



**BOSCH**  
Invented for life

ANNUAL REPORT

2016

# Bosch in figures

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Roughly **389,000**  
associates worldwide

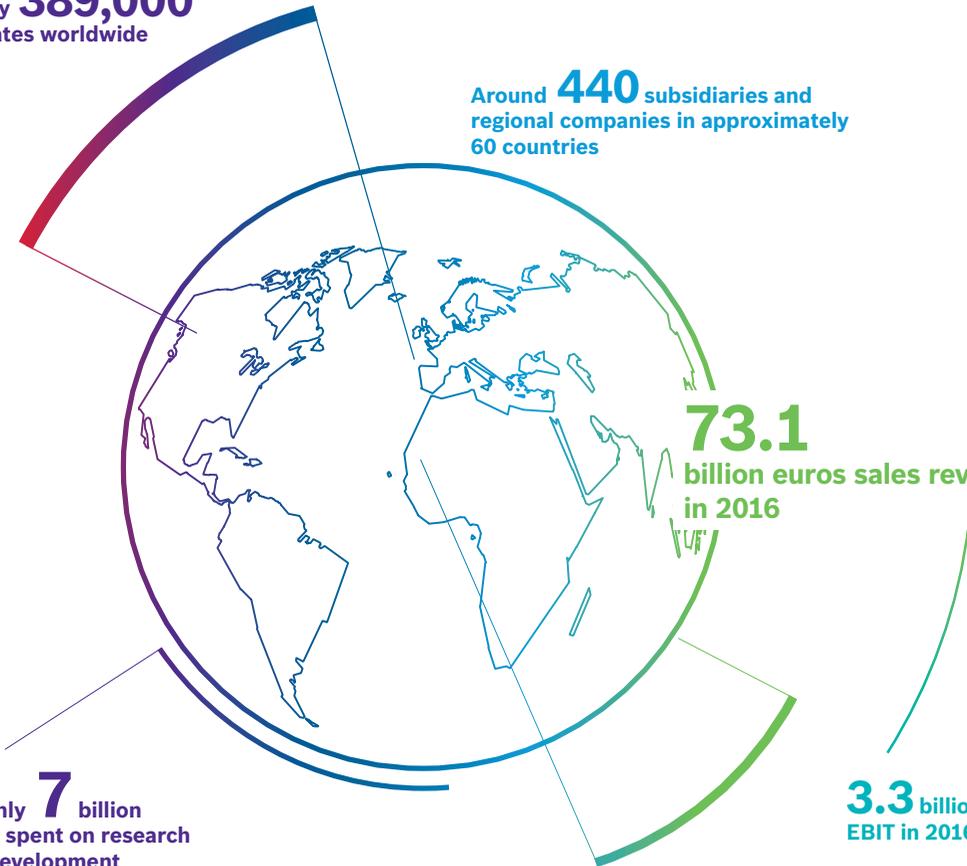
Around **440** subsidiaries and  
regional companies in approximately  
60 countries

**73.1**  
billion euros sales revenue  
in 2016

Roughly **7** billion  
euros spent on research  
and development

**3.3** billion euros  
EBIT in 2016

**120**  
engineering locations  
worldwide



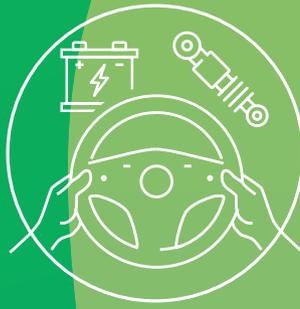
## Bosch Group key data

Figures in millions of euros

	2016	2015
<b>Sales revenue</b>	<b>73,129</b>	<b>70,607</b>
percentage change from previous year	3.6	44.2
percentage of sales revenue generated outside Germany	80	80
<b>Research and development cost</b>	<b>6,954</b>	<b>6,378</b>
as a percentage of sales revenue	9.5	9.0
<b>Capital expenditure</b>	<b>4,252</b>	<b>4,058</b>
as a percentage of depreciation	141	146
<b>Associates</b>		
average for the year	383,917	368,833
at December 31	389,281	374,778
<b>Total assets</b>	<b>81,875</b>	<b>77,266</b>
<b>Equity</b>	<b>36,084</b>	<b>34,424</b>
as a percentage of total assets	44	45
<b>EBIT</b>	<b>3,335</b>	<b>4,587</b>
as a percentage of sales revenue	4.6	6.5
<b>Profit after tax</b>	<b>2,374</b>	<b>3,537</b>
<b>Unappropriated earnings (dividend of Robert Bosch GmbH)</b>	<b>138</b>	<b>142</b>

**THE BOSCH GROUP** is a leading global supplier of technology and services. It employs roughly 389,000 associates worldwide (as of December 31, 2016). The company generated sales of 73.1 billion euros in 2016. Its operations are divided into four business sectors: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology. As a leading IoT company, Bosch offers innovative solutions for smart homes, smart cities, connected mobility, and connected manufacturing. It uses its expertise in sensor technology, software, and services, as well as its own IoT cloud, to offer its customers connected, cross-domain solutions from a single source. The Bosch Group's strategic objective is to create solutions for a connected life. Bosch improves quality of life worldwide with products and services that are innovative and spark enthusiasm. In short, Bosch creates technology that is "Invented for life." The Bosch Group comprises Robert Bosch GmbH and its roughly 440 subsidiaries and regional companies in some 60 countries. Including sales and service partners, Bosch's global manufacturing, engineering, and sales network covers nearly every country in the world. The basis for the company's future growth is its innovative strength. At 120 locations across the globe, Bosch employs some 59,000 associates in research and development.

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.

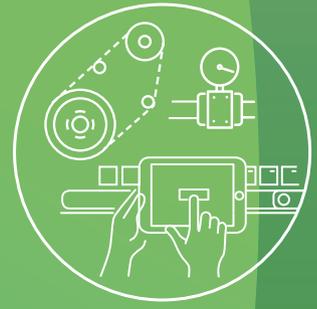


## MOBILITY SOLUTIONS

Gasoline Systems  
Diesel Systems  
Chassis Systems Control  
Electrical Drives  
Starter Motors and Generators  
Car Multimedia  
Automotive Electronics  
Automotive Aftermarket  
Automotive Steering

*Other businesses:*

Bosch Engineering GmbH  
Commercial Vehicles and Offroad Applications  
eBike Systems  
ETAS GmbH  
Two-Wheeler and Powersports



## INDUSTRIAL TECHNOLOGY

Drive and Control Technology<sup>1</sup>  
Packaging Technology

*Other businesses:*

Bosch Connected Industry



## CONSUMER GOODS

Power Tools  
BSH Hausgeräte GmbH



## ENERGY AND BUILDING TECHNOLOGY

Security Systems  
Thermotechnology  
Bosch Global Service Solutions

*Other businesses:*

Robert Bosch Smart Home GmbH

*Other businesses not allocated  
to business sectors:*

Bosch Healthcare Solutions GmbH  
Bosch Software Innovations GmbH  
Robert Bosch Start-up GmbH  
Robert Bosch Venture Capital GmbH

<sup>1</sup> Bosch Rexroth AG (100% Bosch-owned)

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### **Annual report 2016**

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# Foreword

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**Dear readers,**

The Bosch Group is embarking on a process of profound transformation. The internet of things and its accompanying increase in connectivity, together with the automation and electrification of vehicles, will revolutionize markets and the competitive environment. This will mean considerable opportunities and challenges. At the same time, the post-war global order is in flux. We are faced with seismic shifts – in the Americas and Europe as much as in Asia. Against this backdrop, we have two decisive tasks. The first is to increase our company's profitability, despite only moderate global economic growth and considerable global uncertainty. Our second task is to use this as a basis for successfully shaping the transformation of the Bosch Group. As a company, we are devoting a lot of energy to these undertakings.

With its great innovative strength, broad product portfolio, and global presence, Bosch is in an excellent position for the journey ahead: in a global economy that grew only moderately, we reached our growth targets in 2016 and were successful in many areas. However, we are having to make heavy upfront investments, thus systematically preparing the Bosch Group for the challenges of the future. This includes our activities in the fields of automated driving, electromobility, and connected manufacturing. And since artificial intelligence and software are very important for these fields, we are extending our expertise there. Merging our powertrain technology activities to form one strong Powertrain Solutions division is an important move in preparing for the upheavals relating to the internal-combustion engine. This area is currently feeling the negative effects not only of the debate about city driving bans, but also of the diesel engine manipulation affair. On this subject, at the end of 2016 the company reached a settlement with the vehicle owners affected in the United States. We are also continuing to cooperate fully with the investigating authorities in Germany and other countries.

For Bosch, financial independence is very important. It paves the way to putting our own stamp on the transformation in our markets, and to making the upfront investments that are needed for this. For this reason, we will work intensively on this transformation, as well as on increasing efficiency and productivity, and will constantly re-examine where we have to focus our efforts. Over the course of what is now our 130-year history, we have repeatedly opened up new areas of business and parted company with old ones. Moreover, times of change also call for new forms of collaboration. When faced with change, large companies have to be flexible and inventive. This calls for creativity on the part of all concerned, as well as intensive collaboration across divisional boundaries. Many things have already changed at Bosch. Its many initiatives and successful start-ups are a visible sign of the company's agility. To accompany the publication of our annual report, we profile these activities in an exclusively online magazine.

We in the company are working with great determination to seize opportunities and overcome challenges. In 2016, our 389,000 associates worldwide gave their all to take the Bosch Group forward. On behalf of the board of management, I would like to thank them for their hard work. At the same time, I would like to thank the employee representatives for their constructive contributions to the transformation that lies ahead, the shareholders and supervisory board for their support, and our business partners for the trust they have placed in us.

With best regards,



Dr. Volkmar Denner  
Chairman of the board of management

# Board of management

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Dr. Stefan Hartung

Dr. Markus Heyn

Dr. Volkmar Denner

Dr. Rolf Bulander

Prof. Stefan Asenkerschbaumer



Dr. Dirk Hoheisel

Christoph Kübel

Uwe Raschke

Dr. Werner Struth

Peter Tyroller

# Board of management

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## Dr. Volkmar Denner

Chairman

### Corporate responsibilities

- Corporate strategy
- Corporate communications
- Research and advance engineering
- Technology coordination and engineering methods
- Real estate and facilities

### Subsidiaries

- Bosch Healthcare Solutions GmbH
- Bosch Software Innovations GmbH
- Healthcare Telemedicine<sup>1</sup>
- Robert Bosch Venture Capital GmbH

## Dr. Dirk Hoheisel

### Corporate responsibility

- Mobility Solutions systems integration

### Divisions

- Chassis Systems Control
- Car Multimedia
- Automotive Electronics
- Automotive Steering

## Prof. Stefan Asenkerschbaumer

Deputy chairman

### Corporate responsibilities

- Finance and financial statements
- Controlling, planning, mergers and acquisitions
- Internal accounting and organization
- Purchasing and logistics
- Information technology
- In-house consultancy

## Dr. Markus Heyn

### Corporate responsibilities

- Mobility Solutions sales
- Marketing and sales

### Division

- Automotive Aftermarket

### Subsidiaries

- ETAS GmbH
- Bosch Engineering GmbH

### Regional responsibilities<sup>2</sup>

North America, South America

## Christoph Kübel

### Corporate responsibilities

- Human resources and social welfare, including senior executives
- External affairs, governmental and political relations
- Legal services
- Taxes
- Compliance management
- Internal auditing
- Intellectual property
- Insurance
- Environmental protection<sup>2</sup>

## Uwe Raschke

### Corporate responsibilities

- Consumer Goods business sector
- User experience

### Division

- Power Tools

### Subsidiary

- BSH Hausgeräte GmbH

### Regional responsibilities

Western Europe, Middle Eastern Europe, Russia, Middle East, Africa

## Presidents of the divisions

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### Manfred Baden<sup>5, 6</sup>

Car Multimedia

### Dr. Steffen Berns<sup>7</sup>

Car Multimedia

### Henning von Boxberg

Power Tools

### Dr. Jörg Fischer

Bosch Global Service Solutions

### Dr. Uwe Gackstatter

Diesel Systems

### Uwe Glock

Thermotechnology

### Gert van Iperen

Security Systems

### Dr. Ulrich Kirschner

Starter Motors and Generators

### Friedbert Klefenz<sup>8</sup>

Packaging Technology

### Dr. Stefan König<sup>9</sup>

Packaging Technology

### Harald Kröger<sup>10</sup>

Automotive Electronics

### Klaus Meder<sup>11</sup>

Automotive Electronics

### Rolf Najork<sup>12</sup>

Drive and Control Technology

### Stefan Seiberth

Gasoline Systems

### Christian Sobottka

Automotive Steering

### **Peter Tyroller**

**Regional responsibilities**  
Asia Pacific, India

### **Dr. Werner Struth<sup>3</sup>**

**Corporate responsibilities**

- Industrial Technology business sector
- Manufacturing coordination, production system development, investment planning
- Environmental and fire protection, safety

**Divisions**

- Drive and Control Technology
- Packaging Technology

**Regional responsibilities**  
North America, South America

### **Dr. Rolf Bulander**

**Corporate responsibilities**

- Mobility Solutions business sector
- Quality

**Divisions**

- Gasoline Systems
- Diesel Systems
- Electrical Drives
- Starter Motors and Generators

### **Dr. Stefan Hartung**

**Corporate responsibilities**

- Industrial Technology business sector<sup>2</sup>
- Energy and Building Technology business sector
- Manufacturing coordination<sup>2</sup>

**Divisions**

- Drive and Control Technology<sup>2</sup>
- Packaging Technology<sup>2</sup>
- Bosch Global Service Solutions
- Security Systems
- Thermotechnology

**Subsidiaries**

- Bosch Energy Storage Solutions LLC<sup>4</sup>
- Robert Bosch Smart Home GmbH

### **Gerhard Johannes Steiger**

Chassis Systems Control

### **Dr. Bernhard Straub**

Electrical Drives

### **Dr. Uwe Thomas<sup>5</sup>**

Automotive Aftermarket

### **Dr. Karl Tragl<sup>13</sup>**

Drive and Control Technology

<sup>1</sup> Until June 30, 2016

<sup>2</sup> From April 1, 2017

<sup>3</sup> Until March 31, 2017

<sup>4</sup> Until February 28, 2017

<sup>5</sup> Until January 31, 2017

<sup>6</sup> Automotive Aftermarket from February 1, 2017

<sup>7</sup> From February 1, 2017

<sup>8</sup> Until December 31, 2016

<sup>9</sup> From January 1, 2017

<sup>10</sup> From May 1, 2017

<sup>11</sup> Until April 30, 2017

<sup>12</sup> From February 1, 2016

<sup>13</sup> Until January 31, 2016

# Supervisory board report

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## Ladies and gentlemen,

For the Bosch Group, 2016 was a year of both success stories and challenges. The company is having to handle fundamental changes in its markets, as well as to make considerable upfront investments in promising areas such as connectivity via the internet of things and the electrification of vehicles. At the same time, it is having to equip its traditional business to meet the demands of the future. Securing the company's future position in automotive powertrain technology and developing new areas of business, as well as sharpening the focus of Bosch's portfolio and strengthening the competitiveness of certain units, were thus some of the matters the supervisory board concerned itself with.

In addition, the supervisory board critically examined other strategic challenges in detail. These included in-depth discussions about the future of mobility in general terms, the opportunities afforded by connectivity in manufacturing, and the prospects for the Chinese market, which has meanwhile taken on considerable significance for the Bosch Group. Furthermore, the committee formed in the fall of 2015 continued to closely follow the internal investigations prompted by the manipulation of diesel engine control units, and continuously assessed the risks arising from these issues. The entire supervisory board regularly solicited detailed reports about the findings of the investigations. Moreover, the supervisory board looked in detail at business developments as well as the financial and capital expenditure plans.

In our capacity as supervisory board, we regularly monitored the work of the board of management, and lent it our support relating to running the company, to developing Bosch Group strategy, and to individual matters affecting the company. We are obliged by law and the statutes to fulfill a number of tasks – an obligation which we fulfilled once more with the utmost care in the 2016 business year. In addition, outside of board meetings, the chairman of the supervisory board was regularly informed by the chairman of the board of management about current developments and events in the company. For us and the board of management, the highest priority is to ensure that the Bosch Group continues to develop sustainably and successfully. In this endeavor, our work together is open, conscientious, and constructive.

PricewaterhouseCoopers GmbH 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 December 31, 2016. The supervisory board discussed these documents at length and subjected them to its own examination. All members of the supervisory board had access to the auditor's reports. Moreover, at the supervisory board meeting, the auditor reported on the main findings of the audit, which were then discussed in detail. The supervisory board 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.

In mid-2016 and at the end of 2016 respectively, the employee representatives Hans Wolff and Christiane Benner retired from the supervisory board. Their places were taken by Mario Gutmann and Nadine Boguslawski. The supervisory board would like to thank the two former members for their dedication and good work, and the two new members for agreeing to play an active role on the board.

The supervisory board would also like to thank the board of management and all Bosch Group associates for their commitment over the past year. Their hard work and willingness to tackle the challenges of the future are decisive for giving the Bosch Group a head start in its future endeavors.

Stuttgart, March 2017

For the supervisory board



Franz Fehrenbach  
Chairman

## Supervisory board

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### **Franz Fehrenbach** **Stuttgart**

Chairman  
Managing partner of Robert Bosch Industrie-  
treuhand KG  
Former chairman of the board of management  
of Robert Bosch GmbH

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### **Alfred Löckle** **Ludwigsburg**

Deputy chairman  
Member of the works council of the  
Schwieberdingen plant, and chairman of the  
central works council as well as of the combined  
works council of Robert Bosch GmbH

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### **Christiane Benner** **Frankfurt**

(until December 31, 2016)  
Vice president of Industriegewerkschaft Metall,  
Frankfurt am Main

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### **Nadine Boguslawski** **Stuttgart**

(from January 1, 2017)  
Secretary of the regional directorate of the  
Industriegewerkschaft Metall trade union,  
Baden-Württemberg

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### **Dr. Christof Bosch** **Königsdorf**

Spokesperson for the Bosch family

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### **Christian Brunkhorst** **Mühlthal**

Representative of the chairman of  
Industriegewerkschaft Metall

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### **Prof. Elgar Fleisch** **St. Gallen**

(from April 9, 2016)  
Professor of information and technology  
management at the University of St. Gallen  
and ETH Zurich

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### **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,  
and member of the combined works council  
of Robert Bosch GmbH

### **Hartwig Geisel** **Leinfelden-Echterdingen**

Chairman of the works council of the Feuerbach  
plant and deputy chairman of the central works  
council as well as of the combined works council  
of Robert Bosch GmbH

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### **Mario Gutmann** **Bamberg**

(from July 1, 2016)  
Chairman of the works council of the Bamberg  
plant and member of the central works council  
of Robert Bosch GmbH

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### **Jörg Hofmann** **Esslingen**

President of Industriegewerkschaft Metall,  
Frankfurt am Main

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### **Prof. Lars G. Josefsson** **Stockholm**

Former president and chief executive officer  
of Vattenfall AB

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### **Prof. Michael Kaschke** **Oberkochen**

(from April 9, 2016)  
Chairman of the board of management  
of Carl Zeiss AG

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### **Dieter Klein** **Wolfersheim**

Member of the works council of the  
Homburg plant

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### **Prof. Renate Köcher** **Konstanz**

Managing director, Allensbach Institute for  
Public Opinion Research

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### **Prof. Olaf Kübler** **Zurich**

(until April 8, 2016)  
Former director, Eidgenössische Technische  
Hochschule (ETH) Zurich

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### **Matthias Georg Madelung** **Munich**

Member of the board of trustees of  
Robert Bosch Stiftung GmbH

### **Kerstin Mai** **Hildesheim**

Chairwoman of the works council of Robert  
Bosch Car Multimedia GmbH, Hildesheim,  
and member of the combined works council  
of Robert Bosch GmbH

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### **Dr. Wolfgang Malchow** **Pliezhausen**

Managing partner of Robert Bosch  
Industrietreuhand KG

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### **Urs B. Rinderknecht** **Zurich**

Former chief executive of UBS AG

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### **Tilman Todenhöfer** **Madrid**

(until April 8, 2016)  
Managing partner of Robert Bosch  
Industrietreuhand KG

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### **Dr. Richard Vogt** **Bühl**

Project director, Electrical Drives division,  
and chairman of the executives committee of  
Robert Bosch GmbH as well as of the combined  
executives committee of the Bosch Group in  
Germany

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### **Prof. Beatrice Weder di Mauro** **Singapore**

Chair of international macroeconomics at the  
Johannes Gutenberg University of Mainz

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### **Hans Wolff** **Bamberg**

(until June 30, 2016)  
Chairman of the works council of the Bamberg  
plant of Robert Bosch GmbH

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### **Prof. Hermann Scholl** **Stuttgart**

Honorary chairman of the Bosch Group

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# Industrial trust and international advisory committee

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Robert Bosch  
Industrietreuhand KG

## GENERAL PARTNERS

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**Franz Fehrenbach**  
Stuttgart  
Chairman of the shareholders' meeting

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**Tilman Todenhöfer**  
Madrid  
(until April 7, 2016)

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**Dr. Wolfgang Malchow**  
Pliezhausen  
(from April 8, 2016)

## LIMITED PARTNERS

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**Dr. Christof Bosch**  
Königsdorf

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**Dr. Siegfried Dais**  
Gerlingen

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**Dr. Volkmar Denner**  
Pfullingen

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**Prof. Lino Guzzella**  
Uster  
(from April 8, 2016)

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**Dr. Jürgen Hambrecht**  
Neustadt

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**Prof. Lars G. Josefsson**  
Stockholm

**Prof. Renate Köcher**  
Konstanz  
(from April 8, 2016)

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**Prof. Olaf Kübler**  
Zurich  
(until April 7, 2016)

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**Dr. Wolfgang Malchow**  
Pliezhausen  
(until April 7, 2016)

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**Dr. Michael Otto**  
Hamburg  
(until April 7, 2016)

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**Urs B. Rinderknecht**  
Zurich

Robert Bosch  
International Advisory Committee

**Franz Fehrenbach**  
Stuttgart  
Chairman

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**Dott. Alessandro Benetton**  
Treviso

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**Dr. Hugo Bütler**  
Zurich  
(until December 31, 2016)

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**Stephen J. Hadley**  
Washington

**HRH Prince El Hassan bin Talal**  
Amman

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**Prof. Ryozo Hayashi**  
Tokyo

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**Baba N. Kalyani**  
Pune

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**Pascal Lamy**  
Paris

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**Friedrich Merz**  
Düsseldorf

**Prof. Volker Perthes**  
Berlin

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**Ingo Plöger**  
São Paulo

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**Erwin Schurtenberger**  
Ascona, Beijing

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**Prof. Igor Yurgens**  
Moscow

# Highlights 2016

## 01

January 6 - Las Vegas, USA

### When cars help out in the kitchen

CES Consumer Electronics Show: Bosch presents the future of mobility and homes.



January 6 - Las Vegas, USA

### CES 2016 Innovation Award

Winner in the "In-Vehicle Audio/Video" category: a touchscreen with haptic feedback developed by Bosch.



## 02

February 22 - Reutlingen, Germany

### Vital sensor hubs for wearables

Bosch Sensortec launches the first generation of sensor-hub products with optimized vital parameter measurement.

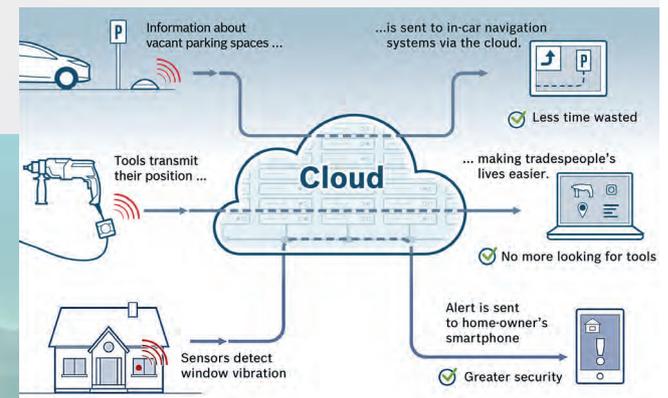


## 03

March 9 - Berlin, Germany

### Bosch Connected World

Bosch launches its own cloud for web-based services.



## 04

April 8 – Stuttgart, Germany

### Bridge-builder for Bosch

In his 40 years with Bosch, Tilman Todenhöfer used his diplomatic skills to smooth many paths, building bridges within the company and for the company. He now steps down from the supervisory board and Robert Bosch Industrietreuhand.



April 9 – Changsha, China

### German Foreign Minister Steinmeier visits Bosch plant in China

At the Bosch plant in the central Chinese provincial capital of Changsha, the focus of the visit is on intelligent production.

April 13 – Abstatt, Germany

### Fourth global meeting of Bosch employee representatives

67 delegates, 37 countries, 17 languages: the global meeting of Bosch employee representatives is becoming ever more international.



## 05

May 2 – Lund, Sweden

### Bosch opens innovation incubator in Sweden

The company's first engineering location in Scandinavia has 50 Bosch experts on board.



## 06

June 9 – Lisbon, Portugal

### 2016 European Inventor Award goes to the father of ESP®

The European Patent Office recognizes the retired Bosch associate Anton van Zanten for his life's work.



June 22 – Tel Aviv, Israel

### Bosch establishes research office in Tel Aviv

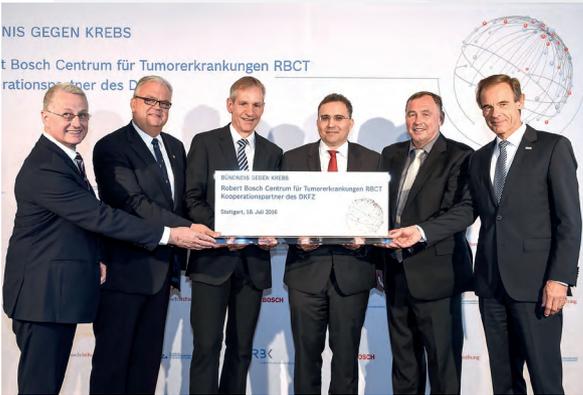
Focus on collaboration with scientific institutions and start-ups in fields such as machine learning, robotics, cybersecurity, connectivity, and the internet of things.

# Highlights 2016

## 07

### July 18 – Stuttgart, Germany Bosch forms an alliance against cancer

The Robert Bosch Hospital, the Robert Bosch Stiftung, and the Bosch Group join forces to fight cancer, launching a number of related initiatives.



## 08

### August 3 – Berlin, Germany Bosch's first shared mobility platform

An e-scooter sharing service launches in Berlin under the new Coup brand.



## 09

### September 21 – Walldorf and Stuttgart, Germany Technology partner for more customer benefit

Bosch and SAP form a strategic partnership for the internet of things and connected manufacturing.



### September 21 – Hannover, Germany 66th IAA Commercial Vehicles 2016

Bosch presents its solutions and ideas for the connected, automated, and electrified commercial vehicles of tomorrow.

### September 30 – Würzburg, Germany Leadership Award Connected World 2016

Vogel Business Media honors the Bosch CEO Volkmar Denner for his exceptional dedication and achievements in the area of digital connectivity.



## 10

October 6 – Stuttgart, Germany

### Sensors and software bring Robert Bosch's workbench from 1887 into the era of connected manufacturing

Bosch's new internet of things gateway makes the benefits of connected manufacturing available to factories using older machinery.



October 12 – Abstatt and Rülzheim, Germany

### Bosch plans acquisition of ITK Engineering AG

With a workforce of 800, ITK Engineering is a leading supplier of systems and software development in multiple sectors.

## 11

November 7 – Clifton, USA, and Stuttgart, Germany

### Acquisition of Skyline Automation

Bosch acquires specialist in building automation and strengthens its international business with integrated services for non-residential buildings.

November 10 – Waiblingen, Germany

### Bosch is becoming a part of everyday healthcare

Vivatmo me is the first breath analysis device that allows asthmatics a quick and no-fuss way of measuring the severity of airway inflammation.



## 12

December 15 – Stuttgart, Germany

### Cyber Valley: Bosch finances an endowed chair for machine learning

A first for Germany: Bosch joins forces with partners from the political, industrial, and scientific arenas to create Cyber Valley, which will drive forward research into artificial intelligence in Baden-Württemberg.



WWW.BOSCH-STIFTUNG.COM

# Robert Bosch Stiftung

Since it was established in 1964, Robert Bosch Stiftung has been carrying on the company founder's public welfare endeavors. It anticipates emergent social issues and formulates exemplary solutions. In addition, it develops and carries out projects of its own. The Stiftung also supports third-party projects that fit with its own objectives. It finances its work from the dividend it receives as a shareholder in Robert Bosch GmbH.

Robert Bosch Stiftung is active in the areas of healthcare, science, society, education, and international relations. To be even better prepared for the major challenges of our time, the Stiftung redesigned its strategy in 2016, and now focuses its work on three main issues: "migration, integration, and participation," "social cohesion in Germany and Europe," and "viable living environments."

## Making integration possible

The Stiftung's work in the area of mass migration is an example of its focus on major social issues. The expert commission convened by the Stiftung to reconceptualize refugee policy formulated 99 reform proposals, which were presented to and discussed with the German federal president at a joint forum.

One of the Stiftung's main concerns is the threat to social cohesion in Europe as a result of refugee influx and rising populism. With programs such as "Europa erfahren" (experience Europe), Robert Bosch Stiftung encourages young people to develop a positive image of Europe. Moreover, the Stiftung created the Europa21 focus theme at the Leipzig Book Fair. This centered on the question of how to strengthen cohesion in Europe.

## Stepping up activities in Africa

Many of the world's problems are particularly severe in Africa, and this prompted Robert Bosch Stiftung to step up its activities there in 2016. As one of its activities on the continent, the Stiftung joined forces with an African partner to organize Africa's first interdisciplinary academic conference. Called the Next Einstein Forum, or NEF, it aimed



1

to highlight the huge potential of African researchers and to put Africa on the map as a location for science and research. The more than 500 delegates included the Senegalese president and a Nobel laureate. The next NEF will be held in Rwanda in 2018.

Multilateral projects are taking on ever greater importance for Robert Bosch Stiftung. Its "Global Governance Futures" program brings together junior executives from Germany, the U.S., China, Japan, and India. Over an 18-month period, they work together on issues such as data governance, global health, and transnational terrorism.

## Ten years of the German school award

There are some excellent schools in Germany. This is demonstrated by the Deutscher Schulpreis (German school award), which has been conferred annually by Robert Bosch Stiftung and the Heidehof Stiftung since 2006. Over the past ten years, the award has given rise to a movement for educational excellence. The Deutsche Schulakademie (German school academy), a subsidiary of the Stiftung, makes the awardwinners' experience available for other schools.

## Total project grants

2016 \_\_\_\_\_ **EUR 109.1m**  
1964–2016 \_\_\_\_\_ **EUR 1,486m**

Figures in millions of euros



1

Welcome to the school of the year 2016! These two pupils attend the “Auf der Süsteresch” elementary school in Schüttorf, northern Germany. Their school won the German school award.

2

Research “made in Africa”: Tolu Oni, whose research focuses on public health and urban epidemiology, speaking at the Next Einstein Forum in Dakar, Senegal.

### For better healthcare

In Germany, more and more people have chronic and multiple illnesses. At the same time, there are fewer and fewer specialists to treat them. For this reason, the Stiftung’s PORT program supported eight initiatives in developing concepts for local health centers. Their aim was to come up with models for ensuring comprehensive basic healthcare within a region, and for improving the care of the chronically ill.

One further focal point is the fight against cancer. For this reason, Robert Bosch Stiftung, the Robert Bosch Hospital (RBK), and the Bosch Group formed an alliance against cancer in 2016. Its centerpiece is the RBCT (Robert Bosch tumor center), a modern cancer research center at the RBK. The Stiftung provides extra funding to support the establishment of the RBCT. Between now and 2020, 24 million euros will be devoted specifically to cancer research.

#### The following institutions also belong to the Stiftung:

- Robert Bosch Hospital
- Dr. Margarete Fischer-Bosch Institute for Clinical Pharmacology
- Institute for the History of Medicine of Robert Bosch Stiftung
- Deutsche Schulakademie
- UWC Robert Bosch College
- Robert Bosch Centrum für Tumorerkrankungen
- International Alumni Center iac Berlin

#### Dependent foundations within the Stiftung:

- Otto und Edith Mühschlegel Stiftung (aging)
- Hans-Walz-Stiftung (research into complementary medicine)
- DVA-Stiftung (Franco-German dialogue)
- Rochus und Beatrice Mummert Stiftung (international promotion of young talent)

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

# Agility

Times are changing, and with this change comes the need for new forms of collaboration. It's up to everyone to think and work outside the box. In other words, it's all about agility. The company's many initiatives and successful start-ups are a visible sign of its agility. To accompany the publication of our annual report for 2016, Bosch is profiling these activities in an exclusively online magazine.



## 👁️ New perspectives

How Bosch improves existing solutions

## 🌐 New connections

How Bosch creates networks internally and externally



**The stories illustrating Bosch strategy are available online at [annual-report.bosch.com](https://annual-report.bosch.com)**

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Bosch Group

# Group management report

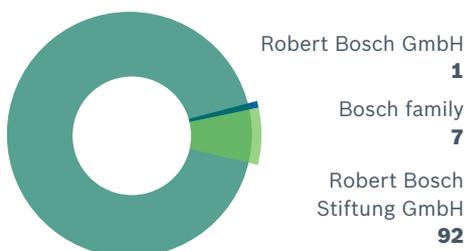


In 2016, the Bosch Group continued to focus its strategy on the challenges of the future. The company is energetically tackling the transformation required in light of the technological changes brought about by the internet of things. Bosch is focusing on increasing connectivity in mobility and industry, consumer goods, and building and energy technology. Its largest business sector, Mobility Solutions, is also facing significant challenges arising from the future electrification of the powertrain. The Bosch Group aims to become a leading supplier for the internet of things and of pioneering mobility solutions. In addition, the group achieved its growth targets for the 2016 financial year despite an only moderate economic environment. However, substantial upfront investments in the transformation of the company placed a burden on result. These upfront investments included a high level of research and development spending, increasing capital expenditure, and high expenses relating to future projects and to restructuring and the disposal of activities. We expect the Bosch Group to grow at a similar rate in 2017 as in 2016. Despite the further transformation tasks that lie ahead, the aim is to improve result.

## 01

### Shareholders of Robert Bosch GmbH

**SHAREHOLDING**  
Percentage figures



**VOTING RIGHTS**  
Percentage figures



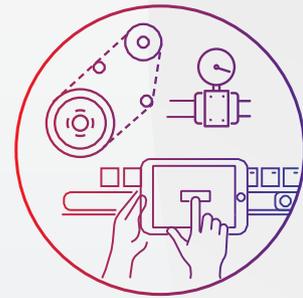
## 02

### Bosch Group business sectors



#### MOBILITY SOLUTIONS

Gasoline Systems  
Diesel Systems  
Chassis Systems Control  
Electrical Drives  
Starter Motors and Generators  
Car Multimedia  
Automotive Electronics  
Automotive Aftermarket  
Automotive Steering



#### INDUSTRIAL TECHNOLOGY

Drive and Control Technology<sup>1</sup>  
Packaging Technology



#### CONSUMER GOODS

Power Tools  
BSH Hausgeräte GmbH



#### ENERGY AND BUILDING TECHNOLOGY

Security Systems  
Thermotechnology  
Bosch Global Service Solutions

<sup>1</sup> Bosch Rexroth AG (100% Bosch-owned)

## Fundamental information about the group

### The group

The Bosch Group is a global supplier of technology and services, and generates about 47 percent of its sales outside Europe. It encompasses around 440 subsidiaries and regional companies in approximately 60 countries. The parent company is Robert Bosch GmbH, which is headquartered in Stuttgart. It started out as "Workshop for Precision Mechanics and Electrical Engineering," founded in Stuttgart in 1886 by Robert Bosch (1861–1942). In 1917, the company changed its legal form into that of a stock corporation (Aktiengesellschaft); in 1937, it reorganized as a close corporation, Robert Bosch GmbH. Robert Bosch Stiftung GmbH has been the majority shareholder since 1964, and currently holds around 92 percent of the shares.

As a not-for-profit foundation, Robert Bosch Stiftung GmbH has no influence on the strategic or business orientation of the Bosch Group. The voting rights accruing to its share are held by Robert Bosch Industrietreuhand KG, an industrial trust, which performs the entrepreneurial ownership functions. The trust itself holds a share of 0.01 percent. Most of the remaining shares and voting rights are held by the founder's descendants. This ownership structure guarantees the Bosch Group's entrepreneurial independence, allowing the company to plan for the long term and make significant upfront investments in its future.

### Organization and competitive environment

With around 389,000 associates, the Bosch Group is highly diversified. It is divided into four business sectors: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology. Reporting is segmented in the same way. The four business sectors are all leaders in their fields. Their markets and competitive environments vary significantly in some cases.

In the case of Mobility Solutions, the Bosch Group competes mainly with a small number of large automotive suppliers, although new competitors are emerging from the IT and internet sectors. Its customers are still primarily automakers, most of which operate globally, although they increasingly also include new providers of mobility solutions. In the case of Industrial Technology, the Drive and Control Technology and Packaging Technology divisions operate as machinery and systems suppliers in fairly fragmented markets with many competitors and customers. In the Consumer Goods business sector, the Power Tools division and the subsidiary BSH Hausgeräte GmbH largely market their products directly to end consumers. These units face intense competition from both global and regional providers. In Energy and Building Technology, the competition in the Security Systems and Thermotechnology divisions consists of a small number of international providers and many regional providers. The

Bosch Global Service Solutions division, which has been a discrete division since 2016, competes with both large international rivals and smaller local providers in the fragmented business services market. Competition from emerging markets is growing in all four business sectors. The competitive environment is also changing due to the increasing connectivity of products, for example due to additional competition from the software industry and competitors from other sectors whose strategy is based on innovative business models.

### Corporate governance

The board of management defines the strategy for the entire company and leads the company as a whole. Its responsibilities are set out in the table of duties. The Robert Bosch GmbH supervisory board appoints, monitors, and advises the board of management. In making appointments, Robert Bosch GmbH is subject to the German Codetermination Act (Mitbestimmungsgesetz). In view of the company's size, the supervisory board has 20 members. Ten members are appointed by the shareholders with voting rights. The other ten members are appointed by the employee representatives. Robert Bosch Industrietreuhand KG acts as managing partner. In line with the mission handed down in the will of the company founder, Robert Bosch, the trust is responsible for safeguarding the company's long-term existence and, above all, its financial independence. The aim is to guarantee that the company remains independent and able to act at all times.

Based on German legal requirements, the supervisory board of Robert Bosch GmbH has set targets for the percentage of women members of the supervisory board and board of management as of January 1, 2017. The current targets are 20 percent of supervisory board members and no members on the board of management. The boards' current composition reflects this. The target for the supervisory board applies to both the employer and workforce sides. The supervisory board will set new targets in the course of 2017.

The company's declared objective is to rigorously pursue efforts to expand the talent pool of women executives for the highest management levels. When the resolution was adopted in June 2015, the target set for the level below the board of management (first management level) was an increase from 2.9 percent to 5 percent by the beginning of 2017; the target for the second management level was an increase from 6.8 percent to 8 percent. With figures of 5.9 percent and 10 percent respectively, these targets have been exceeded. The new targets for the end of 2021 are 8 percent for the first management level and 12 percent for the second management level, and to increase the share of women executives across all group levels worldwide to 20 percent by 2020. The figure currently stands at 15.4 percent (previous year: 15 percent).

## Business sectors

### Mobility Solutions business sector

Bosch is one of the world's largest automotive suppliers and is active in various subsegments. The business sector comprises the following divisions:

#### Gasoline Systems

The Gasoline Systems division develops and manufactures innovative technologies for internal-combustion engines powered by gasoline, natural gas, and ethanol, as well as systems and components for hybrid and electric vehicles and motorcycles. These include engine management systems, fuel supply systems, fuel injection systems, ignition systems, connectors, electric drive units, power electronics, battery systems, and transmission technology. The division's expertise as a systems provider is particularly important. This applies to the management of internal-combustion engines and of electric motors, and in combination with hybrid and plug-in hybrid powertrains.



#### Diesel Systems

The Diesel Systems division is a systems supplier of key powertrain components. The division offers an extensive range of energy-efficient, eco-friendly diesel injection systems for applications ranging from passenger cars and all kinds of commercial vehicles to large-scale industrial power-generation units. It focuses primarily on the common-rail system, which comprises a high-pressure injection pump, the rail, and various injectors (solenoid and piezo). The division also provides air management systems such as mass air-flow sensors, electronic diesel control, and exhaust-gas management

systems such as Denoxtronic, as well as solutions for diesel hybrid vehicles and in the field of fuel cells.

Gasoline Systems and Diesel Systems have cooperated closely for many years in the areas of engine management, sensor systems, and powertrain electrification. They will be brought even closer together from 2018 onwards, when they will be merged into a single division, Powertrain Solutions. This restructuring will include the creation of a separate unit for electromobility, which will pool existing activities.

The Diesel Systems division has, to date, also included the fifty-fifty joint venture Bosch Mahle Turbo Systems GmbH & Co. KG, Stuttgart. It is consolidated according to the equity method, i.e. its pro rata share of equity is reported in the statement of financial position and its after-tax income is reported in the operating result. The joint venture develops and manufactures exhaust-gas turbochargers for gasoline and diesel engines for use in passenger cars, commercial vehicles, and large-scale industrial power-generation units. Together with its joint venture partner MAHLE, Bosch announced in January 2017 that it is seeking to sell these activities.

#### Chassis Systems Control

The Chassis Systems Control division develops and manufactures innovative components, functions, and systems that enable safe, relaxed, dynamic, and automated driving. These include brake-actuation products such as master cylinders and brake boosters, as well as brake discs. ABS, TCS, and ESP® electronic braking control systems are an important area of activity. The division also supplies sensors such as speed, steering-angle, and yaw-rate sensors, as well as electronic devices to protect occupants and pedestrians, such as airbag control units and crash sensors. A fast-growing area is that of driver-assistance systems based on ultrasonic, radar, and video sensors, which are also used as the basis for automated driving. The division's portfolio also includes products such as radar-based speed control (ACC adaptive cruise control), predictive emergency braking systems, lane-keeping systems, and parking assistance systems.

#### Electrical Drives

The Electrical Drives division offers a broad array of products stretching from a wide variety of electromechanical components to entire systems for automotive body applications. These include innovative and energy-efficient actuators, as well as systems and components for engine thermal management, air-conditioning, and windshield cleaning. The product portfolio comprises actuators for electric windows, seat adjustment, and sunroofs, fan modules and

engine-cooling drive systems, pumps and valves for cooling systems, front and rear wiper systems, and wiper blades. Electrical Drives also makes motors for electric steering systems, for ABS and ESP® systems, and for e-bikes and e-scooters.

### Starter Motors and Generators

The Starter Motors and Generators division develops and manufactures starter motors and alternators for passenger cars and commercial vehicles. The product portfolio includes starters for gasoline and diesel engines, including and in particular for use in fuel-saving – and therefore CO<sub>2</sub>-reducing – start-stop systems. Its alternators provide the vehicle with a reliable energy supply, and their high efficiency helps reduce fuel consumption. The gap between start-stop systems and hybrid powertrains is bridged by the BRS boost recuperation system. Based on highly efficient generators, it allows braking energy to be recovered while delivering additional power to the internal-combustion engine. In summer 2016, the division was carved out to form an independent entity. The process of selling the division was commenced in fall 2016.

### Car Multimedia

The Car Multimedia division offers intelligent solutions that help make the integration of in-car entertainment, navigation, telematics, and driver-assistance systems better and more flexible, as well as easy to operate. Vehicle infotainment architectures are making increasing use of the internet and are increasingly becoming connected systems. The product portfolio includes driver information and infotainment systems usable anywhere in the world, freely programmable display systems, and head-up displays. In addition, the division offers communication and entertainment systems for use in both commercial vehicles and buses and on motorcycles.

### Automotive Electronics

Automotive Electronics develops and manufactures microelectronics. The product portfolio ranges from components such as semiconductors, sensors, and MEMS (microelectromechanical systems), through control units for areas such as body electronics, braking control systems, and engine management systems (as well as contract manufacturing of the above), to non-automotive applications such as sensors for consumer electronics. Bosch Connected Devices and Solutions GmbH, Reutlingen, Germany, also offers sensors, software, and complete solutions for the internet of things. Automotive Electronics also includes the Bosch eBike Systems unit.



### Automotive Aftermarket

The Automotive Aftermarket division offers a comprehensive range of spare parts for cars and commercial vehicles for the aftermarket and for workshops worldwide – from new parts to reconditioned spares and repair solutions – as well as diagnostic and repair-shop solutions. The product portfolio consists of Bosch original-equipment products, as well as products and services developed and manufactured in-house for the spare parts market. Under the designation “Automotive Service Solutions,” it also provides testing and repair-shop technology, diagnostics software, service training, and technical information and services. The division is also represented in the market by Bosch Car Service and AutoCrew, two independent repair-shop franchises. The division is also using data-based business models to develop solutions for fleet operators, leasing companies, and insurers.

### Automotive Steering

Automotive Steering manufactures and sells steering technology for passenger cars and commercial vehicles. In addition to complete steering systems for vehicles ranging from compact cars to commercial vehicles, including steering columns and steering pumps, the product line also covers components such as valves, universal joints, and steering shafts. Electric steering systems are the main area of activity. They are of great significance for driver assistance systems, and will in the future be essential for automated vehicles.

### Other businesses

The cross-divisional Two-Wheeler and Powersports unit has access to the worldwide resources of the Mobility Solutions business sector. For two-wheelers, Bosch offers safety systems such as ABS and MSC motorcycle stability control, fuel-saving powertrain technology, display instruments, and communications units.



Based on a similar concept, Commercial Vehicles and Offroad Applications began operating as a separate organizational unit within the Mobility Solutions business sector at the beginning of 2016. This has cross-divisional responsibility for systems development, product management, and sales in the commercial-vehicle and off-highway business.

Bosch's ETAS Group companies provide innovative solutions for embedded software systems that are used in the automotive and other industries. The subsidiary escrypt GmbH Embedded Security, Bochum, Germany, develops data security solutions.

The Bosch Engineering GmbH subsidiary, headquartered in Abstatt, Germany, offers a wide range of customers tailored solutions based on tried and tested technology used in large-scale production. For example, it provides solutions for sports cars and off-road vehicles, but also for railcars, marine applications, and industrial engines. Bosch's motor racing activities are also based there.

At the beginning of 2017, we strengthened our business with individual systems and software development through the acquisition of ITK Engineering AG and its foreign subsidiaries. ITK Engineering will continue operating in the future as a separate legal entity under the name ITK Engineering GmbH, with its own brand and with engineering activities that are separate from those of Bosch.

### Industrial Technology business sector

This business sector comprises two divisions:

#### Drive and Control Technology

The Bosch Rexroth AG subsidiary, based in Lohr, Germany, specializes in drive and control technology and is one of the world's leading suppliers in this field. Its portfolio includes customized drive, control, and actuator solutions for factory automation, plant construction and engineering, mobile machinery, and commercial vehicles. As a systems partner, service provider, and supplier, the division is active in many branches of industry and more than 80 countries. It also offers a comprehensive range of services, is involved in large-scale international projects, and is a leading provider in the area of connected manufacturing.

#### Packaging Technology

This division is one of the world's leading providers of process and packaging solutions for the pharmaceuticals, foodstuffs, and confectionery industries, as well as selected segments of the beverages industry. Its range includes individual machines, system solutions, and a comprehensive service portfolio. This division also includes ATMO, Bosch's in-house provider of assembly systems and special-purpose machinery. ATMO develops flexible, scalable plans for assembly systems and builds customized solutions in the field of testing and process technology.



## Consumer Goods business sector

The business sector comprises two divisions:

### Power Tools

Bosch Power Tools is one of the world's leading suppliers of power tools, power-tool accessories, and measuring technology. The division has an extensive range of products aimed at both professional and do-it-yourself users. In addition to power tools such as hammer drills, cordless screwdrivers, and jigsaws, the product line also includes gardening equipment such as lawnmowers, hedge trimmers, and high-pressure cleaners. One of the division's focal points is convenient, high-performance cordless equipment, and increasingly also web-enabled equipment and services. Power Tools also offers laser measurement tools for both professional and DIY needs. The accessories include a comprehensive range of abrasive systems, drill bits, and saw blades. Precision power tools for DIY and amateur users are also sold under the Dremel brand.

### BSH Hausgeräte GmbH

The household appliance manufacturer BSH Hausgeräte GmbH (BSH Hausgeräte) has a product portfolio that ranges from washing machines and tumble dryers through refrigerators and freezers, stoves and ovens, and dishwashers, to small appliances such as vacuum cleaners, coffee makers, and food processors. The household appliance specialist sells its products under the global Bosch and (under license) Siemens brands, as well as under the Gaggenau and Neff brands. It also has its own regional and specialty brands such as Thermador, Constructa, and Junker.

## Energy and Building Technology business sector

In addition to the established Security Systems and Thermotechnology divisions, the business sector includes the newly created Bosch Global Service Solutions division and the new Robert Bosch Smart Home GmbH unit, as well as the Bosch Energy Storage Solutions and cross-selling projects.

### Security Systems

The Security Systems division offers innovative products and solutions in the field of security and communications, principally for commercial applications. The product portfolio encompasses video-surveillance, intrusion-detection, fire-detection, and voice-

alarm systems, as well as access-control and building management systems, and professional audio and conference systems. Bosch also operates in selected countries via the Integrator Business operating unit (installation business), which offers solutions and services for building security, energy efficiency, and building automation. This unit combines the commercial service business of the building security unit with the subsidiary Bosch Energy and Building Solutions GmbH, Ditzingen, Germany, and the building automation service provider Climatec, LLC, based in Phoenix, AZ (USA).

### Thermotechnology

The Thermotechnology division is a leading manufacturer of energy-efficient heating products and hot-water solutions in Europe. The division's products are sold under international and regional brand names such as Bosch, Buderus, Worcester, and Junkers. The product portfolio ranges from heaters through heat pumps, solar thermal systems, and solid-fuel boilers, to cogeneration plants and industrial boilers. With a view to functions such as remote diagnosis, web-enabled devices are becoming increasingly important.

### Bosch Global Service Solutions

Bosch Global Service Solutions, which has been a discrete division since the beginning of 2016, has the task of expanding the business with external business services. This was previously located within Security Systems. Bosch Global Service Solutions is a leading international provider of business process outsourcing for complex business processes and services, primarily for customers in the automotive, travel, and logistics industries and in information and communications technology. Within Bosch, it also provides shared-service functions.

### Robert Bosch Smart Home GmbH

A new subsidiary, Robert Bosch Smart Home GmbH, Stuttgart, also debuted at the beginning of 2016. It combines smart-home activities, including systems, software, and sensor technology, and offers products and services for smart homes from a single source.

### Companies not allocated to business sectors

The Bosch Group's global software and systems unit, Bosch Software Innovations GmbH, Berlin, designs, develops, and operates IoT and enterprise software and systems solutions worldwide. Its applications relate particularly to mobility, energy, manufacturing, and buildings.

At the end of 2016, Bosch entered the market for medical technology with its subsidiary Bosch Healthcare Solutions GmbH, Waiblingen, Germany. The company focuses on sensors and software, as well as on services arising from the interplay between the two.

Robert Bosch Start-up GmbH, Stuttgart, Germany, was consolidated for the first time. It offers a platform within the Bosch Group for development and implementation of new ideas, giving internal start-ups access to Bosch's resources and expertise and supporting them with business knowledge in areas such as controlling and marketing.



## Prospects for the Bosch Group

### Fundamental direction

The starting point for the group's strategy is the mission of securing the company's future, true to the spirit of its founder Robert Bosch – in other words, ensuring the company's strong and meaningful development and securing its financial independence. Our ambition is to develop products that are "Invented for life," that fascinate, that improve quality of life, and that help conserve natural resources. In this respect, "products" means not only physical products, but also software and services.

The Bosch Group is embarking on a process of profound transformation. Many areas of business are set to change radically over the next ten years. Increasing connectivity – and, in connection with this, automation as well – as a result of the internet of things is a major challenge for the company as a whole. This connectivity affects all business sectors, from connected mobility through connected manufacturing and smart homes, to connected building and energy technology. The increasing electrification of automotive technology will also mean an upheaval.

In our "We are Bosch" mission statement, which provides a framework for the strategic orientation of the Bosch Group and its business sectors, we have anchored our strategic focus on shaping change, taking into account the aspects of connectivity, electrification, automation, energy efficiency, and emerging markets. The strategic focal point "change" underlines our ambition to play an active part in shaping the far-reaching changes that are emerging in markets and technology. As well as change, our strategic focal points include customer focus and excellence. This also calls for an agile organization.

We derived these focal points after due consideration of factors such as megatrends, changes in the competitive environment, innovations, customer expectations, resource scarcity, and political developments. Customer focus means having a precise understanding of customers' needs and finding the best solution for products and business models on this basis. We therefore offer products tailored to our customers and markets, exploiting the innovation potential of our global development network. Excellence in all areas is essential in order to achieve our targets for growth, earnings, and agility on a lasting basis. In this respect, we measure ourselves against our

best competitors. With efficient processes, lean structures, and high productivity, we aim to secure and increase the value of the company. A business environment that is changing at an ever faster pace also calls for increased agility. To this end, we are constantly reappraising our understanding of leadership, collaboration, organization, and communication, as well as the concepts based on them. Our objective here is to make ourselves more capable of change and increase the speed at which we do so.

When putting our strategy into practice, we build on our strengths: the Bosch culture, our high level of innovation and quality, and our broad global presence. Our actions are based on the Bosch values: a clear future and result focus, responsibility and sustainability, initiative and determination, openness and trust, fairness, reliability and credibility, legality, and diversity.

## A wealth of opportunities

Changes in markets and technology are opening up a wealth of opportunities for the Bosch Group, particularly with regard to increasing connectivity. This connectivity is made possible by the miniaturization of electronics and ever more powerful sensors, data networks, data storage devices, and computers. More and more products can be inexpensively connected to the internet. In view of our expertise in many product areas, in software, and in sensor technology (as one of the world's leading suppliers of MEMS sensors), we believe this offers huge opportunities. We are also expanding our IoT portfolio. For example, we offer our own cloud service. We are adding to our expertise in areas such as artificial intelligence and machine learning and, based on this, want to develop new products, services, and business models.

Automation primarily affects the Mobility Solutions and Industrial Technology business sectors. As traffic density continues to grow, automated driving can help reduce the number of accidents, improve traffic flow, and minimize traffic jams. In Industrial Technology, the increasing flexibility of production combined with more widespread connectivity in manufacturing, including human-machine interfaces, offers a wealth of opportunities. This opens up new ways of increasing product quality and productivity, of adding functionality, improving resource conservation, and better protecting workers' health and safety. Opportunities are opening up for new services as well. In the



Consumer Goods and Energy and Building Technology business sectors, connectivity and increasing product intelligence are creating opportunities for new services and business models.

Electrification is of particular importance for our biggest business sector, Mobility Solutions. We now anticipate that in the year 2025, around 20 percent of passenger cars and light trucks produced will be hybrid and electric vehicles. Current developments in the various markets have thus prompted us to revise our previous forecast of 15 percent. In 2016, the total share of newly registered electric and hybrid vehicles still came to roughly 3 percent. The key drivers for electrification and electromobility include new standards for consumption and emissions, falling battery costs, increasing suitability for everyday use in terms of range, but also driving enjoyment, fascination, and connectivity.

We aim to increase energy efficiency both in our products and in our own value chain. Drivers include the growing demand for energy, ever tighter climate and environmental regulations, and the finite nature of fossil fuels. This will lead to increased demand for energy-efficient products in all business sectors.

The emerging markets of Asia, South America, and central and eastern Europe are home to most of the world's population. Despite the current slowdown in growth, over the long term they will experience higher rates of growth than the advanced economies. There



is demand for affordable products that often have to meet special requirements of the local market, such as robustness and ease of repair. Another emerging, and for us promising, market is Africa.

## Business targets

The Bosch Group's business targets are derived from the "We are Bosch" mission statement, the strategic focal points, and the competitive environment. Over the longer term, we aim for average annual sales growth of 8 percent, with up to 3 percentage points of this coming from acquisitions. By 2020, we want to double our sales in Asia Pacific and the Americas compared with 2013 and to grow faster than the market in Europe. These targets are proving to be particularly ambitious in the current economic environment, however. We therefore regularly review our targets and adjust them if necessary. In terms of business sectors, we continue to aim for a better balance between Mobility Solutions and our other business sectors.

We have also set ourselves the goal of an EBIT margin from operations of around 7 percent of sales, derived from benchmark comparisons of operating units, taking into account the significant upfront investments needed for growth projects and for the change processes this will involve. The target margin is also reviewed regularly in light of the current portfolio. The negative effects on earnings from increased depreciation and amortization in connection with the complete takeover of the former joint ventures Automotive Steering and BSH Hausgeräte are not taken into account in the target margin from operations.

## Strategy and innovation

### On the way to becoming an IoT company

Our goal is to become one of the world's leading IoT companies. Coming from a classic product-manufacturing background, the strategy we pursue here is one of significantly enhancing our expertise in software and connectivity. We will use connectivity to further develop our traditional business. In addition, entirely new business opportunities are opening up. Other strategic focal points include the expansion of our own software platform, the Bosch IoT Suite, which our subsidiary Bosch Software Innovations GmbH is developing, and of our new, proprietary IoT cloud.

We therefore operate on all three levels of connectivity – intelligent and connected devices, software platforms, and applications and services – in order to provide additional benefits to customers. We believe the Bosch Group has a competitive advantage, not only thanks to its broad diversification, but also because its expertise covers the entire IoT value chain from sensors to services. Moreover, the fact that we ourselves manufacture, and are a leading global supplier of, MEMS sensors, is a Bosch USP. It allows us to exploit new areas of application at an early stage, develop intelligent solutions, and ensure optimum security for our systems. Bosch is increasingly being perceived as a provider of IoT solutions. At the Consumer Electronics Show (CES) in Las Vegas at the beginning of 2017, we received a total of four awards for innovative connected motorcycle solutions and for a connected boiler.

### Market launch of our own IoT cloud

We launched our own IoT cloud, i.e. our own IT infrastructure for internet-based services, in mid-2016. Our first customer was a German automobile insurer. We have been using our IoT cloud to operate our own smart-home applications since 2015. Having our own IoT cloud gives us greater speed and flexibility as well as enhancing data security. Particularly for applications in mobility and industry, the required standards are very high.

We are also continuing to refine our Bosch IoT Suite software platform, offering microservices (software modules for the development of applications) that can be used as flexible modules, and opening the platform up to third parties to make it more attractive to customers. We will also offer our microservices via other providers' platforms

in the future. Our aim is to increase our presence and thus help to shape important standards. We already connect more than 5 million devices. Our goal is to connect around 25 million devices by 2019.

### Great importance of partnerships

Collaboration with other companies and participation in leading consortia are very important in areas such as connected manufacturing. Bosch entered into partnerships relating to the IoT Suite with companies including SAP and General Electric in 2016, and with IBM in early 2017. We also entered into an innovation partnership with Software AG for our IoT Cloud. Strategic alliances include the German Plattform Industrie 4.0 and the U.S.-based Industrial Internet Consortium. We are also a strategic member of the Eclipse Foundation international open source community. In 2016, we joined the German Labs Network Industrie 4.0, which is concerned with implementing Industry 4.0 in small and medium-sized enterprises.

### Bosch Center for Artificial Intelligence established

With the aim of pooling and expanding our expertise in artificial intelligence and machine learning, the Bosch Center for Artificial Intelligence was launched at the beginning of 2017. The new center will initially employ some 100 experts at our research and development sites in Bengaluru, Palo Alto, Pittsburgh, and Renningen. By 2021, we plan to invest around 300 million euros, and expect the number of associates at the center to increase several times over. Bosch already uses artificial intelligence and machine learning in image recognition during automated driving. We also use data mining methods in a variety of projects. These involve machine analysis of large volumes of data using mathematical methods. Examples of such projects include quality monitoring and forecasting.



As well as conducting research, the new center will make artificial intelligence expertise and methods available to all Bosch units and increase its applicability for them. We want to use this knowledge not only to enhance our products, but also to improve processes in connected manufacturing. Bosch is also one of the founding partners of Cyber Valley in the area around Stuttgart and Tübingen, Germany. Modeled on Silicon Valley, the aim is to help translate the findings of basic research into specific industrial applications, to foster talent, and to support start-ups. As part of this initiative, Bosch is funding an endowed chair at Eberhard Karls University, Tübingen.

### Mobility Solutions

In the Mobility Solutions business sector, our goal is to become one of the leading suppliers in the promising areas of electrified, automated, and connected driving. We are also developing integrated mobility services, i.e. involving a combination of different modes of transport. To this end, we are making significant upfront investments in Asia Pacific. At the same time, we are focusing our activities and adapting them to promising new fields.

### Bosch is shaping the transformation of the powertrain

In February 2017, we announced that we would consolidate our electromobility activities in a dedicated unit. This unit will be part of the new Powertrain Solutions division. From the start of 2018, it will encompass the company's electromobility activities as well as today's Gasoline Systems and Diesel Systems divisions. Our goal is to supply existing and new customers with all powertrain technologies from a single source. We also want to create more flexibility with the new division, as we still cannot predict which powertrain or which combination of powertrains will predominate when. Roughly 88,000 associates at more than 60 locations in 25 countries will work under the umbrella of Powertrain Solutions.

As well as driving electromobility forward, Bosch is working intensively on further improving combustion-engine technology. We spend large sums every year on the development of powertrain solutions. In 2016, we invested around 400 million euros in our efforts to bring about a breakthrough in electromobility. One focal point of these upfront investments in electromobility is R&D relating to batteries. They also focus on power electronics and electric motors.

At the beginning of 2017, we unveiled our new electric axle drive system (e-axle) at the North American International Auto Show (NAIAS) in Detroit. The powertrain has the potential to give the market for electric vehicles another boost. A powertrain for electric or hybrid vehicles currently consists of individual components. In the future, the e-axle will bring together transmission, electric motor, and power electronics in one compact housing. This reduces the complexity of the electrical powertrain and makes it much less expensive, more compact, and more efficient, which will also lower production costs for both electric and hybrid vehicles. We are also developing an integrated thermal management concept for electric vehicles, which will make heating in the winter and cooling in the summer more energy- and thus cost-efficient.



Worldwide, Bosch is the only classic automotive supplier researching into both current and future battery-cell technologies. As early as 2013, we established the Lithium Energy and Power GmbH & Co. KG joint venture with GS Yuasa and Mitsubishi Corporation, which is working to develop more powerful lithium-ion batteries. Our acquisition of the U.S. start-up Seo Inc. in Hayward, CA, in 2015 also boosted our know-how in the field of solid-state cells for lithium-ion batteries. Our main goals in battery research are to increase the range of, and significantly reduce costs for, electrified powertrains. In 2016, we began pooling our German development activities in the field of battery research and development at a battery campus at our Feuerbach location. The campus workforce of around 300 is also working on the necessary manufacturing processes.

We have carried out more than 30 production projects so far in the field of electromobility, for German customers as well as international customers in countries such as China. Our customers include traditional vehicle manufacturers as well as new providers such as StreetScooter GmbH in Aachen, Germany, a subsidiary of Deutsche Post DHL Group. We also signed a cooperation agreement with e.GO Mobile AG in Aachen, Germany, for connectivity and after-sales services in 2016. e.GO Mobile AG is developing a compact electric vehicle, the e.GO Life, at RWTH Aachen University. Bosch supplies the 48-volt powertrain for this.

Strategically speaking, Powertrain Solutions will focus on three core segments: passenger cars and commercial vehicles, each with both internal-combustion engines and hybrid powertrains combining an internal-combustion engine and an electric motor, and fully electric vehicles. This involves wide-ranging challenges. Innovation and growth are anticipated, particularly in electromobility and commercial vehicles. With regard to passenger cars with traditional internal-combustion engines, the aim is to cut consumption and emissions further.

The internal-combustion engine will continue to play a dominant role until well into the next decade. Demand for gasoline direct injection systems is rising on a scale similar to that previously enjoyed by diesel direct injection. Yet diesel, with its outstanding fuel economy, remains important if we want to meet the EU's ambitious greenhouse-gas targets for 2021. Bosch has technologies to ensure that diesel engines meet strict regulations for nitrogen-oxide emissions and particulates under real driving conditions. It is also the first and only supplier to offer water injection in gasoline engines, which can further reduce fuel consumption. Until now, additional fuel has been injected into gasoline engines, which cools the unit through evaporation. Instead of this, the new technology injects a fine water mist.

#### **Growth opportunities in commercial-vehicle business**

The commercial vehicles of the future will also be connected, automated, and electrified. Commercial vehicles are becoming important carriers of technology. To strengthen our commercial-vehicle and off-highway business, we set up a new organization in mid-2016 for sales and systems development, enabling us to offer customers customized, integrated services.

With regard to powertrain technology for commercial vehicles, new emissions regulations are leading to increased demand for modern diesel systems. These comply with the Euro 6 emissions standard in real traffic conditions. Similar emissions standards are planned in the growth regions of China and India. Exhaust-gas treatment is another growth area. We also see opportunities in the electrification of ancillary units such as hydraulic pumps. This enables further fuel savings. At the same time, we are working on heat recovery systems and on hybrid and CNG powertrains. In addition to this, we offer a wide range of solutions for off-highway vehicles, designed to reduce both operating costs and emissions. To this end, we are further refining our diesel systems and are working simultaneously on the electrification of commercial and off-highway vehicles, with fuel-cell technology as an option.



Automation in commercial vehicles began with assistance functions and is gradually expanding. Systems such as automatic emergency braking and lane-departure warning are already mandatory in some markets. Other systems are aimed at safer turning, lane-changing, and maneuvering. A key technology in automated driving is steering. Bosch is a leading supplier of commercial-vehicle steering systems. With our software and systems expertise, we are working on areas such as platooning, which is the automated driving of trucks in convoys along freeways.

Construction machinery is also becoming ever more intelligent. Bosch is part of the joint Genius CAB project, which involves the integration of systems for controlling construction and agricultural

machinery and industrial forklift trucks. Bosch offers mirror replacement displays that make a digital over-the-shoulder view possible. This significantly reduces the blind spot on construction sites in particular. The central user interface is a freely programmable control unit with a touchscreen.



In terms of connectivity, we expect all new trucks in Europe and North America to be telematics-enabled in 2017. We have launched a connectivity control unit on the market as the basis for this, and expect its sales to increase substantially. We are also offering more and more IoT services via our own IoT cloud, such as secure truck parking. Since early 2017, freight forwarders and drivers have been able to use this portal to reserve truck parking spaces along Germany's freeways. We are also launching services such as TraQ, which allows freight to be monitored using integrated MEMS sensors.

### Two-wheeler unit very successful

We also see attractive growth prospects for our cross-divisional Two-Wheeler and Powersports unit. We aim to achieve sales of one billion euros in motorcycle technology by 2020. By 2021, annual production of two-wheelers is expected to surpass 160 million – roughly one-third more than today. Almost 90 percent of these will be produced in China, India, and Southeast Asia, including, in particular, small

motorcycles with an engine size of up to 250 cubic centimeters. Emissions requirements are also being tightened here. In Asia, many two-wheelers are still equipped with outdated carburetor technology. Bosch can help save fuel with an inexpensive, electronically controlled injection system.

Safety requirements for two-wheelers are also becoming stricter. The EU, for example, has mandated ABS for two-wheelers from 2017. Other countries plan to follow suit. In 2016, Bosch launched ABS 10, an inexpensive safety system that is specifically tailored to conditions in emerging markets. In addition, connectivity is also playing an increasing role in motorcycles. The ICC integrated connectivity cluster driver information system allows a motorcycle to be connected to a smartphone. We also offer a connectivity control unit that is linked to the cloud, which enables automatic emergency calls to be made in the event of a motorcycle accident. We have developed a simplified version of this for emerging markets.

### The market for automated and connected mobility

We also see major growth potential for the Bosch Group in the field of automated and connected mobility in passenger cars. Projections by the "Connected Car Effect 2025" study by Bosch and the consultants Prognos illustrate the benefits of connected and assisted driving for Germany, the U.S., and China. The study calculated that in the year 2025, 260,000 accidents would be prevented, 350,000 fewer people injured, 4.3 billion euros saved on collision damage, and nearly 400,000 metric tons less CO<sub>2</sub> emitted, in addition to significant time savings for drivers. In the three countries alone, around 70 million hours of driving would be saved through connected parking functions.

We are currently focusing our efforts on making the search for a parking space much easier, and on automating the parking process step by step. This will also ease pressure on traffic and the environment, particularly in cities and conurbations. In Germany, for example, drivers currently clock up as many as 4.5 kilometers in unnecessary driving each time they look for parking. We are significantly refining our current driver assistance systems for parking, such as parking aids and parking assistants, and are opening up new markets. We follow an integrated approach when it comes to parking.

With our active parking lot management, we want to make it easier for drivers to find parking and to help parking garage operators fill all their spaces. Sensors installed in the pavement detect whether a parking space is occupied. The sensors wirelessly relay this information via a gateway to a server, where the data is transferred to a real-time map.



Drivers can then use an app to access the information online. We are also developing systems for automated valet parking. This function enables the fully automatic use of parking garages based on intelligent parking garage infrastructure, on-board sensors in vehicles, and reciprocal connectivity. The benefits are greater convenience for drivers and improved use of capacity in parking garages, particularly as fully automated parking means more vehicles can fit in the same space. The third promising area is community-based parking. This is intended to make it easier to find curbside parking in residential and downtown areas. It makes use of ultrasonic sensors in parking assistants, which are already available in nearly one-third of new vehicles. Vehicles collect information about available parking spaces as they drive past, and this information is used to create a digital parking map. The data is then available to nearby vehicles via the cloud. Together with Daimler AG, we launched a community-based parking project in the greater Stuttgart area in fall 2016. This solution runs on an open platform that can be used by other partners.

We are also working on automated driving on freeways and similar controlled-access highways, building on a wide range of assistance systems that are already available, such as adaptive cruise control, emergency braking assistants, and lane-keeping assistants. As well as surround sensors, we have all the necessary technology such as powertrains, brakes, steering, and navigation systems in-house. We have further expanded our development activities in this area. As part of this, we have been developing a highway pilot not only for Germany and the U.S., but also for Japan and thus for left-hand driving, since early 2016. The key component is an intelligent interface between the vehicle and the driver – otherwise known as the HMI (human-

machine interface). At the same time, we are working on flexible, intuitive display and control concepts.

Automation and connectivity intermesh. Like scarcely any other company, Bosch is driving connected mobility forward. We are developing the necessary connectivity technologies, sensors, and cloud solutions. We can also offer the complete system, including communication control units, the central gateway for ensuring communication with all domains, and transmission and encryption technologies from our subsidiaries ETAS and escrypt. This means that the secure availability of the cloud-based updates can be ensured throughout the entire lifetime of the vehicle. Our vision is the intelligent assistant. At the Consumer Electronics Show (CES) at the beginning of 2017, we presented a concept vehicle that can also be connected with its environment, such as a smart home or car repair shop.

We are also working on connected transport solutions for the international market. In 2016, we presented the iTraMS intelligent transport management system in India. This new, flexible solution is suitable for all types of vehicles. The connectivity platform comprises vehicle positioning, condition monitoring, and performance analysis. As well as being installed in new vehicles, it can also be retrofitted. It can improve fleet management and can offer basic support in emergencies, off-road applications, and comprehensive transport solutions.



Through our subsidiary Bosch Engineering, we offer expertise in other areas of mobility, such as collision warning and emergency braking for streetcars. Our aim is to think beyond roads when it comes to automated mobility. The same applies to connectivity. Introducing connectivity in the transportation of goods by rail has been difficult up to now, as rail freight cars do not have their own energy supply or their own sensors. Bosch Engineering is now offering solutions in this field. We have strengthened our activities in individual systems and software development for automotive and non-automotive applications with the acquisition of ITK Engineering AG, which was completed in early 2017.

#### More focus needed

With mobility becoming electrified, automated, and connected, and given the high upfront investments associated with this trend, we also need to sharpen our focus. As announced, we have spun off the Starter Motors and Generators division to form an independent unit, and have now begun the sale process. We see better opportunities for this unit with a new owner. Further development of this division, and especially the necessary expansion of its international activities, would have tied up considerable additional capital at Bosch.

In January 2017, we also announced in conjunction with our joint venture partner, the MAHLE Group, that we are seeking to sell our joint turbocharger business Bosch Mahle Turbo Systems (BMTS). The global market for turbochargers is set for further growth over the next few years, as the trend toward small engines with turbochargers, particularly for hybrid powertrains, is continuing. However, success in this cost-driven market is possible only if the company reaches a certain size. Bosch and MAHLE have decided not to pursue the further expansion of BMTS themselves. We also announced in 2016 that we would discontinue the operations of the Stuttgart-based Bosch Emission Systems GmbH & Co. KG at its plant in Neunkirchen, Germany, owing to a continuing difficult economic environment. This also affects the activities of Bosch Emission Systems in the United States. Bosch Emission Systems produces and installs exhaust-gas treatment systems. In addition, we announced that we would sell our transmission components business for on-highway commercial vehicles in Japan to Knorr-Bremse AG. In the Automotive Electronics division, we announced plans to sell our U.S. company Akustica Inc., headquartered in Pittsburgh, PA, which manufactures miniaturized MEMS microphones.

We also decided on a series of structural measures to improve competitiveness and align ourselves with changing markets in 2016. In particular, these include measures for locations in the Mobility Solutions business sector and relocations within the Automotive Aftermarket division concerning the processing of used parts, spark plugs, and diagnostic devices. The affected locations are mainly in Germany and the United States. Moreover, in our Automotive Steering division we are adjusting to the trend away from hydraulic steering and toward electric steering, and are working on attractive and competitive products in this field. Electric steering is a key component of future automated driving. In Automotive Steering we are therefore carrying out restructuring measures in the areas of hydraulic steering and pumps, and have announced adjustments to locations as well as relocations in Germany and other countries such as Brazil.

## Industrial Technology

### Realignment in Drive and Control Technology

The systematic realignment of the Drive and Control Technology division is continuing. Bosch Rexroth is focusing on its Mobile Applications and Industrial Applications business units, whose areas of business are mobile hydraulics, industrial hydraulics, electric drives and controls, and linear motion and assembly technologies. These units are working intensively on further improving their competitiveness, while simultaneously focusing on innovations for increasing electrification and electronification. The latter involves expanding the range of hydraulic products to include sensors, electronic controls, and software. The growing importance of connected solutions and connected manufacturing is also opening up significant opportunities.



Market growth remains weak for the Mobile Applications unit, including in important markets such as the United States, Brazil, and China. In view of excess capacity worldwide and tough competition, the division systematically continued its restructuring program in 2016. This affected a large number of locations around the world. Some adjustments are still being implemented. In Industrial Applications, a project to increase competitiveness, focusing on the head office in Lohr, Germany, was completed in 2016. The total number of associates at Bosch Rexroth fell by around 1,600 to approximately 29,500 worldwide.

The market environment remains difficult in the industrial hydraulics business, which belongs to Industrial Applications. Bosch Rexroth announced plans in February 2017 to adapt its industrial hydraulics business to the lower long-term market volumes and to shed up to 500 jobs in Germany by the end of 2018. This was due in particular to a lack of new investment in commodity-related sectors such as oil production, offshore, mining, and metallurgy. At the same time, the future concept for industrial hydraulics will focus on technically challenging electrohydraulic solutions and on the expansion of the project and services business, as well as on new areas of application.

The division once again launched a wide range of innovations in 2016. These include a control unit that significantly improves driver convenience and ease of use for construction machines such as road finishers. This is based on a hydrostatic powertrain solution with modern mobile electronics and predefined software, together with a freely configurable display. In conjunction with the Mobility Solutions business sector's commercial vehicle unit, Bosch Rexroth is also expanding its product range for hydraulic units with integrated sensors. Together with the British company J.C. Bamford Excavators Limited, one of the world's leading manufacturers of telescopic handlers, a new kind of transmission system has been developed which combines hydrostatic drive technology with a downstream three-gear automatic powershift transmission. As well as significantly reducing fuel consumption, this makes work easier for the operator. Bosch Rexroth is also working on new, customer-specific solutions for e-drives, i.e. 700 V powertrains for mobile machinery such as excavators. The joint expertise of Bosch Rexroth's Industrial Applications and Mobile Applications business units is supplemented by the key competencies of other Bosch units in areas such as energy storage and energy management.



Efficient fuel consumption and customer benefit continue to play an important role. One innovation is the CytroPac, a small hydraulic power unit for machine tools. With its compact design and integrated solution comprising hydraulics, frequency converter, motor, and sensors, it simplifies the commissioning process and helps to reduce energy consumption by up to 80 percent.

A new service package, the Online Diagnostics Network (ODiN), has also been launched. The Industrial Applications unit equips large hydraulic systems with sensors and records their operating states online. The data is analyzed via the Bosch IoT cloud with the aid of self-learning software. This allows any wear and tear to be identified before it causes any downtime. ActiveCockpit, an interactive communications platform, connects IT applications such as production planning, quality data management, and e-mail with the software functions of machinery and equipment, and provides support for process optimization as well as rapid troubleshooting and fault clearance. ActiveAssist, a connected and software-based assembly workstation solution, guides associates through production processes that have many different variants. This shortens learning times and helps to prevent errors. The new concept is currently being used in pilot projects at several Bosch plants.

Bosch Rexroth sees itself as a user and provider of connected manufacturing technology for Industry 4.0 solutions. Systems, machines, and software have been integrated into a connected environment at its own electronics plant in Lohr, allowing flexible assembly of even the smallest batch sizes. Each product guides itself through the production process. No set-up time is required, despite the significant complexity of more than 200,000 type part numbers. Real-time online monitoring increases the availability of systems. Existing test benches have also been connected via a Bosch IoT gateway. With the aid of further systems and analyses, testing times have been significantly reduced and supplies and inventories of spare parts partially automated.

In addition, Bosch Rexroth has set up a complete Industry 4.0 production line together with Qinchuan Machine Tool & Tool (Group) Corp. (QCMT&T), China's third-largest manufacturer of machine tools. The Chinese company uses this line to produce and assemble 35 different gearboxes for robots, with no set-up times. Workers, workpieces, and processes are all connected to each other. The project involved an analysis of the existing value stream up to planning and commissioning of the connected assembly line.

Bosch Rexroth once again worked on many large projects in 2016. For example, the Gotthard Base Tunnel opened to traffic in June. The hydraulics supplied by Bosch Rexroth for several tunnel-boring machines helped to drive the 57 kilometer-long tunnel through the mass of Alpine rock, more than 2,000 meters below the peaks of the Saint-Gotthard Massif. The division also modernized the hydraulics for the elevator in the west pillar of the Eiffel Tower in Paris.



#### **Packaging Technology: focus on systems and innovations**

Our Packaging Technology division is one of the world's leading providers of process and packaging solutions for the pharmaceuticals and foodstuffs industries. Following a series of acquisitions in previous years, the strategic focus is on the expansion of systems solutions and the services business as well as on consolidation of the various operating units and locations. Another focal point is innovations for increasing connectivity in manufacturing. Particularly with a view to emerging markets, the division is simultaneously aiming to bolster its range for price segments with reduced systems complexity and output quantity. An important growth driver is Asia, where new, local competitors are growing into strong rivals in emerging markets such as China.

Innovations in 2016 included the world's first sealed paper packaging, which was developed together with the division's partner BillerudKorsnäs. A new process allows dry products such as sugar, cereals, flour, and other powders to be packed in dust-proof,

sustainable mono-material paper instead of in plastic film. In the field of connectivity, the division presented its new generation HMI 4.0 human-machine interface. This is suitable for both individual machines and entire lines, and was designed jointly with customers. Key innovations include guided operation through the individual work processes and new displays with intuitive touch-screen operation. The division received the World Star international industry award in 2016 for its biscuit packaging solution, which allows the packaging style to be switched quickly from upright to stacked products.

With a view to further expansion of activities in Asia and to make better use of growth opportunities in Southeast Asia, a new unit was set up in Thailand. A new regional organization was also created for local service requests. The service hub supports customers from all industries with local contacts, shorter delivery times for spare parts, and fast deployment of technicians on site.

The consolidation measures that have begun are aimed at simplifying the organization as a whole, at creating synergies in purchasing, production, and support functions, and, in individual cases, at merging, relocating, and closing sites.

#### **The tremendous potential of Industry 4.0**

Industry 4.0 is a subject that we are championing throughout the Bosch Group. At the beginning of 2017, we set up the Bosch Connected Industry project unit. This emerged from the "Connected Industry" innovation cluster, a collaborative effort spanning various units that was created in early 2015. In setting up this unit, we are pooling knowledge from our various divisions, our internet specialist Bosch Software Innovations, and our in-house supplier of assembly systems and special-purpose machinery, ATMO. Our aim is to become a leading user with a focus on reducing costs, increasing quality, boosting flexibility, and meeting delivery commitments at our own plants. At the same time, we want to be a leading supplier to the external market. We have all the key technologies at our disposal and can build on our experience from more than 100 pilot projects at our plants. New business models for services are expected to help significantly boost the availability of machinery and systems. In addition to collaboration relating to the Bosch IoT cloud and IoT Suite, we are focusing on open standards and partnerships.



In 2016, we unveiled a new, open machine language for Industry 4.0 that we developed in-house. The PPM (production performance management) protocol is freely available at no cost, thus helping to break down barriers to the widespread introduction of connected manufacturing. We also presented an IoT gateway in 2016. This can connect older machines with an intranet or the internet and thus make them fit for Industry 4.0. Furthermore, an international research team led by Bosch is developing an innovative industrial manufacturing concept. The aim of the partners in the ReCaM project, which receives funding from the European Union, is to develop a particularly versatile production system that will meet increasing demands for many different product variants. We are also collaborating with partners on intelligent sensor systems as part of the RoMulus project, as multi-sensor systems are vital to the success of Industry 4.0.

## Consumer Goods

### Power Tools: focus on innovation and customers

Power Tools produced more than 50 million power tools in 2016. The division supplies various target groups with differing requirements: DIY users on one hand, and professionals in advanced and emerging markets on the other. Power Tools focuses strongly on innovations with significant benefits to customers and on growth areas such as connectivity, high-performance cordless tools, and the opening of emerging markets.

The division owes its success to its consistent focus on the user. Users are involved in the development of new products and services from the beginning, and functions and designs are adapted to their needs. Modern development methods such as scrum and design thinking are employed. Innovation plays a key role for Power Tools. With “NanoBlade,” the division has brought a completely new saw blade technology for DIY users to the market. The technology is based on a saw blade with a revolving micro-chain consisting of links that measure just four millimeters – similar to a chainsaw but much smaller. This revolving chain eliminates the up-and-down movement typical of jigsaws and saber saws, and with it, the strong vibrations that push the saw blade off course. When it comes to cordless equipment, Bosch employs compatible battery systems in different voltage categories. This allows DIY users to use the same 18-volt battery for their lawn trimmer and hammer drill, for example.

Power Tools also introduced a large number of connected products for tradespeople in 2016. Its range now includes ten connected measuring devices and power tools, including drill and impact screwdrivers, angle grinders, a light for construction sites, and laser distance meters, as well as a thermal detector. Connection to mobile devices makes things such as documentation easier for professional users. By linking their smartphone to the device via Bluetooth and an app, tradespeople can optimize their work processes and eliminate errors that can occur during the manual transfer of measurements. These devices can also be individually configured, and settings can be saved for future work. At the same time, devices are being fitted with intelligent display systems, which further simplify work. The aim is to connect all Bosch’s professional power tools, thereby offering users even greater convenience – and increasing their productivity. Innovation is also being driven by occupational health and safety. Impact drilling machines and hammer drills for both DIY and professional users contain Bosch sensors that can reduce the risk of injury due to a rebound movement.

In emerging markets, many customers are using power tools for the first time. These tradespeople first have to be convinced of the benefits of changing from traditional hand tools to power tools. Bosch has developed a range of professional products specifically for emerging markets. Power Tools launched 35 new products last year in China alone. Bosch also sees major potential in Africa. The availability of affordable products and local service play a crucial role here. Power Tools is therefore building up its own sales organizations and creating its own network of repair centers.

The division is also investing in Germany. At a cost of some 35 million euros, a new office building is being constructed at its Leinfelden site, which will offer space for around 600 associates from 2018. The aim is to create a modern working environment that promotes creativity and cross-functional collaboration. The new building will also make it easier to introduce agile organizational and working methods. Power Tools tested a new form of collaboration in a pilot project in April 2015, which initially brought together a team of four people from product management, brand management, business development, and engineering. This new interdisciplinary structure has since been adopted for all DIY and gardening activities. The planned sale of the Skil business in Europe and North America to Chervon (HK) Ltd., based in Nanjing, China, was announced in August 2016.

### BSH Hausgeräte on a growth path

As a wholly owned subsidiary of the Bosch Group, BSH Hausgeräte has continued to successfully pursue its strategy. It is one of the leading manufacturers of household appliances in Europe and the world. Its goal is to improve consumers' quality of life with first-rate solutions. As well as connectivity and automation in the home, key trends include urbanization and a growing services market. BSH Hausgeräte's strategy is based on innovations relating to the connected world, customer focus, and the further expansion of its global presence. Improving energy efficiency and environmental protection continue to play an important role. China and India in particular offer growth opportunities.

With regard to connectivity, BSH Hausgeräte showcased new partners and services for Home Connect, an internet-based control system for the connected home, at the 2016 IFA industry trade fair in Berlin. Home Connect is currently the only system that can be used to control the entire range of connected household appliances across all brands. The open system also enables connected household appliances to be operated using third-party apps. The aim is to develop Home Connect into a leading centralized platform for the household appliances sector. BSH Hausgeräte is in the process of building up a network of partners. This includes Amazon, with its speech-activated assistant and reorder services. Other partners include companies specializing in electrical installation technology and energy management, software companies, suppliers of interactive cookbooks, and service providers that deliver fresh food straight to customers' homes. Using a software developer kit, external developers can easily join and develop further apps and services.

BSH Hausgeräte also presented the "Mykie" concept at IFA 2016, a personal assistant that communicates with the user via voice control. It can access recipe ideas, for example, and can order any missing ingredients, as well as directly accessing music, videos, and other entertainment services online. Further functions and services are planned.



In addition, BSH Hausgeräte introduced the in-house start-up WeWash GmbH, headquartered in Munich. WeWash makes the shared use of washing machines and dryers attractive. Users can reserve appliances using an app, are kept informed online of the progress of their washing or drying, and can conveniently receive and pay their bill. Shared use is expected to gain in importance, particularly in urban centers where there is a growing number of small households and less living space. Existing appliances can also be enabled for WeWash inexpensively and easily, particularly as no internet connection is required in the laundry room. The free app and inexpensive retrofit kit are due to be launched in 2017.

Another strategic focal point of the growth strategy is the expansion of activities in Asia in particular. The opening of the BSH Technology Center Asia Pacific in Aduodi near Bengaluru, India, will turn this



location into a regional hub for technology and innovation. Products for the Indian market need to be adapted to specific climatic conditions, for example. Development activities will initially focus on refrigeration and washing. The center opened in 2016 with 100 developers; the number of associates is expected to rise to around 400 within the next three years.

At the same time, the BSH Home Appliance Park in Chuzhou, Anhui Province, China, is being extended. BSH Hausgeräte is building its first dishwasher factory in China there. With an initial annual capacity of 600,000 appliances, the Chuzhou factory is expected to begin production in early 2018. It is planned to extend it at a later date. Requirements specific to the Chinese market include, for example, special sterilization programs and different cookware. The workforce in Chuzhou is set to increase from around 4,000 associates at the end of 2015 to 7,500 by 2020. BSH Hausgeräte also laid the foundations for a new technology center in Nanjing in November 2016. The center will work on development spanning all product groups, specifically for the Asian market. It is scheduled to open in October 2018 and will employ around 1,200 associates.

BSH Hausgeräte is continuing to expand its activities in Europe, too. In Poland, two new production lines will manufacture up to two million ovens and refrigerators per year from 2017 onwards. BSH Hausgeräte

acquired a factory site, factory buildings, and selected assets from the insolvent Polish manufacturer Fagor Mastercook in late 2015. The company already has four manufacturing facilities in Poland.

The subject of energy efficiency remains an important strategic focus. Energy-efficient household appliances can contribute significantly to combating global warming and conserving water. Appliances currently produced by BSH Hausgeräte consume up to 75 percent less electricity than their counterparts 15 years ago. In the area of home and living, increasing connectivity in particular offers an opportunity for energy-efficient management of the entire home. BSH Hausgeräte hopes to contribute to this with Home Connect and web-enabled household appliances.

## Energy and Building Technology

We continue to systematically develop this business sector with the goal of becoming a systems supplier and service provider for smart energy and building technology. The three divisions – Security Systems, Thermotechnology, and Bosch Global Service Solutions – cooperate with Robert Bosch Smart Home and Bosch Energy Storage Solutions in four core areas, which we further expanded in 2016.

### Connected products for private customers

The first area is concerned with extending the Security Systems and Thermotechnology divisions' range of products for private customers. Connected products and solutions are playing an increasing role in this area. Having sold over 250,000 connected products, the Thermotechnology division is a leading supplier of intelligent heating solutions. Among other features, these can provide information on faults and predict the causes via the "HomeCom" portal, facilitating remote maintenance. With British Gas, we have also developed a connected service for heating devices, with which the energy supplier can let its customers monitor their heating systems around the clock. With easy-to-use solutions, such as a wifi-enabled room controller that incorporates weather data from the internet into its control logic and automatically switches the heating to economy mode when the occupants have left the house, we increase convenience and save energy.

We are also expanding our international operations. We agreed in 2016 to set up a joint venture for the development and manufacture of hot-water solutions with Guangdong Vanward New Electric Co., Ltd. (Vanward), based in Foshan, China. Bosch will transfer production lines for electric water heaters, hot water heat pumps, and solar thermal collectors from various Bosch locations in China to two existing manufacturing sites as part of the joint venture. In spring 2017 we will begin producing a comprehensive range of hot-water products with a focus on electric water heaters. The products will be sold under the Vanward and Bosch brands.

Solutions and controls that connect different parts of the home are an area with a promising future. We consolidated our activities in this field within Robert Bosch Smart Home at the end of 2015. We presented a range of product innovations at IFA, a major industry trade fair, in Berlin in mid-2016. These included the Twinguard smoke detector, which, in combination with other Bosch products, will in the future be able to replace alarm systems and can measure air quality. The interior camera with 360° monitoring of its surroundings is also more than just a security camera. Privacy and data protection are of paramount importance. The camera can be retracted at the touch of a button if desired, and all data is stored locally.

#### Partnerships in commercial customer business

Two further core business areas are product solutions and services for commercial customers. We are expanding these areas as well. In our Security Systems division, we signed an agreement with Sony Corporation to set up a partnership in the area of video security solutions. This partnership includes a cooperation in sales and marketing as well as a technical collaboration. For example, with the exception of its customers in Japan, Sony's video security customers will in the future be supported by the Bosch Security Systems division's sales and marketing organization. The technical collaboration will relate to the development of innovative products and solutions in the field of video surveillance for security applications. Here, Sony will contribute its leading expertise in video image quality and performance, while Bosch will add an extensive set of robust video analytics at the edge to interpret data as well as innovative technologies to achieve highly efficient bitrates and minimum storage requirements. Sony will continue to manufacture its video security products under its brand. The joint venture for variable refrigerant flow systems (VRF systems)

with the Chinese Midea Group also began production in 2016. These systems employ variable flows of refrigerant to provide commercial buildings with heating and air conditioning.



We also further strengthened our activities in the field of building services, which are pooled within the Integrator Business operating unit. Our subsidiary Climatic LLC, Phoenix, AZ (USA), acquired the business operations of Skyline Automation NJ LLC, Clifton, NJ (USA).

#### Growth in service solutions

The fourth core area, business process management, is concerned with services relating to business processes for external and internal customers. At the beginning of 2016, we established the new Bosch Global Service Solutions division. The existing global business services network of the Security Systems division provided the basis for the reorganization. We expect business in this area to continue growing strongly. As well as customers in the automotive industry, services are aimed at the travel and logistics sectors and at customers working in information and communications technology. We opened a new service center in Leipzig, our fourth center in Germany, in 2016. We see major opportunities and possibilities for services created as a result of increasing connectivity and the internet of things, such as the automatic emergency call service eCall. Around 5 million vehicles worldwide are currently connected through Bosch services, and we expect this to rise to 14 million by the end of 2020. We anticipate the strongest growth in Europe and North America. Another focal point is services relating to multi-channel customer interaction, data analysis, and service design, which are located within the "Customer

Experience” center of competence. Around 7,800 service associates at 26 locations in 15 countries currently provide services around the globe in over 30 languages.

### Successful expansion of cross-selling

The Energy and Building Technology business sector coordinates our cross-selling activities. Here, we offer customer-oriented solutions that are aimed in particular at verticals such as mining, stadiums, airports, hotels, private and commercial buildings, automotive, pharmaceuticals and foodstuffs production, train stations, and theaters. We see growing potential for “smart city” solutions and services. The focus is on offering customers integrated solutions for their needs, based on Bosch’s broad product range. Through this cross-divisional cooperation, we generated an order volume of over 1 billion euros for the first time in 2016.

### Opening up new areas of business

We firmly believe that large companies such as Bosch need to create space for entrepreneurial spirit. In recent years we have succeeded in establishing a start-up culture, particularly with a view to completely new fields of activity. The Bosch eBike Systems unit developed from one such start-up. Its first activities date back to 2009. To develop this area of business, we draw on expertise in lithium-ion batteries from the Power Tools division and in electric motors, control units, navigation, and connectivity from the Mobility Solutions business sector. We have gradually built up the product range with a modular portfolio comprising a variety of e-bike drives, batteries, and display units, and have expanded our clientele to include everyone from city commuters to mountain bikers. We have also been establishing the unit’s presence in the Americas and Asia since 2014. For engineering and production, we make use of the expertise and capacity of the Mobility Solutions business sector.

Since fall 2016, Bosch Healthcare Solutions GmbH, Waiblingen, Germany, has been offering customers connected products and services in the area of healthcare and medical technology. Here too, we draw on our core expertise in sensor technology, software, and services. Vivatmo me is a world first, a breath analysis device that allows more than 330 million asthmatics to measure the severity of

airway inflammation themselves, without leaving home. Patients can share the readings online with their doctor, who can adjust treatment to their individual needs.

The e-scooter sharing service Coup, which was launched in 2016, has proved highly successful in Berlin. The wholly owned subsidiary Coup Mobility GmbH offers a new mobility option with a simple pricing model. Whenever they want, users can locate and book the nearest e-scooter, which is ready for immediate use. Once they reach their destination, they can leave the e-scooter anywhere in the city center. The service is set to expand to other cities.



At the CES in Las Vegas, the Bosch start-up Mayfield Robotics unveiled its home robot Kuri, which will be launched in the U.S. market in late 2017. The robot is around 50 centimeters tall and equipped with a speaker, microphone, camera, and various sensors. Kuri has been designed as a mobile companion that moves around the home with the members of “its” family. When developing the robot, Bosch focused on its ability to interact with people.

Robert Bosch Start-up GmbH, Stuttgart, plays an important part in strengthening our start-up culture and supporting internal initiatives. Our culture of innovation also takes the form of partnerships. In Australia, the partnership between the start-up The Yield and Bosch shows that connected solutions can also be used successfully in aquaculture. Modern sensors precisely determine the parameters

that are important for the oyster harvest. In Singapore, we are collaborating with Joyful Frog Digital Innovation (JFDI), which offers support to start-ups in Southeast Asia. Our first joint project is Surelock Pte. Ltd, Mumbai, India, which provides services relating to anti-theft devices for two-wheelers. The first country where these services will be offered is Vietnam.

Moreover, Robert Bosch Venture Capital GmbH (RBVC) set up its third fund in 2016, with a volume of 150 million euros. We have been investing in technology start-ups around the world since 2007. Through RBVC and our investment in start-ups, we gain access to disruptive innovations from an early stage. This third fund brings the total volume managed by RBVC to 420 million euros. RBVC invests in start-ups and industry-specific venture capital funds in Europe, the U.S., Israel, and China.

## Further expansion of our global presence

As well as expanding our manufacturing facilities around the world, we strengthened our global presence in 2016 through a variety of new activities. We opened a new engineering location in Lund, Sweden. Our first engineering location in Scandinavia already employs 80 experts, who are working on new software and hardware for applications such as connectivity in vehicles, mobile security systems, and motorized two-wheelers, as well as cross-domain connected technology. In 2016, we also opened a research institution in Tel Aviv, Israel, to take advantage of the country's dynamic innovation environment.

We also expanded our global presence through new sales offices in countries such as Iran and Pakistan, having focused in the previous year on Africa, where we are now represented with our own offices and companies in ten countries. We also reinforced our presence in Southeast Asia, opening additional offices in Indonesia, Malaysia, and the Philippines in 2016. We are involved in research alliances around the world. In China, we have been collaborating since 2016 with the Development Research Center of the State Council (DRC) on a study into connected manufacturing. In Japan, Bosch is now part of the IoT Acceleration Lab, which aims to promote the spread of smart mobility and connected manufacturing.



We also expanded our research activities in the United States in 2016, extending our engineering centers in Plymouth and Pittsburgh. Our experts in Pittsburgh are working on internet and security technologies for the internet of things. We strengthened our presence in South America in 2016 by establishing a subsidiary in Montevideo, Uruguay. We plan to set up further representative offices in Cuba, the Dominican Republic, and Paraguay.

## Working in the Bosch Group

### Raising the bar for leadership and agility

With the market changing fundamentally, Bosch is increasingly developing into an agile organization in order to stay adaptable. This is reflected not only in the higher number of Bosch start-ups, but also in the fact that many units are putting themselves on a new footing and fundamentally examining how leadership and collaboration need to change. For example, a broad-based cultural-change initiative played a part in the successful realignment of the Electrical Drives division. Another current example is the Home & Garden unit in the Power Tools division, which has interdisciplinary, customer-focused teams and flat hierarchies.

In the interests of creating a common corporate culture, we developed the new "We LEAD Bosch" leadership principles in 2016. These defined the shared vision of leadership and collaboration in the Bosch Group. The board of management drew up these principles together with a large number of executives and associates. In terms of content, they point the way to new forms of leadership and collaboration that are connected and transparent and reach across hierarchies and units.

Furthermore, the increasingly widespread use of design thinking, the scrum method, and other agile approaches promotes fast, flexible work in teams and on projects. This is supported by the Inspiring Working Conditions project, which works with associates to create the appropriate working environment. Another example is “agile training portfolios,” which help introduce new methods of working. Over 1,100 participants attended 127 of these training events around the world in 2016. Involving associates and employee representatives in dialogue at an early stage is both an important objective and a contributor to success, as there will rarely be one standard solution in tomorrow’s connected world. To encourage networking among associates, the internal social media platform Bosch Connect has been available since September 2013. Over 200,000 associates have registered so far. In India, internal platforms are being used in initial pilot projects so that associates can help fill posts in agile units such as start-ups more quickly and across all departments.

An important step was taken at the beginning of 2016 with a world-wide change in the remuneration system for specialists and executives. The variable remuneration component, the Bosch Performance Bonus, is now based entirely on divisional and company performance. Individual performance is more closely reflected in basic salary. In this way, we give greater weight to work across divisional boundaries and a leadership style that is based on respect and trust and encourages honest feedback.

### Shaping tomorrow’s workplace

Connectivity over the internet of things is changing Bosch’s business, and thus also what is expected of the workforce. New job profiles are being created and specialist qualifications spanning various domains are growing in importance. With the motto “Let’s be remarkable,” we are exploring new avenues in the search for new talent. Within just a few months, an international project team has developed a new online application system that focuses on what potential candidates want from the application process, and aims to make it easy for applicants to contact us – including by smartphone, in keeping with the times. It will initially be introduced in China and the United States in 2017.

Given our broad presence and international character, we offer a wide range of employment opportunities in our international research and development network, in a global manufacturing organization, and in highly varied management and marketing roles – from start-ups

-  **Make your mark**
-  **Shape tomorrow’s world**
-  **Find your place**
-  **Balance your life**
-  **Walk the talk**
-  **Discover new directions**
-  **Be yourself**
-  **Pay it forward**

to group functions. Associates can be flexible in shaping their career paths. Switching between specialist and leadership roles in line or project functions is actively encouraged. In addition, university students and graduates voted us winner of the 2016 trendence Employer Branding Award in the (gender) diversity category.

We strongly believe that mixed teams of men and women, embracing different generations and lifestyles and from diverse backgrounds, promote excellence and increase our capacity to innovate. World-wide, we employ people of more than 150 nationalities in total. We are making progress in our efforts to increase the percentage of international executives in the regions and of women in leadership positions in the company as a whole. In the majority of our focus countries, the percentage of local executives now stands at around 80 percent. Moreover, the target of 20 percent for the proportion of women in leadership positions has already been exceeded in several countries, including China and Spain.

We want to create attractive employment models for all associates and help them achieve a satisfactory work-life balance. Our associates, as well as executives who work in non-production-related areas, use a wide range of working models that allow them freedom to decide where and when they work. Our culture of flexible work and telecommuting won the New Work Award in Germany in 2016. As well as time spent abroad or job changes, we allow family leave – whether for childcare or looking after relatives in need of care – to be recognized as an element on a career path. There are also childcare and other care services close to our locations, and household-related services can also be arranged.

We have a long tradition of offering company pension schemes for our associates in many countries. The Bosch Pension Fund, which was set up for associates in Germany, received five awards in 2016, including for the best European company pension fund. It had already received multiple prizes in previous years. We also support our associates with employee and healthcare services that are tailored to local circumstances. With our OncoCure program, we offer assistance to associates who have developed cancer. This program is initially being offered in Germany. It can improve tumor treatment through targeted genetic diagnostics, the cost of which is borne by Bosch. In addition, we plan to cooperate intensively with the Robert Bosch Hospital and with Robert Bosch Stiftung in the field of cancer research. These efforts will center around the newly established Robert Bosch Centrum für Tumorerkrankungen (RBCT: Robert Bosch tumor center) in Stuttgart and the planned alliance with the Deutsches Krebsforschungszentrum (DKFZ: German center for cancer research) in Heidelberg. We signed a declaration of intent to this effect in July 2016. We are also expanding preventive programs and advice in connection with mental health.

We are conducting pilot projects to examine how we can improve our flexible working culture in production and production-related environments. We believe the connected industrial production of the future offers great opportunities, reinforcing the role of people as shapers, users, and decision-makers. Automated and connected processes bring more security and support and greater scope for flexible working. We see it as an important task to provide associates with further training, in view of far-reaching technological changes in areas such as powertrain technology and with respect to IT expertise.

#### **Importance of training and professional development**

We invested around 250 million euros in continuing professional development in 2016 alone. An environment where knowledge becomes obsolete ever more quickly places new demands on trainers and learners. Knowledge must be made available quickly and relevantly. New technologies support this trend. These future trends are addressed in the “Digital Learning” project, which aims to develop, pilot, and roll out technical solutions for flexible, self-organized learning that can be practiced in any location. The solutions include virtual classrooms, as well as mobile-learning options. Moreover, in the shape of the Robert Bosch Kolleg, we have an institution that offers continuing professional development at university level for specialists and executives.



Occupational training and continuing professional development are very important at Bosch. Worldwide, over 7,300 young people completed apprenticeship schemes at Bosch in 2016, similar to the high levels of previous years. Due to the strong tradition of dual education in companies and schools, Germany leads the field here, with around 4,800 apprentices. At our locations worldwide, moreover, we have many training centers of our own that provide training specifically for technical trades. They include our sites in France, Serbia, Turkey, India, China, and Vietnam, as well as in Brazil and the United States. We also encourage international exchange among apprentices. Each year, for example, around 150 apprentices and over 200 students following dual study courses in Germany are given the chance to complete an internship abroad.

Comprehensive internship programs for university students, scholarship programs, pre-master's programs, and postgraduate programs complete these activities. The junior managers program and graduate specialist program are trainee programs that provide training specifically for the specialists and executives of the future. In 2016 alone, some 200 trainee executives embarked on the junior managers program, which included young people from Africa for the first time. We also maintain numerous partnerships with universities around the world.

#### **Commitment to society**

To support the integration of refugees, particularly in Germany, we offer internships preparing them for working life. Four hundred such internships were offered in 2016, and this involvement will continue. As a company, we made empty properties and company-owned apartments available. We provided around 500,000 euros in special funds in total. Bosch was also one of the founding members of the “Wir zusammen” [“Us together”] initiative, a network of refugee initiatives set up by German businesses. We are proud of our associates’

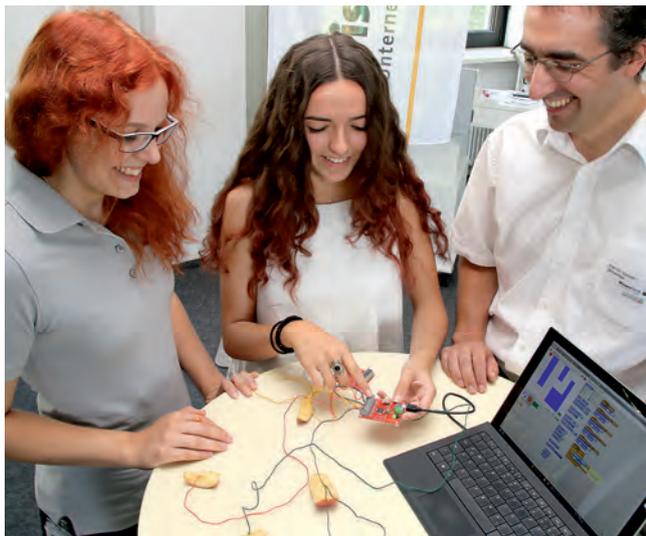
involvement in a wide range of projects. A donation campaign set up by the board of management, combined works council, and combined executives' committee, together with Primavera, an organization of Bosch associates, brought in a total of 820,000 euros. The company doubled each euro that was donated. This made it possible to finance 113 aid projects that had been proposed by Bosch associates for the areas around their locations, or in which they are involved as volunteers.

With our refugee program, we can draw the experience we gained in our program for young people from southern Europe. In 2014, we created around 100 additional apprenticeships, about half of them in the young people's countries of origin and half in Germany, to make a practical contribution to combating youth unemployment in southern Europe. Based on our positive experience and an impressive success rate in interim exams, we plan to start a second intake in Germany with 50 young Spanish people in fall 2017. Significant additional efforts are required on the part of locations to provide the intensive support needed for training to be successful. Our regional companies in Italy and Spain are also pursuing other activities. Their "Prepare for the future" educational projects are giving school and university students a first insight into the world of work.

Bosch has also set itself the goal of promoting IT expertise widely. In Germany, for example, we support the Calliope and IT2School projects of the Wissensfabrik ["Knowledge Factory"] initiative, which

aims to provide students with a hands-on approach to accessing and acquiring IT skills. In these projects, locations such as our Homburg plant get involved in schools, with apprentices and trainers passing on their IT skills.

Regional companies, individual locations, and Bosch associates are also taking the initiative and getting involved in social projects. Early this year, the foundations were laid in the Indian town of Jigani, to the south-west of our Bengaluru location, for a kitchen facility that will prepare 15,000 hot lunches for schoolchildren every day. Bosch India has donated almost 1 million euros to help fund construction. Central Italy was shaken by a series of earthquakes in late summer 2016. Our Italian regional company has donated 150,000 euros to support the construction of a multi-functional outdoor sports ground in the area, which will serve as a meeting point and encourage physical activity, particularly in children and young people. School and university students in the affected region are also being offered assistance with careers guidance to give them a goal in life once more. The Primavera aid initiative, which has been run by Bosch associates on a voluntary basis for over 25 years, provides support above all for children and young people living in the vicinity of Bosch locations outside Germany. The initiative is run solely by volunteers, which means that every euro donated goes directly to the projects. Thirty-four projects are now being managed in 13 countries, with a focus on healthcare and school education; three new projects were added in Indonesia and Thailand this year alone.



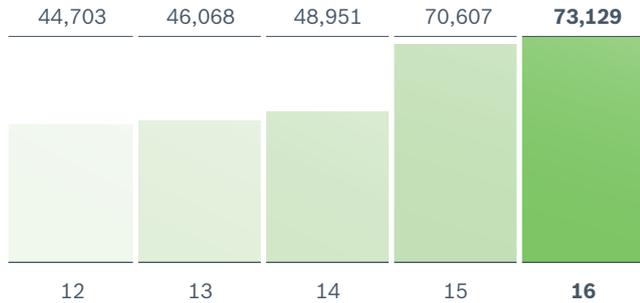
## 03

## Development of sales revenue and EBIT

Bosch Group 2012–2016

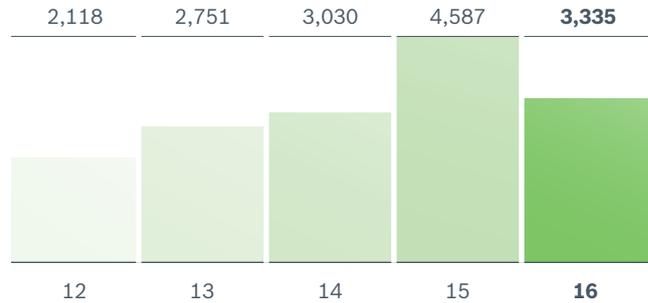
## SALES REVENUE

Figures in millions of euros



## EBIT

Figures in millions of euros



## Report on economic position

In 2016, despite a weak overall economic environment and significant negative exchange-rate effects, the Bosch Group achieved its target growth range for sales, and even exceeded it slightly after adjusting for exchange rates. However, our expectations for EBIT from operations were not fulfilled. This was mainly due to the burden placed on the group by substantial upfront investments in connection with the transformation tasks that lie ahead, as well as by exchange-rate effects. Performance varied considerably by region and business sector. In regional terms, the pace of business picked up considerably in Asia Pacific over the course of the year. Growth in Europe was also encouraging. In North America, however, we felt the impact of the weak economy. The situation in South America remained very difficult, despite a slight recovery in the second half of the year. With regard to the business sectors, Mobility Solutions and Consumer Goods recorded the strongest growth. However, owing to high upfront investments, restructuring measures, and carve-out and integration activities, the operating margin in Mobility Solutions was down year on year. In contrast, Consumer Goods significantly increased its operating margin. The Energy and Building Technology business sector also improved its figures year on year. The still weak market environment placed a strain on the Industrial Technology business sector. Nonetheless, it broke even following the previous year's loss.

## Controlling system

## The Bosch Value Concept as the basis for control

The Bosch Value Concept pursues Bosch's core objectives of profitable growth and financial independence. The controlling system combines value creation with value preservation. Particularly for an unlisted company such as the Bosch Group, being able to strengthen and maintain profitability over the long term is crucial for financing future growth.

The main control parameters for value creation are sales growth, earnings before taxes and before the financial result (EBIT), and the internal "operating value contribution" indicator. The operating value contribution is calculated in the same way as EBIT, but also deducts the cost of capital. Internal reporting is based in principle on the International Financial Reporting Standards (IFRS). However, in certain respects, such as recognition of impairment losses, pension provisions, and provisions for losses arising from delivery commitments, internal reporting deviates from external accounting. For the management of operations and the executive incentive program, we adjust for the earnings fluctuations associated with these factors. We aim to secure value by closely tracking cost trends and through liquidity management that includes centralized financial planning.

The central internal reporting instrument is a monthly business report which contains an up-to-date overview of the main performance indicators of the operating units. It provides a year-on-year comparison and a target versus actual comparison of key performance indicators. The report is based on the business plan, which is embedded into longer-term strategic corporate planning. The methods applied in the target business plan focus on developing and carrying out measures designed to achieve the planning targets. It is a top-down planning

model that is strongly geared toward targets and measures. External benchmark comparisons form the basis for setting these targets.

The targets derived from these are also a guide for the value contribution targets. Since 2016, these targets alone have formed the basis for the short-term variable portion of specialists' and executives' remuneration, from section-manager level to the board of management. This is known as the Bosch Performance Bonus. In addition, on the level of senior executives and the board of management, the VALUE program offers a variable bonus program for long-term corporate success, with a time horizon of three years. The development of the operating value contribution is also used as the basis for this.

## Macroeconomic and sector-specific environment

### Economic environment remains weak

Economic momentum continued to decline slightly in 2016. World economic output, measured on the basis of global GDP, rose by only 2.5 percent in 2016, confirming our cautious forecast. Growth in the advanced economies came to 1.7 percent, somewhat below our expectation of just under 2 percent. In the United States, the growth of GDP slowed much more significantly than expected to 1.6 percent, compared with the slightly revised figure of 2.6 percent in 2015. In Japan as well, economic output grew less strongly than originally anticipated, with an increase of 1 percent. Although the growth rate in the European Union slowed to 1.9 percent, it was higher than the forecast of 1.6 percent. The German economy grew by 1.9 percent, a somewhat higher level of growth than expected. With the situation improving to some extent in eastern Europe, with economic output growing 1.4 percent, growth in Europe as a whole stood at 1.7 percent, exceeding our forecast of 1.3 percent.

Growth in emerging markets came to 3.9 percent, which, as predicted, was once again well below the growth rates achieved in previous years, but higher than originally forecast. Major factors causing this slower growth included a slight slowdown in growth in China and the continuing recession in South America and Russia, although the situation in Russia has improved. Growth in India slowed slightly year on year in 2016. At around 7.5 percent, it was nonetheless stronger than in China, where growth came to 6.7 percent.

In the raw materials markets, prices rose over the course of the year, particularly for oil and other fuels. However, they remained well below the highs reached in previous years. The same applied to prices for industrial and precious metals. The main reasons for this trend were the initial effects of reduced investment in extraction, coupled with a slight improvement in the global economy during the year. Rising oil prices in particular are causing inflation rates to increase around the world. The euro was down only slightly on average against the U.S. dollar over the year. On the other hand, the euro appreciated against other currencies that are significant for us, such as the pound sterling and most of the emerging countries' currencies. In the last quarter of 2016, however, the U.S. dollar appreciated significantly in the wake of the U.S. presidential election and rising U.S. interest rates.

As concerns our core markets, global automotive production including heavy trucks grew more strongly than we had assumed in our plans, rising by 4.5 percent to around 95.7 million units. We had anticipated approximately 93 million units. Production of heavy trucks reached the previous year's level of 2.9 million units, which also exceeded our forecast of 2.7 million units.

One reason for this improved performance in 2016 was unexpectedly strong momentum in a number of important markets. One key factor was that customers brought forward purchases in China after it was originally announced that tax breaks would be phased out. Production in China increased by around 14 percent year on year, and thus much more steeply than the 3 to 5 percent originally anticipated. There was a similar development in India, where production grew by roughly 10 percent. In Japan, automotive production declined. There was weak growth in North America, while production figures in South America again declined sharply. Production grew by 4 percent in Europe, which was also a significantly better growth rate than originally expected. This was due to very favorable developments in Italy, Germany, and France.

We monitored the development of unit sales of diesel passenger cars very closely in 2016. These sales showed increasing buyer reluctance in the important European market. Unit sales of diesel vehicles grew at a slower rate than the market as a whole. The decline in the proportion of diesel vehicles in new registrations, which had already been apparent for some time, has thus intensified, particularly for smaller vehicles. This is especially true in traditional diesel markets such as Spain and France, and increasingly also in Germany. On average in 2016, the proportion of new passenger car registrations with diesel engines was 48.5 percent in Europe, compared with 50.8 percent in the previous year; in Germany, this figure dropped from 45.5 percent to 43.2 percent.

Global production figures in mechanical engineering grew slightly, by about 1 percent, in 2016. We had forecast a minor decline here. Asia and Europe provided positive stimuli, while in the Americas the market stagnated. As expected, the market for mobile applications experienced a slowdown, with associated repercussions for the Drive and Control Technology division.

At 2.8 percent, private consumption grew somewhat more strongly than forecast. According to the information available, global construction activity grew 3.5 percent, below our forecast of 3.8 percent. Most of the stimuli came from Asia, which largely managed to maintain its momentum. Europe showed a slight improvement, while the recovery in construction activity in the U.S. was disappointing.

## Course of business and sales trend

### Good growth in the Bosch Group overall

Despite only moderate global economic growth, the Bosch Group's sales revenue rose to 73.1 billion euros. This represented year-on-year growth of 3.6 percent in nominal terms and of 5.5 percent after adjusting for exchange-rate effects. Growth was thus within the forecast target range of 3 percent to 5 percent for 2016, and even exceeded this range slightly after adjusting for exchange-rate effects. In terms of sales, negative effects from exchange rates came to some 1.3 billion euros. These were primarily due to the euro's appreciation against the pound sterling, the Russian ruble, the Turkish lira, the Brazilian real, and, among the Asian currencies, the Chinese yuan and the Indian rupee. In contrast, the exchange-rate effects against the U.S. dollar were only slight in 2016.

Changes in the consolidated group affected sales to the tune of roughly 130 million euros in 2016. These were essentially due to the inclusion of the former joint venture Automotive Steering for a full year for the first time. In the previous year, it was fully consolidated for only 11 months. Moreover, sales of the packaging machinery manufacturer Kliklok-Woodman Corporation, Decatur, GA (USA), and of its sister company Kliklok International Ltd., Bristol, United Kingdom, were fully consolidated for the first time. When comparing the figures with those from the previous year, the sale of the large gearboxes business

## 04

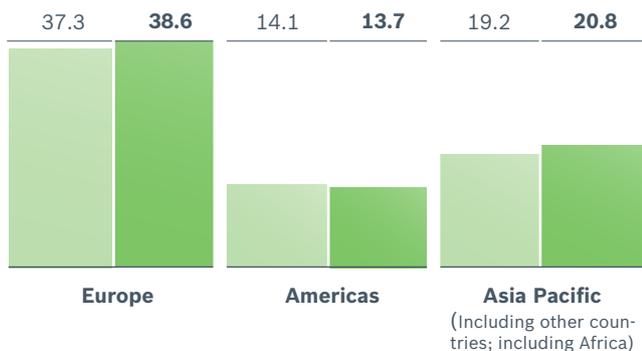
### Development of sales revenue 2015–2016

Bosch Group

#### SALES REVENUE – REGIONAL COMPARISON

Figures in billions of euros

Total 2015–2016 70.6 ↗ 73.1



in the Drive and Control Technology division must also be taken into account, as this was included for 11 months of 2015.

#### Significant regional differences

Business performance varied widely from region to region. Growth in Europe was encouraging. Despite the subdued economy and significant negative exchange-rate effects, we increased our sales revenue to 38.6 billion euros. We thus achieved growth of 3.4 percent in nominal terms and 4.8 percent after adjusting for exchange-rate effects. That means we continue to generate around 53 percent of our total sales revenue in Europe.

Sales in the Americas fell slightly on the whole. Following the previous year's positive figures for North America, sales declined by a nominal 2.2 percent to 12.3 billion euros, and by an exchange rate-adjusted 1.8 percent. This drop primarily affected the Industrial Technology business sector and to a lesser extent Mobility Solutions, while the other two business sectors recorded growth in sales. Business remained difficult in South America, even though the trend turned positive again for the first time in the second half of the year. The depreciation of the Brazilian real also had a negative impact. For the year as a whole, sales in South America decreased by a nominal 5.0 percent to 1.4 billion euros, but rose by 2.4 percent after adjusting for exchange-rate effects.

Asia Pacific (including other countries, inter alia Africa) showed the strongest growth. Business there grew sharply in the second half of the year, following a weak first six months. Here, too, however, significant exchange-rate effects also had a negative impact on sales figures, particularly as a result of the depreciation of the Chinese and Indian currencies. Sales increased by 8.3 percent to around 20.8 billion euros in nominal terms and rose by a low double-digit figure of 12 percent after adjusting for exchange-rate effects. The

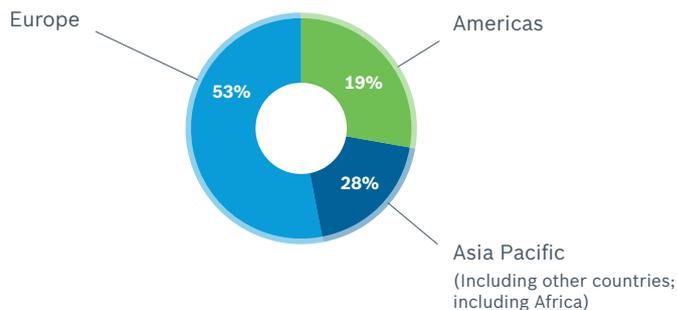
## 05

### Structure of sales revenue 2016

Bosch Group

#### SALES REVENUE – REGIONAL COMPARISON

Percentage figures



Mobility Solutions business had a positive impact, particularly in China, as market growth surpassed expectations. However, we were also pleased with sales growth in Southeast Asia and India.

#### Significant differences by business sector

##### Strongest growth in Mobility Solutions

A breakdown of performance by business sector also shows significant differences. The Mobility Solutions business sector achieved the strongest growth – 5.5 percent in nominal terms and 6.9 percent adjusted for exchange-rate effects. In all segments, we were successful with a large number of modified products and innovations. In addition, the first-time full consolidation of Automotive Steering for the whole year had a positive effect of around 320 million euros.

In powertrain technology, the Gasoline Systems division once again benefited in particular from high demand for advanced gasoline direct injection systems. Engine management systems, transmission control systems, and sensors were also in demand. Here, we expanded our market position in Asia in particular. In diesel technology, however, we felt the effects of customer reluctance in the important European passenger-car market. This was compounded by a decline in business in North and South America, owing to economic developments. On the other hand, business with exhaust-gas treatment systems and sensors developed very positively, as did the Chinese market, meaning that overall we recorded slight growth in our diesel business.

We also achieved further strong growth with modern driver assistance systems in the Chassis Systems Control division in 2016. This was driven by the trend toward automated driving and parking. We were also successful with active and passive safety systems, such as ABS

## 06

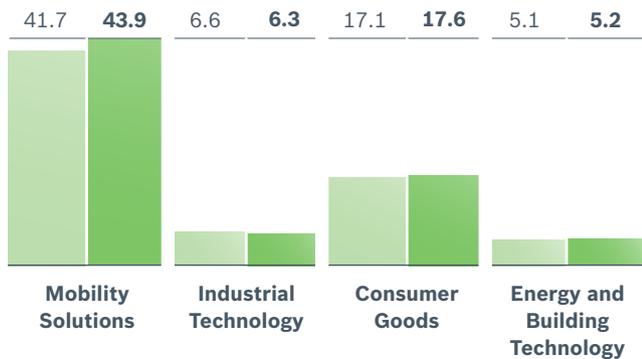
### Development of sales revenue 2015–2016

Bosch Group

#### SALES REVENUE – SECTORAL COMPARISON

Figures in billions of euros

Total 2015–2016 70.6 ↗ 73.1



and ESP®. Our Two-Wheeler and Powersports unit achieved strong double-digit growth. The increasing global use of safety technology such as ABS in two-wheelers was one of the contributing factors. Another noteworthy development was the very positive growth in demand for modern display systems in the Car Multimedia division. We were also very pleased with the growth in the Electrical Drives division's business with automotive thermal systems and actuators, which we achieved thanks to competitive new generations of products.

We recorded strong growth in 2016 with drive systems and control units for e-bikes, an area in which we are now a global leader. Moreover, our software specialist ETAS and our subsidiary Bosch Engineering significantly increased their sales. Our Starter Motors and Generators division also generated growth. The Automotive Aftermarket business failed to meet expectations, owing to unsatisfactory growth in areas such as the North American and Chinese markets and the Automotive Service Solutions unit. Our business with steering systems was impacted by the technological trend toward electric steering systems in passenger cars. While sales rose significantly here, business with hydraulic steering systems and pumps saw a decline.

#### Market remains difficult for Industrial Technology

The Industrial Technology business sector felt the effects of market developments in important mechanical engineering segments, which remained sluggish. Sales dropped nominally by 5.2 percent to 6.3 billion euros and by 4.2 percent after adjusting for exchange-rate effects. The base effect on sales due to the disposal of the large gearboxes business at the end of 2015 came to around 250 million euros, or 3.7 percentage points in nominal terms.

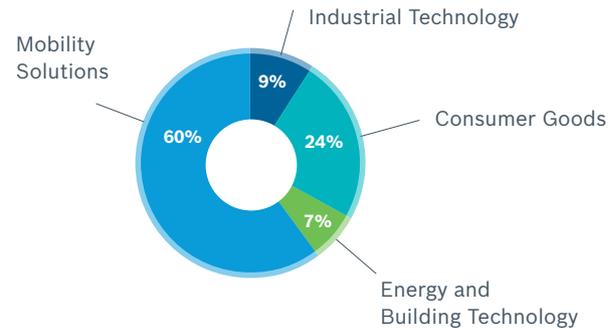
## 07

### Structure of sales revenue 2016

Bosch Group

#### SALES REVENUE – SECTORAL COMPARISON

Percentage figures



In the Drive and Control Technology division, both the Mobile Applications unit and the industrial hydraulics segment within the Industrial Applications unit have been affected by the difficult market situation. These areas felt the effect of a further drop in demand as a result of low oil and commodities prices in 2016, and above all of a significant decline in the U.S. market and the continuing weakness of the Chinese market.

The market for packaging machinery also recorded lower growth in 2016 than in the previous year, which had repercussions for sales growth in the Packaging Technology division. In addition, investment decisions were delayed and projects for important customers in the food sector were postponed.

#### Success for Consumer Goods

The Consumer Goods business sector increased its sales significantly in 2016, despite substantial negative exchange-rate effects. Although sales grew by only around 2.6 percent to 17.6 billion euros in nominal terms, they rose by 5.7 percent after adjusting for exchange-rate effects. The BSH Hausgeräte and Power Tools divisions grew at similarly high rates in 2016.

BSH Hausgeräte increased its sales in almost all countries, despite negative effects from exchange rates. With the exception of refrigeration products, where annual sales stagnated at the previous year's level, all other categories of large appliances recorded sales growth. The Power Tools division was particularly successful in important western European markets such as Germany, the Iberian Peninsula, and the United Kingdom in 2016. However, exchange-rate effects were felt very strongly here. On the whole, making power tools for professional users available in European DIY stores paid off. Cordless appliances such as the Ixo also remain very popular with customers. The handy cordless screwdriver sold over one million units in 2016 alone, bringing total sales since it was launched in 2003 to around

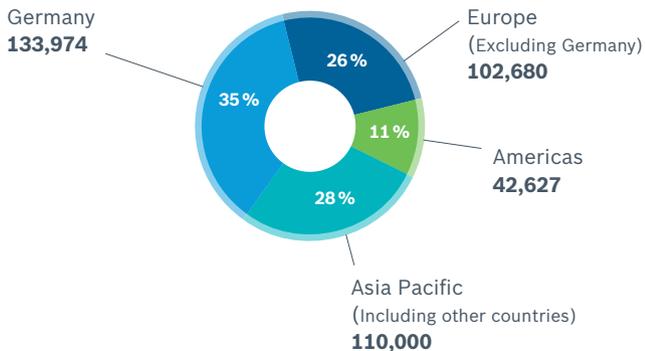
## 08

### Associates

Bosch Group 2016, as per Dec. 31, 2016

#### BY REGION

Total **389,281**



16 million units. This makes the Ixo the world's best-selling power tool. In North America, the announcement that the Skil brand was to be sold dampened sales. Business in India performed well, while business in China and Brazil declined owing to economic effects.

#### Further growth in Energy and Building Technology

The Energy and Building Technology business sector, with the Security Systems and Thermotechnology divisions, increased its sales by only 1.7 percent to 5.2 billion euros in nominal terms, but achieved growth of 4.5 percent after adjustment for exchange-rate effects. Developments in the product business varied in the Security Systems division. Fire detection, intrusion detection, and access control systems provided significant stimuli for growth, while the video surveillance unit fell short of expectations. The installation business recorded substantial sales growth in the United States and Italy. We achieved moderate growth in the German market.

Our specialist in heating and air conditioning technology, the Thermotechnology division, gained market share in Europe despite the difficult overall market environment. There was a further rise in demand for modern, web-enabled heating systems. The division was especially successful in the United Kingdom. We also succeeded in growing our business in the growth markets China, Africa, and eastern Europe. However, the division was considerably impacted by the development of exchange rates.

The Bosch Global Service Solutions division got off to a very successful start, with double-digit growth.

### Headcount

#### Further worldwide growth

The total number of Bosch Group associates rose by around 14,500

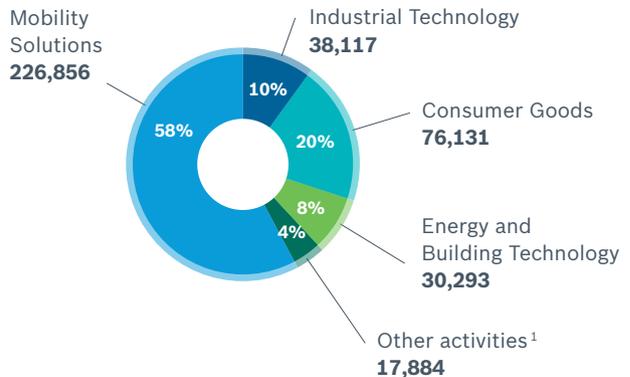
## 09

### Associates

Bosch Group 2016, as per Dec. 31, 2016

#### BY BUSINESS SECTOR

Total **389,281**



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

to approximately 389,300 at the end of 2016, compared with 374,800 at the end of 2015. Of these new associates, some 1,600 were the result of a large number of small-scale consolidations. New hires thus increased the total headcount by around 12,900, after allowing for staff turnover and personnel adjustments. The disposal of activities did not have any major impact in 2016, as the sales that were announced had yet to take effect. Restructuring measures affected the Drive and Control Technology division in particular in 2016.

In regional terms, the workforce structure remained unchanged year on year. At the end of 2016, around 236,700 associates were employed by the Bosch Group in Europe, compared with roughly 229,600 in 2015. The number of associates in Germany grew to some 134,000, compared with approximately 132,000 one year previously. In Asia Pacific, the number of associates increased to around 110,000 during this period, compared with roughly 104,100. In particular, we took on additional associates in China and India, as well as in Southeast Asia, where most of the new recruits were in Malaysia and Vietnam. The number of associates in the Americas rose from 41,000 to 42,600. The trends in North America and South America once again ran counter to each other in 2016. The number of associates rose by some 1,700 in North America, but fell slightly in South America.

There were slight changes in the workforce structure by business sector. While the share of associates in Industrial Technology fell by 1 percentage point year on year, the proportion working for Energy and Building Technology grew by 1 percentage point. The number of associates in the Mobility Solutions business sector increased to approximately 226,900, from roughly 217,000 at the end of 2015. We took on more associates in growth areas such as driver assistance systems and gasoline direct injection systems in particular, while market developments meant that the number of associates in Diesel Systems fell. The number of associates in the Industrial Technology business sector dropped to around 38,100, compared with 39,500

## 10

### Development of CO<sub>2</sub> emissions

Bosch Group 2012–2016

#### CO<sub>2</sub> EMISSIONS<sup>1</sup>

Metric tons of CO<sub>2</sub> per million euros value added<sup>2</sup>



<sup>1</sup> Direct CO<sub>2</sub> emissions from stationary and mobile combustion, indirect CO<sub>2</sub> emissions from procured electricity, district heating and cooling or steam, and volatile CO<sub>2</sub> emissions

<sup>2</sup> Difference between total net sales (third-party sales, intercompany sales, internal deliveries) and planned cost of materials procured externally

at the end of 2015. This was due to restructuring in the Drive and Control Technology division. In contrast, the number of associates in the Consumer Goods business sector rose to around 76,100, compared with 74,300 at the end of 2015. This means that 20 percent of Bosch associates continue to work in this business sector. The number of associates in the Energy and Building Technology business sector increased by around 2,900 to approximately 30,300. As well as consolidation effects from Robert Bosch Smart Home, Thermotechnology, and Service Solutions, the creation of additional jobs in the fast-growing Service Solutions division had an impact.

The number of associates in research and development grew by around 2,900 to 58,700 across all units worldwide. Over half of them are part of our global research network and work outside Germany. The number of associates in the corporate sector for research and advance engineering (other) also rose slightly, to around 1,300.

### Environmental protection, health and safety

Bosch has always considered environmental protection, resource conservation, and occupational health and safety to be very important. Moreover, Robert Bosch GmbH has been a member of the United Nations Global Compact since 2004, and is committed to its ten worldwide principles for responsible corporate governance. For us, "Invented for life" is also about reducing the environmental impact of our products and production processes. We have identified three key themes with regard to environmental protection and accident prevention: combating climate change through energy efficiency, sustainable production through conserving resources, and occupational health and safety. We have defined targets for

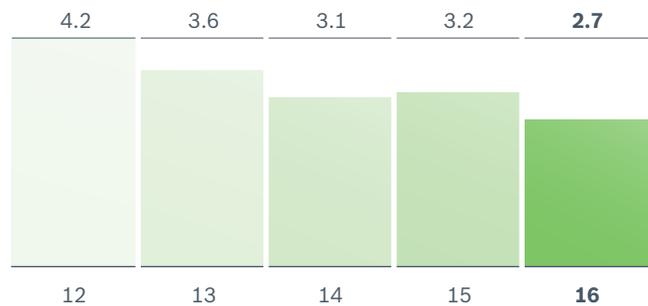
## 11

### Development of occupational health and safety

Bosch Group accident rate 2012–2016

#### ACCIDENTS

per million hours worked<sup>1</sup>



<sup>1</sup> Accidents resulting in one or more days of absence

each of these, based on the following indicators: relative CO<sub>2</sub> emissions, accident rate, and relative waste volume and relative water consumption. In the area of waste volume, we want to achieve an annual improvement of 3 percent by 2018. For water consumption, this figure is 2 percent. These actions are described in greater detail in our sustainability report.

#### Further reduction of CO<sub>2</sub> emissions

We regard the reduction of CO<sub>2</sub> emissions as part of our social responsibility. Through the use of intelligent technical solutions, industry can play an important role in combating climate change. Energy efficiency not only benefits the environment and society, but is also a key factor in making us more competitive. We will therefore continue to develop energy-saving measures.

Back in 2008, we set long-term targets for reducing CO<sub>2</sub> emissions from our locations relative to value added. These targets committed us to achieving a 20 percent reduction in carbon dioxide emissions by 2020 compared with 2007 levels (excluding Automotive Steering and BSH Hausgeräte). We had already significantly surpassed this target by 2015, and made further progress in 2016. With relative CO<sub>2</sub> emissions of 69.4 metric tons per one million euros value added, we have already achieved a reduction of more than 30 percent. We have therefore raised our target to 35 percent by 2020, including BSH Hausgeräte and Automotive Steering.

At many Bosch locations, specially trained CO<sub>2</sub> coordinators are looking for further ways to save energy. These experts and their teams analyze the energy consumption of production facilities and buildings, for example. We have begun to make Bosch's energy use CO<sub>2</sub>-neutral in two pilot projects in the areas of electromobility and the IoT cloud.

# 01

## Most important items of the statement of income

Figures in millions of euros

	2016	2015
Sales revenue	73,129	70,607
Cost of sales	-47,711	-46,675
<b>Gross profit</b>	<b>25,418</b>	<b>23,932</b>
Distribution cost and administrative expenses	-14,776	-13,787
Research and development cost	-6,954	-6,378
Other operating income and expenses	-178	864
Result from companies included at equity	-175	-44
<b>EBIT</b>	<b>3,335</b>	<b>4,587</b>
Financial result	32	-98
<b>Profit before tax</b>	<b>3,367</b>	<b>4,489</b>
Income tax expense	-993	-952
<b>Profit after tax</b>	<b>2,374</b>	<b>3,537</b>

### Improvements achieved in occupational health and safety

At the start of 2016, we defined a long-term occupational health and safety target for 2020 for the first time. The target maximum accident rate for the Bosch Group is now 1.7 accidents for every one million hours worked.

We stepped up our activities in 2016 in order to achieve this goal. Safety in day-to-day work is a key concern at all Bosch locations, alongside quality, delivery reliability, and efficiency improvements. With the "Safety Basics" program, we have established an intensive dialog between executives and associates. We made significant progress with further improvements in occupational health and safety in 2016. The accident rate for 2016 including Automotive Steering and BSH Hausgeräte was 2.7 per million hours worked, as compared with 3.2 in the previous year. The total number of accidents in the workplace stood at 1,849 in the 2016 financial year, compared with 2,126 in 2015.

## Results of operations

### Heavy upfront investments weigh on results

In 2016, we generated earnings before taxes and before financial result (EBIT) of 3.3 billion euros, compared with 4.6 billion euros in the previous year. EBIT from operations came to 4.3 billion euros in 2016, while the operating margin was 5.8 percent. This drop in result was due to an increase in upfront investments as a result of higher research and development costs and to higher depreciation on property, plant, and equipment, continuing high costs for restructuring and adjustment measures in some units, and negative exchange-rate effects compared with the previous year.

Our profit expectations were therefore not fulfilled. For 2016, we had forecast an operating margin roughly on a par with the previous

year. The calculation of operating margin above all did not take into account the earnings impact of higher depreciation and amortization from the remeasurement of assets at Automotive Steering and BSH Hausgeräte, following the complete acquisition of these former joint ventures in 2015. These effects came to around 500 million euros in total. It also ignored the changes in provisions for legal risks.

Cost of sales grew at a lower rate than sales. We were thus able to improve our gross margin. We achieved this despite the higher depreciation on property, plant, and equipment resulting from increased capital expenditure in previous years. Depreciation on property, plant, and equipment rose by some 230 million euros to 3 billion euros.

However, these improvements were not sufficient to compensate for additional upfront investments and burdens, which led to a drop in EBIT. The distribution costs and administrative expenses rose as a result of the greater expense of securing and extending market presence, increased warranty costs, the significantly increased cost of advisory services, and upfront investment in initiatives relating to digitalization and projects to increase the efficiency of shared services. Upfront investments in promising areas are especially reflected in the high research and development cost. This came to approximately 7.0 billion euros in 2016, compared with 6.4 billion euros in the previous year. Research and development intensity was 9.5 percent, compared with 9.0 percent in the previous year. As in the previous year, research and development cost also includes work charged to third parties amounting to some 1.3 billion euros.

The increase in research and development cost relates above all to the Mobility Solutions business sector. We made particularly heavy upfront investments in relation to sales in driver assistance systems, the Car Multimedia division, and sensors. The Mobility Solutions business sector accounted for 76 percent of development costs,

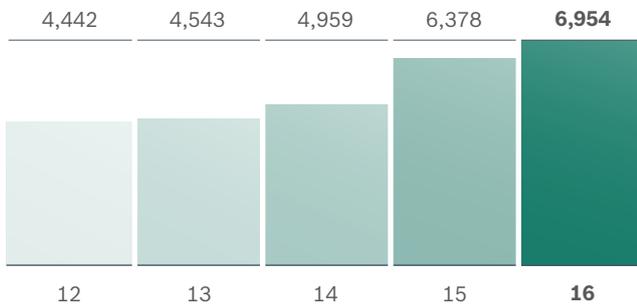
## 12

### Research and development cost<sup>1</sup>

Bosch Group 2012–2016

#### TOTAL EXPENDITURE

Figures in millions of euros



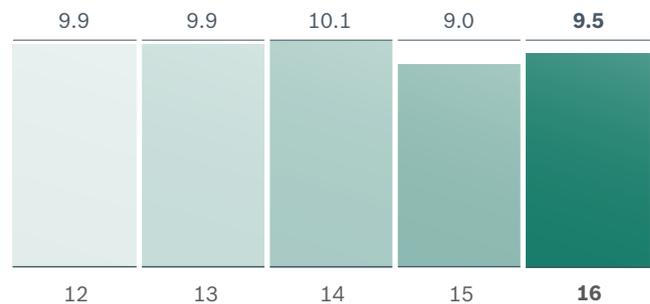
## 13

### Research and development cost<sup>1</sup>

Bosch Group 2012–2016

#### TOTAL EXPENDITURE

As a percentage of sales revenue



<sup>1</sup> Including development work charged directly to customers

after 75 percent the previous year. The share of the Consumer Goods business sector (including other activities) fell from 15 to 14 percent. Industrial Technology and Energy and Building Technology accounted for 6 and 4 percent respectively.

The main reason for the switch from a positive balance in other operating expenses and earnings in 2015 to a negative one in 2016 is that the former contained special earnings of 2.1 billion euros resulting from the full consolidation of Automotive Steering and BSH Hausgeräte. In contrast to the previous year, the financial result was slightly positive in 2016. Profit before tax totals 3.4 billion euros, corresponding to a margin of 4.6 percent. Both figures are also down significantly year on year. We report a result after tax of 2.4 billion euros, compared with 3.5 billion euros in the previous year.

Our internal control parameter, the operating value contribution, is calculated only for the consolidated group used in internal reporting in 2016. The operating value contribution fell to roughly 220 million euros in 2016, from the comparable prior-year figure of roughly 480 million euros. The fundamental difference between EBIT and the operating value contribution is the imputed 3.4 billion-euro (comparable previous-year figure: 3.3 billion euros) cost of capital, which reduces the operating value contribution compared with EBIT.

#### Significant differences in result by segment

Of the business sectors, Mobility Solutions achieved EBIT of 2.0 billion euros, including extraordinary effects accruing to this business sector. This compares with 3.2 billion euros in the previous year. EBIT from operations, excluding the negative effects of higher depreciation and amortization from the remeasurement of assets at Automotive Steering, came to 2.6 billion euros, compared with the prior-year figure of 3.5 billion euros. The operating margin dropped to 6.0 percent, compared with 8.4 percent in the previous year. This was affected in

particular by heavy upfront investments in research and development and capital expenditure, as well as adjustment measures in other divisions such as Automotive Aftermarket.

The Industrial Technology business sector broke even again in 2016, following the substantial loss made by the Drive and Control Technology division in the previous year owing to the difficult business situation. Extraordinary negative effects, including those arising from impairment losses on goodwill, also played a part in the previous year's heavy loss. We thus achieved improvements in Industrial Technology in operational terms as well, following an operating loss of 100 million euros in the previous year. The substantial effort we have put into restructuring Drive and Control Technology is beginning to pay off. The performance of the Packaging Technology division was unsatisfactory in 2016. In addition to sluggish growth, the division was also burdened by costs for adjustment measures.

Result developed very positively in the Consumer Goods business sector. Its operating result increased to 1.4 billion euros in 2016, compared with 1.2 billion euros in the previous year, while the margin rose strongly to 8.2 percent, compared with the previous year's figure of 7.2 percent. Power Tools and BSH Hausgeräte were very successful. However, the EBIT reported for the previous year had included significant positive extraordinary effects from the first-time full consolidation of the former joint venture BSH Hausgeräte, while the result for 2016 was negatively influenced by higher depreciation and amortization from the remeasurement of assets at BSH Hausgeräte following the complete acquisition. Reported EBIT therefore fell to 1.1 billion euros, compared with 2.2 billion euros in the previous year. The Energy and Building Technology business sector discloses EBIT on a par with the previous year, at 226 million euros. The margin came to 4.3 percent, compared with 4.4 percent in 2015.

# 14

## EBIT

Bosch Group 2015–2016

### BY BUSINESS SECTOR

Figures in millions of euros



## Net assets and financial position

### Sound balance sheet structure

At the balance-sheet date, the total assets of the Bosch Group came to 81.9 billion euros, compared with 77.3 billion euros in the previous year. At 44 percent, our equity ratio remains very sound.

On the assets side, our liquidity as reported in the statement of financial position came to 16.7 billion euros as at the balance-sheet date, compared with the previous year's 14.4 billion euros. Apart from cash and cash equivalents, liquidity as per the statement of financial position includes marketable securities and bank balances with a term of more than 90 days. The increase in 2016 resulted from higher cash inflows from operating activities, a lower volume of acquisitions, increases in the market value of securities investments, and borrowing of external funds. The structure of the statement of financial position shows a slight change on the assets side due to the disproportionate increase in current assets resulting from a higher amount of cash and cash equivalents.

On the equity and liabilities side, there is also a slight shift in the contribution of current and non-current liabilities to total equity and liabilities, due to the disproportionate increase in current liabilities. The most significant effect here comes from trade payables.

Our financing structure therefore remains very sound. Standard & Poor's also reaffirmed Robert Bosch GmbH's long-term rating of AA- (with a "stable" outlook). This also benefited the subsidiary BSH Hausgeräte, which has a similar rating. The financial liabilities of the Bosch Group include bonds with a total volume of around 4.2 billion euros. The bond interest rates are between 1.543 percent and 5.125 percent. The bonds' average maturity and average coupon declined slightly year on year. Most of the existing financial liabilities are

denominated in euros. In 2016, we issued promissory note loans and a registered bond with a total volume of 1.5 billion euros, with terms ranging from 7 to 15 years. At the same time, we repaid around 850 million euros' worth of bonds that had matured.

### Further rise in capital expenditure

Bosch Group capital expenditure amounted to 4.3 billion euros in 2016, compared with 4.1 billion euros in the previous year. The investment ratio rose to 5.8 percent of sales, compared with 5.7 percent in the previous year. As at the balance-sheet date, existing investment commitments as a result of orders already placed totaled roughly 580 million euros. Thanks to our very good liquidity position, we have ample financial resources at our disposal.

Broken down by business sector, capital expenditure grew most strongly in Mobility Solutions, where it rose to 3.3 billion euros, compared with 3.1 billion euros in the previous year. This sharp rise was largely due to an increase in requirements relating above all to gasoline direct injection, driver assistance systems, and infotainment and display systems, as well as to the need to expand capacity for semiconductors, sensors, and control units. In Industrial Technology, we invested some 130 million euros, after 140 million euros the previous year. In the Consumer Goods business sector, capital expenditure grew strongly to some 720 million euros, compared with around 650 million euros in the previous year. Along with further expansion of capacity at Power Tools, new plants and extensions at BSH Hausgeräte played a key role in this. In Energy and Building Technology, capital investment rose to approximately 110 million euros, compared with 100 million euros the previous year. This mainly concerned cost-reduction and product-renewal projects at manufacturing, engineering, and sales locations. We also opened a new engineering center in Aveiro, Portugal, and a customer training center in Manisa, Turkey, both for the Thermotechnology division.

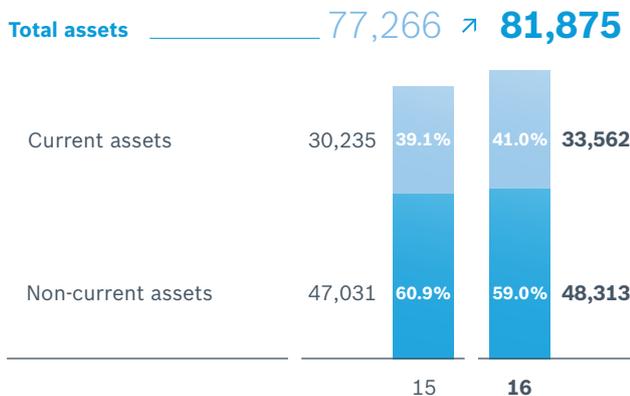
# 15

## Structure of the statement of financial position

Bosch Group 2015–2016

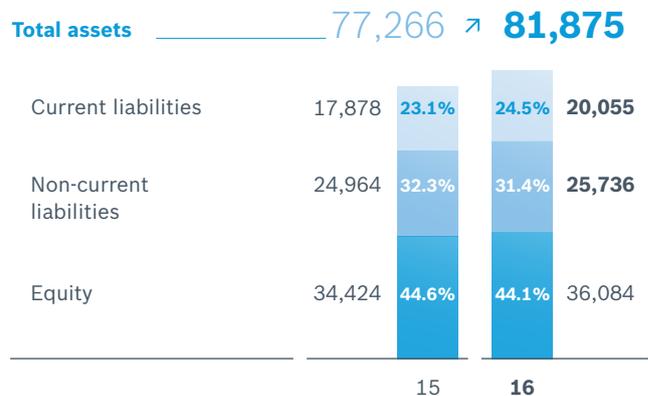
### ASSETS

Figures in millions of euros and as a percentage of total net assets



### EQUITY AND LIABILITIES

Figures in millions of euros and as a percentage of total net assets



We invested around 2.8 billion euros in our European locations, compared with 2.5 billion euros in the previous year. Capital expenditure in Germany was roughly 1.6 billion euros, compared with 1.4 billion euros the previous year. Focal points included the expansion of capacity for semiconductors and sensors, and new buildings at the Reutlingen location as well as in the area of gasoline direct injection systems. Moreover, we are significantly expanding development activities at our site in Abstatt, Germany, with a view to the promising area of automated and connected driving.

We invested 1.0 billion euros in Asia Pacific, compared with 1.1 billion euros in the previous year. In particular, we expanded locations where we produce gasoline direct injection systems, above all in China. We also laid the foundations in 2016 for a new engineering center for the Mobility Solutions business sector in Suzhou, China. We are constructing a new location in Wuhu, China, for the production of combined instruments and head units, and are expanding our Wujin location for the manufacture of electronic control units. BSH Hausgeräte is in the process of constructing its first dishwasher factory in China, and laid the foundations for a new research and engineering center in Nanjing.

Another focal point was again India, where we invested in the expansion of existing manufacturing facilities such as our vehicle component plants in Bidadi and Nashik, and in the further expansion of our software and engineering center at the Bengaluru location. We also invested heavily in Southeast Asia, in order to further expand our market position there. We began construction of a factory for gasoline direct injection systems in Thailand in 2016. In Malaysia, we are expanding capacity for multimedia systems at our site in Penang. We are also continuing to expand development capacity at our software and engineering center in Ho Chi Minh City, Vietnam, and are increasing our production capacity there.

In North and South America, we again invested some 460 million euros. Most of this activity in the Americas concerned the Mobility Solutions business sector. It included the expansion of the engineering location in Plymouth, MI (USA), the manufacturing facility in Charleston, SC (USA), and locations in Mexico.

## Liquidity

### Strong financial position and healthy liquidity situation

The Bosch Group has a strong financial position. In 2016, cash flow came to 6.6 billion euros or 9.0 percent of sales, against prior-year figures of 6.8 billion euros and 9.7 percent of sales.

Liquidity at year-end as per the consolidated statement of cash flows (cash and cash equivalents) stood at 4.8 billion euros, compared with 3.7 billion euros the previous year. In addition, the financing available to Robert Bosch GmbH under its euro medium-term note and commercial paper programs totaled 1 billion euros and 2 billion U.S. dollars respectively.

Cash inflows from operating activities were up slightly year on year, at 6.1 billion euros. Cash outflows from investing activities were down 2.0 billion euros compared with the previous year, despite an increase in spending on fixed assets. Reasons for this included a substantial drop in cash outflows due to acquisitions and investments in participating interests. Cash inflows and outflows from financing activities largely canceled each other out in 2016. The outflow of 0.4 billion euros for dividend payments to third parties was offset by a net inflow of 0.5 billion euros, mainly from the issuing of promissory note loans and a bond and from the repayment of financial liabilities.

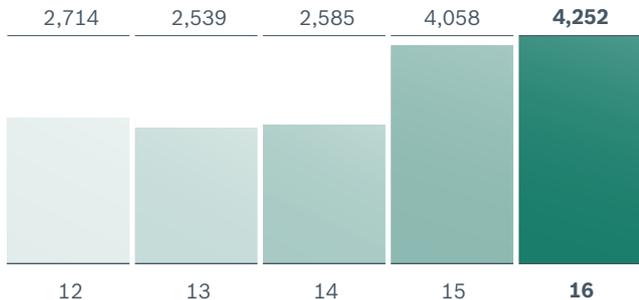
# 16

## Capital expenditure in property, plant, and equipment

Bosch Group 2012–2016

### CAPITAL EXPENDITURE

Figures in millions of euros



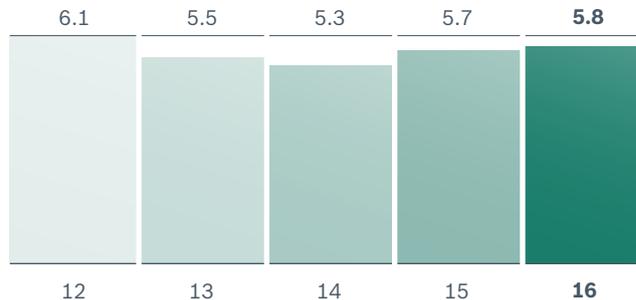
# 17

## Capital expenditure in property, plant, and equipment

Bosch Group 2012–2016

### CAPITAL EXPENDITURE

As a percentage of sales revenue



The Bosch Group has a central financial and currency management system. This is designed to control payment flows to optimum effect and limit the risks of currency exposures at the Bosch Group level. Central financial management also manages our borrowings and investments. Our investment strategy is aimed at broad diversification of shares and interest-bearing securities.

## Outlook

### Political developments create uncertainty

We forecast that global economic growth will remain subdued in 2017. We expect global economic output to rise by around 2.8 percent, following 2.5 percent the previous year. However, there is considerable uncertainty in markets and regions that are important for us: in the U.S. following the change in administration, in Europe following the U.K.'s announcement that it will be leaving the European Union as well as in view of this year's elections in France and Germany, and also in countries such as Turkey.

Above all, there are risks as a result of the increasingly protectionist mood, which is now being voiced more and more in advanced economies. A risk is also presented by the gradual increase in U.S. interest rates, which may place a burden on a number of emerging markets. The fact that raw materials prices are picking up again should tend to dampen private consumption but not become a significant burden for our most important markets.

Looking at the three major economic regions, we once again expect Asia Pacific to grow the fastest, at 4.2 percent. Europe as a whole and the Americas will likely grow appreciably more slowly, at 1.5 and 2.1 percent respectively. At 6.0 percent, the growth rate in China in

2017 is likely to be below the 2016 figure. The same applies to India, which is forecast to grow by 6.8 percent, and thus once again faster than China.

We expect the European Union to grow by 1.5 percent in 2017. Especially for strong exporting countries such as Germany, the political risks are high. For this reason, we expect growth there to be 1.5 percent, and thus slower than in 2016. We expect the pace of the economy in the U.K. to be significantly weaker, at just 1 percent. The burdens resulting from the imminent exit from the EU will gain in significance. As concerns southern Europe, we remain cautious. The repercussions of the 2010–2013 sovereign debt crisis are still braking economic developments in some countries. In eastern Europe, the recovery is likely to continue.

Following a very weak previous year, we expect economic growth of 2.3 percent in the U.S., which should above all be due to the likelihood of more robust private consumption once more, as well as somewhat stronger construction activity. In the weak-growth countries of South America, the slow recovery is likely to continue.

In our core segments, following the unexpectedly high pace of growth in passenger cars and trucks in 2016, our cautious assessment is that production figures will rise by roughly 1 percent to some 97 million vehicles. Production of heavy trucks is also expected to rise slightly. In Europe as a whole, we expect growth to be weaker than in the previous year. Production in North America is likely to increase slightly year on year. In South America, we expect production figures to stabilize on a low level. Following the effects of anticipatory purchases in 2016, we expect automotive production to grow significantly more slowly in China and India.

## 02

**Bosch Group, statement of cash flows**

Figures in millions of euros

	2016	2015
<b>Cash flow</b>	<b>6,565</b>	<b>6,835</b>
<b>as a percentage of sales</b>	<b>9.0</b>	<b>9.7</b>
Liquidity at the beginning of the year (Jan. 1)	3,707	5,513
Cash flows from operating activities	+6,137	+5,959
Cash flows from investing activities	-5,226	-7,204
Cash flows from financing activities	+73	-655
Other activities	+62	+94
<b>Liquidity at the end of the year (Dec. 31)</b>	<b>4,753</b>	<b>3,707</b>

In mechanical engineering, our forecast is that global production will pick up somewhat year on year. Positive stimuli will likely come from most Asian countries and the U.S., while the market in Europe is expected to stagnate. The mobile applications market segment is likely to again deliver a weaker performance than the market as a whole. The Drive and Control Technology division will therefore have to expect its market environment to remain difficult. We expect private consumption growth to pick up slightly, benefiting above all from the comparatively good employment situation in the advanced countries of the Americas and Europe. However, the rise in the oil price will dampen the rise in purchasing power. In addition, there will be burdens as a result of Brexit, which are first and foremost likely to inhibit consumer confidence in the United Kingdom. With respect to the global construction business – another important market – we barely expect to see any change in the pace of growth in 2017. We expect a slightly faster pace of growth in the U.S. and a further improvement in the euro zone. In the U.K., construction activity is likely to shrink for the first time in five years. In Asia, the rate of growth is likely to slow. In China, for example, we expect construction investment to rise more weakly once again, even if it will nonetheless still be higher than average.

**Sales growth and greater profitability**

Against the backdrop of a still subdued economic environment and considerable uncertainty, we forecast that sales growth for the Bosch Group will likely be in a range of 3 to 5 percent in the 2017 financial year. This does not take exchange-rate effects into account. The Mobility Solutions and Consumer Goods business sectors will likely achieve the strongest sales growth. In the Industrial Technology business sector, we expect to see the first slight growth once again, following the decline of previous years. The Energy and Building Technology business sector should disclose similar growth as in the previous year.

For the Bosch Group, our current expectation is that we will be able to slightly increase the EBIT margin from operations, despite further upfront investments in the transformation process such as high research and development expenditure, a high level of capital expenditure, and further restructuring and adjustment measures. Once again, the highest margins will likely be achieved by the Mobility Solutions and Consumer Goods business sectors. We expect to see improvements in Industrial Technology and Energy and Building Technology.

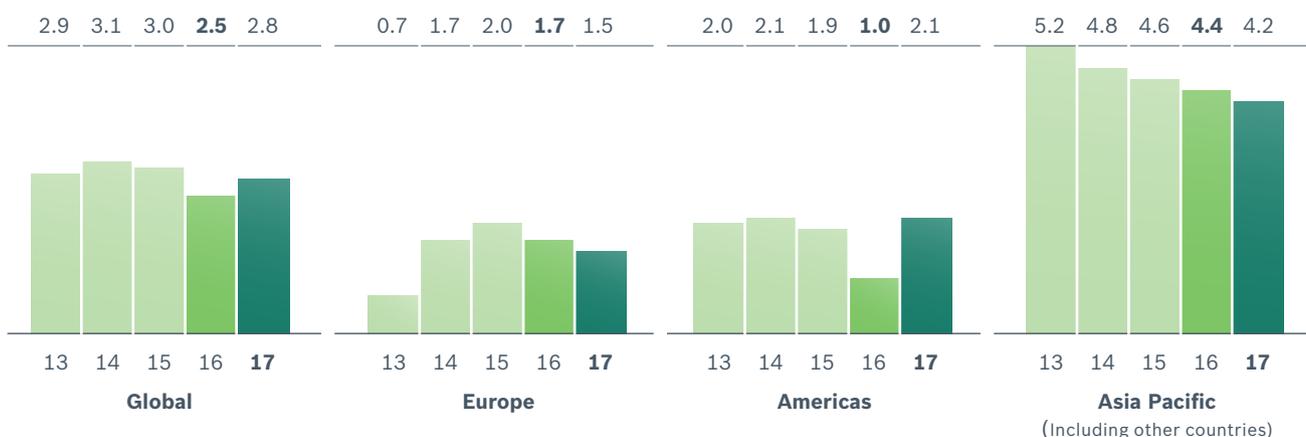
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## Regional economic growth 2013–2017

### REAL GDP, PERCENTAGE CHANGE ON PREVIOUS YEAR

Percentage figures

Forecast 



Revised figures led to a change in certain previous-year figures quoted in 2015 annual report

## Report on opportunities and risks

### Report on opportunities

On the whole, we see good growth opportunities for the Bosch Group, especially as a result of the imminent changes that will arise from increasing connectivity. One reason is our good basis on which to build, given our broad diversification and the resulting expertise in many product areas, as well as our sensor and software know-how. There is also our high level of innovation and strong international presence. Here, further strategic opportunities arise as a result of the automation brought about by connectivity, in electrification, energy efficiency, and thus also the conservation of resources. Moreover, additional opportunities arise as a result of the systematic expansion of our presence in the emerging markets. For further explanations, see the “Prospects for the Bosch Group” section, which describes specific opportunities in more detail and the strategies that we are developing in response, both for the company as a whole and its business sectors.

### Report on risks

#### Comprehensive risk management system

The Bosch Group’s risk management system is part of strategic and operations control. From strategic planning at the group level through medium-term planning by the operating units to our operational controlling, we consistently use risk management tools. At all levels of risk management, a key element is implementing the measures derived from the risk management system. The board of management of Robert Bosch GmbH – with support from the corporate departments – is responsible for risks of group-wide importance. 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 taking any necessary measures in consultation with the management board members responsible.

Strategic risks relate mainly to the way markets, competitors, and suppliers develop, to innovations in technologies and business models, to changes in the political, social, and economic environment, to acquisitions, and to the Bosch brand. We therefore constantly monitor developments at our main competitors, customers, and suppliers. We also carry out business-field, competitor, and scenario analyses. In addition, we prepare forward-looking assessments of planned positions of the Bosch Group in the technological fields and business models relevant to our company. Comprehensive strategic assessments of potential projects help control risks associated with acquisitions. To protect our brand, we carry out proactive reputation management, analyze social media, and carry out activities of our own in this area.

As part of operational controlling, an overview of all economically relevant transactions is compiled every month on the basis of a comprehensive reporting system, along with a list of major opportunities and risks. Committees such as the foreign exchange, raw materials, and investment committees examine specific risks on a regular basis. We have a group-wide liquidity planning system and permanently monitor our financial resources.

#### Overall risk assessment

We are not currently aware of any risks, beyond the economic and political risks mentioned in the outlook above, the risks of the business sectors listed in this report, and litigation risks, which could materially affect the net assets, financial position, and results of operations of the Bosch Group in 2017. Nor does the Bosch Group have any risk exposures that could jeopardize the group’s continued existence as a going concern. There are no significant differences from the previous year that would affect this overall assessment.

### Risks affecting the business sectors

We analyze the medium-term risks for the business sectors in the risk areas of market, customers, competition, purchasing, technology, value-creation model, and business environment. The risks for our company are predominantly in the areas of market, customers, procurement, technology, and the way the competition develops. We assess any medium-term risks that we identify. The main criteria here are the likely economic impact and the estimated probability of occurrence.

Up to 50 percent	Description
Low	Up to 17 percent
Medium	Up to 33 percent
High	Up to 50 percent

Risks with a probability of occurrence of at least 50 percent are considered in our annual or interim forecasts. The assessment is based on our current planning.

We categorize these risks' economic impact as low, medium, high, and very high in terms of their relation to the anticipated accumulated EBIT from operations of the respective business sector over a medium-term horizon of four years.

Degree of impact	Definition of impact
Low	Minor impact on the profitability of the business sector concerned
Medium	Some negative impact on the profitability of the business sector concerned
High	Considerable negative impact on the profitability of the business sector concerned
Very high	Damaging negative impact on the profitability and operations of the business sector concerned

In terms of its share in total sales revenue, the Mobility Solutions business sector shows an above-average overall risk potential. At 19 percent, however, the weighted-average probability of occurrence in this business sector is the lowest. The highest probability – 27 percent – is in the Energy and Building Technology business sector. Special risks are defined as risks with at least medium economic impact and probability of occurrence, which have to be kept under close scrutiny.

There are no special risks in Mobility Solutions. The appreciable risks include the ongoing debate about the viability of the diesel engine. Added to this, extensive warranty exposure fundamentally presents a risk. Due to automakers' extensive platform and modular-design strategies, quality issues relating to individual products can result in large-scale recalls. We counter these risks with continuous improvement of our quality management system. This includes carefully selecting and monitoring our suppliers in order to counter the risk of delivery bottlenecks.

We see a further risk in growing price pressure in the Chinese market. Furthermore, digital transformation processes pose a not immaterial risk for current business models and distribution channels in the aftermarket segment, as do automakers' efforts to take control of this market. In addition, a large number of individual risks exist, each with low economic impact and low probability of occurrence. These individual risks relate above all to achieving target market shares and delivery shares, resource scarcity, price trends, market changes due to new business models, new technologies and competitors, especially from the consumer electronics sphere, and environmental aspects. We counter these risks through extensive planning and tracking of results in acquiring delivery contracts, a broad customer and product portfolio, intensive market surveillance, and global trend scouting.

In the Industrial Technology business sector, the Drive and Control Technology division is exposed to medium risks with at least a medium probability of occurrence. These relate to the particular volatility of markets, with a further drop in prices and the possible entry of new competitors, especially from China and the United States. Furthermore, growing standardization in the field of hydraulic components increases the risk that these items may become technologically indistinguishable. We counter these risks with a product portfolio that is tailored specifically to the needs of the market and a comprehensive restructuring program. The market entry of new competitors from China is an increasing risk, also for our Packaging Technology division, as is the increasing competition in the spare parts business. We counter these challenges by adjusting our portfolio of products and services.

In the Consumer Goods business sector, particular risks concern above all the threats emerging from the growing importance of sales over the internet. Measures include the consistent expansion of our own internet activities. For the Energy and Building Technology business sector, with its strong presence in the U.K., the announced exit from the European Union is a special risk. The same applies to an economic slowdown in the growth markets China and Russia, and to political instability in Turkey. There is still the risk of price erosion due to increasing competition from Chinese providers and sales risks due to the high pace of innovation in IP technologies. We counter this by continuously optimizing our cost structures and increasingly developing IP-enabled products and products for low-price market segments.

Due to our broad regional and sectoral presence, medium-term strategic and operating risks are on the whole broadly diversified. Our risk management system clearly presents the existing risks affecting each of the business sectors. By implementing deliberate measures, we limit both the probability of occurrence and the economic impact of the risks. Overall, the analysis of opportunities and risks shows that we operate in an environment rich in opportunities. Accordingly, the above risks do not currently present any foreseeable sustained or severe threats to our profitability.

**IT risks:** We have put in place comprehensive measures, valid throughout the company, to provide organizational and technical protection against all types of data loss, manipulation, and theft. With our broad-based and well trained IT security and data-protection organization, we respond to constantly growing demands in the area of cyber-crime, protection of intellectual property and sabotage risks, as well as to the increasing awareness of data protection in social

networks. For our Bosch IoT cloud and solutions with connected products on the internet of things, as well as in the context of connected manufacturing, we apply an integrated security concept that we continually update using state-of-the-art technology, and verify its effectiveness with extensive security tests. We ensure high availability of IT systems through redundant systems that run independently of location.

**Legal risks, compliance:** The principle of legality is an integral part of Bosch's values. We constantly examine the requirements our compliance organization has to meet in order to modify and adapt it to new challenges. As a result of the investigations into manipulation of diesel engine control units, we have strengthened the compliance organization in the divisions affected, trained our associates, and issued new company-wide regulations. In addition, we have further cemented the compliance dialogue, which was created in 2015, in the organization and used it to create a better understanding of compliance in product development among the associates affected by the emissions issue. As a further measure, we have fundamentally revised our system for reporting possible compliance violations. With our new system, we not only achieve significant gains in efficiency, but also an even higher standard of data privacy and security. We also conducted a global anti-corruption risk analysis. We will use the results to combat any compliance risks at an early stage.

In the ongoing antitrust investigations of automotive suppliers, Bosch is still in discussions with the EU Commission. In light of the related civil law risks, Bosch has already reached fundamental agreements with individual customers and the most important class action group in the United States. The latter agreement is still subject to approval by the competent U.S. court.

The events surrounding the emissions from diesel vehicles at various automakers and in many countries are a considerable risk for Bosch. With respect to the events concerning Volkswagen diesel vehicle emissions (including Audi and Porsche), Bosch has been and still is a defendant in many class and individual actions. This relates to the U.S. and Canada, among other countries. In several other countries, actions are also pending or have at least been threatened. The risks that may arise as a result of all these pending and threatened actions are difficult to quantify. In two of the pending class actions in the U.S. relating to Volkswagen, Audi, and Porsche vehicles sold in the U.S., Bosch has reached an agreement with buyers and reseller dealers that partly settles the U.S. class actions. The proposed agreement would settle the claims of consumers and reseller dealers against Robert Bosch GmbH, its affiliates, associates, and management, as related to the 2.0-liter Volkswagen and Audi diesel vehicles from model years 2009 to 2015 and the 3.0-liter Volkswagen, Audi, and Porsche diesel vehicles from model years 2009 to 2016. For this, Bosch will pay a total of USD 327.5 million. In agreeing to this settlement, Bosch neither acknowledges the correctness of the claims brought forward nor does it concede any guilt. The settlement agreement that has been reached is still subject to the approval of the U.S. court.

Among other things, there is a risk that individual consumers or reseller dealers will not concur with the settlement, but instead file individual actions. In addition, the class action by VW dealers continues. In the meantime, authorities in many countries are also investigating other automakers. According to press reports, these include Fiat Chrysler, Daimler, and Peugeot. As one of the world's leading suppliers of engine control units, Bosch also supplied these automakers with engine control units, including software, for various models. In the U.S., Bosch companies are defendants in class actions relating to Daimler and Fiat Chrysler diesel passenger cars, together with the respective automaker. In these proceedings, Bosch is asserting its rights.

On the basis of the facts relating to antitrust proceedings and engine control units that were available and assessed by the board of management when these financial statements were prepared, the board of management believes that sufficient precautions have been taken in the form of provisions for legal risks. For the various legal risks outlined above, the provisions amount to some 1.1 billion euros. There are no further apparent legal risks that could materially impair the net assets, financial position, or results of operations for the 2017 financial year.

**Financial risks:** The operating business of the Bosch Group is affected by fluctuations in exchange and interest rates. The aim of business policy is to limit these risks. Our strategy of maintaining a strong global presence with local production and worldwide purchasing activities generally reduces currency risks. A foreign exchange balance plan showing net positions per foreign currency is used as the basis for controlling currency risks. If necessary, these risks are hedged through centralized hedging transactions. Internal regulations and guidelines set down a mandatory framework and define responsibilities relating to payment transactions, investments, and hedging activities. According to our regulations, financial instruments such as forward transactions and interest swaps may only be used in connection with the operating business, financial investments, or financing transactions; speculative transactions are not allowed. Hedging transactions are entered into solely via banks whose creditworthiness is good. Their creditworthiness is constantly monitored, and limits are defined accordingly.

We have extensive 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 limit

system is used to closely monitor investment risk. Prescribed risk limits for the specific investment categories limit the potential loss. The impact of changes in interest rates on borrowed funds is sharply limited over the short and medium term by balancing the maturities of financial liabilities. Changes in financial assets and liabilities are monitored on an ongoing basis. We identify liquidity risks as part of our liquidity planning. Thanks to our good credit rating and existing financing arrangements, we have good access to external funding.

Bosch Group

# **Consolidated financial statements**

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## Income statement

for the period from January 1 to December 31, 2016

Figures in millions of euros

	Note	2016	2015
<b>Sales revenue</b>	1)	<b>73,129</b>	<b>70,607</b>
Cost of sales		-47,711	-46,675
<b>Gross profit</b>		<b>25,418</b>	<b>23,932</b>
Distribution and administrative cost	2)	-14,776	-13,787
Research and development cost	3)	-6,954	-6,378
Other operating income	4)	1,816	3,932
Other operating expenses	5)	-1,994	-3,068
Profit from entities consolidated using the equity method		-175	-44
<b>EBIT</b>		<b>3,335</b>	<b>4,587</b>
Financial income	6)	2,528	2,987
Financial expenses	6)	-2,496	-3,085
<b>Profit before tax</b>		<b>3,367</b>	<b>4,489</b>
Income taxes	7)	-993	-952
<b>Profit after tax</b>		<b>2,374</b>	<b>3,537</b>
of which attributable to non-controlling interests	8)	425	344
of which attributable to parent company		1,949	3,193

## Statement of comprehensive income

for the period from January 1 to December 31, 2016

Figures in millions of euros

	2016	2015
<b>Profit after tax</b>	<b>2,374</b>	<b>3,537</b>
Change from marketable financial instruments recognized in other comprehensive income	330	38
of which attributable to non-controlling interests	16	14
transferred to profit or loss	16	-149
of which attributable to non-controlling interests	-10	-2
Adjustment item from currency translation of entities outside the euro zone	-18	924
of which attributable to non-controlling interests	-17	66
<b>Items that will be reclassified to profit or loss</b>	<b>328</b>	<b>813</b>
of which entities consolidated using the equity method	3	-1
Remeasurement of pension provisions	-509	811
of which attributable to non-controlling interests	-1	
<b>Items that will not be reclassified to profit or loss</b>	<b>-509</b>	<b>811</b>
of which entities consolidated using the equity method		
<b>Other comprehensive income</b>	<b>-181</b>	<b>1,624</b>
<b>Comprehensive income</b>	<b>2,193</b>	<b>5,161</b>
of which attributable to non-controlling interests	413	422
of which attributable to parent company	1,780	4,739

## Statement of financial position

for the year ended December 31, 2016

### ASSETS

Figures in millions of euros

	Note	12/31/2016	12/31/2015
<b>Current assets</b>			
Cash and cash equivalents	10)	4,753	3,707
Trade receivables	11)	14,364	13,240
Other financial assets	12)	2,376	1,833
Income tax receivables		396	300
Other assets	13)	1,778	1,504
Inventories	14)	9,895	9,651
		<b>33,562</b>	<b>30,235</b>
<b>Non-current assets</b>			
Financial assets	15)	12,067	11,534
Income tax receivables		159	81
Property, plant, and equipment	16)	19,085	18,142
Intangible assets	17)	12,174	12,490
Investments measured at equity		93	152
Other assets		207	161
Deferred taxes	7)	4,528	4,471
		<b>48,313</b>	<b>47,031</b>
<b>Total assets</b>		<b>81,875</b>	<b>77,266</b>

**EQUITY AND LIABILITIES**  
Figures in millions of euros

	Note	12/31/2016	12/31/2015
<b>Current liabilities</b>			
Trade payables	18)	6,885	6,184
Other financial liabilities	19)	2,683	2,195
Income tax liabilities		241	233
Other liabilities	20)	6,112	5,494
Income tax provisions		107	109
Other provisions	20)	4,027	3,663
		<b>20,055</b>	<b>17,878</b>
<b>Non-current liabilities</b>			
Financial liabilities	19)	5,702	5,343
Other liabilities	20)	236	247
Pension provisions	21)	11,841	11,262
Income tax provisions		828	816
Other provisions	20)	4,937	4,841
Deferred taxes	7)	2,192	2,455
		<b>25,736</b>	<b>24,964</b>
<b>Equity</b>			
	22)		
Issued capital		1,200	1,200
Capital reserve		4,557	4,557
Retained earnings		28,540	26,948
Unappropriated earnings		138	142
Non-controlling interests		1,649	1,577
		<b>36,084</b>	<b>34,424</b>
<b>Total equity and liabilities</b>		<b>81,875</b>	<b>77,266</b>

## Statement of changes in equity

Figures in millions of euros

	Retained earnings				
	Issued capital	Capital reserve	Earned profit	Treasury stock	Currency translation
<b>1/1/2015</b>	<b>1,200</b>	<b>4,557</b>	<b>25,368</b>	<b>-62</b>	<b>418</b>
Comprehensive income					858
Dividends					
Transfer to retained earnings			3,051		
Other changes					
<b>12/31/2015</b>	<b>1,200</b>	<b>4,557</b>	<b>28,419</b>	<b>-62</b>	<b>1,276</b>
Comprehensive income					-1
Dividends					
Transfer to retained earnings			1,811		
Other changes					
<b>12/31/2016</b>	<b>1,200</b>	<b>4,557</b>	<b>30,230</b>	<b>-62</b>	<b>1,275</b>

Other comprehensive income			Unappropriated earnings	Equity parent company	Equity non-controlling interests	Group equity
Securities	Other	Total				
<b>729</b>	<b>-3,993</b>	<b>-2,846</b>	<b>102</b>	<b>28,319</b>	<b>1,222</b>	<b>29,541</b>
-123	811	1,546	3,193	4,739	422	5,161
			-102	-102	-291	-393
			-3,051			
	-109	-109		-109	224	115
<b>606</b>	<b>-3,291</b>	<b>-1,409</b>	<b>142</b>	<b>32,847</b>	<b>1,577</b>	<b>34,424</b>
340	-508	-169	1,949	1,780	413	2,193
			-142	-142	-283	-425
			-1,811			
	-50	-50		-50	-58	-108
<b>946</b>	<b>-3,849</b>	<b>-1,628</b>	<b>138</b>	<b>34,435</b>	<b>1,649</b>	<b>36,084</b>

## Statement of cash flows

Figures in millions of euros

	Note 23)	2016	2015
EBIT		3,335	4,587
Depreciation and amortization		4,244	4,359
Increase in pension provisions and non-current provisions		5	888
Gains on disposal of non-current assets		-135	-100
Losses on disposal of non-current assets		88	127
Remeasurement of investments			-2,136
Result from investments measured at equity		81	44
Financial income, cash effective		1,293	1,507
Financial expenses, cash effective		-1,457	-1,630
Interest and dividends received		548	475
Interest paid		-246	-242
Income taxes paid		-1,191	-1,044
<b>Cash flow</b>		<b>6,565</b>	<b>6,835</b>
Increase in inventories		-148	-148
Change in receivables and other assets		-1,316	385
Change in liabilities		757	-489
Change in current provisions		279	-624
<b>Cash flows from operating activities (A)</b>		<b>6,137</b>	<b>5,959</b>
Acquisition of subsidiaries and other business units		-8	-3,507
Disposal of subsidiaries and other operating units		26	19
Additions to non-current assets		-5,213	-4,848
Proceeds from disposal of non-current assets		316	456
Purchase of securities		-7,248	-9,844
Disposal of securities		6,901	10,520
<b>Cash flows from investing activities (B)</b>		<b>-5,226</b>	<b>-7,204</b>
Borrowing		1,665	486
Repayment of financial liabilities		-1,167	-748
Dividends paid		-425	-393
<b>Cash flows from financing activities (C)</b>		<b>73</b>	<b>-655</b>
<b>Change in liquidity (A+B+C)</b>		<b>984</b>	<b>-1,900</b>
<b>Liquidity at the beginning of the period (January 1)</b>		<b>3,707</b>	<b>5,513</b>
Exchange-rate related increase in liquidity		11	90
Increase in liquidity due to changes in the consolidated group		51	4
<b>Liquidity at the end of the period (December 31)</b>		<b>4,753</b>	<b>3,707</b>

# Notes

## Principles and methods

### General explanations

The consolidated financial statements of the Bosch Group for the year ended December 31, 2016, have been prepared according to the standards issued by the International Accounting Standards Board (IASB), London. The International Financial Reporting Standards (IFRS) and the Interpretations of the IFRS Interpretations Committee (IFRS IC) as adopted by the EU at the 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.

On September 22, 2016, the EU endorsed IFRS 15 *Revenue from Contracts with Customers* as published in May 2014. The standard will become effective for fiscal years beginning on or after January 1, 2018; it will not be early adopted by the Bosch Group. According to IFRS 15, an entity should recognize revenue to depict the transfer of promised goods or services in an amount that reflects the consideration to which the entity expects to be entitled. IFRS 15 sets forth a consistent, five-step model for determining the amount of revenue to be reported, which is generally applicable for all customer contracts. The effects of first-time adoption of the rules of IFRS 15 on the consolidated financial statements of the Bosch Group are currently being reviewed.

On November 22, 2016, the EU endorsed IFRS 9 *Financial Instruments* as published in July 2014. The standard will become effective for fiscal years beginning on or after January 1, 2018; it will not be early adopted by the Bosch Group. IFRS 9 contains new requirements governing the classification and measurement of financial assets. In addition, it introduces a new impairment model for financial assets. As this model is based on expected credit losses, it is more forward-looking than the previous approach. IFRS 9 also includes new hedge accounting requirements. The effects of first-time adoption of IFRS 9 on the consolidated financial statements of the Bosch Group are currently being reviewed.

The IASB published IFRS 16 *Leases* on January 13, 2016; the standard has not yet been endorsed by the EU. Subject to its endorsement by the EU, the standard will become effective for fiscal years beginning on or after January 1, 2019. For lessees, IFRS 16 removes the previous classification of leases either as finance leases or operating leases. Instead, it introduces a single lease accounting model, according to which lessees are required to recognize a right-of-use asset and a lease liability for all leases with a term of more than 12 months. Accordingly, previously unrecognized leases will in the future have to be recognized in the statement of financial position. The group-wide review of the effects of first-time adoption of IFRS 16 on the consolidated financial statements of the Bosch Group has not yet been completed.

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 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, 2016, were authorized for disclosure by the board of management on March 14, 2017. The consolidated financial statements and group management report will be filed with the 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 IFRS 10 *Consolidated Financial Statements*. These entities are included in the consolidated financial statements from the date on which the Bosch Group obtains control. Conversely, subsidiaries are no longer fully consolidated 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 acquisition method of accounting. At the time of combination, the 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 with effect on income. Any difference resulting from the purchase of additional non-controlling interests is offset against equity.

Joint ventures as defined by IFRS 11 *Joint Arrangements* are accounted for using the equity method.

Pursuant to IAS 28 *Investments in Associates and Joint Ventures*, investments are included in consolidation using the equity method if significant influence can be exercised. At present, no associates have been accounted for using the equity method. For materiality reasons, investments in associates are measured at amortized cost.

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 recognized.

## 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, 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, while equity is translated at historical rates. The line items of the income statement are translated into euros at the annual average exchange rates. Any resulting exchange-rate differences are recorded directly in equity until the disposal of the subsidiaries, and disclosed as a separate line item in equity.

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

	1 EUR =	Closing rate		Average rate	
		12/31/16	12/31/15	2016	2015
Australia	AUD	1.46	1.49	1.49	1.48
Brazil	BRL	3.43	4.31	3.86	3.70
China	CNY	7.31	7.10	7.34	6.91
Czech Republic	CZK	27.02	27.03	27.03	27.28
Hungary	HUF	311.02	313.12	311.46	309.90
India	INR	71.59	72.02	74.37	71.20
Japan	JPY	123.40	131.07	120.20	134.31
Korea	KRW	1,269.36	1,280.78	1,284.18	1,256.54
Poland	PLN	4.41	4.26	4.36	4.18
Russian Federation	RUB	63.81	79.70	74.24	67.81
Switzerland	CHF	1.07	1.08	1.09	1.07
Turkey	TRY	3.71	3.18	3.34	3.03
United Kingdom	GBP	0.86	0.73	0.82	0.73
United States	USD	1.05	1.09	1.11	1.11

## Accounting policies

**Cash and cash equivalents** comprise 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, and other financial assets** that are allocable to the loans and receivables category are measured at amortized cost. All discernible specific risks and general credit risks are accounted for by appropriate valuation allowances. According to internal group guidelines, the carrying amounts of receivables are generally corrected via a valuation allowance account.

**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 production-related 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 written down further when their net realizable value falls below cost.

**Property, plant, and equipment** are measured at 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	10–50 years
Plant and equipment	8–11 years
Other equipment, fixtures, and furniture	3–25 years

## 07

In accordance with IAS 36 *Impairment of Assets*, impairment losses are recorded on property, plant, and equipment if their recoverable amount has fallen below their 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, from a substance-over-form perspective, are deemed to be purchases of assets with long-term financing (finance leases) are recognized at the time of addition at the lower of the fair value of the leased assets 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 result.

**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 presented as part of profit or loss in the period in which the related expenses are incurred.

**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 50 years.

As a rule, **borrowing costs** are not included in the cost of assets. If they are directly attributable to the acquisition, construction, or production of a qualifying asset they are included in the cost of that asset in accordance with IAS 23 *Borrowing Costs*. Write-downs on capitalized borrowing costs are reported in cost of sales.

**Goodwill** from business combinations represents the difference between the purchase price on the one hand and the proportionate share of equity at acquisition-date fair value on the other. Goodwill is allocated to the divisions (cash-generating units) and tested annually for impairment. If the carrying amount of a cash-generating unit's net assets exceeds its recoverable amount, 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.

**Interests in jointly controlled entities** are included in the consolidated financial statements using the equity method. The carrying amount of these interests is subsequently measured in accordance with the change in equity of the jointly controlled entity attributable to the Bosch Group, less any write-offs, where appropriate.

**Development cost** that cannot be recognized as part of the carrying amount of an asset is released to profit or loss in the period incurred.

When determining the fair value, the input factors of the measurement methods pursuant to IFRS 13 *Fair Value Measurement* are categorized as follows:

- ▶ **Level 1:** Quoted prices (unadjusted) in active markets for identical assets or liabilities that the accounting entity can access at the measurement date
- ▶ **Level 2:** Inputs other than quoted prices included within level 1 that are observable for the asset or liability, either directly or indirectly
- ▶ **Level 3:** Inputs that are not based on observable market data

The fair value of current financial assets and liabilities is assumed to correspond to the carrying amount.

In accordance with IAS 39 *Financial Instruments: Recognition and Measurement*, the following categories of financial instrument are used in the Bosch Group:

- ▶ Held-to-maturity investments
- ▶ Loans and receivables
- ▶ Financial liabilities measured at amortized cost
- ▶ Financial 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. Impairments of loans and receivables to allow for anticipated credit risks based on past experience 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 three 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 or loss using the effective interest method. Dividends are recognized through profit or 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 may not exceed the amount of the previously recognized impairment loss. The amount of the reversal is recognized in profit or loss.

If the fair value of available-for-sale financial assets cannot be reliably determined, they are accounted for at 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 every reporting date, the carrying amounts of the financial assets which are not measured at fair value through profit or loss are examined for substantial objective evidence that an asset may be impaired. Such evidence may, for instance, be serious financial difficulties suffered by the debtor, the high probability that insolvency proceedings will be instituted against the debtor, the disappearance of an active market for the financial asset, a prolonged decline in the fair value of the financial asset below amortized cost, or significant changes in the technological, economic, legal, or market environment 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 income. Deferred tax assets arising from unused tax losses and tax credits are recognized as an asset only where there is assurance beyond any reasonable doubt that future taxable income would be sufficient to allow the benefit of the loss to be realized. The deferred tax item equals the estimated tax expense 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.

**Assets and liabilities held for sale** are classified as held for sale if their carrying amount will be recovered principally through a sale transaction and the sale is highly likely to be effected. They are measured at the lower of carrying amount or fair value, less costs to sell.

For **finance leases** under which the Bosch Group is the lessor, a receivable is recognized at the net investment value and disclosed under financial assets. Liabilities from finance leases are disclosed under financial liabilities, at the present value of the future lease payments. Leases under which substantially all risks and rewards in connection with ownership have been transferred to the lessee are classified as finance leases.

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

**Tax provisions** pertain to obligations relating to income tax and other taxes. Deferred taxes are disclosed in separate line items 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 embodying economic benefits 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. They are discounted at the capital market interest rate for equivalent maturities.

**Revenue** from the supply of products and goods or from the provision of services is recognized when title and risk are 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 received are divided up using actuarial methods.

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

**Development cost** that cannot be recognized as part of the carrying amount of an asset is released to profit or loss in the period incurred.

### Assumptions and estimates

The preparation of consolidated financial statements in accordance with IFRS requires that assumptions and estimates be made for some line items. These assumptions and estimates have an effect on the amount and disclosure of the assets and liabilities, income and expenses, and contingent liabilities disclosed in the reporting period. Estimates and assumptions concern the following:

The determination of valuation allowances on receivables is based on estimates and assumptions with respect to the credit standing of individual customers and sovereign risks. The discounted future cash flows used as a basis for testing goodwill and other intangible assets for impairment are based on estimates. Assumptions are also made in the determination of the discount rates and growth rates used. The recognition of deferred tax assets is premised on their future recoverability being probable. Consequently, assumptions have to be made regarding future taxable income and the expected timing of the reversal of temporary differences. Pension provisions and similar obligations are measured using actuarial methods. This requires various assumptions, including with respect to life expectancy, salary trends, and the pension growth rate. The recognition and measurement of other provisions is based on estimates of the amount and probability of future events. To the extent possible, such estimates are based on past experience, and are regularly reviewed and adjusted as necessary.

## 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 Industrietreuhand 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 441 (previous year: 442) fully consolidated companies. The group developed as follows:

	Germany	Outside Germany	Total
<b>Included in consolidation at January 1, 2015</b>	<b>66</b>	<b>275</b>	<b>341</b>
Additions/formations in fiscal year 2015	21	95	116
Disposals/mergers in fiscal year 2015	2	12	14
<b>Included in consolidation at December 31, 2015</b>	<b>85</b>	<b>358</b>	<b>443</b>
Additions/formations in fiscal year 2016	9	18	27
Disposals/mergers in fiscal year 2016	3	25	28
<b>Included in consolidation at December 31, 2016</b>	<b>91</b>	<b>351</b>	<b>442</b>

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The consolidated group includes 9 special funds, as well as other investments.

In the fiscal year 2016, the following companies were consolidated for the first time:

- ▶ Bosch Service Solutions Leipzig GmbH, Leipzig, Germany
- ▶ Bosch SoftTec GmbH, Hildesheim, Germany
- ▶ Robert Bosch Lollar Guss GmbH, Lollar, Germany
- ▶ Robert Bosch Manufacturing Solutions GmbH, Stuttgart, Germany
- ▶ Robert Bosch Smart Home GmbH, Stuttgart, Germany
- ▶ Robert Bosch Start-up GmbH, Stuttgart, Germany
- ▶ Robert Bosch Starter Motors Generators GmbH, Schwieberdingen, Germany
- ▶ Robert Bosch Starter Motors Generators Holding GmbH, Schwieberdingen, Germany
- ▶ Bosch Termotecnologia Ltda., São Paulo, Brazil
- ▶ Robert Bosch Motores de Partida e Alternadores Ltda., Campinas, Brazil
- ▶ Bosch Automotive Technical Service (Beijing) Co., Ltd., Beijing, China
- ▶ Bosch Electronics Trading (Suzhou) Co., Ltd., Suzhou, China
- ▶ Bosch Thermotechnology (Shandong) Co., Ltd., Zibo, China
- ▶ Bosch Thermotechnology (Shanghai) Co., Ltd., Shanghai, China
- ▶ Bosch Thermotechnology (Wuhan) Co., Ltd., Wuhan, China
- ▶ Guangzhou sia Abrasives Company Ltd., Guangzhou, China
- ▶ Robert Bosch Starter Motors Generators (China) Co., Ltd., Changsha, China
- ▶ Robert Bosch Starter Motors Generators France S.A.S., Drancy, France
- ▶ Robert Bosch Starter Motors Generators India Private Limited, Bengaluru, India
- ▶ Robert Bosch Starter Motors Generators S.r.l., Milan, Italy
- ▶ Robert Bosch Starter Motors Generators Mexico Manufacturing, S.A. de C.V., Lerma, Mexico
- ▶ Robert Bosch Starter Motors Generators Mexico Service, S. de R.L. de C.V., Mexico City, Mexico
- ▶ Robert Bosch IC Financing Nederland B.V., Boxtel, Netherlands
- ▶ Robert Bosch Starter Motors Generators (Serviceos) Portugal, Unipessoal Lda., Braga, Portugal
- ▶ Robert Bosch Starter Motors Generators Kft., Miskolc, Hungary
- ▶ Robert Bosch Starter Motors Generators LLC, Farmington Hills, MI, USA

Due to changes to the consolidated group, sales revenue increased by EUR 133 million, while total assets increased by EUR 138 million.

**Condensed financial information on fully consolidated subsidiaries with material non-controlling interests**

**Figures in millions of euros**

	<b>Bosch Automotive Diesel Systems Co., Ltd., Wuxi, China</b>		<b>United Automotive Electronic Systems Co., Ltd., Shanghai, China</b>	
	<b>2016</b>	<b>2015</b>	<b>2016</b>	<b>2015</b>
Current assets	749	650	1,431	1,155
Non-current assets	359	389	1,392	1,385
Current liabilities	383	289	1,021	962
Non-current liabilities	14		185	92
Sales revenue	1,469	1,344	2,720	2,315
Profit after tax	312	329	413	320
Comprehensive income	290	329	370	320
Cash flows from operating activities	362	485	499	392
Cash flows from investing activities	-25	-90	-203	-206
Cash flows from financing activities	-330	-399	-233	-230
Share of capital attributable to non-controlling interests	34.0%	34.0%	49.0%	49.0%
Profit/loss attributable to non-controlling interests	106	112	202	157
Equity attributable to non-controlling interests	242	255	792	728
Dividends paid to non-controlling interests	112	136	111	98

Figures in millions of euros	Bosch HUAYU Steering Systems Group <sup>1</sup> , Shanghai, China		Bosch Ltd., Bengaluru, India	
	2016	2015	2016	2015
Current assets	559	441	811	803
Non-current assets	322	358	959	992
Current liabilities	477	422	430	411
Non-current liabilities	1	2	32	37
Sales revenue	1,019	970	1,416	1,418
Profit after tax	122	85	200	156
Comprehensive income	111	85	256	168
Cash flows from operating activities	215	136	-65	225
Cash flows from investing activities	-38	-86	99	-178
Cash flows from financing activities	-84	-72	-43	-45
Share of capital attributable to non-controlling interests	49.0%	49.0%	29.5%	28.8%
Profit/loss attributable to non-controlling interests	60	41	59	45
Equity attributable to non-controlling interests	197	184	386	389
Dividends paid to non-controlling interests	41	35	13	13

<sup>1</sup> Formerly: ZF Shanghai Steering Systems Group

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The condensed financial information of the respective entities corresponds to the figures before consolidation entries.

## Joint ventures

The following entities are joint ventures in accordance with IFRS 11 and were accounted for using the equity method in accordance with IAS 28:

- ▶ Bosch Mahle Turbo Systems GmbH & Co. KG, Stuttgart, Germany (50 percent)
- ▶ EM-motive GmbH, Hildesheim, Germany (50 percent)
- ▶ Lithium Energy and Power GmbH & Co. KG, Stuttgart, Germany (50 percent)
- ▶ KB Wiper Systems Co., Ltd., Daegu, Korea (50 percent)
- ▶ Hytec Holdings (Pty.), Ltd., Johannesburg, South Africa (50 percent)
- ▶ Associated Fuel Pump Systems Corporation, Anderson, SC, USA (50 percent)

The share of capital corresponds to the share of voting rights in each case.

As in the previous year, there were no unrecognized commitments to joint ventures as of the reporting date that may lead to a future outflow of cash or other resources.

### Material joint ventures

The fifty-fifty joint venture Bosch Mahle Turbo Systems GmbH & Co. KG, Stuttgart, Germany, was established in 2008 by Robert Bosch GmbH and MAHLE GmbH, Stuttgart. The company, which belongs to the Mobility Solutions business sector, develops and manufactures exhaust-gas turbochargers for gasoline and diesel engines for use in passenger cars and commercial vehicles. In January 2017, Bosch and MAHLE announced the planned sale of the joint venture.

The condensed financial information for Bosch Mahle Turbo Systems GmbH & Co. KG is presented in the table below; it corresponds to the amounts from the joint venture's IFRS financial statements.

### Figures in millions of euros

	<b>Bosch Mahle Turbo Systems GmbH &amp; Co. KG, Stuttgart, Germany</b>	
	<b>2016</b>	<b>2015</b>
Sales revenue	373	263
Depreciation and amortization	-32	-23
EBIT	-106	-117
Interest income	0	0
Interest expenses	-2	-1
Profit/loss before tax	-129	-130
Income taxes	0	0
Profit/loss after tax	-129	-130
Other comprehensive income	0	1
Comprehensive income	-129	-129
Current assets	168	138
of which cash and cash equivalents	1	9
Non-current assets	187	160
Current liabilities	124	130
of which financial liabilities	36	19
Non-current liabilities	44	10
Equity	187	158
Share of equity attributable to the group	94	79

**10**

The carrying amount of the interests held in Bosch Mahle Turbo Systems GmbH & Co. KG of EUR 94 million was written off in full in the fiscal year.

## Condensed financial information on individually immaterial joint ventures

Figures in millions of euros

	2016	2015
Carrying amount of the investments	93	73
Group share of profit after tax	-17	12
Group share of other comprehensive income of the period	3	0
Group share of comprehensive income	-14	12

**11**

The carrying amount of the shares in the above-mentioned individually immaterial joint ventures corresponds to the proportionate share in these companies' equity.

## Business combinations

The operations of Skyline Automation NJ LLC, Clifton, NJ, and of Skyline Automation LLC, New York City, NY, both USA, were acquired in the fiscal year. The business combination was financed partly by transferring cash.

On January 11, 2017, the Bosch Group acquired 100 percent of the shares in ITK Engineering GmbH (formerly: ITK Engineering AG), Kuhardt, Germany, for a provisional purchase price of EUR 118 million. The business combination was substantially financed by transfer of cash. The company will be included in the consolidated financial statements of the Bosch Group from 2017 onward. ITK Engineering GmbH and its subsidiaries offer tailored engineering and consulting services for industrial enterprises and research institutions in a wide range of industries. The acquisition strengthens the Bosch Group's business in customized systems and software engineering services. An opening statement of financial position is not available at present, and it is therefore not possible to provide any information on the outstanding purchase price allocation or the fair value of the acquired assets and liabilities. It is likely that the pending purchase price allocation will principally lead to identification of unrecognized intangible assets. Any remaining amount will be recognized as goodwill and be non-deductible for tax purposes.

## Discontinued operations

No decisions were made in the fiscal year concerning the sale of parts of companies or subsidiaries falling within the scope of IFRS 5 *Non-current Assets Held for Sale and Discontinued Operations*.

It was announced in June 2015 that the Starter Motors and Generators division belonging to the Mobility Solutions business sector will be realigned and a buyer or partner sought to secure this division's long-term viability. For this purpose, the global business with starters and generators was carved out into legally independent entities. As of December 31, 2016, the criteria were not satisfied for classifying the division as a discontinued operation or non-current asset held for sale in accordance with IFRS 5.

## Notes to the income statement

### 01 Sales revenue

Sales revenue amounted to EUR 73,129 million (previous year: EUR 70,607 million). The Mobility Solutions business sector accounted for EUR 43,936 million (previous year: EUR 41,657 million) of this total, the Industrial Technology business sector for EUR 6,257 million (previous year: EUR 6,603 million), the Consumer Goods business sector for EUR 17,588 million (previous year: EUR 17,140 million), and the Energy and Building Technology business sector for EUR 5,223 million (previous year: EUR 5,134 million). Sales revenue that cannot be allocated to the business sectors came to EUR 125 million (previous year: EUR 73 million).

### 02 Distribution cost and administrative expenses

Figures in millions of euros

	2016	2015
Administrative expenses	4,081	3,692
Distribution cost	10,695	10,095
	<b>14,776</b>	<b>13,787</b>

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The 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.

### 03 Research and development cost

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

Figures in millions of euros

	2016	2015
Total research and development cost	7,148	6,455
Development cost recognized in the reporting period	-465	-236
Depreciation on recognized development cost	271	159
	<b>6,954</b>	<b>6,378</b>

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## 04 Other operating income

Figures in millions of euros

	2016	2015
Income from exchange-rate fluctuations	880	1,057
Income from the disposal of non-current assets	78	97
Income from rent and leases	12	13
Income from the reversal of provisions	221	53
Income from remeasurement of investments		2,136
Sundry other operating income	625	576
	<b>1,816</b>	<b>3,932</b>

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In the previous year, income from the remeasurement of investments mainly stemmed from the remeasurement of the net assets arising from the first-time full consolidation of BSH Hausgeräte GmbH and of Robert Bosch Automotive Steering GmbH.

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 substantially all the risks and rewards incidental to ownership lie 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 131 million (previous year: EUR 136 million). They are offset against the respective expenses. If there are no such expenses, the grants are disclosed in sundry other operating income.

## 05 Other operating expenses

Figures in millions of euros

	2016	2015
Expenses from exchange-rate fluctuations	661	1,115
Valuation allowances on receivables and other assets	91	74
Expenses from the disposal of non-current assets	87	115
Other taxes	75	66
Expenses from the recognition of provisions	403	698
Impairment of goodwill		565
Sundry other operating expenses	677	435
	<b>1,994</b>	<b>3,068</b>

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The expenses from the recognition of provisions include additions to the provisions for legal risks.

## 06 Financial result

### Figures in millions of euros

	2016	2015
Investment income	86	21
Gains/losses on disposal of investments	56	-10
<b>Result from investments</b>	<b>142</b>	<b>11</b>
Interest and similar income	446	421
Interest and similar expenses	-225	-270
<b>Interest result</b>	<b>221</b>	<b>151</b>
Gains on disposal of securities	259	683
Losses on disposal of securities	-191	-201
Exchange-rate gains	1,035	1,058
Exchange-rate losses	-1,034	-1,290
Gains on derivatives	627	771
Losses on derivatives	-866	-896
Other income	19	33
Other expenses	-180	-418
<b>Other financial result</b>	<b>-331</b>	<b>-260</b>
<b>Financial result, total</b>	<b>32</b>	<b>-98</b>
of which financial income	2,528	2,987
of which financial expenses	-2,496	-3,085

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The line items "gains/losses on derivatives" contain transactions to hedge financial assets. The line item "other expenses" contains impairments of securities totaling EUR 93 million (previous year: EUR 283 million).

Capitalized borrowing costs of EUR 11 million (previous year: EUR 12 million) were deducted from interest expenses. The underlying borrowing rate is 2.5 percent (previous year: 3.0 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

	2016		2015	
	Interest income	Interest expenses	Interest income	Interest expenses
Loans and receivables	101		99	
Available-for-sale financial assets	341		312	
Financial liabilities measured at amortized cost		223		258
	<b>442</b>	<b>223</b>	<b>411</b>	<b>258</b>

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## 07 Income taxes

Income taxes are classified according to their origin as follows:

### Figures in millions of euros

	2016	2015
Current taxes	1,132	1,330
Deferred taxes	-139	-378
	<b>993</b>	<b>952</b>

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Deferred taxes are calculated on the basis of the tax rates that apply or 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 9 percent and 40 percent (previous year: between 9 percent and 38 percent).

As of December 31, the deferred tax assets and liabilities presented in the statement of financial position are attributable to the following items:

### Figures in millions of euros

	2016		2015	
	Assets	Liabilities	Assets	Liabilities
Receivables, other assets, and inventories	660	226	646	206
Securities and investments	33	282	36	297
Property, plant, and equipment	144	926	132	995
Intangible assets	333	1,484	222	1,572
Other assets	144		154	0
Liabilities	911	88	901	91
Provisions	2,726	61	2,578	66
Other liabilities		151	1	160
Unused tax losses and tax credits	603		733	
<b>Total</b>	<b>5,554</b>	<b>3,218</b>	<b>5,403</b>	<b>3,387</b>
Netting	-1,026	-1,026	-932	-932
	<b>4,528</b>	<b>2,192</b>	<b>4,471</b>	<b>2,455</b>

**19**

In the fiscal year, write-downs on deferred tax assets came to EUR 541 million (previous year: EUR 401 million).

There are EUR 1,439 million in unused tax losses for which no deferred tax assets have been recognized (previous year: EUR 1,053 million). Within the next three years, EUR 109 million (previous year: EUR 54 million) will be forfeited. In addition, deferred tax assets were not recognized on tax credits of EUR 20 million (previous year: EUR 21 million).

Consolidation measures give rise to deferred tax assets of EUR 232 million (previous year: EUR 221 million) and deferred tax liabilities of EUR 3 million (previous year: EUR 1 million).

In the fiscal year, changed tax rates in the Bosch Group resulted in deferred tax income of EUR 1 million (previous year: deferred tax expense of EUR 19 million).

In the reporting period, deferred taxes of EUR 155 million (previous year: EUR 140 million) were recorded directly in equity. Of this total, EUR 42 million decreases (previous year: increase of EUR 96 million) the reserve from securities and EUR 197 million increases retained earnings due to the change in actuarial parameters in accordance with IAS 19 (previous year: decrease of EUR 236 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**

	<b>2016</b>	<b>2015</b>
Profit before tax	3,367	4,489
Expected income tax expense	976	1,302
Variances due to tax rate	-124	-38
Non-deductible expenses	109	258
Zero-rated income	-253	-315
Remeasurement of investments		-619
Other differences	285	364
<b>Income tax expense disclosed</b>	<b>993</b>	<b>952</b>
Effective tax rate	29%	21%

[20](#)

## 08 Non-controlling interests

Profits attributable to non-controlling interests amount to EUR 436 million (previous year: EUR 366 million). They are counterbalanced by losses of EUR 11 million (previous year: EUR 22 million).

## 09 Other notes to the income statement

In the reporting period, personnel expenses of EUR 21,315 million (previous year: EUR 20,369 million) were incurred. Cost of materials amounted to EUR 33,366 million (previous year: EUR 32,003 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

	2016	2015
Bank balances (term up to 90 days)	4,735	3,694
Cash and reserve bank deposits	18	13
	<b>4,753</b>	<b>3,707</b>

[21](#)

The bank balances are partly invested as secured deposits in tri-party repo transactions. As of the reporting date, the carrying amount of the secured deposits is EUR 1,100 million (previous year: EUR 500 million). The bank provided collateral of the same amount in the form of securities.

### 11 Trade receivables

In the fiscal year, trade receivables came to EUR 14,364 million (previous year: EUR 13,240 million). Of that amount, EUR 7 million (previous year: EUR 7 million) have a term of more than one year.

Information about valuation allowances on trade receivables is contained in the credit risk section of note 26 "Capital and risk management".

### 12 Other financial assets (current)

Figures in millions of euros

	2016	2015
Securities	852	608
Bank balances (term of more than 90 days)	676	213
Loan receivables	342	378
Derivative financial assets	74	142
Receivables from finance leases	34	32
Sundry other financial assets	398	460
	<b>2,376</b>	<b>1,833</b>

[22](#)

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.

Note 27 "Leases" contains additional disclosures on receivables from finance leases.

## 13 Other assets (current)

Figures in millions of euros

	2016	2015
Prepaid expenses	208	179
Receivables from tax authorities (without income tax receivables)	1,367	1,218
Sundry other assets	203	107
	<b>1,778</b>	<b>1,504</b>

[23](#)

## 14 Inventories

Figures in millions of euros

	2016	2015
Raw materials, consumables, and supplies	3,123	2,946
Work in process	1,537	1,510
Finished goods and merchandise	5,083	4,969
Prepayments	152	226
	<b>9,895</b>	<b>9,651</b>

[24](#)

Of the total amount of inventories, an amount of EUR 418 million (previous year: EUR 485 million) is carried at net realizable value. In the fiscal year, impairment losses of EUR 5 million (previous year: EUR 245 million) were recognized in profit or loss. No inventories were pledged as collateral.

## 15 Non-current financial assets

Figures in millions of euros

	2016	2015
Securities	10,458	9,831
Investments	1,098	1,158
Loan receivables	135	171
Derivative financial assets	85	81
Receivables from finance leases	149	152
Other financial assets	142	141
	<b>12,067</b>	<b>11,534</b>

**25**

Loan receivables with a residual term of more than five years amount to EUR 51 million (previous year: EUR 60 million). As in the previous year, there were no other financial receivables due in more than five years in the fiscal year.

Information about valuation allowances on loan receivables and finance lease receivables is contained in the credit risk section of note 26 "Capital and risk management".

Note 27 "Leases" contains further details on receivables from finance leases.

### Non-current securities and investments

The securities consist of interest-bearing and other securities as well as shares.

The pledged securities have a carrying amount of EUR 964 million (previous year: EUR 1,051 million). The pledged securities satisfy the legal requirement to secure obligations to employees and bank guarantees. Medium-term interest-bearing securities and units equivalent to at least the value of the claims were pledged.

Investments include unlisted investments amounting to EUR 599 million (previous year EUR 581 million). There is no active market for these investments; they are therefore carried at cost. There were no material divestments of unlisted investments in the reporting period or in the previous year.

As of the reporting date, the group plans to sell unlisted investments on a small scale.

## 16 Property, plant, and equipment

Figures in millions of euros	Land, buildings belonging to operating assets	Investment property	Plant and equipment	Other equipment, fixtures and furniture, leased assets	Prepayments and assets under construction	Total
<b>Gross values 1/1/2015</b>	<b>7,788</b>	<b>106</b>	<b>18,413</b>	<b>7,189</b>	<b>1,464</b>	<b>34,960</b>
Changes in consolidated group	1,811	12	3,930	2,280	564	8,597
Additions	232	1	1,200	826	1,799	4,058
Reclassifications	303		1,025	403	-1,731	
Disposals	-171	-27	-1,047	-654	-60	-1,959
Exchange rate differences	158	1	172	89	18	438
<b>Gross values 12/31/2015</b>	<b>10,121</b>	<b>93</b>	<b>23,693</b>	<b>10,133</b>	<b>2,054</b>	<b>46,094</b>
<b>Depreciation 1/1/2015</b>	<b>3,262</b>	<b>36</b>	<b>13,031</b>	<b>5,365</b>	<b>15</b>	<b>21,709</b>
Changes in consolidated group	625	1	2,497	1,620	4	4,747
Additions	278	2	1,540	966	2	2,788
Reclassifications	1		-28	27		
Disposals	-25	-1	-937	-595	-3	-1,561
Exchange rate differences	69		130	69	1	269
<b>Depreciation 12/31/2015</b>	<b>4,210</b>	<b>38</b>	<b>16,233</b>	<b>7,452</b>	<b>19</b>	<b>27,952</b>
<b>Carrying amounts 12/31/2015</b>	<b>5,911</b>	<b>55</b>	<b>7,460</b>	<b>2,681</b>	<b>2,035</b>	<b>18,142</b>
<b>Gross values 1/1/2016</b>	<b>10,121</b>	<b>93</b>	<b>23,693</b>	<b>10,133</b>	<b>2,054</b>	<b>46,094</b>
Changes in consolidated group	32		91	25	-152	-4
Additions	254	2	1,160	901	1,935	4,252
Reclassifications	191	-8	926	387	-1,496	
Disposals	-121	-2	-872	-669	-44	-1,708
Exchange rate differences	17		-37	1	-11	-30
<b>Gross values 12/31/2016</b>	<b>10,494</b>	<b>85</b>	<b>24,961</b>	<b>10,778</b>	<b>2,286</b>	<b>48,604</b>
<b>Depreciation 1/1/2016</b>	<b>4,210</b>	<b>38</b>	<b>16,233</b>	<b>7,452</b>	<b>19</b>	<b>27,952</b>
Changes in consolidated group	3		-66	1		-62
Additions	285	1	1,702	1,033	1	3,022
Reclassifications	-15	-1	16	5	-5	
Disposals	-95		-774	-607	-5	-1,481
Exchange rate differences	36		44	8		88
<b>Depreciation 12/31/2016</b>	<b>4,424</b>	<b>38</b>	<b>17,155</b>	<b>7,892</b>	<b>10</b>	<b>29,519</b>
<b>Carrying amounts 12/31/2016</b>	<b>6,070</b>	<b>47</b>	<b>7,806</b>	<b>2,886</b>	<b>2,276</b>	<b>19,085</b>

The total depreciation charge for the fiscal year contains the following impairment losses:

- ▶ Land and buildings: EUR 2 million (previous year: EUR 7 million)
- ▶ Plant and equipment: EUR 65 million (previous year: EUR 16 million)
- ▶ Other equipment, fixtures, and furniture: EUR 6 million (previous year: EUR 22 million)

The impairment losses of the fiscal year contain an amount of EUR 54 million, attributable to the Mobility Solutions business sector, which was recognized on plant and equipment as well as fixtures and furniture of the Automotive Steering division. The reasons for the impairment losses are increasing customer requirements and strong competition.

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

- ▶ Land and buildings: EUR 16 million (previous year: EUR 14 million)
- ▶ Plant and equipment: EUR 2 million (previous year: EUR 2 million)
- ▶ Other equipment, fixtures, and furniture: EUR 10 million (previous year: EUR 9 million)

The obligations entered into to purchase items of property, plant, and equipment amounted to EUR 583 million (previous year: EUR 630 million); there were no restrictions on title in the fiscal year (previous year: EUR 8 million). Government grants for assets of EUR 14 million (previous year: EUR 13 million) were deducted from the additions in the reporting period.

Investment property comprises rented properties which were measured at depreciated cost. Measured at fair value, the portfolio comes to EUR 104 million (previous year: EUR 115 million). The fair values were calculated at corporate headquarters. The residential property in Germany and Asia allocated to level 3 of the fair-value hierarchy pursuant to IFRS 13 is measured using the discounted earnings or comparative method, based on the ImmoWertV [*Verordnung über die Grundsätze für die Ermittlung der Verkehrswerte von Grundstücken*: Ordinance on principles to assess the market value of land] and taking the current fabric and market values of the individual properties into account. The rental income from investment property came to EUR 9 million (previous year: EUR 10 million), maintenance expenses totaled EUR 3 million (previous year: EUR 5 million).

A review of the useful lives of property, plant, and equipment revealed that special-purpose machinery is used for a longer period than previously estimated. The useful life on which depreciation is based was therefore extended to eight years. The effect of this change on the depreciation of property, plant, and equipment is presented in the following table:

**Figures in millions of euros**

	2016	2017	2018	2019–2020
Depreciation of property, plant, and equipment	22	43	99	139

## 17 Intangible assets

Figures in millions of euros

	Acquired intangible assets (with- out goodwill)	Acquired goodwill	Internally generated intangible assets	Total
<b>Gross values 1/1/2015</b>	<b>3,908</b>	<b>4,848</b>	<b>1,242</b>	<b>9,998</b>
Changes in consolidated group	4,899	827	67	5,793
Additions	303	10	283	596
Disposals	-179	-29	-129	-337
Exchange rate differences	233	130		363
<b>Gross values 12/31/2015</b>	<b>9,164</b>	<b>5,786</b>	<b>1,463</b>	<b>16,413</b>
<b>Amortization 1/1/2015</b>	<b>1,929</b>	<b>128</b>	<b>603</b>	<b>2,660</b>
Changes in consolidated group	-136		49	-87
Additions	802	565	204	1,571
Disposals	-158		-129	-287
Exchange rate differences	62	4		66
<b>Amortization 12/31/2015</b>	<b>2,499</b>	<b>697</b>	<b>727</b>	<b>3,923</b>
<b>Carrying amounts 12/31/2015</b>	<b>6,665</b>	<b>5,089</b>	<b>736</b>	<b>12,490</b>
<b>Gross values 1/1/2016</b>	<b>9,164</b>	<b>5,786</b>	<b>1,463</b>	<b>16,413</b>
Changes in consolidated group	20			20
Additions	260	18	525	803
Disposals	-164	-42	-151	-357
Exchange rate differences	-3	10		7
<b>Gross values 12/31/2016</b>	<b>9,277</b>	<b>5,772</b>	<b>1,837</b>	<b>16,886</b>
<b>Amortization 1/1/2016</b>	<b>2,499</b>	<b>697</b>	<b>727</b>	<b>3,923</b>
Changes in consolidated group	7			7
Additions	810		318	1,128
Disposals	-164	-42	-149	-355
Exchange rate differences	9			9
<b>Amortization 12/31/2016</b>	<b>3,161</b>	<b>655</b>	<b>896</b>	<b>4,712</b>
<b>Carrying amounts 12/31/2016</b>	<b>6,116</b>	<b>5,117</b>	<b>941</b>	<b>12,174</b>

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

- ▶ Acquired intangible assets (without goodwill): EUR 2 million (previous year: EUR 7 million)
- ▶ Internally generated intangible assets: EUR 91 million (previous year: EUR 16 million)

The impairment losses recognized on internally generated intangible assets relate to capitalized development projects and are all attributable to the Mobility Solutions business sector. They were charged because the IAS 38 recognition criteria were no longer satisfied in the fiscal year.

The goodwill of EUR 5,117 million (previous year: EUR 5,089 million) is attributable to the divisions (cash-generating units) as follows:

**Figures in millions of euros**

	2016	2015
Gasoline Systems	353	356
Diesel Systems	54	54
Automotive Aftermarket	411	400
Automotive Steering	108	108
Drive and Control Technology	1,535	1,545
Packaging Technology	131	130
Power Tools	388	383
BSH Hausgeräte GmbH	548	548
Security Systems	477	449
Thermotechnology	1,007	1,012
Other	105	104
	<b>5,117</b>	<b>5,089</b>

Goodwill is subjected to an annual impairment test. An impairment loss is recorded when the recoverable amount is below the carrying amount of the cash-generating unit. The recoverable amount is the value in use, which is derived from the future cash flows. The cash flows are determined by reference to business plans with a planning period of five years and based on the medium-term planning approved by management. Planning is based on expectations with respect to future market shares, growth in the respective markets, and the profitability of products and services. Cash flows after the detailed planning period are determined by reference to an expected long-term growth rate.

The parameters used in impairment testing are presented in the following table:

#### Percentage figures

	Mobility Solutions		Industrial Technology		Consumer Goods		Energy and Building Technology	
	2016	2015	2016	2015	2016	2015	2016	2015
Growth rate	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Pre-tax discount rate	11.0	11.5	9.5	10.7	9.3	9.6	10.1	9.8

[30](#)

A risk-free interest rate of 0.9 percent (previous year: 1.3 percent) and a market risk premium of 6.5 percent (previous year: 6.0 percent) are assumed. The standard tax rate used is 29 percent (previous year: 29 percent).

In the reporting period, the annual impairment test did not give rise to any impairment requirement for goodwill. Neither an increase in the discount rate by 0.5 of a percentage point nor a decrease in the growth rate by 0.5 of a percentage point would have led to an impairment of goodwill.

## 18 Trade payables

Figures in millions of euros

	2016	2015
Trade payables	6,835	6,111
Notes payable	50	73
	<b>6,885</b>	<b>6,184</b>

[31](#)

In the fiscal year, there are trade payables of EUR 8 million due in more than one year.

## 19 Other current and non-current financial liabilities

Figures in millions of euros

	2016		2015	
	up to 1 year	more than 1 year	up to 1 year	more than 1 year
Bonds	809	3,351	855	4,163
Promissory loans	65	1,651		219
Liabilities to banks	550	575	397	838
Loans	98	27	86	29
Derivative financial liabilities	147	7	154	23
Finance lease obligations	6	22	3	23
Other financial liabilities	1,008	69	700	48
	<b>2,683</b>	<b>5,702</b>	<b>2,195</b>	<b>5,343</b>

[32](#)

Financial liabilities amounting to EUR 3,568 million (previous year: EUR 2,507 million) are due in more than five years.

Note 27 "Leases" contains additional disclosures on finance lease obligations.

## 20 Other liabilities and provisions

### Other liabilities

Figures in millions of euros

	2016		2015	
	up to 1 year	more than 1 year	up to 1 year	more than 1 year
Accruals in the personnel area	2,400		2,244	
Accruals in the sales and marketing area	1,257		1,231	
Other accruals	722		549	
Tax liabilities (without income tax liabilities)	680		563	
Prepayments received for inventories	473		483	
Deferred income	170	89	154	10
Deferred income from tooling compensation received	13	115	15	137
Sundry other liabilities	397	32	255	100
	<b>6,112</b>	<b>236</b>	<b>5,494</b>	<b>247</b>

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EUR 11 million of the sundry other liabilities (previous year: EUR 6 million) are due in more than five years.

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.

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

Figures in millions of euros

	2016		2015	
	up to 1 year	more than 1 year	up to 1 year	more than 1 year
Tax provisions (without income tax provisions)	45	79	62	89
Provisions in the personnel area	808	1,881	637	1,711
Provisions in the sales and marketing area	2,174	1,220	2,286	1,152
Other provisions	1,000	1,757	678	1,889
	<b>4,027</b>	<b>4,937</b>	<b>3,663</b>	<b>4,841</b>

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Provisions developed as follows:

**Figures in millions of euros**

	<b>At 1/1/2016</b>	<b>Changes in consoli- dated group</b>	<b>Amounts used</b>	<b>Amounts reversed</b>	<b>Increase incl. increase in discounted amount</b>	<b>Exchange rate adjust- ments</b>	<b>At 12/31/2016</b>
Tax provisions	1,076		-150	-49	170	12	1,059
Provisions in the personnel area	2,348	2	-448	-87	863	11	2,689
Provisions in the sales and marketing area	3,438	4	-1,378	-362	1,698	-6	3,394
Other provisions	2,567	6	-372	-328	877	7	2,757
	<b>9,429</b>	<b>12</b>	<b>-2,348</b>	<b>-826</b>	<b>3,608</b>	<b>24</b>	<b>9,899</b>

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Of the total increase in provisions, an amount of EUR 24 million (previous year: EUR 39 million) relates to increases in the 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 timing 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 purchasing obligations, environmental protection obligations, litigation risks, restructuring, and legal risks.

In the ongoing antitrust investigations of automotive suppliers, Bosch is still in discussions with the EU Commission. In light of the related civil law risks, Bosch has already reached fundamental agreements with individual customers and the most important class action group in the United States. The latter agreement is still subject to approval by the competent U.S. court.

The events surrounding the emissions from diesel vehicles at various automakers and in many countries are a considerable risk for Bosch. With respect to the events concerning Volkswagen diesel vehicle emissions (including Audi and Porsche), Bosch has been and still is a defendant in many class and individual actions. This relates to the U.S. and Canada, among other countries. In several other countries, actions are also pending or have at least been threatened. The risks that may arise as a result of all these pending and threatened actions are difficult to quantify. In two of the pending class actions in the U.S. relating to Volkswagen, Audi, and Porsche vehicles sold in the U.S., Bosch has reached an agreement with buyers and reseller dealers that partly settles the U.S. class actions. The proposed agreement would settle the claims of consumers and reseller dealers against Robert Bosch GmbH, its affiliates, associates, and management, as related to the 2.0-liter Volkswagen and Audi diesel vehicles from model years 2009 to 2015 and the 3.0-liter Volkswagen, Audi, and Porsche diesel vehicles from model years 2009 to 2016. For this, Bosch will pay a total of USD 327.5 million. In agreeing to this settlement, Bosch neither acknowledges the correctness of the claims brought forward nor does it concede any guilt. The settlement agreement that has been reached is still subject to the approval of the U.S. court.

Among other things, there is a risk that individual consumers or reseller dealers will not concur with the settlement, but instead file individual actions. In addition, the class action by VW dealers continues. In the meantime, authorities in many countries are also investigating other automakers. According to press reports, these include Fiat Chrysler, Daimler, and Peugeot. As one of the world's leading suppliers of engine control units, Bosch also supplied these automakers with engine control units, including software, for various models. In the U.S., Bosch companies are defendants in class actions relating to Daimler and Fiat Chrysler diesel passenger cars, together with the respective automaker. In these proceedings, Bosch is asserting its rights.

On the basis of the facts relating to antitrust proceedings and engine control units that were available and assessed by the board of management when these financial statements were prepared, the board of management believes that sufficient precautions have been taken in the form of provisions for legal risks. For the various legal risks outlined above, the provisions amount to EUR 1,074 million.

#### 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

	2016	2015
Contingent liabilities related to notes issued and transferred	21	16
Contingent liabilities from guarantees	20	16
Other contingent liabilities	9	11
	<b>50</b>	<b>43</b>

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## 21 Pension provisions and similar obligations

The workforces 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 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 major pension and post-retirement medical-care plans operated by the Bosch Group are described below. These plans are subject to actuarial risks such as longevity risks, interest fluctuation risks, and capital market risks.

### Germany

The company pension scheme (Bosch bAV Plan), which was introduced on January 1, 2006, is a contribution-based plan with salary-based contributions. The Bosch bAV Plan is partly funded via an external pension fund. The value of the assets of the external pension fund is offset against the pension obligation calculated using the projected unit credit method. In Germany, the external pension funds are Bosch Pensionsfonds AG and Bosch Hilfe e.V.

During the vesting period, employer and employee contributions are added to the assets of Bosch Pensionsfonds AG up to the tax-allowed ceiling. Contributions that exceed the tax-allowed ceiling are allocated to the unfunded obligation. The benefit amount rises in line with the performance of Bosch Pensionsfonds. Grandfather provisions were transferred to the Bosch bAV Plan. For a constantly decreasing number of members of the workforce in the vesting period, a transitional arrangement guarantees a fixed rate of return on the defined benefit obligation.

Besides the Bosch bAV Plan, BSH Hausgeräte GmbH grants pension benefits in the form of contribution-based capital components with salary-based contributions or a salary-based pension component.

On reaching retirement, or in the event of occupational disability or death, the earned benefits are paid out in the form of a lump-sum payment, pension payments, or a lifelong annuity. A fund-based retirement pension was introduced in the Bosch Pensionsfonds as of January 1, 2016.

### Japan

The majority of the pension obligations are corporate pension plans (CPPs), generally in the form of funded career average pension plans. The benefits are based on salary-based contributions that are subject to interest. The rate of return depends on the structure of the plan.

There are also obligations from unfunded retirement allowance plans (RAPs), the benefits of which are based on years of service and final salary.

All the benefits are paid out in the form of lump-sum payments on termination, death, or reaching retirement age. In some CPPs, annuity payments are possible for members of the workforce after a certain period of service.

### Switzerland

Bosch has a funded pension plan. The Bosch pension plan is organized as a foundation. All the demographic and financial risks are borne by the foundation and regularly assessed by the foundation's board of trustees. In the case of a deficit, adjustments can be made such as a change in the pension factors or an increase in future contributions.

Pension plans are governed by the BVG [*Bundesgesetz über die berufliche Alters-, Hinterlassenen- und Invalidenvorsorge*: Swiss Pension Fund Law]. All benefits are defined by law, and the BVG stipulates the minimum benefits to be paid. The Bosch pension plan meets all legal requirements.

Both employer and workforce make contributions to the Bosch pension plan. The benefits are paid out either as a lump sum or a lifelong annuity.

### United Kingdom

Bosch finances a closed final-salary defined benefit plan. The obligation is funded via a trust association which is legally independent of Bosch, and which is operated in accordance with the law. The trustees are required to comply with the legal requirements. The plan has a deficit that is being closed through a restructuring plan.

The benefits earned are paid out on reaching retirement age, or in the event of occupational disability or death.

### United States

Bosch maintains the Bosch pension plan and eleven additional smaller pension plans, all of which are funded and in line with the ERISA requirements. The legal minimum funding requirements therefore apply to these plans. The Bosch pension plan is a cash balance plan under which the benefits depend on age, years of service, and salary. Benefits are paid out on reaching retirement age or in the event of death. The plan does not accept new members.

Two unfunded pension plans are also closed for new members; these provide benefits for certain members of management or for members of the Bosch pension plan whose income lies above the statutory contribution assessment basis. The benefits depend on age, years of service, and salary, and are paid out on reaching retirement age or in the event of death.

In addition, Bosch finances 14 unfunded plans for post-employment medical care. Eight plans are already closed. The level of benefits and the contributions for pensioners vary depending on location, age, and years of service. The benefits include healthcare benefits and life assurance contributions for pensioners and their spouses.

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

#### Percentage figures

	Germany		Japan		Switzerland		U.K.		U.S.		Total	
	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015
Discount factor	1.8	2.3	0.4	0.6	0.6	0.9	2.7	3.8	4.1	4.3	2.0	2.5
Projected salaries	3.0	3.0	2.3	2.1	1.5	1.5	2.9	2.8	3.5	3.5	3.0	3.0
Projected pensions	1.8	1.8	n.a.	n.a.	0.0	0.0	2.8	2.8	n.a.	n.a.	1.6	1.6

n.a. not applicable

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To determine the discount factor in the euro zone, reference was made to bonds rated AA by at least one rating agency as of the reporting date. In all regions the discount factor is determined in accordance with IAS 19.

Projected salaries are future salary increases estimated on the basis of the economic situation and inflation, among other things.

The pension plans are measured using the current mortality tables as of December 31 of the fiscal year concerned. As of December 31, 2016, the following mortality tables are used:

Germany	Heubeck 2005G mortality tables
Japan	2015 MHLW Standard Table
Switzerland	BVG 2015 generation tables for pensioners, BVG 2015 P21 for future beneficiaries
U.K.	105 percent for males, 96 percent for females of S2PXA tables with 2014 CMI projections and 1.25 percent long-term improvement
U.S.	RP2006, projected by MP2016; aggregate for some plans, collar adjustments for others

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As of December 31, 2015, the following mortality tables were used in the key countries:

Germany	Heubeck 2005G mortality tables
Japan	2015 MHLW Standard Table
Switzerland	BVG 2010 generation tables for pensioners, BVG 2010 P20 for future beneficiaries
U.K.	105 percent for males, 96 percent for females of S2PXA tables with 2014 CMI projections
U.S.	RP2006, projected by MP2015; aggregate for some plans, collar adjustments for others

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For the key regions, the present value of the defined benefit obligation can be reconciled to the provision as follows:

**Figures in millions of euros**

	Present value of the obligation	Plan assets	Other assets	Unrecognized asset	Provision
<b>At 12/31/2016</b>					
Germany	13,950	-3,079			10,871
Japan	253	-260	39		32
Switzerland	1,235	-1,170	3		68
U.K.	366	-309	7		64
U.S.	1,988	-1,561			427
Other	564	-191	1	5	379
	<b>18,356</b>	<b>-6,570</b>	<b>50</b>	<b>5</b>	<b>11,841</b>
<b>At 12/31/2015</b>					
Germany	12,919	-2,708			10,211
Japan	235	-232	28		31
Switzerland	1,214	-1,090			124
U.K.	354	-312	10		52
U.S.	1,939	-1,470			469
Other	555	-185		5	375
	<b>17,216</b>	<b>-5,997</b>	<b>38</b>	<b>5</b>	<b>11,262</b>

The development of the net liability of the defined benefit obligation is presented in the following table:

Figures in millions of euros	Present value of the obligation	Plan assets	Other assets	Unrecognized asset	Provision
<b>At 1/1/2016</b>	<b>17,216</b>	<b>-5,997</b>	<b>38</b>	<b>5</b>	<b>11,262</b>
Pension cost charged to profit or loss					
Current service cost	567				567
Past service cost <sup>1</sup>	-111				-111
Gains from plan settlements not related to past service cost	-9				-9
Net interest income/expense	417	-159		1	259
Other		6			6
	<b>864</b>	<b>-153</b>	<b>0</b>	<b>1</b>	<b>712</b>
Remeasurement					
Return on plan assets (excluding amounts included in net interest)		-232			-232
Gains arising from changes in demographic assumptions	-36				-36
Losses arising from changes in financial assumptions	924				924
Experience losses	44				44
Other adjustments				-1	-1
	<b>932</b>	<b>-232</b>	<b>0</b>	<b>-1</b>	<b>699</b>
Contributions					
Employer		-395			-395
Beneficiaries	18	-18			0
	<b>18</b>	<b>-413</b>	<b>0</b>	<b>0</b>	<b>-395</b>
Benefits paid <sup>2</sup>	-686	243			-443
Special effects (plan settlement)	-30	30			0
Transfers	-1				-1
Currency translation	27	-34			-7
Changes in consolidated group	16	-14			2
Changes in other assets			12		12
<b>At 12/31/2016</b>	<b>18,356</b>	<b>-6,570</b>	<b>50</b>	<b>5</b>	<b>11,841</b>

<sup>1</sup> Including past service cost of EUR -44 million due to plan amendments in Germany and of EUR -65 million due to plan amendments at the Swiss Bosch pension fund.

<sup>2</sup> Including EUR 26 million for transfer payments to Bosch Pensionsfonds at the beginning of the pension phase for payment of the pension via a defined contribution plan.

Figures in millions of euros	Present value of the obligation	Plan assets	Other assets	Unrecognized asset	Provision
<b>At 1/1/2015</b>	<b>15,158</b>	<b>-5,247</b>	<b>17</b>	<b>7</b>	<b>9,935</b>
Pension cost charged to profit or loss					
Current service cost	626				626
Past service cost	0				0
Gains from plan settlements not related to past service cost	0				0
Net interest income/expense	393	-146		1	248
Other		6			6
	<b>1,019</b>	<b>-140</b>	<b>0</b>	<b>1</b>	<b>880</b>
Remeasurement					
Losses on plan assets (excluding amounts included in net interest)		76			76
Gains arising from changes in demographic assumptions	-26				-26
Gains arising from changes in financial assumptions	-1,103				-1,103
Experience losses	32				32
Other adjustments				-2	-2
	<b>-1,097</b>	<b>76</b>	<b>0</b>	<b>-2</b>	<b>-1,023</b>
Contributions					
Employer		-363			-363
Beneficiaries	19	-19			0
	<b>19</b>	<b>-382</b>	<b>0</b>		<b>-363</b>
Benefits paid <sup>1</sup>	-666	230			-436
Special effects (plan settlement)	-11	11			0
Transfers	12	-4			8
Currency translation	351	-300		-1	50
Changes in consolidated group	2,431	-241			2,190
Changes in other assets			21		21
<b>At 12/31/2015</b>	<b>17,216</b>	<b>-5,997</b>	<b>38</b>	<b>5</b>	<b>11,262</b>

<sup>1</sup> Including EUR 26 million for transfer payments to the Bosch Pensionsfonds at the beginning of the pension phase for payment of the pension via a defined contribution plan.

The plan assets comprise the following components:

**Percentage figures**

	Germany		Japan		Switzerland		U.K.		U.S.	
	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015
Cash and cash equivalents	1	1	2	1	0	0	1	0	3	1
Equity instruments	37	38	30	37	26	26	38	37	44	44
of which Europe	51	52	13	9	52	54	55	54	14	14
of which North America	21	23	35	23	33	32	26	27	73	73
of which Asia Pacific	13	17	52	68	7	7	15	15	7	8
of which emerging markets	10	8			6	5	4	4	6	5
of which other	5				2	2	0	0	0	0
Debt instruments	47	46	64	57	33	31	53	53	53	55
of which government bonds	39	39	81	85	19	30	41	40	35	37
of which corporate bonds	57	53	14	5	66	56	59	60	65	63
of which other debt instruments	4	8	5	10	15	14				
Property	7	9			36	35	0	1		
Insurance	0	0	4	5			4	4		
Other	8	6			5	8	4	5		

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Quoted prices in an active market are available for cash, equity instruments, and debt instruments. For the other classes of assets, there are in most cases no quoted prices in an active market.

**Duration and estimated maturities of the pension obligation**

The weighted duration of the pension obligation as of December 31, 2016, is 15.3 years (previous year: 15.4 years).

### Estimated maturities of the undiscounted estimated pension payments

Figures in millions of euros

	2016	2015
Less than one year	715	664
Between one and two years	729	680
Between two and three years	781	722
	<b>2,225</b>	<b>2,066</b>

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The estimated additions to plan assets in the fiscal year 2017 amount to EUR 391 million (previous year: EUR 331 million).

The estimated benefits to be paid directly in the fiscal year 2017 amount to EUR 450 million (previous year: EUR 416 million).

### Sensitivity of the defined benefit obligations in relation to actuarial parameters:

Percentage figures

	Germany		Japan		Switzerland		U.K.		U.S.	
	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015
<b>Discount factor</b>										
Increase of 0.5 percentage points	-5.6	-5.4	-4.8	-4.5	-5.7	-5.2	-8.4	-7.7	-6.5	-6.4
Decrease of 0.5 percentage points	6.0	6.4	5.1	4.8	6.4	5.9	9.4	8.6	7.3	7.1
<b>Projected salaries</b>										
Increase of 0.25 percentage points	0.1	0.1	0.8	0.7	0.2	0.3	0.5	0.9	0.0	0.0
Decrease of 0.25 percentage points	-0.1	-0.1	-0.7	-0.7	-0.2	-0.3	-0.5	-0.8	0.0	0.0
<b>Projected pensions</b>										
Increase of 0.25 percentage points	0.7	0.8	n.a.	n.a.	2.5	2.5	1.7	1.5	n.a.	n.a.
Decrease of 0.25 percentage points	-0.6	-0.8	n.a.	n.a.	-2.4	-2.4	-1.6	-1.4	n.a.	n.a.
<b>Life expectancy</b>										
Increase by one year	2.4	2.3	n.a.	n.a.	2.9	3.3	3.2	3.8	2.4	2.7

n.a. not applicable

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The sensitivity analyses of the defined benefit obligation for the main actuarial assumptions are based on the same methods as those used for the post-employment benefit obligations presented in the consolidated statement of financial position (projected unit credit method). In each case, one assumption was changed leaving the other assumptions unchanged. This means that possible correlation effects were not considered.

#### Defined contribution plans

Expenses for defined contribution plans amounted to EUR 1,202 million (previous year: EUR 1,212 million).

#### Provisions for long-service bonuses

Expenses for additions to long-service bonuses amounted to EUR 102 million (previous year: EUR 55 million).

## 22 Equity

The issued capital of EUR 1,200 million and capital reserve of EUR 4,557 million correspond to 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	

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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 other comprehensive income. The effects of changes in actuarial parameters in the pension provisions are disclosed in the "Other" column under "Other comprehensive income" in the statement of changes in equity. This line item also contains differences between the purchase price and the proportionate equity attributable to 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 United Automotive Electronic Systems Co., Ltd., Shanghai, Bosch Automotive Diesel Systems Co., Ltd., Wuxi, Bosch HUAYU Steering Systems Group (formerly: ZF Shanghai Steering Systems Group), Shanghai, all China, and Bosch Ltd., Bengaluru, India.

## 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 EBIT. EBIT is earnings before taxes and before the financial result. Cash inflows from operating activities are adjusted for non-cash expenses and income (mainly depreciation of non-current assets), and take into account cash-effective financial expenses, financial income, and taxes, as well as changes in working capital.

The investing activities mainly comprise additions to non-current assets, including leased assets and the purchase and disposal of subsidiaries and other operating units, 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 items 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 liquidity contained in the statement of cash flows includes cash of EUR 4,753 million (previous year: EUR 3,707 million). In the reporting period, there was no transfer restriction for cash and cash equivalents.

Effects of acquisitions on the cash flow are explained in the "Business combinations" section.

## 24 Segment reporting

### Disclosures on business sectors

Figures in millions of euros

	Mobility Solutions		Industrial Technology		Consumer Goods	
	2016	2015	2016	2015	2016	2015
External sales	43,936	41,657	6,257	6,603	17,588	17,140
Intersegment sales	185	255	279	290	62	77
Total sales	44,121	41,912	6,536	6,893	17,650	17,217
EBIT	2,047	3,216	44	-830	1,102	2,224
of which: profit from entities consolidated using the equity method	-177	-46	2	2		
Non-cash expenses (without depreciation)	2,892	2,942	447	582	845	728
Amortization and depreciation of intangible assets and property, plant, and equipment	2,691	2,427	238	259	862	848
Impairment losses on intangible assets and property, plant, and equipment	157	24	3	550	6	29
Non-cash income	413	1,029	103	121	214	1,767
Assets	14,239	13,137	2,760	2,732	7,094	6,786
Investments measured at equity	59	123	34	29		

	Energy and Building Technology		All other segments		Consolidation		Group	
	2016	2015	2016	2015	2016	2015	2016	2015
	5,223	5,134	125	73			73,129	70,607
	8	20			-534	-642		
	5,231	5,154	125	73	-534	-642	73,129	70,607
	226	224	-84	-247			3,335	4,587
							-175	-44
	213	223	61	154			4,458	4,629
	159	162	34	30			3,984	3,726
		15		15			166	633
	59	68	24	34			813	3,019
	1,715	1,692	188	242			25,996	24,589
							93	152

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

The Mobility Solutions business sector mainly consists of the following areas of business: injection technology for internal-combustion engines, alternative powertrain concepts, efficient and connected powertrain peripherals, systems for active and passive driving safety, assistance and convenience functions, technology for user-friendly infotainment as well as vehicle-to-vehicle and vehicle-to-infrastructure communication, concepts, technology, and services for the automotive aftermarket, and steering systems for passenger cars and commercial vehicles.

The Industrial Technology business sector combines the following activities:

- ▶ Automation technology (technologies for drives, controls, and motion)
- ▶ Packaging technology (machinery and packaging lines for the confectionery, foodstuffs, beverage, and tobacco industry, as well as for the pharmaceuticals industry)

The operations of the Consumer Goods 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)
- ▶ Household appliances (appliances for cooking, washing-up, washing, drying, cooling, freezing, floor care, etc.)

The Energy and Building Technology business sector comprises the following activities:

- ▶ Security systems (video surveillance, public address systems, evacuation systems, and access control)
- ▶ Heating systems (heating and hot-water boilers including open- and closed-loop control systems)
- ▶ Service solutions (business solutions for internal and external customers, shared services for the Bosch Group)
- ▶ Services to increase energy efficiency in non-residential buildings

Business segments which are not reportable are combined and presented in the category "All other segments." This mainly relates to financial, holding, and other service companies as well as the remaining activities in the photovoltaics area.

The divisions allocated to a business sector are aggregated into a single reportable segment as they have similar economic characteristics. Above all, the economic performance of all the divisions aggregated in one segment depends to a similar extent on the same core markets (automotive production, capital goods, consumer goods, and energy and building technology).

Items attributable to financing activities are not included in segment reporting.

Operating value contribution is the main controlling parameter of our value-based management. In addition to this earnings ratio, the internal reporting to management also reports EBIT at segment level.

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, gains on the disposal of items of property, plant, and equipment and of intangible assets, as well as income from the remeasurement of investments.

Segment assets comprise trade receivables as well as inventories, in both cases before valuation allowances.

### Reconciliation statements

#### Figures in millions of euros

	2016	2015
<b>Sales</b>		
Sales by reportable segment	73,538	71,176
Sales of all other segments	125	73
Consolidation	-534	-642
<b>Group sales</b>	<b>73,129</b>	<b>70,607</b>
<b>Result</b>		
EBIT by reportable segment	3,419	4,834
EBIT of all other segments	-84	-247
Financial income	2,528	2,987
Financial expenses	-2,496	-3,085
<b>Profit before tax</b>	<b>3,367</b>	<b>4,489</b>
<b>Assets</b>		
Assets by reportable segment	25,808	24,347
All other segments	188	242
Impairment losses on segment assets	-1,737	-1,698
Other current assets	9,303	7,344
Non-current assets	48,313	47,031
<b>Group assets</b>	<b>81,875</b>	<b>77,266</b>

## Disclosures by important country

Figures in millions of euros

	Sales by registered office of the customer		Non-current assets <sup>1</sup>	
	2016	2015	2016	2015
<b>Europe</b>	<b>38,628</b>	<b>37,346</b>	<b>20,267</b>	<b>19,849</b>
of which Germany	14,548	14,179	12,714	12,347
of which the U.K.	3,863	3,638	440	495
of which France	3,037	2,996	436	450
of which Italy	2,372	2,244	510	511
<b>Americas</b>	<b>13,705</b>	<b>14,052</b>	<b>3,893</b>	<b>3,756</b>
of which the U.S.	10,360	11,018	3,279	3,195
<b>Asia</b>	<b>19,834</b>	<b>18,225</b>	<b>6,992</b>	<b>6,927</b>
of which China	12,465	11,133	4,986	5,039
of which Japan	2,221	2,009	530	507
<b>Other regions</b>	<b>962</b>	<b>984</b>	<b>107</b>	<b>100</b>
<b>Group</b>	<b>73,129</b>	<b>70,607</b>	<b>31,259</b>	<b>30,632</b>

<sup>1</sup> Non-current assets consist of intangible assets and property, plant, and equipment.

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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 gain/loss by category

The table below presents the net gains and losses from financial instruments recognized in the income statement, classified by the categories defined in IAS 39:

#### Figures in millions of euros

	2016	2015
Loans and receivables	128	111
Available-for-sale financial assets	411	663
Financial assets and liabilities held for trading	-83	-203
Financial liabilities measured at amortized cost	-356	-727

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The net gain/loss contains gains and losses from measuring receivables and loans, from the reversal of the reserve from securities in equity, exchange-rate gains and losses, interest income and expenses, as well as gains and losses 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

Figures in millions of euros

	Category pursuant to IAS 39	Carrying amount 2016	Carrying amount pursuant to IAS 39			Carrying amount pursuant to IAS 17	Fair value 2016
			(Amortized) cost	Fair value recognized in other comprehensive income	Fair value recognized in profit or loss		
<b>ASSETS</b>							
<b>Cash and cash equivalents</b>	<b>LaR</b>	<b>4,753</b>	<b>4,753</b>				
<b>Trade receivables</b>	<b>LaR</b>	<b>14,364</b>	<b>14,364</b>				
<b>Current other financial assets</b>		<b>2,376</b>					
Securities	AfS	852		852			852
Bank balances	LaR	676	676				
Loan receivables	LaR	342	342				
Derivative financial assets	FAHfT	74			74		74
Receivables from finance leases	n.a.	34				34	
Sundry other financial assets	LaR	398	398				
<b>Non-current financial assets</b>		<b>12,067</b>					
Securities	AfS	10,458		10,458			10,458
Investments	AfS	1,098	599	499			499
Loan receivables	LaR	135	135				145
Derivative financial assets	FAHfT	85			85		85
Receivables from finance leases	n.a.	149				149	
Other financial assets	LaR	142	142				142

Figures in millions of euros

	Category pursuant to IAS 39	Carrying amount 2016	Carrying amount pursuant to IAS 39			Carrying amount pursuant to IAS 17	Fair value 2016
			(Amortized) cost	Fair value recognized in other comprehensive income	Fair value recognized in profit or loss		
<b>EQUITY AND LIABILITIES</b>							
<b>Trade payables</b>	<b>FLAC</b>	<b>6,885</b>	<b>6,885</b>				
<b>Current other financial liabilities</b>		<b>2,683</b>					
Bonds	FLAC	809	809				
Promissory loans	FLAC	65	65				
Liabilities to banks	FLAC	550	550				
Loans	FLAC	98	98				
Derivative financial liabilities	FLHFT	147			147		147
Finance lease obligations	n.a.	6				6	
Other financial liabilities	FLAC	1,008	1,008				
<b>Non-current financial liabilities</b>		<b>5,702</b>					
Bonds	FLAC	3,351	3,351				3,794
Promissory loans	FLAC	1,651	1,651				1,615
Liabilities to banks	FLAC	575	575				588
Loans	FLAC	27	27				30
Derivative financial liabilities	FLHFT	7			7		7
Finance lease obligations	n.a.	22				22	
Other financial liabilities	FLAC	69	69				69

LaR Loans and receivables  
 AfS Available-for-sale financial assets  
 FAHFT Financial assets held for trading  
 FLAC Financial liabilities measured at amortized cost  
 FLHFT Financial liabilities held for trading  
 n.a. not applicable

Figures in millions of euros

	Category pursuant to IAS 39	Carrying amount 2015	Carrying amount pursuant to IAS 39		Carrying amount pursuant to IAS 17	Fair value 2015
			(Amortized) cost	Fair value recognized in other comprehensive income		
<b>ASSETS</b>						
<b>Cash and cash equivalents</b>	LaR	3,707	3,707			
<b>Trade receivables</b>	LaR	13,240	13,240			
<b>Current other financial assets</b>		<b>1,833</b>				
Securities	AfS	608		608		608
Bank balances	LaR	213	213			
Loan receivables	LaR	378	378			
Derivative financial assets	FAHfT	142			142	142
Receivables from finance leases	n.a.	32				32
Sundry other financial assets	LaR	460	460			
<b>Non-current financial assets</b>		<b>11,534</b>				
Securities	AfS	9,831		9,831		9,831
Investments	AfS	1,158	581	577		577
Loan receivables	LaR	171	171			187
Derivative financial assets	FAHfT	81			81	81
Receivables from finance leases	n.a.	152				152
Other financial assets	LaR	141	141			141

Figures in millions of euros

	Category pursuant to IAS 39	Carrying amount 2015	Carrying amount pursuant to IAS 39			Carrying amount pursuant to IAS 17	Fair value 2015
			(Amortized) cost	Fair value recognized in other comprehen- sive income	Fair value recognized in profit or loss		
<b>EQUITY AND LIABILITIES</b>							
<b>Trade payables</b>	<b>FLAC</b>	<b>6,184</b>	<b>6,184</b>				
<b>Current other financial liabilities</b>		<b>2,195</b>					
Bonds	FLAC	855	855				
Liabilities to banks	FLAC	397	397				
Loans	FLAC	86	86				
Derivative financial liabilities	FLHfT	154			154	154	
Finance lease obligations	n.a.	3				3	
Other financial liabilities	FLAC	700	700				
<b>Non-current financial liabilities</b>		<b>5,343</b>					
Bonds	FLAC	4,163	4,163			4,474	
Promissory loans	FLAC	219	219			249	
Liabilities to banks	FLAC	838	838			866	
Loans	FLAC	29	29			29	
Derivative financial liabilities	FLHfT	23			23	23	
Finance lease obligations	n.a.	23				23	
Other financial liabilities	FLAC	48	48			48	

LaR Loans and receivables  
Afs Available-for-sale financial assets  
FAHfT Financial assets held for trading  
FLAC Financial liabilities measured at amortized cost  
FLHfT Financial liabilities held for trading  
n.a. not applicable

The carrying amounts of the financial assets and liabilities, classified by the categories of IAS 39, are as follows:

### Figures in millions of euros

	2016	2015
Loans and receivables	20,810	18,310
Available-for-sale financial assets	12,408	11,597
Financial assets held for trading	159	223
Financial liabilities measured at amortized cost	15,088	13,519
Financial liabilities held for trading	154	177

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### Composition of the derivative financial instruments

#### Figures in millions of euros

	Market values				Nominal values	
	2016	2016	2015	2015	2016	2015
	up to 1 year	more than 1 year	up to 1 year	more than 1 year		
<b>Derivatives with a positive market value</b>						
<b>Interest derivatives</b>	<b>1</b>		<b>2</b>		<b>63</b>	<b>194</b>
of which interest swaps			1			120
of which other interest derivatives	1		1		63	74
<b>Foreign currency derivatives</b>	<b>59</b>	<b>27</b>	<b>139</b>	<b>20</b>	<b>5,741</b>	<b>7,195</b>
<b>Other derivatives</b>	<b>14</b>	<b>58</b>	<b>1</b>	<b>61</b>	<b>360</b>	<b>50</b>

#### Derivatives with a negative market value

<b>Interest derivatives</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>160</b>	<b>36</b>
of which interest swaps		1		2	10	10
of which other interest derivatives	2		0		150	26
<b>Foreign currency derivatives</b>	<b>128</b>	<b>3</b>	<b>42</b>	<b>0</b>	<b>7,838</b>	<b>3,678</b>
<b>Other derivatives</b>	<b>17</b>	<b>3</b>	<b>112</b>	<b>21</b>	<b>171</b>	<b>546</b>

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The foreign currency derivatives are mainly forward exchange contracts.

The fair values of financial assets and financial liabilities measured at fair value are determined using the fair value hierarchy in accordance with IFRS 13 presented in the table below:

**Figures in millions of euros**

	Category pursuant to IAS 39	Level 1 <sup>1</sup>		Level 2 <sup>2</sup>		Total	
		2016	2015	2016	2015	2016	2015
<b>Financial assets</b>							
Securities	AfS	4,377	3,461	6,933	6,978	11,310	10,439
of which current		94	154	758	454	852	608
of which non-current		4,284	3,307	6,174	6,524	10,458	9,831
Investments	AfS	499	577			499	577
Derivative financial instruments	FAHfT	1		158	223	159	223
of which current		1		73	142	74	142
of which non-current				85	81	85	81
<b>Financial liabilities</b>							
Derivative financial instruments	FLHfT	2		152	177	154	177
of which current		2		145	154	147	154
of which non-current				7	23	7	23

<sup>1</sup> Fair value is calculated on the basis of listed, unadjusted market prices on active markets

<sup>2</sup> Fair value is determined on the basis of market data such as share prices, exchange rates, or interest curves using market-based valuation techniques (e.g. discounted cash flow method or Black-Scholes model)

No fair values were determined using inputs that are not based on observable market data (level 3) in the fiscal year.

At the end of the fiscal year, items are reviewed to determine whether they need to be reclassified between individual levels of the fair-value hierarchy. In the current fiscal year, a small volume of available-for-sale securities were reclassified from level 1 to level 2, as they were no longer measured at their stock market price.

The fair value of financial assets and liabilities measured at amortized cost is determined on the basis of observable market data such as share prices, exchange rates, or interest curves (level 2).

## 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 operating value contribution is the central controlling variable of our financial management accounting system. It is calculated by deducting the cost of capital from EBIT. Additional adjustments are also made in certain other respects, such as recognition of impairment losses, pension provisions, and provisions for losses arising from delivery commitments. The development of the operating value contribution is the yardstick used to assess performance. 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 as well as commodity price risks on the procurement side. Business policy aims to limit these risks by means of hedging. All hedging transactions are managed 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 concluded solely via banks whose creditworthiness is regarded as impeccable. The rating given by leading agencies as well as current risk assessments in the financial markets are taken into account. The creditworthiness of the banking partners of the Bosch Group is closely monitored and the risk mitigated by counterparty limits.

To reduce the credit risk of the bank, fixed term deposits are in some cases entered into as secured deposits in tri-party repo transactions. In such cases, the bank provides predefined securities as collateral. The transactions themselves, as well as the management and valuation of the securities, are managed by a clearing center. For details, please refer to note 10 "Cash and cash equivalents".

The decision-making bodies are committees for commodities, foreign currencies, and investments that meet at regular intervals. 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 ongoing 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 risk analyses and the results of investments and hedges.

### Currency risk

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 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 cash flows is in CNY, GBP, and USD.

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 minimum requirements with respect to nature, scope, and complexity.

The risk of the material operating foreign currency items 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 *Financial Instruments: Disclosures* 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	
	2016	2015	2016	2015
CHF	12	22	-12	-21
CNY	30	-34	-29	31
CZK	-42	-34	42	37
GBP	33	16	-33	-19
HUF	-13	-16	13	19
JPY	12	14	-12	-15
KRW	40	10	-40	-13
PLN	-7	-6	7	6
RUB	-9	-22	9	21
TRY	-49	-51	49	51
USD	34	21	-34	-25

**56**

A change in the USD of 10 percent (starting from the closing rate) against the foreign currency 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	
	2016	2015	2016	2015
CNY	-12	-20	12	20

**57**

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 other than 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 select use of derivative financial instruments. These are mainly interest swaps and interest futures.

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, fixed-rate securities, and interest derivatives. Mutual funds and money market funds were not included.

A change in the market interest rate by 100 basis points (starting from interest rate on the reporting date) would have the following effect on the reserve from securities in equity and the profit before tax:

#### Figures in millions of euros

	Increase in market interest level by 100 basis points		Decrease in market interest level by 100 basis points	
	2016	2015	2016	2015
Reserve from securities	-264	-212	264	212
Profit before tax	20	17	-20	-17

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### Share-price risks

The analysis of the share-price risk in accordance with IFRS 7 took into account share portfolios, investments measured at fair value, as well as share derivatives with a total carrying amount of EUR 4,215 million (previous year: EUR 3,821 million).

A change in the share price of 10 percent (starting from share price on the reporting date) would have the following effect on the reserve from securities in equity and the profit before tax:

#### Figures in millions of euros

	10% increase in share price		10% decrease in share price	
	2016	2015	2016	2015
Reserve from securities	374	384	-318	-320
Profit before tax	47	1	-103	-65

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### Other price risks

Derivatives and physical fixed-price contracts are used to limit the risks of fluctuating commodity prices. The analysis of the commodity-price risk in accordance with IFRS 7 took into account commodity 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:

#### Figures in millions of euros

	10% increase in forward rates		10% decrease in forward rates	
	2016	2015	2016	2015
Profit before tax	50	40	-50	-40

**60**

As of the reporting date, the Bosch Group is not aware that it is exposed to any significant other price risks as defined by IFRS 7.

### Credit risks

The maximum credit risk for each class of financial instrument is the carrying amount of the financial assets recognized in the statement of financial position.

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.

The credit risk for trade receivables is reduced by processing invoices with the corresponding credit notes in a single work step; the net amount is reported in the statement of financial position. This procedure is only performed if there is a legal right to offset and there is an intention to settle the receivable based on the net amount or to settle the receivable by offsetting against the corresponding liability. Moreover, trade receivables are partly secured by retention of title. For some trade receivables, collateral has been additionally provided in the form of guarantees, property liens, and mortgages.

The table below shows the remaining credit risk for trade receivables:

#### Figures in millions of euros

	2016	2015
Trade receivables (gross value)	14,978	13,959
Offsetting of credit notes	-614	-719
Trade receivables (carrying amount)	14,364	13,240
Financial guarantee contracts (received)	-1,368	-1,427
<b>Remaining credit risk</b>	<b>12,996</b>	<b>11,813</b>

**61**

The change in valuation allowances for specific risks as well as for the general credit risk is presented in the following table:

**Figures in millions of euros**

	Trade receivables	Loan receivables
<b>At 1/1/2015</b>	<b>468</b>	<b>5</b>
Change in the valuation allowance for specific risks	85	4
Change in the valuation allowance for the general credit risk	59	-1
<b>At 12/31/2015</b>	<b>612</b>	<b>8</b>
Change in the valuation allowance for specific risks	28	3
Change in the valuation allowance for the general credit risk	6	1
<b>At 12/31/2016</b>	<b>646</b>	<b>12</b>

**62**

Apart from this, valuation allowances were recognized on a small scale on receivables from finance leases.

At the end of the reporting period, there is no indication of any significant defaults of trade receivables or of other financial assets exposed to credit risks that are neither impaired nor past due.

The table below shows a maturity analysis of the unimpaired trade receivables:

**Figures in millions of euros**

	2016	2015
Trade receivables	14,364	13,240
of which not impaired and not past due at the end of the reporting period	4,025	3,729
of which not impaired and past due at the end of the reporting period	167	141
for less than one month	119	95
for more than one month, but less than three months	29	26
for more than three months	19	20

**63**

Of the loans and receivables from finance leases (both current and non-current), an amount of EUR 283 million (previous year: EUR 189 million) is not impaired and not past due. There are no loan receivables and receivables from finance leases (both current and non-current) which are not impaired but past due.

Derivative transactions are entered into in accordance with the German Master Agreement for Financial Derivatives Transactions or the ISDA (International Swaps and Derivatives Association). These do not satisfy the set-off criteria of IAS 32 *Financial Instruments: Presentation*, as netting is only enforceable in the case of insolvency.

The credit risk for derivatives that do not currently satisfy the set-off criteria of IAS 32 (offsetting only enforceable in the case of insolvency of the contracting party) is presented in the following table:

**Figures in millions of euros**

	<b>2016</b>	<b>2015</b>
Derivatives with a positive market value (carrying amount)	159	223
Value of derivatives not netted in the statement of financial position	-39	-19
<b>Remaining credit risk</b>	<b>120</b>	<b>204</b>

**64**

**Liquidity risks**

The development of financial assets and liabilities is 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 5,605 million (previous year: EUR 4,315 million). In addition to that, there is a Euro commercial paper program with a volume of EUR 1,000 million and a U.S. commercial paper program with a volume of USD 2,000 million, neither of which had been drawn at the end of the reporting period.

The liquidity risk is reduced by processing invoices for trade payables with the corresponding credit notes received in a single work step. This procedure is only performed if there is a legal right to offset and there is an intention to settle the liability based on the net amount or to settle the liability by offsetting against the corresponding receivable. Moreover, collateral is provided in the form of guarantees.

The table below shows the remaining liquidity risk for trade payables:

**Figures in millions of euros**

	<b>2016</b>	<b>2015</b>
Trade payables (gross value)	7,499	6,903
Offsetting of credit notes	-614	-719
Trade payables (carrying amount)	6,885	6,184
Financial guarantee contracts (granted)	-8	-6
<b>Remaining liquidity risk</b>	<b>6,877</b>	<b>6,178</b>

**65**

The liquidity risk for derivatives that do not currently satisfy the set-off criteria of IAS 32 (offsetting only enforceable in the case of insolvency) is presented in the following table:

**Figures in millions of euros**

	<b>2016</b>	<b>2015</b>
Derivatives with a negative market value (carrying amount)	154	177
Value of derivatives not netted in the statement of financial position	-39	-19
<b>Remaining liquidity risk</b>	<b>115</b>	<b>158</b>

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

<b>Figures in millions of euros</b>	<b>Carrying amount</b>		<b>Undiscounted cash flows</b>				
	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022 ff.</b>
<b>Non-derivative financial liabilities</b>							
Trade payables	6,885	6,877	3	3	2		
Bonds	4,160	912	138	375	566	552	2,395
Promissory loans	1,716	89	23	171	14	14	1,568
Liabilities to banks	1,125	566	513	72			
Finance lease obligations	28	7	8	5	4	2	6
Loans	125	99	5	6	6	3	8
Other financial liabilities	1,077	1,007	8	2	1	1	58
<b>Derivative financial liabilities</b>							
Gross settlement	125						
Cash outflows		7,007	134	1			
Cash inflows		6,875	131	0			
Net settlement	29						
Cash outflows		25	4				

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Figures in millions of euros	Carrying amount		Undiscounted cash flows				
	2015	2016	2017	2018	2019	2020	2021 ff.
<b>Non-derivative financial liabilities</b>							
Trade payables	6,184	6,184					
Bonds	5,018	987	915	140	375	566	2,949
Promissory loans	219	10	75	9	157		
Liabilities to banks	1,235	422	377	395	87		
Finance lease obligations	26	6	8	6	4	3	12
Loans	115	87	6	6	6	4	8
Other financial liabilities	748	714	33	5	2	2	7
<b>Derivative financial liabilities</b>							
Gross settlement	56						
Cash outflows		3,654	18	44	1		
Cash inflows		3,596	16	42	0		
Net settlement	121						
Cash outflows		102	21				

**68**

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

## 27 Leases

The receivables from finance lease agreements mainly 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

	2016	2015
<b>Gross capital expenditures on finance leases</b>		
due not later than one year	44	42
due later than one year and not later than five years	125	125
due later than five years	53	59
	<b>222</b>	<b>226</b>
<b>Present value of outstanding minimum lease payments</b>		
due not later than one year	34	32
due later than one year and not later than five years	102	100
due later than five years	47	52
	<b>183</b>	<b>184</b>
<b>Unearned finance income</b>	<b>39</b>	<b>42</b>

**69**

There were no unguaranteed residual values.

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

### Figures in millions of euros

	2016	2015
<b>Future minimum lease payments</b>		
due not later than one year	8	5
due later than one year and not later than five years	22	21
due later than five years	8	12
<b>Interest portion contained in the future minimum lease payments</b>		
due not later than one year	2	2
due later than one year and not later than five years	7	8
due later than five years	1	2
<b>Present value of future minimum lease payments</b>		
due not later than one year	6	3
due later than one year and not later than five years	15	13
due later than five years	7	10
	<b>28</b>	<b>26</b>

**70**

The outstanding minimum lease payments from operating lease agreements with entities of the Bosch Group as lessors mainly stem from activities of the Security Systems division, and are due as follows:

**Figures in millions of euros**

	<b>2016</b>	<b>2015</b>
Due not later than one year	44	44
Due later than one year and not later than five years	121	125
Due later than five years	52	47
	<b>217</b>	<b>216</b>

**71**

Obligations from operating lease agreements with entities of the Bosch Group as lessors mainly pertain to lease agreements for technical equipment, for IT equipment, for vehicles, and for buildings. The minimum amount of the undiscounted future payments from operating leases amounts to EUR 1,488 million (previous year: EUR 1,392 million).

The obligations are due as follows:

**Figures in millions of euros**

	<b>2016</b>	<b>2015</b>
Due not later than one year	475	427
Due later than one year and not later than five years	816	738
Due later than five years	197	227
	<b>1,488</b>	<b>1,392</b>

**72**

The payments of the period of EUR 574 million (previous year: EUR 514 million) recognized in profit or loss are contained in the costs of the functional areas (cost of sales, and distribution, administrative, and research and development cost).

## **28 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 14 million (previous year: EUR 13 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, Germany, Robert Bosch Car Multimedia Holding GmbH, Hildesheim, Germany, and Robert Bosch Elektronik GmbH, Salzgitter, Germany. A part of the asset portfolio of Bosch Hilfe e.V. consists of its ownership in Robert Bosch Wohnungsgesellschaft mbH, Stuttgart, Germany, 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.

### Transactions with related parties

Related parties of the Bosch Group include the joint ventures as well as the entities in which non-controlling interests are held. Transactions with these entities are presented in the following table:

Figures in millions of euros	Goods and services sold		Goods and services purchased		Receivables		Liabilities	
	2016	2015	2016	2015	2016	2015	2016	2015
Joint ventures	55	72	76	73	38	58	20	24
Investees	66	57	148	118	24	19	38	11

**73**

All transactions with related parties were at arm's length.

### Total remuneration of key management personnel

The key management personnel are the general partners of Robert Bosch Industrietreuhand KG and any limited partners who are concurrently members of the board of management of Robert Bosch GmbH, the members of the supervisory board, and the members of the board of management of Robert Bosch GmbH.

The total remuneration of key management personnel totals EUR 47 million in fiscal year 2016 (previous year: EUR 49 million) and breaks down as follows:

Figures in millions of euros	2016	2015
Short-term benefits	30	23
Post-employment benefits	9	15
Other long-term benefits	8	11

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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 0.0 million (previous year: EUR 0.6 million) for various services. At the end of the fiscal year there were neither receivables nor liabilities from such business transactions. Guarantees have neither been given nor received.

For obligations from pensions and deferred compensation, provisions totaling EUR 130 million (previous year: EUR 121 million) have been set up.

## 29 Additional disclosures pursuant to Sec. 315a HGB

### Remuneration of members of the board of management and supervisory board

The total remuneration of the members of the board of management (including provisions) comes to EUR 34 million in the fiscal year 2016 (previous year: EUR 28 million), and that of the former members of the board of management and their surviving dependants to EUR 17 million (previous year: EUR 14 million). The remuneration of the members of the supervisory board comes to approximately EUR 2 million. An amount of EUR 211 million (previous year: EUR 206 million) has been accrued for pension obligations to former members of the board of management and their surviving dependants.

### Headcount

	Annual average 2016	Annual average 2015
EU countries	209,389	202,287
Rest of Europe	24,861	23,575
Americas	41,829	40,437
Asia, Africa, Australia	107,838	102,534
	<b>383,917</b>	<b>368,833</b>

**75**

### Personnel expenses

Personnel expenses break down as follows:

#### Figures in millions of euros

	2016	2015
Remuneration	17,506	16,522
Social security costs	2,845	2,724
Post-employment benefit costs	964	1,123
	<b>21,315</b>	<b>20,369</b>

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### Auditor's fees

The fees of the group auditor for audit and advisory services in Germany amount to:

#### Figures in millions of euros

	2016	2015
Fees for		
Audit services	5	5
Audit-related services	0	0
Tax advisory services	1	1
Other services	13	11

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# List of shareholdings of the Bosch Group as of December 31, 2016

## 1 Consolidated group

	Company name	Registered office	Percentage share of capital
Germany	Robert Bosch GmbH	Stuttgart	
	Ampack GmbH	Königsbrunn	100.0 <sup>1</sup>
	AS Abwicklung Dritte Produktion GmbH i.L.	Oldenburg	100.0
	AS Abwicklung und Solar-Service AG i.L.	Oldenburg	100.0
	AS Abwicklung und Solar-Service Deutschland GmbH i.L.	Oldenburg	100.0
	BD Kompressor GmbH	Lollar	100.0
	BD Kompressor Holding GmbH & Co. KG	Lollar	50.0
	Beissbarth GmbH	Munich	100.0 <sup>1,2</sup>
	BeYond GmbH	Hildesheim	100.0 <sup>1</sup>
	Bosch Access Systems GmbH	Würselen	100.0 <sup>1</sup>
	Bosch Automotive Service Solutions GmbH	Pollenfeld	100.0 <sup>1</sup>
	Bosch Connected Devices and Solutions GmbH	Reutlingen	100.0 <sup>1</sup>
	Bosch Emission Systems GmbH & Co. KG	Stuttgart	100.0 <sup>3</sup>
	Bosch Energy and Building Solutions GmbH	Ditzingen	100.0 <sup>1</sup>
	Bosch Engineering GmbH	Abstatt	100.0 <sup>1</sup>
	Bosch Engineering Holding GmbH	Abstatt	100.0 <sup>1,2</sup>
	Bosch Healthcare Solutions GmbH	Waiblingen	100.0 <sup>1</sup>
	Bosch Industriekessel GmbH	Gunzenhausen	100.0 <sup>1</sup>
	Bosch KWK Systeme GmbH	Lollar	100.0 <sup>1</sup>
	Bosch Packaging Systems GmbH	Remshalden	100.0 <sup>1</sup>
	Bosch Pensionsgesellschaft mbH	Stuttgart	100.0 <sup>1</sup>
	Bosch Power Tec GmbH	Böblingen	100.0
	Bosch Rexroth AG	Stuttgart	100.0 <sup>1,2</sup>
	Bosch Rexroth Guss GmbH	Lohr am Main	100.0 <sup>1</sup>
	Bosch Rexroth Vermögensverwaltung GmbH	Lohr am Main	100.0 <sup>1</sup>
	Bosch Sortotec GmbH	Kusterdingen	100.0 <sup>1</sup>
	Bosch Service Solutions Leipzig GmbH	Leipzig	100.0 <sup>1</sup>
	Bosch Service Solutions Magdeburg GmbH	Magdeburg	100.0 <sup>1</sup>
	Bosch Sicherheitssysteme Engineering GmbH	Nuremberg	100.0 <sup>1</sup>
	Bosch Sicherheitssysteme GmbH	Stuttgart	100.0 <sup>1,2</sup>
	Bosch Sicherheitssysteme Montage und Service GmbH	Weimar	100.0 <sup>1</sup>
	Bosch Silicon Trading GmbH	Obernissa	100.0
	Bosch SoftTec GmbH	Hildesheim	100.0 <sup>1</sup>
Bosch Software Innovations GmbH	Berlin	100.0 <sup>1</sup>	
Bosch Solar CISTech GmbH	Brandenburg/ Havel	100.0 <sup>1</sup>	
Bosch Solar Services GmbH	Arnstadt	100.0 <sup>1,2</sup>	
Bosch Solar Thin Film GmbH	Arnstadt	100.0 <sup>1</sup>	
Bosch Solarthermie GmbH	Wettringen	100.0 <sup>1</sup>	

Company name	Registered office	Percentage share of capital
Bosch Technology Licensing Administration GmbH	Gerlingen	100.0 <sup>1</sup>
Bosch Telecom Holding GmbH	Stuttgart	100.0 <sup>1,2</sup>
Bosch Thermotechnik GmbH	Wetzlar	100.0 <sup>1,2</sup>
Bosch Thermotechnik Vermögensverwaltung 1 GmbH	Wetzlar	100.0 <sup>1</sup>
BSH Hausgeräte GmbH	Munich	100.0 <sup>1,2</sup>
BSH Hausgeräte Service GmbH	Munich	100.0 <sup>1</sup>
BSH Hausgeräte Service Nauen GmbH	Nauen	100.0 <sup>1</sup>
BSH Hausgerätekwerk Nauen GmbH	Nauen	100.0 <sup>1</sup>
BSH Vermögensverwaltungs-GmbH	Munich	100.0 <sup>1</sup>
Buderus Guss GmbH	Breidenbach	100.0 <sup>1</sup>
Buderus Immobilien GmbH	Wetzlar	96.0 <sup>1</sup>
CONSTRUCTA Gesellschaft mit beschränkter Haftung	Munich	100.0 <sup>1</sup>
Constructa-Neff Vertriebs-GmbH	Munich	100.0
Elektra-Versicherungsvermittlungs-GmbH	Frankfurt	100.0 <sup>1</sup>
ETAS GmbH	Stuttgart	100.0 <sup>1,2</sup>
EVI Audio GmbH	Straubing	100.0 <sup>1</sup>
Gaggenau Hausgeräte GmbH	Munich	100.0 <sup>1</sup>
Holger Christiansen Deutschland GmbH	Wilnsdorf	100.0 <sup>1</sup>
Hüttlin GmbH	Schopfheim	100.0 <sup>1</sup>
Landau Electronic GmbH	Mörfelden-Walldorf	100.0 <sup>1</sup>
Matra-Werke GmbH	Hainburg	100.0 <sup>1</sup>
Moehwald GmbH	Homburg/Saar	100.0 <sup>1</sup>
Neff GmbH	Munich	100.0 <sup>1</sup>
Pharmatec GmbH	Dresden	100.0 <sup>1</sup>
Pollux Solar-Service GmbH	Arnstadt	100.0
Robert Bosch Automotive Steering Bremen GmbH	Bremen	100.0 <sup>1</sup>
Robert Bosch Automotive Steering GmbH	Schwäbisch Gmünd	100.0 <sup>1,2</sup>
Robert Bosch Battery Systems GmbH	Stuttgart	100.0 <sup>1</sup>
Robert Bosch Car Multimedia GmbH	Hildesheim	100.0 <sup>1</sup>
Robert Bosch Car Multimedia Holding GmbH	Hildesheim	100.0 <sup>1,2</sup>
Robert Bosch Elektronik GmbH	Salzgitter	100.0 <sup>1</sup>
Robert Bosch Elektronik Thüringen GmbH	Arnstadt	100.0 <sup>1</sup>
Robert Bosch Fahrzeugelektrik Eisenach GmbH	Eisenach	100.0 <sup>1</sup>
Robert Bosch Fünfte Vermögensverwaltungsgesellschaft mbH	Gerlingen	100.0 <sup>1</sup>
Robert Bosch Hausgeräte GmbH	Munich	100.0 <sup>1</sup>
Robert Bosch Immobilienverwaltungs GmbH & Co. KG	Stuttgart	100.0
Robert Bosch Lizenzverwaltungsgesellschaft mbH	Holzkirchen	100.0
Robert Bosch Lollar Guss GmbH	Lollar	100.0 <sup>1</sup>

	<b>Company name</b>	<b>Registered office</b>	<b>Percentage share of capital</b>
	Robert Bosch Manufacturing Solutions GmbH	Stuttgart	100.0 <sup>1</sup>
	Robert Bosch Packaging Technology GmbH	Waiblingen	100.0 <sup>1</sup>
	Robert Bosch Power Tools GmbH	Leinfelden-Echterdingen	100.0
	Robert Bosch Risk and Insurance Management GmbH	Stuttgart	100.0 <sup>1</sup>
	Robert Bosch Sechste Vermögensverwaltungsgesellschaft mbH	Gerlingen	100.0
	Robert Bosch Smart Home GmbH	Stuttgart	100.0 <sup>1</sup>
	Robert Bosch Starter Motors Generators GmbH	Schwieberdingen	100.0 <sup>1</sup>
	Robert Bosch Starter Motors Generators Holding GmbH	Schwieberdingen	100.0 <sup>2</sup>
	Robert Bosch Start-up GmbH	Stuttgart	100.0 <sup>1</sup>
	Robert Bosch Venture Capital GmbH	Gerlingen	100.0 <sup>1</sup>
	Robert Bosch Vierte Vermögensverwaltungsgesellschaft mbH	Gerlingen	100.0 <sup>1</sup>
	SEG Hausgeräte GmbH	Munich	100.0 <sup>1</sup>
	sia Abrasives Deutschland GmbH	Solingen	100.0
	Sieger Heizsysteme GmbH	Siegen	100.0 <sup>1</sup>
	UC Vermögensverwaltung GmbH	Stuttgart	100.0 <sup>1</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 company makes use of the exemption provided for in Sec. 264b HGB.

	<b>Company name</b>	<b>Registered office</b>	<b>Percentage share of capital</b>
<b>Europe</b>			
<b>Austria</b>	Bosch Industriekessel Austria GmbH	Bischofshofen	100.0
	Bosch Rexroth GmbH	Pasching	100.0
	BSH Finance and Holding GmbH	Vienna	100.0
	BSH Hausgeräte Gesellschaft mbH	Vienna	100.0
	Robert Bosch AG	Vienna	100.0
	Robert Bosch Holding Austria GmbH	Vienna	100.0
	SBM Schoeller-Bleckmann-Medizintechnik GmbH	Ternitz	100.0
<b>Belgium</b>	Bosch Rexroth N.V.	Brussels	100.0
	Bosch Thermotechnology N.V. / S.A.	Leuven-Heverlee	100.0
	BSH Home Appliances S.A.	Brussels	100.0
	Robert Bosch Produktie N.V.	Tienen	100.0
	Robert Bosch S.A.	Anderlecht (Brussels)	100.0
	sia Abrasives Belgium N.V. / S.A.	Mollem	100.0
<b>Bulgaria</b>	BSH Domakinski Uredi Bulgaria EOOD	Sofia	100.0
	Bosch Software Innovations EOOD	Sofia	100.0

	Company name	Registered office	Percentage share of capital
<b>Croatia</b>	BSH kućanski uređaji d.o.o.	Zagreb	100.0
<b>Czech Republic</b>	Bosch Diesel s.r.o.	Jihlava	100.0
	Bosch Rexroth spol. s.r.o.	Brno	100.0
	Bosch Thermotechnika s.r.o.	Krnov	100.0
	BSH domácí spotřebiče s.r.o.	Prague	100.0
	Robert Bosch odbytova s.r.o.	Prague	100.0
	Robert Bosch, spol. s.r.o.	České Budějovice	100.0
<b>Denmark</b>	Bosch Rexroth A/S	Hvidovre	100.0
	BSH Hvidevarer A/S	Ballerup	100.0
	Holger Christiansen A/S	Esbjerg	100.0
	Robert Bosch A/S	Ballerup	100.0
<b>Finland</b>	Bosch Rexroth Oy	Vantaa	100.0
	BSH Kodinkoneet Oy	Helsinki	100.0
	Robert Bosch Oy	Vantaa	100.0
<b>France</b>	Bosch Automotive Service Solutions S.a.r.l.	La Ferté-Bernard	100.0
	Bosch Centre de Service S.A.S.	Freyming-Merlebach	100.0
	Bosch Rexroth DSI S.A.S.	Vénissieux	100.0
	Bosch Rexroth S.A.S.	Vénissieux	100.0
	Bosch Security Systems France S.A.S.	Clamart	100.0
	BSH Electroménager S.A.S.	Saint-Ouen	100.0
	e.l.m. leblanc S.A.S.	Drancy	100.0
	Gaggenau Industrie S.A.S.	Lipsheim	100.0
	Holger Christiansen France S.A.S.	Olivet	100.0
	Robert Bosch (France) S.A.S.	Saint-Ouen	100.0
	Robert Bosch Automotive Steering Marignier S.A.S.	Marignier	100.0
	Robert Bosch Automotive Steering Vendôme S.A.S.	Vendôme	100.0
	Robert Bosch Starter Motors Generators France S.A.S.	Drancy	100.0
	sia Abrasives France S.a.r.l.	Villepinte	100.0
<b>Greece</b>	BSH Ikiakes Syskeves A.B.E.	Athens	100.0
	Robert Bosch S.A.	Koropi (Athens)	100.0
<b>Hungary</b>	Bosch Rexroth Kft.	Budapest	100.0
	BSH Háztartási Készülék Kereskedelmi Kft.	Budapest	100.0
	Robert Bosch Elektronika Gyártó Kft.	Hatvan	100.0
	Robert Bosch Energy and Body Systems Kft.	Miskolc	100.0
	Robert Bosch Kft.	Budapest	100.0

	<b>Company name</b>	<b>Registered office</b>	<b>Percentage share of capital</b>
	Robert Bosch Automotive Steering Kft.	Eger	100.0
	Robert Bosch Power Tool Elektromos Szerszámgyártó Kft.	Miskolc	100.0
	Robert Bosch Starter Motors Generators Kft.	Miskolc	100.0
	Zelmer Magyarország Kereskedelmi Kft.	Budapest	100.0
<b>Ireland</b>	Robert Bosch Ireland Ltd.	Dublin	100.0
<b>Italy</b>	ARESI S.p.A.	Brembate	100.0
	Bosch Automotive Service Solutions S.r.l.	Parma	100.0
	Bosch Energy and Building Solutions Italy S.r.l.	Cinisello Balsamo	100.0
	Bosch Rexroth Oil Control S.p.A.	Milan	100.0
	Bosch Rexroth S.p.A.	Cernusco	100.0
	Bosch Security Systems S.p.A.	Milan	100.0
	BSH Elettrodomestici S.p.A.	Milan	100.0
	Centro Studi Componenti per Veicoli S.p.A.	Modugno (Bari)	100.0
	Freud S.p.A.	Brugherio	100.0
	Holger Christiansen Italia S.r.l.	Bologna	100.0
	ROBERT BOSCH S.p.A. Società Unipersonale	Milan	100.0
	Robert Bosch Starter Motors Generators S.r.l.	Milan	100.0
	SICAM S.r.l.	Correggio	100.0
	Tecnologie Diesel S.p.A. Società Unipersonale	Modugno (Bari)	100.0
	VHIT S.p.A.	Offanengo	100.0
<b>Kazakhstan</b>	TOO BSH Home Appliances	Almaty	100.0
<b>Luxembourg</b>	Ferroknepper Buderus S.A.	Esch-sur-Alzette	100.0
	BSH électroménagers S.A.	Senningerberg	100.0
<b>Netherlands</b>	Bosch Packaging Technology B.V.	Schiedam	100.0
	Bosch Rexroth B.V.	Boxtel	100.0
	Bosch Security Systems B.V.	Eindhoven	100.0
	Bosch Thermotechniek B.V.	Deventer	100.0
	Bosch Transmission Technology B.V.	Tilburg	100.0
	BSH Huishoudapparaten B.V.	Amsterdam	100.0
	Nefit Vastgoed B.V.	Deventer	100.0
	Robert Bosch B.V.	Boxtel	100.0
	Robert Bosch Asset Managing C.V.	Boxtel	100.0
	Robert Bosch Finance Nederland B.V.	Boxtel	100.0
	Robert Bosch Holding Nederland B.V.	Boxtel	100.0
	Robert Bosch IC Financing Nederland B.V.	Boxtel	100.0

	Company name	Registered office	Percentage share of capital
	Robert Bosch Investment Nederland B.V.	Boxtel	100.0
	Robert Bosch Packaging Technology B.V.	Weert	100.0
	Skil Europe B.V.	Breda	100.0
<b>Norway</b>	Bosch Rexroth A/S	Ski	100.0
	BSH Husholdningsapparater A/S	Oslo	100.0
	Robert Bosch A/S	Ski	100.0
<b>Poland</b>	Bosch Rexroth Sp. z o.o.	Pruszków	100.0
	BSH Sprzęt Gospodarstwa Domowego Sp. z o.o.	Warsaw	100.0
	ROBERT BOSCH Sp. z o.o.	Warsaw	100.0
<b>Portugal</b>	Bosch Car Multimedia Portugal, S.A.	Braga	100.0
	Bosch Security Systems, S.A.	Ovar	100.0
	Bosch Termotecnologia, S.A.	Aveiro	100.0
	BSHP Electrodomésticos, S.U., Lda.	Carnaxide	100.0
	Robert Bosch, S.A.	Lisbon	100.0
	Robert Bosch Portugal, SGPS, S.A.	Lisbon	100.0
	Robert Bosch Starter Motors Generators (Serviceos) Portugal, Unipessoal Lda.	Braga	100.0
<b>Romania</b>	Bosch Service Solutions S.R.L.	Timișoara	100.0
	Bosch Rexroth S.R.L.	Blaj	100.0
	BSH Electrocasnice S.R.L.	Bucharest	100.0
	ROBERT BOSCH S.R.L.	Bucharest	100.0
<b>Russian Federation</b>	OOO "Construction & investments"	Khimki	100.0
	OOO Bosch Power Tools	Engels	100.0
	OOO Bosch Rexroth	Moscow	100.0
	OOO Bosch Thermotechnik	Moscow	99,0
	OOO BSH Bytowije Pribory	St. Petersburg	100.0
	OOO Robert Bosch	Moscow	100.0
	OOO Robert Bosch Saratow	Engels	100.0
	Zelmer Russia O.O.O.	Moscow	100.0
<b>Serbia</b>	BSH Kućni Aparati d.o.o. Beograd	Belgrade	100.0
	Robert Bosch DOO	Belgrade	100.0
<b>Slovakia</b>	BSH Drives and Pumps s.r.o.	Michalovce	100.0
	Holger Christiansen Produktion Slovakia s.r.o.	Bernolákovo	100.0

	<b>Company name</b>	<b>Registered office</b>	<b>Percentage share of capital</b>
<b>Slovenia</b>	BSH Hišni Aparati d.o.o.	Nazarje	100.0
	Bosch Rexroth d.o.o.	Škofja Loka	100.0
<b>Spain</b>	Bosch Rexroth, S.L.U.	Madrid	100.0
	Bosch Service Solutions, S.A.U.	Madrid	100.0
	BOSCH SISTEMAS DE FRENADO, S.L.U.	Madrid	100.0
	BSH Electrodomésticos España, S.A.	Zaragoza	100.0
	ROBERT BOSCH ESPAÑA FÁBRICA CASTELLET S.A.U.	Castellet	100.0
	ROBERT BOSCH ESPAÑA FÁBRICA MADRID S.A.U.	Madrid	100.0
	ROBERT BOSCH ESPAÑA FÁBRICA TRETO S.A.U.	Treto	100.0
	ROBERT BOSCH ESPAÑA FÁBRICA ARANJUEZ S.A.U.	Aranjuez	100.0
	ROBERT BOSCH ESPAÑA, S.L.U.	Madrid	100.0
	sia Abrasives Espana S.A.U.	Madrid	100.0
<b>Sweden</b>	Bosch Rexroth AB	Stockholm	100.0
	Bosch Thermoteknik AB	Tranås	100.0
	BSH Home Appliances AB	Stockholm	100.0
	Robert Bosch AB	Kista	100.0
<b>Switzerland</b>	Bosch Packaging Services AG	Beringen	100.0
	Bosch Packaging Systems AG	Beringen	100.0
	Bosch Packaging Technology SA	Ecublens	100.0
	Bosch Pouch Systems AG	Beringen	100.0
	Bosch Rexroth Schweiz AG	Buttikon	100.0
	BSH Hausgeräte AG	Geroldswil	100.0
	Buderus Heiztechnik AG	Pratteln	100.0
	Robert Bosch AG	Zuchwil	100.0
	Robert Bosch Internationale Beteiligungen AG	Zuchwil	100.0
	Sapal S.A.	Ecublens	100.0
	Scintilla AG	Solothurn	100.0
sia Abrasives Industries AG	Frauenfeld	100.0	
<b>Turkey</b>	Bosch Fren Sistemleri Sanayi ve Ticaret A.S.	Bursa	84.5
	Bosch Rexroth Otomasyon Sanayi ve Ticaret A.S.	Bursa	100.0
	Bosch Sanayi ve Ticaret A.S.	Bursa	100.0
	Bosch Termoteknik Isitma ve Klima Sanayi Ticaret A.S.	Manisa	100.0
	BSH Ev Aletleri Sanayi ve Ticaret A.Ş.	Istanbul	100.0
<b>Ukraine</b>	TOV BSH Pobutova Technika	Kiev	100.0
	Holger Christiansen Production Ukraine	Krakovets	100.0
	MBT Trade T.B.O.	Kiev	100.0
	Zelmer Ukraine T.B.O.	Kiev	100.0

	Company name	Registered office	Percentage share of capital
<b>United Kingdom</b>	Bosch Automotive Service Solutions Ltd.	Brixworth	100.0
	Bosch Lawn and Garden Ltd.	Stowmarket	100.0
	Bosch Packaging Technology Limited	Derby	100.0
	Bosch Rexroth Ltd.	St. Neots	100.0
	Bosch Security Systems Ltd.	Denham	100.0
	Bosch Thermotechnology Ltd.	Worcester	100.0
	BSH Home Appliances Ltd.	Milton Keynes	100.0
	Häggglunds Drives Limited	Wakefield	100.0
	Kliklok International Limited	Bristol	100.0
	Robert Bosch Investment Ltd.	Worcester	100.0
	Robert Bosch Ltd.	Denham	100.0
	Robert Bosch UK Holdings Limited	Denham	100.0
	sia Abrafoam Ltd.	Alfreton	100.0
	sia Abrasives (G.B.) Ltd.	Greetland	100.0
	sia Abrasives Holding Ltd.	Greetland	100.0
	sia Fibril Ltd.	Greetland	100.0
	Worcester Group plc	Worcester	100.0
<b>Americas</b>			
<b>Argentina</b>	Bosch Rexroth S.A.I.C.	Buenos Aires	100.0
	BSH Electrodomésticos S.A.	Buenos Aires	100.0
	Robert Bosch Argentina Industrial S.A.	Buenos Aires	100.0
<b>Brazil</b>	Bosch Rexroth Ltda.	Atibaia	100.0
	Bosch Termotecnologia Ltda.	São Paulo	100.0
	Robert Bosch Ltda.	Campinas	100.0
	Robert Bosch Centro de Comunicação Limitada	Campinas	100.0
	Robert Bosch Direção Automotiva Ltda.	Sorocaba	100.0
	Robert Bosch Motores de Partida e Alternadores Ltda.	Campinas	100.0
	Robert Bosch Tecnologia de Embalagem Ltda.	Alphaville	100.0
	sia Abrasivos Industriais Ltda.	São José dos Pinhais	100.0
<b>Canada</b>	Bosch Rexroth Canada Corporation	Welland, ON	100.0
	BSH Home Appliances Ltd./ Électroménagers BSH Ltée	Mississauga, ON	100.0
	Freud Canada Inc.	Mississauga, ON	100.0
	ROBERT BOSCH INC.	Mississauga, ON	100.0
<b>Chile</b>	Robert Bosch S. A.	Santiago de Chile	100.0
<b>Colombia</b>	Robert Bosch Ltda.	Bogotá	100.0

	<b>Company name</b>	<b>Registered office</b>	<b>Percentage share of capital</b>
<b>Costa Rica</b>	Robert Bosch Service Solutions - Costa Rica Sociedad Anonima	Heredia	100.0
<b>Mexico</b>	Bosch Rexroth, S.A. de C.V.	Mexico City	100.0
	Frenados Mexicanos, S.A. de C.V.	Aguascalientes	100.0
	Robert Bosch Mexico Sistemas de Frenos, S. de R.L. de C.V.	Juárez	100.0
	Robert Bosch México, S.A. de C.V.	Mexico City	100.0
	Robert Bosch México Sistemas Automotrices, S.A. de C.V.	San Luis Potosí	100.0
	Robert Bosch Sistemas Automotrices, S.A. de C.V.	Juárez	100.0
	Robert Bosch Starter Motors Generators Mexico Manufacturing, S.A. de C.V.	Lerma	100.0
	Robert Bosch Starter Motors Generators Mexico Service, S. de R.L. de C.V.	Mexico City	100.0
	Robert Bosch Tool de Mexico, S.A. de C.V.	Mexicali	100.0
	Robert Bosch, S. de R.L. de C.V.	Toluca	100.0
	Robert Bosch México Sistemas de Seguridad, S.A. de C.V.	Hermosillo	100.0
<b>Peru</b>	BSH Electrodomésticos S.A.C.	Callao/Lima	100.0
	Robert Bosch S.A.C.	Lima	100.0
<b>United States</b>	Bosch Automotive Service Solutions Inc.	Warren, MI	100.0
	Bosch Brake Components LLC	Broadview, IL	100.0
	Bosch Packaging Services Inc.	Raleigh, NC	100.0
	Bosch Packaging Technology, Inc.	New Richmond, WI	100.0
	Bosch Rexroth Corporation	Lehigh Valley, PA	100.0
	Bosch Security Systems Inc.	Burnsville, MN	100.0
	Bosch Thermotechnology Corp.	Londonderry, NH	100.0
	BSH Home Appliances Corporation	Irvine, CA	100.0
	Climatec, LLC	Phoenix, AZ	100.0
	Compu-Spread Corporation	Delano, MN	100.0
	ETAS Inc.	Ann Arbor, MI	100.0
	FHP Manufacturing Company	Fort Lauderdale, FL	57.0
	Freud America Inc.	High Point, NC	100.0
	Kliklok Corporation	Decatur, GA	100.0
	Osgood Industries, Inc.	Oldsmar, FL	100.0
	Robert Bosch Asset Management I LLC	Wilmington, DE	100.0
	Robert Bosch Asset Management I LP	Wilmington, DE	100.0
	Robert Bosch Automotive Steering LLC	Florence, KY	100.0
	Robert Bosch Battery Systems LLC	Orion, MI	100.0
	Robert Bosch Finance LLC	Broadview, IL	100.0
	ROBERT BOSCH FUEL SYSTEMS LLC	Kentwood, MI	100.0
	Robert Bosch Healthcare Systems, Inc.	Farmington Hills, MI	100.0

	Company name	Registered office	Percentage share of capital
	Robert Bosch LLC	Broadview, IL	100.0
	Robert Bosch North America Corporation	Broadview, IL	100.0
	Robert Bosch Packaging Technology Inc.	Minneapolis, MN	100.0
	Robert Bosch Starter Motors Generators LLC	Farmington Hills, MI	100.0
	Robert Bosch Tool Corporation	Mt. Prospect, IL	100.0
	sia Abrasives, Inc. USA	Charlotte, NC	100.0
	Seeo, Inc.	Hayward, CA	100.0
<b>Asia</b>			
<b>China</b>	Bosch (Ningbo) e-scooter Motor Co., Ltd.	Ningbo	60.0
	Bosch (Shanghai) Investment Consulting Co., Ltd.	Shanghai	100.0
	Bosch (Shanghai) Security Systems Ltd.	Shanghai	100.0
	Bosch (Shanghai) Venture Capital Investment Co., Ltd.	Shanghai	100.0
	Bosch (Zhuhai) Security Systems Co., Ltd.	Zhuhai	100.0
	Bosch Automotive Components (Changchun) Co., Ltd.	Changchun	55.0
	Bosch Automotive Diesel Systems Co., Ltd.	Wuxi	66.0
	Bosch Automotive Products (Changsha) Co., Ltd.	Changsha	100.0
	Bosch Automotive Products (Chengdu) Co., Ltd.	Chengdu	100.0
	Bosch Automotive Aftermarket (China) Co., Ltd.	Nanjing	100.0
	Bosch Automotive Products (Suzhou) Co., Ltd.	Suzhou	100.0
	Bosch Automotive Service Solutions (Suzhou) Co., Ltd.	Suzhou	100.0
	Bosch Automotive Steering (Jinan) Co., Ltd.	Jinan	100.0
	Bosch Automotive Steering (Nanjing) Co., Ltd.	Nanjing	100.0
	Bosch Automotive Steering Jincheng (Nanjing) Co., Ltd.	Nanjing	70.0
	Bosch Automotive Steering Management (Shanghai) Co., Ltd.	Shanghai	100.0
	Bosch Automotive Systems (Wuxi) Co., Ltd.	Wuxi	100.0
	Bosch Automotive Technical Service (Beijing) Co., Ltd.	Beijing	100.0
	Bosch Car Multimedia (Wuhu) Co., Ltd.	Wuhu	60.0
	Bosch (China) Investment Ltd.	Shanghai	100.0
	Bosch Electronics Trading (Suzhou) Co., Ltd.	Suzhou	100.0
	Bosch HUAYU Steering Systems Co., Ltd.	Shanghai	51.0
	Bosch HUAYU Steering Systems (Wuhan) Co., Ltd.	Wuhan	51.0
	Bosch HUAYU Steering Systems (Yantai) Co., Ltd.	Yantai	51.0
	Bosch Laser Equipment (Dongguan) Limited	Dongguan	100.0
	Bosch Packaging Technology (Chengdu) Co., Ltd.	Chengdu	100.0
	Bosch Packaging Technology (Hangzhou) Co., Ltd.	Hangzhou	100.0
	Bosch Power Tools (China) Ltd.	Hangzhou	100.0
	Bosch Rexroth (Beijing) Hydraulic Co., Ltd.	Beijing	100.0
	Bosch Rexroth (Changzhou) Co., Ltd.	Changzhou	100.0
	Bosch Rexroth (China) Ltd.	Hong Kong	100.0
	Bosch Rexroth (Xi'an) Electric Drives and Controls Co., Ltd.	Xi'an	100.0

	<b>Company name</b>	<b>Registered office</b>	<b>Percentage share of capital</b>
	Bosch Security Systems Ltd.	Hong Kong	100.0
	Bosch Steering Systems (Shanghai) Co., Ltd.	Shanghai	100.0
	Bosch Thermotechnology (Beijing) Co., Ltd.	Beijing	100.0
	Bosch Thermotechnology (Shandong) Co., Ltd.	Zibo	100.0
	Bosch Thermotechnology (Shanghai) Co., Ltd.	Shanghai	100.0
	Bosch Thermotechnology (Wuhan) Co., Ltd.	Wuhan	100.0
	Bosch Trading (Shanghai) Co., Ltd.	Shanghai	100.0
	BSH Electrical Appliances (Jiangsu) Co., Ltd.	Nanjing	100.0
	BSH Home Appliances Co., Ltd.	Chuzhou	100.0
	BSH Home Appliances Ltd.	Hong Kong	100.0
	BSH Home Appliances (China) Co., Ltd.	Nanjing	100.0
	BSH Home Appliances Holding (China) Co., Ltd.	Nanjing	100.0
	BSH Home Appliances Service Jiangsu Co., Ltd.	Nanjing	100.0
	BSW Household Appliances Co., Ltd.	Wuxi	100.0
	ETAS Automotive Technology (Shanghai) Co., Ltd.	Shanghai	100.0
	Guangzhou sia Abrasives Company Ltd.	Guangzhou	100.0
	Häggglunds Drives Shanghai Ltd.	Shanghai	100.0
	Robert Bosch Company Ltd.	Hong Kong	100.0
	Robert Bosch Starter Motors Generators (China) Co., Ltd.	Changsha	100.0
	Shanghai Bosch Rexroth Hydraulics & Automation Ltd.	Shanghai	100.0
	Taixiang Vehicle Replace Parts (Shenzhen) Co., Ltd.	Shenzhen	100.0
	United Automotive Electronic Systems Co., Ltd.	Shanghai	51.0
<b>India</b>	Bosch Automotive Electronics India Private Ltd.	Bengaluru	100.0
	Bosch Chassis Systems India Private Ltd.	Pune	97.9
	Bosch Electrical Drives India Private Ltd.	Chennai	89.2
	Bosch Ltd.	Bengaluru	70.5
	Bosch Rexroth (India) Ltd.	Ahmedabad	97.0
	BSH Home Appliances Private Limited	Mumbai	100.0
	BSH Household Appliances Manufacturing Private Limited	Mumbai	100.0
	Robert Bosch Automotive Steering Private Limited	Pune	74.0
	Robert Bosch Engineering and Business Solutions Private Ltd.	Bengaluru	100.0
	Robert Bosch Starter Motors Generators India Private Limited	Bengaluru	100.0
<b>Indonesia</b>	PT BSH Home Appliances	Jakarta	100.0
	P.T. Robert Bosch	Jakarta	100.0
<b>Israel</b>	BSH Home Appliances Ltd.	Herzlia	100.0
<b>Japan</b>	Bosch Corporation	Tokyo	100.0

	Company name	Registered office	Percentage share of capital
	Bosch Packaging Technology K.K.	Tokyo	100.0
	Bosch Rexroth Corporation	Tsuchiura-shi	99.9
	ETAS K.K.	Yokohama	100.0
	Bosch Security Systems Ltd.	Tokyo	100.0
	FA Niigata Co., Ltd.	Niigata	100.0
	Fuji Aitac Co., Ltd.	Gunma	100.0
	Gunma Seiki Co., Ltd.	Gunma	100.0
	Nippon Injector Corporation	Odawara	50.0
<b>Korea</b>	Bosch Electrical Drives Co., Ltd.	Sejong	100.0
	Bosch Rexroth Korea Ltd.	Busan	100.0
	Robert Bosch Korea Limited Company	Daejeon	100.0
<b>Malaysia</b>	Bosch Power Tools Engineering Sdn. Bhd.	Penang	100.0
	Bosch Rexroth Sdn. Bhd.	Shah Alam	100.0
	Bosch Solar Energy Malaysia Sdn. Bhd.	Penang	100.0
	BSH Home Appliances Sdn. Bhd.	Kuala Lumpur	100.0
	ROBERT BOSCH (MALAYSIA) SDN. BHD.	Penang	100.0
	Robert Bosch Automotive Steering Sdn. Bhd.	Penang	100.0
	ROBERT BOSCH POWER TOOLS SDN. BHD.	Penang	100.0
	Robert Bosch Sdn. Bhd.	Kuala Lumpur	100.0
<b>Philippines</b>	Bosch Service Solutions, Inc.	Manila	100.0
	Robert Bosch Inc.	Manila	100.0
<b>Saudi Arabia</b>	BSH Home Appliances Saudi Arabia LLC	Jeddah	51.0
<b>Singapore</b>	BOSCH PACKAGING TECHNOLOGY (SINGAPORE) PTE. LTD.	Singapore	100.0
	Bosch Rexroth Pte. Ltd.	Singapore	100.0
	BSH Home Appliances Pte. Ltd.	Singapore	100.0
	Robert Bosch (South East Asia) Pte. Ltd.	Singapore	100.0
	Robert Bosch Security Solutions Pte.	Singapore	100.0
<b>Taiwan</b>	Bosch Rexroth Co. Ltd.	Taipei	100.0
	BSH Home Appliances Private Limited	Taipei	100.0
	Robert Bosch Taiwan Co., Ltd.	Taipei	100.0
	Unipoint Electric MFG Co., Ltd.	Taipei	100.0
<b>Thailand</b>	Bosch Automotive Thailand Co. Ltd.	Rayong	87.9
	Bosch Packaging Technology (Thailand) Co., Ltd.	Chonburi	100.0
	BSH Home Appliances Ltd.	Bangkok	100.0
	Robert Bosch Ltd.	Bangkok	100.0
	Robert Bosch Automotive Technologies (Thailand) Co., Ltd.	Rayong	100.0

	<b>Company name</b>	<b>Registered office</b>	<b>Percentage share of capital</b>
<b>United Arab Emirates</b>	BSH Home Appliances FZE	Dubai	100.0
	BSH Home Appliances General Trading LLC	Dubai	100.0
	Robert Bosch Middle East FZE	Dubai	100.0
<b>Vietnam</b>	Bosch Vietnam Co., Ltd.	Dong Nai Province	100.0
<b>Rest of world</b>			
<b>Australia</b>	Australian Industrial Abrasives Pty. Ltd.	Rowville	100.0
	Bosch Automotive Service Solutions Pty. Ltd.	Melbourne	100.0
	Bosch Rexroth Pty. Ltd.	Kings Park	100.0
	Bosch Security Systems Pty. Ltd.	Sydney	100.0
	BSH Home Appliances Pty. Ltd.	Heatherton	100.0
	Robert Bosch (Australia) Pty. Ltd.	Clayton	100.0
	sia Abrasives Australasia Holding Pty. Ltd.	Rowville	100.0
	sia Abrasives Australia Pty. Ltd.	Rowville	100.0
<b>Morocco</b>	BSH Electroménagers (SA)	Casablanca	100.0
<b>New Zealand</b>	BSH Home Appliances Ltd.	Auckland	100.0
<b>South Africa</b>	BSH Home Appliances (Pty.) Ltd.	Johannesburg	100.0
	Robert Bosch (Pty.) Ltd.	Brits	100.0

## 2 Investments measured using the equity method

	<b>Company name</b>	<b>Registered office</b>	<b>Percentage share of capital</b>
<b>Germany</b>	Bosch Mahle Turbo Systems GmbH & Co. KG	Stuttgart	50.0
	EM-motive GmbH	Hildesheim	50.0
	Lithium Energy and Power GmbH & Co. KG	Stuttgart	50.0
<b>Korea</b>	KB Wiper Systems Co., Ltd.	Daegu	50.0
<b>South Africa</b>	Hytec Holdings Pty. Ltd.	Johannesburg	50.0
<b>United States</b>	Associated Fuel Pump Systems Corporation	Anderson, SC	50.0

### 3 Investments measured at amortized cost

	Company name	Registered office	Percentage share of capital
<b>Germany</b>	AIG Planungs- und Ingenieurgesellschaft mbH	Stuttgart	100.0
	Alltrucks GmbH & Co. KG	Munich	33.3
	Asanetwork GmbH	Willstätt	23.3
	BD Kompressor Management GmbH	Lollar	100.0
	Bosch Emission Systems Verwaltungs-GmbH	Stuttgart	100.0
	Bosch Mahle Turbo Systems Verwaltungs GmbH	Stuttgart	50.0
	Bosch Management Support GmbH	Leonberg	100.0
	Bosch Pensionsfonds AG	Stuttgart	100.0
	Bosch Rexroth Interlit GmbH	Joachimsthal	100.0
	BS Systems GmbH & Co. KG	Zusmarshausen	50.0
	BSH Altersfürsorge GmbH	Munich	100.0
	BSH Zweite Verwaltungs GmbH	Munich	100.0
	CDE - Packaging GmbH	Glauburg-Stockheim	49.0
	Circular Economy Solutions GmbH	Göttingen	100.0
	Coup Mobility GmbH	Berlin	100.0
	ECP Energiecontracting GmbH	Heidelberg	81.0
	Energiespeicher Nord GmbH & Co. KG	Braderup	45.0
	Energiespeicher Nord Verwaltungs GmbH	Braderup	45.0
	escrypt GmbH Embedded Security	Bochum	100.0
	GFI Gesellschaft für Infrastrukturdienste mbH	Reutlingen	100.0
	Home Connect GmbH	Munich	100.0
	Integrated Management Consulting GmbH	Schwäbisch Gmünd	100.0
	JCB Management GmbH	Hannover	20.0
	Johnson Controls Autobatterie GmbH & Co. KGaA	Hannover	20.0
	Knorr-Bremse Systeme für Nutzfahrzeuge GmbH	Munich	20.0
	Koller + Schwemmer GmbH	Nuremberg	100.0
	Makat Candy Technology GmbH	Dierdorf	100.0
	Mobility Media GmbH	Berlin	100.0
	mozaik operations GmbH	Frankfurt/Main	33.3
	part GmbH	Bad Urach	50.0
	Profilo Elektrogeräte-Vertriebsgesellschaft mbH	Munich	100.0
	Prüfzentrum Boxberg GmbH	Boxberg	100.0
	Robert Bosch Battery Solutions GmbH	Eisenach	100.0
	Robert Bosch Immobilien GmbH	Stuttgart	100.0
	Reflekt GmbH	Munich	40.0
	Robert Bosch Technical and Business Solutions GmbH	Stuttgart	100.0
	Service- und Betriebsgesellschaft Heidehof GmbH	Stuttgart	100.0
	SupplyOn AG	Hallbergmoos	42.1

	<b>Company name</b>	<b>Registered office</b>	<b>Percentage share of capital</b>
	Valicare GmbH	Frankfurt/Main	100.0
	WeWash GmbH	Munich	100.0
	4U Insurance Services GmbH	Stuttgart	100.0
<b>Europe</b>			
<b>Austria</b>	Bosch General Aviation Technology GmbH	Vienna	100.0
	RobArt GmbH	Linz	22.0
	ZENO Track GmbH	Vienna	100.0
<b>Belarus</b>	Robert Bosch OOO	Minsk	100.0
<b>Belgium</b>	EpiGaN NV	Leuven	22.1
<b>Bulgaria</b>	Robert Bosch EOOD	Sofia	100.0
<b>Croatia</b>	Robert Bosch d.o.o.	Zagreb	100.0
<b>Cyprus</b>	SDA SUPPLY Limited i.L.	Larnaca	100.0
<b>Denmark</b>	Moeller & Devicon A/S	Sandved	100.0
<b>Estonia</b>	Robert Bosch OÜ	Tallinn	100.0
<b>France</b>	BD Kompressor France S.a.r.l.	Trevoux	100.0
	Bosch Packaging Technology S.A.S.	Saint-Ouen	100.0
	ETAS S.A.S.	Saint-Ouen	100.0
<b>Georgia</b>	Robert Bosch Ltd.	Tiflis	100.0
<b>Greece</b>	Bosch Rexroth S.A.	Athens	100.0
<b>Hungary</b>	Bosch Electronic Service Kft.	Kecskemét	100.0
	Bosch Packaging Systems Kft.	Pécel	100.0
<b>Italy</b>	BARI SERVIZI INDUSTRIALI Società consortile a r.l.	Modugno	50.0
	Dana Rexroth Transmission Systems S.r.l.	Arco	50.0
	DECA S.r.l.	Lugo	100.0
	Oleodinamica Gambini S.r.l.	Modena	20.0
<b>Kazakhstan</b>	TOO Robert Bosch	Almaty	100.0

	<b>Company name</b>	<b>Registered office</b>	<b>Percentage share of capital</b>
<b>Latvia</b>	Robert Bosch SIA	Riga	100.0
<b>Lithuania</b>	UAB Robert Bosch	Vilnius	100.0
<b>Netherlands</b>	Bosch Thermotechnology Netherlands Holding B.V.	Boxtel	100.0
	Tradeplace B.V.	Amsterdam	20.0
<b>Poland</b>	Loos Centrum Sp.z o.o.	Warsaw	26.0
	SIA Abrasives Polska Sp. z o.o.	Goleniów	100.0
<b>Russian Federation</b>	Bosch Heating Systems LLC	Engels	100.0
	Evroradiators LLC	Engels	100.0
	Robert Bosch Samara LLC	Chernovskiy	100.0
<b>Slovakia</b>	Robert Bosch spol. s.r.o.	Bratislava	100.0
	Valicare s.r.o.	Trencin	51.1
<b>Slovenia</b>	BSH I.D. Invalidska družba d.o.o.	Nazarje	100.0
	Robert Bosch d.o.o.	Ljubljana	100.0
<b>Spain</b>	Bosch Automotive Service Solutions S.A.U.	Madrid	100.0
<b>Switzerland</b>	Bosch Automotive Service Solutions AG	Kriens	100.0
	Rotzinger AG	Kaiseraugst	46.7
<b>Ukraine</b>	Robert Bosch Ltd.	Kiev	100.0
<b>United Kingdom</b>	Bosch Automotive Training Limited	Motherwell	100.0
	ETAS Ltd.	York	100.0
	GraphCore Ltd.	London	20.2
	LAGTA Group Training Limited	Motherwell	100.0
	Spore Holdings Ltd.	Daventry	100.0
<b>Americas</b>			
<b>Brazil</b>	Bosch Management Support Ltda.	Campinas	99.9
	Bosch Soluções Integradas Brasil Ltda.	Campinas	100.0
	Metapar Usinagem Ltda.	Curitiba-Paraná	100.0
	Planevale Planejamento e Consultoria Ltda.	São José dos Campos	51.0

	<b>Company name</b>	<b>Registered office</b>	<b>Percentage share of capital</b>
<b>Canada</b>	ETAS Embedded Systems Canada Inc.	Kitchener, ON	100.0
<b>Chile</b>	Bosch Rexroth Chile S.p.A.	Santiago de Chile	100.0
<b>Ecuador</b>	Robert Bosch Sociedad Anónima - Ecuabosch	Guayaquil	100.0
<b>Mexico</b>	Bopatec, S.A. de C.V.	Mexico City	50.0
	Bosch Automotive Service Solutions, S.A. de C.V.	Mexico City	100.0
	Bosch Management Services Mexico, S.C.	Mexico City	100.0
	Robert Bosch Starter Motors Generators Mexico Sales, S. de R.L. de C.V.	Mexico City	100.0
<b>Panama</b>	Robert Bosch Panama S.A.	Panama City	100.0
	Robert Bosch Panama Colon, S.A.	Colon	100.0
<b>United States</b>	Akustica Inc.	Pittsburgh, PA	100.0
	Bosch Aviation Technology LLC	Novi, MI	100.0
	Bosch Energy Storage Solutions LLC	Palo Alto, CA	100.0
	Bosch Management Services Corporation	Wilmington, DE	100.0
	Bosch Software Innovations Corp.	Chicago, IL	100.0
	Bosch Solar Energy Corp.	Detroit, MI	100.0
	BSE PV LLC	Palo Alto, CA	100.0
	Industrial Pharmaceutical Resources, Inc.	Bartlett, IL	49.0
	KX2 Holding Building Technologies Group, LP	Phoenix, AZ	100.0
	North America Fuel Systems Remanufacturing LLC	Kentwood, MI	50.0
	PBR International USA Ltd.	Knoxville, TN	100.0
	Robert Bosch Start-up Platform North America LLC	Wilmington, DE	100.0
	RoboToolz Inc.	Mountain View, CA	100.0
<b>Uruguay</b>	Robert Bosch Uruguay S.A.	Montevideo	100.0
<b>Venezuela</b>	Bosch Rexroth S.A.	Caracas	100.0
	Inversiones 421.10 (Venezuela Holding)	Caracas	100.0
	Robert Bosch S.A.	Caracas	100.0
	Skil Venezolana SRL	Caracas	100.0
<b>Asia</b>			
<b>Bangladesh</b>	Robert Bosch (Bangladesh) Ltd.	Dhaka	100.0
<b>Cambodia</b>	Robert Bosch (Cambodia) Co., Ltd.	Phnom Penh	100.0

	Company name	Registered office	Percentage share of capital
<b>China</b>	AUTOBOSS Tech, Inc.	Shenzhen	100.0
	Bosch (Donghai) Automotive Test & Technology Center Co., Ltd.	Donghai	100.0
	Bosch (Hulunbeier) Automotive Test and Technology Centre Co., Ltd.	Yakeshi	100.0
	Bosch (Shanghai) Smart Life Technology Ltd.	Shanghai	100.0
	Bosch Automotive Diagnostics Equipment (Shenzhen) Ltd.	Shenzhen	100.0
	Bosch Automotive Products (Wuhu) Co., Ltd.	Wuhu	100.0
	BSH Home Appliance Trading Co., Ltd.	Shanghai	100.0
	Freud International Trading (Shanghai) Co., Ltd.	Shanghai	100.0
	HEFEI M&B Air Conditioning Equipment Co., Ltd.	Heifei	40.0
	Nanjing Bovon Power Tools Co.	Nanjing	50.0
	Seeo Battery Systems Co., Ltd.	Shanghai	100.0
	sia Abrasives Company Ltd.	Hong Kong	100.0
	<b>India</b>	Automobility Services and Solutions Private Limited	Bengaluru
ETAS Automotive India Private Ltd.		Bengaluru	100.0
Klenzaid's Contamination Controls Private Limited		Mumbai	49.0
MIVIN Engineering Technologies Private Ltd.		Bengaluru	100.0
Newtech Filter India Private Limited		Nalagarh	100.0
Precision Seals Manufacturing Ltd.		Chakan	100.0
ZF Steering Gear (India) Ltd.		Pune	26.0
<b>Indonesia</b>	P.T. Bosch Rexroth	Jakarta	100.0
	P.T. Robert Bosch Automotive	Jakarta	100.0
<b>Iran</b>	Bosch Tejarat Pars	Tehran	100.0
<b>Israel</b>	Utilight Ltd.	Yavne	22.3
<b>Japan</b>	Advanced Driver Information Technology Corporation	Kariya-shi	50.0
	Bosch Engineering K.K.	Tokyo	100.0
	Bosch Service Solutions Corporation	Tokyo	100.0
	Daito Hydraulics Co., Ltd.	Nasu-gun	100.0
	Kanto Seiatsu Kogyo Co., Ltd.	Honjo	94.9
	Knorr-Bremse Commercial Vehicle Systems Japan, Ltd.	Tokyo	20.0
	Robert Bosch Starter Motors Generators Japan Corporation	Yokohama	100.0
<b>Korea</b>	ETAS Korea Co., Ltd.	Seoul	100.0
	Robert Bosch Starter Motors Generators Korea Co.	Yongin	100.0

	<b>Company name</b>	<b>Registered office</b>	<b>Percentage share of capital</b>
<b>Malaysia</b>	Pacific BBA (Malaysia) Sdn. Bhd.	Shah Alam	100.0
	Robert Bosch (Penang) Sdn. Bhd.	Penang	100.0
<b>Sri Lanka</b>	Robert Bosch Lanka (Pvt.) Ltd.	Colombo	100.0
<b>Thailand</b>	FMP Distribution Ltd.	Rayong	50.1
	FMP Group (Thailand) Ltd.	Rayong	50.7
	Pacific BBA (Thailand) Ltd.	Bangkok	100.0
<b>Vietnam</b>	Robert Bosch Engineering and Business Solutions Vietnam Co. Ltd.	Ho Chi Minh City	100.0
<b>Rest of world</b>			
<b>Australia</b>	FMP Group (Australia) Pty. Ltd.	Ballarat	49.0
	Pacifica Group Pty. Ltd.	Melbourne	100.0
	The Yield Technology Solution Pty. Ltd.	Hobart	31.0
<b>Egypt</b>	Bosch Packaging Technology Ltd.	Cairo	100.0
	Robert Bosch Ltd.	Cairo	100.0
	Robert Bosch Holding-Egypt LLC	Cairo	100.0
<b>Ghana</b>	Robert Bosch Ghana Ltd.	Accra	100.0
<b>Kenya</b>	Robert Bosch East Africa Ltd.	Nairobi	100.0
<b>Morocco</b>	Robert Bosch Morocco Sarl	Casablanca	100.0
<b>New Zealand</b>	Bosch Rexroth Ltd.	Auckland	100.0
	Robert Bosch Ltd.	Auckland	100.0
<b>Nigeria</b>	Robert Bosch Limited	Lagos	100.0
<b>South Africa</b>	Häggglunds Drives South Africa (Pty.) Ltd.	Fourways	100.0
	Robert Bosch Starter Motors Generators South Africa Pty. Ltd.	Brits	100.0
<b>Tunisia</b>	Robert Bosch Tunisie SARL	Tunis	100.0

# Auditor's report

## Independent Auditor's Report

We have audited the consolidated financial statements prepared by Robert Bosch Gesellschaft mit beschränkter Haftung, Stuttgart, comprising 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, together with the group management report for the business year from January 1 to December 31, 2016. The preparation of the consolidated financial statements and the group management report in accordance with IFRSs, as adopted by the EU, and the additional requirements of German commercial law pursuant to § 315a Abs. 1 HGB ["Handelsgesetzbuch": German Commercial Code] is the responsibility of the company's management. Our responsibility is to express an opinion on the consolidated financial statements and on the group management report based on our audit.

We conducted our audit of the consolidated financial statements 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). Those standards require that we plan and perform the audit such that misstatements materially affecting the presentation of the net assets, financial position and results of operations in the consolidated financial statements in accordance with the applicable financial reporting framework and in the group management report are detected with reasonable assurance. Knowledge of the business activities and the economic and legal environment of the group and expectations as to possible misstatements are taken into account in the determination of audit procedures. The effectiveness of the accounting-related internal control system and the evidence supporting the disclosures in the consolidated financial statements and the group management report are examined primarily on a test basis within the framework of the audit. The audit includes assessing the annual financial statements of those entities included in consolidation, the determination of entities to be included in consolidation, the accounting and consolidation principles used and significant estimates made by members of management, as well as evaluating the overall presentation of the consolidated financial statements and the group management report. We believe that our audit provides a reasonable basis for our opinion.

Our audit has not led to any reservations.

In our opinion, based on the findings of our audit, the consolidated financial statements comply 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, financial position and results of operations of the group in accordance with these requirements. The group management report is consistent with the consolidated financial statements and as a whole provides a suitable view of the group's position and suitably presents the opportunities and risks of future development.

Stuttgart, March 14, 2017

PricewaterhouseCoopers GmbH  
Wirtschaftsprüfungsgesellschaft

Harald Kayser  
Wirtschaftsprüfer  
(German Public Auditor)

Marcus Nickel  
Wirtschaftsprüfer  
(German Public Auditor)

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## Ten-year summary of the Bosch Group

### Figures in millions of euros

	2007	2008	2009	2010	2011	2012 <sup>1</sup>	2013	2014	2015	2016
<b>Sales revenue</b>	<b>46,320</b>	<b>45,127</b>	<b>38,174</b>	<b>47,259</b>	<b>51,494</b>	<b>44,703</b>	<b>46,068</b>	<b>48,951</b>	<b>70,607</b>	<b>73,129</b>
of which generated outside Germany (as a percentage)	75	74	76	77	77	77	77	78	80	80
Research and development cost <sup>2</sup>	3,583	3,889	3,603	3,810	4,190	4,442	4,543	4,959	6,378	6,954
as a percentage of sales revenue	7.7	8.6	9.4	8.1	8.1	9.9	9.9	10.1	9.0	9.5
Capital expenditure	2,634	3,276	1,892	2,379	3,226	2,714	2,539	2,585	4,058	4,252
of which in Germany	1,138	1,610	928	1,023	1,161	988	913	1,098	1,394	1,580
of which outside Germany	1,496	1,666	964	1,356	2,065	1,726	1,626	1,487	2,664	2,672
as a percentage of sales revenue	5.7	7.3	5.0	5.0	6.3	6.1	5.5	5.3	5.7	5.8
as a percentage of depreciation	108	136	80	100	142	101	126	138	146	141
Depreciation of property, plant, and equipment	2,428	2,410	2,374	2,373	2,265	2,689	2,008	1,868	2,788	3,022
Annual average number of associates (thousands)	268	283	275	276	295	273	280	286	369	384
of which in Germany	111	114	113	112	117	109	108	105	131	133
of which outside Germany	157	169	162	164	178	164	172	181	238	251
as of 12/31 of the year	271	282	271	284	303	273	281	290	375	389
Personnel expenses	12,896	12,994	12,787	14,132	14,719	14,198	14,907	15,325	20,369	21,315
<b>Total assets</b>	<b>48,568</b>	<b>46,761</b>	<b>47,509</b>	<b>52,683</b>	<b>54,616</b>	<b>52,611</b>	<b>55,725</b>	<b>61,924</b>	<b>77,266</b>	<b>81,875</b>
Equity	24,825	23,009	23,069	26,243	26,917	26,900	27,686	29,541	34,424	36,084
as a percentage of total assets	51	49	49	50	49	51	50	48	45	44
Cash flow	5,052	4,032	1,910	5,460	4,959	4,053	3,956	4,866	6,835	6,565
as a percentage of sales revenue	10.9	8.9	5.0	11.6	9.6	9.1	8.6	9.9	9.7	9.0
Profit after tax	2,850	372	-1,214	2,489	1,820	2,304	1,251	2,637	3,537	2,374
Unappropriated earnings	72	75	67	82	88	88	88	102	142	138

<sup>1</sup> Adjusted for changes in accounting policies

<sup>2</sup> Including development work charged directly to customers



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