# Annual Report 2016













## LIEBHERR

## Annual Report 2016

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### Introductory Remarks by the Family Shareholders

### The 2016 Business Year

#### Dear readers,

2016 was a good year for our family company, even though we didn't manage to reach 2015's record turnover of 9.2 billion euros. The picture in our various divisions was mixed, with both rises and falls in turnover being recorded. At the end of the year, sales revenue stood at 9.0 billion euros, putting it on a par with the years prior to 2015.

Our company is on a stable path into the future. We are particularly indebted to our customers for this, and at this point would like to thank them most sincerely for the trust they put in us and for what are often long-standing partnerships. A further key to our long-term success lies in our 42,000 employees, who dedicate themselves to our company day in day out with enthusiasm. We are also exceptionally grateful for their commitment.

The Liebherr Group stands for continuous innovation and technological progress in the interests of our customers.

We demonstrated this once again over the past year. At the Bauma exhibition in Munich, the world's largest trade fair for construction machinery, we again presented more than 60 innovative machines, including many newly developed ones.

Digitalisation, networking and electromobility are three of the technological megatrends of our time, for which we at Liebherr offer innovative solutions in a wide variety of product areas. As we always aim to be one step ahead, we have, for example, successfully developed smart fridges, which in future will help us with our shopping and meal planning. Food placed in the fridge for storage will be recognised automatically, opening up a new dimension of food management for our customers.

In aviation, there is a clear trend toward ever lighter and more fuel-efficient aircraft. For this reason, Liebherr has been quick to start developing components made from



The family shareholders active in the Group (from left to right): Patricia Ruef, Stéfanie Wohlfarth, Jan Liebherr, Sophie Albrecht, Isolde Liebherr and Willi Liebherr

lightweight parts with the aid of 3D printing technology. These parts are now being used in test aircraft.

We have always maintained exacting quality standards – this includes a state-of-the-art production environment. In order to make our company fit for the future, in 2016 we once again invested heavily in the expansion and further optimisation of our production sites, as well as in our global distribution and service network. Only in this way can we meet our customers' requirements.

This year, we will continue to strive across all divisions to offer our customers the best solutions possible. In doing so, we will not shrink from treading new paths and opening up new horizons. For example, over the next few years a new generation of offshore cranes will be developed at the Rostock site in Germany. With a load capacity of 5,000 tonnes, the new cranes will be the largest Liebherr has ever built.

According to current forecasts, the global economy will see positive growth in 2017. In the extraction industry, for example, the first signs of a recovery are already visible. In addition, we will be launching a large number of new products onto the market – for this reason, we estimate that, overall, 2017 will bring increased sales turnover and a slight rise in the number of employees.

2017 will therefore be another successful year for Liebherr.

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Dr. h.c. Dipl.-Kfm. Isolde Liebherr Dr. h.c. Dipl.-Ing. (ETH) Willi Liebherr

Presiding Committee of the administrative board of Liebherr-International AG

## Brief Portrait of the Group

### Brief Portrait

## The Liebherr Group

Hans Liebherr established the company that bears his name in 1949. Since then it has grown into a Group of more than 130 companies on all continents, employing 42,308 people at the latest count.

Today, Liebherr is not only among the world's largest manufacturers of construction machinery, but is an acknowledged supplier of technically advanced, user-oriented products and services in many other fields of activity as well. The Group's holding company Liebherr-International AG, which is based in Bulle, Switzerland, is wholly owned by members of the Liebherr family. The Liebherr Group's corporate culture has been determined from its earliest days by its family ownership. For more than 60 years, Liebherr has demonstrated what this means in terms of stability and trustworthiness, and has striven for a close long-term relationship with its custom-

Liebherr shapes technological progress and aims to retain its position at the leading edge of future technology. All its activities have top quality as their central element. This principle is upheld by all the Group's employees in their day-to-day work. Liebherr's products are the outcome of its passion and dedication: tailor-made solutions that take the customer's needs and wishes as their starting point.





### The Group's Divisions



Earthmoving



Mining



Mobile cranes



Tower cranes



Concrete technology



Maritime cranes



Aerospace and transportation systems



Machine tools and automation systems



Domestic appliances



Components



Hotels

### Self-conception

The Liebherr Group is wholly owned by members of the Liebherr family, and this situation is not about to change. The Group and the family are inseparable. Valueoriented corporate culture ensures close links among the employees, and inspires confidence among customers and business associates.

Hans Liebherr established the original company, and his ideas and untiring personal effort were the elements that led to its successful growth and sound structural basis. Liebherr has demonstrated its stability and trustworthiness for more than 60 years, and these vital factors derive from the personal efforts of its proprietors and the corporate character of a family-owned business enterprise, the independence of which gives Liebherr ample freedom in all its actions and the decisions it takes. The shareholders in the family-owned group are Hans Liebherr's children and grandchildren, who play an active part in the management of various Group divisions. They uphold his tradition and ensure security and continuity.

The family, as the Group shareholders, is conscious of its business responsibility and pursues a clear, wellstructured path that points the way toward sound ongoing development. Job security for the workforce and consistent integrity in business activity are elements of major importance in corporate management.

#### Liebherr-International AG: Company information

Head-office	CH-1630 Bulle/FR
Share capital	CHF 100,000,000
Shareholders	Liebherr family (100 %)
Administrative board	Dr. h.c. Willi Liebherr, Chairman Dr. h.c. Isolde Liebherr, Vice-Chairman Hubert Liebherr Sophie Albrecht Jan Liebherr Patricia Ruef Stéfanie Wohlfarth
Managing directors	Andreas Boehm Stefan Heissler Uwe Rechtsteiner Denis Zosso
Auditors	Ernst & Young AG, Berne

### From generation to generation

Liebherr is thus an independent family-owned business enterprise that is now managed jointly by members of the second and third generation. This continuity is a characteristic of the Group and a firm foundation for its success. The highest level of decision-taking and management within the Group is a committee of partners made up entirely of members of the Liebherr family. All fundamental and strategic questions come before this body.

In addition to Dr. h. c. Willi Liebherr and his sister Dr. h. c. Isolde Liebherr, members of this policy-making body are Jan Liebherr, Stéfanie Wohlfarth, Sophie Albrecht and Patricia Ruef, all representing the third Liebherr family generation. The active part played by the children and grandchildren of company founder Dr.-Ing. E.h. Hans Liebherr guarantees management continuity and will ensure that the Group remains insolubly linked with the Liebherr family in the future.

#### The family shareholders active in the Liebherr Group



Dr. h. c. Willi Liebherr Chairman of the administrative board of Liebherr-International AG



Dr. h. c. Isolde Liebherr Vice-Chairman of the administrative board of Liebherr-International AG



Jan Liebherr Member of the administrative board of Liebherr-International AG



Stéfanie Wohlfarth Member of the administrative board of Liebherr-International AG



Sophie Albrecht Member of the administrative board of Liebherr-International AG



Member of the administrative board of Liebherr-International AG

### The Group's business model

#### User value

For more than 60 years, Liebherr, as an independent family-owned group of companies, has stood for a high standard of user-oriented products and services in many technical areas. The Group offers customers all over the world, and in many different business sectors, access to leading-edge, innovative technologies with all the benefits of tailor-made solutions and genuine user benefits in the product and service areas.

#### Products and customer segments

The Group offers customers from the construction industry a construction machinery range that is unmatched in its breadth and depth. Liebherr develops, produces and distributes an extensive range of large hydraulic excavators and large mining trucks for the extraction industry. The Group also develops, produces and distributes a wide variety of cranes for material handling in the maritime sector. In the machine building and plant construction fields, the Group's activities extend to machine tools, automation systems and engineering projects. The aerospace and transportation systems segment covers equipment for aircraft, rail vehicles and buses. In addition, Liebherr produces a wide variety of refrigeration and freezing equipment for domestic and commercial use. In the components field, the Group specialises in mechanical, hydraulic and electrical drive systems and control technology products that are used in a wide range of industries. Liebherr also operates six hotels in Ireland, Germany and Austria.

#### Distribution channels

Products and services are supplied by way of a widespread network of Group-owned sales and service companies, and also through reputable partners with which Liebherr has enjoyed many years of loyal cooperation.

#### Customer relations

Liebherr aims to build up and maintain close cooperation with its customers and business associates over a period of years or decades. Its aim is to respond quickly, flexibly and reliably to their needs and satisfy them by supplying top-quality technologies. This close relationship with customers and the high value that Liebherr attaches to user benefit are keys to the Liebherr Group's success and a firm element in its corporate tradition as a family-owned business.

#### Key activities

The Liebherr Group develops, produces and sells innovative products and services.

Key resources/added value chain and key partnerships Liebherr invests considerably in research and development. To develop its capabilities, the Group undertakes partnerships with universities of applied science and similar institutions all over the world. Liebherr's international activities are backed by the skills and qualifications of more than 42,000 employees.

A network of more than 40 ultramodern production plants in 17 countries and many years of cooperation with suppliers within and outside the Liebherr Group have put it in a position to offer innovative products of impressive quality at competitive prices. Well-planned parts supply logistics and high standards of after-sales service are the final decisive links in the Liebherr business model.

Liebherr dedicates itself to mastery of key technologies down to the smallest detail, and can therefore claim a high degree of independence in technological areas.

Liebherr has a high equity ratio and operates on the principle that the Group's growth should be predominantly organic, achieved through its own intrinsic strength.

#### Earnings and cost structure

Liebherr generates its earnings from product sales and rentals and from the supply of services.

Certain divisions within the Liebherr Group profit from economies of scale as their production volume rises. Others are more closely focused on the development of tailor-made solutions for individual customers. In such cases Liebherr concentrates on the creation of additional premium value for its customers and supplies services with a high degree of specific client relevance. The Liebherr Group benefits from synergies that derive from its broad product portfolio, its mastery of key technologies and other factors. The supply chain is global in character.

With its eleven divisions the Group pursues a policy of diversification that makes it independent of economic fluctuations in individual business sectors or markets. The profits earned by the Group are re-invested internally with the aim of achieving long-term success in line with its management perspective.

#### Organisational structure

The Group's holding company is Liebherr-International AG with its registered office in Bulle, Switzerland. The corporate structure ensures a unified approach to guestions of central importance and permits a rapid response to market requirements at divisional level. The Group's decentralised structure offers a number of advantages. Besides customer proximity, the ability to adapt quickly to changes is made possible, since a minimum of hierarchical levels encourages the implementation of new ideas with no loss of time. Divisional management companies are responsible for overall operative management in the various product areas.



Service technicians of Liebherr's aerospace and transportation system division

## Progress and Outlook

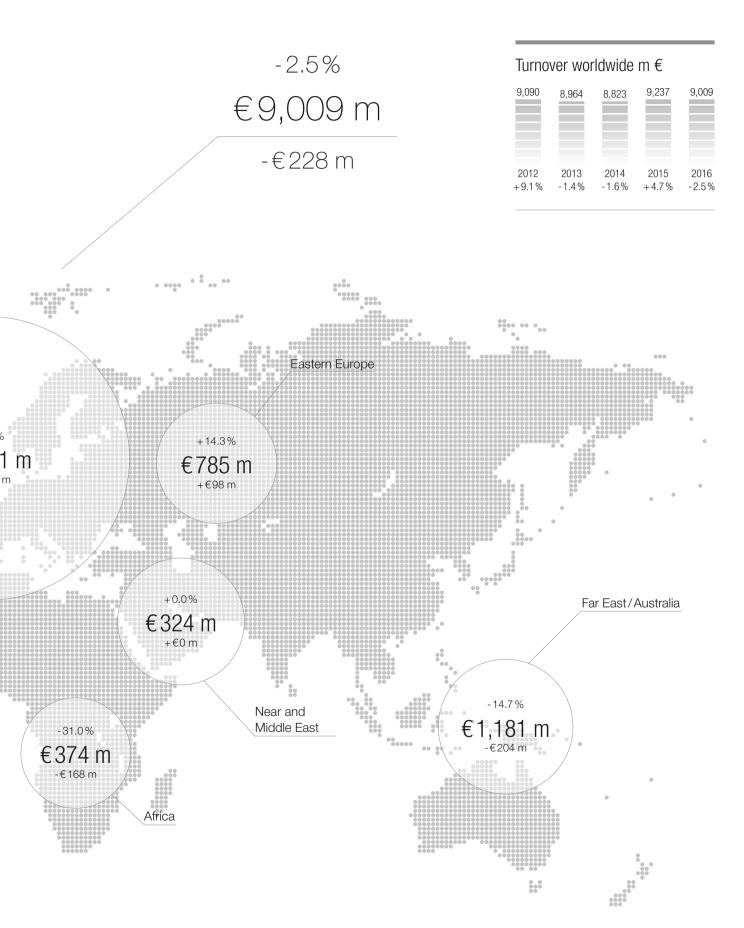
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### Business Performance

## The Group in 2016

In 2016, Liebherr achieved the third-highest tumover in the Group's history, with total sales of  $\in$ 9,009 million. Compared to the record year of 2015, this represents a decrease of  $\in$ 228 million or 2.5%.





In 2016, global economic growth stood at 3.1%, the same level of increase experienced in the previous year. Development in the industrialised countries, at 1.6%, was slightly slower than in 2015. The economy in the USA, in particular, lost some of its momentum. In some emerging and developing economies, however, there was a slight upward trend for the first time in six years. Growth in these countries, at 4.2%, was somewhat above the previous year's level, although the economy in China, Brazil and Russia continued to cool.

#### Sales performance by region

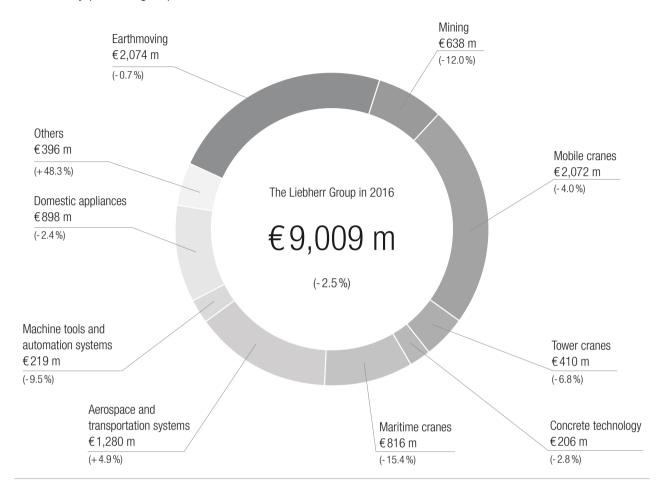
There were marked differences in business performance in the individual sales regions. In Western Europe, Liebherr's most important sales region, turnover increased. This was due in part to renewed growth in its largest market, Germany, as well as to upward trends in other important markets such as France and the Netherlands. In Italy, too, the last business year was an encouraging one. In the UK, the Group's fifth-largest market, turnover declined slightly.

In Eastern Europe, particularly in Russia and Poland, sales revenues also developed positively. In the Near and Middle East, sales remained at the previous year's level. In America, by contrast, a slight fall was recorded. In Africa and the Far East/Australia, turnover was below the previous year's level in each case.



With 14,000 m<sup>2</sup> in area, the Liebherr stand was the largest one at the 2016 Bauma





#### Sales performance by product area

In the construction machinery and mining segments, as well as in other product areas, Liebherr recorded a slight decline in turnover compared to its record year in 2015. Divisions producing construction machinery and mining equipment include earthmoving, mining, mobile cranes, tower cranes and concrete technology. Here, sales revenue fell by €224 million, or 4.0%, to a total of €5,400 million. In the other product areas, those covered by the maritime cranes, aerospace and transportation systems, machine tools and automation systems, domestic appliances, components and hotels divisions, turnover remained at €3,609 - the previous year's level.

#### Net result for the year

In 2016, the Liebherr Group achieved a net result for the year of €298 million. Compared to the previous year, this represented an increase of €4 million. The financial result improved significantly, thanks in part to the positive effects of exchange rate movements. In contrast, there was a perceptible fall in the operating result.

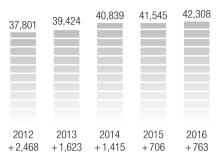
#### **Employees**

The qualifications, enthusiasm and commitment of the Group's employees make a key contribution to its business success. Liebherr's long-term commitment to its employees is in keeping with its tradition as a family-owned company.

2016 saw a further increase in the workforce. At the end of the year, Liebherr had 42,308 employees worldwide. Compared to the previous year, this constituted an increase of 763 or 1.8%. The number of employees in Liebherr companies in Western and Eastern Europe was up compared to the previous year. In America and the Near and Middle East, however, there was a fall in the size of the workforce, whereas it remained at the previous year's level in the Far East/Australia and Africa.

2016 saw the implementation of the "STEP – Learning and Development" Human Resources development plan extended across the Group. In addition, ideas management for employees was introduced in other companies in the Liebherr Group. As part of basic and advanced workforce training, additional e-learning programmes and opportunities to gain further qualifications were provided.

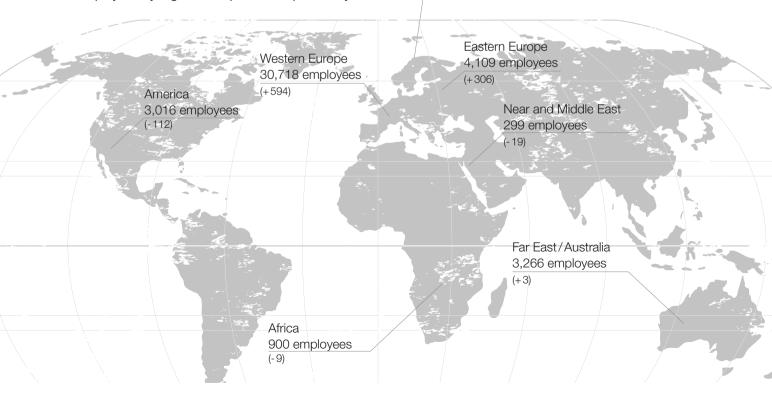
#### Employees worldwide



### 42,308 employees

+763

#### Employees by regions compared with previous year



#### Sustainability

The Group aspires to generate sustainable value for its employees, customers and suppliers and for society as a whole. As an independent family company with a longterm focus, Liebherr is aware of its responsibilities and is committed to sustainable development. Its products, processes and infrastructure are geared to the minimum possible consumption of resources. The focus in all areas is on safety, efficiency and environmental sustainability. Last year, a large number of the Group's companies worked on projects looking at social, environmental and economic aspects of sustainability.

#### Research and development

As a high-technology company, Liebherr pursues the goal of making a decisive contribution to shaping technological progress in sectors relevant to the Group. For this reason, the Group makes substantial investments in research and development: last year, expenditure on research and development stood at €570 million, the bulk of this being used for product development. A large number of joint research projects with universities, other higher-educational institutions and research institutes were initiated or continued.

Important issues across the wide range of products and services include, as they have done for many years, increasing energy efficiency, networking, automation and lightweight product design. One other significant project in 2016 was the trialling of 3D-printing production technology in the aerospace and transportation systems division. Both basic research and studies of specific applications were conducted in this area. Related trials of individual components have been taking place since the end of 2016.

Last year, the domestic appliances division's research and development department pressed ahead with work on the issues of digitalisation and networking, in particular. At IFA 2016, the leading trade show for consumer electronics and home appliances, Liebherr presented an "intelligent fridge", which uses modularly integrable cameras to recognise the food placed in the fridge for storage. A voice module provides customers with additional useful information about the food such as shelf life, the vitamins and minerals it contains, shopping lists or recipe suggestions.



At IFA 2016, Liebherr presented an "intelligent fridge"



Assembly of the new D9812 12-cylinder diesel motor in Colmar (France)

#### Investments

The Group has traditionally emphasised the importance of making regular investments in its production facilities and its global distribution and service networks. As a consequence, the investment rate last year remained at a very high level. Overall, the Group invested €751 million. Offset against this was depreciation of €466 million.

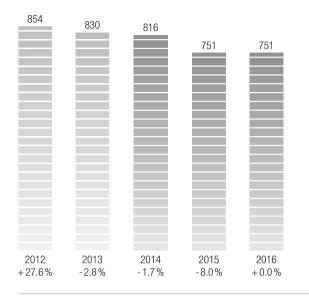
In 2016, new production plants for large-diameter bearings were put into operation in Guaratinguetá in Brazil, to meet the high regional demand for components for wind-power plants. With production starting at the new factory in Deggendorf in Bavaria in July 2016, Liebherr continued to expand its key competencies in the production of micro-precision parts and injectors for Common Rail systems.

The agricultural machinery manufacturer Claas is to purchase a selection of telescopic loaders from Liebherr, starting in 2018. In the light of this collaborative project, Liebherr is expanding its capacity in Telfs (Austria), where telescopic loaders are among the machines produced, and in 2016 it invested in the site, expanding its property and modernising its production facilities.

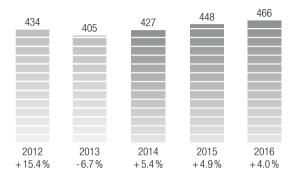
Liebherr also invested in distribution and servicing in various sales regions. Liebherr-Verzahntechnik established a joint venture in South Korea with its long-standing representative DKTEC Industry Corporation to set up a service to secure the division's prominent position in the South Korean market and to support close cooperation with local automotive manufacturers and their supplier structures. In Saline, in the US state of Michigan, Liebherr-Aerospace created new repair capacity.

In 2016, a substantial organisational change within the maritime cranes division was completed. From the start of the year, design, sales and customer service for mobile harbour cranes, ship cranes and offshore cranes were all brought together at the Rostock site in Germany.

#### Investments m €



#### Depreciation m €



#### Risk management system and internal control system

In order to ensure the sustainable success of the Group, opportunities and risks are identified at an early stage and then evaluated and controlled. The Group has in place a continually-optimised risk management and internal control system to help it meet operational, market-related and legal requirements.

To ensure the integrated recording, analysis and evaluation of risks, all managers responsible for the risk management and internal control systems used in the individual Group companies are involved. Risks are identified and assessed locally in the individual companies, then countermeasures to limit the risks are introduced and the impacts are evaluated.

This localised approach also makes it possible to identify and assess areas of opportunity efficiently. The information gained about market-related and technological developments is used in opportunities management to reach decisions about future areas of business and production processes. At the corporate level, the current risk situation is regularly reviewed and the effectiveness of the systems and processes used is assessed. The internal audit department monitors worldwide compliance with Group guidelines and the implementation of the risk management and internal control systems.

#### Supplementary report

Events of particular significance which occur after the reporting date should be recorded here, together with their expected impact on the Group's assets, financial position and earnings. The Liebherr Group had no such events to report after the end of the 2016 business year.

## Outlook The 2017 Business Year

It is anticipated that the coming year will see slight positive growth in the global economy, compared to 2016. The growth trend is expected to increase slightly, both in industrialised countries and in emerging and developing economies.



Liebherr tower cranes on a construction site at the Montréal Olympic Stadium

The International Monetary Fund (IMF) predicts that global economic growth in 2017 will be somewhat higher than in the reporting year, at 3.4%. According to its forecasts, the economy will slightly grow not only in the industrialised countries (+1.9%), but also in the emerging and developing countries (+4.5%). In particular, it expects Brazil and Russia to return to growth. In Germany, the Group's largest market, the IMF projects a slight fall in the growth rate, to 1.5%.

An upturn in world trade is not forecasted. The construction sector in several European countries, including Germany, is expected to continue to grow. The International Air Transport Association anticipates another strong year for the aviation industry.

Further price rises for almost all commodities are expected in 2017. The World Bank is currently forecasting price increases of 26% for energy commodities and 3% for non-energy commodities.

#### Individual opportunities and risks

In order to illustrate the individual opportunities and risks, similar types of risks and opportunities have been grouped together.

Macroeconomic opportunities will arise primarily from the positive outlook for US economic growth and the increase in certain commodity prices. Geopolitical uncertainties in the Near and Middle East, the continued slowdown in international trade and the impact of the UK's announcement that it is to leave the European Union may also harbour risks.

The sections on each of the divisions contain reports on the opportunities and risks relevant to that division. Specific cost changes due to increasing macroeconomic uncertainty which cannot be directly passed on through contractual price indexation may pose risks that affect the Group's performance.

Operational business harbours market price risks, in particular due to exchange rate and interest rate fluctuations. Liebherr monitors these risks continuously and uses appropriate financial instruments to hedge selected transactions. The Group enters into financial transactions only where these are linked to its operational business activity or are for hedging purposes. On principle, Liebherr does not conduct transactions of a speculative nature.

The global nature of our business activities, together with our broadly-diversified product base and the risk management system in place in the Group, ensure that the relevant risks are kept under control. Based on the currently available information, there are no further identifiable risks which could have a substantial detrimental effect on Liebherr's assets, financial position and earnings in the 2017 business year and threaten the survival of the Group as a whole.

#### Forecast for the Group

The Liebherr Group anticipates an increase in turnover this year. The construction machinery and mining segments, as well as other product areas are overall expected to make a positive contribution to turnover. Perceptible growth is anticipated in the following divisions: earthmoving, mining, tower cranes, aerospace and transportation systems, machine tools and automation systems, and domestic appliances.

The Liebherr Group will also continue to invest substantially in its international production facilities and in its distribution and service network. The number of people employed in Liebherr companies will again rise slightly.

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In 2016, the earthmoving division posted a slight decline in sales of €14 million or 0.7%.

This put its total turnover at €2,074 million.

In 2016, the market downward trend in the earthmoving sector continued. The major sales markets did not perform as originally anticipated. Although China had been the principal cause of the global decline in previous years, growth was recorded here for the first time. In contrast, the North American market for construction machinery showed a decline. The sector's most stable performance was recorded in Western Europe.

Overall, the earthmoving division – against the market trend and in a difficult and competitive market environment – recorded reasonable sales, but these were unevenly distributed. Among the large Western European

sales markets, Germany and France showed continued high growth. In Eastern Europe, too, sales revenues developed positively, thanks in particular to encouraging growth in Russia. These sales increases were offset by significant declines in America and Africa. In the Near and Middle East and in the Far East/Australia region, sales remained at approximately the previous year's level.

In some areas, Liebherr recorded significant growth in sales of wheel loaders and piling and drilling rigs, as well as the more specialised pipe layers and two-way excavators. The wheeled excavator, crawler excavator, material handling and crawler tractor product areas saw a decline.



The LH 110 C High Rise Port material handling machine was premiered at the Bauma 2016 trade fair. This newly developed product was designed especially for port handling operations and will be available on the market from 2017. The R 920 Compact crawler excavator was also presented for the first time at the Munich trade fair (Germany). This excavator's reduced tail swing radius makes it particularly suitable for use in inner-city areas. Liebherr's presentation of the LRH 600 piling rig with its newly developed H 15 L hammer also underlined its position as a full-range supplier in the deep-foundation construction segment.

Development priorities once again included projects in the areas of automation and autonomous machines, as well as driver and service assistance systems. The contribution made by Liebherr to the digitisation of construction sites was another major focus. Modular machine concepts are being drawn up for all product lines, in order to meet the requirements of the various machines efficiently. One example of this is the newly introduced LiPOS system for the precise positioning of Liebherr deep-foundation machines on construction sites.

Product development activities continued to be dominated by the conversion of all machines to emissions Stage IV in accordance with the EU regulation on emission limits for mobile machinery. In parallel with this, work on developing emissions Stage V machines continued. In the crawler excavator segment, Liebherr has been busy working on a hydraulic hybrid excavator and developing a new hydraulic system for excavators with a service weight of over 40 tonnes.

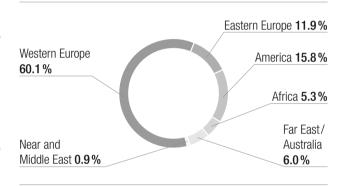
In the deep foundation segment, the newly developed LV 20 vibrator was released for initial testing. In the piling and drilling rig product area, Liebherr has been working on the LRB 16/18, which has been fitted with a new-generation diesel engine and now complies with the Stage IV emissions standard.

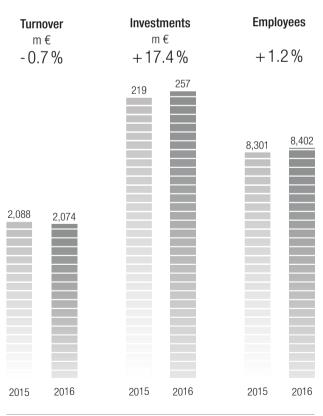
At the same time as expanding its telescopic loader programme, Liebherr has been further developing the hydrostatic drive for its machines. In the special machines segment, work on developing the successors to the RL 54 and RL 64 pipe layers was completed. Development of the sixth generation of the RL 44 pipe layer is still ongoing.

As part of a collaborative project, the agricultural machinery manufacturer Claas will be purchasing a selection of telescopic loaders from Liebherr, starting in 2018. This collaboration will open up new sales opportunities for Liebherr in the agricultural sector. In view of this collaborative project, capacity in Telfs (Austria), where telescopic loaders are among the machines produced, will be expanded. Liebherr has invested in the site, expanding its property and modernising its production facilities.

In 2017, the division anticipates that, despite the continuing decline in the earthmoving machinery market, sales will rise.

#### Turnover by sales regions







The reluctance of operators in the extraction industries to invest continued in 2016. Under these conditions, the mining division generated turnover of  $\in$  638 million. This was  $\in$  87 million or 12.0% below the previous year's turnover.

In 2016, the global downturn in the mining industry continued. Practically all companies in the sector further cut their expenditure, and there was a corresponding fall in the number of new machines delivered. Furthermore, many companies postponed machine overhauls that were due to take place. Consequently, many machines were temporarily taken out of service in order to avoid costly repair work. Finally, prices of selected commodities rose again or stabilised at a low level. Medium-term growth in the commodities sector will remain fraught with uncertainty and continue to be volatile.

The Far East/Australia was once again the mining division's most important global sales region. Here,

significant growth in sales of large hydraulic excavators, particularly in the main sales markets of Australia and Indonesia, compensated to a considerable extent for the decline in mining truck sales. Sales overall were thus down by only 2.7 %.

Fairly sharp falls in turnover were recorded in America, Eastern Europe, Africa and the Near and Middle East. However, the division's turnover from spare parts and servicing exhibited positive growth. As in the previous year, the T 284 was the mining truck model in greatest demand.



At the Bauma trade fair in Munich (Germany), Liebherr presented the PR 776, the world's largest crawler tractor with an infinitely variable hydrostatic drive. The PR 776 has been specially designed to operate under the toughest mining and extraction conditions. The first units are in operation in Russia, Australia and the USA.

The T 236 was premièred at MINExpo in Las Vegas (USA). This 100-tonne-class mining truck is fitted with the new Litronic Plus Generation 2 electric drive system. which significantly reduces fuel consumption. As a system solution, it is designed for use in conjunction with Liebherr's R 9100, R 9150, R 9200 and R 9250 excavators. A pre-production series model of the T 236, which will go into service with selected partners, is planned for 2017.

Another new large hydraulic excavator, the R 9200, has attracted keen interest from operators. The mining division delivered several units in 2016, enabling it to achieve a market share of 24% in the segment in the second year after product launch.

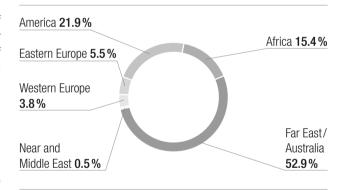
Liebherr used the year 2016 to expand its mining product portfolio. Prototypes of the R 9400 large hydraulic excavator and the T 264 large mining truck underwent internal testing.

Another major innovation project was the development of automated driving technologies. For example, a number of tests were successfully completed in 2016, some of them under real operating conditions. Other development projects covered energy management, machine diagnostic systems, assistance systems, lightweight construction and the integration of Liebherr's new D98-series diesel engines.

A long-term investment programme for the introduction of fully automated welding cells was initiated at the Newport News site in the USA. The mining division invested in the ongoing optimisation of the machine fleet at Newport News and in Colmar (France). The Service-Excellence-programme was expanded. The division's US production company gained certification to the ISO 9001 quality management standard. This means that all the division's production companies are now ISO-certified.

Many companies in the mining industry have made use of the recession in the sector in order to increase their efficiency. This greater competitiveness and the gradual stabilisation of the commodities market have contributed to a feeling of cautious optimism in the sector. The investment backlog which has built up over the past four years is now opening up opportunities in the sector for 2017 and beyond. For example, companies in the sector now have large numbers of new machine purchases and machine overhauls pending. The expansion of the spare parts and service segment and the successful introduction of product innovations, in particular the PR 776, will present further opportunities. Liebherr therefore expects that in 2017, its mining division will have an increased volume of incoming orders and see moderate sales growth.

#### Turnover by sales regions



Turn		Investr		Emplo	yees
m € - 12.0 %			m € - 38.2 %		9 %
725	638	34	21	3,262	3,166
2015	2016	2015	2016	2015	2016



Following its positive sales performance in the mobile and crawler cranes division in 2015, Liebherr achieved somewhat lower sales revenues in 2016. The division generated total earnings of €2,072 million, representing a decrease of €87 million or 4.0 %.

The sideways trend in the global market for mobile cranes continued in 2016. Against this background, the division's turnover was somewhat below the previous year's level. Liebherr mobile cranes were in particularly strong demand in the energy sector, the petrochemical industry and the infrastructure sector.

Sales in Western Europe declined slightly in the business year 2016. Germany remains the strongest market, despite a decline in sales. Sales in France were exceptionally good, and in the Netherlands there was once again very encouraging growth, building on last year's strong performance. While the division did not manage to continue this positive trend in the UK, it is still one of Liebherr's top markets in Western Europe.

In Eastern Europe, the Russian market saw positive growth, despite difficult conditions. Overall, sales revenues in this region rose significantly, while there was a slight fall in the Near and Middle East and a significant fall in the Far East/Australia. The Chinese market for mobile and crawler cranes has also seen no improvement over the year 2016.

Developments in America, by contrast, have been very encouraging. In the USA, the division recorded a considerable rise in sales. Business in Mexico was also remarkably. Brazil, however, saw a decline in sales.

There was an increase in the number of new machines sold in Germany in 2016. However, the trend toward



smaller machines meant that the overall turnover from sales of new machines in Germany declined. Internationally too, turnover from sales of new machines was down. Sales of used machines also fell below the 2015 level.

The division's share of the world market for all-terrain cranes stood at 53%. The strongest demand recorded by Liebherr was for machines in the 4- and 5-axle classes. In the lattice-boom crawler crane market, Liebherr maintained its position as one of the top three manufacturers. The LR 1300 crawler crane continued to be a bestseller, particularly in the US market.

2016 saw the market launch of the 5-axle LTM 1250-5.1. The 250-tonne mobile crane was premièred at the Bauma trade fair in Munich (Germany) and is the most powerful crane in its class worldwide. The LTM 1450-8.1 was also on show for the first time. This mobile crane, with a maximum load capacity of 450 tonnes, has the world's longest telescopic boom that can be carried on public roads with a twelve-tonne axle load, and in many areas can take on jobs normally reserved for cranes in the 500-tonne class.

The completely redeveloped LR 1500 crawler crane was also presented at the Bauma trade fair and successfully launched onto the market in 2016. This 500-tonne crane has won over customers worldwide. Over 20 units have already been sold, and the first deliveries took place in summer 2016.

The division also continued to press ahead with various development projects in 2016. For example, further refinements were made in a number of areas to the technology behind the LR 1100 crawler crane premièred at the Bauma trade fair. The main focus was on new safety standards relating to the assembly and dismantling of the machine. Another important product development issue across the entire range of crane types was the reduction of diesel engine exhaust emissions in compliance with Stage V of the EU Regulation on emission limits for mobile machinery.

Liebherr also announced the expansion of its product portfolio to include a new series of rough-terrain cranes. Development of the new generation of Liebherr cranes was preceded by comprehensive market surveys and analyses of the requirements for modern all-terrain cranes, especially in the company's main market, North America.

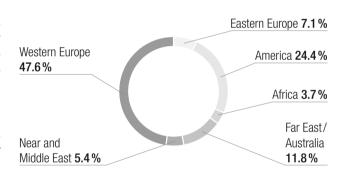
Further work also continued on the development of software solutions for planning the deployment of machines on construction sites. An example of this is the new Liebherr Crane Planner. The new software makes it possible to use existing plans and construction site data to produce even more realistic simulations of construction sites and lifting work using crawler cranes.

In 2016, Liebherr made investments, primarily in office and operating equipment and in plant and machinery, at its sites in Ehingen (Germany) and Nenzing (Austria).

The division's turnover in 2017 is expected to be below the 2016 level

#### Turnover by sales regions

Turnover



Investments

m €		1110	m €		Lilipioyees	
- 4.(		-	7.0%	+	0.6%	
2,159	2,072	57	53	4,576	4,602	
2015	2016	201	5 2016	2015	2016	

**Employees** 



*In 2016, the tower cranes division generated a turnover of € 410 million,* thus falling short of its previous year's turnover by €30 million, which equates to a fall of 6.8%.

In 2016, the global market for tower cranes was characterised by intense competitive pressure. This was particularly true of the markets in emerging economies. For example, demand in several regions declined due to cyclical economic fluctuations or geopolitical uncertainties. Overall, the demand trend shifted toward smaller units.

In Western Europe, the division recorded growth, thanks to upward trends in the strongest sales market, Germany, and in Austria. Despite the difficult market environment, the division was also able to achieve growth in Eastern Europe, primarily through project business. In the Far East/Australia region, sales were above the previous year's level, too. However, the significant falls suffered in the Middle East, as well as in America, had an adverse impact on the division's total turnover. Business in the USA, which in 2015 was still one of the largest single markets for the tower cranes division, was notably weaker in the past business year.

In line with market trends, Liebherr was able to increase its sales of bottom-slewing cranes and mobile construction cranes. Revenues from the machine rental business also showed positive growth, as did those from equipment and accessories. Sales of top-slewing cranes, by contrast, failed to match the previous year's level.

In 2016, the tower cranes division succeeded in winning the contracts for a number of large projects. For



example, it supplied ten tower cranes for the construction of a power plant in Ptolemais in Greece. This was followed by an order for five tower cranes in the 380 to 630 metric tonne class for the construction of a business and shopping centre in the Finnish capital, Helsinki. The division's largest single order of the year was for the construction of the new terminal at Santiago de Chile Airport, for which Liebherr supplied 23 flat-top cranes from its EC-B series.

At Bauma 2016 in Munich (Germany), the division presented three new fast-erecting cranes, the L1-24 and the K-series cranes 81 K.1 and 65 K.1. The L1-24 is the first model in the new L1 series of hydraulic construction cranes; it is very easy to assemble and can be made ready for use particularly quickly. Both the K-series cranes offer increased load capacities and boom lengths. They went into series production in the third quarter of 2016.

At the Bauma Conexpo India trade fair, Liebherr presented the NC-B 6-62, the first in a new series of top-slewing cranes. These flat-top cranes have been developed specifically for deployment in the congested urban areas of emerging countries and are particularly suitable for high lifting heights and heavy loads.

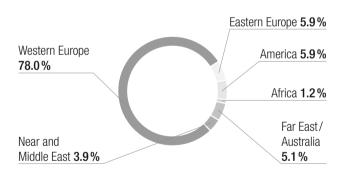
The LiUP 200 internal crane driver elevator, which was first presented in 2015, was also successfully launched onto the market. It was encouraging to see so many orders for the elevator system coming in from customers in the French focus market in 2016. Several customers from other markets and regions, in particular Scandinavia and the Netherlands, also showed a high level of interest in this product.

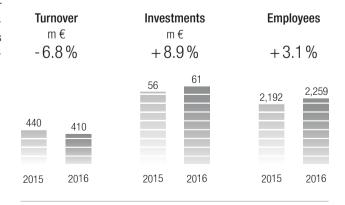
The division pressed ahead with the development of the 125 K bottom-slewing crane, the DR 120 derrick crane and the successor to the 285 EC-B top-slewing crane. In the mobile construction crane segment, the development teams have been working on product variants of the MK 140 and a new version of the MK 88. The 16EC tower system was completed, and the 24HC tower system presented in 2015 underwent an upgrade. Further progress was also made on research into new technologies for developing autonomous cranes.

Over the past year, the tower cranes division has invested heavily in the expansion of its rental fleets in France and in Southern Germany.

In 2017, the construction sector is set to grow in many important markets. The division is well prepared for a corresponding increase in demand. There will be considerable growth opportunities arising from, for example, the market launch of numerous innovations and increased penetration of markets outside Europe, in particular those in emerging countries. However, it is also expected that, due to increased competition, the coming year will bring renewed pressure on prices. Overall, the tower cranes division anticipates an increase in its sales turnover.

#### Turnover by sales regions







In the past business year, Liebherr generated turnover of €206 million from the sale of truck mixers, concrete mixing plants and concrete pumps. The concrete technology division's turnover was thus down on last year's figure by €6 million or 2.8 %.

Trends in the concrete industry last year exhibited pronounced regional differences. Demand in Western Europe stabilised and stimulated business in concrete technology products. There were also positive developments in Canada and the USA, although many customers there were more cautious with their investments in the second half of the year. There was little momentum in other parts of the world, with demand either stagnating or declining. Almost everywhere, manufacturers of machinery for the concrete industry were faced with high levels of overcapacity and strong downward pressure on prices as a result.

The concrete technology division generated modest growth in its strongest sales region, Western Europe. Business performance in Germany, Switzerland and France, in particular, was encouraging. Here, leading concrete producers have been investing in new plant technology. The division achieved significant sales growth in America, as well as in Eastern Europe, in particular in Russia. By contrast, sales declined in the Far East/Australia region, most notably in China, and also in Africa. In the Near and Middle East, Saudi Arabia, one of the division's most important individual markets ground to an almost complete halt in the second half of the year.



Truck mixers, Liebherr's highest-selling product range, performed very well in Western Europe. However, this was not sufficient to offset the falls in the other regions, so sales for the product range overall were lower than in the previous year. Sales of mixing plants roughly matched the levels achieved in the previous year. By contrast, the concrete pump product range showed strong growth, particularly in Eastern Europe, America and the Near and Middle East.

Two new mixing system innovations were launched onto the market: firstly, the RIV 2.5-D ring-pan mixer, in which the rotational speeds of the mixing tools can be controlled independently and are infinitely adjustable, and secondly, the expanded and completely revised twin-shaft mixer programme, which now offers further advantages in terms of installation, maintenance and cleaning.

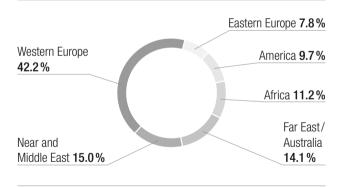
In 2016, the concrete technology division developed the new 05 generation of truck mixers to the point where it was ready for series production. These mixers offer advantages primarily in terms of safety, ergonomics and economy. The innovative platform concept enables the flexible installation of attachment parts. The new LICRO 500 drum steel quality ensures improved wear resistance and thus a longer drum service life. Even in the standard version of the new truck mixers, it has been possible to increase the payload by reducing the unladen weight of the equipment. The lightweight and super-lightweight product variants allow for even greater payloads.

Considerable progress has been achieved in the development of a telematics box for truck mixers. Once installed, it manages the vital vehicle and concrete data efficiently and ensures greater economy, optimised vehicle planning and consistent concrete quality assurance.

In the area of mixing plants, the development teams have been focusing on the Easymix 1.0. It was conceived as a cost-effective entry-level unit for various export markets and designed for an output capacity of 60 m<sup>3</sup> per hour. In parallel with this, the developers have been working on a new simple control unit which will be used in plants including the Easymix 1.0.

The concrete industry is anticipating that conditions will stabilise in 2017. Important markets such as Russia and Brazil seem to be recovering slowly. In core markets such as Germany, Austria and Switzerland, concrete producers are now ready to make investments which they have in some cases been postponing for years. This presents opportunities for the concrete technology division. The full-scale market launch of the new generation of truck mixers will also ensure further growth. The entry of other mixing technology suppliers into a number of markets which are important to Liebherr poses a risk. Against this background, the division expects turnover in 2017 to be stable.

#### Turnover by sales regions



Turnover m €			ments €	Em	Employees		
	8%		7.5 %	-1	0.4%		
212	206	8	11	1,645	1,474		
2015	2016	2015	2016	2015	2016		



In the 2016 business year, the maritime cranes division achieved sales revenues of €816 million. Turnover was down by € 148 million or 15.4 % from the previous year's level.

Last year, the market for products of the maritime cranes division declined worldwide. The global shipbuilding crisis persisted in 2016. The continuing low price of oil also had an adverse impact, particularly on the offshore cranes segment. For these reasons, business was sluggish. Following a slight decline in the previous year, turnover and demand in 2016 were significantly below 2015 levels.

The division recorded encouraging growth in Western Europe, where revenues in Germany, Italy and Turkey, in particular, rose strongly. Moderate growth was registered in Eastern Europe. However, these were not enough to offset the shortfalls in other regions. The revenues on the American continent, in the Near and Middle East, in Africa and in the Far East/Australia were on the whole significantly below last year's levels.

In the mobile harbour cranes product range, the division recorded a slight fall in turnover. Encouraging growth in turnover in the Near and Middle East contrasted with stable sales in Africa and moderate falls in sales in America. and in the Far East/Australia. There was a significant decline in sales in Western and Eastern Europe. Nonetheless, the division was able to maintain its lead in the global market.

In the ship-to-shore container cranes market segment, turnover also fell by comparison with the previous year, but the division was able to maintain its very strong position on the global market in this segment as well. Sales growth was pleasing in Poland and in Germany, where, for example, a major new customer was acquired in Bremerhaven.



In 2016, the sales figures for offshore cranes were less than satisfactory. In the light of consistently low oil and gas prices, demand for products in this segment was down. In the ship cranes segment, the business year was a satisfactory one for Liebherr despite difficult global market conditions, but demand here was also weak.

Last year, the division has once again proven its powers of innovation and successfully launched the LRS 545 reachstacker onto the market. The first unit was dispatched in January to the port in the Italian city of Ravenna.

In June, Liebherr presented a new system for its maritime products at the TOC Europe trade fair: LiDAT smartApp. Customers can use this system to analyse the process and performance data of their equipment in real time. This makes it possible to identify bottlenecks quickly and to make more efficient use of handling equipment.

2016 also saw a series of landmark deliveries. At the beginning of the year, the division dispatched its 100<sup>th</sup> mobile harbour crane to India. In the middle of the year, two LHM 800 cranes - the world's largest mobile harbour crane - were shipped from their German production site in Rostock to the port in the Uruguayan capital, Montevideo - a journey of around 13,000 kilometres. In addition, an automated ship-to-shore container crane went into service last year in the port of Rotterdam in the Netherlands.

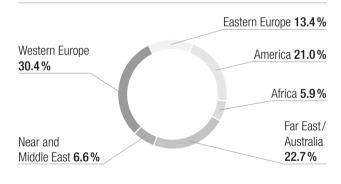
A major contract in Turkmenistan was successfully concluded last year with a Turkish contractor. Most of the equipment, including 18 mobile harbour cranes and portal cranes, 14 gantry cranes and two ship-to-shore container cranes, will be taken into use from 2017 in the port of Turkmenbashi, which is located on the Caspian Sea.

Various models from the offshore cranes product line underwent a technical facelift. This also included new drives. In addition, Liebherr developed a new simulator for ship crane customers, making it possible to offer even more interactive training opportunities.

In 2016, major investments were made at Liebherr's sites in Killarney in Ireland and in Rostock in Germany. 2016 also saw substantial organisational changes within the division. From the start of the year, design, sales and customer service for mobile harbour cranes, ship cranes and offshore cranes were all located together at the Rostock site. In conjunction with Rostock's direct access to the sea, this combining of resources is designed to facilitate the further growth and strengthening of the division's international market position.

Due to continued low raw material prices and the absence of any substantial increase in global trade, it is anticipated that in 2017, potential customers in the maritime sector will be reluctant to invest. For this reason, a slight decline in turnover is expected in the maritime cranes segment.

#### Turnover by sales regions



Turnover m € - 15.4 %		Investments m €			Employees		
		- 9.1 %			+1.1%		
964	816	77	70		4,440	4,488	
2015	2016	2015	2016		2015	2016	



## Aerospace and Transportation Systems

Following a strong performance in the previous year, the aerospace and transportation systems division once again increased its sales revenue. In 2016, this stood at €1,280 million – up by €60 million or 4.9 %.

The growth trajectory of the international aviation industry continued in 2016, albeit at a lower rate than anticipated. Asia stood out as a particularly fast-growing market for international air transportation. The global rail industry followed a path of moderate growth.

During the reporting year, Liebherr celebrated a number of milestones in the equipping of the new Boeing 777X wide-body jet airliner. The first prototypes for the folding wing tip system and the actuation system for the leading and trailing edges of the wings were successfully delivered to Boeing.

For the second generation of the E-Jet family from the Brazilian aircraft manufacturer Embraer, Liebherr develops and produces the fly-by-wire high-lift system –

including integrated controllers and software – as well as the complete air management system. In the reporting year, the division presented all the relevant certification and test results required for flight approval. The Embraer 190-E2 made a successful maiden flight in May 2016.

In general, the division benefited from the long-term nature of aircraft manufacturers' production planning, particularly in the area of air management systems, where last year Liebherr was once again among the world's top three manufacturers and succeeded in winning a number of new orders. Bombardier's Global 7000, for which the division supplied the air management system, had its maiden flight in 2016. In June, a new electrical air conditioning system from Liebherr was successfully tested on the maiden flight of the Clean Sky/Airbus Flight Lab.



At the end of September, the first main landing gear systems assembled in China for the ARJ21 were officially handed over to the customer, COMAC. The assembly of the landing gear systems was carried out under a joint venture with the Chinese company AVIC LAMC.

In the power gearbox product segment, the first gearbox components for the UltraFan™, a new generation of engines from Rolls-Royce, were delivered. The first tests started in December 2016 on Rolls-Royce's new test rig. Back in 2015, Liebherr and Rolls-Royce launched a joint venture with the aim of developing the capability and capacity to produce this power gearbox. This collaboration marked Liebherr's entry into a new segment of the aviation industry.

During the reporting year, the division received a variety of different orders in the area of transportation systems. By the middle of 2017, Liebherr will have equipped a total of 33 DT5 underground trains from Bombardier Transportation with air conditioning units and heating systems. The trains will operate in Hamburg (Germany) and will be the first vehicles in Hamburger Hochbahn AG's fleet to have air-conditioned passenger compartments.

In spring 2016, the division was awarded a contract to manufacture 215 units of hydraulic springs for a new generation of trams. These components will be used in new trams in San Francisco (USA).

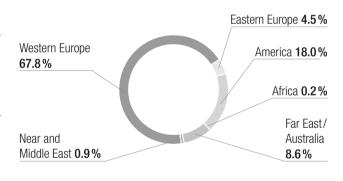
Another contract in the service area was signed with Deutsche Bahn AG. This includes supplying CO<sub>2</sub> sensor kits for installation in double-decker trains. The sensors are intended to measure the CO<sub>2</sub> levels inside the trains and regulate the supply of fresh air accordingly. Besides an air-cycle air-conditioning system was installed in one of Deutsche Bahn's ICE 3 trains for testing purposes. This new-generation air-conditioning system does not require a conventional refrigerant, using only the surrounding air as the cooling medium. The testing will be completed in spring 2018.

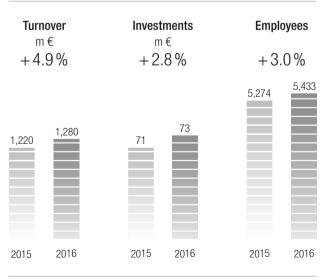
The division's research and development activities focussed on new production processes. There was a particular emphasis on 3D printing. Both basic research and specific application studies were conducted in this area. Related trials on individual components took place at the end of 2016. In addition, the division worked on other new production technologies.

At the Toulouse site in France, Liebherr invested in the modernisation of production plants and the procurement of various items of new equipment. At its site in Saline, in the US state of Michigan, the division opened a new facility and simultaneously expanded its activities in creating new capacity for repairing heat exchangers. The customer service centre in the Chinese city of Shanghai was also enlarged and now provides additional services in the areas of maintenance, repair and overhaul.

The division anticipates a further increase in turnover in 2017. A major contributor to this will be the growing demand for fuel-efficient aircraft. Liebherr is also forecasting growth in the area of global rail transportation.

#### Turnover by sales regions







# Machine Tools and Automation Systems

The machine tools and automation systems division recorded a fall in turnover in the last business year. Sales revenues were €23 million or 9.5% below last year's level.

Total turnover for the division was €219 million.

Orders received by the German machine tools industry showed an upward trend in 2016. According to data from the German Machine Tool Builders' Association, orders were up by 7%. The positive trend was mainly attributable to an increase in incoming orders from Asia, Europe and America.

Liebherr's turnover was down in the last business year in the machine tools segment. Automation systems and tools business, on the other hand, exhibited positive growth.

The division succeeded in increasing its turnover in the important sales region of Western Europe. In Germany and the UK, for example, encouraging levels of sales revenue were generated. However, in the equally important Far East/Australia region, the division suffered a decline in overall sales – although in China the sales figures for machine tools showed a positive trend. The last business year was also an unsatisfactory one in Eastern Europe and in the USA, where overall turnover was likewise noticeably lower, despite encouraging growth in the automation systems segment.



The highest numbers of machine orders recorded by the division last year came from Germany, followed by China and South Korea, where the division is the market leader in the segment of gear technology machines. In 2016, Liebherr's share of the global market for gear technology machines stood at 19%. In the automation systems segment, Liebherr was one of the three leading suppliers of loading gantry solutions last year.

In 2016, the division once again presented a number of product innovations. One new introduction was the LS 180 F gear-shaping machine with its flexibly adjustable vertical cutting distance. Another was the LGG 400 M gear-generating and profile-grinding machine, which allows manual loading and enables the processing of gears of up to 400 mm in diameter.

The division has enjoyed particular success in the area of chamfering and deburring. The ChamferCut process, which Liebherr offers either integrated within a milling machine or as a standalone machine, can be used to remove the burr present on the individual teeth of the gear cleanly while maintaining an equal chamfer width. Another important milestone in 2016 was the successful introduction of new grinding heads on the LGG machine. Features of these include the innovative integration of balancing technology, for which a patent has been applied.

A substantial proportion of the past year's development work was devoted to a new gear skiving machine, which will be presented in 2017 under the name Skiving<sup>3</sup>. Advances were also made in 2016 in the development of bin picking – the automated reaching of a robot arm into a deep industrial bin filled with randomly piled workpieces. The use of a high-resolution laser for the 3D detection of components makes it possible to identify the contours and locations of workpieces even more precisely.

In 2016, the division received the John Deere Award from the tractor and agricultural machinery manufacturer John Deere. The company presents this award to partners which it sees as excelling in terms of product quality, technical support, delivery reliability, customer focus and cost management.

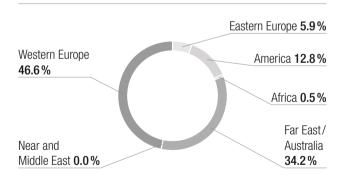
At the beginning of the year, the division opened a new office in Japan. Local presence and proximity to the customer are the foundations of the division's sales success. both in the Japanese market and worldwide. Japan is one of the most important markets for machine tools, and it is there that strategic decisions on global investments by Japanese firms are made.

A joint venture was established in South Korea with the division's long-standing representative DKTEC Industry Corporation to set up a service to secure the division's prominent position on the local market and to support close cooperation with local automotive manufacturers and their supplier structures.

Last year, the division invested in new high-precision processing centres, which came on stream in 2016 and are making an important contribution toward ensuring high product quality. Investments were also made in the expansion and modernisation of the German production site in Kempten.

The division anticipates a slight rise in turnover in the coming business year.

#### Turnover by sales regions



Turnover m €		<b>Invest</b> i m		Employees	
	5%	+0.		+3.6%	
242	219	9	9	1,353	2
2015	2016	2015	2016	2015 2016	j



Over the past year, in a highly competitive market, the domestic appliances division achieved sales revenues of €898 million. This result represented a moderate decrease in turnover of €22 million or 2.4%.

There was a slight upward trend in the global market for refrigerators and freezers, in both the consumer and commercial segments. Similar conditions were observed across Europe. There, almost all markets saw a growth in the sales figures. In Russia conditions generally have stabilised, too.

Western and Eastern Europe remained the two most important sales regions of the domestic appliances division, although trends in the two differed. In Western Europe, sales were slightly below the previous year's level. In the strongest market, Germany, revenues fell slightly. France, Belgium, Spain and the UK, however, recorded growth. In Eastern Europe, the year was a very positive one all round. This was due in no small measure to the encouraging recovery in the Russian market.

In 2016, demand for Liebherr consumer appliances in the middle and lower price brackets increased, while sales figures for built-in appliances declined. In the commercial segment, demand for appliances for the frozen food industry rose significantly.

In the spring of 2016, Liebherr launched its BluPerformance line, a completely new range of refrigerators and freezers. In this way, the division continued to focus on the issue of energy efficiency by expanding its product range of energy-efficient appliances and making it one of the largest in the whole sector. BluPerformance stands for extremely environmentally-friendly and sustainable technology, with the innovative design of the appliances offering further advantages. Customers benefit from a particularly energy-saving and efficient appliance, without having to forgot attractive design.



The range of wine coolers has been expanded to include three new built-in appliances. The appliances are fitted with a tap-to-open mechanism so as not to spoil the aesthetics of the glass door.

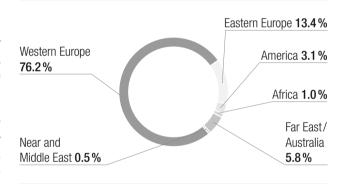
Last year, the division's research and development department pressed ahead with work on digitalisation and networking, in particular. At IFA 2016 in Berlin (Germany), the leading trade show for consumer electronics and home appliances, Liebherr focussed on these areas at its own exhibition stand, presenting an "intelligent fridge". All appliances from the BluPerformance range will in future be controllable with the new-generation Smart-DeviceBox via an app. The food placed in the fridge for storage is recorded by modularly integrable cameras, recognised by technology developed by Microsoft and listed in an inventory. Customers can then check this against a database of recipes and call up recipe suggestions for dishes that can be made using the food in the fridge. With a voice module, customers can also obtain useful information about the food such as its shelf life, the vitamins and minerals it contains, shopping lists or recipe suggestions.

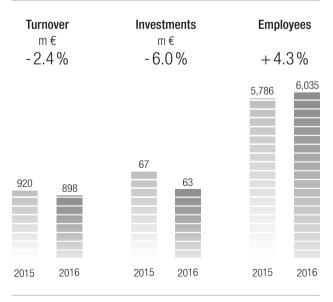
The division has a partner working with it on this development in the shape of the company Microsoft. Together with Microsoft, Liebherr has also been working on a refrigerator that is intended to offer customers from the pharmaceutical industry and the medical field new opportunities for remote monitoring and predictive maintenance. The pharmaceutical industry requires extremely reliable refrigeration technology for the storage of highly sensitive substances, such as drug samples, vaccines and insulin. Intelligent networking solutions will open up new opportunities for professional users in terms of the monitoring and maintenance of commercial refrigeration and freezing appliances. A prototype of this kind of fridge was premiered at the Hannover Messe 2016 – the world's leading industrial show.

In the USA, three of Liebherr's fridge-freezers received the Energy Star Most Efficient 2016 label, which is awarded jointly by the US Environmental Protection Agency and the US Department of Energy to electrical appliances that deliver cutting-edge energy efficiency. In addition, a total of 16 refrigerators and freezers from the new BluPerformance generation received a Red Dot award.

Over the past year, the division invested principally in innovative technologies for refrigeration appliances and in the expansion of a number of production sites. 2017 is expected to bring a slight increase in sales turnover. Growth is anticipated in particular through the introduction of a new line of combined fridge-freezers, as well as the upgrading of built-in appliances to include new features that will bring enhanced consumer benefits.

#### Turnover by sales regions







The components division develops and manufactures products and solutions for use in Liebherr equipment as well as for external customers. During the reporting period, the division recorded a number of sales successes. Due largely to the continuing growth of the wind industry, 2016 was a particularly good year for the product areas of drives and large-diameter bearings.

There was a significant increase in the number of components produced for the wind industry. This was due primarily to the high demand for large-diameter bearings. A large number of orders were also received from the maritime industry. For example, this reporting period Liebherr produced for the first time a segmented bearing with a diameter of 10,000 mm for an external customer, thereby extending its product range. The delivery of a thrust bearing for a tunnel boring machine opened up a further segment of the US market.

At Bauma 2016, the division presented two new diesel engine series in the highest performance class (from 700 kW to 4.5 MW), the D96XX and D98XX series. This marked

another milestone in engine development at Liebherr. As well as the basic engines, Liebherr also developed the associated common rail injection systems and the engine control units. Another product innovation presented by the division at Bauma 2016 was its gas-powered G964 engine. This was designed for use in agriculture and forestry as well as in structural and industrial engineering and transportation technology.

In October 2016, the division presented the results of a global cooperative venture in the genset engine field with Kohler/SDMO, a US-based manufacturer of generators. As part of this collaboration, a completely new G-Drive engine range was developed for the new generation of



Kohler diesel generators. These engines offer a particularly high and reliable level of performance together with a modular structure for optimal ease of maintenance. Starting in 2017, they will be manufactured at Liebherr's sites in Bulle in Switzerland and in Colmar in France.

In the rope winch product area, too, the division reported the successful completion of a number of projects with external customers. For example, Liebherr supplied the gear ring rope winches and suitable electric engines for a rail-mounted crane with one of the world's highest load capacities. Liebherr developed a customised rope winch system for one of the world's leading manufacturers of lime kilns. In this particular case, a modular system enabled the simple configuration and flexible positioning of the required winches in a variety of applications.

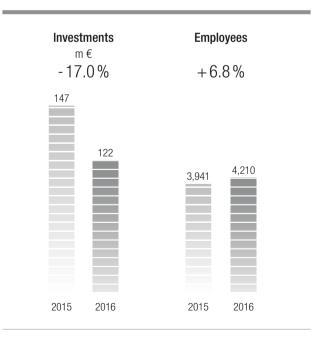
Hydraulics projects constituted a further focal area for the company in this reporting period. The division developed a new series of hydraulic cylinders for heavy-duty use at up to 350 bar. These differential cylinders are used in excavators and in industrial applications. Another new development is LiView, which is a new position-recording system for hydraulic cylinders developed specifically for use in construction machinery applications requiring very high levels of precision and availability.

Another world's first was a high-strength fibre rope for crane operation. This was developed by Liebherr jointly with an Austrian rope manufacturer. Compared with steel ropes, the fibre rope offers substantial advantages when used in tower cranes, mobile cranes, crawler cranes and maritime cranes. It is significantly lighter and more durable. It is significantly lighter and more durable and can thus be used to strengthen a crane's supporting structure, making it possible to further increase the load capacity.

The strong growth of the wind industry in Brazil prompted Liebherr to invest in new production facilities for large-diameter bearings at its main factory there, in Guaratinguetá. With this additional production line providing 6,000 m<sup>2</sup> of additional factory floorspace, Liebherr has expanded its international production network for components and secured close production and distribution relationships with leading manufacturers in the wind industry. The first large-diameter bearings for use in rotor blade and yaw adjustment were delivered to local customers in summer 2016.

The construction of a new factory near Kirchdorf an der Iller (Germany), scheduled for completion by the end of 2017, will provide state-of-the-art production plant and assembly equipment to expand Liebherr's hydraulic cylinder production facilities. This will enable the division to meet future requirements for the development and production of hydraulic cylinders. With production starting at the new factory in Deggendorf in Bavaria in July 2016, Liebherr has expanded key competencies in the production of micro-precision parts and injectors for common rail systems, facilitating further growth in this area.

The components division is expected to continue to expand in 2017, particularly in the wind industry. Liebherr also anticipates positive growth in other areas, such as gas engines and hydraulic cylinders. Next year, the proportion of turnover from external customers will increase significantly.



## Group Companies

## The Group

## Summary of Group Companies

### Western Europe

Austria

Hotel Löwen Schruns GmbH

Schruns

Interalpen-Hotel Tyrol GmbH

Telfs

Liebherr-Hausgeräte Lienz GmbH

Lienz

Liebherr-International Austria GmbH

Bischofshofen

Liebherr-MCCtec GmbH

Nenzing

Liebherr-Transportation Systems GmbH & Co KG

Korneuburg

Liebherr-Werk Bischofshofen GmbH

Bischofshofen

Liebherr-Werk Nenzing GmbH

Nenzing

Liebherr-Werk Telfs GmbH

Telfs Denmark

Liebherr-Danmark ApS

Hedensted

Finland

Liebherr-Finland Ov Ab

Helsinki France

Liebherr-Aerospace Toulouse SAS

Toulouse

Liebherr-Aerospace & Transportation SAS

Toulouse

Liebherr-Components Colmar SAS

Colmar

Liebherr-France SAS

Colmar

Liebherr-Grues à Tour SAS

Niederhergheim

Liebherr-Grues Mobiles SAS

Niederhergheim

Liebherr-Location France SAS

Niederhergheim

Liebherr-Malaxage & Techniques SAS

Niederhergheim

Liebherr-Mining Equipment Colmar SAS

Colmar

Liebherr-Mining Equipment SAS

Colmar

Liebherr-Nenzing Equipements SAS

Niederhergheim

Germany

Liebherr-Aerospace Lindenberg GmbH

Lindenberg

Liebherr-Baumaschinen Vertriebs- und Service GmbH

Kirchdorf an der Iller

Liebherr-Betonpumpen GmbH

Neu-Ulm

Liebherr-Components Biberach GmbH

Biberach an der Riss

Liebherr-Components Deggendorf GmbH

Deggendorf

Liebherr-Components Kirchdorf GmbH

Kirchdorf an der Iller

Liebherr-Elektronik GmbH

Lindau

Liebherr-EMtec GmbH Kirchdorf an der Iller

Liebherr-Ettlingen GmbH

Ettlingen

Liebherr-Hausgeräte GmbH

Ochsenhausen

Liebherr-Hausgeräte Ochsenhausen GmbH

Ochsenhausen

Liebherr-Hydraulikbagger GmbH

Kirchdorf an der Iller

Liebherr-International Deutschland GmbH

Biberach an der Riss

Liebherr-IT Services GmbH

Kirchdorf an der Iller

Liebherr-Logistics GmbH

Kirchdorf an der Iller

Liebherr-MCCtec Rostock GmbH

Rostock

Liebherr-Mietpartner GmbH

Ludwigshafen am Rhein

Liebherr-Mischtechnik GmbH

Bad Schussenried

Liebherr-Nenzing Service GmbH

Hamburg

Liebherr-Purchasing Services GmbH

Biberach an der Riss

Liebherr-Transportation Systems

Mannheim GmbH

Mannheim

Liebherr-Verzahntechnik GmbH

Kempten

Liebherr-Werk Biberach GmbH

Biberach an der Riss

Liebherr-Werk Ehingen GmbH

Ehingen/Donau

Liebherr-Wohnungsbau GmbH

Kirchdorf an der Iller

Ireland

Killarney Hotels Ltd.

Killarney

Liebherr-Construction Equipment Ireland Limited

Rathcoole

Liebherr Container Cranes Ltd.

Killarney

Italy

Liebherr-EMtec Italia S.p.A.

Lallio

Liebherr-Italia S.p.A.

Monfalcone

Liebherr-Utensili s.r.l.

Collegno Netherlands

Liebherr-Maritime Benelux B.V.

Amersfoort

Liebherr-Nederland B.V.

Amersfoort Portugal

Liebherr-Máquinas de Construção Portugal, Lda.

Benavente

Spain

Liebherr Iberica, S.L. Azuqueca de Henares

Liebherr Industrias Metálicas, S.A.

Pamplona

Sweden

Liebherr-Sverige AB

Västerås Switzerland

Liebherr-Baumaschinen AG

Reiden

Liebherr-Components AG

Nussbaumen

Liebherr-Component Technologies AG

Liebherr-Export AG

Nussbaumen

Liebherr-Hotels AG

Bulle

Liebherr-Industrieanlagen AG

Bulle

Liebherr-International AG

Bulle

Liebherr-Intertrading AG

Bulle

Liebherr Machines Bulle SA

Bulle

Liebherr-Service AG

Nussbaumen

Turkey

Liebherr Makine Ticaret Servis Limited Şirketi

Istanbul United Kingdom

Liebherr-Great Britain Ltd.

Biggleswade

Liebherr-Rental Ltd.

Biggleswade

Liebherr Sunderland Works Ltd.

Sunderland

## Eastern Europe

Azerbaijan

Liebherr-Azeri LLC

Baku

Bulgaria

Liebherr-Hausgeräte Marica EOOD

Radinovo

Liebherr-Transportation Systems Marica EOOD

Radinovo

Czechia

Liebherr-Stavební stroje CZ s.r.o.

Brno

Hungary

Liebherr-Építöipari Gépek Magyarország Kft.

Györ

Kazakhstan

Liebherr Kasachstan TOO

Almaty

Poland

Liebherr-Polska sp. z o.o.

Ruda Śląska

Romania

Liebherr-Romania S.R.L.

Bucharest

Russia

Liebherr-Aerospace Nizhny Novgorod OOO

Nizhny Novgorod (75.1%)

Liebherr-Nizhny Novgorod OOO

Nizhny Novgorod

Liebherr-Russland 000

Moscow

#### Near and Middle Fast

Saudi Arabia

Saudi Liebherr Company Ltd.

Jeddah (60%)

United Arab Emirates

Liebherr Middle East FZE

Dubai

#### America

Argentina

Liebherr-Argentina S.A.

**Buenos Aires** 

Brazil

Liebherr Aerospace Brasil Ltda.

Guaratinquetá

Liebherr Brasil Ltda.

Guaratinguetá

Canada

Liebherr-Canada Ltd.

Burlington, ON

Chile

Liebherr Chile SpA

Santiago de Chile

Colombia

Liebherr Colombia SAS

Bogotá D.C.

Mexico

Liebherr Mexico, S. de R.L. de C.V.

Mexico City

Liebherr Monterrey, S. de R.L. de C.V.

Monterrey

Liebherr Servicios Monterrey, S. de R.L. de C.V.

Monterrey

Peru

Liebherr Distribuidora Peru S.A.C.

Lima

USA

HL Farm, LLC

Newport News, VA

Liebherr Aerospace Saline, Inc.

Saline, MI

Liebherr Automation Systems Co.

Saline, MI

Liebherr Gear Technology, Inc.

Saline, MI

Liebherr Mining & Construction Equipment, Inc.

Newport News, VA

Liebherr Mining Equipment Newport News Co.

Newport News, VA Liebherr USA, Co. Newport News, VA

#### Africa

Algeria

Liebherr Algérie, EURL

Algier

Ghana

Liebherr-Ghana Ltd.

Accra

Morocco

Liebherr-Maroc SARL

Casablanca

Mozambique

Liebherr-Mozambique, Lda.

Maputo

Nigeria

Liebherr-Nigeria Ltd.

Abuja (90%)

South Africa

Liebherr-Africa (Pty) Ltd

Springs

Zambia

Liebherr Zambia Ltd.

Lusaka

#### Far Fast/Australia

Australia

Liebherr-Australia Pty. Ltd.

Adelaide

India

Liebherr Appliances India Private Limited

Liebherr CMCtec India Private Limited

Pune

Liebherr India Private Limited

Liebherr Machine Tools India Private Limited

Bangalore (60%)

Indonesia

PT. Liebherr Indonesia Perkasa

Balikpapan

Japan

Liebherr Japan Co., Ltd.

Yokohama

Malaysia

Liebherr Appliances Kluang SDN. BHD.

Liebherr Sales Kluang SDN. BHD.

Kluang

New Caledonia

Liebherr-Nouvelle-Calédonie SAS

Nouméa

PR China

Liebherr (HKG) Limited

Hong Kong SAR

Liebherr LAMC Aviation (Changsha) Co., Ltd.

Changsha (50%)

Liebherr Machinery (Dalian) Co., Ltd.

Dalian

Liebherr Machinery (Xuzhou) Co., Ltd.

Xuzhou

Liebherr Machinery Service (Shanghai) Co., Ltd.

Shanghai

Liebherr Purchasing (Dalian) Co., Ltd.

Dalian

Xuzhou Liebherr Concrete Machinery Co., Ltd.

Xuzhou (50%)

Zhejiang Liebherr Zhongche

Transportation Systems Co., Ltd.

Zhuji (70%)

Singapore

Liebherr-Singapore Pte Ltd

Singapore

South Korea

Liebherr Machine Tools and Automation Korea Ltd.

Seoul (70%)

Liebherr Mobile Cranes Korea Ltd.

Seoul

Thailand

Liebherr (Thailand) Co., Ltd.

Rayong

## Consolidated Financial Statements

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## Consolidated Balance Sheet

Notes	Dec. 31, 2016	%	Dec. 31, 2015	%
3.1	34	0.3	53	0.4
3.2	3,654	28.8	3,512	28.6
3.5	14	0.1	13	0.1
3.6	125	1.0	96	0.8
8	262	2.1	239	1.9
	4,089	32.3	3,913	31.8
4.1	3,530	27.9	3,459	28.3
4.2/4.3	1,958	15.5	1,910	15.6
8	91	0.7	74	0.6
4.5	1,267	10.0	1,242	10.1
4.6	1,726	13.6	1,664	13.6
	8,572	67.7	8,349	68.2
	12,661	100.0	12,262	100.0
	62	0.5	62	0.5
2.3/5	6,973	55.1	6,684	54.5
	7,035	55.6	6,746	55.0
	16	0.1	15	0.1
	7,051	55.7	6,761	55.1
6	1,800	14.2	1,357	
9	713	5.6	609	5.0
8	48	0.4	55	0.4
10	38	0.3	48	0.4
7	142	1.1	157	1.3
	2,741	21.6	2,226	18.2
6	680	5.4	1.021	 8.3
	270	2.1	353	2.9
8	61	0.5	49	0.4
10	533	4.2	556	4.5
7	1,325	10.5	1,296	10.6
	2,869	22.7	3,275	26.7
	12,661	100.0	12,262	100.0
	3.1 3.2 3.5 3.6 8 4.1 4.2/4.3 8 4.5 4.6 2.3/5	3.1 34 3.2 3,654 3.5 14 3.6 125 8 262 4,089 4.1 3,530 4.2/4.3 1,958 8 91 4.5 1,267 4.6 1,726 8,572 12,661 62 2.3/5 6,973 7,035 16 7,051 6 1,800 9 713 8 48 10 38 7 142 2,741 6 680 270 8 61 10 533 7 1,325 2,869	3.1 34 0.3 3.2 3,654 28.8 3.5 14 0.1 3.6 125 1.0 8 262 2.1 4,089 32.3 4.1 3,530 27.9 4.2/4.3 1,958 15.5 8 91 0.7 4.5 1,267 10.0 4.6 1,726 13.6 8,572 67.7 12,661 100.0  12,661 100.0  62 0.5 2,3/5 6,973 55.1 7,035 55.6  16 0.1 7,051 55.7  6 1,800 14.2 9 713 5.6 8 48 0.4 10 38 0.3 7 142 1.1 2,741 21.6 6 680 5.4 270 2.1 8 61 0.5 10 533 4.2 7 1,325 10.5 2,869 22.7	3.1       34       0.3       53         3.2       3,654       28.8       3,512         3.5       14       0.1       13         3.6       125       1.0       96         8       262       2.1       239         4,089       32.3       3,913         4.1       3,530       27.9       3,459         4.2/4.3       1,958       15.5       1,910         8       91       0.7       74         4.5       1,267       10.0       1,242         4.6       1,726       13.6       1,664         8,572       67.7       8,349         12,661       100.0       12,262         62       0.5       62         2.3/5       6,973       55.1       6,684         7,035       55.6       6,746         16       0.1       15         7,051       55.7       6,761         6       1,800       14.2       1,357         9       713       5.6       609         8       48       0.4       55         9       713       5.6       609         8       <

## Consolidated Income Statement

inm€	Notes	Dec. 31, 2016	%	Dec. 31, 2015	%
Sales revenue	11	9,009	93.1	9,237	94.7
Increase or decrease of work in progress and finished goods		62	0.6	- 11	-0.1
Other own work capitalised		418	4.3	346	3.6
Other operating income		197	2.0	173	1.8
Operating income		9,686	100.0	9,745	100.0
Cost of materials		- 4,914	- 50.7	- 4,871	- 50.0
Personnel expenses		- 2,413	- 24.9	-2,331	- 23.9
Depreciation on non-current assets	3	-466	-4.8	- 448	-4.6
Other operating expenses		- 1,484	- 15.3	- 1,562	- 16.0
Operating expenses		-9,277	-95.7	-9,212	-94.5
Operating result		409	4.3	533	5.5
Finance income		548	5.6	992	10.2
Finance cost		-485	-5.0	- 1,092	- 11.2
At equity result		1	0.0	1	0.0
Finance result		64	0.6	-99	-1.0
Result before tax		473	4.9	434	4.5
Taxes on income	8	- 175	- 1.8	- 140	-1.4
Result after tax		298	3.1	294	3.1
of which shareholders of Liebherr-International AG		297	3.1	290	3.1
of which non-controlling interests		1	0.0	4	0.0

## Consolidated Statement of Comprehensive Income

in m €	Dec. 31, 2016	Dec. 31, 2015
Result after tax	298	294
Post-employment benefits	- 59	1
Deferred tax	15	1
Items not recycled to profit or loss	-44	2
Foreign exchange translation differences	59	3
Changes of fair value in cash flow hedges	6	- 56
Deferred tax	-5	21
Items recycled to profit or loss	60	-32
Other comprehensive income	16	-30
Comprehensive income	314	264
of which shareholders of Liebherr-International AG	312	259
of which non-controlling interests	2	5

## Consolidated Statement of Changes in Equity

in m €	Subscribed capital	Value fluctuations on financial instruments	Foreign exchange translation differences	Other revenue reserve	Equity of Liebherr-Inter- national AG shareholders	Non- controlling interests	Group equity
Dec. 31, 2014	62	-16	55	6,410	6,511	14	6,525
	02	- 10	55		· ·		
Result after tax				290	290	4	294
Other comprehensive income		-34	1	2	-31	1	- 30
Comprehensive income		-34	1	292	259	5	264
Dividends				- 24	- 24	-4	- 28
Dec. 31, 2015	62	-50	56	6,678	6,746	15	6,761
Result after tax				297	297	1	298
Other comprehensive income		1	58	- 44	15	1	16
Comprehensive income		1	58	253	312	2	314
Dividends				-23	- 23	-1	- 24
Dec. 31, 2016	62	-49	114	6,908	7,035	16	7,051

## Consolidated Cash Flow Statement

inm€	Dec. 31, 2016	Dec. 31, 2015
Result after tax	298	294
Depreciation on non-current assets	466	448
Value fluctuations marketable securities (current assets)	- 18	-9
Gain/Loss on disposal of non-current assets	17	1
Change of provisions and post-employment benefits	70	24
Other non-liquid expenses/income	- 114	- 118
Change of stock	- 23	111
Change of receivables and other current assets	- 60	-88
Change of other liabilities	- 75	78
Change of rental fleet	- 161	- 127
Net cash flow from operating activities	400	614
Payment for investments in intangible assets	- 14	 - 18
Payment for investments in tangible assets	- 395	-450
Payment for investments in financial assets	0	-2
Payment for investments in marketable securities in current assets	-80	- 108
Proceeds from sales of intangible assets	3	
Proceeds from sales of tangible assets	12	
Proceeds from sales of marketable securities (current assets)	70	91
Other proceeds from investing activities	0	-1
Net cash flow from investing activities	-404	-468
Dividends paid, other distributions and equity capital repaid	-24	- 28
Proceeds from current or non-current financial liabilities	757	476
Repayment of current or non-current financial liabilities	- 667	-385
Net cash flow from financing activities	66	63
Net decrease/increase in liquid funds	62	209
Foreign exchange translation difference on liquid funds at beginning of period and on cash flows	0	22
Liquid funds at beginning of period	1,664	1,433
Liquid funds at end of period	1,726	1,664
Income tax paid and reimbursed	- 197	 - 195
Interest paid/received	-3	-9
Investment in leased assets	1	0

## Notes to the Consolidated Financial Statements

## 1 Corporate information and business activity

The company was founded in 1949 by Dr. Hans Liebherr. Currently, the family business has more than 42,000 employees working in more than 130 companies around the world. The share capital of Liebherr-International AG, Bulle, Switzerland, amounting to 62 million € (100 million CHF) is held exclusively by the Liebherr family.

For the construction sector and the mining industry, the Group develops, produces and distributes construction cranes, mobile cranes, crawler cranes, hydraulic excavators, material handlers, duty cycle crawler cranes, wheel loaders, crawler loaders and tractors, pipelayers, telescopic handlers, mining trucks as well as concrete mixing plants, concrete pumps and truck mixers worldwide. In addition, Liebherr develops, produces and distributes ship cranes, floating cranes, offshore cranes, container and mobile harbour cranes for the cargo handling industry worldwide. The activities range across machine tools, automation systems and engineering projects in the machine and plant construction industry, and landing gears, flight control and actuation systems as well as air management systems in the aerospace industry. Furthermore, Liebherr manufactures equipment for rail vehicles in the transportation technology area. For household and commercial refrigeration and freezing, Liebherr produces a variety of products with high benefits for the end users. In the component area the Group specialises in the development, design and manufacture of products in the mechanical, hydraulic and electric drive and control categories. Moreover, Liebherr operates six hotels in Ireland, Austria and Germany.

## 2 Accounting policies

#### 2.1 General principles

The Group's consolidated financial statements for the year ended December 31, 2016 are prepared following the standards of the International Accounting Standards Board (IASB) in London.

They are in accordance with all International Financial Reporting Standards (IFRS) and interpretations by the International Financial Reporting Interpretations Committee (IFRIC) applicable for annual periods beginning on or after January 1, 2016.

The accounting and reporting principles applied to these consolidated financial statements comply with Swiss Corporation Law as well as with IFRS. The prior year values are prepared in accordance with the same principles, insofar as newly applicable standards also apply to prior periods.

The annual financial statements are prepared according to the historical cost principle with transactions being recognised and reported in the period when they occur. Any divergence from this principle is specifically mentioned. The reporting period of Liebherr-International AG and its subsidiaries ends on December 31. The functional currency is the Euro, as it is the predominant currency in the Group.

To improve comprehensibility and relevance, several details required by IFRS are summarised in the notes. These details are disclosed correctly in the audited group consolidated financial statements.

#### 2.2 Basis of consolidation

The consolidated financial statements are prepared based on the individual financial statements of Liebherr-International AG and its subsidiaries, which are audited by independent auditors and prepared using consistent accounting policies. The consolidated financial statements include the annual financial statements of Liebherr-International AG as a parent company and of all subsidiaries in which Liebherr-International AG directly or indirectly holds a majority of voting rights, or otherwise controls according to IFRS 10.

The following companies have newly been established during the financial year 2016 by means of start-up, acquisition or restructuring:

- Liebherr USA, Co., Newport News, USA,
- Liebherr Distribuidora Peru S.A.C., Lima, Peru,
- Liebherr Machine Tools and Automation Korea Limited, Seoul, South Korea.

Acquired companies are fully consolidated from the time when the Group has control according to IFRS 10. They are accounted for using the purchase method under which identifiable assets, liabilities and contingent liabilities are measured at fair value on the date of acquisition. Any remaining residual value is recorded as goodwill in the respective functional currency of the company acquired. Any goodwill is not systematically amortised, but is reviewed for impairment at least on an annual basis.

Sold companies are deconsolidated at the time the Group ceases to have control and any gain or loss is recognised in the income statement.

Investments for which the Group does not exercise control but a significant influence are classified as associates or joint ventures and accounted for using the equity method according to IFRS 11. The Group's share of net assets is presented in the balance sheet under shares joint ventures and associated companies and the share of profit of joint ventures and associates is shown in the income statement under at equity result.

The consolidated financial statements include investments in joint ventures and associate companies. Material investments are as follows:

- Fors AG, Studen, Switzerland,
- Somatel-Liebherr Spa, Ain Smara, Algeria,
- Aerospace Transmission Technologies GmbH, Friedrichshafen, Germany.

#### 2.3 Translation of foreign currency

Foreign currency transactions are converted at the spot rate as of the transaction date. Monetary assets and liabilities in foreign currency are translated at the balance sheet date exchange rate. All gains and losses are recognised in the income statement. Assets and liabilities in financial statements of subsidiaries are converted to euro using the balance sheet date exchange rate. For the translation of the income statement and the cash flow statement the average exchange rate of the annual period is used. Exchange rate differences arising from the conversion of the income statement of affiliated companies are recognised separately in the other comprehensive income until disposal.

For the most significant currencies, the following exchange rates have been applied:

				2016	2015		
			Year end rate in €	Average rate in €	Year end rate in €	Average rate in €	
Switzerland	CHF	1	0.9312	0.9173	0.9229	0.9370	
USA	USD	1	0.9487	0.9041	0.9185	0.9017	
Great Britain	GBP	1	1.1680	1.2246	1.3625	1.3781	
Australia	AUD	1	0.6851	0.6723	0.6713	0.6784	
Russia	RUB	1	0.0156	0.0136	0.0124	0.0149	

#### 2.4 Financial instruments

A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity. Purchases and sales of financial instruments are recognised using the trading date.

Financial assets and liabilities are recognised when the Liebherr Group becomes a party to the contractual obligations of the instrument. Financial assets are derecognised when the contractual rights to receive cash flows are fully transferred to a third party or they have expired. In cases the rights to receive cash flows are neither transferred nor retained, a derecognition is only relevant to the extent control has been transferred. If the Group retained control, the Group continues to recognise the instrument to the extent of its continuing involvement. A financial liability is not derecognised until the liability is extinguished, i. e. when the obligation specified in the contract is discharged or cancelled or expires.

The initial and subsequent measurement of the various financial instruments used by the Liebherr Group depends on the classification in accordance with IAS 39.

#### Financial instruments at fair value through profit or loss

This category includes financial assets and liabilities designated upon initial recognition at fair value through profit or loss and financial assets, inclusive of derivatives, held for trading. Derivatives designated as hedging instrument as defined by IAS 39 are excluded. All financial instruments in this category are measured at fair value with gains or losses arising from changes in fair value recognised in the income statement in the relevant period (finance income or finance cost). In general, the fair value of the financial instrument base on market prices (Level 1 Inputs and Level 2 Inputs of the fair value hierarchy). Valuation techniques (Level 3 Inputs) using non observable input parameters are not applied. There were no financial instruments whose fair values could not be determined with sufficient reliability.

#### Loans and receivables

This category represents loans granted by the Group and accounts receivable trade. Financial assets within this category are recognised at fair value plus transaction costs that are directly attributable to the acquisition or issue of the financial asset upon initial recognition and subsequently measured at amortised cost. At each balance sheet date or under certain circumstances (e.g. significant financial difficulties of the debtor), the carrying amount of the financial instruments in this category are assessed for any impairment. Any impairment losses, which are determined by comparing the carrying value of the instrument to the fair value, are recognised in the income statement. If there is objective substantial evidence in subsequent periods that the impairment of an asset is no longer applicable, the previously recorded impairment loss is to be reversed. However, the reversal of the impairment loss may not create a carrying value that exceeds what the carrying value would have been if normal amortisation charges had been considered (not considering the impairment).

#### Other financial liabilities

Other financial liabilities comprise all financial liabilities with the exception of derivatives. Financial liabilities are recognised initially at fair value including transaction costs. They are subsequently measured at amortised cost using the effective interest method. In addition to actual interest payments, finance costs include annual compound interest and pro rata transaction costs.

#### Financial guarantee contracts

A financial guarantee contract is a contract that requires the issuer to make specified payments to reimburse the holder for a loss. This loss incurs when a specified debtor fails to make payments in accordance with the original or modified terms of a debt instrument. In some cases, the creditworthiness of customers is guaranteed by the Liebherr Group to the financing party, i.e. a financial guarantee contract is issued in accordance with IAS 39.

#### 3 Non-current assets

#### 3.1 Intangible assets

Intangible assets acquired separately are measured initially at acquisition costs. Internally generated intangible assets from which the Group expects to receive a future benefit and which can be measured reliably are capitalised at their corresponding production costs. The production costs include all costs directly attributable to the production process and a proportionate share of production related overheads. Borrowing costs are not capitalised, as by definition intangible assets are not qualifying assets.

Development costs for new products are not capitalised, as the future economic benefit can only be demonstrated after a regulatory approval and a successful launch of the products in the market.

All intangible assets are amortised over the lower of their expected economic useful life or the contractual length using the straight-line method. Intangible assets with indefinite useful lives are not amortised but are tested for impairment annually.

The estimated useful lives of the major classes of intangible assets are as follows:

Concessions	3 years
Industrial property rights and similar rights	3 years
Licences	3 years
Software	3-5 years

#### 3.2 Tangible assets

Tangible assets are measured at costs less cumulative depreciation and cumulative impairment. As a depreciation method the straight-line method is used with a depreciation period corresponding to the useful life. Land is not depreciated on a systematic basis. Maintenance costs are capitalised when they extend the useful life or the production capacity of the asset. Other maintenance costs and repairs are recognised in the income statement as incurred.

The estimated useful lives of tangible assets are as follows:

Buildings	20 - 40 years
Machinery and equipment	5-21 years
Furniture	13 years
П	3-5 years
Vehicles	5 - 11 years

Any gain or loss arising from the disposal of an asset is included in other operating income or expenses. The disposal of rental machines is recognised as revenue. The reversal of the related remaining book value from the disposal is treated as cost of materials. Tangible assets are derecognised upon disposal or when no future economic benefit is expected from their use. Borrowing costs directly attributable to the purchase, construction or manufacturing of a qualified asset are capitalised during the period until the asset is brought into service and afterwards depreciated over the useful life of the asset. Other borrowing costs are treated as expenses.

## Development of tangible assets as at Dec. 31, 2016:

in m €	Land and buildings	Technical equip. and machinery	Other equip., factory and office equip.	Adv. paym., assets under construction	Total
Acquisition and production cost as at 1/1	2,771	2,350	1,296	277	6,694
Additions	58	404	117	158	737
Disposals	- 17	-313	- 59	-3	-392
Transfers	96	55	52	- 203	0
Foreign exchange differences	45	11	17	4	77
Acquisition and production cost as at 31/12	2,953	2,507	1,423	233	7,116
Accum. depreciation and impairment as at 1/1	949	1,368	865	0	3,182
Depreciation of the year	111	211	126	0	448
Accum. depreciation on disposals	- 16	- 130	-53	0	- 199
Impairment	0	5	0	0	5
Transfers	0	0	0	0	0
Foreign exchange differences	11	6	9	0	26
Accumulated depreciation as at 31/12	1,055	1,460	947	0	3,462
Net book value 31/12	1,898	1,047	476	233	3,654

## Development of tangible assets as at Dec. 31, 2015:

in m€	Land and buildings	Technical equip. and machinery	Other equip., factory and office equip.	Adv. paym., assets under construction	Total
Acquisition and production cost as at 1/1	2,575	2,325	1,186	272	6,358
Additions	79	335	111	207	732
Disposals	- 14	-344	-44	-1	- 403
Transfers	135	35	34	- 204	0
Foreign exchange differences	- 4	-1	9	3	7
Acquisition and production cost as at 31/12	2,771	2,350	1,296	277	6,694
Accum. depreciation and impairment as at 1/1	847	1,351	776	0	2,974
Depreciation of the year	105	209	118	0	432
Accum. depreciation on disposals	-8	- 185	-37	0	- 230
Impairment	1	2	2	0	5
Transfers	2	0	-2	0	0
Foreign exchange differences	2	-9	8	0	1
Accumulated depreciation as at 31/12	949	1,368	865	0	3,182
Net book value 31/12	1,822	982	431	277	3,512

Other equipment, factory and office equipment include mainly computer equipment, furniture, vehicles, transportation equipment, tools and fixtures.

The net book value of 3,654 million € (2015: 3,512 million €) corresponds to 51.3% (2015: 52.5%) of the historical cost. The recognised impairment loss relates to the rental equipment. The carrying amount of tangible assets held under finance leases amounts to 65 million € (2015: 69 million €) and can basically be allocated to land and buildings as well as to technical equipment and machinery.

The carrying amount of land and buildings contains the capitalised borrowing costs amounting to 8 million € (2015: 10 million €).

#### 3.3 Leasing

The Group primarily is both a lessor of its self manufactured construction machinery and a lessee of other tangible assets. The classification of leases according to IAS 17 is based on the extent to which risks and rewards incidental to ownership of a leased asset lie with the lessor or the lessee. Therefore, depending on the situation, the leased asset is recognised as finance or operating lease in the financial statement of the lessor or the lessee.

Self constructed assets capitalised under tangible assets but leased out under an operating lease are recognised at production costs. All other leased out equipment is recognised at acquisition costs. All rental equipment is depreciated using the straight-line method according to the asset's useful life reflecting the lower of the market value or the calculated residual value of the asset. Lease income from operating leases is recognised in the income statement on a straight-line basis. With respect to financial leases, a receivable is recognised at an amount equal to the net investment in the lease. Lease payments are divided into interest and principal payments.

Payments for operating lease contracts where the Liebherr Group is the lessee are recognised as an expense in the income statement on a straight-line basis over the lease term. Assets acquired under a finance lease are capitalised under IAS 17 at the fair value or, if lower, at the present value of the minimum lease payments at the commencement of the lease. At the same time the liability resulting from future minimum lease payments is recognised as a financial liability. The leased asset is depreciated using the straight-line method over the estimated useful life of the asset or over the lease term, if there is no reasonable certainty that the lessee will obtain ownership by the end of the lease.

If sale and lease back transactions result in finance leases, any profit will be deferred and amortised over the lease term. In case of operating leases, which are established at fair value, any profit or loss is recognised immediately.

#### 3.4 Impairment of non-current assets

Impairment losses on intangible and tangible assets will be recognised at each reporting date if there are indications that, following an event or due to changing circumstances, the book value is overvalued. If the carrying amount of an asset exceeds the recoverable amount (value in use or fair value less costs to sell) the asset will be written down to this lower amount. If necessary, intangible and tangible assets are combined to cash generating units.

#### 3.5 Joint ventures and associated companies

Shares in joint ventures and associated companies are accounted for using the equity method of accounting.

#### 3.6 Non-current financial assets

Non-current financial assets comprise non-current leasing receivables, loans and non-current marketable securities. Non-current marketable securities are designated upon initial recognition at fair value through profit and loss. Management of these financial assets is in accordance with a documented investment strategy and their performance is assessed based on the change in fair value.

#### 4 Current assets

#### 4.1 Inventories

Inventories are recognised at acquisition or production costs. Production costs includes costs directly related to the units of production and a systematic allocation of fixed and variable production overheads. The allocation of fixed production overheads is mostly based on the normal capacity of the production facilities; otherwise it is based on the actual level of production. Selling costs, administrative overheads and borrowing costs are not capitalised. Raw materials and merchandise are generally measured at acquisition costs. For raw materials, the acquisition cost reflect the lower of the last purchase price and the weighted average price. Sufficient allowances are recorded for risks with regard to obsolescence and surplus stock as well as for losses of pending transactions by depreciation or writing down to the net realisable value.

inm€	2016	2015
Raw materials and supplies	1,271	1,277
Work in progress	844	832
Finished goods and merchandise	1,410	1,348
Payments made in advance for inventories	5	2
Total	3,530	3,459

#### 4.2 Construction and service contracts

Construction and service contracts within the meaning of IAS 11 are recognised using the Percentage of Completion method. They are recognised based on the agreed contractual revenues by reference to the stage of completion. The disclosure is in accounts receivable, respectively accounts payable, net of prepayments received from customers. The stage of completion is determined based on the proportion of contractual costs incurred for work performed as of balance sheet date to the estimated total contract costs or based on agreed milestones.

When the outcome of a construction contract cannot be estimated reliably, revenue is recognised only to the extent of incurred contractual costs. The profit on such a contract is only recognised when the stage of completion allows for a reliable estimate of contract revenues and contract costs to be incurred to complete the contract.

#### 4.3 Accounts receivable

Accounts receivables, if not derivatives, are classified as loans and receivables. An allowance for doubtful accounts is recognised when there is objective evidence that such receivables are not recoverable (e.g. due to bankruptcy, payment default or other financial difficulties of the debtor). The amount of the loss is measured as the difference between the asset's carrying amount and the present value of estimated future cash flows. The allowance is based on internal group guidelines, according to which individual allowances must be deducted first. Based on the age of receivables, an additional systematic allowance between 20% and 100% is made on the residual balances according to the age of each receivable. The payment terms and outstanding receivables are regularly monitored locally by all subsidiaries. Furthermore, safeguards in the form of prepayments and down payments are established.

#### 4.4 Derivative financial instruments

Within the Liebherr Group, this position predominantly includes forward currency contracts, currency options, currency swaps, interest rate swaps and interest rate currency swaps to hedge its foreign exchange and interest rate risks. All derivatives, if they do not qualify for hedge accounting in accordance with IAS 39, are classified as financial instruments at fair value through profit or loss.

To hedge the interest and foreign currency risks resulting from its operational activities, financial transactions and investments, the Liebherr Group makes use of derivative financial instruments. The goal is to reduce volatility in the income statement. A hedging relationship must fulfill various criteria relating to the documentation, the probability of occurrence, the effectiveness of the hedging instrument and the reliability of the measurement in order to qualify for hedge accounting in accordance with IAS 39.

Under certain circumstances, a derivative financial instrument designated as a hedging instrument can be used to hedge the exposure to variability in cash flows that is attributable to a particular risk associated with a recognised asset or liability or a highly probable future transaction or the foreign currency risk in an unrecognised firm commitment. Exclusively in the aerospace division, Liebherr Group uses hedging instruments in cash flow hedges. Thereby the exposure to variability of future cash flows in foreign currencies which could have an effect on profit and loss is hedged. The effective portion of the gain or loss of the hedging instrument is recognised in other comprehensive income when the criteria for hedge accounting are fulfilled. These other comprehensive income amounts reflecting the cumulated value changes of the hedging instruments are, simultaneously, transferred to the income statement when the hedged transaction affects profit or loss or upon initial recognition of an asset or a liability. If the forecasted transaction is no longer expected to occur, the hedge is no longer effective and the amounts previously recognised in other comprehensive income are transferred to the income statement. The ineffective portion of the gain or loss of the hedging instrument is recognised directly in the finance result.

#### 4.5 Current financial assets

The financial assets in these categories are classified, based on an internal risk management and investment strategy, as financial assets at fair value through profit or loss. The management of these assets is based on a written investment strategy and performance is measured on fair value.

inm€	2016	2015
Shares	354	326
Mutual funds	108	73
Fixed income securities	788	811
Other securities	17	32
Total	1,267	1,242

#### 4.6 Liquid funds

In addition to cash on hand and cash in banks, short term deposits with an original maturity of three months or less are considered as liquid funds.

## 5 Equity

The share capital of Liebherr-International AG is divided into registered shares. The revenue reserve contains the legal reserve of Liebherr-International AG as well as the retained earnings of the other subsidiaries. Additionally, the balance includes the free reserves of Liebherr-International AG as well as reserves and profits from previous years of the consolidated companies.

Under this position, the effective portion of the gain or loss of the hedging instrument in a cash flow hedge is recognised in accordance to IAS 39 in other comprehensive income (OCI) without being recorded in the income statement.

In equity, exchange differences arising from the translation of assets and liabilities from the individual closings of foreign subsidiaries into the presentation currency are included.

### 6 Financial liabilities

The following table gives an overview of the financial liabilities.

in m €	Current	Non-current	Total 2016	Current	Non-current	Total 2015
Bank liabilities	638	1,715	2,353	958	1,283	2,241
Liabilities from leases	38	85	123	58	72	130
Accounts payable from non-genuine factoring	1	0	1	0	2	2
Bank liabilities from discounted bills	3	0	3	5	0	5
Total	680	1,800	2,480	1,021	1,357	2,378

#### 7 Other liabilities

The following table gives an overview of the other liabilities.

in m €	Current	Non-current	Total 2016	Current	Non-current	Total 2015
Liabilities from repurchase obligations with end users	0	100	100	0	111	111
Accounts payable trade	647	0	647	634	0	634
Liabilities from personnel expenses and social security	272	0	272	254	0	254
Tax liabilities and customs	88	0	88	89	0	89
Derivative financial instruments	177	0	177	187	0	187
Deferred income	45	0	45	33	0	33
Further liabilities	96	42	138	99	46	145
Total	1,325	142	1,467	1,296	157	1,453

#### 8 Taxes

Taxes include both current and deferred taxes. Current income taxes (income or corporation tax, business tax and corresponding foreign taxes) are the amounts resulting from taxable income or loss to be paid to or recovered from the relevant tax authority.

Current income taxes for the actual period and prior periods are recognised as a liability to the extent that they have not yet been paid. If the amount already paid in respect of current and prior periods exceeds the amount due for those periods, the excess is recognised as an asset. The benefit relating to a tax loss that can be carried back to recover current tax of a previous period is recognised as an asset.

Current tax liabilities (tax assets) for the actual and prior periods are measured at the amount expected to be paid to (recovered from) the taxation authorities, using the tax rates (and tax laws) that have been enacted at the reporting date or that will be enacted in the near future. Current income taxes are recognised in the income statement, except current income taxes relating to items priorly recognised in other comprehensive income.

Deferred tax assets and liabilities are recognised in accordance with IAS 12 for temporary differences between the carrying amount of an asset or liability in the balance sheet and its tax base. The deferred tax assets also include future tax reductions from the expected use of losses brought forward. Deferred tax assets are only recognised if there is sufficient probability that future taxable profit will allow the deferred tax asset to be recovered. Deferred tax assets and liabilities are measured at the tax rates that are expected to apply to the period when the asset is realised or the liability is settled. The announcements of new tax rates (and new tax laws) by the government have been considered for the measurement of deferred tax assets and liabilities. The formal enactment is not relevant unless the temporary differences balance themselves under the old tax law.

The carrying amount of deferred tax assets is reviewed at each reporting date and reduced to the extent that it is no longer probable that sufficient taxable profit will be available to allow all or part of the deferred income tax asset to be recovered. Conversely, a previously unrecognised deferred tax asset is recognised to the extent that it has become probable that future taxable profit will allow the deferred tax asset to be recovered.

Deferred taxes are charged or credited directly to other comprehensive income if the taxes relate to items that are credited or charged directly to other comprehensive income in the same or a different period.

Deferred income tax assets and deferred income tax liabilities are offset, if a legally enforceable right exists to set off current tax assets against current income tax liabilities and the deferred income taxes relate to the same taxable entity and the same tax authority.

## 9 Employee benefits

Employee benefits consist of pension obligations, commitments related to anniversary bonuses and partial retirement agreements. There are various employee benefit plans in the Group, which are individually aligned with local conditions in their respective countries. They are financed either by means of contributions to legally independent pension/insurance funds, or by recognition as employee benefit liabilities in the balance sheet of the respective subsidiaries.

The net periodic costs with regards to defined contribution plans to be recognised in the income statement are the agreed contributions of the employer. In case of defined benefit plans, the period costs are determined by means of actuarial valuations by external experts using the projected unit credit method which are prepared on a regular basis.

The calculation of net periodic costs and employee benefit liabilities implies that statistical methods and variables are employed. These variables include, for example, estimations and assumptions concerning the discount rate. Furthermore, actuaries use a wide range of statistical information for actuarial calculation of employee benefit liabilities which can deviate significantly from actual results due to changes in market conditions, the economic situation as well as fluctuating rates of withdrawal and shorter or longer life expectancy of benefit plan participants.

Termination benefits related to partial retirement agreements are recognised at the present value of such obligations.

### 10 Provisions

Provisions will be only recognised in the balance sheet if the Liebherr Group has an obligation to a third party that resulted from a past event, and if a reliable estimate of the obligation can be made. Possible losses from future events are not recognised in the balance sheet. Restructuring provisions will only be recognised if the respective costs can be determined reliably by reference to a plan and if there is a corresponding obligation resulting from a contract or notification.

Provisions 2016 in m €	Warranty obligation	Compensation and product liability	Expected loss from pending transactions	Other provisions	Total
Current provisions	388	17	54	74	533
Non-current provisions	0	4	11	23	38
Total provisions	388	21	65	97	571
Reconciliation					
Dec. 31, 2015	393	26	74	111	604
Increase	119	5	24	42	190
Usage	- 95	-5	- 29	-32	- 161
Transfers	1	0	0	-1	0
Reversal	-30	-5	-6	-23	-64
Discounting	0	0	0	0	0
Foreign exchange differences	0	0	2	0	2
Dec. 31, 2016	388	21	65	97	571

Provisions 2015 in m €	Warranty obligation	Compensation and product liability	Expected loss from pending transactions	Other provisions	Total
Current provisions	393	20	60	83	556
Non-current provisions	0	6	14	28	48
Total provisions	393	26	74	111	604
Reconciliation					
Dec. 31, 2014	378	15	78	120	591
Increase	132	13	29	46	220
Usage	- 104	-6	-32	- 24	- 166
Transfers	0	12	0	- 12	0
Reversal	-20	-8	-2	-22	-52
Discounting	0	0	1	1	2
Foreign exchange differences	7	0	0	2	9
Dec. 31, 2015	393	26	74	111	604

### 11 Revenue recognition and profit realisation

Revenues from sales of goods and services are recognised when the related significant risks and rewards of ownership have been transferred to the buyer. Anticipated losses related to onerous contracts are provisioned. Revenue related to construction and service contracts is recognised and measured using the Percentage of Completion method.

Under financial leasing contracts where the Liebherr Group is the lessor, revenue is recognised at the lower of the reqular selling price or the present value of the future minimum lease payments. Also, sales gains or losses are determined applying the same method as for direct sales transactions. The lease payments by the lessee are split into an interest and a principal portion. The interest portion is recognised based on a pattern reflecting a constant periodic return on the outstanding net investment of the lessor.

Revenue from operating leases is recognised on a straight line basis over the lease term, unless another systematic basis is more representative of the time pattern in which the user benefit derived from the leased asset is diminished. As such, income from lease payments is recognised proportionally. The difference between payments received and income recognised is deferred.

Sales proceeds from rental equipment disclosed under non-current assets are not recognised until actual transfer of risks and rewards related to the assets occurs.

## Report of the Statutory Auditor

To the Board of Directors of Liebherr-International AG. Bulle Berne, April 7, 2017

#### Report of the independent auditor on the summary consolidated financial statements

The summary consolidated financial statements of Liebherr-International AG, Bulle, which comprise the balance sheet as at December 31, 2016, the income statement, statement of comprehensive income, cash flow statement and statement of changes in equity for the year then ended, and related summary notes, are derived from the consolidated financial statements prepared in accordance with International Financial Reporting Standards (IFRS) and audited in accordance with International Standards on Auditing (ISA). We expressed an unmodified audit opinion on those consolidated financial statements in our report dated April 7, 2017.

The summary consolidated financial statements do not contain all the disclosures required by IFRS. Reading the summary consolidated financial statements, therefore, is not a substitute for reading the audited consolidated financial statements of Liebherr-International AG.

#### Board of Directors' responsibility

The Board of Directors is responsible for the preparation of a summary of the audited consolidated financial statements on the basis described in the notes to the summary consolidated financial statements.

#### Auditor's responsibility

Our responsibility is to express an opinion on the summary consolidated financial statements based on our procedures, which were conducted in accordance with International Standard on Auditing (ISA) 810, "Engagements to Report on Summary Financial Statements".

#### Opinion

In our opinion, the summary consolidated financial statements derived from the audited consolidated financial statements of Liebherr-International AG for the year ended December 31, 2016 are consistent, in all material respects, with those consolidated financial statements, on the basis described in the notes.

Ernst & Young Ltd

Prof. Dr. Thomas Nösberger Licensed audit expert (Auditor in charge)

Florian Baumgartner Licensed audit expert

## Five-Year Summary

in m €	2012	2013	2014	2015	2016
Sales revenue	9,090	8,964	8,823	9,237	9,009
Investments	854	830	816	751	751
Depreciation	434	405	427	448	466
Non-current assets	3,348	3,521	3,737	3,913	4,089
Current assets	7,840	7,998	8,111	8,349	8,572
Equity	6,274	6,442	6,525	6,761	7,051
Liabilities	4,914	5,077	5,323	5,501	5,610
Result after tax	552	364	316	294	298
Personnel expenses	1,986	2,100	2,181	2,331	2,413
	2012	2013	2014	2015	2016
Employees	37,801	39,424	40,839	41,545	42,308











