our Code of Conduct.

- In accordance with the Code of Conduct, Volvo Cars' requirement on suppliers is that no child labour or physically abusive disciplinary practices are allowed and suppliers shall not engage in any act or omission that could possibly be construed as giving or taking a bribe, or in any other kind of corruption. (See page 54 for more information on the Code of Conduct.)
- Suppliers are required to be third-party certified according to the ISO 14001 environmental management system.
- DM suppliers shall comply with substance use restrictions outlined in the Volvo Cars Restricted Substance Management Standard (RSMS).
- Suppliers are obliged to adhere to chemical legislation to be able to put substances, preparations or articles on intended markets.
- A Sustainability Self-Assessment must also be filled out by each supplier upon request.

Requirements on Volvo Cars' suppliers are communicated through Volvo Cars' Supplier Portal. The legal documents and requirements are also distributed as part of the sourcing process. Since its introduction in 2010, Volvo Cars has registered 1,200 suppliers in its Supplier Portal. During 2014, 190 new suppliers signed up as users.



#### **Ensuring supplier compliance**

To manage the environmental and social responsibility of its supply chain, Volvo Cars assesses, evaluates and audits suppliers.

#### Assessing suppliers

Volvo Cars' global Manufacturing Site Assessment (MSA) evaluates whether a supplier is performing according to customer expectations and requirements regarding manufacturing quality. The MSA is performed by the Supplier Quality Management Department and reviews the fundamental areas of the supplier's manufacturing processes and metrics on site. The assessment also includes areas related to health and safety, risk management and environment. MSA is conducted for new suppliers before sourcing and on a recurring basis for existing suppliers.

#### **Evaluating suppliers**

Volvo Cars has a global Supplier Evaluation Model (SEM) that supports the selection of new suppliers. The model evaluates potential suppliers from a holistic perspective, covering areas such as working conditions, business ethics and environmental impact. The model can also be used for analysing current suppliers. For IDP suppliers, the SEM is a prerequisite to fulfil the criteria in the model in order to qualify for the Volvo Quality Excellence Award (see below) as well as for assessing new suppliers.

#### Supplier sustainability self-assessment

During 2014, Volvo Cars developed a supplier Sustainability Self-Assessment Questionnaire (SAQ) covering the social, environmental and sub-supplier responsibility and business ethics. Out of the 90 suppliers that were asked in the pilot phase to fill out the self-assessment, 66 completed the assessment. Based on the results, follow-up procedures will be implemented in 2015. This includes cooperation with suppliers to strengthen their performance within prioritised areas in order to comply with Volvo Cars' requirements for suppliers.

In 2015, new suppliers will be invited to conduct the Self-Assessment Questionnaire.

#### Auditing suppliers

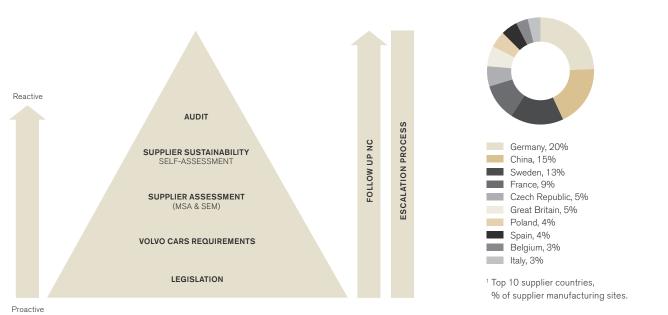
Volvo Cars' supplier sustainability audit assessment criteria are based on Volvo Cars' Working Condition & Environment Audit Checklist. Areas covered in these assessment criteria are labour conditions, business ethics, health and safety (including risk management and emergency preparedness), environmental protection, compliance and management system.

In 2014, Volvo Cars' purchasing department focused on identified non-conformities from the audits that had been carried out in 2013 and worked with concerned suppliers to improve and verify implemented corrective actions.

#### Supplier Escalation Process

The Supplier Escalation Process is a procedure used to escalate procedures against suppliers that deviate from the agreed deliverables stated in agreements and therefore pose a risk for quality/delivery or other major problems. In 2014, Volvo Cars expanded the criteria for the Supplier Escalation Process to include environmental and social responsibilities. There are three categories in Volvo Cars Supplier Escalation Process: Underperforming,

TOP TEN SUPPLIER COUNTRIES<sup>1</sup>



#### ACTIVITIES FOR ENSURING SUPPLIER'S COMPLIANCE

Serious Concern and Constraints. The underperforming supplier escalation process begins when suppliers have systematic or repeated issues in their daily business, and show low progression in resolving the issues. The Serious Concern escalation process is activated if a supplier incident occurs, or if a circumstance at a supplier causes a serious operational problem to Volvo Cars. Finally, the Constraint escalation process starts when there is a disturbance of supply related to agreed deliverables.

In 2014, the supplier escalation process was not activated due to environmental or social responsibility reasons.

#### Supplier awards

Volvo Cars' requirements on quality, product development, cost efficiency, delivery capacity and environmental care are high. To encourage suppliers to live up to these requirements, Volvo Cars has initiated two supplier award schemes.

#### Volvo Cars Quality Excellence

Quality is one of Volvo Cars' Core Values. To let suppliers understand exactly where they stand in relation to Volvo Cars' requirements and help them achieve continuous improvement, the Volvo Cars Quality Excellence Award (VQE Award) was introduced in 2012. The VQE Award is based on a set of fundamental quality and manufacturing disciplines which ensure a supplier's success.

Volvo Cars wants all our suppliers to meet the VQE requirements. This means that the suppliers' facilities have to achieve excellence in the following areas: capable systems, capable manufacturing process, ongoing performance, as well as customer plant impact and customer endorsement.

The VQE Award consists of 11 award performance elements and a 12th complementary element for the final award step: customer endorsements. Fundamental requirements include environmental certification according to ISO 14001 and quality certification pursuant to ISO TS 16949. VQE also includes quality assurance of suppliers' manufacturing processes and working environment and monitoring suppliers' quality and delivery performance. Since the start in 2012, Volvo Cars has presented the award to more than 100 suppliers on a yearly basis. By the end of 2014, 301 DM supplier sites and 58 IDP suppliers had received the award.

#### Volvo Cars Award of Excellence

Volvo Cars Award of Excellence is an annual award that acknowledges top-performing suppliers who have gone the extra mile together with the company. Only the best suppliers are invited to participate in Volvo Cars Award of Excellence. The objective is to reward above-average effort and encourage further improvements. Winners are named in each of the categories Environmental and Social Responsibility, Technology, Quality, Cost Competitiveness and a 'Special Award' which suppliers cannot apply for and which is given only to suppliers that have achieved an extraordinary performance during the year. Around 120 DM and IDP suppliers were invited to apply for one or other of the categories. The supplier that received the Volvo Cars Award of Excellence in the Environmental and Social Responsibility category in 2014 was recognised for its long-term sustainable operational performance and contribution to society through multi-cultural cooperation.

#### Supply chain management training

Volvo Cars adopted a new Code of Conduct in 2014. All purchasing employees globally have been invited to face-to-face training on the Code of Conduct, and the ten policies that it is based on. The training also included questions and group discussions about ethical dilemmas. In total 549 employees have participated in the training: 327 in Europe and 222 in China.

In addition to the Code of Conduct training, 52 new employees in Gothenburg have gone through the Purchasing Introduction training, including social and environmental responsibility information. Moreover, 78 employees from Volvo Cars China Purchasing participated in Social Responsibility training. The focus of this training was to review Volvo Cars' requirements on suppliers in terms of social responsibility and working procedures/tools used within purchasing, e.g. supplier audits, MSA, supplier self-assessment. Environmental awareness training was conducted in the IDP organisation in Gothenburg, with 50 attendees.

During the last year, Volvo Cars was also part of organising a supplier event in Turkey. At the event, automotive original equipment manufacturers (OEMs) presented their expectations on suppliers regarding social responsibility and environment and group discussions were held. 99 suppliers attended, eight of which were unique for Volvo Cars.

In China, a major Supplier Convention was held and 153 suppliers attended the meeting. Sustainability information and expectations on suppliers were part of the agenda and communicated to the suppliers.

#### Industry collaborations and networks

To the extent legally allowed, Volvo Cars works actively with industry peers and organisations to achieve a more sustainable supply chain for the automotive industry as a whole.

### European working group on supply chain sustainability

The European Automotive Working Group on Supply Chain Sustainability consists of several automotive manufacturers working together – in addition to their own efforts – to enhance sustainability in their supply chains. The working group believes in the benefits of a common approach and common messages towards suppliers in the area of sustainability, i.e. training and other activities. Examples of outcomes of the cooperation are a Supplier Sustainability Self-Assessment Questionnaire and the supplier event in Turkey (see page XX). Every company in the group retains the management of its independent supply chains. In the process of collaboration, the participants acknowledge the importance of being legally compliant and accordingly agree to work together only to the extent permissible under relevant competition laws and regulations.

#### Dealers

Volvo Car dealers sell and provide maintenance for Volvo vehicles. Besides new and used car sales, Volvo dealers also sell accessories, extended warranties, finance and insurance products. In 2014 Volvo Cars had around 2,300 dealers in approximately 100 countries. New dealers are appointed through a selection process within each respective market through the National Sales Company. Selection is based on the financial strength of the applicant, their experience and competence in car retailing and on their reputation and ethics. Selection criteria are adopted on a country-by-country basis in line with each country's national guidelines.

Volvo Cars works intensively to make the customers' everyday lives easier by building strong, long-term relationships with dealers. Every dealer must meet the Volvo Cars Dealer Standards which include requirements in a wide range of areas including legal compliance and environment. All dealers must follow local environmental legislation. If a dealer does not comply with the dealer standards, Volvo Cars reserves the right to terminate the contract. The dealer must also appoint an environmental coordinator to be responsible for the safe storage of chemicals, waste sorting and recycling. In 2011, the Dealer Development Portal (DDP) was launched, which is a platform on which Dealer Standards are managed, monitored and reported. The dealers can access the DDP, study and follow the guidelines and requirements which will then be measured and audited through an independent third party. In 2014, 1,423 dealers (out of 2,280 in total) were audited. Dealers that were not audited are mainly in Sweden and Germany, where negotiations on contractual agreements resulted in audit delays, as well as in some smaller markets where the resources for conducting such audits are more limited. In 2015, Volvo Cars plans to audit an even higher number of dealers. There were no incidents of non-compliance related to environmental violations in 2014.

At Volvo Cars' global competence centre in Gothenburg, representatives of the National Sales Companies are trained and given information that they then pass on to dealers of their respective markets. Volvo Cars' training system covers a wide range of areas, from new car introductions and repairs to work processes and service issues. For example, when a new car model is being introduced, dealers are informed about the new active safety systems in the car and clean cabin features.

#### Volvo Cars as a sustainable supplier

Volvo Cars is committed to being seen by our corporate and public sector customers as a responsible sourcing alternative. In line with this, Volvo Cars is a holder of ISO 9001 and 14001 certificates and holds a SMETA Responsible Sourcing Audit (RSA) certificate from SEDEX since 2013. Being a holder of these certificates implies that Volvo Cars is regularly audited on quality, environment and ethics by independent certification organisations, and obliged to solve any non-conformities identified.

For information on ISO 14001, see 'ISO 14001 and beyond' on page 28. For information on ISO 9001, see "Quality management" on page 63.



## SOCIETAL ENGAGEMENT

We design cars around you. Therefore we need to interact with the world around us to gain knowledge and understanding of what cars society needs.

All units within Volvo Cars communicate directly or indirectly with society as part of their ongoing business processes. As a company, Volvo Cars relates to society through the stakeholder groups that influence and are influenced by its operations, knowhow, products and brand. In this context, Volvo Cars' definition of society is confined to the following main stakeholder groups:

- public authorities and politicians,
- NGOs (non-governmental organisations) and international organisations,
- universities and the educational community,
- the media,
- local communities and
- industry networks.

Volvo Cars continuously exchanges information and ideas with these groups through ongoing dialogue and other forms of communication. But Volvo Cars aims to do more than exchange information and ideas; it acknowledges that it cannot find solutions in isolation. Volvo Cars therefore aims to build and nurture open partnerships with societal stakeholders. This cooperation is essential if Volvo Cars is to gain the knowledge and understanding it requires to develop the cars that society needs and to act as a responsible company.

#### Public authorities and politicians

As a company, Volvo Cars is affected by political decisions, rules and regulations that are made in all countries in which it operates. Therefore, Volvo Cars works continuously to establish access to politicians, authorities and institutions through dialogue. This is done to obtain information on important legislation and regulations that impact Volvo Cars' strategic decisions and plans. Through these dialogues, Volvo Cars shares knowledge and experiences that it believes will drive societal developments in a favourable way. In dialogue with public stakeholders, Volvo Cars uses position papers, which are constantly updated to ensure they have a



President Xi Jinping of the People's Republic of China and First Lady Mme Peng Liyuan, joined by King Philippe and Queen Mathilde of Belgium, visited the Volvo Cars facilities in Ghent, Belgium in April 2014.

consistent message. Topics covered include safety, mobility, emissions and research. The position is in line with the sustainability strategy as communicated in this report.

#### NGOs and international organisations

Volvo Cars regards established, independent and credible NGOs and intergovernmental organisations (IGOs) as important drivers for sustainable development. NGOs help to change attitudes by getting involved and moulding public opinion on major societal issues, thus driving sustainable development forward. Volvo Cars' relations with NGOs and IGOs are based primarily on knowledge exchange and partnerships in which the company is responsive to their standpoints and criticism.

Volvo Cars is also a member of a number of trade and interest organisations for car manufacturers in the countries we operate in, e.g. the industry organisations ACEA and the Alliance of Automobile Manufacturers (Auto Alliance), whose goals are to develop and implement constructive solutions to public policy.

#### Universities and educational community

To ensure access to the right expertise Volvo Cars has a strong need to identify and utilise alliances, networks and collaborations, especially with academia. This is also important in ensuring that Volvo Cars attracts future employees with relevant competence. During 2014 Volvo Cars continued to be active and involved in several research programmes with academic partners, both nationally and in the international arena. The main programme for collaborative research is the Swedish Strategic Vehicle Research and Innovation programme (FFI), also involving other key Swedish stakeholders in vehicle and transport related research. The FFI programme offers a comprehensive national platform for sharing results supporting the development of a strong national cluster of competitive automotive competence. On a European level, Volvo Cars have played an active part in joint applications to Horizon2020 for collaborative research. In 2015, some of these applications will, after approval, transform into multi-stakeholder research projects.

At Volvo Cars we are continuously expanding our strategic dialogues with academia. For example, in Sweden, Volvo Cars already has a strategic agreement for collaboration with Chalmers University of Technology. Volvo Cars is also in discussion with several universities on how to develop stronger research collaborations with mutual benefits. In China, we are developing a closer relationship with Tongji University (Shanghai). In 2014, Volvo Cars has had positive experiences from having Swedish students working on their Masters' thesis at Tongji University in collaboration with Linköping University in Sweden. Tongji University is also part of the China–Sweden Research Centre for Traffic Safety (see page 62), where a number of research projects are currently ongoing.

In the USA, Volvo Cars has a number of research agreements with different universities, e.g. Massachusetts Institute of Technology, the University of Wisconsin, the University of Ohio and the University of Pennsylvania. In Brazil, Volvo Cars has started initial discussions investigating possibilities for local research activities with relevant partners, planned to come in to effect during 2015. The main focus for these collaborations is safety.

#### Media

Since the media are the channels of communication that penetrate furthest into all areas of society, an open and honest relationship with them is important to Volvo Cars. Although Volvo Cars cannot control the media or influence what is written, it can produce and supply them with accurate information on products, methods and experience. All press releases are publicly available at: https://www.media.volvocars.com.

#### Local communities

In communities where Volvo Cars is a major employer, the company holds regular meetings with local authorities. Volvo Cars informs the authorities of its plans and learns how the community seeks to develop. Volvo Cars also assesses opportunities for cooperation, such as the Drive Me partnership with the city of Gothenburg that was started in 2014. Apart from authorities, Volvo Cars also aims to communicate with members of the local communities in which its main operations are located. An example is the Volvo Cars Visitor Centre in Gothenburg, Sweden, which welcomes about 30,000 visitors every year.

#### **Industry networks**

Volvo Cars is involved in a number of industry networks. For example, Volvo Cars has been a member of the Swedish Network for Business and Human Rights since its launch in 2012. This network aims to provide a forum where the members can build knowledge and exchange experiences when it comes to business and human rights. The network is a cross-industry initiative and has several leading companies as members, including Alfa Laval, Electrolux, H&M, ICA, Oriflame, SCA, Stora Enso, SKF, TeliaSonera and Vattenfall.

#### Good citizenship projects

Volvo Cars supports projects, initiatives and events in areas that are connected to Volvo Cars' operations and that aim to support the revitalisation of the Volvo brand. By sponsoring long-term initiatives that are in line with our brand values, Volvo Cars aims to build brand ambassadors and apply Good Citizenship practices. Many of the projects that Volvo Cars engages in are closely connected to the success of the company's mission and vision, covering areas such as education and research, traffic safety, and children's welfare (often in relation to issues such as safety and education). Volvo Cars avoids long-term endorsements of individuals. Some examples of Good Citizenship projects that Volvo Cars sponsored or was involved in during 2014 are:

- National Association of Women Highway Safety Leaders: Volvo Cars sponsored a safety leader conference for women focusing exclusively on crash prevention in the US.
- China Automotive Technology & Research Centre: Volvo Cars China works in partnership with CATARC with the aim to support children safety seat legislation in the country.

• Ein Herz für Kinder (A Heart for Children): The association funds many institutions and projects focusing on children in need all around the world, with a key focus on Germany. For each new Volvo car sold in Germany our dealers donate a sum of money (15 Euro per car in 2014) which goes to the organisation. Close partners and suppliers to Volvo Cars Germany also contribute to the organisation and the fundraising is organised by Volvo Cars Germany.

#### Volvo Ocean Race

Volvo Cars has a longstanding tradition of supporting the Volvo Ocean Race as its major sponsorship project. This support was continued in 2014. The Volvo Ocean Race is the world's preeminent round-the-world yacht race and one of the most coveted prizes in the sport. The race is an event jointly owned by Volvo Cars and Volvo Group and is a key enabler for Volvo Cars to convey to the world our brand values and our products, aiming to develop brand attraction and increase consideration to buy.

The race incorporates a range of sustainability measures in its set-up and implementation. For example, a sustainable port selection

process is applied by which ports for the race are selected according to strict compliance and ethics rules in order to minimise corruption risks. Other selection criteria include respect for human rights during port construction and that there are long-term uses for the port.

Other crucial aspects of the set-up of the race include strict adherence to Volvo Cars' Code of Conduct for invitations, which means that participants must obey strict rules covering, for example, entertainment.

During the race Volvo Cars also undertakes a number of initiatives to raise awareness of environmental and traffic safety issues by conducting specific communication campaigns and research projects. During the race, several Good Citizenship initiatives also take place, such as beach cleaning, fundraising for the Save the Albatross project and the Team Jolokia project, which assembles a diverse racing crew that participates in the race to demonstrate how diversity can be an asset.



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Economic				
Indicator	Description	Coverage	UNGC Principle	Page
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EC2	Financial implications and other risks and opportunities for the organisation's activities due to climate change	•	7	Inside cover –1, 20–22, 66–67, AR 6–7
EC3	Coverage of the organisation's defined benefit plan obligations	•		43, AR <sup>1)</sup> 71-72 Note 24
EC8	Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement	0	_	15, 72-75
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Indicator	Description	Coverage	UNGC Principle	Page
EN1	Materials used	•	8	25-26
EN2	Percentage of materials used that are recycled input materials	•	8,9	26
EN3	Direct energy consumption	٠	8	2, 30-31
EN4	Indirect energy consumption	•	8	2, 30-31
EN5	Energy saved due to conservation and efficiency improvements	•	8,9	2, 29-31
	Initiatives to provide energy-efficient or renewable energy based			
EN6	products	•	8,9	2, 20–23
EN8	Water withdrawal	•	8	33-34
EN16	Direct and indirect greenhouse gas emissions	•	8	2, 29–33
EN19	Emissions of ozone-depleting substances	•	8	32-33
EN20	NOx, SOx, and other significant air emissions	•	8	2, 32-33
EN22	Waste	•	8	2, 33-35
EN23	Significant spills	•	8	35

Significant environmental impacts of transporting products and other goods and materials used for the organisation's operations, EN29 and transporting members of the workforce

Initiatives to mitigate environmental impacts of products and services

EN26

Social: Labor Practices and Decent Work					
Indicator	Description	Coverage	UNGC Principle	Page	
LA1	Workforce	•	_	2, 40-41, 49, AR 29	
LA2	Total number and rate of new employee hires and employee turnover by age group, gender, and region	0	6	2, 41	
LA4	Employees covered by collective bargaining agreements	٠	1, 3	52	

0

Partially

7, 8, 9

8

2, 20-25

35-37

Indicator	Description	Coverage	UNGC Principle	Page
LA5	Minimum notice period regarding significant operational changes	•	3	52
LA6	Workforce represented in formal joint management-worker health and safety committees	•	1	45
LA7	Injuries, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	•	1	2, 44-46
LA10	Hours of training per year per employee	•	_	42
LA12	Performance and career development reviews	•	_	42
LA13	Composition of governance bodies and breakdown of employees according to indicators of diversity	•	1, 6	2, 41, 49-50, AR 29
LA14	Ratio of basic salary and remuneration of women to men	0	1, 6	2, 50

Indicator	Description	Coverage	UNGC Principle	Page
HR2	Significant suppliers, contractors and other business partners that have undergone human rights screening	•	1-6	53, 68-70
HR3	Employee training on policies and procedures concerning aspects of human rights	•	1-6	56, 70
HR4	Incidents of discrimination and actions taken	•	1, 2, 6	53, 56
HR5	Operations and significant suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and actions taken to support these rights	•	1, 2, 3	52, 68-69
HR6	Operations and significant suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor	0	1, 2, 5	53, 68-69
HR7	Operations and significant suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor	0	1, 2, 4	53, 68-69
HR11	Grievances related to human rights filed, addressed and resolved through formal grievance mechanisms	٩	1-6	53, 57

Social: Society				
Indicator	Description	Coverage	UNGC Principle	Page
SO3	Employees trained in organisation's anti-corruption policies and procedures	0	10	55-56
SO5	Public policy positions and participation in public policy development and lobbying	•	1-10	72
S07	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes	•	_	65
S08	Significant fines and non-monetary sanctions for non-compliance with laws and regulations	•	_	65

Social: Pr	Social: Product Responsibility					
Indicator	Description	Coverage	UNGC Principle	Page		
PR1	Life cycle stages in which health and safety impacts of products and services are assessed for improvement	•	1	2, 60-61, 65		
PR3	Product and service information required	•	8	25-26, 65		
PR4	Incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling	•	8	65		
PR5	Practices related to customer satisfaction, including results of surveys measuring customer satisfaction.	•	_	2, 64		
PR6	Programs for adherence to laws, standards, and voluntary codes related to marketing communications	•	_	65		
PR7	Incidents of non-compliance with regulations and voluntary codes concerning marketing communications	•	_	65		
PR9	Value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services	٠	_	65		

## **APPENDIX 1**

Stakeholder group	Examples of engagement methods to discuss sustainability issues	Extract of discussed topics	More information
Employees	<ul> <li>Regular discussions with organisations representing the workforce</li> <li>Workshops</li> <li>One-to-one dialogues</li> <li>Anonymous survey</li> </ul>	<ul> <li>Environmental performance</li> <li>Human rights</li> <li>Ethics and integrity</li> <li>Health and safety</li> <li>Quality</li> <li>Sustainability performance and communication</li> </ul>	12, 16-19, 28-29, 38, 44, 52-57
Suppliers	<ul> <li>One-to-one dialogues</li> <li>Supplier trainings</li> <li>Self-assessments</li> <li>Daily liaison</li> </ul>	<ul> <li>Social responsibility and business ethics</li> <li>Health and safety</li> <li>Environmentally responsible production and recycling</li> </ul>	68-70
Academia, Universities, Schools	<ul> <li>Project cooperation and partnership agreement with Chalmers University of Technology</li> <li>Strategic discussions on collaborations with several national and international universities</li> <li>Student activities</li> <li>Anonymous survey</li> </ul>	<ul> <li>Rare materials in cars</li> <li>Developing a legitimate value proposition towards mobility</li> <li>Fuel efficiency</li> <li>Alternatives to fossil fuels</li> <li>Environmental friendly production</li> <li>Talent recruitment at universities</li> <li>Autonomous Driving - transport efficiency</li> <li>Talent recruitment and scholarship programmes</li> <li>Sustainability performance and communication</li> </ul>	3, 62-63, 73
Industry network	<ul> <li>Swedish Business and Human Rights Network</li> <li>One-to-one dialogues</li> <li>Joint projects</li> <li>Anonymous survey</li> </ul>	<ul> <li>Human rights management within multinational organisations</li> <li>Fuel efficiency</li> <li>Sustainability performance and communication</li> </ul>	12, 72, 74
Customers	<ul><li>One-to-one interviews</li><li>Customer surveys</li></ul>	<ul> <li>Environmental friendliness and energy efficiency in the user phase of a car</li> <li>Safety standards</li> <li>Customer satisfaction</li> </ul>	60-61,64
Dealers	<ul> <li>National sales companies (interface between the dealer network and Volvo Cars)</li> <li>Dealer Development Portal (DDP)</li> </ul>	<ul> <li>Safety systems and clean cabin features</li> <li>Legal compliance, environment and anti-corruption</li> </ul>	15-17, 49, 71
Government, Public authorities, Politicians	• One-to-one dialogues • Public dialogues	<ul> <li>Fuel efficiency</li> <li>Reduction of CO<sub>2</sub></li> <li>Safety</li> </ul>	19, 64, 72-73
Local communities	<ul> <li>Regular meetings with local representatives</li> <li>One-to-one dialogues</li> <li>Joint pilot projects</li> </ul>	<ul> <li>Reducing emissions</li> <li>Electric cars</li> <li>Autonomous driving</li> </ul>	22, 53, 66-67, 73-74
NGOs, IGOs, charity organisa- tions	<ul> <li>Ongoing dialogues</li> <li>Joint projects</li> <li>Anonymous survey</li> </ul>	<ul> <li>Human resources issues and recruitment</li> <li>Quality</li> <li>Health and safety</li> <li>Reduction of CO<sub>2</sub> emissions</li> <li>Sustainability performance and communication</li> </ul>	12, 50-51, 73-74
Media	<ul> <li>Press releases</li> <li>Company visits</li> <li>One-to-one interviews</li> </ul>	<ul> <li>Environmental and social impact as well as safety performance of Volvo Cars</li> <li>Product development</li> </ul>	19
Industry and consumer associations	<ul> <li>Memberships in industry associations</li> <li>AstaZero</li> <li>One-to-one dialogues</li> </ul>	<ul> <li>Sustainability in supply chain</li> <li>Development of the world's first full-scale proving ground for future traffic safety solutions</li> <li>Communication with authorities and customers</li> </ul>	59, 70, 73

## **ABOUT THE REPORT**

Volvo Cars has been reporting on environmental, health and safety aspects of its products and production since it signed the UN Global Compact in 2000. In 2003, the company produced its 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, Volvo Cars aims to ensure transparent reporting based on content which is relevant to its stakeholders. The report is structured according to the four dimensions of Volvo Cars' sustainability agenda:

- Economic dimension
- Environmental dimension
- People dimension
- Societal dimension

For 2014, Volvo Cars reports at GRI level B (self-declared, version G3.1). The company reports on an annual basis. This report's sustainability data cover the period 1 January to 31 December 2014. The 2013 report was issued in May 2014 and is available at Volvo Cars' website: www.volvocars.com.

This report describes Volvo Cars, defined as Volvo Car Corporation and its subsidiaries, joint venture companies and affiliated companies in China which are governed and operated by Volvo Cars. Definitions regarding boundaries as well as measuring techniques and calculations for each performance indicator are given in respect to the indicator concerned. The car manufacturing plant in Chengdu, which is owned by an affiliated company (being a subsidiary of Geely Zhao Yuan International Investment Co. Ltd) but is operated by Volvo Cars, as well as the operations in the two Chinese joint venture companies Zhangjiakou Volvo Car Engine Manufacturing Co. Ltd and Daging Volvo Car Manufacturing Co. Ltd - which were established in late 2013 - are included in the specific information on indicators in this report where possible. More complete information from these units will be included in 2015 report. No other significant changes have been made with regard to scope, boundary and measurement methods compared to previous reporting periods.

The Volvo Cars' Sustainability Report 2014 has not been verified by a third party. However, Volvo Cars may consider this in the future.

As a signatory to the UN Global Compact, the Sustainability Report is also our Communication on Progress. Please see GRI Index on page 76 for further reference.



# **INFORMATION AND CONTACT**

Volvo Cars values your comments and welcomes any questions you might have on sustainability and the latest Sustainability Report.

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To read more about Volvo Car Group, see the annual report 2014 and website.



Our global success will be driven by making life less complicated for people, while strengthening our commitment to safety, quality and the environment.

### **VOLVO**