

# Annual Report 2011

# The Bosch Vision

## Creating value – sharing values

Fairness

Initiative  
Determination



As a leading technology and services company, we take advantage of our global opportunities for a strong and meaningful development. Our ambition is to enhance the quality of life with solutions that are both innovative and beneficial. We focus on our core competencies in automotive and industrial technologies as well as in products and services for professional and private use.

We strive for sustained economic success and a leading market position in all that we do. Entrepreneurial freedom and financial independence allow our actions to be guided by a long-term perspective. In the spirit of our founder, we particularly demonstrate social and environmental responsibility – wherever we do business.

Our customers choose us for our innovative strength and efficiency, for our reliability and quality of work. Our organizational structures, processes, and leadership tools are clear and effective, and support the requirements of our various businesses. We act according to common principles. We are strongly determined to jointly achieve the goals we have agreed upon.

As associates worldwide, we feel a special bond in the values we live by – day for day. The diversity of our cultures is a source of additional strength. We experience our task as challenging, we are dedicated to our work, and we are proud to be part of Bosch.

If we want to work successfully as a team in a globalized and complex world, then we need a common image of the future for our company. This image – this vision – helps us bring our strategic thinking into clear alignment.



**BOSCH**

Invented for life

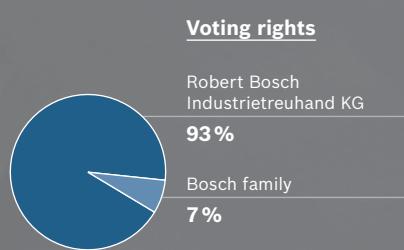
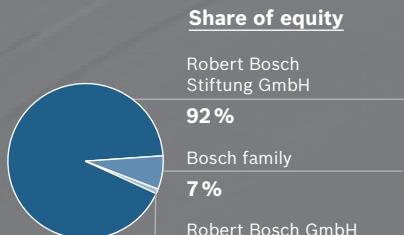
# Key Data

Bosch Group	2010	2011
<b>Sales revenue</b>	47,259	<b>51,494</b>
percentage change from previous year	+ 24	<b>+ 9.0</b>
percentage of sales revenue generated outside Germany	77	<b>77</b>
 <b>Research and development cost</b>	 3,810	 <b>4,190</b>
as a percentage of sales revenue	8.1	<b>8.1</b>
 <b>Capital expenditure</b>	 2,379	 <b>3,226</b>
as a percentage of depreciation	100	<b>142</b>
 <b>Associates</b>		
average for the year	276,418	<b>295,256</b>
as of January 1, 2011/2012	283,507	<b>302,519</b>
 <b>Total assets</b>	 52,683	 <b>54,616</b>
 <b>Equity</b>	 26,243	 <b>26,917</b>
as a percentage of total assets	50	<b>49</b>
 <b>Profit before tax</b>	 3,485	 <b>2,628</b>
as a percentage of sales revenue	7.4	<b>5.1</b>
 <b>Profit after tax</b>	 2,489	 <b>1,820</b>
 <b>Unappropriated earnings</b> (dividend of Robert Bosch GmbH)	 82	 <b>88</b>

Currency figures in millions of euros

# The Bosch Group at a Glance

## Shareholders of Robert Bosch GmbH



The Bosch Group is a leading global supplier of technology and services. In the areas of automotive and industrial technology, consumer goods, and building technology, more than 300,000 associates generated sales of 51.5 billion euros in fiscal 2011. The Bosch Group comprises Robert Bosch GmbH and its roughly 350 subsidiaries and regional companies in some 60 countries. If its sales and service partners are included, then Bosch is represented in roughly 150 countries. This worldwide development, manufacturing, and sales network is the foundation for further growth. Bosch spent some 4.2 billion euros for research and development in 2011, and applied for over 4,100 patents worldwide. With all its products and services, Bosch enhances the quality of life by providing solutions which are both innovative and beneficial.

The company was set up in Stuttgart in 1886 by Robert Bosch (1861-1942) as "Workshop for Precision Mechanics and Electrical Engineering." The special ownership structure of Robert Bosch GmbH guarantees the entrepreneurial freedom of the Bosch Group, making it possible for the company to plan over the long term and to undertake significant up-front investments in the safeguarding of its future. Ninety-two percent of the share capital of Robert Bosch GmbH is held by Robert Bosch Stiftung GmbH, a charitable foundation. The majority of voting rights are held by Robert Bosch Industrietreuhand KG, an industrial trust. The entrepreneurial ownership functions are carried out by the trust. The remaining shares are held by the Bosch family and by Robert Bosch GmbH.

## Automotive Technology

- Gasoline Systems
- Diesel Systems
- Chassis Systems Brakes<sup>1</sup>
- Chassis Systems Control
- Electrical Drives
- Starter Motors and Generators
- Car Multimedia
- Automotive Electronics
- Automotive Aftermarket
- Steering Systems<sup>2</sup>

## Industrial Technology

- Drive and Control Technology<sup>3</sup>
- Packaging Technology
- Solar Energy

## Consumer Goods and Building Technology

- Power Tools
- Thermotechnology
- Household Appliances<sup>4</sup>
- Security Systems

<sup>1</sup> Integrated into the Chassis Systems Control division as of January 1, 2012

<sup>2</sup> ZF Lenksysteme GmbH (50 % Bosch-owned)

<sup>3</sup> Bosch Rexroth AG (100 % Bosch-owned)

<sup>4</sup> BSH Bosch und Siemens Hausgeräte GmbH (50 % Bosch-owned)

**Nº5**

**Heidi Stock**

*Page 18*



**Nº1**

**Alexandra Stindl**

*Page 2*

# Living balance

Supplement to the Annual Report 2011 – Five Portraits

**Nº2**

**Werner Traa**

*Page 6*



**Nº4**

**Fritz Baumann**

*Page 14*



**Nº3**

**VK Viswanathan**

*Page 10*

## No 1 Portrait

### Alexandra Stindl

Age 29  
Stuttgart  
Germany

**Alexandra Stindl, an industrial engineer and marketing expert,** has always had a penchant for mathematics and logic. As an associate in personnel marketing at Bosch, she creates and supervises concepts for university programs. Her mission is to foster the company's contacts with the world's best and brightest students and to present Bosch as an attractive employer.

**At 29, Stindl's experience at Bosch has taken her** to various divisions as an intern, as a working student, and as a degree candidate. She also took part in the commitment initiative students@bosch. "It's easy for me to promote Bosch because of my first-hand experience as a student here," she says.

**€50m**

Bosch funding for  
universities and  
research projects



# Working strategically is like polishing rough diamonds

If you want to understand Alexandra Stindl's world, you'd better grab an atlas. Born in Kazakhstan to a Belarusian father and a Volga German mother and then raised in Ukraine, she graduated from high school in Rosenheim, Germany, and now calls Stuttgart home. And then there's Alexandra's better half, Alexander, a software developer at Bosch, who has close relatives in Canada, South America, and Poland. The couple met in Spain. With a background like that, it's no wonder she considers her solid language skills in Russian, German, English, Spanish, and French a bit paltry. Alexandra Stindl is now adding Italian to her repertoire. "I love traveling with my husband to countries where I can brush up on my languages," she says.

At work, her international flair is the perfect complement to her second passion – strategic thinking and practice. She enjoys creating concepts, the more complex and international the better, and seeing them through to fruition. Her career started off at the subsidiary Bosch Engineering, where she built up internal communications. Now, in personnel marketing, it's her job to ensure successful communications with an external target group: talented young university graduates from all over the world, whom Bosch wants to attract as new associates. Her biggest project at the moment is the Bosch InterCampus program, which manages the support the company provides to leading international universities. Developing concepts

like this calls for direct collaboration with her colleagues abroad in their various markets and departments, so there's a lot of talking to be done. In the morning she's on the phone to Japan, at lunchtime she talks to the Europeans, and later in the afternoon she's in touch with U.S. colleagues. As Stindl describes it,

*"international projects need a consistent base for you to add country-specific ingredients to. Sorting out the nitty-gritty to get the right blend is exciting. It's like polishing rough diamonds. You just keep working at it until you've created something good."*



**15,000**

university graduates accepted jobs at Bosch around the globe in 2011, 3,000 of them in Germany alone.



## Bosch InterCampus program

With its InterCampus program, Bosch is investing a total of 50 million euros to provide support for universities and research projects in Germany, China, India, and the U.S. over the next ten years. The program focuses on three challenges for the future: the environment, energy, and mobility.

**€200m**

is the sum Bosch invests each year in **training** its own associates all over the world. There are also opportunities to work abroad or switch to other industries, divisions, and business sectors.



**4,126 new patents were filed.**

*1 patent sheet is the equivalent of roughly 100 patents.*

**2,000**

students took advantage of the opportunities offered in 2011 by the program backstage@bosch at 125 events in 12 countries: with a mentor to guide them, they experienced an ordinary working day at Bosch, attending business meetings, gaining insights into office and laboratory life, and going to lunch with associates. The program continues in 2012.

**38,500**  
**researchers and  
developers**

were employed at Bosch worldwide at the end of 2011.

**Between six months  
and one year**

is the time students usually spend in the company during the practical phase of the PreMaster program. This program is designed to help students bridge the gap between the courses of study for their bachelor's and master's degrees. And during their master's studies, students remain in contact with Bosch: through work-study programs, master's projects, and personal contact with their mentor.



## No 2 Portrait

**Werner Traa**  
Age 53  
Ulm  
Germany

*Werner Traa is the member of the executive board responsible for sales and marketing at Wieland-Werke AG*, a global manufacturer of semi-finished copper and copper-alloy products. Among other things, the company, based in Ulm, Germany, works with Bosch to develop innovations for a host of industries. It's a relationship that Werner Traa values highly.

*And he has had plenty of opportunity to compare it with other partnerships.* As the “foreign minister” at Wieland, he visits customers in Asia, North America, and throughout Europe several times a year. “I couldn't do this job if I didn't enjoy traveling,” he says.

**115** years of collaboration with Bosch



# Pursuing what's new



Before he's even arrived at the office, Werner Traa can already see the challenges that await an executive board member who feels the pull of tradition but also wants to shape the future. In the foyer at Wieland headquarters in Ulm, he passes by the large bronze bell that the company founder Philipp Jakob Wieland cast for the Neenstetten Protestant parish church in 1835. Just a few meters away there is an illuminated wall. It displays photos of the current Wieland portfolio, comprising top-quality copper and copper-alloy products essential to pioneering, advanced technology. "Not many others can do what we do," Werner Traa says. The main reason for this is that Wieland, following the example of its founder, has always strived to break new ground. For over 100 years now, this drive to innovate has earned the company due appreciation and respect from

Bosch. After all, apart from its products, the supplier also offers expertise and a willingness to join Bosch in exploring new territory. Traa knows that experience can be gathered in many ways and in many areas. For example, Wieland develops copper alloys that are used in the widest variety of applications – from tablet PCs, flat-screen TVs, LEDs, and electric and hybrid vehicles to solar panels and windfarms. It also produces copper alloys that are used when making cymbals:

*"When a pop star like Phil Collins goes on stage, Wieland is up there with him."*

Werner Traa says. His fascination with new advances also extends into his private life where he likes to stay on top of the latest developments in computer technology, and secretly

dreams of a futuristic, fully networked home in which everything from heating through lighting to door mechanisms can be controlled from a smartphone. Today, such solutions are still costly, and some of them more science fiction than fact. In contrast, his role as "chef de cuisine" in the family is more firmly grounded in reality.

**58** companies in  
**30** countries make up  
the international Wieland  
Group, **18** of which  
are headquartered in  
Germany. The Vöhringen  
plant with its **500,000**  
metric ton capacity is  
the largest of its kind  
worldwide in the non-  
ferrous metal industry.



## Independence and competition

Interaction between Bosch and Wieland is defined by the companies' respective strategies. Both have pledged to support fair competition, and both guard their independence. This is why direct business with Bosch accounts for just one percent of Wieland's total annual sales. A much larger percentage is generated indirectly, through sales to other Bosch suppliers.

## Parallels at all levels

Aside from the drive to innovate, Wieland and Bosch also share a strong culture of social responsibility toward the workforce, which has traditionally produced close ties between the companies. Wolfgang Eychmüller, the long-serving CEO and supervisory board chairman at Wieland, sat on the Bosch supervisory council for 25 years up to 2003, ultimately as its chairman.

Today, Wieland supports Bosch development activities with its expertise in the fields of materials and semi-finished products. It is in constant touch with some 250 contact persons at Bosch. Roughly 30 joint development projects are carried out each year.

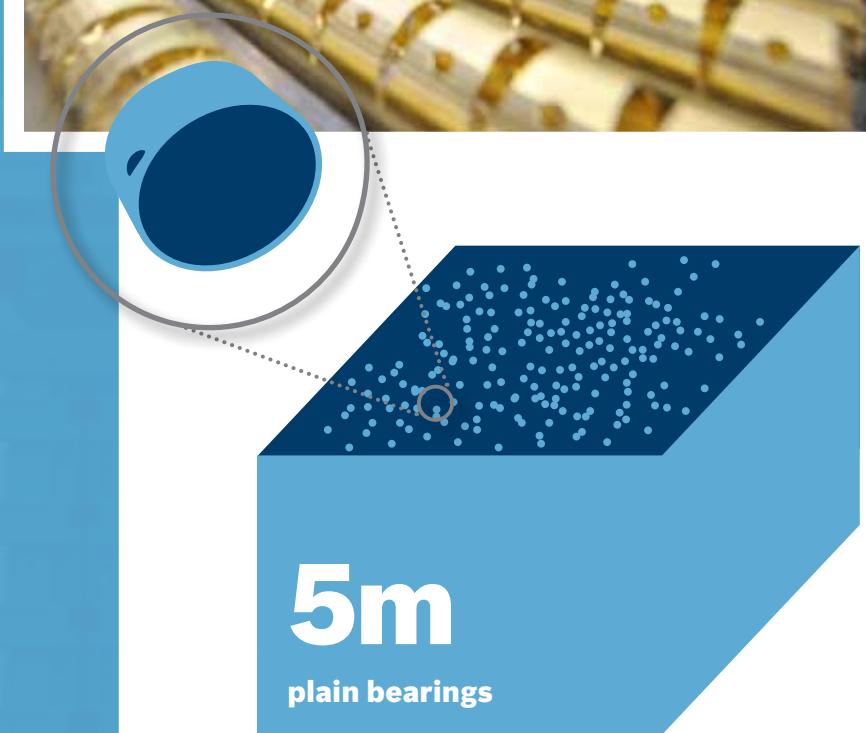
## Humble beginnings

Wieland supplies Bosch with five million plain bearings each year. The first thing the company ever delivered to Bosch, in 1897, was a case of brass tubes.



1 case

1897



2011

## No 3 Portrait

**VK Viswanathan**

Age 61  
Bangalore  
India

**VK “Vish” Viswanathan** is a people’s manager through and through. Way back in his school days and later as a student at Madras University in Chennai, India, he was already fascinated with business and everything that makes a company successful.

**He moved from the consumer goods manufacturer Unilever** to Bosch 13 years ago. Today, he has become such a dyed-in-the-wool Bosch associate that even German terms such as “Injektor” (injector) and “Pumpe-Düse-System” (unit injector system) roll easily off his tongue.

**Viswanathan is the regional president of the Bosch Group in India and the managing director of the Indian regional company Bosch Ltd.** He lives by the maxim: Strive to do only what is consistent with your own values and beliefs.

**24,100** associates in India



# The best of all possible worlds

**W**hen VK Viswanathan stepped off the plane in Germany in September 1998 as a new Bosch associate, he didn't feel very much of the magic force which, as the German author Hermann Hesse maintained, dwells in new beginnings.

***"It was raining, we were freezing, and it was impossible to find a vegetarian meal,"***

he recalls with a laugh over a cup of coffee in the visitors' cafeteria at Schillerhöhe. He recounts this story tongue in cheek. For his rocky start was followed by two wonderful and very successful years in Germany – and many more with Bosch in his home country, India.

Now 61 years of age and the proud father of a grown-up daughter, Viswanathan runs all Bosch activities on the subcontinent from his base in Bangalore. He knows how his fellow Indians think and work. That they are fast and flexible, for example. He learned a certain perfectionism from the Germans. And as regional director of Electrical Drives in the U.S., he grew to appreciate that country's entrepreneurial spirit. "When we combine these qualities at Bosch,

we can't be beaten," he says, eyes gleaming. Viswanathan leans back in his chair, sets out strategies, traces growth curves, and describes paths to superior performance. "Knowing you can still get even better, and applying yourself to this objective with passion and dedication – that's the beauty of a leader's job." In simple terms, it means inspiring people to excel continuously.

That is his world. That is what fascinates him. But Viswanathan can get just as enthusiastic about notes and melodies as about numbers. On Sundays, he and his wife love going to concerts of Indian classical music. He relaxes to the strains of the sitar, sarangi, veena, and the violin, which, when accompanied by vocalists in small ensembles, unfold ethereal qualities. His wife, an artist who runs an NGO that helps poor children with congenital heart disease, also likes to sing. Viswanathan listens and enjoys: "I find this music inspiring, it makes me happy."

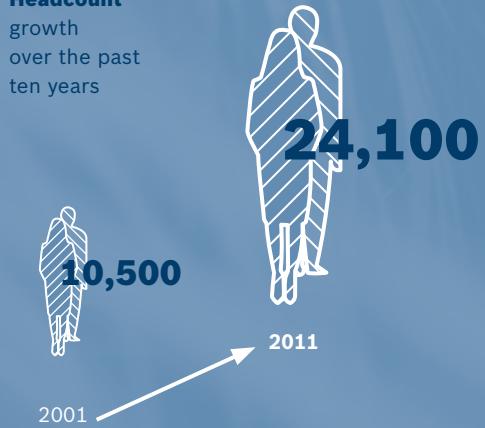
***"I find this music inspiring, it makes me happy."***



## Build, expand, create jobs

India's economy is growing by leaps and bounds – and Bosch is keeping pace. Over the past ten years, Bosch India has been headed in only one direction: straight up. The number of associates has doubled, from 10,500 to 24,100, while sales have soared from some 321 million to 1.4 billion euros. In 2011 alone, those in charge of human resources in Bangalore, Coimbatore, Ahmedabad, and Pune hired 350 new people each month, all year long. Apart from creating new jobs, these positive business developments offer career growth to existing associates as well.

**Headcount  
growth  
over the past  
ten years**





## Unskilled jobs replaced by vocational training – funded by Bosch

*Foundation supports underprivileged children and young people in India*

Set up in 2008, the Bosch India Foundation pools Bosch's civic initiatives, which follow a long tradition, also in India. The foundation is concerned with helping socially underprivileged children and young people get a better education. They receive free vocational training lasting between two and six months, which gives them the basic skills they need for occupations such as auto mechanic, electrician, fitter, or plumber. "Many of these teens quit school early and take unskilled jobs to supplement the family income," says VK Viswanathan.

*"This program is geared to improving their chances in the job market."*

Bosch associates also volunteer their services to teach underprivileged youngsters subjects such as computer skills. At the same time, the foundation funds operations for children with physical deformities and orthopedic problems. "Each year," says Viswanathan, "a certain percentage of the company's profits goes to the foundation."



## No 4 Portrait

**Fritz Baumann**  
Age 65  
Leinfelden-Echterdingen  
Germany

*Nicknamed the “motor czar,” the former Power Tools associate Fritz Baumann* knows all 4,600 motor variations the division produces – their quirks and characteristics, where they are manufactured, and the processes that are used.

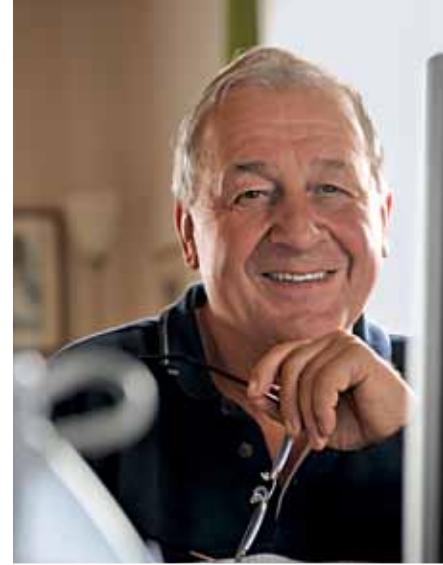
*At his home in southwest Germany,* Baumann takes care of his orchards. When working for Bosch in China and elsewhere, he takes care of good relationships with local colleagues.

*During his career, the engineer invented new processes* and filed patents. But, he reminds us, “That’s no reason to become full of yourself. There are always others involved – these things are only achieved through teamwork.”

**4,600** motor variants at Power Tools







# On the go for Bosch and the Baumann family

Fritz Baumann's alarm goes off at six every morning – seven days a week. There's always just so much to do. Ten plots planted with apple trees need tending. The sturdy 65-year-old, who doesn't look his age, grows vegetables on roughly an acre of land for his family – children, grandchildren, and siblings. In the evenings, he prepares for meetings of the local bank's supervisory board, which he heads, and does paperwork for his 89-year-old aunt. Fritz Baumann officially retired from Bosch in 2006, but his days are far from idle. Even so, when his former employer calls, he is almost always ready for the next assignment or adventure.

For instance, during the expansion of the Power Tools division in Engels, Russia, Baumann spent two years on the job in Leinfelden near Stuttgart and on site in Engels, where he assisted in installing an assembly line for entry-level professional power tools. Later he advised new Power Tools associates at the Leinfelden maintenance and technical functions department. For the avid

handball player, a job well done has always been one achieved through teamwork and strong personal relationships.

When Fritz Baumann passes through the corridors at Power Tools HQ, former colleagues call out greetings from their workstations. To this day, he still gets mail from former

on their own," he recalls. He also invited them to family gatherings and showed them Neuschwanstein Castle. When he later went to China to set up an assembly line, he couldn't have asked for more supportive allies. Retired but far from idle, Baumann says he'll be happy to help out at Bosch for as



colleagues, asking for his expert opinion. Among them are two Chinese engineers who spent six months in Leinfelden in the mid-1990s. "After they arrived, I kept going shopping with them until they could manage

long as his colleagues still value him and his professional advice.

# 910

consultancy assignments  
worldwide in 2011

# 1,400

senior experts  
worldwide work  
for Bosch  
Management  
Support.

Many senior experts  
can draw on  
**four decades** of  
Bosch experience.

Experts registered  
with BMS have jointly  
accumulated over

# 35,000

years of experience.

## Seasoned, motivated, professional

How do you suddenly change pace completely when you retire after four decades going flat out in your job? For Fritz Baumann and many other Bosch associates, this doesn't feel right. Instead, after officially retiring, they continue to work for their former employer as senior experts at Bosch Management Support GmbH (BMS).

BMS started out in 1999 with 30 former Bosch associates and today numbers more than 1,400 experts worldwide. Its success bears testimony to just how greatly the advice of mature associates is valued at Bosch. The old hands go into action wherever a professional consultant is needed at short notice. In Fritz Baumann's case, that meant getting an assembly line up and running abroad; others might see to quality assurance at a plant. The assignments are for a limited period, with pay being based on the expert's previous earnings.

BMS not only makes placements but also gives its senior experts advice on issues such as mandatory health insurance or how much additional income they are allowed to earn. In 2011 alone, more than 571 pensioners spent a total of 54,351 days on the job. Former associates can be counted on even in the darkest hours. For instance, many provided vital assistance as part of special crisis teams following the Japanese earthquake in March 2011.

## One employer, no end of experience

Baumann fondly recalls his early days at Bosch. He first arrived at the Stuttgart-Feuerbach plant in fall 1964 as an 18-year-old mechanic's apprentice. "Even back then, I was lucky enough to be permitted to take on a variety of jobs" – some outside his department. "I built devices for testing medicines at the Robert Bosch Hospital and checked the lights on Robert Bosch Junior's motorcycle," he laughs.

Baumann had intended to explore new territory at other companies after his apprenticeship and studies, but exciting new projects just kept coming his way at Bosch. The engineer tackled quality assurance, automation technology, and consulting. Over his 41 years working full-time and in partial retirement from 2005, he was active in the U.S., Switzerland, the Netherlands, China, Malaysia, Mexico, Poland, Hungary, and Russia. Today he is glad he stayed on at Bosch:

*"I had the best job imaginable."*

## No5 Portrait

***Heidi Stock***  
Age 43  
Stuttgart  
Germany

In 1993, when Heidi Stock was 24 and had just received her sociology degree, she started her very first job, in the personnel department of a large company – only to find there were no other women in the department. Times have changed since then. Since 2001, she has been working to promote equal opportunities at Bosch and now heads the corporate office “Human Resources Management; Associate Development and Diversity.” Bosch aims to raise the proportion of women in leadership positions worldwide to 15 percent by the end of 2012.

The Düsseldorf native and mother pursues her department’s goals tenaciously – and sometimes with a hint of provocation. “Call it my native sense of humor,” she says.

**24%**  
proportion of women in total Bosch workforce



Ohne Frauen geht es nicht, ohne Männer auch nicht. Erfolg ist keine Frage des Geschlechts, vielmehr von individuellen Stärken - Gender Diversity.

Hier setzen wir an, um das ganze Potenzial zu nutzen, denn die Innovationskraft eines Teams ist bei einem Verhältnis von 10:50 Frauen zu Männern am höchsten.

Deshalb bauen wir auf unterschiedliche Denkweisen, Erfahrungen und Lebensstile – dann gewinnen Teams auch auf Führungsebene und am erfolgreichsten.

[Sie erneut Sie verfallen bei Klick!](#)

# Greater diversity means greater innovative strength

Sometimes all your wishes come true, but at the wrong time: new job, new surroundings – and suddenly, there's a baby on the way. That's a lot to handle all at once, thought the HR professional Heidi Stock, so she went to her supervisor to discuss the situation. The solution wasn't long in coming: she would head up the equal opportunities project. And she has stuck with this issue ever since her turbulent start at Bosch in 2001. After the birth of her son, Robert, she went right back to work. Heidi Stock, a fan of who-dunits, is not someone to leave a case unsolved.

*"There's still room for improvement, but Bosch is advanced in this area,"*

Making this issue an integral part of the Bosch values has steered the debate in a new direction. As Stock says:

*"This stopped being a purely feminist issue years ago. Now we realize it's also a business issue."*

In November, Bosch launched a global initiative. Its message: Diversity is our strength. Teams with a mix of ages, genders, and nationalities demonstrably work more efficiently and more creatively. "We shed light on the issue, focus on the benefits for the company, and aim to create a receptive climate for this topic worldwide," she says. In view of demographic changes and future numbers

women. A Bosch poster for a recruiting event announces: "We're looking for women who want to climb higher than three inches."

The image shows a shelf full of high heels. Initially this was not unanimously applauded by female associates. But the poster did garner a prize as well as positive feedback from male and female applicants alike at recruiting events. And Heidi Stock felt her views had been vindicated:

*"You don't always have to take these things so seriously."*



she says of her employer, citing the success of the women's network and the support from the board of management. In 2010, her project became the corporate office "Human Resources Management; Associate Development and Diversity."

of female university graduates, Stock says, Bosch intends to secure the skills of highly qualified young women over the long term. All the same, as Heidi Stock is well aware, this is still a very sensitive issue – among men as much as among



## Share of women in leadership positions



## Diversity: global initiative

Diversity is part of the Bosch corporate culture and is considered a success factor. In an effort to further sharpen associates' awareness, a global initiative was launched at some 200 locations in November 2011. It's all about collaboration and mutual appreciation between the sexes and among generations, nationalities, and working cultures. Increasing the proportion of women in leadership positions worldwide from 11 to 15 percent is a major goal this year.

The scope of the project includes special events for executives, aimed chiefly at sensitizing them to the issue of dealing with diversity. What's more, 158 executives worldwide are spending up to 125 days testing new, flexible working time models. During the kick-off phase, the accompanying communications campaign gives associates facts and figures to boost their awareness of this issue. The information is visually underscored with silhouettes that stand for real associates throughout the world. This year, the silhouettes will get faces – and will report on their personal experiences.



# Finding balance

## Contents

- ◀ The Bosch Vision
  - ◀ Key Data
  - ◀ Bosch Group
  - ◀ **Living balance**
    - Five portraits
  - 24** Foreword
  - 26** Board of Management
  - 28** Supervisory Council Report
  - 30** Supervisory Council, Industrial Trust, International Advisory Committee
  - 32** Highlights 2011
  - 38** **Group Management Report**
- .....
- 106** Robert Bosch Stiftung
  - 108** **Consolidated Financial Statements of the Bosch Group**
  - 182** Auditor's Report
  - 184** Ten-Year Summary of the Bosch Group
  - 186** Publishing details

60

### **Technology and Innovation**

What will Bosch develop tomorrow?  
What will it modify? What drives us?

70

### **Automotive Technology**

What is Bosch doing to remain a key player in the move to new forms of mobility?

80

### **Industrial Technology**

What challenges does Industrial Technology face? Where has it been successful?

88

### **Consumer Goods and Building Technology**

What efficiency gains have been made in consumer goods and building technology?

96

### **Our Responsibility**

How does Bosch manage to balance social, ecological, and economic concerns?

# Foreword



*Ladies and gentlemen,*

The guiding vision behind our 2011 annual report is sustainability - not just in retrospect, looking back at our company's 125-year heritage, but also and above all looking ahead, to the challenges still to come. The year 2011 once again left us in no doubt about the sheer dynamism and volatility of the times the Bosch Group is faced with. The ripples of economic uncertainty sent out by the sovereign-debt crisis, especially in the euro zone, are still as strong as ever. At the same time, the pace of change toward even stronger global competition, driven also by new technologies, is quickening with each new day. And not least, we are faced with major global challenges arising from the world's rapidly growing population, the need to do more to protect the environment and the climate, and the increasing scarcity of natural resources.

For us, sustainability has been an integral part of our corporate responsibility since the very beginning. We see this as a balance between economic interests on the one hand and ecological and social concerns on the other. From the environmental perspective,

we aim to play our part in boosting energy efficiency, conserving resources, and protecting our climate and the world we live in. This applies across the board, from our manufacturing processes to the finished product. We want to deliver technology that is invented for life - and to enhance the quality of life for as many people as possible.

To achieve sustainability effectively, we need to make considerable upfront investments today in the technologies of tomorrow and beyond, something which is only possible with a sound financial footing and a broad business base. In other words, long-term success calls for a balance between creating value - that is, profitable growth - and securing value to preserve our financial independence. This is the only way to safeguard the jobs of our associates, who now number in excess of 300,000 worldwide.

Sustainable and responsible business practices are the key to lasting success. This is true not only for individual companies or the economy as a whole.

## *Can you manage a business sustainably and still have growth?*

**Sophie He, 13,** daughter of Simone He  
Corporate strategy Asia Pacific

**“Yes. These things are not mutually exclusive. In the end, it comes down to the quality of growth: If we can grow using less energy and emitting less CO<sub>2</sub>, then we will conserve resources, protect the climate, and secure jobs for our associates.”**

Franz Fehrenbach



For traditional social aggregates such as sovereign states, long-term, integrated thought and action are likewise the cornerstone of prosperity. In the current European sovereign-debt crisis, pragmatic action is frequently our only option, since it gives us time to prepare structural reform. Yet on no account should short-term rescue packages be seen as a substitute for such reform. This is the only way to combat the steady waning of confidence in free-market structures and politics, and to inspire a newfound sense of trust.

Historically, the free-market economy has proved to be the most productive and innovative economic system there is, leading to improved living conditions in many countries. However, it is vitally important that the ground rules underlying this system be respected and observed, since it cannot work without them. This is precisely where the international community must live up to its responsibilities, for only then can we – society and business together – generate the creativity and leverage the power needed to tackle

the major global issues of our day. Successful companies are a part of this equation.

On behalf of the board of management, I would like to thank all our associates for their hard work and commitment, which have been instrumental in securing the outstanding performance of our company. Our thanks also go out to our business partners for their broad and intensive cooperation, to our shareholders and supervisory council members for their support, and to our employee representatives for their constructive advice and assistance.

Franz Fehrenbach  
Chairman of the Board of Management

# Board of Management

## Franz Fehrenbach

### *Chairman*

Corporate Strategy;  
Corporate Communications, Brand  
Management, and Sustainability;  
Senior Executives;  
Real Estate and Facilities

### **Dr. Siegfried Dais**

#### *Deputy Chairman*

Information Technology

Drive and Control Technology;  
Solar Energy

## Dr. Bernd Bohr

Chairman, Automotive Group;  
Automotive Systems Integration;  
Quality Management

Gasoline Systems;  
Diesel Systems;  
Chassis Systems Brakes  
(reorganized effective  
*December 31, 2011*);  
Steering Systems<sup>1</sup>

India

## Dr. Rudolf Colm

Consumer Goods and Building  
Technology business sector;  
Purchasing and Logistics;  
Insurance

Power Tools;  
Thermotechnology;  
Security Systems;  
Household Appliances<sup>1</sup>

Western Europe; Middle Eastern  
Europe; Russia; Middle East; Africa

<sup>1</sup> Joint venture managed as a division

## Presidents of the Divisions

### **Dr. Rolf Bulander**

Gasoline Systems

### **Dr. Markus Heyn**

Diesel Systems  
(from January 1, 2012)

### **Dr. Gerhard Turner**

Diesel Systems  
(until December 31, 2011)

### **Dr. Werner Struth**

Chassis Systems Control  
(until December 31, 2011)

### **Gerhard Steiger**

Chassis Systems Control  
(from January 1, 2012)  
Chassis Systems Brakes  
(until December 31, 2011)

### **Dr. Udo Wolz**

Electrical Drives

### **Dr. Ulrich Kirschner**

Starter Motors and Generators

### **Dr. Uwe Thomas**

Car Multimedia

**Dr. Stefan Asenkerschbaumer**

Business Administration;  
Finance and Financial Statements;  
Planning and Controlling

**Uwe Raschke**

Asia Pacific

**Wolf-Henning Scheider**

Chassis Systems Control;  
Electrical Drives;  
Starter Motors and Generators

**Dr. Volkmar Denner**

Research and Advance  
Engineering;  
Technology Coordination;  
Product Planning and Technology

Car Multimedia;  
Automotive Electronics

**Dr. Werner Struth**

(from January 1, 2012)

Manufacturing Coordination,  
Production System Development,  
and Investment Planning;  
Environmental Protection

Packaging Technology

North America; South America

**Peter Marks**

(until December 31, 2011)

**Christoph Kübel**

(from January 1, 2012)

Human Resources and Social  
Services; CIP Coordination;  
Legal Services; Compliance; Taxes;  
Intellectual Property;  
Internal Auditing; External Affairs,  
Governmental and Political Relations

**Dr. Wolfgang Malchow**

(until December 31, 2011)

**Peter Tyroller**

Marketing and Sales;  
Original Equipment Sales

Automotive Aftermarket

**Klaus Meder**

Automotive Electronics  
(from January 1, 2012)

**Robert Hanser**

Automotive Aftermarket

**Holger von Hebel**

Solar Energy

**Uwe Glock**

Thermotechnology

**Christoph Kübel**

Automotive Electronics  
(until December 31, 2011)

**Dr. Karl Tragl**

Drive and Control Technology

**Dr. Stefan Hartung**

Power Tools

**Gert van Iperen**

Security Systems

**Friedbert Klefenz**

Packaging Technology



# Supervisory Council Report

*In times of considerable economic uncertainty, how does the supervisory council support the board of management?*

Tobias Hees, 30  
Software and design engineer

*Ladies and gentlemen,*

In 2011 – to a truly gratifying response – we joined with customers, partners, and associates at our locations worldwide in celebrating the 125th anniversary of the company's founding and the 150th anniversary of the birth of its founder, Robert Bosch. We were able to demonstrate our ability to “know how and think beyond,” to highlight the diversity in our company, and at the same time to show the strength we derive from what we have in common. With our thoughts thus occupied with our dual anniversary, we found ourselves all the more shaken by the natural disaster in Japan, a country where Bosch has already had a presence for 100 years. Nor was our company alone in feeling the effects of the current economic uncertainty.

Against the backdrop of the volatile market environment, the supervisory council discussed at length both business performance and the economic outlook. At its March meeting, for example, it took a close look at the impact of the natural disaster in Japan on Bosch and the automotive industry worldwide. In addition, the council discussed the development of the Bosch Group’s

planning and control system, learned in detail about how the financial investments geared to safeguarding our financial independence are structured, and received the annual compliance report.

Among the supervisory council’s strategic priority issues was the long-term potential of renewable forms of energy in the slipstream of current turbulence in the photovoltaics market. The council discussed technical and economic trends affecting safety and driver assistance systems in the field of automotive technology. It also looked at how the growing importance of the internet is not only changing the face of sales, marketing, and communications, but also reshaping our work culture within the company.

PricewaterhouseCoopers Aktiengesellschaft Wirtschaftsprüfungsgesellschaft (PwC) audited and issued an unqualified audit opinion on the Robert Bosch GmbH annual financial statements, the Bosch Group consolidated financial statements, and the accompanying management reports as of and for the year ended

**“In view of the current market volatility, it is important for the long-term development of the Bosch Group to bring different concerns into harmony: the further expansion of the company, the securing of our financial independence, and the protection of the interests of our associates. This also complies with the mission handed down to us in Robert Bosch’s will. In regular, in-depth meetings, the supervisory council and the board of management discuss not only changes in strategic direction, but also the operational measures needed to achieve them. This approach also paid off in the midst of the global financial crisis.”**

Hermann Scholl



December 31, 2011. The supervisory council discussed these documents at length and subjected them to its own examination. All members of the supervisory council had access to the auditor's reports. Moreover, at the supervisory council meeting, the auditor reported on the main findings of the audit, which were discussed in detail in the auditor's presence. The supervisory council raised no objections, concurred with the results of the audit, and approved the Robert Bosch GmbH annual financial statements and the Bosch Group consolidated financial statements. The supervisory council recommended that the shareholders adopt the annual financial statements, approve the consolidated financial statements, and endorse the board of management's proposal for the appropriation of net profit.

Effective December 31, 2011, Dr. Rainer Hahn retired from the supervisory council. Dr. Wolfgang Malchow, who until the end of 2011 was a member of the board of management, was appointed his successor. There will be a further change following the supervisory council

meeting on March 29, 2012, when Dr. Hans-Friedrich von Ploetz retires. Prof. Dr. Renate Köcher has been appointed his successor among the ranks of the shareholders' representatives. The supervisory council wishes to thank the outgoing members for their dedication and commitment and their successors for their willingness to play an active role on the council.

In addition, the supervisory council would like to thank the board of management and all Bosch Group associates for their hard work and input, which enabled the company to achieve strong growth in spite of the challenging environment.

Stuttgart, March 2012  
For the supervisory council

*Hermann Scholl*

Prof. Dr. Hermann Scholl  
Chairman

# Supervisory Council

## Supervisory Council

**Prof. Dr.-Ing. Hermann Scholl**

Stuttgart

*Chairman*

formerly Chairman of the Board  
of Management of Robert Bosch  
GmbH

**Alfred Löckle**

Ludwigsburg

*Deputy Chairman*

Member of the Works Council,  
Schwieberdingen Plant, Chairman  
of the Central Works Council as  
well as of the Combined Works  
Council of Robert Bosch GmbH

**Dr. forest. Christof Bosch**

Königsdorf

Spokesperson  
for the Bosch family

**Christian Brunkhorst**

Mühlthal

Representative of the Chairman  
of Industriegewerkschaft Metall

**Klaus Friedrich**

Lohr

Chairman of the Works Council of  
Bosch Rexroth AG, Lohr am Main,  
Chairman of the Central Works  
Council of Bosch Rexroth AG,  
Member of the Combined Works  
Council of Robert Bosch GmbH

**Hartwig Geisel**

Leinfelden-Echterdingen

Chairman of the Works Council,  
Stuttgart-Feuerbach Plant,  
Deputy Chairman of the Central  
Works Council as well as  
of the Combined Works Council  
of Robert Bosch GmbH

**Hans-Peter Gräther**

Freiberg am Neckar

Vice-President Purchasing,  
Power Tools Division,  
Chairman of the Central  
Executives' Committee  
of Robert Bosch GmbH and  
of the Combined Executives'  
Committee

**Dr.-Ing. Rainer Hahn**

Stuttgart

(until December 31, 2011)

former Member  
of the Board of Management  
of Robert Bosch GmbH

**Jörg Hofmann**

Stuttgart

Regional Chairman of Industrie-  
gewerkschaft Metall,  
Baden-Württemberg region

**Prof. Lars G. Josefsson**

Stockholm

former President and Chief  
Executive Officer of  
Vattenfall AB

**Dieter Klein**

Wolfersheim

Chairman of the Works Council,  
Homburg Plant, Member  
of the Central Works Council  
of Robert Bosch GmbH

**Prof. Dr. Hermut Kormann**

Ulm

former Chairman of the Board  
of Management of Voith AG

**Prof. Dr. Renate Köcher**

Allensbach

(from March 30, 2012)

Managing Director,  
Allensbach Institute for  
Public Opinion Research

**Prof. Dr. Olaf Kübler**

Zurich

former Director,  
Eidgenössische Technische  
Hochschule (ETH) Zürich

**Matthias Georg Madelung**

Munich

Member of the Board of Trustees  
of Robert Bosch Stiftung GmbH

**Dr. Wolfgang Malchow**

Pliezhausen

(from January 1, 2012)  
former Member  
of the Board of Management  
of Robert Bosch GmbH

**Daniel Müller**

Metzingen

Chairman of the Works  
Council, Reutlingen Plant,  
Member of the Central Works  
Council of Robert Bosch GmbH

**Dr. Hans-Friedrich von Ploetz**

Berlin

(until March 29, 2012)

former German Ambassador  
to Russia

**Urs B. Rinderknecht**

Zurich

former Chief Executive of UBS AG

**Wolf Jürgen Röder**

Hofheim (Taunus)

Executive Director,  
Otto Brenner Stiftung der  
Industriegewerkschaft Metall,  
Frankfurt am Main

**Tilman Todenhöfer**

Madrid

former Deputy Chairman  
of the Board of Management  
of Robert Bosch GmbH

**Hans Wolff**

Bamberg

Chairman of the Works Council,  
Bamberg Plant, Member  
of the Central Works Council  
of Robert Bosch GmbH

# Industrial Trust, International Advisory Committee

## Robert Bosch Industrietreuhand KG

<i>General partners</i>	<i>Limited partners</i>		
<b>Prof. Dr.-Ing. Hermann Scholl</b> Stuttgart	<b>Dr. forest. Christof Bosch</b> Königsdorf	<b>Dr. rer. nat. Jürgen Hambrecht</b> Ludwigshafen	<b>Dr. Michael Otto</b> Hamburg
Chairman of the Shareholders' Meeting	<b>Dr. Siegfried Dais</b> Stuttgart	<b>Prof. Lars G. Josefsson</b> Stockholm	<b>Urs B. Rinderknecht</b> Zurich
<b>Tilman Todenhöfer</b> Madrid	<b>Franz Fehrenbach</b> Stuttgart	<b>Prof. Dr. Olaf Kübler</b> Zurich	

## Robert Bosch International Advisory Committee

<b>Prof. Dr.-Ing. Hermann Scholl</b> Stuttgart <i>President</i>	<b>Dr. Hugo Bütler</b> Zurich	<b>Dr. Henry A. Kissinger KCMG</b> Washington	<b>François Scheer</b> Paris <i>(until December 31, 2011)</i>
<b>Dott. Alessandro Benetton</b> Treviso (Venice)	<b>Prof. Ryozo Hayashi</b> Tokyo <i>(from January 1, 2012)</i>	<b>Friedrich Merz</b> Berlin	<b>Erwin Schurtenberger</b> Ascona, Beijing
<b>Miguel Boyer Salvador</b> Madrid <i>(until December 31, 2011)</i>	<b>Baba N. Kalyani</b> Pune	<b>Ingo Plöger</b> São Paulo	<b>Louis Schweitzer</b> Paris
	<b>Dr. Klaus Kinkel</b> St. Augustin (Bonn) <i>(until December 31, 2011)</i>	<b>Dr. Hans-Friedrich von Ploetz</b> Berlin	

# Highlights 2011



**Jan. 19**

## Skid-protection anniversary

It saves lives: the MM3 yaw-rate sensor. The **33,333,333rd** such sensor comes off the production line. Its successor will be even smaller.



**Feb. 14**

## A portrait of Bosch in a single second

Around the world, **125 photographers** pressed the shutter release at the same second. Click. The result: a unique snapshot of the company and an **anniversary gift** for each associate. It is presented worldwide to **300,000 associates**.



▲ Ho Chi Minh City – Vietnam – André de Jong –  
16:00:00 CET – Justin Mott (photographer)

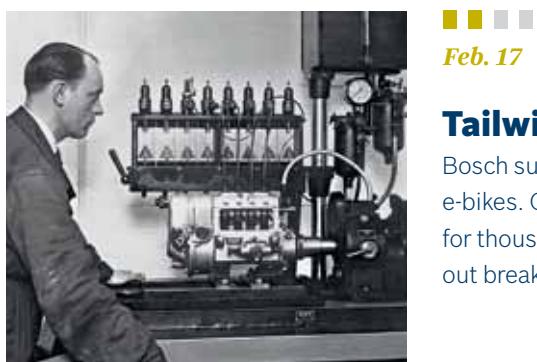
◀ Vienna - Austria - anechoic chamber – 11:00:00 CET –  
Myrzik & Jarisch (photographer)



**Feb. 16**

## Diesel anniversary

In 1936, Bosch injection technology powered the first diesel passenger car. And **75 years** later, the diesel engine still has plenty of potential. Bosch engineers aim to cut its fuel consumption by 30 percent by 2015. ▶



**Feb. 17**

## Tailwind for cyclists

Bosch supplies its first drives for e-bikes. Our engineers tested it for thousands of kilometers without breaking into a sweat.

**Mar. 10**

## More than 15,000 repair shops in 147 countries

From alternators to spark plugs: for 90 years now, the Bosch Car Service repair shops have been making cars roadworthy. Today, they repair more than **180,000 vehicles** a day.

**Apr. 20**

## New headquarters opened in Shanghai

Sales in China pass the **four-billion-euro mark**. An anniversary gala is held in Shanghai.

**May 12**

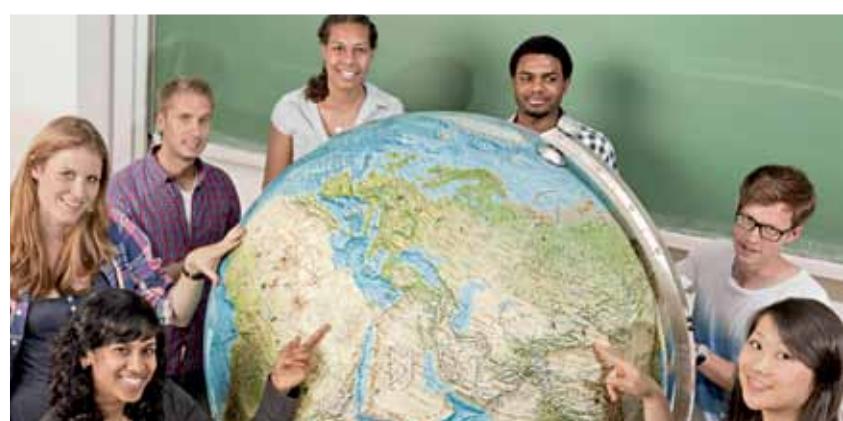
## Software for southeast Asia

Bosch opens a new engineering center in Vietnam. Some **500 engineers** are expected to be working there by 2015.

**May 17**

## Funding for science and research

New initiative: Bosch commits **50 million euros** to universities and research projects worldwide, with the aim of fostering progress in areas of future importance – the environment, energy, and mobility.



## BoschGlobe

At [www.125.bosch.com](http://www.125.bosch.com), everything revolves around the “BoschGlobe,” where visitors can experience company history and modern technology.



◀ Spectacular production: around the world with Bosch



**May 19**

## Symposium 2011

The Energy Challenge: Providing Sustainable Energy Worldwide. Together with decision-makers from the business, academic, and political worlds, Bosch discusses solutions for the energy supply of the future.



▼ A festive venue for the guests of the gala



**May 24**

## Turbocharged market entry

Lower fuel consumption, more fun to drive: turbochargers make engines more efficient. Bosch Mahle Turbo Systems starts series production of this technology, and sees good prospects for a successful future.



◀ Franz Fehrenbach saw the anniversary as a spur to new achievements.

▼ Herrmann Scholl referred to the company's innovative spirit.



## Dual anniversary

The dual anniversary is celebrated with **850 initiatives** worldwide



**May 19**

## We want to shape the future

**2,000 guests, 150 musicians, a 120 meter-wide screen, one world premiere, and one head of state:** at a dazzling gala, Bosch celebrates the 125th anniversary of the company and the 150th anniversary of Robert Bosch's birth.



**June 2**

## Safety at the wheel

Since series production began, Bosch has manufactured more than **111 million airbag control units**. Today, 80 percent of all new vehicles have this life-saver on board.



June 3

## From the Caribbean to Venezuela

A **new regional company** is established in Panama, with the aim of driving forward business in a region with nearly 200 million inhabitants. ▶



June 9

## Innovation boost

Innovation receives a powerful boost: the Robert Bosch Center for Power Electronics opens in Reutlingen, Germany. ▼



July 7

## Award for BPS in České Budějovice

Bosch wins an **award** for its BPS production engineering system.



July 14

## Charged up

Bosch and Daimler sign agreements to establish EM-motive, a joint venture for electric motors based in Hildesheim, Germany.



July 18

## Acquisition of IT company

In acquiring inubit AG, Bosch extends its portfolio of software solutions.



July 21

## Localization of production

Wipers, fans, power windows: the Electrical Drives division breaks ground for a new plant in India. It wants to focus even more strongly on the requirements of this market. ▶



Aug. 29

## Day nurseries and classrooms

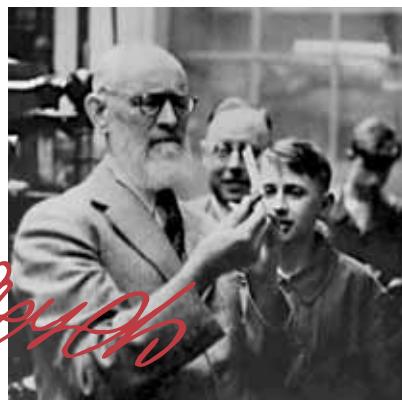
Aid for Japanese earthquake zone: Bosch donates **300 housing container** units to the city of Higashimatsushima, which was severely affected by the earthquake and tsunami. ◀



**Sept. 8**

## Country-sized test laboratory

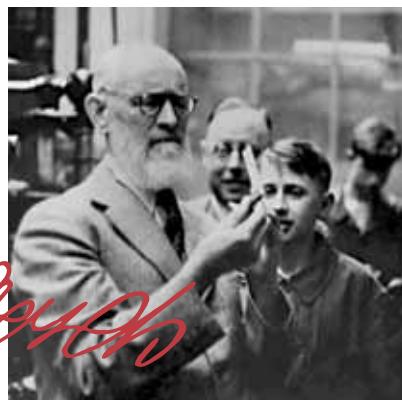
In Singapore's tropical climate, Bosch is testing the future of urban electromobility.



**Oct. 7**

## Reliability, millions of times over

The 250 millionth engine control unit is manufactured at the Salzgitter lead plant. It ensures that engines run **reliably and economically**.



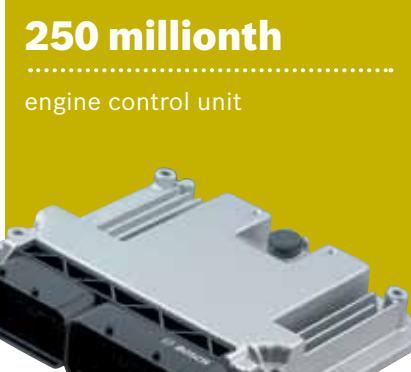
**Oct. 17**



**Sept. 23**

## From artisan to industrialist

150 years have passed since the birth of Robert Bosch, the company founder.



**Oct. 17**

**Oct. 17**

## A technology leader with 83,000 patents

From ABS to robot grippers: when it comes to patent applications, Bosch is one of the world's leading companies.



Oct. 26

## Excellent management

Leading in Europe: between them, the Bosch plant in Bamberg and the Bosch Chassis Systems Control division win three prizes in the internationally acclaimed EFQM competition.



Oct. 28

## Groundbreaking ceremony in southern Bohemia

For a total of 12 million euros, Bosch is expanding its České Budějovice location. Work starts on further expansion of the manufacturing facility and engineering center for gasoline systems.



Oct. 31

## Performances restart thanks to 600 drives and 220 winches

After years of renovation work, performances restart at Moscow's Bolshoi Theater. All the **stage technology** has been supplied by Bosch Rexroth.



Nov. 9

## Connecting cyberspace and the real world

An important step toward the internet of things and services: in Bangalore, India, Bosch opens a center for research into cyber-physical systems.



Nov. 17

## Eco-innovation of the year

A hit with the trade press: the world's first **diesel full hybrids** win a prestigious award, not least for the Bosch technology on board.



Dec. 6

## Pilot project for electromobility

Dense network of charge spots: for several companies in Milan, Italy, Bosch sets up an **infrastructure** for the operation of electric vehicles.



Dec. 8

## Impressive tower for crash tests

Just drop it: with the help of a drop tower at the Schieberdingen location, researchers hope to learn more about **how vehicles behave in an accident**.



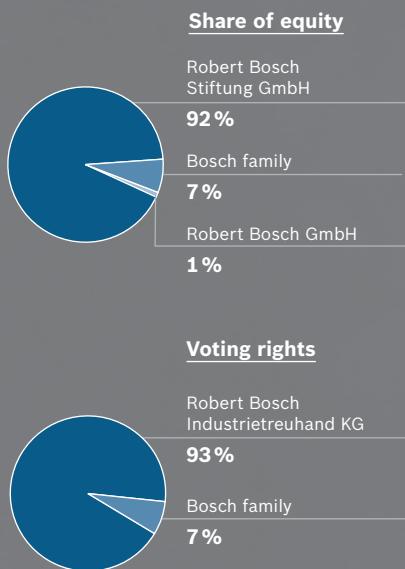
Dec. 16

## Werner von Siemens Ring for Hermann Scholl

Germany's most prestigious **technology award** goes to the chairman of the Bosch supervisory council.

# Group Management Report

## Shareholders of Robert Bosch GmbH



In the year of its 125th anniversary, the Bosch Group recorded strong growth in sales, even though the global economy cooled off more than expected over the course of 2011. The Industrial Technology business sector recorded particularly high growth, Automotive Technology also developed strongly, and Consumer Goods and Building Technology continued to grow steadily. Despite the good developments in sales, result fell short of our expectations. This was due to heavy upfront investments in new areas of business and exceptional one-off effects. In 2012, the economic climate remains tense due to the sovereign-debt crisis, particularly in the euro zone. We are therefore bracing ourselves for a further slowdown in global economic growth, and cannot rule out the possibility of a temporary recession in Europe. Therefore, one of our main tasks is to become more flexible and agile. Despite these uncertainties, there are attractive opportunities arising from the high growth potential in the emerging markets on the one hand and our innovative products and services on the other – opportunities that we systematically exploit.

### **Automotive Technology**

---

Gasoline Systems  
Diesel Systems  
Chassis Systems Brakes<sup>1</sup>  
Chassis Systems Control  
Electrical Drives  
Starter Motors and Generators  
Car Multimedia  
Automotive Electronics  
Automotive Aftermarket  
Steering Systems<sup>2</sup>

<sup>1</sup> Integrated into the Chassis Systems Control division as of January 1, 2012  
<sup>2</sup> ZF Lenksysteme GmbH (50 % Bosch-owned)

### **Industrial Technology**

---

Drive and Control Technology<sup>3</sup>  
Packaging Technology  
Solar Energy

<sup>3</sup> Bosch Rexroth AG (100 % Bosch-owned)

### **Consumer Goods and Building Technology**

---

Power Tools  
Thermotechnology  
Household Appliances<sup>4</sup>  
Security Systems

<sup>4</sup> BSH Bosch und Siemens Hausgeräte GmbH (50 % Bosch-owned)

## Economic environment and business situation

### **Global impetus slows more than expected**

Our forecast for 2011 predicted a slowdown in global economic growth following the strong recovery in 2010. However, the actual slowdown was sharper than expected. Economic developments were hampered by the effects of the natural disaster in Japan in March 2011 and the worsening debt crisis during the year, particularly in the euro zone. At 3.2 percent, global economic growth was around half a percentage point lower than we expected in 2011 as a whole. All global regions were affected by the slowdown.

With growth of some 6 percent, the emerging markets worldwide were once again the main drivers of growth. China was pre-eminent once more, but India also significantly increased its economic output, although not quite as strongly as in 2010. With a growth rate of 1.4 percent, the developed countries failed to meet expectations. Recording growth of some 2 percent, developments in Europe fell short of the level forecast at the start of 2011, even though Germany grew more strongly than expected at 3 percent. The United States grew by just 1.7 percent, while Japan sustained slightly negative growth.

The weaker than anticipated developments in the automotive industry were primarily a result of the natural disaster and nuclear accident in Japan. This gave rise to temporary production standstills, which had a knock-on effect on the global supply chain. Around 80 million passenger cars and commercial vehicles were produced in 2011 as a whole, equivalent to year-on-year growth of around 4 percent. In our original forecast, we had anticipated growth to 81 million vehicles. The production of passenger cars and commercial vehicles in Japan fell by more than 10 percent. The floods in Thailand in the second half of the year also had a noticeable impact on vehicle production. In addition, due to the end of incentive programs, vehicle production in China increased only slightly, while production grew strongly once more in India. Growth was also weaker in South America's emerging markets. Automotive production in Europe and North America continued to pick up, but still remained well below the pre-crisis levels of 2007. The highest growth rates in Europe were recorded by Germany and the countries of central and eastern Europe.

In the capital goods industry, which tends to be affected later by changes in the economic cycle, the upswing continued in 2011, even though there were signs of a slowdown toward the end of the year. Good capacity utilization worldwide encouraged companies to invest, which benefited the mechanical engineering sector. However, industrial production in the major industrial countries remained below its pre-crisis levels. Of the emerging markets, China and India recorded the strongest growth in industrial production.

Demand for consumer goods developed robustly overall in 2011, but with substantial regional differences. However, accelerated price increases, caused primarily by rises in crude oil prices, dampened consumption in the first half of the year. The Asian emerging markets recorded strong growth, although this was generally below the levels of 2010. Personal consumption rose noticeably in Russia. In contrast, consumer confidence in developed countries suffered as a result of the structural problems there. In the United States, for example, employment picked up unusually slowly compared to previous periods of upswing, and this had a negative impact on personal consumption. In some western European countries, the measures put in place to consolidate budgets led to a reduction in government spending as well as to higher social contributions and taxes for private households, which in turn meant a drop in disposable income. In Germany, by contrast, the further decline in unemployment had a positive impact on consumption.

## Business situation

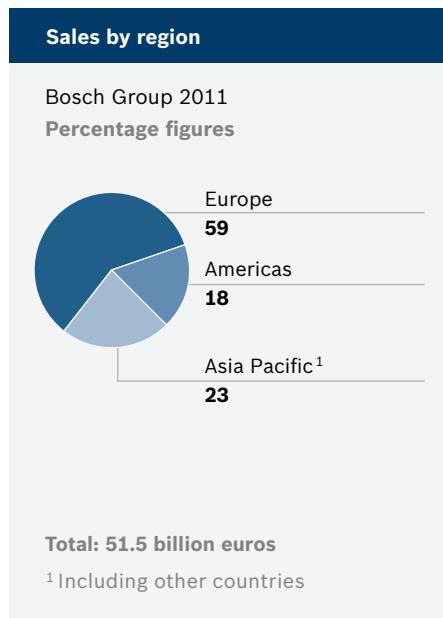
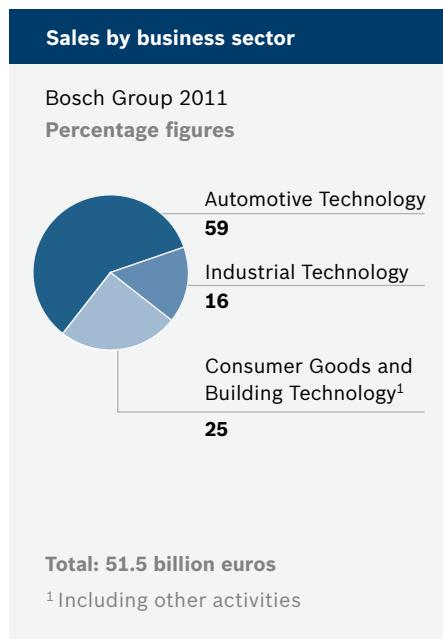
### **Strong increase in Bosch Group sales in 2011**

In 2011, despite the global cooling of the economy, the Bosch Group increased its sales by 9.0 percent to 51.5 billion euros. As a result, sales not only surpassed the 50-billion-euro mark for the first time, but also exceeded our expectations. After adjusting for negative currency effects of around 430 million euros, Bosch Group sales rose by 9.9 percent in 2011. Newly consolidated companies had no noticeable effect on sales. Our sales shortfalls in Japan in the second quarter were largely recouped over the course of the year.

**Bosch Group sales revenue passes the 50-billion-euro mark for the first time.**

### **The three major economic regions perform well**

In Europe, sales increased nominally by 9.6 percent to 30.4 billion euros, thus surpassing the pre-crisis level of 2007 for the first time. At the same time, we expanded our global presence. We performed well in Asia Pacific, our sales rising by 8.9 percent to 12 billion euros: nonetheless, this rate of growth was lower than the exceptional figure recorded the previous year. Positive developments were dampened by only modest growth in Chinese automobile production. Even so, our sales in China rose by 13 percent overall to 4.7 billion euros. Sales growth in India also reached double-digit figures once again, with sales up 14 percent to 1.4 billion euros, but here too growth rates were weaker. In Japan, our sales reached their prior-year level of 2.3 billion euros. Our business in the Americas developed positively, up 6.9 percent to 9.2 billion euros. Our revenue increased by 5.7 percent in North America and by 11 percent in South America.



### Innovations pay dividends in all business sectors

All three business sectors developed favorably in 2011. The Automotive Technology business sector increased its sales by 8.2 percent to 30.4 billion euros. Our fuel-saving injection systems for state-of-the-art diesel and gasoline engines sold well on the back of the expansion of our operations in Asia and the rise in unit sales of gasoline direct injection systems. Our business with high-performance, cost-effective navigation systems and electric power-assisted steering made by the ZF Lenksysteme GmbH joint venture developed very positively. Sales of safety systems such as ABS and ESP® also increased again. There is also ever greater demand for comfort systems such as the Parkpilot parking assistant and for driver assistance systems such as the adaptive cruise control, which automatically keeps vehicles at a safe distance from each other, and the predictive emergency braking system. Demand was also up for systems that make an additional contribution to fuel economy, such as the start-stop system.

Our Automotive Aftermarket division also developed positively. We expanded our international presence here and extended our range of products, diagnostic equipment, and services. For example, we signed agreements to purchase the Unipoint Group in Taipei, Taiwan, in 2011 and the Service Solutions business of SPX Corporation in Charlotte, NC (USA), at the beginning of 2012. In the Gasoline Systems division, we set up the EM-motive GmbH joint venture with Daimler AG. This joint venture, based in Hildesheim in Germany, contributes to our activities in the area of electric vehicles as the drive technology of the future. At the start of 2012, our Hildesheim plant began manufacturing electric motors. The lithium-ion batteries developed by the SB LiMotive Ltd. joint venture in Giheung, Korea, have been installed in the test fleets of various manufacturers since 2011.

In contrast, the situation facing the Chassis Systems Brakes division remained difficult. At the start of 2012, we signed agreements to sell its foundation brakes business in Europe, Asia Pacific, and South America to a subsidiary of KPS Capital Partners. We had already sold its North American locations in 2009. We are integrating our brake booster activities into the Chassis Systems Control division, which produces brake control systems such as ABS and ESP®. The aftermarket business, including the production of brake discs and brake linings, remains with Bosch and is being expanded further.

### Industrial Technology records strongest growth

The Industrial Technology business sector continued to grow strongly in 2011, increasing its sales by 21 percent to 8 billion euros. This was mainly due to the good development of the Drive and Control Technology division, particularly in its Mobile Applications and Industrial Applications business units. Regional sales in Industrial Technology are experiencing a strong shift toward Asia. In many areas of mechanical engineering, China is now the world's largest single market, with a high level of growth. Sales

and products are also being driven by the growing significance of energy efficiency and resource conservation. Business with our components and systems for wind turbines was unsatisfactory. Investors remained cautious about major projects in 2011, but the market for wind power nonetheless offers considerable potential in the medium to long term.

Our Packaging Technology division also developed well in 2011. This was due to the growth in those parts of the global market for packaging machinery that are relevant to Bosch, as well as to the further expansion of international activities, particularly in Asia. We also expanded our product portfolio through the acquisition of Hüttlin GmbH in Schopfheim, Germany, a specialist in drying and granulating pharmaceutical substances, and of the Manesty business operations of BWI plc in Knowsley, United Kingdom, which manufactures machinery for pressing and coating pills. At the start of February 2012, we also announced our intention of acquiring the machinery business of Eisai Co., Ltd. in Tokyo, Japan. Its main products include inspection machinery for the pharmaceuticals industry.

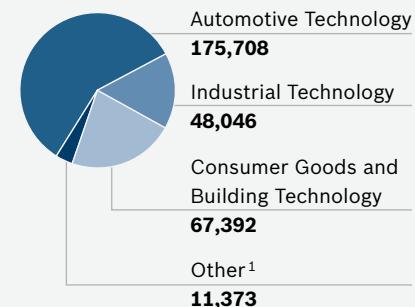
In contrast, conditions in the Solar Energy division were unfavorable. Due to high levels of overcapacity, the industry had to absorb a decline of up to 40 percent in prices for solar cells and solar modules in 2011. While Germany and Europe are the primary sales regions for photovoltaic technology, more and more production is taking place in China. The Solar Energy division also felt the effect of falling prices. Despite the difficult competitive environment, we were able to further increase unit sales of cells and modules in 2011. However, the cost cuts achieved failed to offset the rapid and dramatic decrease in prices. One of our main aims is therefore to cut manufacturing costs. An additional manufacturing location in Penang, Malaysia, for which planning is under way, is intended to help achieve this. We are also working intensively to develop innovations that will improve the efficiency of solar cells, and are continuing our transition from cell manufacturer to systems supplier. This is why we are stepping up the inverter-related activities of our new subsidiary Bosch Power Tec GmbH, and announced the acquisition of voltwerk electronics GmbH, Hamburg, at the end of 2011. Expertise in the field of power electronics, which includes inverters, will also be important for success in the field of electric vehicles in the years ahead.

### **Steady progress in consumer goods and building technology**

We increased the sales of our Consumer Goods and Building Technology business sector by 4.4 percent to 13.1 billion euros. Once again, growth in Asia Pacific and South America was well above average. We also made considerable gains in central and eastern Europe, where the markets continued to recover. We further expanded the market share of our power tools in many important sales regions. This success was buoyed by a whole range of innovations. Although the global market for power tools developed positively in 2011, growth rates were lower than in the previous

### **Headcount by business sector**

Bosch Group 2011  
As per January 1, 2012

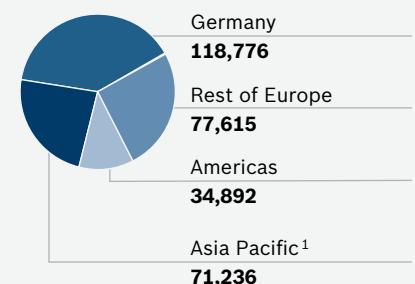


Total: 302,519

<sup>1</sup> Corporate functions and research

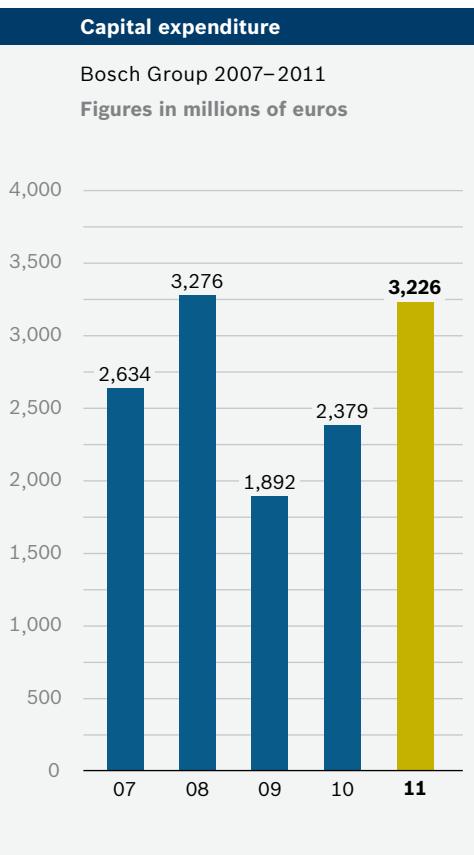
### **Headcount by region**

Bosch Group 2011  
As per January 1, 2012



Total: 302,519

<sup>1</sup> Including other countries



year. Market growth slowed above all in Europe. Developments in the Thermotechnology division were restrained. The budget deficits and cutbacks in major European markets dampened activity in the construction industry. In addition, many building clients in Germany, the division's biggest sales market, were reluctant to commit to renovation projects. One reason for this was the postponement of tax breaks that had been promised for energy efficiency-related renovation work.

Our joint venture BSH Bosch und Siemens Hausgeräte GmbH was successful with innovative, energy-efficient products. Above all, developments in Russia, as well as in southeast Asia, northern Europe, and Germany, were especially positive. In contrast, the economic difficulties in southern European markets had a negative impact. On the whole, the market for security technology developed satisfactorily in 2011. Good growth was recorded primarily in China, eastern Europe, and South America. The product business of the Security Systems division outperformed the market. Furthermore, we continued to expand our comprehensive service-provider business internationally by setting up communication centers.

#### An additional 19,000 associates hired worldwide

On the back of the Bosch Group's strong growth, we recruited an additional 19,000 associates worldwide in 2011. Over the course of the year, our total workforce increased by nearly 7 percent to 302,500. Headcount in Europe experienced the greatest rise, growing by 9,800 to 196,400, with the greatest increases taking place in Germany (5,200 associates), Hungary (1,700), and Turkey (1,200). We hired an additional 8,000 associates in Asia Pacific, where 71,200 people now work for the Bosch Group. The number of Bosch associates rose by around 4,000 in China to over 30,200 and by 3,300 in India to over 24,100. We expanded our workforce in other countries as well. Some 34,900 people are now employed by Bosch in the Americas – 1,200 more than a year ago. This increase is divided evenly among Brazil, Mexico, and the United States.

Training and education play an indispensable role in the sustainable development of our company. More than 6,600 young people were in apprenticeship schemes at Bosch worldwide in 2011, compared to 6,500 the previous year. Germany, which has a long tradition of dual education in companies and schools, leads the field here, with 4,600 apprentices. Worldwide, associates attended 529,200 courses in 2011, an increase of 6 percent. Increasingly, these include company-wide seminars, on topics such as quality, procurement, and compliance, at the six Bosch Training Centers around the world. Robert Bosch Kolleg, which celebrated its 30th anniversary in 2011 and is now also active in India, China, and Japan, offers training at university level for specialists and executives.

## Strategy

### Environment marked by volatility and profound change

The Bosch Group operates in a very dynamic environment that is marked by increasing volatility and an accelerated pace of change. This change is manifested in continued globalization, urbanization, and demographic change, as well as in megatrends such as energy efficiency, climate protection, and scarcity of resources. On top of this, there is the ever greater prominence of information, communication, and internet technologies, which are changing the competitive landscape.

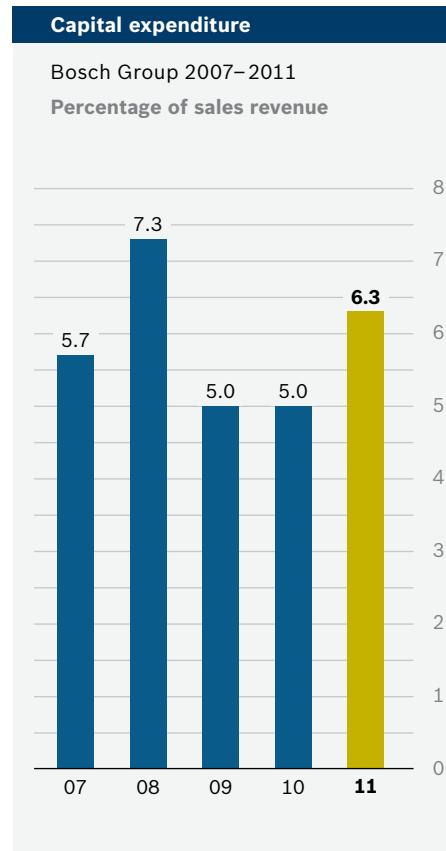
### Strategy of creating and securing value

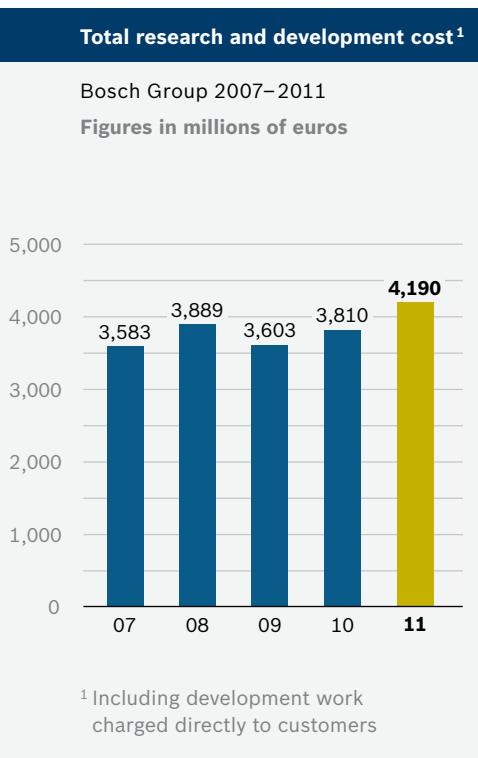
Long-term success in this dynamic and volatile environment requires a balance between creating and securing value. The strategy we pursue to achieve this takes its lead from the overriding objectives of strong and meaningful development on the one hand and continued financial independence on the other. As a technology and services company, we develop innovative and beneficial solutions that improve the quality of life, and aim to achieve or enhance a leading market position in all our areas of activity. True to the spirit of our founder Robert Bosch as well as to the principles of sustainable corporate development, we take on social and environmental responsibility. This enables us to create value above and beyond immediate business requirements. The objectives of entrepreneurial freedom and financial independence are firmly rooted in the Bosch vision, which is presented alongside the Bosch values, the BeQIK mission, our core competencies, and our fundamental Bosch business processes in the “House of Orientation,” which serves as our frame of reference.

The BeQIK mission sets out our standards of quality, innovation, customer focus, and speed. It thus serves as inspiration for continuous improvement, particularly in view of rapidly changing conditions. The key to our business independence is our corporate constitution, with a charitable foundation and the family of the company’s founder Robert Bosch as shareholders, and with an industrial trust that carries out the entrepreneurial ownership functions.

### Increasing flexibility and agility

Our response to economic uncertainty is to introduce measures to improve the company’s flexibility. One of our goals is to significantly lower the break-even point: in other words, the level to which sales can fall during a crisis without the company making an operating loss. This impacts fundamental decisions, such as whether to manufacture products in-house or whether to buy in parts and components. It also relates to the optimization of processes and to flexible arrangements that can be introduced at short notice, such as flexible worktime models. In our endeavors to secure value, we also focus on securing liquidity. To this end, we want to generate a strong, sustainable cash flow in our operative business to finance our





growth. Important factors include systematic inventory and accounts receivable management as well as long-term investment planning.

In light of a business environment that is changing ever more quickly, we are also improving the company's agility. The focus here is on simplifying and accelerating both our internal processes and those relating to customers and suppliers. We achieve this on the one hand by defining standards and, on the other, by delegating decision-making powers to operating units and regions. The operational targets we have set to secure our market position in the long term are average annual sales growth of 8 percent and a pre-tax return on sales of between 7 and 8 percent. The important core elements of our strategy are a strong global presence, exceptional innovative strength, and focused diversification.

### Further expansion in global growth regions

We want to further expand our market position worldwide. Focal points include the growth regions of Asia, South America, and central and eastern Europe. Opening up new markets goes hand in hand with the consistent expansion of local value added. We are increasingly turning our attention to Africa and the Middle East, where we are initially setting up additional sales companies and agencies. In the emerging markets, intense competition, new local competitors, and the specific requirements of a growing middle class demand that we further expand our local resources for sales, manufacturing, and engineering, and that we develop customized product concepts. These opportunities and challenges apply to all our business sectors. At the same time, the developed markets of Europe and North America present attractive growth opportunities in the medium to long term, particularly for innovative products and services. Our broad regional presence and diversified corporate structure help spread the risks and thus secure the long-term prospects of the company.

### Sustainability – an important driver of future innovations

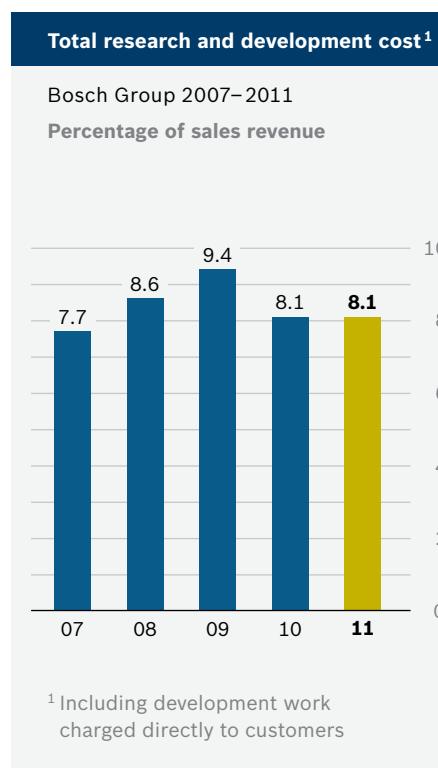
Issues of key global importance, such as energy, environmental protection, demographic trends, and urbanization are especially significant drivers of innovation for us. Roughly half our research and development expenditure of 4.2 billion euros is allocated to products designed to improve energy efficiency, conserve resources, and protect the environment. These products now account for around 40 percent of our sales. We further increased our innovative strength in 2011. We hired an additional 4,300 research and development associates, more than half of them in Asia Pacific. We now employ 38,500 researchers and developers worldwide, 24,400 in Europe (mainly Germany), 2,400 in the Americas, and 11,700 in Asia Pacific. We applied for some 4,100 patents in 2011, which is equivalent to 16 per working day, and 260 more than in the previous year. In Renningen, Germany, we are also planning a new location for research and advance engineering in the greater Stuttgart area. This location will also strengthen the close cooperation with our international research network. Construction is scheduled to start in mid-2012.

### "Invented for life" – the basis for focused diversification

In our plans for long-term business expansion, we focus on activities that conform to our strategic imperative "Invented for life" and that satisfy the standards we set for innovative strength, extremely precise and complex production processes, service, and sustainability. In Automotive Technology, one strategic focal point is the further development of existing and future drive concepts. The internal-combustion engine will continue to be the predominant drive system for the foreseeable future, as it still offers significant potential for cutting fuel consumption and pollutant emissions. When coupled with turbocharging, further developments in injection technology allow fuel-saving engines to be manufactured that are smaller in size but deliver the same power. In some cases, power can even be increased. In the first weeks of 2012, the Bosch Mahle Turbo Systems GmbH & Co KG joint venture, which was founded in Stuttgart in 2010, started series production of turbochargers.

At the same time, we also spend around 400 million euros a year on upfront investments for alternative drive concepts for hybrid and electric vehicles. However, we expect these concepts to achieve extensive market penetration in the long term only, with small models leading the way particularly when it comes to electric vehicles. Large urban centers will likely pioneer such developments. Our current forecasts envisage that hybrid, plug-in hybrid, and electric vehicles will account for around 10 percent of passenger cars and light commercial vehicles produced worldwide in 2020, with all-electric vehicles accounting for 3 of these percentage points. These shares are expected to grow considerably in the subsequent decade. Our upfront investments are aimed at ensuring that we become an established player in these market segments, with the long-term goal of being among the leading suppliers of a wide range of components and systems. In cooperation with 13 automakers, Bosch plans to take some 21 projects for hybrid or all-electric drives into series production by 2013. We are also involved in equipping electric two-wheelers, such as the e-bike and e-scooter. Bosch made good headway in this field in 2011, selling more than 70,000 drive systems for 30 different makes of bicycle.

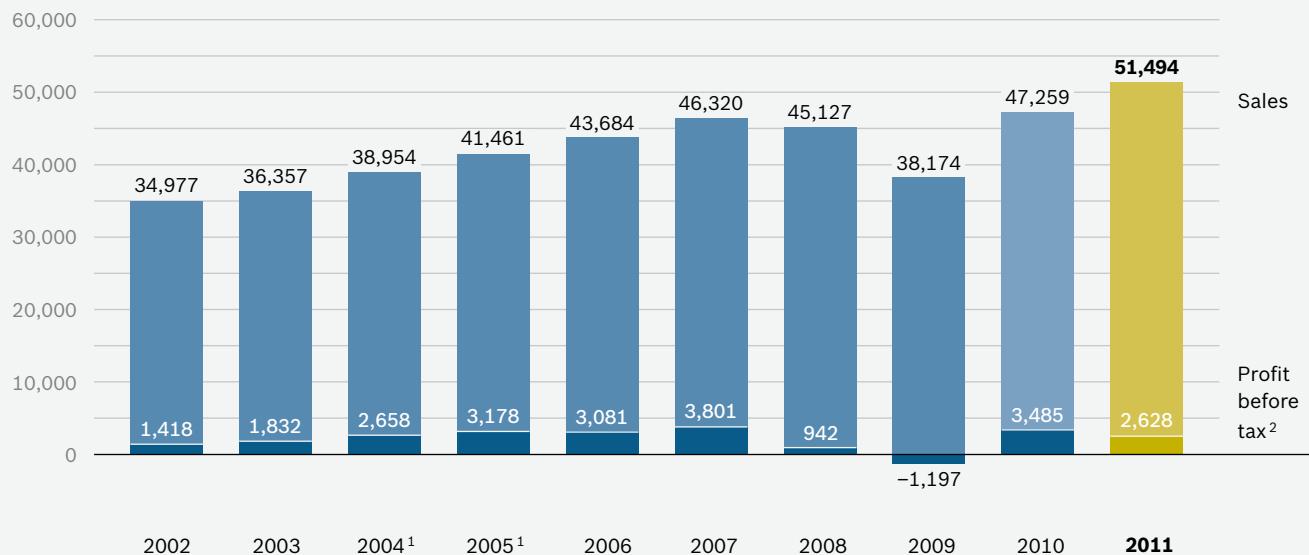
A further focal element of our strategy is in the field of active and passive systems for vehicle safety and driver assistance systems. We are preparing for ever greater vehicle connectivity, in which entertainment, information, and communication systems play an increasingly important role. Connected mobility will gain in significance, particularly in large urban centers with high traffic volumes. Here, getting to a destination might involve renting an electric vehicle at short notice, and then switching to public transport. Since mid-2011, we have been gathering experience in this field through our web-based electromobility platform in Singapore. This platform enables automated billing and allows users to search for and reserve charge spots online. Its open design also allows other providers to integrate their services. Extensive changes in mobility such as these call for an integrated "mobility solutions" concept, and this is something we are working on in our Automotive Technology business sector.



### Sales and profit before tax

Bosch Group 2002–2011

Figures in millions of euros



<sup>1</sup> Pursuant to IFRS, continuing operations only; 2004 sales pursuant to HGB: 40 billion euros

<sup>2</sup> Up to 2003 designated income from ordinary business activities pursuant to HGB

In the Industrial Technology business sector, the activities of the Drive and Control Technology division and Packaging Technology division, which are guided by the principle of “automation and control,” aim to expand our presence in the market as well as our technology portfolio. This includes strengthening individual product segments, offering systems, expanding services, and adapting to technical changes. In industrial automation in particular there is a trend toward the electrification of functions, which also helps make production processes more energy-efficient. In packaging technology, too, there is growing demand for eco-friendly, resource-conserving, and energy-efficient processes and products.

A current strategic focal point in the Consumer Goods and Building Technology business sector is the closer integration of building technology and decentralized energy technology. “Energy and building technology” is therefore a new conceptual frame of reference for cooperation among our divisions. The objective is to intelligently connect sources of power, such as photovoltaic systems on the roof of the building or solar thermal

hot-water generation, future storage technologies and heating systems, as well as household appliances. This can help control energy flows and increase energy efficiency. The Bosch Energy and Building Solutions GmbH subsidiary in Ditzingen, Germany, set up in 2011, will in the future offer energy efficiency services tailored specifically to commercial customers, from industrial enterprises to institutions such as hospitals, to facilities management companies. The services range from advisory services and the installation and operation of equipment to the supply of useful energy, such as heating, air-conditioning, and lighting. This concept also incorporates the product portfolios of the Thermotechnology, Solar Energy, and Security Systems divisions. One important element is a software platform that will make it possible in the future to monitor and control all the energy flows of a building online.

In building and energy technology as well as in electromobility, the internet, and the comprehensive linking of physical objects and services which it makes possible (“internet of things and services”), is leading to far-reaching changes. In response to these changes, we further strengthened our internet activities in 2011 through the acquisition of inubit AG, Berlin. Together with our subsidiary Bosch Software Innovations GmbH in Immenstaad, Germany, and our divisions, this acquisition means that some 450 internet specialists are now working on new web-based solutions. Other important areas of application for the internet include social media platforms such as portals for sales, communication, and innovation processes. Networking also plays a crucial role in telehealth, making it possible for the health of patients with chronic conditions to be monitored at home, thereby cutting the number of visits to the doctor. In 2011, the Care Solutions business unit, previously part of the Security Systems division, was integrated into Bosch Healthcare. It offers social alarm and nurse call systems.

#### **Corporate responsibility as an expression of sustainability**

Sustainability is part of our corporate responsibility, which means we want to help protect the environment and conserve resources not only through the products we sell but also through our production processes. We take into account the complete value-added chain and involve our customers and suppliers. In order to reduce emissions, we are working intensively to improve energy efficiency at our locations. By 2020, our objective is to cut CO<sub>2</sub> emissions from our locations by 20 percent from their 2007 level. CO<sub>2</sub> emissions remained on their prior-year level, at 2.4 million metric tons. Related to internal value-added activity, however, CO<sub>2</sub> emissions actually fell by 11 percent compared to the reference year 2007. Our total energy consumption in 2011 amounted to 6,034 gigawatt hours (previous year: 6,285 gigawatt hours) and thus grew at a slower rate than internal value-added activity. We are also focusing on ensuring our products are environmentally friendly, improving resource efficiency, and preventing waste.

**We place great importance on energy efficiency, reducing emissions, and occupational health and safety.**

We also place very great importance on the continuous improvement of occupational health and safety. In 2011, the number of occupational accidents fell to 1,913 from 2,128 in the previous year, while the relative number of occupational accidents per million working hours fell to 4.0 from 4.9 in the previous year. In addition to the measures in place for our own manufacturing facilities, we will increasingly check the environmental and social standards of our suppliers. The figures for CO<sub>2</sub> emissions, energy demand, and occupational accidents refer to the group of consolidated companies set out in the Corporate Social Responsibility Report 2007/2008 and the yearly updates that can be found on the Bosch Group's website. The Solar Energy division has not yet been included.

Long-term and thus sustainable economic success also depends on diversity among associates and managers. Moreover, diversity is one of the Bosch values, and encompasses gender, nationality, age, and working cultures. We believe diversity is an advantage in an increasingly global and rapidly changing market environment. A communication initiative launched throughout the Bosch Group in 2011 is designed to create additional impetus. In 2011, we increased the share of female executives worldwide to 11 percent, taking us another step closer to achieving our ambitious goal of 15 percent by the end of 2012. A large number of countries have already surpassed this target. They include not only European countries such as Poland and Russia, but also China. An equally important concern is to increase the share of international executives within the group. In the future, we want at least 80 percent of executives at our locations outside Germany to be natives of the respective country. We have already achieved this aim in many focus countries, such as the United States, Brazil, Japan, and India. And we are also close to achieving this goal in China, Mexico, Hungary, and the Czech Republic.

#### **Integrated approach to continuous quality improvement**

Quality is an integral part of our BeQIK mission. 125 years of Bosch means 125 years of constantly improving the quality of our products for the benefit of our customers. The challenges of the future lie in ever shorter development cycles coupled with the use of new technologies. We devote particular attention to field quality. For example, we closely observe our products in the field in order to gain an overview of their robustness. In this respect, the Bosch Car Service partners worldwide are a source of reliable information.

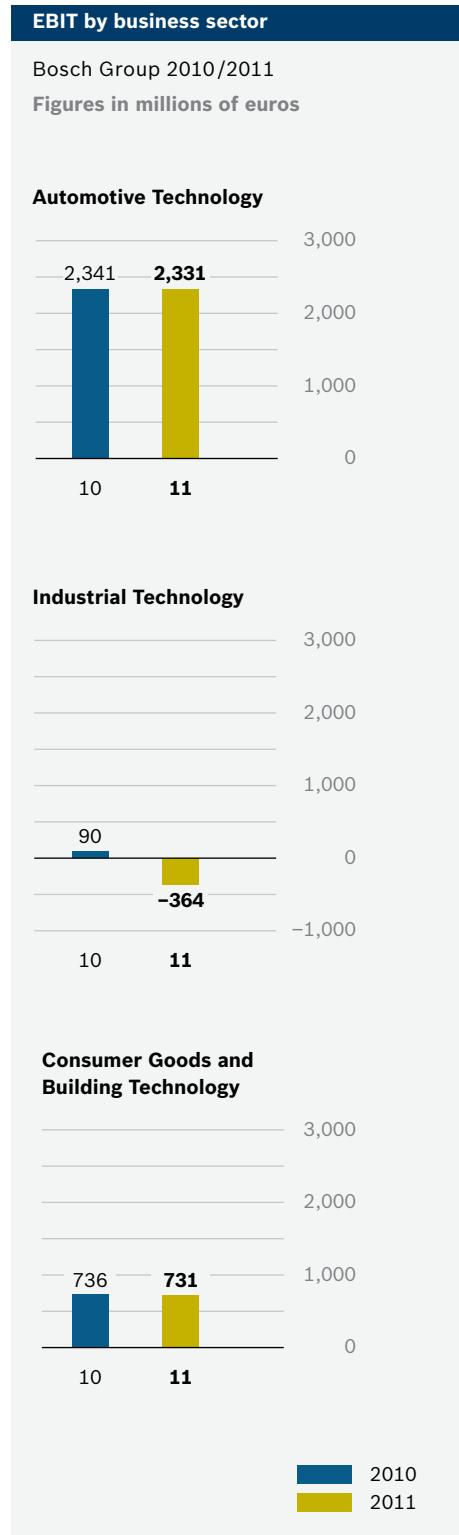
Returned and analyzed products help us to understand and evaluate the requirements in the field even better. We use the findings to continuously improve our engineering standards. To promote sustainability, we always scrutinize the related business process during problem solving. This gives rise to an integrated approach for improving products, processes, and systems. A decline in the number of complaints and quality-related

costs within the Bosch Group confirms that we are on the right track with this approach. Numerous customers have also honored our continuous and systematic improvement processes with quality awards.

#### **Natural disasters pose tough challenges for purchasing and logistics**

The natural disaster in Japan and the serious reactor incident in Fukushima in March 2011 had a considerable impact on global supply chains in the automotive industry, particularly in the second quarter. There were especially bottlenecks in supplies of electronic components and assemblies. However, production standstills were successfully avoided through close cooperation with suppliers and customers worldwide. Parts were also tested for radiation as a precaution. A similarly designed comprehensive bottleneck management system proved equally successful following the floods in Thailand.

In view of the strong growth in sales, we increased our investment levels and inventories in machinery, equipment, and tools. Our global purchasing volume therefore reached a record high in 2011. We spent 29.1 billion euros on production materials, merchandise, supplies, services, and machinery in 2011, compared to 24.1 billion euros the previous year. We continued to pursue our strategy of pooling purchasing requirements, information, and expertise, as well as on presenting a single point of contact to our suppliers. Toward the middle of the year, we rolled out our cross-divisional purchasing organization for bought-in automotive parts. We also standardized group-wide purchasing processes for indirect materials in a step-by-step process. Indirect materials include logistics and development services, as well as machinery, systems, equipment, and tools. A further project, launched in the area of transport management, aims to reduce the volume of transport and, in the process, to cut CO<sub>2</sub> emissions. We are also intensifying the exchange of ideas with existing and new suppliers to jointly come up with new product and process innovations.



<b>Consolidated statement of cash flows</b>		
Bosch Group 2010/2011	<b>Figures in millions of euros</b>	
	<b>2010</b>	<b>2011</b>
<b>Cash flow</b>	5,460	<b>4,959</b>
<b>Cash flow as percentage of sales</b>	11.6	<b>9.6</b>
Liquidity <sup>1</sup> at the beginning of the year (Jan. 1)	2,937	<b>3,821</b>
Cash flows from operating activities	+4,391	<b>+2,717</b>
Cash flows from investing activities	-2,918	<b>-3,613</b>
Cash flows from financing activities	-684	<b>+388</b>
Miscellaneous	+95	<b>+15</b>
Liquidity <sup>1</sup> at the end of year (Dec. 31)	3,821	<b>3,328</b>

<sup>1</sup> Cash and cash equivalents

## Results of operations

### **Result reduced by upfront investments and one-off effects**

We disclose a pre-tax result of 2.6 billion euros, compared with 3.5 billion euros in the previous year. Despite the strong increase in sales and good result development in most units and regions, we achieved a pre-tax return on sales of 5.1 percent, and thus failed to reach our target corridor of between 7 and 8 percent. Earnings before interest and tax (EBIT) of 2.7 billion euros were also down on the previous year, when they reached 3.2 billion euros.

A considerable rise in the price of raw materials, together with exchange-rate effects, led to a burden of around half a billion euros. The result was affected by upfront investments amounting to more than half a billion euros, primarily in the growth fields of electromobility and renewable energy. Due to the difficult market environment and the resulting loss situation in the Solar Energy division, we were also forced to post impairment losses on goodwill and other intangible assets amounting to around 560 million euros.

Due to the capital measures in place for the expansion of the SB LiMotive and Bosch Mahle Turbo Systems joint ventures, the financial result for 2011 is negative, at around 80 million euros. The previous year's figure of 300 million euros also included the sale of listed financial holdings.

**Result develops well in most divisions and regions.**

The result after tax for 2011 was some 1.8 billion euros, compared to 2.5 billion euros the previous year. An out-of-court settlement with the Italian tax authorities concerning several years of disputed back taxes gave rise to extraordinary tax expense. Despite the high upfront investments and one-off effects, the sound financial position of the Bosch Group remains unchanged.

The result situation in the Automotive Technology business sector remains favorable. Despite the high upfront investments in the growth field of electromobility and the burden of increased raw materials prices, the business sector generated EBIT of 2.3 billion euros. The Industrial Technology business sector discloses negative EBIT of around 360 million euros, due to extraordinary effects in the Solar Energy division. In the previous year, it disclosed a positive result of 90 million euros. These burdens could not be offset by the overall favorable developments in the Drive and Control Technology and Packaging Technology divisions. EBIT in the Consumer Goods and Building Technology business sector was on a par with the previous year, at 730 million euros. Despite the increase in sales, the result stagnated due to the rise in raw materials prices, the subdued development in thermotechnology, and the increase in price pressure for consumer goods in particular.

**Favorable result situation  
in the Automotive Technology  
business sector**

### **Volatility demands greater flexibility**

We are gearing our operations to the high volatility of the economic environment. For this reason, we are further developing our planning system and key performance indicators. On the basis of a comprehensive and integrated internal controlling system, the board of management receives a monthly business report outlining the performance of the operating units. This is based on the business plan, which itself is embedded into longer-term strategic corporate planning. Controlling is performed by comparing actual and target values. We will improve this system's timeliness by focusing the content of the business plan and significantly shortening the business planning process. To this end, more processes should run in parallel instead of sequentially, and individual steps, such as the second forecast year, will be eliminated entirely.

We are also revising our key performance indicators. Value contribution as a measure for assessing the company's economic value creation remains the central control parameter of our value-based management system. The current post-tax parameter will be developed into a simplified, operational pre-tax value contribution. The value contribution target will still be derived from the target of achieving a sustained pre-tax return on sales of between 7 and 8 percent. The value contribution target represents cash flow less the cost of capital. The change to a pre-tax parameter will also impact on the cost of capital, which remained unchanged in 2011 at 8 percent. The value contribution forms the basis for calculating the performance-based part of executives' variable remuneration, from section-manager level to board of management. It is also used as the basis for the performance-related bonuses of associates and for portfolio management.

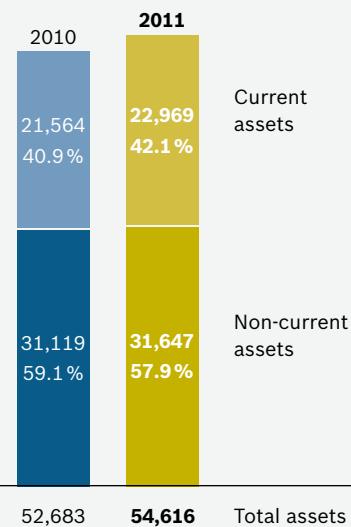
Owing to the volatile environment, the significance of securing value, and thus of volatility management and measures to secure liquidity, is increasing. Therefore, greater emphasis is being placed on the break-even point and free cash flow. The operating units will regularly report on these figures in our monthly business report from 2012 onwards. The break-even point is the level to which sales can fall without making a loss. Our target is to achieve a break-even point of 80 percent based on EBIT. The pre-tax free cash flow represents the financial resources available from the operating business after taking capital expenditure into account. These two reporting parameters supplement the figures on sales and result, personnel resources, capital expenditure, fixed costs, and current assets.

## Financial position and net assets

### Structure of the statement of financial position – assets

Bosch Group 2010/2011

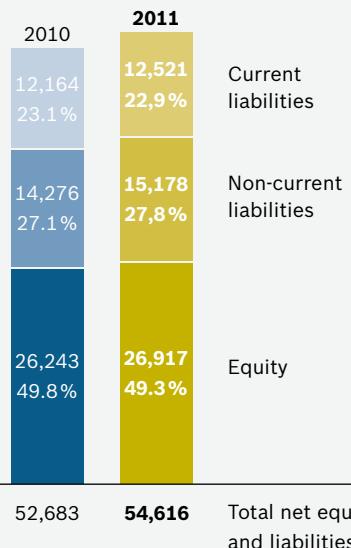
Figures in millions of euros /  
as a percentage of total assets



### Structure of the statement of financial position – equity and liabilities

Bosch Group 2010/2011

Figures in millions of euros /  
as a percentage of  
total net equity and liabilities



### Financial strength and liquidity remain high

The Bosch Group retains a sound financial basis. Cash flow amounted to 5.0 billion euros in 2011, reaching 9.6 percent of sales compared to 11.6 percent in the previous year. One important reason for the decrease is the lower profit before tax. The increase in depreciation and amortization is above all the result of impairments in photovoltaics, included in non-cash expenses. Payments to the Italian tax authorities of around 320 million euros also placed a burden on the cash flow. In 2011, we spent around 400 million euros on acquisitions and increasing our shareholdings.

At the end of the year, our liquidity as per the consolidated statement of cash flows (cash and cash equivalents) reached 3.3 billion euros (previous year 3.8 billion euros). This decline is mainly a result of increased inventories and capital expenditure. Increased borrowing ran counter to this. We took a 250-million-euro loan from the European Investment Bank (EIB), and our BSH Bosch und Siemens Hausgeräte joint venture also increased its borrowed funds. Liquidity as per statement of financial position rose came to 11.8 billion euros. Apart from cash and cash equivalents, this liquidity also includes securities and bank balances with a term of more than 90 days.

### Higher capital expenditure budget due to strong growth

We invested some 3.2 billion euros in the Bosch Group in 2011, significantly more than during the upturn in 2010, when our capital expenditure was 2.4 billion euros. As a result, capital expenditure in 2011 was considerably higher than depreciation of property, plant, and equipment.

We invested 2.1 billion euros in our European locations (previous year: 1.6 billion euros). Around 1.2 billion euros of this was invested in Germany, compared to around 1 billion euros the previous year. Capital expenditure in Asia Pacific grew to 800 million euros, bringing it well above the 2010 level of around 560 million euros. We invested a total of some 350 million euros in the Americas, compared to approximately 170 million euros in the previous year.

In particular, we increased our capital expenditure in the Automotive Technology business sector. The launch of Generation 9 of our ABS and ESP® brake control systems required global investments of some 100 million euros in 2011 alone. We also made considerable investments in Automotive Technology to ramp up new products and expand our manufacturing capacity. This applies in particular to innovations in the Diesel Systems and Gasoline Systems divisions. We also significantly expanded our foundry capacities for brake discs, as well as our manufacturing capacity for racks at the ZF Lenksysteme joint venture and for electric

motors in the Electrical Drives division. In the Industrial Technology business sector, we expanded the capacity of our Drive and Control Technology division in China and India, but also in the U.S. and Turkey.

We also expanded a number of locations in the Packaging Technology division, including the Verna location in India. In the Solar Energy division, we opened a new engineering center in Arnstadt. In the Consumer Goods and Building Technology business sector, the Power Tools division took the first stage of a new manufacturing facility for abrasives into operation at our Swiss subsidiary sia Abrasives. In Thermotechnology, we restructured our manufacturing facilities for small-scale and large-scale hot-water and buffer storage tanks at our location in Eibelshausen, Germany. In Household Appliances, we invested in new plants in India for cooking and washing products and in production rollouts for new machine generations at a number of German and international locations.

#### **Statement of financial position – balanced and sound structure**

The structure of the statement of financial position is very sound. At balance-sheet date, total assets rose to 54.6 billion euros. The assets were affected above all by the decline in cash and cash equivalents, the rise in inventories and property, plant, and equipment, and the fall in intangible assets as a result of the impairment recorded for photovoltaics. At the end of the year, cash and cash equivalents, including current bank balances and current securities, stood at 4.0 billion euros. The inventories of the Bosch Group increased to 7.7 billion euros in 2011, and property, plant, and equipment to 13.8 billion euros. The securities we report under non-current financial assets amounted to 7.6 billion euros at the end of the year. Trade receivables increased to 9.2 billion euros due to the considerable increase in business volume. There were no significant bad debts.

On the equity and liabilities side, equity came to 26.9 billion euros. At 49 percent, equity ratio thus remained high. Due to borrowing activity, our financial liabilities increased. Liabilities are due between 2013 and 2019. Moreover, provisions for pensions and similar obligations increased to 6.9 billion euros due to a decrease in the interest rates applied outside the euro zone. Our liquidity and securities therefore once more cover our pension provisions, as well as our current and non-current financial liabilities. Our net financial position comes to 625 million euros.

## Subsequent events

There were no events of material importance subsequent to the end of the reporting period that have not been covered in the business situation section.

#### **Risk limitation through corporate currency and interest rate management**

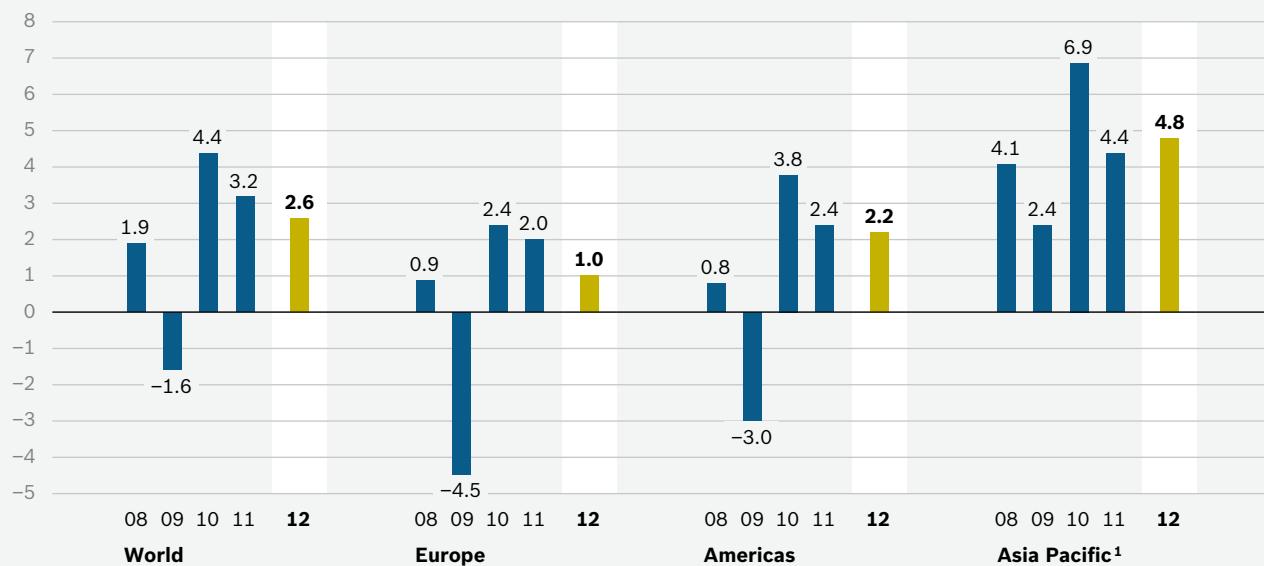
In light of the difficulties in the capital market, there was a strong focus on risk limitation, with great importance being attached to central financial and currency management. This is designed to ensure the group's ability to pay at all times, to control payment flows to optimum effect, and to limit the risk of currency exposures at Bosch Group level. In 2011, there were considerable fluctuations especially in the global foreign exchange markets. Using business planning as a basis, our foreign exchange balance plan establishes the financial and foreign currency flows and the hedging requirements in the respective currencies. Currency exposures are hedged centrally in the foreign exchange market. Central financial management also manages our borrowings and investments.

Both short- and long-term investments were faced with challenges again in 2011 as a result of the sustained low interest rates and downgrading of creditworthiness ratings particularly of euro zone countries. The stock markets were also very volatile. Our investment policy is based on the principle of security before returns. That is why we reduced the equity exposure of our investments in 2011, while essentially retaining our diversified investment strategy. This strategy is based on long-term return and risk expectations. Our financial investments are secured through regular checks of the creditworthiness of financial institutions. Our sound financial position meant we were able to maintain our good credit rating among the rating agencies in 2011. Standard & Poor's reaffirmed our long-term rating of AA- (with a "stable" outlook).

### Regional economic growth 2008–2012

Real GDP, percentage change on previous year

 Forecast



<sup>1</sup> Including other countries

## Forecast

### Further weakening of global economic growth

The economic climate in 2012 remains tense, above all as a result of the sovereign-debt crisis, particularly in the euro zone. We are therefore preparing for a further slowdown in global economic growth, to 2.6 percent. We do not rule out the possibility of a recession in Europe, particularly in the euro zone, even though we currently forecast growth of around 0.5 percent for the euro zone. Developments will be highly dependent on the extent to which the stabilization efforts take hold and whether confidence in the financial markets can be regained. Our growth forecast of 1.0 percent for Germany is slightly more optimistic than the outlook of most observers.

Overall, we forecast global growth of around 1½ percent for the developed countries. With growth of 2 percent, the outlook for the U.S. is somewhat more favorable. The situation there will be largely dependent on the development of personal consumption, and especially on developments in the labor market. In the emerging markets as well, growth is also likely to slow in 2012, to a strong 5 percent. The slowdown in global trade and the end of a number of stimulus packages will have a dampening effect in some important countries. There is, however, a chance that growth in the

emerging markets will pick up in the second half of the year. China and India will remain the major drivers of growth, while Brazil and Russia can be expected to record only below-average growth.

In the automotive industry, we currently forecast that production figures for passenger cars and commercial vehicles will grow by around 3 to 5 percent, with percentage growth thus remaining roughly on a par with 2011. The largest increases are expected once again in the emerging markets. While vehicle production is likely to stagnate in Europe, the market in North America will continue its recovery. We expect double-digit growth in Japan, after the slump in the previous year. Following strong growth in the capital goods industry in 2011, we expect developments to slow in 2012. Personal demand is expected to remain robust on a global level, although it will not be quite as dynamic as in previous years. Consumption will be threatened by a worsening of the debt crisis and further increases in crude oil prices. The reason for this is the politically unstable conditions in a number of oil-producing countries. We also expect raw materials prices to remain at a high level. Due to the debt crisis in Europe and extensive public debt in the United States, we expect 2012 to be shaped by significant swings in exchange rates once again.

Despite the subdued conditions in 2012, we have been able to further increase the sales of the Bosch Group in the first months of the year and are confident of achieving growth of between 3 and 5 percent for the year as a whole. Our headcount will also increase as a result of our efforts to expand our international footprint. Research and development expenditure will at least be on a par with 2011, and capital expenditure will be higher. In 2012, we expect our result to improve once more on the previous year. We also see excellent opportunities for profitable growth in 2013 thanks to our innovative products and strong market position worldwide.

**Innovative products and strong global market position offer good growth opportunities.**

## Risk report

### **Comprehensive risk management in the Bosch Group**

Risk management within the Bosch Group is based on rules and actions that are laid down in directives. These are reviewed on a regular basis to ensure they are effective and are revised in accordance with the latest statutory regulations. The executive management of the divisions and the presidents of the regional organizations are responsible for identifying risks at the point of origin and for managing any derived actions. The board of management of Robert Bosch GmbH – with support from the corporate departments – is responsible for risks of general relevance.

Processes are in place to ensure that information on relevant risks and opportunities is forwarded to the appropriate decision-makers, right up to board of management level. Risk management tools include systematic

business field, competition, and regional analyses. Our comprehensive reporting system is the basis for monthly reports on all commercially and financially relevant matters. At meetings of the raw materials, foreign exchange, and investment committees, specific risks are examined on a regular basis. Cross-divisional crisis teams are formed to handle risks such as those after the natural disasters in Japan and Thailand.

**The company's broad regional and sectoral presence helps spread risk.**

#### **General risk assessment**

On the basis of the information currently available and the individual risks listed, there are no additional recognizable opportunities or risks, apart from the market-related opportunities and risks listed in the forecast above, that will materially impair the net assets, financial position, or results of operations of the Bosch Group in fiscal 2012. With regard to economic uncertainty, our broad regional and sectoral presence helps ensure that risks are spread.

The following risk categories are considered in greater detail:

**Strategic risks:** We systematically and regularly examine the consequences resulting from changes in the markets, the supplier environment, the possible concentration of customers and competitors, and technical developments. The competitive environment for automotive technology will change through the longer-term wide-scale introduction of electric vehicles and increasing vehicle connectivity. A consolidation process is under way in the photovoltaics industry. And the thermotechnology market is faced with the challenges resulting from the merging of the global heating and air-conditioning markets. Furthermore, the competitive environment in all three business sectors is changing as a result of new web-based systems solutions and business models.

**Operational risks:** The economic environment has worsened as a result of the debt crisis, particularly in the euro zone. There is a risk that companies with limited financial resources will find it increasingly difficult to obtain loans if the effects the debt crisis is having on the banking sector become more acute, and given that the equity requirements placed on the banks themselves have increased. So far, we have not identified any significant financing bottlenecks among our suppliers. The high raw materials prices, however, do present a risk. We counter this development to some extent through price escalator clauses and forward transactions. One risk that remains unchanged has its origin in automakers' demands for continued price reductions and in price pressures in the area of consumer goods. Stringent requirements relating to product liability, particularly in the field of automotive technology, also pose a risk, which we counter with far-reaching quality assurance strategies.

**IT risks:** We have put in place comprehensive measures valid throughout the company to provide organizational and technical protection against all kinds of data loss, manipulation, and theft. We respond to the growing

demands and increasing sensitivity of data protection by means of a comprehensive set of policies and a broad-based and well trained data protection organization. We also protect our data against IT system failures by using redundant systems that run independently of location.

**Legal risks, compliance:** We do not anticipate any risks as a result of current or impending litigation or compliance issues that could materially impair the net assets, financial position, or results of operations of the Bosch Group in fiscal 2012. The principle of legality is an integral part of the Bosch values and is reinforced through a global compliance organization. The core element of this organization is the compliance committee, which comprises the directors of the corporate legal department and the internal auditing unit. It is supported by the compliance committee office and an international network of national compliance officers. There is also a global hotline system that associates and third parties can use to report critical incidents. Any information received is examined in detail. Worldwide information and training events and publications are used to ensure that the issue of compliance has a high profile within the company. Violations of the law or of the Bosch Code of Business Conduct will not be tolerated, under any circumstances. In addition to internal disciplinary measures, cases of misconduct can also result in criminal charges.

**Financial risks:** The operative business of the Bosch Group is impacted by fluctuations in exchange and interest rates. Our strategy of maintaining a strong global presence with local production and worldwide purchasing activities reduces currency risks. We also limit these risks by taking precautionary measures at corporate level. Internal regulations and guidelines set down a mandatory framework and define the responsibilities relating to payment transactions, investments, and precautionary activities. According to these regulations, financial tools such as futures trading and interest swaps may only be used in connection with operative business, financial investments, or financing transactions; speculative transactions are not allowed. Hedging transactions are entered into solely via banks whose creditworthiness is regarded as impeccable.

**Strategy of strong global presence combined with local production mitigates currency risks.**

We have substantial financial assets. These are subject to interest-rate and exchange-rate risks. We control these risks by means of an investment process geared to our financial exposure. The objective is to secure appropriate, risk-adjusted returns on invested capital. Here, we endeavor to spread our investments as widely as possible. A detailed depiction of risk management in relation to financial risks can be found in the notes to the financial statements.

**Global risks:** We systematically and comprehensively analyze the economic, legal, and political developments in individual regions and countries and, among other things, assess the risks stemming from disasters or the actions of third parties.



**No 1**  
**Interview**  
**November 2, 2011**

Technology and  
Innovation

**Alexandra Stindl (left)**  
associate in personnel marketing  
responsible for the Bosch InterCampus  
program, the company's international  
higher education initiative

**Horst Münzel (right)**  
regional president, Bosch Research and  
Technology Center (RTC) North America

*“If you want to be successful with innovations, you have to go where the action is – where there are world-class universities and a pioneering spirit. That’s why Bosch also has locations in Palo Alto and Pittsburgh, Singapore and Shanghai.”*

Horst Münzel

**Ms. Stindl, Mr. Münzel, you are constantly on the lookout for highly qualified young talent for cutting-edge research work. What are your associates working on at the moment?**

*Horst Münzel:* The RTC is part of the corporate research organization, and works as part of a global research network in areas of competence that are important for Bosch, such as the powertrain or software engineering. Our job is to spot trends and the business opportunities they represent, and to apply our research to turn them into product ideas for Bosch. In Silicon Valley, we are currently carrying out a research project in the area of medical diagnostics together with partners from top-notch universities and start-ups. The aim is to develop a method that will allow serious illnesses to be diagnosed earlier, and thus help to reduce healthcare costs. We are also working on new battery technologies, algorithms for robotics and data mining, as well as on the question of how far online interconnectedness will go – plus, of course, we’re also involved in electromobility. All in all, we currently employ 80 associates at the RTC, all of them excellently qualified scientific experts.

*Alexandra Stindl:* In information and computer science, there has been intense competition for quite some time now. That’s why Bosch works with the world’s top universities, with initiatives tailored to each market. That way, we make contact with the best and brightest early on and can present ourselves as an attractive employer.

**What challenges do you see in your work?**

*Horst Münzel:* Depending on where we are, we have to meet different requirements. In Germany, Bosch has an outstanding reputation as an employer. In the U.S., Bosch is currently in the process of making a name for itself as an employer in the field of research and innovation.

*Alexandra Stindl:* That’s why the decisions about how to collaborate with universities are made locally, not at corporate level. Our colleagues in the various markets have a keen understanding of how things stand in their countries and work closely with the relevant faculties. It’s about knowing which university leads the way in the areas we’re interested in at a given time, what they’re teaching their students, which universities we’re already working with, and whether Bosch is located close to a particular university so that we can offer internships. With our global projects, we’re really focusing on growth markets like India and China, but are also involved in Germany and the U.S.

**What form does your collaboration with universities take?**

*Horst Münzel:* As far as research in the U.S. is concerned, corporate research has a global system in place that it uses to find the best partners for Bosch. Schools are rated according to their performance in important competence areas. Only the best ones get our money and our

time. We go into these schools, work directly with students and teaching staff. We take a long-term view, work with the students, and contribute challenging questions of our own. And in return, we gain important research findings we need for our innovations.

*Alexandra Stindl:* Universities are happy to take up our ideas. But Bosch also champions autonomy in research and teaching. We engage with universities not just to research attractive, up-and-coming fields with them, but also to foster young talent and education in general. That's reflected in our values: looking to the future from a business perspective on the one hand, and corporate citizenship on the other.

### **What kind of time frames are we talking about in your work?**

*Horst Münzel:* Time frames range from 2 to more than 20 years. Take electromobility: some forecasts indicate that by 2050 only 2 percent of new vehicles will still have internal-combustion engines. In other words, the next 30 years will be a time of upheaval, as we make the transition from one powertrain to another. It's a phase we have to take an active part in shaping, creating innovations for Bosch that keep us in business. The biggest challenge here is the battery. In the short term, our research efforts are aimed at improving the performance of today's lithium-ion batteries - by using new combinations of materials, for example. In the medium term, we need to have completely new battery technologies, with far greater energy density and reduced cost. We're working on this together with top-notch partners around the world - in the U.S., Germany, and Asia. Thinking even further ahead, we might have a solid-state quantum device instead of a battery, and batteries could look completely different from the ones we know today. It will be interesting to see how things develop.

*Alexandra Stindl:* The InterCampus program is about a long-term engagement at the world's leading universities spanning the next ten years. It's geared toward megatrends such as the environment and electric cars, as well as population aging and megacities. We work hand in glove with our colleagues in research to drive projects in these fields forward.

*Horst Münzel:* There's so much happening at the world's leading universities. That's why Bosch research also has locations in Palo Alto and Pittsburgh, Singapore and Shanghai. Moreover, the Chinese market is growing incredibly fast. The conditions there are completely different, and you have to meet different product requirements than in Europe or the U.S. With a local presence, Bosch can increase its market-specific technological lead.



# Technology and Innovation

Our innovative spirit has always driven us to develop new technologies and ready them for market, and at the same time to fine-tune existing ones. Today, this spirit is helping us respond to the great challenges of the 21st century: climate change, the scarcity of natural resources, and rapid progress in information and communication technology (such as the emergence of the internet of things and services). These areas are the main focus of our 38,500 researchers and development engineers. Some 1,300 of them work in our corporate sector for research and advance engineering, where they develop, test, and research innovative systems, components, technologies, and methods. In all these areas of activity, sustainability is a central aim. We take a two-pronged approach. On the one hand, we seek to improve established systems, developing even more efficient internal-combustion engines, industrial plant, and machinery. On the other hand, we are opening up new applications for the future, such as systems for harnessing renewable forms of energy and electromobility solutions.

# 4,126

patents were filed by Bosch in 2011.



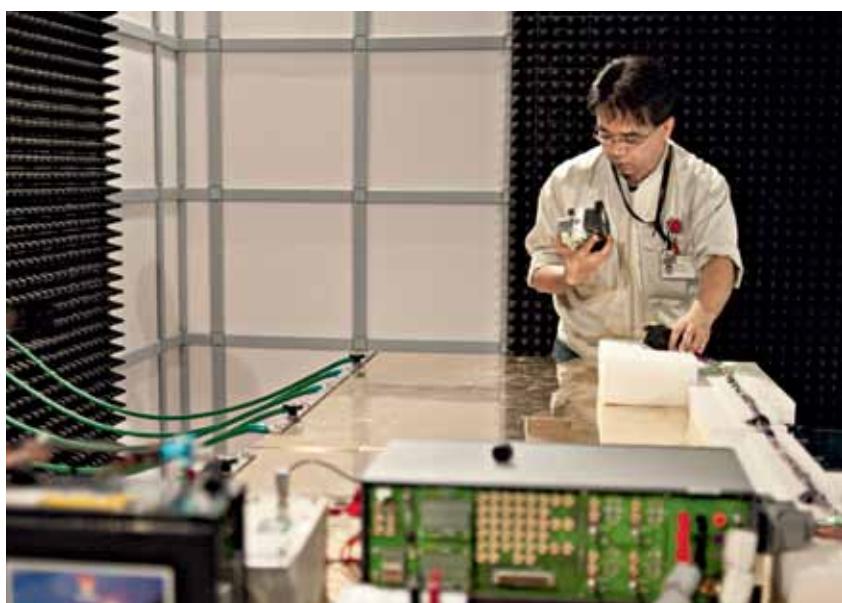
## The international research network at Bosch

- Research locations
- New research locations

### Globally connected

Our global research and development network enables us to combine the strengths of different regions, and to drive innovation forward around the world. At our newly enlarged research and development center in Yokohama, for example, our advances include driver assistance systems geared to the needs of the Japanese market. In Renningen, Germany, we are building a new research and advance engineering site to pool our capacities in the Stuttgart region. This will strengthen our research work in the region, enhance the ever more important integration of our international research network, and generate additional synergy effects. All this will provide an additional boost to our innovative strength worldwide. With 4,126 patents to our credit last year, we ranked once again among the world's most innovative companies.

One of the megatrends of the coming years will be the internet of things and services. It will promote the global exchange of information not just among people, but also among things: in other words, machines, equip-



*Yokohama engineering center: testing an ABS/ESP® unit for electromagnetic compatibility.*

ment, and buildings will communicate with each other. This will not only change our everyday lives. It will also result in more efficient processes and new business models in many areas. And we at Bosch are actively shaping this change. Our subsidiary Bosch Software Innovations GmbH devises platform solutions, and gives our divisions the support they need to use them. Our Automotive Aftermarket division, for example, offers a web-enabled vehicle diagnostics system for repair shops that gets smarter over time, helping its customers to carry out repair and maintenance work more efficiently. At the same time, our software and systems engineers are creating the technical cornerstones for the internet of things and services. For instance, we are exploring how smart, autonomous, and wireless sensors can be connected to the internet and used to pinpoint and provide relevant information for functions and processes. In Bangalore, India, we have set up the Robert Bosch Center for Research in Cyber Physical Systems – systems that connect the digital and physical worlds to perform important functions such as saving energy in buildings.

Going forward, mobility will be another major field of growth. Together with other companies in the automotive industry, we are involved in a project called simTD, which stands for “safe intelligent mobility – test field Germany.” To make driving safer, more comfortable, and more efficient, the project is testing new functions based on car-to-car (C2C) and car-to-infrastructure (C2I) communication technologies. This involves connecting vehicles with each other and with the traffic infrastructure via traffic control centers, and enabling them to exchange data. We are currently piloting this project on a large scale in the Frankfurt region of Germany. One example of C2C is the “electronic brake light.” When a driver brakes hard, the vehicle sends out a warning to its immediate surroundings, so even vehicles out of the line of sight are alerted in good time.

One example of C2I is when traffic lights record traffic density and time their phases to keep traffic flowing as smoothly as possible, which saves fuel. For simTD, we have developed components and functions for both technologies. These technologies are an important step on the road to autonomous driving, where vehicles are steered with no direct intervention by the driver.

**16** patent registrations per day

*Which of your cool inventions do the most to protect nature?*

Kaan Aslan, 13  
Son of Bilal Aslan  
*Manufacturing engineering worldwide*



**“We are working on clean sources of energy. We want cars to be powered by electricity that we generate from sources such as sunlight, and houses that themselves generate the electricity their inhabitants consume.”**

Volkmar Denner

Schwieberdingen: at new test bays, batteries are tested for robustness.



#### **Efficient and cost-saving powertrains**

The internal-combustion engine will remain the dominant powertrain technology for a long time to come. We continue to reduce its carbon footprint. For example, we are looking at how to put the exhaust heat from the engine to good use. When fuel is burned, a large part of its energy – around one-third – is still lost as waste heat in the exhaust gas. Here we are pursuing two main avenues of research. In the first, a steam circuit with a turbine is fitted in the exhaust system and converts the thermal energy in the exhaust gas into mechanical power. This solution, which is capable of cutting carbon dioxide emissions by about 5 percent, makes economic sense primarily for commercial vehicles. In the second approach, a thermoelectric generator converts the thermal energy directly into electrical energy. Planned for use in passenger cars, this project involves developing special thermoelectric modules that operate reliably even at the high temperatures found in exhaust gas. This solution offers a potential reduction of fuel consumption and carbon dioxide emissions of between 3 and 5 percent.

Ultimately, the general public will accept electric vehicles only if two challenges are successfully tackled: range and cost. Our researchers are examining different materials and determining how they can be combined to make the production of electric motors as resource- and cost-efficient as possible. For instance, we are looking at the neodymium-iron-boron compound, which is used in the hard magnet with the highest currently known level of coercivity. That means it retains its magnetization even in strong opposing fields, making it suitable for smaller and lighter motors. When selecting appropriate raw materials, availability is a prime consideration, but naturally also price, which in some cases is subject to extreme volatility. This is why our researchers always endeavor to choose materials that enable production at reasonable cost. Currently, for example, we are examining whether magnets for electric motors can be made from alternative materials that have properties similar to neodymium-iron-

**5%**

The forecast reduction in CO<sub>2</sub> as a result of using the exhaust heat from commercial vehicles.

boron but can be sourced at more affordable prices. Working in tandem with purchasing, our researchers keep a constant eye on the raw materials market so as to anticipate potential shortages and devise alternative strategies.

### A building that compensates for loads

Sustainability is the watchword of a forward-looking project being pursued by our Industrial Technology business sector. The Drive and Control Technology division is joining forces with two Stuttgart university institutes to build the world's first 1:1-scale prototype of an adaptive building. In this type of building, hydraulic cylinders and control systems compensate for potential loads and stresses caused by the kind of movements or vibrations found in storms, earthquakes, or heavy snow. In the long term, this technology will pave the way for stable ultra-light structures capable of significantly reducing the use of resources in buildings. The new technology could be used in stadium roofs or high-rise support structures, for example.

The sun is our most plentiful source of renewable energy, so photovoltaics - generating electricity from the sun - will play an ever greater role in the future. We are constantly improving our products in this field - not only conventional cells and modules based on crystalline silicon but also modules based on thin-film technologies. While these modules are less material- and energy-intensive to manufacture, they are not yet as efficient as conventional modules based on crystalline silicon. This is why we are exploring less costly alternative materials for semiconductors, with the long-term goal of achieving efficiency levels high enough to allow resource-friendly and even more cost-efficient production of photovoltaic systems.

# 1:1

scale used to build the world's first prototype adaptive building.



Arnstadt: We are continuously improving our crystalline solar modules.

## New areas of business

### Using the internet of things and services

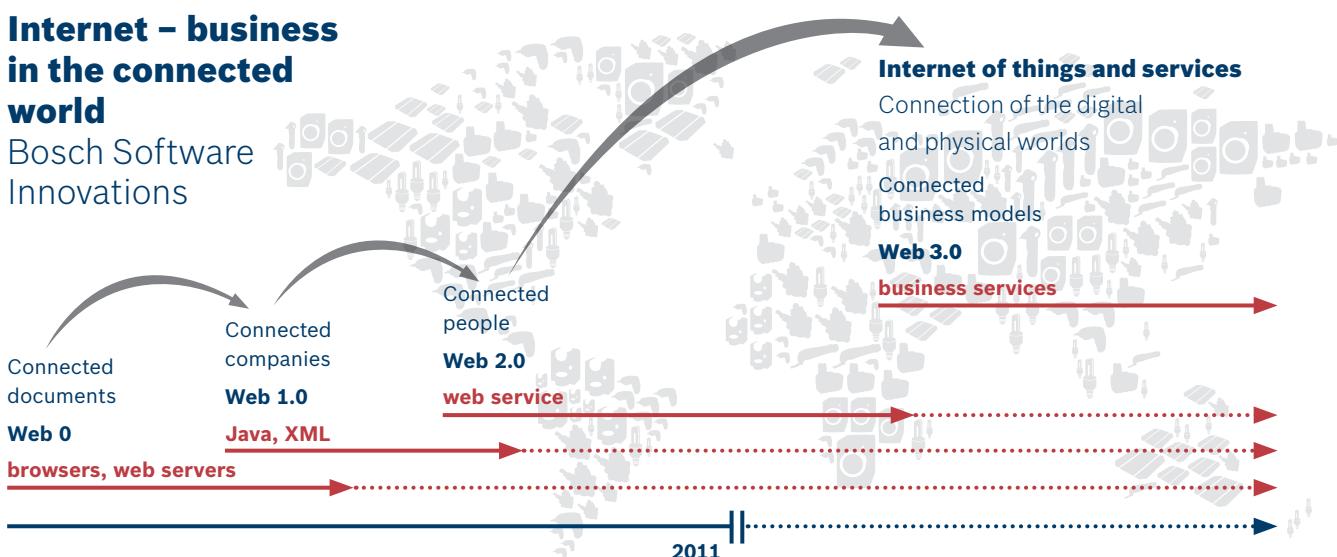
Since 2011, the software and systems unit of the Bosch Group has been trading under the name Bosch Software Innovations GmbH. The company originates from Innovations Software Technology GmbH, which was acquired in 2008 and developed a business rules management system based on Java software. The system graphically models and describes complex business rules and decision logic in processes or systems. Automatic code generation makes it possible to implement changes quickly without having to spend a lot of time rewriting the software. For instance, the Visual Rules software made by Bosch Software Innovations is used in private banking to prevent money laundering and insider trading, as well as to evaluate credit risks.

Bosch Software Innovations is also involved in developing complete inventory control systems for commercial enterprises, providing software solutions for health insurance application reviews, and offering industry-independent IT consulting services. Its portfolio has been expanded to include the solutions provided by the Berlin-based inubit AG, which was acquired in 2011. In the future, the inubit-Suite software for business process management will be used not only to map rules but also to automate entire corporate processes and standardize IT environments.

Our software and systems unit also plays a leading role in the field of electromobility. For example, a supply infrastructure for electric vehicles went into operation in Singapore in 2011. The system is based on a software platform that controls operation of the battery-charging infrastructure and makes it possible for any number of companies to integrate their business models into the solution. Once the system is completed, it will be possible in Singapore to use the internet to reserve charge spots and parking spaces, to immediately pay for the electricity drawn from the grid,

### Internet – business in the connected world

Bosch Software  
Innovations



and to manage the coordination of mobility and energy. The suppliers' vehicles and systems exchange information fully automatically. This project is therefore also an example of an application using web 3.0, also known as the internet of things and services. Web 3.0 is based on the idea that not only people but also devices and systems can independently exchange data via the internet. In 15 years' time, more than 50 billion devices and systems will already be networked in this way.

### **Greater quality of life for patients**

More than 50,000 people, particularly in the U.S., use technology provided by Bosch Healthcare. It can be used to transfer medical data, such as weight, blood pressure, oxygen saturation, and blood sugar levels, to medical centers. If the data show anomalies, medical support staff contact the patients. Patients also take part in a training program to learn how to cope with their illness and thus avoid relapses. This way, patients suffering from chronic illnesses such as heart problems or diabetes can have their state of health monitored constantly without having to visit a doctor at frequent intervals. This enables them to stay in their familiar environment, which in turn improves their quality of life and takes the pressure off the healthcare system. On the basis of findings from studies, experts reckon that costs can be cut by up to 13 percent per patient.

In 2011, the Care Solutions business unit originating in the Bosch Security Systems division was integrated into Bosch Healthcare. It provides systems that enable people at home to contact a support person at the touch of a button, around the clock. People in hospitals or in retirement and nursing homes can also alert staff using an emergency button. Bosch Healthcare now offers a complete product portfolio providing care for elderly people and chronically ill patients.

### **Inverters added to portfolio**

The planned acquisition of voltwerk electronics GmbH is intended to strengthen Bosch Power Tec, which is headquartered in Böblingen, Germany, and was set up at the start of 2011. Bosch Power Tec will drive forward our power electronics business related to power generation and energy storage, and will develop new generations of devices. Bosch Power Tec's operations will focus initially on the photovoltaics sector, and more particularly on inverters. Inverters are at the heart of every solar power installation, converting direct current into alternating current before feeding it into the power grid. And in electric vehicles, a conversion process is also needed so that the motor can use the direct current from the battery. We will expand the product range in the years ahead and open up additional areas of business.

Forecast suggest that more than

# **50 billion**

devices and systems will be connected to each other in 15 years' time.



*A social alarm system comprises two parts: the hands-free base unit is connected via the phone line with an emergency call center, which is manned around the clock. In an emergency, users can trigger an alarm by means of a radio transmitter that they wear all the time – around their wrist or neck, or as a kind of brooch.*

**More information is available online at:**

Corporate Research [www.research.bosch.com](http://www.research.bosch.com)



**No2**  
**Interview**  
**November 15, 2011**

Automotive Technology

***Werner Traa (left)***

Member of the executive board  
responsible for sales and marketing at  
Wieland-Werke AG in Ulm, Germany.

***Dr. Karl Nowak (right)***

President of the corporate sector for  
purchasing and logistics at Bosch

***“Our partnership is founded on trust, on innovative strength, and on the will to just go on getting better. But there are other reasons for our excellent relationship that are harder to grasp and explain.”*** Werner Traa

#### **Mr. Traa, Mr. Nowak, what does it take to be a Bosch supplier?**

*Karl Nowak:* A good Bosch supplier is outstandingly competitive in terms of quality, delivery, and cost, is exceptionally innovative, and strives continuously to raise the bar. The best suppliers can be granted preferred-supplier status, which gives them an advantage when participating in tenders for new business. They work very closely with us, and are lastingly dependable partners. Wieland-Werke is an excellent example of this. At the moment, we have 450 preferred suppliers, and will further extend this network, especially in the growth markets.

*Werner Traa:* That's very much how we like to see ourselves – as suppliers of quality. It's also the reason we continuously invest in our production engineering to assure and further enhance the quality of our copper and copper-alloy ranges. We also constantly optimize our processes and procedures so that we can meet the requirements placed on delivery reliability and provide our products on competitive terms. What's more, Bosch and Wieland share similar values. We cultivate a fair, trusting approach to relationships. Both companies pride themselves on being leaders in innovation and intend to pursue further growth in tandem.

#### **What is important when jointly developing innovative products?**

*Karl Nowak:* To actively cultivate Bosch's innovative ability and competitiveness, we harness external partners' expertise in the very early stages of our product development process. It's only at the start of development that anything significant can be done about the cost of a product. This is why we launched our “Genesis” program (generate with externals synergies and innovative solutions) on a wide scale in 2011. We use Genesis to reinforce suppliers' collaboration with purchasing, development, quality assurance, and manufacturing. In this way, we arrive jointly at more innovative solutions, better products, and more efficient processes. This calls for openness and mutual trust, which can only be built up over time. This alone is reason enough to establish long-term relationships with our partners.

*Werner Traa:* The name we use for this is “technical marketing.” Wieland staff are continually visiting the relevant people at Bosch to present new products and exchange information. These contacts are a matter of course at the expert level and don't have to go through management. You have to give and take to achieve something together. Neither Wieland nor Bosch need worry about information ending up in the wrong hands. Intellectual property rights are mutually respected.

*Karl Nowak:* In the end, of course, we have to ensure that the supplier that gets a particular order is objectively the most competitive one. So of course we have to consider the assessments and arguments of all the functional units, but it's purchasing that steers the order-

awarding process. Only in this way can we implement our purchasing guidelines and ensure healthy competition.

### **What do you understand by fair treatment of each other?**

*Werner Traa:* Part of it is sticking to contracts – something which unfortunately doesn't always go without saying in the industry. Wieland and Bosch, however, don't question agreements. By the same token, in a customer-supplier relationship as close as ours, it makes no sense to insist on sticking to contracts in hard times. This was especially apparent three years ago, during the economic and financial crisis. It was a difficult time for both companies. But we pulled together, were sympathetic to each other's problems, and found a mutually acceptable solution.

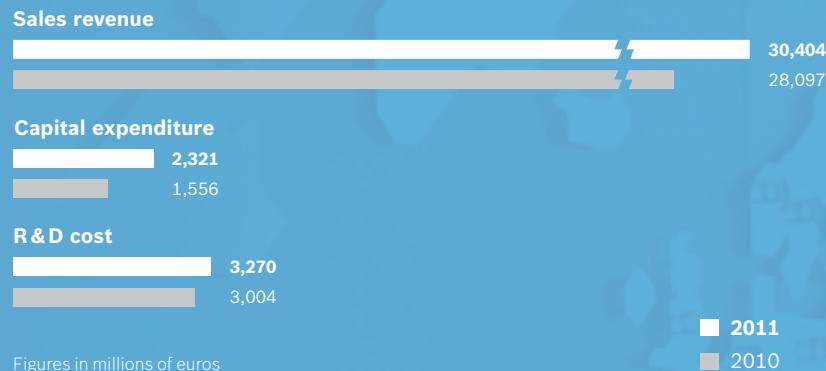
*Karl Nowak:* The markets have become more volatile, and we have geared our purchasing strategy to this fact. Of course, we keep a close eye on how our partners react in a crisis. The main objective is for Bosch and its preferred suppliers to weather the storm and come out of it stronger than ever. After all, we rely on these companies. We depend on their expertise. But we also need their flexibility – flexibility that allows them to support us at short notice when problems crop up, as they sometimes do in complex supply chains. We also need to be able to turn to them when our customers' requirements call for sudden changes in plan. In the long term, we need them to be willing to join us in seizing opportunities in growth markets.

### **You have a lot in common, yet even so – collaboration stretching over a century sounds suspiciously like a record.**

*Karl Nowak:* A friendship even existed between the Wieland family and Robert Bosch. Today, we look back on 115 years of cooperation with Wieland, which has the supplier number three. Clearly, the chemistry between us has been right for a considerable time.

*Werner Traa:* We can't let our performance slip. But you're right, this relationship is something special. Our partnership is founded on trust, on innovative strength, and on the will to just go on getting better. But – aside from the practical aspects – there are other reasons for our excellent relationship that are harder to grasp and explain.

# Automotive Technology



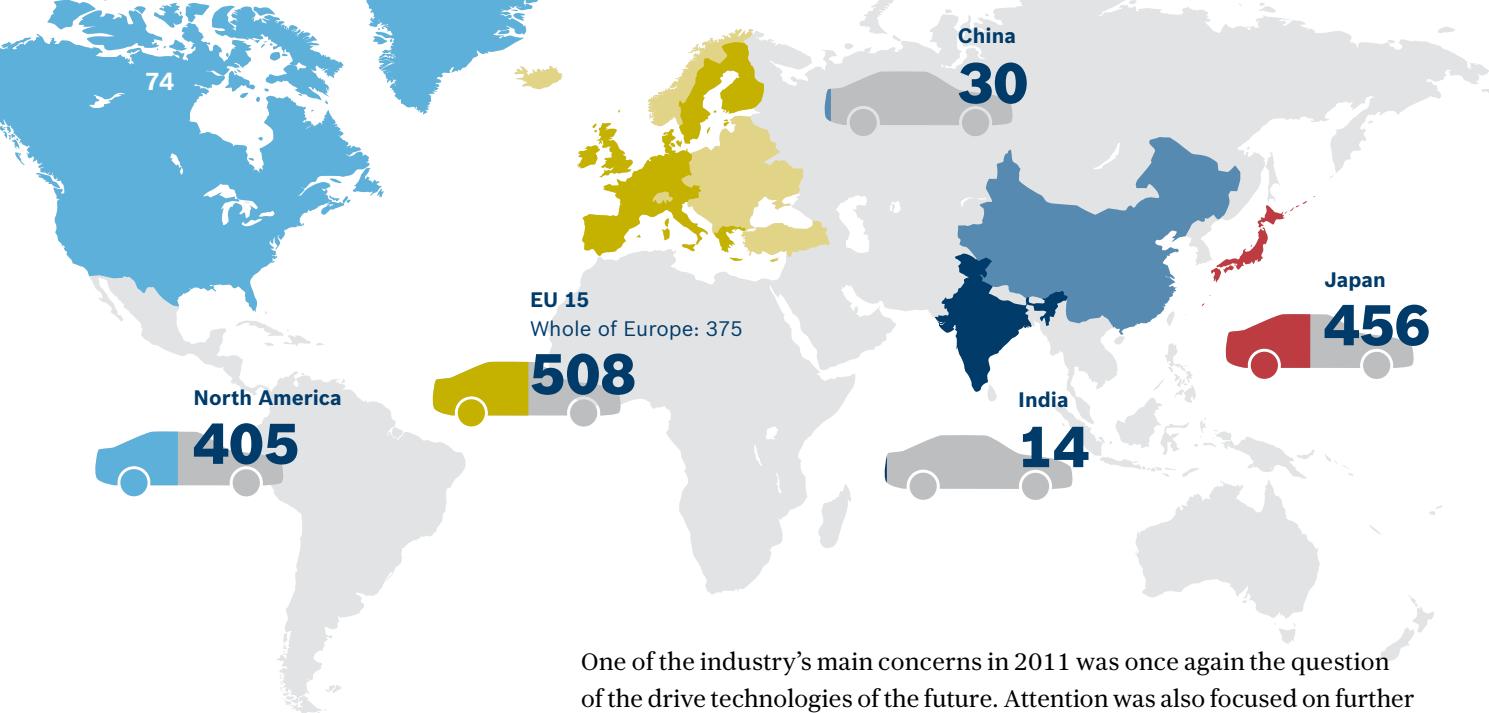
Figures in millions of euros

■ 2011  
■ 2010

In 2011, global automotive production grew by around 4 percent, which was less than expected. This was mainly due to the natural disaster in Japan and the floods in Thailand.

Our Automotive Technology business sector once again outperformed the market, with sales exceeding 30 billion euros for the first time. To help shape the transition in the automotive industry, we spent 3.3 billion euros for research and development. The number of associates rose by 5.2 percent to 176,000.

**8,700**  
additional associates



## Vehicles

per 1,000 inhabitants  
by country/region

*Since 2010, we have been producing electric motors for hybrid vehicles at our location in Hildesheim, Germany. Automakers are installing these motors in ever more models.*

One of the industry's main concerns in 2011 was once again the question of the drive technologies of the future. Attention was also focused on further improving internal-combustion engines and features for greater safety and comfort.

Bosch believes that the electric drive is a suitable concept for the future of personal mobility, but that it will not have a noticeable impact on the market until the next decade. The internal-combustion engine will thus remain the dominant drive technology for many years still. For this reason, we are active in both areas. We are optimizing traditional internal-combustion engines and aim to reduce their fuel consumption by another 30 percent in the years to come. At the same time, we are intensifying our efforts in the series development of systems for hybrid and electric vehicles. We are already making upfront investments of around 400 million euros in this area of business each year.



### Future focus with alternative drives

Bosch has comprehensive expertise and a broad portfolio of components for powertrain electrification. These include electric motors, traction batteries, power electronics, electrically driven auxiliary units, and specially adapted braking systems. Two premium vehicles with Bosch parallel full hybrid technology went into series production in 2010. And 2011 saw the launch of the first passenger car with a diesel hybrid drive. Bosch collaborated in the development of the axle split concept used in this car. The special thing about this concept is that the electric motor and differential gear unit in the rear axle module enable partial four-wheel drive.

Bosch believes that strong alliances are crucial for the development and production of key electric-vehicle components – the electric motor and the lithium-ion battery. In November 2011, we founded the EM-motive GmbH joint venture with Daimler AG, with the aim of producing electric motors for electric vehicles. Production began at our Hildesheim plant at the start of 2012, and one million electric motors are to be produced there by 2020. SB LiMotive Co. Ltd., the subsidiary in which we hold a 50 percent stake, employs some 900 associates devoted to optimizing the lithium-ion battery. Production got under way in 2010, and lithium-ion cells made by SB LiMotive have been installed in test fleets since 2011.

Bosch also believes that the combination of electromobility with state-of-the-art communication technology offers considerable potential. Our internet-based electromobility platform in Singapore successfully got off the ground in the summer of 2011. This solution enables drivers to locate available charge spots – which have already been installed in the city – and reserve them online. Utility companies and fleet managers can also integrate their products and services into the system with ease.

Bicycle manufacturers and cyclists are also taking an increased interest in electric drives. Bosch started production of e-bike drives at the beginning of 2011. By the end of the year, they had already been installed in 30 different makes of bicycle. The system comprises the electric drive, the complete sensor technology, and the control module.

### Great potential for internal-combustion engines

EU directives stipulate that the average emissions of all the new passenger cars produced by each automaker must not exceed 130 grams of CO<sub>2</sub> per kilometer from 2015 onwards. By 2020, this limit is to be lowered to

# €400m

a year for the electrification of the powertrain.



*Over the past  
125 years,  
people's mobility has  
changed radically.  
Will this development  
continue in the years  
to come?*

Lena Schuster, 18  
Apprentice office communication clerk

**“Cars will learn to communicate. They will listen to each other. Messages such as ‘This road’s icy’ or ‘I’m approaching from the right’ will prevent accidents and make drivers’ lives easier. We want an autopilot button for traffic jams, and an accident-free trip.”**

Bernd Bohr

Radar and video sensors are the eyes of our assistance and safety systems. Year on year, we tripled unit sales of our LRR3 radar sensor in 2011.

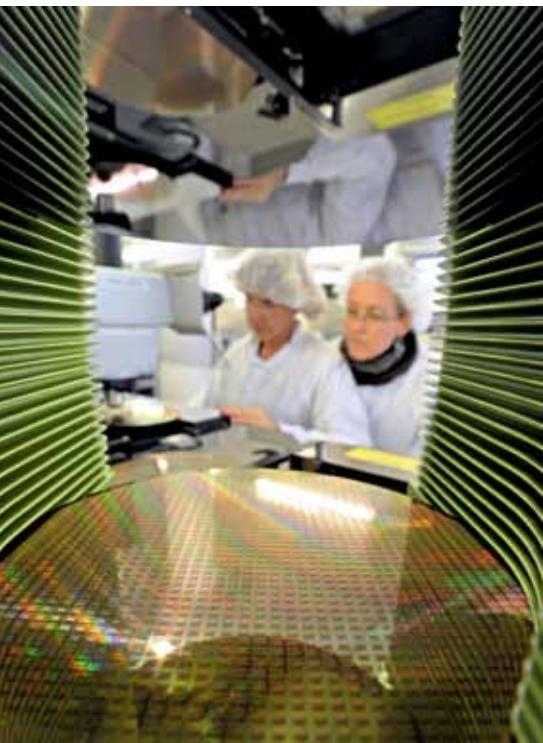


95 grams. The improvements in consumption required to achieve these targets will have to be met for the most part by the internal-combustion engine. Apart from the gasoline engine, diesel drives can make an important contribution in this regard. Bosch continues to further develop the now widespread common-rail technology, and produced the 75-millionth injection system of this kind at the end of 2011. By 2013, annual unit sales of our common-rail diesel injection systems will have risen from almost nine million at present to more than twelve million. Moreover, solenoid injectors for pressures of up to 2,000 bar went into series operation for the first time at the end of 2011. The higher injection pressure atomizes fuel more finely and thus further reduces emissions and fuel consumption.

We are also promoting the cost-effectiveness, cleanliness, and high torque of the diesel drive outside Europe. For example, a roadshow designed to convince drivers and the general public of the benefits of diesel has been touring China since the end of 2011.

The drive to further increase the efficiency of gasoline engines is also demanding ever more complex solutions. As with diesel engines, the concept of downsizing is coming to the fore. This involves reducing the displacement of the engine while keeping its power constant. Gasoline direct injection promises to unlock further potential in this area. Bosch expects to sell more than seven million of these systems in 2013 - three times as many as in 2010. Downsizing also requires turbochargers, which are provided by Bosch Mahle Turbo Systems GmbH & Co. KG. The systems made by this joint venture company went into series production at the start of 2012, and more than ten contracts have already been signed with six manufacturers.

The start-stop system further reduces fuel consumption by as much as 5 percent in the New European Driving Cycle (NEDC). At the end of 2011,



*At our testing center in Reutlingen, Germany, each individual semiconductor chip is tested electrically prior to further processing.*

four years after the launch of series production, we delivered the five-millionth starter adapted specifically to this system. Future systems will extend the phases in which the engine is switched off further still – first when the vehicle is coasting to a halt and later even to include phases when the driver is merely no longer accelerating.

In other words, the focus is on helping to improve the efficiency of vehicles. We are also doing this by developing ever more compact electric drives for electric windows, seats, steering, fans, and windshield wipers. One example is the reversing wiper direct drive that was launched in spring 2011. It requires 75 percent less installation space than conventional rotary systems and is over one kilo lighter.

#### **Improving road safety further still**

It is predicted that the number of road deaths worldwide will continue to rise in the next few years – mainly driven by growing traffic density in emerging countries. To counteract this development, the United Nations proclaimed the “decade of action for road safety” in May 2011. The UN regards the widespread use of active safety systems, such as the ESP® electronic stability program, as an important factor in this initiative. More and more countries are making it a legal requirement to fit vehicles with this system, which was developed by Bosch.

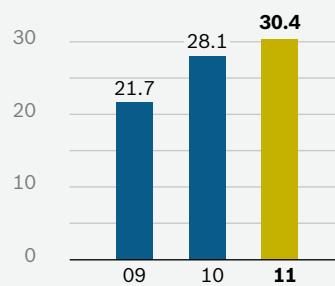
The installation rate for new vehicles worldwide will therefore rise from 40 percent in 2010 to almost 60 percent by 2015. Bosch is already manufacturing ABS and ESP® systems in Europe, the U.S., Japan, Brazil, China, and India.

As the smallest such system in the world, our ABS variant for motorcycles is suitable for all motorcycles with hydraulic braking systems. The additional safety potential of this brake support system is high, which is why there are plans for an EU directive to mandate this safety system for all motorcycles with an engine displacement of more than 50 cc from 2017 onwards.

We have further improved our preventive emergency braking system so it can now also brake automatically at speeds below 30 kph and thus prevent accidents. At higher speeds, the driver is still provided with support in several stages – from the initial warning to automatic full braking. This extended functionality was launched in a European model in 2011, as was our new navigation system with revised eco-route feature. This system factors in map-based parameters such as the class of road and number of

#### **Automotive Technology sales**

Bosch Group 2009–2011  
Figures in billions of euros



*When you say  
cars are going  
onto the internet,  
what do you  
mean?*

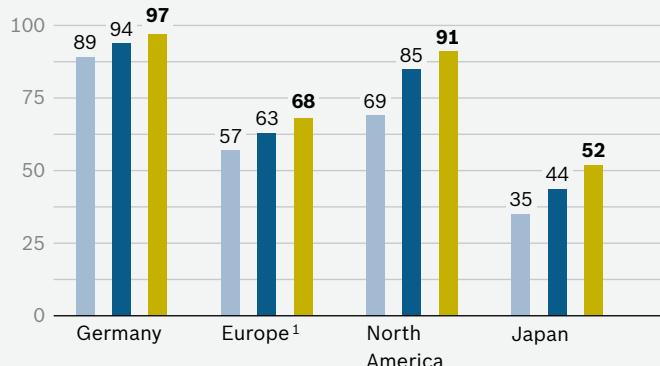
Pradnya Halady, 10  
Daughter of Prashanth Halady  
Car Multimedia

**“Cars receive up-to-the-minute information about things like free parking spaces. Electric cars find the right charge spot for their battery, more or less automatically. And driving becomes safer, because vehicles can immediately warn each other of dangers and bad roads.”**

**Wolf-Henning Scheider**

**Growing acceptance ESP®**

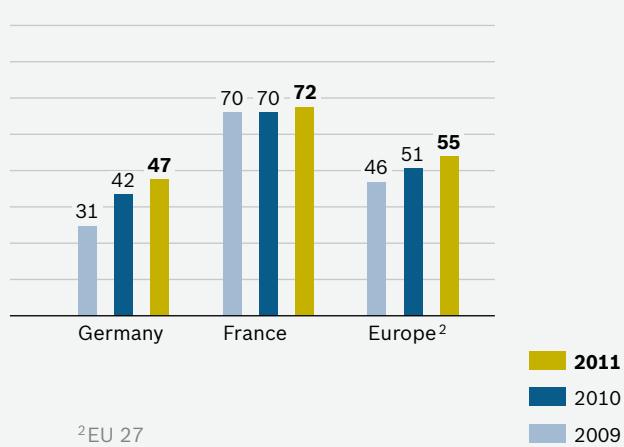
Share of vehicles equipped with an electronic stability program, based on production of passenger cars in selected markets from 2009 to 2011  
Percentage figures



<sup>1</sup>Including the Russian Federation

**Passenger car powered by diesel**

Share of diesel in newly registered passenger cars, based on selected markets from 2009 to 2011  
Percentage figures



<sup>2</sup>EU 27

■ 2011  
■ 2010  
■ 2009

**44%** of all passenger cars and light commercial vehicles manufactured in 2011 were equipped with **ESP®**.

**30%** of all passenger cars registered in western Europe in 2011 were equipped with **start-stop**.

junctions as well as vehicle-specific features such as the type of engine and transmission. In close cooperation with a commercial vehicle manufacturer, we will be launching a system in 2012 that takes information on inclines and curves into account in its gear-shift strategy. This will improve the fuel economy of vehicles further still. By using the navigation system as a predictive sensor, it will also be possible to make passenger cars cleaner and more fuel-efficient in the future.

Autonomous driving features will first become established in discrete situations, such as automatic steering in bumper-to-bumper traffic or during parking maneuvers. In the years to come, we will augment these features further to make them suitable for higher speeds and more complex situations – leading step by step to accident-free and autonomous driving.

**Comprehensive investments in Asia**

Automotive Technology continued to step up its activities in the Asian growth region in 2011. Despite the effects of natural disasters, our regional sales there have increased by half since 2007. At the end of 2011, some 10,000 of our 29,000 engineers working in automotive technology worldwide were located in Asia. Significant activities are taking place in China in particular, where Bosch plans to invest some 1.8 billion euros from 2011 to 2013. The new headquarters of the Chinese regional subsidiary opened its doors in Shanghai in April 2011, and in the future will offer space for 2,000 associates. At our location in Changsha, where we

pool our engineering activities for starters, alternators, and electric drives, a locally developed starter for commercial vehicles and a cost-effective alternator went into series production in 2011. In Wuhu, a Bosch joint venture opened a new location for the production of injection systems for gasoline engines. The production of brake control systems at the Suzhou location was also expanded significantly. Construction of a new proving ground for testing active safety systems such as ABS and ESP® began in Jiangsu province in October. The number of Bosch Car Service repair shops in China has doubled within four years, with the 1000th operation being opened in mid-2011.

### **Global replacement parts program**

Bosch is represented in all global markets as a leading supplier of industrially remanufactured vehicle parts. The replacement parts program run by the Automotive Aftermarket division currently includes 11,000 vehicle parts from 30 product groups, taking in everything from starters to diesel injection pumps. The Bosch Electronic Service facilities also offer repair services for control units and vehicle multimedia systems. The program was expanded in 2011 to include common-rail injectors for commercial vehicles, which are repaired at our Homburg plant.

At the end of 2011 we acquired the UniPoint Group in Taiwan, a notable Asian producer of starters, alternators, and wiper blades. This move strengthens the position of Automotive Aftermarket as one of the leading suppliers of these product groups.

At the start of 2012, we agreed the terms of the takeover of the Service Solutions business from the U.S. company SPX Corporation. This will further boost our position as a prominent supplier of diagnostic solutions worldwide.



**“Even now, Bosch is developing technologies that use alternative energies and conserve resources. Whether for wind power, solar power, modern heating technology, batteries, or electric cars – Bosch has a fitting solution.”**

**Peter Tyroller**

**More information is available online at:**

Automotive Technology [www.bosch-automotivetechnology.com](http://www.bosch-automotivetechnology.com)



**No 3**  
**Interview**  
**October 6, 2011**

---

Industrial Technology

---

**Ramona Günnewicht (left)**  
Industrial mechanic, Packaging  
Technology, Waiblingen, Germany

---

**Friedbert Klefenz (right)**  
President of the  
Packaging Technology division

***“I am positive that in ten years we will see a huge boom in Africa. Then that continent will be as economically important for us in Packaging Technology as Asia is today.”***

Friedbert Klefenz

**Ms. Günnewicht, Mr. Klefenz, can you pick up a bar of chocolate or a piece of candy in the supermarket without examining the packaging?**

*Ramona Günnewicht (laughs): Yes, I can still manage that.*

*Friedbert Klefenz:* I often do check whether the seams on the edges are cut properly and sealed straight. That's practically automatic with me: whenever I visit our locations abroad, I always plan a trip to a local supermarket as well. There's a lot I want to know. What foods are sold there? How many of them are packaged? And what do the bags and boxes look like? Especially in the newer markets - China, India, and Central and South America - that tells you a lot.

**Ms. Günnewicht, you have learned quite a lot in recent years.**

*Ramona Günnewicht:* That's right. My first day at Bosch is still fresh in my mind. That was four years ago, and I had just started my training as an industrial mechanic. Back then, I could never have imagined that I would take such huge steps forward in my personal and professional growth, and later study mechanical engineering part-time.

**What was your occupational training like?**

*Ramona Günnewicht:* The master craftsmen really made sure we learned a lot. And there was always someone you could ask if you needed help. Another thing I really liked was that we were encouraged to start up our own development projects. Two of the people in my year, for example, developed a drawbar control system that allows a truck with a trailer to maneuver easily when parking. They won first prize nationwide in “Jugend forscht,” Germany’s longest-running and best known competition for young researchers.

*Friedbert Klefenz:* It's true that our apprenticeships focus strongly on research and development. After all, most of our machines are customized for our clients' needs. Associates today also need to be able to install complex systems. This ability is becoming ever more important in achieving one of our major strategic goals: to offer our customers machines at every link in their supply chain.

**What exactly does that mean?**

*Friedbert Klefenz:* Take gummy bears, for example. Our machines can mix and boil the ingredients in large tanks. Then the gummy bear mass is poured into molds, and the bears cool down in the cooling tunnel. After weighing, they are first filled into bags and then put into the

end packaging, such as boxes. Here, the entire process – from production to the packages ready for delivery – uses machines made by Bosch Packaging Technology. That's where we're constantly seeking and finding fresh solutions and approaches.

### **What major innovations has Packaging Technology come up with recently?**

*Friedbert Klefenz:* Ultrasonic sealing is one example. This technology is truly groundbreaking. Many foods are packaged in foils, and today these foils are sealed by applying external heat – like the kind of laminator you might have at home. But the heat means you have to maintain a certain distance to the product and make the packaging larger than would otherwise be necessary. Nobody wants to buy a candy bar that started melting while being wrapped. In ultrasonic sealing, the overlapping foils are made to vibrate at high frequencies. As a result of this vibration, the temperature needed for sealing is created inside the foils, so that they melt and adhere to each other exactly where they adjoin. The area around the candy bar, say, stays cool, and the package can be smaller. This is an innovation that saves huge amounts of material.

### **What innovations do you find the most fascinating?**

*Ramona Günnewicht:* I can get excited about all kinds of packaging machines. At first, all you see is that somebody presses a button and a packaged product comes out at the end. But there are so many fascinating steps in between that I learned about over time. Piece by piece, the puzzle comes together – and eventually you see the whole picture.

*Friedbert Klefenz:* You also have to bear in mind that different regions require different innovations. For the European market, we manufacture highly complex machines that cut down on material and energy use. In emerging and developing countries, where only very few foodstuffs are packaged at present, we take an entirely different approach. At a recent trade show in India, for example, we presented a packaging machine so simple it can even be operated right next to the fields. Incidentally, India will be our largest bagging machine location worldwide this year.

### **Ms. Günnewicht, where do you see yourself professionally in ten years' time?**

*Ramona Günnewicht:* I would like to be a design engineer at Bosch. I'd be happy to work in another country, too.

# Industrial Technology

## Sales revenue



## Capital expenditure



## R&D cost



■ 2011

■ 2010

Figures in millions of euros

The Industrial Technology business sector – comprising the Drive and Control Technology, Packaging Technology, and Solar Energy divisions – generated sales of 8 billion euros in 2011, an improvement of 21 percent on the previous year. One reason for this was the strong economic recovery in the mechanical and industrial engineering sector. The markets in China, India, Brazil, and Russia in particular boosted growth at Bosch Rexroth AG and in the Packaging Technology division. The Solar Energy division was faced with the challenge of increasing price pressure. The number of associates in the Industrial Technology business sector rose by 11 percent to 48,000.

**600**

drives for the Bolshoi Theater

CAUTION - FRAGILE  
CONTRACT NO. P0273  
CASE NO. 19 / 21  
SELLER ROBERT BO  
DRIVES PHARMASTRAN  
GROSS WEIGHT : 758 K  
NET WEIGHT : 458 K  
DIMENSIONS : 240 X 2





**27%**  
2011

2003

Share contributed by Asia Pacific  
(plus Africa) to total Drive and Control  
Technology sales

#### Leading systems partner

A strong rise in demand from the capital goods industry boosted the activities of our Drive and Control Technology division. Thanks to its focus on markets and industries, the company was able to make good use of the opportunities that arose. There has been a shift in regional focus toward Asia. At present, Asia Pacific accounts for 27 percent of the total sales of the Drive and Control Technology division.

Mobile Applications grew strongly, driven by high global demand for machinery for use in construction and agriculture. Industrial Applications increased its business volume in both process engineering and factory automation. Renewable Energies, which produces components and systems for harnessing wind power, was unable to achieve its growth targets. However, we regard the long-term outlook for this sector as positive.

Resource conservation and climate protection are becoming ever more important for users and mechanical engineers. As a leading systems partner, Drive and Control Technology offers solutions that reduce the energy consumption of machinery and equipment without compromising on productivity. Our “Rexroth for Energy Efficiency” (4EE) program offers customers a wide range of options for saving energy and cutting costs across all drive and control technologies – from hydraulics, electrics, and electronics to mechanics and pneumatics.

For use in excavators, our engineers in Japan have developed an innovative power hydraulics system geared specifically to the Asian market. It cuts diesel consumption by up to 20 percent. A further innovation is a new axial piston variable pump developed for tractor engines delivering 74 kW or less. Calculated over the entire lifetime and based on typical load cycle distribution, the pump reduces fuel consumption by between 10 and 15 percent.



This French wind farm is equipped with Bosch sensors and electronic control systems.

In projects around the globe, we demonstrate our expertise in resource-friendly automation solutions. We have won an order to supply the complete hydraulics for the reconstruction of the Panama Canal. The project is scheduled to get under way in 2012. The new locks will consume less fresh water. From 2014 onwards, even larger cargo ships will be able to use the link between the Atlantic and Pacific Oceans, and in this way reduce pollutant emissions.

In Moscow, we supplied and commissioned over 600 electric and hydraulic drives, as well as the entire sequence control system, for the new stage machinery of the Bolshoi Theater, which has reopened after a lengthy period of renovation. Among other things, these drives ensure that the scenery can be changed quickly and easily. We were able to integrate our sophisticated technology into the architecture of the famous building without making any changes to its historic outer shell.

#### **Greater focus on regional requirements**

We are stepping up the expansion of our engineering capacities in the growth markets, particularly in China, but also in South America. Our engineers in these regions are developing more and more products and solutions that are tailored to regional customer requirements. In emerging markets, there is a growing demand for what we call "good enough" products. These are cost-effective products developed to high quality standards and designed to perform a specific task – not more, not less. Potential customers for products like these include tens of thousands of smaller businesses in countries such as China, India, and Brazil.

In the renewable energies sector, we deliver innovations to improve the performance of equipment that uses clean sources of energy for power generation. To identify damage and ice formation on rotor blades, the Sternwald Forest wind farm on the border between Austria and the Czech Republic is equipped with a unique monitoring system. Sensors in the blades measure vibrations and changes that indicate damage. This prevents unnecessary downtimes. Investment costs are recouped in less than two years.

# 20%

reduction in diesel consumption thanks to a new power hydraulics system for excavators



*When will all  
our electricity  
come from the  
sun at last?*

**Jun Hao Kang, 14**  
Son of Chee Kian Kang  
*Packaging Technology*

**"The sunlight that falls on the surface of the earth for a single hour is enough to satisfy the energy needs of the world for an entire year. The world will learn to exploit this energy on an ever greater scale."**

**Siegfried Dais**

*Market mix: the process engineer Hüttlin is a positive addition to our Packaging Technology division.*



### Growing demand for packaging

As standards of living around the world increase, so does the demand for packaging. This has benefited our Packaging Technology division, particularly in China, where we are already one of the major manufacturers. In Chengdu in the centrally located Sichuan province, we opened our second packaging-machinery manufacturing facility in China last year. In India, we moved into our new plant in Verna. Furthermore, we are stepping up our sales and service activities in the growth regions of South America and Africa. New sales office locations include Panama City and Johannesburg.

We offer our customers comprehensive solutions from a single source. To round off our product portfolio for the pharmaceutical sector, we acquired the Oystar Group's subsidiary Hüttlin GmbH in Schopfheim, Germany, and the Manesty division of BWI plc in Knowsley, United Kingdom. Hüttlin produces equipment for mixing and granulating, while Manesty manufactures machinery for pressing and coating pills.

The innovations of our Packaging Technology division help conserve resources and save energy. One special focus of our development work is aseptic pouch packaging systems. If products such as baby food are packaged aseptically, they no longer have to be heat-treated during packaging. This makes it possible to use simpler materials and to consume less energy during sterilization. Products packaged in this way also do not need to be kept cool, which also saves energy. The first products packaged using this technology are poised for market launch.

Our carton packaging systems are both eco-friendly and flexible. They are suitable for a wide range of product formats and types of packaging. In response to the new trend toward personalized medicine, we offer our customers highly flexible filling and sealing machines. They are ideal for the fast and reliable production and packaging of small quantities of pharmaceuticals that are tailored to the needs of very specific patient groups. In the first instance, these machines are especially appealing for North American customers.



*Top-quality products for the solar market: quality assurance in Arnstadt*

### Worldwide growth expected in solar energy

Our Solar Energy division came under considerable pressure last year as a result of sharply declining prices and strong competition from Asia. Our subsidiary aleo solar AG, which manufactures and sells crystalline modules, was also unable to meet its sales targets. Despite the difficult environment, we increased our unit sales.

We firmly believe that, in the long term, the sun will be an important source of renewable energy. As for the regions of the world, we expect strong growth in Asia and the Americas.

Last year, the division opened a new headquarters and a competence center for photovoltaics in Arnstadt, Germany. We invested more than half a billion euros in this project. To improve supplies to the French and southern European markets, we started production of solar modules at the Vénissieux location in France at the beginning of 2012.

In the Malaysian state of Penang, we have plans to build a new manufacturing site to cover the entire crystalline value-added chain. It is intended to serve the dynamic solar market in Asia and the Americas. Capital expenditure on this project will amount to some 500 million euros.

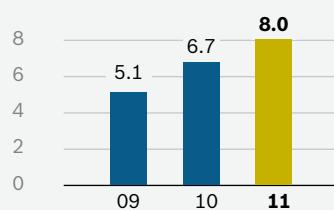
For production in Penang we are developing a completely new photovoltaic module based on highly efficient monocrystalline solar cells. Every component is being optimized to achieve the best possible cost-benefit ratio. In spring 2011, we achieved an impressive efficiency rating of 19.6 percent in the cell – an important milestone.

### What's 'sustainability'?

**Cydney Armwood, 5**  
Daughter of Chandra Lewis  
Corporate communications

### Industrial Technology sales

Bosch Group 2009–2011  
Figures in billions of euros



**"If you look after an apple tree properly, and if you grow new apple trees from some of the seeds it produces, then you and your children will be able to pick lots of lovely apples in the future as well. That's sustainability."**

### More information is available online at:

Drive and Control Technology [www.boschrexroth.com](http://www.boschrexroth.com)  
Packaging Technology [www.boschpackaging.com](http://www.boschpackaging.com)  
Solar Energy [www.bosch-solarenergy.com](http://www.bosch-solarenergy.com)

**Werner Struth**



**No4**  
**Interview**  
**October 24, 2011**

Consumer Goods and  
Building Technology

**Fritz Baumann (left)**  
Senior expert with  
Bosch Management Support (BMS)

**Egbert Schneider (right)**  
Senior Vice President Engineering,  
Power Tools, with responsibility for  
research and development



***“It’s just like in an orchestra.  
Simply fine-tuning a product’s  
functionality is no longer enough  
these days.”***

Egbert Schneider

**Mr. Schneider, Mr. Baumann, Power Tools launches a wealth of innovative products every year. Which of them do you find especially intriguing?**

*Egbert Schneider:* I’m very pleased with the success of our oscillating tool – a little device that uses rapid vibrations to perform a whole variety of sanding and cutting tasks. It’s a proven idea that we have reinterpreted, enhancing costs and benefits to make it attractive for do-it-yourselfers as well. This is a great innovative product with huge market potential.

*Fritz Baumann:* During my career at Bosch, I set up plenty of production lines. That’s why I’m most familiar with and can best appreciate process-related innovation. This involves a lot of work. Especially when setting up a new line calls for various materials and machines from all over the world to be put together to form a functioning system.

**Innovations are an essential part of the success of Power Tools. How do you achieve this innovative strength?**

*Egbert Schneider:* One vital element is customer focus. That means we need to understand the problems and challenges users face, and then come up with new tools based on that knowledge. Ideally, that involves a process of intense sparring. The marketing expert might say, for example: it would be great if we had a power tool just ten centimeters long. Customers would like that. And then the engineer, once he has thrown his hands into the air and yelled that it can’t be done, takes up the challenge and works on producing the smallest possible model.

*Fritz Baumann:* But then manufacturing still has to be able to produce the innovations they want! If marketing and development say the motor also has to deliver 20 percent more output, then we have to think: can I get the additional copper wire that’s required to actually fit inside this motor?

*Egbert Schneider:* Exactly. It’s just like in an orchestra. Simply fine-tuning a product’s functionality is no longer enough these days. Marketing and development, manufacturing, quality assurance, and purchasing all have to work in harmony. And someone has to make sure they play the right notes in the right order. That’s the only way we can be fast enough to beat the competition from all over the world, especially Asian competitors. Today, it takes us only eleven and a half months on average to get a product from kick-off to readiness for series production.

**Mr. Baumann, while you were a Bosch associate during the 1980s and 1990s, the main challenges you faced must have been completely different, mustn't they?**

*Fritz Baumann:* The pace has definitely picked up. When we set up an assembly line in the old days, we were given a year and a half from the order through to the start of production. Now lines are expected to be set up within six months. But you have to accept that times were different then. The challenges are completely different today.

**And as a Bosch Management Support associate, you are stepping up to those challenges?**

*Fritz Baumann:* Yes, I've been working with BMS ever since I officially retired in 2006. A little while ago, I trained new associates in operations scheduling at Power Tools in Leinfelden. Before that, I spent two and a half years helping set up our plant in Engels, Russia, and getting the production lines there up and running. During that time, I worked an average of 23 days a month. BMS really looked after me very well throughout, taking care of all the administrative stuff like travel arrangements and insurance. Which left me with the job of supporting my colleagues.

**So just putting your feet up and enjoying retirement is not for you?**

*Fritz Baumann:* There are people who see retirement as turning in their badge and never looking back. I don't feel that way. I always really enjoyed my work at Bosch, and that's not something that simply stops on your last official day at work.

*Egbert Schneider:* Your in-depth knowledge is absolutely essential to us. In many areas within Power Tools, we're trying to make knowledge management less dependent on individuals. But in some fields, seasoned associates' expertise is so important. Of course, the extent to which we can leverage this know-how depends very much on the individual case. You, Mr. Baumann, have the necessary skills at your command so that other associates acknowledge you as an expert. Plus, you're also very good at dealing with people. That's just one more reason we hope you'll help us again soon with a new project in China.

*Fritz Baumann:* Mutual acceptance is really the key. That's something the corporate culture at Bosch fosters. Of course, you can't afford to be preachy. After all, old hands like us can also learn a lot from the youngsters - when it comes to computers, for instance.

# Consumer Goods and Building Technology

## Sales revenue



## Capital expenditure



## R&D cost



■ 2011

■ 2010

Figures in millions of euros

Demand for products in our Consumer Goods and Building Technology business sector grew steadily in 2011 even though construction work in important regions declined. Nonetheless, sales of power tools, heating technology, security systems, and household appliances increased by 4.4 percent to 13 billion euros. While the Asian markets were the main drivers of growth, the markets in South America also developed positively. We expect the above-average growth in these regions to continue in the years to come. The number of associates in the business sector rose by 6 percent to 67,400.

**15%**

growth in Asia



## Bosch Communication Centers worldwide

- Locations 2011
- New locations 2011–2012



*This Energy Plus house in Wetzlar, Germany, not only keeps its occupants cozy and warm, it also generates more power than it needs.*

### Focus on customer requirements

On the whole, the global market for power tools developed positively in 2011, though growth was not as strong as in the previous year. There were also significant regional differences: demand in western Europe grew more slowly, while the markets in South America and Asia were very dynamic. The slight upward trend in North America persisted.

All in all, Power Tools once again outperformed the market in 2011, and was thus able to expand its market share in all key sales regions. Growth was particularly strong in Asia and Europe, slightly less so in the United States. We also gained market share in Germany and maintained our high level of performance there. As a result, 17 of the 20 best selling power tools in European DIY stores are made by Bosch. Sales in South America were also very encouraging.

It is our innovations that lay the foundation for this success. Last year, Power Tools generated almost 40 percent of its sales with products that were launched less than two years previously. In 2011 as well, the division launched a total of more than 100 new and improved products that immediately proved very popular. This demonstrated that we are on the right track with our approach to developing new products – consistently focusing on customer requirements. Take our professional power tools, for example. We launched over 40 new tools for tradesmen last year, including a two-kilo hammer drill and an orbital sander, both of which boast exceptionally low vibration values. The L-Boxx – an intelligent solution for transporting and storing power tools, accessories, and parts – also offers added value for customers. It has been part of the delivery scope for our new professional products since it was launched in 2010, and is very popular with tradesmen.

One of the reasons for the success of our DIY and professional tools is our policy of communicating intensively with our end-customers. For example, our [www.1-2-do.com](http://www.1-2-do.com) social media platform addresses keen DIY and

handicraft enthusiasts. Last year, we increased the number of interactive elements on the site to make it even more appealing – and the number of users has far more than doubled in the last twelve months.

### **Increasing importance of energy efficiency**

In 2011, the development of the Thermotechnology division was hampered by the difficult situation in the construction industry and by high budget deficits, particularly in western and central Europe. In contrast, the markets in eastern Europe, Asia, and South America developed positively. A good two-thirds of sales in our heating technology operations are now generated outside Germany. We were able to maintain our market share in Germany.

The efficient use of energy is becoming increasingly important in this market. Here, we have put innovative technologies to work, such as waste heat recycling. A landfill site near Frankfurt in Germany uses an organic Rankine cycle (ORC) system to recover waste heat from a combined heat and power plant. While this waste heat was previously lost, it is now used to generate power. This solution was developed and installed by Bosch KWK Systeme GmbH, a subsidiary of the Thermotechnology division. The system runs successfully with a rated electrical output of 65 kilowatts and thermal efficiency of 12 percent.

Since the system went into operation in May 2011, it has generated an extra 121,000 kilowatt-hours of power, thereby saving 143 metric tons of CO<sub>2</sub>. This technology has huge market potential, because up to 50 percent of the energy used in industry worldwide is lost as waste heat. The Bosch systems already use low feed temperatures of between 90 and 150 degrees centigrade. Using waste heat from cogeneration plants, biogas plants, and industrial installations, they emit nontoxic, noncombustible steam. The steam drives a turbine, which in turn powers a generator to produce electricity. The electrical energy produced in this way is fed back directly into the power grid.

A further example of energy efficiency using Bosch technology is the Energy Plus house, which was handed over to its inhabitants in Wetzlar, Germany, in December 2011. Thanks to the smart interaction between the decentralized energy supply, heating, ventilation, cooling, and water heating, the building produces more energy than it consumes over the course of a year. This solution offers great ecological potential in Germany, since 40 percent of the country's primary energy is used in buildings.

# > 100

new and modified power tools  
were launched in 2011.



*Does sustainability  
always have the  
same importance  
for Bosch, wherever  
it does business?*

**Katherina Löbel, 12**  
Daughter of Uwe Löbel, manufacturing  
engineering worldwide, and Olga Löbel,  
engineering support

**“Sustainability is  
a global objective.  
It does not stop at  
national borders.  
And so our actions  
are based on the  
same standards and  
rules worldwide,  
supplemented  
where necessary by  
national regulations.”**

**Rudolf Colm**

The Thermotechnology division is opening up new market opportunities with powerful large-scale boilers and heat pumps, particularly in Asia. With the aim of putting appropriate facilities in place to meet demand in this region, Bosch has acquired the Chinese suppliers Wuhan Tianyuan Boiler and Oak. This also strengthens our presence in Asia. There and in South America we expect above-average growth opportunities for our thermotechnology business.

#### **Security and service in demand worldwide**

The global market for security technology developed satisfactorily in 2011. The highest growth rates were recorded in China, eastern Europe, and South America. In these regions, Bosch achieved double-digit sales growth, and expects above-average growth in the years to come. Activities in Germany also developed favorably.

**BER** is the IATA code for the new Berlin Brandenburg international airport. All its security equipment was supplied by Bosch.

Our involvement in major projects worldwide continued in 2011. We supplied the security technology for the Tomsk economic zone in western Siberia and installed the public-address and evacuation system for Dubai International Airport. The Shanghai Oriental Sports Center relies on our security and communication solutions, and we won the contract for all the security technology at the new Berlin Brandenburg (BER) international airport.

For these projects we supplied video surveillance systems, fire alarm systems, evacuation systems, access control systems, and management systems, among other things. Millions of people at large and small events worldwide are protected by Bosch security systems or benefit from the outstanding sound quality of Bosch public-address systems. Bosch systems were in operation at both the men's Soccer World Cup in South Africa and the women's Soccer World Cup in Germany. But our systems also provide reliable protection for people on a day-to-day basis in many airports, train stations, and office buildings.

*Fire-alarm systems like this one in the stadium of the ALBA Berlin basketball team discreetly keep people safe the world over.*



Bosch Communication Center Magdeburg GmbH has set up a new call-center location in Kazan, Russia. The service provider of the Security Systems division is now active in 13 countries in Europe, Asia, and South America, and has plans for further expansion. New sites are planned in Asia, among other places, in 2012. Bosch Communication Center Magdeburg GmbH offers a wide range of options for outsourcing services for marketing and sales, customer service, finance and accounting, security, building management, procurement, logistics and production, IT and technology, and HR.

### **Environmental protection in the home**

The efficient use of energy and resources is one of the primary product development objectives at BSH Bosch und Siemens Hausgeräte GmbH (BSH). Founded more than four decades ago, this successful joint venture between Bosch and Siemens is a respected global supplier of high-quality and energy-efficient household appliances. Thanks to this good reputation, BSH was able to gain an additional share in all important markets in 2011.

Especially in Europe, Bosch and Siemens are among the strongest-selling brands. Their product portfolio includes large and small household appliances, floor-care equipment, and water heaters. BSH covers a broad range of consumer requirements through its seven special brands Gaggenau, Neff, Thermador, Constructa, Viva, Ufesa, and Junker. A continuous stream of innovations allows customers to rest assured that they are buying genuine state-of-the-art products. BSH innovations are pioneering and set standards worldwide. AquaStop, zero degrees chill technology, and NoFrost technology are just three examples. Innovations also help improve energy efficiency. For example, BSH offers many highly efficient refrigerators in energy-efficiency class A++, such as the most efficient model in the compact category. In 2011, BSH also held the world record for the most water-efficient washer-dryer.

### **More information is available online at:**

Power Tools [www.bosch-pt.com](http://www.bosch-pt.com)

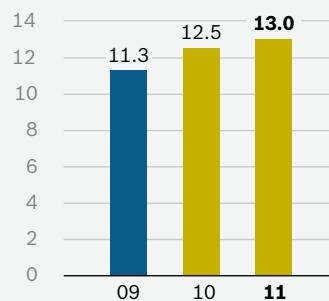
Thermotechnology [www.bosch-thermotechnology.com](http://www.bosch-thermotechnology.com)

Security Systems [www.boschsecurity.com](http://www.boschsecurity.com)

Household Appliances [www.bosch-home.com](http://www.bosch-home.com)

### **Consumer Goods and Building Technology sales**

Bosch Group 2009–2011  
Figures in billions of euros



Conspicuously green technology: a model of the Bosch ActiveWater Eco<sup>2</sup>, currently the world's most economical dishwasher (as of February 2012).



**No 5**  
**Interview**  
**September 7, 2011**

---

Our Responsibility

---

**Ernst Ulrich von Weizsäcker (left)**  
Co-Chair, International Resource Panel

---

**Christof Bosch (right)**  
Spokesperson for the Bosch family

**“Sustainability arises from the sum total of interactions between civilization and nature.”** Christof Bosch

**Mr. von Weizsäcker, Mr. Bosch, what does sustainability mean to you?**

*Ernst von Weizsäcker:* Future generations should not be worse off than ours. But when you consider that the world's population is heading for the ten billion mark and beyond, then future generations by definition will be incomparably worse off unless we make changes in our lifestyle and our behavior. What's more, fairness and long-term success are also significant aspects of sustainability.

*Christof Bosch:* The fundamental definition - which is development designed not to destroy the basis for future generations' existence - seems quite clear to me. But what specifically is sustainability? This question is anything but simple. That's because sustainability is not something that can be isolated in the social, economic, or political arena; nor is it scientifically quantifiable. Sustainability arises from the sum total of interactions between civilization and nature. And defining the sum of these interactions is tremendously difficult. I would say it's all about intelligent development - intelligent meaning above all creating the best possible conditions such that future generations won't automatically be so much worse off than we are today.

**And what will that take?**

*Christof Bosch:* To achieve that, we need intelligent development that increases the potential available to us on this earth.

*Ernst von Weizsäcker:* I would fully agree with that. Natural resources should remain the basis of life for future generations; as things stand, crude technologies, greed, ill-conceived incentives, and the like still result in intolerable waste. If we want to leverage this potential, we need to pool the best engineering minds, establish globally recognized regulations, and create a global sense of shared responsibility, the first signs of which we are starting to see in Europe today. That would be a blessing for the two hundred or so countries on the planet.

*Christof Bosch:* High-tech companies such as the Bosch Group need to invest their energies and their collective global expertise in developing products that will truly make people's lives easier. That can only mean creating products that are sustainable, responsible in their use of resources, and energy-efficient. Technical solutions need to help us master the major challenges of today and tomorrow, and also offer jobs with adequate income to ensure good quality of life for workers. That is part of sustainability, too.

*Ernst von Weizsäcker:* Yes, replacing gigajoules or kilowatt hours with systems control and intelligence – that's an area where Bosch as a technology company and other similar enterprises can play a big part, with the aim of achieving a factor of five in the increase of resource productivity, which I feel is absolutely essential for the global economy. Companies that play a leading role here will guarantee their own long-term success. To do that, these companies need to harness the combined expertise of their entire workforce, especially of their engineers, to define the tasks they face and generate technological solutions.

*Christof Bosch:* In everything it does, the Robert Bosch Stiftung can support the sustainable development of society and the company. Whether it's about promoting healthcare, education, or international relations – the three main pillars of the Robert Bosch Stiftung are based on the concept of sustainability and are also directly interconnected. The Robert Bosch Stiftung will pursue its work to advance the social aspects of sustainability on our planet in the years ahead.

*Ernst von Weizsäcker:* Strong family-owned businesses that consider long-term innovative strength and sustainability more important than the last quarterly report have a very good basis for lasting success. And having a foundation as the majority shareholder will tend to strengthen a company even further in the long term.

#### **And how do you see the potential conflicts between sustainability and growth?**

*Ernst von Weizsäcker:* The word “growth” is deceptive. The destruction of the Amazon rain forest that's happening right now shows up in the statistics as growth, but physically speaking, it's destruction. So we also need to learn to apply better yardsticks and to make these better yardsticks the basis for our reward systems. In many places today, destroying the environment is financially rewarded rather than penalized.

*Christof Bosch:* The idea that sustainability means zero growth is completely off-target! If we don't constantly direct our efforts toward creating growth in forward-looking developments, we will not be able to develop our company. And if the company doesn't develop, it will not survive, so it won't be able to produce the technical solutions for the major challenges of the present and the future.



# Our Responsibility

We consider the sustainable development of our company indispensable to our long-term success. Within this context, corporate social responsibility means maintaining a balance between business and technological interests on the one hand and social and environmental interests on the other. Accordingly, the standards we set are particularly high: in terms of how we define **leadership**, how we deal with **associates**, how we treat the **environment**, and how we engage with **society**.

125

**years of sustainable development**

Company

Associates

Environment

Society





## Rise in **Bosch headcount**

 **New associates in 2011**



*At the many Bosch locations around the world, some 6,600 young people were in apprenticeship schemes in 2011 – like this budding microtechnology engineer in Reutlingen, Germany.*

Our associates are fundamental to our dynamic growth and sustained economic success. At year end, Bosch employed 302,500 people worldwide – some 19,000 more than in the previous year. Our workforce in Asia Pacific grew by 8,000 to 71,200, while in Europe it went up by 9,800 to 196,400, of whom 118,800 are in Germany (an increase of 5,200). In the Americas, we hired 1,200 associates, bringing our workforce there up to 34,900 at year end. Despite our ever broader international reach, Germany remains an important location; in 2011, over one in four of our new associates were hired there.

### Boost for higher education funding

In order to attract top young talent to Bosch across the globe, we have significantly stepped up our international funding for higher education. One of our major efforts in this regard is the Bosch InterCampus program. Over the next ten years, Bosch will spend a total of 50 million euros to provide support for universities and research projects in Germany, China, India, and the United States. The initiative aims to achieve lasting improvements in research conditions for university students and academics, thereby accelerating progress in highly promising fields of study. Since 2011, students and academics have been researching into electromobility, power generation, energy efficiency, and emissions reduction at places such as Aachen, Ann Arbor, Bangalore, Beijing, Berkeley, Karlsruhe, Shanghai, Stanford, and Stuttgart. To create the optimum conditions for this, Bosch is setting up new institutes and chairs there, expanding those already in existence, and creating networks among universities.

### Novel research and teaching alliance

In June, in collaboration with partners from science and government, we opened the Robert Bosch Center for Power Electronics (RBZ). The RBZ, the first research and teaching network of its kind in Germany, was set up in Reutlingen and Stuttgart, and will receive investments totaling more than 30 million euros over ten years. The funds will be invested in new chairs as well as in infrastructure relating to power electronics and microelectronics. These areas of study are also concerned with components for applications such as hybrid and electric vehicles as well as photovoltaic systems.

## Training for associates worldwide

For Bosch, it is important not only to support education and research but also to provide the workforce with ongoing training. This is based on the requirements of an increasingly globalized world. More and more training is becoming available in Asia and the Americas. In 2011, Bosch invested a total of over 200 million euros in training for its associates worldwide. We have also made the Robert Bosch Kolleg, headquartered in Stuttgart, more international in scope. Since 2010, our corporate university, which celebrated its 30th anniversary last year, has offered university-level programs also in India, China, and Japan. Around 20,000 specialists and executives have attended over 2,000 seminars and lectures since Robert Bosch Kolleg was set up in 1981.

## Strong identification with Bosch

We conducted our fourth associate survey in 2011, following those in 2005, 2007, and 2009. We polled our associates worldwide on our company's strategy and image, on leadership, collaboration, and conditions in the workplace, as well as on work-life balance. The high response rate of 84 percent shows the considerable importance associates attach to this tool. The responses also demonstrate their strong identification with the company: 84 percent of our associates are proud to work for Bosch, 3 percent more than in 2009.

## Diversity as a priority

Introducing more measures designed to foster even greater diversity in the company is one of the prime objectives of our HR development activities. Studies have shown that workforce heterogeneity is a major driver of innovation and value added. This is why our priorities include increasing the proportion of women at Bosch. Among our efforts in this regard is a communications initiative which aims to promote equal opportunity and was launched at 38 pilot locations. The initiative aims to raise awareness of the benefits of diversity, primarily among our executives around the world, and in this way to serve as a lever to increase the number of women taking up executive positions. Furthermore, in our anniversary year we launched the MORE (Mindset Organization Executives) project. It is an opportunity for 160 managers around the world who have little or no experience of flexible working time models themselves to spend 125 days working either part-time or out-of-office in order to expand their own horizons with respect to new working environments.

*Will the move to  
new forms of energy  
create new jobs in  
Singapore as well?*

Gursharon Kaur Dhaliwal, 21  
Trainee, Junior Managers Program

# €200m

were invested by Bosch in training for its associates worldwide.



**“Absolutely – the number of associates in Singapore will continue to rise. After all, our research and development headquarters for Asia Pacific is based there, and its work focuses on renewable energy and electromobility.”**

**Christoph Kübel**



*Work-life balance: as part of its childcare support for associates, Bosch has opened a kindergarten in Hatvan, Hungary.*

## 20%

reduction in CO<sub>2</sub> emissions planned at our manufacturing sites worldwide by 2020.

### Training quotas at record levels

In Germany alone, some 1,500 young people at 60 locations and 100 operating units started an apprenticeship at Bosch in 2011. That marked an increase of over 5 percent compared with the already high level of 1,400 apprentices in the previous year. Worldwide there are 6,600 young people in occupational training programs at Bosch, including 4,600 in Germany. Not only do we believe that comprehensive, high-caliber training paves the way for the lasting success of our company, we also consider it an integral part of our social responsibility. This is also true for regions such as China, where, for example, Bosch has its own occupational training department in Suzhou. Here young people can complete apprenticeships in line with German standards in fields such as industrial mechanics and mechatronics.

### Thanks to our associates and the employee representatives

We would like to thank all our associates for their outstanding commitment and exceptional flexibility. Their dedication was instrumental in helping us to achieve a milestone: for the first time in the company's history, we closed the fiscal year with sales in excess of 50 billion euros. Our gratitude also goes out to the employee representatives, who supported the development of Bosch with their forward-looking, solution-driven teamwork and many constructive ideas.

## Environment

The foremost ecological challenge for humankind is to conserve and protect the natural environment. At Bosch, therefore, we consistently gear our operations to the efficient use of energy and resources. Eco-friendly products specifically designed to reduce pollution and minimize the use of resources already account for some 40 percent of our sales. Roughly half our research and development budget goes into such products.

By 2020, we aim to reduce the emissions of carbon dioxide from our production locations around the world by at least 20 percent compared with the reference year 2007. By 2011, we had reduced relative CO<sub>2</sub> emissions by roughly 10 percent as compared to 2007. We also gain valuable support from research alliances and from exchange with specific partners and interest groups. Our website also provides updates as to our activities and progress, as well as sustainability data.

### Expanding renewable energy

Photovoltaics will generate a significant share of our future energy supply. Along with power generated from other renewable sources such as wind and biomass, electricity from the sun is a major factor in the move to alternative energy sources that Germany has committed to over the coming years. With some 3,500 associates, our Solar Energy division

produces highly efficient solar cells and modules right through to turn-key solar power stations – all from a single source.

Bosch is also increasing the use of renewable energies at its own locations. At our Blaichach location in southern Germany, we invested nearly ten million euros in a complete overhaul of our hydropower plant. It generates 15,000 megawatt-hours of power each year, which covers 85 percent of the location's energy needs. This, in turn, cuts CO<sub>2</sub> emissions by nearly 6,000 metric tons annually. We are also using photovoltaic systems to make Bosch locations more energy-efficient. The new wafer production plant in Reutlingen, for example, already generates some of its power from the sun. A solar thermal system at our location in Madrid, Spain, covers around 70 percent of the hot-water requirements of the location's canteen and locker rooms. A photovoltaic array for generating electricity is also under construction there.

#### **Expansion of energy-saving portfolio**

In the entire history of the company, Bosch has never offered so many energy-efficient household appliances. Twenty refrigerator models are in the A+++ category, the top energy-efficiency class. BSH Bosch und Siemens Hausgeräte GmbH was the first household appliance manufacturer to group its most efficient products into a “super efficiency portfolio,” which it is adding to all the time. Super-efficient refrigerator-freezers use up to 73 percent less electricity than comparable Bosch appliances did 15 years ago; replacing old units offers enormous potential for cutting energy consumption and CO<sub>2</sub> emissions.

#### **Prestigious environmental award in China**

Protecting the planet is a global issue, and is on the agenda of states and companies on every continent. In China, Bosch received a major award at the beginning of 2011: “CEFE” (China Environmentally Friendly Enterprise), the top Chinese environmental award, presented by the All China Environment Federation. No other non-Chinese company received this honor in 2011. With this prize, China acknowledged the outstanding environmental commitment of eleven Bosch subsidiaries in the country.

**20**

Bosch refrigerator models are in the A+++ category, the top energy-efficiency class.



*You talk about  
'Invented for life.'  
What about  
invented for  
emerging markets?*

Falko Satoshi Wagner, 12  
Son of Friedrich Wagner  
Car Multimedia

**“These markets want similar solutions to the ones offered in industrialized countries. But so that people can afford them, they need to be geared to the income levels there, which are often lower.”**

**Uwe Raschke**

## Society



*Supported by the Robert Bosch Stiftung, the Sankara Eye Hospital in India uses state-of-the-art medical technology to treat patients with eye conditions.*

In the tradition of our company founder, Robert Bosch, we make social responsibility a special priority – within the company and beyond. This explains our longstanding commitment to education, to supporting young talent in the sciences, and to charitable work. The initiatives we support include the Primavera association, which was founded by current and former associates with the aim of giving a better start in life to children who live near Bosch locations in developing and emerging countries. In addition, we provide immediate aid when regions where we do business are affected by natural disasters.

### Aid for Japan

The year 2011 marked a special anniversary for us in Japan: Bosch had established its first branch office there one hundred years before. When the earthquake, tsunami, and nuclear catastrophe struck the northern part of the country on March 11, 2011, we launched comprehensive aid programs, which we are continuing in 2012. In the immediate aftermath of the earthquake, we donated one million euros to the Red Cross. Many of our associates in Japan stepped forward with personal donations, and our Japanese regional subsidiary matched the amount its associates had raised. Associates outside Japan also gave generously, bringing the total additional funds to some 230,000 euros. Our Power Tools division delivered 200 tools for initial reconstruction at no charge. Starting in June 2011, teams made up of our Japanese workforce and their families volunteered to assist in the cleanup in Higashimatsushima in their spare time. On top of that, Bosch provided 300 housing container units worth a total of 3.5 million euros for the severely damaged city, which has a population of 40,000. The units are being used as day care centers, classrooms, and other facilities. To enable people living in neighboring communities to utilize these facilities, Bosch also donated six vehicles to the city council.

### Donations for flood victims in Thailand

In late summer 2011, heavy monsoon rains and tropical storms caused a catastrophic flood in Thailand, which affected over 12 million people. Over one-third of the country was under water. The Bosch Group donated 150,000 euros in emergency relief aid to the Red Cross.

### Lasting aid in communities where we operate

We have been operating in China for over 100 years and now employ some 30,000 associates there. In 2011, we underscored our lasting commitment to that country by setting up the Bosch China Charity Center (BCCC). The BCCC's aim is to coordinate and steer all our charity and social welfare activities and ensure that they are carried out effectively. With an annual budget of nearly three million euros, its goal is to support Chinese people in need of financial assistance, particularly in rural areas, and provide their children with access to education.



Happy children: Bosch donated sports equipment, toys, and teaching materials to schools in Bangkok.

In the U.S., we have launched the Bosch Community Fund. In setting up this foundation, all our community efforts at 50 of our U.S. locations will now be managed from a single source. The focus is on education for young people in science, technology, and environmental fields. Our worldwide efforts are rounded out by the Bosch India Foundation, established in 2008, and the Instituto Robert Bosch in Brazil, which has been supporting charitable and cultural projects since 1971.

#### Schoolchildren today, associates tomorrow

Sparking enthusiasm and an early interest in technology and the natural sciences lies at the heart of our longstanding involvement in “Jugend forscht.” We have been organizing the Baden-Württemberg heat of this Germany-wide science competition as its corporate sponsor since 1985. Bosch apprentices have successfully taken part in many of the contests.

Bosch is also a founding member of “Wissensfabrik – Unternehmen für Deutschland e.V.” (Knowledge factory – companies for Germany), which aims to promote science and technology education for children and young people. The company maintains some 260 partnerships with educational institutions across Germany, such as kindergartens and schools.

# 260

partnerships with educational institutions across Germany

**More information is available online at:**

Jobs and careers

[www.bosch-career.com](http://www.bosch-career.com)

Corporate social responsibility

<http://csr.bosch.com>

Primavera

[www.primavera-ev.de](http://www.primavera-ev.de)

# Robert Bosch Stiftung



Robert Bosch Stiftung GmbH has been continuing the charitable and social endeavors of the company's founder in contemporary form since 1964. The Stiftung pursues its specific objectives with programs and institutions of its own, but also supports suitable external projects and initiatives designed to address the challenges society faces.

*Members of the fellowship program for U.S. junior executives outside the Robert Bosch House, the former residence of the company founder, which today is the seat of the Robert Bosch Stiftung. The Stiftung also has offices in the neighboring Bosch Haus Heidehof, which serves as a training and conference center for the Bosch Group.*

In line with the values of Robert Bosch and the wishes he expressed in his will, many of the Stiftung's projects develop and test ways of addressing social and societal issues. Core topics include healthcare, education, and international relations. These projects are funded by the dividend the Stiftung receives as a shareholder of Robert Bosch GmbH. Just like the company, the Stiftung is committed to delivering high-quality results. It develops ideas that can be put into practice and ensures that they can be applied as widely as possible.

## **Bringing people together**

On an international level, foundations help maintain constructive dialogue between nations. By helping to bring together young people in particular, Robert Bosch Stiftung helps break down barriers and encourage mutual understanding. Typical examples of the Stiftung's work include international scholarship programs, exchange programs for young executives from Europe's government administrations, and research grants for journalists.

It also runs the “Jugend denkt Europa” (Young ideas for Europe) program, which gives several hundred students across Europe the opportunity to work on joint projects each year. The Stiftung devotes special attention to the establishment and support of democratic structures – initially in eastern Europe but now also in the Caucasus. Support for cultural initiatives also plays an important role in its activities. For many years, Robert Bosch Stiftung has supported authors and translators, which it regards as valuable cultural ambassadors, as well as young executives who work as cultural managers in various institutions outside Germany.

Science and research help safeguard the viability of our societies and contribute to resolving global problems. Each year, the Robert Bosch junior professorship for the sustainable use of natural resources provides opportunities for outstanding young researchers. The junior professorship was awarded for the fourth time in 2011. Dr. Pieter Samyn, an engineer, will establish a research group at the University of Freiburg to investigate how waste from paper mills can in the future be used as a raw material.

The Stiftung's unconventional initiatives for political education are designed primarily to appeal to young people who feel alienated by traditional politics. Learning centers in soccer stadiums and the “Du hast die Macht” (You have the power) internet project are designed to encourage them to take a greater interest in political issues.

### **Accelerating the pace of reform**

In the German educational scene, the “Deutscher Schulpreis” (German school award) of Robert Bosch Stiftung and Heidehof Stiftung has established itself as a seal of quality. Awarded for the fifth time in 2011, it and many other programs are designed to accelerate education reforms and improve the quality of education in Germany. The Stiftung also devotes attention to the transition from school to occupational training and the working world, and focuses on how leadership and management in schools can be improved. A further focal point is demography and the issue of age. Here, the Stiftung aims to respond to the challenges of demographic change. It also devotes a great deal of attention to the problems associated with growing old, such as multimorbidity and dementia.

The Robert Bosch Hospital, the Dr. Margarete Fischer-Bosch Institute for Clinical Pharmacology, and the Institute for the History of Medicine also belong to the Robert Bosch Stiftung. The Otto und Edith Mühlischlegel Stiftung, the Hans-Walz-Stiftung, the DVA-Stiftung, and the Rochus und Beatrice Mummert Stiftung are dependent foundations within the Robert Bosch Stiftung. They deal in greater depth with issues such as old age, research into complementary medicine, Franco-German relations, or promoting young international talent.

### **Total 2011 project grants by Robert Bosch Stiftung**

<b>Figures in millions of euros</b>	
Healthcare and science	11.7
Society and culture	6.8
International relations: western Europe, the Americas, Turkey, Japan, India	11.1
International relations: central Europe, southeast Europe, the CIS states, China	11.4
Education and society	10.2
Special area: challenges facing healthcare in the future	0.6
Research at institutes <sup>1</sup> and the Robert Bosch Hospital	8.2
Investments in the Robert Bosch Hospital	5.6
Dependent foundations	2.7
<b>Total</b>	<b>68.3</b>

<sup>1</sup>Dr. Margarete Fischer-Bosch Institute for Clinical Pharmacology, Institute for the History of Medicine of Robert Bosch Stiftung

Robert Bosch Stiftung supports around

**800** projects a year.

**More information is  
available online at:  
[www.bosch-stiftung.de](http://www.bosch-stiftung.de)**

# Consolidated Financial Statements of the Bosch Group

## **Consolidated Financial Statements**

- 110** Income statement
- 111** Statement of comprehensive income
- 112** Statement of financial position  
for the year ended December 31, 2011
- 114** Statement of changes in equity
- 116** Statement of cash flows
- 117** Notes to the consolidated financial  
statements

**182 Auditor's Report**

**184 Ten-Year Summary of the Bosch Group**

## *What does sustainability mean for finance and accounting?*

**Felipe Dissenha, 14**  
Son of Dalton Dissenha  
*Manufacturing engineering worldwide*



**“For financial management, sustainability means always having enough money available to pay our bills. And it means securing our financial independence.”**

**Stefan Asenkerschbaumer**

# Consolidated Financial Statements of the Bosch Group

## Income statement for the period from January 1 to December 31, 2011

	Note	2011	2010
<b>Sales revenue</b>	1	<b>51,494</b>	<b>47,259</b>
Cost of sales		-34,547	-31,064
<b>Gross profit</b>		<b>16,947</b>	<b>16,195</b>
Distribution and administrative cost	2	-9,378	-9,010
Research and development cost	3	-4,190	-3,810
Other operating income	4	1,217	1,195
Other operating expenses	5	-1,887	-1,389
<b>EBIT</b>		<b>2,709</b>	<b>3,181</b>
Financial income	6	1,573	1,912
Financial expenses	6	-1,654	-1,608
<b>Profit before tax</b>		<b>2,628</b>	<b>3,485</b>
Income taxes	7	-808	-996
<b>Profit after tax</b>		<b>1,820</b>	<b>2,489</b>
of which attributable to non-controlling interests	8	74	112
of which attributable to parent company		1,746	2,377

Figures in millions of euros

## Statement of comprehensive income for the period from January 1 to December 31, 2011

	2011	2010
<b>Profit after tax</b>	<b>1,820</b>	<b>2,489</b>
Change from marketable financial instruments		
recognized in other comprehensive income	-466	635
of which attributable to non-controlling interests		
transferred to profit or loss	-64	-216
of which attributable to non-controlling interests	-4	7
Change in actuarial gains and losses for pension provisions	-343	-525
of which attributable to non-controlling interests		-1
Adjustment item from currency translation of entities outside the euro zone	-26	885
of which attributable to non-controlling interests	-21	48
<b>Other comprehensive income</b>	<b>-899</b>	<b>779</b>
<b>Comprehensive income</b>	<b>921</b>	<b>3,268</b>
of which attributable to non-controlling interests	49	166
of which attributable to parent company	872	3,102

Figures in millions of euros

## Statement of financial position for the year ended December 31, 2011

<b>Assets</b>	<b>Note</b>	<b>12/31/2011</b>	<b>12/31/2010</b>
<b>Current assets</b>			
Cash and cash equivalents	10	3,328	3,821
Marketable securities	11	718	872
Trade receivables	12	9,156	8,017
Income tax receivables		292	218
Other assets	13	1,816	1,856
Inventories	14	7,659	6,780
		<b>22,969</b>	<b>21,564</b>
<b>Non-current assets</b>			
Financial assets	15	9,942	9,858
Income tax receivables		139	117
Property, plant, and equipment	16	13,776	13,000
Intangible assets	17	5,654	6,267
Deferred taxes	7	2,136	1,877
		<b>31,647</b>	<b>31,119</b>
<b>Total assets</b>		<b>54,616</b>	<b>52,683</b>

Figures in millions of euros

<b>Equity and liabilities</b>	<b>Note</b>	<b>12/31/2011</b>	<b>12/31/2010</b>
<b>Current liabilities</b>			
Financial liabilities	18	437	250
Trade payables	19	4,241	3,895
Income tax liabilities		176	216
Other liabilities	20	4,566	4,226
Income tax provisions		413	422
Other provisions	20	2,688	3,155
		<b>12,521</b>	<b>12,164</b>
<b>Non-current liabilities</b>			
Financial liabilities	18	3,851	3,397
Other liabilities	20	453	441
Pension provisions	21	6,861	6,503
Income tax provisions		337	237
Other provisions	20	2,866	2,842
Deferred taxes	7	810	856
		<b>15,178</b>	<b>14,276</b>
<b>Equity</b>	<b>22</b>		
Issued capital		1,200	1,200
Capital reserve		4,557	4,557
Retained earnings		20,589	19,886
Unappropriated earnings		88	82
Non-controlling interests		483	518
		<b>26,917</b>	<b>26,243</b>
<b>Total equity and liabilities</b>		<b>54,616</b>	<b>52,683</b>

Figures in millions of euros

## Statement of changes in equity

	Retained earnings				
	Issued capital	Capital reserve	Earned profit	Treasury stock	Currency translation
<b>January 1, 2010</b>	<b>1,200</b>	<b>4,557</b>	<b>15,885</b>	<b>-62</b>	<b>-283</b>
Comprehensive income					837
Dividends					
Transfer to retained earnings			2,295		
Other changes					
<b>December 31, 2010</b>	<b>1,200</b>	<b>4,557</b>	<b>18,180</b>	<b>-62</b>	<b>554</b>
Comprehensive income					-5
Dividends					
Transfer to retained earnings			1,658		
Other changes					
<b>December 31, 2011</b>	<b>1,200</b>	<b>4,557</b>	<b>19,838</b>	<b>-62</b>	<b>549</b>

Figures in millions of euros

Other comprehensive income						
Securities	Other changes	Total	Unappropriated earnings	Equity parent company	Non-controlling interests	Total equity
<b>1,392</b>	<b>-70</b>	<b>1,039</b>	<b>67</b>	<b>22,686</b>	<b>383</b>	<b>23,069</b>
412	-524	725	2,377	<b>3,102</b>	166	<b>3,268</b>
			-67	<b>-67</b>	-28	<b>-95</b>
			-2,295			
	4	4		<b>4</b>	-3	<b>1</b>
<b>1,804</b>	<b>-590</b>	<b>1,768</b>	<b>82</b>	<b>25,725</b>	<b>518</b>	<b>26,243</b>
-526	-343	-874	1,746	<b>872</b>	49	<b>921</b>
			-82	<b>-82</b>	-76	<b>-158</b>
			-1,658			
	-81	-81		<b>-81</b>	-8	<b>-89</b>
<b>1,278</b>	<b>-1,014</b>	<b>813</b>	<b>88</b>	<b>26,434</b>	<b>483</b>	<b>26,917</b>

## Statement of cash flows

	Note 23	2011	2010
Profit before tax		2,628	3,485
Depreciation and amortization <sup>1</sup>		3,287	2,812
Decrease in pension provisions		-35	-41
Decrease in non-current provisions		-139	-67
Gains on disposal of non-current assets		-59	-220
Losses on disposal of non-current assets		85	119
Gains on disposal of securities		-278	-236
Losses on disposal of securities		182	111
Financial income		-692	-669
Financial expenses		812	578
Interest and dividends received		404	405
Interest paid		-172	-298
Income taxes paid		-1,064	-519
<b>Cash flow</b>		<b>4,959</b>	<b>5,460</b>
Increase in inventories		-819	-1,069
Increase in receivables and other assets		-1,037	-391
Increase in liabilities		109	775
Decrease in current provisions		-495	-384
<b>Cash flows from operating activities (A)</b>		<b>2,717</b>	<b>4,391</b>
Acquisition of subsidiaries and other business units		-26	-14
Additions to non-current assets		-3,851	-2,839
Proceeds from disposal of non-current assets		244	564
Purchase of securities		-7,603	-7,072
Disposal of securities		7,623	6,443
<b>Cash flows from investing activities (B)</b>		<b>-3,613</b>	<b>-2,918</b>
Acquisition of non-controlling interests		-61	-3
Borrowing		1,195	244
Repayment of financial liabilities		-588	-830
Dividends paid		-158	-95
<b>Cash flows from financing activities (C)</b>		<b>388</b>	<b>-684</b>
<b>Change in liquidity (A+B+C)</b>		<b>-508</b>	<b>789</b>
<b>Liquidity at the beginning of the period (January 1)</b>		<b>3,821</b>	<b>2,937</b>
Exchange-rate related increase in liquidity		14	87
Increase in liquidity due to changes in the consolidated group		1	8
<b>Liquidity at the end of the period (December 31)</b>		<b>3,328</b>	<b>3,821</b>

Figures in millions of euros

<sup>1</sup> After offsetting write-ups of EUR 41 million (previous year: EUR 36 million)

# Notes to the consolidated financial statements

## Principles and methods

### General explanations

The consolidated financial statements of the Bosch Group for the year ended December 31, 2011, have been prepared according to the standards issued by the **International Accounting Standards Board** (IASB), London. The **International Financial Reporting Standards** (IFRSs) and the Interpretations of the **International Financial Reporting Interpretations Committee** (IFRS IC) applicable in the EU at end of the reporting period have been applied. The previous-year figures have been determined using the same principles.

The consolidated financial statements are in line with the provisions of Sec. 315a HGB [“Handelsgesetzbuch”: German Commercial Code] and Regulation (EC) No 1606/2002 of the European Parliament and of the Council of July 19, 2002, on the application of international accounting standards.

The amendments endorsed by the EU to IFRS 7 *Financial Instruments: Disclosures* (mandatory application for fiscal years beginning on or after July 1, 2011) have not been early adopted.

To enhance the clarity and transparency of the consolidated financial statements, individual items of the consolidated income statement and the consolidated statement of financial position have been combined. These items are explained separately in the notes to the consolidated financial statements. The income statement has been prepared using the function of expense method.

The preparation of consolidated financial statements in accordance with IFRSs requires that assumptions be made for some items. These assumptions have an effect on the amount of the assets and liabilities, income and expenses, and contingent liabilities disclosed in the consolidated statement of financial position.

The group currency is the euro (EUR). Unless otherwise stated, all figures are in millions of euros (EUR million).

The consolidated financial statements prepared as of December 31, 2011, were authorized for disclosure by management on March 9, 2012. The consolidated financial statements and group management report will be filed with the electronic Federal Gazette [Bundesanzeiger] and published there.

### Basis of consolidation

Besides Robert Bosch GmbH, the consolidated financial statements include all subsidiaries for which Robert Bosch GmbH fulfills the criteria pursuant to IAS 27 *Consolidated and Separate Financial Statements*, or to which the interpretation of the **Standing Interpretations Committee SIC 12 Consolidation – Special Purpose Entities** applies. These entities are included in the consolidated financial statements from the date on which the Bosch Group obtains control. Conversely, subsidiaries are no longer included when control of the entity is lost.

The capital of the companies consolidated in the fiscal year for the first time is consolidated pursuant to IFRS 3 *Business Combinations* using the purchase method of accounting. At the time of combination, the purchase cost of the shares acquired is offset against pro-rata revalued equity. Assets, liabilities, and contingent liabilities are carried at fair value. Remaining debit differences are accounted for as goodwill. Any credit differences are recognized through profit or loss. Any difference resulting from the purchase of additional non-controlling interests is offset against equity.

Joint ventures as defined by IAS 31 *Interests in Joint Ventures* are consolidated proportionately.

Pursuant to IAS 28 *Investments in Associates*, investments are included in consolidation using the equity method if significant influence can be exercised. At present, no entity has been accounted for using the equity method.

Within the consolidated group, intercompany profits and losses, sales, expenses, and other income, as well as all receivables and liabilities or provisions are eliminated. In the case of consolidation measures with an effect on income, the effects for income tax purposes are considered and deferred taxes disclosed.

#### **Currency translation**

In the separate financial statements of the group companies, all receivables and liabilities denominated in currencies other than the euro are measured at the closing rate at the end of the reporting period, regardless of whether they are hedged or not. Exchange-rate gains and losses from revaluations are recorded in profit or loss.

The financial statements of the consolidated companies outside the euro zone are translated into euros in accordance with IAS 21 *The Effects of Changes in Foreign Exchange Rates*. Assets and liabilities are translated at the closing rate at the end of the reporting period, while equity is translated at historical rates. The positions of the income statement are translated into euros at the annual average exchange rate. Any resulting exchange-rate differences are recorded as other comprehensive income until the disposal of the subsidiaries, and disclosed as a separate position in equity.

For the most important non-euro currencies of the Bosch Group, the following exchange rates apply:

	1 EUR =	<b>Closing rate</b>		<b>Average rate</b>	
		<b>12/31/2011</b>	<b>12/31/2010</b>	<b>2011</b>	<b>2010</b>
Australia	AUD	1.27	1.31	1.35	1.44
Brazil	BRL	2.42	2.22	2.33	2.33
China	CNY	8.16	8.81	9.00	8.98
Czech Republic	CZK	25.80	25.06	24.58	25.30
Hungary	HUF	311.13	278.75	279.29	275.47
India	INR	68.71	59.76	64.89	60.59
Japan	JPY	100.20	108.65	110.94	116.24
Korea	KRW	1,498.69	1,499.06	1,541.28	1,531.82
Poland	PLN	4.42	3.97	4.11	3.99
Russian Federation	RUB	41.67	40.33	40.87	40.18
Switzerland	CHF	1.22	1.25	1.23	1.38
United Kingdom	GBP	0.84	0.86	0.87	0.86
USA	USD	1.29	1.34	1.39	1.33

**Accounting policies**

**Cash and cash equivalents** consist of cash, reserve bank deposits, and bank balances with an original maturity of less than 90 days. Measurement is at amortized cost.

**Trade receivables, income tax receivables, other assets (current), and other financial assets (non-current)** are measured at amortized cost. All discernible specific risks and general credit risks are accounted for by appropriate valuation allowances. This does not apply to derivative financial instruments. For finance leases under which the Bosch Group is the lessor, a receivable is disclosed equivalent to the net investment value. Leases under which substantially all risks and rewards in connection with ownership have been transferred to the lessee are classified as finance leases.

**Inventories** include raw materials, consumables, and supplies, work in process, finished goods and merchandise, and prepayments. Inventories are stated at purchase cost or cost of conversion using the average cost method. In addition to direct cost, cost of conversion includes an allocable portion of necessary materials and production overheads as well as depreciation that can be directly allocated to the production process. Appropriate allowance is made for risks associated with holding and selling inventories due to obsolescence. Inventories are devalued further when the net selling price of the inventories has fallen below cost.

**Property, plant, and equipment** are measured at cost of purchase or production cost less depreciation and, if necessary, impairment losses. Depreciation is charged on a straight-line basis over the economic useful life.

Depreciation is based on the following ranges of useful lives:

	<b>Useful life</b>
Buildings	10 – 33 years
Plant and equipment	6 – 14 years
Other equipment, fixtures, and furniture	3 – 12 years

In accordance with IAS 36 *Impairment of Assets*, impairment losses are recorded on property, plant, and equipment if the recoverable amount has fallen below the carrying amount. Impairment losses are reversed if the reasons for the impairment loss from previous years no longer apply. Repair costs are recognized in the income statement.

In accordance with IAS 17 *Leases*, leased items of property, plant, and equipment which for economic purposes are deemed to be purchases of assets with long-term financing (finance leases) are recognized at the time of addition at the lower of cost or present value of the minimum lease payments. Depreciation is charged over the economic useful life. If it is uncertain whether title to the leased asset will be transferred, the asset is depreciated over the term of the lease agreement (if shorter than the economic useful life). The finance expense from these leases is disclosed under other financial expenses.

**Investment property** is measured at depreciated cost in accordance with IAS 40 *Investment Property*.

**Government grants** are only recognized pursuant to IAS 20 *Accounting for Government Grants and Disclosure of Government Assistance* if it is sufficiently certain that the assistance will be granted and the conditions attached to the assistance are satisfied. Grants related to assets are deducted in order to calculate the carrying amount of the asset. Grants related to income are recognized in the income statement of the period in which the expenses are incurred which the grants are intended to cover.

**Purchased and internally generated intangible assets** are capitalized pursuant to IAS 38 *Intangible Assets* if a future economic benefit will flow to the entity from the use of the asset and the cost of the asset can be reliably determined. These assets are generally carried at cost and amortized using the straight-line method over their economic useful life. As a rule, the useful life is four years. Intangible assets accounted for in the course of business combinations have a useful life of up to 20 years.

**Borrowing costs** incurred in connection with the acquisition, construction, or production of qualifying assets are included in the cost of this asset for the period of time until the asset is commissioned and subsequently written off with the asset concerned. Other borrowing costs are recorded as expenses.

**Goodwill** from business combinations represents the difference between the purchase price on the one hand and the pro-rata fair value of the equity at the time of acquisition on the other. Goodwill is allocated to the cash-generating units and tested annually for impairment. If the recoverable amount of the cash-generating unit does not cover the carrying amount of the net asset, impairment losses are charged in accordance with the requirements of IAS 36.

Pursuant to IFRS 1 *First-time Adoption of International Financial Reporting Standards*, goodwill existing as of January 1, 2004 (date of transition) was transferred at the carrying amount in accordance with the provisions of the German Commercial Code. Goodwill is also tested for impairment pursuant to the provisions of IAS 36.

**Intangible assets** with an indefinite useful life are tested annually for impairment. Intangible assets subject to wear and tear are only tested for impairment if there is any indication that they may be impaired. Impairment losses are recorded in accordance with IAS 36 if the recoverable amount of the asset concerned has fallen below the carrying amount. Impairment losses are reversed if the reasons for the impairment loss from previous years no longer apply.

#### **Financial instruments**

A financial instrument is any contract that gives rise to a financial asset of one entity on the one hand and to a financial liability or equity instrument of a second entity on the other. As a rule, financial instruments are determined as of the settlement date. Financial instruments are accounted for at amortized cost or fair value. In the case of a financial asset or financial liability not accounted for at fair value through profit or loss, transaction costs that are directly attributable to the acquisition or issue of the financial asset or financial liability are taken into account. Fair value is the market value. If it is not possible to reliably determine a market value, the fair value is determined using actuarial methods based on available market information (the most common methods are the discounted cash flow method and the Black-Scholes model). The fair values needed to present the market values required by IFRS 7 *Financial Instruments: Disclosures* are determined in the same way. The fair value of current financial assets and liabilities corresponds to the carrying amount.

Under IAS 39 *Financial Instruments: Recognition and Measurement*, the following categories of financial instruments are used in the Bosch Group:

- ▶ Held-to-maturity investments
- ▶ Loans and receivables
- ▶ Financial liabilities measured at amortized cost
- ▶ Assets and liabilities held for trading
- ▶ Available-for-sale financial assets

The fair-value option pursuant to IAS 39 is not exercised.

Financial investments held to maturity, loans and receivables, and current and non-current financial liabilities are measured at amortized cost using the effective interest method. These are mainly loans, trade receivables, and current and non-current other financial assets and liabilities. Impairments of loans and receivables to allow for anticipated credit risks are recognized in the form of specific and general doubtful debt allowances. When determining valuation allowances for the general credit risk, financial assets that could potentially be impaired are grouped together by similar credit risk characteristics, collectively tested for impairment, and, if necessary, written down.

Financial assets and liabilities held for trading are measured at fair value. Changes in value are recognized in profit or loss. These are derivative financial instruments which are mainly used to limit currency, interest, and commodity risks in accordance with internal risk management. Hedge accounting is not used in the Bosch Group.

Available-for-sale financial assets are those non-derivative financial assets that cannot be allocated to any of the preceding categories. They are carried at fair value. Unrealized gains and losses from changes in market value are disclosed in equity, net of deferred taxes, until they are realized. Interest received is generally recognized through profit and loss using the effective interest method. Dividends are recognized through profit and loss as soon as payment is legally enforceable. If impairment losses are necessary, the accumulated net loss is eliminated from equity and disclosed in profit or loss. If an impairment loss recorded on equity instruments is reversed in accordance with IAS 39, this is offset directly against equity. Reversals of impairment losses on debt instruments are recognized in profit or loss. They may not exceed the amount for which the impairment loss was recorded.

If the fair value of available-for-sale financial assets cannot be reliably determined, they are accounted for at acquisition cost. These are investments for which there is no active market. Necessary impairment losses are recognized in profit or loss and are not reversed.

As of the end of every reporting period, the carrying amounts of the financial assets which are not measured at fair value through profit or loss are examined for substantial objective indications that an asset may be impaired. Such indications may, for instance, be serious financial difficulties suffered by the debtor, the high probability that insolvency proceedings will be instituted against the debtor, the loss of an active market for the financial asset, a permanent drop in the fair value of the financial asset below amortized cost, or significant changes in the technological, economic, or legal environment, or in the market of the issuer. A possible impairment loss is given if the fair value of the asset is lower than the carrying amount. The fair value of loans and receivables is the present value of the estimated future cash flows discounted using the original effective interest rate.

In accordance with IAS 12 *Income Taxes*, **deferred tax assets and liabilities** are recorded for temporary differences between the tax carrying amounts and the carrying amounts in the consolidated statement of financial position unless they arise from the initial recognition of an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affect neither the profit before tax nor the taxable profit. This also applies to unused tax losses and tax credits if there is assurance beyond reasonable doubt that future taxable profit will be available against which they can be utilized. The deferred tax item equals the estimated tax burden or relief in later periods. The tax rate applicable at the time of realization is taken as a basis. Tax implications from profit distributions are generally not considered until the resolution for the appropriation of profits has been adopted. If it is uncertain whether recognized deferred taxes can be realized, they are adjusted accordingly.

**Liabilities** are measured at amortized cost. Liabilities from finance leases are disclosed under other liabilities, at the present value of the future lease installments. The effective interest method is applied when measuring bonds.

Pursuant to IAS 19 *Employee Benefits*, **pension provisions** are recognized using the projected unit credit method, taking into account future estimated increases in pensions and salaries, among other things.

**Tax provisions** pertain to obligations relating to income tax and other taxes. Deferred taxes are disclosed in separate positions of the statement of financial position.

Pursuant to IAS 37 *Provisions, Contingent Liabilities, and Contingent Assets*, **other provisions** are recognized if there is a current obligation from a past event which will probably lead to an outflow of resources in the future. In addition, it must be possible to reliably estimate the amount of this outflow. Other provisions are measured at full cost. Provisions due in more than one year are stated at their discounted settlement amount.

**Revenue** from the supply of products and goods or from the provision of services is recognized when title and risk is transferred to the purchaser, less sales deductions. Interest and lease income is recorded according to the contractual agreement and, where appropriate, accrued pro rata temporis. In the case of finance leases, the payments are divided up using actuarial methods.

**Cost of sales** contains the cost of internally manufactured goods and the cost price of resold merchandise. The production cost of internally manufactured goods contains materials and production cost that can be allocated directly, the allocable parts of indirect overheads, including the depreciation of production equipment and the amortization of other intangible assets, and the devaluation of inventories.

**Development cost** that cannot be recognized is charged against income in the period incurred.

# Consolidation

## Consolidated group

Robert Bosch GmbH is headquartered in Stuttgart, Germany. The shareholders of Robert Bosch GmbH are Robert Bosch Stiftung GmbH, Stuttgart (92.0 percent of the shares), the Bosch family (7.4 percent of the shares), and Robert Bosch Industrie-Treuhand KG, Stuttgart, which performs the entrepreneurial ownership functions. Robert Bosch GmbH holds treasury stock equivalent to 0.6 percent of capital.

Besides Robert Bosch GmbH, the consolidated group comprises a further 349 (previous year: 360) fully consolidated companies. The group developed as follows:

	Germany	Outside Germany	Total
<b>Included in consolidation at December 31, 2009</b>	<b>63</b>	<b>313</b>	<b>376</b>
Additions/formations in fiscal year 2010	2	6	8
Disposals/mergers in fiscal year 2010	6	17	23
<b>Included in consolidation at December 31, 2010</b>	<b>59</b>	<b>302</b>	<b>361</b>
Additions/formations in fiscal year 2011	3	15	18
Disposals/mergers in fiscal year 2011	3	26	29
<b>Included in consolidation at December 31, 2011</b>	<b>59</b>	<b>291</b>	<b>350</b>

Pursuant to SIC 12, the consolidated group contains special funds and other investments for which the Bosch Group bears the economic risks and rewards.

In the fiscal year 2011, the following companies were included in the consolidation for the first time:

- ▶ Bosch Emission Systems GmbH & Co. KG, Stuttgart, Germany
- ▶ Hüttlin GmbH, Schopfheim, Germany
- ▶ aleo solar Australia Pty. Ltd., Thornbury, Australia
- ▶ Bosch Power Tools Engineering Sdn. Bhd., Penang, Malaysia
- ▶ OOO Bosch Power Tools, Engels, Russian Federation

Due to corporate restructuring and mergers, the number of subsidiaries included in consolidation was reduced by a total of 29.

Due to changes to the consolidated group, sales revenue increased by EUR 39 million and total assets by EUR 21 million.

## Proportionate consolidation

The following companies are joint ventures. In accordance with IAS 31, the financial statements have therefore been included proportionate to the share Bosch holds in their capital:

- ▶ BSH Bosch und Siemens Hausgeräte GmbH (50%), Munich, Germany  
(the subgroup consists of 69 companies)
- ▶ ZF Lenksysteme GmbH (50%), Schwäbisch Gmünd, Germany  
(the subgroup consists of 12 companies)
- ▶ United Automotive Electronic Systems Co., Ltd. (51%), Shanghai, China
- ▶ KEFICO Corporation (50%), Gunpo, Korea  
(the subgroup consists of 3 companies)
- ▶ Purolator Filters North America LLC (50%), Fayetteville, NC, USA

The proportionate consolidation of these companies had the following impact on the assets, liabilities, as well as the income and expenses of the Bosch Group:

**Effects of proportionate consolidation on assets and liabilities**

Figures in millions of euros	2011	2010
Current assets	3,366	2,940
Non-current assets	1,736	1,596
Current liabilities	2,187	1,940
Non-current liabilities	1,415	1,171

**Effects of proportionate consolidation on the income statement**

Figures in millions of euros	2011	2010
Income	7,782	7,078
Expenses	7,397	6,689

The share of contingent liabilities of these companies attributable to the Bosch Group amounts to EUR 2 million (previous year: EUR 2 million).

**Business combinations**

In the fiscal year, the Bosch Group acquired 100 percent of the shares in Hüttlin GmbH, Schopfheim, Germany, and the Manesty business operations of BWI plc., Knowsley, UK, for a total of EUR 26 million. The above business combinations were financed by transferring cash and cash equivalents and had no material impact on the sales revenue and result of the Bosch Group.

**Discontinued operations**

No decisions were taken during the reporting period which would have resulted in parts of the company, subsidiaries, or joint ventures being classified as held for sale.

## Notes to the income statement

### **1 Sales revenue**

Sales revenue amounted to EUR 51,494 million (previous year: EUR 47,259 million). The Automotive Technology business sector accounted for EUR 30,404 million (previous year: EUR 28,097 million) of this total, the Industrial Technology business sector for EUR 8,038 million (previous year: EUR 6,660 million), and the Consumer Goods and Building Technology business sector for EUR 13,029 million (previous year: EUR 12,480 million). Sales revenue that cannot be allocated to the business sectors came to EUR 23 million (previous year: EUR 22 million).

### **2 Distribution cost and administrative expenses**

Figures in millions of euros	2011	2010
Administrative expenses	2,468	2,321
Distribution cost	6,910	6,689
	<b>9,378</b>	<b>9,010</b>

Distribution cost includes personnel and indirect costs, depreciation charged in the distribution function, customer service, logistics, market research, sales promotion, shipping, advertising, and warranty costs.

### **3 Research and development cost**

Research and development cost contains both research cost as well as development cost that cannot be capitalized and depreciation on recognized development cost. In addition, it includes development work charged directly to customers.

Figures in millions of euros	2011	2010
Total research and development cost	4,189	3,809
Development cost recognized in the reporting period	-134	-131
Depreciation on recognized development cost	135	132
	<b>4,190</b>	<b>3,810</b>

**4 Other operating income**

Figures in millions of euros	2011	2010
Income from exchange-rate fluctuations	553	614
Income from the reversal of valuation allowances on receivables and other assets	59	73
Income from the disposal of non-current assets	56	47
Income from rent and leases	13	12
Income from the reversal of provisions (not disclosed in functional areas)	133	88
Sundry other operating income	403	361
	<b>1,217</b>	<b>1,195</b>

The income from exchange-rate fluctuations is offset by expenses which are disclosed in other operating expenses. These items contain the effective exchange-rate results and the results from foreign-currency derivatives allocable to the operating business.

Leases are accounted for according to the rules pertaining to operating leases, provided that the substantial risks and rewards associated with the leased asset rest with the lessor. The assets concerned are recognized in property, plant, and equipment and the lease payments received, provided they are not disclosed as sales revenue, are recorded in other operating income.

Government grants related to income amounted to EUR 62 million (previous year: EUR 77 million). They are offset against the respective expenses. If there are no such expenses, the grants are disclosed in sundry other operating income.

**5 Other operating expenses**

Figures in millions of euros	2011	2010
Expenses from exchange-rate fluctuations	683	560
Valuation allowances on receivables and other assets	160	115
Expenses from the disposal of non-current assets	84	117
Other taxes	34	21
Expenses from the recognition of provisions	167	155
Impairment of goodwill	498	
Sundry other operating expenses	261	421
	<b>1,887</b>	<b>1,389</b>

**6 Financial result**

Figures in millions of euros	2011	2010
Investment income	28	57
Gains on disposal of investments	3	171
<b>Income from investments</b>	<b>31</b>	<b>228</b>
Interest and similar income	392	342
Interest and similar expenses	-274	-256
<b>Interest result</b>	<b>118</b>	<b>86</b>
Gains on disposal of securities	278	236
Losses on disposal of securities	-182	-111
Exchange-rate gains	585	724
Exchange-rate losses	-607	-495
Gains on derivatives	240	326
Losses on derivatives	-366	-560
Other income	47	56
Other expenses	-225	-186
<b>Other financial result</b>	<b>-230</b>	<b>-10</b>
<b>Financial result, total</b>	<b>-81</b>	<b>304</b>
of which financial income	1,573	1,912
of which financial expenses	-1,654	-1,608

The positions "gains/losses on derivatives" contain transactions to hedge financial assets. The position "other expenses" contains impairments of securities totaling EUR 34 million (previous year: EUR 7 million).

Capitalized borrowing costs of EUR 7 million (previous year: EUR 5 million) have been deducted from interest expenses. The underlying borrowing rate is 4.5 percent (previous year: 4.0 percent).

Interest income and expenses are attributable to financial instruments not measured at fair value through profit or loss as follows:

Figures in millions of euros	2011		2010	
	Interest income	Interest expenses	Interest income	Interest expenses
Loans and receivables	113		77	
Held-to-maturity investments	1		4	
Available-for-sale financial assets	276	28	259	29
Financial liabilities measured at amortized cost		246		227

The interest result of the "available-for-sale financial assets" category contains dividend income from equity instruments held, totaling EUR 68 million (previous year: EUR 74 million).

## 7 Income taxes

Income taxes are classified according to their origin as follows:

Figures in millions of euros	2011	2010
Current taxes	1,042	888
Deferred taxes	-234	108
<b>Income taxes</b>	<b>808</b>	<b>996</b>

Deferred taxes are calculated on the basis of the tax rates that apply or that are expected to apply given the current legislation in the individual countries at the expected time of realization. The corporate income tax rate for German companies is 15 percent. Taking into account the solidarity surcharge of 5.5 percent and the trade tax levied on profits recorded in Germany, the total tax rate is 29 percent.

The tax rates outside Germany range between 7 percent and 42 percent.

As of December 31, deferred tax assets and liabilities are allocable to the following positions in the statement of financial position:

Figures in millions of euros	2011		2010	
	Assets	Liabilities	Assets	Liabilities
Receivables, other assets, and inventories	455	254	366	209
Securities, investments	5	269	89	277
Property, plant, and equipment	172	559	158	558
Intangible assets	84	364	82	418
Other assets	124	1	108	
Liabilities	490	41	385	32
Provisions	1,387	50	1,308	42
Other liabilities	1	44	1	21
Unused tax losses and tax credits	664		700	
<b>Gross amount</b>	<b>3,382</b>	<b>1,582</b>	<b>3,197</b>	<b>1,557</b>
Valuation allowances	-474		-619	
Netting	-772	-772	-701	-701
	<b>2,136</b>	<b>810</b>	<b>1,877</b>	<b>856</b>

There are EUR 959 million in unused tax losses for which no deferred tax assets have been recognized (previous year: EUR 1,002 million). Within the next three years, EUR 18 million (previous year: EUR 9 million) will be forfeited.

Consolidation measures give rise to deferred tax assets of EUR 154 million (previous year: EUR 131 million) and deferred tax liabilities of EUR 15 million (previous year: EUR 15 million).

In the reporting period, deferred taxes of EUR 47 million (previous year: EUR 178 million) were recorded as other comprehensive income. Of this amount, EUR 1 million (previous year: EUR 2 million) reduces the surplus from securities and EUR 48 million increases the retained earnings due to the change in actuarial parameters in accordance with IAS 19 (previous year: EUR 180 million).

The basis for the expected income tax expense is the German tax rate of 29 percent. The difference between expected and disclosed income tax expense is attributable to the following factors:

Figures in millions of euros	2011	2010
Profit before tax	2,628	3,485
Expected income tax expense	762	1,011
Variances due to tax rate	-21	-57
Non-deductible expenses	239	113
Zero-rated income	-179	-247
Other differences	7	176
<b>Income tax expense disclosed</b>	<b>808</b>	<b>996</b>
Effective tax rate	31 %	29 %

---

#### 8 Non-controlling interests

Profits attributable to non-controlling interests amount to EUR 94 million (previous year: EUR 116 million). This is counterbalanced by losses of EUR 20 million (previous year: EUR 4 million).

---

#### 9 Other notes to the income statement

The income statement contains personnel expenses of EUR 14,719 million (previous year: EUR 14,132 million).

Cost of materials amounted to EUR 23,481 million (previous year: EUR 21,081 million). Information about amortization and depreciation is contained in the notes on non-current assets.

## Notes to the statement of financial position

### **10 Cash and cash equivalents**

Figures in millions of euros	2011	2010
Bank balances (term up to 90 days)	3,287	3,802
Cash and reserve bank deposits	41	19
	<b>3,328</b>	<b>3,821</b>

### **11 Marketable securities (current)**

The securities classified as current are listed securities with a residual term of less than one year as well as securities which are intended for sale within a year.

### **12 Trade receivables**

Figures in millions of euros	2011	2010
Trade receivables	9,156	8,017
of which not impaired and not past due at the end of the reporting period	1,963	1,582
of which not impaired and past due at the end of the reporting period	129	120
for less than one month	97	76
for more than one month, but less than three months	22	28
for more than three months	10	16

The carrying amount of trade receivables contains allowances for specific doubtful debts of EUR 281 million (previous year: EUR 262 million) and for general credit risks of EUR 227 million (previous year: EUR 182 million).

Trade receivables totaling EUR 14 million (previous year: EUR 14 million) are due in more than one year.

**13 Other assets (current)**

Figures in millions of euros	2011	2010
Bank balances (term of more than 90 days)	131	324
Loan receivables	283	236
Receivables from finance leases	28	27
Positive market values from derivatives	56	59
Prepaid expenses	142	134
Receivables from tax authorities (without income tax receivables)	719	685
Receivables from board of management, associates	41	41
Sundry other receivables	416	350
	<b>1,816</b>	<b>1,856</b>

The receivables from finance leases stem from products leased by the Security Systems division. As a rule, the agreed term is ten years. The receivables are due as follows:

Figures in millions of euros	2011	2010
Gross capital expenditures on finance leases		
due not later than one year	37	36
due later than one year and not later than five years	114	113
due later than five years	54	53
	<b>205</b>	<b>202</b>
Present value of outstanding minimum lease payments		
due not later than one year	28	27
due later than one year and not later than five years	92	91
due later than five years	48	48
	<b>168</b>	<b>166</b>
Unearned finance income	<b>37</b>	<b>36</b>

There were no unguaranteed residual values. It was not necessary to write down any lease receivables.

The outstanding minimum lease payments from operating leases mainly stem from activities of the Security Systems division. The minimum lease payments are due as follows:

Figures in millions of euros	2011	2010
Due not later than one year	40	39
Due later than one year and not later than five years	119	121
Due later than five years	49	55
	<b>208</b>	<b>215</b>

**14 Inventories**

Figures in millions of euros	2011	2010
Raw materials, consumables, and supplies	2,504	2,136
Work in process	1,280	1,177
Finished goods and merchandise	3,590	3,200
Prepayments	285	267
	<b>7,659</b>	<b>6,780</b>

Of the total amount of inventories, an amount of EUR 288 million (previous year: EUR 128 million) is carried at the lower net selling price. In the fiscal year, impairment losses of EUR 109 million (previous year: reversal of impairment losses of EUR 22 million) were recognized in profit or loss. No inventories were pledged.

**15 Non-current financial assets**

Figures in millions of euros	2011	2010
Securities	7,590	7,396
Investments	1,845	1,973
Other financial assets	507	489
	<b>9,942</b>	<b>9,858</b>

**Held-to-maturity investments**

Figures in millions of euros	2011	2010
Due later than five years	7	7
	<b>7</b>	<b>7</b>

The financial investments held to maturity have a market value of EUR 7 million (previous year: EUR 7 million).

**Other non-current financial assets**

Figures in millions of euros	2011	2010
Loan receivables	98	27
Receivables from finance leases	140	139
Other receivables and other assets	269	323
	<b>507</b>	<b>489</b>

There are no loans or other receivables due in more than five years.

The carrying amount of loan receivables contains allowances for specific risks of EUR 9 million (previous year: EUR 2 million) and for general credit risks of EUR 3 million (previous year: EUR 2 million).

Of the loan receivables and receivables from finance leases (both current and non-current), an amount of EUR 300 million (previous year: EUR 234 million) is not impaired and not past due. There are no loan receivables and receivables from finance leases (either current or non-current) which are not impaired but past due.

**Non-current securities and investments**

The securities consist of interest-bearing and other securities as well as shares which are not designated for sale within twelve months of the end of the reporting period.

The market value of the pledged securities amounts to EUR 370 million (previous year: EUR 304 million). They are used to secure bank guarantees. Medium-term interest-bearing securities and units equivalent at least to the value of the claims from the bank-guarantee obligations were used for pledging.

Non-current securities and investments developed as follows:

Figures in millions of euros	Available-for-sale financial assets				Held-to-maturity investments Securities	Total		
	Investments		Securities					
	measured at fair value	measured at cost	Shares	Other				
<b>Gross values 1/1/2010</b>	<b>1,384</b>	<b>721</b>	<b>1,993</b>	<b>4,739</b>	<b>6</b>	<b>8,843</b>		
Changes in consolidated group		-53				-53		
Additions	6	185	1,068	4,884		6,143		
Reclassifications				-809		-809		
Disposals	-318	-6	-1,083	-3,821		-5,228		
Revaluations	293		297	86		676		
Exchange differences	4	23	9	26	1	63		
<b>Gross values 12/31/2010</b>	<b>1,369</b>	<b>870</b>	<b>2,284</b>	<b>5,105</b>	<b>7</b>	<b>9,635</b>		
<b>Depreciation 1/1/2010</b>		<b>163</b>				<b>163</b>		
Changes in consolidated group		24				24		
Additions		80				80		
Disposals		-4				-4		
Exchange differences		3				3		
<b>Depreciation 12/31/2010</b>		<b>266</b>				<b>266</b>		
<b>Carrying amounts 12/31/2010</b>	<b>1,369</b>	<b>604</b>	<b>2,284</b>	<b>5,105</b>	<b>7</b>	<b>9,369</b>		
<b>Gross values 1/1/2011</b>	<b>1,369</b>	<b>870</b>	<b>2,284</b>	<b>5,105</b>	<b>7</b>	<b>9,635</b>		
Changes in consolidated group		-95				-95		
Additions	5	296	1,156	5,051		6,508		
Reclassifications				-515		-515		
Disposals		-10	-1,373	-3,913		-5,296		
Revaluations	-257		-213	41		-429		
Exchange differences		7	-4	-36		-33		
<b>Gross values 12/31/2011</b>	<b>1,117</b>	<b>1,068</b>	<b>1,850</b>	<b>5,733</b>	<b>7</b>	<b>9,775</b>		
<b>Depreciation 1/1/2011</b>		<b>266</b>				<b>266</b>		
Additions		74				74		
Disposals		-1				-1		
Exchange differences		1				1		
<b>Depreciation 12/31/2011</b>		<b>340</b>				<b>340</b>		
<b>Carrying amounts 12/31/2011</b>	<b>1,117</b>	<b>728</b>	<b>1,850</b>	<b>5,733</b>	<b>7</b>	<b>9,435</b>		

**16 Property, plant, and equipment**

<b>Figures in millions of euros</b>	<b>Land, buildings belonging to operating assets</b>	<b>Investment property</b>	<b>Plant and equipment</b>	<b>Other equipment, fixtures and furniture, leased assets</b>	<b>Prepayments and assets under construction</b>	<b>Total</b>
<b>Gross values 1/1/2010</b>	<b>7,040</b>	<b>166</b>	<b>17,706</b>	<b>7,088</b>	<b>854</b>	<b>32,854</b>
Changes in consolidated group	36	-14	41	-1	10	72
Additions	181		747	473	978	2,379
Reclassifications	161		364	146	-671	
Disposals	-66	-7	-924	-618	-43	-1,658
Exchange differences	386	4	810	195	40	1,435
<b>Gross values 12/31/2010</b>	<b>7,738</b>	<b>149</b>	<b>18,744</b>	<b>7,283</b>	<b>1,168</b>	<b>35,082</b>
<b>Depreciation 1/1/2010</b>	<b>2,853</b>	<b>69</b>	<b>12,243</b>	<b>5,106</b>	<b>11</b>	<b>20,282</b>
Changes in consolidated group	14	-9	35	-2		38
Additions	220	3	1,454	694	2	2,373
Disposals	-47	-1	-831	-570		-1,449
Write-ups	-1		-23			-24
Exchange differences	158		568	136		862
<b>Depreciation 12/31/2010</b>	<b>3,197</b>	<b>62</b>	<b>13,446</b>	<b>5,364</b>	<b>13</b>	<b>22,082</b>
<b>Carrying amounts 12/31/2010</b>	<b>4,541</b>	<b>87</b>	<b>5,298</b>	<b>1,919</b>	<b>1,155</b>	<b>13,000</b>
<b>Gross values 1/1/2011</b>	<b>7,738</b>	<b>149</b>	<b>18,744</b>	<b>7,283</b>	<b>1,168</b>	<b>35,082</b>
Changes in consolidated group	8		-15	2	9	4
Additions	228		1,101	664	1,233	3,226
Reclassifications	203	6	529	150	-888	
Disposals	-91		-876	-516	-80	-1,563
Exchange differences	69		-54	-6	11	20
<b>Gross values 12/31/2011</b>	<b>8,155</b>	<b>155</b>	<b>19,429</b>	<b>7,577</b>	<b>1,453</b>	<b>36,769</b>
<b>Depreciation 1/1/2011</b>	<b>3,197</b>	<b>62</b>	<b>13,446</b>	<b>5,364</b>	<b>13</b>	<b>22,082</b>
Changes in consolidated group	1		-22	-4		-25
Additions	211	3	1,351	697	3	2,265
Reclassifications	13	-1	-24	18	-6	
Disposals	-56		-790	-461	-1	-1,308
Write-ups	-11		-29	-1		-41
Exchange differences	39		-24	4	1	20
<b>Depreciation 12/31/2011</b>	<b>3,394</b>	<b>64</b>	<b>13,908</b>	<b>5,617</b>	<b>10</b>	<b>22,993</b>
<b>Carrying amounts 12/31/2011</b>	<b>4,761</b>	<b>91</b>	<b>5,521</b>	<b>1,960</b>	<b>1,443</b>	<b>13,776</b>

The total depreciation charge contains the following impairment losses:

- ▶ Land and buildings: EUR 4 million (previous year: EUR 15 million)
- ▶ Plant and equipment: EUR 42 million (previous year: EUR 97 million)
- ▶ Other equipment, furniture, and fixtures: EUR 4 million  
(previous year: EUR 8 million)

The impairment losses of the reporting period contain an amount of EUR 28 million attributable to plant and equipment of the Chassis Systems Brakes division. The impairment test was carried out at division level. The recoverable amount was assumed to be the fair value less costs to sell. The fair value was determined by means of a qualified estimate.

The carrying amounts contain the following amounts from finance leases under which the Bosch Group is the lessee:

- ▶ Land and buildings: EUR 28 million (previous year: EUR 32 million)
- ▶ Plant and equipment: EUR 7 million (previous year: EUR 16 million)
- ▶ Other equipment, furniture, and fixtures: EUR 14 million  
(previous year: EUR 18 million)

The obligations entered into to purchase items of property, plant, and equipment amounted to EUR 418 million (previous year: EUR 361 million), restrictions on title totaled EUR 60 million (previous year: EUR 45 million). Government grants for assets of EUR 25 million (previous year: EUR 28 million) were deducted from the additions in the reporting period.

Investment property comprises rented properties which were measured at amortized cost. Measured at fair value, the portfolio comes to EUR 156 million (previous year: EUR 145 million). The fair values were determined on the basis of freely available representative lists of market rents and on the basis of the company's own estimates. The rental income from investment property came to EUR 9 million (previous year: EUR 7 million), maintenance expenses totaled EUR 4 million (previous year: EUR 4 million).

**17 Intangible assets**

Figures in millions of euros	Acquired intangible assets (without goodwill)	Acquired goodwill	Internally generated intangible assets	Total
<b>Gross values 1/1/2010</b>	<b>2,448</b>	<b>4,724</b>	<b>1,049</b>	<b>8,221</b>
Changes in consolidated group		16		16
Additions	112	11	146	269
Reclassifications	9	-9		
Disposals	-135	-7	-175	-317
Exchange differences	127	115	1	243
<b>Gross values 31/12/2010</b>	<b>2,561</b>	<b>4,850</b>	<b>1,021</b>	<b>8,432</b>
<b>Amortization 1/1/2010</b>	<b>1,103</b>	<b>275</b>	<b>638</b>	<b>2,016</b>
Additions	244		140	384
Reclassifications	3	-3		
Disposals	-106	-7	-175	-288
Write-ups	-1			-1
Exchange differences	49	4	1	54
<b>Amortization 31/12/2010</b>	<b>1,292</b>	<b>269</b>	<b>604</b>	<b>2,165</b>
<b>Carrying amounts 31/12/2010</b>	<b>1,269</b>	<b>4,581</b>	<b>417</b>	<b>6,267</b>
<b>Gross values 1/1/2011</b>	<b>2,561</b>	<b>4,850</b>	<b>1,021</b>	<b>8,432</b>
Changes in consolidated group	19	29		48
Additions	135	2	187	324
Disposals	-83		-270	-353
Exchange differences	25	3		28
<b>Gross values 31/12/2011</b>	<b>2,657</b>	<b>4,884</b>	<b>938</b>	<b>8,479</b>
<b>Amortization 1/1/2011</b>	<b>1,292</b>	<b>269</b>	<b>604</b>	<b>2,165</b>
Changes in consolidated group	7			7
Additions	311	498	180	989
Disposals	-77		-270	-347
Exchange differences	15	-4		11
<b>Amortization 31/12/2011</b>	<b>1,548</b>	<b>763</b>	<b>514</b>	<b>2,825</b>
<b>Carrying amounts 31/12/2011</b>	<b>1,109</b>	<b>4,121</b>	<b>424</b>	<b>5,654</b>

The amount of amortization for the fiscal year contains the following impairment losses:

- ▶ Purchased intangible assets (without goodwill): EUR 66 million (previous year: EUR 0 million)
- ▶ Internally generated intangible assets: EUR 24 million (previous year: EUR 23 million)

Overcapacity in the photovoltaics market and keen competition from Asian suppliers and the associated drop in prices led to impairment losses on intangible assets (without goodwill) in the Solar Energy division of EUR 66 million in the reporting period.

The goodwill of EUR 4,121 million (previous year: EUR 4,581 million) is attributable to the business sectors as follows: Automotive Technology EUR 103 million (previous year: EUR 102 million), Industrial Technology EUR 2,223 million (previous year: EUR 2,688 million), Consumer Goods and Building Technology EUR 1,795 million (previous year: EUR 1,791 million).

Goodwill is subjected to an annual impairment test. An impairment loss is recorded when the recoverable amount is below the carrying amount of the division which is considered the cash-generating unit. The recoverable amount is derived from the future cash flows. The cash flows are determined on the basis of business plans with a planning period of five years.

For the Automotive Technology business sector, a growth rate of 1.0 percent (previous year: 1.0 percent) was applied, for Industrial Technology 2.0 percent (previous year: 2.0 percent), and for Consumer Goods and Building Technology 2.0 percent (previous year: 2.0 percent). For the Automotive Technology business sector, a pre-tax discount rate of 9.2 percent (previous year: 10.2 percent) was applied, for Industrial Technology 10.1 percent (previous year: 11.0 percent), and for Consumer Goods and Building Technology 10.4 percent (previous year: 11.3 percent). A risk-free interest rate of 2.7 percent (previous year: 3.4 percent) and a market risk premium of 5.0 percent (previous year: 5.0 percent) were assumed. The standard tax rate used is 29 percent (previous year: 29 percent).

The annual impairment test of the Solar Energy division resulted in impairment losses on goodwill of EUR 498 million.

## 18 Current and non-current financial liabilities

Figures in millions of euros	2011		2010	
	up to 1 year	more than 1 year	up to 1 year	more than 1 year
Bonds		2,472		2,348
Promissory loans		499		499
Liabilities to banks	383	858	248	529
Other financial liabilities	54	22	2	21
	<b>437</b>	<b>3,851</b>	<b>250</b>	<b>3,397</b>

Financial liabilities amounting to EUR 1,370 million (previous year: EUR 1,821 million) are due in more than five years.

**Terms and conditions of the major bonds**

Interest terms	Interest rate	Beginning of term	End of term	Currency	Figures in millions of euros	
					Nominal	Fair value 12/31/2011
Fixed	4.375%	05/2006	05/2016	EUR	750	833
Fixed	3.750%	06/2009	06/2013	EUR	700	727
Fixed	5.125%	06/2009	06/2017	EUR	600	695
Fixed	5.000%	08/2009	08/2019	EUR	300	357

The undiscounted cash flows of the non-derivative and derivative financial liabilities are presented in the table below:

Figures in millions of euros	Carrying amount	Undiscounted cash flows						
		2011	2012	2013	2014	2015	2016	2017 ff.
<b>Non-derivative financial liabilities</b>								
Bonds	<b>2,472</b>	109	794	134	81	857	987	
Promissory loans	<b>499</b>	21	21	358	9	9	175	
Liabilities to banks	<b>1,241</b>	425	480	74	65	27	290	
Other financial liabilities	<b>908</b>	803	47	37	19	12	17	
Finance lease obligations	<b>30</b>	16	6	5	3	2	15	
<b>Derivative financial liabilities</b>	<b>305</b>	315	40	8	20	1	1	

Figures in millions of euros	Carrying amount	Undiscounted cash flows						
		2010	2011	2012	2013	2014	2015	2016 ff.
<b>Non-derivative financial liabilities</b>								
Bonds	<b>2,348</b>	105	105	791	79	79	1,769	
Promissory loans	<b>499</b>	22	22	22	358	9	184	
Liabilities to banks	<b>777</b>	250	36	428	41	33	15	
Other financial liabilities	<b>906</b>	795	36	47	25	21	24	
Finance lease obligations	<b>40</b>	17	10	7	4	3	24	
<b>Derivative financial liabilities</b>	<b>74</b>	42	1		8	10	3	

The undiscounted cash flows contain interest and principal payments. All on-call financial liabilities are allocated to the earliest possible period. The variable interest payments were calculated using the last interest rate determined before the end of the respective reporting period.

For the derivatives presented under derivative financial liabilities for which gross settlement has been agreed, the undiscounted cash outflows are netted against the corresponding cash inflows.

**19 Trade payables**

Figures in millions of euros	2011	2010
Trade payables	4,148	3,762
Notes payable	93	133
	<b>4,241</b>	<b>3,895</b>

There are trade payables which are due in more than one year of EUR 2 million (previous year: EUR 7 million).

**20 Other liabilities and provisions****Other liabilities**

Figures in millions of euros	2011		2010	
	up to 1 year	more than 1 year	up to 1 year	more than 1 year
Loans	102	67	98	92
Accruals in the personnel area	1,532		1,436	
Accruals in the sales and marketing area	557		522	
Other accruals	388		346	
Deferred income	122		122	
Tax liabilities (without income tax liabilities)	393		340	
Finance lease obligations	10	20	14	26
Deferred income from tooling compensation received	32	104	43	105
Prepayments received for inventories	555		546	
Sundry other liabilities	875	262	759	218
	<b>4,566</b>	<b>453</b>	<b>4,226</b>	<b>441</b>

Loans with a residual term of more than five years amount to EUR 5 million (previous year: EUR 9 million). The sundry other liabilities with a residual term of more than five years amount to EUR 2 million (previous year: EUR 0 million).

The accruals in the personnel area mainly relate to vacation and salary entitlements as well as accrued special payments, while those in the sales and marketing area mainly pertain to bonus and commission payments.

Finance lease obligations primarily stem from vehicle lease agreements with terms of three to six years. The liabilities are due as follows:

Figures in millions of euros	2011	2010
Future minimum lease payments		
due not later than one year	12	17
due later than one year and not later than five years	20	26
due later than five years	16	17
Interest portion contained in the future minimum lease payments		
due not later than one year	2	3
due later than one year and not later than five years	7	7
due later than five years	9	10
Present value of outstanding minimum lease payments		
due not later than one year	10	14
due later than one year and not later than five years	13	19
due later than five years	7	7
	<b>30</b>	<b>40</b>

#### Provisions (without income tax provisions and pension provisions)

Figures in millions of euros	2011		2010	
	up to 1 year	more than 1 year	up to 1 year	more than 1 year
Tax provisions (without income tax provisions)	36	81	10	76
Provisions in the personnel area	595	994	747	913
Provisions in the sales and marketing area	1,635	1,142	1,879	1,128
Other provisions	422	649	519	725
	<b>2,688</b>	<b>2,866</b>	<b>3,155</b>	<b>2,842</b>

Provisions developed as follows:

Figures in millions of euros	At 1/1/2011	Changes in consolidated group	Amounts used	Amounts reversed	Increase incl. increase in discounted amount	Exchange adjustments	At 12/31/2011
Tax provisions	745		-362	-50	561	-27	867
Provisions in the personnel area	1,660	1	-291	-201	421	-1	1,589
Provisions in the sales and marketing area	3,007	2	-927	-494	1,177	12	2,777
Other provisions	1,244	1	-336	-154	318	-2	1,071
	<b>6,656</b>	<b>4</b>	<b>-1,916</b>	<b>-899</b>	<b>2,477</b>	<b>-18</b>	<b>6,304</b>

Of the total increase in provisions, an amount of EUR 60 million (previous year: EUR 49 million) relates to increases in discounted amount.

Provisions in the personnel area relate to obligations from personnel adjustment measures, from early phased retirement, and from other special benefits for which the time or amount cannot yet be precisely determined. Provisions in the sales and marketing area mainly take account of losses from delivery and warranty obligations, including risks from recall, exchange, and product liability cases. Other provisions are recognized, among other things, for risks from restructuring, purchasing obligations, and renewal obligations for rent and lease agreements.

#### **Contingent liabilities and other financial obligations**

No provisions were recognized for the following contingent liabilities, as it is more likely than not that they will not occur:

Figures in millions of euros	2011	2010
Contingent liabilities related to notes issued and transferred	17	18
Contingent liabilities from guarantees	23	24
Contingent liabilities from warranties	3	4
Other contingent liabilities	7	4
	<b>50</b>	<b>50</b>

Obligations from operating leases mainly pertain to lease agreements for technical equipment, for IT equipment, and for vehicles. They mature in between two and six years. The minimum amount of the undiscounted future payments from operating leases amounts to EUR 755 million (previous year: EUR 640 million). The obligations are due as follows:

Figures in millions of euros	2011	2010
Due not later than one year	220	216
Due later than one year and not later than five years	416	346
Due later than five years	119	78
	<b>755</b>	<b>640</b>

The payments of the period recognized in profit or loss of EUR 239 million (previous year: EUR 247 million) are contained in the costs of the functional areas (cost of sales, and distribution, administrative, and research and development cost).

---

#### **21 Provisions for pensions and similar obligations**

Associates of the companies included in the consolidated financial statements have certain rights in connection with the company pension scheme, depending on the conditions existing in the various countries. The benefit obligations include both currently claimed benefits and future benefit obligations of active associates or of associates that have left the company.

The group's post-employment benefits include both defined contribution plans and defined benefit plans. In the case of defined contribution plans, the company pays voluntary contributions to state or private pension or insurance funds, based on legal or contractual provisions. No further payment obligations arise for the company from the payment of these contributions. The defined benefit plans are funded or unfunded pension systems, or systems financed by insurance premiums.

The Bosch Pension Scheme has been in place for most Bosch Group associates in Germany since January 1, 2006. During the vesting phase, both company and employee contributions are made to the Bosch Pensionsfonds (Bosch pension fund) up to the tax-allowed limit for contributions; amounts in excess of this, as well as the claims of associates born before 1951, are reported in the unfunded obligation (direct benefit obligation).

Pension provisions for the defined benefit plans are calculated according to the projected unit credit method in accordance with IAS 19. This involves measuring future obligations using actuarial procedures, with prudent estimates of the relevant factors. Taking account of dynamic components, the future benefit obligations are spread over the entire period of service.

Actuarial calculations and estimates are made for all defined benefit plans. Besides assumptions about life expectancy, the calculations are based on the following parameters, which vary from one country to another depending on the local economic circumstances:

Percentage figures	Europe		Americas		Asia		Africa, Australia		Total	
	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010
Discount factor	4.9	5.0	4.5	5.4	1.3	1.2	9.3	8.9	4.8	4.9
Expected return on plan assets	4.4	4.9	6.4	7.8	1.9	2.4	n.a.	n.a.	4.8	5.5
Future salary increases	2.9	2.9	4.2	4.2	2.3	2.6	7.0	7.0	3.1	3.1
Pension increases	1.4	1.4	0.0	0.1	n.a.	n.a.	6.0	6.0	1.2	1.2
Cost increase rate for medical plans	n.a.	n.a.	5.0	5.0	n.a.	n.a.	8.3	7.6	5.1	5.0

n.a. not applicable

The assumptions about the expected return on assets are based on a target portfolio structure and the forecast returns in the individual investment categories. These forecasts are based on publicly available and internal capital market studies and forecasts for each category of asset. The estimates of future salary increases are made, among other things, on the basis of the economic situation and inflation.

Adjustments between the actuarial projected benefit obligation – after deducting plan assets – and the provision mainly result from actuarial gains or losses related to changes in the rates of personnel turnover and deviations between the actual salary development and the assumptions used for calculation purposes.

To make the reporting more transparent, the actuarial gains and losses from defined benefit plans are recognized outside of profit or loss in other comprehensive income. In this way, all actuarial gains and losses are accounted for.

If the benefit system is funded externally, the value of the assets of the external pension institutions is deducted from the benefit obligation resulting from the projected unit credit method. The externally funded pension institutions in Germany are Bosch Pensionsfonds AG and Bosch Hilfe e.V.

Pension schemes and obligations are measured at regular intervals, at least every three years. All significant schemes are measured annually by means of comprehensive actuarial procedures.

The present value of the obligation breaks down as follows:

<b>Figures in millions of euros</b>	<b>2011</b>	<b>2010</b>
Defined benefit obligation at January 1	<b>10,115</b>	<b>8,728</b>
Changes in the consolidated group	5	-4
Current service cost	396	312
Interest cost	483	484
Transfers	-7	7
Past service cost	8	14
Pension payments	-531	-506
Actuarial losses	151	790
Currency translation	94	303
Other	-12	-13
Defined benefit obligation at December 31	<b>10,702</b>	<b>10,115</b>

Plan assets developed as follows:

<b>Figures in millions of euros</b>	<b>2011</b>	<b>2010</b>
Fair value of plan assets at January 1	<b>3,622</b>	<b>2,957</b>
Changes in the consolidated group	3	3
Expected return on plan assets	201	175
Contributions paid	327	282
Contributions by the employees	14	13
Transfers	-1	13
Benefits paid	-164	-144
Actuarial losses/gains	-203	94
Currency translation	64	237
Other	-8	-8
Fair value of plan assets at December 31	<b>3,855</b>	<b>3,622</b>
Actual expense/income	-2	269
Expected contributions in the following year	301	334

The fund assets comprise the following components:

<b>Percentage figures</b>	<b>2011</b>	<b>2010</b>
Shares	33.6	36.1
Fixed-interest securities	43.9	42.3
Property	11.7	12.1
Other	10.8	9.5

The funding status of the defined benefit obligations pursuant to IAS 19 is as follows:

Figures in millions of euros	2011	2010
Present value of benefit obligation from wholly unfunded plans	3,175	3,272
Present value of benefit obligation from plans that are wholly or partly funded	7,527	6,843
Total present value of benefit obligation	10,702	10,115
Plan assets at fair value	-3,855	-3,622
Net obligation	6,847	6,493
Past service cost	5	5
Asset amount not recognized as of December 31 due to the limitation pursuant to IAS 19.58 (b)	9	5
	<b>6,861</b>	<b>6,503</b>

The table below presents changes in the pension provisions:

Figures in millions of euros	2011	2010
Carrying amount at January 1	<b>6,503</b>	<b>5,786</b>
Changes in the consolidated group	2	-7
Net expense for the period	666	608
Transfers	-6	-6
Pension payments	-367	-362
Contributions paid	-327	-282
Actuarial losses	358	690
Other	32	76
Carrying amount at December 31	<b>6,861</b>	<b>6,503</b>

The total amount of recognized actuarial gains and losses developed as follows:

Figures in millions of euros	2011	2010
Total actuarial losses/gains at January 1	<b>176</b>	<b>-537</b>
Actuarial losses of the current year	354	696
Change of effect pursuant to IAS 19.58 (b)	4	-5
Other changes and adjustments		-1
Total actuarial losses	<b>358</b>	<b>690</b>
Currency effects and changes in the consolidated group	13	23
Total actuarial losses at December 31	<b>547</b>	<b>176</b>

The amounts recognized in the income statement are as follows:

Figures in millions of euros	2011	2010
Current service cost	382	299
Interest cost	483	484
Expected return on plan assets	-201	-175
Past service cost	7	14
Other	-5	-14
<b>Net expense for the period</b>	<b>666</b>	<b>608</b>

The net expense is contained in the costs of the functional areas.

Expenses for defined benefit obligations amounted to EUR 883 million (previous year: EUR 843 million).

Other disclosures in the notes:

Figures in millions of euros	2011	2010
Distribution of losses from the valuation	151	790
of which from changes in assumptions	259	642
of which from unexpected changes in number of beneficiaries	-108	148
Payments expected in the following year		
additions to plan assets	301	334
directly payable benefits	352	331

Figures in millions of euros	2011	2010	2009	2008	2007
History of the present value of the obligation	10,702	10,115	8,728	8,488	8,553
History of the plan assets	3,855	3,622	2,957	2,755	2,880
History of net obligation	-6,847	-6,493	-5,771	-5,733	-5,673
History of change in obligation due to changes in number of beneficiaries	-108	148	-4	-24	-54
History of change in plan assets (actual vs. expected)	-203	94	159	-580	-35

Effect of change in cost trend on medical costs:

Figures in millions of euros	2011	2010	One percentage point increase in cost trend		One percentage point decrease in cost trend	
			2011	2010	2011	2010
Present value of the obligation	212	196	231	213	195	181
Service cost and interest cost	12	13	14	14	12	12

**22 Equity**

The issued capital of EUR 1,200 million and capital reserve of EUR 4,557 million correspond with the items of the statement of financial position disclosed by Robert Bosch GmbH. The issued capital is divided between the shareholders as follows:

**Shareholders of Robert Bosch GmbH**

Percentage figures	Shareholding	Voting rights
Robert Bosch Stiftung GmbH	92.0	
Robert Bosch Industrietreuhand KG		93.2
Bosch family	7.4	6.8
Robert Bosch GmbH (treasury stock)	0.6	

Retained earnings contain profits that have not been distributed and that were generated in the past by the entities included in the consolidated financial statements, as well as in other comprehensive income. The effects of changes in actuarial parameters in the pension provisions are disclosed in the "Other changes" column of other comprehensive income. This position also contains differences between purchase price and purchased pro-rata equity of additional share purchases.

Retained earnings also consider treasury stock of EUR 62 million.

The unappropriated earnings of the group match those of Robert Bosch GmbH.

**Non-controlling interests**

The shares of non-controlling interests in the equity of the consolidated subsidiaries mainly comprise the non-controlling interests in Bosch Automotive Diesel Systems Co., Ltd., Wuxi, China, and in Bosch Ltd., Bangalore, India.

Changes resulted from the acquisition of additional shares in aleo solar AG, Prenzlau, Germany, and the first-time inclusion of Bosch Emission Systems GmbH & Co. KG, Stuttgart, Germany, in the consolidated financial statements of the Bosch Group.

## Other notes

### 23 Statement of cash flows

The statement of cash flows presents cash inflows and outflows from operating activities, investing activities, and financing activities.

The cash flow is derived indirectly, starting from the profit before tax. Cash inflows from operating activities are adjusted for non-cash expenses and income (mainly depreciation of non-current assets), and take changes in working capital into account.

The investing activities mainly consist of additions to non-current assets, including leased assets and the purchase and disposal of subsidiaries and other business entities, as well as of securities.

Financing activities combine the inflows and outflows of cash and cash equivalents from borrowing and repayment of financial liabilities, from dividends, and from the acquisition of non-controlling interests.

Changes in positions of the statement of financial position contained in the statement of cash flows cannot be directly derived from the statement of financial position, as these have been adjusted for exchange-rate effects and changes in the consolidated group. The change in accounting for pensions is adjusted to eliminate actuarial gains and losses.

The cash and cash equivalents contained in the statement of cash flows contain cash of EUR 3,328 million (previous year: EUR 3,821 million). In the reporting period, there was no transfer restriction for cash and cash equivalents.

Effects on the cash flow from acquisitions are explained in the section on business combinations.

### 24 Segment reporting

#### Business sector data

Figures in millions of euros	Automotive Technology		Industrial Technology	
	2011	2010	2011	2010
External sales	30,404	28,097	8,038	6,660
Intersegment sales	98	89	252	190
Total sales	30,502	28,186	8,290	6,850
EBIT	2,331	2,341	-364	90
Non-cash expenses (without depreciation)	1,888	2,200	361	436
Amortization and depreciation	1,801	1,840	376	357
Impairment losses on intangible assets and property, plant, and equipment	67	136	564	
Non-cash income	710	772	136	123
Assets	9,505	8,549	3,753	3,005

Based on the internal management and reporting structure, the Bosch Group is divided into three business sectors. These are the reportable segments and result from the combination of divisions in accordance with the criteria set forth in IFRS 8. The operating business within the business sectors is the responsibility of the divisions.

The activities of the Automotive Technology business sector mainly comprise injection technology for internal-combustion engines, powertrain peripherals, alternative drive concepts, active and passive vehicle safety systems, assistance and comfort functions, technology for in-car information and communication, and a range of after-sales, engineering-support, and service concepts for the automotive aftermarket.

The Industrial Technology business sector combines the following activities:

- ▶ Automation technology (hydraulics, pneumatics, all important technologies for drives, controls, and motion)
- ▶ Packaging technology (machines and packaging lines for the confectionery, food, beverage, and tobacco industry, as well as for the pharmaceuticals industry)
- ▶ Photovoltaics (solar cells and photovoltaic modules).

The operations of the Consumer Goods and Building Technology business sector comprise the production and distribution of

- ▶ Power tools (tools for the trade, industry, and DIY, accessories, garden tools, as well as industrial tools and measuring equipment)
- ▶ Heating systems (heating and hot-water boilers including open- and closed-loop control systems)
- ▶ Security systems (video surveillance, public address systems, evacuation systems, and access control)
- ▶ Household appliances (appliances for cooking, washing-up, washing, drying, cooling, freezing, floor care, etc.).

	Consumer Goods and Building Technology		All other segments		Consolidation		Group	
	2011	2010	2011	2010	2011	2010	2011	2010
	13,029	12,480	23	22			51,494	47,259
	27	24			-377	-303		
	13,056	12,504	23	22	-377	-303	51,494	47,259
	731	736	11	14			2,709	3,181
	553	668	2	2			2,804	3,306
	431	411	8	6			2,616	2,614
	7	7					638	143
	173	149					1,019	1,044
	4,958	4,474	2				18,218	16,028

Business segments which are not reportable are combined and presented in the category "All other segments." This mainly relates to financial and holding companies. Positions that belong to financing activities are not included in the segment reporting.

Value added is the main controlling parameter of our valued-based management. In addition to this earnings ratio, the internal reporting to management also reports EBIT at segment level. EBIT is earnings before taxes and before financial result.

Transfer prices between the business segments are determined at arm's length.

The main items included in non-cash expenses are bad debt allowances, additions to provisions, as well as losses on the disposal of items of property, plant, and equipment and of intangible assets.

The main items included in non-cash income are income from the reversal of provisions as well as gains on the disposal of items of property, plant, and equipment and of intangible assets.

Segment assets comprise trade receivables as well as inventories, in both cases before valuation allowances.

#### **Reconciliation statements**

Figures in millions of euros	2011	2010
<b>Sales</b>		
Sales by reportable segment	51,848	47,540
All other segments	23	22
Consolidation	-377	-303
<b>Group sales</b>	<b>51,494</b>	<b>47,259</b>
<b>EBIT</b>		
EBIT by reportable segment	2,698	3,167
All other segments	11	14
Financial income	1,573	1,912
Financial expenses	-1,654	-1,608
<b>Profit before tax</b>	<b>2,628</b>	<b>3,485</b>
<b>Assets</b>		
Assets by reportable segment	18,216	16,028
All other segments	2	
Impairment losses on segment assets	-1,403	-1,231
Other current assets	6,154	6,767
Non-current assets	31,647	31,119
<b>Group assets</b>	<b>54,616</b>	<b>52,683</b>

**Disclosures by important country**

Figures in millions of euros	Sales by registered office of the customer		Non-current assets <sup>1</sup>	
	2011	2010	2011	2010
<b>Europe</b>	<b>30,357</b>	<b>27,693</b>	<b>14,041</b>	<b>14,491</b>
of which Germany	12,008	10,865	9,036	9,536
of which France	2,965	2,955	326	314
of which the U.K.	2,219	2,044	112	109
of which Italy	2,101	1,968	494	505
<b>Americas</b>	<b>9,181</b>	<b>8,591</b>	<b>2,011</b>	<b>1,911</b>
of which the U.S.	5,888	5,524	1,411	1,320
<b>Asia</b>	<b>11,087</b>	<b>10,121</b>	<b>3,282</b>	<b>2,740</b>
of which China	4,694	4,153	1,656	1,330
of which Japan	2,285	2,302	765	751
<b>Other regions</b>	<b>869</b>	<b>854</b>	<b>96</b>	<b>125</b>
<b>Group</b>	<b>51,494</b>	<b>47,259</b>	<b>19,430</b>	<b>19,267</b>

<sup>1</sup>The non-current assets consist of intangible assets and property, plant, and equipment.

The customer structure of the Bosch Group in the reporting period does not reveal any concentration on individual customers.

---

**25 Additional notes  
on financial instruments**
**Net profit/loss by category**

The table below presents the net effects of financial instruments recognized in the income statement, classified by the categories defined in IAS 39:

Figures in millions of euros	2011	2010
Loans and receivables	71	135
Held-to-maturity investments	1	4
Available-for-sale financial assets	330	566
Assets and liabilities held for trading	-273	-222
Financial liabilities measured at amortized cost	-328	-98

The net profit/loss contains the result of the receivables and loan valuation, the result of the reversal of the reserve from securities in equity, exchange-rate gains and losses, interest income and expenses, as well as the result from derivatives.

The valuation gains and losses from securities and equity investments are presented in the statement of comprehensive income.

**Book values, carrying amounts, and fair values by category**

<b>Figures in millions of euros</b>	<b>Category pursuant to IAS 39</b>	<b>Carrying amount 2011</b>	<b>Carrying amount pursuant to IAS 39</b>			<b>Carrying amount pursuant to IAS 17</b>	<b>Fair value 2011</b>
			(Amor-tized) cost	Fair value recognized in other comprehensive income	Fair value recognized in profit or loss		
<b>Assets</b>							
<b>Cash and cash equivalents</b>	LaR	3,328	3,328				3,328
<b>Current investments</b>		718					
Available-for-sale financial assets	AfS	718		718			718
<b>Trade receivables</b>	LaR	9,156	9,156				9,156
<b>Other current assets</b>		1,816					
Receivables from finance leases	n. a.	28				28	28
Other financial assets	LaR	744	744				744
Derivative financial assets	FAHfT	56			56		56
Non-financial assets within the meaning of IFRS 7	n. a.	988					
<b>Non-current financial assets</b>		9,942					
Available-for-sale financial assets	AfS	7,583		7,583			7,583
Held-to-maturity investments	HtM	7	7				7
Investments	AfS	1,845	728	1,117			1,117
Derivative financial assets	FAHfT	55			55		55
Receivables from finance leases	n. a.	140				140	140
Other financial assets	LaR	170	170				177
Non-financial assets within the meaning of IFRS 7	n. a.	142					
<b>Equity and liabilities</b>							
<b>Trade payables</b>	FLAC	4,241	4,241				4,241
<b>Current financial liabilities</b>		437					
Liabilities to banks	FLAC	383	383				383
Other financial liabilities	FLAC	54	54				54
<b>Other current liabilities</b>		4,566					
Derivative financial liabilities	FLHfT	205			205		205
Finance lease obligations	n. a.	10				10	10
Other financial liabilities	FLAC	670	670				670
Other non-financial liabilities within the meaning of IFRS 7	n. a.	3,681					
<b>Non-current financial liabilities</b>		3,851					
Bonds	FLAC	2,472	2,472				2,735
Promissory loans	FLAC	499	499				544
Liabilities to banks	FLAC	858	858				930
Other financial liabilities	FLAC	22	22				24
<b>Other non-current liabilities</b>		453					
Derivative financial liabilities	FLHfT	100			100		100
Finance lease obligations	n. a.	20				20	20
Other financial liabilities	FLAC	162	162				175
Other non-financial liabilities within the meaning of IFRS 7	n. a.	171					

LaR Loans and receivables

AfS Available-for-sale financial assets

HtM Held-to-maturity investments

FAHfT Financial assets held for trading

FLAC Financial liabilities measured at amortized cost

FLHfT Financial liabilities held for trading

n. a. not applicable

<b>Figures in millions of euros</b>							
	Category pursuant to IAS 39	Carrying amount 2010	(Amor-tized) cost	Fair value recognized in other comprehensive income	Fair value recognized in profit or loss	Carrying amount pursuant to IAS 17	Fair value 2010
<b>Assets</b>							
<b>Cash and cash equivalents</b>	LaR	3,821	3,821				3,821
<b>Current investments</b>		872					
Available-for-sale financial assets	AfS	872		872			872
<b>Trade receivables</b>	LaR	8,017	8,017				8,017
<b>Other current assets</b>		1,856					
Receivables from finance leases	n. a.	27				27	27
Other financial assets	LaR	868	868				868
Derivative financial assets	FAHfT	59			59		59
Non-financial assets within the meaning of IFRS 7	n. a.	902					
<b>Non-current financial assets</b>		9,858					
Available-for-sale financial assets	AfS	7,389		7,389			7,389
Held-to-maturity investments	HtM	7	7				7
Investments	AfS	1,973	604	1,369			1,369
Derivative financial assets	FAHfT	80			80		80
Receivables from finance leases	n. a.	139				139	139
Other financial assets	LaR	113	113				115
Non-financial assets within the meaning of IFRS 7	n. a.	157					
<b>Equity and liabilities</b>							
<b>Trade payables</b>	FLAC	3,895	3,895				3,895
<b>Current financial liabilities</b>		250					
Liabilities to banks	FLAC	248	248				248
Other financial liabilities	FLAC	2	2				2
<b>Other current liabilities</b>		4,226					
Derivative financial liabilities	FLHfT	43			43		43
Finance lease obligations	n. a.	14				14	14
Other financial liabilities	FLAC	701	701				701
Other non-financial liabilities within the meaning of IFRS 7	n. a.	3,468					
<b>Non-current financial liabilities</b>		3,397					
Bonds	FLAC	2,348	2,348				2,544
Promissory loans	FLAC	499	499				543
Liabilities to banks	FLAC	529	529				630
Other financial liabilities	FLAC	21	21				24
<b>Other non-current liabilities</b>		441					
Derivative financial liabilities	FLHfT	31			31		31
Finance lease obligations	n. a.	26				26	26
Other financial liabilities	FLAC	182	182				191
Other non-financial liabilities within the meaning of IFRS 7	n. a.	202					

The carrying amounts of the financial assets and liabilities, classified by the categories defined in IAS 39, are as follows:

Figures in millions of euros	2011	2010
Loans and receivables	13,398	12,819
Held-to-maturity investments	7	7
Available-for-sale financial assets	10,146	10,234
Financial assets held for trading	111	139
Financial liabilities measured at amortized cost	9,361	8,425
Financial liabilities held for trading	305	74

#### Composition of the derivative financial instruments

Figures in millions of euros	Market values				Nominal values	
	2011 up to 1 year	2011 more than 1 year	2010 up to 1 year	2010 more than 1 year	2011	2010
<b>Derivatives with a positive market value</b>						
<b>Interest derivatives</b>		<b>3</b>			<b>762</b>	<b>4</b>
of which interest swaps					3	
of which other interest derivatives		3			759	4
<b>Foreign currency derivatives</b>	<b>50</b>	<b>1</b>	<b>40</b>	<b>3</b>	<b>588</b>	<b>1,535</b>
<b>Other derivatives</b>	<b>6</b>	<b>51</b>	<b>19</b>	<b>77</b>	<b>82</b>	<b>164</b>
<b>Derivatives with a negative market value</b>						
<b>Interest derivatives</b>		<b>9</b>		<b>10</b>	<b>266</b>	<b>705</b>
of which interest swaps		9		10	228	334
of which other interest derivatives					38	371
<b>Foreign currency derivatives</b>	<b>189</b>	<b>64</b>	<b>43</b>	<b>4</b>	<b>4,108</b>	<b>1,519</b>
<b>Other derivatives</b>	<b>16</b>	<b>27</b>		<b>17</b>	<b>231</b>	<b>59</b>

The foreign currency derivatives are mainly forward exchange contracts.

The fair values of financial assets and financial liabilities were derived as follows:

<b>Figures in millions of euros</b>	<b>Prices listed on active markets</b>		<b>Other significant observable input parameters</b>		<b>Total</b>	
	<b>2011</b>	<b>2010</b>	<b>2011</b>	<b>2010</b>	<b>2011</b>	<b>2010</b>
<b>Financial assets</b>						
Investments	1,103	1,369	14		1,117	1,369
Derivative financial instruments	9	54	102	85	111	139
Other securities	4,108	5,115	4,193	3,146	8,301	8,261
<b>Financial liabilities</b>						
Derivative financial instruments	38	53	267	21	305	74

## 26 Capital and risk management

### Capital management

The main objective of the centralized capital management of the Bosch Group is to maintain the company's sound financial substance and thus to secure the financial independence and flexibility required for further growth.

The central controlling parameter of our financial target system is value contribution, which represents cash flow less cost of capital. Its development is the yardstick we use to assess performance, and it is also used for portfolio management. It is supplemented for capital management purposes by the conventional financial, liquidity, and indebtedness indicators.

### Hedging policy and financial derivatives

The operative business of the Bosch Group is impacted in particular by fluctuations in exchange and interest rates. Business policy aims to limit these risks by means of hedging. All hedging transactions are implemented at corporate level.

Internal regulations and guidelines set down a mandatory framework and define the responsibilities related to investment and hedging transactions. According to these regulations, derivatives may only be used in connection with operative business, financial investments, or financing transactions; speculative transactions are not allowed. Trading limits are an important component of the guidelines. Hedges are closed solely via banks whose creditworthiness is regarded as impeccable. The rating given by leading agencies as well as current developments in the financial markets are taken into account. Due to the finance and debt crisis, the creditworthiness of the banking partners of the Bosch Group is closely monitored and the risk mitigated by means of even tighter counterparty limits.

Within the corporate finance department, there is a spatial and functional segregation of trading, settlement, and control functions. Key tasks of the control function include determining risks using the value-at-risk method as well as the basis-point-value method, and regular compliance checks with instructions and guidelines.

Each month, the risk of financial investments is calculated using the value-at-risk concept for the next month. Prescribed risk limits for the various investment categories limit the potential loss. The forecast quality of the value-at-risk method is tested by means of monthly backtesting. Management is informed monthly about the performance of investments and hedges and the result of the risk analyses.

#### **Currency risks**

Currency risks of the operative business are mitigated by the central management of selling and purchasing currencies. The currency risk is determined on the basis of the worldwide consolidated cash flow in the respective foreign currencies. Based on the business plan, estimated inflows and outflows in the various countries for the planning period are aggregated in a foreign exchange balance plan. The resulting net position is used for the central management of currency exposures.

The largest net currency position of the planned foreign currency cash flow is in CNY.

Hedging largely takes the form of forward exchange contracts; currency options and currency swaps to secure group financing are used to a lesser extent. These transactions, which are only entered into with banks, are subject to certain minimum requirements.

The risk of the entire operative foreign currency position is determined using the value-at-risk concept, supplemented by worst-case analyses. These risk analyses and the hedge result are determined monthly and presented to management.

To present the currency risks in accordance with IFRS 7 for the most important foreign currencies, all monetary assets and monetary liabilities denominated in foreign currency for all consolidated companies were analyzed at the end of the reporting period and sensitivity analyses carried out for the respective currency pairs, in terms of the net risk.

A change in the EUR of 10 percent (starting from the closing rate) against the foreign currencies listed in the table would have the following implications for the profit before tax:

Figures in millions of euros	10% increase in EUR		10% decrease in EUR	
	2011	2010	2011	2010
CHF	91	123	-91	-124
CNY	-22	-10	14	8
CZK	-41	-27	46	29
GBP	10	3	-10	-5
HUF	-21	-15	24	17
JPY	56	20	-71	-30
PLN	-12	-7	12	7
RUB	-22	-14	22	14
USD	-182	-106	170	100

A change in the USD of 10 percent (starting from the closing rate) against the foreign currencies listed in the table would have the following implications for the profit before tax:

Figures in millions of euros	10% increase in USD		10% decrease in USD	
	2011	2010	2011	2010
CNY	-37	-33	37	33

The effects on earnings shown here mainly result from loans within the Bosch Group which, by way of an exception, were granted in a currency which is not the local currency of the borrower, e.g. because it can be repaid from expected cash flows in this currency. The currency risk for the statement of financial position does not correspond to the economic risk, which is determined on the basis of forecast cash flows.

#### Interest-rate risks

Risks from anticipated changes in interest rates on investments and borrowings are limited by means of derivative financial instruments. These are mainly interest swaps and to a lesser extent also interest options. At present, only payer swaps have been used to swap the floating interest expense for promissory note tranches for a fixed rate of interest.

An analysis of the interest risk was carried out in accordance with IFRS 7. The sensitivity analysis considered assets and liabilities subject to floating interest rates, available-for-sale fixed-rate securities, and interest derivatives. Due to immateriality, mutual funds and money market funds are not considered.

A change in the market interest rate by 100 basis points (starting from interest rate on the cut-off date) would have the following effect on the reserve from securities in equity and the profit before tax:

<b>Figures in millions of euros</b>	<b>Increase in market interest level by 100 basis points</b>		<b>Decrease in market interest level by 100 basis points</b>	
	<b>2011</b>	<b>2010</b>	<b>2011</b>	<b>2010</b>
Reserve from securities	-154	-150	154	150
Profit before tax	26	8	-26	-8

#### **Share-price risks**

Derivatives are used on a small scale to limit the risks from investments in shares.

The analysis of the share-price risk in accordance with IFRS 7 took into account share portfolios in the “available-for-sale financial assets” category, investments measured at fair value, as well as share derivatives with a carrying amount of EUR 2,945 million (previous year: EUR 3,644 million).

A change in the share price of 10 percent (starting from share price on the cut-off date) would have the following effect on the reserve from securities in equity and the profit before tax:

<b>Figures in millions of euros</b>	<b>10% increase in share price</b>		<b>10% decrease in share price</b>	
	<b>2011</b>	<b>2010</b>	<b>2011</b>	<b>2010</b>
Reserve from securities	297	365	-282	-340
Profit before tax	0	2	-15	-27

#### **Other price risks**

Derivatives and physical fixed-price contracts are used to limit the risks of fluctuating commodity prices. The analysis of the share-price risk in accordance with IFRS 7 took into account commodity price derivatives measured as of the reporting date.

A change in the forward rate level of 10 percent (starting from forward rate on the reporting date) would have the following effect on the profit before tax:

<b>Figures in millions of euros</b>	<b>10% increase in forward rates</b>		<b>10% decrease in forward rates</b>	
	<b>2011</b>	<b>2010</b>	<b>2011</b>	<b>2010</b>
Profit before tax	17	11	-17	-11

The Bosch Group is not exposed to any significant other price risks as defined by IFRS 7.

**Credit risks**

The maximum credit risk for each valuation category is the carrying amount of the financial assets recognized in the statement of financial position. Trade receivables are partly secured by retention of title. The credit risk from customer receivables is recorded and monitored on an ongoing basis. Responsibilities and duties relating to credit risks are governed by an internal directive. This mainly concerns the stipulation of payment terms, fixing of credit limits, release of deliveries, and receivables monitoring.

There is no indication at the end of the reporting period of any significant defaults of trade receivables or of other financial assets exposed to credit risks that are neither impaired nor past due.

The sections on trade receivables and non-current financial assets contain further information about credit risks.

**Liquidity risks**

The development of financial assets and liabilities is recorded and monitored on an ongoing basis. Internal directives regulate the duties and responsibilities of liquidity management and planning. The company has liquidity reserves in the form of highly liquid assets totaling EUR 4,046 million (previous year: EUR 4,693 million). In addition to that, there is a Euro commercial paper program with a volume of EUR 1,000 million and a US commercial paper program with a volume of USD 2,000 million, neither of which had been drawn at the end of the reporting period. There is also a medium-term-note program with a volume of EUR 3,000 million, of which EUR 2,350 million has been drawn. See the section on current and non-current financial liabilities for more information about liquidity risks.

---

**27 Related parties disclosures**

As shareholder, Robert Bosch Industrietreuhand KG exercises majority voting rights at Robert Bosch GmbH. In addition, Robert Bosch Industrietreuhand KG is accountable for the internal audit of the Bosch Group. The costs incurred for this of EUR 11 million (previous year: EUR 10 million) were borne by Robert Bosch GmbH.

A part of the pension obligations and funds has been outsourced to Bosch Pensionsfonds AG. Robert Bosch GmbH is the sole shareholder of Bosch Pensionsfonds AG. Bosch Hilfe e.V. provides assistance to associates of co-owners in emergencies (emergency assistance). Bosch Hilfe e.V. is co-owned by Robert Bosch GmbH, Stuttgart, Robert Bosch Car Multimedia Holding GmbH, Hildesheim, and Robert Bosch Elektronik GmbH, Salzgitter, all in Germany. A part of the asset portfolio of Bosch Hilfe e.V. consists of its ownership in Robert Bosch Wohnungsgesellschaft mbH, Stuttgart, which builds and rents property for Bosch associates.

Robert Bosch Stiftung GmbH, Stuttgart, is the tenant of several properties belonging to Robert Bosch GmbH, Stuttgart.

**Sales, receivables, and liabilities due from and to related parties**

<b>Figures in millions of euros</b>	<b>Sales</b>		<b>Receivables</b>		<b>Liabilities</b>	
	<b>2011</b>	<b>2010</b>	<b>2011</b>	<b>2010</b>	<b>2011</b>	<b>2010</b>
FMP Group (Australia) Pty. Ltd., Australia	4	4	1	1	1	1
avim solar production Co. Ltd., China	12	4	3	1		
sia Abrasives Company Ltd., China	3	2	1	1		
Weifu High Technology Co., Ltd., China	8	10	2	2	5	5
BT Magnet-Technologie GmbH, Germany	1		3	4	1	1
Knorr-Bremse Systeme für Nutzfahrzeuge GmbH, Germany	48	42	9	8		
Oleodinamica Gambini S.r.l., Italy	2	1	1	1		
VB Autobatterie GmbH & Co. KGaA, Germany	4	3				1
Akebono Brake Industry Co., Ltd., Japan	2	61		2	6	12
Denso Corporation, Japan		3		1		
Knorr-Bremse Commercial Vehicle Systems Japan Ltd., Japan	1				1	1
Ohta Iron Works Co., Ltd., Japan	1				1	2
Doowon Precision Industry Co., Ltd., Korea	3	9	1	1		
SB LiMotive Company Ltd., Korea	2	1	12			
Loos Centrum Sp.z o.o., Poland	10	2	2	1		
Rotzinger AG, Switzerland			2		2	
Associated Fuel Pump Systems Corporation, USA	1	1	1			

**Total remuneration of management in key positions**

The members of management in key positions are the general partners of Robert Bosch Industrietreuhand KG, the members of the supervisory council, and the members of the board of management of Robert Bosch GmbH.

The total remuneration of the members of management in key positions totals EUR 36 million in the fiscal year 2011 (previous year: EUR 29 million) and breaks down as follows:

<b>Figures in millions of euros</b>	<b>2011</b>	<b>2010</b>
Short-term benefits	20	21
Post-employment benefits	14	8
Other long-term benefits	2	0

Share-based payments are not made.

There are no provisions (valuation allowances) for doubtful debts due from key management personnel. Moreover, no expenses were incurred for uncollectible or doubtful receivables.

The Bosch Group pays other related parties compensation totaling EUR 0.2 million (previous year: EUR 0.2 million) for various services, mainly consulting services. At the end of the fiscal year there were neither receivables nor liabilities from these business transactions. Guarantees have neither been given nor received.

## 28 Additional disclosures pursuant to Sec. 315a HGB

### **Declaration of compliance with the German Corporate Governance Code**

The declaration of compliance required by Sec. 161 AktG [“Aktiengesetz”; German Stock Corporations Act] for the listed company aleo solar AG, Prenzlau, Germany, which was included in the consolidated financial statements of the Bosch Group for the first time in the fiscal year 2009, was issued by the board of management and supervisory council of aleo solar AG and is publicly accessible on the internet site of aleo solar AG.

### **Remuneration of members of the board of management and supervisory council**

The total remuneration of the members of the board of management (including provisions) comes to EUR 18 million in the fiscal year (previous year: EUR 19 million), and that of the former members of the board of management and their dependants to EUR 10 million (previous year: EUR 9 million). The remuneration of the members of the supervisory council comes to approximately EUR 2 million. An amount of EUR 90 million (previous year: EUR 97 million) has been accrued for pension obligations to former members of the board of management and their survivors.

#### **Headcount**

	Annual average 2011		Annual average 2010	
	Total	thereof companies included proportionately	Total	thereof companies included proportionately
EU countries	176,851	17,139	170,522	16,481
Rest of Europe	16,097	3,084	14,171	2,578
Americas	34,347	2,087	32,875	2,015
Asia, Africa, Australia	67,961	9,660	58,850	7,907
	<b>295,256</b>	<b>31,970</b>	<b>276,418</b>	<b>28,981</b>

### **Auditor's fees**

The fees of the group auditor for audit and advisory services in Germany amount to:

Figures in millions of euros	2011	2010
Fees for		
Audit services	4.1	4.4
Audit-related services	0.1	0.1
Tax advisory services	1.1	1.4
Other services	2.4	2.5

# List of shareholdings of the Bosch Group as of December 31, 2011

## 1 Consolidated group

Germany	Company name	Registered office	Percentage share of capital held
	Robert Bosch GmbH	Stuttgart	
	aleo solar AG	Prenzlau	90.7
	aleo solar Deutschland GmbH	Oldenburg	100
	aleo solar Dritte Produktion GmbH	Prenzlau	100
	Beissbarth GmbH	Munich	100 <sup>1, 2</sup>
	Bosch Access Systems GmbH	Würselen	100
	Bosch Communication Center Magdeburg GmbH	Magdeburg	100
	Bosch Emission Systems GmbH & Co. KG	Stuttgart	55
	Bosch Engineering GmbH	Abstatt	100 <sup>1, 2</sup>
	Bosch Packaging Services GmbH	Viersen	100 <sup>1</sup>
	Bosch Packaging Systems GmbH	Remshalden	100 <sup>1</sup>
	Bosch Pensionsgesellschaft mbH	Stuttgart	100 <sup>1</sup>
	Bosch Rexroth AG	Stuttgart	100 <sup>1, 2</sup>
	Bosch Rexroth Electric Drives and Controls GmbH	Lohr am Main	100 <sup>1</sup>
	Bosch Rexroth Filtration Systems GmbH	Ketsch	100 <sup>1</sup>
	Bosch Rexroth Mechatronics GmbH	Schweinfurt	100 <sup>1</sup>
	Bosch Rexroth Pneumatics GmbH	Laatzen	100 <sup>1</sup>
	Bosch Sensortec GmbH	Kusterdingen	100 <sup>1</sup>
	Bosch Sicherheitssysteme Engineering GmbH	Nuremberg	100
	Bosch Sicherheitssysteme GmbH	Stuttgart	100 <sup>2</sup>
	Bosch Sicherheitssysteme Montage und Service GmbH	Weimar	100
	Bosch Solar CISTech GmbH	Brandenburg/Havel	90.7
	Bosch Solar Energy AG	Erfurt	100 <sup>1, 2</sup>
	Bosch Solar Operations GmbH	Erfurt	100 <sup>1</sup>
	Bosch Solar Thin Film GmbH	Erfurt	100
	Bosch Solar Wafers GmbH	Arnstadt	100 <sup>1</sup>
	Bosch Solarthermie GmbH	Wettingen	100 <sup>1</sup>
	Bosch Telecom Holding GmbH	Stuttgart	100 <sup>1, 2</sup>
	Bosch Thermotechnik GmbH	Wetzlar	100 <sup>1, 2</sup>
	BSH Bosch und Siemens Hausgeräte GmbH	Munich	50 <sup>3</sup>
	Buderus Guss GmbH	Breidenbach	100 <sup>1</sup>
	Buderus Immobilien GmbH	Wetzlar	96 <sup>1</sup>
	Elektra-Versicherungsvermittlungs-GmbH	Stuttgart	100 <sup>1</sup>
	ETAS Entwicklungs- und Applikationswerkzeuge für elektronische Systeme GmbH	Stuttgart	100 <sup>1, 2</sup>
	EVI Audio GmbH	Straubing	100
	FBG Foundation Brakes Germany GmbH	Abstatt	100
	Hägglunds Drives GmbH	Haan	100 <sup>1</sup>
	Hawera Probst GmbH	Ravensburg	100 <sup>1</sup>
	Holger Christiansen Deutschland GmbH	Wilnsdorf	100 <sup>1</sup>

<b>Germany</b>	<b>Company name</b>	<b>Registered office</b>	<b>Percentage share of capital held</b>
	Hüttlin GmbH	Schopfheim	100 <sup>1</sup>
	Bosch KWK Systeme GmbH	Lollar	100 <sup>1</sup>
	Landau Electronic GmbH	Mörfelden-Walldorf	100
	Bosch Industrikessel GmbH	Gunzenhausen	100 <sup>1</sup>
	Moehwald GmbH	Homburg/Saar	100 <sup>1</sup>
	Pharmatec GmbH	Dresden	100 <sup>1</sup>
	Robert Bosch Car Multimedia GmbH	Hildesheim	100 <sup>1</sup>
	Robert Bosch Car Multimedia Holding GmbH	Hildesheim	100 <sup>1, 2</sup>
	Robert Bosch Elektronik GmbH	Salzgitter	100 <sup>1</sup>
	Robert Bosch Elektrowerkzeuge GmbH	Sebnitz	100 <sup>1</sup>
	Robert Bosch Erste Vermögensverwaltungsgesellschaft mbH	Gerlingen	100 <sup>1, 2</sup>
	Robert Bosch Fahrzeugelektrik Eisenach GmbH	Eisenach	100 <sup>1</sup>
	Robert Bosch Healthcare GmbH	Waiblingen	100 <sup>1</sup>
	Robert Bosch Venture Capital GmbH	Gerlingen	100 <sup>1</sup>
	Robert Bosch Versicherungsvermittlungs-GmbH	Stuttgart	100 <sup>1</sup>
	Robert Bosch Zweite Vermögensverwaltungsgesellschaft mbH	Gerlingen	100 <sup>1</sup>
	sia Abrasives Deutschland GmbH	Solingen	100
	sia Abrasives Holding GmbH	Solingen	100
	Sieger Heizsysteme GmbH	Siegen	100 <sup>1</sup>
	UC Vermögensverwaltung GmbH	Stuttgart	100 <sup>1</sup>
	ZF Lenksysteme GmbH	Schwäbisch Gmünd	50 <sup>3</sup>

<sup>1</sup> These companies make use of the exemption provided for in Sec. 264 (3) HGB

<sup>2</sup> These companies make use of the exemption provided for in Sec. 291 (2) HGB

<sup>3</sup> The consolidated financial statements were included proportionately in accordance with IAS 27.

<b>Outside Germany</b>	<b>Company name</b>	<b>Registered office</b>	<b>Percentage share of capital held</b>
<b>Europe</b>			
<b>Austria</b>	Bosch Rexroth GmbH	Pasching	100
	Buderus Austria Heiztechnik GmbH	Wels	100
	Bosch Industriekessel Austria GmbH	Bischofshofen	100
	Robert Bosch AG	Vienna	100
	Robert Bosch Holding Austria GmbH	Vienna	100
	SBM Schoeller-Bleckmann-Medizintechnik GmbH	Ternitz	100
<b>Belgium</b>	Bosch Rexroth N.V.	Brussels	100
	Bosch Security Systems N.V. / S.A.	Kortrijk-Marke	100
	Bosch Thermotechnology N.V. / S.A.	Leuven-Heverlee	100
	Robert Bosch Produktie N.V.	Tienen	100
	Robert Bosch S.A.	Anderlecht (Brussels)	100
	Servico N.V.	Aartselaar	100
	sia Abrasives Belgium N.V. / S.A.	Mollem	100
<b>Czech Republic</b>	Bosch Diesel s.r.o.	Jihlava	100
	Bosch Rexroth spol. s.r.o.	Brno	100
	Bosch Thermotechnika s.r.o.	Krnov	100
	Robert Bosch odbytova s.r.o.	Prague	100
	Robert Bosch, spol. s.r.o.	České Budějovice	100
<b>Denmark</b>	Bosch Rexroth A/S	Hvidovre	100
	Holger Christiansen A/S	Esbjerg	100
	Robert Bosch A/S	Ballerup	100
<b>Finland</b>	Bosch Rexroth Oy	Vantaa	100
	Robert Bosch Oy	Vantaa	100
<b>France</b>	Bosch Centre de Service S.A.S.	Forbach	100
	Bosch Packaging Services S.a.r.l.	Hoenheim	100
	Bosch Rexroth DSI S.A.S.	Vénissieux	100
	Bosch Rexroth Fluidtech S.A.S.	Bonneville	100
	Bosch Rexroth S.A.S.	Vénissieux	100
	Bosch Rexroth (France) S.A.S.	Vénissieux	100
	Bosch Security Systems S.A.S. France	Clamart	100
	Buderus Chauffage S.A.S.	Haguenau	100
	E.L.M. Leblanc S.A.S.U.	Drancy	100
	Foundation Brakes France S.A.S.	Drancy	100
	Geminox S.A.S.U.	Saint Thégonnec	100

<b>Outside Germany</b>	<b>Company name</b>	<b>Registered office</b>	<b>Percentage share of capital held</b>
	Hägglunds Drives S.a.r.l.	Grenoble	100
	Holger Christiansen France S.A.S.	Olivet	100
	Robert Bosch (France) S.A.S.	Saint-Ouen (Paris)	100
	sia Abrasives France S.a.r.l.	Roissy Ch.-de-Gaulle	100
<b>Greece</b>	Bosch Thermotechniki S.A.	Athens	100
	Robert Bosch S.A.	Peristeri (Athens)	100
<b>Hungary</b>	Bosch Rexroth Kft.	Budapest	100
	Bosch Rexroth Pneumatika Kft.	Eger	100
	Robert Bosch Elektronika Gyártó Kft.	Hatvan	100
	Robert Bosch Energy and Body Systems Kft.	Miskolc	100
	Robert Bosch Kft.	Budapest	100
	Robert Bosch Power Tool Elektromos Szerszámgyártó Kft.	Miskolc	100
<b>Ireland</b>	Robert Bosch Ireland Ltd.	Portlaoise	100
<b>Italy</b>	aleo solar Italia S.r.l.	Treviso	100
	BMA Abrasives S.p.A.	Borgo San Giovanni (Lodi)	100
	Bosch Rexroth Oil Control S.p.A.	Milan	94.5
	Bosch Rexroth S.p.A.	Cernusco sul Naviglio, Milan	100
	Bosch Security Systems S.p.A.	Milan	100
	Centro Studi Componenti per Veicoli S.p.A.	Modugno (Bari)	100
	Foundation Brakes Italy S.r.l.	Milan	100
	Freud Produzioni Industriali S.p.A.	Milan	100
	Freud S.p.A.	Brugherio	100
	Holger Christiansen Italia S.r.l.	Bologna	100
	ROBERT BOSCH S.p.A.	Milan	100
	SICAM S.r.l.	Correggio (Reggio Emilia)	100
	Tecnologie Diesel e Sistemi Frenanti S.p.A.	Modugno (Bari)	100
	VHIT S.p.A.	Offanengo (Crema)	100
<b>Luxembourg</b>	Ferroknepper Buderus S.A.	Esch-sur-Alzette	100
<b>Malta</b>	Robert Bosch Finance Malta, Ltd.	Valetta	100
	Robert Bosch Holding Malta, Ltd.	Valetta	100

<b>Outside Germany</b>	<b>Company name</b>	<b>Registered office</b>	<b>Percentage share of capital held</b>
<b>Netherlands</b>	Bosch Communications Center B.V.	Nijmegen	100
	Bosch Packaging Technology B.V.	Schiedam	100
	Bosch Rexroth B.V.	Boxtel	100
	Bosch Security Systems B.V.	Eindhoven	100
	Bosch Thermotechniek B.V.	Deventer	100
	Bosch Thermotechniek Holding B.V.	Deventer	100
	Bosch Transmission Technology B.V.	Tilburg	100
	Foundation Brakes Holding B.V.	Boxtel	100
	Holger Christiansen Benelux B.V.	Etten-leur	100
	Nefit B.V.	Deventer	100
	Nefit Vastgoed B.V.	Deventer	100
	Professional Communication, Security & Imaging International Holding B.V.	Eindhoven	100
	Robert Bosch B.V.	Hoofddorp (Amsterdam)	100
	Robert Bosch Holding Nederland B.V.	Boxtel	100
	Robert Bosch Investment Nederland B.V.	Boxtel	100
	Robert Bosch Packaging Technology B.V.	Weert	100
	Skil Europe B.V.	Breda	100
	Telex Holding Germany B.V.	Boxtel	100
	Telex Holding Hong Kong B.V.	Boxtel	100
	Telex Holding Singapore B.V.	Boxtel	100
<b>Norway</b>	Bosch Rexroth A/S	Ski	100
	Robert Bosch A/S	Ski	100
<b>Poland</b>	Bosch Rexroth Sp. z o.o.	Pruszków	100
	Buderus Technika Grawcza Sp. z o.o.	Tarnowo Podgórne	100
	Foundation Brakes Poland Sp. z o.o.	Mirkow	100
	Holger Christiansen Polska Sp. z o.o.	Poznan	100
	ROBERT BOSCH Sp. z o.o.	Warsaw	100
<b>Portugal</b>	Bosch Car Multimedia Portugal, S.A.	Braga	100
	Bosch Security Systems, S.A.	Ovar	100
	Bosch Termotecnologia, S.A.	Aveiro	100
	Robert Bosch Portugal, SGPS, S.A.	Lisbon	100
	Robert Bosch Travões, S.A.	Abrantes (Lisbon)	100
	Robert Bosch, S.A.	Lisbon	100
<b>Romania</b>	Bosch Communication Center S.R.L.	Timisoara	100
	Bosch Rexroth S.R.L.	Bucharest	100
	ROBERT BOSCH S.R.L.	Bucharest	100

<b>Outside Germany</b>	<b>Company name</b>	<b>Registered office</b>	<b>Percentage share of capital held</b>
<b>Russian Federation</b>	OOO Bosch Rexroth	Moscow	100
	OOO Bosch Power Tools	Engels	100
	OOO Buderus Otopitelnaja Technika	Moscow	99
	OOO Robert Bosch	Moscow	100
	Robert Bosch Saratow AG	Engels	100
<b>Slovakia</b>	Holger Christiansen Produktion Slovakia s.r.o.	Bernolákovo	100
<b>Slovenia</b>	Indramat electromotorji d.o.o.	Skofja Loka	100
<b>Spain</b>	aleo solar distribución España S.L.	Barcelona	100
	aleo solar España S.L.	Barcelona	100
	Bosch Rexroth, S.L.	Barcelona	100
	Bosch Security Systems S.A.	Madrid	100
	BOSCH SISTEMAS DE FRENADO, S.L.	Madrid	100
	Nueva Braking System S.L.U.	Madrid	100
	ROBERT BOSCH ESPAÑA FÁBRICA CASTELLET S.A.	Castellet	100
	ROBERT BOSCH ESPAÑA FÁBRICA MADRID S.A.	Madrid	100
	ROBERT BOSCH ESPAÑA FÁBRICA TRETO S.A.	Treto	100
	Robert Bosch España Gasoline Systems S.A.	Madrid	100
	ROBERT BOSCH ESPAÑA, S.L.U.	Madrid	100
	sia Abrasives Espana S.A.U.	Madrid	100
<b>Sweden</b>	Bosch Rexroth Teknik AB	Stockholm	100
	Bosch Thermoteknik AB	Tranas	100
	Hägglunds Drives AB	Mellansel	100
	Hägglunds Drives Production AB	Mellansel	100
	Holger Christiansen Sverige AB	Örebro	100
	Robert Bosch AB	Kista	100
<b>Switzerland</b>	Bosch Packaging Services AG	Beringen	100
	Bosch Packaging Systems AG	Beringen	100
	Bosch Packaging Technology SA	Romanel-sur-Lausanne	100
	Bosch Rexroth Schweiz AG	Buttikon	100
	Buderus Heiztechnik AG	Pratteln	100
	Buderus Heiztechnik Holding AG	Pratteln	100
	Robert Bosch AG	Zuchwil	100
	Robert Bosch Internationale Beteiligungen AG	Zuchwil	100
	Sapal S.A.	Ecublens	100

<b>Outside Germany</b>	<b>Company name</b>	<b>Registered office</b>	<b>Percentage share of capital held</b>
	Scintilla AG	Solothurn	100
	sia Abrasives Industries AG	Frauenfeld	100
	TeleAlarm S.A.	La Chaux-de-Fonds	100
<b>Turkey</b>	Bosch Fren Sistemleri Sanayi ve Ticaret A.S.	Bursa	84.5
	Bosch Rexroth Otomasyon Sanayi ve Ticaret A.S.	Sefaköy-Istanbul	100
	Bosch Sanayi ve Ticaret A.S.	Bursa	100
	Bosch Termoteknik Isitma ve Klima Ticaret A.S.	Istanbul	100
	Bosch Termoteknik Sanayi ve Ticaret A.S.	Manisa	100
	Foundation Brakes Frenleme Sistemleri Otomotiv Sanayi ve Ticaret A.S.	Bursa	100
<b>Ukraine</b>	Holger Christiansen Production Ukraine	Krakovets, Iviv region	100
<b>United Kingdom</b>	Bosch Lawn and Garden Ltd.	Stowmarket, Suffolk	100
	Bosch Packaging Technology Limited	Derby	100
	Bosch Rexroth Ltd.	St. Neots	100
	Bosch Rexroth UK Holdings Ltd.	St. Neots	100
	Bosch Security Systems Ltd.	Denham	100
	Bosch Thermotechnology Ltd.	Worcester	100
	Derwent Systems Ltd.	Cramlington	100
	Extreme CCTV (UK) Ltd.	Cramlington	100
	Forward Vision CCTV Ltd.	Church Crookham	100
	Hägglunds Drives Limited	Wakefield	100
	Holger Christiansen UK Ltd.	Nottingham	100
	Robert Bosch Finance Ltd.	Denham	100
	Robert Bosch Investment Ltd.	Warndon, Worcester	100
	Robert Bosch Ltd.	Denham	100
	Robert Bosch UK Holdings Limited	Denham	100
	sia Abrafoam Ltd.	Alfreton	100
	sia Abrasives (G.B.) Ltd.	Greetland	100
	sia Abrasives Holding Ltd.	Greetland	100
	sia Fibral Ltd.	Greetland	100
	Telex Communications (UK) Ltd.	Mitcham	100
	Worcester Group plc	Warndon, Worcester	100
	Worcester Group Properties Ltd.	Warndon, Worcester	100

<b>Outside Germany</b>	<b>Company name</b>	<b>Registered office</b>	<b>Percentage share of capital held</b>
<b>Americas</b>			
<b>Argentina</b>	Bosch Rexroth S.A.I.C.	Buenos Aires	100
	Robert Bosch Argentina Industrial S.A.	Buenos Aires	100
<b>Brazil</b>	AB Sistema de Freios Ltda	Campinas	100
	Bosch Rexroth Ltda.	Atibaia-SP	100
	Robert Bosch Ltda.	Campinas	100
	Robert Bosch Tecnologia de Embalagem Ltda.	Barueri-São Paulo	100
	sia Abrasivos Industriais Ltda.	São José dos Pinhais	100
<b>Canada</b>	Bosch Rexroth Canada Corporation	Welland, ON	100
	Extreme CCTV Inc.	Burnaby, BC	100
	Freud Canada Inc.	Mississauga, ON	100
	ROBERT BOSCH INC.	Mississauga, ON	100
<b>Mexico</b>	Bosch Rexroth, S.A. de C.V.	Mexico, D.F.	100
	Frenados Mexicanos, S.A. de C.V.	Aguascalientes	100
	Morse Automotive Corporation - Mexico, S. de R.L. de C.V.	Juarez	100
	Robert Bosch Mexico Holding, S.A. de C.V.	Mexico City	100
	Robert Bosch Sistemas Automotrices, S.A. de C.V.	Juarez	100
	Robert Bosch Mexico Sistemas Automotrices, S.A. de C.V.	San Luis Potosi	100
	Robert Bosch Tool de Mexico, S.A. de C.V.	Mexicali	100
	Robert Bosch, S. de R.L. de C.V.	Toluca	100
	Saguaro Electronica, S.A. de C.V.	Hermosillo	100
<b>United States</b>	aleo solar North America Inc.	Westminster, CO	100
	Bosch Brake Components LLC	Broadview, IL	100
	Bosch Packaging Services Inc.	Raleigh, NC	100
	Bosch Packaging Technology, Inc.	New Richmond, WI	100
	Bosch Rexroth Corporation	Lehigh Valley, PA	100
	Bosch Security Systems Inc.	Burnsville, MN	100
	Bosch Thermotechnology Corporation	Londonderry, NH	100
	Compu-Spread Corporation	Delano, DE	100
	ETAS Inc.	Ann Arbor, MI	100
	FHP Manufacturing Company	Fort Lauderdale, FL	100
	Freud America Inc.	High Point, NC	100
	Robert Bosch Healthcare Systems, Inc.	Farmington Hills, MI	100
	Holger Christiansen North America Inc.	Suwanee, GA	100
	PBR International USA Ltd.	Knoxville, TN	100
	PBR Knoxville LLC	Knoxville, TN	100

<b>Outside Germany</b>	<b>Company name</b>	<b>Registered office</b>	<b>Percentage share of capital held</b>
	Purolator Filters North America LLC	Fayetteville, NC	50 <sup>4</sup>
	Robert Bosch Finance LLC	Broadview, IL	100
	ROBERT BOSCH FUEL SYSTEMS LLC	Kentwood, MI	100
	Robert Bosch LLC	Broadview, IL	100
	Robert Bosch North America Corporation	Broadview, IL	100
	Robert Bosch Packaging Technology Inc.	Brooklyn Park, MN	100
	Robert Bosch Tool Corporation	Louisville, IL	100
	sia Abrasives, Inc. USA	Charlotte, NC	100
	Vetronix Corporation	Santa Barbara, CA	100
<b>Venezuela</b>	Inversiones 421.10 (Venezuela Holding)	Caracas	100
	Skil Venezolana SRL	Caracas	100
<b>Asia</b>			
<b>China</b>	Bosch (China) Investment Ltd.	Shanghai	100
	Bosch (Shanghai) Security Systems Ltd.	Shanghai	100
	Bosch (Zhuhai) Security Systems Co., Ltd.	Zhuhai	100
	Bosch Automotive Diesel Systems Co., Ltd.	Wuxi	67
	Bosch Automotive Products (Changsha) Co., Ltd.	Changsha	100
	Bosch Automotive Products (Suzhou) Co., Ltd.	Suzhou	100
	Bosch Chassis Systems (Dalian) Co., Ltd.	Dalian	100
	Bosch Packaging Technology (Hangzhou) Co., Ltd.	Hangzhou	100
	Bosch Power Tools (China) Ltd.	Hangzhou	100
	Bosch Rexroth (Beijing) Hydraulic Co., Ltd.	Beijing	100
	Bosch Rexroth (Changzhou) Co., Ltd.	Changzhou	100
	Bosch Rexroth (China) Ltd.	Hong Kong	100
	Bosch Rexroth (Xi'an) Electric Drives and Controls Co., Ltd.	Xi'an	100
	Bosch Security Systems Ltd.	Hong Kong	100
	Bosch Trading (Shanghai) Co., Ltd.	Shanghai	100
	ETAS Automotive Technology (Shanghai) Co., Ltd.	Shanghai	100
	Foundation Brakes (Suzhou) Co., Ltd.	Suzhou	100
	Hägglunds Drives Shanghai Ltd.	Shanghai	100
	Robert Bosch Company Ltd.	Hong Kong	100
	Shanghai Bosch Rexroth Hydraulics & Automation Ltd.	Shanghai	100
	United Automotive Electronic Systems Co., Ltd.	Shanghai	51 <sup>4</sup>
<b>India</b>	Bosch Automotive Electronics India Private Ltd.	Bangalore	100
	Bosch Chassis Systems India Ltd.	Pune	97.9
	Bosch Ltd.	Bangalore	71.2
	Bosch Rexroth (India) Ltd.	Ahmedabad	96.4

<b>Outside Germany</b>	<b>Company name</b>	<b>Registered office</b>	<b>Percentage share of capital held</b>
	Foundation Brake Manufacturing Limited	Pune	100
	Hägglunds Drives (India) Private Limited	Pune	100
	Robert Bosch Engineering and Business Solutions Ltd.	Bangalore	100
<b>Japan</b>	Bosch Corporation	Tokyo	100
	Bosch Packaging Services K.K.	Chiba	100
	Bosch Packaging Technology K.K.	Tokyo	100
	Bosch Rexroth Corporation	Ibaraki-ken	99.9
	Daito Hydraulics Co., Ltd.	Tochigi-ken, Nasu-gun	100
	ETAS K.K.	Yokohama	100
	EVI Audio (Japan) Ltd.	Tokyo	100
	FA Niigata Co., Ltd.	Izumozaki-machi/ Niigata pref.	100
	Foundation Brakes Japan Corporation	Tokyo	100
	Fuji Aitac Co., Ltd.	Ora-gun/Gunma pref.	100
	Gunma Seiki Co., Ltd.	Takasaki-shi/ Gunma pref.	100
	Nippon Injector Corporation	Odawara-City	50
	Tokyo Foundry Co., Ltd.	Fukaya-shi	100
<b>Korea</b>	Bosch Electrical Drives Co., Ltd.	Buyong	100
	Bosch Rexroth Korea Ltd.	Busan	100
	KEFICO Corporation	Gunpo	50 <sup>4</sup>
	Robert Bosch Korea Diesel Ltd.	Daejeon	100
	Robert Bosch Korea Ltd.	Daejeon	100
<b>Malaysia</b>	Bosch Power Tools Engineering Sdn. Bhd.	Penang	100
	Bosch Rexroth Sdn. Bhd.	Shah Alam, Selangor	100
	FMP Automotive (Malaysia) Sdn. Bhd.	Shah Alam, Selangor	100
	Pacific BBA (Malaysia) Sdn. Bhd.	Shah Alam, Selangor	100
	PBR (Malaysia) Sdn. Bhd.	Shah Alam, Selangor	100
	ROBERT BOSCH (MALAYSIA) SDN. BHD.	Penang	100
	ROBERT BOSCH POWER TOOLS SDN. BHD.	Penang	100
	Robert Bosch Sdn. Bhd.	Kuala Lumpur	100
<b>Singapore</b>	ADC Technologies International Pte. Ltd.	Singapore	100
	BOSCH PACKAGING TECHNOLOGY (SINGAPORE) PTE. LTD.	Singapore	100
	Bosch Rexroth Pte. Ltd.	Singapore	100
	Robert Bosch (South East Asia) Pte. Ltd.	Singapore	100

<b>Outside Germany</b>	<b>Company name</b>	<b>Registered office</b>	<b>Percentage share of capital held</b>
<b>Taiwan</b>	Bosch Rexroth Co. Ltd.	Taipei Hsien	100
<b>Thailand</b>	Bosch Automotive Thailand Co. Ltd.	Rayong	87.9
	Bosch Chassis Systems (Thailand) Ltd.	Rayong	100
	FMP Distribution Ltd.	Rayong	50.1
	FMP Group (Thailand) Ltd.	Rayong	50.7
	Pacific BBA (Thailand) Ltd.	Bangkok	100
	Robert Bosch Ltd.	Bangkok	100
<b>Vietnam</b>	Robert Bosch Vietnam Co., Ltd.	Ho Chi Minh City	100
<b>Rest of the world</b>			
<b>Australia</b>	Abrasives Products Pty. Ltd.	Rowville	100
	aleo solar Australia Pty. Ltd.	Thornbury	100
	Australian Industrial Abrasives Pty. Ltd.	Rowville	100
	Bosch Chassis Systems Australia Pty. Ltd.	Melbourne	100
	Bosch Rexroth Pty. Ltd.	Kings Park	100
	Bosch Security Systems Pty. Ltd.	Sydney	100
	Pacifica Group Pty. Ltd.	Melbourne	100
	PacMat China Pty. Ltd.	Melbourne	100
	Robert Bosch (Australia) Pty. Ltd.	Clayton	100
	sia Abrasives Australasia Holding Pty. Ltd.	Rowville	100
	sia Abrasives Australia Pty. Ltd.	Rowville	100
<b>New Zealand</b>	AIA Abrasives Ltd.	Christchurch	100
	Bosch Security Systems Ltd.	Auckland	100
	Robert Bosch Ltd.	Auckland	100
<b>South Africa</b>	Foundation Brakes (Pty.) Ltd.	Brits	100
	Robert Bosch (Pty.) Ltd.	Brits	100

<sup>4</sup> The financial statements were included proportionately in accordance with IAS 27

**2 Preconsolidated companies in the financial statements of the subgroups included proportionately**

<b>Company name</b>		<b>Registered office</b>
<b>Germany</b>		
BSH Bosch und Siemens Hausgeräte GmbH		Munich
BSH Hausgeräte Service GmbH		Munich
BSH Hausgeräte Service Nauen GmbH		Nauen
BSH Hausgeräte Vertriebs GmbH		Munich
BSH Hausgerätewerk Nauen GmbH		Nauen
BSH Vermögensverwaltungs-GmbH		Munich
CONSTRUCTA GmbH		Munich
Constructa-Neff Vertriebs-GmbH		Munich
Gaggenau Hausgeräte GmbH		Munich
Neff GmbH		Munich
Robert Bosch Hausgeräte GmbH		Munich
Siemens-Electrogeräte GmbH		Munich
ZF Lenksysteme GmbH		Schwäbisch Gmünd
ZF Lenksysteme Nacam GmbH		Bremen
<b>Europe</b>		
<b>Austria</b>		
BSH Finance Management GmbH		Vienna
BSH Hausgeräte Gesellschaft mbH		Vienna
BSH Home Appliances Holding GmbH		Vienna
<b>Belgium</b>		
BSH Home Appliances S.A.		Brussels
<b>Czech Republic</b>		
BSH domácí spotřebiče s.r.o.		Prague
<b>Denmark</b>		
BSH Hvidevarer A/S		Ballerup
<b>Finland</b>		
BSH Kodinkoneet Oy		Helsinki
<b>France</b>		
BSH Electroménager S.A.S.		Saint-Ouen
Gaggenau Industrie S.A.S.		Lipsheim
ZF - Systèmes de Directions France S.A.S.		Malignier
ZF Systèmes de Direction Nacam S.A.S.		Vendôme
<b>Greece</b>		
BSH Ikiakes Syskeves A.B.E.		Athens
<b>Hungary</b>		
BSH Háztartási Készülék Kereskedelmi Kft.		Budapest
ZF Lenksysteme Hungaria Kft.		Eger
<b>Italy</b>		
BSH Elettrodomestici S.p.A.		Milan

	<b>Company name</b>	<b>Registered office</b>
<b>Luxembourg</b>	BSH électroménagers S.A.	Luxembourg
<b>Netherlands</b>	BSH Huishoudapparaten B.V.	Amsterdam
<b>Norway</b>	BSH Husholdningsapparater A/S	Oslo
<b>Poland</b>	BSH Sprzet Gospodarstwa Domowego Sp. z o.o.	Warsaw
<b>Portugal</b>	BSHP Electrodomésticos, S.U., Lda.	Carnaxide
<b>Romania</b>	BSH Electrocasnice S.R.L.	Bucharest
<b>Russian Federation</b>	ООО BSH Bytovye Pribory	St. Petersburg
<b>Federation</b>	ООО BSH Bytowaja Technika	Moscow
<b>Slovakia</b>	BSH Drives and Pumps s.r.o.	Michalovce
<b>Slovenia</b>	BSH Hišni Aparati d.o.o.	Nazarje
<b>Spain</b>	BSH Electrodomésticos España, S.A.	Huarte
<b>Sweden</b>	BSH Home Appliances AB	Stockholm
<b>Switzerland</b>	BSH Hausgeräte AG	Geroldswil
<b>Turkey</b>	BSH Ev Aletleri Sanayi ve Ticaret A.S.	Istanbul
<b>Ukraine</b>	TOV BSH Pobutova Technika	Kiev
<b>United Kingdom</b>	BSH Home Appliances Ltd.	Milton Keynes
<b>Americas</b>		
<b>Argentina</b>	BSH Electrodomésticos S.A.	Buenos Aires
<b>Brazil</b>	BSH Indústria e Comércio de Eletrodomésticos Ltda.	São Paulo
	ZF Sistemas de Direção Ltda.	Sorocaba
<b>Canada</b>	BSH Home Appliances Ltd./ Electroménagers BSH Ltée	Mississauga, ON
<b>Mexico</b>	BSH Electrodomésticos S.A. de C.V.	Mexico City

	<b>Company name</b>	<b>Registered office</b>
<b>Peru</b>	BSH Electrodomésticos S.A.C.	Callao-Lima
<b>United States</b>	BSH Home Appliances Corporation	Huntington Beach, CA/ New Bern, NC
	ZF Steering Systems LLC	Florence, KY
<b>Uruguay</b>	Briky S.A.	Montevideo
<b>Asia</b>		
<b>China</b>	BSH Electrical Appliances (Anhui) Co., Ltd.	Chuzhou
	BSH Electrical Appliances (Jiangsu) Co., Ltd.	Nanjing
	BSH Home Appliances (China) Co., Ltd.	Nanjing
	BSH Home Appliances Co., Ltd.	Chuzhou
	BSH Home Appliances Holding (China) Co., Ltd.	Nanjing
	BSH Home Appliances Ltd.	Hong Kong
	BSH Home Appliances Service Jiangsu Co., Ltd.	Nanjing
	BSW Household Appliances Co., Ltd.	Wuxi
	KEFICO Automotive Systems (Beijing) Co., Ltd.	Beijing
	ZF Commercial Vehicle Steering (Shandong) Co., Ltd.	Jinan
	ZF Shanghai Steering Systems Co., Ltd.	Shanghai
	ZF Shanghai Steering System (Yantai) Co., Ltd.	Yantai
	ZF Steering Jincheng (Nanjing) Co., Ltd.	Nanjing
<b>India</b>	BSH Home Appliances Private Limited	Mumbai
	BSH Household Appliances Manufacturing Private Limited	Mumbai
<b>Israel</b>	BSH Home Appliances Ltd.	Tel Aviv
<b>Korea</b>	BSH Home Appliances Limited	Seoul
	KEFICO Corporation	Gunpo
<b>Malaysia</b>	BSH Home Appliances Sdn. Bhd.	Kuala Lumpur
	ZF Steerings (Malaysia) Sdn. Bhd.	Penang
<b>Saudi Arabia</b>	BSH Home Appliances Saudi Arabia LLC	Jeddah
<b>Singapore</b>	BSH Home Appliances Pte. Ltd.	Singapore
<b>Thailand</b>	BSH Home Appliances Ltd.	Bangkok
	BSH Home Appliances Manufacturing Ltd.	Kabinburi

	<b>Company name</b>	<b>Registered office</b>
<b>United</b>		
<b>Arab Emirates</b>	BSH Home Appliances FZE	Dubai
<b>Vietnam</b>	KEFICO Vietnam Company Limited	Hai Duong City
<b>Rest of the world</b>		
<b>Australia</b>	BSH Home Appliances Pty. Ltd.	Heatherton
<b>Morocco</b>	BSH Electroménagers (SA)	Casablanca
<b>New Zealand</b>	BSH Home Appliances Ltd.	Auckland
<b>South Africa</b>	BSH Home Appliances (Pty.) Ltd.	Johannesburg

### 3 Investments measured at cost or fair value

	<b>Company name</b>	<b>Registered office</b>	<b>Percentage share of capital held</b>
<b>Germany</b>	AIG Planungs- und Ingenieurgesellschaft mbH	Stuttgart	100
	Asanetwork GmbH	Willstätt	23.3
	Bosch Emission Systems Verwaltungs-GmbH	Stuttgart	55
	Bosch Energy and Building Solutions GmbH	Ditzingen	100
	Bosch Global Travel Management GmbH	Stuttgart	100
	Bosch Mahle Turbo Systems GmbH & Co. KG	Stuttgart	50
	Bosch Mahle Turbo Systems Verwaltungs GmbH	Stuttgart	50
	Bosch Management Support GmbH	Leonberg	100
	Bosch Pensionsfonds AG	Stuttgart	100
	Bosch Power Tec GmbH	Böblingen	100
	Bosch Rexroth Interlit GmbH	Joachimsthal	100
	Bosch SoftTec GmbH	Hildesheim	100
	Bosch Software Innovations GmbH	Immenstaad	100
	BT Magnet-Technologie GmbH	Herne	50
	CDE - Packaging GmbH	Glauburg-Stockheim	49
	EM-motive GmbH	Hildesheim	50
	Bosch Systems Engineering GmbH	Holzkirchen	100

	<b>Company name</b>	<b>Registered office</b>	<b>Percentage share of capital held</b>
	GFI Gesellschaft für Infrastrukturdienste mbH	Reutlingen	100
	Heliatek GmbH	Dresden	20.2
	Bosch Rexroth Monitoring Systems GmbH	Dresden	100
	inubit AG	Berlin	100
	Knorr-Bremse Systeme für Nutzfahrzeuge GmbH	Munich	20
	Makat Candy Technology GmbH	Dierdorf	100
	Mobility Media GmbH	Berlin	80
	part GmbH	Bad Urach	50
	Prüfzentrum Boxberg GmbH	Boxberg	100
	Robert Bosch Battery Solutions GmbH	Eisenach	100
	Robert Bosch Car Multimedia Personal Service GmbH	Hildesheim	100
	Robert Bosch Immobilien GmbH	Stuttgart	100
	Robert Bosch Immobilienverwaltungs GmbH & Co. KG	Stuttgart	100
	Robert Bosch Lizenzverwaltungsgesellschaft mbH	Holzkirchen	100
	Robert Bosch Technical and Business Solutions GmbH	Schwieberdingen	100
	Service- und Betriebsgesellschaft Heidehof GmbH	Stuttgart	100
	SupplyOn AG	Hallbergmoos	38.5
	thermea. Energiesysteme GmbH	Freital	26.9
	Valicare GmbH	Frankfurt am Main	100
	VB Autobatterie GmbH & Co. KGaA	Hannover	20
	VB Management GmbH	Hannover	20
<b>Europe</b>			
<b>Austria</b>	Bosch General Aviation Technology GmbH	Vienna	100
	sia Abrasives GmbH	Schwaz	100
<b>Belarus</b>	Robert Bosch OOO	Minsk	100
<b>Belgium</b>	EpiGaN N.V.	Leuven	22
<b>Bulgaria</b>	Robert Bosch EOOD	Sofia	100
<b>Croatia</b>	Robert Bosch d.o.o.	Zagreb	100
<b>Denmark</b>	Moeller & Devicon A/S	Sandved	100
	ScandiaPack ApS	Ballerup	24.2
<b>Estonia</b>	Robert Bosch OÜ	Tallinn	100

	<b>Company name</b>	<b>Registered office</b>	<b>Percentage share of capital held</b>
<b>France</b>	Bosch Techniques d'Emballage S.A.S.	Hoenheim	100
	ETAS S.A.S.	Rungis	100
	Loos France S.A.S.	Wattviller	100
<b>Georgia</b>	Robert Bosch Ltd.	Tiflis	100
<b>Greece</b>	Bosch Rexroth S.A.	Athens	100
<b>Hungary</b>	Bosch Electronic Service Kft.	Kecskemét	100
	Buderus Hungaria Futéstechnika Kft.	Szigetszentmiklós	100
	Bosch Packaging Systems Kft.	Pécel	100
<b>Italy</b>	aleo solar Distribuzione Italia S.r.l.	Milan	100
	ARESI S.p.A.	Brembate	100
	BARI SERVIZI INDUSTRIALI Società consortile a r.l.	Modugno	33.3
	Dana Rexroth Transmission Systems S.r.l.	Arco	50
	MA.NA. S.r.l.	Borgo San Giovanni (Lodi)	50
	Oleodinamica Gambini S.r.l.	Modena	20
<b>Kazakhstan</b>	TOO Robert Bosch	Almaty	99.9
<b>Latvia</b>	Robert Bosch SIA	Riga	100
<b>Lithuania</b>	UAB Robert Bosch	Vilnius	100
<b>Netherlands</b>	Robert Bosch Licensing Administration C.V.	Boxtel	100
<b>Poland</b>	Advanced Diesel Particulate Filters Sp. z o.o.	Wroclaw	100
	Loos Centrum Sp.z o.o.	Warsaw	26
<b>Russian Federation</b>	OOO "Construction & investments"	Khimki	100
<b>Serbia</b>	Robert Bosch DOO	Belgrade	100
<b>Slovakia</b>	Robert Bosch spol. s.r.o.	Bratislava	100
	Valicare s.r.o.	Trencin	51.1
<b>Slovenia</b>	Robert Bosch d.o.o.	Ljubljana	100
<b>Spain</b>	Industrial J. Gispert S.A.	Rubi (Barcelona)	100

	<b>Company name</b>	<b>Registered office</b>	<b>Percentage share of capital held</b>
<b>Switzerland</b>	Bosch Pouch Systems AG	Beringen	100
	Pharmatec Schweiz GmbH	Pratteln	100
	Rotzinger AG	Kaiseraugst	46.7
<b>Ukraine</b>	Robert Bosch Ltd.	Kiev	100
<b>United Kingdom</b>	aleo solar UK Limited	Denton Island, Newhaven	100
	Beissbarth UK Ltd.	Nottingham	100
	ETAS Ltd.	Osbaldwick York	100
	Freud Tooling UK Ltd.	Leeds	100
	LCX Solar Limited	Shepperton	33.3
<b>Americas</b>			
<b>Brazil</b>	Bosch Management Support Ltda.	Campinas	99.9
	Ishida do Brasil Ltda.	Osasco	50
	Metapar Usinagem Ltda.	Curitiba-Paraná	100
<b>Chile</b>	Robert Bosch S. A.	Santiago de Chile	100
<b>Columbia</b>	Robert Bosch Ltda.	Bogota	100
<b>Mexico</b>	sia Abrasivos México, S.A. de C.V.	Mexico City	100
	Robert Bosch México S.A. de C.V.	Mexico City	100
<b>Panama</b>	Robert Bosch Panama S.A.	Panama City	100
<b>Peru</b>	Robert Bosch S.A.C.	Lima	100
<b>United States</b>	Akustica Inc.	Pittsburgh, PA	100
	Associated Fuel Pump Systems Corporation	Anderson, SC	50
	Bosch Chassis Systems Columbia LLC	West Columbia, SC	100
	Bosch Emission Systems Group LLC	Kentwood, MI	100
	Bosch Energy Storage Solutions LLC	East Lansing, MI	100
	Bosch Management Services Corporation	Wilmington, DE	100
	Bosch Pouch Systems LLC	Raleigh, NC	100
	Bosch Solar Energy Corp.	Detroit, MI	100
	BSE PV LLC	Palo Alto, CA	100
	Bosch Software Innovations Corp.	Chicago, IL	100
	North America Fuel Systems Remanufacturing LLC	Kentwood, MI	50
	NSA Corp.	Sacramento, CA	100
	RoboToolz Inc.	Mountain View, CA	100

	<b>Company name</b>	<b>Registered office</b>	<b>Percentage share of capital held</b>
	RTI Technologies Co., Ltd.	York, PA	100
	Woodworking Tools Distribution LLC	High Point, NC	100
	EIQ Energy, Inc.	San Jose, CA	22.4
<b>Venezuela</b>	Bosch Rexroth S.A.	Caracas	100
	Robert Bosch S.A.	Caracas	100
<b>Asia</b>			
<b>China</b>	avim solar production Co. Ltd.	Gaomi	50
	Bosch (Donghai) Automotive Test & Technology Center Co., Ltd.	Donghai	100
	Bosch (Hulunbeier) Automotive Test and Technology Centre Co., Ltd.	Yakeshi	100
	Bosch Automotive Diagnostics Equipment (Beijing) Ltd.	Beijing	100
	Bosch Automotive Diagnostics Equipment (Shenzhen) Ltd.	Shenzhen	100
	Bosch Automotive Products (Chengdu) Co., Ltd.	Chengdu	100
	Bosch Gardening Equipment (Ningbo) Co. Ltd.	Yuyao City	100
	Bosch Laser Equipment (Dongguan) Limited	Dongguan	100
	Bosch Thermotechnology (Beijing) Co., Ltd.	Tianjin	100
	Dalian Rexroth Control Technology Ltd.	Dalian	60
	Freud International Trading (Shanghai) Co., Ltd.	Shanghai	100
	Loos China Ltd.	Hong Kong	100
	Nanjing Boven Power Tools Co.	Nanjing	50
	Bosch Automotive Products (Nanjing) Co., Ltd.	Nanjing	100
	Bosch Thermotechnology (Shanghai) Co., Ltd.	Shanghai	100
	Bosch Thermotechnology (Wuhan) Co., Ltd.	Wuhan	100
	Shanghai Electric Solar Energy Co., Ltd.	Shanghai	35
	sia Abrasives Company Ltd.	Hong Kong	30
	Taixiang Vehicle Replace Parts (Shenzhen) Co., Ltd.	Shenzhen	100
<b>India</b>	Bosch Electrical Drives India Private Ltd.	Chennai	85.5
	ETAS Automotive India Private Ltd.	Bangalore	100
	MHB Filter India Private Ltd.	Bangalore	50
	MIVIN Engineering Technologies Private Ltd.	Bangalore	100
	MICO Trading Private Ltd.	Bangalore	100
	Precision Seals Manufacturing Ltd.	Pune	100
<b>Indonesia</b>	P.T. Bosch Rexroth	Jakarta	100
	P.T. Robert Bosch	Jakarta	100
<b>Japan</b>	Advanced Driver Information Technology Corporation	Kariya-Shi, Aichi-Ken	50
	Bosch Engineering K.K.	Yokohama	100
	Kanto Seiatsu Kogyo Co., Ltd.	Kodama-cho	94.9

	<b>Company name</b>	<b>Registered office</b>	<b>Percentage share of capital held</b>
	Knorr-Bremse Commercial Vehicle Systems Japan, Ltd.	Toshima-ku, Tokyo	20
	Mecman Japan, Ltd.	Saitama-Ken, Yono-shi	40
	Ohta Iron Works Co., Ltd.	Isehara-shi, Kanagawa pref.	32
<b>Korea</b>	Doowon Precision Industry Co., Ltd.	Seoul	40
	ETAS Korea Co., Ltd.	Seoul	100
	SB LiMotive Company Ltd.	Suwon	50
<b>Malaysia</b>	Bosch Solar Energy Malaysia Sdn. Bhd.	Penang	100
	ROBERT BOSCH (PENANG) SDN. BHD.	Penang	100
<b>Philippines</b>	Robert Bosch Inc.	Manila	100
	Robert Bosch Communication Center Inc.	Manila	100
<b>Taiwan</b>	Robert Bosch Taiwan Co. Ltd.	Taipei	100
	Unipoint Electric MFG Co., Ltd.	Taipei	98.4
<b>United Arab Emirates</b>			
	Robert Bosch Middle East FZE	Dubai	100
<b>Vietnam</b>	Robert Bosch Engineering and Business Solutions Vietnam Co. Ltd.	Ho Chi Minh City	100
<b>Rest of the world</b>			
<b>Australia</b>	Beissbarth (Australia) Pty. Ltd.	Thomastown	100
	FMP Group (Australia) Pty. Ltd.	Ballarat	49
<b>New Zealand</b>	Bosch Rexroth Ltd.	East Tamaki, Auckland	100
<b>South Africa</b>	Hägglunds Drives South Africa (Pty.) Ltd.	Fourways	100

# Auditor's Report

## **Independent Auditors' Report**

To Robert Bosch Gesellschaft mit beschränkter Haftung, Stuttgart

### **Report on the Consolidated Financial Statements**

We have audited the accompanying consolidated financial statements of Robert Bosch Gesellschaft mit beschränkter Haftung, Stuttgart, and its subsidiaries, which comprise the income statement, the statement of comprehensive income, the statement of financial position, the statement of changes in equity, the statement of cash flows and the notes to the consolidated financial statements for the business year from January 1, 2011 to December 31, 2011.

#### *Managing Directors' Responsibility for the Consolidated Financial Statements*

The Managing Directors of Robert Bosch Gesellschaft mit beschränkter Haftung are responsible for the preparation of these consolidated financial statements. This responsibility includes that these consolidated financial statements are prepared in accordance with International Financial Reporting Standards, as adopted by the EU, and the additional requirements of German commercial law pursuant to § (Article) 315a Abs. (paragraph) 1 HGB ("Handelsgesetzbuch": German Commercial Code) and that these consolidated financial statements give a true and fair view of the net assets, financial position and results of operations of the group in accordance with these requirements. The Managing Directors are also responsible for the internal controls Management deems necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

#### *Auditor's Responsibility*

Our responsibility is to express an opinion on these consolidated financial statements based on our audit. We conducted our audit in accordance with § 317 HGB and German generally accepted standards for the audit of financial statements promulgated by the Institut der Wirtschaftsprüfer (Institute of Public Auditors in Germany) (IDW) and additionally observed the International Standards on Auditing (ISA). Accordingly, we are required to comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing audit procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The selection of audit procedures depends on the auditor's professional judgment. This includes the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In assessing those risks, the auditor considers the internal control system relevant to the entity's preparation of consolidated financial statements that give a true and fair view. The aim of this is to plan and perform audit procedures that are appropriate in the given circumstances, but not for the purpose of expressing an opinion on the effectiveness of the group's internal control system. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by the Managing Directors, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

### *Audit Opinion*

According to § 322 Abs. 3 Satz (sentence) 1 HGB, we state that our audit of the consolidated financial statements has not led to any reservations.

In our opinion based on the findings of our audit, the consolidated financial statements comply, in all material respects, with IFRSs, as adopted by the EU, and the additional requirements of German commercial law pursuant to § 315a Abs. 1 HGB and give a true and fair view of the net assets and financial position of the Group as at December 31, 2011 as well as the results of operations for the business year then ended, in accordance with these requirements.

## **Report on the Group Management Report**

We have audited the accompanying group management report of Robert Bosch Gesellschaft mit beschränkter Haftung for the business year from January 1, 2011 to December 31, 2011. The Managing Directors of Robert Bosch Gesellschaft mit beschränkter Haftung are responsible for the preparation of the group management report in accordance with the requirements of German commercial law applicable pursuant to § 315a Abs. 1 HGB. We conducted our audit in accordance with § 317 Abs. 2 HGB and German generally accepted standards for the audit of the group management report promulgated by the Institut der Wirtschaftsprüfer (Institute of Public Auditors in Germany) (IDW). Accordingly, we are required to plan and perform the audit of the group management report to obtain reasonable assurance about whether the group management report is consistent with the consolidated financial statements and the audit findings, as a whole provides a suitable view of the Group's position and suitably presents the opportunities and risks of future development.

According to § 322 Abs. 3 Satz 1 HGB we state that our audit of the group management report has not led to any reservations.

In our opinion based on the findings of our audit of the consolidated financial statements and group management report, the group management report is consistent with the consolidated financial statements, as a whole provides a suitable view of the Group's position and suitably presents the opportunities and risks of future development.

Stuttgart, March 9, 2012

PricewaterhouseCoopers  
Aktiengesellschaft  
Wirtschaftsprüfungsgesellschaft

Harald Kayser  
Wirtschaftsprüfer

## Ten-Year Summary of the Bosch Group

	2002	2003 <sup>1</sup>	2004 <sup>2</sup>	2005 <sup>2</sup>	2006	2007	2008	2009	2010	2011
<b>Sales revenue</b>	<b>34,977</b>	<b>36,357</b>	<b>38,954</b>	<b>41,461</b>	<b>43,684</b>	<b>46,320</b>	<b>45,127</b>	<b>38,174</b>	<b>47,259</b>	<b>51,494</b>
– of which generated outside Germany (as a percentage)	72	71	72	73	74	75	74	76	77	77
Research and development cost <sup>3</sup>	2,487	2,650	2,715	3,073	3,348	3,583	3,889	3,603	3,810	4,190
– as a percentage of sales revenue	7.1	7.3	7.0	7.4	7.7	7.7	8.6	9.4	8.1	8.1
Capital expenditure	2,006	2,028	2,377	2,923	2,670	2,634	3,276	1,892	2,379	3,226
– of which in Germany	903	1,002	1,057	974	968	1,138	1,610	928	1,023	1,161
– of which outside Germany	1,103	1,026	1,320	1,949	1,702	1,496	1,666	964	1,356	2,065
– as a percentage of sales revenue	5.7	5.6	6.1	7.0	6.1	5.7	7.3	5.0	5.0	6.3
– as a percentage of depreciation	108	118	135	156	116	108	136	80	100	142
Depreciation of property, plant, and equipment	1,865	1,713	1,758	1,870	2,309	2,428	2,410	2,374	2,373	2,265
Annual average number of associates (thousands)	226	229	234	249	258	268	283	275	276	295
– of which in Germany	103	105	107	110	110	111	114	113	112	117
– of which outside Germany	123	124	127	139	148	157	169	162	164	178
– as of Jan. 1 of subsequent year	224	232	238	251	261	271	282	271	284	303
Personnel expenses	10,815	10,994	11,179	11,936	12,534	12,896	12,994	12,787	14,132	14,719
<b>Total assets</b>	<b>27,475</b>	<b>31,995</b>	<b>41,170</b>	<b>45,554</b>	<b>46,940</b>	<b>48,568</b>	<b>46,761</b>	<b>47,509</b>	<b>52,683</b>	<b>54,616</b>
Equity	8,885	11,760	17,428	20,943	22,482	24,825	23,009	23,069	26,243	26,917
– as a percentage of total assets	32	37	42	46	48	51	49	49	50	49
Cash flow	3,352	3,727	3,977	4,352	4,521	5,052	4,032	1,910	5,460	4,959
– as a percentage of sales revenue	9.6	10.3	10.2	10.5	10.3	10.9	8.9	5.0	11.6	9.6
Profit after tax	650	1,100	1,870	2,450	2,170	2,850	372	-1,214	2,489	1,820
Unappropriated earnings (dividend of Robert Bosch GmbH)	60	60	63	63	69	72	75	67	82	88

**Currency figures in millions of euros**

<sup>1</sup> The provisions of the German commercial code were applied through 2003

<sup>2</sup> With the exception of profit after tax, without discontinued operations

<sup>3</sup> Including development work charged directly to customers



**Published by**

Robert Bosch GmbH  
 Corporate Communications,  
 Brand Management,  
 and Sustainability (C/CC)  
 Postfach 10 60 50  
 70049 Stuttgart  
 Germany  
 Phone +49 711 811-0  
 Fax +49 711 811-6630

**Senior Vice President**

Uta-Micaela Dürig



[www.bosch.com](http://www.bosch.com)

Additional information can be taken from  
 the company brochures

- Bosch today
- Corporate social responsibility

The above brochures can be ordered  
 in English at:

bosch@infoscan-sinsheim.de

**Cover illustration**

*The tree symbolizes the balance between  
 business and technological interests on  
 the one hand and social and environmental  
 interests on the other.*

**Photographs**

Thomas Bauer, Cologne

**Design**

Embassy, Berlin

**Pre-press**

GZD Media GmbH, Ditzingen, Germany

**Print**

Elanders Germany GmbH, Waiblingen



To meet the global challenges of our times, we develop, produce, and market energy-efficient solutions that protect the environment and conserve resources. We also create internet-based products. As a leading technology and services company with more than 300,000 associates worldwide, we take our corporate, social, and environmental responsibilities seriously. If you, too, believe in ideas that benefit people: [www.bosch.com/bosch-thinking](http://www.bosch.com/bosch-thinking)

**Beneficial.**  
*Our first consideration  
is people, wherever they  
live.*

**There's only  
one kind of  
technology we  
call advanced –  
the kind that  
benefits people.**



**There's no  
alternative to  
staying true  
to yourself.**

Mathew Grizzell  
Vice President Manufacturing

**Determined.**  
*We believe we can always  
get better.*



**Pioneering.**  
*Even today, we are work-  
ing on the technologies  
of tomorrow.*

Dr. Tilla Haubold  
Project Manager  
Corporate Research

### **Curious.**

*Only if you question what you're doing will you find more than one answer.*



If you know where your roots are, **you're at home anywhere in the world.**



**Philippe Gauß**  
Junior Managers Program  
Technical Sales

**We know** that we don't know everything.



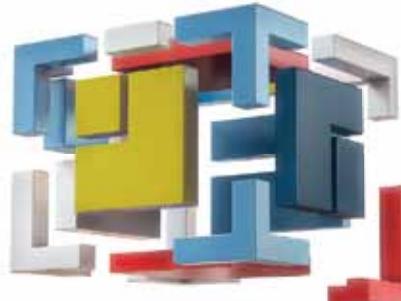
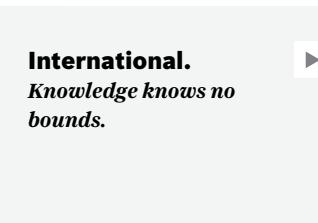
**Dr. Ghislain Mouli Sil**  
Development Engineer  
Automotive

### **International.**

*Knowledge knows no bounds.*

### **Diverse.**

*Innovations come about where people contribute their ideas.*



Being different is the only way to be **the perfect match.**

**Verena Bauder**  
Controller



**Dr. Ghislain Mouli Sil**  
Development Engineer  
Automotive

Global image campaign

# Think ahead. Get to the bottom of things. Work together – worldwide.

A shared way of thinking, a secure grasp of the corporate principles, and values that are translated into action combine to create the foundation for global success at Bosch. It is values and principles like these that guide our more than 300,000 associates worldwide, enabling them to develop innovative and beneficial solutions and products on a daily basis.



Animated microsite  
[www.bosch.com/bosch-thinking](http://www.bosch.com/bosch-thinking)



Smartphone-enabled  
microsite

A poster for Bosch Mobility Solutions. At the top, it lists several business units: Mobility Solutions | Energy & Building Technology | Automation & Control | Consumer Goods | Healthcare. The central image is a 3D rendering of several interlocking geometric blocks in blue, yellow, and red. Below the image, a man and a woman are shown from the waist up; the man is holding a red L-shaped block above his head. Text on the poster reads: "Being different is the only way to be **the perfect match.**". At the bottom left, there is a logo for "125 Years Bosch 1886–2011". On the right side, two names are listed: "Verena Bauder Controller" and "Dr. Ghislain Meull Sil Development Engineer Automotive". The Bosch logo and the tagline "Invented for life" are at the bottom right.

Poster series to accompany the initiative

**Robert Bosch GmbH**

Postfach 10 60 50  
70049 Stuttgart  
Germany  
Phone +49 711 811-0  
Fax +49 711 811-6630  
[www.bosch.com](http://www.bosch.com)

Printed in Germany



**BOSCH**  
Invented for life